

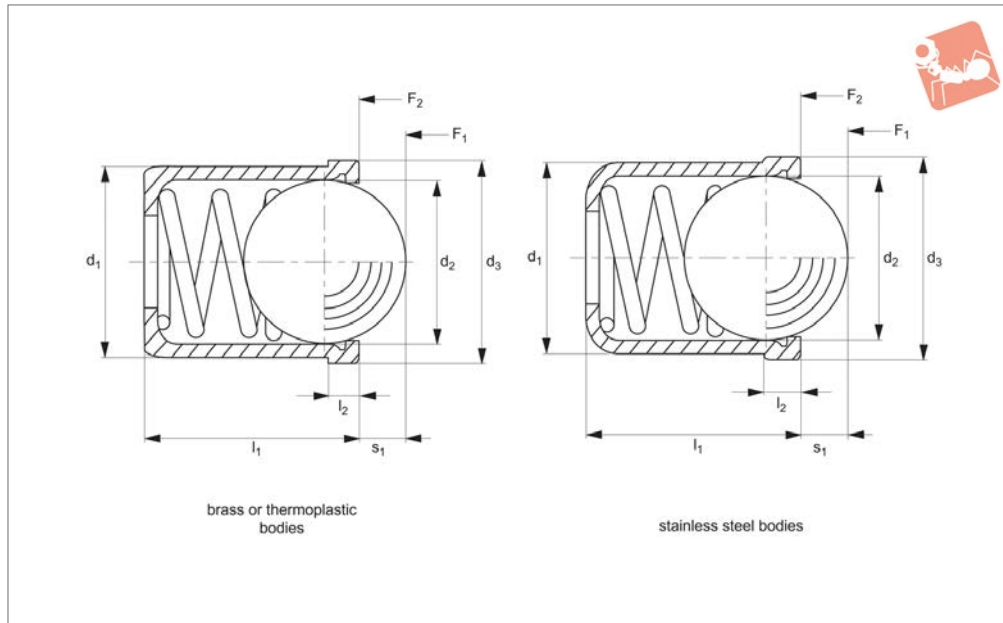


Spring Plungers

smooth model, with collar and ball- stainless steel



Spring Plunger & Detent Pins



32300

SPRING PLUNGER & DETENT PINS

Material

Body: stainless steel 1.4303 (AISI 305), brass, or thermoplastic POM, blue.
 Ball: ball bearing steel 1.3505 (100Cr6) hardened or thermoplastic POM, white.
 Spring: stainless steel 1.4568 (X7CrNiAl17-7).

Technical Notes

Used for locating, applying pressure or

lifting off.

Spring loads * = statistical average values.
 Thermo type temperature range -30°C to +50°C.
 Stainless and brass type, temperature range max. 250°C.
 For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

These are press fit spring plungers. Typical hole tolerance is H7 for manual assembly. These fit tolerances vary with type of material so a trial hole is recommended. Light spring load- marked with one line. Standard spring load- no marking. Heavy spring load- marked with two lines. Special types available on request.

Order No.	Spring load	Finish	d ₁ -0 +0.1	d ₂	d ₃	l ₁	l ₂ ≈	s ₁	Spring load		Temperature °C max.	Weight g
									F ₁ N ≈	F ₂ N ≈		
32300.W1004	Light	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	0,4	1,0	250	0,30
32300.W1005	Light	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	0,5	4,7	250	0,60
32300.W1006	Light	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	2,3	6,5	250	1,00
32300.W1008	Light	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	4,0	9,0	250	2,10
32300.W1010	Light	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	3,9	10,0	250	4,40
32300.W1012	Light	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	6,2	14,6	250	7,30
32300.W0003	Standard	Body & Ball Stainless	3	2,38	3,5	4,0	0,60	0,70	1,8	3,5	+250	0,20
32300.W0004	Standard	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	2,5	6,0	+250	0,30
32300.W0005	Standard	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	3,0	6,5	+250	0,60
32300.W0006	Standard	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	5,5	11,5	+250	1,00
32300.W0008	Standard	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	7,0	12,5	+250	2,10
32300.W0010	Standard	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	8,5	18,5	+250	4,40
32300.W0012	Standard	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	12,0	26,5	+250	7,30
32300.W0203	Standard	Body Brass, Ball Stainless	3	2,38	3,6	4,0	0,60	0,60	1,8	3,5	+250	0,20
32300.W0204	Standard	Body Brass, Ball Stainless	4	3,00	4,5	5,0	1,00	0,80	3,0	6,0	+250	0,50
32300.W0205	Standard	Body Brass, Ball Stainless	5	4,00	5,5	6,0	1,00	1,00	4,0	6,5	+250	0,80
32300.W0206	Standard	Body Brass, Ball Stainless	6	5,00	6,5	7,0	1,00	1,60	6,0	11,5	+250	1,30
32300.W0208	Standard	Body Brass, Ball Stainless	8	6,50	8,5	9,0	1,00	1,90	8,0	12,5	+250	2,80
32300.W0403	Standard	Body Thermo, Ball S/S	3	2,00	3,6	4,0	0,60	0,55	1,7	3,5	-30/+50	0,09
32300.W0404	Standard	Body Thermo, Ball S/S	4	3,00	4,6	5,0	1,00	0,80	3,0	6,5	-30/+50	0,20
32300.W0405	Standard	Body Thermo, Ball S/S	5	4,00	5,6	6,0	1,00	1,00	6,0	9,4	-30/+50	0,40
32300.W0406	Standard	Body Thermo, Ball S/S	6	5,00	6,5	7,0	1,00	1,60	6,2	12,6	-30/+50	0,70
32300.W0408	Standard	Body Thermo, Ball S/S	8	6,50	8,5	9,0	1,00	1,90	10,0	20,4	-30/+50	1,50
32300.W0410	Standard	Body Thermo, Ball S/S	10	8,00	11,0	13,5	1,50	2,40	11,9	22,3	-30/+50	3,20
32300.W0412	Standard	Body Thermo, Ball S/S	12	10,00	13,0	16,0	1,50	3,30	14,0	25,0	-30/+50	5,80
32300.W0604	Standard	Body & Ball Thermoplast	4	3,00	4,6	5,0	1,00	0,80	3,0	6,5	-30/+50	0,10

Spring Plunger & Detent Pins

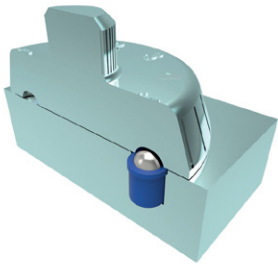
Spring Plungers

smooth model, with collar and ball- stainless steel



Order No.	Spring load	Finish	d ₁ -0 +0.1	d ₂	d ₃	l ₁	l ₂ ≈	s ₁	Spring load	Spring load	Temperature °C max.	Weight g
									F ₁ N ≈	F ₂ N ≈		
32300.W0605	Standard	Body & Ball Thermoplast	5	4,00	5,6	6,0	1,00	1,00	6,0	9,4	-30/+50	0,20
32300.W0606	Standard	Body & Ball Thermoplast	6	5,00	6,5	7,0	1,00	1,60	6,2	12,6	-30/+50	0,30
32300.W0608	Standard	Body & Ball Thermoplast	8	6,50	8,5	9,0	1,00	1,90	10,0	20,4	-30/+50	0,60
32300.W0610	Standard	Body & Ball Thermoplast	10	8,00	11,0	13,5	1,50	2,40	11,9	22,3	-30/+50	1,50
32300.W0612	Standard	Body & Ball Thermoplast	12	10,00	13,0	16,0	1,50	3,30	14,0	25,0	-30/+50	2,50
32300.W2004	Heavy	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	5,0	10,4	+250	0,30
32300.W2005	Heavy	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	6,0	12,0	+250	0,60
32300.W2006	Heavy	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	7,3	19,0	+250	1,00
32300.W2008	Heavy	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	11,0	25,0	+250	2,10
32300.W2010	Heavy	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	17,0	37,0	+250	4,40
32300.W2012	Heavy	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	30,0	54,0	+250	7,30

SPRING PLUNGER & DETENT PINS

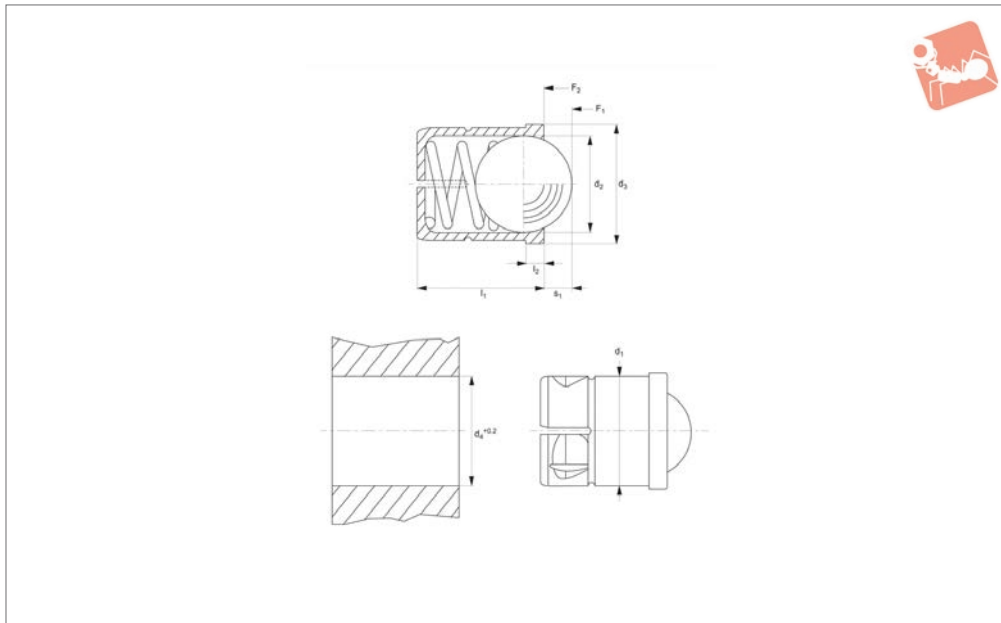




Expander Fit Spring Plunger

smooth body - thermoplastic

Spring Plunger & Detent Pins



32302

SPRING PLUNGER & DETENT PINS

Material

Body: thermoplastic POM, black.
 Ball: ball bearing steel 1.3505 (100Cr6) hardened or thermoplastic POM, white.
 Spring: stainless steel.

Technical Notes

Unique body design flexes to expand and contract to fit in location bore tolerances

as wide as +0,2mm of d_4 . Especially suited to installation in plastic moulded components where hole and bore precision is not high.
 Guarantees a secure overhead installation. Simple push fit design, no special tooling necessary.
 For calculation of indexing resistance

please refer to spring plunger technical pages.

Tips

Spring load* - statistical average value.
 Temperature range -30°C to +50°C

See Wixroyd.com for:
 32305 - Spring plungers - INCH

Order No.	Finish	d_1 +0.1	d_2	d_3	d_4 +0.2	l_1 ±0.2	l_2 ≈	s_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32302.W0704	Body Thermo & Ball Stainless	4	3,0	4,6	4	5,0	1,0	0,8	3,0	6,5	-30/+50	0,12
32302.W0705	Body Thermo & Ball Stainless	5	4,0	5,6	5	6,0	1,0	1,0	6,0	9,4	-30/+50	0,34
32302.W0706	Body Thermo & Ball Stainless	6	5,0	6,5	6	7,0	1,0	1,6	6,2	12,6	-30/+50	0,63
32302.W0708	Body Thermo & Ball Stainless	8	6,5	8,5	8	9,0	1,0	1,9	10,0	20,4	-30/+50	1,40
32302.W0710	Body Thermo & Ball Stainless	10	8,0	11,0	10	13,5	1,5	2,4	11,9	22,3	-30/+50	2,90
32302.W0804	Body & Ball Thermo	4	3,0	4,6	4	5,0	1,0	0,8	3,0	6,5	-30/+50	0,06
32302.W0805	Body & Ball Thermo	5	4,0	5,6	5	6,0	1,0	1,0	6,0	9,4	-30/+50	0,17
32302.W0806	Body & Ball Thermo	6	5,0	6,5	6	7,0	1,0	1,6	6,2	12,6	-30/+50	0,23
32302.W0808	Body & Ball Thermo	8	6,5	8,5	8	9,0	1,0	1,9	10,0	20,4	-30/+50	0,57
32302.W0810	Body & Ball Thermo	10	8,0	11,0	10	13,5	1,5	2,4	11,9	22,3	-30/+50	1,21



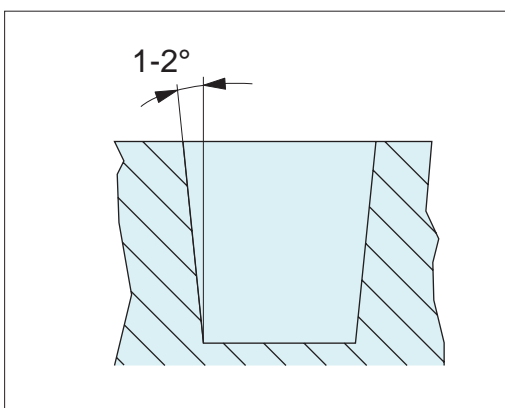
Struggle with inconsistent location bore tolerances and wide material variation?

Looking to reduce machining costs?

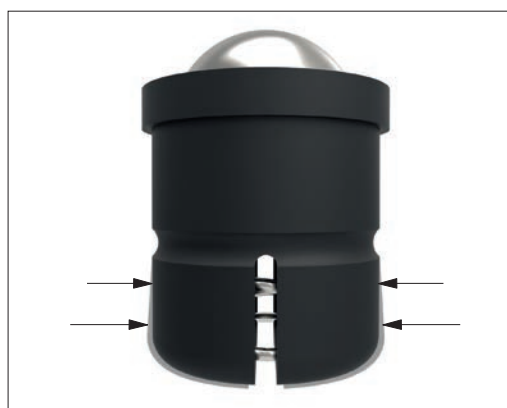
Our smooth body expander fit spring plunger offers a simple and accommodating solution - with the capacity to accommodate location bore tolerances as wide as $+0.2\text{mm}$.



Unique Expander Fit Design

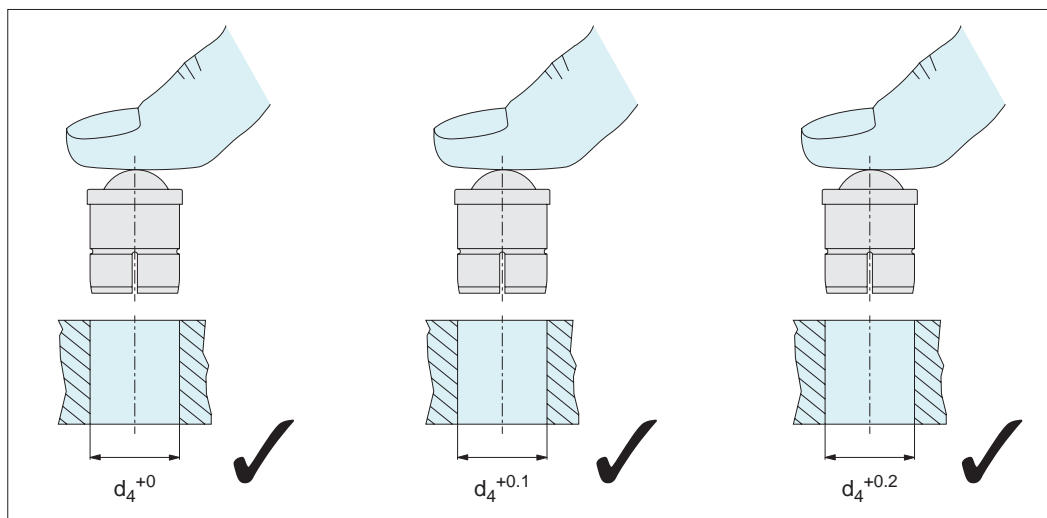


Typically, unmachined plastic injection moulded holes can vary widely in accuracy, with sidewall variation of ± 1 to 2° .



Unique body design flexes to expand and contract to fit in location bore tolerances as wide as $+0,2\text{mm}$.

Especially suited to installation in plastic moulded components where hole and bore precision is not high.



Expands/contracts to fit a range of hole tolerances from $+0$ to $+0,2$.

Unique Advantages

- Speed and flexibility in production and assembly.
- Removes need and cost of high tolerance machining and workpiece preparation.
- Easy push fit installation, no special tools or punches required.

Important Note

Important Note: It is not recommended to repeatedly install and uninstall expander fit spring plungers between locating bores of different tolerances, as such repeated action can lead to reduction of its capacity to expand into holes of wider tolerances (due to slight plastic fatigue).

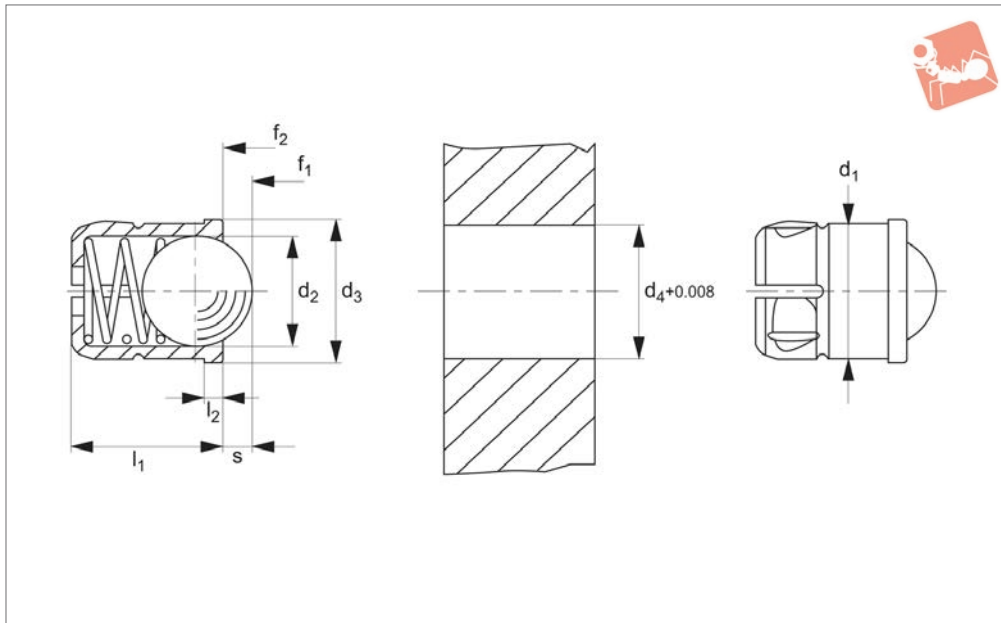
As with all our smooth bodied spring plungers, best results are achieved when used as a single one-off installation.



Expander Fit Spring Plungers

smooth body, with collar and ball- **stainless steel**

Spring Plunger & Detent Pins



32305.web

SPRING PLUNGER & DETENT PINS

Material

Body: thermoplastic POM, black.
Ball: stainless steel hardened.
Spring: stainless steel.

Technical Notes

Used for locating, applying pressure,

detent or ejection.

Spring loads * = statistical average values.
Temperature range -5°C to +50°C.

Tips

Typical location hole tolerance is 0,008 inch due to flexible body.

Special types available on request.

Order No.	d ₁ +0.004	d ₂	d ₃ inch	d ₄ +0.008	l ₁ ±0.01	l ₂	Stroke s inch	Spring load f ₁ lb	Spring load f ₂ lb	Weight oz
32305.W0050	3/16	0.157	0.220	3/16	0.236	0.039	0.039	1.3	2.1	0.01
32305.W0060	1/4	0.197	0.276	1/4	0.276	0.039	0.059	1.4	2.8	0.02
32305.W0080	5/16	0.256	0.335	5/16	0.354	0.039	0.075	1.9	4.5	0.05
32305.W0090	3/8	0.315	0.433	3/8	0.531	0.059	0.091	2.7	5.0	0.10
32305.W0120	1/2	0.394	0.551	1/2	0.630	0.059	0.126	3.1	5.6	0.18

Spring Plunger & Detent Pins

Spring Plunger - Pin End - Smooth

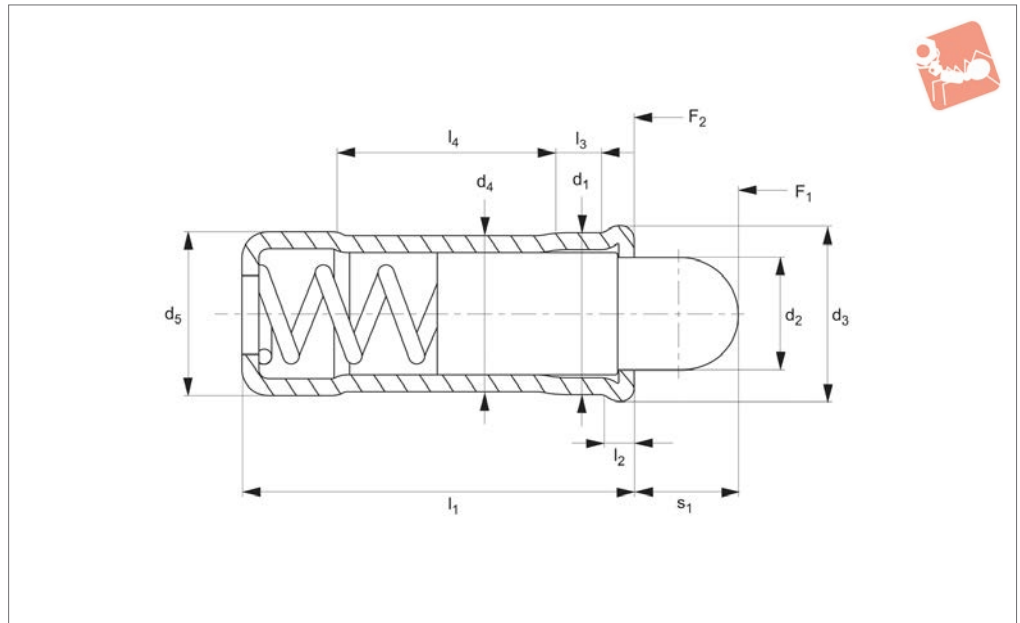
stainless steel - with collar



SPRING PLUNGER & DETENT PINS



32282



Material

Body: stainless steel 1.4303 (AISI 305).
 Pin: stainless steel 1.4305 (AISI 303), or thermoplastic POM white.
 Spring: stainless steel

lifting off.

Thermoplastic type temperature range - 30°C to +50°C.

Stainless type, temperature range max. 250°C.

Spring load * = statistical average value.

Tips

Special types available on request.

A tolerance of H7 is recommended for the locating hole of d₁.

Technical Notes

Used for locating, applying pressure or

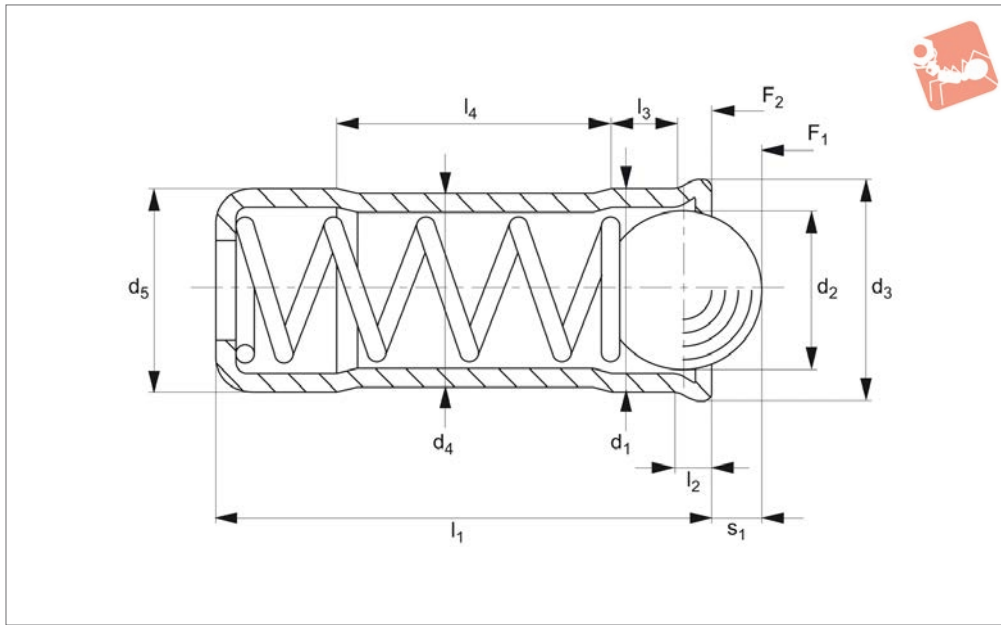
Order No.	Pin type	d ₁ +0.1 +0.04	d ₂	d ₃	d ₄	d ₅ ±0.04	l ₁	l ₂ ≈	l ₃ ≈	l ₄ ≈	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Temperature °C max.	Weight g
32282.W0104	Stainless	4	2,8	4,6	3,85	4	10,7	0,9	1,8	5,6	2,7	3,0	8,2	+250	0,7
32282.W0105	Stainless	5	3,8	5,6	4,85	5	12,0	0,9	2,1	6,0	4,0	3,3	9,0	+250	1,2
32282.W0106	Stainless	6	4,8	6,5	5,85	6	15,0	1,0	2,3	8,2	5,5	6,1	12,0	+250	2,2
32282.W0108	Stainless	8	6,2	8,5	7,55	8	18,0	1,1	2,9	9,5	6,5	9,0	20,1	+250	4,2
32282.W0110	Stainless	10	8,1	11,0	9,55	10	26,0	1,5	4,2	14,3	8,0	16,2	29,0	+250	9,0
32282.W0124	Plastic	4	2,8	4,6	3,85	4	10,7	0,9	1,8	5,6	2,7	3,0	8,2	-30/+50	0,5
32282.W0125	Plastic	5	3,8	5,6	4,85	5	12,0	0,9	2,1	6,0	4,0	3,3	9,0	-30/+50	0,8
32282.W0126	Plastic	6	4,8	6,5	5,85	6	15,0	1,0	2,3	8,2	5,5	6,1	12,0	-30/+50	1,3
32282.W0128	Plastic	8	6,2	8,5	7,55	8	18,0	1,1	2,9	9,5	6,5	9,0	20,1	-30/+50	2,5
32282.W0130	Plastic	10	8,1	11,0	9,55	10	26,0	1,5	4,2	15,0	8,0	16,2	29,0	-30/+50	5,0



Spring Plunger - Ball End - Smooth

stainless steel - with collar

Spring Plunger & Detent Pins



32284

SPRING PLUNGER & DETENT PINS

Material

Body: stainless steel 1.4303 (AISI 303).
Pin: stainless steel 1.4303 (AISI 303),
Spring: stainless steel.

lifting off.

Temperature range max. 250°C.
Spring load * = statistical average value.

locating hole of d_1 .

Technical Notes

Used for locating, applying pressure or

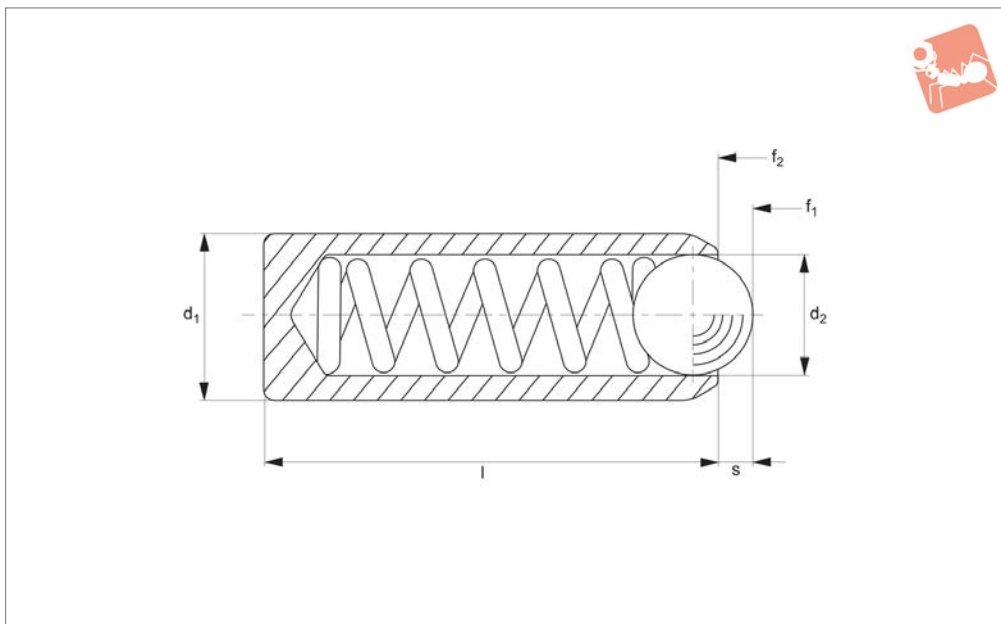
Tips

Special types available on request.
A tolerance of H7 is recommended for the

Order No.	d_1 +0.10 +0.04	d_2	d_3	d_4	d_5 ± 0.04	l_1	l_2 \approx	l_3 \approx	l_4 \approx	Spring load F_1 N \approx	Spring load F_2 N \approx	Stroke s_1	Weight g
32284.W1104	4	3.0	4.6	3.85	4	10.7	0.9	1.8	5.6	12.9	19.0	0.9	0.6
32284.W1105	5	4.0	5.6	4.85	5	12.0	0.9	2.1	6.0	19.3	29.2	1.3	1.0
32284.W1106	6	5.0	6.5	5.85	6	15.0	1.0	2.3	8.2	28.0	47.5	1.7	2.0
32284.W1108	8	6.5	8.5	7.55	8	18.0	1.1	2.9	9.5	40.0	67.3	2.3	4.0
32284.W1110	10	8.5	11.0	9.55	10	26.0	1.5	4.2	14.3	66.0	105.0	3.1	8.0



32280



Material

Body: stainless steel 1.4305 (AISI 303).
 Ball: ball bearing steel 1.3505 (100Cr6) hardened.
 Spring: stainless steel

Technical Notes

Used for locating, applying pressure or

lifting off.

Temperature range up to +250°C. Spring load * = statistical average value.

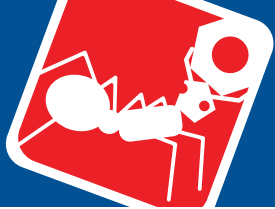
Tips

These are press fit spring plungers, use tolerance of F8 for easy fit, or H9 when tight fit required. These tolerances vary

with material type, hence a trial hole is recommended.

Special types available on request.

Order No.	Pressure	d ₁ ±0.04	d ₂	l ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32280.W0306	Standard pressure	2.0	1.0	3.5	0.3	0.8	1.5	0.1
32280.W0308	Standard pressure	2.5	1.5	5.0	0.40	2.8	4.7	0.2
32280.W0310	Standard pressure	3.0	2.0	7.0	0.7	4.5	7.5	0.4
32280.W0312	Standard pressure	3.5	2.5	9.0	0.8	6.0	14.5	0.6
32280.W0315	Standard pressure	4.0	3.0	11.0	0.9	8.0	14.0	0.8
32280.W0317	Standard pressure	4.5	3.2	12.0	1.0	9.5	16.5	1.1
32280.W0320	Standard pressure	5.0	3.5	13.0	1.0	11.0	18.0	1.5
32280.W0322	Standard pressure	5.5	4.0	14.0	1.2	15.5	25.0	1.9
32280.W0325	Standard pressure	6.0	4.5	15.0	1.5	18.0	31.0	2.3
32280.W0327	Standard pressure	8.0	6.0	18.0	2.0	24.0	45.0	5.0
32280.W0330	Standard pressure	10.0	8.0	20.0	2.5	26.0	49.0	8.3
32280.W0332	Standard pressure	12.0	10.0	22.0	3.5	41.0	86.0	12
32280.W0356	High pressure	2.0	1.0	3.5	0.3	1.3	2.2	0.1
32280.W0358	High pressure	2.5	1.5	5.0	2.5	4.7	7.1	0.2
32280.W0360	High pressure	3.0	2.0	7.0	0.7	7.8	11.6	0.3
32280.W0362	High pressure	3.5	2.5	9.0	0.8	12.0	18.0	0.5
32280.W0365	High pressure	4.0	3.0	11.0	0.9	15.0	22.0	0.7
32280.W0367	High pressure	4.5	3.2	12.0	1.0	18.7	25.1	1.0
32280.W0370	High pressure	5.0	3.5	13.0	1.0	19.3	26.6	1.4
32280.W0372	High pressure	5.5	4.0	14.0	1.2	25.1	39.2	1.8
32280.W0375	High pressure	6.0	4.5	15.0	1.5	36.0	60.5	2.3
32280.W0377	High pressure	8.0	6.0	18.0	2.0	57.0	103.5	5.2
32280.W0380	High pressure	10.0	8.0	20.0	2.5	61.0	110.0	8.5
32280.W0382	High pressure	12.0	10.0	22.0	3.5	68.0	143.0	13



Spring Plungers

smooth model, without collar - *stainless steel*



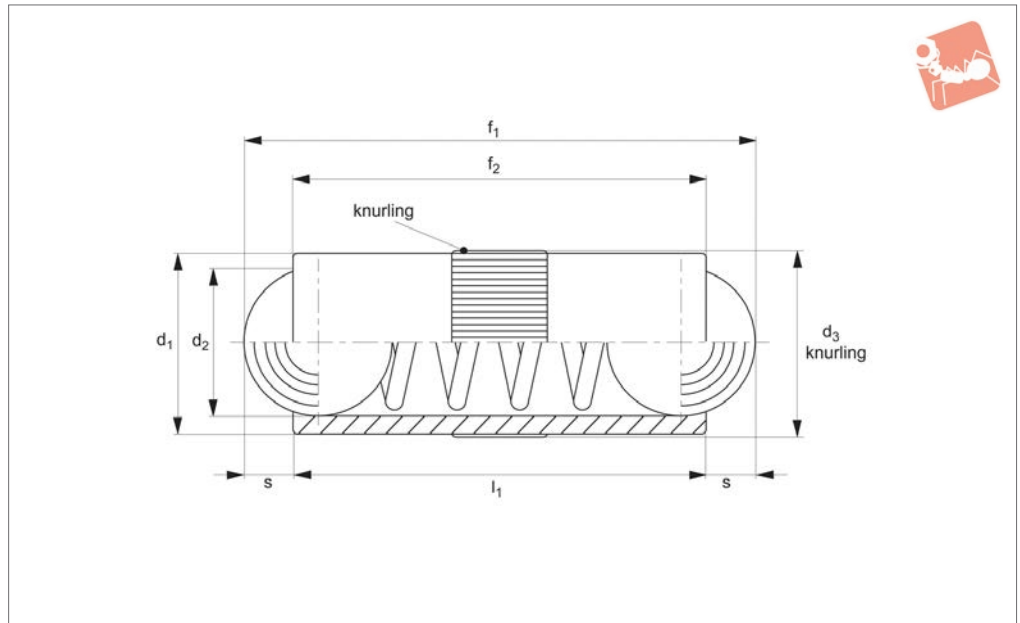
Spring Plunger & Detent Pins



SPRING PLUNGER & DETENT PINS



32350



Material

Body: brass.
Ball: stainless steel, hardened.
Spring: stainless steel.

Technical Notes

Double ended spring plungers are used for axial locations and securing of bolts, as

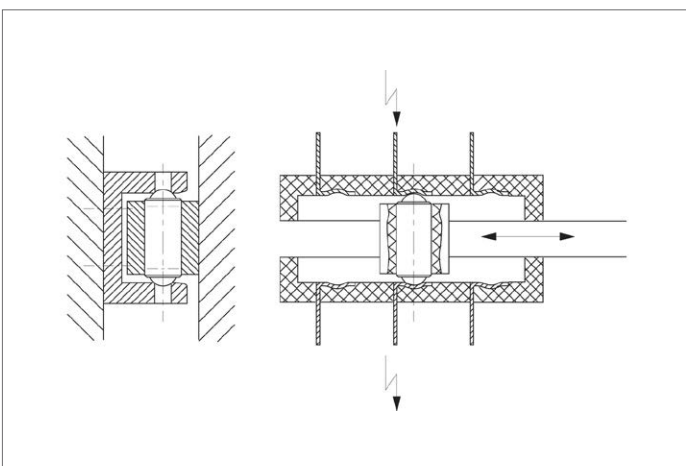
well as a means of electrical contact (see diagram). Spring loads * = statistical average value.
For calculation of indexing resistance please refer to spring plunger technical pages.

Temperature resistance up to 250°C

Tips

Suggested hole tolerance for these spring plungers is H8.
Special types available on request.

Order No.	d_1 tol. h10	d_2	d_3 +0.05	l_1	s	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32350.W0025	2.5	2.0	2.52	5.3	0.65	1.3	2.5	0.22
32350.W0030	3.0	2.5	3.02	7.3	0.80	2.0	4.5	0.34
32350.W0040	4.0	3.0	4.03	9.0	0.90	2.5	7.5	0.65
32350.W0050	5.0	4.0	5.03	10.8	1.20	3.5	8.0	1.27
32350.W0060	6.0	5.0	6.03	12.6	1.60	3.5	10.5	1.99
32350.W0070	7.0	6.0	7.03	14.0	2.00	4.0	12.0	3.00
32350.W0080	8.0	6.5	8.03	18.0	2.10	6.0	15.0	5.10

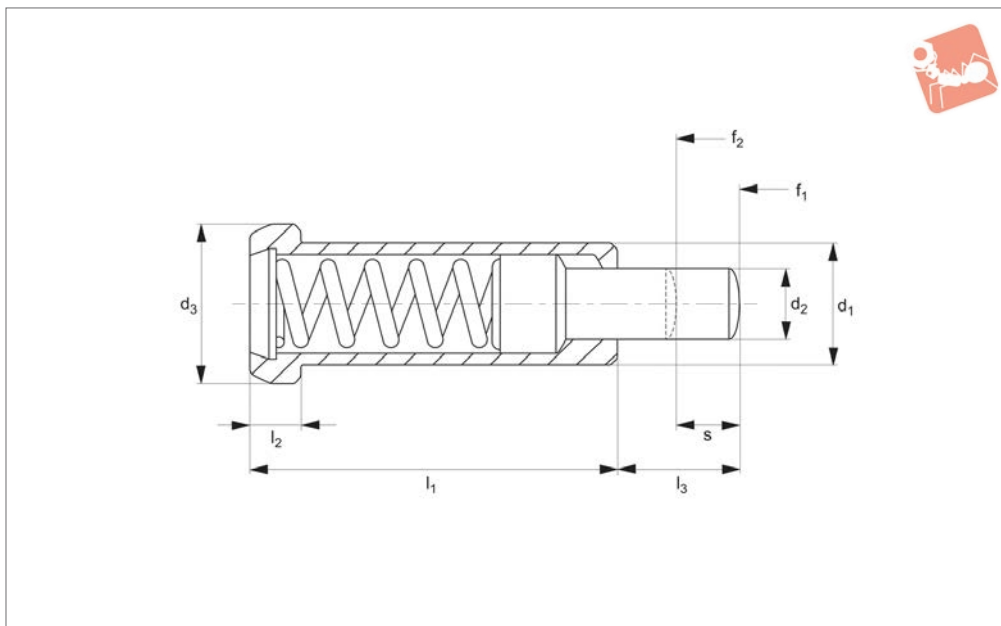




Spring Plungers

smooth model, long

Spring Plunger & Detent Pins



32400

SPRING PLUNGER & DETENT PINS

Material

Body: free cutting steel, blackened.
Pin: case hardened steel, blackened.
Spring: stainless steel.

Technical Notes

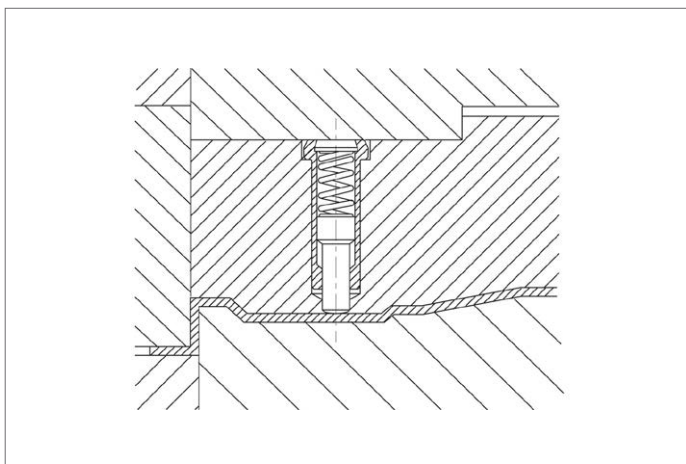
Used as pulling off pins and spring stops in

tool making. No part of the spring plunger can come out of the retaining bore. Recommended installation hole tolerance H7. Temperature range up to 250°C. Spring load * = statistical average values.

Tips

Do not push pin beyond spring range ,s', as this will damage spring and result in reduction of spring load. Special types available on request.

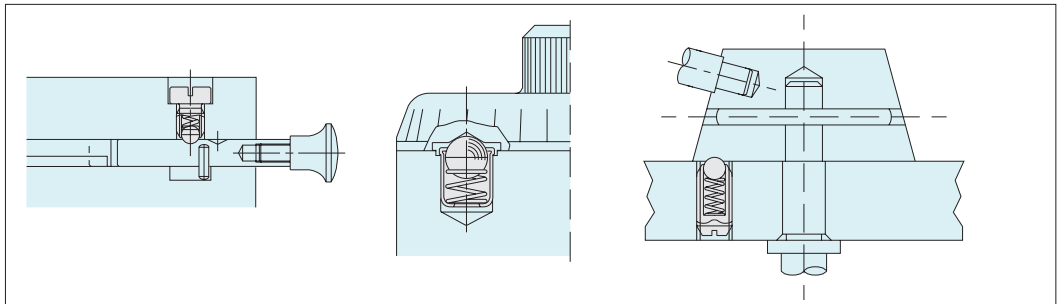
Order No.	d ₁ 0 -0.05	d ₂	d ₃	l ₁	l ₂	l ₃	Spring load F ₁ N ≈	Spring load F ₂ N ≈	s spring range	Weight g
32400.W0010	10	5.9	13	30	4.0	10	42	110	5.5	16.0
32400.W0006	6	2.7	8	20	3.2	6	10	22	3.5	4.2
32400.W0008	8	3.9	10	24	3.2	8	30	88	4.5	7.7
32400.W0012	12	7.9	16	36	5.0	12	50	130	6.5	27.0





Wixroyd Spring Plungers - A Range of Endless Possibilities

Made of high quality steel and stainless steel, Wixroyd's Spring Plunger range is proven to be reliable for millions of repetitions in securing, positioning, positive locking, indexing and quick release. Their application is limited only by the imagination!



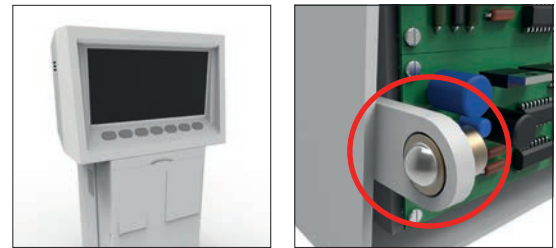
Commercial Lighting

Three push-fit spring plungers no. 32000 have been added to the design of this recessed commercial light fitting. The push-fit design of the plunger makes for easy assembly during production. Their use greatly simplifies the mounting and servicing of the units, reducing handling costs and saving valuable operator time.



Medical Applications

Used in conjunction with a simple hinge, Wixroyd spring plunger 32300 provides an easy and secure means to positively position and secure the back panel of a blood gas analysis machine. With both brass and stainless steel varieties, our spring plungers have a wide range of application in the medical, pharmaceutical, food and drink processing industries.



Applications

Uses

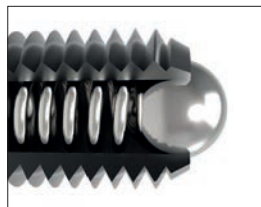
- For location, applying pressure and "lifting off".
- Securing and positioning.
- Positive locking and indexing.
- Quick release.

Industry Sectors

- Machine and fixture design.
- Measuring equipment.
- Electronic components.
- Lighting equipment.
- Medical, optics and orthopaedics.

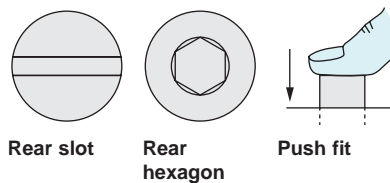
Wixroyd Spring Plungers - Uses and Mounting Options

Ball Type

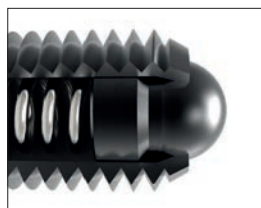


- 31400
- 31420
- 31500
- 32000
- 32100
- 32102
- 32280
- 32300
- 32302
- 32350

Mounting Options

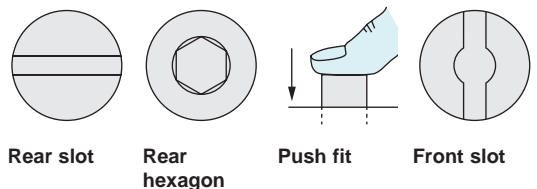


Pin Head Type



- 31000
- 31600
- 32150
- 32200
- 32220
- 32282
- 32400
- 32420

Mounting Options





Quality products every time

- Every spring plunger that is produced on the Wixroyd assembly line is individually tested. That is how we guarantee the quality of our products.
- A Wixroyd spring plunger is tested against four key criteria during manufacture.

100% Testing

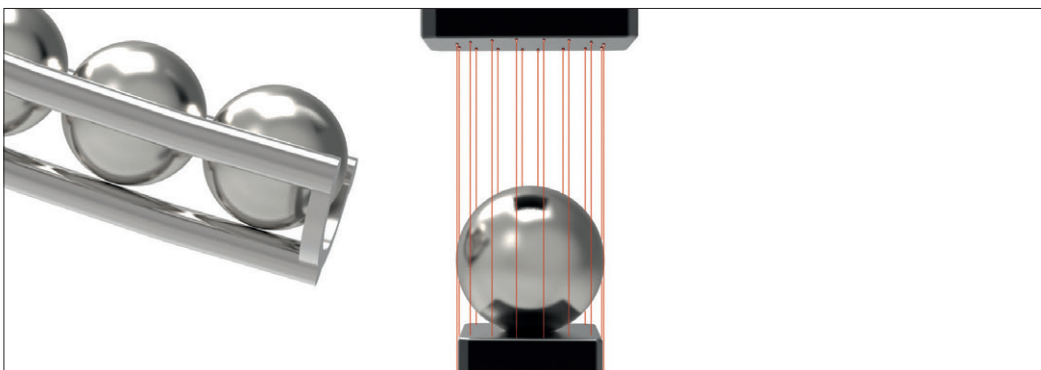
Accuracy of 'S' Stroke/ Spring Range



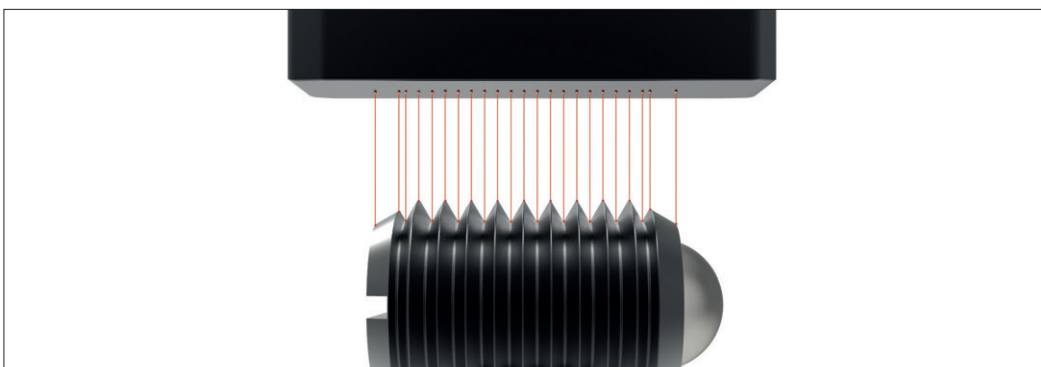
Accuracy of f_1 and f_2 Spring Forces



Accuracy of Ball Diameter



Accuracy of Thread





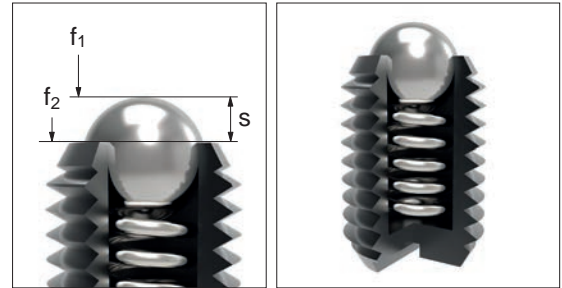
Thread Details

All Wixroyd metric spring plungers have a coarse thread.

Thread (D) Pitch	ISO metric coarse threads (mm)															
	3	3,5	4	4,5	5	6	7	8	10	12	14	16	18	20	22	24
	0,5	0,6	0,7	0,75	0,8	1,0	1,0	1,25	1,5	1,75	2,00	2,0	2,5	2,5	2,5	3,0

Spring Loads

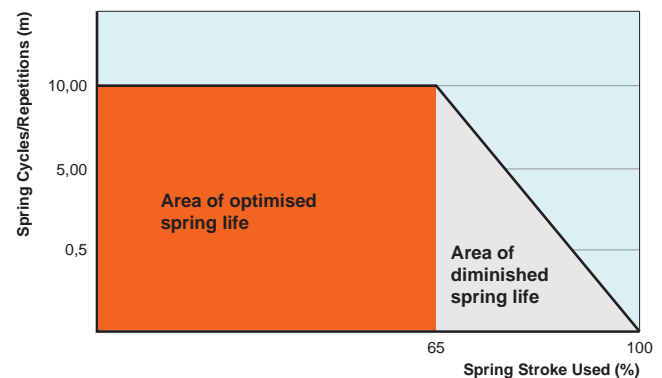
- s Stroke, or movement of plunger's ball or pin.
- f₁ The force required in Newtons (N) to overcome the static strength of the spring and achieve initial movement of the plunger's ball or pin.
- f₂ The force required in Newtons (N) to fully compress the spring until the ball or pin is fully depressed against the plunger's body.



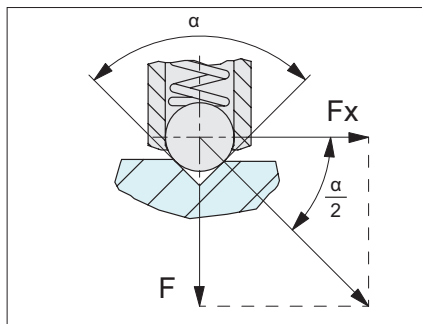
Typical Spring Repetitions

Although dependent upon a number of application specific factors, we are able to give the following guide relating to the maximum number of spring repetitions or cycles of our spring plungers.

- 100% or full stroke "s" used: approx. 300,000 cycles.
- 65% of stroke "s" used: approx 10,000,000 cycles.



Calculating Indexing Resistance



Important Note: This is only an approximation formula. For more accurate calculation the roughness of the counterpart surface as well as any variation in the plungers spring force (due to age or high repetitions) should be considered.

We are able to provide the following formula as an approximation of the pull or push force (N) required to 'release' a ball plunger from its indexing counterpart.

$$F_x = \frac{F}{\tan \frac{\alpha}{2}}$$

F_x = pull or push force (N)
 F = plungers spring force (see relevant product table)
 α = angle of the indexing counterpart face

For example:

For Spring plunger 31500.W0010;
 $F = 24\text{N}$ (see product table)

If $\alpha = 90^\circ$

$$F_x = \frac{24}{\tan \frac{90}{2}} = 24\text{N}$$

If $\alpha = 60^\circ$

$$F_x = \frac{24}{\tan \frac{60}{2}} = 41,5\text{N}$$

If $\alpha = 120^\circ$

$$F_x = \frac{24}{\tan \frac{120}{2}} = 13,8\text{N}$$

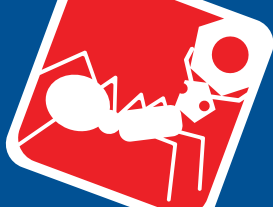
Electrical Conductivity

We are often asked the electrical conductivity of our spring plungers, unfortunately we are unable to provide any reliable information related to this as there are many factors in an application. We recommend you study the specific material properties of the spring plunger's component parts to make your own calculations, alternatively if in doubt make a test application.

Specials to Your Own Design

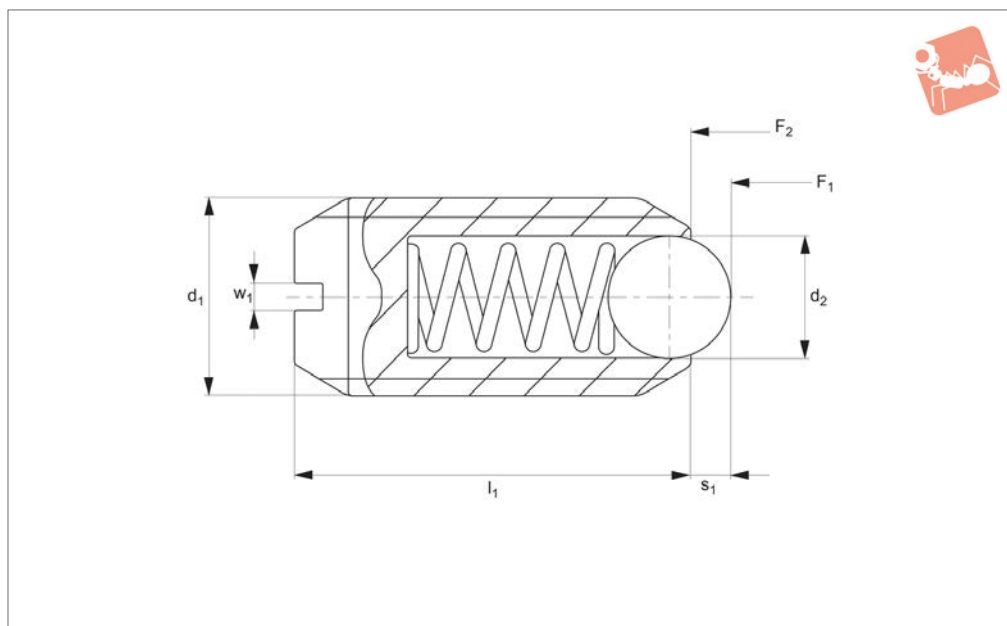
Manufacturing exactly to your specific requirements is also our strength. If you need a variation in spring pressure, plunger body or pin design we can assist with a special design item for volumes as low as 1,000 units.

For further information, or to request a quotation, please call our sales office on 0333 207 4497.



Spring Plungers with ball & slot - stainless steel

Spring Plunger & Detent Pins



32100

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.
Ball: ball bearing steel 1.3505 (100Cr6) hardened.
Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3505 (100Cr6), hardened.
Spring: stainless steel.

Technical Notes

These spring plungers may be used for

location, for applying pressure or lifting off.

Temperature range up to 250°C. Spring load * = statistical average value.

For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

Spring load identifier:

Normal spring load - no marking.
Increased spring load - body marked with two lines.

Special types available on request.

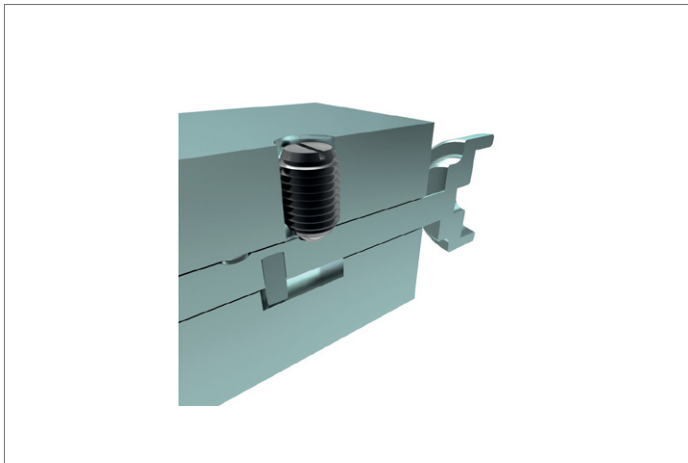
Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
32100.W0003	Steel	Normal	M 3	1.5	7	3.0	4.5	0.4	0.40	0.2
32100.W0004	Steel	Normal	M 4	2.5	9	8.5	14.0	0.8	0.60	0.4
32100.W0005	Steel	Normal	M 5	3.0	12	8.0	14.0	0.9	0.80	1.0
32100.W0006	Steel	Normal	M 6	3.5	14	11.0	18.0	1.0	1.00	1.7
32100.W0008	Steel	Normal	M 8	4.5	16	18.0	31.0	1.5	1.20	3.5
32100.W0010	Steel	Normal	M10	6.0	19	24.0	45.0	2.0	1.50	6.6
32100.W0012	Steel	Normal	M12	8.0	22	26.0	49.0	2.5	2.00	11.0
32100.W0016	Steel	Normal	M16	10.0	24	41.0	86.0	3.5	2.00	23.0
32100.W0020	Steel	Normal	M20	12.0	30	56.0	111.0	4.5	2.50	45.0
32100.W0024	Steel	Normal	M24	15.0	34	81.0	151.0	5.5	3.00	72.0
32100.W0205	Steel	Increased	M 5	3.0	12	15.0	22.0	0.9	0.80	1.0
32100.W0206	Steel	Increased	M 6	3.5	14	19.0	28.0	1.0	1.00	1.7
32100.W0208	Steel	Increased	M 8	4.5	16	36.0	62.0	1.5	1.20	3.6
32100.W0210	Steel	Increased	M10	6.0	19	57.0	104.0	2.0	1.50	6.6
32100.W0212	Steel	Increased	M12	8.0	22	61.0	110.0	2.5	2.00	11.0
32100.W0216	Steel	Increased	M16	10.0	24	68.0	142.0	3.5	2.00	23.0
32100.W0220	Steel	Increased	M20	12.0	30	84.0	166.0	4.5	2.50	43.0
32100.W0224	Steel	Increased	M24	15.0	34	127.0	237.0	5.5	3.00	72.0
32100.W0402	Stainless	Normal	M 2	1.0	4	0.8	1.5	0.3	0.25	0.1
32100.W0403	Stainless	Normal	M 3	1.5	7	3.0	4.5	0.4	0.40	0.2
32100.W0404	Stainless	Normal	M 4	2.5	9	8.5	14.0	0.8	0.60	0.4
32100.W0405	Stainless	Normal	M 5	3.0	12	8.0	14.0	0.9	0.80	1.0



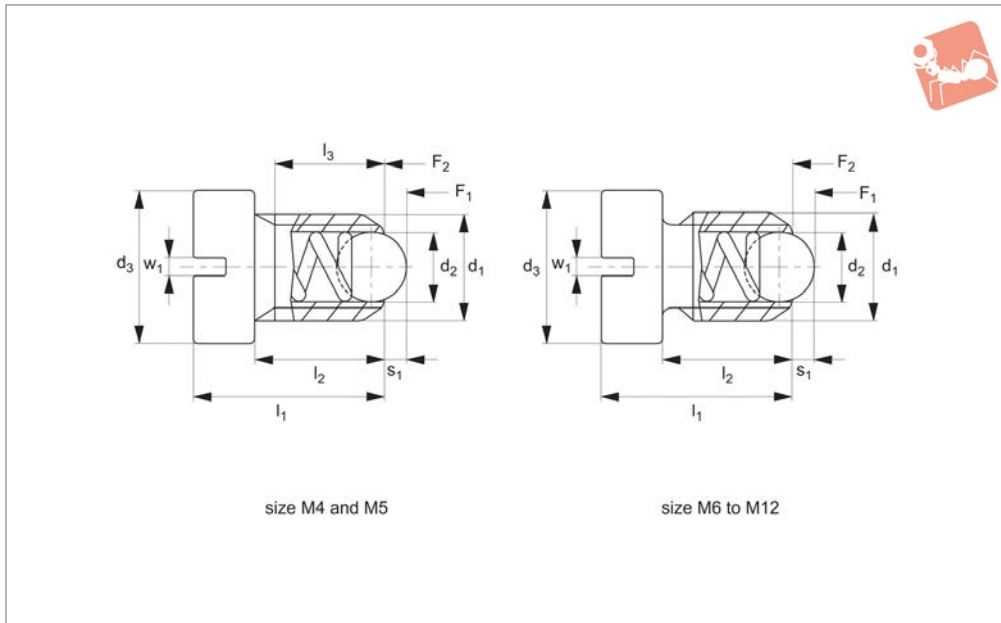
Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
32100.W0406	Stainless	Normal	M 6	3.5	14	11.0	18.0	1.0	1.00	1.7
32100.W0408	Stainless	Normal	M 8	4.5	16	18.0	31.0	1.5	1.20	3.5
32100.W0410	Stainless	Normal	M10	6.0	19	24.0	45.0	2.0	1.50	6.6
32100.W0412	Stainless	Normal	M12	8.0	22	26.0	49.0	2.5	2.00	11.0
32100.W0416	Stainless	Normal	M16	10.0	24	41.0	86.0	3.5	2.00	23.0
32100.W0420	Stainless	Normal	M20	12.0	30	56.0	111.0	4.5	2.50	45.0
32100.W0424	Stainless	Normal	M24	15.0	34	81.0	151.0	5.5	3.00	72.0
32100.W0605	Stainless	Increased	M 5	3.0	12	15.0	22.0	0.9	0.80	1.0
32100.W0606	Stainless	Increased	M 6	3.5	14	19.0	28.0	1.0	1.00	1.7
32100.W0608	Stainless	Increased	M 8	4.5	16	36.0	62.0	1.5	1.20	3.6
32100.W0610	Stainless	Increased	M10	6.0	19	57.0	104.0	2.0	1.50	6.6
32100.W0612	Stainless	Increased	M12	8.0	22	61.0	110.0	2.5	2.00	11.0
32100.W0616	Stainless	Increased	M16	10.0	24	68.0	142.0	3.5	2.00	23.0
32100.W0620	Stainless	Increased	M20	12.0	30	84.0	166.0	4.5	2.50	43.0
32100.W0624	Stainless	Increased	M24	15.0	34	127.0	237.0	5.5	3.00	72.0





Spring Plungers with ball & slot - headed

Spring Plunger & Detent Pins



31400

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.
Ball: ball bearing steel 1.3505 (100Cr6), hardened.
Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3505 (100Cr6),

hardened.

Spring: stainless steel.

For calculation of indexing resistance please refer to appendix - Technical Data.

Technical Notes

Max. temperature 250°C. Spring loads = statistical average.
For M4 and M5 threads dimension l_3 is max.

screw in depth, i.e. there is no undercut. For calculation of indexing resistance please refer to spring plunger technical pages.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Material	d_1	d_2	d_3	l_1	l_2	l_3	Spring load F_1 N	Spring load F_2 N	Stroke s_1	w_1	Weight g
31400.W0940	Stainless	M 4	2.5	6	9.5	6.5	5.0	8	14	0.8	0.6	1.2
31400.W0941	Stainless	M 5	3.0	8	12.5	8.5	6.7	8	14	0.9	0.8	2.4
31400.W0942	Stainless	M 6	3.5	10	14.0	9.0	-	11	18	1.0	1.0	3.9
31400.W0943	Stainless	M 8	4.5	13	16.5	11.0	-	18	31	1.5	1.2	7.9
31400.W0944	Stainless	M10	6.0	16	20.0	14.0	-	24	45	2.0	1.5	14.0
31400.W0945	Stainless	M12	8.0	18	22.0	15.0	-	26	49	2.5	2.0	20.0
31400.W0930	Steel	M 4	2.5	6	9.5	6.5	5.0	8	14	0.8	0.6	1.2
31400.W0931	Steel	M 5	3.0	8	12.5	8.5	6.7	8	14	0.9	0.8	2.4
31400.W0932	Steel	M 6	3.5	10	14.0	9.0	-	11	18	1.0	1.0	3.9
31400.W0933	Steel	M 8	4.5	13	16.5	11.0	-	18	31	1.5	1.2	7.9
31400.W0934	Steel	M10	6.0	16	20.0	14.0	-	24	45	2.0	1.5	14.0
31400.W0935	Steel	M12	8.0	18	22.0	15.0	-	26	49	2.5	2.0	20.0

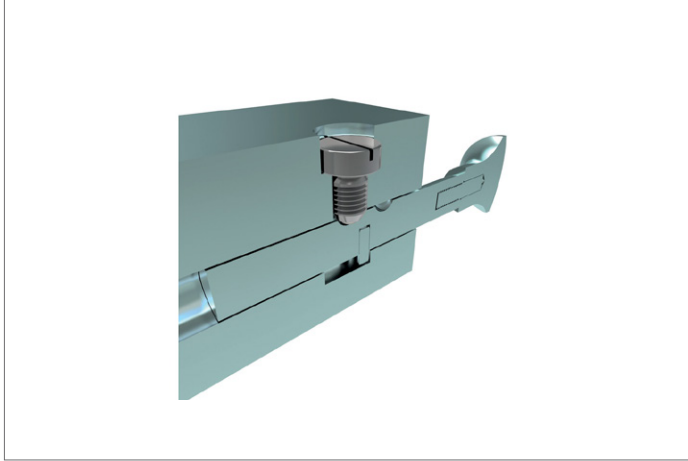
Spring Plunger & Detent Pins

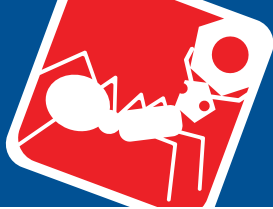


Spring Plungers with ball & slot - headed



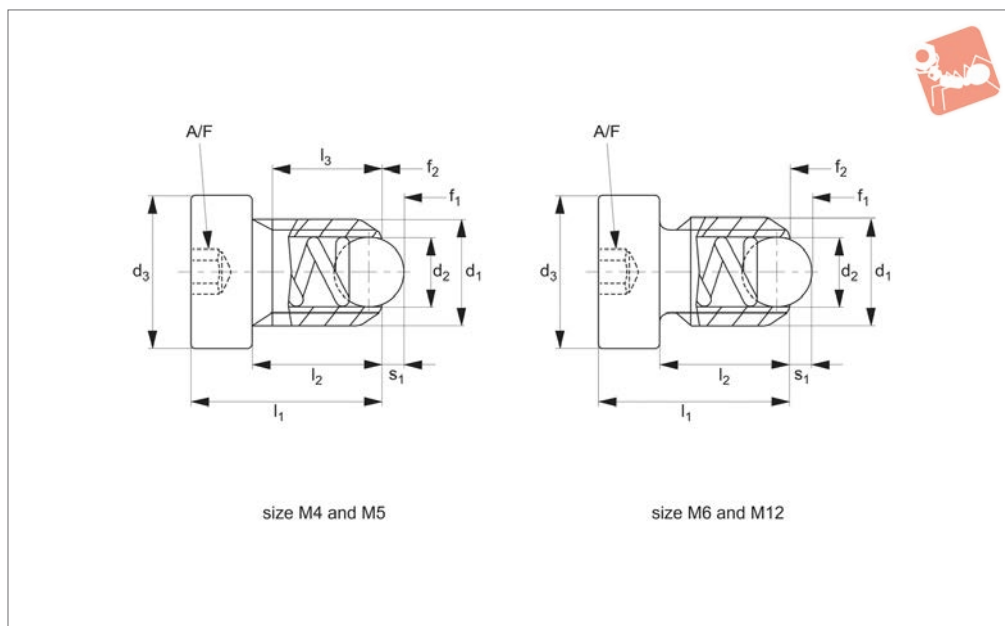
SPRING PLUNGER & DETENT PINS





Spring Plungers with ball end & hex. socket - headed

Spring Plunger & Detent Pins



31420

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Ball: ball bearing steel 1.3505 (100Cr6) hardened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Ball: stainless steel 1.3505 (100Cr6), hardened.

Spring: stainless steel.

Technical Notes

Max. temperature 250°C. Spring loads = statistical average.

For M4 and M5 threads dimension l_3 is max. screw in depth, i.e. there is no undercut.

For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

Used for locating, applying pressure or lifting off. Special types available on request.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

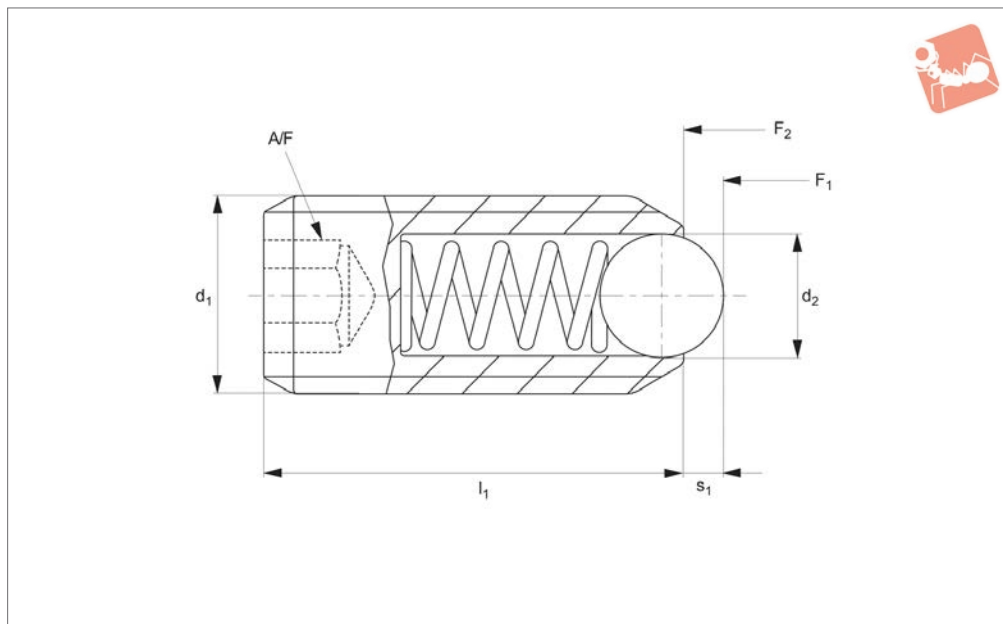
Order No.	Material	d_1	d_2	d_3	l_1	l_2	l_3	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke s_1	A/F	Weight g
31420.W0940	Stainless	M 4	2.5	6	12	9.0	7.5	8	14	0.8	2.0	1.1
31420.W0941	Stainless	M 5	3.0	8	14	10.0	8.2	8	14	0.9	2.5	2.3
31420.W0942	Stainless	M 6	3.5	10	15	10.0	-	11	18	1.0	3.0	3.9
31420.W0943	Stainless	M 8	4.5	13	18	12.5	-	18	31	1.5	4.0	7.8
31420.W0944	Stainless	M10	6.0	16	23	17.0	-	24	45	2.0	5.0	14.0
31420.W0945	Stainless	M12	8.0	18	26	19.0	-	26	49	2.5	6.0	21.0
31420.W0930	Steel	M 4	2.5	6	12	9.0	7.5	8	14	0.8	2.0	1.1
31420.W0931	Steel	M 5	3.0	8	14	10.0	8.2	8	14	0.9	2.5	2.3
31420.W0932	Steel	M 6	3.5	10	15	10.0	-	11	18	1.0	3.0	3.9
31420.W0933	Steel	M 8	4.5	13	18	12.5	-	18	31	1.5	4.0	7.8
31420.W0934	Steel	M10	6.0	16	23	17.0	-	24	45	2.0	5.0	14.0
31420.W0935	Steel	M12	8.0	18	26	19.0	-	26	49	2.5	6.0	21.0



SPRING PLUNGER & DETENT PINS



31500



Material

Free cutting steel type-

Body: free cutting steel, blackened. Ball: ball bearing steel 1.3505 (100Cr6) hardened. Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303). Ball: stainless steel 1.3505 (100Cr6), hardened. Spring: stainless steel.

Technical Notes

These spring plungers may be used for

location, for applying pressure or lifting off.

Temperature range max. 250° C.
Spring load * = statistical average value.
For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

Spring load identifier:

Normal spring load - no marking.
Increased spring load - body marked with two lines.

Special types available on request.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
31500.W0204	Stainless	Normal	M 4	2.5	12	8.5	14.0	0.8	2.0	0.7
31500.W0203	Stainless	Normal	M 3	1.5	8	3.0	4.5	0.4	1.5	0.3
31500.W0205	Stainless	Normal	M 5	3.0	14	8.0	14.0	0.9	2.5	1.2
31500.W0206	Stainless	Normal	M 6	3.5	15	11.0	18.0	1.0	3.0	1.8
31500.W0208	Stainless	Normal	M 8	4.5	18	18.0	31.0	1.5	4.0	3.9
31500.W0210	Stainless	Normal	M10	6.0	23	24.0	45.0	2.0	5.0	8.1
31500.W0212	Stainless	Normal	M12	8.0	26	26.0	49.0	2.5	6.0	13.0
31500.W0216	Stainless	Normal	M16	10.0	33	41.0	86.0	3.5	8.0	32.0
31500.W0220	Stainless	Normal	M20	12.0	43	56.0	111.0	4.5	10.0	66.0
31500.W0224	Stainless	Normal	M24	15.0	48	81.0	151.0	5.5	12.0	106.0
31500.W0245	Stainless	Increased	M 5	3.0	14	15.0	22.0	0.9	2.5	1.2
31500.W0246	Stainless	Increased	M 6	3.5	15	19.0	28.0	1.0	3.0	1.9
31500.W0248	Stainless	Increased	M 8	4.5	18	36.0	62.0	1.5	4.0	4.2
31500.W0250	Stainless	Increased	M10	6.0	23	57.0	104.0	2.0	5.0	8.2
31500.W0252	Stainless	Increased	M12	8.0	26	61.0	110.0	2.5	6.0	13.0
31500.W0256	Stainless	Increased	M16	10.0	33	68.0	142.0	3.5	8.0	33.0
31500.W0260	Stainless	Increased	M20	12.0	43	84.0	166.0	4.5	10.0	66.0
31500.W0264	Stainless	Increased	M24	15.0	48	127.0	237.0	5.5	12.0	107.0
31500.W0004	Steel	Normal	M 4	2.5	12	8.5	14.0	0.8	2.0	0.7
31500.W0003	Steel	Normal	M 3	1.5	8	3.0	4.5	0.4	1.5	0.3
31500.W0005	Steel	Normal	M 5	3.0	14	8.0	14.0	0.9	2.5	1.2
31500.W0006	Steel	Normal	M 6	3.5	15	11.0	18.0	1.0	3.0	1.8
31500.W0008	Steel	Normal	M 8	4.5	18	18.0	31.0	1.5	4.0	3.9



Spring Plungers with ball end & hex. socket



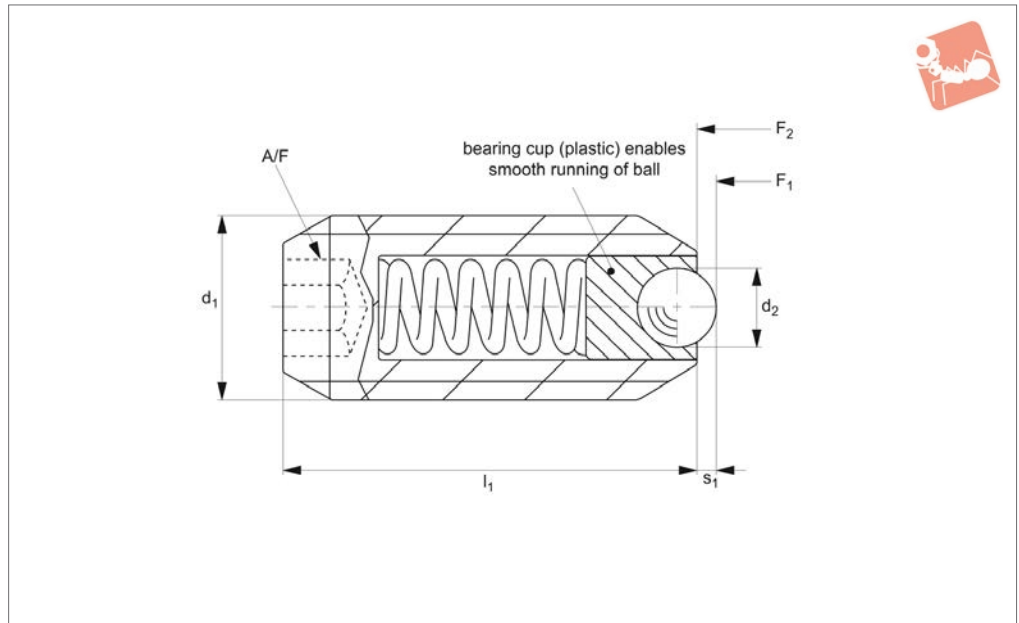
Spring Plunger & Detent Pins

Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
31500.W0010	Steel	Normal	M10	6.0	23	24.0	45.0	2.0	5.0	8.1
31500.W0012	Steel	Normal	M12	8.0	26	26.0	49.0	2.5	6.0	13.0
31500.W0016	Steel	Normal	M16	10.0	33	41.0	86.0	3.5	8.0	32.0
31500.W0020	Steel	Normal	M20	12.0	43	56.0	111.0	4.5	10.0	66.0
31500.W0024	Steel	Normal	M24	15.0	48	81.0	151.0	5.5	12.0	106.0
31500.W0045	Steel	Increased	M 5	3.0	14	15.0	22.0	0.9	2.5	1.2
31500.W0046	Steel	Increased	M 6	3.5	15	19.0	28.0	1.0	3.0	1.9
31500.W0048	Steel	Increased	M 8	4.5	18	36.0	62.0	1.5	4.0	4.2
31500.W0050	Steel	Increased	M10	6.0	23	57.0	104.0	2.0	5.0	8.2
31500.W0052	Steel	Increased	M12	8.0	26	61.0	110.0	2.5	6.0	13.0
31500.W0056	Steel	Increased	M16	10.0	33	68.0	142.0	3.5	8.0	33.0
31500.W0060	Steel	Increased	M20	12.0	43	84.0	166.0	4.5	10.0	66.0
31500.W0064	Steel	Increased	M24	15.0	48	127.0	237.0	5.5	12.0	107.0

SPRING PLUNGER & DETENT PINS



31610



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Ball: ball bearing steel 1.3505(100Crb), hardened.

Spring: stainless steel.

Bearing cup: plastic.

Body: stainless steel, 1.4305(AISI 303).

Ball: ball bearing steel 1.3505(100Crb), hardened.

Spring: stainless steel.

Bearing cup: plastic.

unique plastic „bearing cup“, angling the smooth running of the ball.

This offers a solution with less friction, for reduced surface damage to mounting parts.

In addition the plastic cup offers electrical insulation.

Stainless steel type-

Technical Notes

Plunger's ball bearing is mounted in a

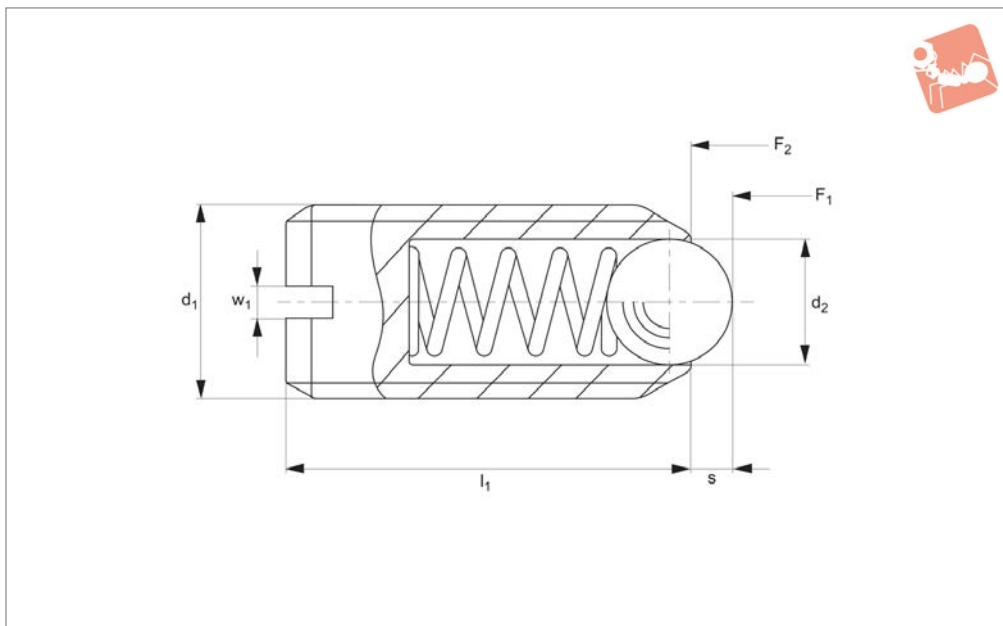
Temperature range -30°C to +90°C.

Order No.	Material	Spring load	d ₁	d ₂	l ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	A/F	Weight g
31610.W0005	Steel	Normal	M 5	2.0	14	0.50	4.8	6.8	2.5	1.1
31610.W0006	Steel	Normal	M 6	2.5	15	0.70	6.3	10.0	3.0	2.1
31610.W0008	Steel	Normal	M 8	3.5	18	0.95	16.0	24.0	4.0	4.8
31610.W0010	Steel	Normal	M10	4.5	23	1.40	18.8	31.7	5.0	10.0
31610.W0012	Steel	Normal	M12	6.5	26	2.30	26.0	49.0	6.0	15.0
31610.W0016	Steel	Normal	M16	8.5	33	3.10	38.0	68.0	8.0	37.0
31610.W0045	Steel	Increased	M 5	2.0	14	0.50	10.0	14.0	2.5	1.2
31610.W0046	Steel	Increased	M 6	2.5	15	0.70	11.0	16.0	3.0	2.2
31610.W0048	Steel	Increased	M 8	3.5	18	0.95	23.0	40.0	4.0	5.0
31610.W0050	Steel	Increased	M10	4.5	23	1.40	54.3	54.3	5.0	10.0
31610.W0052	Steel	Increased	M12	6.5	26	2.30	39.5	77.3	6.0	15.0
31610.W0056	Steel	Increased	M16	8.5	33	3.10	50.0	88.7	8.0	37.0
31610.W0205	Stainless	Normal	M 5	2.0	14	0.50	4.8	6.8	2.5	1.1
31610.W0206	Stainless	Normal	M 6	2.5	15	0.70	6.3	10.0	3.0	2.1
31610.W0208	Stainless	Normal	M 8	3.5	18	0.95	16.0	24.0	4.0	4.8
31610.W0210	Stainless	Normal	M10	4.5	23	1.40	18.8	31.7	5.0	10.0
31610.W0212	Stainless	Normal	M12	6.5	26	2.30	26.0	49.0	6.0	15.0
31610.W0216	Stainless	Normal	M16	8.5	33	3.10	38.0	68.0	8.0	37.0
31610.W0245	Stainless	Increased	M 5	2.0	14	0.50	10.0	14.0	2.5	1.2
31610.W0246	Stainless	Increased	M 6	2.5	15	0.70	11.0	16.0	3.0	2.2
31610.W0248	Stainless	Increased	M 8	3.5	18	0.95	23.0	40.0	4.0	5.0
31610.W0250	Stainless	Increased	M10	4.5	23	1.40	28.0	54.3	5.0	10.0
31610.W0252	Stainless	Increased	M12	6.5	26	2.30	39.5	77.3	6.0	15.0
31610.W0256	Stainless	Increased	M16	8.5	33	3.10	50.0	88.7	8.0	37.0



Spring Plungers plastic version

Spring Plunger & Detent Pins



32000

SPRING PLUNGER & DETENT PINS

Material

Body: thermoplastic POM, blue.
Ball: hardened stainless steel 1.3541 or white thermoplastic POM.
Spring: stainless steel.

Temperature range -30°C to +50°C.
Spring loads * = statistical average value.
For calculation of indexing resistance please refer to spring plunger technical pages.

Special types available on request.

Technical Notes

Used for locating, applying pressure or lifting off.

Tips

May be used where electrical conductivity is not required.

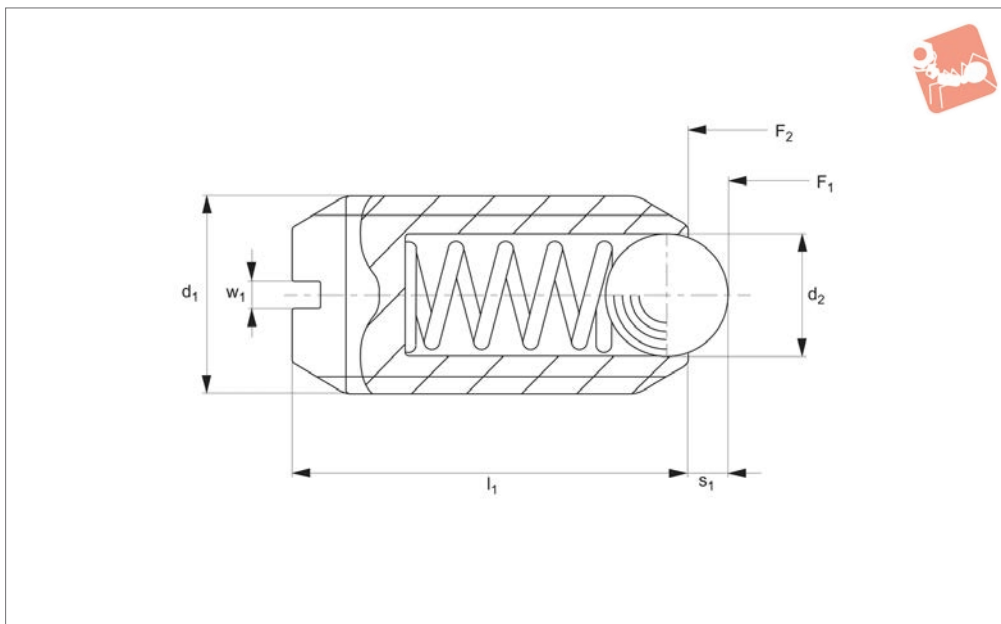
Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Ball finish	d ₁	d ₂	l ₁	s	Spring load F ₁ N ≈	Spring load F ₂ N ≈	w ₁	Weight g
32000.W0006	Stainless	M 6	3.5	14	0.9	12	17	1.0	0.6
32000.W0008	Stainless	M 8	5.0	16	1.5	20	35	1.2	1.3
32000.W0010	Stainless	M10	6.0	19	1.9	25	45	1.5	2.6
32000.W0406	Thermo	M 6	3.5	14	0.9	12	17	1.0	0.5
32000.W0408	Thermo	M 8	5.0	16	1.5	20	35	1.2	1.0
32000.W0410	Thermo	M10	6.0	19	1.9	25	45	1.5	1.8



32102



Material

Body: stainless steel A4, passivated.
 Ball: ceramic (silicone nitride), black.
 Spring: stainless steel A4, passivated

Technical Notes

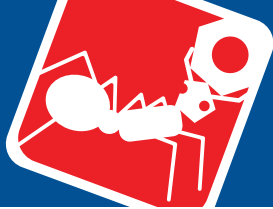
To be used for locating or for applying pressure, as a detent or for ejection. The version from stainless steel A4 guarantees

the highest corrosion protection.
 Ceramic ball: abrasion resistant, antimagnetic, electrically isolating.
 Temperature range up to max. 250°C.
 Spring load * = Statistical average value.
 For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

Spring load identifier:
 Normal spring load - no marking.
 Increased spring load - body marked with two lines.
 Special types available on request.

Order No.	Spring load	d ₁	d ₂	l ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	w ₁	Weight g
32102.W1404	Normal	M 4	2.5	9	0.8	8.5	14	0.6	0.4
32102.W1405	Normal	M 5	3.0	12	0.9	8.0	14	0.8	0.9
32102.W1406	Normal	M 6	3.5	14	1.0	11.0	18	1.0	1.6
32102.W1408	Normal	M 8	4.5	16	1.5	18.0	31	1.2	3.5
32102.W1410	Normal	M10	6.0	19	2.0	24.0	45	1.5	6.2
32102.W1412	Normal	M12	8.0	22	2.5	26.0	49	2.0	9.8
32102.W1416	Normal	M16	10.0	24	3.5	41.0	86	2.0	19.8
32102.W1605	Increased	M 5	3.0	12	0.9	15.0	22	0.8	1.1
32102.W1606	Increased	M 6	3.5	14	1.0	19.0	28	1.0	1.8
32102.W1608	Increased	M 8	4.5	16	1.5	36.0	62	1.2	3.4
32102.W1610	Increased	M10	6.0	19	2.0	57.0	104	1.5	6.1
32102.W1612	Increased	M12	8.0	22	2.5	61.0	110	2.0	9.8
32102.W1616	Increased	M16	10.0	24	3.5	68.0	142	2.0	19.8

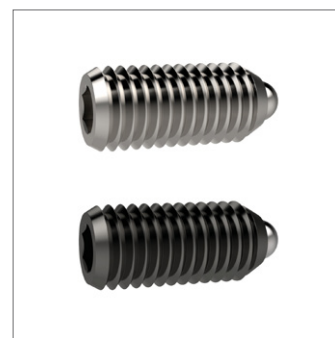
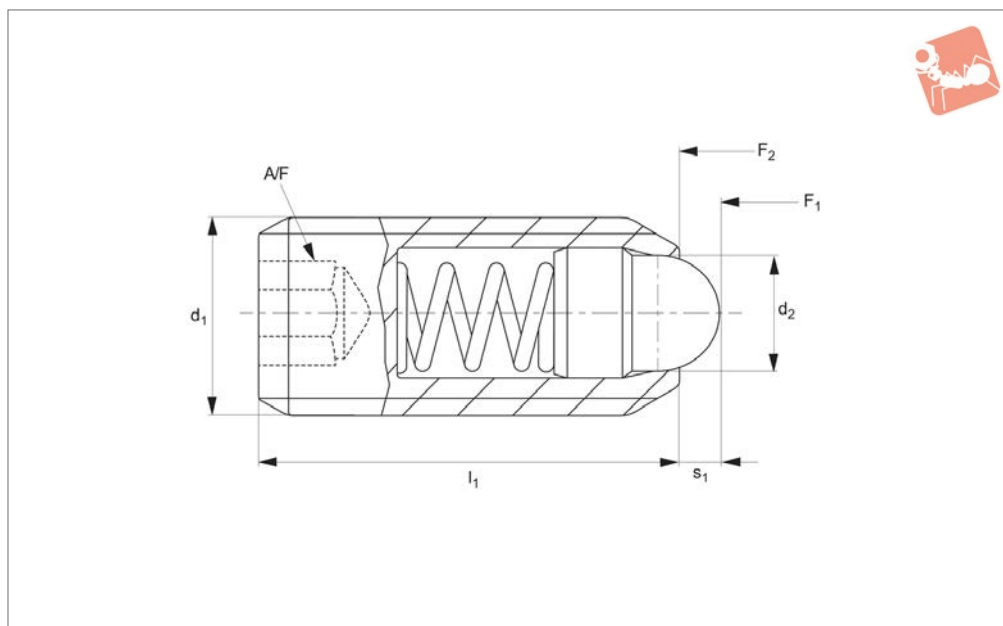


Spring Plungers

with round-ended pin & hex. socket



Spring Plunger & Detent Pins



31600

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened, blackened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

These spring plungers may be used for locating, for applying pressure or lifting off.

Temperature range max. 250° C. Spring load * = statistical average value.

Tips

Spring load identifier:

Normal spring load - no marking.

Increased spring load - body marked with two lines.

Special types available on request.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
31600.W0104	Steel	Normal	M 4	1.8	12	4.5	12.5	1.5	2.0	0.6
31600.W0105	Steel	Normal	M 5	2.4	14	5.0	13.0	2.0	2.5	1.3
31600.W0106	Steel	Normal	M 6	2.7	15	6.0	17.0	2.0	3.0	1.9
31600.W0108	Steel	Normal	M 8	3.8	18	16.0	33.0	2.0	4.0	4.2
31600.W0110	Steel	Normal	M10	4.5	23	19.0	42.0	2.5	5.0	8.5
31600.W0112	Steel	Normal	M12	6.2	26	22.0	57.0	3.5	6.0	13.0
31600.W0116	Steel	Normal	M16	8.5	33	38.0	78.0	4.5	8.0	32.0
31600.W0120	Steel	Normal	M20	10.0	43	39.0	81.0	6.5	10.0	67.0
31600.W0124	Steel	Normal	M24	13.0	48	72.0	155.0	8.0	12.0	106.0
31600.W0146	Steel	Increased	M 6	2.7	15	11.0	25.0	2.0	3.0	2.0
31600.W0148	Steel	Increased	M 8	3.8	18	23.0	59.0	2.0	4.0	4.2
31600.W0150	Steel	Increased	M10	4.5	23	20.0	54.0	2.5	5.0	8.5
31600.W0152	Steel	Increased	M12	6.2	26	38.0	96.0	3.5	6.0	13.0
31600.W0156	Steel	Increased	M16	8.5	33	50.0	100.0	4.5	8.0	32.0
31600.W0160	Steel	Increased	M20	10.0	43	52.0	133.0	6.5	10.0	67.0
31600.W0164	Steel	Increased	M24	13.0	48	91.0	223.0	8.0	12.0	106.0
31600.W0304	Stainless	Normal	M 4	1.8	12	4.5	12.5	1.5	2.0	0.6
31600.W0305	Stainless	Normal	M 5	2.4	14	5.0	13.0	2.0	2.5	1.3
31600.W0306	Stainless	Normal	M 6	2.7	15	6.0	17.0	2.0	3.0	1.9
31600.W0308	Stainless	Normal	M 8	3.8	18	16.0	33.0	2.0	4.0	4.2
31600.W0310	Stainless	Normal	M10	4.5	23	19.0	42.0	2.5	5.0	8.5
31600.W0312	Stainless	Normal	M12	6.2	26	22.0	57.0	3.5	6.0	13.0
31600.W0316	Stainless	Normal	M16	8.5	33	38.0	78.0	4.5	8.0	32.0
31600.W0320	Stainless	Normal	M20	10.0	43	39.0	81.0	6.5	10.0	67.0
31600.W0324	Stainless	Normal	M24	13.0	48	72.0	155.0	8.0	12.0	106.0
31600.W0346	Stainless	Increased	M 6	2.7	15	11.0	25.0	2.0	3.0	2.0

Spring Plunger & Detent Pins

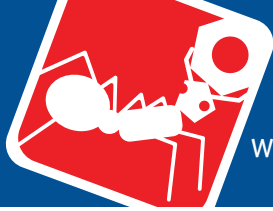


Spring Plungers with round-ended pin & hex. socket



Order No.	Material	Spring load	d ₁	d ₂	l ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Stroke s ₁	A/F	Weight g
31600.W0348	Stainless	Increased	M 8	3.8	18	23.0	59.0	2.0	4.0	4.2
31600.W0350	Stainless	Increased	M10	4.5	23	20.0	54.0	2.5	5.0	8.5
31600.W0352	Stainless	Increased	M12	6.2	26	38.0	96.0	3.5	6.0	13.0
31600.W0356	Stainless	Increased	M16	8.5	33	50.0	100.0	4.5	8.0	32.0
31600.W0360	Stainless	Increased	M20	10.0	43	52.0	133.0	6.5	10.0	67.0
31600.W0364	Stainless	Increased	M24	13.0	48	91.0	223.0	8.0	12.0	106.0

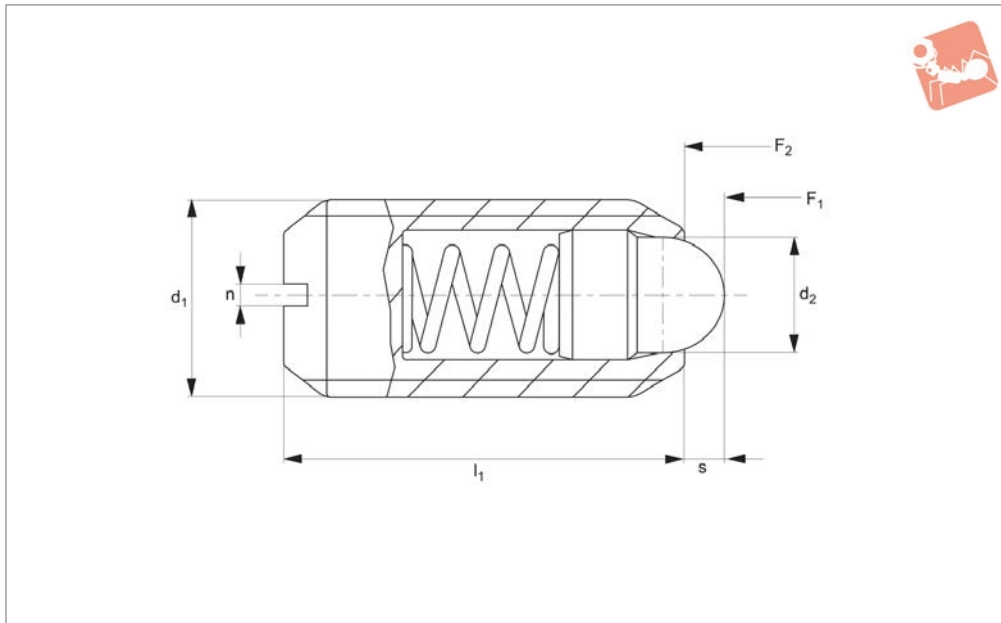
SPRING PLUNGER & DETENT PINS



Spring Plungers

with round-ended pin & slot - stainless steel or steel

Spring Plunger & Detent Pins



32150

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened, blackened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel, 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

These spring plungers may be used for location, for applying pressure or lifting off.

Temperature range up to 250°C. Spring load * = statistical average value.

Tips

Spring load identifier:

Normal spring load - no marking.

Increased spring load - body marked with two lines.

Special types available on request.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Material	Spring load	d ₁	d ₂	l ₁	n ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32150.W0104	Steel	Normal	M 4	1.8	9	0.6	1.5	4.5	12.5	0.4
32150.W0105	Steel	Normal	M 5	2.4	12	0.8	2.0	5.0	13.0	1.1
32150.W0106	Steel	Normal	M 6	2.7	14	1.0	2.0	6.0	17.0	1.8
32150.W0108	Steel	Normal	M 8	3.8	16	1.2	2.0	16.0	33.0	3.7
32150.W0110	Steel	Normal	M10	4.5	19	1.5	2.5	19.0	42.0	7.1
32150.W0112	Steel	Normal	M12	6.2	22	2.0	3.5	22.0	57.0	11.0
32150.W0116	Steel	Normal	M16	8.5	24	2.0	4.5	38.0	78.0	23.0
32150.W0120	Steel	Normal	M20	10.0	30	2.5	6.5	39.0	81.0	46.0
32150.W0124	Steel	Normal	M24	13.0	34	3.0	8.0	72.0	155.0	73.0
32150.W0306	Steel	Increased	M 6	2.7	14	1.0	2.0	11.0	25.0	1.8
32150.W0308	Steel	Increased	M 8	3.8	16	1.2	2.0	23.0	59.0	3.8
32150.W0310	Steel	Increased	M10	4.5	19	1.5	2.5	20.0	54.0	7.0
32150.W0312	Steel	Increased	M12	6.2	22	2.0	3.5	38.0	96.0	11.0
32150.W0320	Steel	Increased	M20	10.0	30	2.5	6.5	52.0	133.0	46.0
32150.W0324	Steel	Increased	M24	13.0	34	3.0	8.0	91.0	223.0	74.0
32150.W0504	Stainless	Normal	M 4	1.8	9	0.6	1.5	4.5	12.5	0.4
32150.W0505	Stainless	Normal	M 5	2.4	12	0.8	2.0	5.0	13.0	1.1
32150.W0506	Stainless	Normal	M 6	2.7	14	1.0	2.0	6.0	17.0	1.8
32150.W0508	Stainless	Normal	M 8	3.8	16	1.2	2.0	16.0	33.0	3.7
32150.W0510	Stainless	Normal	M10	4.5	19	1.5	2.5	19.0	42.0	7.1
32150.W0512	Stainless	Normal	M12	6.2	22	2.0	3.5	22.0	57.0	11.0
32150.W0516	Stainless	Normal	M16	8.5	24	2.0	4.5	38.0	78.0	23.0
32150.W0520	Stainless	Normal	M20	10.0	30	2.5	6.5	39.0	81.0	46.0
32150.W0524	Stainless	Normal	M24	13.0	34	3.0	8.0	72.0	155.0	73.0
32150.W0706	Stainless	Increased	M 6	2.7	14	1.0	2.0	11.0	25.0	1.8
32150.W0708	Stainless	Increased	M 8	3.8	16	1.2	2.0	23.0	59.0	3.8

Spring Plunger & Detent Pins



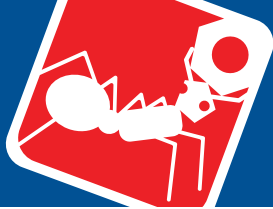
Spring Plungers

with round-ended pin & slot - stainless steel or steel



Order No.	Material	Spring load	d_1	d_2	l_1	n_1	s_1	Spring load F_1 N \approx	Spring load F_2 N \approx	Weight g
32150.W0710	Stainless	Increased	M10	4.5	19	1.5	2.5	20.0	54.0	7.0
32150.W0712	Stainless	Increased	M12	6.2	22	2.0	3.5	38.0	96.0	11.0
32150.W0720	Stainless	Increased	M20	10.0	30	2.5	6.5	52.0	133.0	46.0
32150.W0724	Stainless	Increased	M24	13.0	34	3.0	8.0	91.0	223.0	74.0

SPRING PLUNGER & DETENT PINS

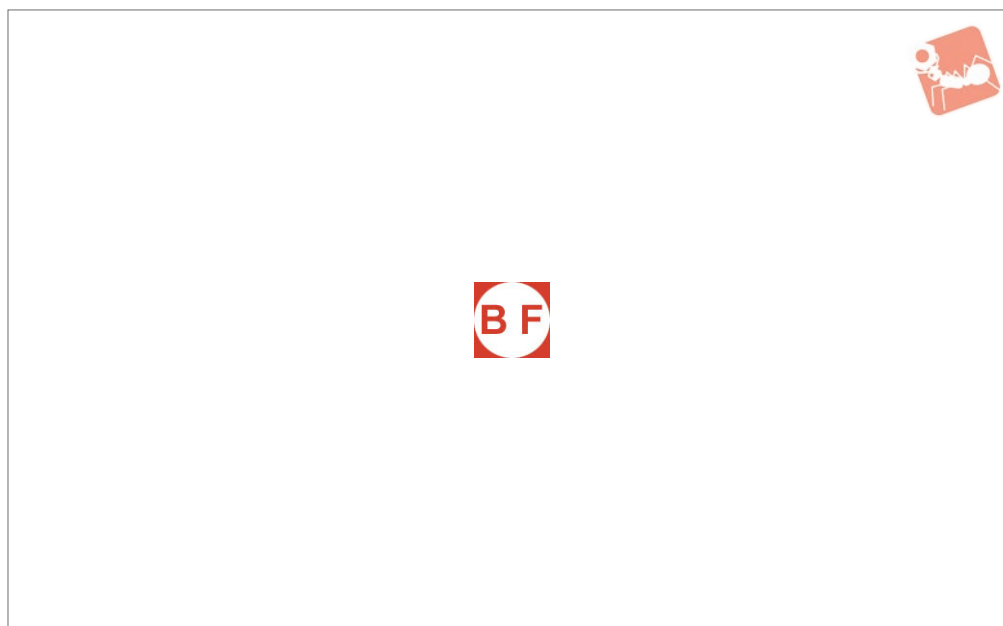


Spring Plungers

with pin end & hex. socket - stainless steel



Spring Plunger & Detent Pins



32200

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.
Pin: free cutting steel, hardened, blackened, or thermoplastic POM, white.
Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).
Pin: stainless steel 1.4305 (AISI 303), or thermoplastic POM, white.
Spring: stainless steel.

Technical Notes

These spring plungers may be used for

location, for applying pressure or lifting off.
Temperature range: all steel or stainless, up to 250°C.
Steel or stainless with thermoplastic pin, -30°C to +50°C.
Spring load * = statistical average value.

Tips

Spring load identifier:

Normal spring load - no marking.
Increased spring load - body marked with two lines.

These spring plungers can be assembled by

use of a hexagon key at the rear, or from the front with special slotted screwdrivers, see 32200.W0803 to .W0824.
Special types available on request.

Important Notes

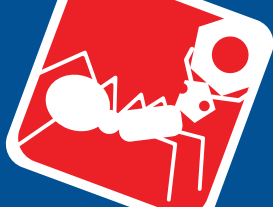
All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Spring load	Finish	d ₁	d ₂	l ₁	s ₁	Spring load F ₁ N ~	Spring load F ₂ N ~	t ₁	w ₁	A/F	Weight g
32200.W0003	Normal	All Steel	M 3	1.0	12	1.0	2.0	4	0.5	0.4	0.7	0.40
32200.W0004	Normal	All Steel	M 4	1.5	15	1.5	4.5	16	0.6	0.6	1.3	0.93
32200.W0005	Normal	All Steel	M 5	2.4	18	2.3	6.0	19	0.8	1.2	1.5	1.70
32200.W0006	Normal	All Steel	M 6	2.7	20	2.5	6.0	19	0.9	1.3	2.0	2.80
32200.W0008	Normal	All Steel	M 8	3.5	22	3.0	10.0	39	1.4	1.5	2.5	5.80
32200.W0010	Normal	All Steel	M10	4.0	22	3.0	10.0	39	1.4	1.5	3.0	9.20
32200.W0012	Normal	All Steel	M12	6.0	28	4.0	12.0	53	2.0	2.7	4.0	16.00
32200.W0016	Normal	All Steel	M16	7.5	32	5.0	45.0	100	2.5	3.2	5.0	35.00
32200.W0020	Normal	All Steel	M20	10.0	40	7.0	52.0	125	3.0	3.7	6.0	68.00
32200.W0024	Normal	All Steel	M24	12.0	52	10.0	70.0	170	3.0	3.7	8.0	131.00
32200.W0105	Increased	All Steel	M 5	2.4	18	2.3	11.0	40	0.8	1.2	1.5	1.60
32200.W0106	Increased	All Steel	M 6	2.7	20	2.5	15.0	43	0.9	1.3	2.0	2.80
32200.W0108	Increased	All Steel	M 8	3.5	22	3.0	20.0	75	1.4	1.5	2.5	5.80
32200.W0110	Increased	All Steel	M10	4.0	22	3.0	20.0	75	1.4	1.5	3.0	9.30
32200.W0112	Increased	All Steel	M12	6.0	28	4.0	45.0	120	2.0	2.7	4.0	16.00
32200.W0116	Increased	All Steel	M16	7.5	32	5.0	64.0	160	2.5	3.2	5.0	33.00
32200.W0120	Increased	All Steel	M20	10.0	40	7.0	75.0	195	3.0	3.7	6.0	67.00
32200.W0124	Increased	All Steel	M24	12.0	52	10.0	75.0	245	3.0	3.7	8.0	129.00
32200.W0204	Normal	Steel, Thermo Pin	M 4	1.5	15	1.5	4.5	16	0.6	0.6	1.3	0.86
32200.W0205	Normal	Steel, Thermo Pin	M 5	2.4	18	2.3	6.0	19	0.8	1.2	1.5	1.50
32200.W0206	Normal	Steel, Thermo Pin	M 6	2.7	20	2.5	6.0	19	0.9	1.3	2.0	2.30
32200.W0208	Normal	Steel, Thermo Pin	M 8	3.5	22	3.0	10.0	39	1.4	1.5	2.5	5.10



Order No.	Spring load	Finish	d ₁	d ₂	l ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	t ₁	w ₁	A/F	Weight g
32200.W0210	Normal	Steel, Thermo Pin	M10	4.0	22	3.0	10.0	39	1.4	1.5	3.0	8.10
32200.W0212	Normal	Steel, Thermo Pin	M12	6.0	28	4.0	12.0	53	2.0	2.7	4.0	14.00
32200.W0216	Normal	Steel, Thermo Pin	M16	7.5	32	5.0	45.0	100	2.5	3.2	5.0	31.00
32200.W0404	Normal	All Stainless	M 4	1.5	15	1.5	4.5	16	0.6	0.6	1.3	1.10
32200.W0405	Normal	All Stainless	M 5	2.4	18	2.3	6.0	19	0.8	1.2	1.5	1.70
32200.W0406	Normal	All Stainless	M 6	2.7	20	2.5	6.0	19	0.9	1.3	2.0	2.80
32200.W0408	Normal	All Stainless	M 8	3.5	22	3.0	10.0	39	1.4	1.5	2.5	5.90
32200.W0410	Normal	All Stainless	M10	4.0	22	3.0	10.0	39	1.4	1.5	3.0	9.50
32200.W0412	Normal	All Stainless	M12	6.0	28	4.0	12.0	53	2.0	2.7	4.0	17.00
32200.W0416	Normal	All Stainless	M16	7.5	32	5.0	45.0	100	2.5	3.2	5.0	35.00
32200.W0420	Normal	All Stainless	M20	10.0	40	7.0	52.0	125	3.0	3.7	6.0	68.00
32200.W0604	Normal	S/S, Thermo Pin	M 4	1.5	15	1.5	4.5	16	0.6	0.6	1.3	0.93
32200.W0605	Normal	S/S, Thermo Pin	M 5	2.4	18	2.3	6.0	19	0.8	1.2	1.5	1.60
32200.W0606	Normal	S/S, Thermo Pin	M 6	2.7	20	2.5	6.0	19	0.9	1.3	2.0	2.50
32200.W0608	Normal	S/S, Thermo Pin	M 8	3.5	22	3.0	10.0	39	1.4	1.5	2.5	5.10
32200.W0610	Normal	S/S, Thermo Pin	M10	4.0	22	3.0	10.0	39	1.4	1.5	3.0	8.50
32200.W0612	Normal	S/S, Thermo Pin	M12	6.0	28	4.0	12.0	53	2.0	2.7	4.0	14.00
32200.W0616	Normal	S/S, Thermo Pin	M16	7.5	32	5.0	45.0	100	2.5	3.2	5.0	32.00
32200.W0803	Head ø2,5	Screwdriver	M 3	-	-	-	-	-	-	-	-	13.00
32200.W0804	Head ø4,0	Screwdriver	M 4	-	-	-	-	-	-	-	-	29.00
32200.W0805	Head ø5,0	Screwdriver	M 5	-	-	-	-	-	-	-	-	61.00
32200.W0806	Head ø5,5	Screwdriver	M 6	-	-	-	-	-	-	-	-	65.00
32200.W0808	Head ø7,0	Screwdriver	M 8	-	-	-	-	-	-	-	-	108.00
32200.W0810	Head ø8,0	Screwdriver	M10	-	-	-	-	-	-	-	-	124.00
32200.W0812	Head ø11,0	Screwdriver	M12	-	-	-	-	-	-	-	-	112.00
32200.W0816	Head ø14,0	Screwdriver	M16	-	-	-	-	-	-	-	-	173.00
32200.W0820	Head ø18,0	Screwdriver	M20	-	-	-	-	-	-	-	-	226.00
32200.W0824	Head ø19,9	Screwdriver	M24	-	-	-	-	-	-	-	-	258.00

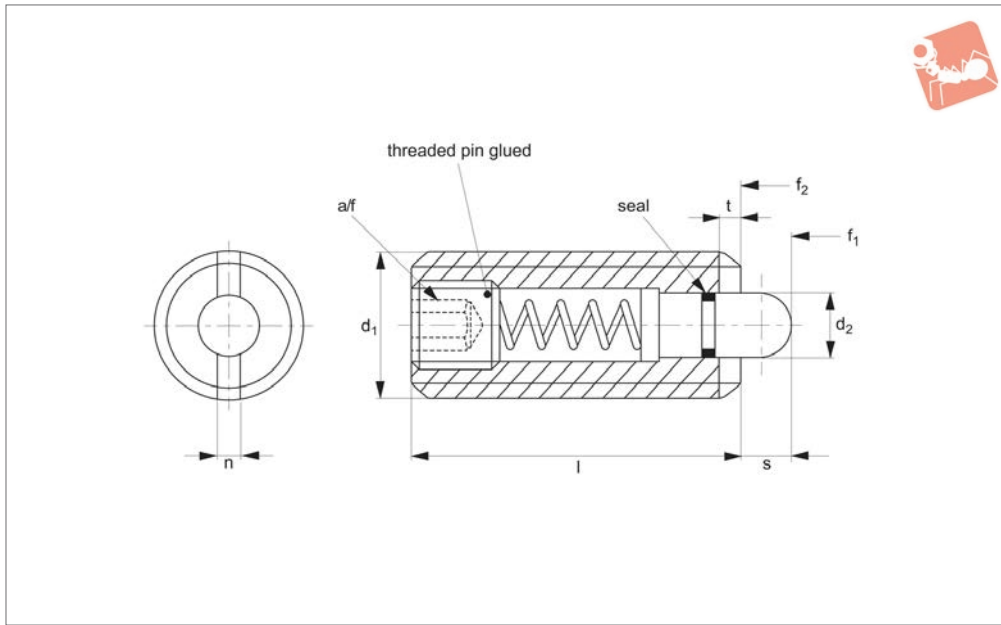




Spring Plungers

with pin end & hex socket and seal - stainless steel

Spring Plunger & Detent Pins



32220

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, blackened.

Spring: stainless steel. Seal NBR plastic.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Seal: NBR plastic.

Technical Notes

These spring plungers may be used for

location, for applying pressure or lifting off. Incorporation of a seal into the design prevents liquid penetrating into the spring plunger. Temperature range -30°C to +80°C. Spring load * = statistical average value.

Tips

Spring load identifier:

Normal spring load - no marking.

Increased spring load - body marked with two lines.

Please note these items vary in dimension

l, spring load and temperature range in comparison to no-sealed item 32200. Spring plungers can be assembled by use of a hexagon key at the rear, or from the front with special slotted screwdrivers, see 32200.W0808 to .W0816. Special types available on request.

Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Spring load	Finish	d ₁	d ₂	l	n	s	Spring load F ₁ N ≈	Spring load F ₂ N ≈	t	A/F	Weight g
32220.W0048	Normal	All Steel	M 8	3.8	26	1.5	3.0	9	24	1.4	2.5	6.9
32220.W0050	Normal	All Steel	M10	4.0	28	1.5	3.5	15	30	1.4	3.0	11.0
32220.W0052	Normal	All Steel	M12	6.0	35	2.7	4.0	24	50	2.0	4.0	20.0
32220.W0056	Normal	All Steel	M16	7.5	40	3.2	5.0	36	58	2.5	5.0	43.0
32220.W0148	Increased	All Steel	M 8	3.8	26	1.5	3.0	17	39	1.4	2.5	6.6
32220.W0150	Increased	All Steel	M10	4.0	28	1.5	3.5	22	43	1.4	3.0	12.0
32220.W0152	Increased	All Steel	M12	6.0	35	2.7	4.0	40	80	2.0	4.0	20.0
32220.W0156	Increased	All Steel	M16	7.5	40	3.2	5.0	44	113	2.5	5.0	45.0
32220.W0448	Normal	All Stainless	M 8	3.8	26	1.5	3.0	9	24	1.4	2.5	7.2
32220.W0450	Normal	All Stainless	M10	4.0	28	1.5	3.5	15	30	1.4	3.0	12.0
32220.W0452	Normal	All Stainless	M12	6.0	35	2.7	4.0	24	50	2.0	4.0	20.0
32220.W0456	Normal	All Stainless	M16	7.5	40	3.2	5.0	36	58	2.5	5.0	44.0

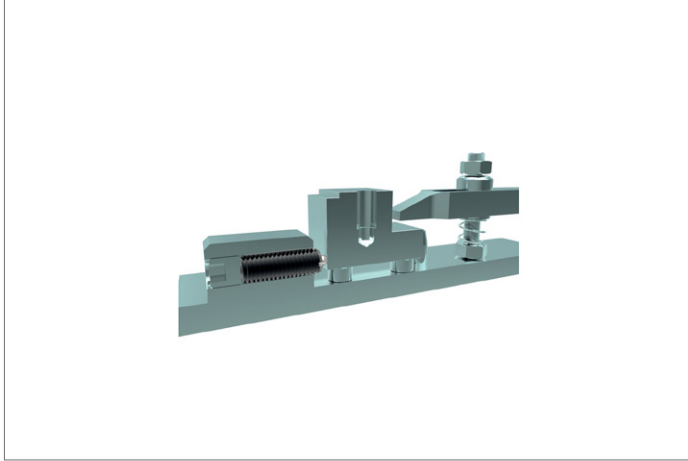
Spring Plunger & Detent Pins



Spring Plungers with pin end & hex socket and seal - stainless steel



SPRING PLUNGER & DETENT PINS

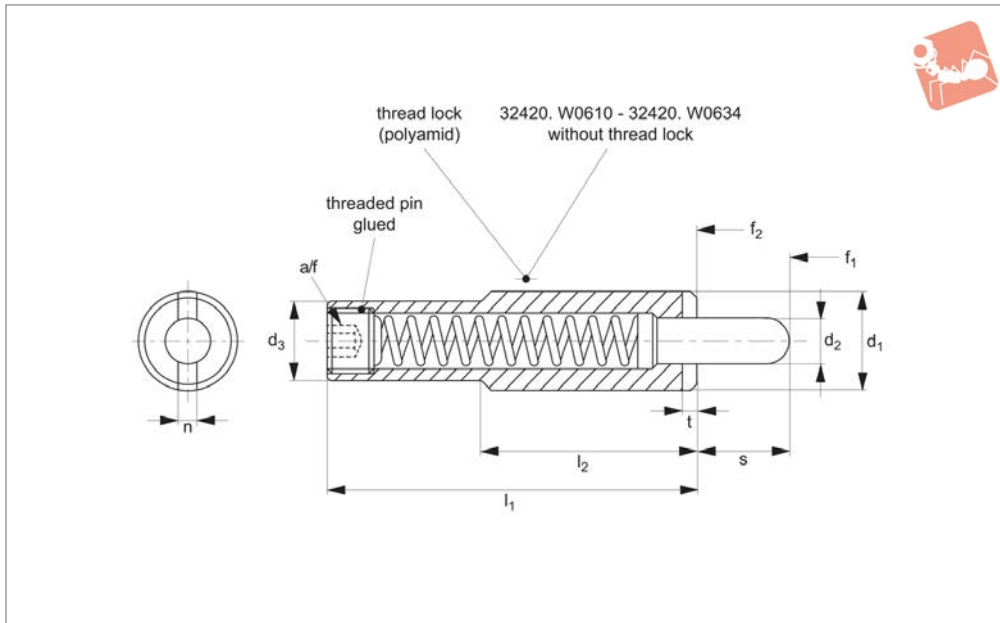




Spring Plungers

Long version

Spring Plunger & Detent Pins



32420

SPRING PLUNGER & DETENT PINS

Material

Body: free cutting steel, blackened or heat-treated steel tempered blackened.
 Part nos. 32420.W0512 to 32420.W0580 - threaded body bright finish.
 Pin: case hardened steel, blackened.
 Spring: stainless steel.

Technical Notes

Used for ejecting parts (particularly in

press tools), and applying pressure. They are fitted/removed by means of the slot or internal hexagon.

Spring load* = statistical average value.

Tips

Spring Load Identifier:

Normal spring load - no marking.
 Increased spring load - body marked with two lines.

Parts 32420.W0408 to 32420.W0580 with thread-lock.

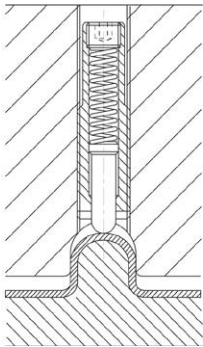
Important Notes

All metric Wixroyd spring plungers have a coarse thread, see appendix five for thread details.

Order No.	Spring load	d ₁	d ₂	d ₃	l ₁	l ₂	n	s	Spring load F ₁ N ≈	Spring load F ₂ N ≈	t	A/F	Weight g
32420.W0408	Normal	M10	4.0	7.8	35	25	1.5	8	6	16	1.4	3	13
32420.W0412	Normal	M12	5.5	9.5	43	35	2.7	10	4	18	2.0	4	22
32420.W0430	Normal	M16	8.0	13.4	48	35	3.2	10	7	24	3.0	6	47
32420.W0432	Normal	M16	8.0	13.4	58	35	3.2	10	15	42	3.0	6	52
32420.W0436	Normal	M16	8.0	13.4	58	35	3.2	15	9	33	3.0	6	54
32420.W0440	Normal	M16	8.0	13.4	58	35	3.2	20	4	23	3.0	6	55
32420.W0442	Normal	M16	8.0	13.4	83	35	3.2	20	11	43	3.0	6	71
32420.W0444	Normal	M16	8.0	13.4	98	35	3.2	25	13	41	3.0	6	81
32420.W0450	Normal	M16	8.0	13.4	98	35	3.2	30	13	47	3.0	6	83
32420.W0452	Normal	M16	8.0	13.4	118	35	3.2	30	24	110	3.0	6	97
32420.W0455	Normal	M16	8.0	13.4	148	35	3.2	40	13	63	3.0	6	117
32420.W0460	Normal	M16	8.0	13.4	148	35	3.2	50	7	43	3.0	6	117
32420.W0480	Normal	M24	10.0	19.6	60	45	3.7	15	14	87	3.0	8	132
32420.W0512	Increased	M12	5.5	9.5	43	35	2.7	10	7	46	2.0	4	23
32420.W0530	Increased	M16	8.0	13.4	48	35	3.2	10	10	43	3.0	6	47
32420.W0532	Increased	M16	8.0	13.4	58	35	3.2	10	14	84	3.0	6	54
32420.W0536	Increased	M16	8.0	13.4	58	35	3.2	15	10	57	3.0	6	55
32420.W0542	Increased	M16	8.0	13.4	83	35	3.2	20	18	72	3.0	6	72
32420.W0544	Increased	M16	8.0	13.4	98	35	3.2	25	20	70	3.0	6	82
32420.W0550	Increased	M16	8.0	13.4	98	35	3.2	30	20	80	3.0	6	83
32420.W0555	Increased	M16	8.0	13.4	148	35	3.2	40	21	113	3.0	6	121
32420.W0560	Increased	M16	8.0	13.4	148	35	3.2	50	13	75	3.0	6	121
32420.W0580	Increased	M24	10.0	19.6	60	45	3.7	15	24	192	3.0	8	134
32420.W0610	Normal, Heat-Treated	M16	7.3	13.4	80	35	3.2	11	17	74	3.0	8	69
32420.W0612	Normal, Heat-Treated	M16	7.3	13.4	120	35	3.2	21	21	81	3.0	8	96
32420.W0614	Normal, Heat-Treated	M16	7.3	13.4	150	35	3.2	31	21	89	3.0	8	117
32420.W0616	Normal, Heat-Treated	M16	7.3	13.4	200	35	3.2	41	16	80	3.0	8	149



Order No.	Spring load	d ₁	d ₂	d ₃	l ₁	l ₂	n	s	Spring load F ₁ N ≈	Spring load F ₂ N ≈	t	A/F	Weight g
32420.W0630	Normal, Heat-Treated	M22	9.0	19.0	130	50	3.5	21	80	214	4.0	8	211
32420.W0632	Normal, Heat-Treated	M22	9.0	19.0	168	50	3.5	31	70	210	4.0	8	278
32420.W0634	Normal, Heat-Treated	M22	9.0	19.0	226	50	3.5	41	76	208	4.0	8	358
32420.W0830	Screwdriver	for M10	-	-	-	-	-	-	-	-	-	-	87
32420.W0832	Screwdriver	for M12	-	-	-	-	-	-	-	-	-	-	88
32420.W0834	Screwdriver	for M16	-	-	-	-	-	-	-	-	-	-	110
32420.W0836	Screwdriver	for M22	-	-	-	-	-	-	-	-	-	-	245
32420.W0838	Screwdriver	for M24	-	-	-	-	-	-	-	-	-	-	258

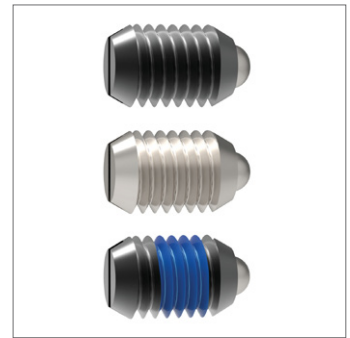
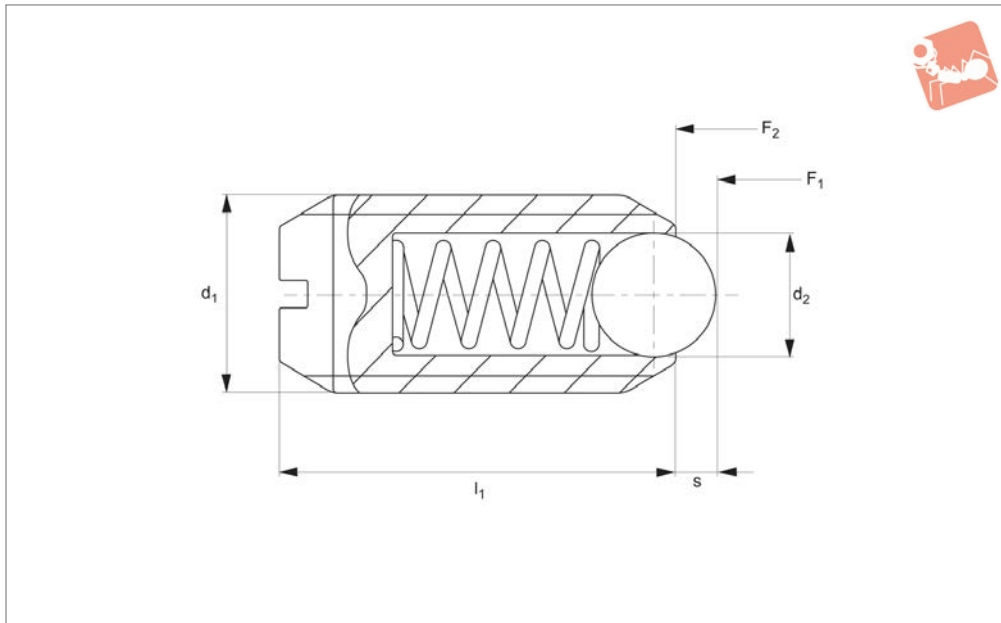




Spring Plungers - IMPERIAL

with ball and slot

Spring Plunger & Detent Pins



3B100

SPRING PLUNGER & DETENT PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.
Ball: ball bearing steel 1.3505 (100Cr6) hardened.
Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).
Ball: ball bearing steel, hardened.
Spring: stainless steel.

Technical Notes

To be used as detents or for locating, posi-

tioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Light spring load - marked with one line.

Standard spring load - no marking.

Heavy spring load - marked with two lines.

Special types available on request.

Important Notes

Spring loads are statistical average values
All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0010	w/o Threadlock	Steel	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.049
3B100.W0012	w/o Threadlock	Steel	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.074
3B100.W0016	w/o Threadlock	Steel	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0018	w/o Threadlock	Steel	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.193
3B100.W0020	w/o Threadlock	Steel	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0022	w/o Threadlock	Steel	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.787
3B100.W0031	w/o Threadlock	Steel	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.008
3B100.W0032	w/o Threadlock	Steel	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.016
3B100.W0033	w/o Threadlock	Steel	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0035	w/o Threadlock	Steel	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0036	w/o Threadlock	Steel	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0038	w/o Threadlock	Steel	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0040	w/o Threadlock	Steel	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0042	w/o Threadlock	Steel	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.073
3B100.W0046	w/o Threadlock	Steel	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0048	w/o Threadlock	Steel	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0050	w/o Threadlock	Steel	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.406
3B100.W0052	w/o Threadlock	Steel	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.811
3B100.W0070	w/o Threadlock	Steel	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.049
3B100.W0072	w/o Threadlock	Steel	Heavy	UNC 1/4-20	17/32	0.035	1/8	5.6	8.6	0.073
3B100.W0076	w/o Threadlock	Steel	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.122
3B100.W0078	w/o Threadlock	Steel	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.196
3B100.W0080	w/o Threadlock	Steel	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.408



Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0082	w/o Threadlock	Steel	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0110	w/o Threadlock	Stainless	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.048
3B100.W0112	w/o Threadlock	Stainless	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.071
3B100.W0116	w/o Threadlock	Stainless	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0118	w/o Threadlock	Stainless	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.190
3B100.W0120	w/o Threadlock	Stainless	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0122	w/o Threadlock	Stainless	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.790
3B100.W0131	w/o Threadlock	Stainless	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.005
3B100.W0132	w/o Threadlock	Stainless	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.015
3B100.W0133	w/o Threadlock	Stainless	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.018
3B100.W0135	w/o Threadlock	Stainless	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.019
3B100.W0136	w/o Threadlock	Stainless	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0138	w/o Threadlock	Stainless	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0140	w/o Threadlock	Stainless	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0142	w/o Threadlock	Stainless	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.072
3B100.W0146	w/o Threadlock	Stainless	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0148	w/o Threadlock	Stainless	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0150	w/o Threadlock	Stainless	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.396
3B100.W0152	w/o Threadlock	Stainless	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.813
3B100.W0170	w/o Threadlock	Stainless	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.046
3B100.W0172	w/o Threadlock	Stainless	Heavy	UNC 1/4-20	17/32	0.35	1/8	5.6	8.6	0.074
3B100.W0176	w/o Threadlock	Stainless	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.123
3B100.W0178	w/o Threadlock	Stainless	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.197
3B100.W0180	w/o Threadlock	Stainless	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.409
3B100.W0182	w/o Threadlock	Stainless	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0210	With Threadlock	Steel	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.049
3B100.W0212	With Threadlock	Steel	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.074
3B100.W0216	With Threadlock	Steel	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0218	With Threadlock	Steel	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.193
3B100.W0220	With Threadlock	Steel	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0222	With Threadlock	Steel	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.787
3B100.W0231	With Threadlock	Steel	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.008
3B100.W0232	With Threadlock	Steel	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.016
3B100.W0233	With Threadlock	Steel	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0235	With Threadlock	Steel	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0236	With Threadlock	Steel	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0238	With Threadlock	Steel	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0240	With Threadlock	Steel	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0242	With Threadlock	Steel	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.073
3B100.W0246	With Threadlock	Steel	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0248	With Threadlock	Steel	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0250	With Threadlock	Steel	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.406
3B100.W0252	With Threadlock	Steel	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.811
3B100.W0270	With Threadlock	Steel	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.049
3B100.W0272	With Threadlock	Steel	Heavy	UNC 1/4-20	17/32	0.035	1/8	5.6	8.6	0.073
3B100.W0276	With Threadlock	Steel	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.122
3B100.W0278	With Threadlock	Steel	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.196
3B100.W0280	With Threadlock	Steel	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.408
3B100.W0282	With Threadlock	Steel	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0310	With Threadlock	Stainless	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.048
3B100.W0312	With Threadlock	Stainless	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.071
3B100.W0316	With Threadlock	Stainless	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0318	With Threadlock	Stainless	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.190
3B100.W0320	With Threadlock	Stainless	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0322	With Threadlock	Stainless	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.790
3B100.W0331	With Threadlock	Stainless	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.005
3B100.W0332	With Threadlock	Stainless	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.015
3B100.W0333	With Threadlock	Stainless	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.018
3B100.W0335	With Threadlock	Stainless	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.019
3B100.W0336	With Threadlock	Stainless	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0338	With Threadlock	Stainless	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0340	With Threadlock	Stainless	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.035
3B100.W0342	With Threadlock	Stainless	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.072
3B100.W0346	With Threadlock	Stainless	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0348	With Threadlock	Stainless	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0350	With Threadlock	Stainless	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.396
3B100.W0352	With Threadlock	Stainless	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.813



Spring Plungers - IMPERIAL

with ball and slot



Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0370	With Threadlock	Stainless	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.046
3B100.W0372	With Threadlock	Stainless	Heavy	UNC 1/4-20	17/32	0.35	1/8	5.6	8.6	0.074
3B100.W0376	With Threadlock	Stainless	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.123
3B100.W0378	With Threadlock	Stainless	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.197
3B100.W0380	With Threadlock	Stainless	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.409
3B100.W0382	With Threadlock	Stainless	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825

SPRING PLUNGER & DETENT PINS

Spring Plunger & Detent Pins

Spring Plungers - IMPERIAL

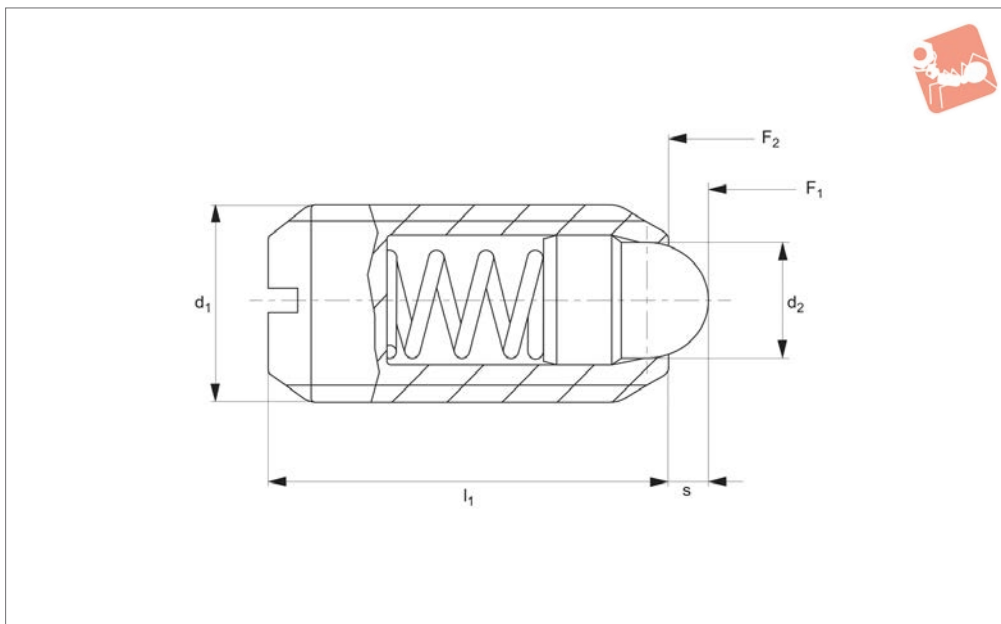
with round-ended pin and slot - stainless steel or



SPRING PLUNGER & DETENT PINS



3B150



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

To be used as detents or for locating, posi-

tioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Standard spring load = no marking

Heavy spring load = marked with two lines

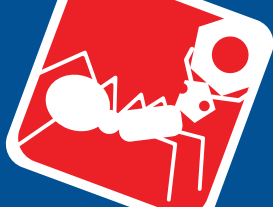
Special types available on request.

Important Notes

Spring loads are statistical average values
All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B150.W0033	Steel	w/o Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0036	Steel	w/o Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0038	Steel	w/o Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0040	Steel	w/o Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0042	Steel	w/o Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0046	Steel	w/o Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0048	Steel	w/o Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.187
3B150.W0050	Steel	w/o Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.377
3B150.W0052	Steel	w/o Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.885
3B150.W0063	Steel	w/o Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.018
3B150.W0066	Steel	w/o Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0068	Steel	w/o Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0070	Steel	w/o Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0072	Steel	w/o Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.074
3B150.W0076	Steel	w/o Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0078	Steel	w/o Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.190
3B150.W0080	Steel	w/o Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.384
3B150.W0082	Steel	w/o Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.907
3B150.W0133	Stainless	w/o Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0136	Stainless	w/o Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0138	Stainless	w/o Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0140	Stainless	w/o Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0142	Stainless	w/o Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0146	Stainless	w/o Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123



Spring Plungers - IMPERIAL

with round-ended pin and slot - stainless steel or



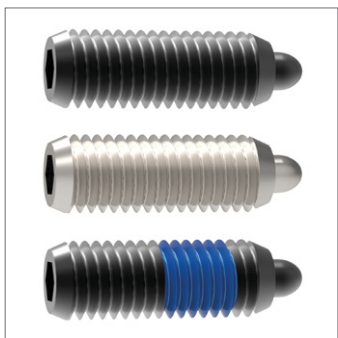
Spring Plunger & Detent Pins

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B150.W0148	Stainless	w/o Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.190
3B150.W0150	Stainless	w/o Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.388
3B150.W0152	Stainless	w/o Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.892
3B150.W0163	Stainless	w/o Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.014
3B150.W0166	Stainless	w/o Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0168	Stainless	w/o Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0170	Stainless	w/o Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0172	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.071
3B150.W0176	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0178	Stainless	w/o Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.194
3B150.W0180	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.399
3B150.W0182	Stainless	w/o Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.914
3B150.W0233	Steel	With Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0236	Steel	With Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0238	Steel	With Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0240	Steel	With Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0242	Steel	With Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0246	Steel	With Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0248	Steel	With Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.187
3B150.W0250	Steel	With Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.377
3B150.W0252	Steel	With Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.885
3B150.W0263	Steel	With Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.018
3B150.W0266	Steel	With Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0268	Steel	With Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0270	Steel	With Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0272	Steel	With Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.074
3B150.W0276	Steel	With Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0278	Steel	With Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.190
3B150.W0280	Steel	With Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.384
3B150.W0282	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.907
3B150.W0333	Stainless	With Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0336	Stainless	With Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0338	Stainless	With Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0340	Stainless	With Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0342	Stainless	With Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0346	Stainless	With Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0348	Stainless	With Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.190
3B150.W0350	Stainless	With Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.388
3B150.W0352	Stainless	With Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.892
3B150.W0363	Stainless	With Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.014
3B150.W0366	Stainless	With Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0368	Stainless	With Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0370	Stainless	With Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0372	Stainless	With Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.071
3B150.W0376	Stainless	With Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0378	Stainless	With Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.194
3B150.W0380	Stainless	With Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.399
3B150.W0382	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.914

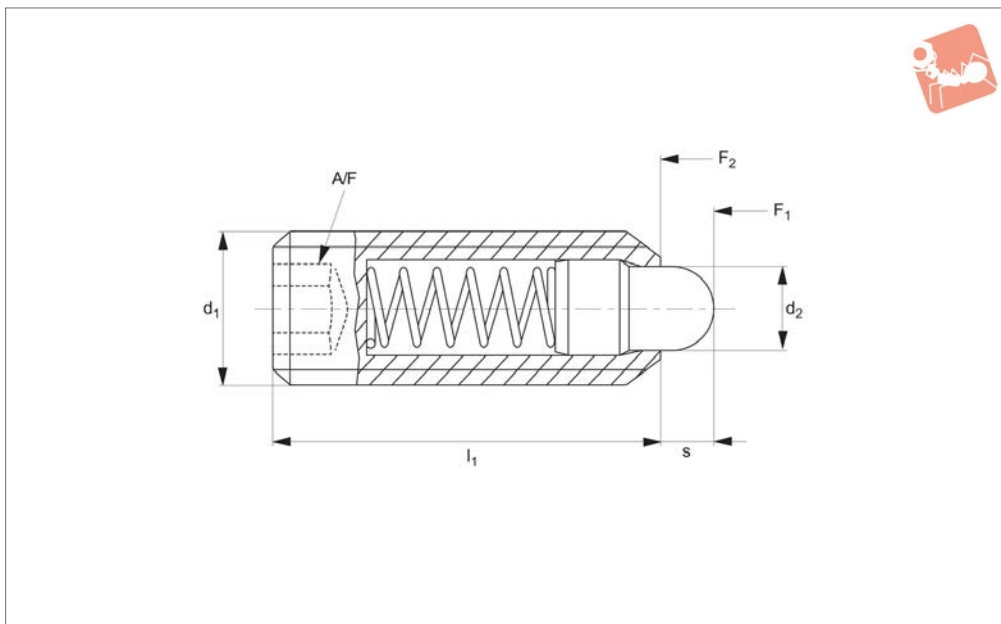
SPRING PLUNGER & DETENT PINS



SPRING PLUNGER & DETENT PINS



3B200



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened, blackened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

To be used as detents or for locating, positioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Standard spring load = no marking

Heavy spring load = marked with two lines

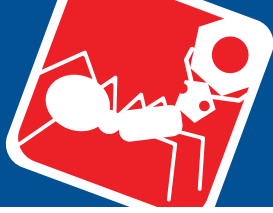
Important Notes

Spring loads are statistical average values

All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	A/F	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B200.W0033	Steel	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.025
3B200.W0036	Steel	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.042
3B200.W0040	Steel	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0042	Steel	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.134
3B200.W0044	Steel	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.145
3B200.W0046	Steel	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.205
3B200.W0048	Steel	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.335
3B200.W0050	Steel	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.656
3B200.W0052	Steel	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0053	Steel	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.152
3B200.W0054	Steel	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.443
3B200.W0063	Steel	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.026
3B200.W0066	Steel	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0070	Steel	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.067
3B200.W0072	Steel	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.134
3B200.W0074	Steel	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0076	Steel	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.207
3B200.W0078	Steel	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.335
3B200.W0080	Steel	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.649
3B200.W0082	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.245
3B200.W0083	Steel	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.187
3B200.W0084	Steel	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.538
3B200.W0133	Stainless	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.018
3B200.W0136	Stainless	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.039
3B200.W0140	Stainless	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0142	Stainless	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.131



Spring Plungers - IMPERIAL

with round-ended pin and hex. socket - stainless



Spring Plunger & Detent Pins

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	A/F	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B200.W0144	Stainless	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.141
3B200.W0146	Stainless	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.208
3B200.W0148	Stainless	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.328
3B200.W0150	Stainless	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.653
3B200.W0152	Stainless	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0153	Stainless	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.180
3B200.W0154	Stainless	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.474
3B200.W0163	Stainless	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.025
3B200.W0166	Stainless	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0170	Stainless	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.063
3B200.W0172	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.131
3B200.W0174	Stainless	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0176	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.212
3B200.W0178	Stainless	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.339
3B200.W0180	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.653
3B200.W0182	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.252
3B200.W0183	Stainless	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.198
3B200.W0184	Stainless	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.524
3B200.W0233	Steel	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.025
3B200.W0236	Steel	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.042
3B200.W0240	Steel	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0242	Steel	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.134
3B200.W0244	Steel	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.145
3B200.W0246	Steel	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.205
3B200.W0248	Steel	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.335
3B200.W0250	Steel	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.656
3B200.W0252	Steel	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0253	Steel	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.152
3B200.W0254	Steel	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.443
3B200.W0263	Steel	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.026
3B200.W0266	Steel	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0270	Steel	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.067
3B200.W0272	Steel	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.134
3B200.W0274	Steel	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0276	Steel	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.207
3B200.W0278	Steel	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.335
3B200.W0280	Steel	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.649
3B200.W0282	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.245
3B200.W0283	Steel	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.187
3B200.W0284	Steel	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.538
3B200.W0333	Stainless	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.018
3B200.W0336	Stainless	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.039
3B200.W0340	Stainless	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0342	Stainless	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.131
3B200.W0344	Stainless	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.141
3B200.W0346	Stainless	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.208
3B200.W0348	Stainless	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.328
3B200.W0350	Stainless	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.653
3B200.W0352	Stainless	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0353	Stainless	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.180
3B200.W0354	Stainless	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.474
3B200.W0363	Stainless	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.025
3B200.W0366	Stainless	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0370	Stainless	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.063
3B200.W0372	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.131
3B200.W0374	Stainless	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0376	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.212
3B200.W0378	Stainless	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.339
3B200.W0380	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.653
3B200.W0382	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.252
3B200.W0383	Stainless	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.198
3B200.W0384	Stainless	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.524

SPRING PLUNGER & DETENT PINS

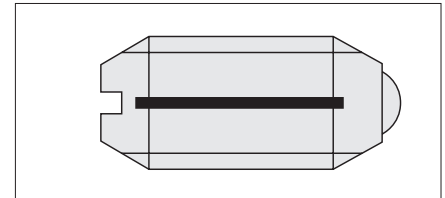


Wixroyd have applied their extensive experience and expertise in spring plunger design and production to offer a range of imperial plungers.

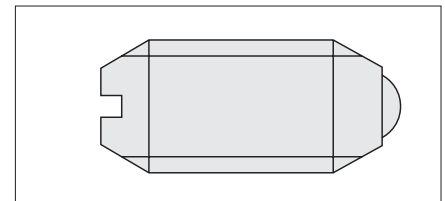
At Last – Imperial Version Spring Plungers Stocked in the UK!

Spring Loads

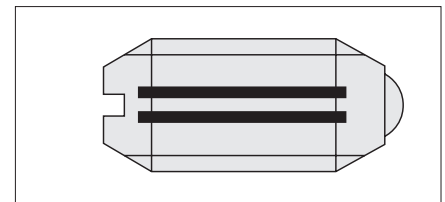
Three available spring pressure models.



Light spring load = marked with one line.



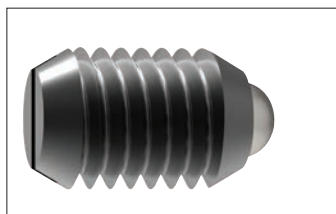
Standard spring load = no marking.



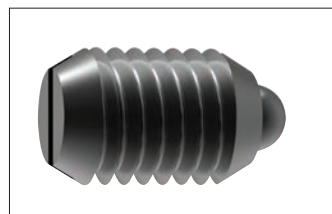
Heavy spring load = marked with two lines.

Thread Details

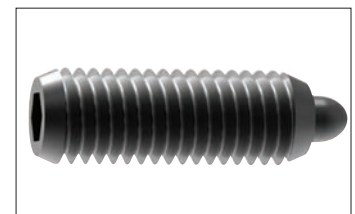
2A-UNC/UNF: sizes 4-48 to 5/8-11.



3B100 Imperial plunger with ball and slot.



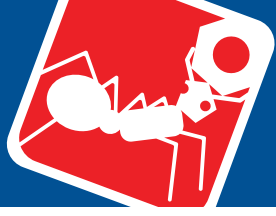
3B150 Imperial plunger with pin and slot.



3B200 Imperial plunger with pin and hex socket.

Conversion table: Metric/Imperial values

	To convert from	To	Use conversion factor
Lengths	Inch (in)	Millimeter (mm)	in x 25,4 = mm
	Millimeter (mm)	Inch (in)	mm x 0,03937 = in
Weight/force	Ounces (oz)	Gram (g)	oz x 28 = g
	Gram (g)	Ounces (oz)	g x 0,035 = oz
	Pounds (lbs)	Kilogram (Kg)	lbs x 0,4536 = Kg
	Kilogram (Kg)	Pounds (lbs)	Kg x 2,205 = lbs
	Kilogram (Kg)	Newton (N)	Kg x 9,81 = N
	Newton (N)	Kilogram (Kg)	N/ 9,81 = Kg
Temperature	Degree fahrenheit (°F)	Degree centigrade (°C)	(°F-32) x 5/9 = °C
	Degree centigrade (°C)	Degree fahrenheit (°F)	°C x 9/5 + 32 = °F
Torque	Foot-pounds (ft-lbs)	Newton-meter (Nm)	ft/lbs x 1,35 = Nm
	Newton-meter (Nm)	Foot-pounds (ft-lbs)	Nm x 0,74 = ft/lbs



We recommend a cutting speed of between 10 and 20m/min.

Therefore typical value for chamfers of varying diameter are as follows.

Diameter	RPM range
10 mm	320 to 640 rpm
15 mm	210 to 420 rpm
20 mm	160 to 320 rpm
30 mm	110 to 220 rpm
40 mm	80 to 160 rpm
50 mm	55 to 110 rpm

We do however recommend you use the following formula to check the most suitable rpm used.

$$\text{Rpm} = (\text{cutting speed} \times 1000) / (\text{diameter} \times 3.14)$$

Blade cutting angle	0°	14°	20°	25°
Suitable for material	Brass, bronze, cast iron, stainless steel	Steel, special bronze, perspex	Soft steel, copper, AU 4G, plastic, stainless steel	Aluminium, soft iron, sheet metal

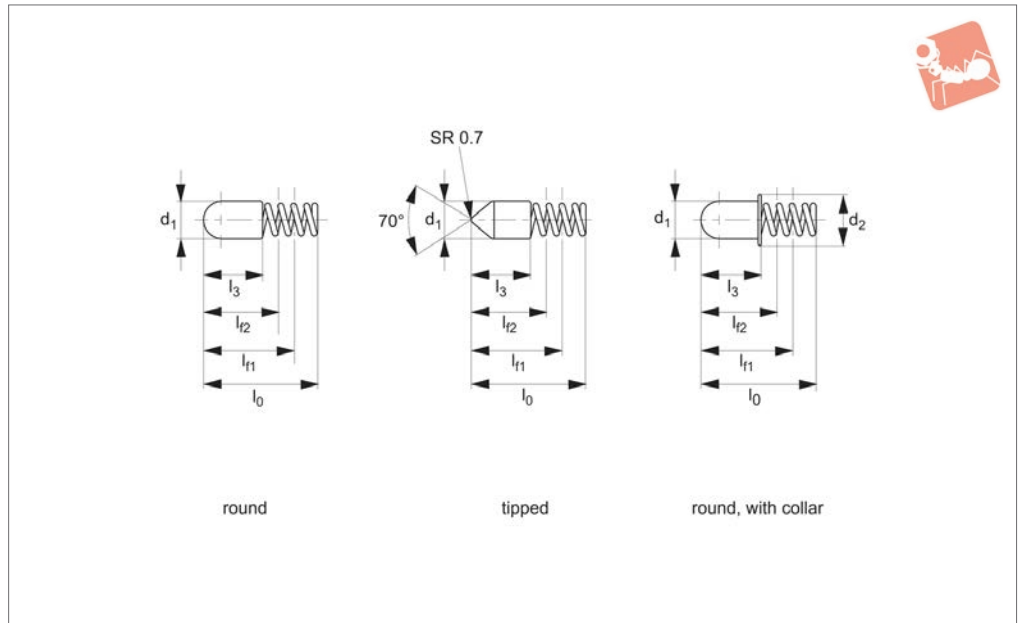
Important Note:
 We recommend the chamfering tool is lubricated with cutting fluid or soluble oil to ensure the long life of the cutting blade edge, and to reduce wear of the pilot cone.
 We offer blades with a variety of cutting angles to best suit the material in which a chamfer is required.
 Typically a blade cutting angle of 14° suits most applications; please refer to table above.

Recommended Cutting Speed

Typical rpm for varying chamfer diameters, when using cutting speed of between 10 and 20 m/min.



31000



Material

Body: steel, nickel-plated.
 Stainless steel 1.4303 (AISI 305). Brass, nickel-plated.
 Spring: stainless steel 1,4310 (AISI 301).

Technical Notes

Max. temperature 250°C. Spring load * = statistical average.

Tips

To be used for locating or as a detent. Special springs available on request.

Order No.	Type	Finish	d ₁ ±0.05	l ₀	d ₂	l ₃	l _{f1}	l _{f2}	Spring load F ₁ N ≈	Spring load F ₂ N ≈	R N/mm	Weight g
31000.W0012	Round	Steel	2.2	16	-	7.8	12.0	10.5	2.2	3.0	0.53	0.13
31000.W0016	Round	Steel	2.6	8	-	3.8	6.5	5.2	1.1	2.0	0.70	0.07
31000.W0022	Round	Steel	3.0	12	-	6.0	9.0	8.7	6.2	6.8	2.00	0.18
31000.W0024	Round	Steel	3.0	16	-	8.5	13.0	10.7	4.8	8.4	1.60	0.23
31000.W0034	Round	Steel	3.4	12	-	6.0	9.0	7.8	5.0	7.0	1.69	0.18
31000.W0036	Round	Steel	3.4	15	-	7.3	12.0	8.2	5.9	13.3	1.95	0.22
31000.W0042	Round	Steel	4.0	14	-	8.0	12.0	9.0	5.0	12.3	2.45	0.41
31000.W0052	Round	Steel	5.0	16	-	8.0	13.0	10.4	8.0	15.0	2.70	0.59
31000.W0124	Round	Stainless	3.0	16	-	8.0	13.0	10.6	4.8	8.6	1.60	0.22
31000.W0137	Round	Stainless	3.6	18	-	9.0	15.0	11.5	6.7	14.5	2.24	0.36
31000.W0144	Round	Stainless	4.0	16	-	7.5	13.0	11.4	8.0	12.3	2.70	0.37
31000.W0212	Tipped	Steel	2.2	16	-	7.8	12.0	10.5	2.2	3.0	0.53	0.12
31000.W0222	Tipped	Steel	3.0	11	-	5.0	9.0	6.7	1.6	3.4	0.78	0.11
31000.W0224	Tipped	Steel	3.0	16	-	8.5	13.0	10.7	4.8	8.4	1.60	0.23
31000.W0373	Round, with Collar	Stainless	3.0	13	4.1	7.0	10.0	8.9	5.3	7.2	1.75	0.19

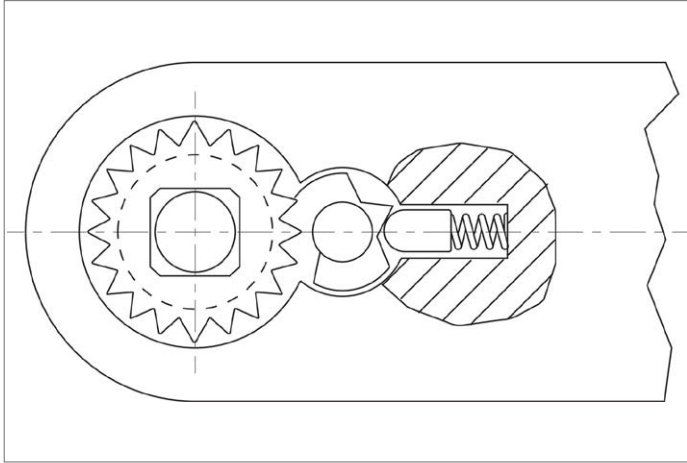


Spring Bodies

steel or stainless steel

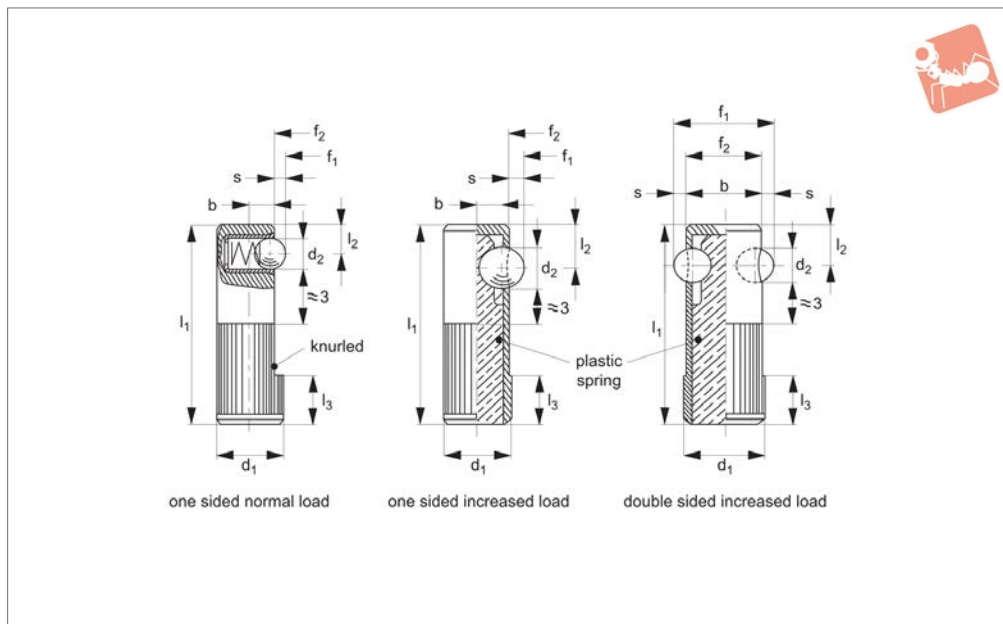


Spring Plunger & Detent Pins





32800



Material

Body: free cutting steel, blackened.
 Ball: ball bearing steel 1.3505 (100Cr6) hardened, stainless steel, hardened or Thermoplastic white (POM).
 Spring: stainless steel or plastic (PU).

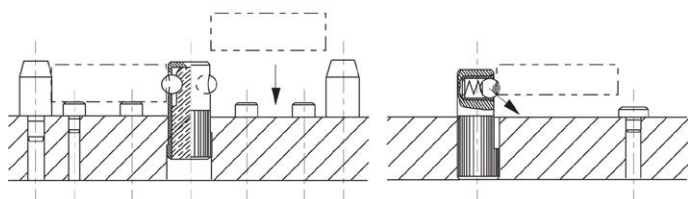
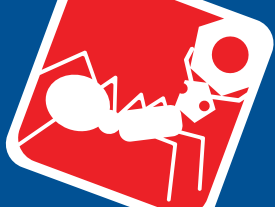
Technical Notes

The lateral spring plunger must be inserted into a bore to measure at least l_3 . Positions and applies pressure. Spring loads * = statistical average values.

Tips

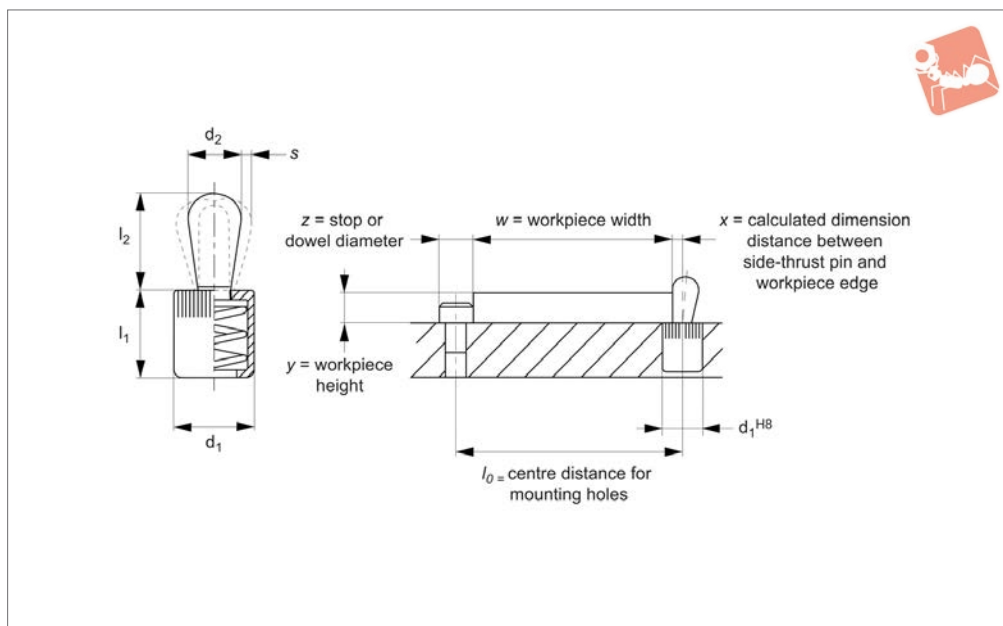
When storing the fixtures, no pressure should be applied to the plastic spring.

Order No.	Ball type	Spring load	d_1 +0.1	d_2	l_1	l_2	l_3	b	Location hole tol. H8	s	Spring load N F_1 ≈	Spring load N F_2 ≈	Temperature °C max.	Weight g
32800.W0008	Stainless, One	Normal	8	3,0	25	3,6	6	3,2	8	0,8	2,5	6,5	-30/+50	9
32800.W0010	Stainless, One	Normal	10	4,0	30	4,2	7	4,0	10	1,0	4,5	9,0	-30/+50	17
32800.W0012	Stainless, One	Normal	12	5,0	35	4,8	9	5,0	12	1,6	6,5	13,0	-30/+50	29
32800.W0014	Stainless, One	Normal	14	6,5	40	5,8	10	5,4	14	1,9	8,0	18,0	-30/+50	43
32800.W0108	Thermo, One	Normal	8	3,0	25	3,6	6	3,2	8	0,8	2,5	6,5	-30/+50	9
32800.W0110	Thermo, One	Normal	10	4,0	30	4,2	7	4,0	10	1,0	4,5	9,0	-30/+50	17
32800.W0112	Thermo, One	Normal	12	5,0	35	4,8	9	5,0	12	1,6	6,5	13,0	-30/+50	28
32800.W0114	Thermo, One	Normal	14	6,5	40	5,8	10	5,4	14	1,9	8,0	18,0	-30/+50	42
32800.W0410	Steel, One	Increased	10	5,5	30	7,0	8	4,5	10	1,0	60,0	170,0	-40/+80	9
32800.W0412	Steel, One	Increased	12	6,5	35	8,0	9	5,5	12	1,5	80,0	260,0	-40/+80	14
32800.W0414	Steel, One	Increased	14	8,0	40	9,0	10	6,5	14	2,0	120,0	480,0	-40/+80	20
32800.W0616	Steel, Double	Increased	16	5,5	35	7,0	11	15,0	16	1,5	110,0	220,0	-40/+80	21
32800.W0618	Steel, Double	Increased	18	6,5	40	8,0	12	17,0	18	1,8	120,0	330,0	-40/+80	27
32800.W0622	Steel, Double	Increased	22	8,0	45	9,0	15	21,0	22	2,5	130,0	540,0	-40/+80	45





32810



Material

Body: aluminium.

Pin: steel, case hardened and galvanized, or thermoplastic (POM) white.

Spring: steel (blackened or blue galvanized), or stainless steel.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than

$l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

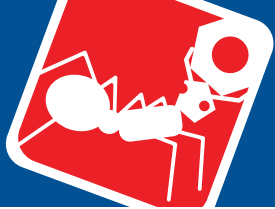
Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

Heavy spring load = steel spring, blue galvanized.

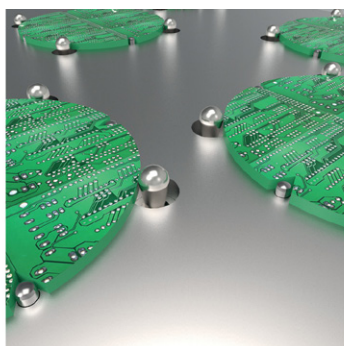
Order No.	Pin material	Spring load	d_1	d_2	l_1 -1	l_2 ± 0.5	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance $^{\circ}\text{C}$ max.	Fitting tool 32810	Weight g
32810.W0001	Steel Pin	Light	6	3	7	4,0	6	S/S	10	0,5	250	.W0830	1
32810.W0002	Steel Pin	Standard	6	3	7	4,0	6	Black	20	0,5	250	.W0830	1
32810.W0003	Steel Pin	Heavy	6	3	7	4,0	6	Blue	40	0,5	250	.W0830	1
32810.W0004	Steel Pin	Light	10	5	11	6,7	10	S/S	20	0,8	250	.W0831	3
32810.W0005	Steel Pin	Standard	10	5	11	6,7	10	Black	50	0,8	250	.W0831	3
32810.W0006	Steel Pin	Heavy	10	5	11	6,7	10	Blue	100	0,8	250	.W0831	3
32810.W0007	Steel Pin	Light	10	6	11	10,7	10	S/S	40	1,0	250	.W0831	4
32810.W0008	Steel Pin	Standard	10	6	11	10,7	10	Black	75	1,0	250	.W0831	4
32810.W0009	Steel Pin	Heavy	10	6	11	10,7	10	Blue	150	1,0	250	.W0831	4
32810.W0010	Steel Pin	Light	12	8	13	13,9	12	S/S	50	1,3	250	.W0832	7
32810.W0011	Steel Pin	Standard	12	8	13	13,9	12	Black	100	1,3	250	.W0832	7
32810.W0012	Steel Pin	Heavy	12	8	13	13,9	12	Blue	200	1,3	250	.W0832	7
32810.W0013	Steel Pin	Light	16	10	17	16,7	16	S/S	100	1,6	250	.W0833	15
32810.W0014	Steel Pin	Standard	16	10	17	16,7	16	Black	200	1,6	250	.W0833	15
32810.W0015	Plastic Pin	Heavy	16	10	17	16,7	16	Blue	300	1,6	80	.W0833	15
32810.W0404	Plastic Pin	Heavy	10	5	11	6,7	10	S/S	20	0,8	80	.W0831	1
32810.W0407	Plastic Pin	Standard	10	6	11	10,7	10	S/S	40	1,0	80	.W0831	2
32810.W0410	Plastic Pin	Light	12	8	13	13,9	12	S/S	50	1,3	80	.W0832	3
32810.W0413	Plastic Pin	Heavy	16	10	17	16,7	16	S/S	100	1,6	80	.W0833	7



Side-Thrust Pins without seal



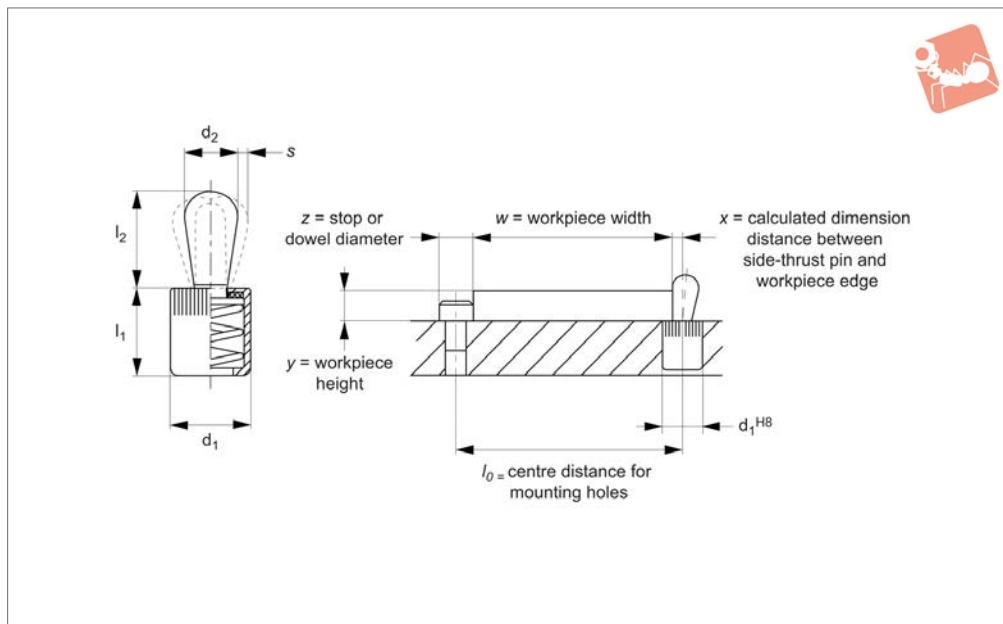
Spring Plunger & Detent Pins



SPRING PLUNGER & DETENT PINS



32820



Material

Body: aluminium.

Pin: steel, case hardened and galvanized, or thermoplastic (POM) white.

Spring: steel (blackened or blue galvanized), or stainless steel.

Seal: rubber (CR), 60 shore.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than

$l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and

workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

Heavy spring load = steel spring, blue galvanized.

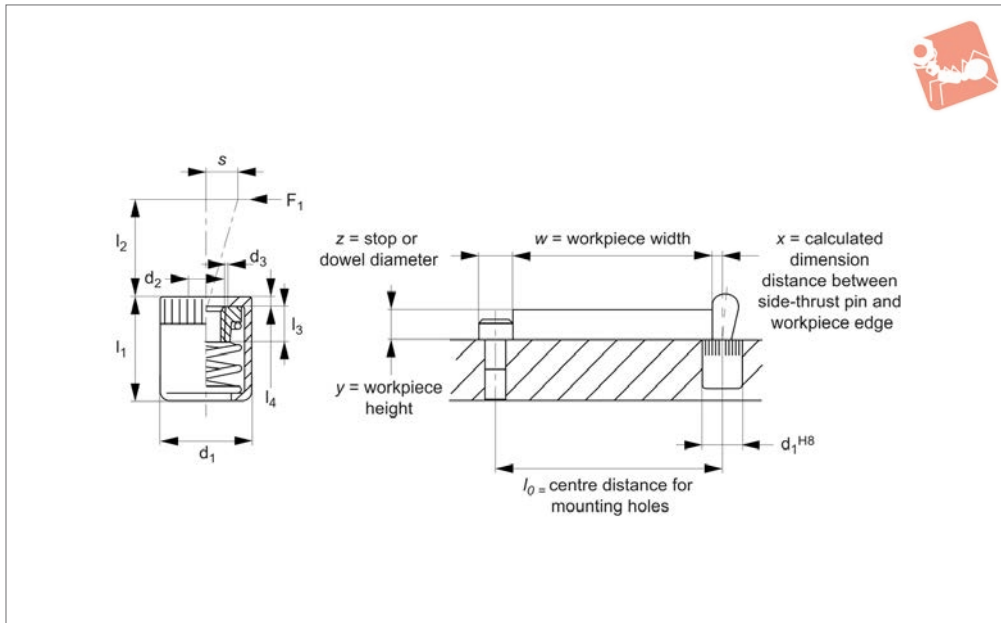
Order No.	Pin material	Spring load	d_1	d_2	l_1 -1	l_2 ± 0.5	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance $^{\circ}\text{C}$ max.	Fitting tool 32810	Weight g
32820.W0001	Steel Pin	Light	6	3	7	4	6	S/S	10	0,5	110	.W0830	1
32820.W0002	Steel Pin	Standard	6	3	7	4	6	Black	20	0,5	110	.W0830	1
32820.W0003	Steel Pin	Heavy	6	3	7	4	6	Blue	40	0,5	110	.W0830	1
32820.W0004	Steel Pin	Light	10	5	12	6	10	S/S	20	0,8	110	.W0831	3
32820.W0005	Steel Pin	Standard	10	5	12	6	10	Black	50	0,8	110	.W0831	3
32820.W0006	Steel Pin	Heavy	10	5	12	6	10	Blue	100	0,8	110	.W0831	3
32820.W0007	Steel Pin	Light	10	6	12	10	10	S/S	40	1,0	110	.W0831	4
32820.W0008	Steel Pin	Standard	10	6	12	10	10	Black	75	1,0	110	.W0831	4
32820.W0009	Steel Pin	Heavy	10	6	12	10	10	Blue	150	1,0	110	.W0831	4
32820.W0010	Steel Pin	Light	12	8	14	13	12	S/S	50	1,3	110	.W0832	7
32820.W0011	Steel Pin	Standard	12	8	14	13	12	Black	100	1,3	110	.W0832	7
32820.W0012	Steel Pin	Heavy	12	8	14	13	12	Blue	200	1,3	110	.W0832	8
32820.W0013	Steel Pin	Light	16	10	18	16	16	S/S	100	1,6	110	.W0833	15
32820.W0014	Steel Pin	Standard	16	10	18	16	16	Black	200	1,6	110	.W0833	15
32820.W0015	Steel Pin	Heavy	16	10	18	16	16	Blue	300	1,6	110	.W0833	16
32820.W0401	Plastic Pin	Light	6	3	7	4	6	S/S	10	0,5	80	.W0830	1
32820.W0404	Plastic Pin	Light	10	5	12	6	10	S/S	20	0,8	80	.W0831	1
32820.W0407	Plastic Pin	Light	10	6	12	10	10	S/S	40	1,0	80	.W0831	2
32820.W0410	Plastic Pin	Light	12	8	14	13	12	S/S	50	1,3	80	.W0832	3
32820.W0413	Plastic Pin	Light	16	10	18	16	16	S/S	100	1,6	80	.W0833	7



Side-Thrust Pins - Without Seal

for use with pins of your own design

Spring Plunger & Detent Pins



32830.1

SPRING PLUNGER & DETENT PINS

Material

Body: aluminium.
 Threaded Washer: steel, blackened.
 Spring: steel (blackened or blue galvanized), or stainless steel.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{[l_2 - (d_2/2) - y] * 0.123\}$

l_0 = centre distance for mounting holes
 y = workpiece height
 w = workpiece width
 x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

Heavy spring load = steel spring, blue galvanized.

Order No.	Spring load	d_1	d_2	d_3	l_1 -1	l_2	l_3	Weight g
32830.W0001	Light	10	M 4	6.3	11	2.5	4.5	2
32830.W0002	Standard	10	M 4	6.3	11	2.5	4.5	2
32830.W0003	Heavy	10	M 4	6.3	11	2.5	4.5	2
32830.W0004	Light	10	M 4	6.3	11	7.5	4.5	2
32830.W0005	Standard	10	M 4	6.3	11	7.5	4.5	2
32830.W0006	Heavy	10	M 4	6.3	11	7.5	4.5	3
32830.W0007	Light	16	M 6	10.3	18	11.5	7.5	9
32830.W0008	Standard	16	M 6	10.3	18	11.5	7.5	9
32830.W0009	Heavy	16	M 6	10.3	18	11.5	7.5	9

Order No.	l_4	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32810
32830.W0001	1.2	10	S/S	20	1.6	250	.W0831
32830.W0002	1.2	10	Black	50	1.6	250	.W0831
32830.W0003	1.2	10	Blue	100	1.6	250	.W0831
32830.W0004	1.2	10	S/S	40	2.0	250	.W0831
32830.W0005	1.2	10	Black	75	2.0	250	.W0831
32830.W0006	1.2	10	Blue	100	2.0	250	.W0831
32830.W0007	1.7	16	S/S	100	3.2	250	.W0833
32830.W0008	1.7	16	Black	150	3.2	250	.W0833

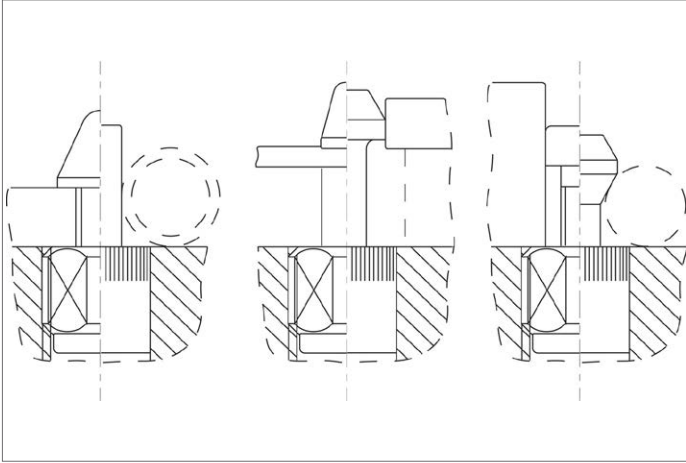
Spring Plunger & Detent Pins

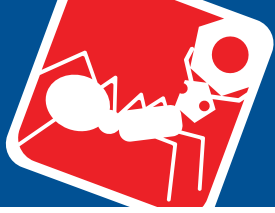
Side-Thrust Pins - Without Seal for use with pins of your own design



Order No.	l_4	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32810
32830.W0009	1.7	16	Blue	200	3.2	250	.W0833

SPRING PLUNGER & DETENT PINS

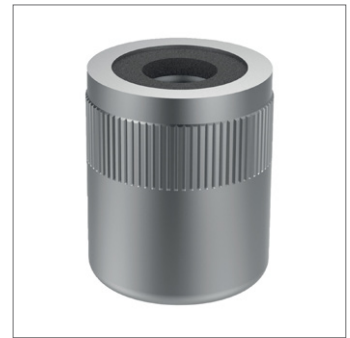
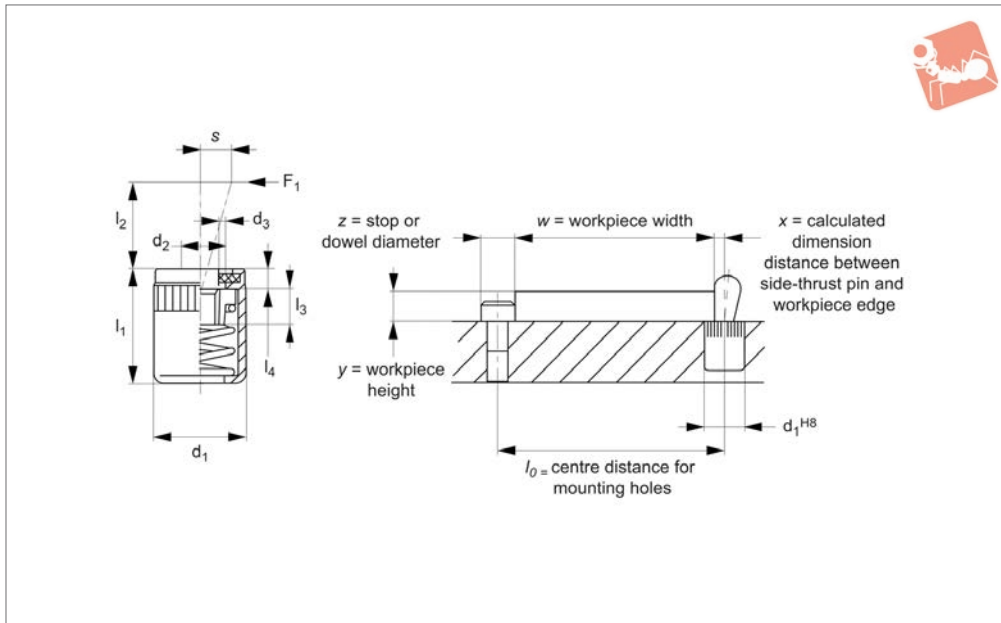




Side-Thrust Pins - With Seal

for use with pins of your own design

Spring Plunger & Detent Pins



32830.2

SPRING PLUNGER & DETENT PINS

Material

Body: aluminium.
 Threaded Washer: steel, blackened.
 Spring: steel (blackened or blue galvanized), or stainless steel.
 Seal: rubber (CR), 60 shore.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).
 Installation calculations:
 A) Calculating centre distance for mounting holes (l_0):
 $l_0 = (z/2) + w + x$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as;
 $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as;
 $x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$

l_0 = centre distance for mounting holes
 y = workpiece height
 w = workpiece width
 x = distance between side-thrust pin and

workpiece edge
 s = stroke
 z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.
Spring colour gives visual indication of spring pressure (N).
 Light spring load = natural stainless spring.
 Standard spring load = steel spring, blackened.
 Heavy spring load = steel spring, blue galvanized.

Order No.	Spring load	d_1	d_2	d_3	l_1 -2	l_2	l_3	Weight g
32830.W0401	Light	10	M 4	6.3	11	2.5	4.5	2
32830.W0402	Standard	10	M 4	6.3	11	2.5	4.5	2
32830.W0403	Heavy	10	M 4	6.3	11	2.5	4.5	2
32830.W0404	Light	10	M 4	6.3	11	7.5	4.5	2
32830.W0405	Standard	10	M 4	6.3	11	7.5	4.5	2
32830.W0406	Heavy	10	M 4	6.3	11	7.5	4.5	3
32830.W0407	Light	16	M 6	10.3	18	11.5	7.5	9
32830.W0408	Standard	16	M 6	10.3	18	11.5	7.5	9
32830.W0409	Heavy	16	M 6	10.3	18	11.5	7.5	9

Order No.	l_4	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32810
32830.W0401	1.8	10	S/S	20	1.6	110	.W0831
32830.W0402	1.8	10	Black	50	1.6	110	.W0831
32830.W0403	1.8	10	Blue	100	1.6	110	.W0831
32830.W0404	1.8	10	S/S	40	2.0	110	.W0831
32830.W0405	1.8	10	Black	75	2.0	110	.W0831
32830.W0406	1.8	10	Blue	100	2.0	110	.W0831
32830.W0407	2.0	16	S/S	100	3.2	110	.W0833
32830.W0408	2.0	16	Black	150	3.2	110	.W0833

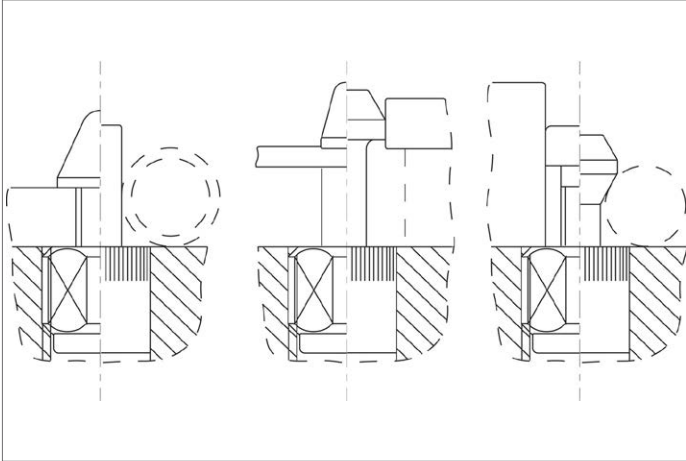
Spring Plunger & Detent Pins

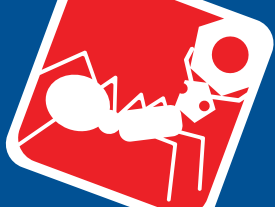
Side-Thrust Pins - With Seal for use with pins of your own design



Order No.	l_4	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32810
32830.W0409	2.0	16	Blue	200	3.2	110	.W0833

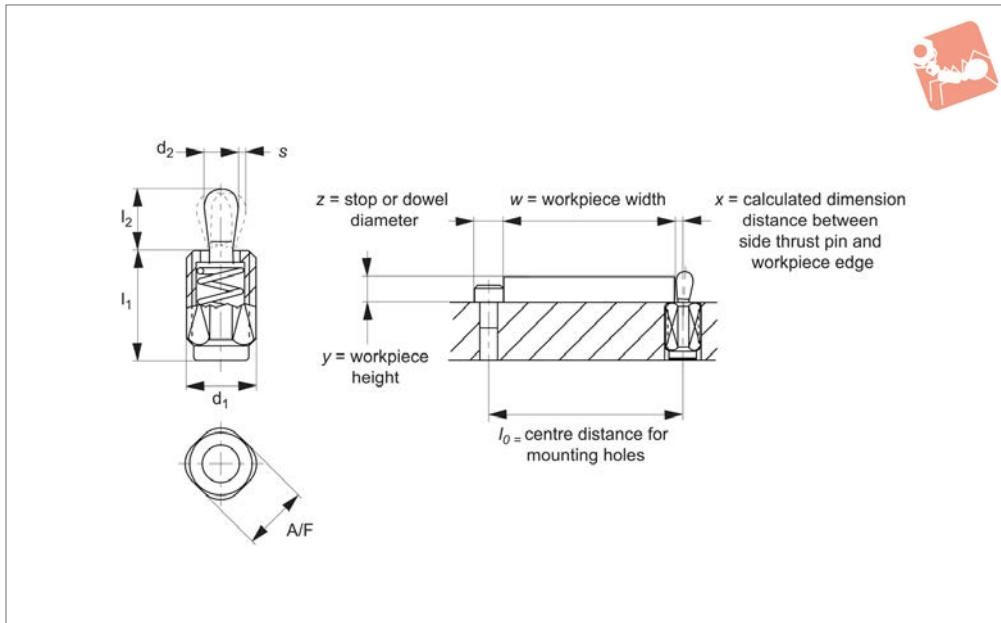
SPRING PLUNGER & DETENT PINS





Side-Thrust Pins - Threaded without seal

Spring Plunger & Detent Pins



32840

SPRING PLUNGER & DETENT PINS

Material

Body: aluminium.
Pin: steel, case hardened and galvanized, or thermoplastic (POM) white.
Spring: steel (blackened or blue galvanized), or stainless steel.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).
Installation calculations;

A) Calculating centre distance for mounting holes (l_0):
 $l_0 = (z/2) + w + x$

B) Calculating pin location (x):
When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$
When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as;
 $x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$

l_0 = centre distance for mounting holes
 y = workpiece height
 w = workpiece width
 x = distance between side-thrust pin and workpiece edge

s = stroke
 z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.
Spring colour gives visual indication of spring pressure (N).
Light spring load = natural stainless spring.
Standard spring load = steel spring, blackened.
Heavy spring load = steel spring, blue galvanized.

Order No.	Pin material	Spring load	d_1	d_2	l_{-2}	Weight g
32840.W0001	Steel pin	Light	M12	5	11.5	4
32840.W0002	Steel pin	Light	M12	5	19.0	6
32840.W0003	Steel pin	Light	M12	5	26.5	8
32840.W0004	Steel pin	Standard	M12	5	11.5	4
32840.W0005	Steel pin	Standard	M12	5	19.0	6
32840.W0006	Steel pin	Standard	M12	5	26.5	8
32840.W0007	Steel pin	Heavy	M12	5	11.5	4
32840.W0008	Steel pin	Heavy	M12	5	19.0	7
32840.W0009	Steel pin	Heavy	M12	5	26.5	9
32840.W0010	Steel pin	Light	M12	6	11.5	5
32840.W0011	Steel pin	Light	M12	6	19.0	6
32840.W0012	Steel pin	Light	M12	6	26.5	8
32840.W0013	Steel pin	Standard	M12	6	11.5	5
32840.W0014	Steel pin	Standard	M12	6	19.0	7
32840.W0015	Steel pin	Standard	M12	6	26.5	10
32840.W0016	Steel pin	Heavy	M12	6	11.5	5
32840.W0017	Steel pin	Heavy	M12	6	19.0	8
32840.W0018	Steel pin	Heavy	M12	6	26.5	10
32840.W0019	Steel pin	Light	M18x1,5	10	18.0	19
32840.W0020	Steel pin	Light	M18x1,5	10	31.5	28
32840.W0021	Steel pin	Light	M18x1,5	10	45.0	36
32840.W0022	Steel pin	Standard	M18x1,5	10	18.0	20
32840.W0023	Steel pin	Standard	M18x1,5	10	31.5	29



Order No.	Pin material	Spring load	d ₁	d ₂	l ₁ -2	Weight g
32840.W0024	Steel pin	Standard	M18x1,5	10	45.0	39
32840.W0025	Steel pin	Heavy	M18x1,5	10	18.0	21
32840.W0026	Steel pin	Heavy	M18x1,5	10	31.5	30
32840.W0027	Steel pin	Heavy	M18x1,5	10	45.0	40
32840.W0401	Plastic pin	Light	M12	5	11.5	3
32840.W0402	Plastic pin	Light	M12	5	19.0	4
32840.W0403	Plastic pin	Light	M12	5	26.5	6
32840.W0410	Plastic pin	Light	M12	6	11.5	3
32840.W0411	Plastic pin	Light	M12	6	19.0	5
32840.W0412	Plastic pin	Light	M12	6	26.5	7
32840.W0419	Plastic pin	Light	M18x1,5	10	18.0	12
32840.W0420	Plastic pin	Light	M18x1,5	10	31.5	20
32840.W0421	Plastic pin	Light	M18x1,5	10	45.0	30

Order No.	l ₂	A/F	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32840
32840.W0001	6.4	10	S/S	20	1.6	250	.W0820
32840.W0002	6.4	10	S/S	20	1.6	250	.W0820
32840.W0003	6.4	10	S/S	20	1.6	250	.W0820
32840.W0004	6.4	10	Black	50	1.6	250	.W0820
32840.W0005	6.4	10	Black	50	1.6	250	.W0820
32840.W0006	6.4	10	Black	50	1.6	250	.W0820
32840.W0007	6.4	10	Blue	100	1.6	250	.W0820
32840.W0008	6.4	10	Blue	100	1.6	250	.W0820
32840.W0009	6.4	10	Blue	100	1.6	250	.W0820
32840.W0010	10.4	10	S/S	40	2.0	250	.W0820
32840.W0011	10.4	10	S/S	40	2.0	250	.W0820
32840.W0012	10.4	10	S/S	40	2.0	250	.W0820
32840.W0013	10.4	10	Black	75	2.0	250	.W0820
32840.W0014	10.4	10	Black	75	2.0	250	.W0820
32840.W0015	10.4	10	Black	75	2.0	250	.W0820
32840.W0016	10.4	10	Blue	100	2.0	250	.W0820
32840.W0017	10.4	10	Blue	100	2.0	250	.W0820
32840.W0018	10.4	10	Blue	100	2.0	250	.W0820
32840.W0019	16.9	16	S/S	100	3.2	250	.W0822
32840.W0020	16.9	16	S/S	100	3.2	250	.W0822
32840.W0021	16.9	16	S/S	100	3.2	250	.W0822
32840.W0022	16.9	16	Black	150	3.2	250	.W0822
32840.W0023	16.9	16	Black	150	3.2	250	.W0822
32840.W0024	16.9	16	Black	150	3.2	250	.W0822
32840.W0025	16.9	16	Blue	200	3.2	250	.W0822
32840.W0026	16.9	16	Blue	200	3.2	250	.W0822
32840.W0027	16.9	16	Blue	200	3.2	250	.W0822
32840.W0401	6.4	10	S/S	20	1.6	80	.W0820
32840.W0402	6.4	10	S/S	20	1.6	80	.W0820
32840.W0403	6.4	10	S/S	20	1.6	80	.W0820
32840.W0410	10.4	10	Black	40	2.0	80	.W0820
32840.W0411	10.4	10	Black	40	2.0	80	.W0820
32840.W0412	10.4	10	Black	40	2.0	80	.W0820
32840.W0419	16.9	16	Blue	100	3.2	80	.W0822
32840.W0420	16.9	16	Blue	100	3.2	80	.W0822
32840.W0421	16.9	16	Blue	100	3.2	80	.W0822



Side-Thrust Pins - Threaded without seal

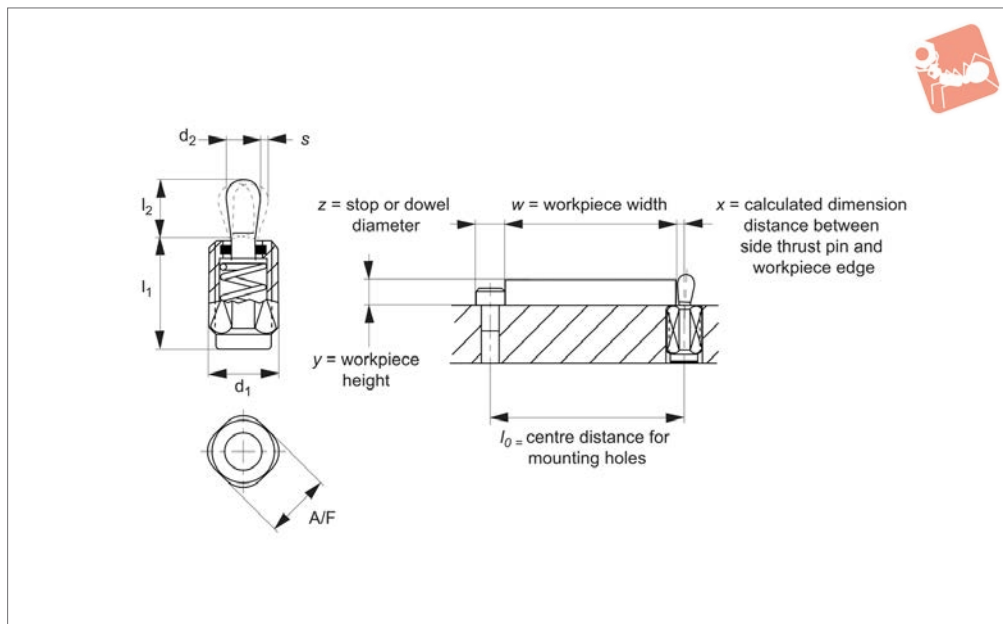


Spring Plunger & Detent Pins





32850



Material

Body: steel, zinc-plated by galvanization.
 Pin: steel, case hardened and galvanized, or thermoplastic (POM) white.
 Spring: steel (blackened or blue galvanized), or stainless steel.
 Seal: rubber (CR), 60 shore.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{[(l_2 - (d_2/2) - y) * 0.123]\}$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

Heavy spring load = steel spring, blue galvanized.

Order No.	Pin material	Spring load	d_1	d_2	$l_1 - 2$	Weight g
32850.W0001	Steel pin	Light	M12	5	11.5	4
32850.W0002	Steel pin	Light	M12	5	19.0	6
32850.W0003	Steel pin	Light	M12	5	26.5	8
32850.W0004	Steel pin	Standard	M12	5	11.5	4
32850.W0005	Steel pin	Standard	M12	5	19.0	6
32850.W0006	Steel pin	Standard	M12	5	26.5	8
32850.W0007	Steel pin	Heavy	M12	5	11.5	4
32850.W0008	Steel pin	Heavy	M12	5	19.0	7
32850.W0009	Steel pin	Heavy	M12	5	26.5	9
32850.W0010	Steel pin	Light	M12	6	11.5	5
32850.W0011	Steel pin	Light	M12	6	19.0	6
32850.W0012	Steel pin	Light	M12	6	26.5	8
32850.W0013	Steel pin	Standard	M12	6	11.5	5
32850.W0014	Steel pin	Standard	M12	6	19.0	7
32850.W0015	Steel pin	Standard	M12	6	26.5	10
32850.W0016	Steel pin	Heavy	M12	6	11.5	5
32850.W0017	Steel pin	Heavy	M12	6	19.0	8
32850.W0018	Steel pin	Heavy	M12	6	26.5	10
32850.W0019	Steel pin	Light	M18x1,5	10	18.0	19
32850.W0020	Steel pin	Light	M18x1,5	10	31.5	28



Side-Thrust Pins - Threaded with seal

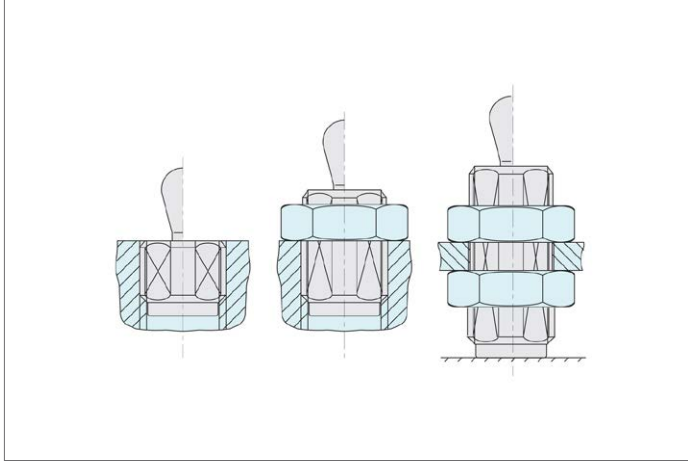


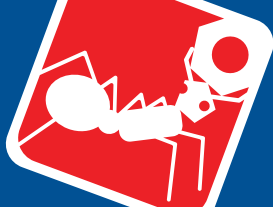
Spring Plunger & Detent Pins

Order No.	Pin material	Spring load	d ₁	d ₂	l ₁₋₂	Weight g
32850.W0021	Steel pin	Light	M18x1,5	10	45.0	36
32850.W0022	Steel pin	Standard	M18x1,5	10	18.0	20
32850.W0023	Steel pin	Standard	M18x1,5	10	31.5	29
32850.W0024	Steel pin	Standard	M18x1,5	10	45.0	39
32850.W0025	Steel pin	Heavy	M18x1,5	10	18.0	21
32850.W0026	Steel pin	Heavy	M18x1,5	10	31.5	30
32850.W0027	Steel pin	Heavy	M18x1,5	10	45.0	40
32850.W0401	Plastic pin	Light	M12	5	11.5	3
32850.W0402	Plastic pin	Light	M12	5	19.0	4
32850.W0403	Plastic pin	Light	M12	5	26.5	6
32850.W0410	Plastic pin	Light	M12	6	11.5	3
32850.W0411	Plastic pin	Light	M12	6	19.0	5
32850.W0412	Plastic pin	Light	M12	6	26.5	7
32850.W0419	Plastic pin	Light	M18x1,5	10	18.0	12
32850.W0420	Plastic pin	Light	M18x1,5	10	31.5	20
32850.W0421	Plastic pin	Light	M18x1,5	10	45.0	30

Order No.	l ₂	A/F	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32840
32850.W0001	6	10	S/S	20	0.8	250	.W0820
32850.W0002	6	10	S/S	20	0.8	250	.W0820
32850.W0003	6	10	S/S	20	0.8	250	.W0820
32850.W0004	6	10	Black	50	0.8	250	.W0820
32850.W0005	6	10	Black	50	0.8	250	.W0820
32850.W0006	6	10	Black	50	0.8	250	.W0820
32850.W0007	6	10	Blue	100	0.8	250	.W0820
32850.W0008	6	10	Blue	100	0.8	250	.W0820
32850.W0009	6	10	Blue	100	0.8	250	.W0820
32850.W0010	10	10	S/S	40	1.0	250	.W0820
32850.W0011	10	10	S/S	40	1.0	250	.W0820
32850.W0012	10	10	S/S	40	1.0	250	.W0820
32850.W0013	10	10	Black	75	1.0	250	.W0820
32850.W0014	10	10	Black	75	1.0	250	.W0820
32850.W0015	10	10	Black	75	1.0	250	.W0820
32850.W0016	10	10	Blue	100	1.0	250	.W0820
32850.W0017	10	10	Blue	100	1.0	250	.W0820
32850.W0018	10	10	Blue	100	1.0	250	.W0820
32850.W0019	16	16	S/S	100	1.6	250	.W0822
32850.W0020	16	16	S/S	100	1.6	250	.W0822
32850.W0021	16	16	S/S	100	1.6	250	.W0822
32850.W0022	16	16	Black	150	1.6	250	.W0822
32850.W0023	16	16	Black	150	1.6	250	.W0822
32850.W0024	16	16	Black	150	1.6	250	.W0822
32850.W0025	16	16	Blue	200	1.6	250	.W0822
32850.W0026	16	16	Blue	200	1.6	250	.W0822
32850.W0027	16	16	Blue	200	1.6	250	.W0822
32850.W0401	6	10	S/S	20	0.8	80	.W0820
32850.W0402	6	10	S/S	20	0.8	80	.W0820
32850.W0403	6	10	S/S	20	0.8	80	.W0820
32850.W0410	10	10	Black	40	1.0	80	.W0820
32850.W0411	10	10	Black	40	1.0	80	.W0820
32850.W0412	10	10	Black	40	1.0	80	.W0820
32850.W0419	16	16	Blue	100	1.6	80	.W0822
32850.W0420	16	16	Blue	100	1.6	80	.W0822
32850.W0421	16	16	Blue	100	1.6	80	.W0822

SPRING PLUNGER & DETENT PINS

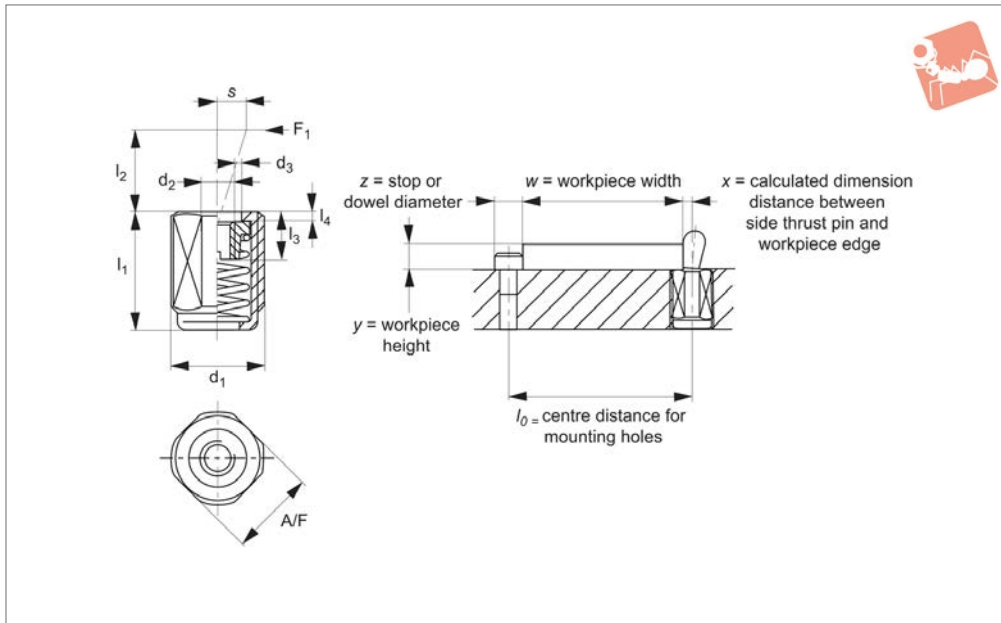




Side-Thrust Pins - Threaded

without seal - for use with pins of your own design

Spring Plunger & Detent Pins



32860.1

SPRING PLUNGER & DETENT PINS

Material

Body: aluminium.
Threaded washer: steel, blackened.
Spring: steel (blackened or blue galvanized), or stainless steel.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{[l_2 - (d_2/2) - y] * 0.123\}$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

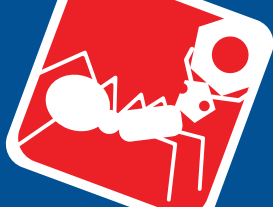
Heavy spring load = steel spring, blue galvanized.

Order No.	Spring load	d_1	d_2	d_3	l_{-2}	l_2	Weight g
32860.W0001	Light	M12	M4	6.1	11.5	4.0	3
32860.W0002	Light	M12	M4	6.1	19.0	4.0	5
32860.W0003	Light	M12	M4	6.1	26.5	4.0	7
32860.W0004	Standard	M12	M4	6.1	11.5	4.0	3
32860.W0005	Standard	M12	M4	6.1	19.0	4.0	6
32860.W0006	Standard	M12	M4	6.1	26.5	4.0	8
32860.W0007	Heavy	M12	M4	6.1	11.5	4.0	4
32860.W0008	Heavy	M12	M4	6.1	19.0	4.0	6
32860.W0009	Heavy	M12	M4	6.1	26.5	4.0	8
32860.W0010	Light	M12	M4	6.1	11.5	7.5	3
32860.W0011	Light	M12	M4	6.1	19.0	7.5	5
32860.W0012	Light	M12	M4	6.1	26.5	7.5	7
32860.W0013	Standard	M12	M4	6.1	11.5	7.5	3
32860.W0014	Standard	M12	M4	6.1	19.0	7.5	6
32860.W0015	Standard	M12	M4	6.1	26.5	7.5	8
32860.W0016	Heavy	M12	M4	6.1	11.5	7.5	4
32860.W0017	Heavy	M12	M4	6.1	19.0	7.5	6
32860.W0018	Heavy	M12	M4	6.1	26.5	7.5	9
32860.W0019	Light	M18x1,5	M6	10.1	18.0	11.5	15
32860.W0020	Light	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0021	Light	M18x1,5	M6	10.1	45.0	11.5	32
32860.W0022	Standard	M18x1,5	M6	10.1	18.0	11.5	14



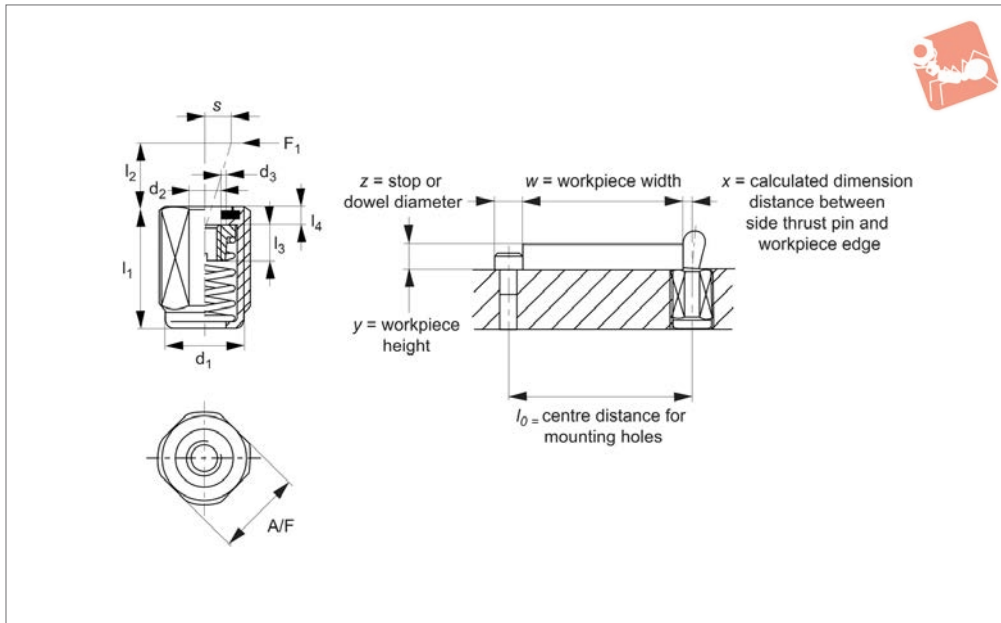
Order No.	Spring load	d ₁	d ₂	d ₃	l ₁₋₂	l ₂	Weight g
32860.W0023	Standard	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0024	Standard	M18x1,5	M6	10.1	45.0	11.5	32
32860.W0025	Heavy	M18x1,5	M6	10.1	18.0	11.5	14
32860.W0026	Heavy	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0027	Heavy	M18x1,5	M6	10.1	45.0	11.5	32

Order No.	l ₃	l ₄	A/F	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32840
32860.W0001	4.5	1.5	10	S/S	20	1.6	250	.W0820
32860.W0002	4.5	1.5	10	S/S	20	1.6	250	.W0820
32860.W0003	4.5	1.5	10	S/S	20	1.6	250	.W0820
32860.W0004	4.5	1.5	10	Black	50	1.6	250	.W0820
32860.W0005	4.5	1.5	10	Black	50	1.6	250	.W0820
32860.W0006	4.5	1.5	10	Black	50	1.6	250	.W0820
32860.W0007	4.5	1.5	10	Blue	100	1.6	250	.W0820
32860.W0008	4.5	1.5	10	Blue	100	1.6	250	.W0820
32860.W0009	4.5	1.5	10	Blue	100	1.6	250	.W0820
32860.W0010	4.5	1.5	10	S/S	40	2.0	250	.W0820
32860.W0011	4.5	1.5	10	S/S	40	2.0	250	.W0820
32860.W0012	4.5	1.5	10	S/S	40	2.0	250	.W0820
32860.W0013	4.5	1.5	10	Black	75	2.0	250	.W0820
32860.W0014	4.5	1.5	10	Black	75	2.0	250	.W0820
32860.W0015	4.5	1.5	10	Black	75	2.0	250	.W0820
32860.W0016	4.5	1.5	10	Blue	100	2.0	250	.W0820
32860.W0017	4.5	1.5	10	Blue	100	2.0	250	.W0820
32860.W0018	4.5	1.5	10	Blue	100	2.0	250	.W0820
32860.W0019	7.5	1.5	16	S/S	100	3.2	250	.W0822
32860.W0020	7.5	1.5	16	S/S	100	3.2	250	.W0822
32860.W0021	7.5	1.5	16	S/S	100	3.2	250	.W0822
32860.W0022	7.5	1.5	16	Black	150	3.2	250	.W0822
32860.W0023	7.5	1.5	16	Black	150	3.2	250	.W0822
32860.W0024	7.5	1.5	16	Black	150	3.2	250	.W0822
32860.W0025	7.5	1.5	16	Blue	200	3.2	250	.W0822
32860.W0026	7.5	1.5	16	Blue	200	3.2	250	.W0822
32860.W0027	7.5	1.5	16	Blue	200	3.2	250	.W0822



Side-Thrust Pins - Threaded with seal - for use with pins of your own design

Spring Plunger & Detent Pins



32860.2

SPRING PLUNGER & DETENT PINS

Material

Body: aluminium.
Threaded washer: steel, blackened
Spring: steel (blackened or blue galvanized), or stainless steel.
Seal: rubber (CR), 60 shore.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and

workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = natural stainless spring.

Standard spring load = steel spring, blackened.

Heavy spring load = steel spring, blue galvanized.

Order No.	Spring load	d_1	d_2	d_3	l_{-2}	l_2	Weight g
32860.W0401	Light	M12	M4	6.1	11.5	4.0	3
32860.W0402	Light	M12	M4	6.1	19.0	4.0	5
32860.W0403	Light	M12	M4	6.1	26.5	4.0	7
32860.W0404	Standard	M12	M4	6.1	11.5	4.0	3
32860.W0405	Standard	M12	M4	6.1	19.0	4.0	6
32860.W0406	Standard	M12	M4	6.1	26.5	4.0	8
32860.W0407	Heavy	M12	M4	6.1	11.5	4.0	4
32860.W0408	Heavy	M12	M4	6.1	19.0	4.0	6
32860.W0409	Heavy	M12	M4	6.1	26.5	4.0	8
32860.W0410	Light	M12	M4	6.1	11.5	7.5	3
32860.W0411	Light	M12	M4	6.1	19.0	7.5	5
32860.W0412	Light	M12	M4	6.1	26.5	7.5	7
32860.W0413	Standard	M12	M4	6.1	11.5	7.5	3
32860.W0414	Standard	M12	M4	6.1	19.0	7.5	6
32860.W0415	Standard	M12	M4	6.1	26.5	7.5	8
32860.W0416	Heavy	M12	M4	6.1	11.5	7.5	4
32860.W0417	Heavy	M12	M4	6.1	19.0	7.5	6
32860.W0418	Heavy	M12	M4	6.1	26.5	7.5	9
32860.W0419	Light	M18x1,5	M6	10.1	18.0	11.5	15
32860.W0420	Light	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0421	Light	M18x1,5	M6	10.1	45.0	11.5	32
32860.W0422	Standard	M18x1,5	M6	10.1	18.0	11.5	14



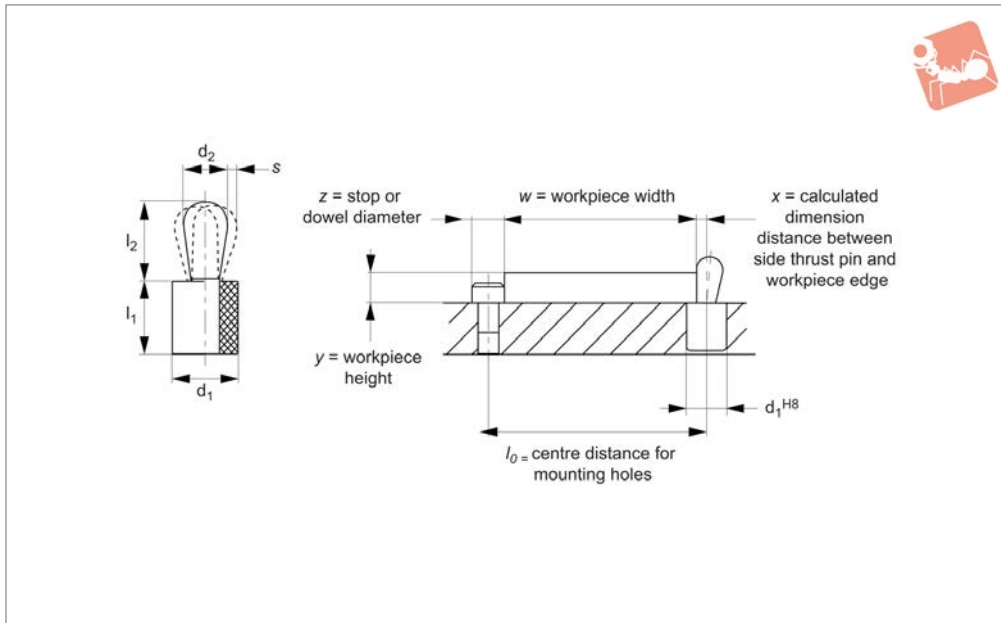
Order No.	Spring load	d ₁	d ₂	d ₃	l ₁₋₂	l ₂	Weight g
32860.W0423	Standard	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0424	Standard	M18x1,5	M6	10.1	45.0	11.5	32
32860.W0425	Heavy	M18x1,5	M6	10.1	18.0	11.5	14
32860.W0426	Heavy	M18x1,5	M6	10.1	31.5	11.5	23
32860.W0427	Heavy	M18x1,5	M6	10.1	45.0	11.5	32

Order No.	l ₃	l ₄	A/F	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32840
32860.W0401	4.5	2.0	10	S/S	20	1.6	110	.W0820
32860.W0402	4.5	2.0	10	S/S	20	1.6	110	.W0820
32860.W0403	4.5	2.0	10	S/S	20	1.6	110	.W0820
32860.W0404	4.5	2.0	10	Black	50	1.6	110	.W0820
32860.W0405	4.5	2.0	10	Black	50	1.6	110	.W0820
32860.W0406	4.5	2.0	10	Black	50	1.6	110	.W0820
32860.W0407	4.5	2.0	10	Blue	100	1.6	110	.W0820
32860.W0408	4.5	2.0	10	Blue	100	1.6	110	.W0820
32860.W0409	4.5	2.0	10	Blue	100	1.6	110	.W0820
32860.W0410	4.5	2.0	10	S/S	40	2.0	110	.W0820
32860.W0411	4.5	2.0	10	S/S	40	2.0	110	.W0820
32860.W0412	4.5	2.0	10	S/S	40	2.0	110	.W0820
32860.W0413	4.5	2.0	10	Black	75	2.0	110	.W0820
32860.W0414	4.5	2.0	10	Black	75	2.0	110	.W0820
32860.W0415	4.5	2.0	10	Black	75	2.0	110	.W0820
32860.W0416	4.5	2.0	10	Blue	100	2.0	110	.W0820
32860.W0417	4.5	2.0	10	Blue	100	2.0	110	.W0820
32860.W0418	4.5	2.0	10	Blue	100	2.0	110	.W0820
32860.W0419	7.5	2.3	16	S/S	100	3.2	110	.W0822
32860.W0420	7.5	2.3	16	S/S	100	3.2	110	.W0822
32860.W0421	7.5	2.3	16	S/S	100	3.2	110	.W0822
32860.W0422	7.5	2.3	16	Black	150	3.2	110	.W0822
32860.W0423	7.5	2.3	16	Black	150	3.2	110	.W0822
32860.W0424	7.5	2.3	16	Black	150	3.2	110	.W0822
32860.W0425	7.5	2.3	16	Blue	200	3.2	110	.W0822
32860.W0426	7.5	2.3	16	Blue	200	3.2	110	.W0822
32860.W0427	7.5	2.3	16	Blue	200	3.2	110	.W0822



Side-Thrust Pins with plastic spring

Spring Plunger & Detent Pins



32870

SPRING PLUNGER & DETENT PINS

Material

Spring Body: plastic.

Pin: steel, case hardened and galvanized, stainless steel or thermoplastic (POM) white.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = blue plastic.

Standard spring load = red plastic.

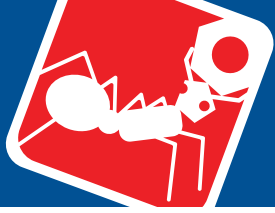
Heavy spring load = green plastic.

Order No.	Pin material	Spring load	d_1	d_2	l_{-1}	Weight g
32870.W0001	Steel Pin	Light	6	3	7	1
32870.W0002	Steel Pin	Standard	6	3	7	1
32870.W0003	Steel Pin	Light	8	4	9	1
32870.W0004	Steel Pin	Standard	8	4	9	1
32870.W0005	Steel Pin	Light	10	5	9	2
32870.W0006	Steel Pin	Standard	10	5	9	2
32870.W0007	Steel Pin	Heavy	10	5	9	2
32870.W0008	Steel Pin	Light	10	6	9	3
32870.W0009	Steel Pin	Standard	10	6	9	3
32870.W0010	Steel Pin	Heavy	10	6	9	3
32870.W0012	Steel Pin	Standard	12	8	13	7
32870.W0013	Steel Pin	Heavy	12	8	13	7
32870.W0014	Steel Pin	Standard	16	10	16	15
32870.W0015	Steel Pin	Heavy	16	10	16	15
32870.W0401	Plastic Pin	Light	6	3	7	1
32870.W0402	Plastic Pin	Standard	6	3	7	1
32870.W0403	Plastic Pin	Light	8	4	9	1
32870.W0404	Plastic Pin	Standard	8	4	9	1
32870.W0405	Plastic Pin	Light	10	5	9	2
32870.W0406	Plastic Pin	Standard	10	5	9	2
32870.W0407	Plastic Pin	Heavy	10	5	9	2
32870.W0408	Plastic Pin	Light	10	6	9	3
32870.W0409	Plastic Pin	Standard	10	6	9	3



Order No.	Pin material	Spring load	d ₁	d ₂	l ₁ -i	Weight g
32870.W0410	Plastic Pin	Heavy	10	6	9	3
32870.W0412	Plastic Pin	Standard	12	8	13	7
32870.W0413	Plastic Pin	Heavy	12	8	13	7
32870.W0414	Plastic Pin	Standard	16	10	16	15
32870.W0415	Plastic Pin	Heavy	16	10	16	15
32870.W0601	Stainless Pin	Light	6	3	7	1
32870.W0602	Stainless Pin	Standard	6	3	7	1
32870.W0603	Stainless Pin	Light	8	4	9	1
32870.W0604	Stainless Pin	Standard	8	4	9	1
32870.W0605	Stainless Pin	Light	10	5	9	2
32870.W0606	Stainless Pin	Standard	10	5	9	2
32870.W0607	Stainless Pin	Heavy	10	5	9	2
32870.W0608	Stainless Pin	Light	10	6	9	3
32870.W0609	Stainless Pin	Standard	10	6	9	3
32870.W0610	Stainless Pin	Heavy	10	6	9	3
32870.W0612	Stainless Pin	Standard	12	8	13	7
32870.W0613	Stainless Pin	Heavy	12	8	13	7
32870.W0614	Stainless Pin	Standard	16	10	16	15
32870.W0615	Stainless Pin	Heavy	16	10	16	15
32870.W0840	Fitting Tool	-	-	-	-	23
32870.W0841	Fitting Tool	-	-	-	-	47
32870.W0842	Fitting Tool	-	-	-	-	46
32870.W0843	Fitting Tool	-	-	-	-	98
32870.W0844	Fitting Tool	-	-	-	-	145

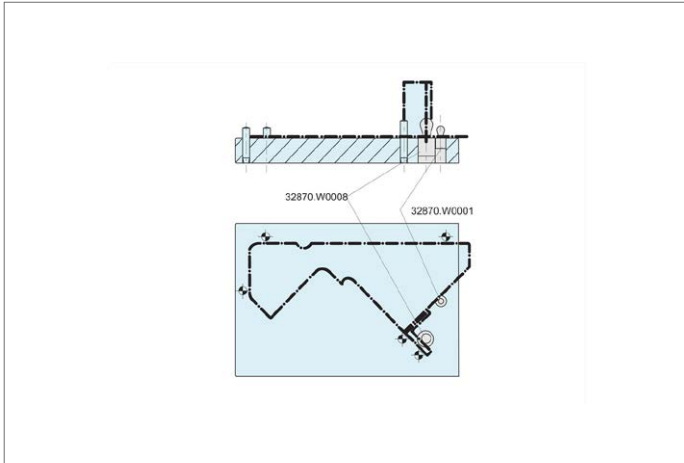
Order No.	l ₂ ±0.5	Location hole d ₁ tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32870
32870.W0001	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0002	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0003	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0004	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0005	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0006	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0007	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0008	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0009	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0010	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0012	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0013	13.3	11.9	Green	100	1.2	100	.W0843
32870.W0014	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0015	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0401	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0402	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0403	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0404	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0405	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0406	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0407	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0408	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0409	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0410	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0412	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0413	13.3	11.9	Green	100	1.2	100	.W0843
32870.W0414	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0415	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0601	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0602	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0603	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0604	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0605	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0606	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0607	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0608	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0609	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0610	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0612	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0613	13.3	11.9	Green	100	1.2	100	.W0843



Side-Thrust Pins with plastic spring

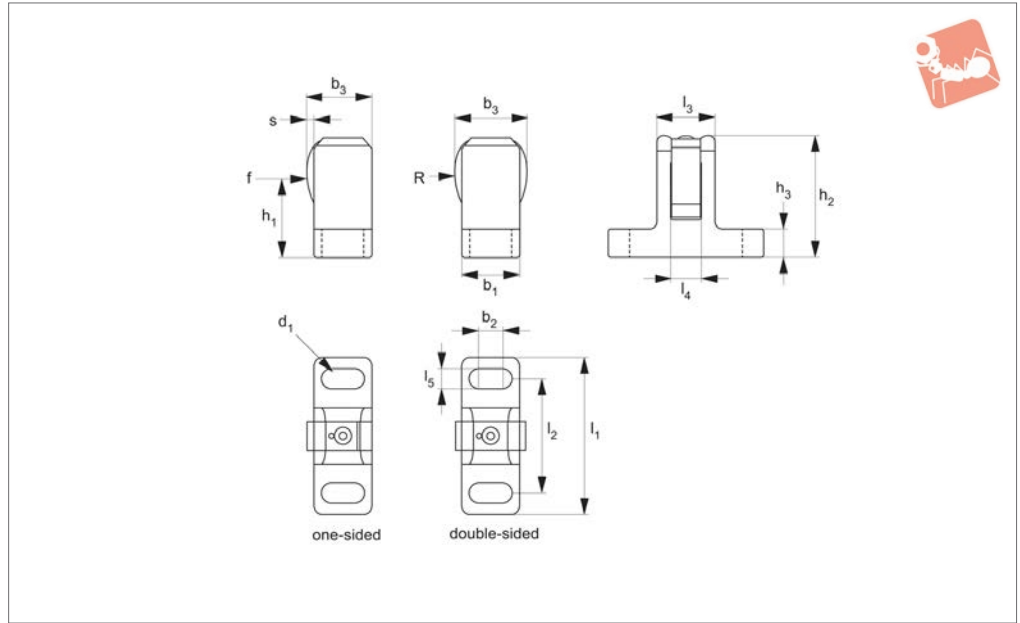


Order No.	l_2 ± 0.5	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance $^{\circ}\text{C}$ max.	Fitting tool 32870
32870.W0614	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0615	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0840	-	-	-	-	-	-	-
32870.W0841	-	-	-	-	-	-	-
32870.W0842	-	-	-	-	-	-	-
32870.W0843	-	-	-	-	-	-	-
32870.W0844	-	-	-	-	-	-	-





32802



Material

Body: steel, blackened.
Spring element: stainless steel.

Technical Notes

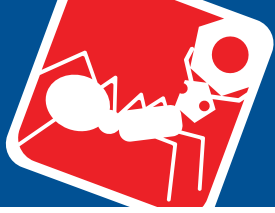
Simple and secure positioning of work

pieces or components. If component is mounted below height h_1 , a down hold clamping effect is present. Double sided version, ideal for multi-component clamping.

Max. temperature resistance 250°C

Order No.	Finish	d_1 for screw	h_1	$h_2 \pm 1$	h_3	$l_1 \pm 1$	l_2	l_3	l_4	Weight g
32802.W0006	One-Sided	M 6	28.5	43.0	10	55	40	20	10	130
32802.W0012	One-Sided	M12	40.5	61.5	15	72	50	23	12	255
32802.W0206	Double-Sided	M 6	28.5	42.5	10	55	40	20	10	135
32802.W0212	Double-Sided	M12	40.5	61.5	15	72	50	23	12	260

Order No.	l_5	$b_1 \pm 0.5$	b_2	b_3	s	Spring load F N ~	R
32802.W0006	6.6	20	8	22.5	1.5	55	22.5
32802.W0012	13.5	25	6	29.0	1.5	170	32.8
32802.W0206	6.6	20	8	25.0	1.5	55	22.5
32802.W0212	13.5	25	6	33.5	1.5	170	32.8



A Wide Selection of Solutions

- Locating and positioning.
- Indexing.
- Securing.
- Positive locking.
- Rapid adjustment of all kinds of tables, platforms and fixtures.
- Machine and fixture design.
- OEM products.
- Sports equipment.
- Medical aides (wheelchairs etc.).
- Aerospace.
- Machine cabinets.

Applications

Materials

Locking or Non Locking

Handling and Actuation Methods

Mounting Options

Additional Technical Notes

Spring Loads



Steel with plastic grip



Stainless with plastic grip



Stainless body and grip



Locking (park)



Non locking (spring back)



Push pull



Standard grip



Lever grip



T-handle



Pull ring



Threaded for bespoke handle



Fine threaded (standard)



Coarse thread



Flange mount



Thin wall mount



Weldable

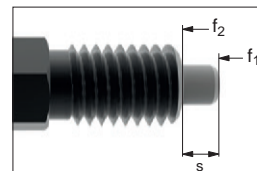
- Unless otherwise stated, grips on index plungers are not removable.
- Many of the pins on index plungers are toleranced to either the pin or the hole. Please refer to the specific product table.
- Index plungers are not recommended for shear load applications.

	Pin Tol.	Hole Tol.
①	h_9	+0,03 +0,08
②	-0,02 -0,04	H_7

s Stroke, or movement of plunger's pin.

f₁ The force required in Newtons (N) to overcome the static strength of the spring and achieve initial movement of the plunger's pin.

f₂ The force required in Newtons (N) to fully compress the spring until the pin is fully depressed against the plunger's body.



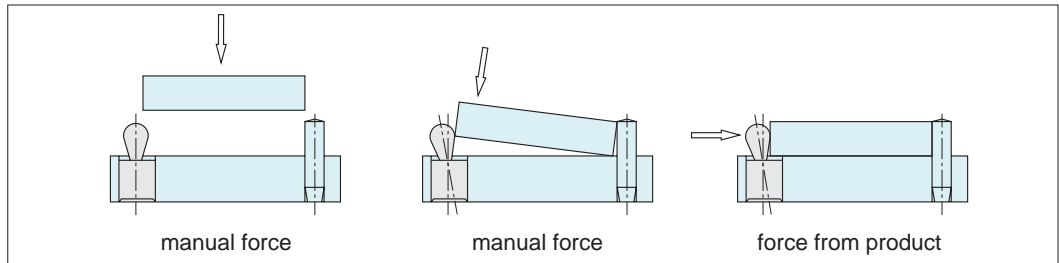


Wixroyd side-thrust pins are an economical way to clamp, hold and position components – from low height PCB's to relatively large castings.



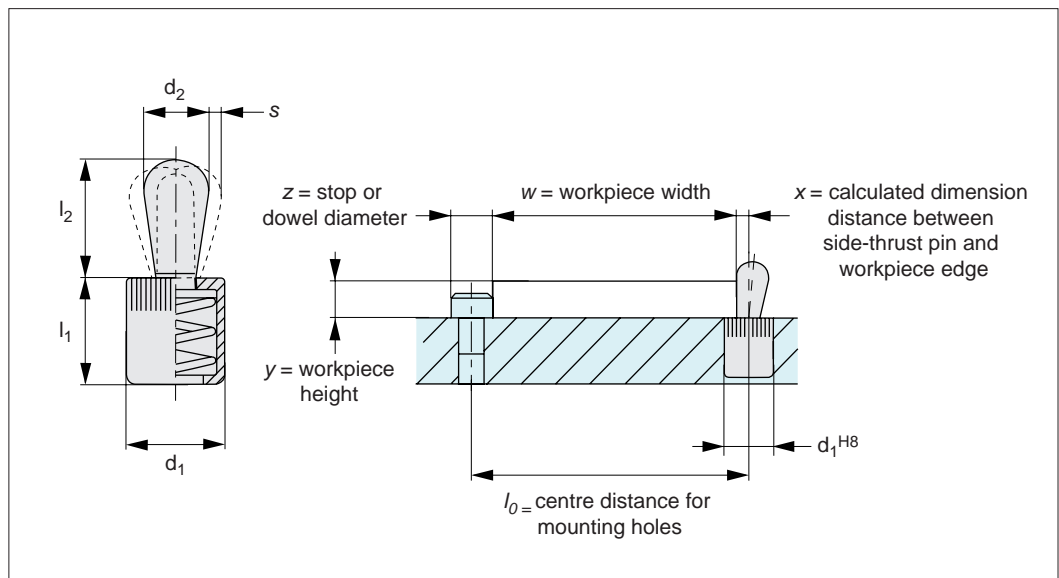
Easy to Use

Simple to mount, easy to use and space saving.



- Easy handling.
- Minimum mounting space.
- Simple and rapid changeover.
- Ideal for flat pieces.
- Reduced clamping times.
- Constant clamping pressure.

Installation Calculations of Side Thrust Pins



A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s$$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$$

l_0 = centre distance for mounting holes

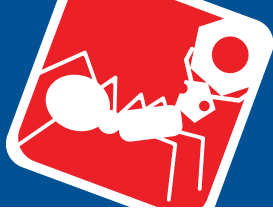
y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter



Wixroyd Side-Thrust Pins

factors to consider in pin selection

32810 - 32870
Positioning Elements

The best selection of side thrust pins is made with consideration to the following four factors:

- a) Pin size Ø
- b) Pin material
- c) Sealed or non-sealed pin
- d) Required pin force

Pin size Ø	Application
3 mm	Circuit boards, thin metals
4 mm	Electronics, measuring equipment, small precise parts
5 mm	Drilling jigs, sheet metal, measuring devices, welding fixtures
6 mm	Fixtures for light machine parts and castings
8 mm	Fixtures for medium machine parts and castings
10 mm	Fixtures for heavy machine parts and castings

Pin Size Ø

Plastic pins for sensitive parts. Steel pins for other parts. Stainless steel pins in corrosive environments.

Pin Material

With/without seal	Application	Operation
Use side-thrust pins with seal e.g. 32820, 32850 etc	Milling, drilling, reaming, broaching, honing, engraving	Machining
	Washing, polishing, painting, sand blasting	After machining
Use side-thrust pins without seal e.g. 32810, 32840 etc	Gluing, welding, hard soldering	Prior to machining
	Gripping, inserting, fitting	Final mounting
	Measuring, controlling, loading	Quality assurance
	Soft soldering, checking	Processing circuit boards

Sealed or Non-sealed Pin

Positioning applications 30 - 60 N. Clamping applications 90 - 150 N.

Pinforce - Guide Only

Available in an aluminium body, and in various spring pressures from 10 to 300N. Each pin size is usually available in 3 spring pressures.

Pressure	Low	Medium	High
Spring Colour	Stainless	Black	Blue

Compression Spring Type

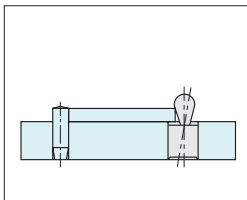
Available in elastomer body and in various spring pressures from 10 to 160N.

Elastomer Spring Type

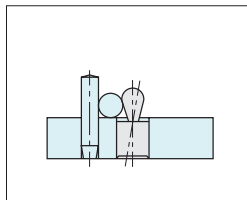
Side-thrust pins find applications in the following industries and more:

- Automotive.
- Aviation.
- Electronics.
- Computing.
- Plastics.
- Medical.
- Precision engineering.
- Tool manufacturing.

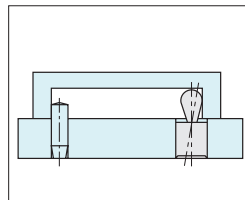
Typical Applications



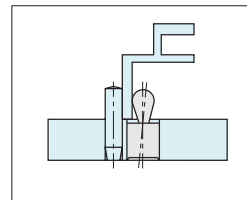
Positioning and clamping even extremely flat parts (e.g. metal sheets and printed circuit boards).



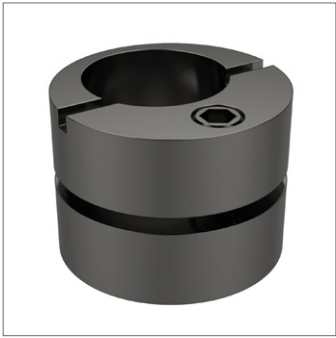
Positioning and clamping round metal using the deep drawing effect.



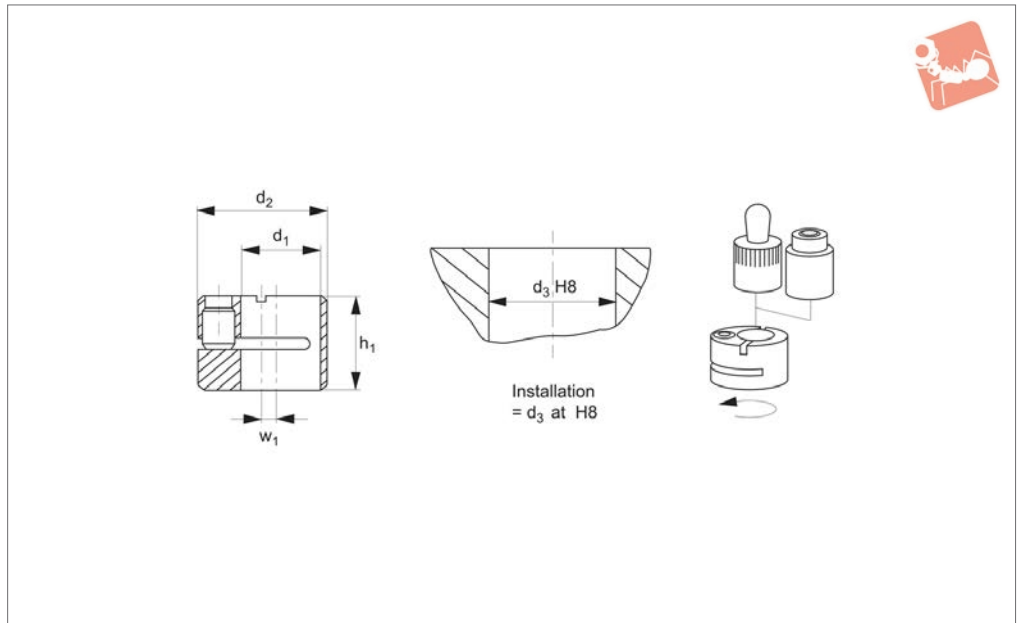
Space saving positioning and clamping from the inside to the outside.



Positioning and clamping different profiles when welding. Material expansions compensated for by flexibility of the side-thrust pin.



32900



Material

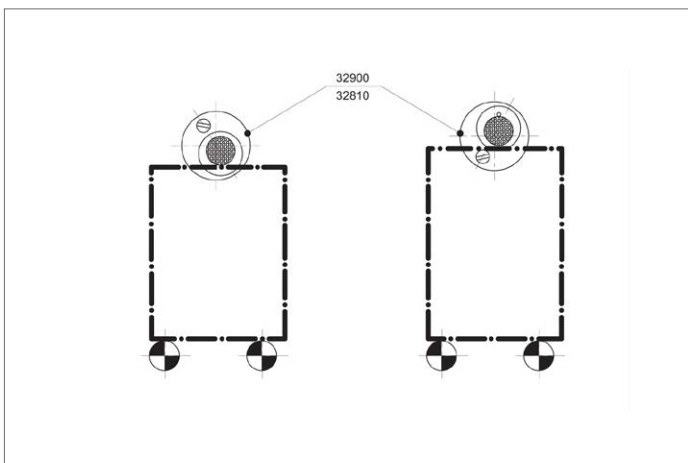
Steel, blackend.

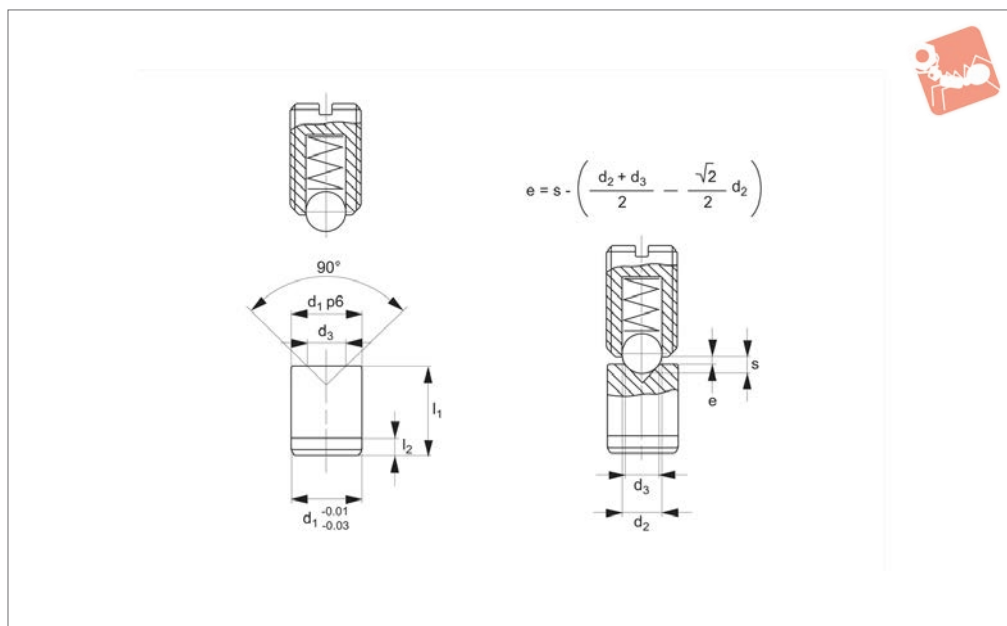
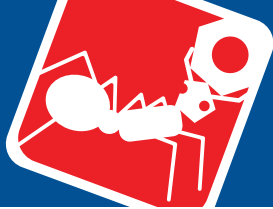
side-thrust pins nos. 32810, 32820 and side-thrust roller bearing no. 32880 when workpieces have large tolerances.

Technical Notes

The eccentric bushings are used to position

Order No.	d ₁ tol. H8	d ₂ tol. h9	d ₃ tol. H8	w ₁	h ₁	Weight g
32900.W0001	6	12	12	2	9.9	6
32900.W0003	10	16	16	2	11.9	10
32900.W0004	12	18	18	2	13.9	13
32900.W0005	16	25	25	3	17.9	35





32440

SPRING PLUNGER & DETENT PINS

Material

Burnished, ground, hardened steel.

Technical Notes

Striker bushings are used together with spring plungers when a contact surface is required with high resistance. In particular

they are recommended for use with spring plungers equipped with high load value and those with increased spring loads.

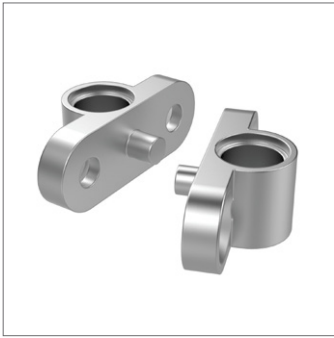
Tips

For dimensions d2 and s, please see corresponding spring plunger. Striker bushes

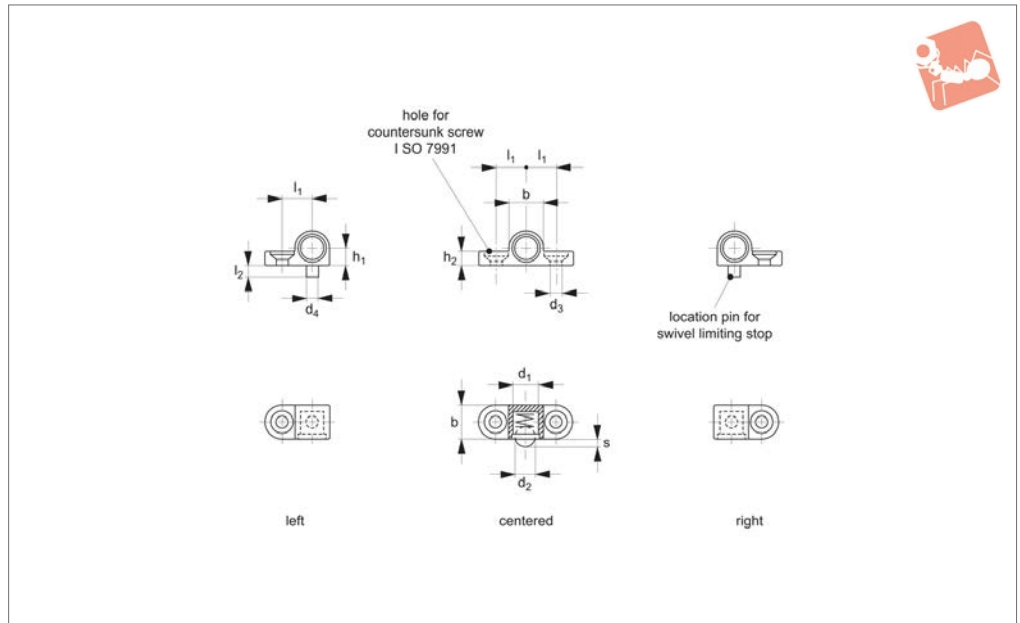
are for use with Wixroyd nos. 31500, 32100, 32150, 32200 & 32300 see stated ,e' values for each type.

Order No.	d ₁ tol. p6	d ₂ & s		d ₃	l ₁ ±0.05	Weight g
32440.W0004	4	See corresponding plunger table		1.5	5	1
32440.W0005	5	See corresponding plunger table		2.0	6	1
32440.W0006	6	See corresponding plunger table		2.0	8	2
32440.W0008	8	See corresponding plunger table		3.0	10	4
32440.W0010	10	See corresponding plunger table		4.0	12	7
32440.W0012	12	See corresponding plunger table		6.0	14	12
32440.W0016	16	See corresponding plunger table		8.0	18	26

Order No.	l ₂	For 32100 e =	For 32150 e =	For 32200 e =	For 32300 e =
32440.W0004	2	M_4 = 0,6	M_4 = 1,1	M_4 = 1,1	-
32440.W0005	2	M_5 = 0,4	M_5 = 1,5	M_5 = 1,8	Ø 4 mm = 0,4
32440.W0006	2	M_6 = 0,6	M_6 = 1,6	M_6 = 2,1	Ø 5 mm = 0,8
32440.W0008	2	M_8 = 0,9	M_8 = 1,3	M_8 = 2,2	Ø 6 mm = 1,1
32440.W0010	3	M10 = 1,2	M10 = 1,4	M10 = 1,8	Ø 8 mm = 1,2
32440.W0012	3	M12 = 1,2	M12 = 1,7	M12 = 2,2	Ø 10 mm = 1,9
32440.W0016	3	M16 = 1,6	M16 = 2,3	M16 = 2,5	Ø 12 mm = 1,9



32450



Material

Die-cast zinc, nickel plated.

available.

32300#26>, their small dimensions make them ideal for confined spaces.

Technical Notes

Left, right and centre mounting options

Tips

Assist in the easy mounting of smooth bodied spring plunger 32300<X\

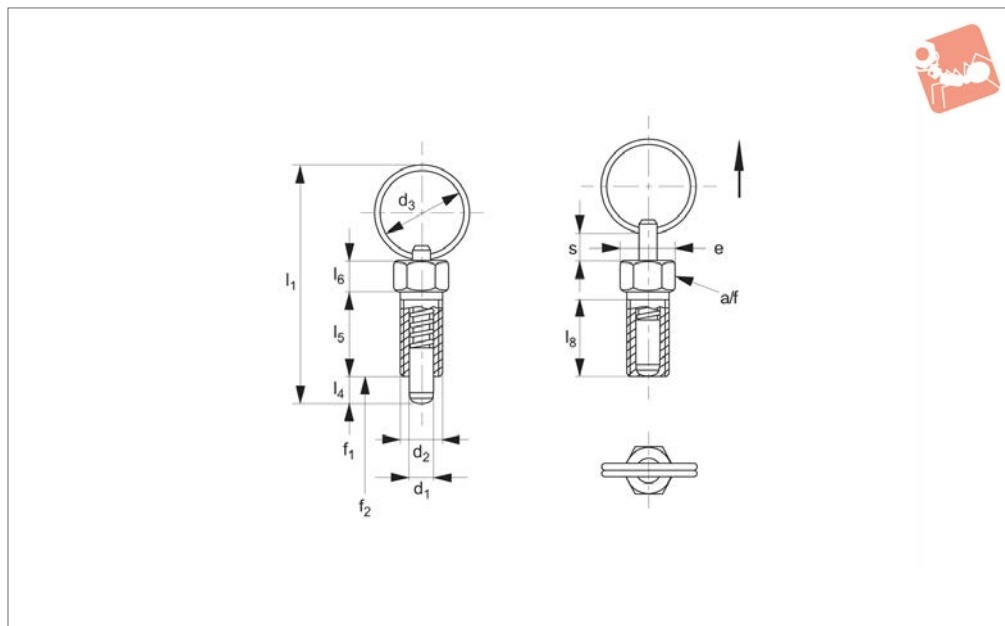
Order No.	Type	Ball dia. plunger 32300 d_2	Body dia. plunger 32300 d_1 -0.05	d_3 for countersunk screw ISO 7991	d_4 -0.05	b	h_1 ± 0.05	h_2	l_1 ± 0.05	l_2	w -0.1 stroke
32450.W0006	Left	5,0	6	M 3-3,2	3	8,5	4,25	3,2	7,5	3	1,5
32450.W0008	Left	6,5	8	M 4-4,3	4	10,5	5,25	4,2	9,5	4	1,8
32450.W0016	Right	5,0	6	M 3-3,2	3	8,5	4,25	3,2	7,5	3	1,5
32450.W0018	Right	6,5	8	M 4-4,3	4	10,5	5,25	4,2	9,5	4	1,8
32450.W0026	Centered	5,0	6	M 3-3,2	3	8,5	4,25	3,2	7,5	3	1,5
32450.W0028	Centered	6,5	8	M 4-4,3	4	10,5	5,25	4,2	9,5	4	1,8



Index Plungers - Pull Ring

non-locking - coarse thread

Index Plunger & Pins



32550

INDEX PLUNGER & PINS

Material

Body: free cutting steel, galvanized.
 Pin: stainless steel 1.4305 (AISI 303).
 Pull Ring: stainless steel 1.4310 (AISI 301).

not required.

Coarse thread.

Temperature resistance up to 250°C

Lock nuts sold separately. See products 65690 and 65692

Technical Notes

For applications where high precision is

Tips

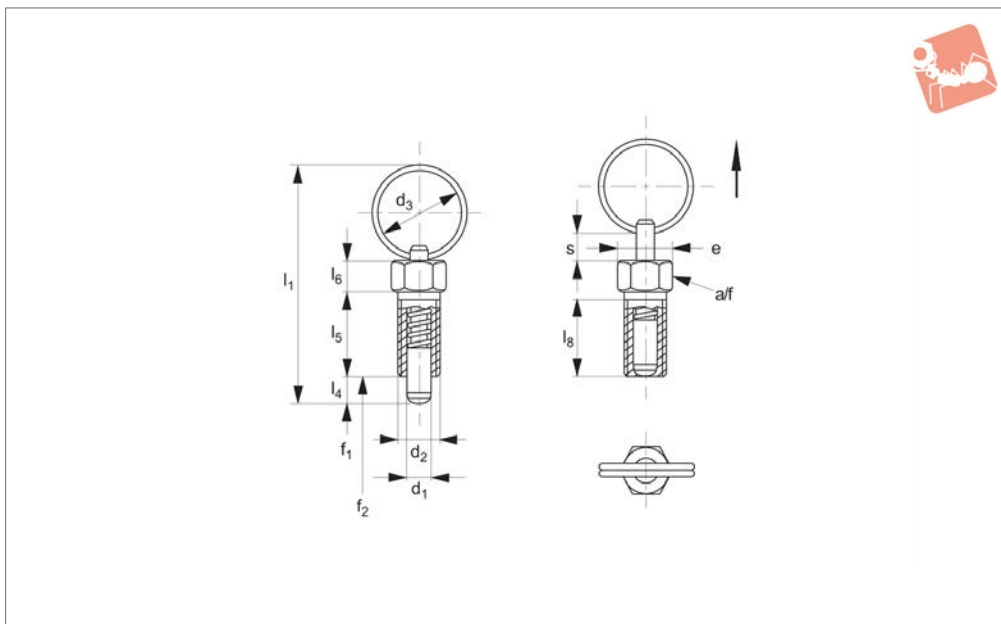
Spring loads * = statistical average

Order No.	Type	d ₁ tol. h9	d ₂	d ₃	e	l ₁	l ₄ =s min.	l ₅	l ₆	l ₈	A/F	Spring load	Spring load	Tightening torque	Weight
												F ₁ N ≈	F ₂ N ≈	Nm max.	g
32550.W0723	Non Locking	3	M 6x1,00	14	6,9	34,0	3,5	12	4,5	10,0	6	3	12	2	3,2
32550.W0724	Non Locking	4	M 6x1,00	14	6,9	34,5	4	12	4,5	10,0	6	3	12	2	3,6
32550.W0725	Non Locking	5	M 8x1,25	18	9,2	45,0	5	15	6,0	13,5	8	5	24	7	8,4
32550.W0726	Non Locking	6	M10x1,50	24	11,5	57,5	6	20	7,5	17,0	10	5	21	15	17,0
32550.W0728	Non Locking	8	M12x1,75	30	13,8	71,0	8	24	9,0	20,5	12	6	22	20	31,0





32551



Material

Body: stainless steel 1.4305 (AISI 303).
 Pin: stainless steel 1.4305 (AISI 303).
 Pull ring: stainless steel 1.4310 (AISI 301).

Coarse thread.

Temperature resistance up to 250°C
Lock nuts sold separately. See products 65690 and 65692

Technical Notes

For applications where high precision is not required.

Tips

Spring loads * = statistical average.

Order No.	Type	d ₁ tol. h9	d ₂	d ₃	e	l ₁	l ₄ =s min.	l ₅	l ₆	l ₈	A/F	Spring load		Tightening torque Nm max.	Weight g
												F ₁ N ≈	F ₂ N ≈		
32551.W0773	Non Locking	3	M 6x1,00	14	6,9	34,0	3,5	12	4,5	10,0	6	3	12	2	3,2
32551.W0774	Non Locking	4	M 6x1,00	14	6,9	34,5	4	12	4,5	10,0	6	3	12	2	3,6
32551.W0775	Non Locking	5	M 8x1,25	18	9,2	45,0	5	15	6,0	13,5	8	5	24	7	8,4
32551.W0776	Non Locking	6	M10x1,50	24	11,5	57,5	6	20	7,5	17,0	10	5	21	15	17,0
32551.W0778	Non Locking	8	M12x1,75	30	13,8	71,0	8	24	9,0	20,5	12	6	22	30	31,0

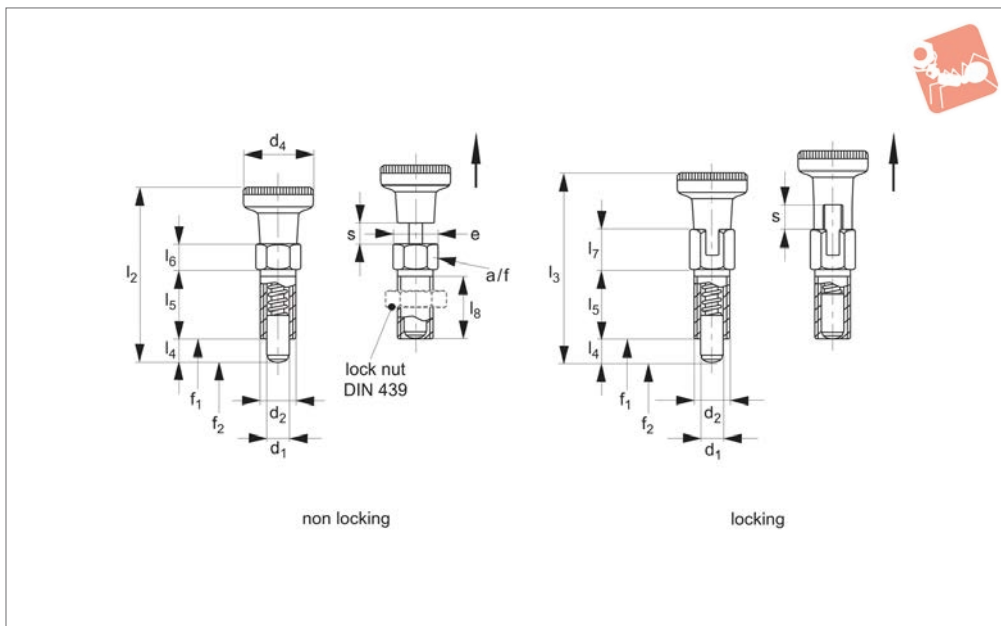




Index Plungers - Pull Grip

steel - coarse thread

Index Plunger & Pins



32570

INDEX PLUNGER & PINS

Material

Body: steel, galvanized.
Pin: stainless steel 1.4305 (AISI 303).
Grip: thermoplastic PA 6, black.

back grip, turn 90° to engage ,locking' on a notched catch.
„Non Locking” type- pin simply springs back when grip released.

Temperature resistance -30° C to +80° C.
Lock nuts sold separately. See products 65690 and 65692

Tips

Grip non-removable.
Spring loads * = statistical average.

Technical Notes

„Locking” type- enable pin to be held in retracted/non-projecting position; pull

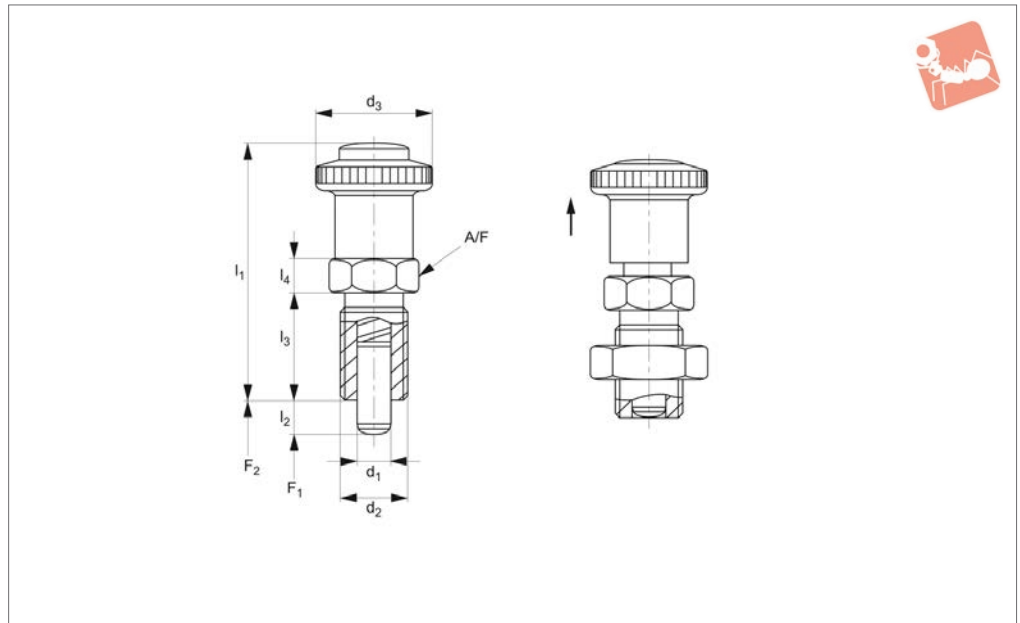
For applications where high precision is not required.
Coarse thread.

Order No.	Type	Material	d ₁	d ₂	d ₄	l ₂	l ₃	Weight g
32570.W0743	Non Lock	-	3	M 6x1,00	12	30.0	-	3.6
32570.W0744	Non Lock	Steel	4	M 6x1,00	12	30.5	-	4.0
32570.W0745	Non Lock	Steel	5	M 8x1,25	16	40.0	-	9.2
32570.W0746	Non Lock	Steel	6	M10x1,50	18	49.0	-	18.0
32570.W0748	Non Lock	Steel	8	M12x1,75	21	59.0	-	32.0
32570.W0763	Lock	-	3	M 6x1,00	12	-	32.5	3.8
32570.W0764	Lock	Steel	4	M 6x1,00	12	-	33.0	4.2
32570.W0765	Lock	Steel	5	M 8x1,25	16	-	43.5	9.8
32570.W0766	Lock	Steel	6	M10x1,50	18	-	52.0	18.0
32570.W0768	Lock	Steel	8	M12x1,75	21	-	63.5	32.0

Order No.	l ₄ =s	l ₅	l ₆	l ₇	l ₈	e	A/F	Spring load F ₁ N	Spring load F ₂ N	Tightening torque Nm
32570.W0743	3.5	12	4.5	-	10.0	6.9	6	3	12	2
32570.W0744	4	12	4.5	-	10.0	6.9	6	3	12	2
32570.W0745	5	16	6.0	-	13.5	9.2	8	5	24	7
32570.W0746	6	20	7.5	-	17.0	11.5	10	5	21	15
32570.W0748	8	24	9.0	-	20.5	13.8	12	6	22	20
32570.W0763	3.5	12	-	7.0	10.0	6.9	6	3	12	2
32570.W0764	4	12	-	7.0	10.0	6.9	6	3	12	2
32570.W0765	5	16	-	9.5	13.5	9.2	8	5	24	7
32570.W0766	6	20	-	10.5	17.0	11.5	10	5	21	15
32570.W0768	8	24	-	13.5	20.5	13.8	12	6	22	20



32494



Material

Body: steel, blackened or stainless steel 1.4305.

Knob: thermoplastic, black-grey, matt.

Button: thermoplastic POM, red.

Locking pin: steel, hardened or stainless steel, nickel-plated.

Technical Notes

Press red button and hold whilst pulling

knob to release pin.

Temperature range -30 to +80°C.

Tips

Knob is non removable.

Lock nuts available separately.

Used with:

32510 Mounting blocks.

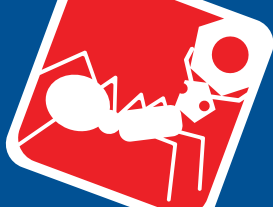
32700 Lock nut .

32750 Distance collars.

32752 Locating bushes.

32753 Locating bushes.

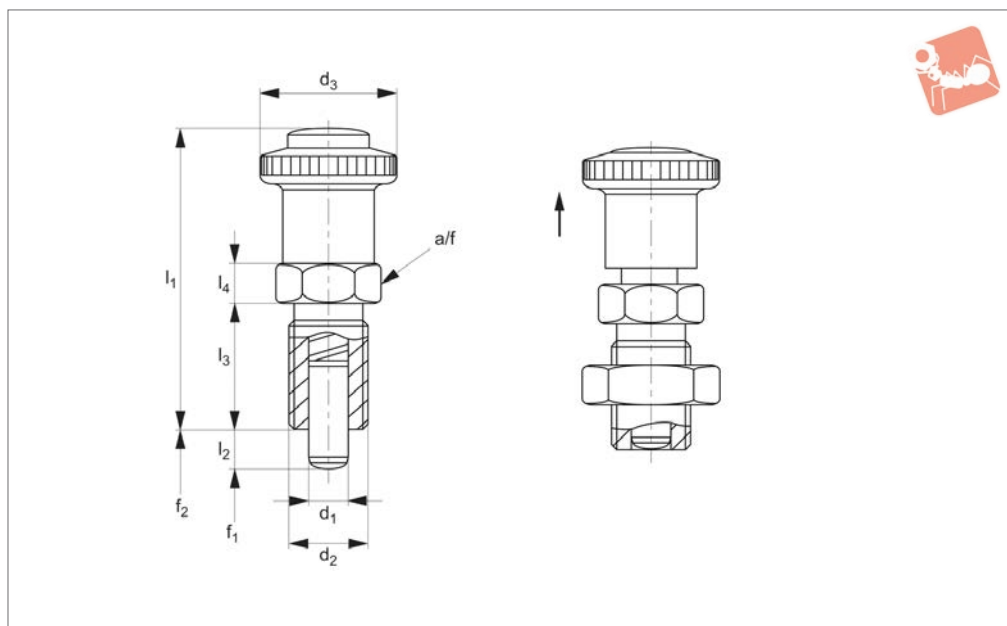
Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3	l_4	A/F	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32494.W0005	Steel	6	M12x1,5	28	56	6	22	6	19	6.5	19	44
32494.W0010	Steel	6	M12x1,5	28	56	9	22	6	19	6.0	25	45
32494.W0015	Steel	8	M16x1,5	28	62	8	26	8	19	8.5	26	70
32494.W0020	Steel	8	M16x1,5	28	62	12	26	8	19	8.5	28	72
32494.W0025	Steel	10	M16x1,5	28	62	12	26	8	19	9.5	38	74
32494.W0105	Stainless	6	M12x1,5	28	56	6	22	6	19	6.5	19	44
32494.W0110	Stainless	6	M12x1,5	28	56	9	22	6	19	6.0	25	45
32494.W0115	Stainless	8	M16x1,5	28	62	8	26	8	19	8.5	26	70
32494.W0120	Stainless	8	M16x1,5	28	62	12	26	8	19	8.5	28	72
32494.W0125	Stainless	10	M16x1,5	28	62	12	26	8	19	9.5	38	74



Index Plungers -Pull Grip

Rapid locking head

Index Plunger & Pins



32495

INDEX PLUNGER & PINS

Material

Body:

Steel: Steel, blackened.

Stainless: Stainless steel 1.4305.

Knob: thermoplastic, black-grey, matt.

Button: thermoplastic POM, red.

Locking pin. Steel: hardened.

Stainless: stainless steel 1.4305, nickel-plated.

Technical Notes

Pull knob up, red button flush = pin locked.

Press red button, red button out = pin unlocked.

Temperature range -30 to +80 °C.

Tips

Knob is non removable.

Lock nuts available separately.

Used with:

32510 Mounting blocks.

32700 Lock nut .

32750 Distance collars.

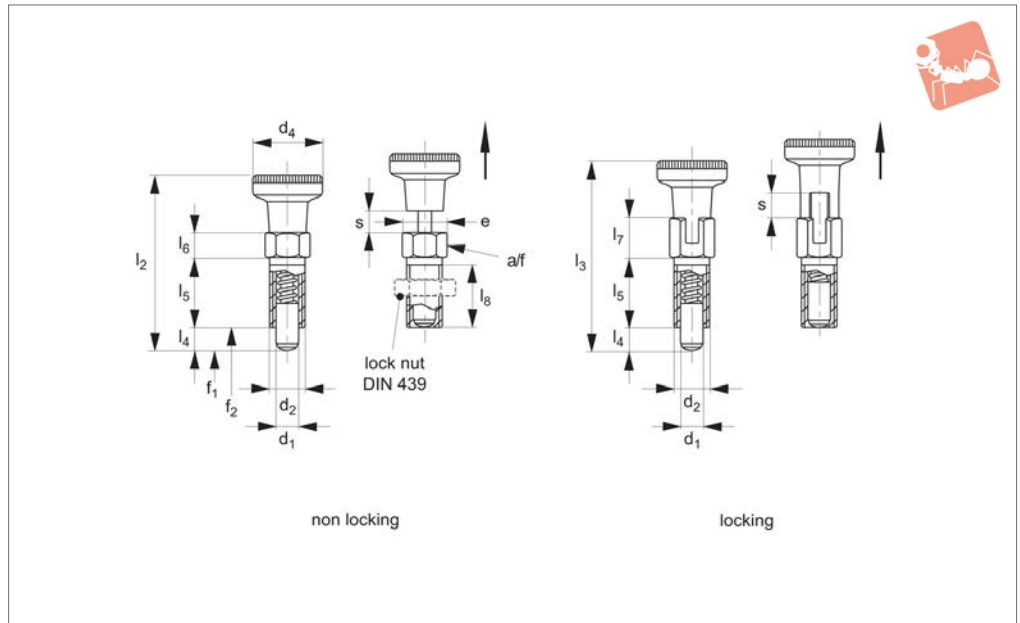
32752 Locating bushes.

32753 Locating bushes.

Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3	l_4	A/F	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32495.W0205	Steel	6	M12x1,5	30	53.5	6	22	6	19	6.5	19	47
32495.W0210	Steel	6	M12x1,5	30	53.5	9	22	6	19	6.0	25	48
32495.W0215	Steel	8	M16x1,5	30	59.5	8	26	8	19	8.5	26	74
32495.W0220	Steel	8	M16x1,5	30	59.5	12	26	8	19	8.5	28	77
32495.W0225	Steel	10	M16x1,5	30	59.5	12	26	8	19	9.5	38	78
32495.W0305	Stainless	6	M12x1,5	30	53.5	6	22	6	19	6.5	19	47
32495.W0310	Stainless	6	M12x1,5	30	53.5	9	22	6	19	6.0	25	48
32495.W0315	Stainless	8	M16x1,5	30	59.5	8	26	8	19	8.5	26	74
32495.W0320	Stainless	8	M16x1,5	30	59.5	12	26	8	19	8.5	28	77
32495.W0325	Stainless	10	M16x1,5	30	59.5	12	26	8	19	9.5	38	78



32571



Material

Body: stainless steel 1.4305 (AISI 303).
Pin: stainless steel 1.4305 (AISI 303).
Grip: thermoplastic PA 6, black.

Technical Notes

„Locking“ type- enable pin to be held in

retracted/non-projecting position; pull back grip, turn 90° to engage „locking“ on a notched catch.

„Non Locking“ type- pin simply springs back when grip released.

For applications where high precision is

not required.

Coarse thread.

Temperature resistance -30° C to +80° C.

Tips

Grip non-removable.

Spring loads * = statistical average.

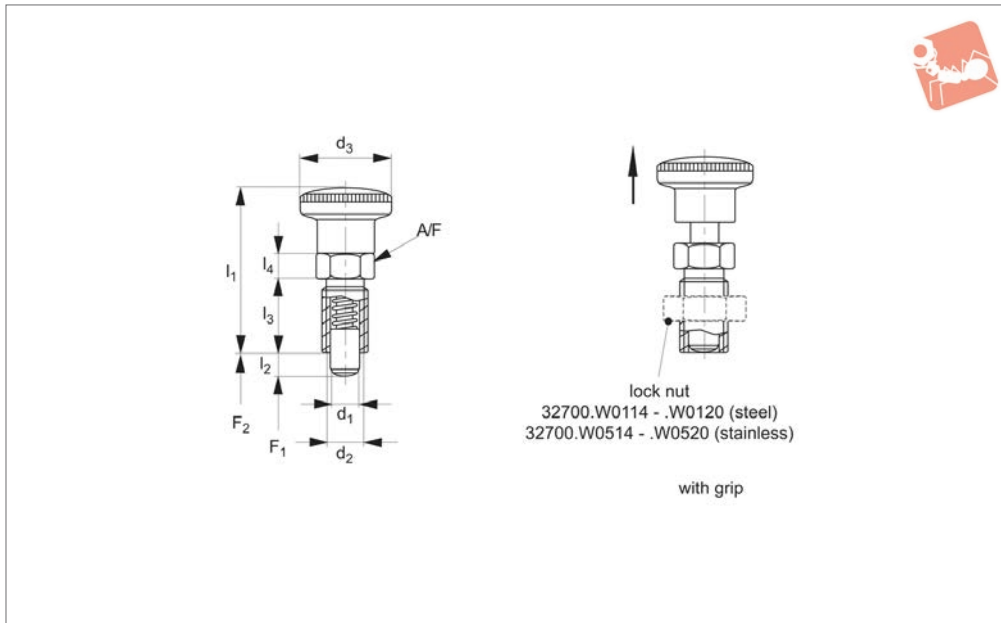
Order No.	Type	Material	d ₁ tol. h9	d ₂	d ₄	l ₂	l ₃	l ₄ =s min.	l ₅	l ₆	l ₇	l ₈	e	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Tightening torque Nm max.	Weight g
32571.W0783	Non Lock	Stainless	3	M 6x1,00	12	30,0	3,5	12	4,5	10,0	6,9	6	3	12	2	3,2		
32571.W0784	Non Lock	Stainless	4	M 6x1,00	12	30,5	4,0	12	4,5	10,0	6,9	6	3	12	2	4,0		
32571.W0785	Non Lock	Stainless	5	M 8x1,25	16	40,0	5,0	16	6,0	13,5	9,2	8	5	24	7	9,2		
32571.W0786	Non Lock	Stainless	6	M10x1,50	18	49,0	6,0	20	7,5	17,0	11,5	10	5	21	15	18,0		
32571.W0788	Non Lock	Stainless	8	M12x1,75	21	59,0	8,0	24	9,0	20,5	13,8	12	6	22	20	32,0		
32571.W0793	Lock	Stainless	3	M 6x1,00	12	32,5	3,5	12	7,0	10,0	6,9	6	3	12	2	3,8		
32571.W0794	Lock	Stainless	4	M 6x1,00	12	33,0	4,0	12	7,0	10,0	6,9	6	3	12	2	4,2		
32571.W0795	Lock	Stainless	5	M 8x1,25	16	43,5	5,0	16	9,5	13,5	9,2	8	5	24	7	9,8		
32571.W0796	Lock	Stainless	6	M10x1,50	18	52,0	6,0	20	10,5	17,0	11,5	10	5	21	15	18,0		
32571.W0798	Lock	Stainless	8	M12x1,75	21	63,5	8,0	24	13,5	20,5	13,8	12	6	22	20	32,0		



Index Plungers - Pull Grip

compact - non-locking

Index Plunger & Pins



32680

INDEX PLUNGER & PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„Non Locking“ type- pin simply springs back when grip released.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation. Benefits from a more compact design and hence shorter overall length.

Temperature resistance from -30° to +80°C.

Distance collars no. 32750 can be used to adapt screw length.

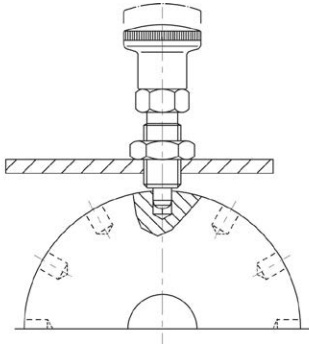
Lock nuts sold separately. See products 65690 and 65692

Tips

Grip non-removable.

Spring loads * = statistical average.

Order No.	Type	Material	d ₁ -0.02 -0.04	d ₂	d ₃	l ₁	l ₂ min.	l ₃	l ₄	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32680.W0103	No Lock	Steel	4	M 8x1,0	16	35.0	4	16	5	10	4.5	12.0	10
32680.W0104	No Lock	Steel	4	M 8x1,0	16	35.0	6	16	5	10	4.0	12.5	10
32680.W0106	No Lock	Steel	5	M10x1,0	19	40.0	5	18	6	12	5.0	15.5	18
32680.W0107	No Lock	Steel	5	M10x1,0	19	40.0	8	18	6	12	5.0	18.0	18
32680.W0109	No Lock	Steel	6	M12x1,5	23	48.0	6	22	6	14	6.5	19.0	29
32680.W0110	No Lock	Steel	6	M12x1,5	23	48.0	9	22	6	14	6.0	25.0	29
32680.W0112	No Lock	Steel	8	M16x1,5	28	58.0	8	26	8	17	8.5	26.0	62
32680.W0113	No Lock	Steel	8	M16x1,5	28	58.0	12	26	8	17	8.5	28.0	62
32680.W0115	No Lock	Steel	10	M16x1,5	28	58.0	12	26	8	17	9.5	38.0	63
32680.W0116	No Lock	Steel	12	M20x1,5	33	67.0	15	33	10	22	11.5	40.0	117
32680.W0117	No Lock	Steel	16	M24x 2	33	78.5	20	38	12	27	13.0	54.0	204
32680.W0203	No Lock	Stainless	4	M 8x1,0	16	35.0	4	16	5	10	4.5	12.0	10
32680.W0204	No Lock	Stainless	4	M 8x1,0	16	35.0	6	16	5	10	4.0	12.5	10
32680.W0206	No Lock	Stainless	5	M10x1,0	19	40.0	5	18	6	12	5.0	15.5	18
32680.W0207	No Lock	Stainless	5	M10x1,0	19	40.0	8	18	6	12	5.0	18.0	18
32680.W0209	No Lock	Stainless	6	M12x1,5	23	48.0	6	22	6	14	6.5	19.0	29
32680.W0210	No Lock	Stainless	6	M12x1,5	23	48.0	9	22	6	14	6.0	25.0	29
32680.W0212	No Lock	Stainless	8	M16x1,5	28	58.0	8	26	8	17	8.5	26.0	62
32680.W0213	No Lock	Stainless	8	M16x1,5	28	58.0	12	26	8	17	8.5	28.0	62
32680.W0215	No Lock	Stainless	10	M16x1,5	28	58.0	12	26	8	17	9.5	38.0	63
32680.W0216	No Lock	Stainless	12	M20x1,5	33	67.0	15	33	10	22	11.5	40.0	117
32680.W0217	No Lock	Stainless	16	M24x 2	33	78.5	20	38	12	27	-	-	204

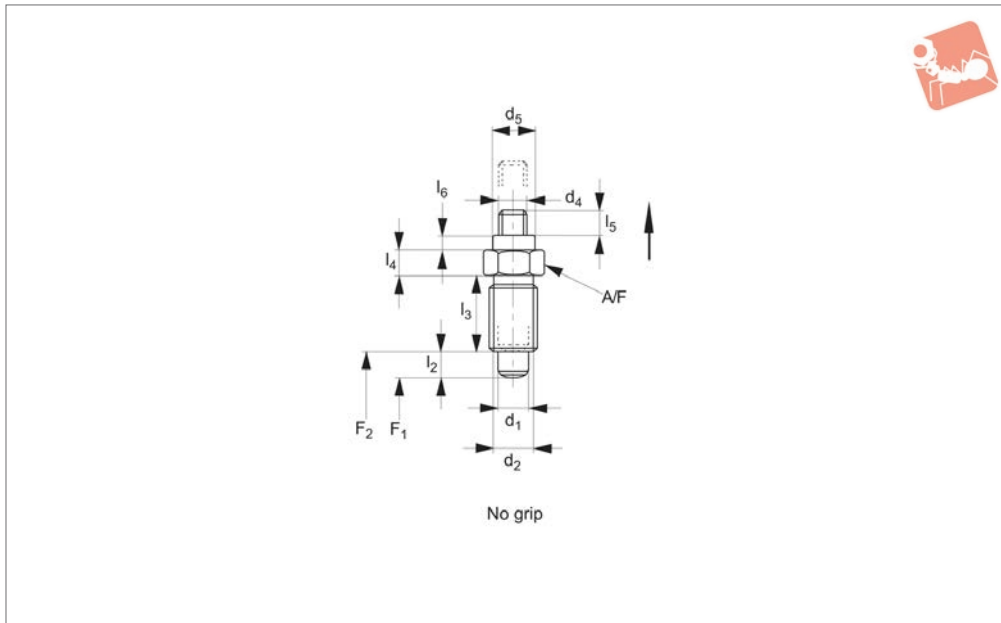




Index Plungers - No Grip

compact - non-locking

Index Plunger & Pins



32681

INDEX PLUNGER & PINS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Technical Notes

„Non Locking“ type- pin simply springs

back when grip released.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation.

Benefits from a more compact design and hence shorter overall length.

Temperature resistance up to 250°C

Distance collars no. 32750 can be used to adapt screw length.

Lock nuts sold separately See products 65690 & 65692

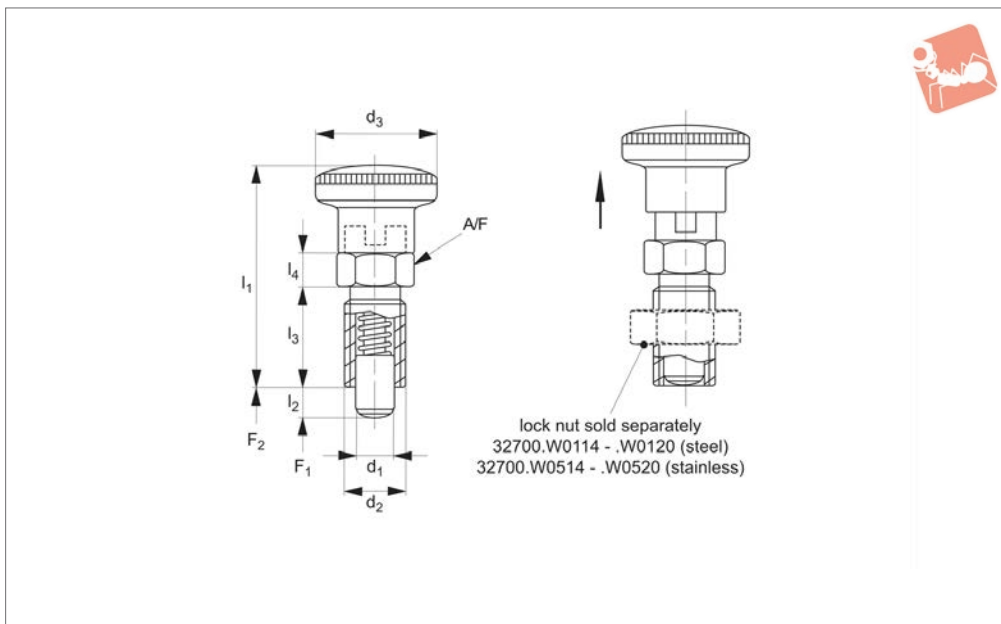
Tips

Spring loads * = statistical average. Threaded head of d_4 enables use of larger handle or grip better suited to your application. See palm grip no. 70000, or similar.

Order No.	Type	Material	d_1	d_2	d_4	d_5	l_2	l_3	l_4	l_5	l_6	A/F	Spring load F_1 N	Spring load F_2 N	Weight g
32681.W0143	No Grip	Steel	4	M 8x1,0	M 3	7	4	16	5	4.5	2.5	10	4.5	12.0	9
32681.W0144	No Grip	Steel	4	M 8x1,0	M 3	7	6	16	5	4.5	2.5	10	4.0	12.5	9
32681.W0146	No Grip	Steel	5	M10x1,0	M 4	8	5	18	6	5.5	3.0	12	5.0	15.0	16
32681.W0147	No Grip	Steel	5	M10x1,0	M 4	8	8	18	6	5.5	3.0	12	5.0	18.0	16
32681.W0149	No Grip	Steel	6	M12x1,5	M 5	9	6	22	6	7.0	3.5	14	6.5	19.0	25
32681.W0150	No Grip	Steel	6	M12x1,5	M 5	9	9	22	6	7.0	3.5	14	6.0	25.0	25
32681.W0152	No Grip	Steel	8	M16x1,5	M 6	10	8	26	8	8.5	4.0	17	8.5	26.0	55
32681.W0153	No Grip	Steel	8	M16x1,5	M 6	10	12	26	8	8.5	4.0	17	8.5	28.0	55
32681.W0155	No Grip	Steel	10	M16x1,5	M 6	10	12	26	8	8.5	4.0	17	9.5	38.0	56
32681.W0156	No Grip	Steel	12	M20x1,5	M 6	12	15	33	10	8.5	4.0	22	11.5	40.0	111
32681.W0157	No Grip	Steel	16	M24 x 2	M 8	15	20	38	12	11.5	5.0	27	13.0	54.0	194
32681.W0243	No Grip	Stainless	4	M 8x1,0	M 3	7	4	16	5	4.5	2.5	10	4.5	12.0	9
32681.W0244	No Grip	Stainless	4	M 8x1,0	M 3	7	6	16	5	4.5	2.5	10	4.0	12.5	9
32681.W0246	No Grip	Stainless	5	M10x1,0	M 4	8	5	18	6	5.5	3.0	12	5.0	15.0	16
32681.W0247	No Grip	Stainless	5	M10x1,0	M 4	8	8	18	6	5.5	3.0	12	5.0	18.0	16
32681.W0249	No Grip	Stainless	6	M12x1,5	M 5	9	6	22	6	7.0	3.5	14	6.5	19.0	25
32681.W0250	No Grip	Stainless	6	M12x1,5	M 5	9	9	22	6	7.0	3.5	14	6.0	25.0	25
32681.W0252	No Grip	Stainless	8	M16x1,5	M 6	10	8	26	8	8.5	4.0	17	8.5	26.0	55
32681.W0253	No Grip	Stainless	8	M16x1,5	M 6	10	12	26	8	8.5	4.0	17	8.5	28.0	55
32681.W0255	No Grip	Stainless	10	M16x1,5	M 6	10	12	26	8	8.5	4.0	17	9.5	38.0	56
32681.W0256	No Grip	Stainless	12	M20x1,5	M 6	12	15	33	10	8.5	4.0	22	11.5	40.0	111
32681.W0257	No Grip	Stainless	16	M24 x 2	M 8	15	20	38	12	11.5	5.0	27	13.0	54.0	194



32690



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303),

nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„Locking“ type- enable pin to be held in

retracted/non-projecting position; pull back grip, turn 90° to engage ,locking‘ on a notched catch.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation. Benefits from a more compact design and hence shorter overall length.

Temperature resistance from -30° to +80°C.

adapt screw length.

Lock nuts sold separately See products 65690 & 65692

Tips

Grip non-removable.

Spring loads * = statistical average.

Distance collars no. 32750 can be used to

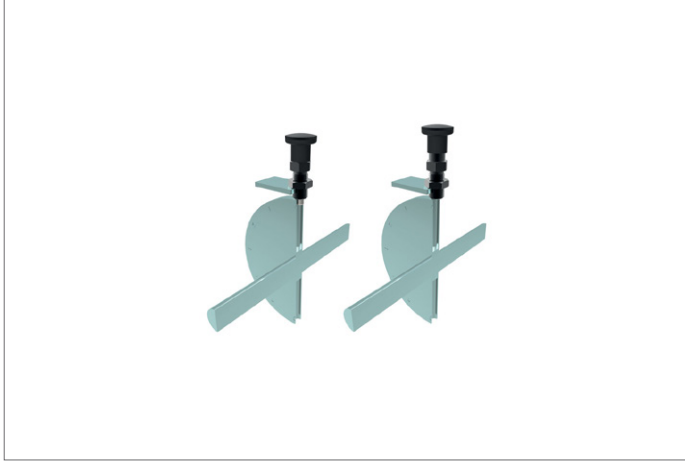
Order No.	Type	Material	d ₁ -0.02 -0.04	d ₂	d ₃	l ₁	l ₂ min.	l ₃	l ₄	A/F	Spring load F ₁ N ~	Spring load F ₂ N ~	Weight g
32690.W0123	Locking	Steel	4	M 8x1,0	16	35	4	16	5	10	4.5	12.0	12.0
32690.W0124	Locking	Steel	4	M 8x1,0	16	35	6	16	5	10	4.0	12.5	12.0
32690.W0126	Locking	Steel	5	M10x1,0	19	40	5	18	6	12	5.0	15.0	20.0
32690.W0127	Locking	Steel	5	M10x1,0	19	40	8	18	6	12	5.0	18.0	20.0
32690.W0129	Locking	Steel	6	M12x1,5	23	48	6	22	6	14	6.5	19.0	31.0
32690.W0130	Locking	Steel	6	M12x1,5	23	48	9	22	6	14	6.0	25.0	33.0
32690.W0132	Locking	Steel	8	M16x1,5	28	58	8	26	8	17	8.5	26.0	65.0
32690.W0133	Locking	Steel	8	M16x1,5	28	58	12	26	8	17	8.5	28.0	68.0
32690.W0135	Locking	Steel	10	M16x1,5	28	58	12	26	8	17	9.5	38.0	69.0
32690.W0136	Locking	Steel	12	M20x1,5	33	67	15	33	10	22	11.5	40.0	125.0
32690.W0137	Locking	Steel	16	M24 x 2	33	78.5	20	38	12	27	13.0	54.0	220
32690.W0223	Locking	Stainless	4	M 8x1,0	16	35	4	16	5	10	4.5	12.0	12.0
32690.W0224	Locking	Stainless	4	M 8x1,0	16	35	6	16	5	10	4.0	12.5	12.0
32690.W0226	Locking	Stainless	5	M10x1,0	19	40	5	18	6	12	5.0	15.0	20.0
32690.W0227	Locking	Stainless	5	M10x1,0	19	40	8	18	6	12	5.0	18.0	20.0
32690.W0229	Locking	Stainless	6	M12x1,5	23	48	6	22	6	14	6.5	19.0	31.0
32690.W0230	Locking	Stainless	6	M12x1,5	23	48	9	22	6	14	6.0	25.0	33.0
32690.W0232	Locking	Stainless	8	M16x1,5	28	58	8	26	8	17	8.5	26.0	65.0
32690.W0233	Locking	Stainless	8	M16x1,5	28	58	12	26	8	17	8.5	28.0	68.0
32690.W0235	Locking	Stainless	10	M16x1,5	28	58	12	26	8	17	9.5	38.0	69.0
32690.W0236	Locking	Stainless	12	M20x1,5	33	67	15	33	10	22	11.5	40.0	125.0
32690.W0237	Locking	Stainless	16	M24 x 2	33	78.5	20	38	12	27	13.0	54.0	220



Index Plungers - Compact

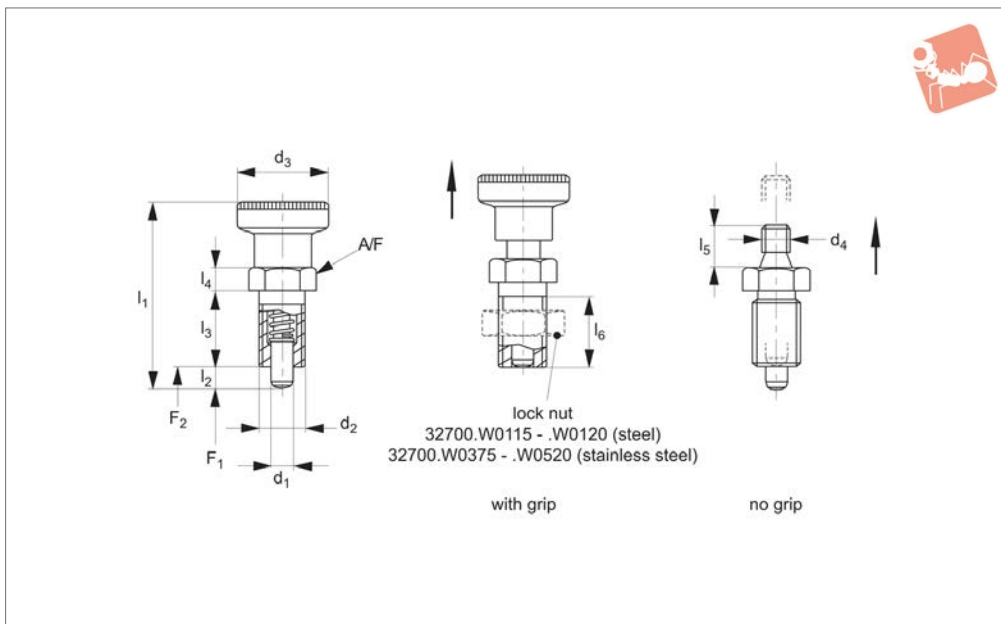
compact -locking

Index Plunger & Pins





32700



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„Non Locking“ type- pin simply springs back when pull ring released.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation. Without grip temperature resistance up to 250°C.

Distance collars no. 32750 can be used to adapt screw length.

Lock nuts sold separately See Products 65690 and 65692

Tips

Grip non-removable.

Spring loads * = statistical average.

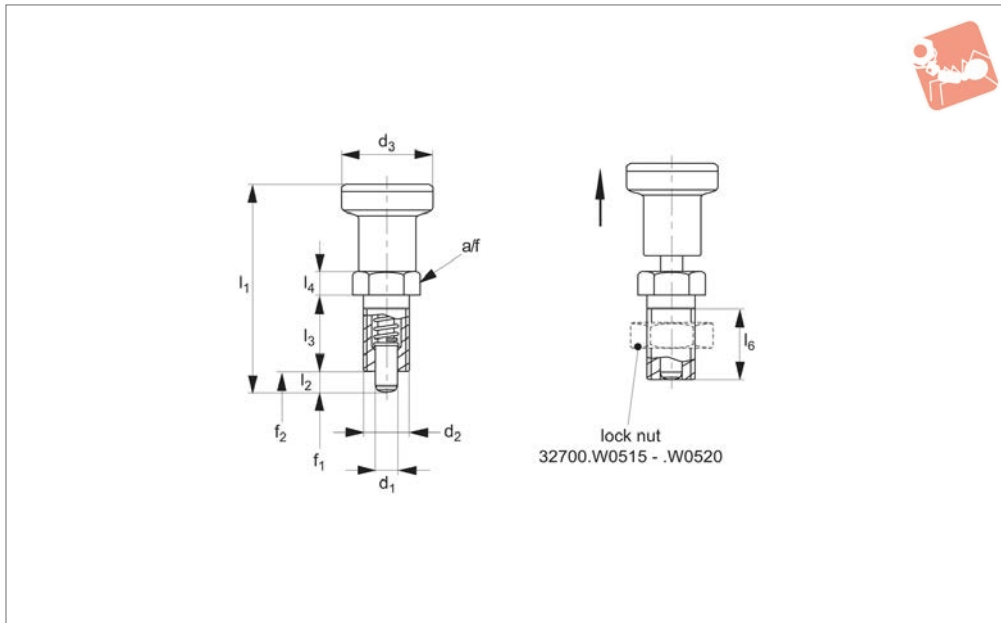
Order No.	Type	Material	d ₁ -0.02 -0.04	d ₂	d ₃	d ₄	l ₁ ≈	l ₂ min.	l ₃	l ₄	l ₅	l ₆ min.	A/F	Spring load		Weight g
														F ₁ N ≈	F ₂ N ≈	
32700.W0005	With Grip	Steel	5	M10x1,0	21		45,0	5	17	5		15	12	6,0	14	19,0
32700.W0006	With Grip	Steel	6	M12x1,5	25		54,5	6	20	6		17	14	5,5	13	31,0
32700.W0008	With Grip	Steel	8	M16x1,5	31		69,0	8	26	8		23	19	11,5	28	71,0
32700.W0010	With Grip	Steel	10	M20x1,5	31		80,0	10	33	10		30	22	23,0	54	115,0
32700.W0025	No Grip	Steel	5	M10x1,0		M 5		5	17	5	6	15	12	6,0	14	14,0
32700.W0026	No Grip	Steel	6	M12x1,5		M 6		6	20	6	10	17	14	5,5	13	23,0
32700.W0028	No Grip	Steel	8	M16x1,5		M 8		8	26	8	12	23	19	11,5	28	54,0
32700.W0030	No Grip	Steel	10	M20x1,5		M 8		10	33	10	12	30	22	23,0	54	79,0
32700.W0405	With Grip	Stainless	5	M10x1,0	21		45,0	5	17	5		15	12	6,0	14	19,0
32700.W0406	With Grip	Stainless	6	M12x1,5	25		54,5	6	20	6		17	14	5,5	13	31,0
32700.W0408	With Grip	Stainless	8	M16x1,5	31		69,0	8	26	8		23	19	11,5	28	71,0
32700.W0410	With Grip	Stainless	10	M20x1,5	31		80,0	10	33	10		30	22	23,0	54	115,0
32700.W0425	No Grip	Stainless	5	M10x1,0		M 5		5	17	5	6	15	12	6,0	14	14,0
32700.W0426	No Grip	Stainless	6	M12x1,5		M 6		6	20	6	10	17	14	5,5	13	23,0
32700.W0428	No Grip	Stainless	8	M16x1,5		M 8		8	26	8	12	23	19	11,5	28	54,0
32700.W0430	No Grip	Stainless	10	M20x1,5		M 8		10	33	10	12	30	22	23,0	54	79,0



Index Plungers - Pull Grip

non-locking - ALL stainless

Index Plunger & Pins



32702

INDEX PLUNGER & PINS

Material

All Stainless Steel Type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: stainless steel 1.4305 (AISI 303).

Spring: stainless steel 1.4310 (AISI 301).

Technical Notes

„Non Locking“ type- pin simply springs

back when pull ring released.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation.

Temperature resistance from -30° to +80°C.

Distance collars no. 32750 can be used to adapt screw length.

Lock nuts sold separately. See Products 65690 and 65692

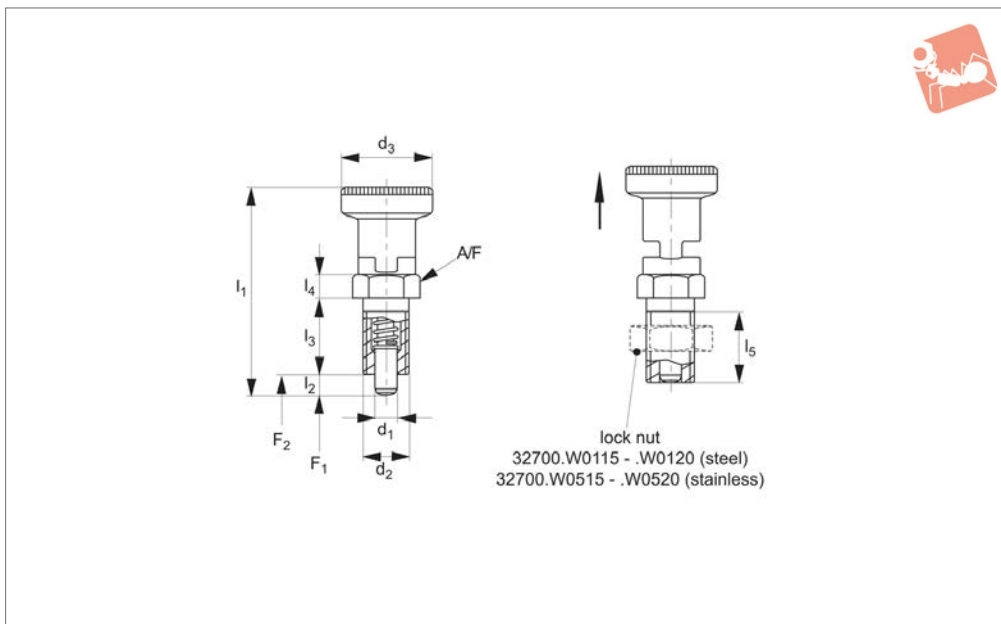
Tips

Complete stainless steel construction designed with specific demands of food processing, pharmaceutical and water treatment industries in mind. Grip non-removable. Spring Loads* = statistical average.

Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3	l_4	l_6 min.	A/F	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32702.W0705	Non locking	5	M10x1,0	21	45.0	5	17	5	15	12	6.0	14	39.0
32702.W0706	Non locking	6	M12x1,5	25	54.5	6	20	6	17	14	5.5	13	65.0
32702.W0707	Non locking	8	M16x1,5	31	69.0	8	26	8	23	19	11.5	28	132.0
32702.W0710	Non locking	10	M20x1,5	31	80.0	10	33	10	30	22	23.0	54	175.0



32710



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: hardened steel.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„**Locking**“ type- enable pin to be held in retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation. Temperature resistance from -30° to +80°C.

Distance collars no. 32750 can be used to adapt screw length.

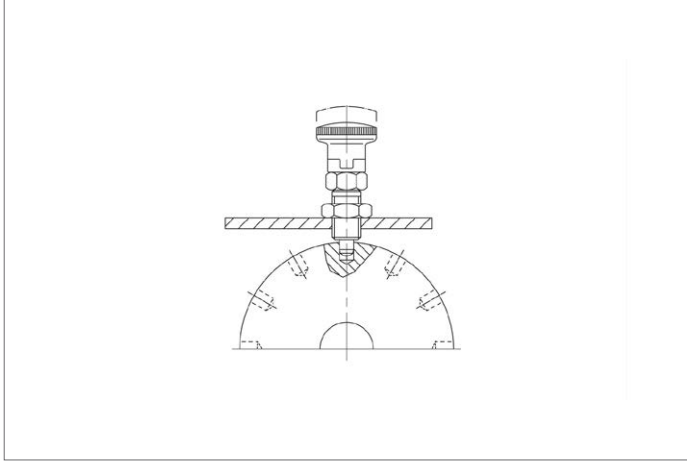
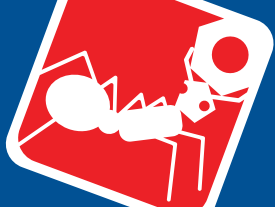
Lock nuts sold separately. See Products 65690 and 65692

Tips

Grip non-removable.

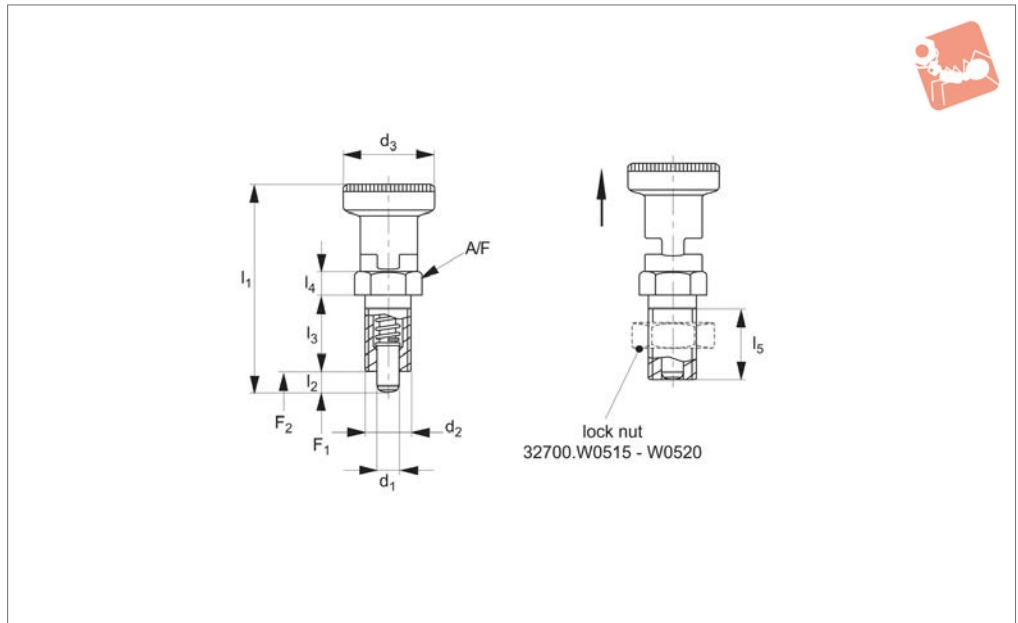
Spring loads * = statistical average.

Order No.	Type	Material	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3	l_4	l_5 min.	A/F	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32710.W0205	Locking	Steel	5	M10x1,0	21	51.0	5	17	5	15	12	6.0	14	22
32710.W0206	Locking	Steel	6	M12x1,5	25	61.0	6	20	6	17	14	5.5	13	36
32710.W0208	Locking	Steel	8	M16x1,5	31	75.5	8	26	8	23	19	1.5	28	79
32710.W0210	Locking	Steel	10	M20x1,5	31	91.0	10	33	10	30	22	28.0	54	134
32710.W0605	Locking	Stainless	5	M10x1,0	21	51.0	5	17	5	15	12	6.0	14	22
32710.W0606	Locking	Stainless	6	M12x1,5	25	61.0	6	20	6	17	14	5.5	13	36
32710.W0608	Locking	Stainless	8	M16x1,5	31	75.5	8	26	8	23	19	1.5	28	79
32710.W0610	Locking	Stainless	10	M20x1,5	31	91.0	10	33	10	30	22	28.0	54	134





32712



Material

All Stainless Steel Type-

Body: stainless steel 1.4305 (AISI 303).
 Pin: stainless steel 1.4305, nickel plated.
 Grip: stainless steel 1.4305 (AISI 303).
 Spring: stainless steel 1.4310 (AISI 301).

Technical Notes

„Locking“ type- enable pin to be held in retracted/non-projecting position; pull

back grip, turn 90° to engage ,locking‘ on a notched catch.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation. Temperature resistance from -30° to +80°C.

Distance collars no. 32750 can be used to adapt screw length.

Lock nuts sold separately. See Products 65690 and 65692

Tips

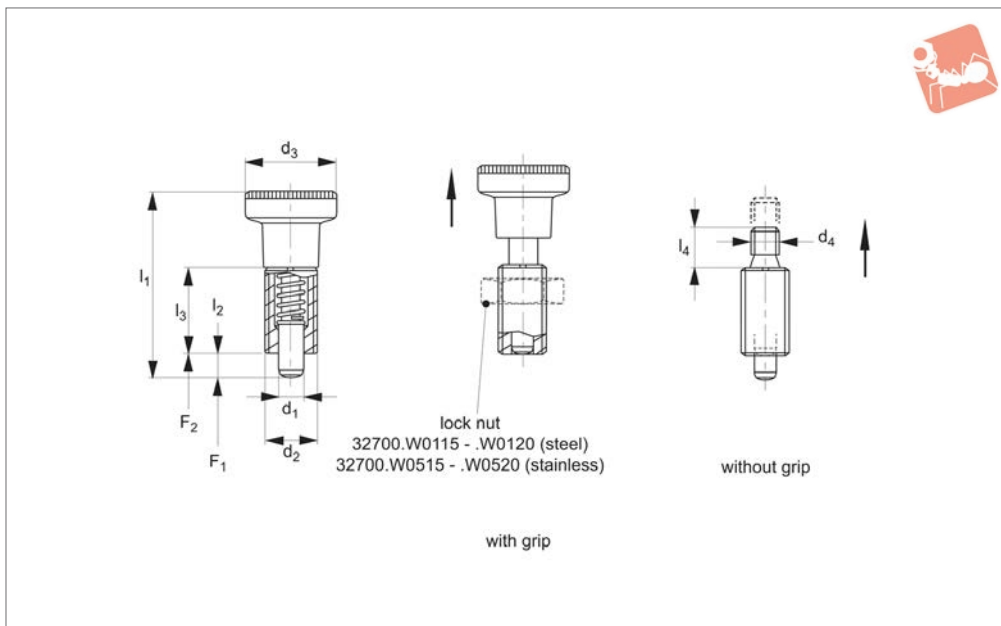
Complete stainless steel construction designed with specific demands of food processing, pharmaceutical and water treatment industries in mind. Grip non-removable. Spring Loads* = statistical average.

Order No.	Type	d ₁ -0.02 -0.04	d ₂	d ₃	l ₁ ≈	l ₂ min.	l ₃	l ₄	l ₅	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32712.W0705	Locking	5	M10x1,0	21	51.0	5	17	5	15	12	6.0	14	43
32712.W0706	Locking	6	M12x1,5	25	61.0	6	20	6	17	14	5.5	13	71
32712.W0708	Locking	8	M16x1,5	31	75.5	7	26	8	23	19	11.5	28	144
32712.W0710	Locking	10	M20x1,5	31	91.0	10	33	10	30	22	28.0	54	202



Index Plunger - Pull Grip non-locking

Index Plunger & Pins



32740

INDEX PLUNGER & PINS

Material

Free Cutting Steel Type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303),

nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„Non Locking“ type- pin simply springs back when pull ring released.

Plungers without grip enable your own adaptation with actuation grip/lever to your own design. Installation requires use of specific assembly tool, see data table.

Without grip temperature resistance up to 250°C.

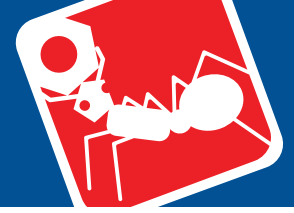
Lock nuts sold separately. See Products 65690 and 65692

Tips

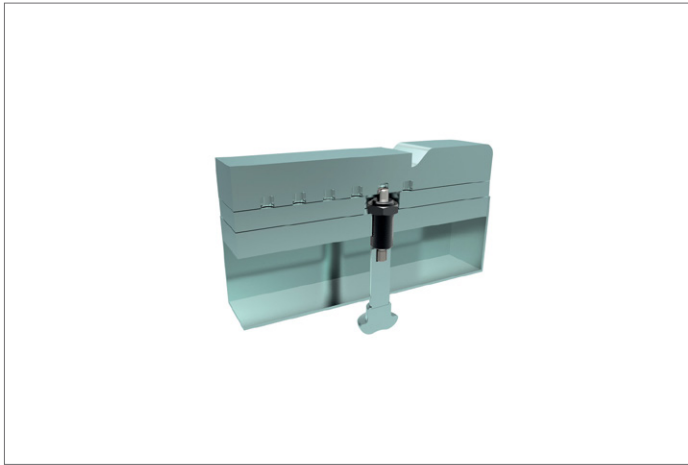
Grip non-removable.

Spring loads * = statistical average.

Order No.	Type	Material	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	l ₄	Spring load F ₁ N	Spring load F ₂ N	Weight g
32740.W0045	With Grip	Steel	5	M10x1,0	21	-	45.0	5	22	-	6.0	14	17
32740.W0046	With Grip	Steel	6	M12x1,5	25	-	54.5	6	26	-	5.5	13	27
32740.W0048	With Grip	Steel	8	M16x1,5	31	-	69.0	8	34	-	11.5	28	63
32740.W0050	With Grip	Steel	10	M20x1,5	31	-	80.0	10	41	-	23.0	54	104
32740.W0065	No Grip	Steel	5	M10x1,0	-	M 5	-	5	22	6	6.0	14	12
32740.W0066	No Grip	Steel	6	M12x1,5	-	M 6	-	6	26	10	5.5	13	12
32740.W0068	No Grip	Steel	8	M16x1,5	-	M 8	-	8	34	12	11.5	28	46
32740.W0070	No Grip	Steel	10	M20x1,5	-	M 8	-	10	43	12	23.0	54	87
32740.W0445	With Grip	Stainless	5	M10x1,0	21	-	45.0	5	22	-	6.0	14	17
32740.W0446	With Grip	Stainless	6	M12x1,5	25	-	54.5	6	26	-	5.5	13	27
32740.W0448	With Grip	Stainless	8	M16x1,5	31	-	69.0	8	34	-	11.5	28	63
32740.W0450	With Grip	Stainless	10	M20x1,5	31	-	80.0	10	41	-	23.0	54	104
32740.W0465	No Grip	Stainless	5	M10x1,0	-	M 5	-	5	22	6	6.0	14	12
32740.W0466	No Grip	Stainless	6	M12x1,5	-	M 6	-	6	26	10	5.5	13	12
32740.W0468	No Grip	Stainless	8	M16x1,5	-	M 8	-	8	34	12	11.5	28	46
32740.W0470	No Grip	Stainless	10	M20x1,5	-	M 8	-	10	43	12	23.0	54	87
32740.W0955	Assembly Tool	Steel	-	for M10x1,0	-	-	-	-	-	-	-	-	10
32740.W0956	Assembly Tool	Steel	-	for M12x1,5	-	-	-	-	-	-	-	-	14
32740.W0958	Assembly Tool	Steel	-	for M16x1,5	-	-	-	-	-	-	-	-	25
32740.W0960	Assembly Tool	Steel	-	for M20x1,5	-	-	-	-	-	-	-	-	27



INDEX PLUNGER & PINS

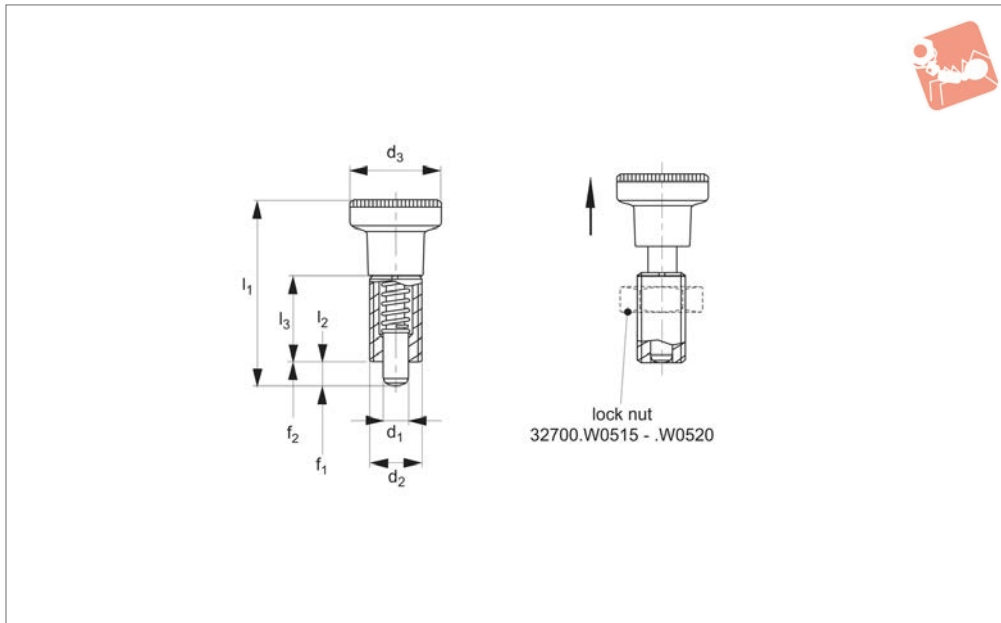




Index Plunger - Pull Grip

non-locking - ALL stainless

Index Plunger & Pins



32742

INDEX PLUNGER & PINS

Material

All Stainless Steel Type-

Body: stainless steel 1.4305 (AISI 303).
 Locking pin: stainless steel 1.4305 (AISI 303), nickel plated.
 Grip: stainless steel 1.4305 (AISI 303).
 Spring: stainless steel 1.4310 (AISI 301).

Technical Notes

„Non Locking“ type- pin simply springs

back when pull ring released.
 Temperature resistance -30°C to +80°C
 Installation requires use of specific assembly tool, see part nos. 32740.W0955 to .W0960.

Lock nuts sold separately. See Products 65690 and 65692

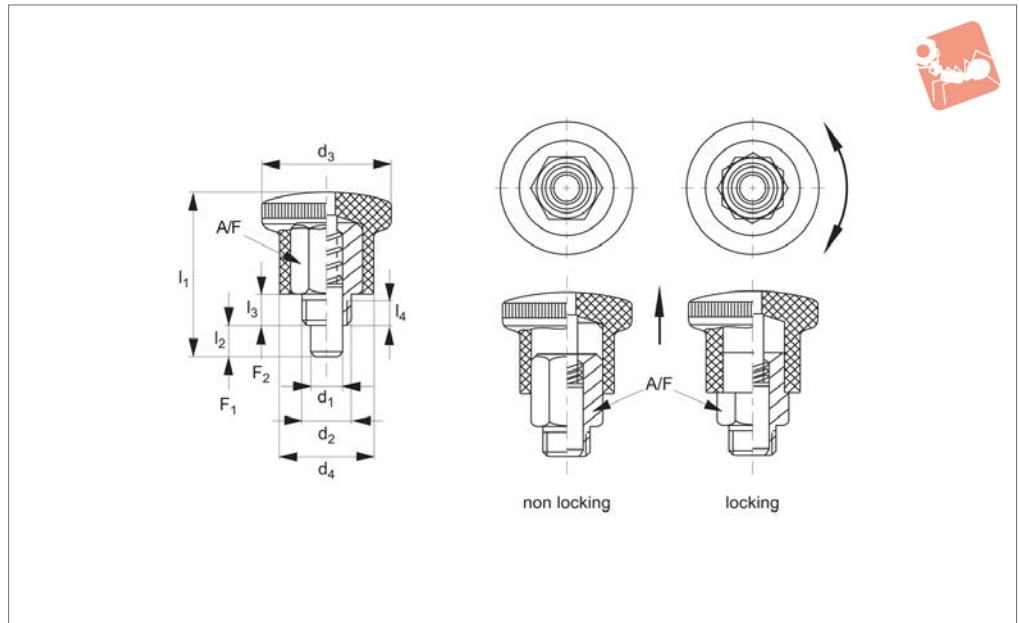
Tips

Complete stainless steel construction designed with specific demands of food processing, pharmaceutical and water treatment industries in mind. Grip non-removable.
 Spring Load* = statistical average.

Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32742.W0705	Non Locking	5	M10x1,0	21	45.0	5	22	6.0	14	37.0
32742.W0706	Non Locking	6	M12x1,5	25	54.5	6	26	5.5	13	62.0
32742.W0707	Non Locking	8	M16x1,5	31	69.0	8	34	11.5	28	124.0
32742.W0710	Non Locking	10	M20x1,5	31	80.0	10	43	23.0	54	165.0



32600



Material

Free cutting steel type-

Body: free cutting steel, galvanized.
Pin: stainless steel 1.4305 (AISI 303).
Grip: thermoplastic PA 6, black.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).
Pin: stainless steel 1.4305 (AISI 303).
Grip: thermoplastic PA 6, black.

Technical Notes

„Locking“ type- enable pin to be held in

retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

„Non Locking“ type- pin simply springs back when grip released.

For positioning and indexing in the smallest of spaces. Particularly suited for use on sheet metal assemblies; e.g shopfitting displays, electrical cabinets and enclosures etc.

Extra fine thread

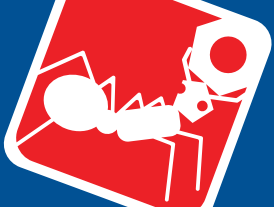
Temperature resistance from -30° to +80°C.

Distance collars no. 32750 can be used to adapt screw length.

Tips

Grip non-removable.
Spring loads * = statistical average.

Order No.	Material	Type	d ₁ 01-0.06	d ₂	d ₃	d ₄	l ₁	l ₂ min.	l ₃	l ₄ min.	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32600.W0024	Steel	Non Locking	4	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0026	Steel	Non Locking	5	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0028	Steel	Non Locking	6	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	25
32600.W0030	Steel	Non Locking	7	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	26
32600.W0034	Steel	Locking	4	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	13
32600.W0036	Steel	Locking	5	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0038	Steel	Locking	6	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	24
32600.W0040	Steel	Locking	7	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	25
32600.W0224	Stainless	Non Locking	4	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0226	Stainless	Non Locking	5	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0228	Stainless	Non Locking	6	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	25
32600.W0230	Stainless	Non Locking	7	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	26
32600.W0234	Stainless	Locking	4	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	13
32600.W0236	Stainless	Locking	5	M 8x0,75	21	15	26,5	5	5	3,5	10	4,5	12	14
32600.W0238	Stainless	Locking	6	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	24
32600.W0240	Stainless	Locking	7	M10x1,00	25	18	34,0	7	7	4,5	12	5,0	18	25



Index Plungers - Pull Grip

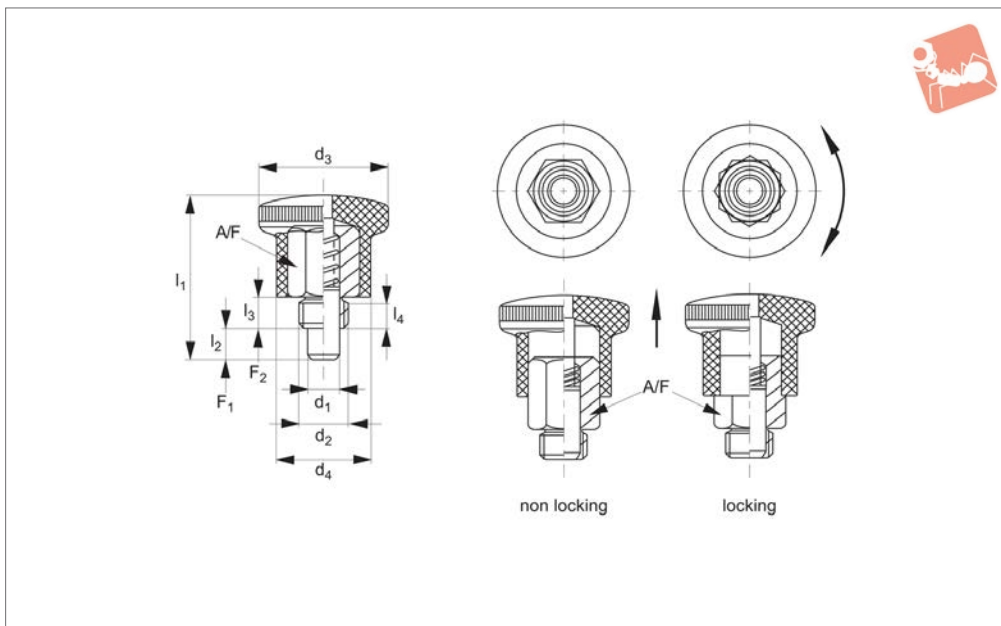
mini - for thin walled parts - extra fine thread

Index Plunger & Pins





32602



Material

Free cutting steel type-

Body: free cutting steel, galvanized.

Pin: stainless steel 1.4305 (AISI 303).

Grip: thermoplastic PA 6, black.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Grip: thermoplastic PA 6, black.

Technical Notes

„Locking“ type- enable pin to be held in

retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

„Non Locking“ type- pin simply springs back when grip released.

For positioning and indexing in the smallest of spaces. Particularly suited for use on sheet metal assemblies; e.g shopfitting displays, electrical cabinets and enclosures etc.

Temperature resistance from -30° to

+80°C.

Distance collars no. 32750 can be used to adapt screw length.

Fine Thread

Tips

Grip non-removable.

Spring loads * = statistical average.

Order No.	Material	Finish	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32602.W0604	Steel	Non Locking	4	M 8x1,00	21	15	27.5	5	6	10	4	12	14
32602.W0608	Steel	Non Locking	5	M10x1,00	25	18	34.0	6	8	12	6	16	25
32602.W0612	Steel	Non Locking	6	M10x1,00	25	18	34.0	6	8	12	6	16	25
32602.W0616	Steel	Non Locking	6	M12x1,50	28	20	40.5	7	10	14	10	23	40
32602.W0620	Steel	Non Locking	7	M12x1,50	28	20	40.5	7	10	14	10	23	41
32602.W0624	Steel	Non Locking	8	M16x1,50	33	23	47.5	10	12	17	11	35	67
32602.W0628	Steel	Non Locking	10	M16x1,50	33	23	47.5	10	12	17	11	35	69
32602.W0632	Steel	Locking	4	M 8x1,00	21	15	27.5	5	6	10	4	12	13
32602.W0636	Steel	Locking	5	M10x1,00	25	18	34.0	6	8	12	6	16	23
32602.W0640	Steel	Locking	6	M10x1,00	25	18	34.0	6	8	12	6	16	25
32602.W0644	Steel	Locking	6	M12x1,50	28	20	40.5	7	10	14	10	23	39
32602.W0648	Steel	Locking	7	M12x1,50	28	20	40.5	7	10	14	10	23	39
32602.W0652	Steel	Locking	8	M16x1,50	33	23	47.5	10	12	17	11	35	65
32602.W0656	Steel	Locking	10	M16x1,50	33	23	47.5	10	12	17	11	35	67
32602.W0704	Stainless	Non Locking	4	M 8x1,00	21	15	27.5	5	6	10	4	12	14
32602.W0708	Stainless	Non Locking	5	M10x1,00	25	18	34.0	6	8	12	6	16	25
32602.W0712	Stainless	Non Locking	6	M10x1,00	25	18	34.0	6	8	12	6	16	25
32602.W0716	Stainless	Non Locking	6	M12x1,50	28	20	40.5	7	10	14	10	23	40
32602.W0720	Stainless	Non Locking	7	M12x1,50	28	20	40.5	7	10	14	10	23	41
32602.W0724	Stainless	Non Locking	8	M16x1,50	33	23	47.5	10	12	17	11	35	67
32602.W0728	Stainless	Non Locking	10	M16x1,50	33	23	47.5	10	12	17	11	35	69
32602.W0732	Stainless	Locking	4	M 8x1,00	21	15	27.5	5	6	10	4	12	13
32602.W0736	Stainless	Locking	5	M10x1,00	25	18	34.0	6	8	12	6	16	23
32602.W0740	Stainless	Locking	6	M10x1,00	25	18	34.0	6	8	12	6	16	25



Index Plungers - Pull Grip

mini - for thin walled parts - fine thread

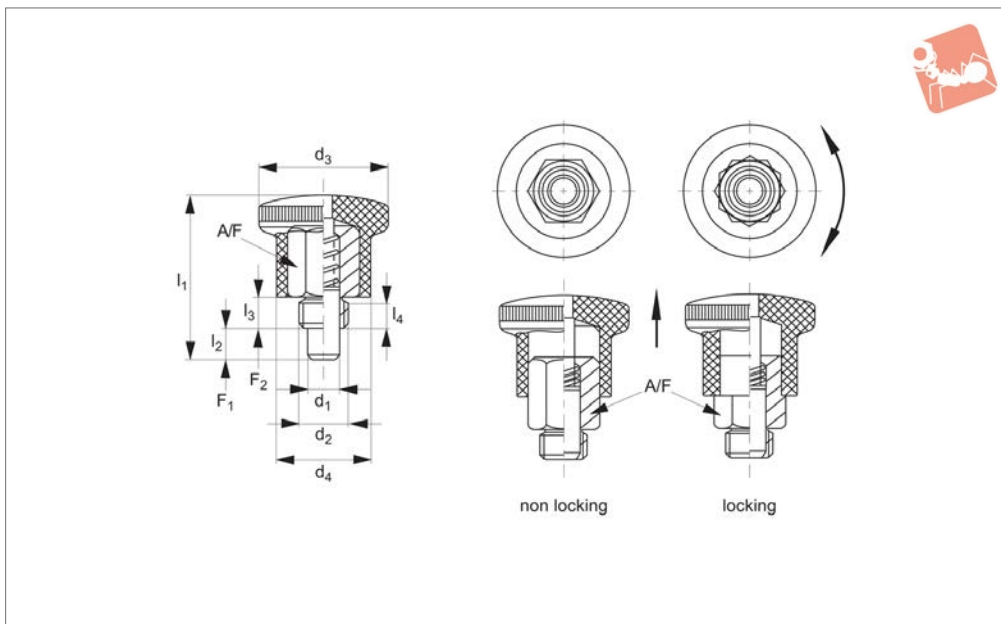
Index Plunger & Pins



Order No.	Material	Finish	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32602.W0744	Stainless	Locking	6	M12x1,50	28	20	40.5	7	10	14	10	23	39
32602.W0748	Stainless	Locking	7	M12x1,50	28	20	40.5	7	10	14	10	23	39
32602.W0752	Stainless	Locking	8	M16x1,50	33	23	47.5	10	12	17	11	35	65
32602.W0756	Stainless	Locking	10	M16x1,50	33	23	47.5	10	12	17	11	35	67



32604



Material

Free cutting steel type-

Body: free cutting steel, galvanized.

Pin: stainless steel 1.4305 (AISI 303).

Grip: thermoplastic PA 6, black.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Grip: thermoplastic PA 6, black.

Technical Notes

„Locking“ type- enable pin to be held in

retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

„Non Locking“ type- pin simply springs back when grip released.

For positioning and indexing in the smallest of spaces. Particularly suited for use on sheet metal assemblies; e.g shopfitting displays, electrical cabinets and enclosures etc.

Temperature resistance from -30° to

+80°C.

Distance collars no. 32750 can be used to adapt screw length.

Coarse thread.

Tips

Grip non-removable.

Spring loads * = statistical average

Order No.	Material	Finish	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32604.W0602	Steel	Non Locking	4	M 8x1,25	21	15	27.5	5	6	10	4	12	14
32604.W0606	Steel	Non Locking	5	M10x1,50	25	18	34.0	6	8	12	6	16	25
32604.W0610	Steel	Non Locking	6	M10x1,50	25	18	34.0	6	8	12	6	16	25
32604.W0614	Steel	Non Locking	6	M12x1,75	28	20	40.5	7	10	14	10	23	40
32604.W0618	Steel	Non Locking	7	M12x1,75	28	20	40.5	7	10	14	10	23	41
32604.W0622	Steel	Non Locking	8	M16x2,00	33	23	47.5	10	12	17	11	35	66
32604.W0626	Steel	Non Locking	10	M16x2,00	33	23	47.5	10	12	17	11	35	68
32604.W0630	Steel	Locking	4	M 8x1,25	21	15	27.5	5	6	10	4	12	13
32604.W0634	Steel	Locking	5	M10x1,50	23	18	34.0	6	8	12	6	16	23
32604.W0638	Steel	Locking	6	M10x1,50	25	18	34.0	6	8	12	6	16	24
32604.W0642	Steel	Locking	6	M12x1,75	28	20	40.5	7	10	14	10	23	38
32604.W0646	Steel	Locking	7	M12x1,75	28	20	40.5	7	10	14	10	23	39
32604.W0650	Steel	Locking	8	M16x2,00	33	23	47.5	10	12	17	11	35	64
32604.W0654	Steel	Locking	10	M16x2,00	33	23	47.5	10	12	17	11	35	66
32604.W0702	Stainless	Non Locking	4	M 8x1,25	21	15	27.5	5	6	10	4	12	14
32604.W0706	Stainless	Non Locking	5	M10x1,50	25	18	34.0	6	8	12	6	16	25
32604.W0710	Stainless	Non Locking	6	M10x1,50	25	18	34.0	6	8	12	6	16	25
32604.W0714	Stainless	Non Locking	6	M12x1,75	28	20	40.5	7	10	14	10	23	40
32604.W0718	Stainless	Non Locking	7	M12x1,75	28	20	40.5	7	10	14	10	23	41
32604.W0722	Stainless	Non Locking	8	M16x2,00	33	23	47.5	10	12	17	11	35	66
32604.W0726	Stainless	Non Locking	10	M16x2,00	33	23	47.5	10	12	17	11	35	68
32604.W0730	Stainless	Locking	4	M 8x1,25	21	15	27.5	5	6	10	4	12	13
32604.W0734	Stainless	Locking	5	M10x1,50	23	18	34.0	6	8	12	6	16	23
32604.W0738	Stainless	Locking	6	M10x1,50	25	18	34.0	6	8	12	6	16	24



Index Plungers - Pull Grip

mini - for thin walled parts - coarse thread

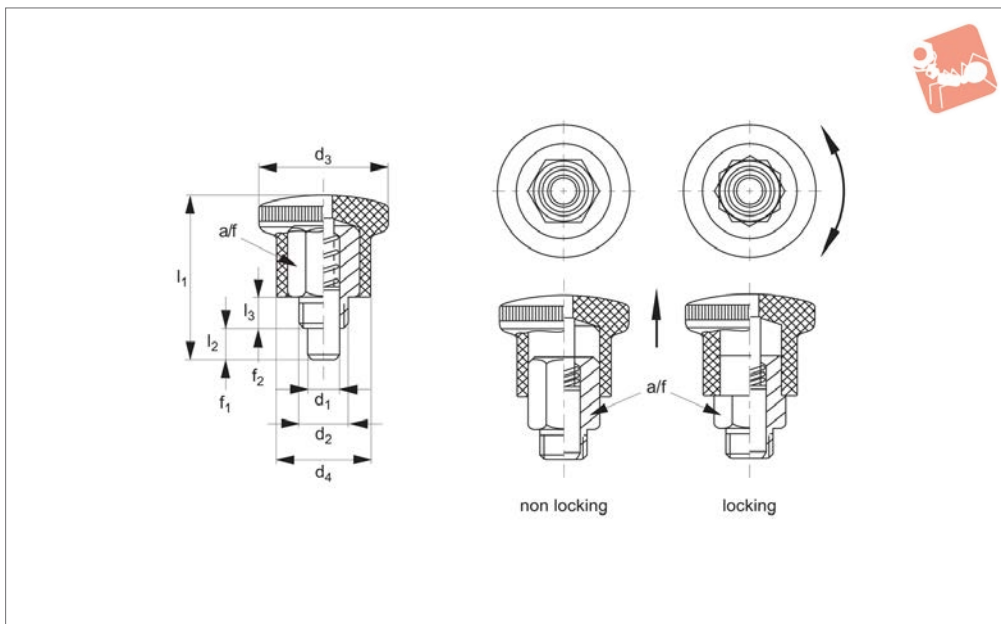
Index Plunger & Pins



Order No.	Material	Finish	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32604.W0742	Stainless	Locking	6	M12x1,75	28	20	40.5	7	10	14	10	23	38
32604.W0746	Stainless	Locking	7	M12x1,75	28	20	40.5	7	10	14	10	23	39
32604.W0750	Stainless	Locking	8	M16x2,00	33	23	47.5	10	12	17	11	35	64
32604.W0754	Stainless	Locking	10	M16x2,00	33	23	47.5	10	12	17	11	35	66



32606



Material

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Grip: stainless steel 1.4308 (AISI 304).

Technical Notes

„**Locking**“ type- enable pin to be held in retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a

notched catch.

„**Non Locking**“ type- pin simply springs back when grip released.

For positioning and indexing in the smallest of spaces. Particularly suited for use on sheet metal assemblies; e.g shopfitting displays, electrical cabinets and enclosures etc.

Extra fine thread

Temperature resistance up to 250°C.

Distance collars no. 32750 can be used to adapt screw length.

Tips

Grip non-removable.

Spring loads * = statistical average.

Order No.	Type	d ₁ 0 -0.06	d ₂	d ₃	d ₄	l ₁	l ₂ min.	l ₃	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32606.W1102	Non-Locking	4	M 8	21	15	27.5	5	6	10	4	12	28
32606.W1104	Non-Locking	4	M 8x1	21	15	27.5	5	6	10	4	12	28
32606.W1106	Non-Locking	5	M10	25	18	34.0	6	8	12	6	16	49
32606.W1108	Non-Locking	5	M10x1	25	18	34.0	6	8	12	6	16	50
32606.W1110	Non-Locking	6	M10	25	18	34.0	6	8	12	6	16	50
32606.W1112	Non-Locking	6	M10x1	25	18	34.0	6	8	12	6	16	50
32606.W1114	Non-Locking	6	M12	28	20	40.5	7	10	14	10	23	74
32606.W1116	Non-Locking	6	M12x1,5	28	20	40.5	7	10	14	10	23	75
32606.W1118	Non-Locking	7	M12	28	20	40.5	7	10	14	10	23	75
32606.W1120	Non-Locking	7	M12x1,5	28	20	40.5	7	10	14	10	23	75
32606.W1122	Non-Locking	8	M16	33	23	47.5	10	12	17	11	34	110
32606.W1124	Non-Locking	8	M16x1,5	33	23	47.5	10	12	17	11	35	113
32606.W1126	Non-Locking	10	M16	33	23	47.5	10	12	17	11	35	113
32606.W1128	Non-Locking	10	M16x1,5	33	23	47.5	10	12	17	11	35	113
32606.W1130	Locking	4	M 8	21	15	27.5	5	6	10	4	12	28
32606.W1132	Locking	4	M 8x1	21	15	27.5	5	6	10	4	12	28
32606.W1134	Locking	5	M10	25	18	34.0	6	8	12	6	16	49
32606.W1136	Locking	5	M10x1	25	18	34.0	6	8	12	6	16	50
32606.W1138	Locking	6	M10	25	18	34.0	6	8	12	6	16	50
32606.W1140	Locking	6	M10x1	25	18	34.0	6	8	12	6	16	50
32606.W1142	Locking	6	M12	28	20	40.5	7	10	14	10	23	74
32606.W1144	Locking	6	M12x1,5	28	20	40.5	7	10	14	10	23	75
32606.W1146	Locking	7	M12	28	20	40.5	7	10	14	10	23	75
32606.W1148	Locking	7	M12x1,5	28	20	40.5	7	10	14	10	23	75
32606.W1150	Locking	8	M16	33	23	47.5	10	12	17	11	35	110
32606.W1152	Locking	8	M16x1,5	33	23	47.5	10	12	17	11	35	113
32606.W1154	Locking	10	M16	33	23	47.5	10	12	17	11	35	113



Index Plungers - Pull Grip

mini - for thin walled parts - extra fine thread

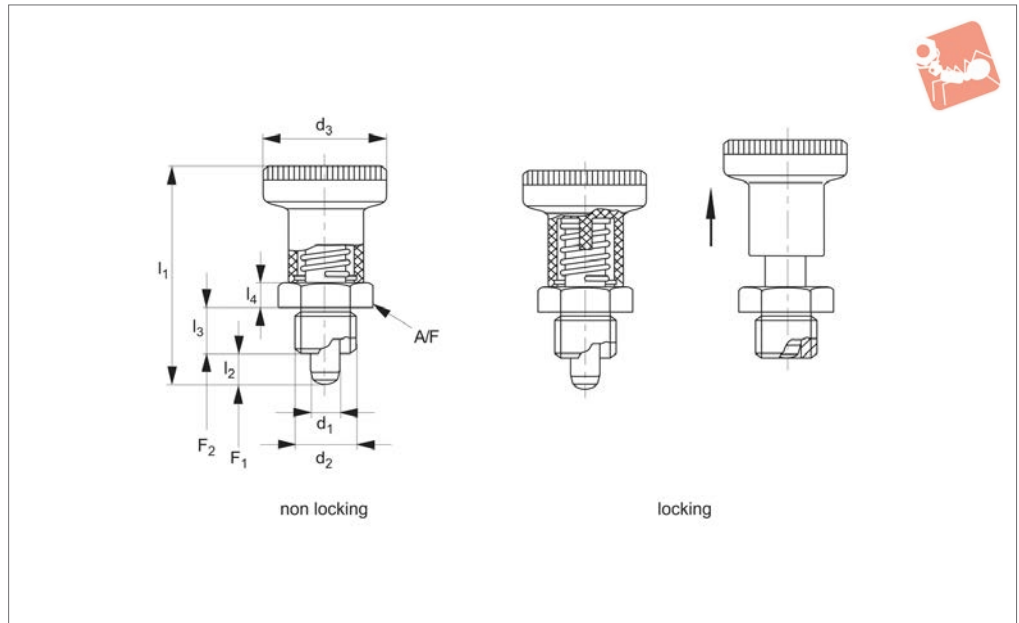
Index Plunger & Pins



Order No.	Type	d_1 0 -0.06	d_2	d_3	d_4	l_1	l_2 min.	l_3	A/F	Spring load F_1 N \approx	Spring load F_2 N \approx	Weight g
32606.W1156	Locking	10	M16x1,5	33	23	47.5	10	12	17	11	35	113



32730



Material

Free Cutting Steel type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black.

Stainless steel type -

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: thermoplastic PA6, black.

Technical Notes

„**Locking**” type- enable pin to be held in retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking’ on a notched catch.

„**Non Locking**” type- pin simply springs back when grip released.
Short bodied index plungers for compact applications. Hexagon collar improves leverage for secure installation.

Temperature resistance from -30° to +80°C.

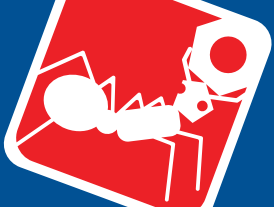
Lock nuts sold separately. See Products 65690 and 65692

Tips

Distance collars no. 32750 can be used to adapt screw length.

Spring loads * = statistical average.

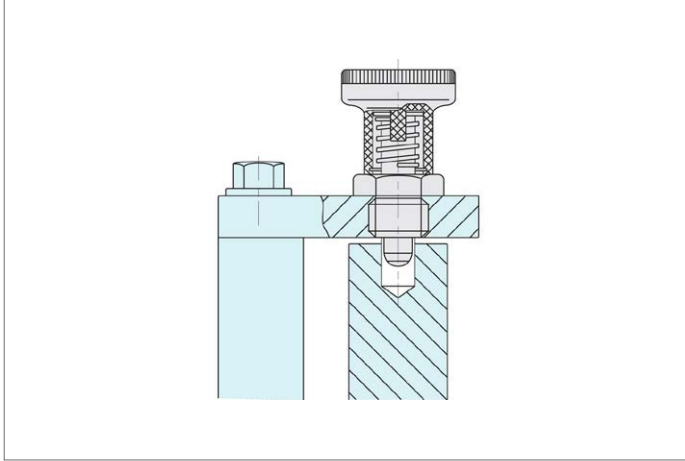
Order No.	Material	Type	d ₁ -0.02 -0.04	d ₂	d ₃	l ₁ ≈	l ₂ min.	l ₃ -0.15	l ₄	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32730.W0226	Non Locking	Steel	6	M12x1,5	25	45	6	10	5	17	7	19	35.0
32730.W0228	Non Locking	Steel	8	M16x1,5	31	54	8	12	6	19	14	24	62.0
32730.W0236	Locking	Steel	6	M12x1,5	25	45	6	10	5	17	7	19	35.0
32730.W0238	Locking	Steel	8	M16x1,5	31	54	8	12	6	19	14	24	61.0
32730.W0246	Non Locking	Stainless	6	M12x1,5	25	45	6	10	5	17	7	19	35.0
32730.W0248	Non Locking	Stainless	8	M16x1,5	31	54	8	12	6	19	14	24	62.0
32730.W0256	Locking	Stainless	6	M12x1,5	25	45	6	10	5	17	7	19	35.0
32730.W0258	Locking	Stainless	8	M16x1,5	31	54	8	12	6	19	14	24	61.0



Index Plungers - Pull Grip

for thin walled parts

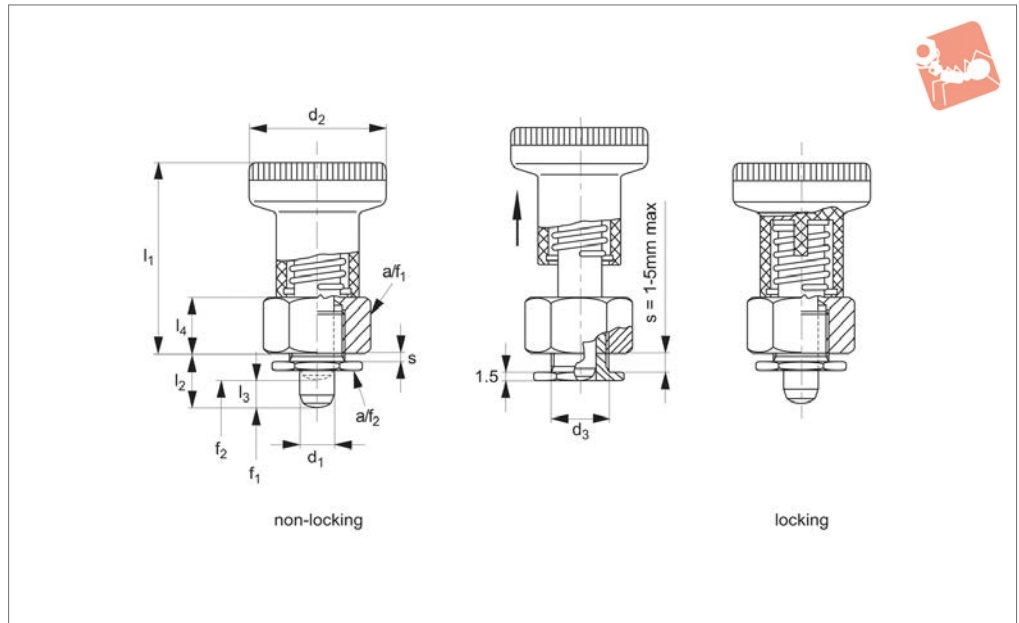
Index Plunger & Pins



INDEX PLUNGER & PINS



32770



Material

Body: steel galvanised.
 Pin: stainless steel 1.4305, nickel plated.
 Grip: thermoplastic PA6, black.

Technical Notes

„**Locking**“ type- enable pin to be held in retracted position; pull back grip, turn 90°

to engage ‚locking‘ on a notched catch.
 „**Non Locking**“ type- pin simply springs back when grip released.

For installation on thin walled panels/ sheet metal of thickness 1 to 5mm.

Pin does not fully retract in all cases - protrusion of pin ,l₃‘ dependant upon

panel thickness of installation ,s‘

Temperature resistance -30°C to +80°C

Tips

Grip non-removable.
 Spring loads* = statistical average.

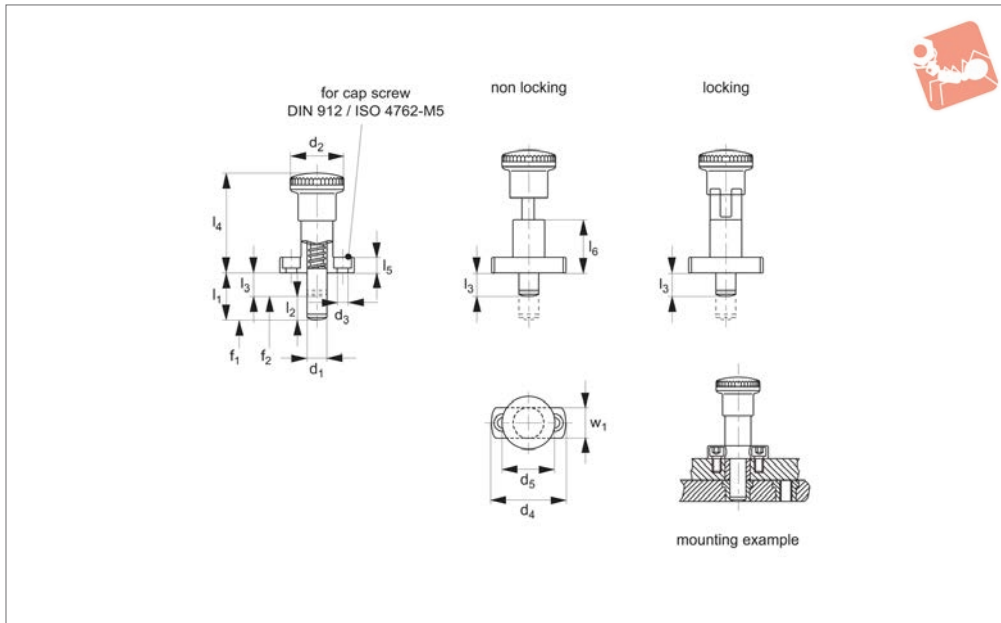
Order No.	Type	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	s	Spring load F ₁ N	Spring load F ₂ N	A/F ₁	A/F ₂	Weight g
32770.W0266	Locking	6	25	10	34	8.5	6.0	10	1-5	8.5	22	17	14	39
32770.W0267	Locking	6	25	10	34	10.5	6.0	10	1-5	8.5	22	17	14	40
32770.W0268	Locking	8	31	12	40	10.0	7.5	12	1-5	15.5	28	19	16	63
32770.W0269	Locking	8	31	12	40	12.0	7.5	12	1-5	15.5	28	19	16	63
32770.W0286	Non Locking	6	25	10	34	8.5	6.0	10	1-5	8.5	22	17	14	39
32770.W0287	Non Locking	6	25	10	34	10.5	6.0	10	1-5	8.5	22	17	14	39
32770.W0288	Non Locking	8	31	12	40	10.0	7.5	12	1-5	15.5	28	19	16	61
32770.W0289	Non Locking	8	31	12	40	12.0	7.5	12	1-5	15.5	28	19	16	62
32770.W0299	Spanner = a/f2	-	-	-	-	-	-	-	-	-	-	-	-	27



Index Plungers - Pull Grip

flange mounting - extended pin

Index Plunger & Pins



32530

INDEX PLUNGER & PINS

Material

Body: steel, blackened.
Pin: steel, hardened and ground.
Grip: thermoplastic PA6, black.

Technical Notes

„Locking“ type- enable pin to be held in retracted position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.
„Non Locking“ type- pin simply springs

back when grip is released.

Due to extended length pin does not fully retreat into plunger body when grip activated - note dimension l_3 for length pin remains exposed.

Extended pin assists locating and indexing of components. Due to its extended length the pin does not fully retract flush to the plunger body - please note dimensions l_1

for extended pin length and l_3 for retracted pin length. Pin is toleranced to h7 for improved location accuracy. Accuracy dependant upon suitable tolerance of bush, we suggest H7, with min. pin engagement to dim. l_3 .

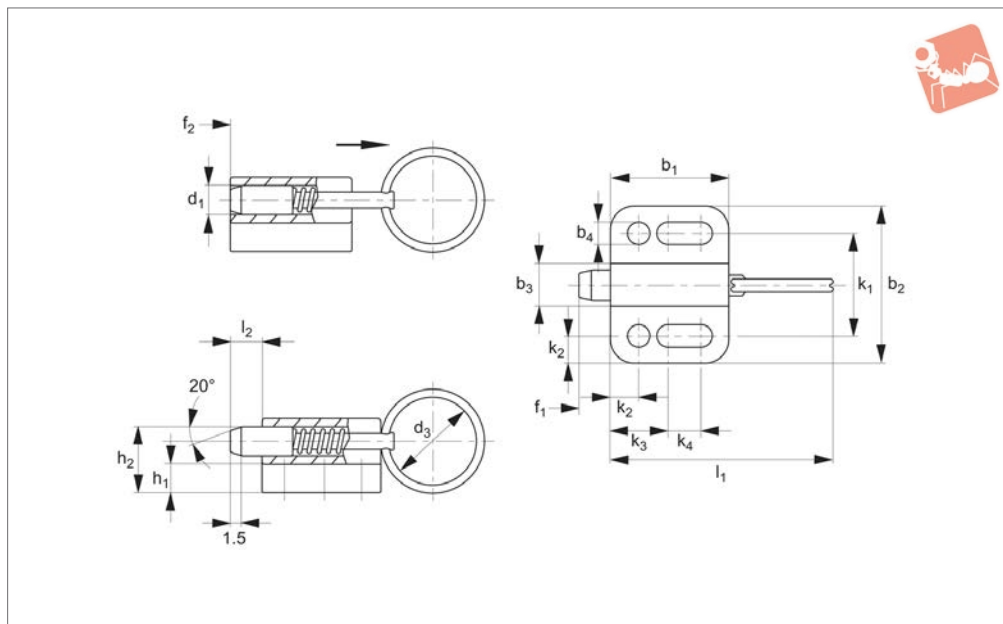
Tips

Grip non-removable.
Spring Loads* = statistical average.

Order No.	Type	d_1 tol. h7	d_2	d_3	d_4	d_5	l_1	l_3	l_4	l_5	l_6	w_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke l_2	Weight g
32530.W0081	Non Locking	8	28	5,5	38	26	20	10	51	8	27	16	8,5	28	10	74
32530.W0083	Non Locking	8	28	5,5	38	26	26	16	51	8	27	16	8,5	28	10	77
32530.W0102	Non Locking	10	28	5,5	38	26	24	12	51	8	27	16	9,5	38	12	77
32530.W0104	Non Locking	10	28	5,5	38	26	32	20	51	8	27	16	9,5	38	12	80
32530.W0281	Locking	8	28	5,5	38	26	20	10	51	8	27	16	8,5	28	10	80
32530.W0283	Locking	8	28	5,5	38	26	26	16	51	8	27	16	8,5	28	10	83
32530.W0202	Locking	10	28	5,5	38	26	24	12	51	8	27	16	9,5	38	12	83
32530.W0204	Locking	10	28	5,5	38	26	32	20	51	8	27	16	9,5	38	12	100



32540



Material

Body: die cast zinc, black.

Pin: stainless steel 1.4305 (AISI 303).

Pull ring: stainless steel 1.4305 (AISI 303).

Integral mounting flange simplifies installation on flat surfaces.

Temperature resistant to 100°C.

Technical Notes

„Non Locking“ type- pin simply springs back when pull ring released.

Tips

Spring loads * = statistical average.

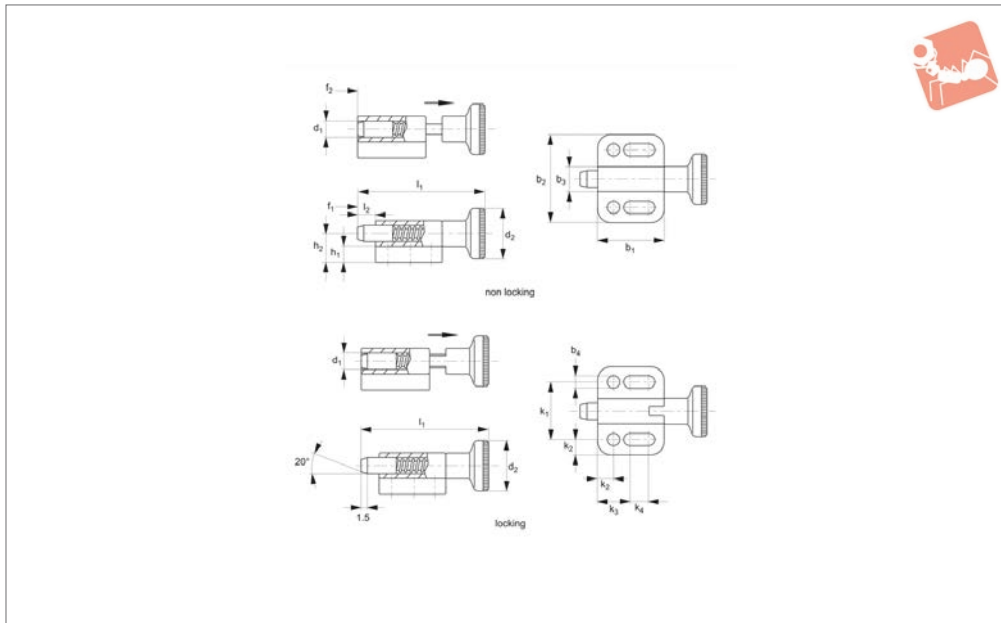
Order No.	Type	d ₁ tol. h9	d ₃	b ₁	b ₂	b ₃	b ₄ -0.2	h ₁	h ₂	k ₁ ±0.05	k ₂	k ₃	k ₄	l ₁	l ₂ min.	Spring load	Spring load	Weight g
																F ₁ N ≈	F ₂ N ≈	
32540.W0304	Non Locking	4	14	16,5	22	6	3,3	4,0	7,0	14	4,0	8	4,5	34,5	4	3	12	10
32540.W0305	Non Locking	5	18	22,0	28	8	4,3	4,5	9,5	18	5,0	10	7,0	45,0	5	5	24	20
32540.W0306	Non Locking	6	24	27,5	32	10	5,4	5,0	10,5	21	5,5	12	10,0	57,5	6	5	21	40
32540.W0308	Non Locking	8	30	33,0	34	12	5,4	6,0	12,5	23	5,5	12	15,5	71,0	8	6	22	58
32540.W0310	Non Locking	10	30	35,0	39	14,5	6,5	6,0	14,5	27	6,0	15	13,5	75,0	10	4	25	83



Index Plungers - Pull Grip

flange mounting - locking

Index Plunger & Pins



32542

INDEX PLUNGER & PINS

Material

Body: die cast zinc, black.

Pin: stainless steel 1.4305 (AIAI 303).

Grip: thermoplastic PA6, black.

Technical Notes

„Locking“ type- enable pin to be held in retracted/non-projecting position; pull

back grip, turn 90° to engage ‚locking‘ on a notched catch.

„Non Locking“ type- pin simply springs back when grip released.

Integral mounting flange simplifies installation of index plunger on horizontal

surfaces.

Temperature resistance from -30°C up to +80°C.

Tips

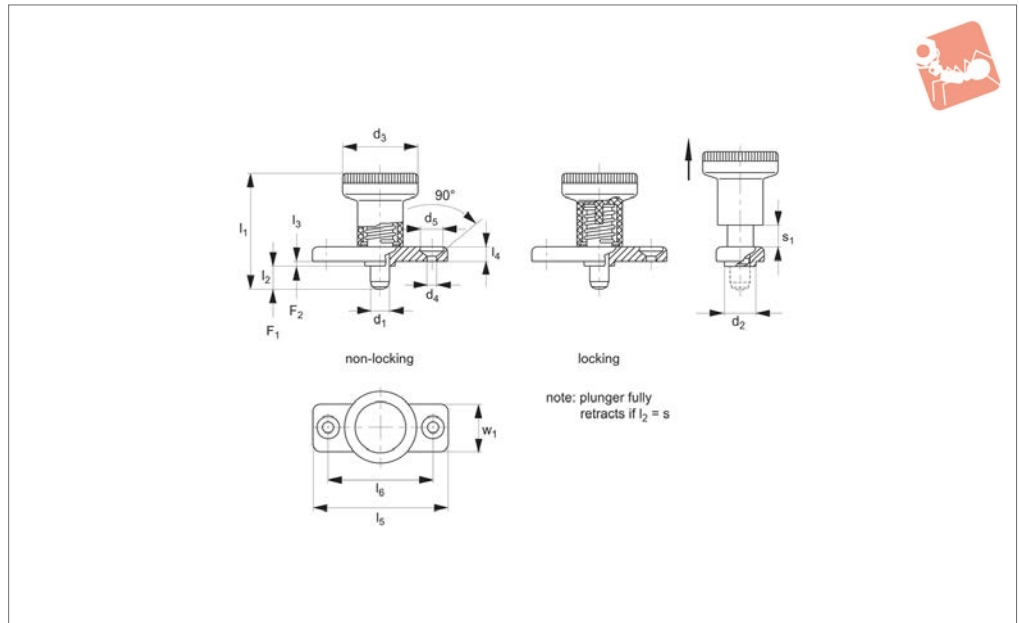
Grip non-removable.

Spring loads * = statistical average.

Order No.	Type	d ₁ tol. h9	d ₂	b ₁	b ₂	b ₃	b ₄ -0.2	h ₁	h ₂	k ₁ ±0.05	k ₂	k ₃	k ₄	l ₁	l ₂ min.	Spring load		Weight g
																F ₁ N ≈	F ₂ N ≈	
32542.W0324	Non Locking	4	12	16,5	22	6	3,3	4,0	7,0	14	4,0	8	4,5	30,5	4	3	12	11
32542.W0325	Non Locking	5	16	22,0	28	8	4,3	4,5	9,5	18	5,0	10	7,0	40,0	5	5	24	20
32542.W0326	Non Locking	6	18	27,5	32	10	5,4	5,0	10,5	21	5,5	12	10,0	49,0	6	5	21	37
32542.W0328	Non Locking	8	21	33,0	34	12	5,4	6,0	12,5	23	5,5	12	15,5	59,0	8	6	22	61
32542.W0330	Non Locking	10	25	35,0	39	14,5	6,5	6,0	14,5	27	6,0	15	13,5	67,5	10	4	25	90
32542.W0344	Locking	4	12	19,0	22	6	3,3	4,0	7,0	14	4,0	8	7,0	33,0	4	3	12	10
32542.W0345	Locking	5	16	25,5	28	8	4,3	4,5	9,5	18	5,0	10	10,5	43,5	5	5	24	26
32542.W0346	Locking	6	18	30,5	32	10	5,4	5,0	10,5	21	5,5	12	13,0	52,0	6	5	21	40
32542.W0348	Locking	8	21	37,5	34	12	5,4	6,0	12,5	23	5,5	12	20,0	63,5	8	6	22	67
32542.W0350	Locking	10	25	40,0	39	14,5	27	6,0	14,5	27	6,0	15	18,5	72,5	10	4	25	98



32760



Material

Free Cutting Steel Type-

Body: die cast zinc, galvanised.

Pin: steel, hardened.

Grip: thermoplastic PA6, black

Stainless Steel Type-

Body: die-cast zinc, galvanised.

Pin: stainless steel, 1.4305 (AISI 303),

nickel plated.

Grip: thermoplastic PA6, black

Technical Notes

„**Locking**” type- enable pin to be held in retracted position; pull back grip, turn 90° to engage ‚locking’ on a notched catch.

„**Non Locking**” type- pin simply springs back when grip released.

Integral mounting flange simplifies installation on flat surfaces.

Pin does not fully retract in all cases - note dimension ‚s’ the stroke of the pin,

i.e. the amount by which the pin retracts when actuated.

Temperature resistance -30°C to +80°C

Tips

Grip non-removable.

Spring loads * = statistical average.

Order No.	Type	Material	d_1 -0.02 - 0.04	d_2 -0.02 - 0.1	d_3	d_4	d_5	l_1	l_2	l_3 -0.15	l_4	l_5	l_6	w_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke s_1	Weight g
32760.W0926	Non Locking	Steel	6	10	25	4,3	8,3	37	6	2,5	4,5	40	30	18	8,5	22	6	26
32760.W0927	Non Locking	Steel	6	10	25	4,3	8,3	45	14	2,5	4,5	40	30	18	8,5	22	6	38
32760.W0928	Non Locking	Steel	8	12	31	5,3	10,4	44	8	2,5	5,5	46	34	20	15,5	28	8	59
32760.W0929	Non Locking	Steel	8	12	31	5,3	10,4	54	18	2,5	5,5	46	34	20	15,5	28	8	63
32760.W0936	Locking	Steel	6	10	25	4,3	8,3	37	6	2,5	4,5	40	30	18	8,5	22	6	36
32760.W0937	Locking	Steel	6	10	25	4,3	8,3	45	14	2,5	4,5	40	30	18	8,5	22	6	38
32760.W0938	Locking	Steel	8	12	31	5,3	10,4	44	8	2,5	5,5	46	34	20	15,5	28	8	60
32760.W0939	Locking	Steel	8	12	31	5,3	10,4	54	18	2,5	5,5	46	34	20	15,5	28	8	63
32760.W0966	Non Locking	Stainless	6	10	25	4,3	8,3	37	6	2,5	4,5	40	30	18	8,5	22	6	26
32760.W0967	Non Locking	Stainless	6	10	25	4,3	8,3	45	14	2,5	4,5	40	30	18	8,5	22	6	38
32760.W0968	Non Locking	Stainless	8	12	31	5,3	10,4	44	8	2,5	5,5	46	34	20	15,5	28	8	59
32760.W0969	Non Locking	Stainless	8	12	31	5,3	10,4	54	18	2,5	5,5	46	34	20	15,5	28	8	63
32760.W0976	Locking	Stainless	6	10	25	4,3	8,3	37	6	2,5	4,5	40	30	18	8,5	22	6	36
32760.W0977	Locking	Stainless	6	10	25	4,3	8,3	45	14	2,5	4,5	40	30	18	8,5	22	6	38
32760.W0978	Locking	Stainless	8	12	31	5,3	10,4	44	8	2,5	5,5	46	34	20	15,5	28	8	60
32760.W0979	Locking	Stainless	8	12	31	5,3	10,4	54	18	2,5	5,5	46	34	20	15,5	28	8	63



Index Plunger - Pull Grip

flange mounting

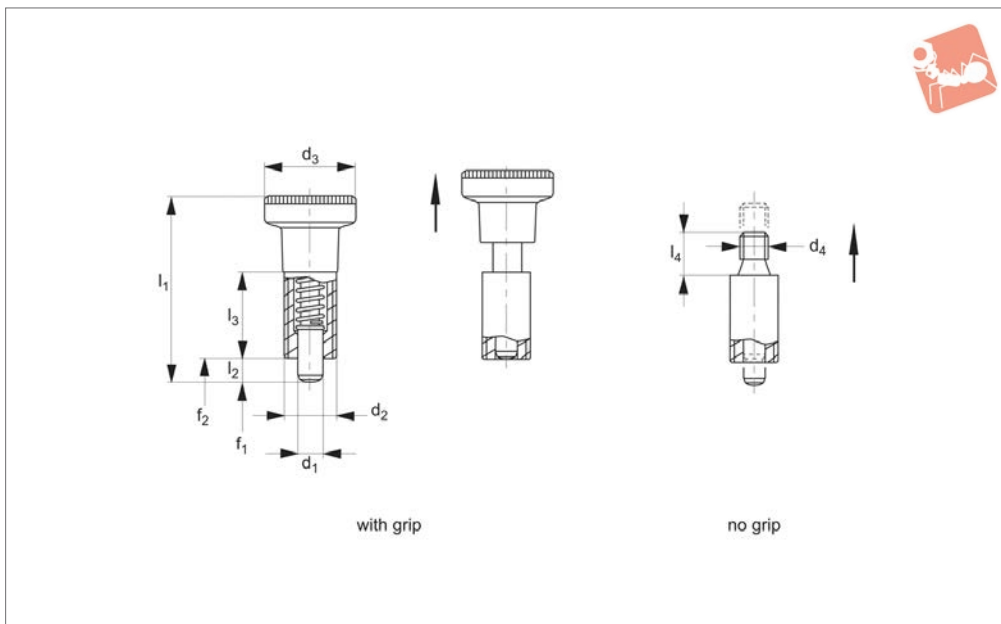
Index Plunger & Pins



INDEX PLUNGER & PINS



32720



Material

Body: free cutting steel, blackened, weldable.

Pin: hardened steel.

Grip: plastic (PA 6), black, non-removable.

Technical Notes

„Non Locking“ type- pin simply springs

back when pull ring released.

Designed specifically for installation via welding or use of glues. Plungers without grip enable your own adaptation with actuation grip/lever to your own design. Without grip temperature resistance up to 250°C .

Tips

Grip non-removable.

Spring loads * = statistical average.

Order No.

32720.W0805

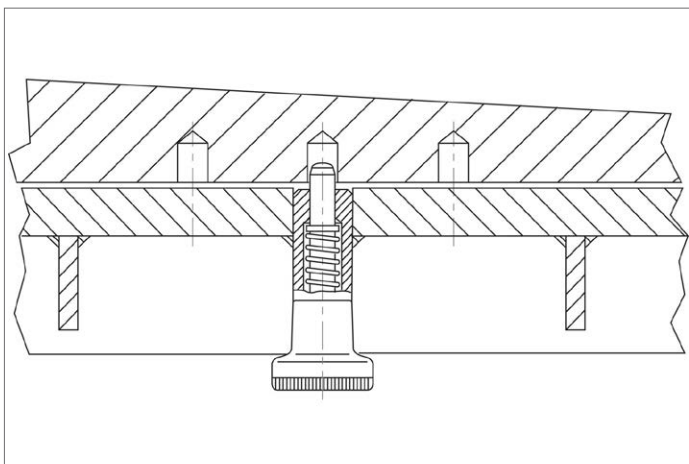
32720.W0806

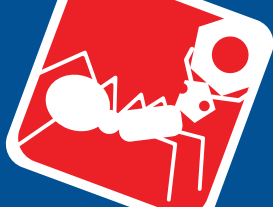
32720.W0808

32720.W0825

32720.W0826

32720.W0828

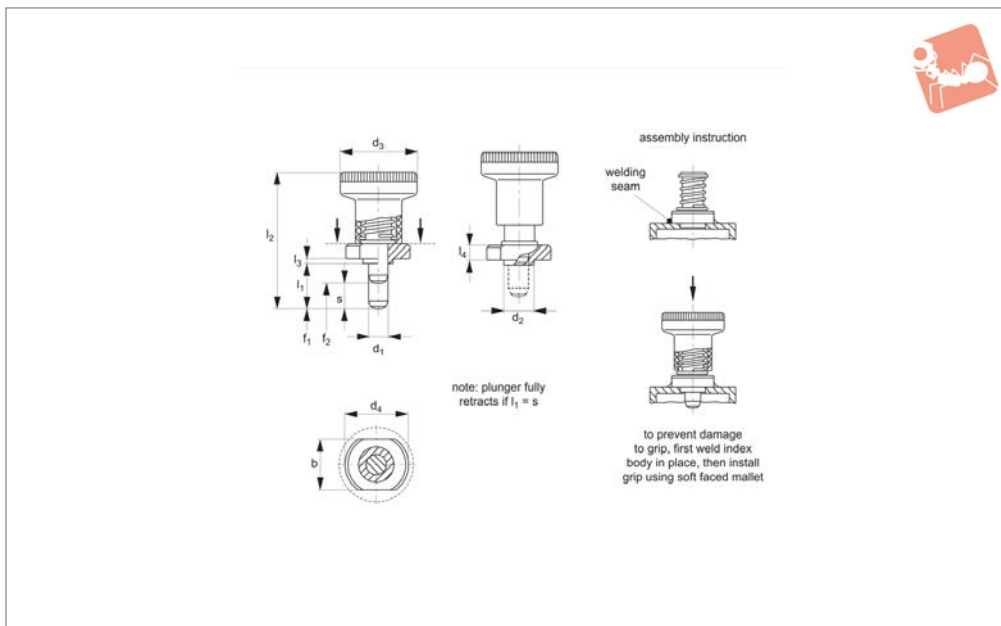




Index Plungers - Pull Grip

weldable - flange mounting - compact

Index Plunger & Pins



32762

INDEX PLUNGER & PINS

Material

Body: steel blackened.
 Locking Pin: hardened.
 Grip: black matte finish, not removable.

Technical Notes

„**Locking**” type- enable pin to be held in retracted position; pull back grip, turn 90° to engage ‚locking’ on a notched catch.

„**Non Locking**” type- pin simply springs back when grip released.

Installation requires welding of plunger body to component. To avoid damage to plastic grip, item is supplied part assembled. Grip is driven in indexing mechanism with a light mallet. Non removable once installed.

Pin does not fully retract in all cases - note dimension ,s’ the stroke of the pin, i.e. the amount by which the pin retracts when actuated.

Temperature resistance -30°C to +80°C

Tips

Spring load* = statistical average.

Important Notes

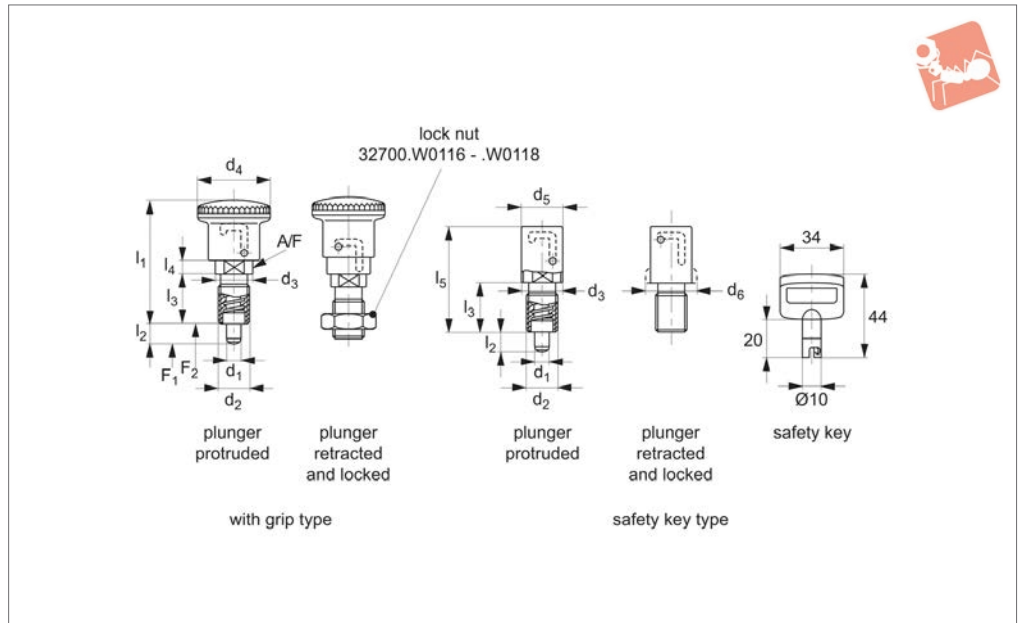
Only parts 32762.W0826,W0828,W0836 and W0838 have fully retractable index bolt. Bolt of other parts do not fully retract into body, instead bolt will protrude by l_1-s when grip actuated.

Order No.	Type	d_1 -0.02 -0.1	l_1	b	d_2 -0.02 -0.04	d_3	Weight g
32762.W0826	Non Locking	6	6	18	10	25	35
32762.W0828	Non Locking	8	8	20	12	31	55
32762.W0829	Non Locking	8	18	20	12	31	60
32762.W0836	Locking	6	6	18	10	25	35
32762.W0839	Locking	8	18	20	12	31	60
32762.W0827	Non Locking	6	14	18	10	25	36
32762.W0837	Locking	6	14	18	10	25	36
32762.W0838	Locking	8	8	20	12	31	55

Order No.	d_4	l_2	l_3	l_4	s	Spring load F_1 N ≈	Spring load F_2 N ≈	Axial load N
32762.W0826	22	37	1.5	5.5	6	8.5	22	400
32762.W0828	25	44	2.0	6.5	8	15.5	28	500
32762.W0829	25	44	2.0	6.5	8	15.5	28	500
32762.W0836	22	37	1.5	5.5	6	8.5	22	400
32762.W0839	25	44	2.0	6.5	8	15.5	28	500
32762.W0827	22	37	1.5	5.5	6	8.5	22	400
32762.W0837	22	37	1.5	5.5	6	8.5	22	400
32762.W0838	25	44	2.0	6.5	8	15.5	28	500



32781



Material

Body: free cutting steel, zinc plated, blue passivated.

Pin: stainless steel, 1.4305 (AISI 303).

Spring: stainless steel, 1.4310 (AISI 301).

Grip: thermoplastic PA6, black.

Technical Notes

Tamper resistant against unauthorised or accidental actuation.

At start position pin is protruding, when lever is actuated pin retracts.

Two different types available;

with grip - enables pin to be held in retracted/non projecting position; pull back grip, turn 90° to engage ,locking' via a deep notch in plunger body.

with safety key - use key to hold pin in retracted/non-projecting position; acuate

key (please order seperately) turn 90° to engage ,locking via a deep notch in plunger body.

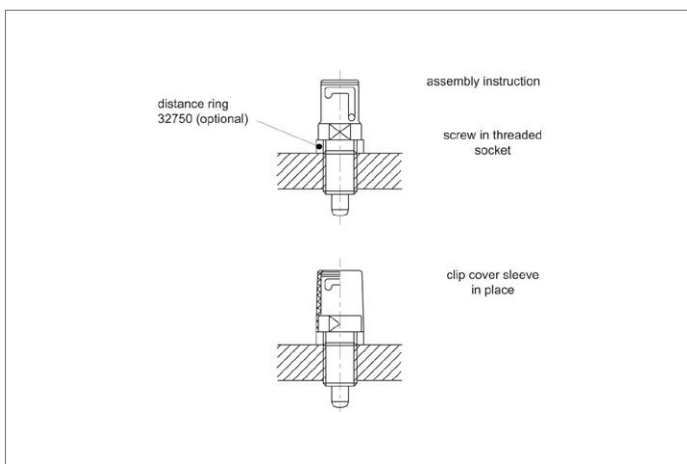
Lock nuts sold separately See products 65690 and 65692

Tips

Grip non-removable.

Spring loads* = statistical average.

Order No.	Type	d ₁ 0 -0.05	d ₂	d ₃	d ₄	d ₅	d ₆	l ₁ ≈	l ₂	l ₃	l ₄ ≈	l ₅	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight kg
32781.W0006	With Grip	6	M12x1,5	16	28	17		50	8	20	6	43	14	13	28	0,05
32781.W0008	With Grip	8	M16x1,5	18	28	17	20	52	10	22	6	48	16	14	38	0,05
32781.W0026	For Safety key	6	M12x1,5	16	28	17		50	8	20	6	43	14	13	28	0,03
32781.W0028	For Safety key	8	M16x1,5	18	28	17	20	52	10	22	6	48	16	14	38	0,05
32781.W0998	Safety key															

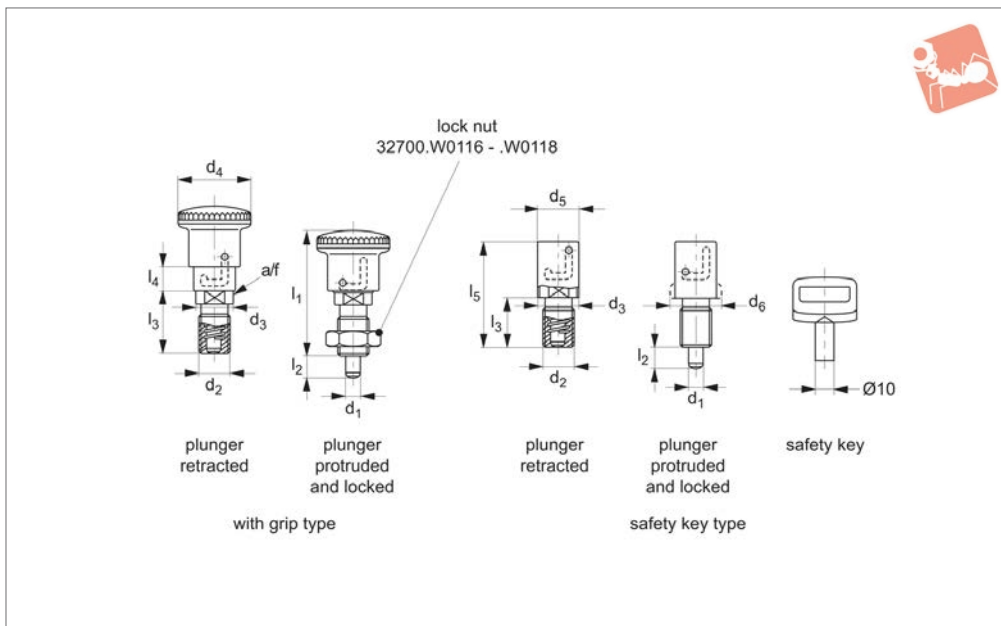




Index plungers - Pull Grip

locking - tamper resistant - pin retracted at start

Index Plunger & Pins



32782

INDEX PLUNGER & PINS

Material

Body: free cutting steel, zinc plated, blue passivated.
 Pin: stainless steel, 1.4305 (AISI 303).
 Spring: stainless steel, 1.4301 (AISI301).
 Grip: thermoplastic PA6, black.

Technical Notes

Tamper resistant against unauthorised or accidental actuation.

At start position pin is retracted, when lever is actuated pin protrudes.

Two different types available;
with grip - use key to hold pin in protruding position; pull back grip, turn 90° to engage ,locking' via a deep notch in plunger body.

with safety key - use key to hold pin in

protruding position; acuate key (please order seperately) turn 90° to engage ,locking' via a deep notch in plunger body.

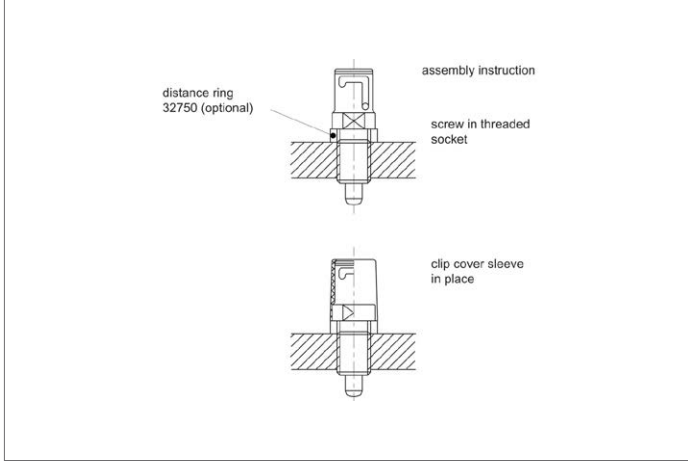
Lock nuts sold separately See products 65690 and 65692

Tips

Grip non-removable.
 Spring loads* = statistical average.

Order No.	Type	d ₁ 0 -0.05	d ₂	d ₃	d ₄	d ₅	Weight kg
32782.W0356	With Grip	6	M12x1,5	16	28	17	0.05
32782.W0358	With Grip	8	M16x1,5	18	28	17	0.05
32782.W0366	For Safety Key	6	M12x1,5	16	28	17	0.05
32782.W0368	For Safety Key	8	M16x1,5	18	28	17	0.05
32782.W0999	Key	-	-	-	-	-	-

Order No.	d ₆	l ₁ ≈	l ₂	l ₃	l ₄ ≈	l ₅	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈
32782.W0356	-	51.5	8	20	6	43	14	12	27
32782.W0358	20	54.5	10	22	6	48	16	12	35
32782.W0366	-	51.5	8	20	6	43	14	12	27
32782.W0368	20	54.5	10	22	6	48	16	12	35
32782.W0999	-	-	-	-	-	-	-	-	-

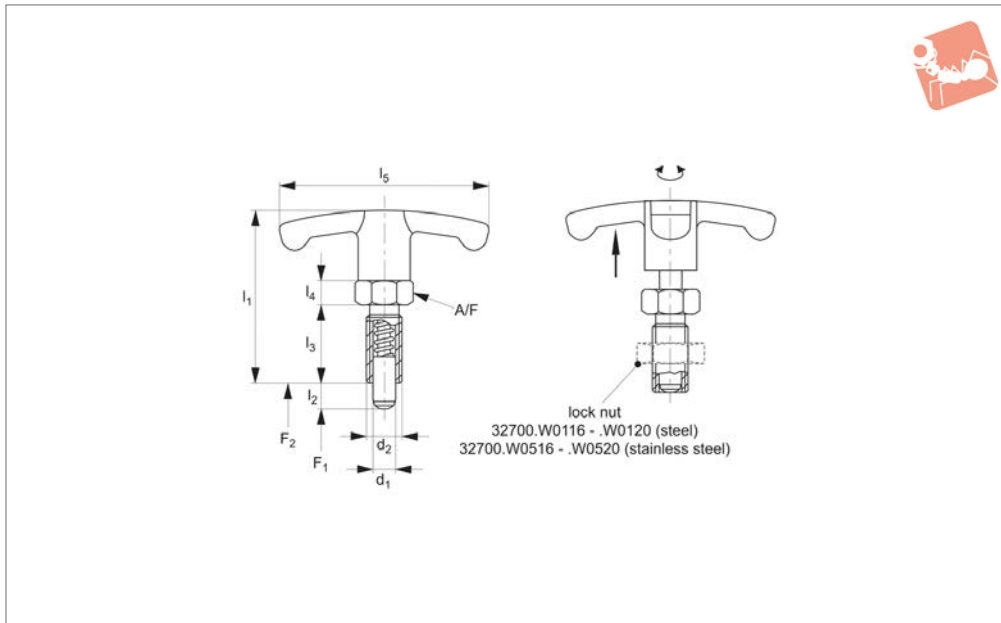




Index Plungers - T-handle Grip

compact - non locking

Index Plunger & Pins



32502

INDEX PLUNGER & PINS

Material

Free cutting Steel Type-

Body: Free cutting steel, blackened.
Pin: Steel, hardened.
Grip: Thermoplastic PA6, black, dull.

Stainless Steel Type-

Body: Stainless steel 1.4305 (AISI 303).
Pin: Stainless steel 1.4305 (AISI 303), nickel plated.
Grip: Thermoplastic PA6, black, dull.

Technical Notes

T-handle grip makes for improved hand-

ling, especially when operator is using safety gloves etc.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation.

„Non Locking“ type- pin simply springs back when grip released.

Lock nuts sold separately. See products 65690 and 65692

Tips

Distance collar no. 32750 can be used to adapt screw length.

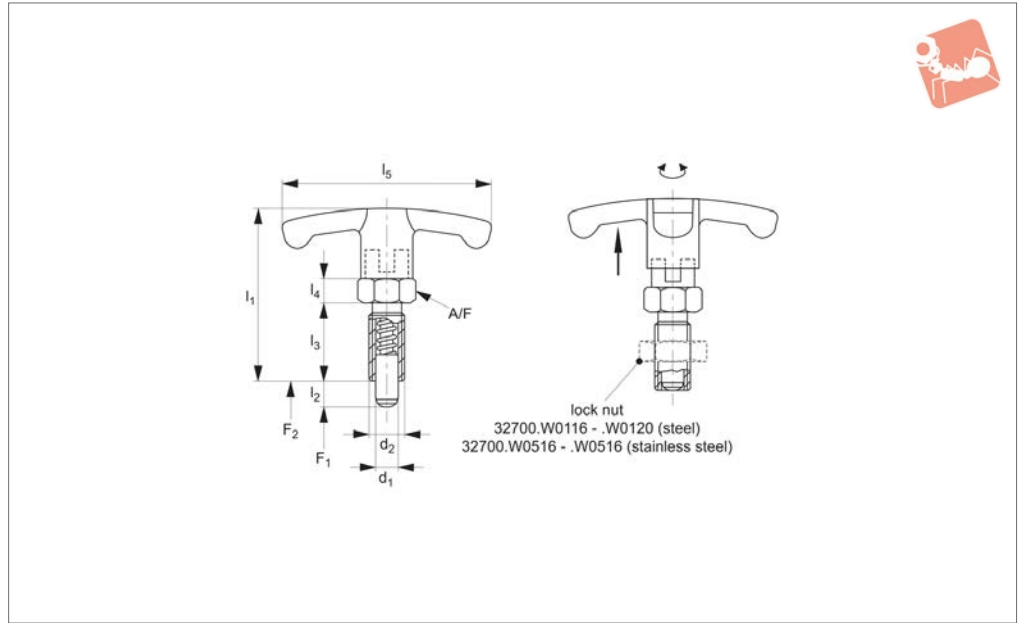
Grip non-removable.

Spring loads* = statistical average.

Order No.	Type	Material	d ₁ -0.02 -0.04	l ₂	d ₂	l ₁	l ₃	l ₄	l ₅	A/F	Spring load N ~	Spring load F ₁ N ~	Spring load F ₂ N ~	Weight g
32502.W0820	Non Locking	Steel	6	6	M12x1,5	48	22	6	54	14	6,5	19	31,0	
32502.W0822	Non Locking	Steel	6	9	M12x1,5	48	22	6	54	14	6,0	25	32,0	
32502.W0824	Non Locking	Steel	8	8	M16x1,5	59	26	8	59	17	8,5	26	64,0	
32502.W0826	Non Locking	Steel	8	12	M16x1,5	59	26	8	59	17	8,5	28	65,0	
32502.W0828	Non Locking	Steel	10	12	M16x1,5	59	26	8	59	17	9,5	38	66,0	
32502.W0830	Non Locking	Steel	12	15	M20x1,5	68	33	10	59	22	11,5	40	120,0	
32502.W0920	Non Locking	Stainless steel	6	6	M12x1,5	48	22	6	54	14	6,5	19	31,0	
32502.W0922	Non Locking	Stainless steel	6	9	M12x1,5	48	22	6	54	14	6,0	25	32,0	
32502.W0924	Non Locking	Stainless steel	8	8	M16x1,5	59	26	8	59	17	8,5	26	64,0	
32502.W0926	Non Locking	Stainless steel	8	12	M16x1,5	59	26	8	59	17	8,5	28	65,0	
32502.W0928	Non Locking	Stainless steel	10	12	M16x1,5	59	26	8	59	17	9,5	38	66,0	
32502.W0930	Non Locking	Stainless steel	12	15	M20x1,5	68	33	10	59	22	11,5	40	120,0	



32504



Material

Free cutting Steel Type-

Body: free cutting steel, blackened.

Pin: steel, hardened.

Grip: thermoplastic PA6, black, dull.

Stainless Steel Type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303), nickel plated.

Grip: thermoplastic PA6, black, dull.

Technical Notes

T-handle grip makes for improved hand-

ling, especially when operator is using safety gloves etc.

Thread recess on body allows full engagement of thread length. Hexagon collar improves leverage for secure installation.

„Locking“ type- enable pin to be held in retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

Lock nuts sold separately. See products 65690 and 65692

Tips

Distance collars no. 32750 can be used to adapt screw length.

Grip non-removable.

Spring loads* = statistical average.

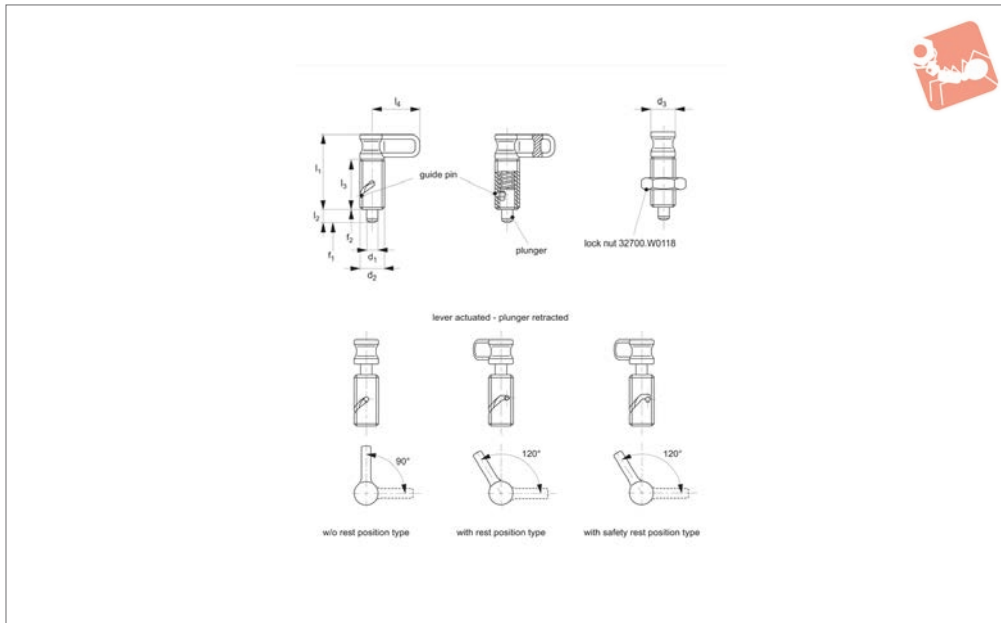
Order No.	Type	Material	d ₁	l ₂	d ₂	l ₁	l ₃	l ₄	l ₅	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32504.W0832	Locking	Steel	6	6	M12x1,5	48	22	6	54	14	6.5	19	33.0
32504.W0834	Locking	Steel	6	9	M12x1,5	48	22	6	54	14	6.0	25	34.0
32504.W0836	Locking	Steel	8	8	M16x1,5	59	26	8	59	17	8.5	26	68.0
32504.W0838	Locking	Steel	8	12	M16x1,5	59	26	8	59	17	8.5	28	71.0
32504.W0840	Locking	Steel	10	12	M16x1,5	59	26	8	59	17	9.5	38	72.0
32504.W0842	Locking	Steel	12	15	M20x1,5	68	33	10	59	22	11.5	40	127.0
32504.W0932	Locking	Stainless	6	6	M12x1,5	48	22	6	54	14	6.5	19	33.0
32504.W0934	Locking	Stainless	6	9	M12x1,5	48	22	6	54	14	6.0	25	34.0
32504.W0936	Locking	Stainless	8	8	M16x1,5	59	26	8	59	17	8.5	26	68.0
32504.W0938	Locking	Stainless	8	12	M16x1,5	59	26	8	59	17	8.5	28	71.0
32504.W0940	Locking	Stainless	10	12	M16x1,5	59	26	8	59	17	9.5	38	72.0
32504.W0942	Locking	Stainless	12	15	M20x1,5	68	33	10	59	22	11.5	40	127.0



Index Plungers - Lever Grip

pin protruding at start

Index Plunger & Pins



32491

INDEX PLUNGER & PINS

Material

Body: steel zinc plated, blue passivated.
Pin: stainless steel 1.4305 (AISI 303).
Grip/Lever: thermoplastic, black.

Technical Notes

At start position locking pin is protruding, when lever is actuated locking pin retracts.

The lever can be turned anti-clockwise by 90° or 120°, over a cam guide, to retract

the pin.

Three different types available;

1) without rest position- sprung loaded pin which springs back to start position whenever released.

2) with rest position- pin held in retracted position via indexed notch on cam.

3) with safety rest position- pin held in retracted position via deep notch, to avoid

accidental actuation, lever must first be pulled out of notch prior to release.

Lock nuts sold separately. See products 65690 and 65692

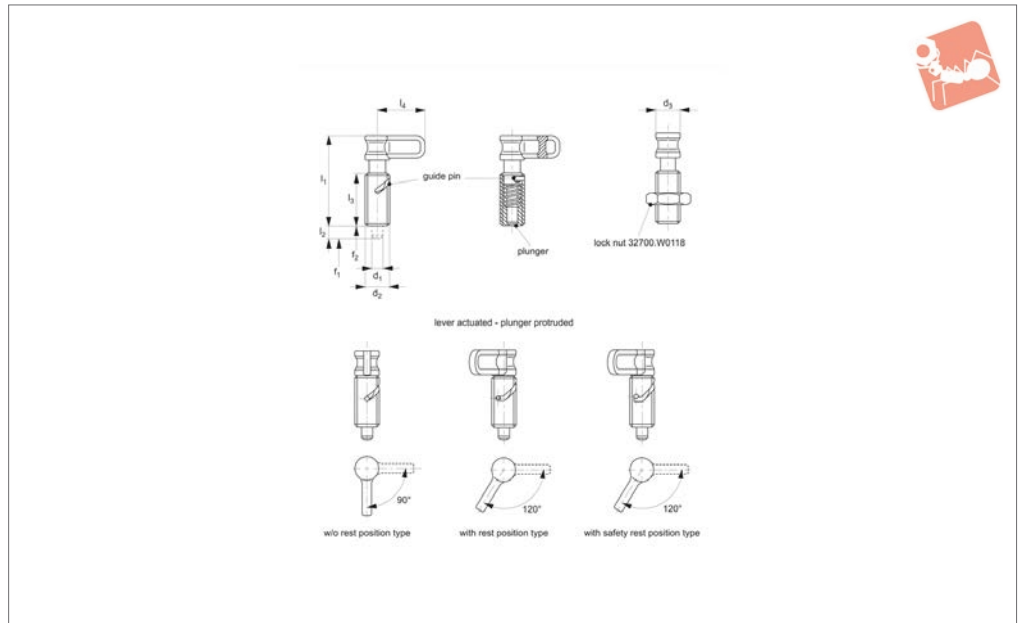
Tips

Spring Loads* = statistical average.

Order No.	Type	d ₁	d ₂	d ₃	l ₁ ≈	l ₂	l ₃ min.	l ₄	Spring load F ₁ N ≈	Spring load F ₂ N ≈
32491.W0006	W/o Rest Position - Spring Back	6	M16x1,5	16	51	8	35	32	6.5	20
32491.W0007	W/o Rest Position - Spring Back	8	M16x1,5	16	51	8	35	32	6.5	20
32491.W0009	W/o Rest Position - Spring Back	10	M16x1,5	16	51	8	35	32	6.5	20
32491.W0356	With Rest Position	6	M16x1,5	16	51	8	35	32	6.5	20
32491.W0357	With Rest Position	8	M16x1,5	16	51	8	35	32	6.5	20
32491.W0359	With Rest Position	10	M16x1,5	16	51	8	35	32	6.5	20
32491.W0456	With Safety Rest Position	6	M16x1,5	16	51	8	35	32	6.5	20
32491.W0457	With Safety Rest Position	8	M16x1,5	16	51	8	35	32	6.5	20
32491.W0459	With Safety Rest Position	10	M16x1,5	16	51	8	35	32	6.5	20



32492



Material

Body: steel, zinc plated, blue passivated.
 Pin: stainless steel, 1.4305 (AISI 303).
 Grip/Lever: thermoplastic, black.

Technical Notes

At start position locking pin is retracted, when lever is actuated locking pin protrudes.

The lever can be turned anti-clockwise by

90° or 120°, over a cam guide, to extend the pin.

Three different types available;

1) without rest position- sprung loaded pin which springs back to start position whenever released.

2) with rest position- pin held in protruding position via indexed notch on cam,

3) with safety rest position- pin held in

protruding position via deep notch, to avoid accidental actuation, lever must first be pulled out of notch prior to release.

Lock nuts sold separately. See products 65690 and 65692

Tips

Spring Loads* = statistical average.

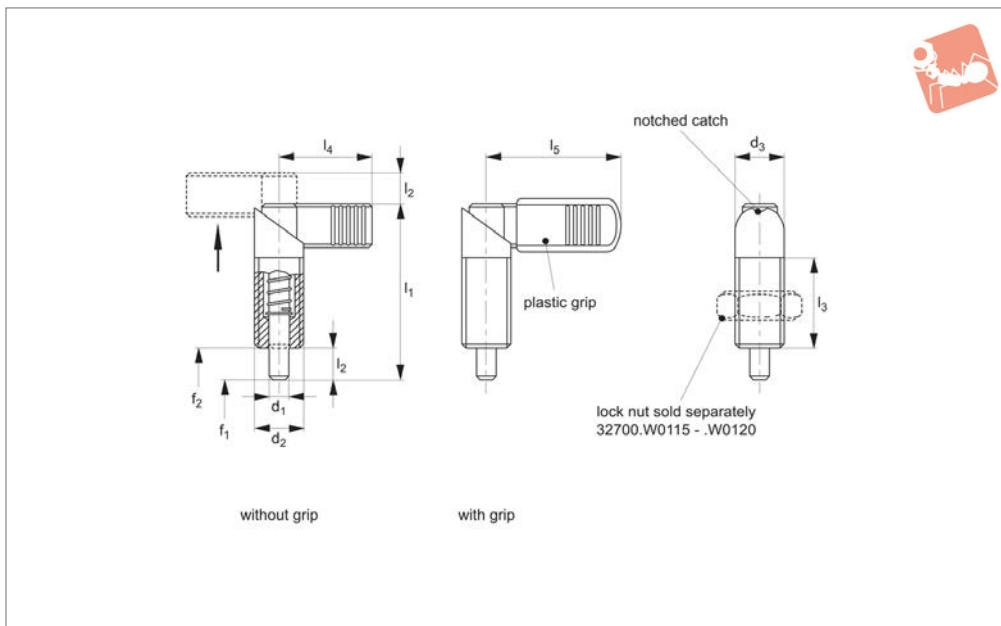
Order No.	Type	d ₁	d ₂	d ₃	l ₁ ≈	l ₂	l ₃ min.	l ₄	Spring load F ₁ N ≈	Spring load F ₂ N ≈
32492.W0326	W/o Rest Position - Spring Back	6	M16x1,5	16	60	8	35	32	7	16.5
32492.W0327	W/o Rest Position - Spring Back	8	M16x1,5	16	60	8	35	32	7	16.5
32492.W0366	With Rest Position	6	M16x1,5	16	60	8	35	32	7	16.5
32492.W0367	With Rest Position	8	M16x1,5	16	60	8	35	32	7	16.5
32492.W0466	With Safety Rest Position	6	M16x1,5	16	60	6	35	32	7	16.5
32492.W0467	With Safety Rest Position	8	M16x1,5	16	60	6	35	32	7	16.5



Index Plungers - Lever Grip

locking - steel

Index Plunger & Pins



32500

INDEX PLUNGER & PINS

Material

Body: free-cutting steel, blackened.

Pin: hardened steel.

Plastic grip: thermoplastic, black, dull.

Technical Notes

Turn lever 180° to retract pin. To enable

pin to be held in retracted position, secure lever in notched catch on plunger body.

Plastic grip type, improves handling.

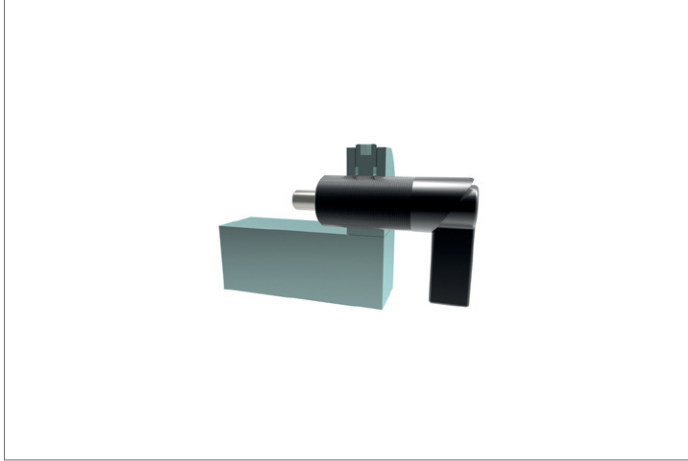
Temperature resistance of type with plastic grip is -30°C to +80°C

Lock nuts sold separately. See products 65690 and 65692

Tips

Spring loads * = statistical average.

Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3 +1.5	l_4	l_5	Spring load F_1 N ≈	Spring load F_2 N	Weight g
32500.W0000	Without Grip	4	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	17.0
32500.W0001	Without Grip	5	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	18.0
32500.W0002	Without Grip	6	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	18.0
32500.W0003	Without Grip	5	M12x1,5	12	47.0	8	26	26	-	8.5	19.5	29.0
32500.W0004	Without Grip	6	M12x1,5	12	47.0	8	26	26	-	8.5	19.5	29.0
32500.W0006	Without Grip	6	M16x1,5	16	56.0	10	30	32	-	11.5	30.5	59.0
32500.W0005	Without Grip	8	M12x1,5	12	47.0	8	26	26	-	8.5	19.5	30.0
32500.W0007	Without Grip	8	M16x1,5	16	56.0	10	30	32	-	11.5	30.5	61.0
32500.W0008	Without Grip	8	M20x1,5	20	69.0	12	36	37	-	21.0	57.5	121.0
32500.W0009	Without Grip	10	M16x1,5	16	56.0	10	30	32	-	11.5	30.5	64.0
32500.W0010	Without Grip	10	M20x1,5	20	69.0	12	36	37	-	21.0	57.5	123.0
32500.W0012	Without Grip	12	M20x1,5	20	69.0	12	36	37	-	21.0	57.5	127.0
32500.W0353	With Grip	5	M12x1,5	12	47.0	8	26	-	32	8.5	19.5	30.0
32500.W0354	With Grip	6	M12x1,5	12	47.0	8	26	-	32	8.5	19.5	30.0
32500.W0356	With Grip	6	M16x1,5	16	56.0	10	30	-	42	11.5	30.5	61.0
32500.W0355	With Grip	8	M12x1,5	12	47.0	8	26	-	32	8.5	19.5	32.0
32500.W0357	With Grip	8	M16x1,5	16	56.0	10	30	-	42	11.5	30.5	63.0
32500.W0358	With Grip	8	M20x1,5	20	69.0	12	36	-	52	21.0	57.5	124.0
32500.W0359	With Grip	10	M16x1,5	16	56.0	10	30	-	42	11.5	30.5	66.0
32500.W0360	With Grip	10	M20x1,5	20	69.0	12	36	-	52	21.0	57.5	128.0
32500.W0362	With Grip	12	M20x1,5	20	69.0	12	36	-	52	21.0	57.5	131.0

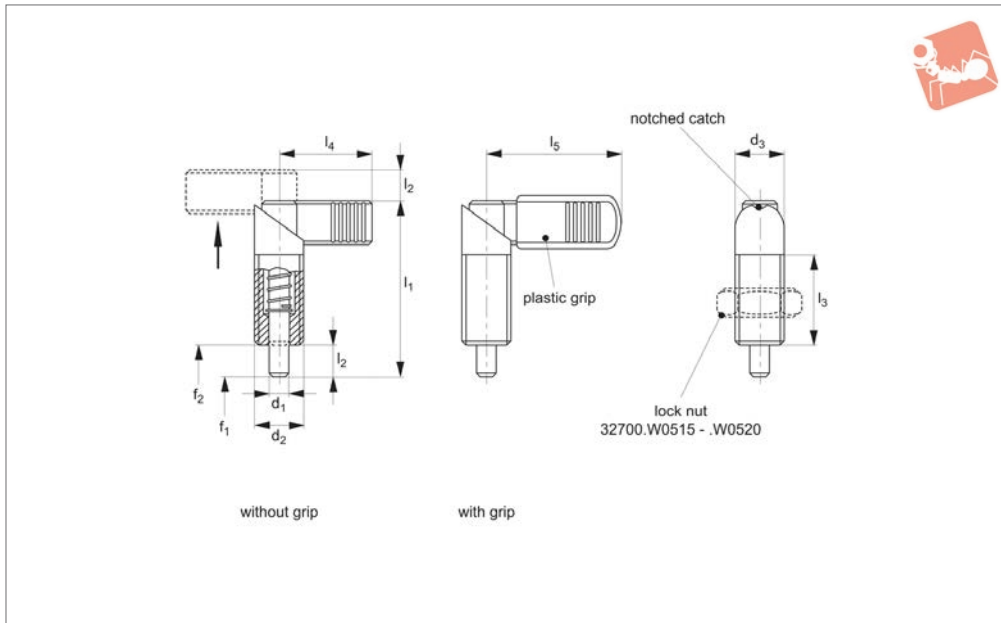




Index Plungers - Lever Grip

locking - stainless

Index Plunger & Pins



32501

INDEX PLUNGER & PINS

Material

Body: stainless steel 1.4305 (AISI 303).
Pin: stainless steel 1.4305 (AISI 303).
Plastic Grip: thermoplastic, black, dull.

Technical Notes

Turn lever 180° to retract pin. To enable

pin to be held in retracted position, secure lever in notched catch on plunger body.

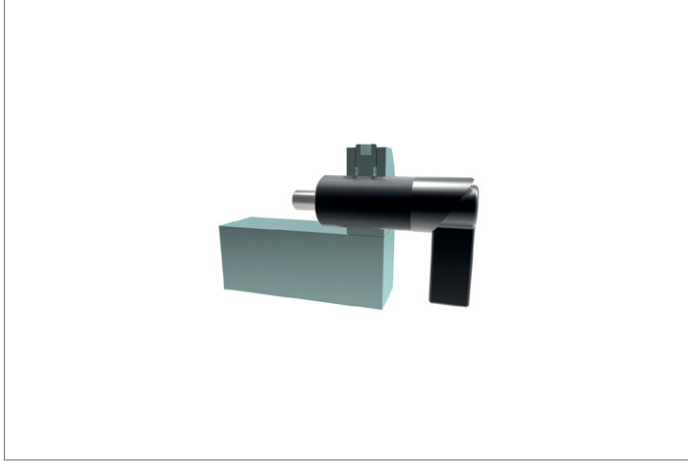
Plastic grip type, improves handling.
Temperature resistance of type with plastic grip is -30°C to +80°C

Lock nuts sold separately. See products 65690 and 65692

Tips

Spring loads * = statistical average.

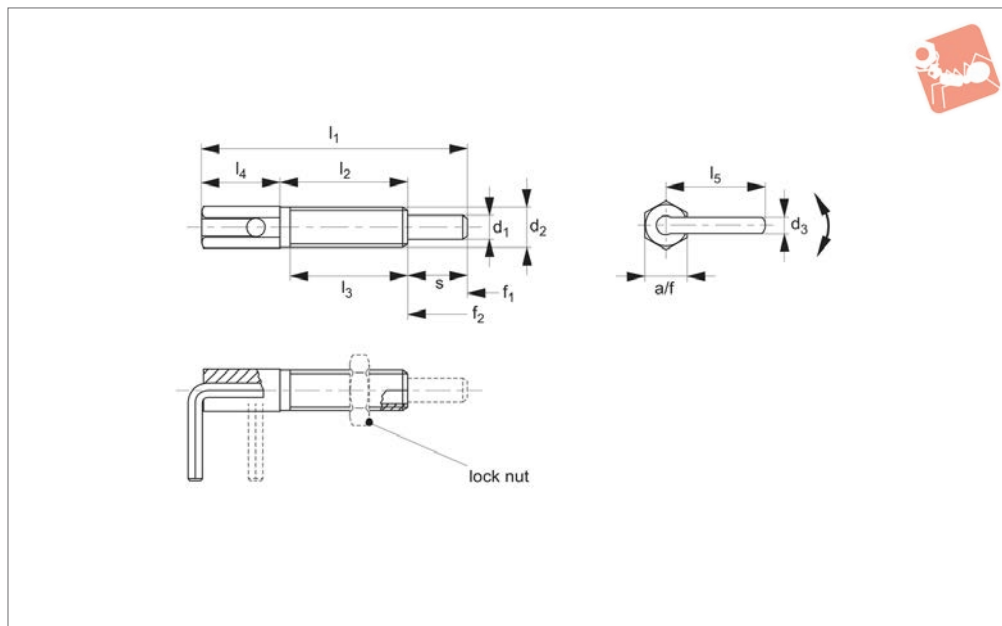
Order No.	Type	d_1 -0.02 -0.04	d_2	d_3	l_1 ≈	l_2 min.	l_3 +1.5	l_4	l_5	Spring load F_1 N ≈	Spring load F_2 N	Weight g
32501.W0308	Without Grip	4	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	17
32501.W0310	Without Grip	5	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	18
32501.W0312	Without Grip	6	M10x1,0	10	37.5	6	19	21	-	8.5	25.0	18
32501.W0323	Without Grip	5	M12x1,5	12	47	8	26	26	-	8.5	19.5	29.0
32501.W0324	Without Grip	6	M12x1,5	12	47	8	26	26	-	8.5	19.5	29.0
32501.W0326	Without Grip	6	M16x1,5	16	56	10	30	32	-	11.5	30.5	59.0
32501.W0325	Without Grip	8	M12x1,5	12	47	8	26	26	-	8.5	19.5	30.0
32501.W0327	Without Grip	8	M16x1,5	16	56	10	30	32	-	11.5	30.5	61.0
32501.W0328	Without Grip	8	M20x1,5	20	69	12	36	37	-	21.0	57.5	121.0
32501.W0329	Without Grip	10	M16x1,5	16	56	10	30	32	-	11.5	30.5	64.0
32501.W0330	Without Grip	10	M20x1,5	20	69	12	36	37	-	21.0	57.5	123.0
32501.W0332	Without Grip	12	M20x1,5	20	69	12	36	37	-	21.0	57.5	127.0
32501.W0363	With Grip	5	M12x1,5	12	47	8	26	-	32	8.5	19.5	30.0
32501.W0364	With Grip	6	M12x1,5	12	47	8	26	-	32	8.5	19.5	30.0
32501.W0366	With Grip	6	M16x1,5	16	56	10	30	-	42	11.5	30.5	61.0
32501.W0365	With Grip	8	M12x1,5	12	47	8	26	-	32	8.5	19.5	32.0
32501.W0367	With Grip	8	M16x1,5	16	56	10	30	-	42	11.5	30.5	63.0
32501.W0368	With Grip	8	M20x1,5	20	69	12	36	-	52	21.0	57.5	124.0
32501.W0369	With Grip	10	M16x1,5	16	56	10	30	-	42	11.5	30.5	66.0
32501.W0370	With Grip	10	M20x1,5	20	69	12	36	-	52	21.0	57.5	128.0
32501.W0372	With Grip	12	M20x1,5	20	69	12	36	-	52	21.0	57.5	131.0





Index Plungers - Lever Grip locking - coarse thread

Index Plunger & Pins



32555

INDEX PLUNGER & PINS

Material

Body: free cutting steel, zinc plated.
Pin: steel, galvanised.
Lever: steel, galvanised.

Technical Notes

Pull back and turn lever 180° to retract pin.

To enable pin to be held in retracted position, secure lever in notched catch on plunger body.

For applications where high precision is not required.

Coarse thread.

Temperature resistance up to 250°C

Lock nuts sold separately. See products 65690 and 65692

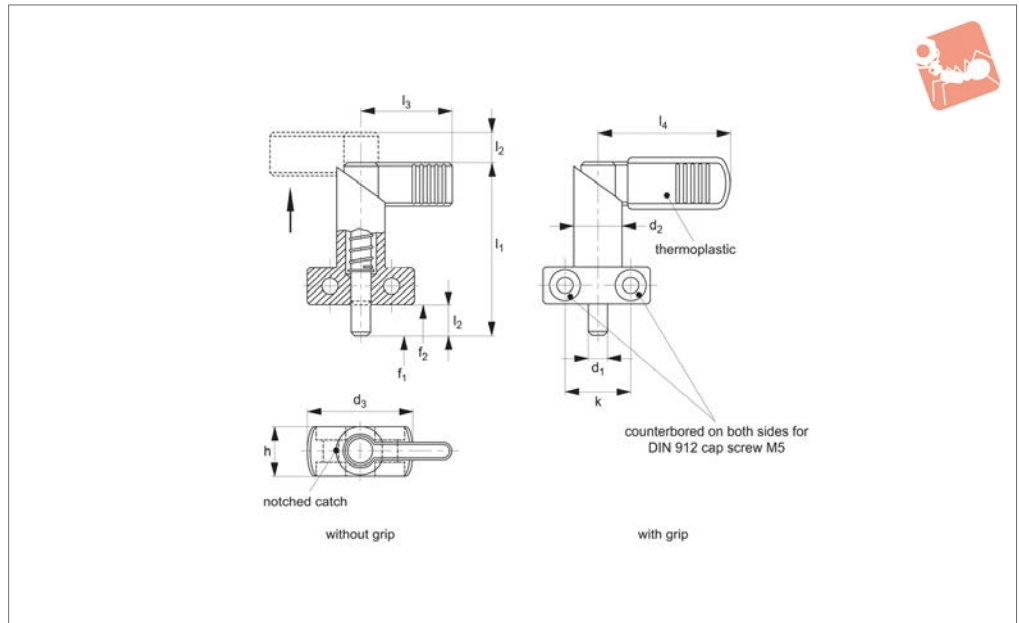
Tips

Spring loads* = statistical average.

Order No.	Type	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	l ₄	l ₅	s	A/F	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Tightening torque Nm max.	Weight g
32555.W0105	Locking	4	M 6x1,00	2,3	41,5	20,0	17,0	12,0	15,5	9,5	6	3,0	10,0	1,6	6
32555.W0110	Locking	5	M 8x1,25	3,0	54,0	27,0	24,0	15,0	19,2	12,0	8	3,5	13,5	4,5	14
32555.W0115	Locking	6	M10x1,50	3,5	65,0	33,5	30,0	17,5	22,9	14,0	10	4,0	16,0	10,0	26
32555.W0120	Locking	8	M12x1,75	4,7	73,0	31,8	28,0	22,2	31,2	19,0	12	4,0	22,0	13,0	55
32555.W0125	Locking	10	M16x2,00	4,7	102,5	50,5	44,5	27,0	32,7	25,0	16	4,0	23,0	42,0	103



32520



Material

Body & Lever: free cutting steel, blackened.

Pin: steel, nitrided, black.

Plastic Grip: thermoplastic, black, dull.

Technical Notes

Turn lever 180° to retract pin. To enable

pin to be held in retracted position, secure lever in notched catch on plunger body.

Countersunk holes on both sides of mounting flange enable both right or left mounting.

Plastic grip type, improves handling.

Temperature resistance of type with plastic

grip is -30°C to +80°C.

Tips

Spring loads * = statistical average.

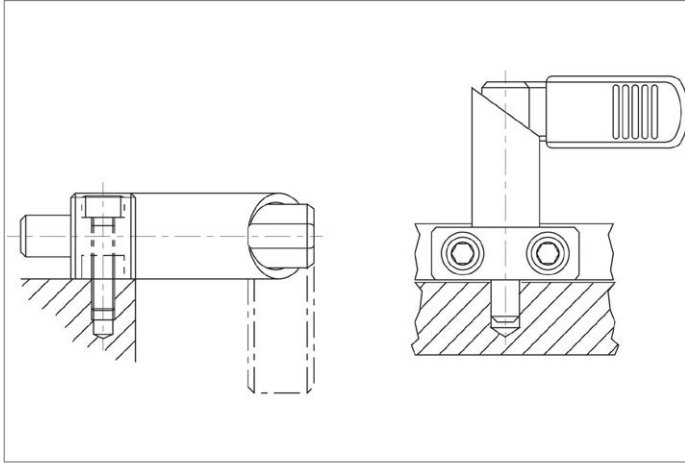
Order No.	Type	d_1 0 -0.05	l_2	d_2	d_3	h	k	l_1	l_3	l_4	s	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32520.W0376	Without Grip	6	10	16	35	16	20	56	32	-	12	12	32	82
32520.W0378	Without Grip	8	10	16	35	16	20	56	32	-	12	12	32	85
32520.W0379	Without Grip	8	12	20	40	20	22	69	37	-	15	21	58	163
32520.W0381	Without Grip	10	10	16	35	16	20	56	32	-	12	12	32	85
32520.W0382	Without Grip	10	12	20	40	20	22	69	37	-	15	21	58	167
32520.W0384	Without Grip	12	12	20	40	20	22	69	37	-	15	21	58	168
32520.W0386	With Grip	6	10	16	35	16	20	56	-	42	12	12	32	83
32520.W0388	With Grip	8	10	16	35	16	20	56	-	42	12	12	32	85
32520.W0389	With Grip	8	12	20	40	20	22	69	-	52	15	21	58	169
32520.W0391	With Grip	10	10	16	35	16	20	56	-	42	12	12	32	86
32520.W0392	With Grip	10	12	20	40	20	22	69	-	52	15	21	58	171
32520.W0394	With Grip	12	12	20	40	20	22	69	-	52	15	21	58	171



Index Plungers - Lever Grip

flange mounting - locking

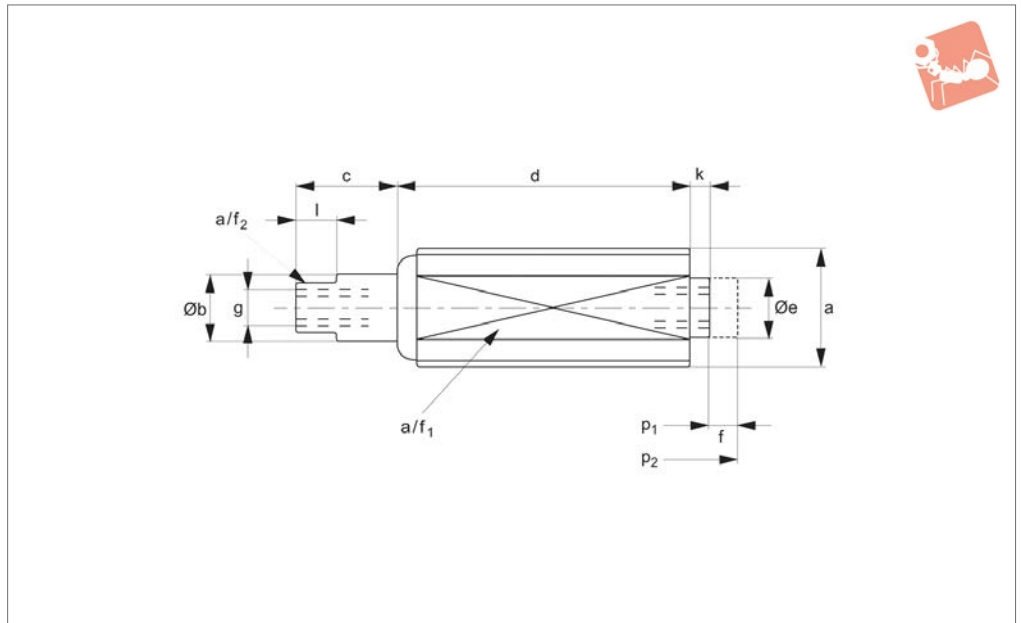
Index Plunger & Pins



INDEX PLUNGER & PINS



32790



Material

Body: steel, blue galvanised.
Pins: steel, burnished.

Technical Notes

Ideal for either pressure (push) and

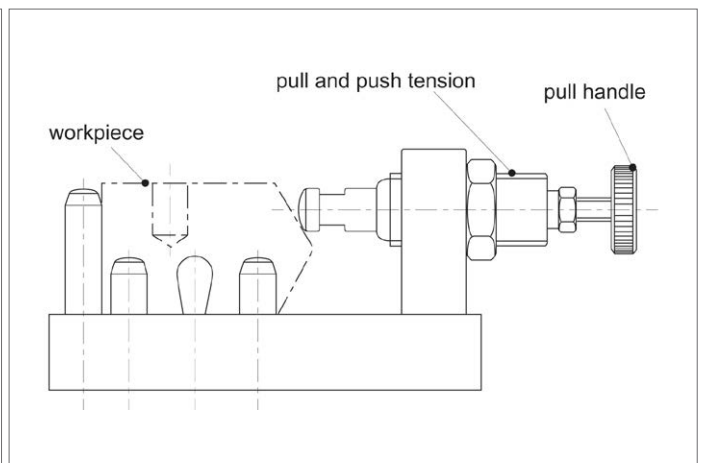
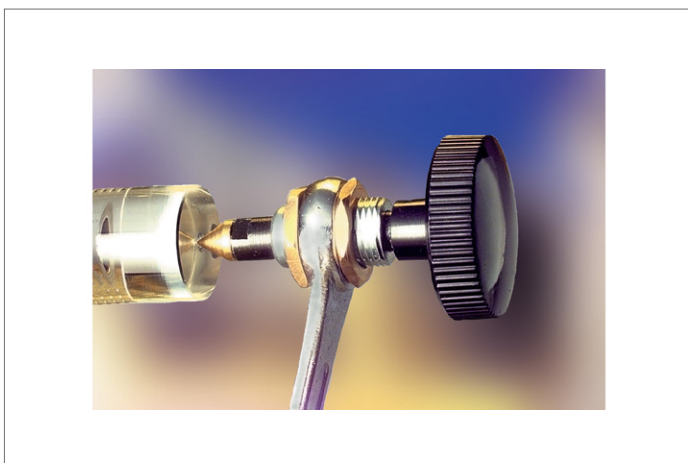
tension (pull) applications, due to the unique designs spring loaded pin with threads at both ends to allow installation of your own adaptor or handle.

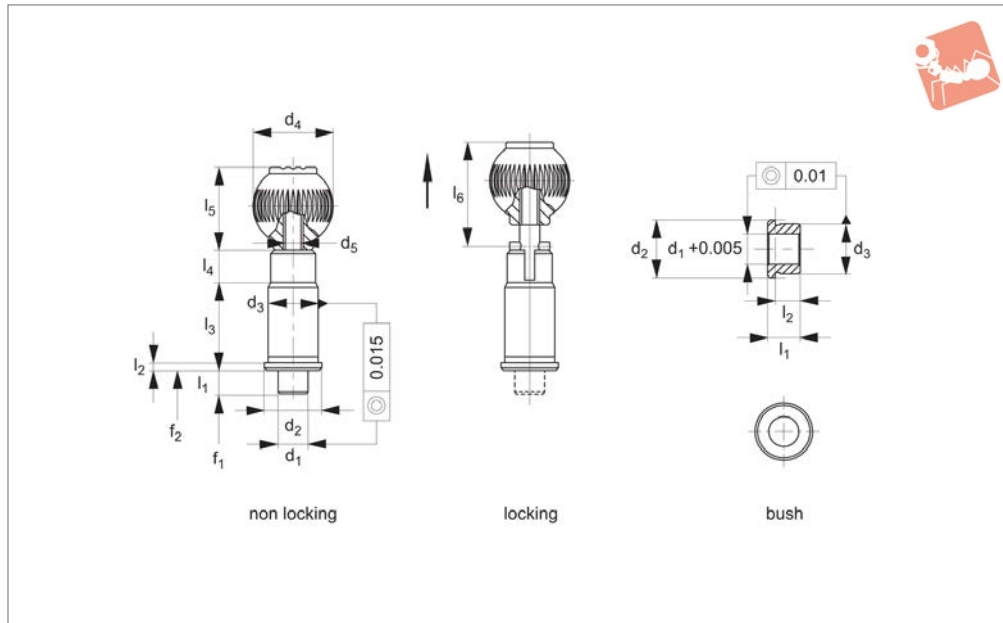
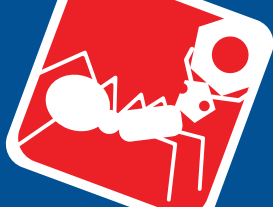
A wide range of application: pressure

bolts, holding or magnets etc.

Requires very small space requirements.

Order No.	a	Ø b	c	d ₁	Ø e	f	g	A/F ₁	k	l	p ₁ N	p ₂ N	A/F ₂	Weight g
32790.W0120	M12	7	4.5	11.0	6	3.5	M 4x8	10	1.5	5	5	20	6	5
32790.W0121	M12	7	7.0	18.5	6	6.0	M 4x8	10	1.5	5	5	20	6	8
32790.W0122	M12	7	11.0	26.0	6	10.0	M 4x8	10	1.5	5	5	20	6	12
32790.W0130	M12	7	4.5	11.0	6	3.0	M 4x8	10	1.5	5	15	80	6	5
32790.W0131	M12	7	7.0	18.5	6	5.0	M 4x8	10	1.5	5	15	80	6	8
32790.W0132	M12	7	11.0	26.0	6	8.0	M 4x8	10	1.5	5	15	80	6	12
32790.W0140	M12	7	4.5	11.0	6	3.0	M 4x8	10	1.5	5	30	125	6	5
32790.W0141	M12	7	7.0	18.5	6	5.0	M 4x8	10	1.5	5	30	125	6	8
32790.W0142	M12	7	11.0	26.0	6	8.0	M 4x8	10	1.5	5	30	125	6	13
32790.W0180	M18x1,5	11	6.0	17.0	10	4.0	M 6x12	16	2.0	6	50	150	9	22
32790.W0181	M18x1,5	11	11.5	29.5	10	7.0	M 6x12	16	2.0	6	50	150	9	43
32790.W0182	M18x1,5	11	16.0	45.5	10	12.5	M 6x12	16	2.0	6	50	150	9	66





32460

INDEX PLUNGER & PINS

Material

Pin, Body & Bush: case-hardened steel, blackened and ground.
Grip: thermoplastic, black.

Technical Notes

Supplied part assembled to enable precise setting, grip and body must be glued after

mounting. Non removable once installed.

„**Locking**“ type - enable pin to be held in retracted/non-projecting position; pull back grip, turn 90 to engage „locking“ on a notched catch.

„**Non Locking**“ type - pin simply springs

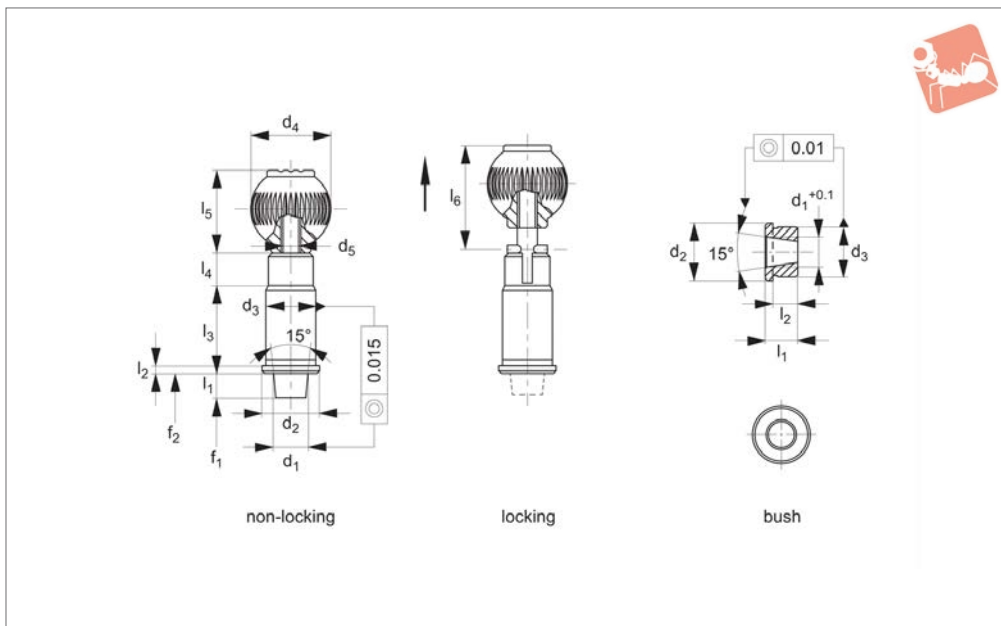
back when grip released.

Tips

When used for alignment of two sub-plates, the plunger's precise finish guarantees high repetition accuracy.
Spring loads * = statistical average.

Order No.	Type	d_1 -0.005 -0.01	d_2	d_3 tol. n6	d_4	d_5	l_1 min.	l_2	l_3	l_4	l_5	l_6	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32460.W0010	Non Locking	10	19	16	25	M 6	10	2,5	31	13	25,0		15	30	79
32460.W0012	Non Locking	12	23	20	32	M 8	10	3,0	35	13	33,0		15	35	138
32460.W0016	Non Locking	16	28	25	40	M10	10	3,0	42	13	41,5		20	50	226
32460.W0020	Non Locking	20	33	30	40	M10	10	3,0	50	13	41,5		36	63	350
32460.W0025	Non Locking	25	42	38	50	M10	10	3,0	60	13	51,0		20	73	649
32460.W0060	Locking	10	19	16	25	M 6	10	2,5	31	13	25,0	36,5	15	30	79
32460.W0062	Locking	12	23	20	32	M 8	10	3,0	35	13	33,0	44,5	15	35	136
32460.W0066	Locking	16	28	25	40	M10	10	3,0	42	13	41,5	53,0	20	50	228
32460.W0070	Locking	20	33	30	40	M10	10	3,0	50	13	41,5	53,0	36	63	350
32460.W0075	Locking	25	42	38	50	M10	10	3,0	60	13	51,0	62,5	20	73	649
32460.W0090	Bush	10	19	16			11	8,5							11
32460.W0092	Bush	12	23	20			13	10,0							22
32460.W0093	Bush	16	28	25			17	14,0							40
32460.W0094	Bush	20	33	30			16	13,0							51
32460.W0096	Bush	25	42	38			19	16,0							99





32480

INDEX PLUNGER & PINS

Material

Pin, body & bush: case hardened steel, blackened and ground.
Grip: thermoplastic, black.

Technical Notes

Supplied part assembled to enable precise setting, grip and body must be glued after

mounting. Non removable once installed.

„Locking“ type - enable pin to be held in retracted/non-projecting position; pull back grip, turn 90° to engage ‚locking‘ on a notched catch.

„Non Locking“ type - pin simply springs

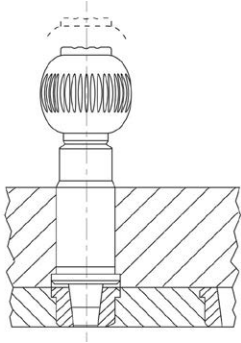
back when grip released.

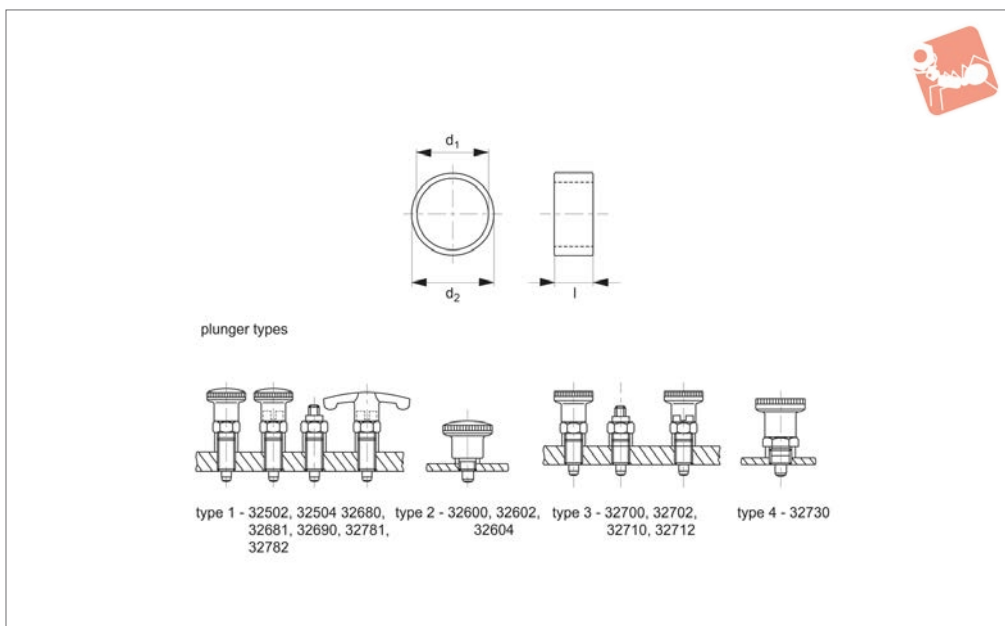
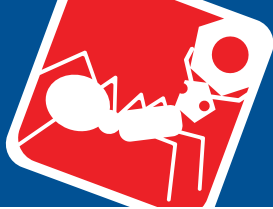
Tips

When used for alignment of two sub-plates, the plunger's precise finish on pin allows easier alignment of pin and bushing.

Spring loads * = statistical average.

Order No.	Type	Dia. Ø nom.	d ₁	d ₂	d ₃ tol. n6	d ₄	d ₅	l ₁ min.	l ₂	l ₃	l ₄	l ₅	l ₆	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32480.W0110	Non Locking	10	10,00	19	16	25	M 6	6	2,5	31	13	25,0		19	29	78
32480.W0112	Non Locking	12	12,00	23	20	32	M 8	6	3,0	35	13	33,0		22	35	135
32480.W0116	Non Locking	16	16,00	28	25	40	M10	6	3,0	42	13	41,5		30	50	227
32480.W0120	Non Locking	20	20,00	33	30	40	M10	6	3,0	50	13	41,5		46	63	348
32480.W0125	Non Locking	25	25,00	42	38	50	M10	6	3,0	60	13	51,0		39	73	654
32480.W0160	Locking	10	10,00	19	16	25	M 6	6	2,5	31	13	25,0	32,5	19	29	78
32480.W0162	Locking	12	12,00	23	20	32	M 8	6	3,0	35	13	33,0	40,5	22	35	135
32480.W0166	Locking	16	16,00	28	25	40	M10	6	3,0	42	13	41,5	49,0	30	50	228
32480.W0170	Locking	20	20,00	33	30	40	M10	6	3,0	50	13	41,5	49,0	46	63	348
32480.W0175	Locking	25	25,00	42	38	50	M10	6	3,0	60	13	51,0	58,5	39	73	651
32480.W0190	Tapered Bush	10	7,10	19	16			11	8,5							13
32480.W0192	Tapered Bush	12	8,28	23	20			13	10,0							25
32480.W0193	Tapered Bush	16	11,52	28	25			17	14,0							47
32480.W0194	Tapered Bush	20	15,49	33	30			16	13,0							60
32480.W0196	Tapered Bush	25	19,70	42	38			19	16,0							114





32750

INDEX PLUNGER & PINS

Material

Stainless steel 1.4305 (AISI 303).

index plungers to enable different thread reaches. Order while stocks last.

Technical Notes

Distance collars adapt the thread length of

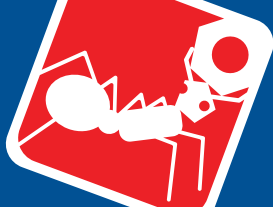
Order No.	d ₁ tol. H12	d ₂ -0.1	For index plungers size d ₁	Suitable for plunger type	l ₁ ±0.1	Weight g
32750.W0933	8	10	M 8	1	3	0.8
32750.W0934	8	10	M 8	1	4	0.9
32750.W0936	8	10	M 8	1	6	1.2
32750.W0938	8	10	M 8	1	8	1.6
32750.W0940	8	10	M 8	1	10	2.0
32750.W0942	10	12	M10	1/2/3	2	0.6
32750.W0944	10	12	M10	1/2/3	4	1.1
32750.W0946	10	12	M10	1/3	6	1.6
32750.W0948	10	12	M10	1/3	8	2.1
32750.W0950	10	12	M10	1/3	10	2.7
32750.W0952	10	12	M10	1/3	12	3.0
32750.W0962	12	14	M12	1	2	0.6
32750.W0964	12	14	M12	1	4	2.5
32750.W0966	12	14	M12	1	6	1.9
32750.W0968	12	14	M12	1	8	2.4
32750.W0972	12	17	M12	3/4	2	2.0
32750.W0974	12	17	M12	3/4	4	3.4
32750.W0975	12	17	M12	3/4	5	4.4
32750.W0976	16	17	M16	1	4	0.7
32750.W0977	16	17	M16	1	6	1.2
32750.W0978	16	17	M16	1	8	1.4
32750.W0979	16	17	M16	1	10	2.0
32750.W0980	16	17	M16	1	12	2.1
32750.W0982	16	19	M16	3/4	2	1.3
32750.W0984	16	19	M16	3/4	4	2.8
32750.W0986	16	19	M16	3/4	6	3.8
32750.W0988	16	19	M16	3/4	8	4.8
32750.W0990	16	19	M16	3	10	6.1
32750.W0992	16	19	M16	3	12	9.2
32750.W0993	20	22	M20	1/3	6	3.0
32750.W0994	20	22	M20	1/3	8	4.0
32750.W0995	20	22	M20	1/3	10	4.9
32750.W0996	20	22	M20	1/3	12	5.9
32750.W0997	20	22	M20	1/3	14	6.9



Order No.	d_1 tol. H12	d_2 -0.1	For index plungers size d_1	Suitable for plunger type	l_1 ± 0.1	Weight g
32750.W0998	20	22	M20	1/3	16	9.3
32750.W0999	20	22	M20	1/3	18	9.0

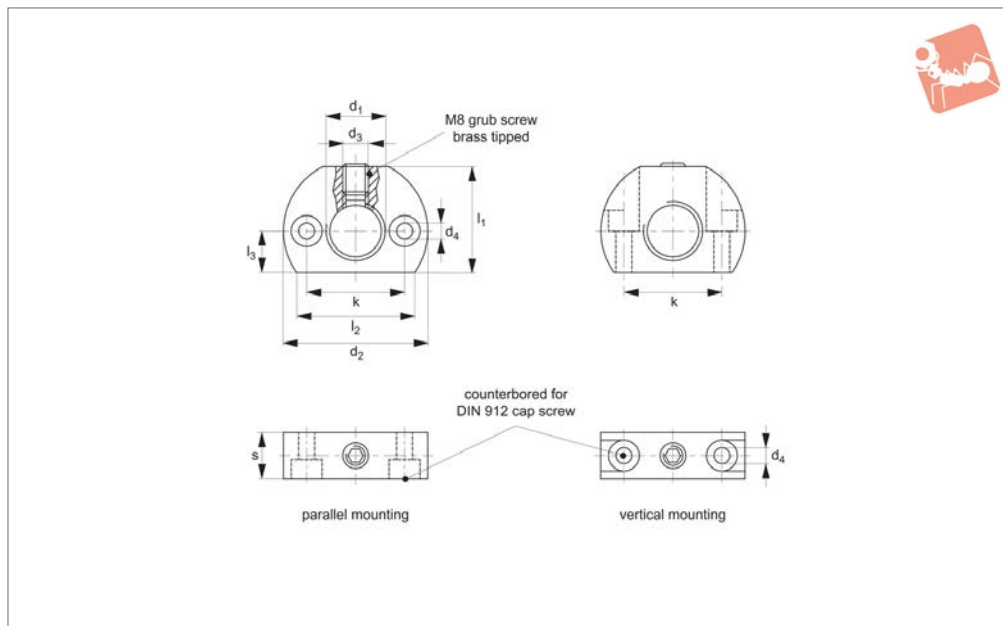
INDEX PLUNGER & PINS





Mounting Blocks for index plungers - fine thread

Index Plunger & Pins



32510

INDEX PLUNGER & PINS

Material

Steel type-

Body: Steel, blackened.

Grub Screw: M8 with brass tip.

Stainless steel type-

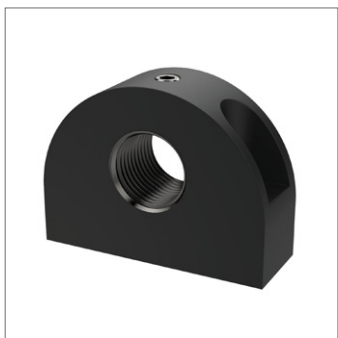
Body: Stainless steel 1.4305 (AISI 303).

Technical Notes

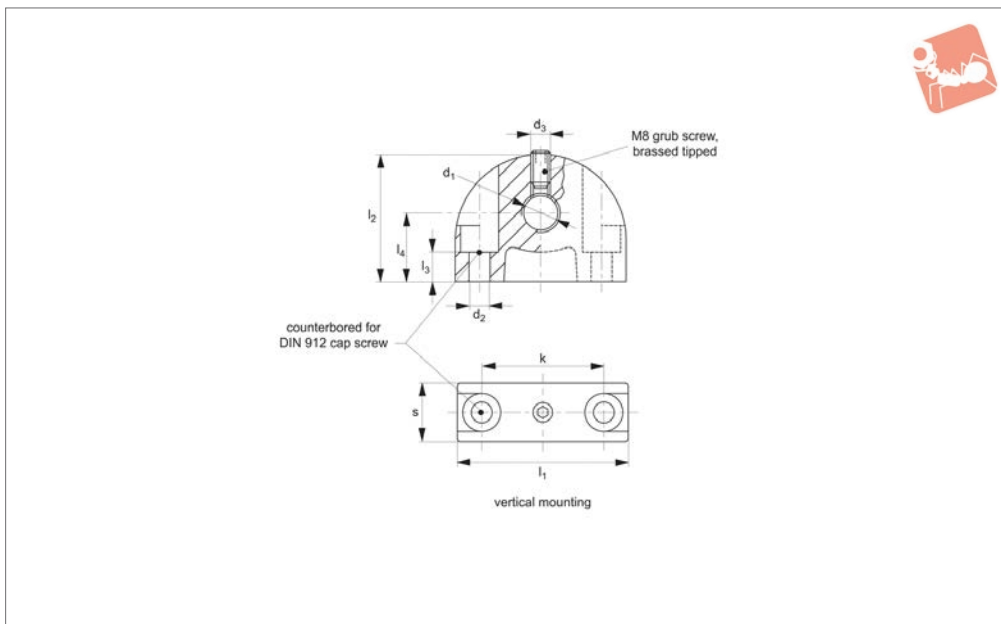
Mounting blocks provide assembly support for mounting of index plungers. **(Not**

suitable for index plungers with coarse thread).

Order No.	Material	Type	d ₁	d ₂	d ₃	d ₄	k ±0.1	l ₁	l ₂ ≈	l ₃	s	Weight g
32510.W0345	Steel	Parallel	M12x1,5	32	M 5	4.5	21	22	26.5	9	12	43
32510.W0346	Steel	Parallel	M16x1,5	46	M 8	5.5	32	33	38.0	13	15	122
32510.W0347	Steel	Vertical	M12x1,5	32	M 5	4.5	21	22	26.5	9	12	37
32510.W0348	Steel	Vertical	M16x1,5	46	M 8	5.5	32	33	38.0	13	15	106
32510.W0350	Steel	Parallel	M20x1,5	46	M 8	5.5	32	33	37.0	13	15	109
32510.W0352	Steel	Vertical	M20x1,5	46	M 8	5.5	32	33	38.0	13	15	94
32510.W0545	Stainless	Parallel	M12x1,5	32	M 5	4.5	21	22	26.5	9	12	43
32510.W0546	Stainless	Parallel	M16x1,5	46	M 8	5.5	32	33	38.0	13	15	122
32510.W0547	Stainless	Vertical	M12x1,5	32	M 5	4.5	21	22	26.5	9	12	37
32510.W0548	Stainless	Vertical	M16x1,5	46	M 8	5.5	32	33	38.0	13	15	106
32510.W0550	Stainless	Parallel	M20x1,5	46	M 8	5.5	32	33	37.0	13	15	109
32510.W0552	Stainless	Vertical	M20x1,5	46	M 8	5.5	32	33	38.0	13	15	94



32512



Material

Body: die-cast zinc, black plastic coated.
Grub screw: M8 with brass tip.

for mounting of index plungers. **(Not suitable for index plungers with coarse thread).**

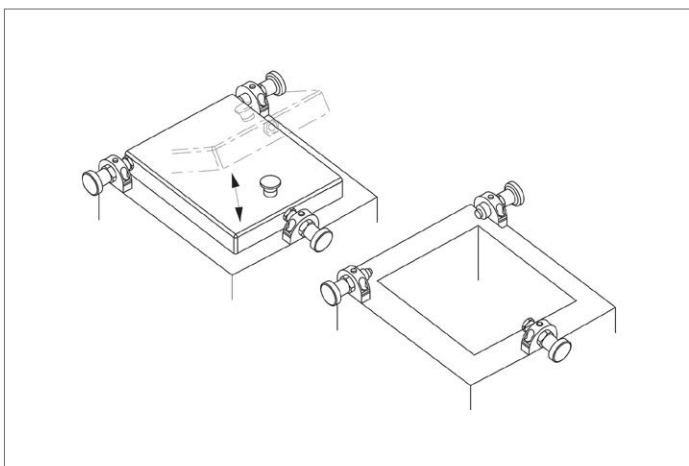
d_1 on countersunk side.

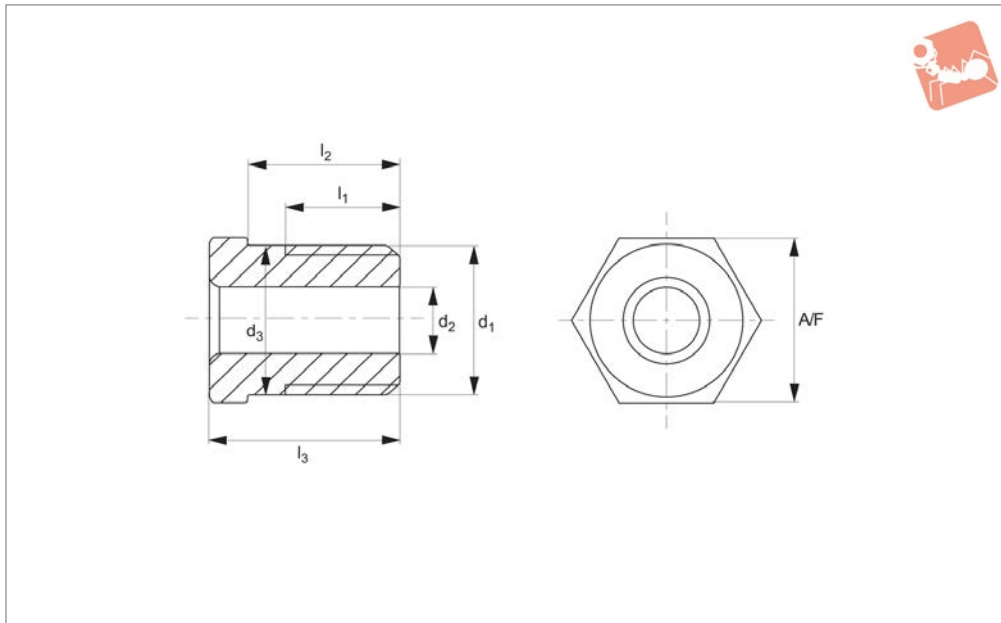
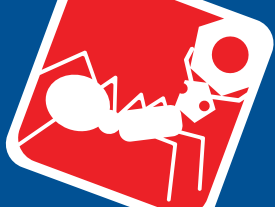
Technical Notes

Mounting blocks provide assembly support

Index plunger must be assembled in hole

Order No.	Type	d_1	d_2	d_3	k	l_1	l_2	l_3 -0.2	l_4	Weight g
32512.W0408	Vertical	M 8x1,0	4.3	M 4	25	35	26	11.5	14	39
32512.W0410	Vertical	M10x1,0	4.3	M 4	25	35	26	11.5	14	36
32512.W0412	Vertical	M12x1,5	4.3	M 4	25	35	26	11.5	14	41
32512.W0416	Vertical	M16x1,5	5.3	M 5	35	47	34	15.5	18	77
32512.W0420	Vertical	M20x1,5	5.3	M 5	35	47	34	15.5	18	68





32752

INDEX PLUNGER & PINS

Material

Steel, nitrided.

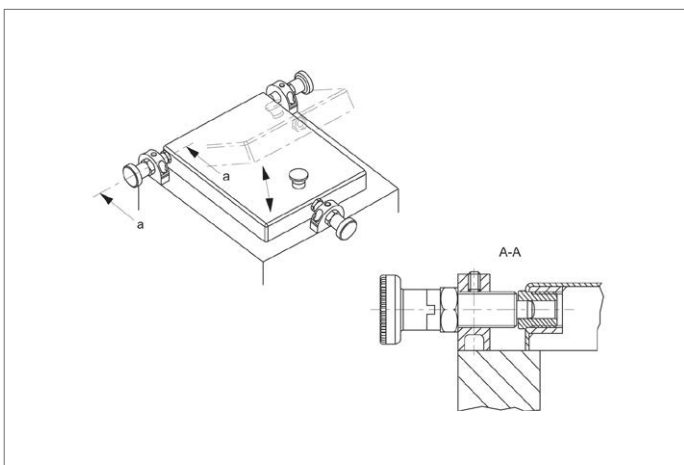
Technical Notes

For use with our wide range of index plun-

gers. Provide a durable location bush for index plunger pins of diameter d_2 . See „for pin dia.“ column in data table and refer to individual index plunger production infor-

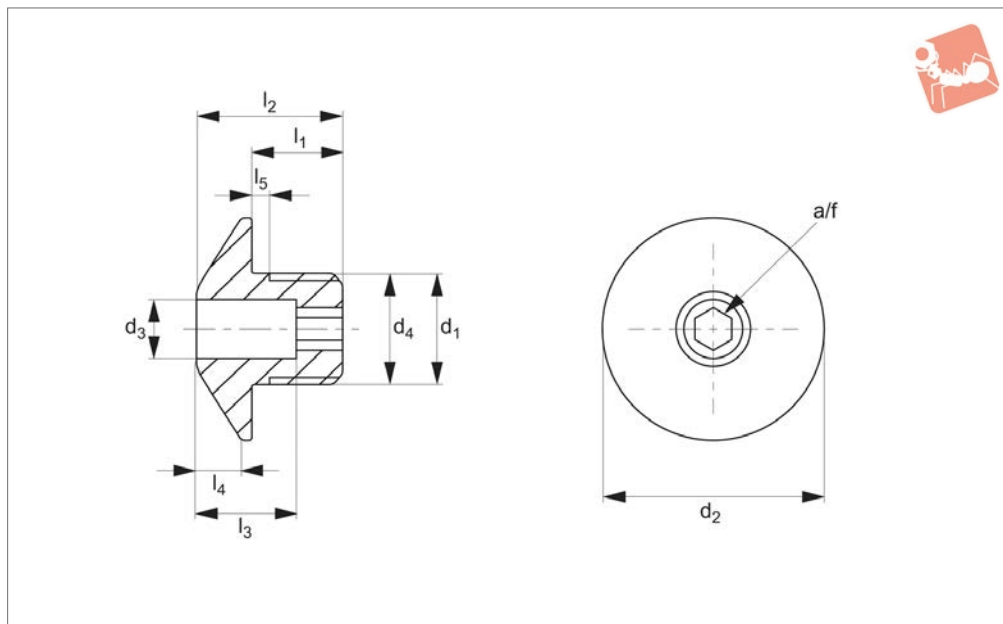
mation for matching pin diameters.

Order No.	d_1	For pin dia.	d_2 +0.1	d_3 ± 0.3	l_1 min.	l_2 -0.3	l_3	A/F	Weight g
32752.W0454	M12x1,5	4	4.2	12.1	9	10	13	13	10
32752.W0455	M12x1,5	5	5.2	12.1	9	10	13	13	10
32752.W0456	M12x1,5	6	6.2	12.1	9	10	13	13	9
32752.W0458	M16x1,5	8	8.2	16.1	11	12	15	17	18
32752.W0460	M16x1,5	10	10.2	16.1	11	12	15	17	14
32752.W0462	M16x1,5	12	12.2	16.1	11	12	15	17	9





32753



Material

Body:
Steel: Hardened, blackened
Stainless: Stainless steel hardened

and plungers. Provide a durable location bush for index plunger pins of diameter d_3 , refer to individual index plunger production information for matching pin diameters.

Tips

Low wear option due to hardened material.

Technical Notes

For use with our wide range of index bolts

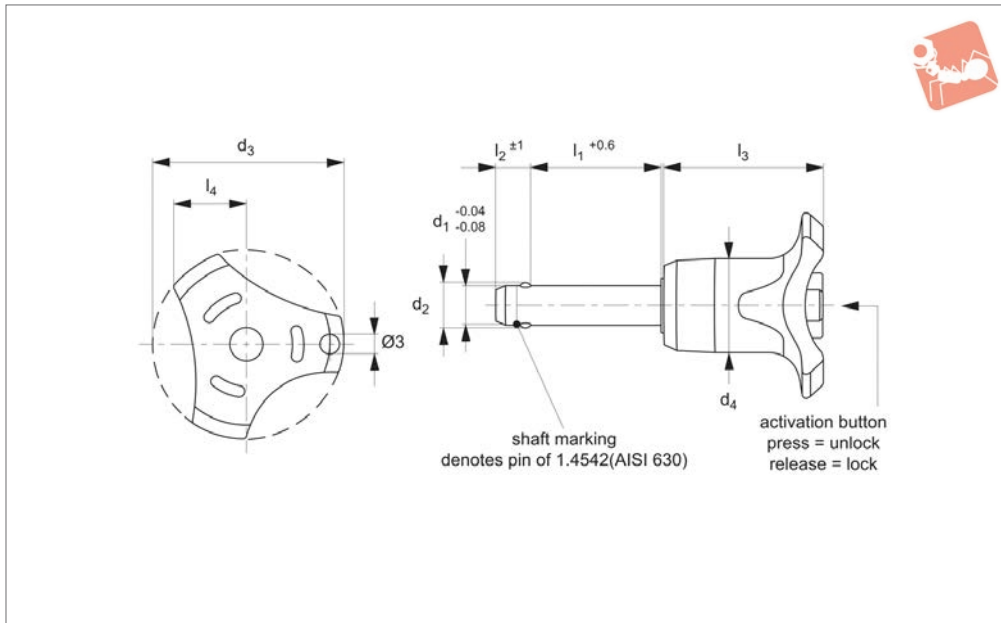
Order No.	Type	d_1	d_2	d_3 +0,1	d_4 -0,05	l_1	l_2	l_3	l_4	l_5 +0,5	For pin	A/F	Weight g
32753.W0464	Steel	M12x1,5	24	4.2	12	10	16	11	5	1.5	4	4	17
32753.W0465	Steel	M12x1,5	24	5.2	12	10	16	11	5	1.5	5	4	16
32753.W0466	Steel	M12x1,5	24	6.2	12	10	16	11	5	1.5	6	4	16
32753.W0468	Steel	M16x1,5	32	8.2	16	12	20	13	7	1.5	8	6	36
32753.W0470	Steel	M16x1,5	32	10.2	16	12	20	13	7	1.5	10	6	33
32753.W0472	Steel	M16x1,5	32	12.2	16	12	20	13	7	1.5	12	6	33
32753.W0474	Stainless	M12x1,5	24	4.2	12	10	16	11	5	1.5	4	4	17
32753.W0475	Stainless	M12x1,5	24	5.2	12	10	16	11	5	1.5	5	4	16
32753.W0476	Stainless	M12x1,5	24	6.2	12	10	16	11	5	1.5	6	4	16
32753.W0478	Stainless	M16x1,5	32	8.2	16	12	20	13	7	1.5	8	6	36
32753.W0480	Stainless	M16x1,5	32	10.2	16	12	20	13	7	1.5	10	6	33
32753.W0482	Stainless	M16x1,5	32	12.2	16	12	20	13	7	1.5	12	6	33



Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



33060.BK

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1,4542 (AISI 630), precipitation hardened, blast finish. (marked at end of shaft to denote 1.4542 material).

Ball: stainless steel 1.3541

Spring: stainless steel.

Handle: thermoplastic PA 6.

Available colours: grey/orange, grey/blue, grey/grey, black/black.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.

For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes

available see part no.33248.

Important Notes

Extreme load capacity due to high material grade.

*Shearing resistance similar to DIN 50141.

Also available in stainless grade 1.4305 (AISI 303), see part no.33080.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0812	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0813	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0814	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	24	16
33060.W0815	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	24	17
33060.W0816	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	24	18
33060.W0817	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33060.W0818	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33060.W0819	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33060.W0805	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0806	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33060.W0807	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33060.W0808	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33060.W0809	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33060.W0810	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33060.W0811	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0821	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33060.W0822	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	35	16
33060.W0823	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	35	17
33060.W0824	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	35	18
33060.W0825	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	35	19
33060.W0826	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	35	20
33060.W0827	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	35	21
33060.W0828	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	35	22
33060.W0829	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	35	23
33060.W0830	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	35	24
33060.W0831	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0832	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38
33060.W0833	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33060.W0834	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0835	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0836	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0837	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0838	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0839	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0840	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0841	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33060.W0842	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33060.W0843	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33060.W0844	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	100	47
33060.W0845	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	49
33060.W0846	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	100	53
33060.W0847	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	100	55
33060.W0848	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	100	58
33060.W0849	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0850	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0851	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33060.W0852	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0853	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33060.W0854	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33060.W0855	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33060.W0856	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33060.W0857	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33060.W0858	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33060.W0864	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33060.W0865	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0866	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	144	100
33060.W0867	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0868	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0869	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	144	113
33060.W0870	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	144	117
33060.W0872	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	144	126
33060.W0874	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	144	134
33060.W0876	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	144	143
33060.W0877	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33060.W0878	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33060.W0879	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33060.W0880	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33060.W0886	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	257	132
33060.W0887	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	257	140
33060.W0888	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	257	148
33060.W0889	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0890	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0892	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	257	178
33060.W0894	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	257	194
33060.W0896	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	257	208
33060.W0897	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33060.W0898	16	10	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33060.W0899	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33060.W0900	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33060.W0901	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33060.W0902	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33060.W0903	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33060.W0904	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	403	343
33060.W0905	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	403	329
33060.W0906	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	403	377
33060.W0907	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	426
33060.W0908	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	403	392
33060.W0912	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	403	440
33060.W0913	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	403	474
33060.W0916	20	120	25.0	57.1	33.8	20.5	50.7	21.5	20	403	488
33060.W0917	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	403	523
33060.W0918	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	403	546
33060.W0919	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	403	571



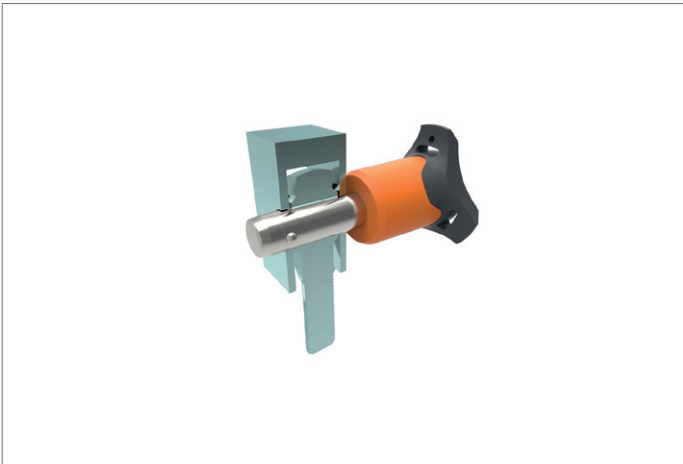
Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0921	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	631	415
33060.W0922	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	631	453
33060.W0923	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	631	490
33060.W0924	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	631	528
33060.W0925	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	631	565
33060.W0926	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	631	603
33060.W0927	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	631	640
33060.W0928	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	631	678
33060.W0929	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	631	715
33060.W0930	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	631	753
33060.W0931	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	631	790



BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Blue

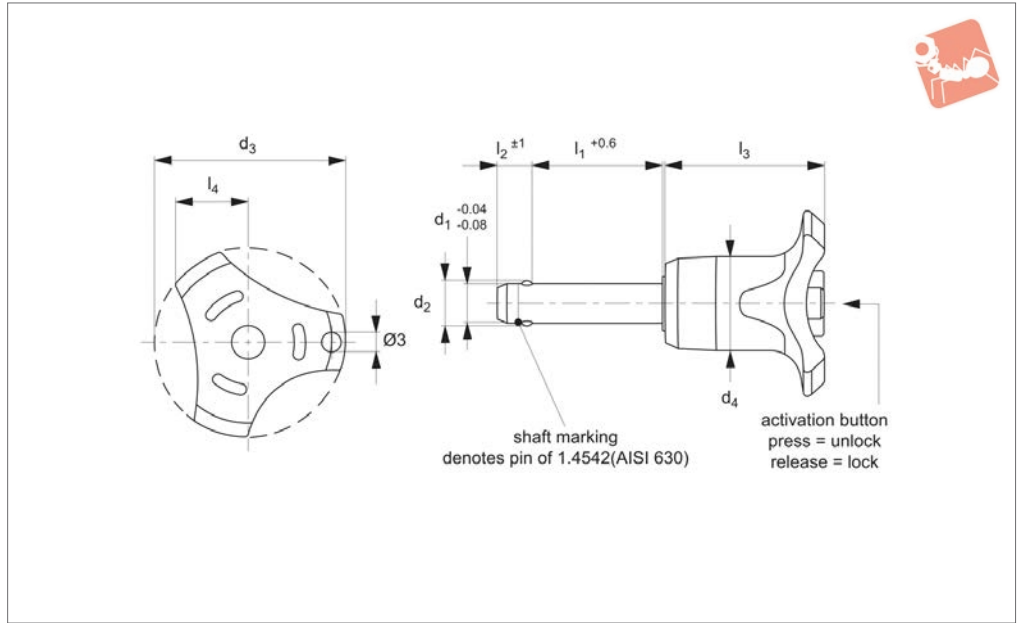
self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS



33060.BU



Material

Pin: stainless steel 1,4542 (AISI 630), precipitation hardened, blast finish. (marked at end of shaft to denote 1.4542 material).

Ball: stainless steel 1.3541

Spring: stainless steel.

Handle: thermoplastic PA 6.

Available colours: grey/orange, grey/blue, grey/grey, black/black.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.

For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes

available see part no.33248.

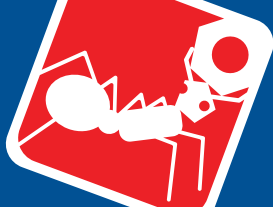
Important Notes

Extreme load capacity due to high material grade.

*Shearing resistance similar to DIN 50141.

Also available in stainless grade 1.4305 (AISI 303), see part no.33080.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0432	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0433	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0434	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	24	16
33060.W0435	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	24	17
33060.W0436	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	24	18
33060.W0437	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33060.W0438	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33060.W0439	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33060.W0425	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0426	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33060.W0427	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33060.W0428	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33060.W0429	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33060.W0430	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33060.W0431	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0441	8	100	9.6	39.2	18.4	8.2	33.3	10.8,13.4	8	38	54
33060.W0442	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	35	16
33060.W0443	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	35	17
33060.W0444	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	35	18
33060.W0445	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	35	19
33060.W0446	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	35	20
33060.W0447	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	35	21
33060.W0448	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	35	22
33060.W0449	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	35	23
33060.W0450	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	35	24
33060.W0451	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36



Ball Lock Pins - Single Acting - Blue

self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0452	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	24
33060.W0453	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33060.W0454	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0455	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	63	42
33060.W0456	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0457	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	63	46
33060.W0458	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0459	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	63	49
33060.W0460	8	50	9.6	39.2	18.4	8.2	33.3	13.4	8	63	51
33060.W0461	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33060.W0462	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33060.W0463	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33060.W0464	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	100	47
33060.W0465	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	49
33060.W0466	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	100	53
33060.W0467	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	100	55
33060.W0468	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	100	58
33060.W0469	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0470	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	100	64
33060.W0471	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33060.W0472	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0473	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33060.W0474	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33060.W0475	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33060.W0476	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33060.W0477	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33060.W0478	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33060.W0484	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33060.W0485	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	144	96
33060.W0486	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	144	100
33060.W0487	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0488	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	144	109
33060.W0489	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	144	113
33060.W0490	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	144	117
33060.W0492	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	144	126
33060.W0494	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	144	134
33060.W0496	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	144	143
33060.W0497	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33060.W0498	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33060.W0499	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33060.W0500	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33060.W0506	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	257	132
33060.W0507	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	257	140
33060.W0508	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	257	148
33060.W0509	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0510	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	257	168
33060.W0512	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	257	178
33060.W0514	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	257	194
33060.W0516	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	257	208
33060.W0517	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33060.W0518	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33060.W0519	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33060.W0520	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33060.W0521	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33060.W0522	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33060.W0523	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33060.W0531	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	403	329
33060.W0532	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	403	343
33060.W0533	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	403	377
33060.W0536	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	403	392
33060.W0537	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	426
33060.W0540	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	403	440
33060.W0541	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	403	474
33060.W0544	20	120	25.0	57.1	33.8	20.5	50.7	21.5	20	403	488
33060.W0545	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	403	523
33060.W0546	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	403	546
33060.W0547	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	403	571

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

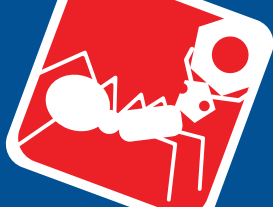
Ball Lock Pins - Single Acting - Blue self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS

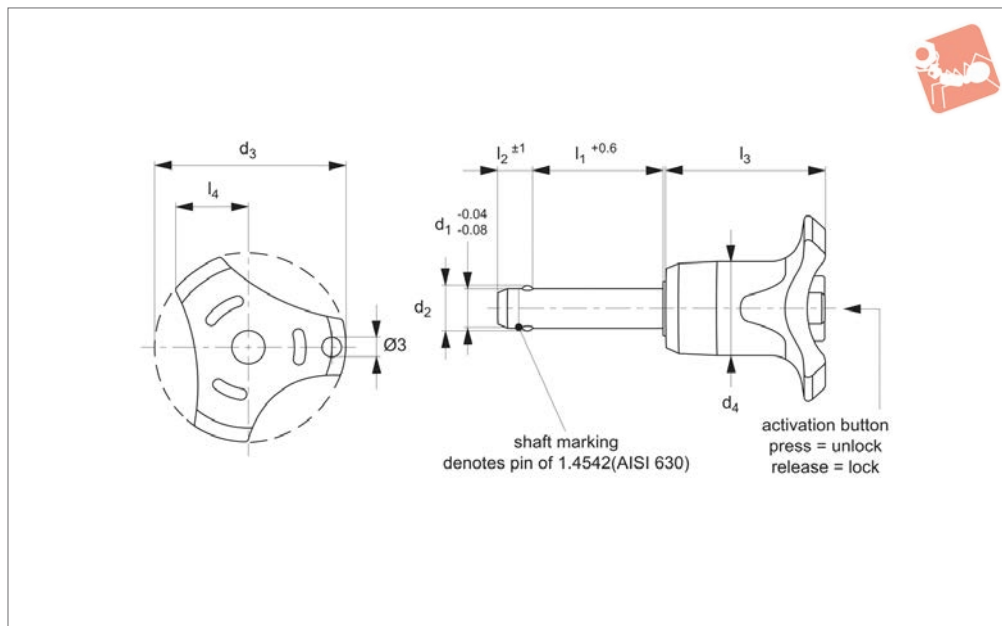
Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0549	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	631	415
33060.W0550	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	631	453
33060.W0551	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	631	490
33060.W0552	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	631	528
33060.W0553	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	631	565
33060.W0554	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	631	603
33060.W0555	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	631	640
33060.W0556	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	631	678
33060.W0557	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	631	715
33060.W0558	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	631	753
33060.W0559	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	631	790





Ball Lock Pins - Single Acting - Grey self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



33060.GR

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1,4542 (AISI 630), precipitation hardened, blast finish. (marked at end of shaft to denote 1.4542 material).

Ball: stainless steel 1.3541

Spring: stainless steel.

Handle: thermoplastic PA 6.

Available colours: grey/orange, grey/blue, grey/grey, black/black.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.

For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes

available see part no.33248.

Important Notes

Extreme load capacity due to high material grade.

*Shearing resistance similar to DIN 50141.

Also available in stainless grade 1.4305 (AISI 303), see part no.33080.

Order No.	d_1	l_1	d_2	d_3	d_4	l_2	l_3	l_4	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0292	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0293	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0294	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	24	16
33060.W0295	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	24	17
33060.W0296	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	24	18
33060.W0297	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33060.W0298	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33060.W0299	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33060.W0285	5	35	5.5	33.3	14.5	6.0	26.7	10.8	5	14	19
33060.W0286	5	40	5.5	33.4	14.5	6.0	26.7	10.8	5	14	20
33060.W0287	5	45	5.5	33.5	14.5	6.0	26.7	10.8	5	14	21
33060.W0288	5	50	5.5	33.6	14.5	6.0	26.7	10.8	5	14	23
33060.W0289	5	60	5.5	33.7	14.5	6.0	26.7	10.8	5	14	24
33060.W0290	5	70	5.5	33.8	14.5	6.0	26.7	10.8	5	14	18
33060.W0291	5	80	5.5	33.9	14.5	6.0	26.7	10.8	5	14	19
33060.W0301	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33060.W0302	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	35	16
33060.W0303	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	35	17
33060.W0304	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	35	18
33060.W0305	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	35	19
33060.W0306	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	35	20
33060.W0307	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	35	21
33060.W0308	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	35	22
33060.W0309	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	35	23
33060.W0310	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	35	24
33060.W0311	8	90	7.0	39.2	18.4	8.2	33.3	13.4	8	38	36

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Grey

self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0312	8	10	9.6	39.2	18.5	8.2	33.3	13.4	8	38	38
33060.W0313	8	15	9.6	39.2	18.5	8.2	33.3	13.4	8	38	58
33060.W0314	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0315	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	63	42
33060.W0316	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0317	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	63	46
33060.W0318	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0319	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	63	49
33060.W0320	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	51
33060.W0321	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	51
33060.W0322	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	51
33060.W0323	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33060.W0324	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	100	47
33060.W0325	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	49
33060.W0326	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	100	53
33060.W0327	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	100	55
33060.W0328	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	100	58
33060.W0329	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0330	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	100	64
33060.W0331	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33060.W0332	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0333	10	91	12.0	39.2	18.4	9.6	33.3	13.4	10	60	70
33060.W0334	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33060.W0335	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33060.W0336	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33060.W0337	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33060.W0338	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33060.W0339	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33060.W0344	12	20	14.5	47.6	26.3	10.6	39.7	16.7	12	87	156
33060.W0345	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	144	96
33060.W0346	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	144	100
33060.W0347	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0348	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	144	109
33060.W0349	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	144	113
33060.W0350	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	144	117
33060.W0352	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	144	126
33060.W0354	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	144	134
33060.W0356	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	144	143
33060.W0357	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33060.W0358	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33060.W0359	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33060.W0360	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33060.W0366	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	257	132
33060.W0367	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	257	140
33060.W0368	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	257	148
33060.W0369	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0370	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	257	168
33060.W0372	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	257	178
33060.W0374	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	257	194
33060.W0376	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	257	208
33060.W0377	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33060.W0378	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33060.W0379	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33060.W0380	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33060.W0381	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33060.W0382	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33060.W0383	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33060.W0391	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	403	329
33060.W0392	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	403	343
33060.W0393	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	377
33060.W0396	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	403	392
33060.W0397	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	426
33060.W0400	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	403	440
33060.W0401	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	403	474
33060.W0404	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	403	488
33060.W0405	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	403	523
33060.W0406	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	403	546



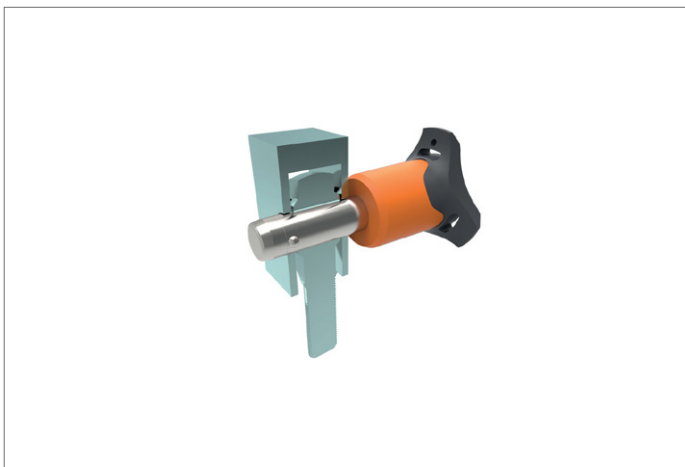
Ball Lock Pins - Single Acting - Grey

self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0407	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	403	571
33060.W0409	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	631	415
33060.W0410	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	631	453
33060.W0411	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	631	490
33060.W0412	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	631	528
33060.W0413	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	631	565
33060.W0414	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	631	603
33060.W0415	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	631	640
33060.W0416	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	631	678
33060.W0417	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	631	715
33060.W0418	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	631	753
33060.W0419	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	631	790



BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Orange

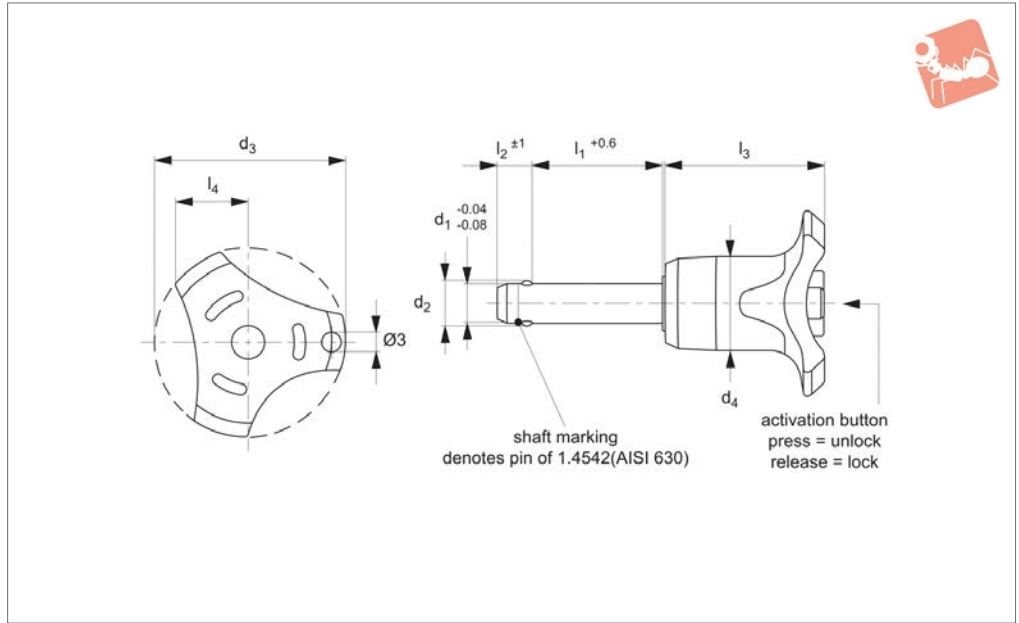
self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS



33060.OR



Material

Pin: stainless steel 1,4542 (AISI 630), precipitation hardened, blast finish. (marked at end of shaft to denote 1.4542 material).

Ball: stainless steel 1.3541

Spring: stainless steel.

Handle: thermoplastic PA 6.

Available colours: grey/orange, grey/blue, grey/grey, black/black.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.

For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes

available see part no.33248.

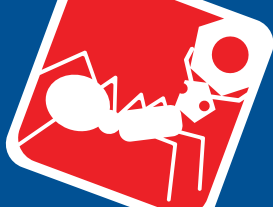
Important Notes

Extreme load capacity due to high material grade.

*Shearing resistance similar to DIN 50141.

Also available in stainless grade 1.4305 (AISI 303), see part no.33080.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0152	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0153	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0154	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	24	16
33060.W0155	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	24	17
33060.W0156	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	24	18
33060.W0157	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33060.W0158	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33060.W0159	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33060.W0145	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0146	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33060.W0147	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33060.W0148	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33060.W0149	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33060.W0150	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33060.W0151	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0161	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33060.W0162	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	35	16
33060.W0163	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	35	17
33060.W0164	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	35	18
33060.W0165	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	35	19
33060.W0166	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	35	20
33060.W0167	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	35	21
33060.W0168	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	35	22
33060.W0169	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	35	23
33060.W0170	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	35	24
33060.W0171	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36



Ball Lock Pins - Single Acting - Orange

self-locking - stainless steel 1.4542 (AISI 630)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0172	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38
33060.W0173	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33060.W0174	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0175	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	63	42
33060.W0176	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0177	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	63	46
33060.W0178	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0179	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	63	49
33060.W0180	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	51
33060.W0181	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33060.W0182	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33060.W0183	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33060.W0184	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	100	47
33060.W0185	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	49
33060.W0186	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	100	53
33060.W0187	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	100	55
33060.W0188	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	100	58
33060.W0189	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0190	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	100	64
33060.W0191	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33060.W0192	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0193	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	70
33060.W0194	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33060.W0195	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33060.W0196	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33060.W0197	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33060.W0198	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33060.W0204	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33060.W0205	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	144	96
33060.W0206	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	144	100
33060.W0207	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0208	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	144	109
33060.W0209	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	144	113
33060.W0210	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	144	117
33060.W0212	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	144	126
33060.W0214	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	144	134
33060.W0216	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	144	143
33060.W0217	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33060.W0218	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33060.W0219	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33060.W0220	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	177
33060.W0226	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	257	132
33060.W0227	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	257	140
33060.W0228	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	257	148
33060.W0229	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0230	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	257	168
33060.W0232	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	257	178
33060.W0234	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	257	194
33060.W0236	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	257	208
33060.W0237	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33060.W0238	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	151
33060.W0239	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33060.W0240	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33060.W0241	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33060.W0242	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33060.W0243	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33060.W0251	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	403	329
33060.W0252	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	403	343
33060.W0253	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	403	377
33060.W0256	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	403	392
33060.W0257	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	426
33060.W0260	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	403	440
33060.W0261	20	110	25.0	57.1	33.5	20.5	50.7	21.5	20	403	474
33060.W0264	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	403	488
33060.W0265	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	403	523
33060.W0266	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	403	546
33060.W0267	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	403	571

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Orange self-locking - stainless steel 1.4542 (AISI 630)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0269	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	631	415
33060.W0270	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	631	453
33060.W0271	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	631	490
33060.W0272	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	631	528
33060.W0273	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	631	565
33060.W0274	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	631	603
33060.W0275	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	631	640
33060.W0276	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	631	678
33060.W0277	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	631	715
33060.W0278	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	631	753
33060.W0279	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	631	790

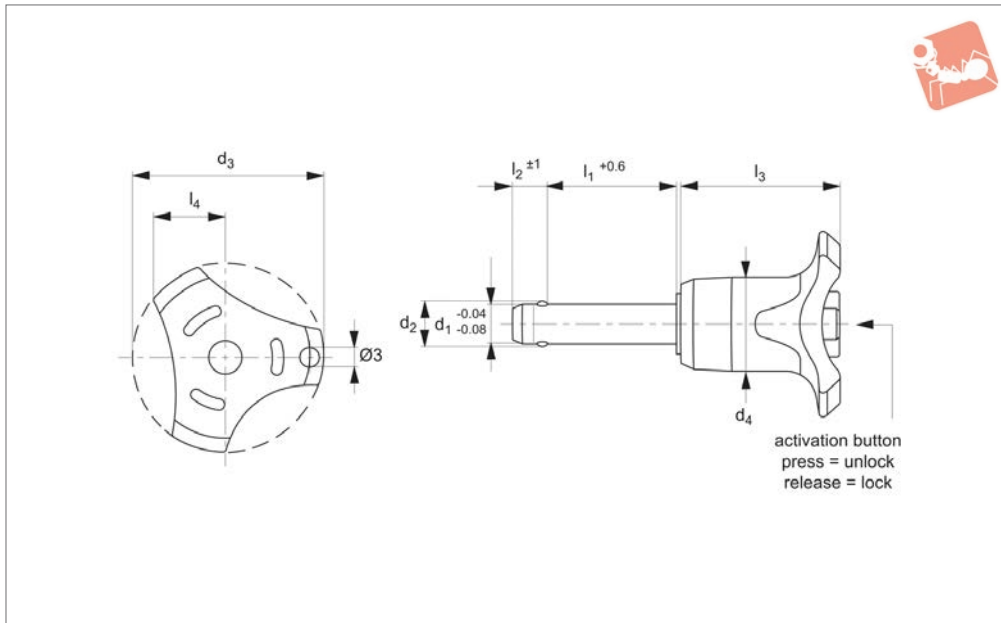




Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



33080.BK

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4542 (AISI 630)
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Handle: thermoplastic PA 6.
 Available colours: grey/orange, grey/blue, grey/grey.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.
 For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes

*Shearing resistance similar to DIN 50141.
 Also available in stainless grade 1.4542 (AISI 630) for higher shear forces, see part no.33060.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0812	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0813	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0814	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	14	16
33080.W0815	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	14	16
33080.W0816	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0817	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33080.W0818	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33080.W0819	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33080.W0832	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38
33080.W0833	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33080.W0805	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0806	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33080.W0807	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33080.W0808	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33080.W0809	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33080.W0810	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0811	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0822	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	21	16
33080.W0823	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	21	17
33080.W0824	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	21	18
33080.W0825	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	21	19
33080.W0826	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	21	20
33080.W0827	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	21	21
33080.W0828	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	21	21
33080.W0829	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	21	23
33080.W0830	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	21	24
33080.W0834	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	38	40

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4305 (AISI 303)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0835	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	38	42
33080.W0836	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	38	44
33080.W0837	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	38	46
33080.W0838	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	38	47
33080.W0839	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	38	49
33080.W0840	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	38	51
33080.W0841	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33080.W0842	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33080.W0843	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33080.W0831	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36
33080.W0821	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33080.W0851	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33080.W0844	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	60	47
33080.W0845	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	60	49
33080.W0846	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	60	53
33080.W0847	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	60	55
33080.W0848	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	60	58
33080.W0849	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	60	61
33080.W0850	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	60	64
33080.W0852	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	60	70
33080.W0853	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33080.W0854	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33080.W0855	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33080.W0856	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33080.W0857	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33080.W0858	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33080.W0864	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33080.W0866	12	30	14.5	47.6	25.2	10.6	39.7	16.7	12	87	100
33080.W0865	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	87	96
33080.W0867	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	87	105
33080.W0868	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	87	109
33080.W0869	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	87	113
33080.W0870	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	87	117
33080.W0872	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	87	126
33080.W0874	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	87	134
33080.W0876	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	87	143
33080.W0877	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33080.W0878	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33080.W0879	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33080.W0880	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33080.W0886	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	155	132
33080.W0887	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	155	140
33080.W0888	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	155	148
33080.W0889	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	155	155
33080.W0890	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	155	168
33080.W0892	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	155	178
33080.W0894	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	155	194
33080.W0896	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	155	208
33080.W0897	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33080.W0898	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33080.W0899	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33080.W0900	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33080.W0901	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33080.W0902	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33080.W0903	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33080.W0905	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	244	329
33080.W0906	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	244	377
33080.W0909	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	244	426
33080.W0913	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	244	474
33080.W0904	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	244	343
33080.W0908	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	244	392
33080.W0912	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	244	440
33080.W0916	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	244	488
33080.W0917	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	244	523
33080.W0918	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	244	546
33080.W0919	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	244	571
33080.W0921	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	386	415



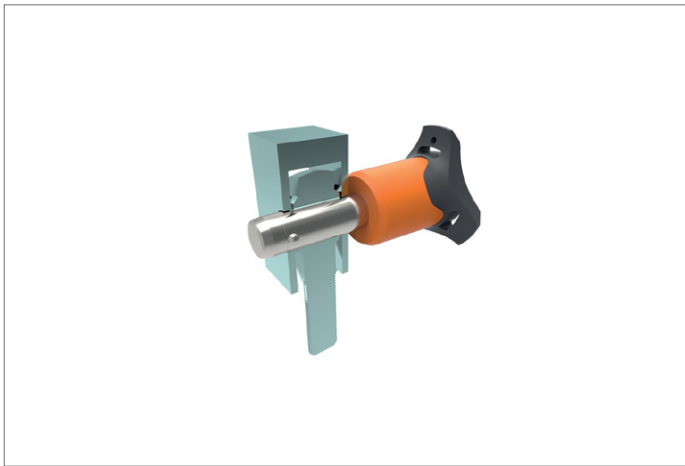
Ball Lock Pins - Single Acting - Black

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0922	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	386	453
33080.W0923	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	386	490
33080.W0924	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	386	528
33080.W0925	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	386	565
33080.W0926	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	386	603
33080.W0927	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	386	640
33080.W0928	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	386	690
33080.W0929	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	386	715
33080.W0930	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	386	753
33080.W0931	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	386	790



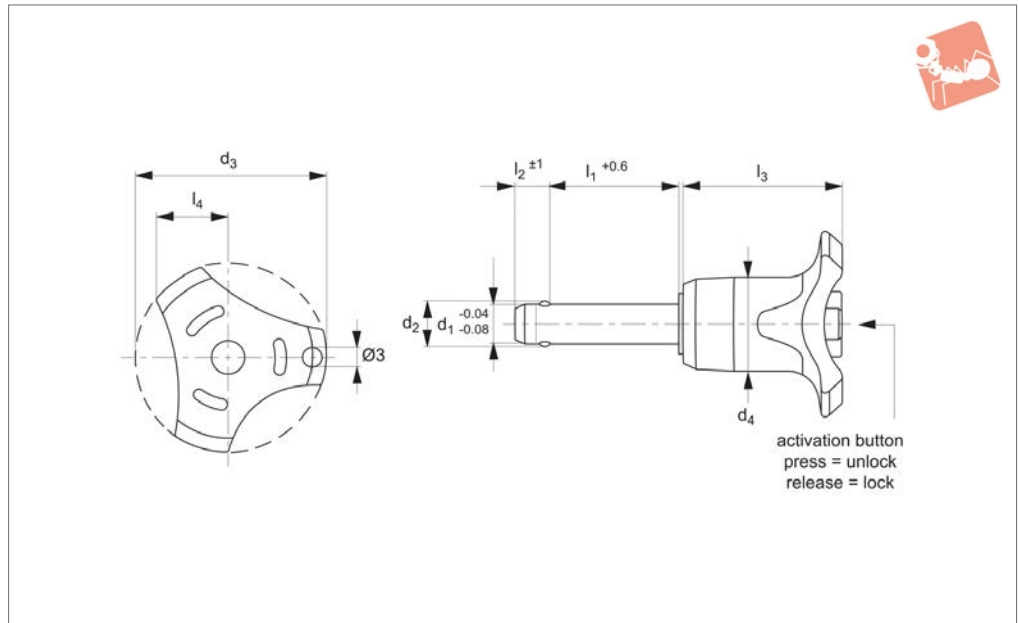
BALL LOCK PINS & QUICK RELEASE PINS



BALL LOCK PINS & QUICK RELEASE PINS



33080.BU



Material

Pin: stainless steel 1.4542 (AISI 630)
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Handle: thermoplastic PA 6.
 Available colours: grey/orange, grey/blue, grey/grey.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.
 For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes

*Shearing resistance similar to DIN 50141.
 Also available in stainless grade 1.4542 (AISI 630) for higher shear forces, see part no.33060.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0432	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0433	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0434	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	14	16
33080.W0435	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	14	17
33080.W0436	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0437	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33080.W0438	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33080.W0439	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33080.W0425	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0426	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33080.W0427	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33080.W0428	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33080.W0429	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33080.W0430	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0431	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0442	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	21	16
33080.W0443	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	21	17
33080.W0444	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	21	18
33080.W0445	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	21	19
33080.W0446	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	21	20
33080.W0447	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	21	21
33080.W0448	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	21	22
33080.W0449	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	21	23
33080.W0450	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	21	24
33080.W0452	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38
33080.W0453	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33080.W0454	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	38	40



Ball Lock Pins - Single Acting - Blue

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0455	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	38	42
33080.W0456	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	38	44
33080.W0457	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	38	46
33080.W0458	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	38	47
33080.W0459	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	38	49
33080.W0460	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	38	51
33080.W0461	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33080.W0462	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33080.W0463	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33080.W0451	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36
33080.W0441	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33080.W0464	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	60	47
33080.W0465	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	60	49
33080.W0466	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	60	53
33080.W0467	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	60	55
33080.W0468	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	60	58
33080.W0469	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	60	61
33080.W0470	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	60	64
33080.W0471	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33080.W0473	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33080.W0474	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33080.W0475	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33080.W0476	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33080.W0477	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33080.W0478	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33080.W0484	12	20	14.5	47.0	25.2	10.6	39.7	16.7	12	87	156
33080.W0472	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	60	70
33080.W0485	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	87	96
33080.W0486	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	87	100
33080.W0487	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	87	105
33080.W0488	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	87	109
33080.W0489	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	87	113
33080.W0490	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	87	117
33080.W0492	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	87	126
33080.W0494	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	87	134
33080.W0496	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	87	143
33080.W0497	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33080.W0498	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33080.W0499	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33080.W0500	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33080.W0506	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	155	132
33080.W0507	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	155	140
33080.W0508	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	155	148
33080.W0509	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	155	155
33080.W0510	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	155	168
33080.W0512	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	155	178
33080.W0514	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	155	194
33080.W0516	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	155	208
33080.W0517	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33080.W0518	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33080.W0519	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33080.W0520	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33080.W0521	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33080.W0522	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33080.W0523	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33080.W0531	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	244	329
33080.W0533	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	244	377
33080.W0537	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	244	426
33080.W0532	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	244	343
33080.W0536	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	244	392
33080.W0540	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	244	440
33080.W0544	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	244	488
33080.W0545	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	244	523
33080.W0546	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	244	546
33080.W0547	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	244	571
33080.W0549	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	386	415
33080.W0550	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	386	453

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release



Ball Lock Pins - Single Acting - Blue

self-locking - stainless steel 1.4305 (AISI 303)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0551	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	386	490
33080.W0552	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	386	528
33080.W0553	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	386	565
33080.W0554	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	386	603
33080.W0556	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	386	690
33080.W0557	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	386	715
33080.W0558	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	386	753
33080.W0559	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	386	790

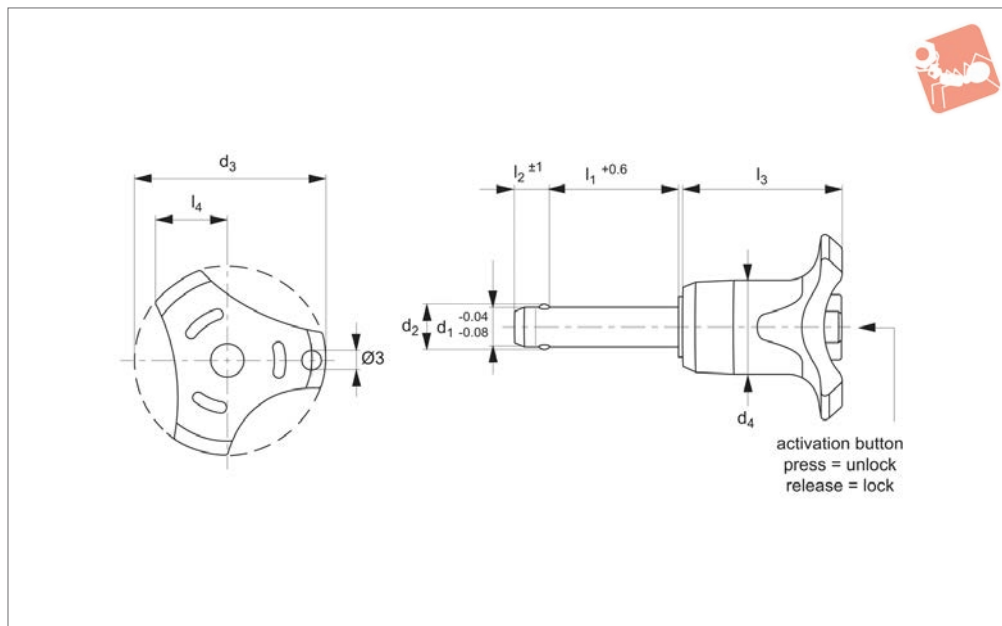




Ball Lock Pins - Single Acting - Grey

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



33080.GR

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4542 (AISI 630)
Ball: stainless steel 1.3541
Spring: stainless steel.
Handle: thermoplastic PA 6.
Available colours: grey/orange, grey/blue, grey/grey.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.
For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes

*Shearing resistance similar to DIN 50141.
Also available in stainless grade 1.4542 (AISI 630) for higher shear forces, see part no.33060.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0292	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0293	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0294	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	14	16
33080.W0295	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	14	17
33080.W0296	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0297	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33080.W0298	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33080.W0299	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33080.W0285	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0286	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33080.W0287	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33080.W0288	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33080.W0289	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33080.W0290	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0291	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0302	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	21	16
33080.W0301	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33080.W0303	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	21	17
33080.W0304	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	21	18
33080.W0305	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	21	19
33080.W0306	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	21	20
33080.W0307	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	21	21
33080.W0308	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	21	22
33080.W0309	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	21	23
33080.W0310	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	21	24
33080.W0311	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36
33080.W0312	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Grey

self-locking - stainless steel 1.4305 (AISI 303)



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0313	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33080.W0314	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	38	40
33080.W0315	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	38	42
33080.W0316	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	38	44
33080.W0317	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	38	46
33080.W0318	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	38	47
33080.W0319	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	38	49
33080.W0320	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	38	51
33080.W0321	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33080.W0322	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33080.W0323	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33080.W0324	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	60	47
33080.W0325	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	60	49
33080.W0326	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	60	53
33080.W0327	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	60	55
33080.W0328	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	60	58
33080.W0329	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	60	61
33080.W0330	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	60	64
33080.W0331	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33080.W0332	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	60	70
33080.W0333	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33080.W0334	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33080.W0335	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33080.W0336	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33080.W0337	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33080.W0338	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33080.W0344	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33080.W0345	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	87	96
33080.W0346	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	87	100
33080.W0347	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	87	105
33080.W0348	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	87	109
33080.W0349	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	87	113
33080.W0350	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	87	117
33080.W0352	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	87	126
33080.W0354	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	87	134
33080.W0356	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	87	143
33080.W0357	12	90	14.5	47.6	26.3	10.6	39.7	16.7	12	87	165
33080.W0358	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33080.W0359	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33080.W0360	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	96
33080.W0366	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	155	132
33080.W0367	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	155	140
33080.W0368	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	155	148
33080.W0369	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	155	155
33080.W0370	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	155	168
33080.W0372	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	155	178
33080.W0374	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	155	194
33080.W0376	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	155	208
33080.W0377	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33080.W0378	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33080.W0379	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33080.W0380	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33080.W0381	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33080.W0382	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33080.W0383	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33080.W0391	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	244	329
33080.W0392	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	244	343
33080.W0393	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	244	377
33080.W0397	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	244	426
33080.W0401	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	244	474
33080.W0396	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	244	392
33080.W0400	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	244	440
33080.W0404	20	120	25.0	57.1	33.8	20.5	50.7	21.5	20	244	488
33080.W0406	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	244	523
33080.W0407	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	244	571
33080.W0409	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	286	415
33080.W0410	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	286	453



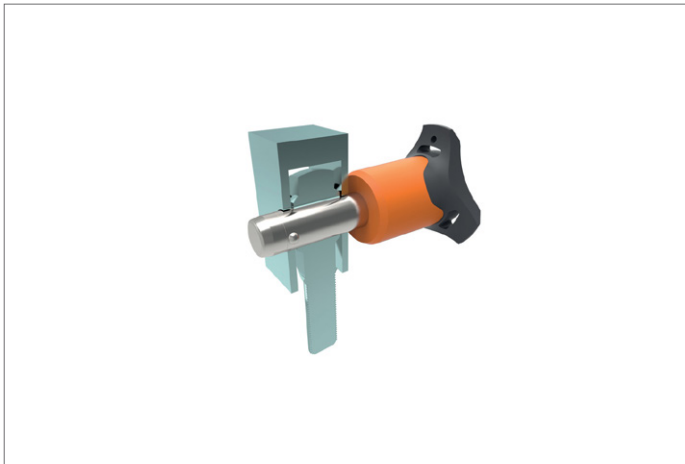
Ball Lock Pins - Single Acting - Grey

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



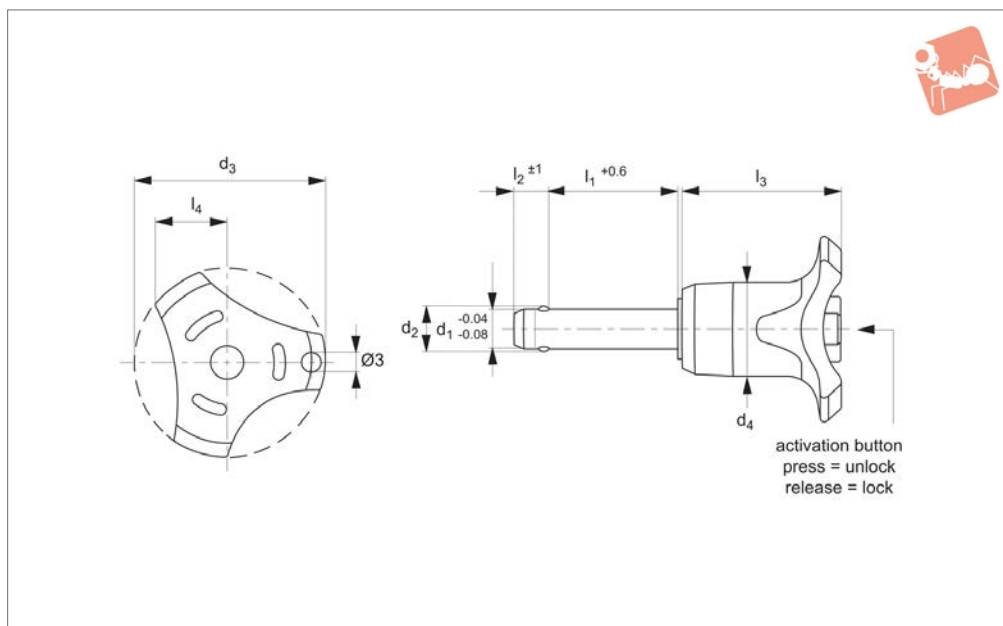
Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0411	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	286	490
33080.W0412	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	286	528
33080.W0413	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	286	565
33080.W0414	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	286	603
33080.W0415	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	286	640
33080.W0416	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	286	690
33080.W0417	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	286	715
33080.W0418	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	286	753
33080.W0419	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	286	790



BALL LOCK PINS & QUICK RELEASE PINS



33080.OR



Material

Pin: stainless steel 1,4542 (AISI 630)
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Handle: thermoplastic PA 6.
 Available colours: grey/orange, grey/blue, grey/grey.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature resistance -30°C to +80°C.
 For quick fastening and locking of frequently repeated connections.

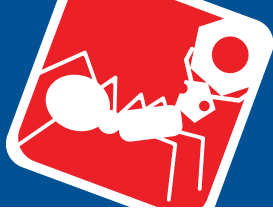
Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes

*Shearing resistance similar to DIN 50141.
 Also available in stainless grade 1.4542 (AISI 630) for higher shear forces, see part no.33060.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0152	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0153	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	14	15
33080.W0154	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	14	16
33080.W0155	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	14	17
33080.W0156	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0157	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33080.W0158	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33080.W0159	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33080.W0145	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0146	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33080.W0147	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33080.W0148	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33080.W0149	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33080.W0150	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33080.W0151	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33080.W0161	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33080.W0162	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	21	16
33080.W0163	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	21	17
33080.W0164	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	21	18
33080.W0165	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	21	19
33080.W0166	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	21	20
33080.W0167	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	21	21
33080.W0168	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	21	22
33080.W0169	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	21	23
33080.W0170	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	21	24
33080.W0171	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36
33080.W0172	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38



Ball Lock Pins - Single Acting - Orange

self-locking - stainless steel 1.4305 (AISI 303)

Ball Lock Pins & Quick Release



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0173	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33080.W0174	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	38	40
33080.W0175	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	38	42
33080.W0176	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	38	44
33080.W0177	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	38	46
33080.W0178	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	38	47
33080.W0179	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	38	49
33080.W0180	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	38	51
33080.W0181	8	60	9.6	39.2	19.3	8.2	33.3	13.4	8	38	62
33080.W0182	8	70	9.6	39.2	19.3	8.2	33.3	13.4	8	38	65
33080.W0183	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33080.W0184	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	60	47
33080.W0185	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	60	49
33080.W0186	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	60	53
33080.W0187	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	60	55
33080.W0188	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	60	58
33080.W0189	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	60	61
33080.W0190	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	60	64
33080.W0191	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33080.W0192	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	60	70
33080.W0193	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	91
33080.W0195	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33080.W0194	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33080.W0196	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33080.W0197	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33080.W0198	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33080.W0204	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33080.W0205	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	87	96
33080.W0206	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	87	100
33080.W0207	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	87	105
33080.W0208	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	87	109
33080.W0209	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	87	113
33080.W0210	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	87	117
33080.W0212	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	87	126
33080.W0214	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	87	134
33080.W0216	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	87	143
33080.W0217	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33080.W0218	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33080.W0219	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33080.W0220	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	177
33080.W0226	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	155	132
33080.W0227	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	155	140
33080.W0228	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	155	148
33080.W0229	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	155	155
33080.W0230	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	155	168
33080.W0232	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	155	178
33080.W0234	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	155	194
33080.W0236	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	155	208
33080.W0237	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33080.W0238	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	251
33080.W0239	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33080.W0240	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33080.W0241	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33080.W0242	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33080.W0243	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33080.W0251	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	244	329
33080.W0252	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	244	343
33080.W0253	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	244	377
33080.W0256	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	244	392
33080.W0257	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	244	426
33080.W0260	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	244	440
33080.W0261	20	110	25.0	57.1	33.8	20.5	50.7	21.5	20	244	474
33080.W0264	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	244	488
33080.W0265	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	244	523
33080.W0266	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	244	546
33080.W0267	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	244	571
33080.W0269	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	386	415

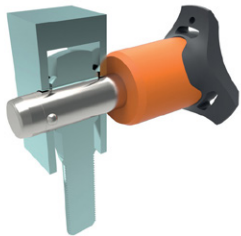
BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - Orange self-locking - stainless steel 1.4305 (AISI 303)



Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33080.W0270	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	386	453
33080.W0271	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	386	490
33080.W0272	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	386	528
33080.W0273	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	386	565
33080.W0274	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	386	603
33080.W0275	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	386	640
33080.W0276	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	386	690
33080.W0277	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	386	715
33080.W0278	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	386	753
33080.W0279	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	386	790



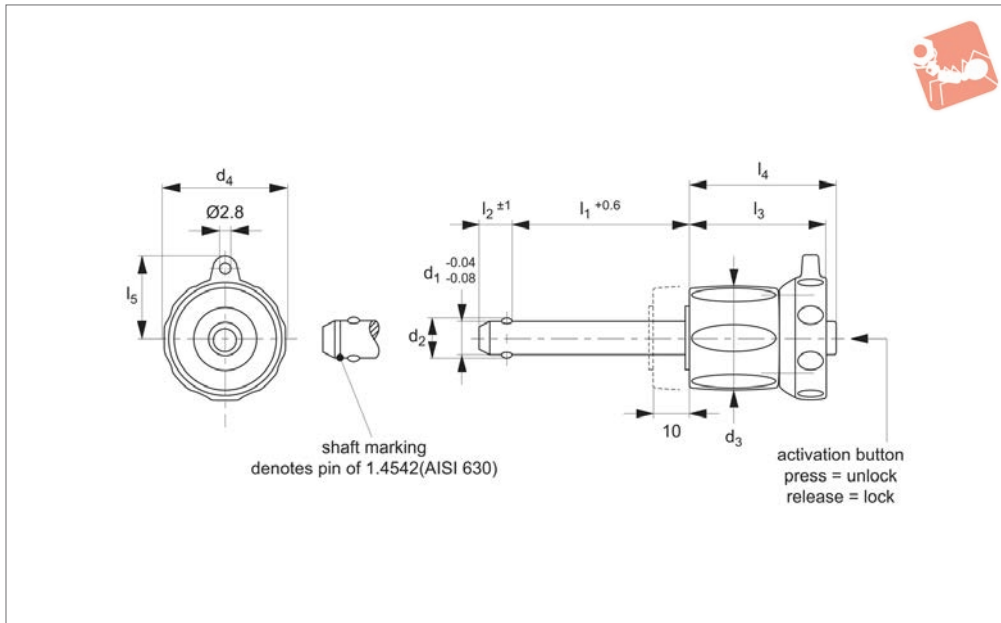
BALL LOCK PINS & QUICK RELEASE PINS



Ball Lock Pins - Single Acting

self-locking - adj. length - stainless 1.4305

Ball Lock Pins & Quick Release



33104.1

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3541
Spring: stainless steel.
Adj. Grip: thermoplastic, grey/black.

Technical Notes

Pressing = unlocking.
Releasing = locking.

Unique design; adj.grip offers up to 10mm of clamping stroke on pin length l_1 after installation.

Temperature resistance -30°C to +80°C.
For quick fastening and locking of frequently repeated connections, with additional clamping capacity of up to 10mm stroke.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes available see part no.33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	d_1	l_1	Material	d_2	d_3	d_4	l_2	l_3	l_4	l_5	Loc'n hole tol. H11	Shearing resistance, double	Weight
												kN min.	g
33104.W0192	5	0 - 10	Stainless 1.4305	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	14	24
33104.W0193	5	5 - 15	Stainless 1.4305	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	14	25
33104.W0194	5	10 - 20	Stainless 1.4305	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	14	26
33104.W0195	5	15 - 25	Stainless 1.4305	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	14	27
33104.W0196	5	20 - 30	Stainless 1.4305	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	14	27
33104.W0202	6	0 - 10	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	25
33104.W0203	6	5 - 15	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	26
33104.W0204	6	10 - 20	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	27
33104.W0205	6	15 - 25	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	28
33104.W0206	6	20 - 30	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	29
33104.W0207	6	25 - 35	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	30
33104.W0208	6	30 - 40	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	31
33104.W0209	6	35 - 45	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	32
33104.W0210	6	40 - 50	Stainless 1.4305	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	21	33
33104.W0214	8	10 - 20	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	57
33104.W0215	8	15 - 25	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	58
33104.W0216	8	20 - 30	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	60
33104.W0217	8	25 - 35	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	62
33104.W0218	8	30 - 40	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	64
33104.W0219	8	35 - 45	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	66
33104.W0220	8	40 - 50	Stainless 1.4305	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	38	68
33104.W0224	10	10 - 20	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	63
33104.W0225	10	15 - 25	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	66
33104.W0226	10	20 - 30	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	69
33104.W0227	10	25 - 35	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	72
33104.W0228	10	30 - 40	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	75
33104.W0229	10	35 - 45	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	78
33104.W0230	10	40 - 50	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	81

Ball Lock Pins & Quick Release

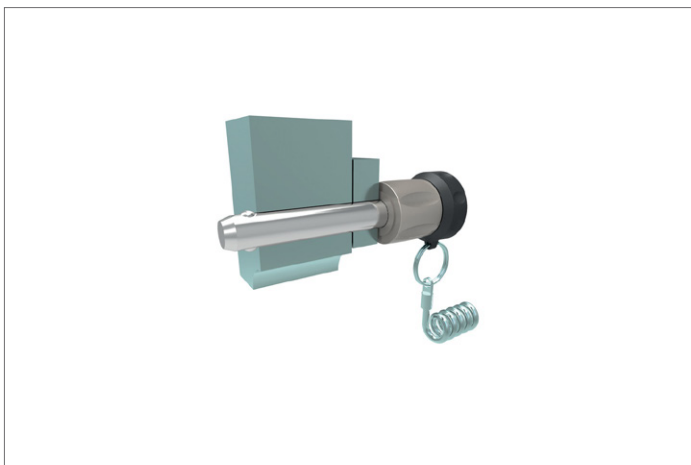
Ball Lock Pins - Single Acting

self-locking - adj. length - stainless 1.4305



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	Material	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	l ₅	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33104.W0232	10	50 - 60	Stainless 1.4305	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	60	87
33104.W0235	12	15 - 25	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	123
33104.W0236	12	20 - 30	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	127
33104.W0237	12	25 - 35	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	131
33104.W0238	12	30 - 40	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	135
33104.W0239	12	35 - 45	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	140
33104.W0240	12	40 - 50	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	144
33104.W0242	12	50 - 60	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	152
33104.W0244	12	60 - 70	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	161
33104.W0246	12	70 - 80	Stainless 1.4305	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	87	169
33104.W0256	16	20 - 30	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	159
33104.W0257	16	25 - 35	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	166
33104.W0258	16	30 - 40	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	174
33104.W0259	16	35 - 45	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	182
33104.W0260	16	40 - 50	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	189
33104.W0262	16	50 - 60	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	205
33104.W0264	16	60 - 70	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	220
33104.W0266	16	70 - 80	Stainless 1.4305	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	155	235

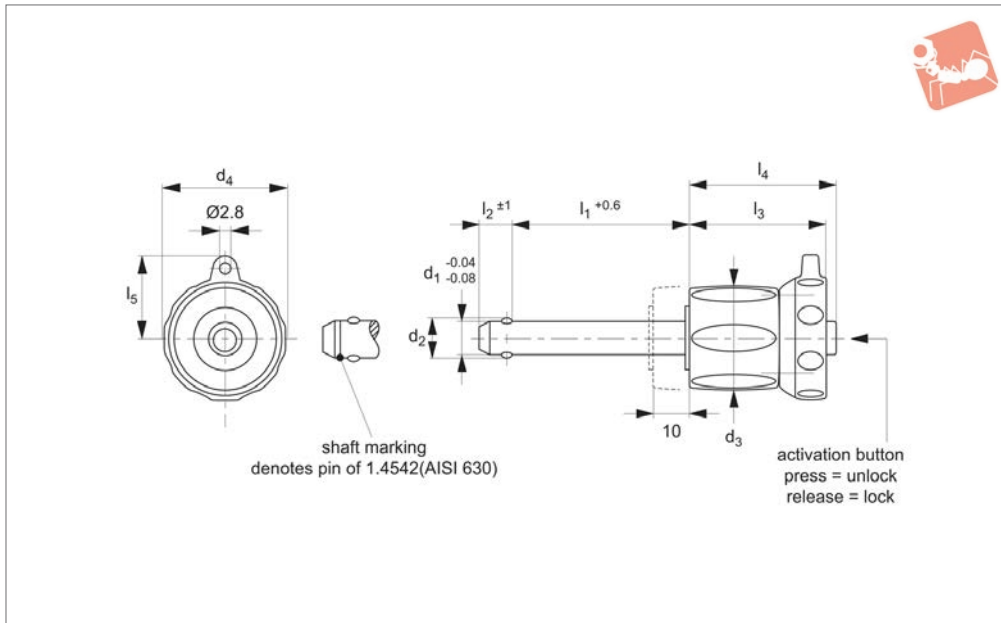




Ball Lock Pins - Single Acting

self-locking - adj. length - stainless 1.4542

Ball Lock Pins & Quick Release



33104.2

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4542 (AISI 630), precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Adj. Grip: thermoplastic, grey/black.

Releasing = locking.

Unique design; adj.grip offers up to 10mm of clamping stroke on pin length l_1 after installation.

Temperature resistance -30°C to +80°C.
 For quick fastening and locking of frequently repeated connections, with additional clamping capacity of up to 10mm stroke.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes available see part no.33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Technical Notes

Pressing = unlocking.

Order No.	d_1	l_1	Material	d_2	d_3	d_4	l_2	l_3	l_4	l_5	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33104.W0392	5	0 - 10	Stainless 1.4542	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	24	24
33104.W0393	5	5 - 15	Stainless 1.4542	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	24	25
33104.W0394	5	10 - 20	Stainless 1.4542	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	24	26
33104.W0395	5	15 - 25	Stainless 1.4542	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	24	27
33104.W0396	5	20 - 30	Stainless 1.4542	5.5	17.6	23.6	6.0	25.7	26.2	15.9	5	24	27
33104.W0402	6	0 - 10	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	25
33104.W0403	6	5 - 15	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	26
33104.W0404	6	10 - 20	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	27
33104.W0405	6	15 - 25	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	28
33104.W0406	6	20 - 30	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	29
33104.W0407	6	25 - 35	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	30
33104.W0408	6	30 - 40	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	31
33104.W0409	6	35 - 45	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	32
33104.W0410	6	40 - 50	Stainless 1.4542	7.0	17.6	23.6	7.0	25.7	26.2	15.9	6	35	33
33104.W0414	8	10 - 20	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	57
33104.W0415	8	15 - 25	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	58
33104.W0416	8	20 - 30	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	60
33104.W0417	8	25 - 35	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	62
33104.W0418	8	30 - 40	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	64
33104.W0419	8	35 - 45	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	66
33104.W0420	8	40 - 50	Stainless 1.4542	9.6	23.0	27.6	8.2	31.2	33.1	18.0	8	63	68
33104.W0424	10	10 - 20	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	63
33104.W0425	10	15 - 25	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	66
33104.W0426	10	20 - 30	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	69
33104.W0427	10	25 - 35	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	72

Ball Lock Pins & Quick Release

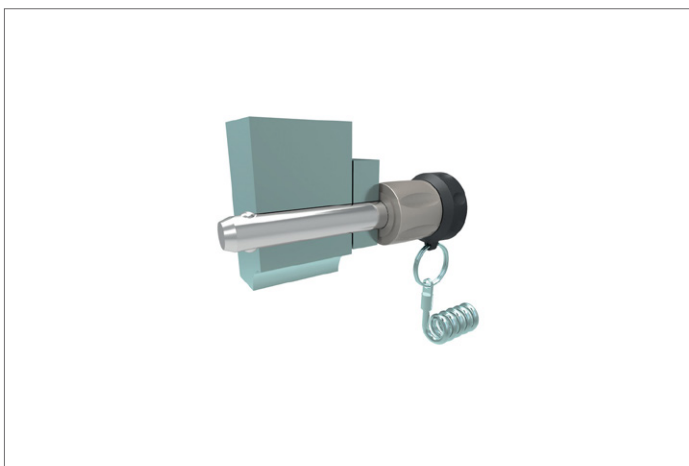
Ball Lock Pins - Single Acting

self-locking - adj. length - stainless 1.4542



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d ₁	l ₁	Material	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	l ₅	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33104.W0428	10	30 - 40	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	75
33104.W0429	10	35 - 45	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	78
33104.W0430	10	40 - 50	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	81
33104.W0432	10	50 - 60	Stainless 1.4542	12.0	23.0	27.6	9.6	31.2	33.1	18.0	10	100	87
33104.W0435	12	15 - 25	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	123
33104.W0436	12	20 - 30	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	127
33104.W0437	12	25 - 35	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	131
33104.W0438	12	30 - 40	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	135
33104.W0439	12	35 - 45	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	140
33104.W0440	12	40 - 50	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	144
33104.W0442	12	50 - 60	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	152
33104.W0444	12	60 - 70	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	161
33104.W0446	12	70 - 80	Stainless 1.4542	14.5	29.0	34.6	10.6	36.7	39.5	21.8	12	144	169
33104.W0456	16	20 - 30	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	159
33104.W0457	16	25 - 35	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	166
33104.W0458	16	30 - 40	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	174
33104.W0459	16	35 - 45	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	182
33104.W0460	16	40 - 50	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	189
33104.W0462	16	50 - 60	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	205
33104.W0464	16	60 - 70	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	220
33104.W0466	16	70 - 80	Stainless 1.4542	19.0	29.0	34.6	14.0	36.7	39.5	21.8	16	257	235





Wixroyd Ball Lock Pins

applications

33060 - 33250
Positioning Elements

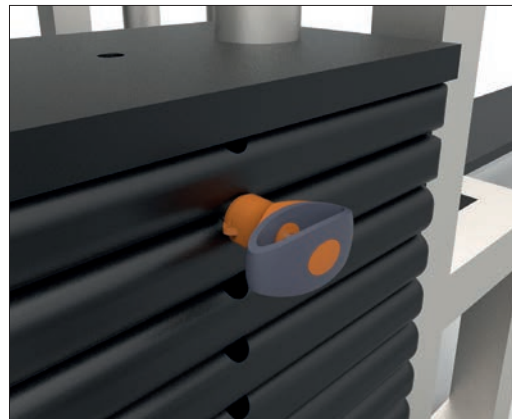


Sound Rigging Systems

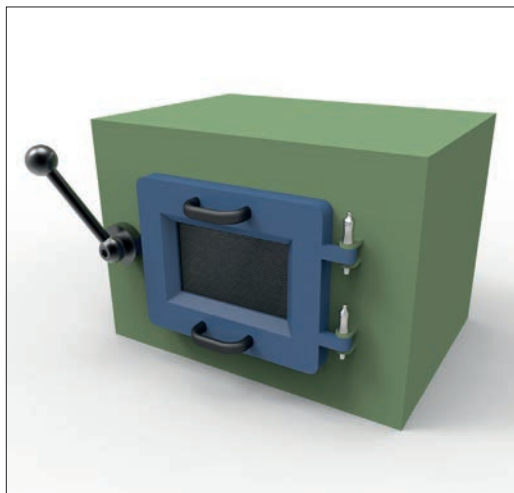
Ball lock pins on a sound rigging system. Offering secure fixing with high shear forces and easy fitting for operators at heights.

In addition full black powder coating of grip and actuation button eliminates glare from other stage lighting.

BALL LOCK PINS & QUICK RELEASE PINS



Gym Equipment



Scientific and Medical

ov-W33060.BK-A-TOR1706-W33250-A-TLA1066-a-rmh - Updated - 27-10-2022



Pin Material

1.4305 (AISI 303) - shear force approx. 60% of higher material version 1.4542

1.4542 (AISI 630) - identified by the ridge on the pin

CRES 17-4PH (AMS 5643) aviation standard



Handle Style



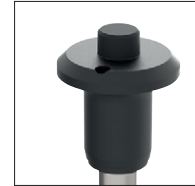
Plastic tri-star



T-handled, metal



L-handled, metal



Mushroom, metal



Single piece metal, contoured



Special plastic self-spring



Adjustable grip length, plastic



Key ring



Safety, metal



Mushroom Type B aviation

Type R aviation

Lanyards and Locating Bushes



Stainless wire - (coated) - 2 x key ring



Stainless wire - Key ring and fixing loop



Plastic - 2 x cable tie



Steel wire - (coated) - 2 x key ring



Stainless bead chain - 2 x key ring



Locating bushes

Actuation



Press = unlock
Release = lock (standard)



Press = unlock and position
Release = lock and simultaneous clamp



Simple spring loaded balls "pullout pin"

Important Note

Important Note: Ball lock pins are not suited to lifting applications!
For quick release lifting pins, see part 33400.



Shear force



Lifting force

Special Variations

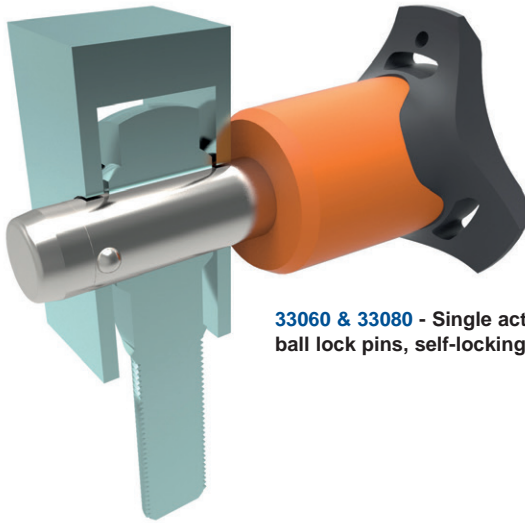


Variations on our standard designs are possible, please contact our sales team for technical assistance. Quick production on specials can be as little as 3 weeks.



Applications

- Positioning.
- Lifting.
- Locking.
- Indexing.
- Joining.



33060 & 33080 - Single acting ball lock pins, self-locking.



33194 - Single acting ball lock pins, self locking, simple finish.



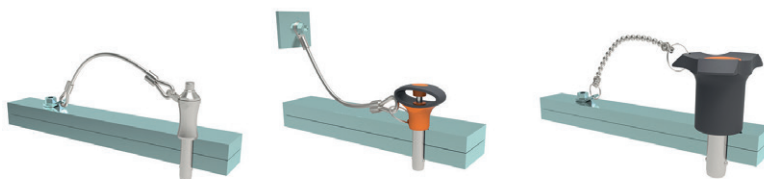
33140 - Socket pins, non-locking, spring loaded balls.



33100 - Single acting ball lock pin, self locking.



33180 - Clamping pins, with span compensation, self-locking.



33250 & 33270 - Lanyards.



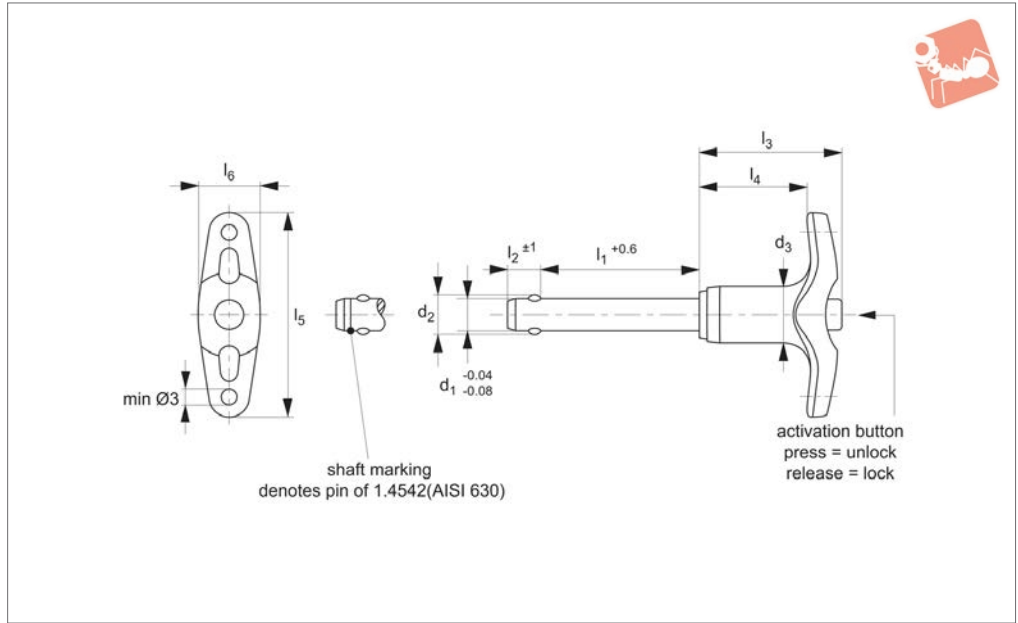
33220 - Ball lock pins, single acting - L-handle



BALL LOCK PINS & QUICK RELEASE PINS



33200.1



Material

Pin: stainless steel 1.4305 (AISI 303).
 Ball: stainless steel 1.3541
 Handle: aluminium, black (similar to RAL 9005)
 Spring: stainless Steel.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Temperature range -30°C to +150°C.
 For quick fastening and locking frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 +

33246.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0007	Stainless 1.4305	5	45	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	25
33200.W0008	Stainless 1.4305	5	50	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	26
33200.W0009	Stainless 1.4305	5	60	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	27
33200.W0010	Stainless 1.4305	5	70	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	29
33200.W0011	Stainless 1.4305	5	80	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	30
33200.W0012	Stainless 1.4305	5	10	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	19
33200.W0013	Stainless 1.4305	5	15	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	20
33200.W0014	Stainless 1.4305	5	20	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	20
33200.W0015	Stainless 1.4305	5	25	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	21
33200.W0016	Stainless 1.4305	5	30	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	22
33200.W0017	Stainless 1.4305	5	35	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	24
33200.W0018	Stainless 1.4305	5	40	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	14	24
33200.W0019	Stainless 1.4305	6	60	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	31
33200.W0020	Stainless 1.4305	6	70	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	33
33200.W0021	Stainless 1.4305	6	80	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	35
33200.W0022	Stainless 1.4305	6	10	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	20
33200.W0023	Stainless 1.4305	6	15	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	21
33200.W0024	Stainless 1.4305	6	20	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	22
33200.W0025	Stainless 1.4305	6	25	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	23
33200.W0026	Stainless 1.4305	6	30	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	24
33200.W0027	Stainless 1.4305	6	35	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	25
33200.W0028	Stainless 1.4305	6	40	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	26
33200.W0029	Stainless 1.4305	6	45	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	27
33200.W0030	Stainless 1.4305	6	50	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	21	28
33200.W0031	Stainless 1.4305	8	60	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	52
33200.W0032	Stainless 1.4305	8	10	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	33
33200.W0033	Stainless 1.4305	8	15	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	35



Ball Lock Pins - Single Acting - T- self-locking - stainless 1.4305

Ball Lock Pins & Quick Release

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0034	Stainless 1.4305	8	20	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	37
33200.W0035	Stainless 1.4305	8	25	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	39
33200.W0036	Stainless 1.4305	8	30	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	41
33200.W0037	Stainless 1.4305	8	35	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	43
33200.W0038	Stainless 1.4305	8	40	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	44
33200.W0039	Stainless 1.4305	8	45	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	46
33200.W0040	Stainless 1.4305	8	50	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	48
33200.W0041	Stainless 1.4305	8	70	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	56
33200.W0042	Stainless 1.4305	8	80	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	60
33200.W0043	Stainless 1.4305	8	90	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	63
33200.W0044	Stainless 1.4305	10	20	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	44
33200.W0045	Stainless 1.4305	10	25	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	47
33200.W0046	Stainless 1.4305	10	30	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	49
33200.W0047	Stainless 1.4305	10	35	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	52
33200.W0048	Stainless 1.4305	10	40	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	55
33200.W0049	Stainless 1.4305	10	45	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	58
33200.W0050	Stainless 1.4305	10	50	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	61
33200.W0051	Stainless 1.4305	8	100	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	38	67
33200.W0052	Stainless 1.4305	10	60	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	67
33200.W0053	Stainless 1.4305	10	70	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	73
33200.W0054	Stainless 1.4305	10	80	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	79
33200.W0055	Stainless 1.4305	10	90	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	85
33200.W0056	Stainless 1.4305	10	100	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	91
33200.W0057	Stainless 1.4305	10	110	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	97
33200.W0058	Stainless 1.4305	10	120	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	103
33200.W0059	Stainless 1.4305	10	15	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	60	40
33200.W0060	Stainless 1.4305	12	90	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	127
33200.W0061	Stainless 1.4305	12	100	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	136
33200.W0062	Stainless 1.4305	12	110	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	144
33200.W0063	Stainless 1.4305	12	120	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	153
33200.W0064	Stainless 1.4305	12	20	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	68
33200.W0065	Stainless 1.4305	12	25	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	73
33200.W0066	Stainless 1.4305	12	30	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	77
33200.W0067	Stainless 1.4305	12	35	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	81
33200.W0068	Stainless 1.4305	12	40	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	86
33200.W0069	Stainless 1.4305	12	45	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	90
33200.W0070	Stainless 1.4305	12	50	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	94
33200.W0071	Stainless 1.4305	16	30	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	150
33200.W0072	Stainless 1.4305	12	60	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	103
33200.W0073	Stainless 1.4305	16	35	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	157
33200.W0074	Stainless 1.4305	12	70	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	111
33200.W0075	Stainless 1.4305	16	40	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	165
33200.W0076	Stainless 1.4305	12	80	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	87	119
33200.W0077	Stainless 1.4305	16	45	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	173
33200.W0078	Stainless 1.4305	16	50	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	180
33200.W0079	Stainless 1.4305	16	60	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	196
33200.W0080	Stainless 1.4305	16	70	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	211
33200.W0081	Stainless 1.4305	16	80	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	226
33200.W0082	Stainless 1.4305	16	90	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	242
33200.W0083	Stainless 1.4305	16	100	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	257
33200.W0084	Stainless 1.4305	16	110	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	272
33200.W0085	Stainless 1.4305	16	120	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	288
33200.W0086	Stainless 1.4305	16	130	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	303
33200.W0087	Stainless 1.4305	16	140	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	319
33200.W0088	Stainless 1.4305	16	150	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	155	334
33200.W0089	Stainless 1.4305	20	50	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	241
33200.W0090	Stainless 1.4305	20	60	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	265
33200.W0091	Stainless 1.4305	20	70	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	289
33200.W0092	Stainless 1.4305	20	80	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	313
33200.W0093	Stainless 1.4305	20	90	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	337
33200.W0094	Stainless 1.4305	20	100	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	361
33200.W0095	Stainless 1.4305	20	110	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	385
33200.W0096	Stainless 1.4305	20	120	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	409
33200.W0097	Stainless 1.4305	20	130	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	433
33200.W0098	Stainless 1.4305	20	140	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	457
33200.W0099	Stainless 1.4305	20	150	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	244	481

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release



Ball Lock Pins - Single Acting - T-self-locking - stainless 1.4305



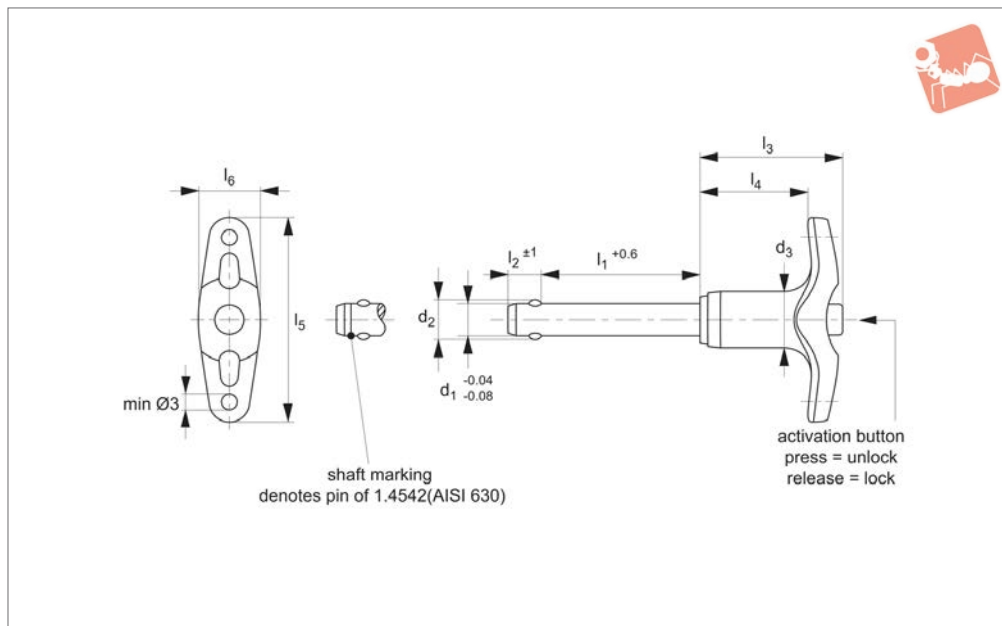
BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0100	Stainless 1.4305	25	50	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	447
33200.W0101	Stainless 1.4305	25	60	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	484
33200.W0102	Stainless 1.4305	25	70	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	522
33200.W0103	Stainless 1.4305	25	80	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	560
33200.W0104	Stainless 1.4305	25	90	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	598
33200.W0105	Stainless 1.4305	25	100	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	636
33200.W0106	Stainless 1.4305	25	110	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	674
33200.W0107	Stainless 1.4305	25	120	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	712
33200.W0108	Stainless 1.4305	25	130	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	750
33200.W0109	Stainless 1.4305	25	140	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	788
33200.W0110	Stainless 1.4305	25	150	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	386	825



Ball Lock Pins - Single Acting - T- self-locking - stainless 1.4542

Ball Lock Pins & Quick Release



33200.2

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4542 (AISI 630).
Precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).
Ball: stainless steel 1.3541
Handle: aluminium, black (RAL9003).
Spring: stainless steel.

Technical Notes

Pressing = unlocking.
Releasing = locking.
Temperature range -30°C to +150°C.
For quick fastening and locking frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0307	Stainless 1.4542	5	45	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	25
33200.W0308	Stainless 1.4542	5	50	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	26
33200.W0309	Stainless 1.4542	5	60	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	27
33200.W0310	Stainless 1.4542	5	70	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	29
33200.W0311	Stainless 1.4542	5	80	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	30
33200.W0312	Stainless 1.4542	5	10	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	19
33200.W0313	Stainless 1.4542	5	15	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	20
33200.W0314	Stainless 1.4542	5	20	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	20
33200.W0315	Stainless 1.4542	5	25	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	21
33200.W0316	Stainless 1.4542	5	30	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	22
33200.W0317	Stainless 1.4542	5	35	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	24
33200.W0318	Stainless 1.4542	5	40	5,5	11,8	6,0	31,6	24,1	45,2	12,7	5	24	24
33200.W0319	Stainless 1.4542	6	60	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	31
33200.W0320	Stainless 1.4542	6	70	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	33
33200.W0321	Stainless 1.4542	6	80	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	35
33200.W0322	Stainless 1.4542	6	10	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	20
33200.W0323	Stainless 1.4542	6	15	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	21
33200.W0324	Stainless 1.4542	6	20	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	22
33200.W0325	Stainless 1.4542	6	25	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	23
33200.W0326	Stainless 1.4542	6	30	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	24
33200.W0327	Stainless 1.4542	6	35	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	25
33200.W0328	Stainless 1.4542	6	40	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	26
33200.W0329	Stainless 1.4542	6	45	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	27
33200.W0330	Stainless 1.4542	6	50	7,0	11,8	7,0	31,6	24,1	45,2	12,7	6	35	28
33200.W0331	Stainless 1.4542	8	60	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	52
33200.W0332	Stainless 1.4542	8	10	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	33
33200.W0333	Stainless 1.4542	8	15	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	35
33200.W0334	Stainless 1.4542	8	20	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	37

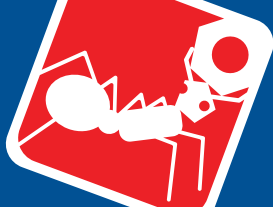
Ball Lock Pins & Quick Release

Ball Lock Pins - Single Acting - T-self-locking - stainless 1.4542



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0335	Stainless 1.4542	8	25	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	39
33200.W0336	Stainless 1.4542	8	30	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	41
33200.W0337	Stainless 1.4542	8	35	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	43
33200.W0338	Stainless 1.4542	8	40	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	44
33200.W0339	Stainless 1.4542	8	45	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	46
33200.W0340	Stainless 1.4542	8	50	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	48
33200.W0341	Stainless 1.4542	8	70	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	56
33200.W0342	Stainless 1.4542	8	80	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	60
33200.W0343	Stainless 1.4542	8	90	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	63
33200.W0344	Stainless 1.4542	10	20	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	44
33200.W0345	Stainless 1.4542	10	25	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	47
33200.W0346	Stainless 1.4542	10	30	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	49
33200.W0347	Stainless 1.4542	10	35	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	52
33200.W0348	Stainless 1.4542	10	40	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	55
33200.W0349	Stainless 1.4542	10	45	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	58
33200.W0350	Stainless 1.4542	10	50	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	61
33200.W0351	Stainless 1.4542	8	100	9,5	14,7	8,2	35,8	26,9	51,5	15,8	8	63	67
33200.W0352	Stainless 1.4542	10	60	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	67
33200.W0353	Stainless 1.4542	10	70	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	73
33200.W0354	Stainless 1.4542	10	80	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	79
33200.W0355	Stainless 1.4542	10	90	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	85
33200.W0356	Stainless 1.4542	10	100	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	91
33200.W0357	Stainless 1.4542	10	110	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	97
33200.W0358	Stainless 1.4542	10	120	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	103
33200.W0359	Stainless 1.4542	10	15	12,0	14,7	9,6	35,8	26,9	51,5	15,8	10	100	40
33200.W0360	Stainless 1.4542	12	90	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	127
33200.W0361	Stainless 1.4542	12	100	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	136
33200.W0362	Stainless 1.4542	12	110	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	144
33200.W0363	Stainless 1.4542	12	120	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	153
33200.W0364	Stainless 1.4542	12	20	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	68
33200.W0365	Stainless 1.4542	12	25	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	73
33200.W0366	Stainless 1.4542	12	30	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	77
33200.W0367	Stainless 1.4542	12	35	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	81
33200.W0368	Stainless 1.4542	12	40	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	86
33200.W0369	Stainless 1.4542	12	45	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	90
33200.W0370	Stainless 1.4542	12	50	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	94
33200.W0371	Stainless 1.4542	16	30	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	150
33200.W0372	Stainless 1.4542	12	60	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	103
33200.W0373	Stainless 1.4542	16	35	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	157
33200.W0374	Stainless 1.4542	12	70	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	111
33200.W0375	Stainless 1.4542	16	40	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	165
33200.W0376	Stainless 1.4542	12	80	14,5	18,2	10,6	35,1	25,3	59,1	20,2	12	144	119
33200.W0377	Stainless 1.4542	16	45	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	173
33200.W0378	Stainless 1.4542	16	50	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	180
33200.W0379	Stainless 1.4542	16	60	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	196
33200.W0380	Stainless 1.4542	16	70	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	211
33200.W0381	Stainless 1.4542	16	80	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	226
33200.W0382	Stainless 1.4542	16	90	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	242
33200.W0383	Stainless 1.4542	16	100	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	257
33200.W0384	Stainless 1.4542	16	110	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	272
33200.W0385	Stainless 1.4542	16	120	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	288
33200.W0386	Stainless 1.4542	16	130	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	303
33200.W0387	Stainless 1.4542	16	140	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	319
33200.W0388	Stainless 1.4542	16	150	19,0	23,4	14,0	42,2	29,8	74,8	24,7	16	257	334
33200.W0389	Stainless 1.4542	20	50	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	241
33200.W0391	Stainless 1.4542	20	70	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	289
33200.W0392	Stainless 1.4542	20	80	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	313
33200.W0393	Stainless 1.4542	20	90	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	337
33200.W0394	Stainless 1.4542	20	100	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	361
33200.W0395	Stainless 1.4542	20	110	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	385
33200.W0396	Stainless 1.4542	20	120	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	409
33200.W0397	Stainless 1.4542	20	130	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	433
33200.W0398	Stainless 1.4542	20	140	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	457
33200.W0399	Stainless 1.4542	20	150	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	481
33200.W3019	Stainless 1.4542	25	140	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	788
33200.W3090	Stainless 1.4542	20	60	24,8	23,4	17,0	43,1	29,8	74,8	24,7	20	403	265



Ball Lock Pins - Single Acting - T- self-locking - stainless 1.4542

Ball Lock Pins & Quick Release

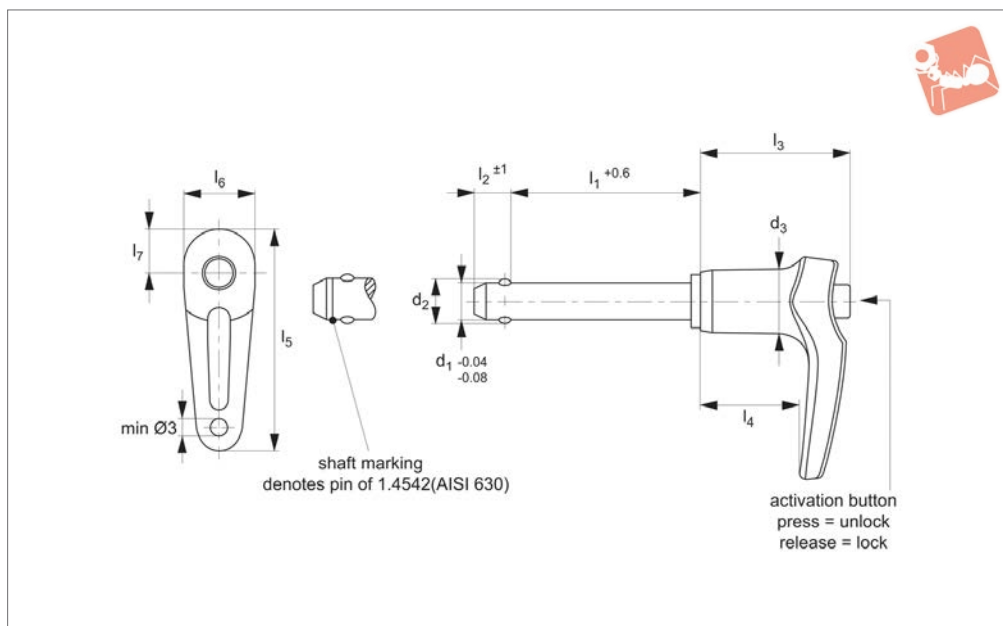


Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W3100	Stainless 1.4542	25	50	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	447
33200.W3101	Stainless 1.4542	25	60	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	484
33200.W3102	Stainless 1.4542	25	70	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	522
33200.W3103	Stainless 1.4542	25	80	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	560
33200.W3104	Stainless 1.4542	25	90	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	598
33200.W3105	Stainless 1.4542	25	100	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	636
33200.W3106	Stainless 1.4542	25	110	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	674
33200.W3107	Stainless 1.4542	25	120	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	712
33200.W3108	Stainless 1.4542	25	130	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	750
33200.W3110	Stainless 1.4542	25	150	31,0	30,4	22,0	54,8	37,5	88,7	33,2	25	631	825

BALL LOCK PINS & QUICK RELEASE PINS



33220.1



Material

Pin: stainless steel 1.4305 (AISI 303).

Ball: stainless steel 1.3541

Spring: stainless steel

Releasing = locking.

Temperature resistance -30°C to +150°C.

For quick fastening and locking of frequently repeated connections.

33250. Easy install locating bushes available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

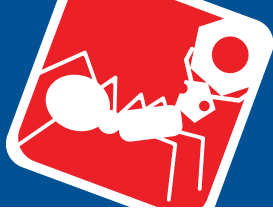
Technical Notes

Pressing = unlocking.

Tips

For lanyards & retaining cables see aprt no.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	Location hole dia.	Shearing resistance kN	Weight g
33220.W0112	Stainless 1.4305	5	10	5.5	11.8	6.0	31.6	21.9	43.8	12.6	8.5	5	14	20
33220.W0113	Stainless 1.4305	5	15	5.5	11.8	6.0	31.6	21.9	43.8	12.6	8.5	5	14	21
33220.W0114	Stainless 1.4305	5	20	5.5	11.8	6.0	31.6	21.9	43.8	12.6	8.5	5	14	21
33220.W0115	Stainless 1.4305	5	25	5.5	11.8	6.0	31.6	21.9	43.8	12.6	8.5	5	14	22
33220.W0116	Stainless 1.4305	5	30	5.5	11.8	6.0	31.6	21.9	43.8	12.6	8.5	5	14	23
33220.W0122	Stainless 1.4305	6	10	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	21
33220.W0123	Stainless 1.4305	6	15	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	22
33220.W0124	Stainless 1.4305	6	20	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	23
33220.W0125	Stainless 1.4305	6	25	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	24
33220.W0126	Stainless 1.4305	6	30	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	25
33220.W0127	Stainless 1.4305	6	35	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	26
33220.W0128	Stainless 1.4305	6	40	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	27
33220.W0129	Stainless 1.4305	6	45	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	28
33220.W0130	Stainless 1.4305	6	50	7.0	11.8	7.0	31.6	21.9	43.8	12.6	8.5	6	21	29
33220.W0134	Stainless 1.4305	8	20	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	37



Ball Lock Pins - Single Acting - L- self-locking - stainless 1.4305

Ball Lock Pins & Quick Release

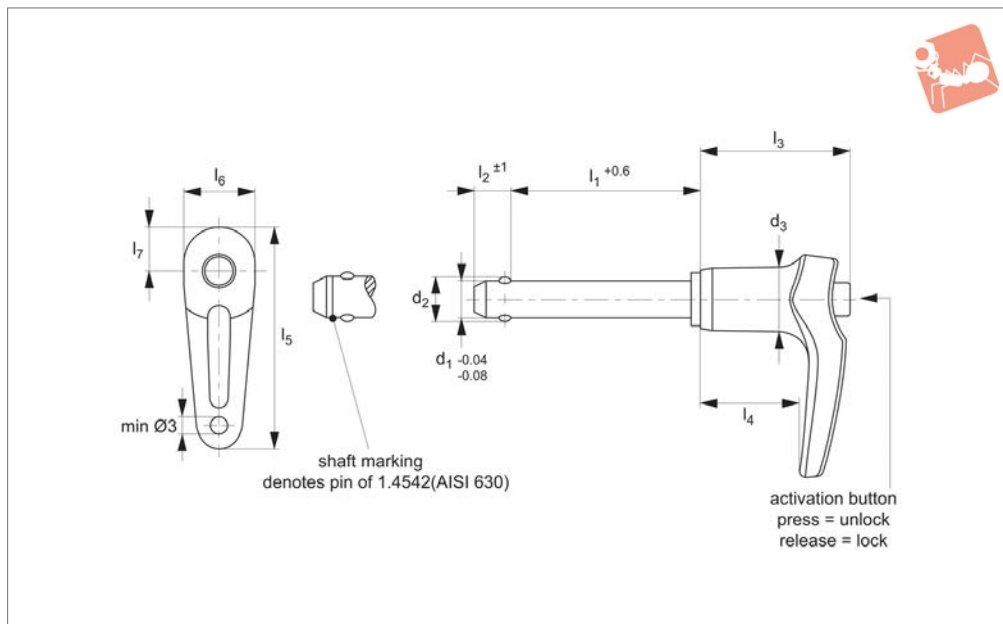


Order No.	Material	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	Location hole dia.	Shearing resistance kN	Weight g
33220.W0135	Stainless 1.4305	8	25	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	39
33220.W0136	Stainless 1.4305	8	30	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	41
33220.W0137	Stainless 1.4305	8	35	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	43
33220.W0138	Stainless 1.4305	8	40	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	45
33220.W0139	Stainless 1.4305	8	45	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	46
33220.W0140	Stainless 1.4305	8	50	9.5	14.7	8.2	35.8	24.4	49.7	15.8	9.9	8	38	48
33220.W0144	Stainless 1.4305	10	20	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	44
33220.W0145	Stainless 1.4305	10	25	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	47
33220.W0146	Stainless 1.4305	10	30	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	50
33220.W0147	Stainless 1.4305	10	35	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	53
33220.W0148	Stainless 1.4305	10	40	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	56
33220.W0149	Stainless 1.4305	10	45	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	58
33220.W0150	Stainless 1.4305	10	50	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	62
33220.W0152	Stainless 1.4305	10	60	12.0	14.7	9.6	35.8	24.4	49.7	15.8	9.9	10	60	67
33220.W0165	Stainless 1.4305	12	25	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	73
33220.W0166	Stainless 1.4305	12	30	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	77
33220.W0167	Stainless 1.4305	12	35	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	82
33220.W0168	Stainless 1.4305	12	40	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	86
33220.W0169	Stainless 1.4305	12	45	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	90
33220.W0170	Stainless 1.4305	12	50	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	94
33220.W0172	Stainless 1.4305	12	60	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	103
33220.W0174	Stainless 1.4305	12	70	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	111
33220.W0176	Stainless 1.4305	12	80	14.5	18.2	10.6	35.1	22.7	57.1	20.2	12.6	12	87	120

BALL LOCK PINS & QUICK RELEASE PINS



33220.2



Material

Pin: stainless steel 1.4542 (AISI 630).
Precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).
Ball: stainless steel 1.3541
Handle: aluminium, black (RAL9003).
Spring: stainless steel.

Technical Notes

Pressing = unlocking.
Releasing = locking.
Temperature resistance -30°C to +150°C.
For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see aprt no. 33250. Easy install locating bushes available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	Weight g
33220.W0312	Stainless 1.4542	5	10	5.5	11.8	20
33220.W0313	Stainless 1.4542	5	15	5.5	11.8	21
33220.W0314	Stainless 1.4542	5	20	5.5	11.8	21
33220.W0315	Stainless 1.4542	5	25	5.5	11.8	22
33220.W0316	Stainless 1.4542	5	30	5.5	11.8	23
33220.W0322	Stainless 1.4542	6	10	7.0	11.8	21
33220.W0323	Stainless 1.4542	6	15	7.0	11.8	22
33220.W0324	Stainless 1.4542	6	20	7.0	11.8	23
33220.W0325	Stainless 1.4542	6	25	7.0	11.8	24
33220.W0326	Stainless 1.4542	6	30	7.0	11.8	25
33220.W0327	Stainless 1.4542	6	35	7.0	11.8	26
33220.W0328	Stainless 1.4542	6	40	7.0	11.8	27
33220.W0329	Stainless 1.4542	6	45	7.0	11.8	28
33220.W0330	Stainless 1.4542	6	50	7.0	11.8	29
33220.W0334	Stainless 1.4542	8	20	9.5	14.7	37
33220.W0335	Stainless 1.4542	8	25	9.5	14.7	39
33220.W0336	Stainless 1.4542	8	30	9.5	14.7	41
33220.W0337	Stainless 1.4542	8	35	9.5	14.7	43
33220.W0338	Stainless 1.4542	8	40	9.5	14.7	45
33220.W0339	Stainless 1.4542	8	45	9.5	14.7	46
33220.W0340	Stainless 1.4542	8	50	9.5	14.7	48
33220.W0344	Stainless 1.4542	10	20	12.0	14.7	44
33220.W0345	Stainless 1.4542	10	25	12.0	14.7	47
33220.W0346	Stainless 1.4542	10	30	12.0	14.7	50
33220.W0347	Stainless 1.4542	10	35	12.0	14.7	53
33220.W0348	Stainless 1.4542	10	40	12.0	14.7	56
33220.W0349	Stainless 1.4542	10	45	12.0	14.7	58
33220.W0350	Stainless 1.4542	10	50	12.0	14.7	62
33220.W0352	Stainless 1.4542	10	60	12.0	14.7	67



Ball Lock Pins - Single Acting - L- self-locking - stainless 1.4542

Ball Lock Pins & Quick Release



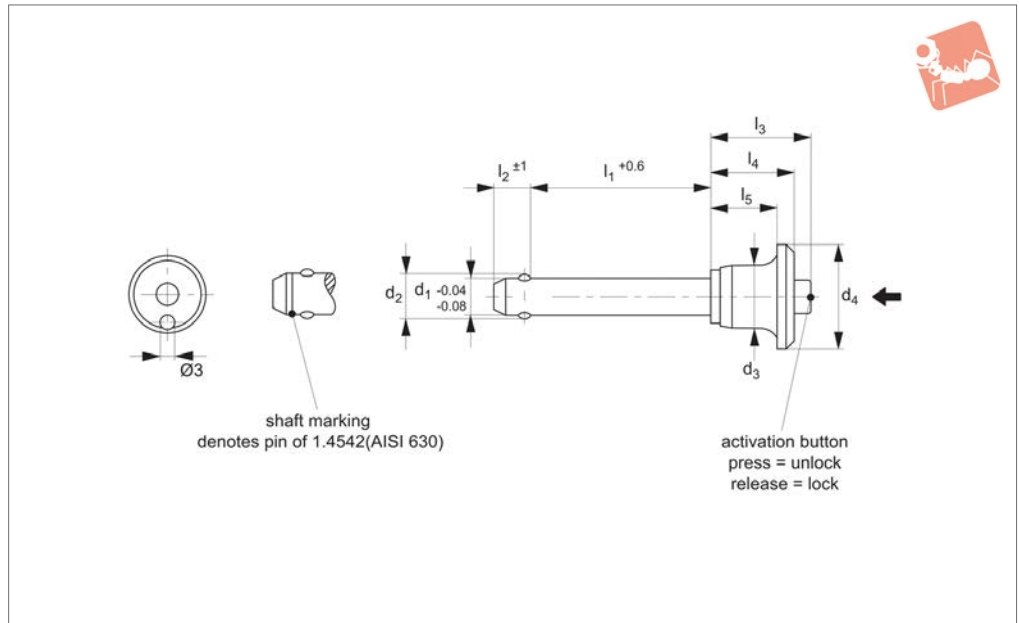
Order No.	Material	d ₁	l ₁	d ₂	d ₃	Weight g
33220.W0365	Stainless 1.4542	12	25	14.5	18.2	73
33220.W0366	Stainless 1.4542	12	30	14.5	18.2	77
33220.W0367	Stainless 1.4542	12	35	14.5	18.2	82
33220.W0368	Stainless 1.4542	12	40	14.5	18.2	86
33220.W0369	Stainless 1.4542	12	45	14.5	18.2	90
33220.W0370	Stainless 1.4542	12	50	14.5	18.2	94
33220.W0372	Stainless 1.4542	12	60	14.5	18.2	103
33220.W0374	Stainless 1.4542	12	70	14.5	18.2	111
33220.W0376	Stainless 1.4542	12	80	14.5	18.2	120

Order No.	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	Location hole dia. tol. H11	Shearing resistance kN
33220.W0312	6.0	31.6	21.9	43.8	12.6	8.5	5	24
33220.W0313	6.0	31.6	21.9	43.8	12.6	8.5	5	24
33220.W0314	6.0	31.6	21.9	43.8	12.6	8.5	5	24
33220.W0315	6.0	31.6	21.9	43.8	12.6	8.5	5	24
33220.W0316	6.0	31.6	21.9	43.8	12.6	8.5	5	24
33220.W0322	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0323	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0324	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0325	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0326	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0327	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0328	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0329	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0330	7.0	31.6	21.9	43.8	12.6	8.5	6	35
33220.W0334	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0335	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0336	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0337	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0338	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0339	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0340	8.2	35.8	24.4	49.7	15.8	9.9	8	63
33220.W0344	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0345	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0346	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0347	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0348	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0349	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0350	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0352	9.6	35.8	24.4	49.7	15.8	9.9	10	100
33220.W0365	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0366	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0367	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0368	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0369	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0370	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0372	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0374	10.6	35.1	22.7	57.1	20.2	12.6	12	144
33220.W0376	10.6	35.1	22.7	57.1	20.2	12.6	12	144

BALL LOCK PINS & QUICK RELEASE PINS



33224.1



Material

Pin: Stainless steel 1.4305 (AISI 303).
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Handle: aluminium, black (RAL9003).

Releasing = locking.

Temperature resistance -30°C to $+150^{\circ}\text{C}$
 For quick fastening and locking of frequently repeated connections.

available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Technical Notes

Pressing = unlocking.

Tips

For lanyards & retaining cables see part no. 33250. Easy install locating bushes

Order No.	Stainless type	d_1	d_2	d_3	d_4	l_1	l_2	l_3	l_4	l_5	Location hole	Shearing resistance, double kN	Weight g
33224.W0085	Stainless 1.4305	16	19.0	23.4	40	120	14.0	42.2	34.5	28.5	16	155	283
33224.W0212	Stainless 1.4305	5	5.5	11.3	20	10	6.0	20.7	17.6	14.6	5	14	12
33224.W0213	Stainless 1.4305	5	5.5	11.3	20	15	6.0	20.7	17.6	14.6	5	14	12
33224.W0214	Stainless 1.4305	5	5.5	11.3	20	20	6.0	20.7	17.6	14.6	5	14	13
33224.W0215	Stainless 1.4305	5	5.5	11.3	20	25	6.0	20.7	17.6	14.6	5	14	14
33224.W0216	Stainless 1.4305	5	5.5	11.3	20	30	6.0	20.7	17.6	14.6	5	14	15
33224.W0221	Stainless 1.4305	6	7.0	11.3	20	80	7.0	20.7	17.6	14.6	6	21	27
33224.W0222	Stainless 1.4305	6	7.0	11.3	20	10	7.0	20.7	17.6	14.6	6	21	13
33224.W0223	Stainless 1.4305	6	7.0	11.3	20	15	7.0	20.7	17.6	14.6	6	21	14
33224.W0224	Stainless 1.4305	6	7.0	11.3	20	20	7.0	20.7	17.6	14.6	6	21	15
33224.W0225	Stainless 1.4305	6	7.0	11.3	20	25	7.0	20.7	17.6	14.6	6	21	16
33224.W0226	Stainless 1.4305	6	7.0	11.3	20	30	7.0	20.7	17.6	14.6	6	21	17
33224.W0227	Stainless 1.4305	6	7.0	11.3	20	35	7.0	20.7	17.6	14.6	6	21	18
33224.W0228	Stainless 1.4305	6	7.0	11.3	20	40	7.0	20.7	17.6	14.6	6	21	19
33224.W0229	Stainless 1.4305	6	7.0	11.3	20	45	7.0	20.7	17.6	14.6	6	21	20
33224.W0230	Stainless 1.4305	6	7.0	11.3	20	50	7.0	20.7	17.6	14.6	6	21	21
33224.W0234	Stainless 1.4305	8	9.5	14.1	25	20	8.2	27.3	22.6	18.6	8	38	28
33224.W0235	Stainless 1.4305	8	9.5	14.1	25	25	8.2	27.3	22.6	18.6	8	38	30
33224.W0236	Stainless 1.4305	8	9.5	14.1	25	30	8.2	27.3	22.6	18.6	8	38	32
33224.W0237	Stainless 1.4305	8	9.5	14.1	25	35	8.2	27.3	22.6	18.6	8	38	34
33224.W0238	Stainless 1.4305	8	9.5	14.1	25	40	8.2	27.3	22.6	18.6	8	38	36
33224.W0239	Stainless 1.4305	8	9.5	14.1	25	45	8.2	27.3	22.6	18.6	8	38	38
33224.W0240	Stainless 1.4305	8	9.5	14.1	25	50	8.2	27.3	22.6	18.6	8	38	40
33224.W0244	Stainless 1.4305	10	12.0	14.1	25	20	9.6	27.3	22.6	18.6	10	60	35
33224.W0245	Stainless 1.4305	10	12.0	14.1	25	25	9.6	27.3	22.6	18.6	10	60	38
33224.W0246	Stainless 1.4305	10	12.0	14.1	25	30	9.6	27.3	22.6	18.6	10	60	40
33224.W0247	Stainless 1.4305	10	12.0	14.1	25	35	9.6	27.3	22.6	18.6	10	60	44
33224.W0248	Stainless 1.4305	10	12.0	14.1	25	40	9.6	27.3	22.6	18.6	10	60	47
33224.W0249	Stainless 1.4305	10	12.0	14.1	25	45	9.6	27.3	22.6	18.6	10	60	50
33224.W0250	Stainless 1.4305	10	12.0	14.1	25	50	9.6	27.3	22.6	18.6	10	60	53



Ball Lock Pins - Mushroom Handle

single acting - self-locking - stainless 1.4305

Ball Lock Pins & Quick Release



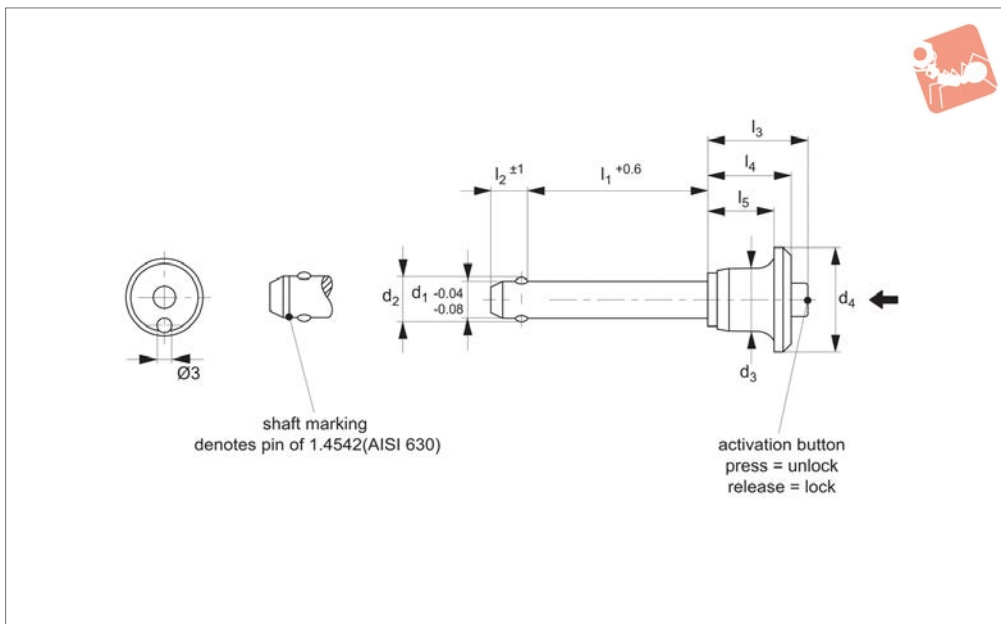
Order No.	Stainless type	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	l ₄	l ₅	Location hole	Shearing resistance, double kN	Weight g
33224.W0252	Stainless 1.4305	10	12.0	14.1	25	60	9.6	27.3	22.6	18.6	10	60	59
33224.W0265	Stainless 1.4305	12	14.5	17.7	35	25	10.6	33.2	27.3	22.3	12	87	69
33224.W0266	Stainless 1.4305	12	14.5	17.7	35	30	10.6	33.2	27.3	22.3	12	87	73
33224.W0267	Stainless 1.4305	12	14.5	17.7	35	35	10.6	33.2	27.3	22.3	12	87	78
33224.W0268	Stainless 1.4305	12	14.5	17.7	35	40	10.6	33.2	27.3	22.3	12	87	82
33224.W0269	Stainless 1.4305	12	14.5	17.7	35	45	10.6	33.2	27.3	22.3	12	87	86
33224.W0270	Stainless 1.4305	12	14.5	17.7	35	50	10.6	33.2	27.3	22.3	12	87	90
33224.W0272	Stainless 1.4305	12	14.5	17.7	35	60	10.6	33.2	27.3	22.3	12	87	99
33224.W0274	Stainless 1.4305	12	14.5	17.7	35	70	10.6	33.2	27.3	22.3	12	87	108
33224.W0276	Stainless 1.4305	12	14.5	17.7	35	80	10.6	33.2	27.3	22.3	12	87	116
33224.W0303	Stainless 1.4305	25	31.0	30.4	50	80	22.0	54.8	43.5	36.5	25	386	547
33224.W0304	Stainless 1.4305	25	31.0	30.4	50	90	22.0	54.8	43.5	36.5	25	386	585
33224.W0306	Stainless 1.4305	25	31.0	30.4	50	110	22.0	54.8	43.5	36.5	25	386	660



BALL LOCK PINS & QUICK RELEASE PINS



33224.2



Material

Pin: Stainless steel 1.4542 (AISI 630), precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).
 Ball: stainless steel 1.3541
 Spring: stainless steel.
 Handle: aluminium, black (RAL9003).

Technical Notes

Pressing = unlocking.
 Releasing = locking.
 Temperature resistance -30°C to +150°C
 For quick fastening and locking of frequently repeated connections.

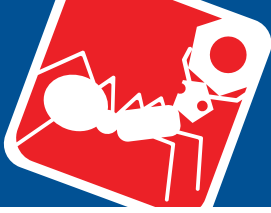
Tips

For lanyards & retaining cables see part no. 33250. Easy install locating bushes available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Stainless type	d_1	d_2	d_3	d_4	l_1	l_2	l_3	l_4	l_5	Location hole	Shearing resistance, double kN	Weight g
33224.W0512	Stainless 1.4542	5	5.5	11.3	20	10	6.0	20.7	17.6	14.6	5	24	12
33224.W0513	Stainless 1.4542	5	5.5	11.3	20	15	6.0	20.7	17.6	14.6	5	24	12
33224.W0514	Stainless 1.4542	5	5.5	11.3	20	20	6.0	20.7	17.6	14.6	5	24	13
33224.W0515	Stainless 1.4542	5	5.5	11.3	20	25	6.0	20.7	17.6	14.6	5	24	14
33224.W0516	Stainless 1.4542	5	5.5	11.3	20	30	6.0	20.7	17.6	14.6	5	24	15
33224.W0522	Stainless 1.4542	6	7.0	11.3	20	10	7.0	20.7	17.6	14.6	6	35	13
33224.W0523	Stainless 1.4542	6	7.0	11.3	20	15	7.0	20.7	17.6	14.6	6	35	14
33224.W0524	Stainless 1.4542	6	7.0	11.3	20	20	7.0	20.7	17.6	14.6	6	35	15
33224.W0525	Stainless 1.4542	6	7.0	11.3	20	25	7.0	20.7	17.6	14.6	6	35	16
33224.W0526	Stainless 1.4542	6	7.0	11.3	20	30	7.0	20.7	17.6	14.6	6	35	17
33224.W0527	Stainless 1.4542	6	7.0	11.3	20	35	7.0	20.7	17.6	14.6	6	35	18
33224.W0528	Stainless 1.4542	6	7.0	11.3	20	40	7.0	20.7	17.6	14.6	6	35	19
33224.W0529	Stainless 1.4542	6	7.0	11.3	20	45	7.0	20.7	17.6	14.6	6	35	20
33224.W0530	Stainless 1.4542	6	7.0	11.3	20	50	7.0	20.7	17.6	14.6	6	35	21
33224.W0531	Stainless 1.4542	8	9.5	14.1	25	60	8.2	27.3	22.6	18.6	8	63	44
33224.W0534	Stainless 1.4542	8	9.5	14.1	25	20	8.2	27.3	22.6	18.6	8	63	28
33224.W0535	Stainless 1.4542	8	9.5	14.1	25	25	8.2	27.3	22.6	18.6	8	63	30
33224.W0536	Stainless 1.4542	8	9.5	14.1	25	30	8.2	27.3	22.6	18.6	8	63	32
33224.W0537	Stainless 1.4542	8	9.5	14.1	25	35	8.2	27.3	22.6	18.6	8	63	34
33224.W0538	Stainless 1.4542	8	9.5	14.1	25	40	8.2	27.3	22.6	18.6	8	63	36
33224.W0539	Stainless 1.4542	8	9.5	14.1	25	45	8.2	27.3	22.6	18.6	8	63	38
33224.W0540	Stainless 1.4542	8	9.5	14.1	25	50	8.2	27.3	22.6	18.6	8	63	40
33224.W0544	Stainless 1.4542	10	12.0	14.1	25	20	9.6	27.3	22.6	18.6	10	100	35
33224.W0545	Stainless 1.4542	10	12.0	14.1	25	25	9.6	27.3	22.6	18.6	10	100	38
33224.W0546	Stainless 1.4542	10	12.0	14.1	25	30	9.6	27.3	22.6	18.6	10	100	40
33224.W0547	Stainless 1.4542	10	12.0	14.1	25	35	9.6	27.3	22.6	18.6	10	100	44
33224.W0548	Stainless 1.4542	10	12.0	14.1	25	40	9.6	27.3	22.6	18.6	10	100	47
33224.W0549	Stainless 1.4542	10	12.0	14.1	25	45	9.6	27.3	22.6	18.6	10	100	50
33224.W0550	Stainless 1.4542	10	12.0	14.1	25	50	9.6	27.3	22.6	18.6	10	100	53



Ball Lock Pins - Mushroom Handle

single acting - self-locking - stainless 1.4542

Ball Lock Pins & Quick Release



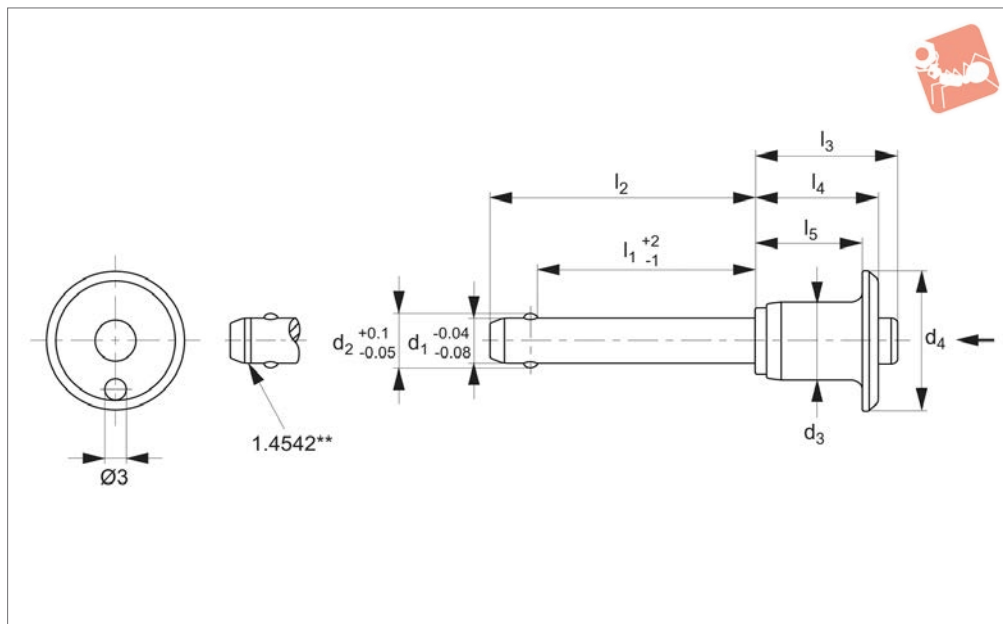
Order No.	Stainless type	d ₁	d ₂	d ₃	d ₄	l ₁	l ₂	l ₃	l ₄	l ₅	Location hole	Shearing resistance, double kN	Weight g
33224.W0552	Stainless 1.4542	10	12.0	14.1	25	60	9.6	27.3	22.6	18.6	10	100	59
33224.W0565	Stainless 1.4542	12	14.5	17.7	35	25	10.6	33.2	27.3	22.3	12	144	69
33224.W0566	Stainless 1.4542	12	14.5	17.7	35	30	10.6	33.2	27.3	22.3	12	144	73
33224.W0567	Stainless 1.4542	12	14.5	17.7	35	35	10.6	33.2	27.3	22.3	12	144	78
33224.W0568	Stainless 1.4542	12	14.5	17.7	35	40	10.6	33.2	27.3	22.3	12	144	82
33224.W0569	Stainless 1.4542	12	14.5	17.7	35	45	10.6	33.2	27.3	22.3	12	144	86
33224.W0570	Stainless 1.4542	12	14.5	17.7	35	50	10.6	33.2	27.3	22.3	12	144	90
33224.W0572	Stainless 1.4542	12	14.5	17.7	35	60	10.6	33.2	27.3	22.3	12	144	99
33224.W0574	Stainless 1.4542	12	14.5	17.7	35	70	10.6	33.2	27.3	22.3	12	144	108
33224.W0576	Stainless 1.4542	12	14.5	17.7	35	80	10.6	33.2	27.3	22.3	12	144	116
33224.W0590	Stainless 1.4542	20	24.8	23.4	40	60	17.0	43.1	34.5	28.5	20	403	261



BALL LOCK PINS & QUICK RELEASE PINS



33230



Material

Type One

Pin: Stainless steel 1.4305 (AISI 303).

Type Two

Pin: Stainless steel 1.4542 (AISI 630), precipitation hardened.

Both

Handle: Aluminium, black.

Button: Stainless steel, yellow.

Spring: Stainless steel.

Technical Notes

Not suitable for lifting loads.

Corrosion resistant.

Press button = unlocking.

Release button = clamping.

For securing in blind holes H_{11} . Tempera-

ture range -30 to 150°C.

Quick fastening, adjusting and locking of frequently repeated connections.

Tips

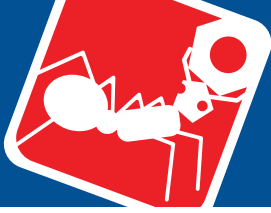
Used with:

33250: Lanyards & retaining cables

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	d_1	Type	d_2	d_3	d_4	Weight g
33230.W0022	6	Type One Stainless 1.4305	6.2	11.3	20	13
33230.W0122	6	Type Two Stainless 1.4542	6.2	11.3	20	13
33230.W0024	6	Type One Stainless 1.4305	6.2	11.3	20	15
33230.W0124	6	Type Two Stainless 1.4542	6.2	11.3	20	15
33230.W0028	6	Type One Stainless 1.4305	6.2	11.3	20	19
33230.W0128	6	Type Two Stainless 1.4542	6.2	11.3	20	19
33230.W0032	6	Type One Stainless 1.4305	6.2	11.3	20	23
33230.W0132	6	Type Two Stainless 1.4542	6.2	11.3	20	23
33230.W0042	8	Type One Stainless 1.4305	8.3	14.1	25	25
33230.W0142	8	Type Two Stainless 1.4542	8.3	14.1	25	25
33230.W0044	8	Type One Stainless 1.4305	8.3	14.1	25	28
33230.W0144	8	Type Two Stainless 1.4542	8.3	14.1	25	28
33230.W0048	8	Type One Stainless 1.4305	8.3	14.1	25	36
33230.W0148	8	Type Two Stainless 1.4542	8.3	14.1	25	36
33230.W0052	8	Type One Stainless 1.4305	8.3	14.1	25	43
33230.W0152	8	Type Two Stainless 1.4542	8.3	14.1	25	43
33230.W0056	8	Type One Stainless 1.4305	8.3	14.1	25	51
33230.W0156	8	Type Two Stainless 1.4542	8.3	14.1	25	51
33230.W0062	10	Type One Stainless 1.4305	10.3	14.1	25	35
33230.W0162	10	Type Two Stainless 1.4542	10.3	14.1	25	35
33230.W0066	10	Type One Stainless 1.4305	10.3	14.1	25	47
33230.W0166	10	Type Two Stainless 1.4542	10.3	14.1	25	47
33230.W0070	10	Type One Stainless 1.4305	10.3	14.1	25	58
33230.W0170	10	Type Two Stainless 1.4542	10.3	14.1	25	58
33230.W0072	10	Type One Stainless 1.4305	10.3	14.1	25	70
33230.W0172	10	Type Two Stainless 1.4542	10.3	14.1	25	70
33230.W0074	10	Type One Stainless 1.4305	10.3	14.1	25	83
33230.W0174	10	Type Two Stainless 1.4542	10.3	14.1	25	83



Clamp Lock Pins - Single Acting button handle - stainless steel

Ball Lock Pins & Quick Release



Order No.	l ₁	l ₂	l ₃	l ₄	Location hole dia. tol. H11	Shearing resistance, double (1.4305)		Shearing resistance, double (1.4542)	
						kN min.		kN min.	
33230.W0022	10	17.4	17.6	20.7	6	21	35	21	35
33230.W0122	10	17.4	17.6	20.7	6	21	35	21	35
33230.W0024	20	27.4	17.6	20.7	6	21	35	21	35
33230.W0124	20	27.4	17.6	20.7	6	21	35	21	35
33230.W0028	40	47.4	17.6	20.7	6	21	35	21	35
33230.W0128	40	47.4	17.6	20.7	6	21	35	21	35
33230.W0032	60	67.4	17.6	20.7	6	21	35	21	35
33230.W0132	60	67.4	17.6	20.7	6	21	35	21	35
33230.W0042	10	18.6	22.6	27.3	8	38	63	38	63
33230.W0142	10	18.6	22.6	27.3	8	38	63	38	63
33230.W0044	20	28.6	22.6	27.3	8	38	63	38	63
33230.W0144	20	28.6	22.6	27.3	8	38	63	38	63
33230.W0048	40	48.6	22.6	27.3	8	38	63	38	63
33230.W0148	40	48.6	22.6	27.3	8	38	63	38	63
33230.W0052	60	68.6	22.6	27.3	8	38	63	38	63
33230.W0152	60	68.6	22.6	27.3	8	38	63	38	63
33230.W0056	80	88.6	22.6	27.3	8	38	63	38	63
33230.W0156	80	88.6	22.6	27.3	8	38	63	38	63
33230.W0062	20	30.0	22.6	27.3	10	60	100	60	100
33230.W0162	20	30.0	22.6	27.3	10	60	100	60	100
33230.W0066	40	50.0	22.6	27.3	10	60	100	60	100
33230.W0166	40	50.0	22.6	27.3	10	60	100	60	100
33230.W0070	60	70.0	22.6	27.3	10	60	100	60	100
33230.W0170	60	70.0	22.6	27.3	10	60	100	60	100
33230.W0072	80	100.0	22.6	27.3	10	60	100	60	100
33230.W0172	80	100.0	22.6	27.3	10	60	100	60	100
33230.W0074	100	120.0	22.6	27.3	10	60	100	60	100
33230.W0174	100	120.0	22.6	27.3	10	60	100	60	100

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

Ball Lock Pins - Contoured Handle

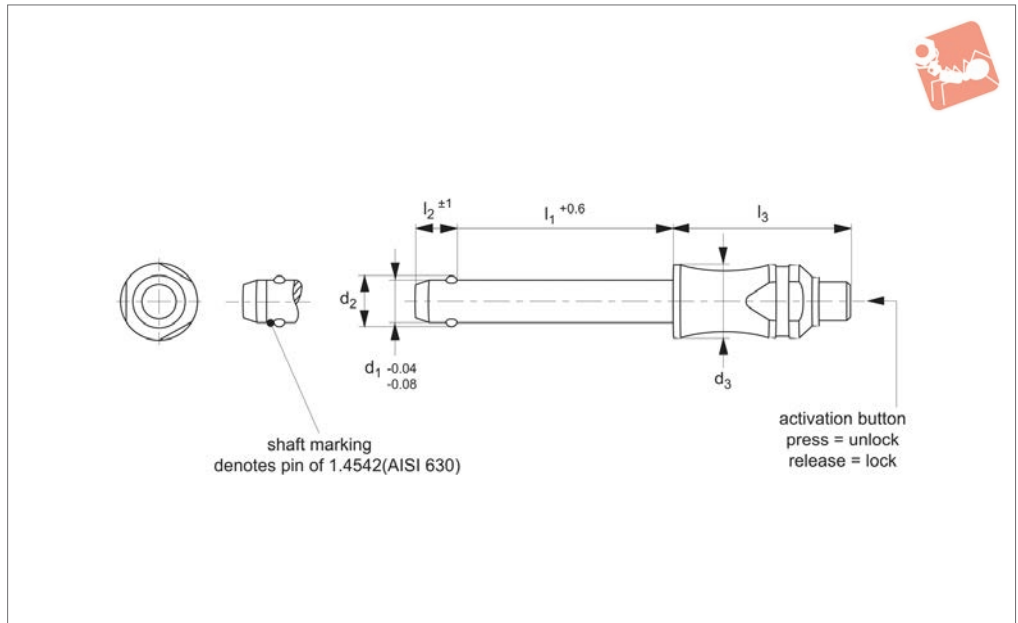
self-locking - single acting - stainless 1.4305



BALL LOCK PINS & QUICK RELEASE PINS



33194.1



Material

Pin: stainless steel 1.4305 (AISI 303).
Spring: stainless steel.

Technical Notes

Pressing = unlocking.
Releasing = locking.
Single piece contoured design for limited space applications.

Temperature resistance up to 250°C.
For quick fastening and locking of frequently repeated connections.
For suitable lanyards see part no. 33250.
W0970 and .W0974 only. Easy install locating bushes available see part no. 33248.

Tips

Single piece design, no danger of parts coming away from pin - ideal for applications with F.O.B (Foreign Object Body) issues.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0007	Stainless 1.4305	5	5.5	10	45	6.0	26.2	5	14	15
33194.W0008	Stainless 1.4305	5	5.5	10	50	6.0	26.2	5	14	16
33194.W0009	Stainless 1.4305	5	5.5	10	60	6.0	26.2	5	14	17
33194.W0010	Stainless 1.4305	5	5.5	10	70	6.0	26.2	5	14	19
33194.W0011	Stainless 1.4305	5	5.5	10	80	6.0	26.2	5	14	20
33194.W0012	Stainless 1.4305	5	5.5	10	10	6.0	26.2	5	14	10
33194.W0013	Stainless 1.4305	5	5.5	10	15	6.0	26.2	5	14	11
33194.W0014	Stainless 1.4305	5	5.5	10	20	6.0	26.2	5	14	12
33194.W0015	Stainless 1.4305	5	5.5	10	25	6.0	26.2	5	14	13
33194.W0016	Stainless 1.4305	5	5.5	10	30	6.0	26.2	5	14	13
33194.W0017	Stainless 1.4305	5	5.5	10	35	6.0	26.2	5	14	14
33194.W0018	Stainless 1.4305	5	5.5	10	40	6.0	26.2	5	14	15
33194.W0019	Stainless 1.4305	6	7.0	10	60	7.0	26.2	6	21	21
33194.W0020	Stainless 1.4305	6	7.0	10	70	7.0	26.2	6	21	21
33194.W0021	Stainless 1.4305	6	7.0	10	80	7.0	26.2	6	21	25
33194.W0022	Stainless 1.4305	6	7.0	10	10	7.0	26.2	6	21	11
33194.W0023	Stainless 1.4305	6	7.0	10	15	7.0	26.2	6	21	12
33194.W0024	Stainless 1.4305	6	7.0	10	20	7.0	26.2	6	21	13
33194.W0025	Stainless 1.4305	6	7.0	10	25	7.0	26.2	6	21	14
33194.W0026	Stainless 1.4305	6	7.0	10	30	7.0	26.2	6	21	15
33194.W0027	Stainless 1.4305	6	7.0	10	35	7.0	26.2	6	21	16
33194.W0028	Stainless 1.4305	6	7.0	10	40	7.0	26.2	6	21	17
33194.W0029	Stainless 1.4305	6	7.0	10	45	7.0	26.2	6	21	18
33194.W0030	Stainless 1.4305	6	7.0	10	50	7.0	26.2	6	21	19
33194.W0031	Stainless 1.4305	8	9.6	14	60	8.2	33.1	8	38	47
33194.W0032	Stainless 1.4305	8	9.6	14	10	8.2	33.1	8	38	29
33194.W0033	Stainless 1.4305	8	9.6	14	15	8.2	33.1	8	38	31
33194.W0034	Stainless 1.4305	8	9.6	14	20	8.2	33.1	8	38	33



Ball Lock Pins - Contoured Handle

self-locking - single acting - stainless 1.4305

Ball Lock Pins & Quick Release



Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0035	Stainless 1.4305	8	9.6	14	25	8.2	33.1	8	38	34
33194.W0036	Stainless 1.4305	8	9.6	14	30	8.2	33.1	8	38	36
33194.W0037	Stainless 1.4305	8	9.6	14	35	8.2	33.1	8	38	38
33194.W0038	Stainless 1.4305	8	9.6	14	40	8.2	33.1	8	38	40
33194.W0039	Stainless 1.4305	8	9.6	14	45	8.2	33.1	8	38	42
33194.W0040	Stainless 1.4305	8	9.6	14	50	8.2	33.1	8	38	44
33194.W0041	Stainless 1.4305	8	9.6	14	70	8.2	33.1	8	38	51
33194.W0042	Stainless 1.4305	8	9.6	14	80	8.2	33.1	8	38	55
33194.W0043	Stainless 1.4305	8	9.6	14	90	8.2	33.1	8	38	58
33194.W0044	Stainless 1.4305	10	12.0	14	20	9.6	33.1	10	60	39
33194.W0045	Stainless 1.4305	10	12.0	14	25	9.6	33.1	10	60	42
33194.W0046	Stainless 1.4305	10	12.0	14	30	9.6	33.1	10	60	45
33194.W0047	Stainless 1.4305	10	12.0	14	35	9.6	33.1	10	60	48
33194.W0048	Stainless 1.4305	10	12.0	14	40	9.6	33.1	10	60	51
33194.W0049	Stainless 1.4305	10	12.0	14	45	9.6	33.1	10	60	54
33194.W0050	Stainless 1.4305	10	12.0	14	50	9.6	33.1	10	60	57
33194.W0051	Stainless 1.4305	8	9.6	14	100	8.2	33.1	8	38	62
33194.W0052	Stainless 1.4305	10	12.0	14	60	9.6	33.1	10	60	63
33194.W0053	Stainless 1.4305	10	12.0	14	70	9.6	33.1	10	60	69
33194.W0054	Stainless 1.4305	10	12.0	14	80	9.6	33.1	10	60	74
33194.W0055	Stainless 1.4305	10	12.0	14	90	9.6	33.1	10	60	80
33194.W0056	Stainless 1.4305	10	12.0	14	100	9.6	33.1	10	60	86
33194.W0057	Stainless 1.4305	10	12.0	14	110	9.6	33.1	10	60	92
33194.W0058	Stainless 1.4305	10	12.0	14	120	9.6	33.1	10	60	98
33194.W0059	Stainless 1.4305	10	12.0	14	15	9.6	33.1	10	60	36
33194.W0060	Stainless 1.4305	12	14.5	20	90	10.6	39.5	12	87	139
33194.W0061	Stainless 1.4305	12	14.5	20	100	10.6	39.5	12	87	148
33194.W0062	Stainless 1.4305	12	14.5	20	110	10.6	39.5	12	87	157
33194.W0063	Stainless 1.4305	12	14.5	20	120	10.6	39.5	12	87	165
33194.W0064	Stainless 1.4305	12	14.5	20	20	10.6	39.5	12	87	98
33194.W0065	Stainless 1.4305	12	14.5	20	25	10.6	39.5	12	87	84
33194.W0066	Stainless 1.4305	12	14.5	20	30	10.6	39.5	12	87	88
33194.W0067	Stainless 1.4305	12	14.5	20	35	10.6	39.5	12	87	92
33194.W0068	Stainless 1.4305	12	14.5	20	40	10.6	39.5	12	87	96
33194.W0069	Stainless 1.4305	12	14.5	20	45	10.6	39.5	12	87	101
33194.W0070	Stainless 1.4305	12	14.5	20	50	10.6	39.5	12	87	105
33194.W0072	Stainless 1.4305	12	14.5	20	60	10.6	39.5	12	87	113
33194.W0074	Stainless 1.4305	12	14.5	20	70	10.6	39.5	12	87	122
33194.W0076	Stainless 1.4305	12	14.5	20	80	10.6	39.5	12	87	130
33194.W0086	Stainless 1.4305	16	19.0	20	30	14.0	39.5	16	155	120
33194.W0087	Stainless 1.4305	16	19.0	20	35	14.0	39.5	16	155	127
33194.W0088	Stainless 1.4305	16	19.0	20	40	14.0	39.5	16	155	135
33194.W0089	Stainless 1.4305	16	19.0	20	45	14.0	39.5	16	155	143
33194.W0090	Stainless 1.4305	16	19.0	20	50	14.0	39.5	16	155	150
33194.W0092	Stainless 1.4305	16	19.0	20	60	14.0	39.5	16	155	166
33194.W0094	Stainless 1.4305	16	19.0	20	70	14.0	39.5	16	155	181
33194.W0096	Stainless 1.4305	16	19.0	20	80	14.0	39.5	16	155	196
33194.W0097	Stainless 1.4305	16	19.0	20	90	14.0	39.5	16	155	216
33194.W0098	Stainless 1.4305	16	19.0	20	100	14.0	39.5	16	155	233
33194.W0099	Stainless 1.4305	16	19.0	20	110	14.0	39.5	16	155	248
33194.W0100	Stainless 1.4305	16	19.0	20	120	14.0	39.5	16	155	263
33194.W0101	Stainless 1.4305	16	19.0	20	130	14.0	39.5	16	155	279
33194.W0102	Stainless 1.4305	16	19.0	20	140	14.0	39.5	16	155	295
33194.W0103	Stainless 1.4305	16	19.0	20	150	14.0	39.5	16	155	310
33194.W0111	Stainless 1.4305	20	25.0	28	50	20.5	49.9	20	244	303
33194.W0112	Stainless 1.4305	20	25.0	28	60	20.5	49.9	20	244	322
33194.W0116	Stainless 1.4305	20	25.0	28	80	20.5	49.9	20	244	370
33194.W0117	Stainless 1.4305	20	25.0	28	90	20.5	49.9	20	244	400
33194.W0120	Stainless 1.4305	20	25.0	28	100	20.5	49.9	20	244	414
33194.W0124	Stainless 1.4305	20	25.0	28	120	20.5	49.9	20	244	466
33194.W0125	Stainless 1.4305	20	25.0	28	130	20.5	49.9	20	244	497
33194.W0126	Stainless 1.4305	20	25.0	28	140	20.5	49.9	20	244	520
33194.W0127	Stainless 1.4305	20	25.0	28	150	20.5	49.9	20	244	545
33194.W0129	Stainless 1.4305	25	30.8	28	50	22.0	49.9	25	386	466
33194.W0130	Stainless 1.4305	25	30.8	28	60	22.0	49.9	25	386	432
33194.W0131	Stainless 1.4305	20	30.8	28	70	22.0	49.9	25	386	470
33194.W0132	Stainless 1.4305	25	30.8	28	810	22.0	49.9	25	386	507

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

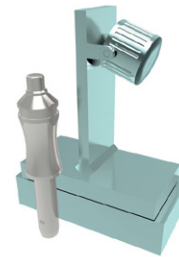
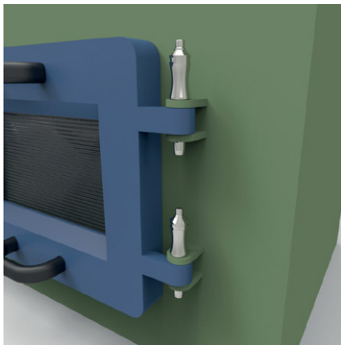
Ball Lock Pins - Contoured Handle

self-locking - single acting - stainless 1.4305



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0133	Stainless 1.4305	25	30.8	28	90	22.0	49.9	25	386	545
33194.W0134	Stainless 1.4305	25	30.8	28	100	22.0	49.9	25	386	582
33194.W0135	Stainless 1.4305	25	30.8	28	110	22.0	49.9	25	386	620
33194.W0136	Stainless 1.4305	25	30.8	28	120	22.0	49.9	25	386	657
33194.W0137	Stainless 1.4305	25	30.8	28	130	22.0	49.9	25	386	695
33194.W0138	Stainless 1.4305	25	30.8	28	140	22.0	49.9	25	386	732
33194.W0139	Stainless 1.4305	25	30.8	28	150	22.0	49.9	25	386	770

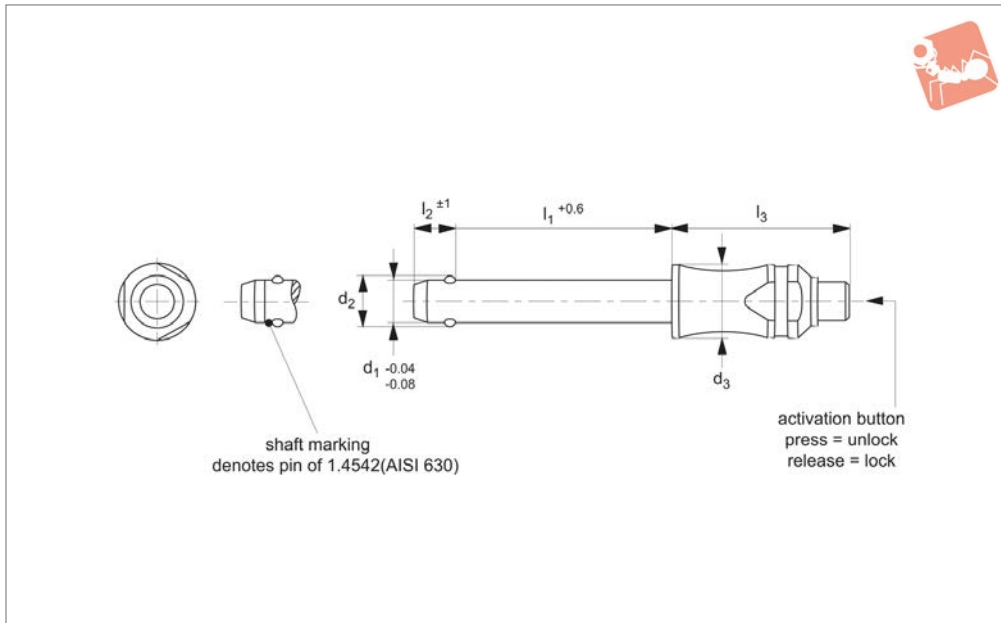




Ball Lock Pins - Contoured Handle

self-locking - single acting - stainless 1.4542

Ball Lock Pins & Quick Release



33194.2

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4542 (AISI 630), precipitation-hardened, blast finish. Offering extreme load capacity (marked at end of shaft to denote 1.4542 material). End of shaft marked for material type 1.4542.
Spring: stainless steel.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Single piece contoured design for limited space applications.
Temperature resistance up to 250°C.
For quick fastening and locking of frequently repeated connections.
For suitable lanyards see part no. 33250. W0970 and .W0974 only. Easy install locating bushes available see part no. 33248.

Tips

Single piece design, no danger of parts coming away from pin - ideal for applications with F.O.B (Foreign Object Body) issues.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0307	Stainless 1.4542	5	5.5	10	45	6.0	26.2	5	24	15
33194.W0308	Stainless 1.4542	5	5.5	10	50	6.0	26.2	5	24	16
33194.W0309	Stainless 1.4542	5	5.5	10	60	6.0	26.2	5	24	17
33194.W0310	Stainless 1.4542	5	5.5	10	70	6.0	26.2	5	24	20
33194.W0311	Stainless 1.4542	5	5.5	10	80	6.0	26.2	5	24	20
33194.W0312	Stainless 1.4542	5	5.5	10	10	6.0	26.2	5	24	10
33194.W0313	Stainless 1.4542	5	5.5	10	15	6.0	26.2	5	24	11
33194.W0314	Stainless 1.4542	5	5.5	10	20	6.0	26.2	5	24	12
33194.W0315	Stainless 1.4542	5	5.5	10	25	6.0	26.2	5	24	13
33194.W0316	Stainless 1.4542	5	5.5	10	30	6.0	26.2	5	24	13
33194.W0317	Stainless 1.4542	5	5.5	10	35	6.0	26.2	5	24	14
33194.W0318	Stainless 1.4542	5	5.5	10	40	6.0	26.2	5	24	15
33194.W0319	Stainless 1.4542	6	7.0	10	60	7.0	26.2	6	35	21
33194.W0320	Stainless 1.4542	6	7.0	10	70	7.0	26.2	6	35	23
33194.W0321	Stainless 1.4542	6	7.0	10	70	7.0	26.2	6	35	25
33194.W0322	Stainless 1.4542	6	7.0	10	10	7.0	26.2	6	35	11
33194.W0323	Stainless 1.4542	6	7.0	10	15	7.0	26.2	6	35	12
33194.W0324	Stainless 1.4542	6	7.0	10	20	7.0	26.2	6	35	13
33194.W0325	Stainless 1.4542	6	7.0	10	25	7.0	26.2	6	35	14
33194.W0326	Stainless 1.4542	6	7.0	10	30	7.0	26.2	6	35	15
33194.W0327	Stainless 1.4542	6	7.0	10	35	7.0	26.2	6	35	16
33194.W0328	Stainless 1.4542	6	7.0	10	40	7.0	26.2	6	35	17
33194.W0329	Stainless 1.4542	6	7.0	10	45	7.0	26.2	6	35	18
33194.W0330	Stainless 1.4542	6	7.0	10	50	7.0	26.2	6	35	19
33194.W0331	Stainless 1.4542	8	9.6	14	60	8.2	33.1	8	63	47

Ball Lock Pins & Quick Release

Ball Lock Pins - Contoured Handle

self-locking - single acting - stainless 1.4542



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0332	Stainless 1.4542	8	9.6	14	10	8.2	33.1	8	63	29
33194.W0333	Stainless 1.4542	8	9.6	14	15	8.2	33.1	8	63	31
33194.W0334	Stainless 1.4542	8	9.6	14	20	8.2	33.1	8	63	33
33194.W0335	Stainless 1.4542	8	9.6	14	25	8.2	33.1	8	63	34
33194.W0336	Stainless 1.4542	8	9.6	14	30	8.2	33.1	8	63	36
33194.W0337	Stainless 1.4542	8	9.6	14	35	8.2	33.1	8	63	38
33194.W0338	Stainless 1.4542	8	9.6	14	40	8.2	33.1	8	63	40
33194.W0339	Stainless 1.4542	8	9.6	14	45	8.2	33.1	8	63	42
33194.W0340	Stainless 1.4542	8	9.6	14	50	8.2	33.1	8	63	44
33194.W0341	Stainless 1.4542	8	9.6	14	70	8.2	33.1	8	63	51
33194.W0342	Stainless 1.4542	8	9.6	14	80	8.2	33.1	8	63	55
33194.W0343	Stainless 1.4542	8	9.6	14	90	8.2	33.1	8	63	58
33194.W0344	Stainless 1.4542	10	12.0	14	20	9.6	33.1	10	100	39
33194.W0345	Stainless 1.4542	10	12.0	14	25	9.6	33.1	10	100	42
33194.W0346	Stainless 1.4542	10	12.0	14	30	9.6	33.1	10	100	45
33194.W0347	Stainless 1.4542	10	12.0	14	35	9.6	33.1	10	100	48
33194.W0348	Stainless 1.4542	10	12.0	14	40	9.6	33.1	10	100	51
33194.W0349	Stainless 1.4542	10	12.0	14	45	9.6	33.1	10	100	54
33194.W0350	Stainless 1.4542	10	12.0	14	50	9.6	33.1	10	100	57
33194.W0351	Stainless 1.4542	8	9.6	14	100	8.2	33.1	8	63	62
33194.W0352	Stainless 1.4542	10	12.0	14	60	9.6	33.1	10	100	63
33194.W0353	Stainless 1.4542	10	12.0	14	70	9.6	33.1	10	100	69
33194.W0354	Stainless 1.4542	10	12.0	14	80	9.6	33.1	10	100	74
33194.W0355	Stainless 1.4542	10	12.0	14	90	9.6	33.1	10	100	80
33194.W0356	Stainless 1.4542	10	12.0	14	100	9.6	33.1	10	100	86
33194.W0357	Stainless 1.4542	10	12.0	14	110	9.6	33.1	10	60	92
33194.W0358	Stainless 1.4542	10	12.0	14	120	9.6	33.1	10	100	98
33194.W0359	Stainless 1.4542	10	12.0	14	15	9.6	33.1	10	100	36
33194.W0360	Stainless 1.4542	12	14.5	20	90	10.6	39.5	12	144	139
33194.W0361	Stainless 1.4542	12	14.5	20	100	10.6	39.5	12	144	148
33194.W0362	Stainless 1.4542	12	14.5	20	110	10.6	39.5	12	144	157
33194.W0363	Stainless 1.4542	12	14.5	20	120	10.6	39.5	12	144	165
33194.W0364	Stainless 1.4542	12	14.5	20	20	10.6	39.5	12	144	80
33194.W0365	Stainless 1.4542	12	14.5	20	25	10.6	39.5	12	144	84
33194.W0366	Stainless 1.4542	12	14.5	20	30	10.6	39.5	12	144	88
33194.W0367	Stainless 1.4542	12	14.5	20	35	10.6	39.5	12	144	92
33194.W0368	Stainless 1.4542	12	14.5	20	40	10.6	39.5	12	144	96
33194.W0369	Stainless 1.4542	12	14.5	20	45	10.6	39.5	12	144	101
33194.W0370	Stainless 1.4542	12	14.5	20	50	10.6	39.5	12	144	105
33194.W0372	Stainless 1.4542	12	14.5	20	60	10.6	39.5	12	144	113
33194.W0374	Stainless 1.4542	12	14.5	20	70	10.6	39.5	12	144	122
33194.W0376	Stainless 1.4542	12	14.5	20	80	10.6	39.5	12	144	130
33194.W0386	Stainless 1.4542	16	19.0	20	30	14.0	39.5	16	257	120
33194.W0387	Stainless 1.4542	16	19.0	20	35	14.0	39.5	16	257	127
33194.W0388	Stainless 1.4542	16	19.0	20	40	14.0	39.5	16	257	135
33194.W0389	Stainless 1.4542	16	19.0	20	45	14.0	39.5	16	257	143
33194.W0390	Stainless 1.4542	16	19.0	20	50	14.0	39.5	16	257	150
33194.W0392	Stainless 1.4542	16	19.0	20	60	14.0	39.5	16	257	166
33194.W0394	Stainless 1.4542	16	19.0	20	70	14.0	39.5	16	257	181
33194.W0396	Stainless 1.4542	16	19.0	20	80	14.0	39.5	16	257	196
33194.W0397	Stainless 1.4542	16	19.0	20	90	14.0	39.5	16	257	216
33194.W0398	Stainless 1.4542	16	19.0	20	100	14.0	39.5	16	257	233
33194.W0399	Stainless 1.4542	16	19.0	20	110	14.0	39.5	16	257	248
33194.W0411	Stainless 1.4542	20	25.0	28	50	20.0	49.9	16	403	303
33194.W0412	Stainless 1.4542	20	25.0	28	60	20.5	49.9	20	403	322
33194.W0416	Stainless 1.4542	20	25.0	28	80	20.5	49.9	20	403	370
33194.W0417	Stainless 1.4542	20	25.0	28	90	20.5	49.9	20	403	400
33194.W0420	Stainless 1.4542	20	25.0	28	100	20.5	49.9	20	403	414
33194.W0424	Stainless 1.4542	20	25.0	28	120	20.5	49.9	20	403	466
33194.W0425	Stainless 1.4542	20	25.0	28	130	20.5	49.9	20	403	497
33194.W0426	Stainless 1.4542	20	25.0	28	140	20.5	49.9	20	403	520
33194.W0427	Stainless 1.4542	20	25.0	28	150	20.5	49.9	20	403	545
33194.W0429	Stainless 1.4542	25	30.8	28	50	22.0	49.9	25	631	395
33194.W0430	Stainless 1.4542	25	30.8	28	60	22.0	49.9	25	631	396
33194.W0431	Stainless 1.4542	25	30.8	28	70	22	49.9	25	631	396
33194.W0432	Stainless 1.4542	25	30.8	28	80	22.0	49.9	25	631	507
33194.W0433	Stainless 1.4542	25	30.8	28	90	22.0	49.9	25	631	545



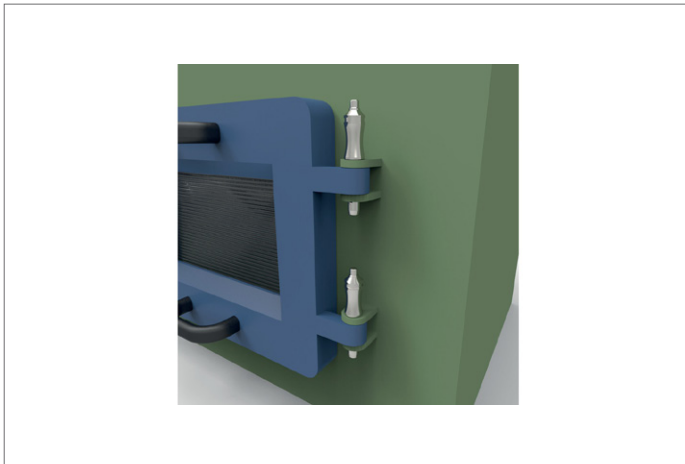
Ball Lock Pins - Contoured Handle

self-locking - single acting - stainless 1.4542

Ball Lock Pins & Quick Release



Order No.	Material	d ₁	d ₂	d ₃	l ₁	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33194.W0434	Stainless 1.4542	25	30.8	28	100	22.0	49.9	25	631	582
33194.W0435	Stainless 1.4542	25	30.8	28	110	22.0	49.9	25	631	620
33194.W0436	Stainless 1.4542	25	30.8	28	120	22.0	49.9	25	631	657
33194.W0438	Stainless 1.4542	25	30.8	28	140	22.0	49.9	25	631	732
33194.W0439	Stainless 1.4542	25	30.8	28	150	22.0	49.9	25	631	770
33194.W3100	Stainless 1.4542	16	19.0	20	120	14.0	39.5	16	257	263
33194.W3101	Stainless 1.4542	16	19.0	20	130	14.0	39.5	16	257	279
33194.W3102	Stainless 1.4542	16	19.0	20	140	14.0	39.5	16	257	295
33194.W3103	Stainless 1.4542	16	19.0	20	150	14.0	39.5	16	257	310



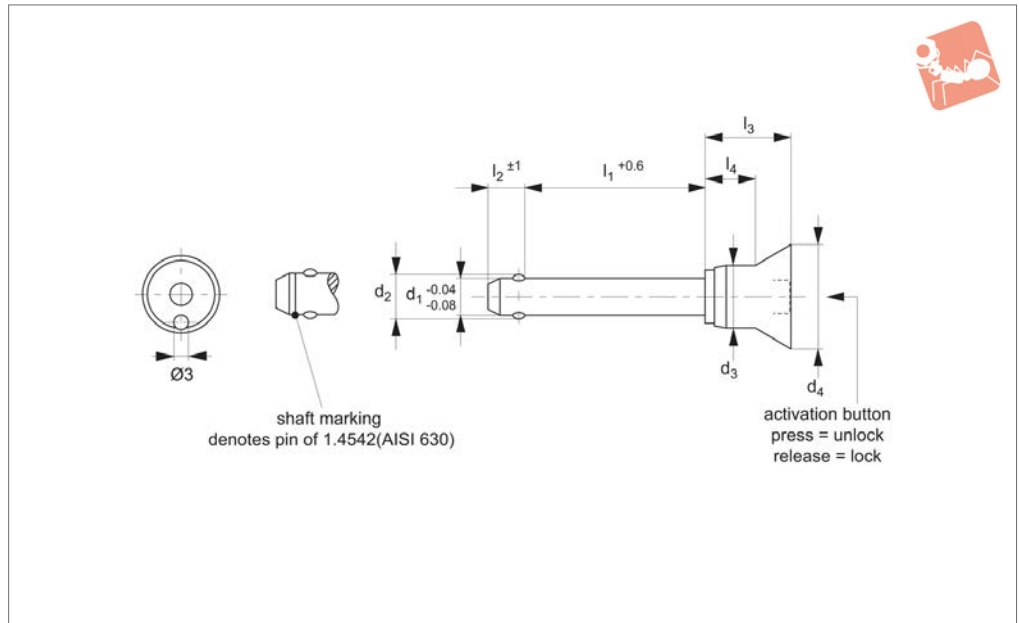
BALL LOCK PINS & QUICK RELEASE PINS



BALL LOCK PINS & QUICK RELEASE PINS



33226.1



Material

Pin: Stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3541
Spring: stainless steel.
Handle: stainless steel.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Handle shape protects against accidental actuation of ball lock pin.
Temperature resistant up to 250°C
For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no. 33250. Easy install locating bushes available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia.	Shearing resistance, double kN	Weight g
33226.W1012	Stainless 1.4305	5	10	5.5	10.3	20	6.0	21.0	11.6	5	14	18
33226.W1013	Stainless 1.4305	5	15	5.5	10.3	20	6.0	21.0	11.6	5	14	19
33226.W1014	Stainless 1.4305	5	20	5.5	10.3	20	6.0	21.0	11.6	5	14	20
33226.W1015	Stainless 1.4305	5	25	5.5	10.3	20	6.0	21.0	11.6	5	14	21
33226.W1016	Stainless 1.4305	5	30	5.5	10.3	20	6.0	21.0	11.6	5	14	21
33226.W1022	Stainless 1.4305	6	10	7.0	10.3	20	7.0	21.0	11.6	6	21	19
33226.W1023	Stainless 1.4305	6	15	7.0	10.3	20	7.0	21.0	11.6	6	21	20
33226.W1024	Stainless 1.4305	6	20	7.0	10.3	20	7.0	21.0	11.6	6	21	22
33226.W1025	Stainless 1.4305	6	25	7.0	10.3	20	7.0	21.0	11.6	6	21	23
33226.W1026	Stainless 1.4305	6	30	7.0	10.3	20	7.0	21.0	11.6	6	21	24
33226.W1027	Stainless 1.4305	6	35	7.0	10.3	20	7.0	21.0	11.6	6	21	25
33226.W1028	Stainless 1.4305	6	40	7.0	10.3	20	7.0	21.0	11.6	6	21	26
33226.W1029	Stainless 1.4305	6	45	7.0	10.3	20	7.0	21.0	11.6	6	21	27
33226.W1030	Stainless 1.4305	6	50	7.0	10.3	20	7.0	21.0	11.6	6	21	28
33226.W1034	Stainless 1.4305	8	20	9.5	13.3	24	8.2	27.5	17.4	8	38	40
33226.W1035	Stainless 1.4305	8	25	9.5	13.3	24	8.2	27.5	17.4	8	38	41
33226.W1036	Stainless 1.4305	8	30	9.5	13.3	24	8.2	27.5	17.4	8	38	43
33226.W1037	Stainless 1.4305	8	35	9.5	13.3	24	8.2	27.5	17.4	8	38	45
33226.W1038	Stainless 1.4305	8	40	9.5	13.3	24	8.2	27.5	17.4	8	38	47
33226.W1039	Stainless 1.4305	8	45	9.5	13.3	24	8.2	27.5	17.4	8	38	49
33226.W1040	Stainless 1.4305	8	50	9.5	13.3	24	8.2	27.5	17.4	8	38	51
33226.W1044	Stainless 1.4305	10	20	12.0	13.3	24	9.6	27.5	17.4	10	60	46
33226.W1045	Stainless 1.4305	10	25	12.0	13.3	24	9.6	27.5	17.4	10	60	49
33226.W1046	Stainless 1.4305	10	30	12.0	13.3	24	9.6	27.5	17.4	10	60	52
33226.W1047	Stainless 1.4305	10	35	12.0	13.3	24	9.6	27.5	17.4	10	60	5
33226.W1048	Stainless 1.4305	10	40	12.0	13.3	24	9.6	27.5	17.4	10	60	58
33226.W1049	Stainless 1.4305	10	45	12.0	13.3	24	9.6	27.5	17.4	10	60	61
33226.W1050	Stainless 1.4305	10	50	12.0	13.3	24	9.6	27.5	17.4	10	60	64
33226.W1052	Stainless 1.4305	10	60	12.0	13.3	24	9.6	27.5	17.4	10	60	70
33226.W1065	Stainless 1.4305	12	25	14.5	16.5	28	10.6	33.5	23.1	12	87	77



Ball Lock Pins - Single Acting - Safety

self-locking - stainless 1.4305

Ball Lock Pins & Quick Release



Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia.	Shearing resistance, double kN	Weight g
33226.W1066	Stainless 1.4305	12	30	14.5	16.5	28	10.6	33.5	23.1	12	87	82
33226.W1067	Stainless 1.4305	12	35	14.5	16.5	28	10.6	33.5	23.1	12	87	86
33226.W1068	Stainless 1.4305	12	40	14.5	16.5	28	10.6	33.5	23.1	12	87	90
33226.W1069	Stainless 1.4305	12	45	14.5	16.5	28	10.6	33.5	23.1	12	87	94
33226.W1070	Stainless 1.4305	12	50	14.5	16.5	28	10.6	33.5	23.1	12	87	99
33226.W1072	Stainless 1.4305	12	60	14.5	16.5	28	10.6	33.5	23.1	12	87	107
33226.W1074	Stainless 1.4305	12	70	14.5	16.5	28	10.6	33.5	23.1	12	87	116
33226.W1076	Stainless 1.4305	12	80	14.5	16.5	28	10.6	33.5	23.1	12	87	124

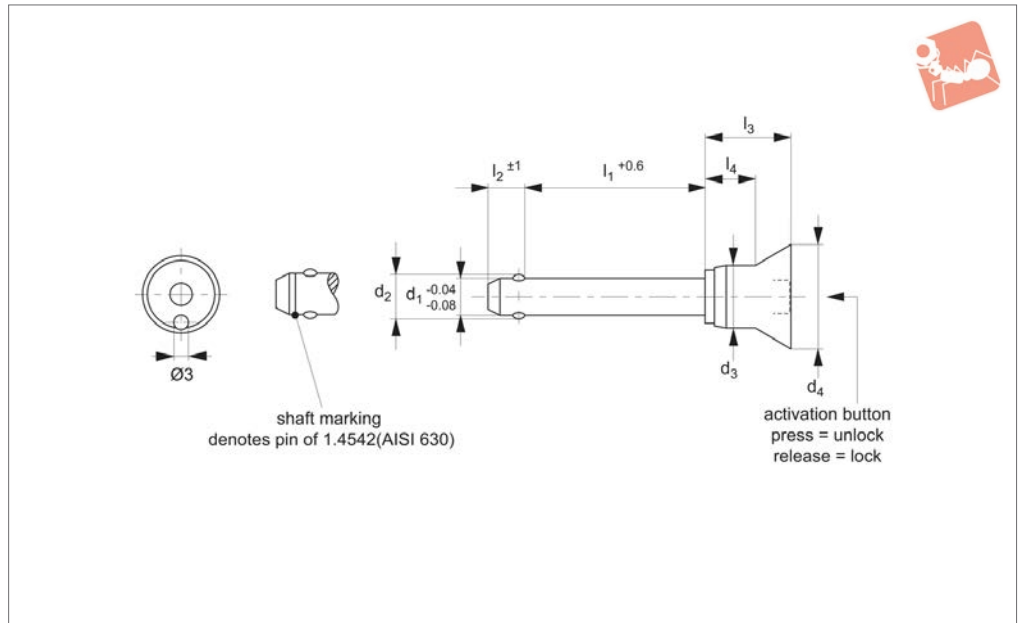
BALL LOCK PINS & QUICK RELEASE PINS



BALL LOCK PINS & QUICK RELEASE PINS



33226.2



Material

Pin: Stainless steel 1.4542 (AISI 630), precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).
Ball: stainless steel 1.3541
Spring: stainless steel.
Handle: stainless steel.

Technical Notes

Pressing = unlocking.

Releasing = locking.

Handle shape protects against accidental actuation of ball lock pin.
Temperature resistant up to 250°C
For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no. 33250. Easy install locating bushes

available see part no. 33248.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia.	Shearing resistance, double kN	Weight g
33226.W1512	Stainless 1.4542	5	10	5.5	10.3	20	6.0	21.0	11.6	5	24	18
33226.W1513	Stainless 1.4542	5	15	5.5	10.3	20	6.0	21.0	11.6	5	24	19
33226.W1514	Stainless 1.4542	5	20	5.5	10.3	20	6.0	21.0	11.6	5	24	20
33226.W1515	Stainless 1.4542	5	25	5.5	10.3	20	6.0	21.0	11.6	5	24	21
33226.W1516	Stainless 1.4542	5	30	5.5	10.3	20	6.0	21.0	11.6	5	24	21
33226.W1522	Stainless 1.4542	6	10	7.0	10.3	20	7.0	21.0	11.6	6	35	19
33226.W1523	Stainless 1.4542	6	15	7.0	10.3	20	7.0	21.0	11.6	6	35	20
33226.W1524	Stainless 1.4542	6	20	7.0	10.3	20	7.0	21.0	11.6	6	35	22
33226.W1525	Stainless 1.4542	6	25	7.0	10.3	20	7.0	21.0	11.6	6	35	23
33226.W1526	Stainless 1.4542	6	30	7.0	10.3	20	7.0	21.0	11.6	6	35	24
33226.W1527	Stainless 1.4542	6	35	7.0	10.3	20	7.0	21.0	11.6	6	35	25
33226.W1528	Stainless 1.4542	6	40	7.0	10.3	20	7.0	21.0	11.6	6	35	26
33226.W1529	Stainless 1.4542	6	45	7.0	10.3	20	7.0	21.0	11.6	6	35	27
33226.W1530	Stainless 1.4542	6	50	7.0	10.3	20	7.0	21.0	11.6	6	35	28
33226.W1534	Stainless 1.4542	8	20	9.5	13.3	24	8.2	27.5	17.4	8	63	40
33226.W1535	Stainless 1.4542	8	25	9.5	13.3	24	8.2	27.5	17.4	8	63	41
33226.W1536	Stainless 1.4542	8	30	9.5	13.3	24	8.2	27.5	17.4	8	63	43
33226.W1537	Stainless 1.4542	8	35	9.5	13.3	24	8.2	27.5	17.4	8	63	45
33226.W1538	Stainless 1.4542	8	40	9.5	13.3	24	8.2	27.5	17.4	8	63	47
33226.W1539	Stainless 1.4542	8	45	9.5	13.3	24	8.2	27.5	17.4	8	63	49
33226.W1540	Stainless 1.4542	8	50	9.5	13.3	24	8.2	27.5	17.4	8	63	51
33226.W1544	Stainless 1.4542	10	20	12.0	13.3	24	9.6	27.5	17.4	10	100	46
33226.W1545	Stainless 1.4542	10	25	12.0	13.3	24	9.6	27.5	17.4	10	100	49
33226.W1546	Stainless 1.4542	10	30	12.0	13.3	24	9.6	27.5	17.4	10	100	52
33226.W1547	Stainless 1.4542	10	35	12.0	13.3	24	9.6	27.5	17.4	10	100	55
33226.W1548	Stainless 1.4542	10	40	12.0	13.3	24	9.6	27.5	17.4	10	100	58



Ball Lock Pins - Single Acting - Safety

self-locking - stainless 1.4542

Ball Lock Pins & Quick Release

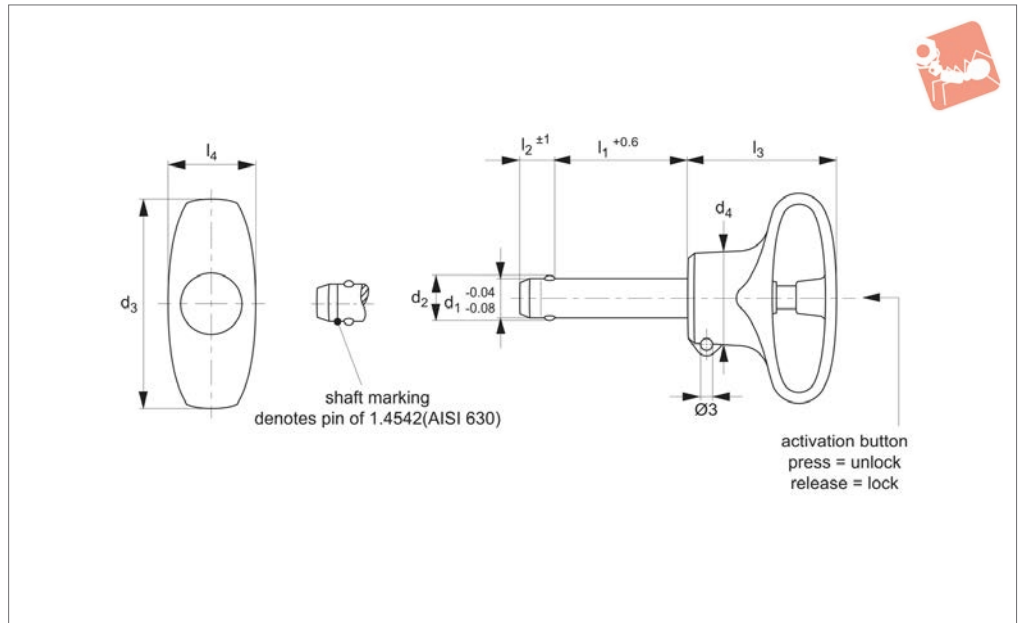


Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia.	Shearing resistance, double kN	Weight g
33226.W1549	Stainless 1.4542	10	45	12.0	13.3	24	9.6	27.5	17.4	10	100	61
33226.W1550	Stainless 1.4542	10	50	12.0	13.3	24	9.6	27.5	17.4	10	100	64
33226.W1552	Stainless 1.4542	10	60	12.0	13.3	24	9.6	27.5	17.4	10	100	70
33226.W1565	Stainless 1.4542	12	25	14.5	16.5	28	10.6	33.5	23.1	12	144	77
33226.W1566	Stainless 1.4542	12	30	14.5	16.5	28	10.6	33.5	23.1	12	144	82
33226.W1567	Stainless 1.4542	12	35	14.5	16.5	28	10.6	33.5	23.1	12	144	86
33226.W1568	Stainless 1.4542	12	40	14.5	16.5	28	10.6	33.5	23.1	12	144	90
33226.W1569	Stainless 1.4542	12	45	14.5	16.5	28	10.6	33.5	23.1	12	144	94
33226.W1570	Stainless 1.4542	12	50	14.5	16.5	28	10.6	33.5	23.1	12	144	99
33226.W1572	Stainless 1.4542	12	60	14.5	16.5	28	10.6	33.5	23.1	12	144	107
33226.W1574	Stainless 1.4542	12	70	14.5	16.5	28	10.6	33.5	23.1	12	144	116
33226.W1576	Stainless 1.4542	12	80	14.5	16.5	28	10.6	33.5	23.1	12	144	124

BALL LOCK PINS & QUICK RELEASE PINS



33100



Material

Type One-

Pin: Stainless steel 1.4305 (AISI 303).

Type Two-

Pin: Stainless steel 1.4542 (AISI 630), precipitation hardened, blast finish. Offering extreme load capacity. (Marked at end of shaft to denote 1.4542 material).

Handle: plastic (PBT/TPE). Colours avail.; orange/grey

Technical Notes

Pressing = unlocking.

Releasing = locking.

Unique design; elastic handle provides integral spring action to reset pin (hence no internal spring mechanism required).

Tested to over 100,000+ repetitions.

Temperature resistance -30°C to 80°C.

For quick fastening and locking of frequently repeated connections in applica-

tions such as; sports, leisure, medical and general engineering applications.

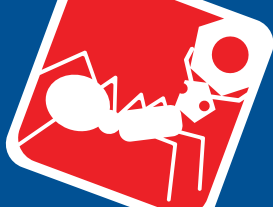
Tips

For easy to install locating bush see part **33248 <X\33248#26>**.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33100.W0712	Stainless 1.4305	5	10	5.5	36	12.7	6.0	31.0	15.9	5	14	9
33100.W0713	Stainless 1.4305	5	15	5.5	36	12.7	6.0	31.0	15.9	5	14	10
33100.W0714	Stainless 1.4305	5	20	5.5	36	12.7	6.0	31.0	15.9	5	14	11
33100.W0715	Stainless 1.4305	5	25	5.5	36	12.7	6.0	31.0	15.9	5	14	11
33100.W0716	Stainless 1.4305	5	30	5.5	36	12.7	6.0	31.0	15.9	5	14	12
33100.W0722	Stainless 1.4305	6	10	7.0	36	12.7	7.0	31.0	15.9	6	21	10
33100.W0723	Stainless 1.4305	6	15	7.0	35	12.7	7.0	31.0	15.9	6	21	11
33100.W0724	Stainless 1.4305	6	20	7.0	36	12.7	7.0	31.0	15.9	6	21	12
33100.W0725	Stainless 1.4305	6	25	7.0	36	12.7	7.0	31.0	15.9	6	21	13
33100.W0726	Stainless 1.4305	6	30	7.0	36	12.7	7.0	31.0	15.9	6	21	14
33100.W0727	Stainless 1.4305	6	35	7.0	36	12.7	7.0	31.0	15.9	6	21	15
33100.W0728	Stainless 1.4305	6	40	7.0	36	12.7	7.0	31.0	15.9	6	21	16
33100.W0729	Stainless 1.4305	6	45	7.0	36	12.7	7.0	31.0	15.9	6	21	18
33100.W0730	Stainless 1.4305	6	50	7.0	36	12.7	7.0	31.0	15.9	6	21	18
33100.W0734	Stainless 1.4305	8	20	9.6	41	16.4	8.2	34.8	19.2	8	38	23
33100.W0735	Stainless 1.4305	8	25	9.6	41	16.4	8.2	34.8	19.2	8	38	25
33100.W0736	Stainless 1.4305	8	30	9.6	41	16.4	8.2	34.8	19.2	8	38	26
33100.W0737	Stainless 1.4305	8	35	9.6	41	16.4	8.2	34.8	19.2	8	38	28
33100.W0738	Stainless 1.4305	8	40	9.6	41	16.4	8.2	34.8	19.2	8	38	30
33100.W0739	Stainless 1.4305	8	45	9.6	41	16.4	8.2	34.8	19.2	8	38	32
33100.W0740	Stainless 1.4305	8	50	9.6	41	16.4	8.2	34.8	19.2	8	38	34
33100.W0744	Stainless 1.4305	10	20	12.0	41	16.4	9.6	34.8	19.2	10	60	30
33100.W0745	Stainless 1.4305	10	25	12.0	41	16.4	9.6	34.8	19.2	10	60	32
33100.W0746	Stainless 1.4305	10	30	12.0	41	16.4	9.6	34.8	19.2	10	60	35
33100.W0747	Stainless 1.4305	10	35	12.0	41	16.4	9.6	34.8	19.2	10	60	38
33100.W0748	Stainless 1.4305	10	40	12.0	41	16.4	9.6	34.8	19.2	10	60	41



Ball Lock Pins - Single Acting - Elastic self-locking

Ball Lock Pins & Quick Release



Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33100.W0749	Stainless 1.4305	10	45	12.0	41	16.4	9.6	34.8	19.2	10	60	44
33100.W0750	Stainless 1.4305	10	50	12.0	41	16.4	9.6	34.8	19.2	10	60	47
33100.W0752	Stainless 1.4305	10	60	12.0	41	16.4	9.6	34.8	19.2	10	60	53
33100.W0765	Stainless 1.4305	12	25	14.5	49	21.2	10.6	40.5	24.8	12	87	54
33100.W0766	Stainless 1.4305	12	30	14.5	49	21.2	10.6	40.5	24.8	12	87	59
33100.W0767	Stainless 1.4305	12	35	14.5	49	21.2	10.6	40.5	24.8	12	87	63
33100.W0768	Stainless 1.4305	12	40	14.5	49	21.2	10.6	40.5	24.8	12	87	67
33100.W0769	Stainless 1.4305	12	45	14.5	49	21.2	10.6	40.5	24.8	12	87	71
33100.W0770	Stainless 1.4305	12	50	14.5	49	21.2	10.6	40.5	24.8	12	87	75
33100.W0772	Stainless 1.4305	12	60	14.5	49	21.2	10.6	40.5	24.8	12	87	84
33100.W0774	Stainless 1.4305	12	70	14.5	49	21.2	10.6	40.5	24.8	12	87	93
33100.W0776	Stainless 1.4305	12	80	14.5	49	21.2	10.6	40.5	24.8	12	87	101
33100.W0786	Stainless 1.4305	16	30	19.0	49	21.2	14.0	40.5	24.8	16	155	91
33100.W0787	Stainless 1.4305	16	35	19.0	49	21.2	14.0	40.5	24.8	16	155	98
33100.W0788	Stainless 1.4305	16	40	19.0	49	21.2	14.0	40.5	24.8	16	155	106
33100.W0789	Stainless 1.4305	16	45	19.0	49	21.2	14.0	40.5	24.8	16	155	114
33100.W0790	Stainless 1.4305	16	50	19.0	49	21.2	14.0	40.5	24.8	16	155	121
33100.W0792	Stainless 1.4305	16	60	19.0	49	21.2	14.0	40.5	24.8	16	155	137
33100.W0794	Stainless 1.4305	16	70	19.0	49	21.2	14.0	40.5	24.8	16	155	152
33100.W0796	Stainless 1.4305	16	80	19.0	49	21.2	14.0	40.5	24.8	16	155	167
33100.W0912	Stainless 1.4542	5	10	5.5	36	12.7	6.0	31.0	15.9	5	24	9
33100.W0913	Stainless 1.4542	5	15	5.5	36	12.7	6.0	31.0	15.9	5	24	10
33100.W0914	Stainless 1.4542	5	20	5.5	36	12.7	6.0	31.0	15.9	5	24	11
33100.W0915	Stainless 1.4542	5	25	5.5	36	12.7	6.0	31.0	15.9	5	24	11
33100.W0916	Stainless 1.4542	5	30	5.5	36	12.7	6.0	31.0	15.9	5	24	12
33100.W0922	Stainless 1.4542	6	10	7.0	36	12.7	7.0	31.0	15.9	6	35	10
33100.W0923	Stainless 1.4542	6	15	7.0	35	12.7	7.0	31.0	15.9	6	35	11
33100.W0924	Stainless 1.4542	6	20	7.0	36	12.7	7.0	31.0	15.9	6	35	12
33100.W0925	Stainless 1.4542	6	25	7.0	36	12.7	7.0	31.0	15.9	6	35	13
33100.W0926	Stainless 1.4542	6	30	7.0	36	12.7	7.0	31.0	15.9	6	35	14
33100.W0927	Stainless 1.4542	6	35	7.0	36	12.7	7.0	31.0	15.9	6	35	15
33100.W0928	Stainless 1.4542	6	40	7.0	36	12.7	7.0	31.0	15.9	6	35	16
33100.W0929	Stainless 1.4542	6	45	7.0	36	12.7	7.0	31.0	15.9	6	35	18
33100.W0930	Stainless 1.4542	6	50	7.0	36	12.7	7.0	31.0	15.9	6	35	18
33100.W0934	Stainless 1.4542	8	20	9.6	41	16.4	8.2	34.8	19.2	8	63	23
33100.W0935	Stainless 1.4542	8	25	9.6	41	16.4	8.2	34.8	19.2	8	63	25
33100.W0936	Stainless 1.4542	8	30	9.6	41	16.4	8.2	34.8	19.2	8	63	26
33100.W0937	Stainless 1.4542	8	35	9.6	41	16.4	8.2	34.8	19.2	8	63	28
33100.W0938	Stainless 1.4542	8	40	9.6	41	16.4	8.2	34.8	19.2	8	63	30
33100.W0939	Stainless 1.4542	8	45	9.6	41	16.4	8.2	34.8	19.2	8	63	32
33100.W0940	Stainless 1.4542	8	50	9.6	41	16.4	8.2	34.8	19.2	8	63	34
33100.W0944	Stainless 1.4542	10	20	12.0	41	16.4	9.6	34.8	19.2	10	100	30
33100.W0945	Stainless 1.4542	10	25	12.0	41	16.4	9.6	34.8	19.2	10	100	32
33100.W0946	Stainless 1.4542	10	30	12.0	41	16.4	9.6	34.8	19.2	10	100	35
33100.W0947	Stainless 1.4542	10	35	12.0	41	16.4	9.6	34.8	19.2	10	100	38
33100.W0948	Stainless 1.4542	10	40	12.0	41	16.4	9.6	34.8	19.2	10	100	41
33100.W0949	Stainless 1.4542	10	45	12.0	41	16.4	9.6	34.8	19.2	10	100	44
33100.W0950	Stainless 1.4542	10	50	12.0	41	16.4	9.6	34.8	19.2	10	100	47
33100.W0952	Stainless 1.4542	10	60	12.0	41	16.4	9.6	34.8	19.2	10	100	53
33100.W0965	Stainless 1.4542	12	25	14.5	49	21.2	10.6	40.5	24.8	12	144	54
33100.W0966	Stainless 1.4542	12	30	14.5	49	21.2	10.6	40.5	24.8	12	144	59
33100.W0967	Stainless 1.4542	12	35	14.5	49	21.2	10.6	40.5	24.8	12	144	63
33100.W0968	Stainless 1.4542	12	40	14.5	49	21.2	10.6	40.5	24.8	12	144	67
33100.W0969	Stainless 1.4542	12	45	14.5	49	21.2	10.6	40.5	24.8	12	144	71
33100.W0970	Stainless 1.4542	12	50	14.5	49	21.2	10.6	40.5	24.8	12	144	75
33100.W0972	Stainless 1.4542	12	60	14.5	49	21.2	10.6	40.5	24.8	12	144	84
33100.W0974	Stainless 1.4542	12	70	14.5	49	21.2	10.6	40.5	24.8	12	144	93
33100.W0976	Stainless 1.4542	12	80	14.5	49	21.2	10.6	40.5	24.8	12	144	101
33100.W0986	Stainless 1.4542	16	30	19.0	49	21.2	14.0	40.5	24.8	16	257	91
33100.W0987	Stainless 1.4542	16	35	19.0	49	21.2	14.0	40.5	24.8	16	257	98
33100.W0988	Stainless 1.4542	16	40	19.0	49	21.2	14.0	40.5	24.8	16	257	106
33100.W0989	Stainless 1.4542	16	45	19.0	49	21.2	14.0	40.5	24.8	16	257	114
33100.W0990	Stainless 1.4542	16	50	19.0	49	21.2	14.0	40.5	24.8	16	257	121
33100.W0992	Stainless 1.4542	16	60	19.0	49	21.2	14.0	40.5	24.8	16	257	137
33100.W0994	Stainless 1.4542	16	70	19.0	49	21.2	14.0	40.5	24.8	16	257	152

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

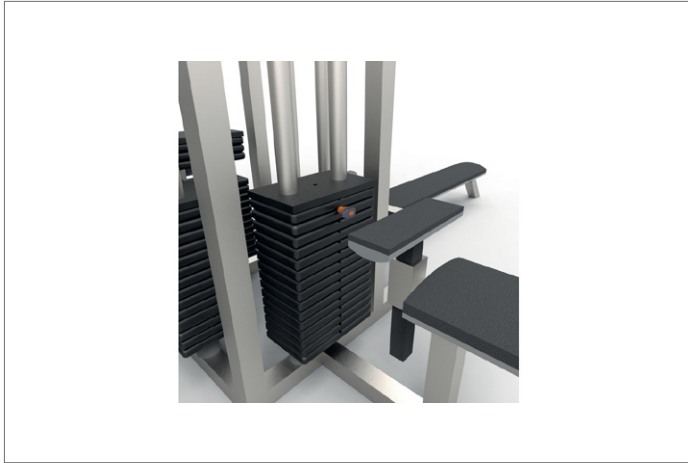


Ball Lock Pins - Single Acting - Elastic self-locking



Order No.	Material	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33100.W0996	Stainless 1.4542	16	80	19.0	49	21.2	14.0	40.5	24.8	16	257	167

BALL LOCK PINS & QUICK RELEASE PINS

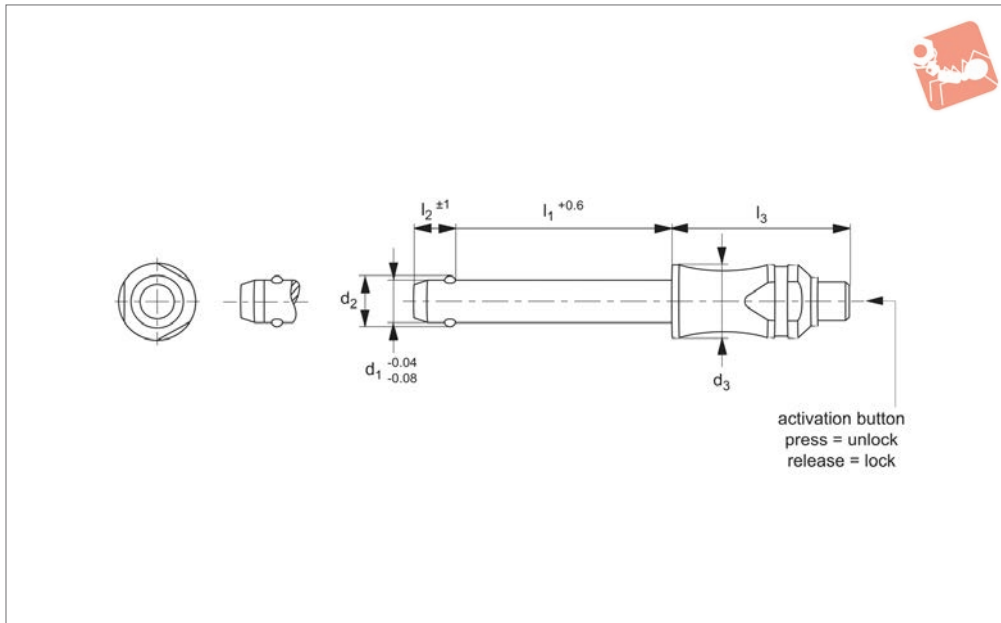




Ball Lock Pins - Contoured Handle

self-locking - single acting - titanium

Ball Lock Pins & Quick Release



33196

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: Titanium G5 (6A/4V DIN 3.7165). Offering extreme load capacity.
 Ball: Ceramic.
 Spring: Corrosion resistant alloy.

Technical Notes

Pressing = unlocking.
 Releasing = locking.
 Single piece contoured design for limited

space applications.
 Temperature resistance up to 400°C.
 For quick fastening and locking of frequently repeated connections.
 For suitable lanyards see part no. 33250. W0970 and .W0974 only. Easy install locating bushes available see part no. 33248.

Tips

Single piece design, no danger of parts coming away from pin - ideal for applications with F.O.B (Foreign Object Body) issues.

Important Notes

*Shearing resistance similar to DIN 50141.

Order No.	d ₁	l ₁	d ₂	d ₃	l ₂	l ₃	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33196.W0022	6	10	7.0	10	7.0	26.2	6	23	7
33196.W0024	6	20	7.0	10	7.0	26.2	6	23	8
33196.W0026	6	30	7.0	10	7.0	26.2	6	23	9
33196.W0028	6	40	7.0	10	7.0	26.2	6	23	10
33196.W0030	6	50	7.0	10	7.0	26.2	6	23	11
33196.W0034	8	20	9.6	14	8.2	33.1	8	43	19
33196.W0036	8	30	9.6	14	8.2	33.1	8	43	21
33196.W0038	8	40	9.6	14	8.2	33.1	8	43	23
33196.W0040	8	50	9.6	14	8.2	33.1	8	43	25
33196.W0044	10	20	12.0	14	9.6	33.1	8	46	23
33196.W0046	10	30	12.0	14	9.6	26.2	10	69	26
33196.W0048	10	40	12.0	14	9.6	26.2	10	69	29
33196.W0050	10	50	12.0	14	9.6	26.2	10	69	32
33196.W0052	10	60	12.0	14	9.6	26.2	10	69	36

Ball Lock Pins & Quick Release

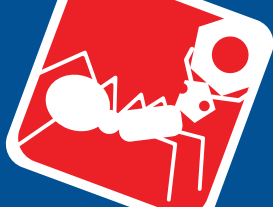


Ball Lock Pins - Contoured Handle self-locking - single acting - titanium



BALL LOCK PINS & QUICK RELEASE PINS

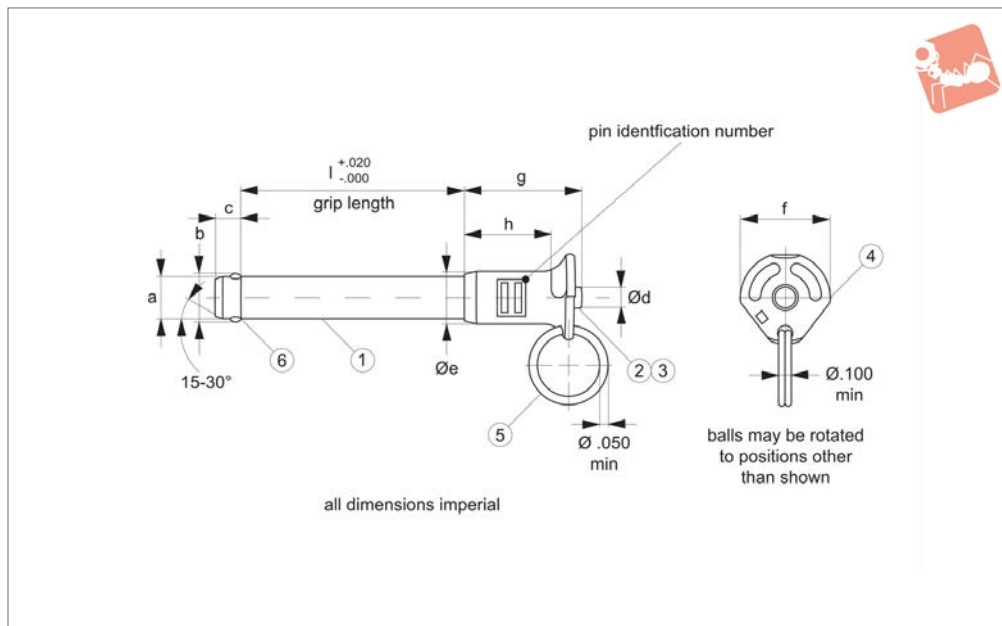




Aviation Pip-Pin - Standard B Handle

single acting - quick release pins

Ball Lock Pins & Quick Release



33600

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shank (part 1) & Spindle (part 2):

CRES 17-4PH (AMS 5643), heat treated per MIL-H-6875, condition H900, min. 40 HRC, passivated per AMS2700

Spring (part 3, not shown):

CRES 302 (ASTM-A-313), heat treated per MIL-H-6875, passivated per AMS2700

Handle (part 4):

A380 (QQ-A-591), anodized (black) per MIL-A-8625

Attaching ring (part 5):

CRES 302 (ASTM-A-313), passivated per AMS2700

Ball (locking element, part 6):

CRES CL440C (AMS5630), heat treated per MIL-H-6875, passivated per AMS2700

Technical Notes

Wixroyd Aviation Pip-Pins manufactured to Aviation Norm NASM 17984 (former norm: MS 17984) and tested to NAS 1332.

Manufacture certified & assessed to EN9100D by EASE (European Aerospace Supplier Evaluation).

Temp. range -22°F to 302°F

Pressing = unlocking.

Releasing = locking.

Pip-Pins are used for frequently repeated operations such as quick fastening, locking, adjusting, changing and securing. All dimensions shown are imperial.

Tips

We can manufacture specials (both metric & imperial) to your drawing, and are certified to produce to NASM standards.

Wixroyd Aviation Pip-Pins can be produced within the following dimensions:

+ diameter: from 3/16" to 1"

+ grip length: from 0.3" to 9.9"

Quick production time on small batches.

Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33600.A005	3/16	0.5	0.220	0.26	0.31	0.44	17
33600.A006	3/16	0.6	0.220	0.26	0.31	0.44	17
33600.A007	3/16	0.7	0.220	0.26	0.31	0.44	17
33600.A008	3/16	0.8	0.220	0.26	0.31	0.44	18
33600.A010	3/16	1.0	0.220	0.26	0.31	0.44	18
33600.A011	3/16	1.1	0.220	0.26	0.31	0.44	19
33600.A013	3/16	1.3	0.220	0.26	0.31	0.44	19
33600.A015	3/16	1.5	0.220	0.26	0.31	0.44	20
33600.A018	3/16	1.8	0.220	0.26	0.31	0.44	21
33600.A020	3/16	2.0	0.220	0.26	0.31	0.44	22
33600.B007	1/4	0.7	0.289	0.29	0.31	0.44	20
33600.B008	1/4	0.8	0.289	0.29	0.31	0.44	20
33600.B010	1/4	1.0	0.289	0.29	0.31	0.44	22
33600.B011	1/4	1.1	0.289	0.29	0.31	0.44	22
33600.B012	1/4	1.2	0.289	0.29	0.31	0.44	24
33600.B014	1/4	1.4	0.289	0.29	0.31	0.44	24
33600.B018	1/4	1.8	0.289	0.29	0.31	0.44	26
33600.B019	1/4	1.9	0.289	0.29	0.31	0.44	27
33600.B020	1/4	2.0	0.289	0.29	0.31	0.44	27
33600.B023	1/4	2.3	0.289	0.29	0.31	0.44	29
33600.B025	1/4	2.5	0.289	0.29	0.31	0.44	32

Ball Lock Pins & Quick Release

Aviation Pip-Pin - Standard B Handle single acting - quick release pins



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33600.B028	1/4	2.8	0.289	0.29	0.31	0.44	32
33600.B029	1/4	2.9	0.289	0.29	0.31	0.44	33
33600.B064	1/4	6.4	0.289	0.29	0.31	0.44	59
33600.C008	5/16	0.8	0.375	0.33	0.31	0.49	25
33600.C010	5/16	1.0	0.375	0.33	0.31	0.49	28
33600.C012	5/16	1.2	0.375	0.33	0.31	0.49	29
33600.C014	5/16	1.4	0.375	0.33	0.31	0.49	31
33600.C016	5/16	1.6	0.375	0.33	0.31	0.49	33
33600.C017	5/16	1.7	0.375	0.33	0.31	0.49	34
33600.C019	5/16	1.9	0.375	0.33	0.31	0.49	33
33600.C020	5/16	2.0	0.375	0.33	0.31	0.49	36
33600.C022	5/16	2.2	0.375	0.33	0.31	0.49	38
33600.C023	5/16	2.3	0.375	0.33	0.31	0.49	39
33600.C025	5/16	2.5	0.375	0.33	0.31	0.49	43
33600.C029	5/16	2.9	0.375	0.33	0.31	0.49	46
33600.C030	5/16	3.0	0.375	0.33	0.31	0.49	47
33600.C036	5/16	3.6	0.375	0.33	0.31	0.49	53
33600.C049	5/16	4.9	0.375	0.33	0.31	0.49	65
33600.C062	5/16	6.2	0.375	0.33	0.31	0.49	73
33600.C067	5/16	6.7	0.375	0.33	0.31	0.49	85

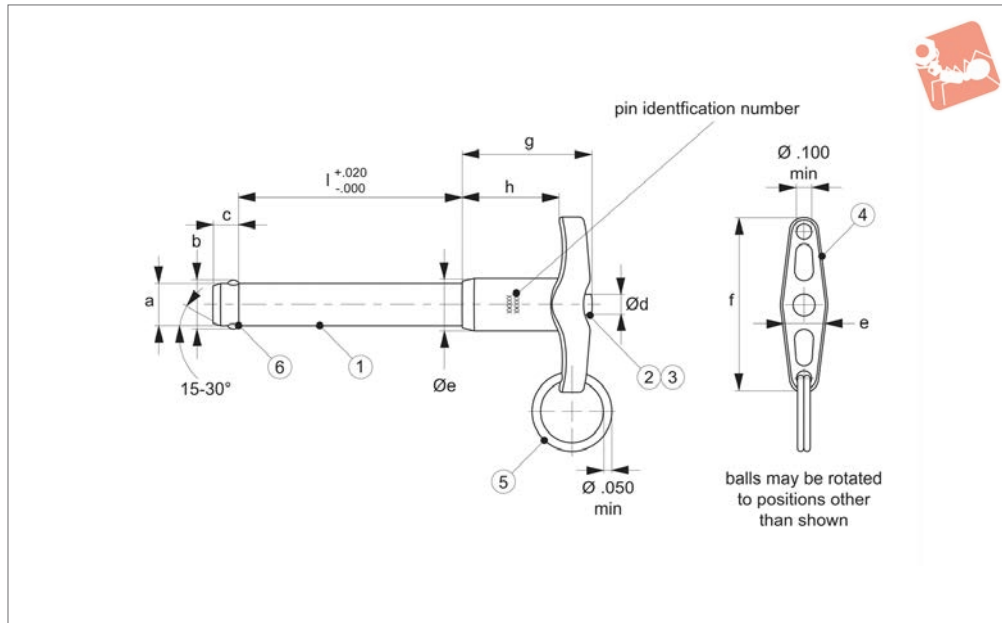
Order No.	Ø f max.	g max.	h min.	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33600.A005	0.800	0.83	0.48	5.150	0.1940	MS17984C305
33600.A006	0.800	0.83	0.48	5.150	0.1940	MS17984C306
33600.A007	0.800	0.83	0.48	5.150	0.1940	MS17984C307
33600.A008	0.800	0.83	0.48	5.150	0.1940	MS17984C308
33600.A010	0.800	0.83	0.48	5.150	0.1940	MS17984C310
33600.A011	0.800	0.83	0.48	5.150	0.1940	MS17984C311
33600.A013	0.800	0.83	0.48	5.150	0.1940	MS17984C313
33600.A015	0.800	0.83	0.48	5.150	0.1940	MS17984C315
33600.A018	0.800	0.83	0.48	5.150	0.1940	MS17984C318
33600.A020	0.800	0.83	0.48	5.150	0.1940	MS17984C320
33600.B007	0.800	0.89	0.48	9.200	0.2540	MS17984C407
33600.B008	0.800	0.89	0.48	9.200	0.2540	MS17984C408
33600.B010	0.800	0.89	0.48	9.200	0.2540	MS17984C410
33600.B011	0.800	0.89	0.48	9.200	0.2540	MS17984C411
33600.B012	0.800	0.89	0.48	9.200	0.2540	MS17984C412
33600.B014	0.800	0.89	0.48	9.200	0.2540	MS17984C414
33600.B018	0.800	0.89	0.48	9.200	0.2540	MS17984C418
33600.B019	0.800	0.89	0.48	9.200	0.2540	MS17984C419
33600.B020	0.800	0.89	0.48	9.200	0.2540	MS17984C410
33600.B023	0.800	0.89	0.48	9.200	0.2540	MS17984C423
33600.B025	0.800	0.89	0.48	9.200	0.2540	MS17984C425
33600.B028	0.800	0.89	0.48	9.200	0.2540	MS17984C428
33600.B029	0.800	0.89	0.48	9.200	0.2540	MS17984C429
33600.B064	0.800	0.89	0.48	9.200	0.2540	MS17984C464
33600.C008	1.135	0.93	0.48	14.400	0.3165	MS17984C508
33600.C010	1.135	0.93	0.48	14.400	0.3165	MS17984C510
33600.C012	1.135	0.93	0.48	14.400	0.3165	MS17984C512
33600.C014	1.135	0.93	0.48	14.400	0.3165	MS17984C514
33600.C016	1.135	0.93	0.48	14.400	0.3165	MS17984C516
33600.C017	1.135	0.93	0.48	14.400	0.3165	MS17984C517
33600.C019	1.135	0.93	0.48	14.400	0.3165	MS17984C519
33600.C020	1.135	0.93	0.48	14.400	0.3165	MS17984C520
33600.C022	1.135	0.93	0.48	14.400	0.3165	MS17984C522
33600.C023	1.135	0.93	0.48	14.400	0.3165	MS17984C523
33600.C025	1.135	0.93	0.48	14.400	0.3165	MS17984C525
33600.C029	1.135	0.93	0.48	14.400	0.3165	MS17984C529
33600.C030	1.135	0.93	0.48	14.400	0.3165	MS17984C530
33600.C036	1.135	0.93	0.48	14.400	0.3165	MS17984C536
33600.C049	1.135	0.93	0.48	14.400	0.3165	MS17984C549
33600.C062	1.135	0.93	0.48	14.400	0.3165	MS17984C562
33600.C067	1.135	0.93	0.48	14.400	0.3165	MS17984C567



Aviation Pip-Pin - Standard T-Handle

single acting - quick release pins - according to

Ball Lock Pins & Quick Release



33610

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shank (part 1) & spindle (part 2):

CRES 17-4PH (AMS 5643), heat treated per MIL-H-6875, condition H900, min. 40 HRC, passivated per AMS2700.

Spring (part 3, not shown):

CRES 302 (ASTM-A-313), heat treated per MIL-H-6875, passivated per AMS2700.

Handle (part 4):

A380 (QQ-A-591), anodized (black) per MIL-A-8625.

Attaching ring (part 5):

CRES 302 (ASTM-A-313), passivated per AMS2700.

Ball (locking element, part 6):

CRES CL440C (AMS5630), heat treated per MIL-H-6875, passivated per AMS2700.

Technical Notes

Wixroyd Aviation Pip-pins manufactured to Aviation Norm NASM 17985 (former norm: MS 17985) and tested to NAS 1332.

Manufacture certified & assessed to EN9100D by EASE (European Aerospace Supplier Evaluation).

Temp. range -22°F to 302°F

Pressing = unlocking.

Releasing = locking.

Pip-pins are used for frequently repeated operations such as quick fastening, locking, adjusting, changing and securing. All dimensions shown are imperial.

Tips

We can manufacture specials (both metric & imperial) to your drawing, and are certified to produce to NASM standards.

Wixroyd Aviation Pip-Pins can be produced within the following dimensions:

+ diameter: from 3/16" to 1"

+ grip length: from 0.3" to 9.9"

Quick production time on small batches.

Order No.	Dia. Ø inch nom.	Grip l inch	b ₁	c ₁	Ø d max.	Ø e max.	Weight g
33610.A003	3/16	0.3	,220	,260	,310	0.500	24
33610.A005	3/16	0.5	,220	,260	,310	0.500	24
33610.A008	3/16	0.8	,220	,260	,310	0.500	25
33610.A012	3/16	1.2	,220	,260	,310	0.500	26
33610.A013	3/16	1.3	,220	,260	,310	0.500	27
33610.A014	3/16	1.4	,220	,260	,310	0.500	27
33610.A026	3/16	2.6	,220	,260	,310	0.500	33
33610.B005	1/4	0.5	,289	,290	,310	0.500	26
33610.B009	1/4	0.9	,289	,290	,310	0.500	27
33610.B011	1/4	1.1	,289	,290	,310	0.500	28
33610.B012	1/4	1.2	,289	,290	,310	0.500	30
33610.B013	1/4	1.3	,289	,290	,310	0.500	30
33610.B015	1/4	1.5	,289	,290	,310	0.500	32
33610.B016	1/4	1.6	,289	,290	,310	0.500	33
33610.B021	1/4	2.1	,289	,290	,310	0.500	36
33610.B026	1/4	2.6	,289	,290	,310	0.500	40
33610.B028	1/4	2.8	,289	,290	,310	0.500	41
33610.B040	1/4	4.0	,289	,290	,310	0.500	49
33610.C003	5/16	0.3	,375	,330	,310	0.500	27
33610.C006	5/16	0.6	,375	,330	,310	0.500	30



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Dia. Ø inch nom.	Grip l inch	b ₁	c ₁	Ø d max.	Ø e max.	Weight g
33610.C010	5/16	1.0	,375	,330	,310	0.500	34
33610.C013	5/16	1.3	,375	,330	,310	0.500	36
33610.C015	5/16	1.5	,375	,330	,310	0.500	39
33610.C016	5/16	1.6	,375	,330	,310	0.500	39
33610.C018	5/16	1.8	,375	,330	,310	0.500	41
33610.C020	5/16	2.0	,375	,330	,310	0.500	43
33610.C023	5/16	2.3	,375	,330	,310	0.500	45
33610.C029	5/16	2.9	,375	,330	,310	0.500	52
33610.C030	5/16	3.0	,375	,330	,310	0.500	53
33610.C033	5/16	3.3	,375	,330	,310	0.500	56
33610.C040	5/16	4.0	,375	,330	,310	0.500	62
33610.C050	5/16	5.0	,375	,330	,310	0.500	75
33610.C064	5/16	6.4	,375	,330	,310	0.500	89
33610.C070	5/16	7.0	,375	,330	,310	0.500	93
33610.D005	3/8	0.5	,440	,365	,390	0.625	43
33610.D010	3/8	1.0	,440	,365	,390	0.625	48
33610.D012	3/8	1.2	,440	,365	,390	0.625	55
33610.D015	3/8	1.5	,440	,365	,390	0.625	57
33610.D016	3/8	1.6	,440	,365	,390	0.625	58
33610.D020	3/8	2.0	,440	,365	,390	0.625	60
33610.D024	3/8	2.4	,440	,365	,390	0.625	69
33610.D025	3/8	2.5	,440	,365	,390	0.625	72
33610.D026	3/8	2.6	,440	,365	,390	0.625	72
33610.D028	3/8	2.8	,440	,365	,390	0.625	72
33610.D031	3/8	3.1	,440	,365	,390	0.625	80
33610.D032	3/8	3.2	,440	,365	,390	0.625	80
33610.D035	3/8	3.5	,440	,365	,390	0.625	85
33610.D040	3/8	4.0	,440	,365	,390	0.625	91
33610.D045	3/8	4.5	,440	,365	,390	0.625	100
33610.E012	7/16	1.2	,509	,380	,390	0.625	60
33610.E018	7/16	1.8	,509	,380	,390	0.625	69
33610.E023	7/16	2.3	,509	,380	,390	0.625	82
33610.E024	7/16	2.4	,509	,380	,390	0.625	80
33610.E026	7/16	2.6	,509	,380	,390	0.625	90
33610.E029	7/16	2.9	,509	,380	,390	0.625	93
33610.E040	7/16	4.0	,509	,380	,390	0.625	113
33610.E042	7/16	4.2	,509	,380	,390	0.625	117
33610.E055	7/16	5.5	,509	,380	,390	0.625	145
33610.E072	1/2	7.2	,594	,460	,390	0.625	176
33610.F010	1/2	1.0	,594	,460	,565	0.800	82
33610.F012	1/2	1.2	,594	,460	,565	0.800	87
33610.F014	1/2	1.4	,594	,460	,565	0.800	94
33610.F015	1/2	1.5	,594	,460	,565	0.800	94
33610.F019	1/2	1.9	,594	,460	,565	0.800	106
33610.F020	1/2	2.0	,594	,460	,565	0.800	108
33610.F024	1/2	2.4	,594	,460	,565	0.800	117
33610.F029	1/2	2.9	,594	,460	,565	0.800	130
33610.F031	1/2	3.1	,594	,460	,565	0.800	135
33610.F036	1/2	3.6	,594	,460	,565	0.800	147
33610.F037	1/2	3.7	,594	,460	,565	0.800	146
33610.F040	1/2	4.0	,594	,460	,565	0.800	156
33610.F047	1/2	4.7	,594	,460	,565	0.800	177
33610.F048	1/2	4.8	,594	,460	,565	0.800	179
33610.F064	1/2	6.4	,594	,460	,565	0.800	218
33610.G017	9/16	1.7	,666	,510	,565	0.800	120
33610.G032	9/16	3.2	,666	,510	,565	0.800	160
33610.G036	9/16	3.6	,666	,510	,565	0.800	176
33610.G040	9/16	4.0	,666	,510	,565	0.800	190
33610.G061	9/16	6.1	,666	,510	,565	0.800	252

Order No.	Ø f max.	g ₁	h ₁	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33610.A003	1.815	1.27	0.800	5.150	0.1940	MS17985C303
33610.A005	1.815	1.27	0.800	5.150	0.1940	MS17985C305
33610.A008	1.815	1.27	0.800	5.150	0.1940	MS17985C308
33610.A012	1.815	1.27	0.800	5.150	0.1940	MS17985C312



Aviation Pip-Pin - Standard T-Handle

single acting - quick release pins - **according to**

Ball Lock Pins & Quick Release



Order No.	Ø f max.	g ₁	h ₁	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33610.A013	1.815	1.27	0.800	5.150	0.1940	MS17985C313
33610.A014	1.815	1.27	0.800	5.150	0.1940	MS17985C314
33610.A026	1.815	1.27	0.800	5.150	0.1940	MS17985C326
33610.B005	1.815	1.27	0.800	9.200	0.2540	MS17985C405
33610.B009	1.815	1.27	0.800	9.200	0.2540	MS17985C409
33610.B011	1.815	1.27	0.800	9.200	0.2540	MS17985C411
33610.B012	1.815	1.27	0.800	9.200	0.2540	MS17985C412
33610.B013	1.815	1.27	0.800	9.200	0.2540	MS17985C413
33610.B015	1.815	1.27	0.800	9.200	0.2540	MS17985C415
33610.B016	1.815	1.27	0.800	9.200	0.2540	MS17985C416
33610.B021	1.815	1.27	0.800	9.200	0.2540	MS17985C421
33610.B026	1.815	1.27	0.800	9.200	0.2540	MS17985C426
33610.B028	1.815	1.27	0.800	9.200	0.2540	MS17985C428
33610.B040	1.815	1.27	0.800	9.200	0.2540	MS17985C440
33610.C003	1.815	1.27	0.800	14.400	0.3165	MS17985C503
33610.C006	1.815	1.27	0.800	14.400	0.3165	MS17985C506
33610.C010	1.815	1.27	0.800	14.400	0.3165	MS17985C510
33610.C013	1.815	1.27	0.800	14.400	0.3165	MS17985C513
33610.C015	1.815	1.27	0.800	14.400	0.3165	MS17985C515
33610.C016	1.815	1.27	0.800	14.400	0.3165	MS17985C516
33610.C018	1.815	1.27	0.800	14.400	0.3165	MS17985C518
33610.C020	1.815	1.27	0.800	14.400	0.3165	MS17985C520
33610.C023	1.815	1.27	0.800	14.400	0.3165	MS17985C523
33610.C029	1.815	1.27	0.800	14.400	0.3165	MS17985C529
33610.C030	1.815	1.27	0.800	14.400	0.3165	MS17985C530
33610.C033	1.815	1.27	0.800	14.400	0.3165	MS17985C533
33610.C040	1.815	1.27	0.800	14.400	0.3165	MS17985C540
33610.C050	1.815	1.27	0.800	14.400	0.3165	MS17985C550
33610.C064	1.815	1.27	0.800	14.400	0.3165	MS17985C564
33610.C070	1.815	1.27	0.800	14.400	0.3165	MS17985C570
33610.D005	2.065	1.45	0.850	20.700	0.3790	MS17985C605
33610.D010	2.065	1.45	0.850	20.700	0.3790	MS17985C610
33610.D012	2.065	1.45	0.850	20.700	0.3790	MS17985C612
33610.D015	2.065	1.45	0.850	20.700	0.3790	MS17985C615
33610.D016	2.065	1.45	0.850	20.700	0.3790	MS17985C616
33610.D020	2.065	1.45	0.850	20.700	0.3790	MS17985C620
33610.D024	2.065	1.45	0.850	20.700	0.3790	MS17985C624
33610.D025	2.065	1.45	0.850	20.700	0.3790	MS17985C625
33610.D026	2.065	1.45	0.850	20.700	0.3790	MS17985C626
33610.D028	2.065	1.45	0.850	20.700	0.3790	MS17985C628
33610.D031	2.065	1.45	0.850	20.700	0.3790	MS17985C631
33610.D032	2.065	1.45	0.850	20.700	0.3790	MS17985C632
33610.D035	2.065	1.45	0.850	20.700	0.3790	MS17985C635
33610.D040	2.065	1.45	0.850	20.700	0.3790	MS17985C640
33610.D045	2.065	1.45	0.850	20.700	0.3790	MS17985C645
33610.E012	2.065	1.47	0.850	28.500	0.4425	MS17985C712
33610.E018	2.065	1.47	0.850	28.500	0.4425	MS17985C718
33610.E023	2.065	1.47	0.850	28.500	0.4425	MS17985C723
33610.E024	2.065	1.47	0.850	28.500	0.4425	MS17985C724
33610.E026	2.065	1.47	0.850	28.500	0.4425	MS17985C726
33610.E029	2.065	1.47	0.850	28.500	0.4425	MS17985C729
33610.E040	2.065	1.47	0.850	28.500	0.4425	MS17985C740
33610.E042	2.065	1.47	0.850	28.500	0.4425	MS17985C742
33610.E055	2.065	1.47	0.850	28.500	0.4425	MS17985C755
33610.E072	2.345	1.60	0.850	36.900	0.5050	MS17985C772
33610.F010	2.345	1.60	0.885	36.900	0.5050	MS17985C810
33610.F012	2.345	1.60	0.885	36.900	0.5050	MS17985C812
33610.F014	2.345	1.60	0.885	36.900	0.5050	MS17985C814
33610.F015	2.345	1.60	0.885	36.900	0.5050	MS17985C815
33610.F019	2.345	1.60	0.885	36.900	0.5050	MS17985C819
33610.F020	2.345	1.60	0.885	36.900	0.5050	MS17985C820
33610.F024	2.345	1.60	0.885	36.900	0.5050	MS17985C824
33610.F029	2.345	1.60	0.885	36.900	0.5050	MS17985C829
33610.F031	2.345	1.60	0.885	36.900	0.5050	MS17985C831
33610.F036	2.345	1.60	0.885	36.900	0.5050	MS17985C836
33610.F037	2.345	1.60	0.885	36.900	0.5050	MS17985C837
33610.F040	2.345	1.60	0.885	36.900	0.5050	MS17985C840

BALL LOCK PINS & QUICK RELEASE PINS

Ball Lock Pins & Quick Release

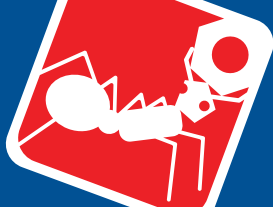


Aviation Pip-Pin - Standard T-Handle single acting - quick release pins - according to



Order No.	Ø f max.	g ₁	h ₁	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33610.F047	2.345	1.60	0.885	36.900	0.5050	MS17985C847
33610.F048	2.345	1.60	0.885	36.900	0.5050	MS17985C848
33610.F064	2.345	1.60	0.885	36.900	0.5050	MS17985C864
33610.G017	2.345	1.60	0.885	46.700	0.5675	MS17985C917
33610.G032	2.345	1.60	0.885	46.700	0.5675	MS17985C932
33610.G036	2.345	1.60	0.885	46.700	0.5675	MS17985C936
33610.G040	2.345	1.60	0.885	46.700	0.5675	MS17985C940
33610.G061	2.345	1.60	0.885	46.700	0.5675	MS17985C961

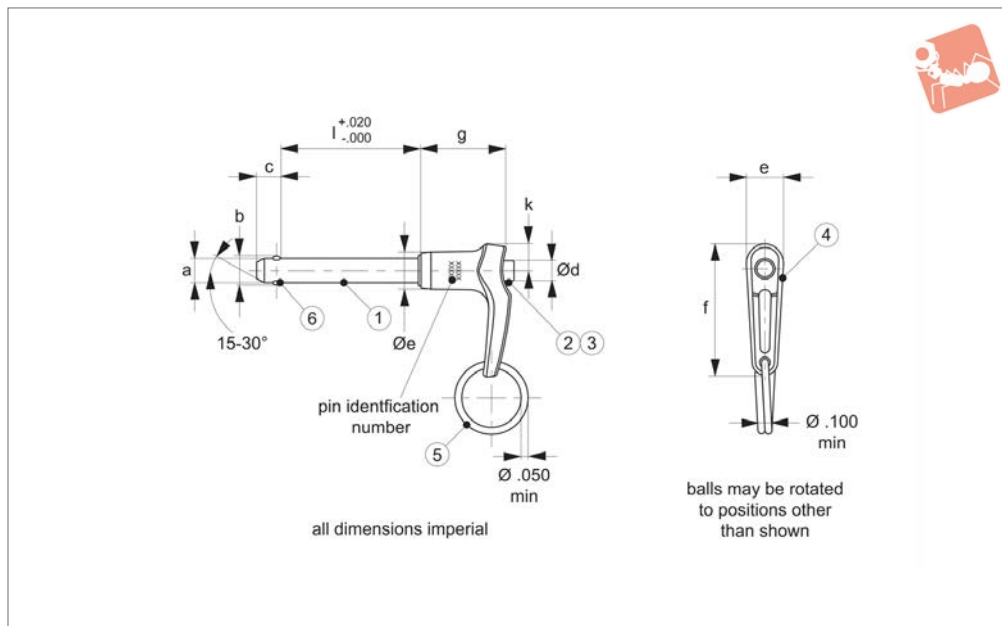
BALL LOCK PINS & QUICK RELEASE PINS



Aviation Pip-Pin, Standard LA Handle

single acting, quick release pins - according to

Ball Lock Pins & Quick Release



33620

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shank (part 1) & spindle (part 2):

CRES 17-4PH (AMS 5643), heat treated per MIL-H-6875, condition H900, min. 40 HRC, passivated per AMS2700.

Spring (part 3, not shown):

CRES 302 (ASTM-A-313), heat treated per MIL-H-6875, passivated per AMS2700.

Handle (part 4):

A380 (QQ-A-591), anodized (black) per MIL-A-8625.

Attaching ring (part 5):

CRES 302 (ASTM-A-313), passivated per AMS2700.

Ball (locking element, part 6):

CRES CL440C (AMS5630), heat treated per MIL-H-6875, passivated per AMS2700.

Technical Notes

Wixroyd Aviation Pip-pins manufactured to Aviation Norm NASM 17986 (former norm: MS 17986) and tested to NAS 1332.

Manufacture certified & assessed to EN9100D by EASE (European Aerospace Supplier Evaluation).

Temp. range -22°F to 302°F

Pressing = unlocking.

Releasing = locking.

Pip-pins are used for frequently repeated operations such as quick fastening, locking, adjusting, changing and securing. All dimensions shown are imperial.

Tips

We can manufacture specials (both metric & imperial) to your drawing, and are certified to produce to NASM standards.

Wixroyd Aviation Pip-Pins can be produced within the following dimensions:

+ diameter: from 3/16" to 1"

+ grip length: from 0.3" to 9.9"

Quick production time on small batches.

Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33620.A005	3/16	0.5	,594	,460	,565	0.500	23
33620.A008	3/16	0.8	,594	,460	,565	0.500	26
33620.A010	3/16	1.0	,594	,460	,565	0.500	26
33620.A013	3/16	1.3	,594	,460	,565	0.500	28
33620.A014	3/16	1.4	,594	,460	,565	0.500	28
33620.A017	3/16	1.7	,594	,460	,565	0.500	27
33620.B012	1/4	1.2	,594	,460	,565	0.500	32
33620.B015	1/4	1.5	,594	,460	,565	0.500	33
33620.B017	1/4	1.7	,594	,460	,565	0.500	34
33620.B016	1/4	1.6	,594	,460	,565	0.500	33
33620.B021	1/4	2.1	,594	,460	,565	0.500	36
33620.C004	5/16	0.4	,594	,460	,565	0.500	29
33620.C006	5/16	0.6	,594	,460	,565	0.500	30
33620.C010	5/16	1.0	,594	,460	,565	0.500	34
33620.C013	5/16	1.3	,594	,460	,565	0.500	37
33620.C016	5/16	1.6	,594	,460	,565	0.500	40
33620.C018	5/16	1.8	,594	,460	,565	0.500	43
33620.C020	5/16	2.0	,594	,460	,565	0.500	41
33620.C023	5/16	2.3	,594	,460	,565	0.500	46
33620.C029	5/16	2.9	,594	,460	,565	0.500	54
33620.C030	5/16	3.0	,594	,460	,565	0.500	53

Ball Lock Pins & Quick Release

Aviation Pip-Pin, Standard LA Handle

single acting, quick release pins - according to



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33620.C033	5/16	3.3	,594	,460	,565	0.500	57
33620.C036	5/16	3.6	,594	,460	,565	0.500	60
33620.C040	5/16	4.0	,594	,460	,565	0.500	64
33620.D010	3/8	1.0	,594	,460	,565	0.625	49
33620.D015	3/8	1.5	,594	,460	,565	0.625	59
33620.D020	3/8	2.0	,594	,460	,565	0.625	65
33620.D024	3/8	2.4	,594	,460	,565	0.625	71
33620.D026	3/8	2.6	,594	,460	,565	0.625	73
33620.D030	3/8	3.0	,594	,460	,565	0.625	72
33620.D060	3/8	6.0	,594	,460	,565	0.625	122
33620.E012	7/16	1.2	,594	,460	,565	0.625	61
33620.E035	7/16	3.5	,594	,460	,565	0.625	-
33620.E040	7/16	4.0	,594	,460	,565	0.625	115
33620.E055	7/16	5.5	,594	,460	,565	0.625	146
33620.F010	1/2	1.0	,594	,460	,565	0.800	83
33620.F015	1/2	1.5	,594	,460	,565	0.800	95
33620.F019	1/2	1.9	,594	,460	,565	0.800	103
33620.F034	1/2	3.4	,594	,460	,565	0.800	143
33620.F042	1/2	4.2	,594	,460	,565	0.800	160
33620.F045	1/2	4.5	,594	,460	,565	0.800	172
33620.G017	9/16	1.7	,594	,460	,565	0.800	116
33620.G025	9/16	2.5	,594	,460	,565	0.800	140
33620.G040	9/16	4.0	,594	,460	,565	0.800	189
33620.G050	9/16	5.0	,594	,460	,565	0.800	-
33620.G060	9/16	6.0	,594	,460	,565	0.800	249
33620.G075	9/16	7.5	,594	,460	,565	0.800	298

Order No.	Ø f max.	g max.	h min.	k max.	Shearing resistance, double	Location hole dia. max.	MS Part No.
					lb min.		
33620.A005	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C305
33620.A008	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C308
33620.A010	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C310
33620.A013	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C313
33620.A014	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C314
33620.A017	1.80	1.27	0.76	0.34	5.150	0.1940	MS17986C317
33620.B012	1.80	1.27	0.76	0.34	9.200	0.2540	MS17986C412
33620.B015	1.80	1.27	0.76	0.34	9.200	0.2540	MS17986C415
33620.B017	1.80	1.27	0.76	0.34	9.200	0.2540	MS17986C417
33620.B016	1.80	1.27	0.76	0.34	9.200	0.2540	MS17986C416
33620.B021	1.80	1.27	0.76	0.34	9.200	0.2540	MS17986C421
33620.C004	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C504
33620.C006	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C506
33620.C010	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C510
33620.C013	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C513
33620.C016	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C516
33620.C018	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C518
33620.C020	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C520
33620.C023	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C523
33620.C029	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C529
33620.C030	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C530
33620.C033	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C533
33620.C036	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C536
33620.C040	1.80	1.27	0.76	0.34	14400	0.3165	MS17986C540
33620.D010	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C610
33620.D015	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C615
33620.D020	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C620
33620.D024	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C624
33620.D026	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C626
33620.D030	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C630
33620.D060	2.03	1.45	0.85	0.39	20700	0.3790	MS17986C660
33620.E012	2.03	1.47	0.85	0.39	28500	0.4425	MS17986C712
33620.E035	2.03	1.47	0.85	0.39	28500	0.4425	MS17986C735
33620.E040	2.03	1.47	0.85	0.39	28500	0.4425	MS17986C740
33620.E055	2.03	1.47	0.85	0.39	28500	0.4425	MS17986C755
33620.F010	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C810
33620.F015	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C815
33620.F019	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C819



Aviation Pip-Pin, Standard LA Handle

single acting, quick release pins - according to

Ball Lock Pins & Quick Release

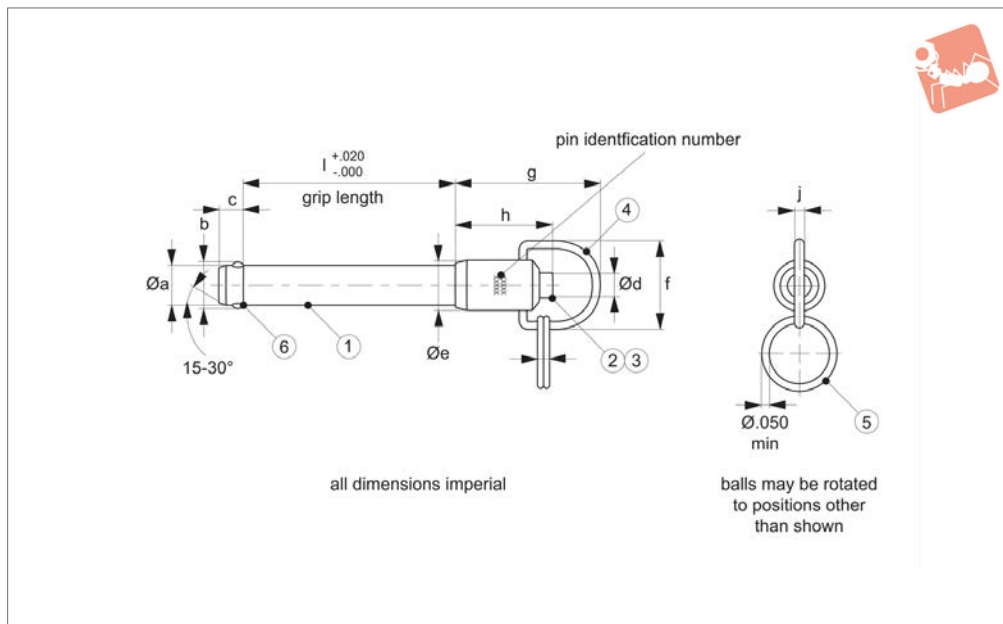


Order No.	Ø f max.	g max.	h min.	k max.	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33620.F034	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C834
33620.F042	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C842
33620.F045	2.36	1.60	0.85	0.50	36900	0.5050	MS17986C845
33620.G017	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C917
33620.G025	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C925
33620.G040	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C940
33620.G050	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C950
33620.G060	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C960
33620.G075	2.36	1.60	0.85	0.50	46700	0.5675	MS17986C975

BALL LOCK PINS & QUICK RELEASE PINS



33630



Material

Shank (part 1) & spindle (part 2):

CRES 17-4PH (AMS 5643), heat treated per MIL-H-6875, condition H900, min. 40 HRC, passivated per AMS2700.

Spring (part 3, not shown):

CRES 302 (ASTM-A-313), heat treated per MIL-H-6875, passivated per AMS2700.

Handle (part 4):

CRES 302 (ASTM-A-313), passivated per AMS2700.

Attaching ring (part 5):

CRES 302 (ASTM-A-313), passivated per AMS2700.

Ball (locking element, part 6):

CRES CL440C (AMS5630), heat treated per MIL-H-6875, passivated per AMS2700.

Technical Notes

Wixroyd Aviation Pip-pins manufactured to Aviation Norm NASM 17987 (former norm: MS 17987) and tested to NAS 1332.

Manufacture certified & assessed to EN9100D by EASE (European Aerospace Supplier Evaluation).

Temp. range -22°F to 302°F

Pressing = unlocking.

Releasing = locking.

Pip-pins are used for frequently repeated operations such as quick fastening, locking, adjusting, changing and securing. All dimensions shown are imperial.

Tips

We can manufacture specials (both metric & imperial) to your drawing, and are certified to produce to NASM standards.

Wixroyd Aviation Pip-Pins can be produced within the following dimensions:

+ diameter: from 3/16" to 1"

+ grip length: from 0.3" to 9.9"

Quick production time on small batches.

Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33630.A008	3/16	0.8	,594	,460	,565	0.53	24
33630.A009	3/16	0.9	,594	,460	,565	0.53	24
33630.A010	3/16	1.0	,594	,460	,565	0.53	24
33630.A011	3/16	1.1	,594	,460	,565	0.53	25
33630.A012	3/16	1.2	,594	,460	,565	0.53	25
33630.A015	3/16	1.5	,594	,460	,565	0.53	26
33630.A016	3/16	1.6	,594	,460	,565	0.53	26
33630.A017	3/16	1.7	,594	,460	,565	0.53	27
33630.A025	3/16	2.5	,594	,460	,565	0.53	30
33630.A031	3/16	3.1	,594	,460	,565	0.53	33
33630.A043	5/16	4.3	,594	,460	,565	0.53	-
33630.B004	1/4	0.4	,594	,460	,565	0.53	24
33630.B005	1/4	0.5	,594	,460	,565	0.53	24
33630.B006	1/4	0.6	,594	,460	,565	0.53	25
33630.B007	1/4	0.7	,594	,460	,565	0.53	26
33630.B008	1/4	0.8	,594	,460	,565	0.53	27
33630.B009	1/4	0.9	,594	,460	,565	0.53	27
33630.B010	1/4	1.0	,594	,460	,565	0.53	27
33630.B011	1/4	1.1	,594	,460	,565	0.53	28
33630.B012	1/4	1.2	,594	,460	,565	0.53	29
33630.B014	1/4	1.4	,594	,460	,565	0.53	30



Aviation Pip-Pin, Standard R Handle

single acting, quick release pins - according to

Ball Lock Pins & Quick Release



Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33630.B015	1/4	1.5	,594	,460	,565	0.53	31
33630.B017	1/4	1.7	,594	,460	,565	0.53	32
33630.B018	1/4	1.8	,594	,460	,565	0.53	32
33630.B019	1/4	1.9	,594	,460	,565	0.53	33
33630.B020	1/4	2.0	,594	,460	,565	0.53	34
33630.B021	1/4	2.1	,594	,460	,565	0.53	34
33630.B022	1/4	2.2	,594	,460	,565	0.53	36
33630.B025	1/4	2.5	,594	,460	,565	0.53	37
33630.B029	1/4	2.9	,594	,460	,565	0.53	40
33630.B030	1/4	3.0	,594	,460	,565	0.53	39
33630.B040	1/4	4.0	,594	,460	,565	0.53	47
33630.B047	1/4	4.7	,594	,460	,565	0.53	50
33630.C006	5/16	0.6	,594	,460	,565	0.59	30
33630.C007	5/16	0.7	,594	,460	,565	0.59	31
33630.C008	5/16	0.8	,594	,460	,565	0.59	33
33630.C009	5/16	0.9	,594	,460	,565	0.59	34
33630.C011	5/16	1.1	,594	,460	,565	0.59	35
33630.C012	5/16	1.2	,594	,460	,565	0.59	36
33630.C013	5/16	1.3	,594	,460	,565	0.59	38
33630.C015	5/16	1.5	,594	,460	,565	0.59	39
33630.C016	5/16	1.6	,594	,460	,565	0.59	39
33630.C018	5/16	1.8	,594	,460	,565	0.59	42
33630.C019	5/16	1.9	,594	,460	,565	0.59	43
33630.C020	5/16	2.0	,594	,460	,565	0.59	43
33630.C023	5/16	2.3	,594	,460	,565	0.59	46
33630.C026	5/16	2.6	,594	,460	,565	0.59	48
33630.C033	5/16	3.3	,594	,460	,565	0.59	56
33630.C035	5/16	3.5	,594	,460	,565	0.59	59
33630.C060	5/16	6.0	,594	,460	,565	0.59	85
33630.C067	5/16	6.7	,594	,460	,565	0.59	92
33630.D008	3/8	0.8	,594	,460	,565	0.65	49
33630.D009	3/8	0.9	,594	,460	,565	0.65	50
33630.D010	3/8	1.0	,594	,460	,565	0.65	52
33630.D011	3/8	1.1	,594	,460	,565	0.65	53
33630.D012	3/8	1.2	,594	,460	,565	0.65	54
33630.D013	3/8	1.3	,594	,460	,565	0.65	55
33630.D014	3/8	1.4	,594	,460	,565	0.65	55
33630.D015	3/8	1.5	,594	,460	,565	0.65	58
33630.D016	3/8	1.6	,594	,460	,565	0.65	61
33630.D018	3/8	1.8	,594	,460	,565	0.65	62
33630.D026	3/8	2.6	,594	,460	,565	0.65	73
33630.D030	3/8	3.0	,594	,460	,565	0.65	80
33630.D031	3/8	3.1	,594	,460	,565	0.65	82
33630.D043	3/8	4.3	,594	,460	,565	0.65	97
33630.E008	7/16	0.8	,594	,460	,565	0.71	56
33630.E012	7/16	1.2	,594	,460	,565	0.71	65
33630.E014	7/16	1.4	,594	,460	,565	0.71	68
33630.E015	7/16	1.5	,594	,460	,565	0.71	-
33630.E019	7/16	1.9	,594	,460	,565	0.71	77
33630.E020	7/16	2.0	,594	,460	,565	0.71	81
33630.E022	7/16	2.2	,594	,460	,565	0.71	81
33630.E024	7/16	2.4	,594	,460	,565	0.71	88
33630.E026	7/16	2.6	,594	,460	,565	0.71	88
33630.F011	1/2	1.1	,594	,460	,565	0.80	88
33630.F012	1/2	1.2	,594	,460	,565	0.80	91
33630.F013	1/2	1.3	,594	,460	,565	0.80	93
33630.F014	1/2	1.4	,594	,460	,565	0.80	96
33630.F015	1/2	1.5	,594	,460	,565	0.80	98
33630.F020	1/2	2.0	,594	,460	,565	0.80	109
33630.F023	1/2	2.3	,594	,460	,565	0.80	117
33630.F033	1/2	3.3	,594	,460	,565	0.80	141
33630.F039	1/2	3.9	,594	,460	,565	0.80	160
33630.F045	1/2	4.5	,594	,460	,565	0.80	160
33630.F050	1/2	5.0	,594	,460	,565	0.80	187
33630.F053	1/2	5.3	,594	,460	,565	0.80	186
33630.F065	1/2	6.5	,594	,460	,565	0.80	215
33630.F080	1/2	8.0	,594	,460	,565	0.80	260
33630.G013	9/16	1.3	,594	,460	,565	0.84	120



Order No.	Dia. Ø nom.	Grip l	b	c	Ø d max.	Ø e max.	Weight g
33630.G025	9/16	2.5	,594	,460	,565	0.84	150
33630.G030	9/16	3.0	,594	,460	,565	0.84	166
33630.G037	9/16	3.7	,594	,460	,565	0.84	183
33630.G055	9/16	5.5	,594	,460	,565	0.84	245

Order No.	Ø f max.	g max.	h min.	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33630.A008	1.45	0.73	0.08	5.150	0.1940	MS17987C308
33630.A009	1.45	0.73	0.08	5.150	0.1940	MS17987C309
33630.A010	1.45	0.73	0.08	5.150	0.1940	MS17987C310
33630.A011	1.45	0.73	0.08	5.150	0.1940	MS17987C311
33630.A012	1.45	0.73	0.08	5.150	0.1940	MS17987C312
33630.A015	1.45	0.73	0.08	5.150	0.1940	MS17987C315
33630.A016	1.45	0.73	0.08	5.150	0.1940	MS17987C316
33630.A017	1.45	0.73	0.08	5.150	0.1940	MS17987C317
33630.A025	1.45	0.73	0.08	5.150	0.1940	MS17987C325
33630.A031	1.45	0.73	0.08	5.150	0.1940	MS17987C331
33630.A043	1.45	0.73	0.08	5.150	0.1940	MS17987C343
33630.B004	1.50	0.78	0.08	9.200	0.2540	MS17987C404
33630.B005	1.50	0.78	0.08	9.200	0.2540	MS17987C405
33630.B006	1.50	0.78	0.08	9.200	0.2540	MS17987C406
33630.B007	1.50	0.78	0.08	9.200	0.2540	MS17987C407
33630.B008	1.50	0.78	0.08	9.200	0.2540	MS17987C408
33630.B009	1.50	0.78	0.08	9.200	0.2540	MS17987C409
33630.B010	1.50	0.78	0.08	9.200	0.2540	MS17987C410
33630.B011	1.50	0.78	0.08	9.200	0.2540	MS17987C411
33630.B012	1.50	0.78	0.08	9.200	0.2540	MS17987C412
33630.B014	1.50	0.78	0.08	9.200	0.2540	MS17987C414
33630.B015	1.50	0.78	0.08	9.200	0.2540	MS17987C415
33630.B017	1.50	0.78	0.08	9.200	0.2540	MS17987C417
33630.B018	1.50	0.78	0.08	9.200	0.2540	MS17987C418
33630.B019	1.50	0.78	0.08	9.200	0.2540	MS17987C419
33630.B020	1.50	0.78	0.08	9.200	0.2540	MS17987C420
33630.B021	1.50	0.78	0.08	9.200	0.2540	MS17987C421
33630.B022	1.50	0.78	0.08	9.200	0.2540	MS17987C422
33630.B025	1.50	0.78	0.08	9.200	0.2540	MS17987C425
33630.B029	1.50	0.78	0.08	9.200	0.2540	MS17987C429
33630.B030	1.50	0.78	0.08	9.200	0.2540	MS17987C430
33630.B040	1.50	0.78	0.08	9.200	0.2540	MS17987C440
33630.B047	1.50	0.78	0.08	9.200	0.2540	MS17987C447
33630.C006	1.65	0.83	0.08	14400	0.3165	MS17987C506
33630.C007	1.65	0.83	0.08	14400	0.3165	MS17987C507
33630.C008	1.65	0.83	0.08	14400	0.3165	MS17987C508
33630.C009	1.65	0.83	0.08	14400	0.3165	MS17987C509
33630.C011	1.65	0.83	0.08	14400	0.3165	MS17987C511
33630.C012	1.65	0.83	0.08	14400	0.3165	MS17987C512
33630.C013	1.65	0.83	0.08	14400	0.3165	MS17987C513
33630.C015	1.65	0.83	0.08	14400	0.3165	MS17987C515
33630.C016	1.65	0.83	0.08	14400	0.3165	MS17987C516
33630.C018	1.65	0.83	0.08	14400	0.3165	MS17987C518
33630.C019	1.65	0.83	0.08	14400	0.3165	MS17987C519
33630.C020	1.65	0.83	0.08	14400	0.3165	MS17987C520
33630.C023	1.65	0.83	0.08	14400	0.3165	MS17987C523
33630.C026	1.65	0.83	0.08	14400	0.3165	MS17987C526
33630.C033	1.65	0.83	0.08	14400	0.3165	MS17987C533
33630.C035	1.65	0.83	0.08	14400	0.3165	MS17987C535
33630.C060	1.65	0.83	0.08	14400	0.3165	MS17987C560
33630.C067	1.65	0.83	0.08	14400	0.3165	MS17987C567
33630.D008	1.65	0.94	0.08	20700	0.3790	MS17987C608
33630.D009	1.65	0.94	0.08	20700	0.3790	MS17987C609
33630.D010	1.65	0.94	0.08	20700	0.3790	MS17987C610
33630.D011	1.65	0.94	0.08	20700	0.3790	MS17987C611
33630.D012	1.65	0.94	0.08	20700	0.3790	MS17987C612
33630.D013	1.65	0.94	0.08	20700	0.3790	MS17987C613
33630.D014	1.65	0.94	0.08	20700	0.3790	MS17987C614
33630.D015	1.65	0.94	0.08	20700	0.3790	MS17987C615
33630.D016	1.65	0.94	0.08	20700	0.3790	MS17987C616



Aviation Pip-Pin, Standard R Handle

single acting, quick release pins - according to

Ball Lock Pins & Quick Release



Order No.	Ø f max.	g max.	h min.	Shearing resistance, double lb min.	Location hole dia. max.	MS Part No.
33630.D018	1.65	0.94	0.08	20700	0.3790	MS17987C618
33630.D026	1.65	0.94	0.08	20700	0.3790	MS17987C626
33630.D030	1.65	0.94	0.08	20700	0.3790	MS17987C630
33630.D031	1.65	0.94	0.08	20700	0.3790	MS17987C631
33630.D043	1.65	0.94	0.08	20700	0.3790	MS17987C643
33630.E008	1.85	0.98	0.08	28500	0.4425	MS17987C708
33630.E012	1.85	0.98	0.08	28500	0.4425	MS17987C712
33630.E014	1.85	0.98	0.08	28500	0.4425	MS17987C714
33630.E015	1.85	0.98	0.08	28500	0.4425	MS17987C715
33630.E019	1.85	0.98	0.08	28500	0.4425	MS17987C719
33630.E020	1.85	0.98	0.08	28500	0.4425	MS17987C720
33630.E022	1.85	0.98	0.08	28500	0.4425	MS17987C722
33630.E024	1.85	0.98	0.08	28500	0.4425	MS17987C724
33630.E026	1.85	0.98	0.08	28500	0.4425	MS17987C726
33630.F011	1.85	1.14	0.08	36900	0.5050	MS17987C811
33630.F012	1.85	1.14	0.08	36900	0.5050	MS17987C812
33630.F013	1.85	1.14	0.08	36900	0.5050	MS17987C813
33630.F014	1.85	1.14	0.08	36900	0.5050	MS17987C814
33630.F015	1.85	1.14	0.08	36900	0.5050	MS17987C815
33630.F020	1.85	1.14	0.08	36900	0.5050	MS17987C820
33630.F023	1.85	1.14	0.08	36900	0.5050	MS17987C823
33630.F033	1.85	1.14	0.08	36900	0.5050	MS17987C833
33630.F039	1.85	1.14	0.08	33900	0.5050	MS17987C839
33630.F045	1.85	1.14	0.08	36900	0.5050	MS17987C845
33630.F050	1.85	1.14	0.08	36900	0.5050	MS17987C850
33630.F053	1.85	1.14	0.08	36900	0.5050	MS17987C853
33630.F065	1.85	1.14	0.08	36900	0.5050	MS17987C865
33630.F080	1.85	1.14	0.08	36900	0.5050	MS17987C880
33630.G013	2.03	1.14	0.08	46700	0.5675	MS17987C913
33630.G025	2.03	1.14	0.08	46700	0.5675	MS17987C925
33630.G030	2.03	1.14	0.08	46700	0.5675	MS17987C930
33630.G037	2.03	1.14	0.08	46700	0.5675	MS17987C937
33630.G055	2.03	1.14	0.08	46700	0.5675	MS17987C955

BALL LOCK PINS & QUICK RELEASE PINS



Wixroyd Flight Pin Range - Certified to Aviation Standards

With many years experience producing an extensive range of standard Pip-pins (also know as quick release pins or ball lock pins) we are now able to offer of Aviation Standard approved Pip-pins, manufactured according to NASM norms (formerly MS norms) and tested to NAS 1332 standards.

Expanding Range



33600 - Single acting Pip-pin, standard B handle

33610 - Single acting Pip-pin, standard TA handle

33620 - Single acting Pip-pin, standard LA handle

33630 - Single acting Pip-pin, standard R handle

Wide Range of Aviation Applications

- Interior panel attachment
- Baby bassinet pin
- Curtain track attachment
- Curtain track support pins
- TV monitor attachment
- Folding table assembly (e.g. First Class Cabins)

Aviation Approved

The Wixroyd Aviation Pip-pin range is produced according to NASM norms, and tested to NAS standards. Our manufacturing processes have been assessed and certified by EASE (European Aerospace Supplier Evaluation) to EN9100D.

All our Aviation Pip-pins are individually marked to enable identification of their production lot number.

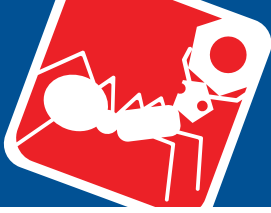
In-Stock and Available?

Yes! The product sizes shown on the following pages, with a cross reference to the NASM part code for ease of identification, are all available from stock for delivery within 5 days.

Special Designs

We have extensive knowledge and experience in designing, producing and assembling bespoke design pip-pins and ball lock pins in both imperial and metric sizes. We produce under a fully certified manufacturing process, both to our own high standard or to meet Aviation standards. Please contact our technical team to discuss your requirements (tel. 0845 26 66 577) or email a drawing to info@wixroyd.com

For our full range visit:
wixroyd.com



Wixroyd Flight Pin Range - Certified to Aviation Standards

Your normal experience may be that imperial Aviation Standard Pip-pins are hard to obtain; price prohibitive, and delivery times far too long. The range of Wixroyd Aviation Pip-pins, in a variety of imperial dimensions, has been designed to solve these problems - we hold a wide, and ever increasing range of sizes ex-stock for immediate delivery - no more 6-8 week lead time!

With many years experience producing an extensive range of standard Pip-pins (also know as quick release pins or ball lock pins) we are now able to offer of Aviation Standard approved Pip-pins, manufactured according to NASM norms (formerly MS norms) and tested to NAS 1332 standards.

- Interior panel attachment
- Baby bassinet pin
- Curtain track attachment
- Curtain track support pins
- TV monitor attachment
- Folding table assembly (e.g. First Class Cabins)

Wide Range of Aviation Applications

Yes! The product sizes shown on the following pages, with a cross reference to the NASM part code for ease of identification, are all available from stock for delivery within 5 days.

In-stock and Available?

Our Aviation Pip-pins are manufactured to NASM norms, and we follow the material specification of these norms, which means you can feel safe in purchasing a part which is to specification - both in materials and strength.

Materials



The new Wixroyd Aviation Pip-pin range is produced according to NASM norms, and tested to NAS standards. Our manufacturing processes have been assessed and certified by EASE (European Aerospace Supplier Evaluation) to EN9100D.

Aviation Approved

All our Aviation Pip-pins are individually marked to enable identification of their production lot number. Marking allows identification of:

Identifying Production Batches

- NASM Standard Number
- Material Grade
- Pin/shank diameter
- Grip length
- Company identification
- Production lot number.

We have extensive knowledge and experience in designing, producing and assembling bespoke design pip-pins and ball lock pins in both imperial and metric sizes. We produce under a fully certified manufacturing process, both to our own high standard or to meet Aviation standards.

Special Designs

We can customise to meet your needs:

- Changes in grip/handle type
- Material variations
- Changes of functional dimensions; pin diameter, pin grip length

Please contact our technical team to discuss your requirements (tel. 0845 26 66 577) or email a drawing to info@wixroyd.com

Expanding Range



Single acting Pip-pin, standard B handle

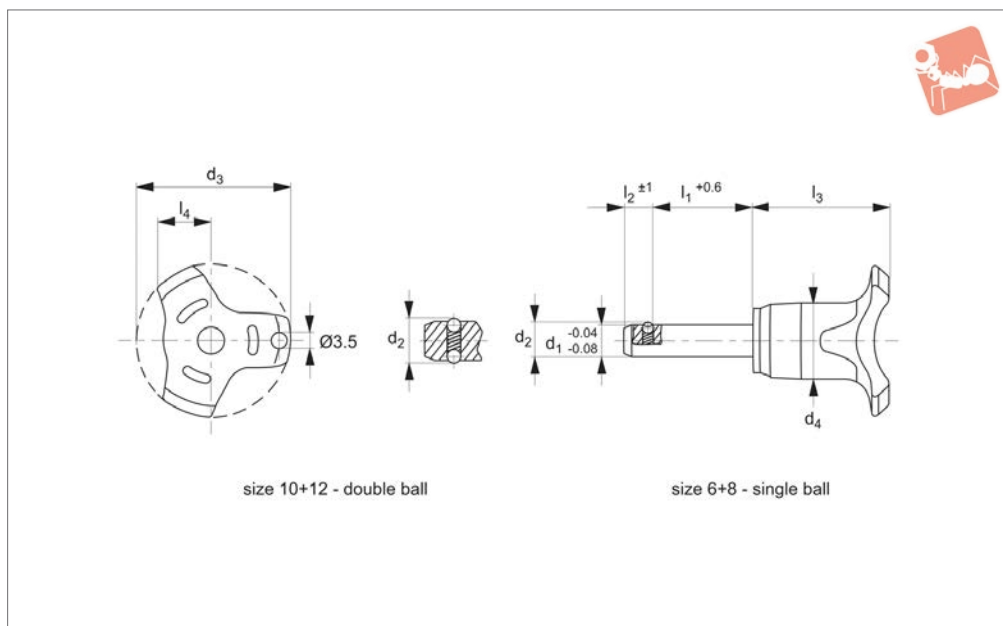
Single acting Pip-pin, standard TA handle

Single acting Pip-pin, standard LA handle

Single acting Pip-pin, standard R handle



33140



Material

Pin: stainless steel 1,4305 (AISI 303).
Handle: thermoplastic PA 6, grey.
Spring: stainless steel.

Technical Notes

Balls are simply spring loaded and do not

lock out. Resulting in pins being easier to pull out.

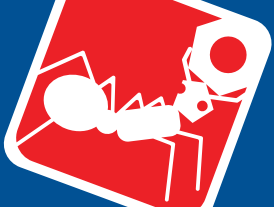
Temperature range: -30°C to +80°C.
For a quick fastening, locking, adjusting, changing and securing. Quickly and easily unlockable for frequently repeated

connections.

Tips

For lanyards & retaining cables see part no. 33250.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	Location hole tol. H11	Shearing resistance, double kN min.	Tensile force non lubricated N max.	Weight g
33140.W0062	6	10	6.5	38	17.3	5.0	27.0	10.8	6	22	8	14
33140.W0064	6	15	6.5	38	17.3	5.0	27.0	10.8	6	22	8	16
33140.W0066	6	20	6.5	38	17.3	5.0	27.0	10.8	6	22	8	16
33140.W0068	6	25	6.5	38	17.3	5.0	27.0	10.8	6	22	8	17
33140.W0070	6	30	6.5	38	17.3	5.0	27.0	10.8	6	22	8	18
33140.W0075	6	50	6.5	38	17.3	5.0	27.0	10.8	6	22	8	23
33140.W0084	8	15	8.7	38	17.3	6.3	28.6	10.8	8	40	15	21
33140.W0086	8	20	8.7	38	17.3	6.3	28.6	10.8	8	40	15	22
33140.W0088	8	25	8.7	38	17.3	6.3	28.6	10.8	8	40	15	25
33140.W0090	8	30	8.7	38	17.3	6.3	28.6	10.8	8	40	15	27
33140.W0095	8	50	8.7	38	17.3	6.3	28.6	10.8	8	40	15	33
33140.W0104	10	15	12.0	38	17.3	8.7	28.6	10.8	10	62	30	32
33140.W0106	10	20	12.0	38	17.3	8.7	28.6	10.8	10	62	30	35
33140.W0108	10	25	12.0	38	17.3	8.7	28.6	10.8	10	62	30	38
33140.W0110	10	30	12.0	38	17.3	8.7	28.6	10.8	10	62	30	39
33140.W0115	10	50	12.0	38	17.3	8.7	28.6	10.8	10	62	30	53
33140.W0122	12	20	14.5	38	17.3	9.5	28.6	10.8	12	90	32	43
33140.W0124	12	30	14.5	38	17.3	9.5	28.6	10.8	12	90	32	52
33140.W0126	12	40	14.5	38	17.3	9.5	28.6	10.8	12	90	32	61
33140.W0128	12	50	14.5	38	17.3	9.5	28.6	10.8	12	90	32	68



Socket Pins
non-locking

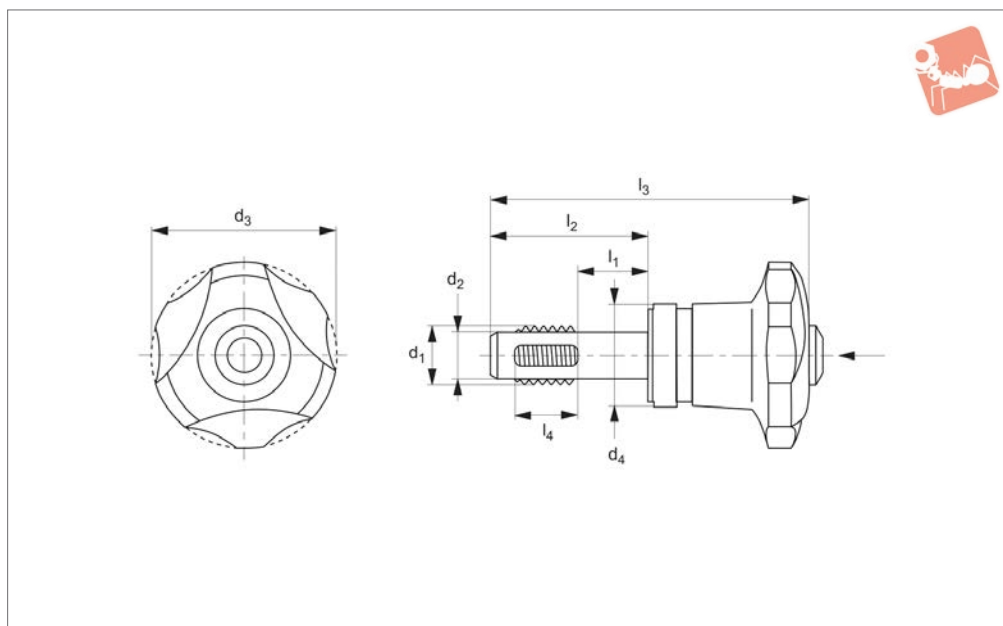
Ball Lock Pins &
Quick Release



BALL LOCK PINS & QUICK RELEASE PINS



33331



Material

Pin: Free cutting steel, manganese phosphated or stainless steel 1.4305 (AISI 303).

Handle: Thermoplastic PA 6, black similar to RAL 9005

Press button: Aluminium, orange, anodised.

Threaded element: stainless steel 1.4542

(AISI 630), precipitation-hardened.

Spring: stainless steel.

Technical Notes

Pressing = unlocking.

Releasing = locking.

To suit metric course threads. The threaded lock pin can be quickly inserted into a threaded hole, and further tightened

up to indicated max. torque reducing both assembly and disassembly times.

Tips

For suitable lanyards see part no. 33268. Lanyards can be used to prevent accidental loss of pin from application.

Order No.	Type	d ₁	l ₁	d ₂ -0.07	d ₃	d ₄	Weight g
33331.W0102	Steel	M 8	10	6.62	40	21.6	40
33331.W0104	Steel	M 8	20	6.62	40	21.6	42
33331.W0106	Steel	M 8	30	6.62	40	21.6	45
33331.W0202	Steel	M10	10	8.35	40	21.6	44
33331.W0204	Steel	M10	20	8.35	40	21.6	48
33331.W0206	Steel	M10	30	8.35	40	21.6	52
33331.W0303	Steel	M12	15	10.07	40	21.6	53
33331.W0306	Steel	M12	30	10.07	40	21.6	62
33331.W0310	Steel	M12	50	10.07	40	21.6	74
33331.W0503	Steel	M16	15	13.80	40	21.6	70
33331.W0506	Steel	M16	30	13.80	40	21.6	87
33331.W0510	Steel	M16	50	13.80	40	21.6	109
33331.W1102	Stainless Steel	M 8	10	6.62	40	21.6	40
33331.W1104	Stainless Steel	M 8	20	6.62	40	21.6	42
33331.W1106	Stainless Steel	M 8	30	6.62	40	21.6	45
33331.W1202	Stainless Steel	M10	10	8.35	40	21.6	44
33331.W1204	Stainless Steel	M10	20	8.35	40	21.6	48
33331.W1206	Stainless Steel	M10	30	8.35	40	21.6	52
33331.W1303	Stainless Steel	M12	15	10.07	40	21.6	53
33331.W1306	Stainless Steel	M12	30	10.07	40	21.6	62
33331.W1310	Stainless Steel	M12	50	10.07	40	21.6	74
33331.W1503	Stainless Steel	M16	15	13.80	40	21.6	70
33331.W1506	Stainless Steel	M16	30	13.80	40	21.6	87
33331.W1510	Stainless Steel	M16	50	13.80	40	21.6	109



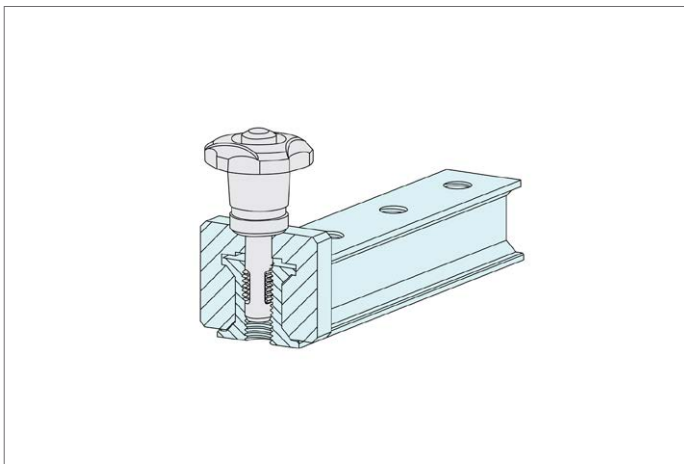
Threaded Lock Pins self-locking

Ball Lock Pins & Quick Release



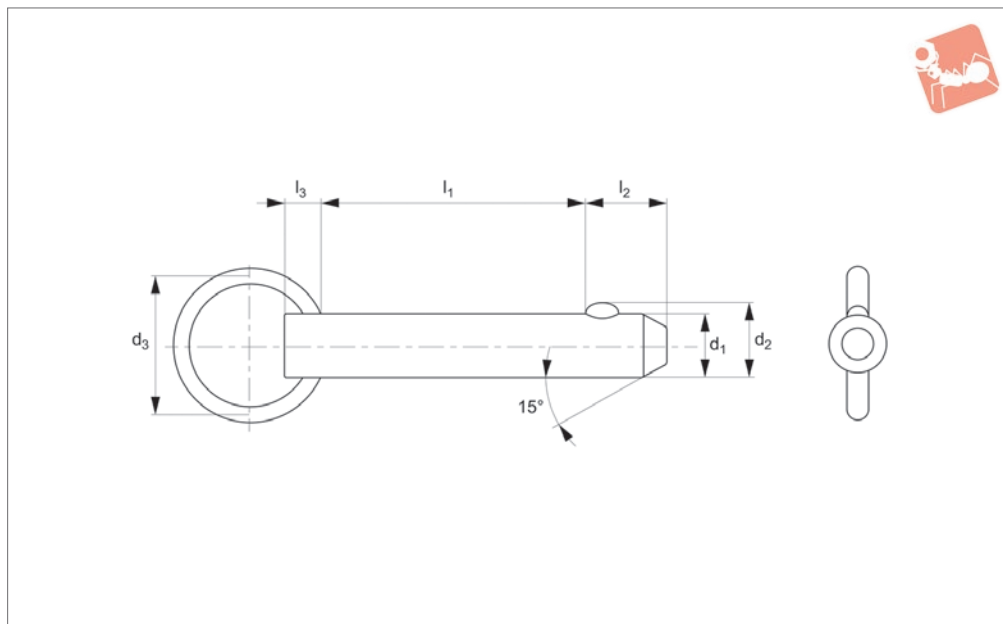
Order No.	l ₂	l ₃	l ₄	Locating thread	Temp. resistance °C min.	Temp. resistance °C max.	Torque to Nm max.	Shearing resistance two-shear kN min.
33331.W0102	23.8	58.4	8	M 8	-30	80	5	12.7
33331.W0104	33.8	68.4	8	M 8	-30	80	5	12.7
33331.W0106	43.8	78.4	8	M 8	-30	80	5	12.7
33331.W0202	26.0	60.6	10	M10	-30	80	5	20.6
33331.W0204	36.0	70.6	10	M10	-30	80	5	20.6
33331.W0206	46.0	80.6	10	M10	-30	80	5	20.6
33331.W0303	34.0	68.6	12	M12	-30	80	5	30.4
33331.W0306	49.0	83.6	12	M12	-30	80	5	30.4
33331.W0310	69.0	103.6	12	M12	-30	80	5	30.4
33331.W0503	34.0	68.6	12	M16	-30	80	5	62.9
33331.W0506	49.0	83.6	12	M16	-30	80	5	62.9
33331.W0510	69.0	103.6	12	M16	-30	80	5	62.9
33331.W1102	23.8	58.4	8	M 8	-30	80	5	16.7
33331.W1104	33.8	68.4	8	M 8	-30	80	5	16.7
33331.W1106	43.8	78.4	8	M 8	-30	80	5	16.7
33331.W1202	26.0	60.6	10	M10	-30	80	5	27.1
33331.W1204	36.0	70.6	10	M10	-30	80	5	27.1
33331.W1206	46.0	80.6	10	M10	-30	80	5	27.1
33331.W1303	34.0	68.6	12	M12	-30	80	5	40.0
33331.W1306	49.0	83.6	12	M12	-30	80	5	40.0
33331.W1310	69.0	103.6	12	M12	-30	80	5	40.0
33331.W1503	34.0	68.6	12	M16	-30	80	5	82.7
33331.W1506	49.0	83.6	12	M16	-30	80	5	82.7
33331.W1510	69.0	103.6	12	M16	-30	80	5	82.7

BALL LOCK PINS & QUICK RELEASE PINS





33010.1



Material

Shaft: Carbon steel (C1144), zinc plated.
Ball & spring: Stainless steel AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment. The solid body with direct spring loaded

ball ensures reliable operation. Can be used for locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins and as replacement for cotter pins where frequent removal is necessary. Hole sizes - commercial drills provide clear-

ance for our standard pins. Inch dimensions in brackets ().

Tips

Also available in stainless steel see part no. PP1202.

Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33010.W1183	4,76 (3/16")	7,62 (0,3")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1805	4,76 (3/16")	12,7 (0,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1810	4,76 (3/16")	25,4 (1")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1815	4,76 (3/16")	38,1 (1,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1820	4,76 (3/16")	50,8 (2")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1825	4,76 (3/16")	63,5 (2,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1830	4,76 (3/16")	76,2 (3")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1835	4,76 (3/16")	88,9 (3,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W1840	4,76 (3/16")	101,6 (4")	5.18	25.4	5.08	4.74	1,9 - 2,3	10.8
33010.W2505	6,35 (1/4")	12,7 (0,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2510	6,35 (1/4")	25,4 (1")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2515	6,35 (1/4")	38,1 (1,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2520	6,35 (1/4")	50,8 (2")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2525	6,35 (1/4")	63,5 (2,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2530	6,35 (1/4")	76,2 (3")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2535	6,35 (1/4")	88,9 (3,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W2540	6,35 (1/4")	101,6 (4")	7.26	25.4	7.92	5.58	2,27 - 2,73	19.3
33010.W3105	7,93 (5/16")	12,7 (0,5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3110	7,93 (5/16")	25,4 (1")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3115	7,93 (5/16")	38,1 (1,5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3120	7,93 (5/16")	50,8 (2")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3125	7,93 (5/16")	63,5 (2,5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3130	7,93 (5/16")	76,2 (3")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3135	7,93 (5/16")	88,9 (3,5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3140	7,93 (5/16")	101,6 (4")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3145	7,93 (5/16")	114,3 (4,5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3150	7,93 (5/16")	127,0 (5")	9.09	25.4	9.52	6.35	2,72 - 2,73	30.0
33010.W3705	9,52 (3/8")	12,7 (0,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3710	9,52 (3/8")	25,4 (1")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3



Detent Pin Steel

Ball Lock Pins & Quick Release

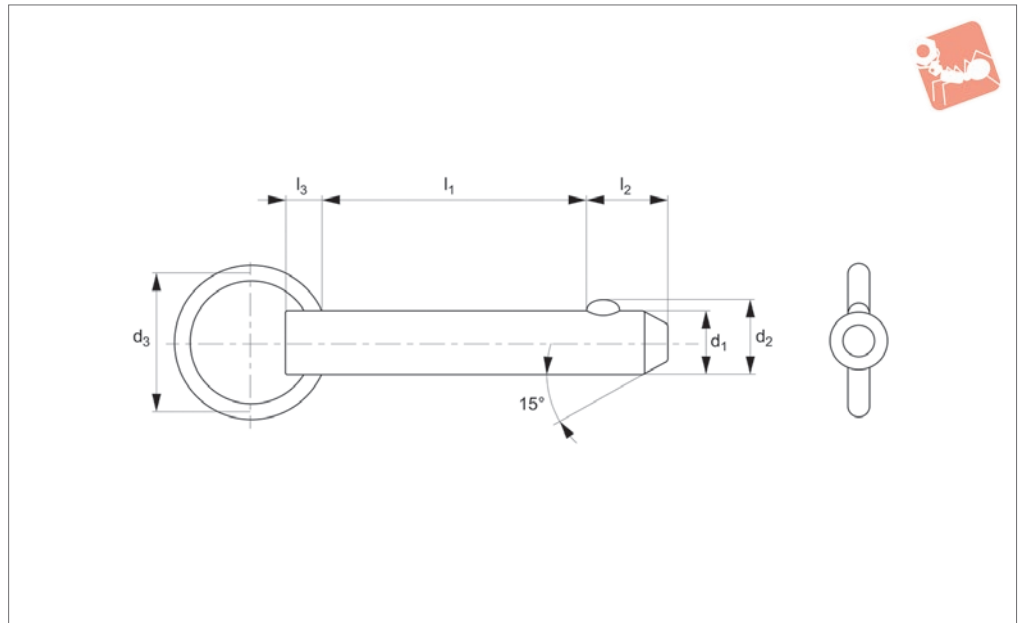


Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33010.W3715	9,52 (3/8")	38,1 (1,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3720	9,52 (3/8")	50,8 (2")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3725	9,52 (3/8")	63,5 (2,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3730	9,52 (3/8")	76,2 (3")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3735	9,52 (3/8")	88,9 (3,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3740	9,52 (3/8")	101,6 (4")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3745	9,52 (3/8")	114,3 (4,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3750	9,52 (3/8")	127,0 (5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3755	9,52 (3/8")	139,7 (5,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W3760	9,52 (3/8")	152,4 (6")	10.8	25.4	12.7	6.35	3,63 - 4,54	43.3
33010.W4305	11,1 (7/16")	12,7 (0,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4310	11,1 (7/16")	25,4 (1")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4315	11,1 (7/16")	38,1 (1,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4320	11,1 (7/16")	50,8 (2")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4325	11,1 (7/16")	63,5 (2,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4330	11,1 (7/16")	76,2 (3")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4335	11,1 (7/16")	89,0 (3,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4340	11,1 (7/16")	101,6 (4")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4345	11,1 (7/16")	114,3 (4,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4350	11,1 (7/16")	127,0 (5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4355	11,1 (7/16")	139,7 (5,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W4360	11,1 (7/16")	152,4 (6")	12.5	25.4	14.2	6.35	4,09 - 5,45	58.9
33010.W5005	12,7 (1/2")	12,7 (0,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5010	12,7 (1/2")	25,4 (1")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5015	12,7 (1/2")	38,1 (1,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5020	12,7 (1/2")	50,8 (2")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5025	12,7 (1/2")	63,5 (2,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5030	12,7 (1/2")	76,2 (3")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5035	12,7 (1/2")	88,9 (3,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5040	12,7 (1/2")	101,6 (4")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5045	12,7 (1/2")	114,3 (4,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5050	12,7 (1/2")	127,0 (5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5055	12,7 (1/2")	139,7 (5,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5060	12,7 (1/2")	152,4 (6")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5065	12,7 (1/2")	165,1 (6,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0
33010.W5070	12,7 (1/2")	177,8 (7")	14.4	31.7	15.8	7.92	4,54 - 5,45	77.0

BALL LOCK PINS & QUICK RELEASE PINS



33010.2



Material

Shaft: Carbon steel (C1144), zinc plated.
Ball & spring: Stainless steel AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment. The solid body with direct spring loaded

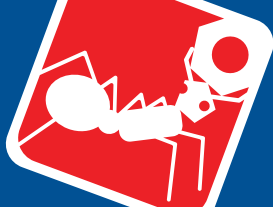
ball ensures reliable operation. Can be used for locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins and as replacement for cotter pins where frequent removal is necessary. Hole sizes - commercial drills provide clea-

rance for our standard pins. Inch dimensions in brackets ().

Tips

Also available in stainless steel see part no. PP1202.

Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33010.W5610	14,2 (9/16")	25,4 (1")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5615	14,2 (9/16")	38,1 (1,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5620	14,2 (9/16")	50,8 (2")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5625	14,2 (9/16")	63,5 (2,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5630	14,2 (9/16")	76,2 (3")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5635	14,2 (9/16")	88,9 (3,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5640	14,2 (9/16")	101,6 (4")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5645	14,2 (9/16")	114,3 (4,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5650	14,2 (9/16")	127,0 (5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5655	14,2 (9/16")	139,7 (5,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5660	14,2 (9/16")	152,4 (6")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W5670	14,2 (9/16")	177,8 (7")	16,3	31,7	17,4	7,92	5,45 - 6,81	97,6
33010.W6210	15,8 (5/8")	25,4 (1")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6215	15,8 (5/8")	38,1 (1,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6220	15,8 (5/8")	50,8 (2")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6225	15,8 (5/8")	63,5 (2,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6230	15,8 (5/8")	76,2 (3")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6235	15,8 (5/8")	88,9 (3,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6240	15,8 (5/8")	101,6 (4")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6245	15,8 (5/8")	114,3 (4,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6250	15,8 (5/8")	127,0 (5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6255	15,8 (5/8")	139,7 (5,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6260	15,8 (5/8")	152,4 (6")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6265	15,8 (5/8")	165,1 (6,5")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6270	15,8 (5/8")	177,8 (7")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W6280	15,8 (5/8")	203,2 (8")	18,0	31,7	19,0	9,52	3,36 - 7,26	121,6
33010.W7510	19,0 (3/4")	25,4 (1")	21,7	38,1	23,7	9,52	8,17 - 9,98	173,6
33010.W7515	19,0 (3/4")	38,1 (1,5")	21,7	38,1	23,7	9,52	8,17 - 9,98	173,6
33010.W7520	19,0 (3/4")	50,8 (2")	21,7	38,1	23,7	9,52	8,17 - 9,98	173,6



Detent Pin Steel

Ball Lock Pins & Quick Release

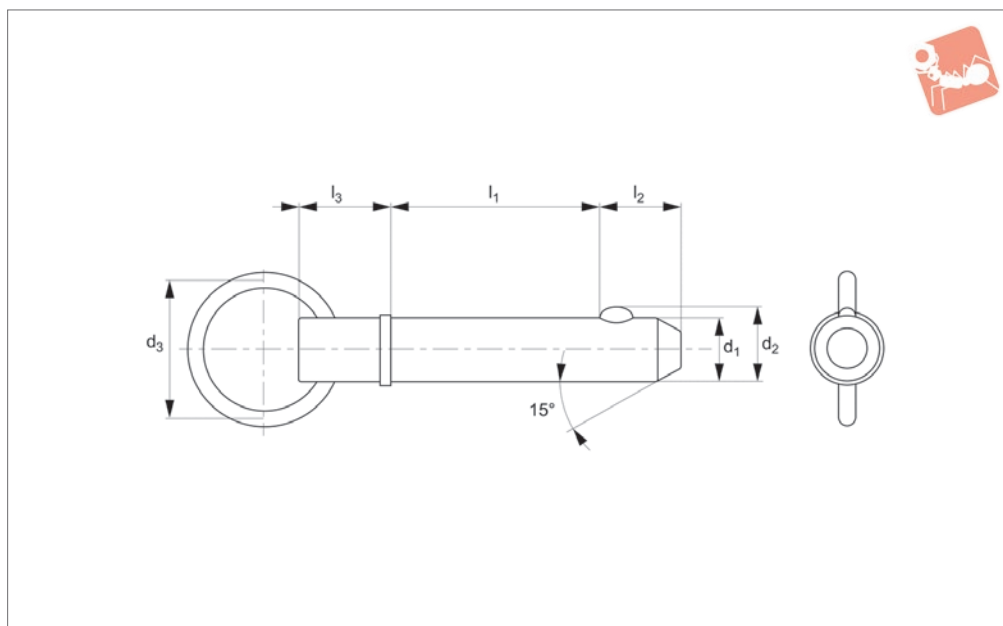


Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33010.W7525	19,0 (3/4")	63,5 (2,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7530	19,0 (3/4")	76,2 (3")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7535	19,0 (3/4")	88,9 (3,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7540	19,0 (3/4")	101,6 (4")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7545	19,0 (3/4")	114,3 (4,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7550	19,0 (3/4")	127,0 (5")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7555	19,0 (3/4")	139,7 (5,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7560	19,0 (3/4")	152,4 (6")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7570	19,0 (3/4")	177,8 (7")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W7580	19,0 (3/4")	203,2 (8")	21.7	38.1	23.7	9.52	8,17 - 9,98	173.6
33010.W8810	22,2 (7/8")	25,4 (1")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8815	22,2 (7/8")	38,1 (1,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8820	22,2 (7/8")	50,8 (2")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8825	22,2 (7/8")	63,5 (2,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8830	22,2 (7/8")	76,2 (3")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8835	22,2 (7/8")	88,9 (3,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8840	22,2 (7/8")	101,6 (4")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8845	22,2 (7/8")	114,3 (4,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8850	22,2 (7/8")	127,0 (5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8855	22,2 (7/8")	139,7 (5,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8860	22,2 (7/8")	152,4 (6")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8865	22,2 (7/8")	165,1 (6,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8870	22,2 (7/8")	177,8 (7")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W8880	22,2 (7/8")	203,2 (8")	25.2	38.1	25.4	12.7	12,71 - 14,07	239.4
33010.W1010	25,4 (1")	25,4 (1")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1015	25,4 (1")	38,1 (1,5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1020	25,4 (1")	50,8 (2")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1025	25,4 (1")	63,5 (2,5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1030	25,4 (1")	76,2 (3")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1035	25,4 (1")	88,9 (3,5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1040	25,4 (1")	101,6 (4")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1045	25,4 (1")	114,3 (4,5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1050	25,4 (1")	127,0 (5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1055	25,4 (1")	139,7 (5,5")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1060	25,4 (1")	152,4 (6")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1070	25,4 (1")	177,8 (7")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3
33010.W1080	25,4 (1")	203,2 (8")	28.9	38.1	31.7	12.7	15,88 - 18-15	321.3

BALL LOCK PINS & QUICK RELEASE PINS



33014



Material

Shaft: Carbon steel (C1144), zinc plated.
Ball & spring: Stainless steel AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment. The solid body with direct spring loaded

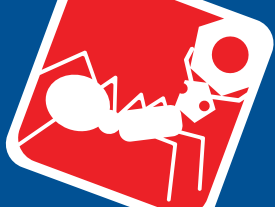
ball ensures reliable operation. Can be used for locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins and as replacement for cotter pins where frequent removal is necessary. Hole sizes - commercial drills provide clear-

ance for our standard pins. Inch dimensions in brackets ().

Tips

Also available in stainless steel see part no. P.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33014.W1803	4,76 (3/16")	7,62 (0,3")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1805	4,76 (3/16")	12,7 (0,5")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1810	4,76 (3/16")	25,4 (1")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1815	4,76 (3/16")	38,1 (1,5")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1820	4,76 (3/16")	50,8 (2")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1825	4,76 (3/16")	63,5 (2,5")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1830	4,76 (3/16")	76,2 (3")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1835	4,76 (3/16")	88,9 (3,5")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W1840	4,76 (3/16")	101,6 (4")	5.18	25.4	5.08	17.45	1,9 - 2,3	10.8
33014.W2505	6,35 (1/4")	12,7 (0,5")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2506	6,35 (1/4")	15,24 (0,6")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2510	6,35 (1/4")	25,4 (1")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2515	6,35 (1/4")	38,1 (1,5")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2520	6,35 (1/4")	50,8 (2")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2525	6,35 (1/4")	63,5 (2,5")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2530	6,35 (1/4")	76,2 (3")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2535	6,35 (1/4")	88,9 (3,5")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W2540	6,35 (1/4")	101,6 (4")	7.26	31.75	7.92	18.29	2,27 - 2,73	19.3
33014.W3105	7,94 (5/16")	12,7 (0,5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3110	7,94 (5/16")	25,4 (1")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3115	7,94 (5/16")	38,1 (1,5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3120	7,94 (5/16")	50,8 (2")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3125	7,94 (5/16")	63,5 (2,5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3130	7,94 (5/16")	76,2 (3")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3135	7,94 (5/16")	88,9 (3,5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3140	7,94 (5/16")	101,6 (4")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3145	7,94 (5/16")	114,3 (4,5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3150	7,94 (5/16")	127 (5")	9.09	31.75	9.53	19.05	2,27 - 2,73	30.0
33014.W3705	9,53 (3,8")	12,7 (0,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3



Detent Pin - Ring Handle - Shoulder Steel

Ball Lock Pins & Quick Release



Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33014.W3706	9,53 (3,8")	15,24 (0,6")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3710	9,53 (3,8")	25,4 (1")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3715	9,53 (3,8")	38,1 (1,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3718	9,53 (3,8")	45,72 (1,8")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3720	9,53 (3,8")	50,8 (2")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3725	9,53 (3,8")	63,5 (2,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3730	9,53 (3,8")	76,2 (3")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3735	9,53 (3,8")	88,9 (3,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3740	9,53 (3,8")	101,6 (4")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3745	9,53 (3,8")	114,3 (4,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3750	9,53 (3,8")	127 (5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3755	9,53 (3,8")	139,7 (5,5")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W3760	9,53 (3,8")	152,4 (6")	10.82	44.45	12.7	19.05	3,63 - 4,54	43.3
33014.W4305	11,11(7,16")	12,7 (0,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4310	11,11(7,16")	25,4 (1")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4315	11,11(7,16")	38,1 (1,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4320	11,11(7,16")	50,8 (2")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4325	11,11(7,16")	63,5 (2,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4330	11,11(7,16")	76,2 (3")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4335	11,11(7,16")	88,9 (3,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4340	11,11(7,16")	101,6 (4")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4345	11,11(7,16")	114,3 (4,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4350	11,11(7,16")	127 (5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4355	11,11(7,16")	139,7 (5,5")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W4360	11,11(7,16")	152,4 (6")	12.6	44.45	14.27	24.13	4,09 - 5,45	58.9
33014.W5005	12,7 (1/2")	12,7 (0,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5010	12,7 (1/2")	25,4 (1")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5013	12,7 (1/2")	33,02 (1,3")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5015	12,7 (1/2")	38,1 (1,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5020	12,7 (1/2")	50,8 (2")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5025	12,7 (1/2")	63,5 (2,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5035	12,7 (1/2")	88,9 (3,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5040	12,7 (1/2")	101,6 (4")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5045	12,7 (1/2")	114,3 (4,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5050	12,7 (1/2")	127 (5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5055	12,7 (1/2")	139,7 (5,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5060	12,7 (1/2")	152,4 (6")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5065	12,7 (1/2")	165,1 (6,5")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5070	12,7 (1/2")	177,8 (7")	14.48	50.8	15.88	25.7	4,54 - 5,45	77.0
33014.W5610	14,29 (9/16")	25,4 (1")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5615	14,29 (9/16")	38,1 (1,5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5620	14,29 (9/16")	50,8 (2")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5625	14,29 (9/16")	63,5 (2,5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5630	14,29 (9/16")	76,2 (3")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5635	14,29 (9/16")	88,9 (3,5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5640	14,29 (9/16")	101,6 (4")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5645	14,29 (9/16")	114,3 (4,5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5650	14,29 (9/16")	127 (5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5655	14,29 (9/16")	139,7 (5,5")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5660	14,29 (9/16")	152,4 (6")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W5670	14,29 (9/16")	177,8 (7")	16.31	50.8	17.45	25.7	5,45 - 6,81	97.6
33014.W6210	15,88 (5/8")	25,4 (1")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6215	15,88 (5/8")	38,1 (1,5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6220	15,88 (5/8")	50,8 (2")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6225	15,88 (5/8")	63,5 (2,5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6230	15,88 (5/8")	76,2 (3")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6235	15,88 (5/8")	88,9 (3,5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6240	15,88 (5/8")	101,6 (4")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6245	15,88 (5/8")	114,3 (4,5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6250	15,88 (5/8")	127 (5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6255	15,88 (5/8")	139,7 (5,5")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6260	15,88 (5/8")	152,4 (6")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6270	15,88 (5/8")	177,8 (7")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W6280	15,88 (5/8")	203,2 (8")	18.03	57.15	19.05	27.31	6,36 - 7,26	121.6
33014.W7510	19,05 (3/4")	25,4 (1")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7515	19,05 (3/4")	38,1 (1,5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7520	19,05 (3/4")	50,8 (2")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6

BALL LOCK PINS & QUICK RELEASE PINS

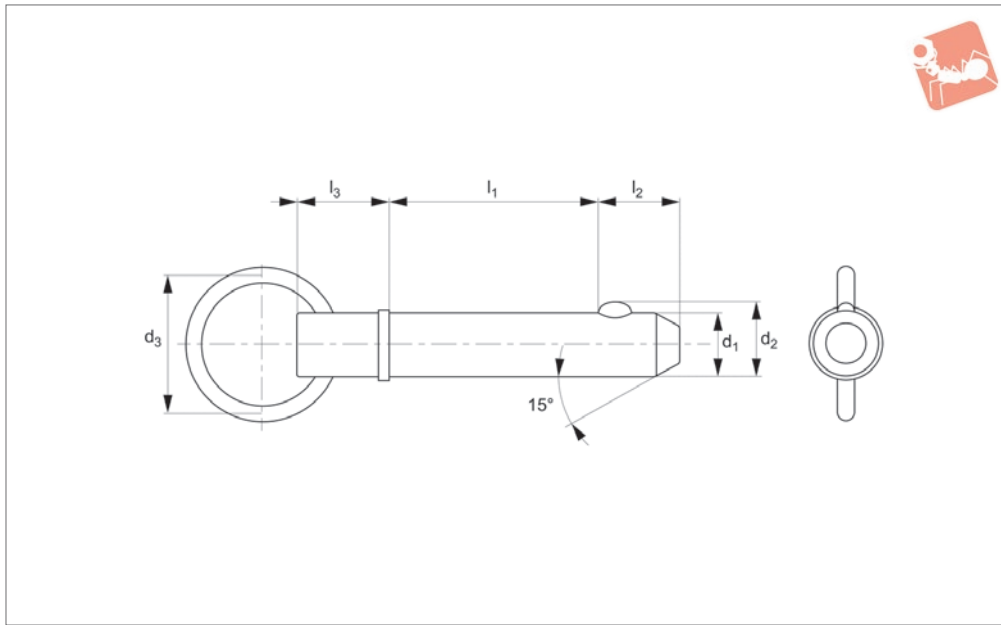


Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33014.W7525	19,05 (3/4")	63,5 (2,5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7530	19,05 (3/4")	76,2 (3")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7535	19,05 (3/4")	88,9 (3,5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7540	19,05 (3/4")	101,6 (4")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7545	19,05 (3/4")	114,3 (4,5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7550	19,05 (3/4")	127 (5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7555	19,05 (3/4")	139,7 (5,5")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7560	19,05 (3/4")	152,4 (6")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7570	19,05 (3/4")	177,8 (7")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W7580	19,05 (3/4")	203,2 (8")	21.74	57.15	23.8	34.93	8,17 - 9,98	173.6
33014.W8810	22,23 (7/8")	25,4 (1")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8815	22,23 (7/8")	38,1 (1,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8820	22,23 (7/8")	50,8 (2")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8825	22,23 (7/8")	63,5 (2,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8830	22,23 (7/8")	76,2 (3")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8835	22,23 (7/8")	88,9 (3,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8840	22,23 (7/8")	101,6 (4")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8845	22,23 (7/8")	114,3 (4,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8850	22,23 (7/8")	127 (5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8855	22,23 (7/8")	139,7 (5,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8860	22,23 (7/8")	152,4 (6")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8865	22,23 (7/8")	165,1 (6,5")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8870	22,23 (7/8")	177,8 (7")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W8880	22,23 (7/8")	203,2 (8")	25.3	63.5	25.4	38.1	12,71 - 14,07	239.4
33014.W1010	25,4 (1")	25,4 (1")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1015	25,4 (1")	38,1 (1,5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1020	25,4 (1")	50,8 (2")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1025	25,4 (1")	63,5 (2,5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1030	25,4 (1")	76,2 (3")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1035	25,4 (1")	88,9 (3,5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1040	25,4 (1")	101,6 (4")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1045	25,4 (1")	114,3 (4,5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1050	25,4 (1")	127 (5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1055	25,4 (1")	139,7 (5,5")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1060	25,4 (1")	152,4 (6")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1070	25,4 (1")	177,8 (7")	28.96	39	31.75	38.1	15,88 - 18,15	312.3
33014.W1080	25,4 (1")	203,2 (8")	28.96	39	31.75	38.1	15,88 - 18,15	312.3



Detent Pin - Ring Handle - Shoulder stainless steel

Ball Lock Pins & Quick Release



33016

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shaft: Stainless steel, AISI 303.

Ball & Spring: Stainless steel, AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.

For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

Hole sizes - commercial drills provide clearance for our standard pins.

Inch dimensions in brackets ().

Tips

Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33016.W1803	4,76 (3/16")	7,62 (0,3")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1805	4,76 (3/16")	12,7 (0,5")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1810	4,76 (3/16")	25,4 (1")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1815	4,76 (3/16")	38,1 (1,5")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1820	4,76 (3/16")	50,8 (2")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1825	4,76 (3/16")	63,5 (2,5")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1830	4,76 (3/16")	76,2 (3")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1835	4,76 (3/16")	88,9 (3,5")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W1840	4,76 (3/16")	101,6 (4")	5.18	25.4	5.08	17.45	1, 9 - 2, 3	12.2
33016.W2505	6,35 (1/4")	12,7 (0,5")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2506	6,35 (1/4")	15,24 (0,6")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2510	6,35 (1/4")	25,4 (1")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2515	6,35 (1/4")	38,1 (1,5")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2520	6,35 (1/4")	50,8 (2")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2525	6,35 (1/4")	63,5 (2,5")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2530	6,35 (1/4")	76,2 (3")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2535	6,35 (1/4")	88,9 (3,5")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W2540	6,35 (1/4")	101,6 (4")	7.26	25.4	7.92	18.29	2,27 - 2,73	21.7
33016.W3105	7,94 (5/16")	12,7 (0,5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3110	7,94 (5/16")	25,4 (1")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3115	7,94 (5/16")	38,1 (1,5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3120	7,94 (5/16")	50,8 (2")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3125	7,94 (5/16")	63,5 (2,5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3130	7,94 (5/16")	76,2 (3")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3135	7,94 (5/16")	88,9 (3,5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3140	7,94 (5/16")	101,6 (4")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3145	7,94 (5/16")	114,3 (4,5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3150	7,94 (5/16")	127 (5")	9.09	25.4	9.53	19.05	2,27 - 2,73	33.8
33016.W3705	9,53 (3,8")	12,7 (0,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3706	9,53 (3,8")	15,24 (0,6")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1



Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33016.W3710	9,53 (3,8")	25,4 (1")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3715	9,53 (3,8")	38,1 (1,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3718	9,53 (3,8")	45,72 (1,8")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3720	9,53 (3,8")	50,8 (2")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3725	9,53 (3,8")	63,5 (2,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3730	9,53 (3,8")	76,2 (3")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3735	9,53 (3,8")	88,9 (3,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3740	9,53 (3,8")	101,6 (4")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3745	9,53 (3,8")	114,3 (4,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3750	9,53 (3,8")	127 (5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3755	9,53 (3,8")	139,7 (5,5")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W3760	9,53 (3,8")	152,4 (6")	10.82	25.4	12.7	19.05	3,63 - 4,54	49.1
33016.W4305	11,11 (7,16")	12,7 (0,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4310	11,11 (7,16")	25,4 (1")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4315	11,11 (7,16")	38,1 (1,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4320	11,11 (7,16")	50,8 (2")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4325	11,11 (7,16")	63,5 (2,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4330	11,11 (7,16")	76,2 (3")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4335	11,11 (7,16")	88,9 (3,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4340	11,11 (7,16")	101,6 (4")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4345	11,11 (7,16")	114,3 (4,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4350	11,11 (7,16")	127 (5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4355	11,11 (7,16")	139,7 (5,5")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W4360	11,11 (7,16")	152,4 (6")	12.6	25.4	14.27	24.13	4,09 - 5,45	66.5
33016.W5005	12,7 (1/2")	12,7 (0,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5010	12,7 (1/2")	25,4 (1")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5013	12,7 (1/2")	33,02 (1,3")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5015	12,7 (1/2")	38,1 (1,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5020	12,7 (1/2")	50,8 (2")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5025	12,7 (1/2")	63,5 (2,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5035	12,7 (1/2")	88,9 (3,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5040	12,7 (1/2")	101,6 (4")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5045	12,7 (1/2")	114,3 (4,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5050	12,7 (1/2")	127 (5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5055	12,7 (1/2")	139,7 (5,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5060	12,7 (1/2")	152,4 (6")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5065	12,7 (1/2")	165,1 (6,5")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5070	12,7 (1/2")	177,8 (7")	14.48	31.75	15.88	25.7	4,54 - 5,45	87.1
33016.W5610	14,29 (9/16")	25,4 (1")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5615	14,29 (9/16")	38,1 (1,5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5620	14,29 (9/16")	50,8 (2")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5625	14,29 (9/16")	63,5 (2,5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5630	14,29 (9/16")	76,2 (3")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5635	14,29 (9/16")	88,9 (3,5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5640	14,29 (9/16")	101,6 (4")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5645	14,29 (9/16")	114,3 (4,5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5650	14,29 (9/16")	127 (5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5655	14,29 (9/16")	139,7 (5,5")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5660	14,29 (9/16")	152,4 (6")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W5670	14,29 (9/16")	177,8 (7")	16.31	31.75	17.45	25.7	5,45 - 6,81	110.3
33016.W6210	15,88 (5/8")	25,4 (1")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6215	15,88 (5/8")	38,1 (1,5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6220	15,88 (5/8")	50,8 (2")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6225	15,88 (5/8")	63,5 (2,5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6230	15,88 (5/8")	76,2 (3")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6235	15,88 (5/8")	88,9 (3,5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6240	15,88 (5/8")	101,6 (4")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6245	15,88 (5/8")	114,3 (4,5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6250	15,88 (5/8")	127 (5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6255	15,88 (5/8")	139,7 (5,5")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6260	15,88 (5/8")	152,4 (6")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6270	15,88 (5/8")	177,8 (7")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W6280	15,88 (5/8")	203,2 (8")	18.03	31.75	19.05	27.31	6,36 - 7,26	137.3
33016.W7510	19,05 (3/4")	25,4 (1")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7515	19,05 (3/4")	38,1 (1,5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7520	19,05 (3/4")	50,8 (2")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7525	19,05 (3/4")	63,5 (2,5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9



Detent Pin - Ring Handle - Shoulder stainless steel

Ball Lock Pins & Quick Release



Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33016.W7530	19,05 (3/4")	76,2 (3")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7535	19,05 (3/4")	88,9 (3,5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7540	19,05 (3/4")	101,6 (4")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7545	19,05 (3/4")	114,3 (4,5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7550	19,05 (3/4")	127 (5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7555	19,05 (3/4")	139,7 (5,5")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7560	19,05 (3/4")	152,4 (6")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7570	19,05 (3/4")	177,8 (7")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W7580	19,05 (3/4")	203,2 (8")	21.74	38.1	23.8	34.93	8,17 - 9,98	195.9
33016.W8810	22,23 (7/8")	25,4 (1")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8815	22,23 (7/8")	38,1 (1,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8820	22,23 (7/8")	50,8 (2")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8825	22,23 (7/8")	63,5 (2,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8830	22,23 (7/8")	76,2 (3")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8835	22,23 (7/8")	88,9 (3,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8840	22,23 (7/8")	101,6 (4")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8845	22,23 (7/8")	114,3 (4,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8850	22,23 (7/8")	127 (5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8855	22,23 (7/8")	139,7 (5,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8860	22,23 (7/8")	152,4 (6")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8865	22,23 (7/8")	165,1 (6,5")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8870	22,23 (7/8")	177,8 (7")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W8880	22,23 (7/8")	203,2 (8")	25.3	38.1	25.4	38.1	12,71 - 14,07	262.4
33016.W1010	25,4 (1")	25,4 (1")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1015	25,4 (1")	38,1 (1,5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1020	25,4 (1")	50,8 (2")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1025	25,4 (1")	63,5 (2,5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1030	25,4 (1")	76,2 (3")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1035	25,4 (1")	88,9 (3,5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1040	25,4 (1")	101,6 (4")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1045	25,4 (1")	114,3 (4,5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1050	25,4 (1")	127 (5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1055	25,4 (1")	139,7 (5,5")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1060	25,4 (1")	152,4 (6")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1070	25,4 (1")	177,8 (7")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0
33016.W1080	25,4 (1")	203,2 (8")	28.96	38.1	31.75	38.1	15,88 - 18,15	353.0

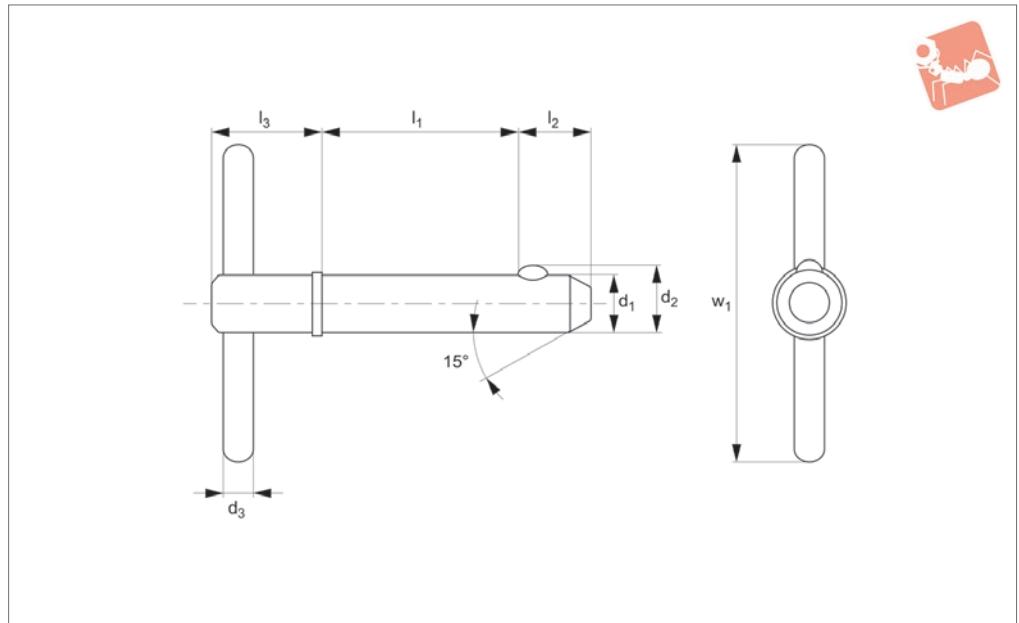
BALL LOCK PINS & QUICK RELEASE PINS



BALL LOCK PINS & QUICK RELEASE PINS



33018



Material

Shaft: Carbon steel (C1144), zinc plated.
Ball & spring: Stainless steel AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment. The solid body with direct spring loaded

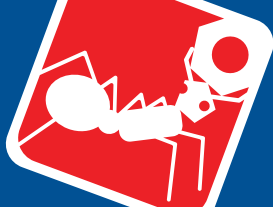
ball ensures reliable operation. Can be used for locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins and as replacement for cotter pins where frequent removal is necessary. Hole sizes - commercial drills provide clear-

ance for our standard pins. Inch dimensions in brackets ().

Tips

Also available in stainless steel see part no. P.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	w ₁	Single shear strength kN min.
33018.W1803	4,76 (3/16")	7,62 (0,3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1805	4,76 (3/16")	12,7 (0,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1810	4,76 (3/16")	25,4 (1")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1815	4,76 (3/16")	38,1 (1,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1820	4,76 (3/16")	50,8 (2")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1825	4,76 (3/16")	63,5 (2,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1830	4,76 (3/16")	76,2 (3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1835	4,76 (3/16")	88,9 (3,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W1840	4,76 (3/16")	101,6 (4")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	10.8
33018.W2505	6,35 (1/4")	12,7 (0,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2506	6,35 (1/4")	15,24 (0,6")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2510	6,35 (1/4")	25,4 (1")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2515	6,35 (1/4")	38,1 (1,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2520	6,35 (1/4")	50,8 (2")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2525	6,35 (1/4")	63,5 (2,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2530	6,35 (1/4")	76,2 (3")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2535	6,35 (1/4")	88,9 (3,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W2540	6,35 (1/4")	101,6 (4")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33018.W3105	7,94 (5/16")	12,7 (0,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3110	7,94 (5/16")	25,4 (1")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3115	7,94 (5/16")	38,1 (1,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3120	7,94 (5/16")	50,8 (2")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3125	7,94 (5/16")	63,5 (2,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3130	7,94 (5/16")	76,2 (3")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3135	7,94 (5/16")	88,9 (3,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3140	7,94 (5/16")	101,6 (4")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3145	7,94 (5/16")	114,3 (4,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3150	7,94 (5/16")	127 (5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33018.W3705	9,53 (3,8")	12,7 (0,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3



Detent Pin - T Handle - Shoulder steel

Ball Lock Pins & Quick Release

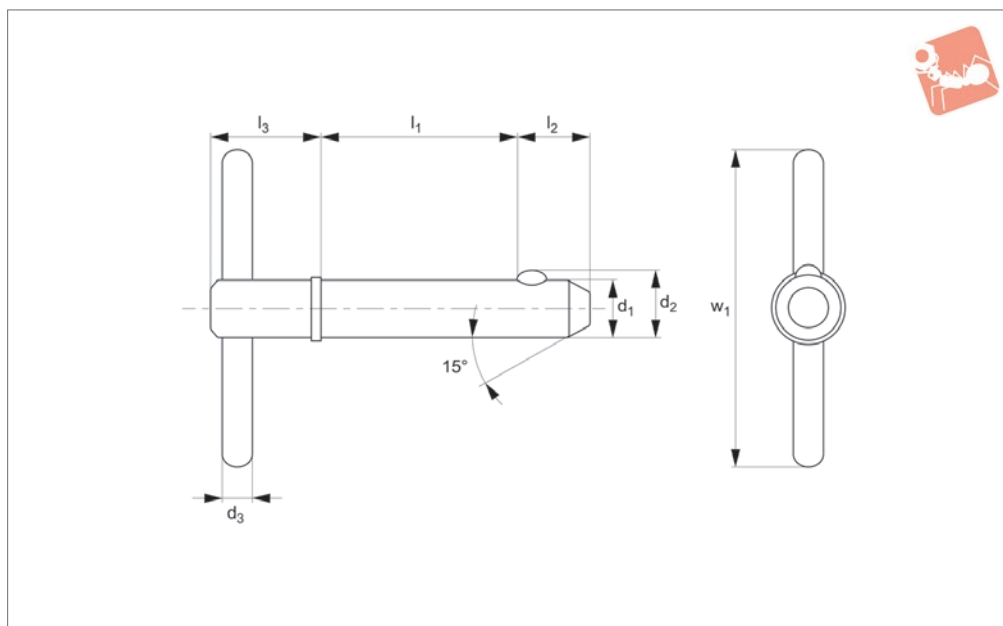


Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33018.W3706	9,53 (3,8")	15,24 (0,6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3710	9,53 (3,8")	25,4 (1")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3715	9,53 (3,8")	38,1 (1,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3718	9,53 (3,8")	45,72 (1,8")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3720	9,53 (3,8")	50,8 (2")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3725	9,53 (3,8")	63,5 (2,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3730	9,53 (3,8")	76,2 (3")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3735	9,53 (3,8")	88,9 (3,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3740	9,53 (3,8")	101,6 (4")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3745	9,53 (3,8")	114,3 (4,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3750	9,53 (3,8")	127 (5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3755	9,53 (3,8")	139,7 (5,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W3760	9,53 (3,8")	152,4 (6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33018.W4305	11,11(7/16")	12,7 (0,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33018.W4310	11,11(7/16")	25,4 (1")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33018.W4315	11,11(7/16")	38,1 (1,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33018.W4320	11,11(7/16")	50,8 (2")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33018.W4325	11,11(7/16")	63,5 (2,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33018.W4330	11,11(7/16")	76,2 (3")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9

BALL LOCK PINS & QUICK RELEASE PINS



33020



Material

Shaft: Stainless steel, AISI 303.

Ball & Spring: Stainless steel, AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.

For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

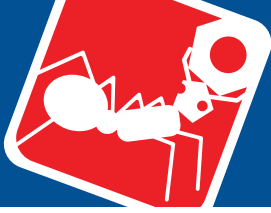
Hole sizes - commercial drills provide clearance for our standard pins.

Inch dimensions in brackets ().

Tips

Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	w ₁	Single shear strength kN min.
33020.W1803	4,76 (3/16")	7,62 (0,3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1805	4,76 (3/16")	12,7 (0,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1810	4,76 (3/16")	25,4 (1")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1815	4,76 (3/16")	38,1 (1,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1820	4,76 (3/16")	50,8 (2")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1825	4,76 (3/16")	63,5 (2,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1830	4,76 (3/16")	76,2 (3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1835	4,76 (3/16")	88,9 (3,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W1840	4,76 (3/16")	101,6 (4")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33020.W2505	6,35 (1/4")	12,7 (0,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2506	6,35 (1/4")	15,24 (0,6")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2510	6,35 (1/4")	25,4 (1")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2515	6,35 (1/4")	38,1 (1,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2520	6,35 (1/4")	50,8 (2")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2525	6,35 (1/4")	63,5 (2,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2530	6,35 (1/4")	76,2 (3")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2535	6,35 (1/4")	88,9 (3,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W2540	6,35 (1/4")	101,6 (4")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33020.W3105	7,94 (5/16")	12,7 (0,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3110	7,94 (5/16")	25,4 (1")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3115	7,94 (5/16")	38,1 (1,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3120	7,94 (5/16")	50,8 (2")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3125	7,94 (5/16")	63,5 (2,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3130	7,94 (5/16")	76,2 (3")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3135	7,94 (5/16")	88,9 (3,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3140	7,94 (5/16")	101,6 (4")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3145	7,94 (5/16")	114,3 (4,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3150	7,94 (5/16")	127 (5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33020.W3705	9,53 (3,8")	12,7 (0,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	49.1
33020.W3706	9,53 (3,8")	15,24 (0,6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	49.1



Detent Pin - T Handle - Shoulder stainless steel

Ball Lock Pins & Quick Release

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	w ₁	Single shear strength kN min.
33020.W3710	9,53 (3,8")	25,4 (1")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3715	9,53 (3,8")	38,1 (1,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3718	9,53 (3,8")	45,72 (1,8")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3720	9,53 (3,8")	50,8 (2")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3725	9,53 (3,8")	63,5 (2,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3730	9,53 (3,8")	76,2 (3")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3735	9,53 (3,8")	88,9 (3,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3740	9,53 (3,8")	101,6 (4")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3745	9,53 (3,8")	114,3 (4,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3750	9,53 (3,8")	127 (5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3755	9,53 (3,8")	139,7 (5,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W3760	9,53 (3,8")	152,4 (6")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33020.W4305	11,11 (7,16")	12,7 (0,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4310	11,11 (7,16")	25,4 (1")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4315	11,11 (7,16")	38,1 (1,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4320	11,11 (7,16")	50,8 (2")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4325	11,11 (7,16")	63,5 (2,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4330	11,11 (7,16")	76,2 (3")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4335	11,11 (7,16")	88,9 (3,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4340	11,11 (7,16")	101,6 (4")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4345	11,11 (7,16")	114,3 (4,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4350	11,11 (7,16")	127 (5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4355	11,11 (7,16")	139,7 (5,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W4360	11,11 (7,16")	152,4 (6")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33020.W5005	12,7 (1/2")	12,7 (0,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5010	12,7 (1/2")	25,4 (1")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5013	12,7 (1/2")	33,02 (1,3")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5015	12,7 (1/2")	38,1 (1,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5020	12,7 (1/2")	50,8 (2")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5025	12,7 (1/2")	63,5 (2,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5035	12,7 (1/2")	88,9 (3,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5040	12,7 (1/2")	101,6 (4")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5045	12,7 (1/2")	114,3 (4,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5050	12,7 (1/2")	127 (5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5055	12,7 (1/2")	139,7 (5,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5060	12,7 (1/2")	152,4 (6")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5065	12,7 (1/2")	165,1 (6,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5070	12,7 (1/2")	177,8 (7")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33020.W5610	14,29 (9/16")	25,4 (1")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5615	14,29 (9/16")	38,1 (1,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5620	14,29 (9/16")	50,8 (2")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5625	14,29 (9/16")	63,5 (2,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5630	14,29 (9/16")	76,2 (3")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5635	14,29 (9/16")	88,9 (3,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5640	14,29 (9/16")	101,6 (4")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5645	14,29 (9/16")	114,3 (4,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5650	14,29 (9/16")	127 (5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5655	14,29 (9/16")	139,7 (5,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5660	14,29 (9/16")	152,4 (6")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W5670	14,29 (9/16")	177,8 (7")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33020.W6210	15,88 (5/8")	25,4 (1")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6215	15,88 (5/8")	38,1 (1,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6220	15,88 (5/8")	50,8 (2")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6225	15,88 (5/8")	63,5 (2,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6230	15,88 (5/8")	76,2 (3")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6235	15,88 (5/8")	88,9 (3,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6240	15,88 (5/8")	101,6 (4")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6245	15,88 (5/8")	114,3 (4,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6250	15,88 (5/8")	127 (5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6255	15,88 (5/8")	139,7 (5,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6260	15,88 (5/8")	152,4 (6")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6270	15,88 (5/8")	177,8 (7")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W6280	15,88 (5/8")	203,2 (8")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33020.W7510	19,05 (3/4")	25,4 (1")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33020.W7515	19,05 (3/4")	38,1 (1,5")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33020.W7520	19,05 (3/4")	50,8 (2")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33020.W7525	19,05 (3/4")	63,5 (2,5")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9

BALL LOCK PINS & QUICK RELEASE PINS

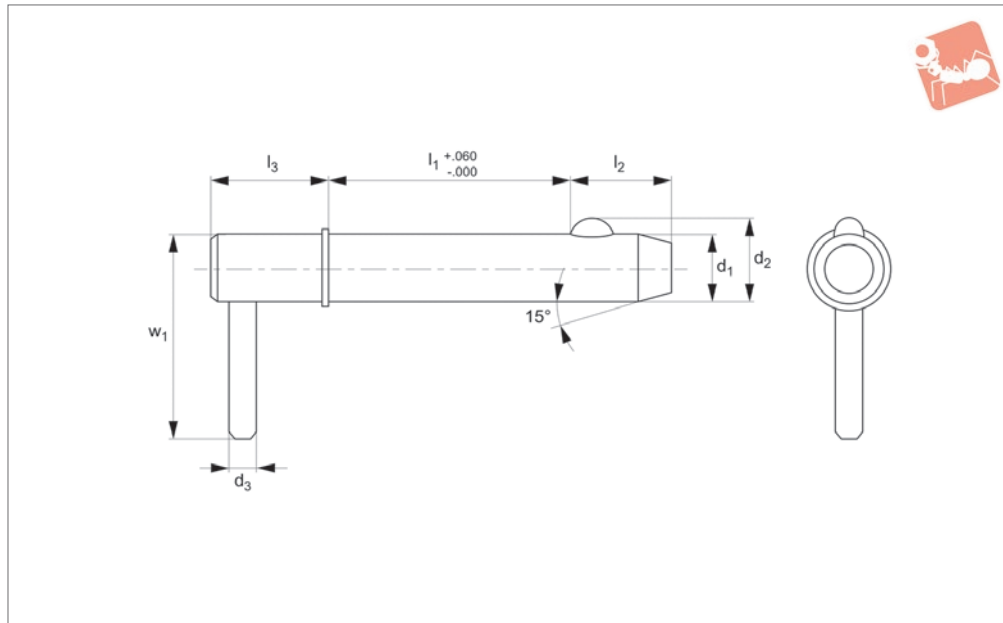


Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33020.W7530	19,05 (3/4")	76,2 (3")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7535	19,05 (3/4")	88,9 (3,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7540	19,05 (3/4")	101,6 (4")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7545	19,05 (3/4")	114,3 (4,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7550	19,05 (3/4")	127 (5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7555	19,05 (3/4")	139,7 (5,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7560	19,05 (3/4")	152,4 (6")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7570	19,05 (3/4")	177,8 (7")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W7580	19,05 (3/4")	203,2 (8")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33020.W8810	22,23 (7/8")	25,4 (1")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8815	22,23 (7/8")	38,1 (1,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8820	22,23 (7/8")	50,8 (2")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8825	22,23 (7/8")	63,5 (2,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8830	22,23 (7/8")	76,2 (3")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8835	22,23 (7/8")	88,9 (3,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8840	22,23 (7/8")	101,6 (4")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8845	22,23 (7/8")	114,3 (4,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8850	22,23 (7/8")	127 (5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8855	22,23 (7/8")	139,7 (5,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8860	22,23 (7/8")	152,4 (6")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8865	22,23 (7/8")	165,1 (6,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8870	22,23 (7/8")	177,8 (7")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W8880	22,23 (7/8")	203,2 (8")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33020.W1010	25,4 (1")	25,4 (1")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1015	25,4 (1")	38,1 (1,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1020	25,4 (1")	50,8 (2")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1025	25,4 (1")	63,5 (2,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1030	25,4 (1")	76,2 (3")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1035	25,4 (1")	88,9 (3,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1040	25,4 (1")	101,6 (4")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1045	25,4 (1")	114,3 (4,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1050	25,4 (1")	127 (5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1055	25,4 (1")	139,7 (5,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1060	25,4 (1")	152,4 (6")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1070	25,4 (1")	177,8 (7")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33020.W1080	25,4 (1")	203,2 (8")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0



Detent Pin - L Handle - Shoulder steel

Ball Lock Pins & Quick Release



33022

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shaft: Carbon steel (C1144), zinc plated.
Ball & spring: Stainless steel AISI 316.

Technical Notes

Detent Pins are very economical for use in commercial and military equipment. The solid body with direct spring loaded

ball ensures reliable operation.

Can be used for locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins and as replacement for cotter pins where frequent removal is necessary.

Hole sizes - commercial drills provide clear-

ance for our standard pins.

Inch dimensions in brackets ().

Tips

Also available in stainless steel see part no. 33024.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	w ₁	Single shear strength kN min.
33022.W1803	4,76 (3/16")	7,62 (0,3")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1805	4,76 (3/16")	12,7 (0,5")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1810	4,76 (3/16")	25,4 (1")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1815	4,76 (3/16")	38,1 (1,5")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1820	4,76 (3/16")	50,8 (2")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1825	4,76 (3/16")	63,5 (2,5")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1830	4,76 (3/16")	76,2 (3")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1835	4,76 (3/16")	88,9 (3,5")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W1840	4,76 (3/16")	101,6 (4")	5.18	2.38	5.08	17.45	1,9 - 2,3	25.4	10.8
33022.W2505	6,35 (1/4")	12,7 (0,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2506	6,35 (1/4")	15,24 (0,6")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2510	6,35 (1/4")	25,4 (1")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2515	6,35 (1/4")	38,1 (1,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2520	6,35 (1/4")	50,8 (2")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2525	6,35 (1/4")	63,5 (2,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2530	6,35 (1/4")	76,2 (3")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2535	6,35 (1/4")	88,9 (3,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W2540	6,35 (1/4")	101,6 (4")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	19.3
33022.W3105	7,94 (5/16")	12,7 (0,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3110	7,94 (5/16")	25,4 (1")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3115	7,94 (5/16")	38,1 (1,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3120	7,94 (5/16")	50,8 (2")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3125	7,94 (5/16")	63,5 (2,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3130	7,94 (5/16")	76,2 (3")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3135	7,94 (5/16")	88,9 (3,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3140	7,94 (5/16")	101,6 (4")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3145	7,94 (5/16")	114,3 (4,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3150	7,94 (5/16")	127 (5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	30.0
33022.W3705	9,53 (3,8")	12,7 (0,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3



BALL LOCK PINS & QUICK RELEASE PINS

Order No.	d_1 +0.00 -0.08	l_1 grip +1.50 -0.00	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33022.W3706	9,53 (3/8")	15,24 (0,6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3710	9,53 (3/8")	25,4 (1")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3715	9,53 (3/8")	38,1 (1,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3718	9,53 (3/8")	45,72 (1,8")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3720	9,53 (3/8")	50,8 (2")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3725	9,53 (3/8")	63,5 (2,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3730	9,53 (3/8")	76,2 (3")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3735	9,53 (3/8")	88,9 (3,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3740	9,53 (3/8")	101,6 (4")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3745	9,53 (3/8")	114,3 (4,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3750	9,53 (3/8")	127 (5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3755	9,53 (3/8")	139,7 (5,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W3760	9,53 (3/8")	152,4 (6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	43.3
33022.W4305	11,11 (7/16")	12,7 (0,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4310	11,11 (7/16")	25,4 (1")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4315	11,11 (7/16")	38,1 (1,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4320	11,11 (7/16")	50,8 (2")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4325	11,11 (7/16")	63,5 (2,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4330	11,11 (7/16")	76,2 (3")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4335	11,11 (7/16")	88,9 (3,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4340	11,11 (7/16")	101,6 (4")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4345	11,11 (7/16")	114,3 (4,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4350	11,11 (7/16")	127 (5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4355	11,11 (7/16")	139,7 (5,5")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W4360	11,11 (7/16")	152,4 (6")	12.6	3.96	14.27	24.13	4,09 - 5,45	25.4	58.9
33022.W5005	12,7 (1/2")	12,7 (0,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5010	12,7 (1/2")	25,4 (1")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5013	12,7 (1/2")	33,02 (1,3")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5015	12,7 (1/2")	38,1 (1,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5020	12,7 (1/2")	50,8 (2")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5025	12,7 (1/2")	63,5 (2,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5035	12,7 (1/2")	88,9 (3,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5040	12,7 (1/2")	101,6 (4")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5045	12,7 (1/2")	114,3 (4,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5050	12,7 (1/2")	127 (5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5055	12,7 (1/2")	139,7 (5,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5060	12,7 (1/2")	152,4 (6")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5065	12,7 (1/2")	165,1 (6,5")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5070	12,7 (1/2")	177,8 (7")	14.48	4.76	15.88	25.7	4,54 - 5,45	31.75	77.0
33022.W5610	14,29 (9/16")	25,4 (1")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5615	14,29 (9/16")	38,1 (1,5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5620	14,29 (9/16")	50,8 (2")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5625	14,29 (9/16")	63,5 (2,5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5630	14,29 (9/16")	76,2 (3")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5635	14,29 (9/16")	88,9 (3,5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5640	14,29 (9/16")	101,6 (4")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5645	14,29 (9/16")	114,3 (4,5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5650	14,29 (9/16")	127 (5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5655	14,29 (9/16")	139,7 (5,5")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5660	14,29 (9/16")	152,4 (6")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W5670	14,29 (9/16")	177,8 (7")	16.31	4.76	17.45	25.7	5,45 - 6,81	31.75	97.6
33022.W6210	15,88 (5/8")	25,4 (1")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6215	15,88 (5/8")	38,1 (1,5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6220	15,88 (5/8")	50,8 (2")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6225	15,88 (5/8")	63,5 (2,5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6230	15,88 (5/8")	76,2 (3")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6235	15,88 (5/8")	88,9 (3,5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6240	15,88 (5/8")	101,6 (4")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6245	15,88 (5/8")	114,3 (4,5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6250	15,88 (5/8")	127 (5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6255	15,88 (5/8")	139,7 (5,5")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6260	15,88 (5/8")	152,4 (6")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6270	15,88 (5/8")	177,8 (7")	18.03	6.35	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W6280	15,88 (5/8")	203,2 (8")	18.03	57.15	19.05	27.31	6,36 - 7,26	31.75	121.6
33022.W7510	19,05 (3/4")	25,4 (1")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7515	19,05 (3/4")	38,1 (1,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7520	19,05 (3/4")	50,8 (2")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6



Detent Pin - L Handle - Shoulder steel

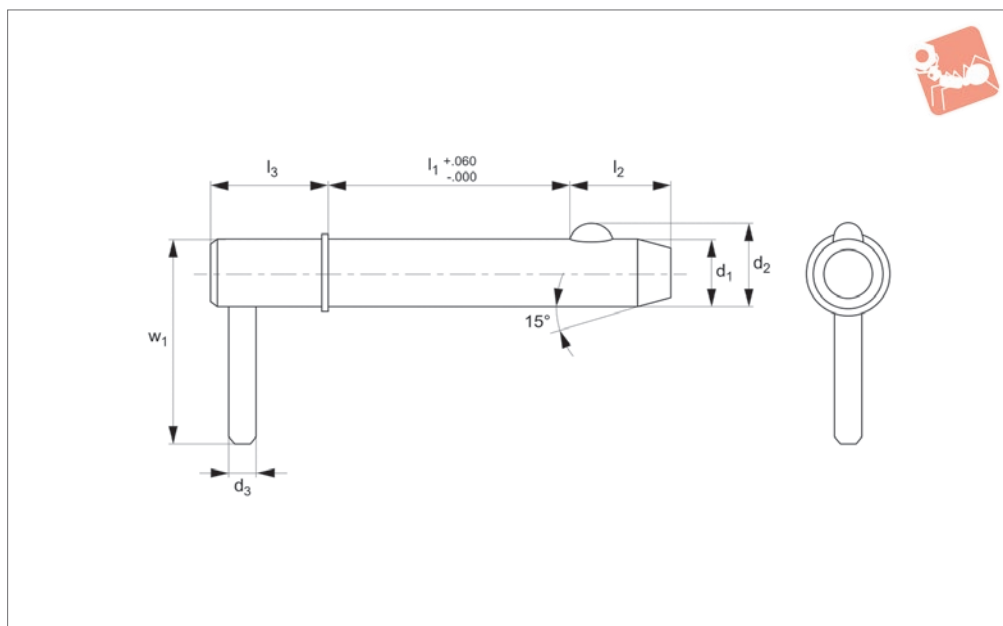
Ball Lock Pins & Quick Release

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.50 -0.00	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	w ₁	Single shear strength kN min.
33022.W7525	19,05 (3/4")	63,5 (2,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7530	19,05 (3/4")	76,2 (3")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7535	19,05 (3/4")	88,9 (3,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7540	19,05 (3/4")	101,6 (4")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7545	19,05 (3/4")	114,3 (4,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7550	19,05 (3/4")	127 (5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7555	19,05 (3/4")	139,7 (5,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7560	19,05 (3/4")	152,4 (6")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7570	19,05 (3/4")	177,8 (7")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W7580	19,05 (3/4")	203,2 (8")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	173.6
33022.W8810	22,23 (7/8")	25,4 (1")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8815	22,23 (7/8")	38,1 (1,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8820	22,23 (7/8")	50,8 (2")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8825	22,23 (7/8")	63,5 (2,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8830	22,23 (7/8")	76,2 (3")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8835	22,23 (7/8")	88,9 (3,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8840	22,23 (7/8")	101,6 (4")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8845	22,23 (7/8")	114,3 (4,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8850	22,23 (7/8")	127 (5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8855	22,23 (7/8")	139,7 (5,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8860	22,23 (7/8")	152,4 (6")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8865	22,23 (7/8")	165,1 (6,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8870	22,23 (7/8")	177,8 (7")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W8880	22,23 (7/8")	203,2 (8")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	239.4
33022.W1010	25,4 (1")	25,4 (1")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1015	25,4 (1")	38,1 (1,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1020	25,4 (1")	50,8 (2")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1025	25,4 (1")	63,5 (2,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1030	25,4 (1")	76,2 (3")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1035	25,4 (1")	88,9 (3,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1040	25,4 (1")	101,6 (4")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1045	25,4 (1")	114,3 (4,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1050	25,4 (1")	127 (5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1055	25,4 (1")	139,7 (5,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1060	25,4 (1")	152,4 (6")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1070	25,4 (1")	177,8 (7")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3
33022.W1080	25,4 (1")	203,2 (8")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	312.3

BALL LOCK PINS & QUICK RELEASE PINS



33024



Material

Shaft: Stainless steel, AISI 303.

Ball & Spring: Stainless steel, AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.

For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

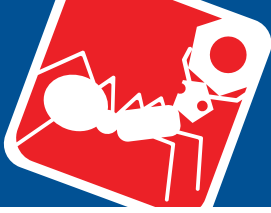
Hole sizes - commercial drills provide clearance for our standard pins.

Inch dimensions in brackets ().

Tips

Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d_1 +0.00 -0.08	l_1 +1.5 -0.0	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33024.W1803	4,76 (3/16")	7,62 (0,3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1805	4,76 (3/16")	12,7 (0,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1810	4,76 (3/16")	25,4 (1")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1815	4,76 (3/16")	38,1 (1,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1820	4,76 (3/16")	50,8 (2")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1825	4,76 (3/16")	63,5 (2,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1830	4,76 (3/16")	76,2 (3")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1835	4,76 (3/16")	88,9 (3,5")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W1840	4,76 (3/16")	101,6 (4")	5.18	2.38	5.08	17.45	1, 9 - 2, 3	25.4	12.2
33024.W2505	6,35 (1/4")	12,7 (0,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2506	6,35 (1/4")	15,24 (0,6")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2510	6,35 (1/4")	25,4 (1")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2515	6,35 (1/4")	38,1 (1,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2520	6,35 (1/4")	50,8 (2")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2525	6,35 (1/4")	63,5 (2,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2530	6,35 (1/4")	76,2 (3")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2535	6,35 (1/4")	88,9 (3,5")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W2540	6,35 (1/4")	101,6 (4")	7.26	3.17	7.92	18.29	2,27 - 2,73	25.4	21.7
33024.W3105	7,94 (5/16")	12,7 (0,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3110	7,94 (5/16")	25,4 (1")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3115	7,94 (5/16")	38,1 (1,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3120	7,94 (5/16")	50,8 (2")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3125	7,94 (5/16")	63,5 (2,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3130	7,94 (5/16")	76,2 (3")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3135	7,94 (5/16")	88,9 (3,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3140	7,94 (5/16")	101,6 (4")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3145	7,94 (5/16")	114,3 (4,5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3150	7,94 (5/16")	127 (5")	9.09	3.96	9.53	19.05	2,27 - 2,73	25.4	33.8
33024.W3705	9,53 (3,8")	12,7 (0,5")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	49.1
33024.W3706	9,53 (3,8")	15,24 (0,6")	10.82	3.96	12.7	19.05	3,63 - 4,54	25.4	49.1



Detent Pin - L Handle - Shoulder stainless steel

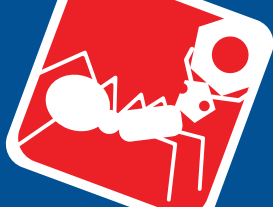
Ball Lock Pins & Quick Release

Order No.	d_1 +0.00 -0.08	l_1 +1.5 -0.0	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33024.W3710	9,53 (3,8")	25,4 (1")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3715	9,53 (3,8")	38,1 (1,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3718	9,53 (3,8")	45,72 (1,8")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3720	9,53 (3,8")	50,8 (2")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3725	9,53 (3,8")	63,5 (2,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3730	9,53 (3,8")	76,2 (3")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3735	9,53 (3,8")	88,9 (3,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3740	9,53 (3,8")	101,6 (4")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3745	9,53 (3,8")	114,3 (4,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3750	9,53 (3,8")	127 (5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3755	9,53 (3,8")	139,7 (5,5")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W3760	9,53 (3,8")	152,4 (6")	10,82	3,96	12,7	19,05	3,63 - 4,54	25,4	49,1
33024.W4305	11,11 (7/16")	12,7 (0,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4310	11,11 (7/16")	25,4 (1")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4315	11,11 (7/16")	38,1 (1,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4320	11,11 (7/16")	50,8 (2")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4325	11,11 (7/16")	63,5 (2,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4330	11,11 (7/16")	76,2 (3")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4335	11,11 (7/16")	88,9 (3,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4340	11,11 (7/16")	101,6 (4")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4345	11,11 (7/16")	114,3 (4,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4350	11,11 (7/16")	127 (5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4355	11,11 (7/16")	139,7 (5,5")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W4360	11,11 (7/16")	152,4 (6")	12,6	3,96	14,27	24,13	4,09 - 5,45	25,4	66,5
33024.W5005	12,7 (1/2")	12,7 (0,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5010	12,7 (1/2")	25,4 (1")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5013	12,7 (1/2")	33,02 (1,3")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5015	12,7 (1/2")	38,1 (1,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5020	12,7 (1/2")	50,8 (2")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5025	12,7 (1/2")	63,5 (2,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5035	12,7 (1/2")	88,9 (3,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5040	12,7 (1/2")	101,6 (4")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5045	12,7 (1/2")	114,3 (4,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5050	12,7 (1/2")	127 (5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5055	12,7 (1/2")	139,7 (5,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5060	12,7 (1/2")	152,4 (6")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5065	12,7 (1/2")	165,1 (6,5")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5070	12,7 (1/2")	177,8 (7")	14,48	4,76	15,88	25,7	4,54 - 5,45	31,75	87,1
33024.W5610	14,29 (9/16")	25,4 (1")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5615	14,29 (9/16")	38,1 (1,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5620	14,29 (9/16")	50,8 (2")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5625	14,29 (9/16")	63,5 (2,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5630	14,29 (9/16")	76,2 (3")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5635	14,29 (9/16")	88,9 (3,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5640	14,29 (9/16")	101,6 (4")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5645	14,29 (9/16")	114,3 (4,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5650	14,29 (9/16")	127 (5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5655	14,29 (9/16")	139,7 (5,5")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5660	14,29 (9/16")	152,4 (6")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W5670	14,29 (9/16")	177,8 (7")	16,31	4,76	17,45	25,7	5,45 - 6,81	31,75	110,3
33024.W6210	15,88 (5/8")	25,4 (1")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6215	15,88 (5/8")	38,1 (1,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6220	15,88 (5/8")	50,8 (2")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6225	15,88 (5/8")	63,5 (2,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6230	15,88 (5/8")	76,2 (3")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6235	15,88 (5/8")	88,9 (3,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6240	15,88 (5/8")	101,6 (4")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6245	15,88 (5/8")	114,3 (4,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6250	15,88 (5/8")	127 (5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6255	15,88 (5/8")	139,7 (5,5")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6260	15,88 (5/8")	152,4 (6")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6270	15,88 (5/8")	177,8 (7")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W6280	15,88 (5/8")	203,2 (8")	18,03	6,35	19,05	27,31	6,36 - 7,26	31,75	137,3
33024.W7510	19,05 (3/4")	25,4 (1")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33024.W7515	19,05 (3/4")	38,1 (1,5")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33024.W7520	19,05 (3/4")	50,8 (2")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9
33024.W7525	19,05 (3/4")	63,5 (2,5")	21,74	6,35	23,8	34,93	8,17 - 9,98	38,1	195,9

BALL LOCK PINS & QUICK RELEASE PINS

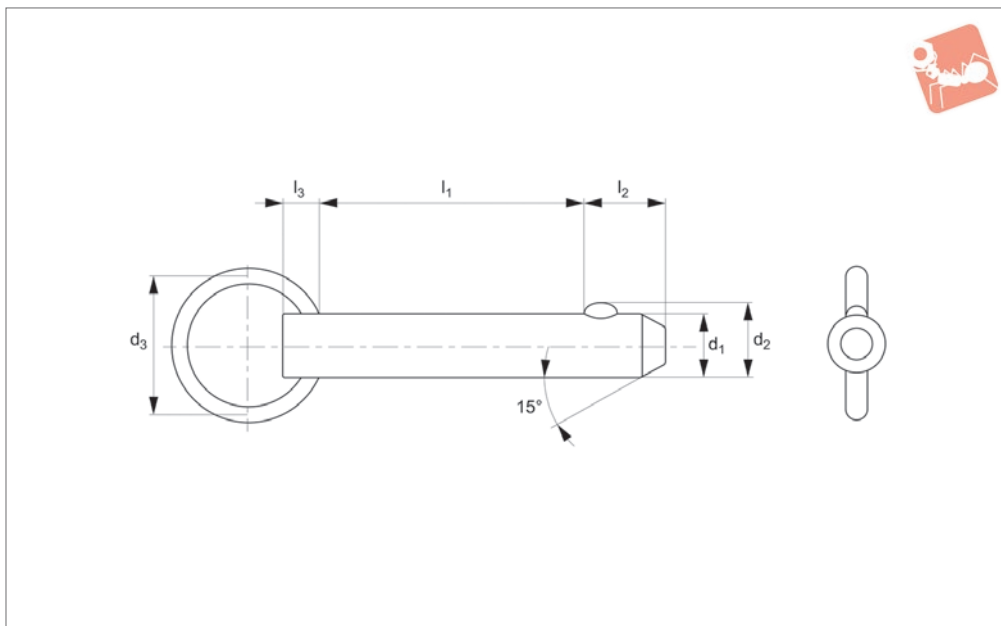


Order No.	d_1 +0.00 -0.08	l_1 +1.5 -0.0	d_2	d_3	l_2	l_3	Pull out strength kg	w_1	Single shear strength kN min.
33024.W7530	19,05 (3/4")	76,2 (3")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7535	19,05 (3/4")	88,9 (3,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7540	19,05 (3/4")	101,6 (4")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7545	19,05 (3/4")	114,3 (4,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7550	19,05 (3/4")	127 (5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7555	19,05 (3/4")	139,7 (5,5")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7560	19,05 (3/4")	152,4 (6")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7570	19,05 (3/4")	177,8 (7")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W7580	19,05 (3/4")	203,2 (8")	21.74	6.35	23.8	34.93	8,17 - 9,98	38.1	195.9
33024.W8810	22,23 (7/8")	25,4 (1")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8815	22,23 (7/8")	38,1 (1,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8820	22,23 (7/8")	50,8 (2")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8825	22,23 (7/8")	63,5 (2,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8830	22,23 (7/8")	76,2 (3")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8835	22,23 (7/8")	88,9 (3,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8840	22,23 (7/8")	101,6 (4")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8845	22,23 (7/8")	114,3 (4,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8850	22,23 (7/8")	127 (5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8855	22,23 (7/8")	139,7 (5,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8860	22,23 (7/8")	152,4 (6")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8865	22,23 (7/8")	165,1 (6,5")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8870	22,23 (7/8")	177,8 (7")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W8880	22,23 (7/8")	203,2 (8")	25.3	9.52	25.4	38.1	12,71 - 14,07	38.1	262.4
33024.W1010	25,4 (1")	25,4 (1")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1015	25,4 (1")	38,1 (1,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1020	25,4 (1")	50,8 (2")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1025	25,4 (1")	63,5 (2,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1030	25,4 (1")	76,2 (3")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1035	25,4 (1")	88,9 (3,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1040	25,4 (1")	101,6 (4")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1045	25,4 (1")	114,3 (4,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1050	25,4 (1")	127 (5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1055	25,4 (1")	139,7 (5,5")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1060	25,4 (1")	152,4 (6")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1070	25,4 (1")	177,8 (7")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0
33024.W1080	25,4 (1")	203,2 (8")	28.96	9.52	31.75	38.1	15,88 - 18,15	38.1	353.0



Detent Pin Stainless Steel

Ball Lock Pins & Quick Release



33012.1

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shaft: Stainless steel, AISI 303.

Ball & Spring: Stainless steel, AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.

For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

Hole sizes - commercial drills provide clearance for our standard pins.

Inch dimensions in brackets ().

Tips

Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.5 -0.0	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33012.W1803	4,76 (3/16")	7,62 (0,3")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1805	4,76 (3/16")	12,7 (0,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1810	4,76 (3/16")	25,4 (1")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1815	4,76 (3/16")	38,1 (1,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1820	4,76 (3/16")	50,8 (2")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1825	4,76 (3/16")	63,5 (2,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1830	4,76 (3/16")	76,2 (3")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1835	4,76 (3/16")	88,9 (3,5")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W1840	4,76 (3/16")	101,6 (4")	5.18	25.4	5.08	4.74	1,9 - 2,3	12.2
33012.W2505	6,35 (1/4")	12,7 (0,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2510	6,35 (1/4")	25,4 (1")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2515	6,35 (1/4")	38,1 (1,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2520	6,35 (1/4")	50,8 (2")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2525	6,35 (1/4")	63,5 (2,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2530	6,35 (1/4")	76,2 (3")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2535	6,35 (1/4")	88,9 (3,5")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W2540	6,35 (1/4")	101,6 (4")	7.26	25.4	7.92	5.58	2,27 - 2,73	21.7
33012.W3105	7,93 (5/16")	12,7 (0,5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3110	7,93 (5/16")	25,4 (1")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3115	7,93 (5/16")	38,1 (1,5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3120	7,93 (5/16")	50,8 (2")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3125	7,93 (5/16")	63,5 (2,5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3130	7,93 (5/16")	76,2 (3")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3135	7,93 (5/16")	88,9 (3,5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3140	7,93 (5/16")	101,6 (4")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3145	7,93 (5/16")	114,3 (4,5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3150	7,93 (5/16")	127,0 (5")	9.09	25.4	9.52	6.35	2,27 - 2,73	33.8
33012.W3705	9,52 (3/8")	12,7 (0,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3710	9,52 (3/8")	25,4 (1")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3715	9,52 (3/8")	38,1 (1,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1

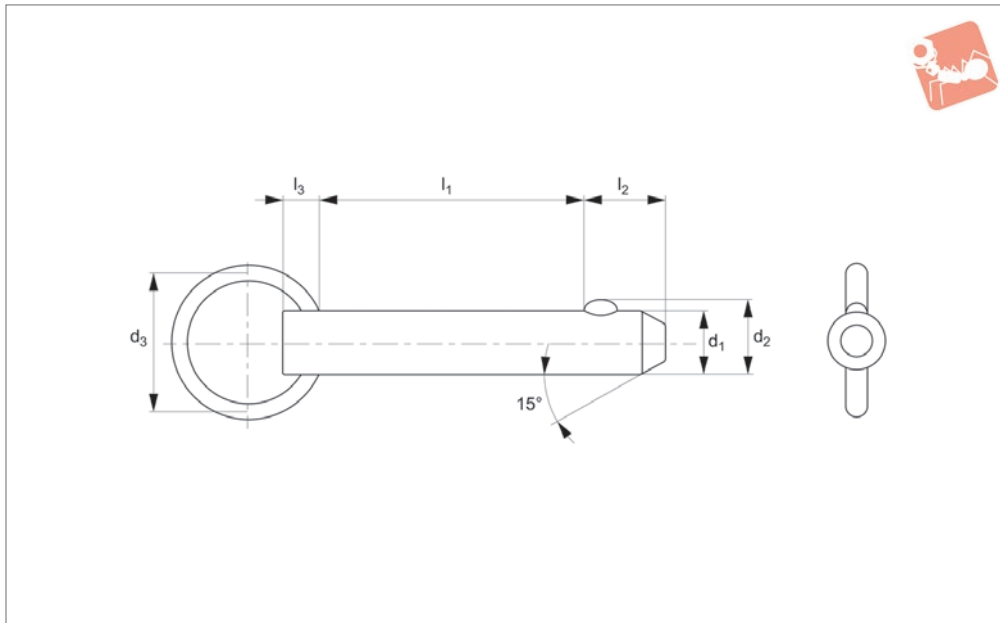


Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.5 -0.0	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33012.W3720	9,52 (3/8")	50,8 (2")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3725	9,52 (3/8")	63,5 (2,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3730	9,52 (3/8")	76,2 (3")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3735	9,52 (3/8")	88,9 (3,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3740	9,52 (3/8")	101,6 (4")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3745	9,52 (3/8")	114,3 (4,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3750	9,52 (3/8")	127,0 (5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3755	9,52 (3/8")	139,7 (5,5")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W3760	9,52 (3/8")	152,4 (6")	10.8	25.4	12.7	6.35	3,63 - 4,54	49.1
33012.W4305	11,1 (7/16")	12,7 (0,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4310	11,1 (7/16")	25,4 (1")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4315	11,1 (7/16")	38,1 (1,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4320	11,1 (7/16")	50,8 (2")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4325	11,1 (7/16")	63,5 (2,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4330	11,1 (7/16")	76,2 (3")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4335	11,1 (7/16")	88,9 (3,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4340	11,1 (7/16")	101,6 (4")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4345	11,1 (7/16")	114,3 (4,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4350	11,1 (7/16")	127,0 (5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4355	11,1 (7/16")	139,7 (5,5")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W4360	11,1 (7/16")	152,4 (6")	12.5	25.4	14.2	6.35	4,09 - 5,45	66.5
33012.W5005	12,7 (1/2")	12,7 (0,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5010	12,7 (1/2")	25,4 (1")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5015	12,7 (1/2")	38,1 (1,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5020	12,7 (1/2")	50,8 (2")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5025	12,7 (1/2")	63,5 (2,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5030	12,7 (1/2")	76,2 (3")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5035	12,7 (1/2")	88,9 (3,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5040	12,7 (1/2")	101,6 (4")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5045	12,7 (1/2")	114,3 (4,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5050	12,7 (1/2")	127,0 (5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5055	12,7 (1/2")	139,7 (5,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5060	12,7 (1/2")	152,4 (6")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5065	12,7 (1/2")	165,1 (6,5")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1
33012.W5070	12,7 (1/2")	177,8 (7")	14.4	31.7	15.8	7.92	4,54 - 5,45	87.1



Detent Pin Stainless Steel

Ball Lock Pins & Quick Release



33012.2

BALL LOCK PINS & QUICK RELEASE PINS

Material

Shaft: Stainless steel, AISI 303.

Ball & Spring: Stainless steel, AISI 316.

Technical Notes

Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.

For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

Hole sizes - commercial drills provide clearance for our standard pins.

Inch dimensions in brackets ().

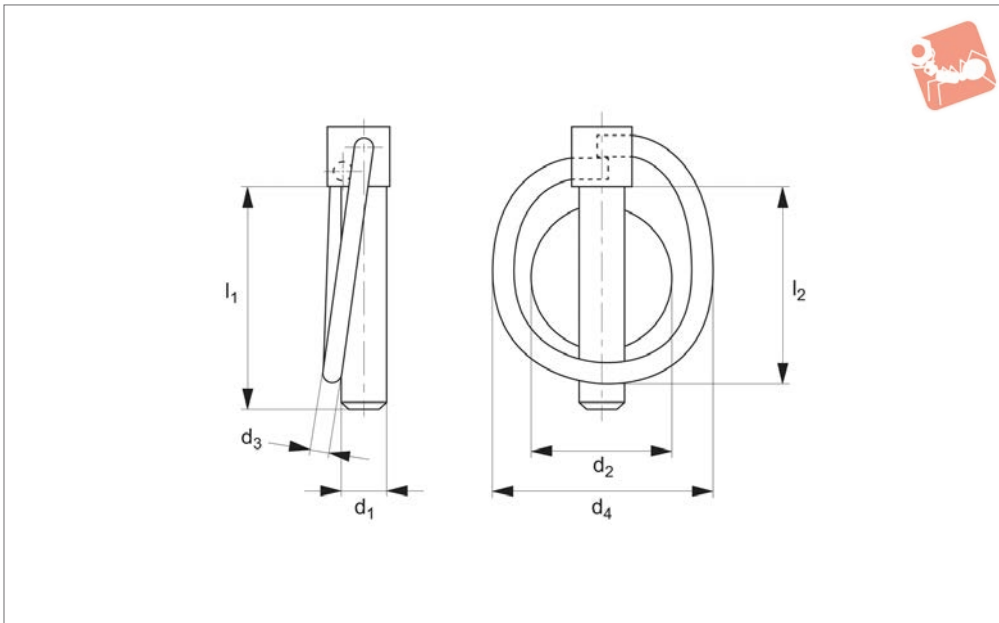
Tips

Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d_1 +0.00 -0.08	l_1 grip +1.5 -0.0	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33012.W5610	14,2 (9/16")	25,4 (1,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5615	14,2 (9/16")	38,1 (1,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5620	14,2 (9/16")	50,8 (2,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5625	14,2 (9/16")	63,5 (2,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5630	14,2 (9/16")	76,2 (3,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5635	14,2 (9/16")	88,9 (3,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5640	14,2 (9/16")	101,6 (4,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5645	14,2 (9/16")	114,3 (4,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5650	14,2 (9/16")	127,0 (5,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5655	14,2 (9/16")	139,7 (5,5")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5660	14,2 (9/16")	152,4 (6,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W5670	14,2 (9/16")	177,8 (7,0")	16,3	31,7	17,4	7,92	5,45 - 6,81	110,3
33012.W6210	15,8 (5/8")	25,4 (1,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6215	15,8 (5/8")	38,1 (1,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6220	15,8 (5/8")	50,8 (2,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6225	15,8 (5/8")	63,5 (2,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6230	15,8 (5/8")	76,2 (3,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6235	15,8 (5/8")	88,9 (3,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6240	15,8 (5/8")	101,6 (4,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6245	15,8 (5/8")	114,3 (4,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6250	15,8 (5/8")	127,0 (5,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6255	15,8 (5/8")	139,7 (5,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6260	15,8 (5/8")	152,4 (6,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6265	15,8 (5/8")	165,1 (6,5")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6270	15,8 (5/8")	177,8 (7,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W6280	15,8 (5/8")	203,2 (8,0")	18,0	31,7	19,0	9,52	6,36 - 7,26	137,3
33012.W7510	19,0 (3/4")	25,4 (1,0")	21,7	38,1	23,7	9,52	8,17 - 9,98	195,9
33012.W7515	19,0 (3/4")	38,1 (1,5")	21,7	38,1	23,7	9,52	8,17 - 9,98	195,9
33012.W7520	19,0 (3/4")	50,8 (2,0")	21,7	38,1	23,7	9,52	8,17 - 9,98	195,9
33012.W7525	19,0 (3/4")	63,5 (2,5")	21,7	38,1	23,7	9,52	8,17 - 9,98	195,9



Order No.	d ₁ +0.00 -0.08	l ₁ grip +1.5 -0.0	d ₂	d ₃	l ₂	l ₃	Pull out strength kg	Single shear strength kN min.
33012.W7530	19,0 (3/4")	76,2 (3,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7535	19,0 (3/4")	88,9 (3,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7540	19,0 (3/4")	101,6 (4,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7545	19,0 (3/4")	114,3 (4,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7550	19,0 (3/4")	127,0 (5,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7555	19,0 (3/4")	139,7 (5,5")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7560	19,0 (3/4")	152,4 (6,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7570	19,0 (3/4")	177,8 (7,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W7580	19,0 (3/4")	203,2 (8,0")	21.7	38.1	23.7	9.52	8,17 - 9,98	195.9
33012.W8810	22,2 (7/8")	25,4 (1,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8815	22,2 (7/8")	38,1 (1,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8820	22,2 (7/8")	50,8 (2,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8825	22,2 (7/8")	63,5 (2,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8830	22,2 (7/8")	76,2 (3,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8835	22,2 (7/8")	88,9 (3,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8840	22,2 (7/8")	101,6 (4,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8845	22,2 (7/8")	114,3 (4,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8850	22,2 (7/8")	127,0 (5,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8855	22,2 (7/8")	139,7 (5,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8860	22,2 (7/8")	152,4 (6,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8865	22,2 (7/8")	165,1 (6,5")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8870	22,2 (7/8")	177,8 (7,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W8880	22,2 (7/8")	203,2 (8,0")	25.2	38.1	25.4	12.7	12,71 - 14,07	262.4
33012.W1010	25,4 (1")	25,4 (1,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1015	25,4 (1")	38,1 (1,5")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1020	25,4 (1")	50,8 (2,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1025	25,4 (1")	63,5 (2,5")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1030	25,4 (1")	76,2 (3,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1035	25,4 (1")	88,9 (3,5")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1040	25,4 (1")	101,6 (4,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1045	25,4 (1")	114,3 (4,5")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1050	25,4 (1")	127,0 (5,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1055	25,4 (1")	139,7 (5,5")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1060	25,4 (1")	152,4 (6,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1070	25,4 (1")	177,8 (7,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0
33012.W1080	25,4 (1")	203,2 (8,0")	28.9	38.1	31.7	12.7	15,88 - 18,15	353.0



33300

BALL LOCK PINS & QUICK RELEASE PINS

Material

Mild steel, generally yellow zinc plated.

For pin $d_1 = 4,5$ & 6 there is no flat on the pin.

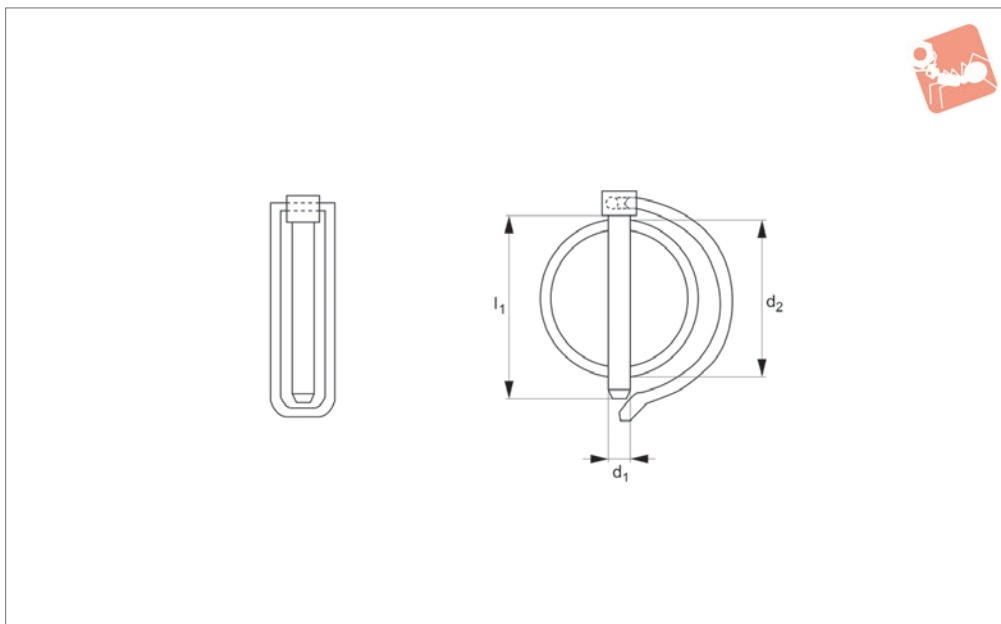
Technical Notes

To DIN 11023. With spring steel „keep“.

Order No.	d_1	l_1	d_2 max.	d_3	d_4	l_2
33300.W0004	4.5	42	25	3.5	41	37
33300.W0006	6.0	42	32	3.5	41	37
33300.W0007	7.0	42	32	3.5	41	37
33300.W0009	9.0	42	32	3.5	41	37
33300.W0010	10.0	42	32	3.5	41	37
33300.W0011	11.0	42	32	3.5	41	37



33320



Material

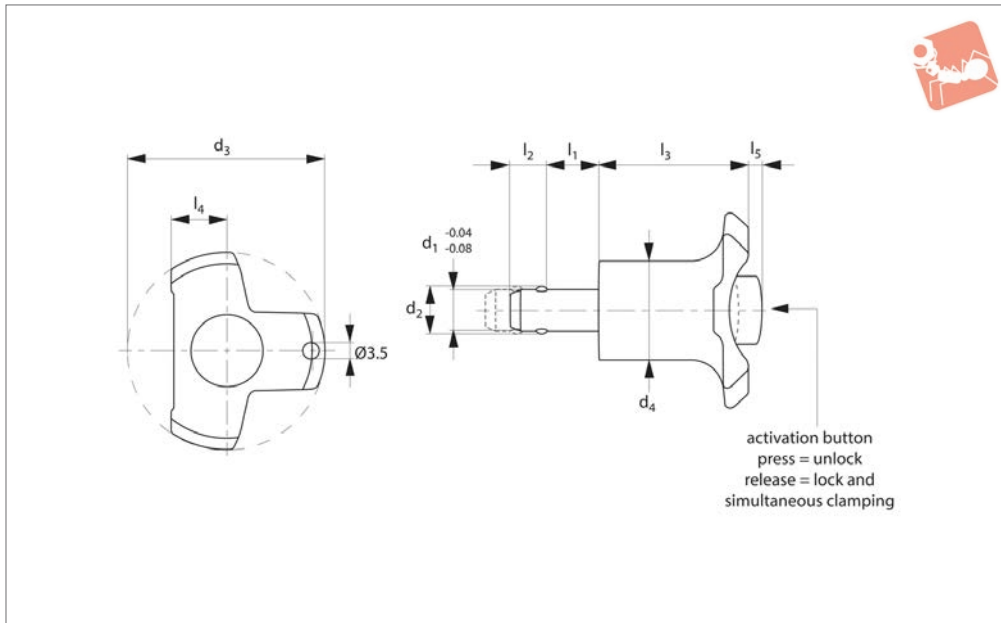
Mild steel, generally silver zinc-plated.
Zinc plating colour will be at manufac-

turers discretion.

Technical Notes

With spring steel „keep“.

Order No.	d ₁	l ₁	d ₂ max.
33320.W0041	4.5	32	28
33320.W0042	4.5	40	36
33320.W0061	6.0	32	28
33320.W0062	6.0	40	36
33320.W0063	6.0	45	40
33320.W0080	8.0	40	36
33320.W0081	8.0	45	40
33320.W0082	8.0	50	45
33320.W0083	8.0	60	50
33320.W0101	10.0	40	36
33320.W0102	10.0	50	45
33320.W0103	10.0	60	55
33320.W0111	11.0	45	40
33320.W0112	11.0	55	50



33180

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1,4305 (AISI 303).
Handle: thermoplastic PA 6, grey.
Spring: stainless steel.

Technical Notes

Pressing = unlocking & fixing.

Releasing = locking and simultaneous clamping.

Temperature resistance: -30°C to +80°C.

Locks and simultaneously clamps thin walled plates, with clamping distance of up to 5mm. Applications in welding work,

protection of covers and to close doors.

Tips

For lanyards & retaining cables see part no. 33250.

Order No.	d ₁	l ₁	d ₂	d ₃	d ₄	l ₂	l ₃	l ₄	l ₅ unclamped	Location hole tol. H11	Clamping force N max.	Weight g
33180.W0010	6	0 - 5	7.0	38	17.5	5.0	30.2	11.0	3	6	16	19
33180.W0012	6	5 - 10	7.0	38	17.5	5.0	30.2	11.0	3	6	18	23
33180.W0020	8	0 - 5	9.5	38	17.5	6.5	30.2	11.0	3	8	16	22
33180.W0022	8	5 - 10	9.5	38	17.5	6.5	30.2	11.0	3	8	18	25
33180.W0030	10	0 - 5	12.0	47	23.0	8.7	36.0	11.0	4	10	21	45
33180.W0032	10	5 - 10	12.0	47	23.0	8.7	36.0	11.0	4	10	23	47
33180.W0040	12	0 - 5	14.0	47	23.0	9.4	36.0	13.5	4	12	21	47
33180.W0042	12	5 - 10	14.0	47	23.0	9.4	36.0	13.5	4	12	23	54

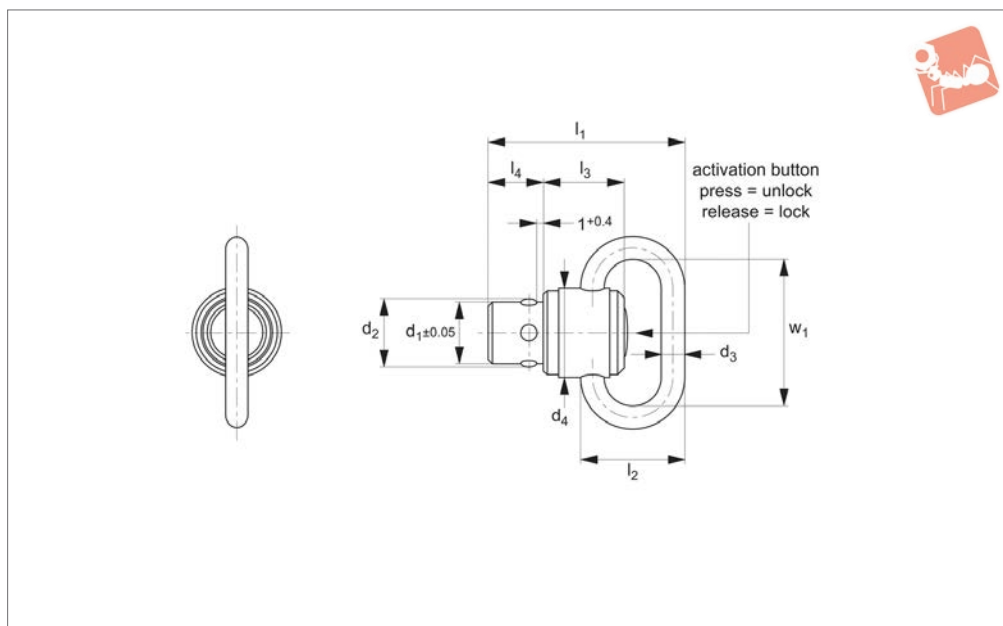




BALL LOCK PINS & QUICK RELEASE PINS



33170



Material

Pin: Stainless Steel 1.4305 (AISI 303)

Spring: Stainless Steel

Finish: Black or Natural

Technical Notes

Temperature range -50°C to +150°C.

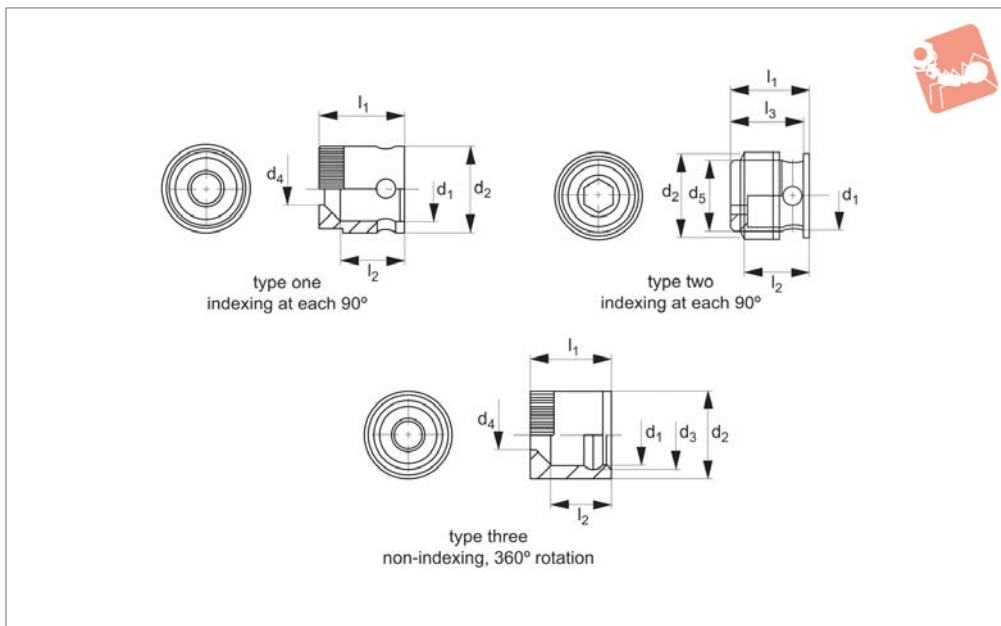
For quick fastening and locking of frequently repeated connections; gun slings, tool holders etc, used in combination with sling swivel receivers no.33172.

Pressing = Unlocking

Releasing = Locking

Order No.	Finish	Nom. pin dia	$d_1 +0.05$	w_1	d_2	d_3	d_4	l_1	l_2	l_3	l_4	Load capacity kN max.	Weight g
33170.W0010	Black	9.5	9.5	23	11.1	3.5	14	31.3	16.5	12.5	9	1.2	20
33170.W0020	Black	9.5	9.5	40	11.1	4.5	14	36.6	23.0	12.5	9	2.0	29
33170.W0110	Natural	9.5	9.5	23	11.1	3.5	14	31.3	16.5	12.5	9	1.2	20
33170.W0120	Natural	9.5	9.5	40	11.1	4.5	14	36.6	23.0	12.5	9	2.0	29





33172

BALL LOCK PINS & QUICK RELEASE PINS

Material

Pin: stainless steel 1.4305.
Spring: stainless steel.
Finish: Black or natural.

Technical Notes

Temperature range -50°C to +150°C.

Receivers for sling swivel pins part no. 33170.

To achieve quick fastening and locking frequently repeated connections.
Type one and two: indexing at 90°.
Type three: non-indexing, 360° rotation.

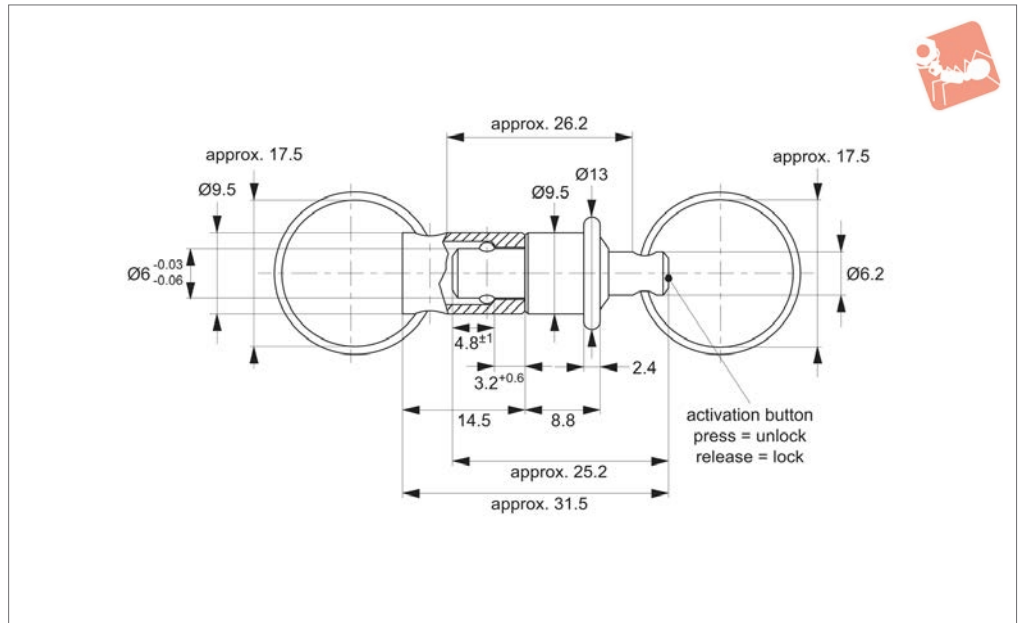
Order No.	Dia. Ø nom.	Finish	For mounting in	Type	d ₁ tol. h9	d ₂ ±0.1	d ₃	d ₄	d ₅	l ₁	l ₂	l ₃	A/F	Weight g
33172.W0205	9.5	Black	Wood	One	9.6	12.65	-	4.9	-	12.65	9.65	-	-	5.6
33172.W0210	9.5	Black	Plastic	Two	9.6	12.65	-	-	10.7	12.10	9.20	11	5	3.0
33172.W0215	9.5	Black	Wood 360°	Three	9.6	13.50	11.3	4.9	-	12.65	9.65	-	-	6.5
33172.W0305	9.5	Natural	Wood	One	9.6	12.65	-	4.9	-	12.65	9.65	-	-	5.6
33172.W0310	9.5	Natural	Plastic	Two	9.6	12.65	-	-	10.7	12.10	9.20	11	5	3.0
33172.W0315	9.5	Natural	Wood 360°	Three	9.6	13.50	11.3	4.9	-	12.65	9.65	-	-	6.5



BALL LOCK PINS & QUICK RELEASE PINS



33178



Material

Pin & Bush: stainless steel 1.4305 (AISI 303).
 Ball: stainless steel 1.3541
 Ring & Spring: stainless steel.

Technical Notes

Pressing = unlocking
 Releasing = locking.
 Temperature resistance up to max. 250 °C.

Tips

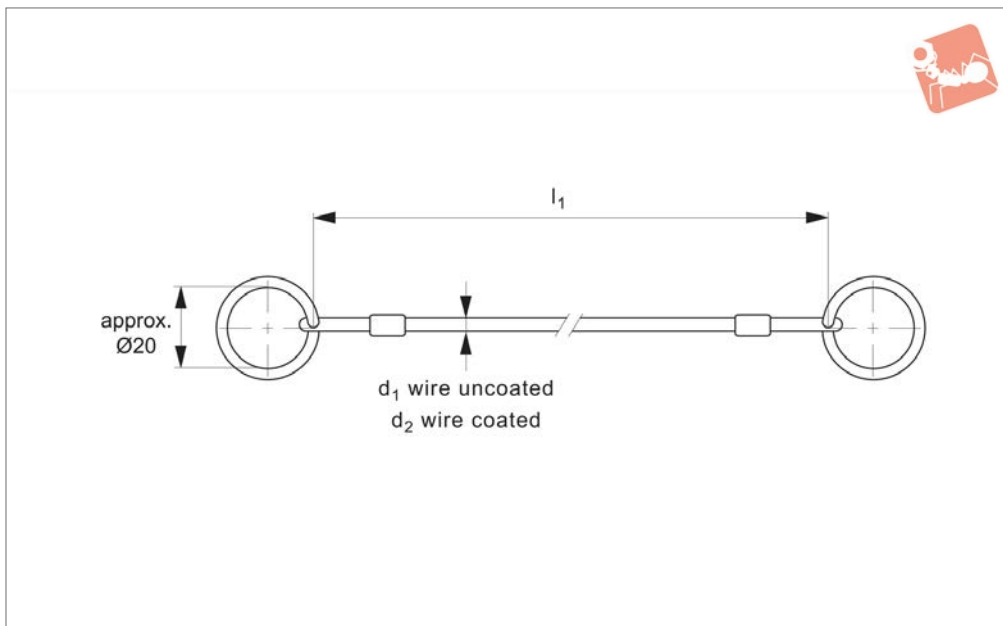
For lanyards & retaining cables see part no. 33250.

Order No.	Load capacity N max.	Weight g
33178.W0905	30	15



Lanyard - Loop to Loop with split rings - crimps stainless

Ball Lock Pins & Quick Release



33250

BALL LOCK PINS & QUICK RELEASE PINS

Material

Wire rope: stainless steel
Coating (if present): PA6 see table.
Crimps /sleeves: stainless steel
Split rings: stainless steel

Technical Notes

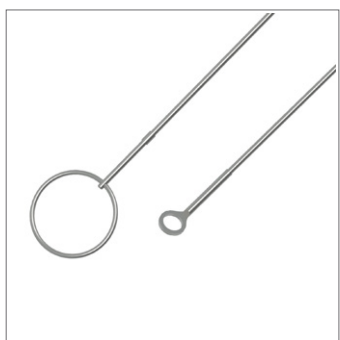
Crimps tested to failure at 28 Kgf. Tempe-

perature range: up to 250°C (uncoated)

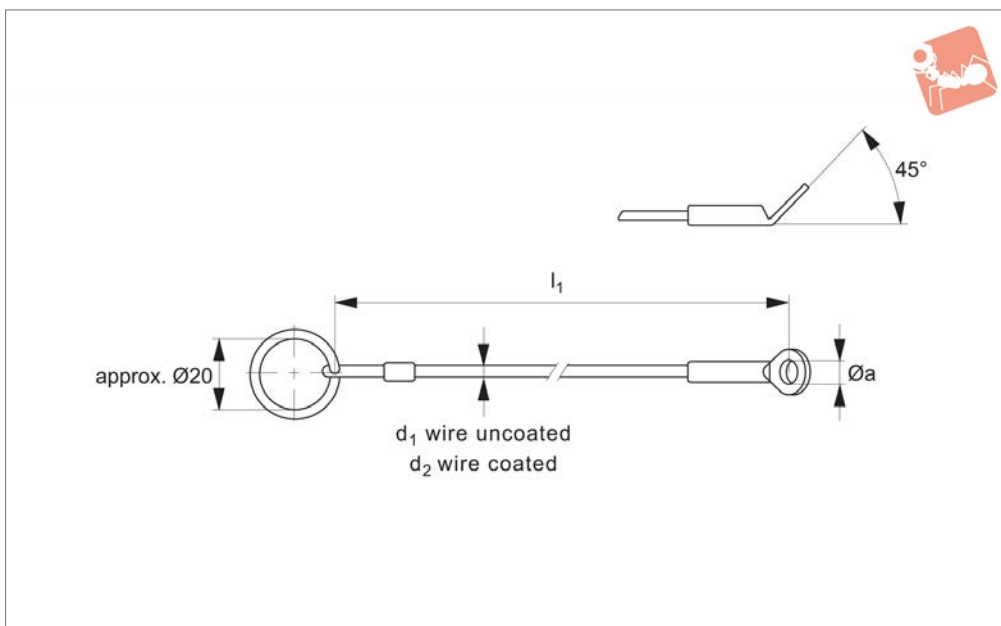
Tips

For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins nos. 33060 through 33226.

Order No.	Coating	d ₁ wire uncoated	l ₁	d ₂ wire coated	Weight g
33250.W0940	Black	1.5	150	2.2	6.5
33250.W0941	Black	1.5	200	2.2	6.4
33250.W0943	Black	1.5	300	2.2	7.5
33250.W0950	Clear	1.5	150	2.2	6.5
33250.W0952	Clear	1.5	200	2.2	6.4
33250.W0956	Clear	1.5	300	2.2	7.5
33250.W0930	Uncoated	1.5	150	-	6.5
33250.W0931	Uncoated	1.5	200	-	6.4
33250.W0933	Uncoated	1.5	300	-	7.5



33251



Material

Wire rope: stainless steel.
 Coating (if present): PA6, see table.
 Crimps /sleeves: stainless steel.
 Eyelet and split ring: stainless steel.

temperature range: up to 250°C (uncoated).

Tips

For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins nos. 33060 through 33226.

Technical Notes

Crimps tested for failure at 28 Kgf. Tempe-

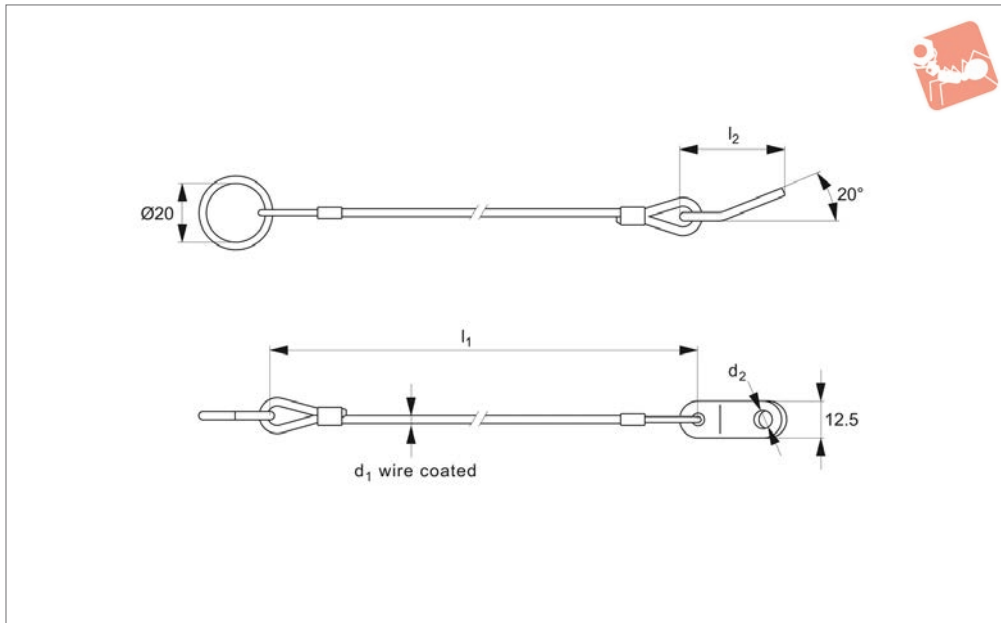
Order No.	Coating	d ₁ wire uncoated	l ₁	Ø a	d ₂ wire uncoated	Weight g
33251.W0945	Black	1.5	150	4.8	2.0	6.9
33251.W0946	Black	1.5	200	4.8	2.0	7.6
33251.W0948	Black	1.5	300	4.8	2.0	8.6
33251.W0960	Clear	1.5	150	4.8	2.0	6.9
33251.W0962	Clear	1.5	200	4.8	2.0	7.6
33251.W0966	Clear	1.5	300	4.8	2.0	8.6
33251.W0935	Uncoated	1.5	150	4.8	2.0	6.9
33251.W0936	Uncoated	1.5	200	4.8	2.0	7.6
33251.W0938	Uncoated	1.5	300	4.8	2.0	8.6



Lanyard - Split Ring to Rectangle Tab

crimps brass, tab stainless steel

Ball Lock Pins & Quick Release



33252

BALL LOCK PINS & QUICK RELEASE PINS

Material

Wire rope: stainless steel.
 Coating: thermoplastic, PVC, green transparent
 Crimps: brass, zinc plated.
 Tabs: stainless steel
 Split ring: stainless steel.

Technical Notes

Temperature range up to 80°C.

Tips

For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins

nos.33060 through 33226.

Important Notes

Conform to military spec MIL-DTL-83420 specification

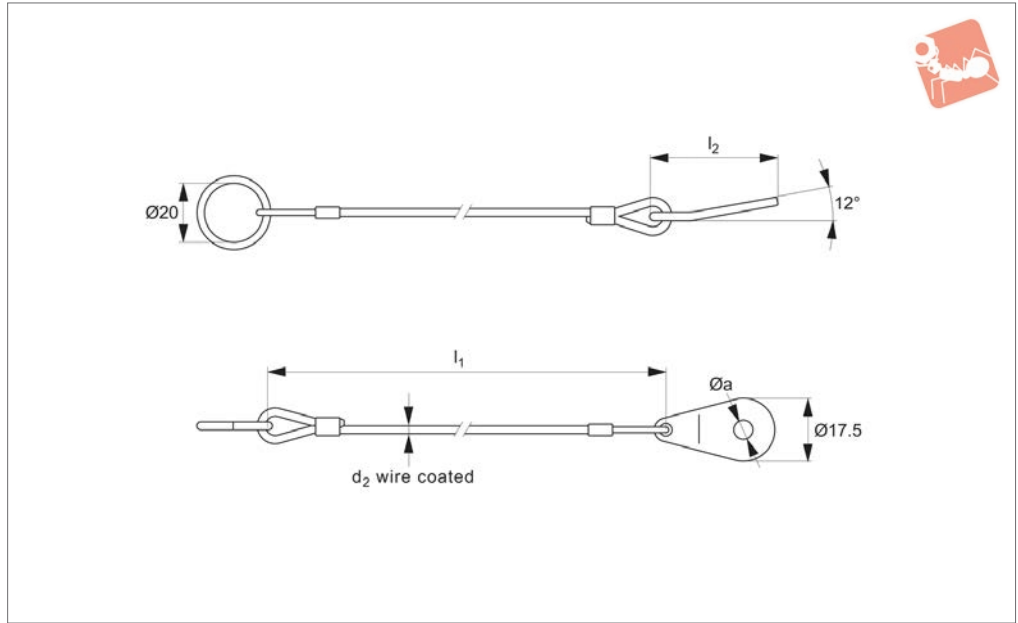
Order No.	Coating	d ₁ wire coated	l ₁	d ₂	l ₂	Weight g
33252.W1301	Green	2.4	150	294.9	29	13
33252.W1302	Green	2.4	200	4.9	29	14
33252.W1303	Green	2.4	300	4.9	29	16



BALL LOCK PINS & QUICK RELEASE PINS



33253



Material

Wire rope: stainless steel.
 Coating: thermoplastic, PVC, green transparent
 Crimps: brass, zinc plated.
 Tabs: stainless steel
 Split ring: stainless steel.

Technical Notes

Temperature range up to 80°C.

Tips

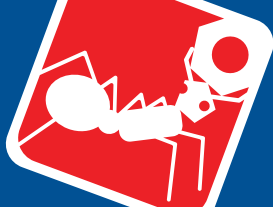
For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins

nos.33060 through 33226.

Important Notes

Conform to military spec MIL-DTL-83420 specification

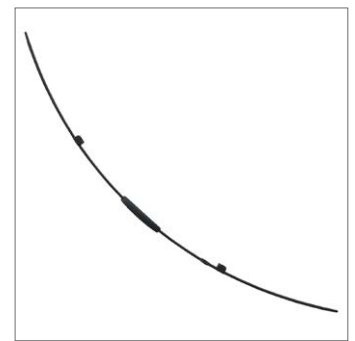
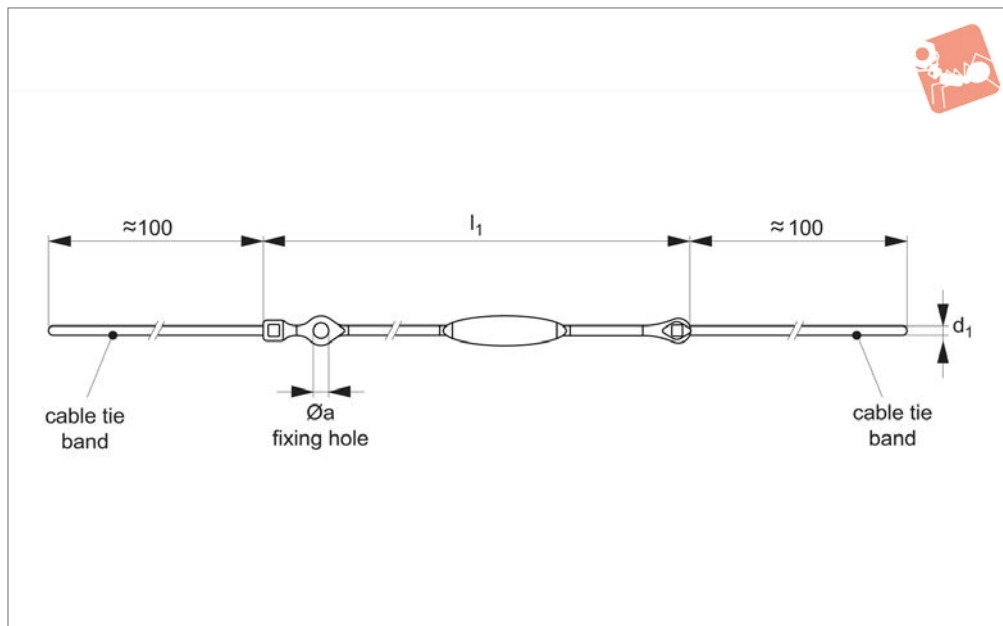
Order No.	Coating	l_1	$\varnothing a$	d_2 wire coated	l_2	Weight g
33253.W1311	Green	150	4.9	2.4	33	13.0
33253.W1312	Green	200	4.9	2.4	33	14.0
33253.W1313	Green	300	4.9	2.4	33	16.0



Lanyard - Cable Tie Loop

thermoplastic

Ball Lock Pins & Quick Release



33260

BALL LOCK PINS & QUICK RELEASE PINS

Material

Thermoplastic PA6, grey.

Technical Notes

Temperature range up to 80°C offers two

fixing alternatives:

- Cable tie at both ends
- Cable tie one end and fixing hole at other to secure with M4 screw.

Tips

For use in securing components to assemblies, or to avoid items being misplaced.

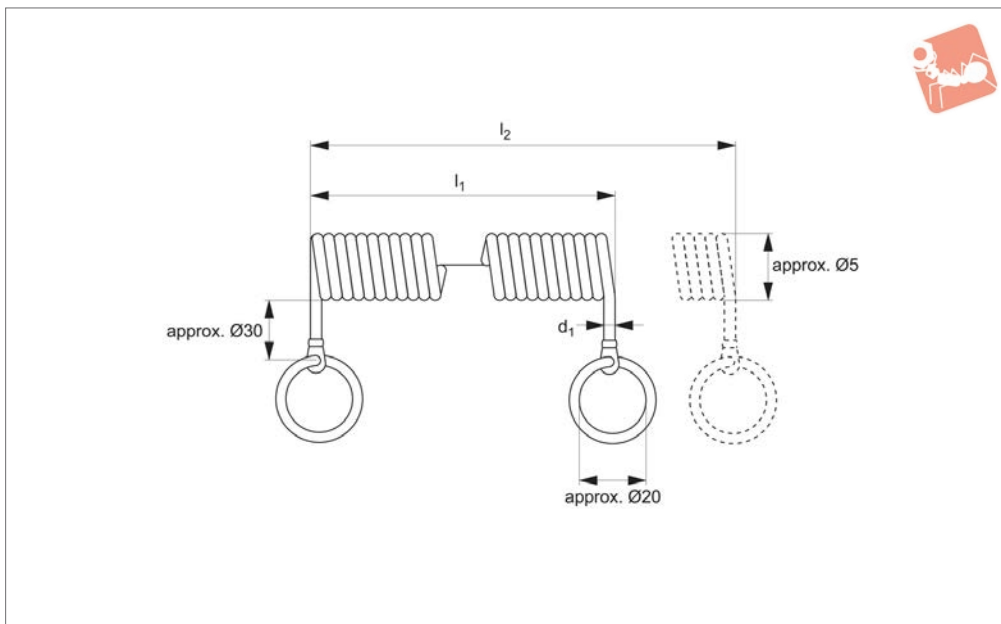
Order No.	Coating	d ₁	l ₁	Ø a	Weight g
33260.W0970	n/a	2.5	150	4.2	2.1
33260.W0974	n/a	2.5	250	4.2	2.7



BALL LOCK PINS & QUICK RELEASE PINS



33261



Material

Wire rope: steel.
Coating: PUR, thermoplastic.
Eyelet: brass, zinc plated.
Split ring: stainless steel.

Technical Notes

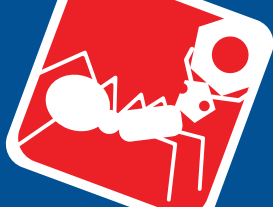
Temperature range up to 80°C. Coiled

sprung wire offers high extended length in a compact design.

Tips

For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins, part nos. 33060 to 33226.

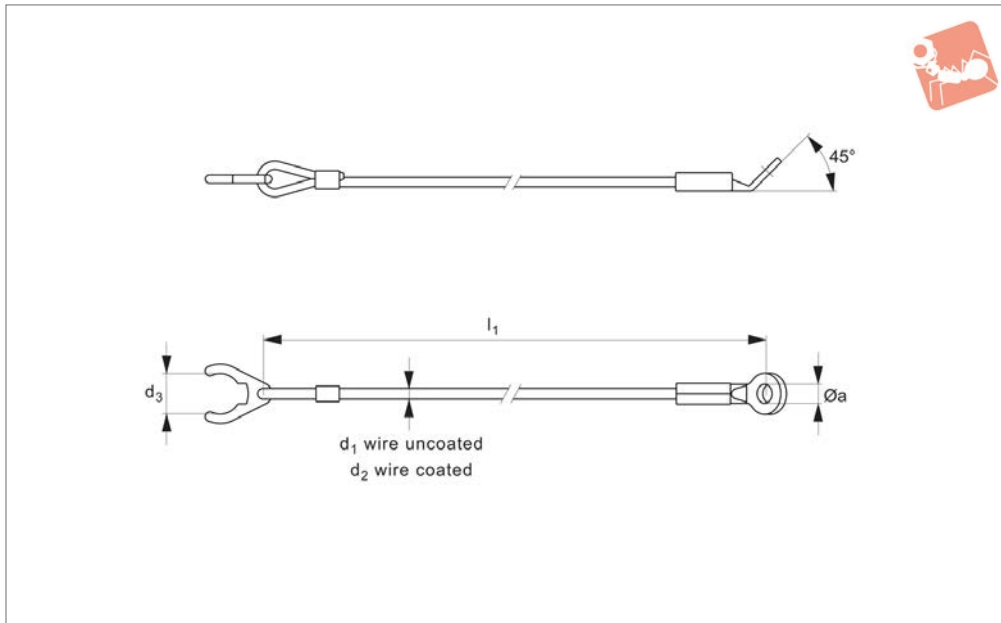
Order No.	PUR coating	d ₁	l ₁ retracted	l ₂ extended	Weight g
33261.W0980	Black	1.5	100	600	11.5
33261.W0982	Black	1.5	200	1200	17.4



Lanyard - Circlip End to Eyelet

crimps brass, tabs stainless steel

Ball Lock Pins & Quick Release



33265

BALL LOCK PINS & QUICK RELEASE PINS

Material

Wire rope: stainless steel.
 Coating (if present): PVC, see table.
 Crimps/sleeves: brass.
 Eyelet, circlip end and split ring: stainless

steel.

Technical Notes

Designed specifically to hold ball lock pin 33194.

Important Notes

Assemble by attaching holding clips to the ball lock pin with a soft-face mallet, disassemble via levering off with a screw driver.

Order No.	Coating	d ₁ wire uncoated	l ₁	Ø a	d ₂ wire coated	d ₅ for use with part no. 33914 of pin dia d ₁	Weight g
33265.W1001	Clear	1.5	150	4.8	2.0	5/ 6	6.0
33265.W1021	Clear	1.5	200	4.8	2.0	5/ 6	7.0
33265.W1041	Clear	1.5	300	4.8	2.0	5/ 6	8.0
33265.W1061	Clear	1.5	150	2.0	4.8	8/10	7.0
33265.W1002	Clear	1.5	200	4.8	2.0	8/10	8.0
33265.W1022	Clear	1.5	200	4.8	2.0	8/10	9.0
33265.W1042	Clear	1.5	150	4.8	2.0	12/16	8.0
33265.W1062	Clear	1.5	200	4.8	2.0	12/16	9.0
33265.W1003	Clear	1.5	300	4.8	2.0	12/16	10.0
33265.W1023	Clear	1.5	150	4.8	2.0	20/25	12.0
33265.W1043	Clear	1.5	200	4.8	2.0	20/25	13.0
33265.W1063	Clear	1.5	300	4.8	2.0	20/25	14.0
33265.W1101	Black	1.5	150	4.8	2.0	5/ 6	6.0
33265.W1121	Black	1.5	200	4.8	2.0	5/ 6	7.0
33265.W1141	Black	1.5	300	4.8	2.0	5/ 6	8.0
33265.W1161	Black	1.5	150	4.8	2.0	8/10	7.0
33265.W1102	Black	1.5	200	4.8	2.0	8/10	8.0
33265.W1122	Black	1.5	300	4.8	2.0	8/10	9.0
33265.W1142	Black	1.5	150	4.8	2.0	12/16	8.0
33265.W1162	Black	1.5	200	4.8	2.0	12/16	9.0
33265.W1103	Black	1.5	300	4.8	2.0	12/16	10.0
33265.W1123	Black	1.5	150	4.8	2.0	20/25	12.0
33265.W1143	Black	1.5	200	4.8	2.0	20/25	13.0
33265.W1163	Black	1.5	300	4.8	2.0	20/25	14.0
33265.W1201	Uncoated	1.5	150	4.8	-	5/ 6	6.0
33265.W1221	Uncoated	1.5	200	4.8	-	5/ 6	7.0
33265.W1241	Uncoated	1.5	300	4.8	-	5/ 6	8.0
33265.W1261	Uncoated	1.5	150	4.8	-	8/10	7.0
33265.W1202	Uncoated	1.5	200	4.8	-	8/10	8.0
33265.W1222	Uncoated	1.5	300	4.8	-	8/10	9.0
33265.W1242	Uncoated	1.5	200	4.8	-	12/16	8.0
33265.W1262	Uncoated	1.5	200	4.8	-	12/16	9.0
33265.W1203	Uncoated	1.5	300	4.8	-	12/16	10.0

Ball Lock Pins & Quick Release



Lanyard - Circlip End to Eyelet

crimps brass, tabs stainless steel



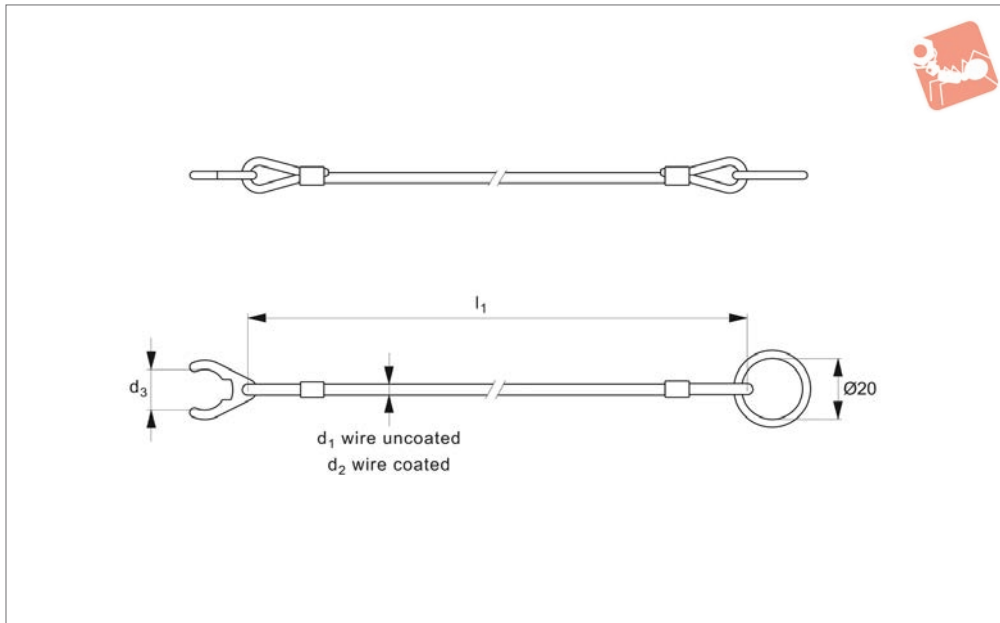
Order No.	Coating	d ₁ wire uncoated	l ₁	Ø a	d ₂ wire coated	d ₅ for use with part no. 33914 of pin dia d ₁	Weight g
33265.W1223	Uncoated	1.5	150	4.8	-	20/25	12.0
33265.W1243	Uncoated	1.5	200	4.8	-	20/25	13.0
33265.W1263	Uncoated	1.5	300	4.8	-	20/25	14.0

BALL LOCK PINS & QUICK RELEASE PINS



Lanyard - Circlip End to Loop with crimps brass, tabs stainless steel, for ball lock pins

Ball Lock Pins & Quick Release



33266

BALL LOCK PINS & QUICK RELEASE PINS

Material

Wire rope: stainless steel.
Coating (if present): PA6, see table.
Crimps/sleeves: brass.
Circlip end and split ring: stainless steel.

Technical Notes

Designed specifically to hold ball lock pin 33194.

Important Notes

Assemble by attaching holding clips to the ball lock pin with a soft-face mallet, disassemble via levering off with a screw driver.

Order No.	Coating	d_1 wire uncoated	l_1	d_2 wire coated	d_3 for use with part no. 33914 of pin dia d_1	Weight g
33266.W1011	Clear	1.5	150	2.0	5/6	6.3
33266.W1031	Clear	1.5	150	2.0	8/10	7.2
33266.W1051	Clear	1.5	150	2.0	12/16	8.4
33266.W1071	Clear	1.5	150	2.0	20/25	11
33266.W1012	Clear	1.5	200	2.0	5/6	6.9
33266.W1032	Clear	1.5	200	2.0	8/10	7.8
33266.W1052	Clear	1.5	200	2.0	12/16	9.0
33266.W1072	Clear	1.5	200	2.0	20/25	12
33266.W1013	Clear	1.5	300	2.0	5/6	8.2
33266.W1033	Clear	1.5	300	2.0	8/10	9.0
33266.W1053	Clear	1.5	300	2.0	12/16	10
33266.W1073	Clear	1.5	300	2.0	20/25	13
33266.W1111	Black	1.5	150	2.0	5/6	6.3
33266.W1131	Black	1.5	150	2.0	8/10	7.3
33266.W1151	Black	1.5	150	2.0	12/16	8.4
33266.W1171	Black	1.5	150	2.0	20/25	11
33266.W1112	Black	1.5	200	2.0	5/6	7.0
33266.W1132	Black	1.5	200	2.0	8/10	7.8
33266.W1152	Black	1.5	200	2.0	12/16	9.0
33266.W1172	Black	1.5	200	2.0	20/25	12
33266.W1113	Black	1.5	300	2.0	5/6	8.2
33266.W1133	Black	1.5	300	2.0	8/10	9.0
33266.W1153	Black	1.5	300	2.0	12/16	10
33266.W1173	Black	1.5	300	2.0	20/25	13
33266.W1211	Uncoated	1.5	150	-	5/6	5.9
33266.W1231	Uncoated	1.5	150	-	8/10	6.8
33266.W1251	Uncoated	1.5	150	-	12/16	8.0
33266.W1271	Uncoated	1.5	150	-	20/25	11
33266.W1212	Uncoated	1.5	200	-	5/6	6.4
33266.W1232	Uncoated	1.5	200	-	8/10	7.3
33266.W1252	Uncoated	1.5	200	-	12/16	8.5
33266.W1272	Uncoated	1.5	200	-	20/25	12
33266.W1213	Uncoated	1.5	300	-	5/6	7.4

Ball Lock Pins & Quick Release



Lanyard - Circlip End to Loop with crimps brass, tabs stainless steel, for ball lock pins



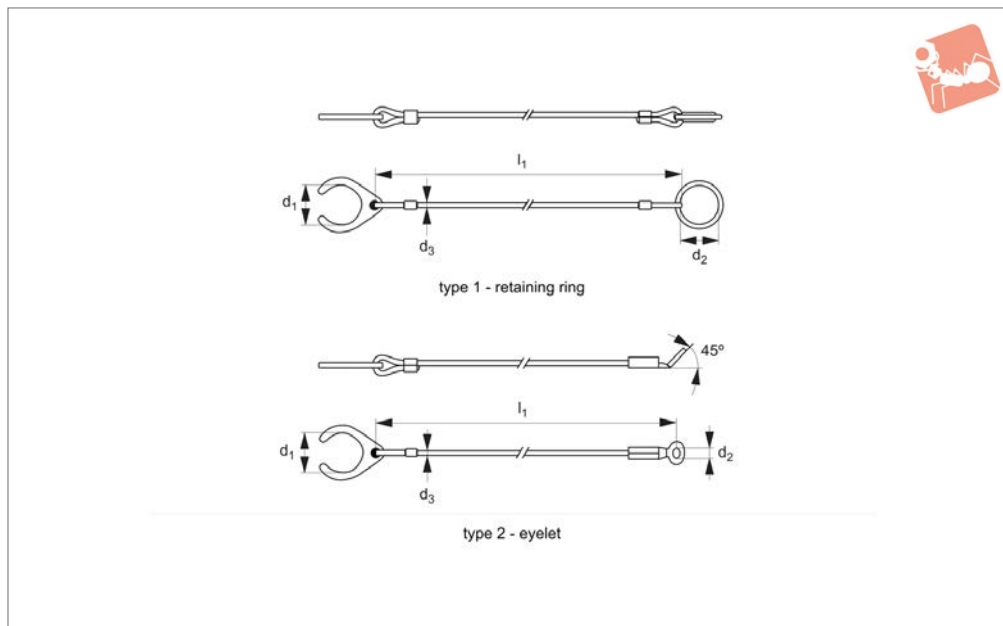
Order No.	Coating	d ₁ wire uncoated	l ₁	d ₂ wire coated	d ₃ for use with part no. 33914 of pin dia d ₁	Weight g
33266.W1233	Uncoated	1.5	300	-	8/10	8.6
33266.W1253	Uncoated	1.5	300	-	12/16	9.5
33266.W1273	Uncoated	1.5	300	-	20/25	13

BALL LOCK PINS & QUICK RELEASE PINS



Retaining Cable with holding clip for no. 33331

Ball Lock Pins & Quick Release



33268

BALL LOCK PINS & QUICK RELEASE PINS

Material

Split ring or eyelet: stainless steel.
Holding circlip: thermoplastic PA 6, black.
Wire rope: stainless steel.

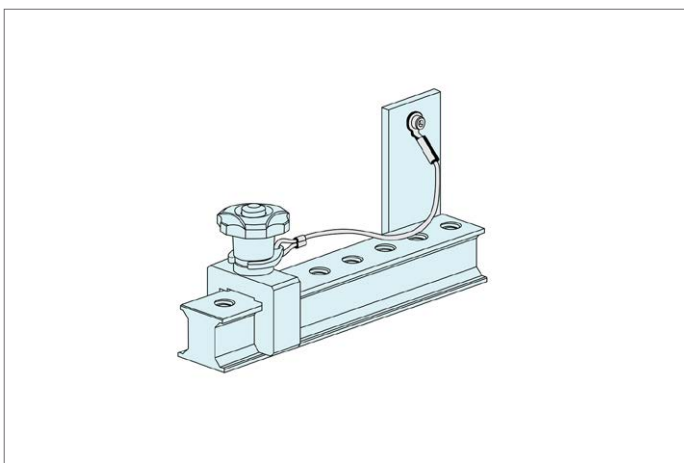
Coating: thermoplastic PA 6, black.

Technical Notes

Retaining cables designed specifically for

use with threaded lock pin no. 33331.
Lanyard prevents accidental loss of pin
from application.

Order No.	Type	d ₁	l ₁	d ₂	d ₃ wire coated	To suit lock pin 33331	Weight g
33268.W6001	1	20.3	150	20.3	2	M 8 to M16	6
33268.W6002	1	20.3	200	20.3	2	M 8 to M16	7
33268.W6003	1	20.3	300	20.3	2	M 8 to M16	8
33268.W6011	2	20.3	150	4.8	2	M 8 to M16	6
33268.W6012	2	20.3	200	4.8	2	M 8 to M16	7
33268.W6013	2	20.3	300	4.8	2	M 8 to M16	8

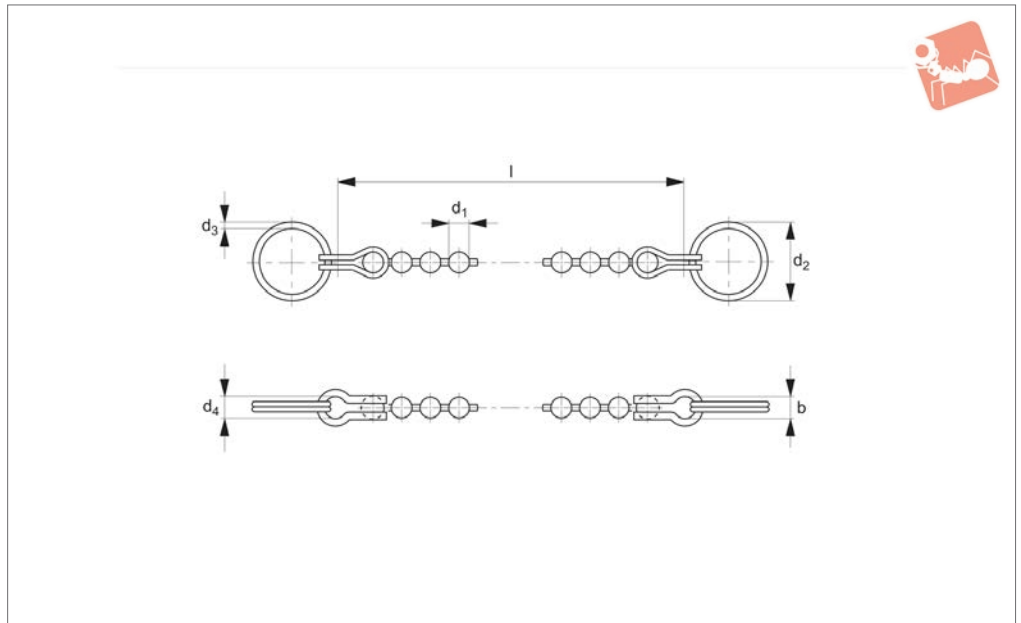




BALL LOCK PINS & QUICK RELEASE PINS



33270



Material

Bead chain: stainless steel AISI 304, polished.
End attachments: brass, nickel plated.

Split rings: stainless steel.

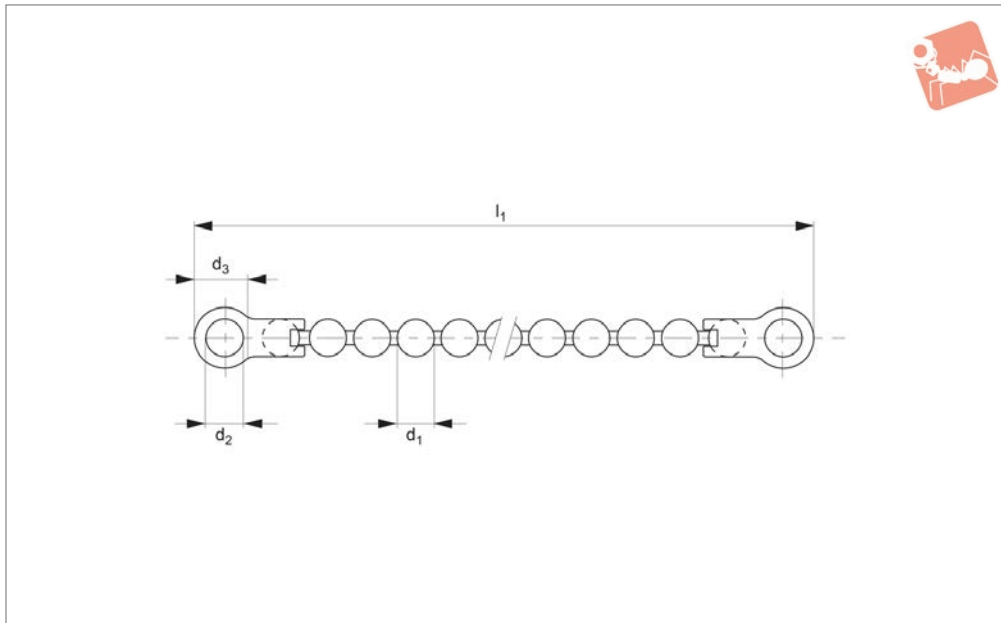
Technical Notes

Retaining chains secure single-acting ball

lock pins against possible loss.

Other chain lengths available on request.

Order No.	Length l	d_1	Breaking strength kg min.	d_4	b	Ring thickness d_3	Ring dia. d_2
33270.W0200	200	3.2	20	3.5	6	1.52	24
33270.W0350	350	3.2	20	3.5	6	1.52	24
33270.W0500	500	3.2	20	3.5	6	1.52	24



33272

BALL LOCK PINS & QUICK RELEASE PINS

Material

Bead chain: stainless steel AISI 304.
Terminals: brass.

Tips

For use in securing components to assemb-

lies, or to avoid items being misplaced. For a wide range of detent pins and quick release ball lock pins see parts 33010 through 33226. Terminals also available in AISI 304 stainless steel on request. Subject

to min. quantity.

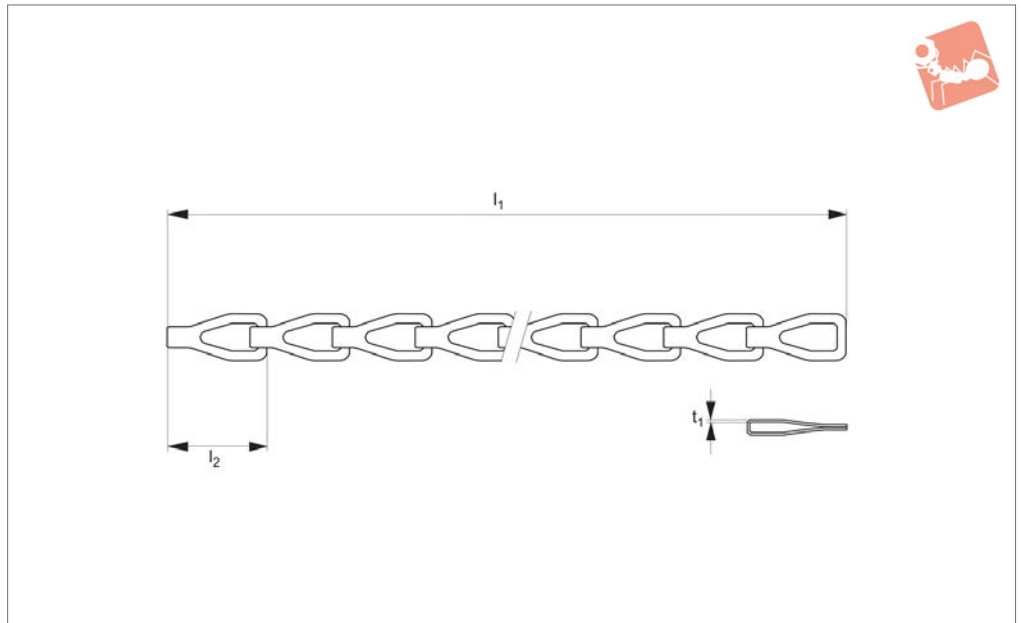
Order No.	Trade size	d ₁	l ₁ nom.	d ₂	d ₃	Terminal material
33272.W0080	10	4.5	80	4.7	6.35	Brass
33272.W0100	10	4.5	100	4.7	6.35	Brass
33272.W0150	10	4.5	150	4.7	6.35	Brass
33272.W0200	10	4.5	200	4.7	6.35	Brass
33272.W0300	10	4.5	300	4.7	6.35	Brass
33272.W0450	10	4.5	450	4.7	6.35	Brass



BALL LOCK PINS & QUICK RELEASE PINS



33274



Material

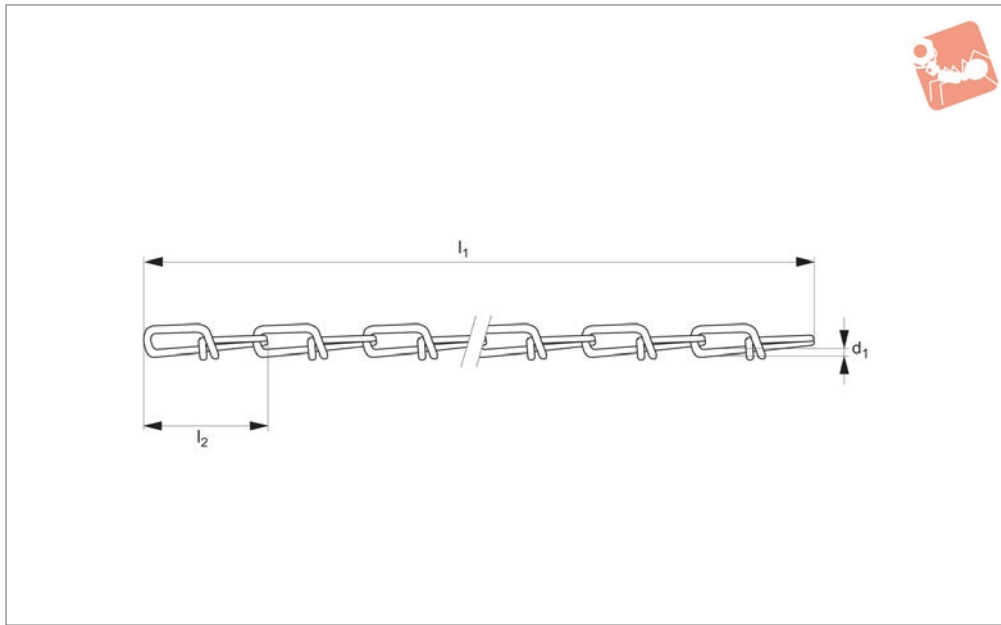
Brass.

Tips

For use in securing components to assemb-

lies, or to avoid items being misplaced. For a wide range of detent pins and quick release ball lock pins see parts 33010 through 33226.

Order No.	Material	Trade size	l_1 nom.	l_2	t_1
33274.W0100	Brass	8	100	25	0.95
33274.W0150	Brass	8	150	25	0.95
33274.W0200	Brass	8	200	25	0.95
33274.W0300	Brass	8	300	25	0.95
33274.W0450	Brass	8	450	25	0.95



33276

BALL LOCK PINS & QUICK RELEASE PINS

Material

Steel (1008), zinc plated.

Tips

For use in securing components to assemb-

lies, or to avoid items being misplaced. For a wide range of detent pins and quick release ball lock pins see parts 33010 through 33226. Terminals also available in

AISI 304 stainless steel on request. Subject to min. quantity.

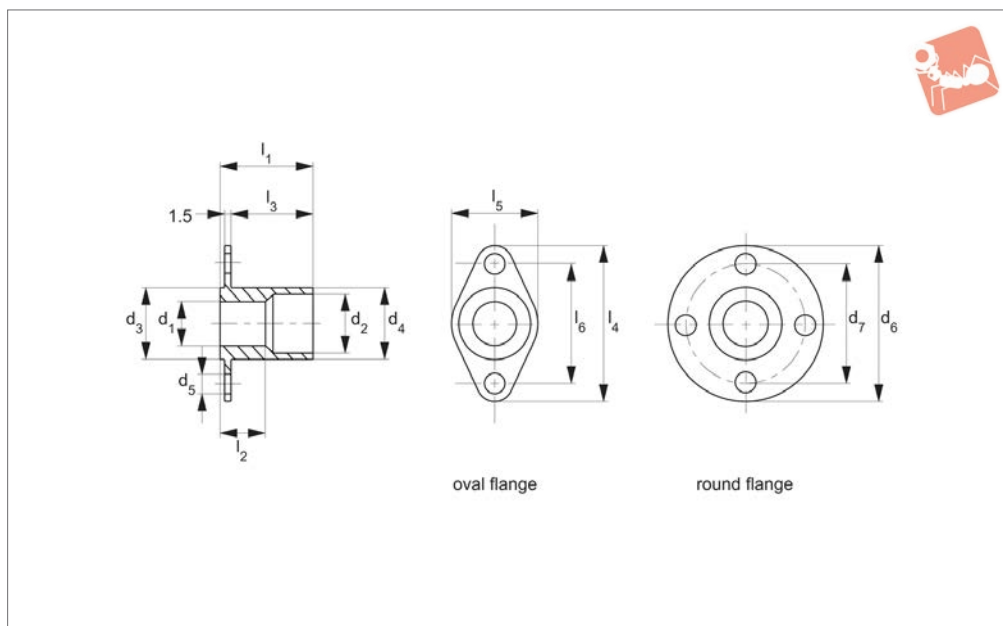
Order No.	Material	Trade size	d ₁	l ₁ nom.	l ₂
33276.W0128	Steel	4	1.8	128	32
33276.W0192	Steel	4	1.8	192	32
33276.W0256	Steel	4	1.8	256	32
33276.W0320	Steel	4	1.8	320	32
33276.W0448	Steel	4	1.8	448	32



BALL LOCK PINS & QUICK RELEASE PINS



33246



Material

Body: stainless steel 1.4305. (AISI 303).

Technical Notes

For quick and safe location of single acting ball lock pins - especially in soft materials

such as aluminium, or in thin walled components.

Can be used from both sides. Optimised centering due to precision collar on bush.

Tips

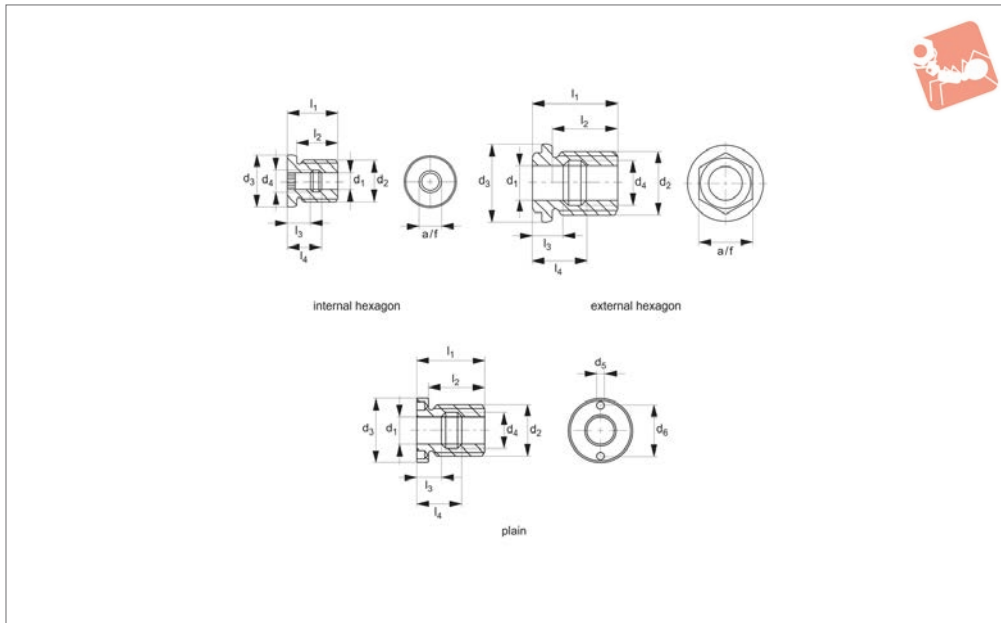
For use with our wide range of metric ball lock pins, see part no.'s 33060 through to 33226.

Order No.	Type	For pin dia. nom.	d ₁ tol. H11	d ₂	d ₃ -0.05	d ₄ -0.1	d ₅	d ₆	d ₇	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	Weight g
33246.W0305	Oval flange	5	5	8	10	9.9	3.4	-	-	12	5.4	9.5	25	15	19	6
33246.W0306	Oval flange	6	6	8	10	9.9	3.4	-	-	13	5.3	10.5	25	15	19	6
33246.W0308	Oval flange	8	8	10	12	11.9	4.5	-	-	19	10.3	16.5	30	18	22	10
33246.W0310	Oval flange	10	10	13	16	15.9	4.5	-	-	21	10.2	18.5	35	20	27	19
33246.W0312	Oval flange	12	12	15	19	18.9	4.5	-	-	27	15.2	24.5	40	24	30	34
33246.W0316	Oval flange	16	16	20	24	23.9	5.5	-	-	30	15.3	27.5	50	30	40	52
33246.W0405	Round flange	5	5	8	10	9.9	3.4	25	19	12	5.4	9.5	-	-	-	9
33246.W0406	Round flange	6	6	8	10	9.9	3.4	25	19	13	5.3	10.5	-	-	-	9
33246.W0408	Round flange	8	8	10	12	11.9	4.5	30	22	19	10.3	16.5	-	-	-	14
33246.W0410	Round flange	10	10	13	16	15.9	4.5	35	27	21	10.2	18.5	-	-	-	24
33246.W0412	Round flange	12	12	15	19	18.9	4.5	40	30	27	15.2	24.5	-	-	-	41
33246.W0416	Round flange	16	16	20	24	23.9	5.5	50	40	30	15.3	27.5	-	-	-	63



Locating Bushes for ball lock pins

Ball Lock Pins & Quick Release



33248

BALL LOCK PINS & QUICK RELEASE PINS

Material

Body: stainless steel 1.4305. (AISI 303).

Technical Notes

For quick and safe location of single acting ball lock pins - especially in soft materials such as aluminium, or in thin walled

components.

Can be used from both sides. Optimised centering due to precision collar on bush.

Important Notes

l_5 and l_6 refer to depths of ball locating recess when bush is installed flange collar

up, or flange collar inverted (see diagram below).

Use pin face spanner with 5mm pin to install pin mount bushings.

Order No.	Type	d_1 tol. H11	d_2	d_3 tol. h9	d_4	d_5	d_6	Weight g
33248.W0905	Int Hex	5	M12	18	6.0	-	-	15
33248.W0906	Int Hex	6	M12	18	7.5	-	-	13
33248.W0908	Int Hex	8	M16	22	10.0	-	-	29
33248.W0910	Int Hex	10	M24	30	12.5	-	-	75
33248.W0912	Int Hex	12	M24	30	15.0	-	-	66
33248.W0916	Ext Hex	16	M30	36	19.5	-	-	124
33248.W0920	Ext Hex	20	M36	45	25.5	-	-	208
33248.W0924	Ext Hex	25	M42	50	32.0	-	-	415
33248.W0925	Plain	16	M30	39	19.5	5.1	30	160
33248.W0926	Plain	20	M36	43	25.5	5.1	30	257
33248.W0927	Plain	25	M42	50	32.0	5.1	36	434

Order No.	l_1	l_2	l_3	l_4	l_5	l_6	A/F
33248.W0905	19	15	9.0	13.0	5.1	9.0	5
33248.W0906	19	15	9.4	13.0	5.6	8.8	6
33248.W0908	25	20	12.0	17.0	7.3	11.7	8
33248.W0910	29	24	13.5	19.5	8.9	14.1	10
33248.W0912	29	24	14	20	9.6	14.4	12
33248.W0916	39	29	15.5	23.5	6.1	12.8	24
33248.W0920	49	38	17.5	31.5	7.7	19.3	30
33248.W0924	65	50	26.5	38.5	13.3	21.8	36
33248.W0925	39	33	15.5	23.5	10.4	16.6	-
33248.W0926	49	42	17.5	31.5	11.9	23.1	-
33248.W0927	65	57	26.5	38.5	13.3	21.8	-



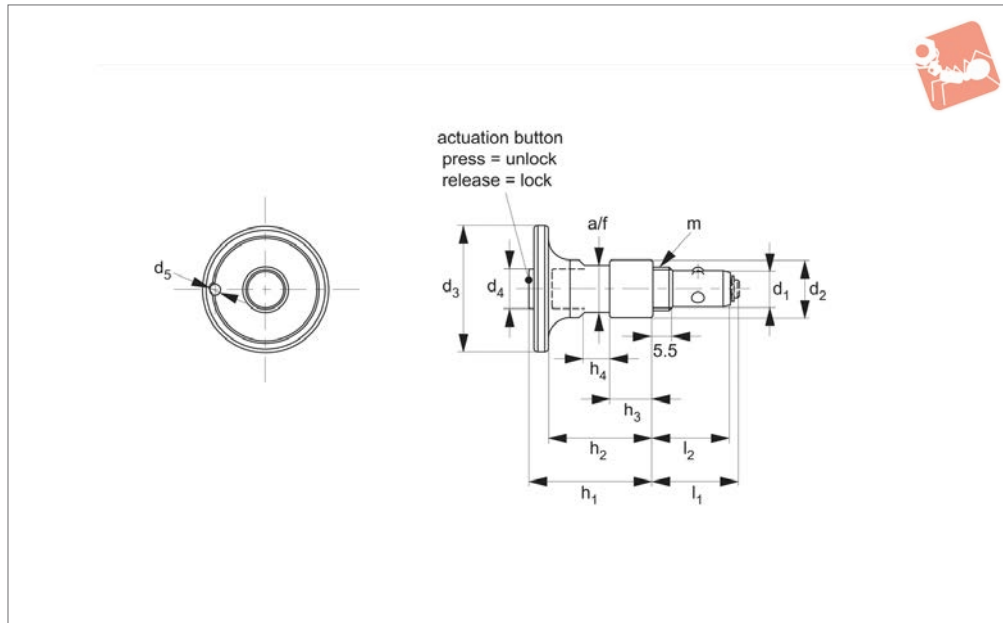


One-Touch Fastener - Ball Locking

push button lock - recessed button - steel



One Touch Fasteners



33910

ONE TOUCH FASTENERS

Material

Body & button: steel, nickel plated.
Ball: stainless steel.
Coil ring: stainless steel.
O-Ring: fluororubber.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
Temperature resistant to 180°C.

Tips

Secure one-touch fasteners to your assembly with lanyards and retaining cables, see part no. 33250.

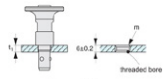
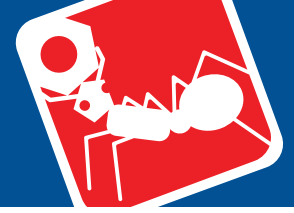
Important Notes

Suitable for panels/enclosures of 6 to 10mm thickness. For locating bushes see part no. 33920.
Recessed button handle means button is not exposed to accidental activation for added security.

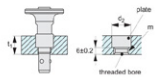
Actuation:
push button: unlock (to pass pin through panels)
release button: lock to securely fasten.

Order No.	For single panel thickness	d_1 -0.05 -0.10	d_2	d_3	d_4	d_5	h_1	h_2	Weight g
33910.W1006	6-10	6	12	25	8	-	22.0	18	30
33910.W1610	6-16	10	16	35	11	3	34.5	29	30

Order No.	h_3	h_4	l_1	l_2	m	A/F	Clamping force N	Shear strength N	Tensile strength N
33910.W1006	6	5.5	21.0	19.0	M 8x1,25	10	30	3000	500
33910.W1610	12	7.0	23.5	21.5	M12x1,50	13	50	9000	1500



6mm panel thickness
installation via threaded bore



6mm to 13mm panel thickness
installation via recessed hole with
threaded bore

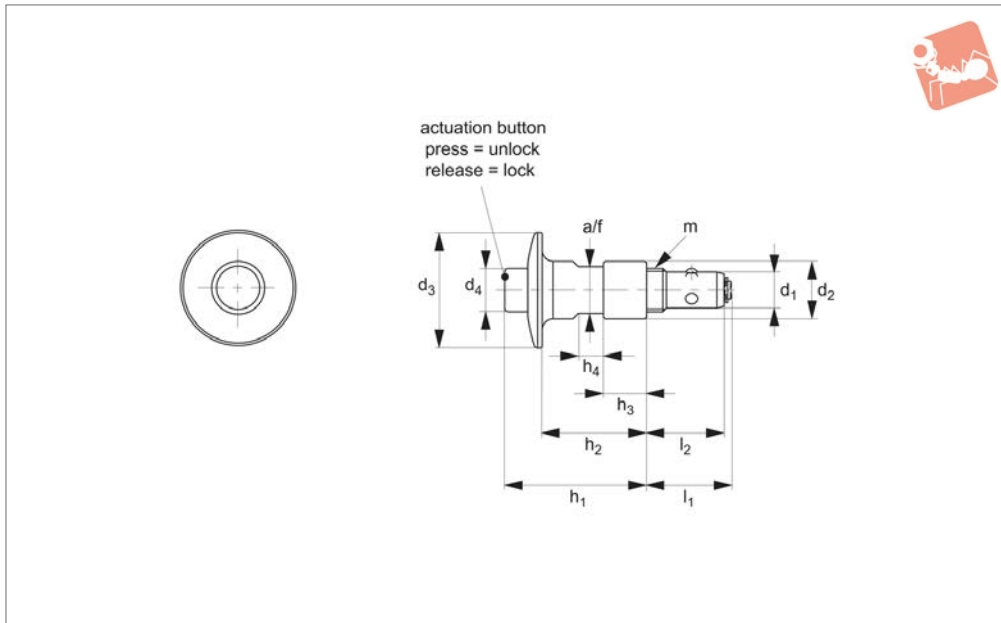


One-Touch Fastener - Ball Locking

push button lock - button handle - stainless steel



One Touch Fasteners



33912

ONE TOUCH FASTENERS

Material

Body: stainless steel.
 Button: stainless steel, nickel plated.
 Ball & coil ring: stainless steel.
 O-Ring: fluororubber.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use

in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
 Temperature resistant to 180°C.

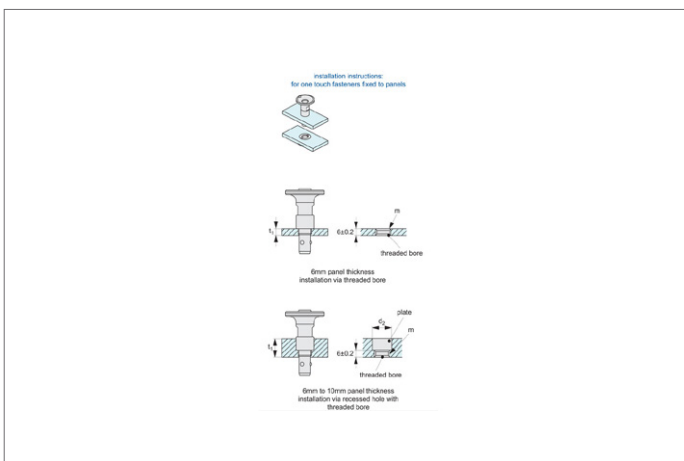
Important Notes

Suitable for panels/enclosures of 6 to 10mm thickness.
 For locating bushes see part no. 33920.

Actuation:
 push button: unlock (to pass pin through panels)
 release button: lock to securely fasten.

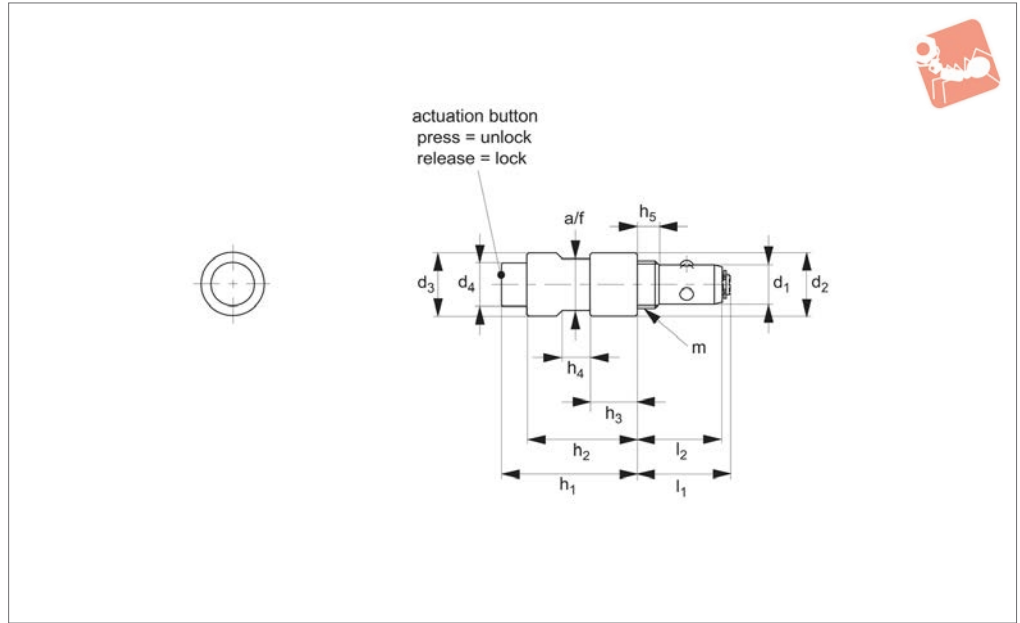
Order No.	For single panel thickness	d_1 -0.05 -0.10	d_2	d_3	d_4	h_1	h_2	Weight g
33912.W1006	6-10	6	12	23	8	26.0	18	30
33912.W1610	6-16	10	16	32	12	39.4	29	75

Order No.	h_3	h_4	l_1	l_2	m	A/F	Clamping force N	Shear strength N	Tensile strength N
33912.W1006	6	5.5	21.0	19.0	M 8x1,25	10	30	3000	500
33912.W1610	12	7.0	23.5	21.5	M12x1,50	13	50	9000	1500





33914



Material

Body & button: steel, nickel plated.
 Ball & coil ring: stainless steel.
 Snap Ring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
 Temperature resistant to 180°C.

Important Notes

Suitable for panels/enclosures of 6 to 16mm thickness.

For locating bushes see part no. 33920.

Actuation:

push button: unlock (to pass pin through panels)
 release button: lock to securely fasten.

Note: One-touch fastener 33914 is not suitable for installation unattached from panel.

Order No.	For single panel thickness		d_1 -0.05 -0.10	d_2	d_3	d_4	h_1	h_2	h_3	Weight g
33914.W1006	6-10		6	12	12	8	22.0	17.5	6	30
33914.W1610	6-16		10	16	16	11	34.4	28.0	12	50

Order No.	h_4	h_5	l_1	l_2	m	A/F	Clamping force N	Shear strength N	Tensile strength N
33914.W1006	5.5	5.5	21.0	19.0	M8x1,25	10	30	3000	500
33914.W1610	7.0	5.5	23.5	21.5	M12x1,5	13	50	9000	1500

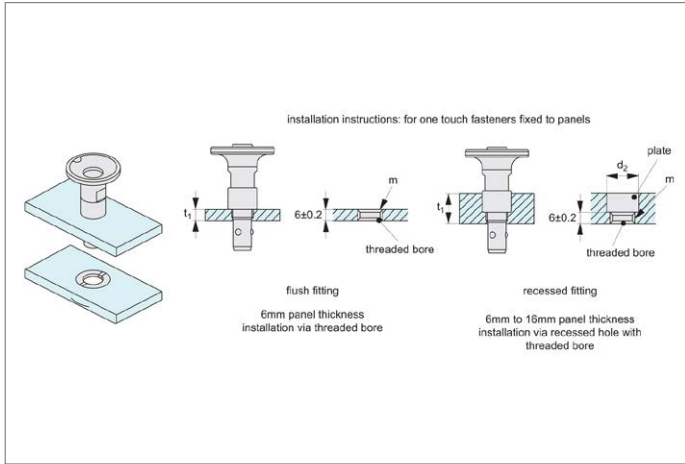


One-Touch Fastener - Ball Locking

push button lock - straight - steel

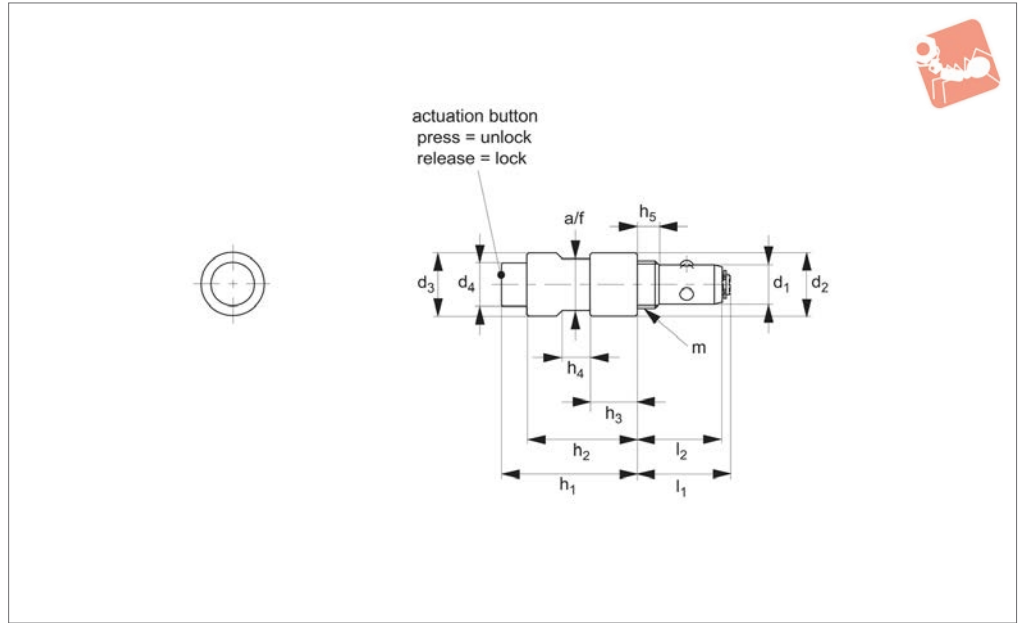


One Touch Fasteners





33915



Material

Body & button: stainless steel
 Ball & coil ring: stainless steel.
 Snap Ring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
 Temperature resistant to 180°C.

Important Notes

Suitable for panels/enclosures of 6 to 16mm thickness.

For locating bushes see part no. 33920.

Actuation:

push button: unlock (to pass pin through panels)
 release button: lock to securely fasten.

Note: One-touch fastener 33915 is not suitable for installation unattached from panel.

Order No.	For single panel thickness		d_1 -0.05 -0.10	d_2	d_3	d_4	h_1	h_2	h_3	Weight g
33915.W1006	6-10		6	12	25	8	22.0	17.5	6	30
33915.W1610	6-16		10	16	35	11	34.4	28.0	12	50

Order No.	h_4	h_5	l_1	l_2	m	A/F	Clamping force N	Shear strength N	Tensile strength N
33915.W1006	5.5	5.5	21.0	19.0	M 8x1,25	10	30	3000	500
33915.W1610	7.0	5.5	23.5	21.5	M12x1,5	13	50	9000	1500

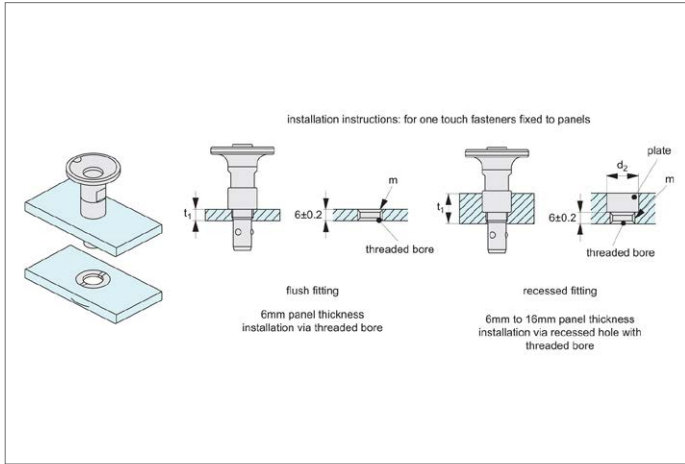


One-Touch Fastener - Ball Locking

push button lock - straight - stainless steel

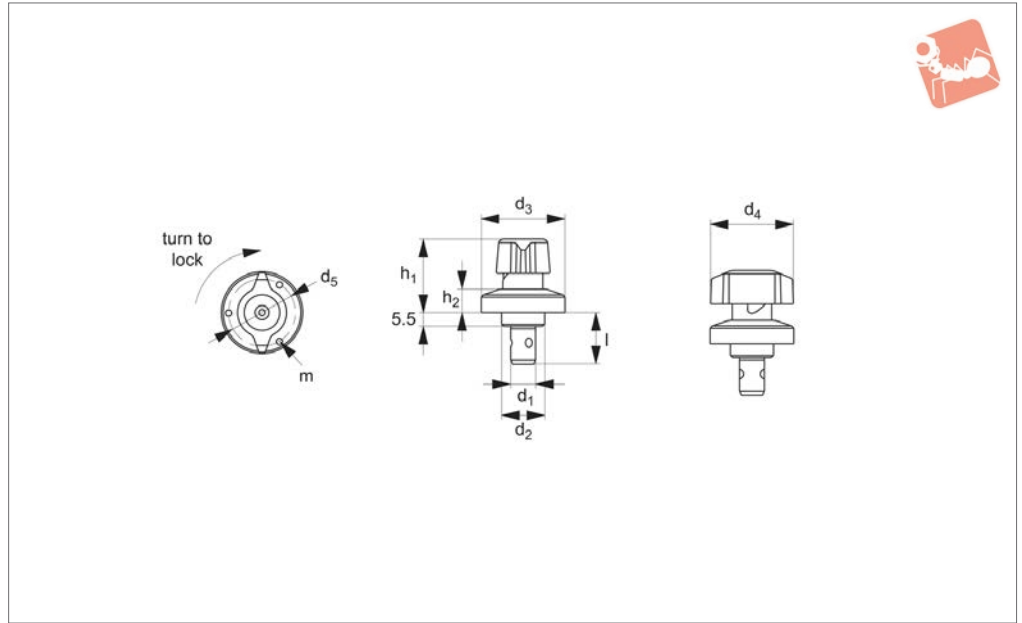


One Touch Fasteners





33916



Material

Body & Shank: steel, nickel plated.
 Knob: plastic, black.
 Ball & Spring: Titanium G5.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

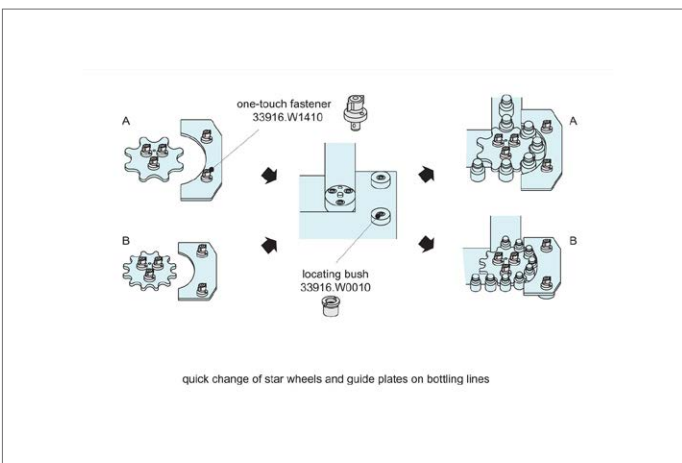
Suitable for panels/enclosures of 6 to 20mm thickness.
 For locating bushes see part no. 33920.
 Quarter turn handle, easy-to-read on/off position of the one-touch fastener for

increased security.
 Temperature resistant to 180°C.

Actuation:

- Turn handle to off position: locking balls retract and are held in retracted position via notched catch.
- Pass fastener through panel.
- Turn handle 45° to on position: locking balls engage with locating bush, panels are securely fastened.

Order No.	For single panel thickness	d_1 -0.05 -0.10	d_2 tol. h9	d_3	d_4	d_5	h_1	h_2	l	m	Clamping force N	Weight g
33916.W1006	6-10	6	14	25	25	21	24.5	6.5	19.5	M 2x0,4	30	40
33916.W1410	6-14	10	18	34	34	28	31.0	10.0	21.5	M 3x0,5	50	95
33916.W2010	12-20	10	18	34	34	28	31.0	10.0	27.5	M 3x0,5	50	100



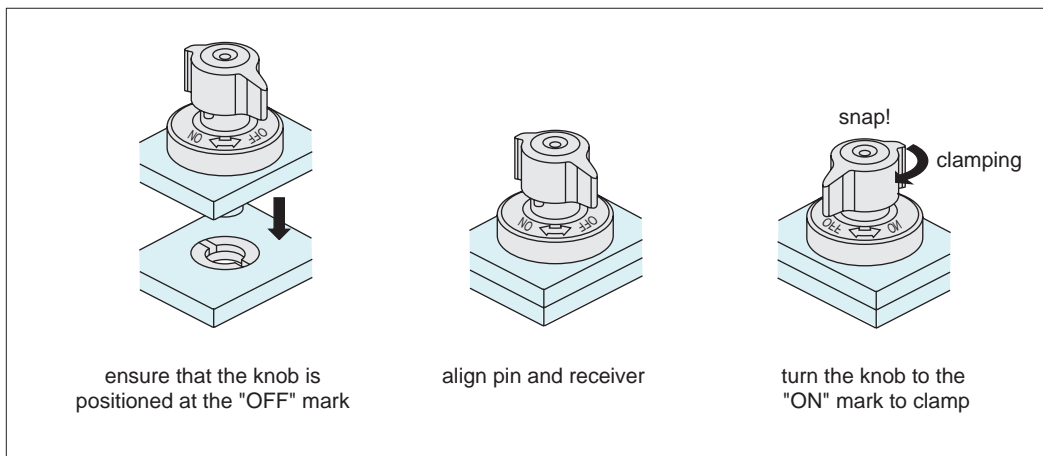


One-Touch Fastener - Ball Locking

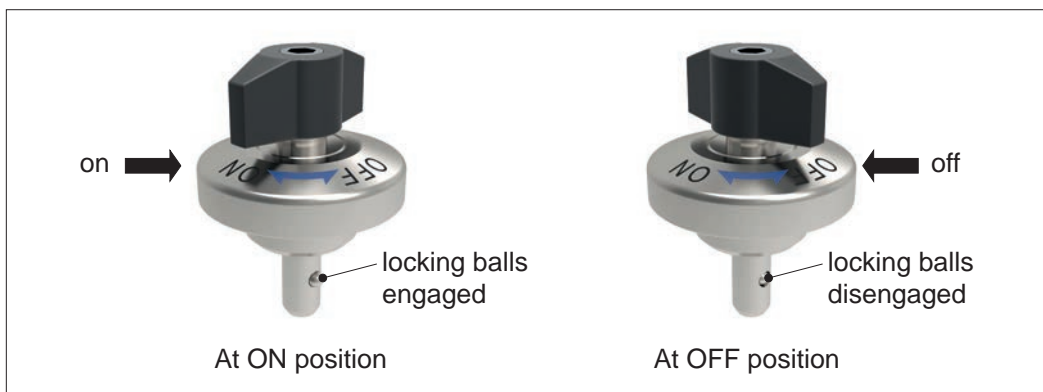
quarter turn - installation instructions

33916 - 33918
Positioning Elements

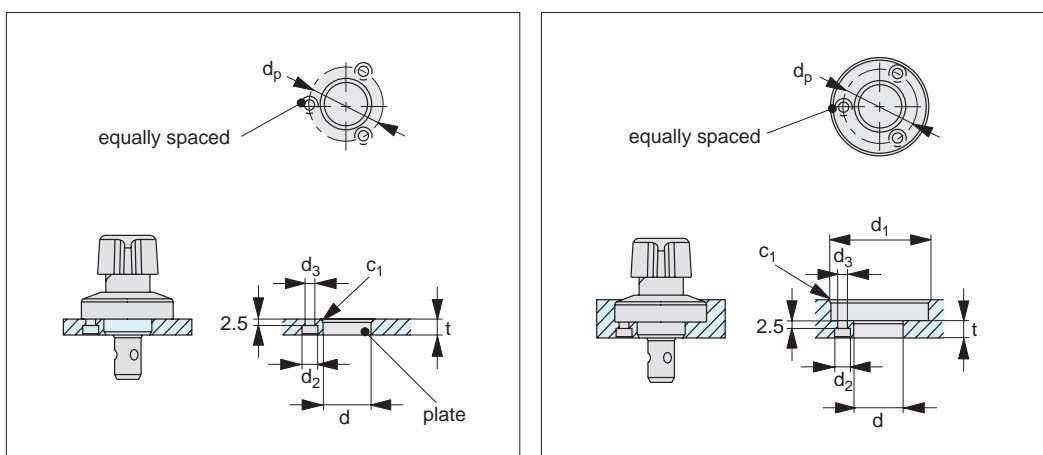
Operating Instructions



Easy Status Identification



Installation Dimensions for 33916-33918



Installation for 6mm panels

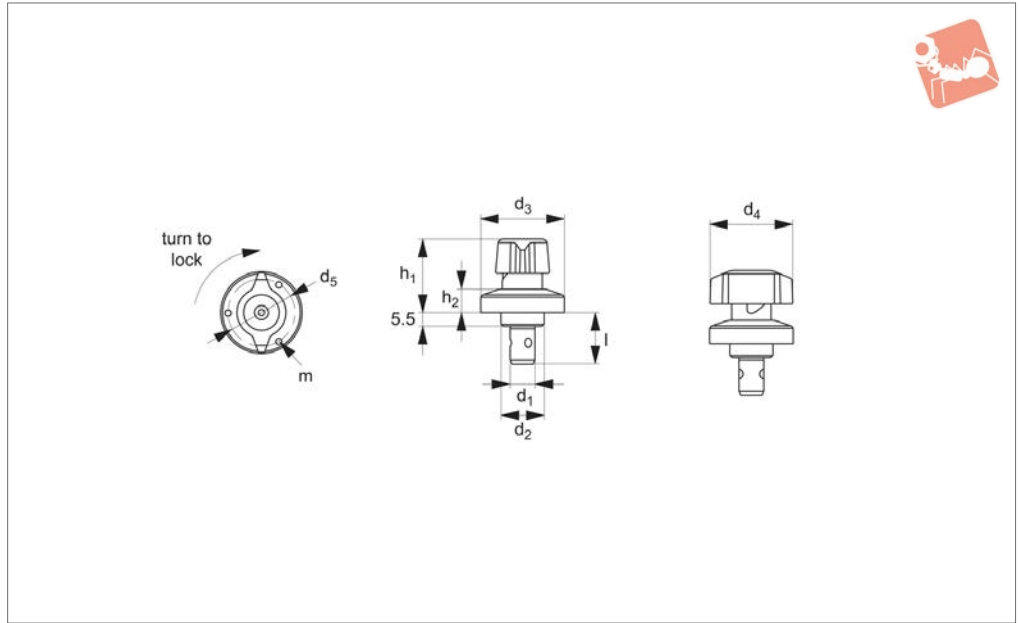
Installation for 6mm to 20mm panels

33916/17/18	Single panel thickness $t \pm 0,2$	$d_6 +0,1$ $+0,0$	d_7	d_8	d_9	d_5
.W1006	6	14	-	4,4	2,4	21
.W1006	6 to 10	14	26	4,4	2,4	21
.W1410	6	18	-	6,5	3,4	28
.W1410	6 to 14	18	35	6,5	3,4	28
.W2010	12	18	-	6,5	3,4	28
.W2010	12 to 20	18	35	6,5	3,4	28

Note: if two fasteners used, allow spacing tolerance of $\pm 0,1$ mm



33917



Material

Body: stainless steel
 Shank: steel, nickel plated.
 Knob: stainless steel.
 Ball & spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

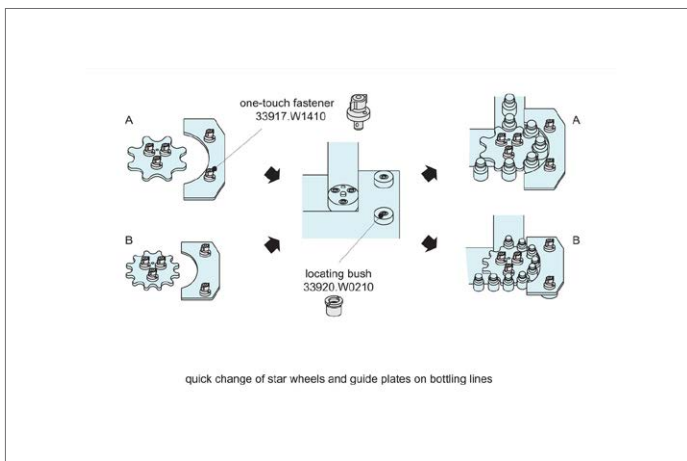
Suitable for panels/enclosures of 6 to 20mm thickness.
 For locating bushes see part no. 33920.
 Quarter turn handle, easy-to-read on/off position of the one-touch fastener for increased security.

Temperature resistant to 180°C.

Actuation:

- Turn handle to off position: locking balls retract and are held in retracted position via notched catch.
- Pass fastener through panel.
- Turn handle 45° to on position: locking balls engage with locating bush, panels are securely fastened.

Order No.	For single panel thickness	d_1 -0.05 -0.10	d_2 tol. h9	d_3	d_4	d_5	h_1	h_2	l	m	Clamping force N	Weight g
33917.W1006	6-10	6	14	25	25	21	24.5	6.5	19.5	M 2x0,4	30	40
33917.W1410	6-14	10	18	34	34	28	31.0	10.0	21.5	M 3x0,5	50	95
33917.W2010	12-20	10	18	34	34	28	31.0	10.0	27.5	M 3x0,5	50	100



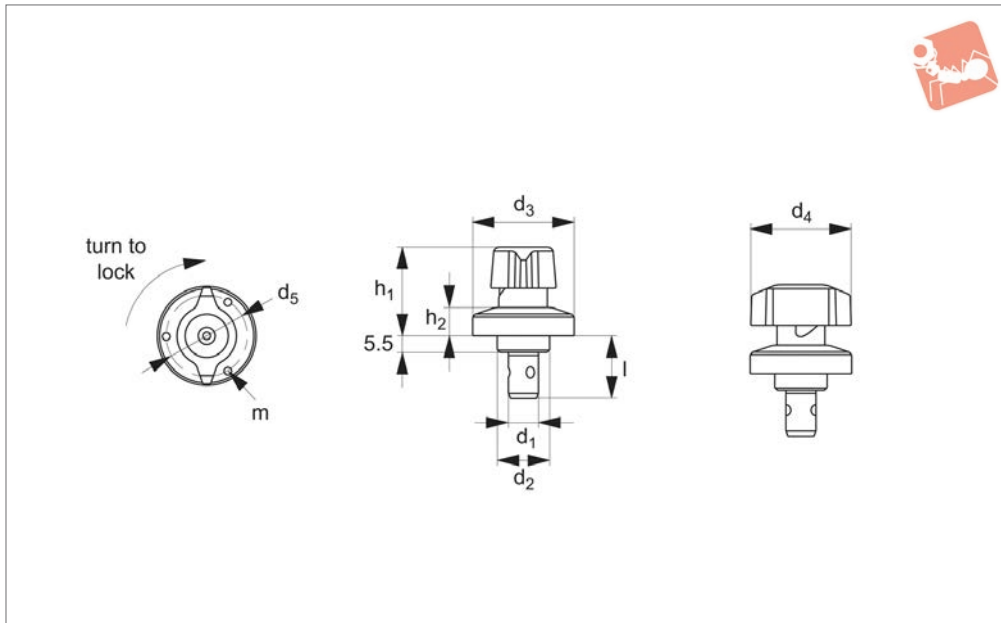


One-Touch Fastener - Ball Locking

quarter turn lock - t-handle grip - stainless steel



One Touch Fasteners



33918

ONE TOUCH FASTENERS

Material

Body & shank: stainless steel.
Knob: stainless steel.
Ball & spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

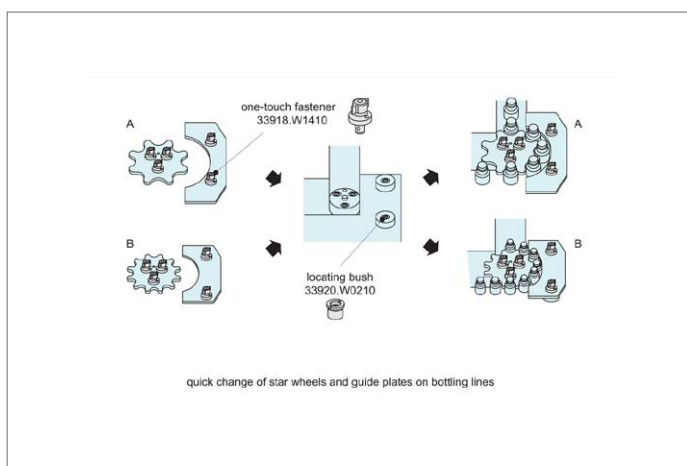
Suitable for panels/enclosures of 6 to 20mm thickness.
For locating bushes see part no. 33920.
Quarter turn handle, easy-to-read on/off position of the one-touch fastener for

increased security.
Temperature resistant to 180°C.

Actuation:

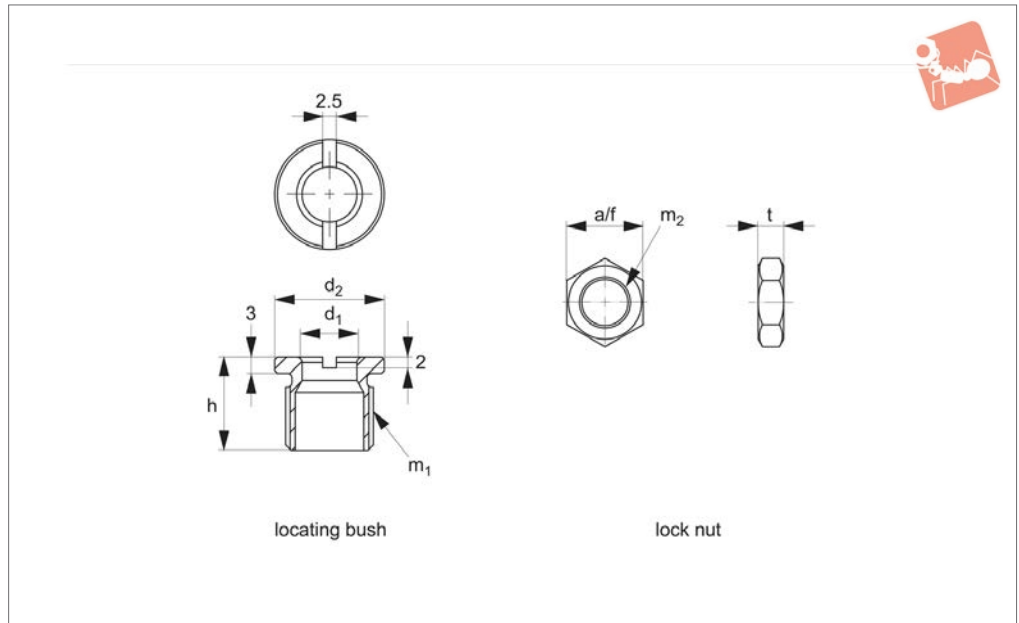
- Turn handle to off position: locking balls retract and are held in retracted position via notched catch.
- Pass fastener through panel.
- Turn handle 45° to on position: locking balls engage with locating bush, panels are securely fastened.

Order No.	For single panel thickness	d ₁ -0.05 -0.10	d ₂ tol. h9	d ₃	d ₄	d ₅	h ₁	h ₂	l ₁	m	Clamping force N	Weight g
33918.W1006	3-10	6	14	25	25	21	24.5	6.5	19.5	M 2x0,4	30	40
33918.W1410	3-14	10	18	34	34	28	31.0	10.0	21.5	M 3x0,5	50	120
33918.W2010	12-20	10	18	34	34	28	31.0	10.0	27.5	M 3x0,5	50	100





33920



Material

Body: steel or stainless steel SUS303.
Nut: stainless steel SUS303.

Technical Notes

Used in conjunction with one-touch fasteners 33910 to 33918, locating bushes 33920 provide secure fastening of panels and covers. Locating bushes are of particular use in soft metals, such as aluminium where receiving surfaces may wear. One-

touch fasteners are the ideal solution for applications requiring rapid and recurring change over tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts.

Tips

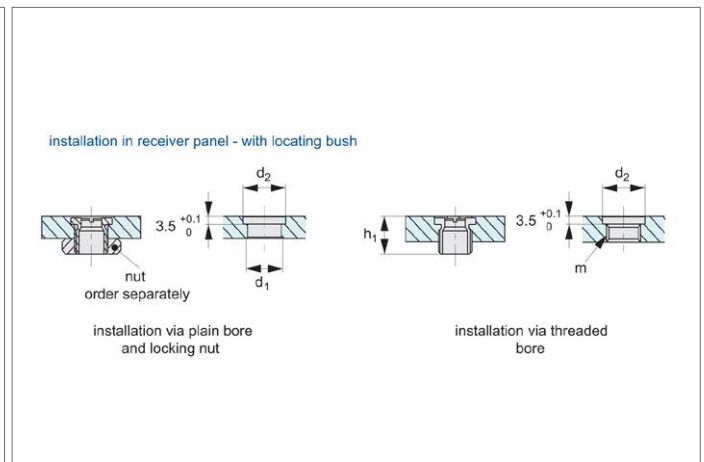
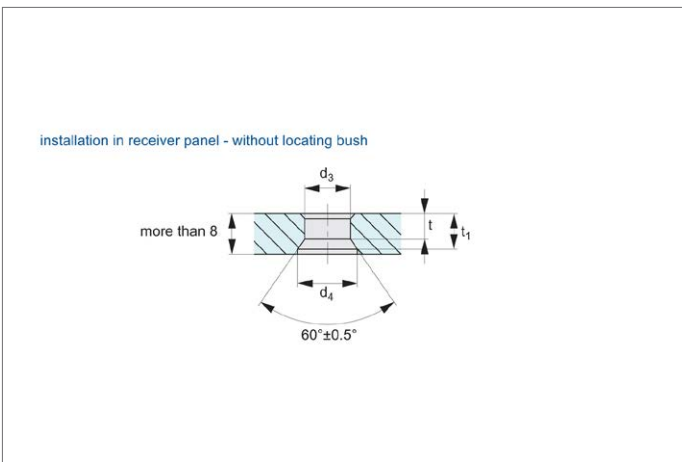
While we recommend the use of locating bushes as receivers for our one-touch fasteners, it is also possible to mount one-

touch fasteners without them, see specifications opposite.

Important Notes

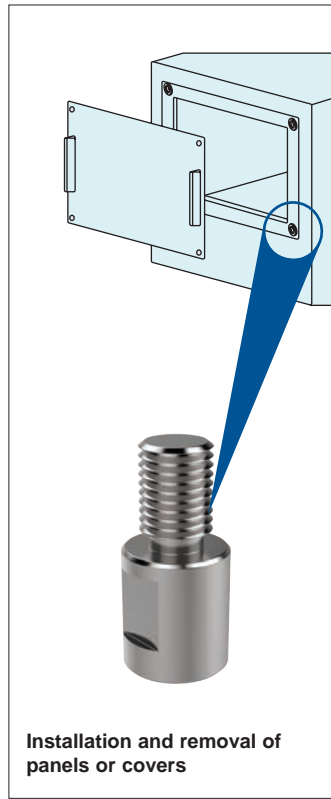
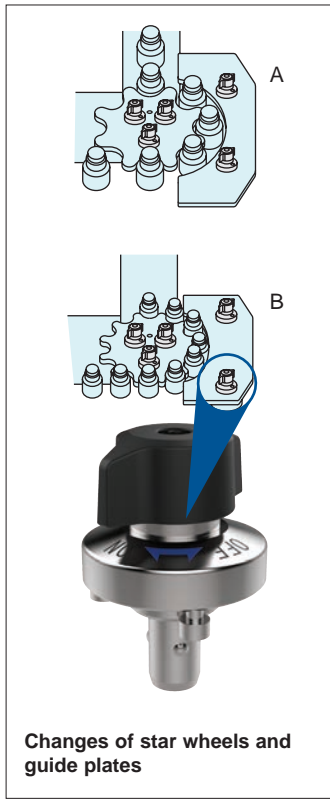
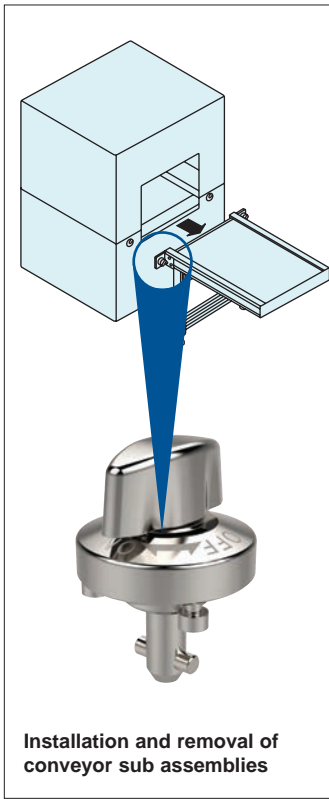
Suitable for panels/enclosures of 6 to 20mm thickness. For one-touch fasteners see part no. 33910 to 33918. For installation instructions see technical page. Temperature resistant to 180°C.

Order No.	Type	Material	d_1 +0.4 +0.2	d_2 tol. h9	h	m_1	For panel thickness	Weight g
33920.W0006	Bush	Steel	6	16	15	M12x1,5	>6	9
33920.W0010	Bush	Steel	10	20	17	M16x1,5	>6	13
33920.W0206	Bush	S/S	6	16	15	M12x1,5	>6	9
33920.W0210	Bush	S/S	10	20	17	M16x1,5	>6	13





One-Touch Fasteners - Alternatives to Screws



ONE TOUCH FASTENERS

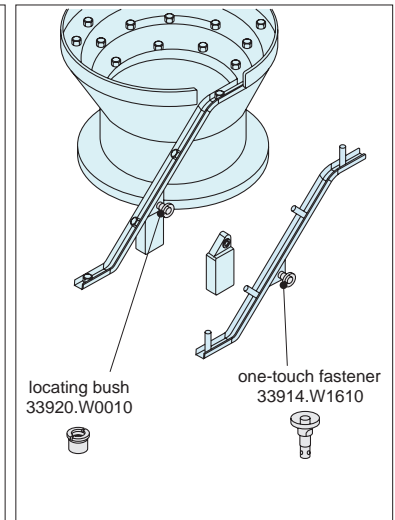
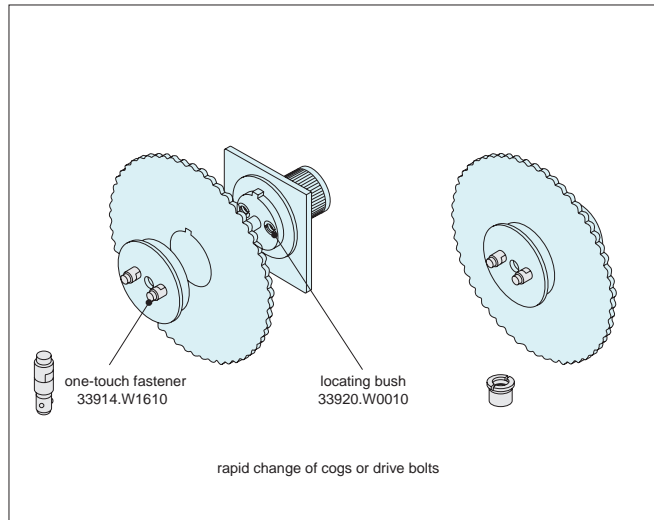
Easy & Secure! For Quick Changeover with No Tools!



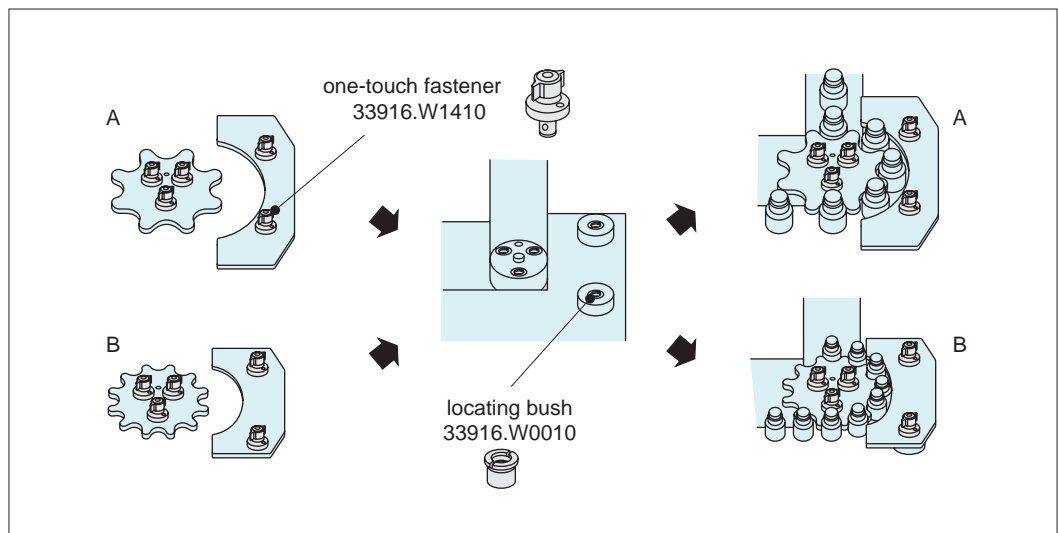


One-Touch Change Over

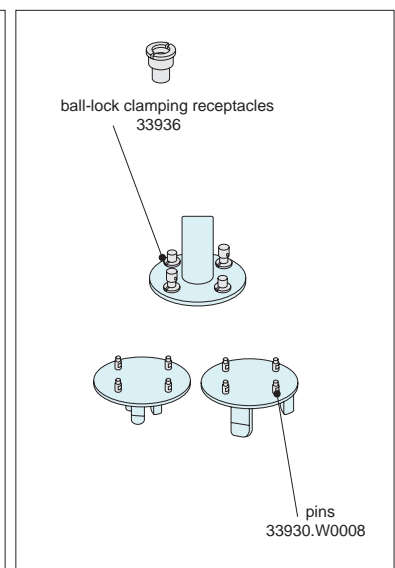
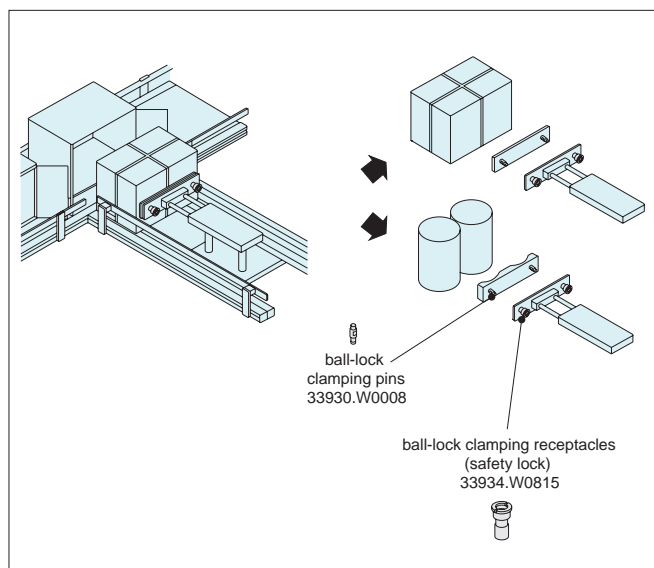
Installation and Removal of Rotary Blades and Changes of Shooters



Changes of Star Wheels and Guide Plates



Changes of Pusher and Changes of Chuck Handling Machines





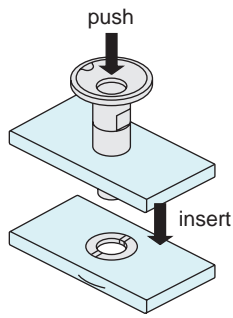
One-Touch Fastener - Ball Locking

technical information

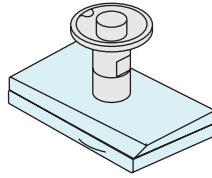
33910 - 33920

Positioning Elements

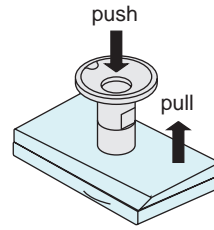
Operating Instructions



depress button, align pin and insert

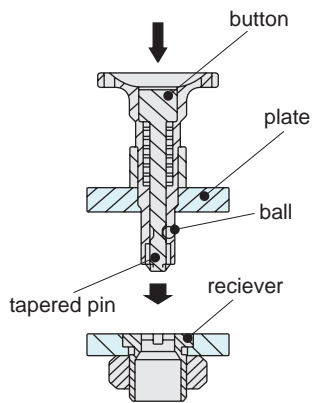


when the button is released, clamping is complete

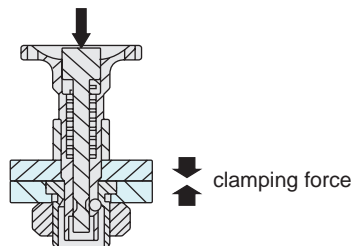


depress button to release, and pull out

Operating Principle



activation button press = unlock
release = lock



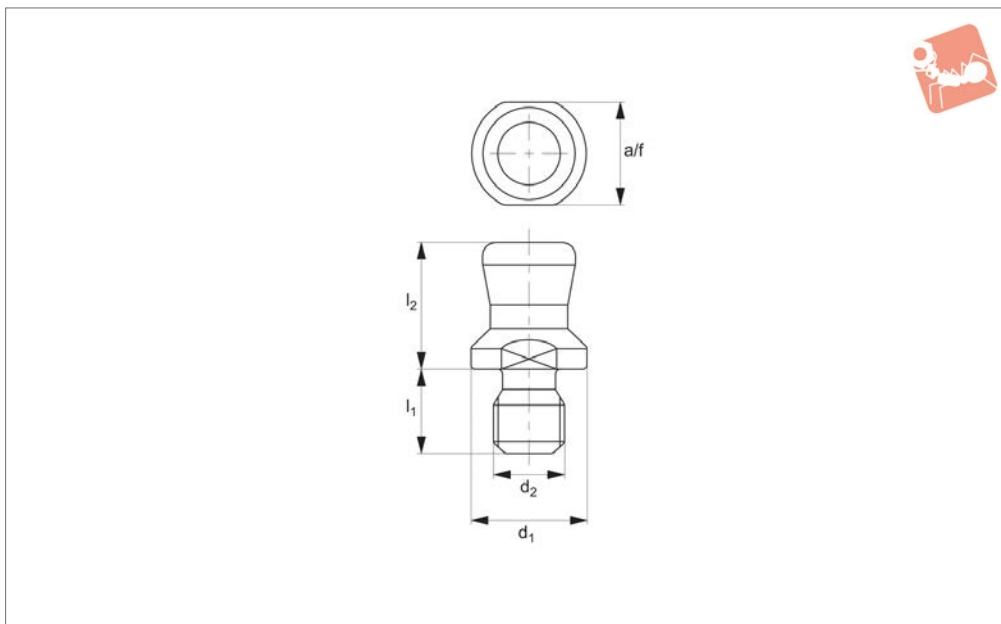
during clamping the tapered pin pushes out the ball bearing, into the recessed holes of the receiver, securely clamping the two surfaces together

ONE TOUCH FASTENERS

ov-W33910-A-T-W33920-A-T-ball-locking-one-touch-fasteners-a-rmh - Updated - 27-10-2022



33923



Material

Body: stainless steel, SUS630

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

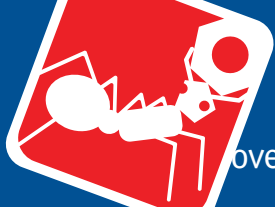
cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

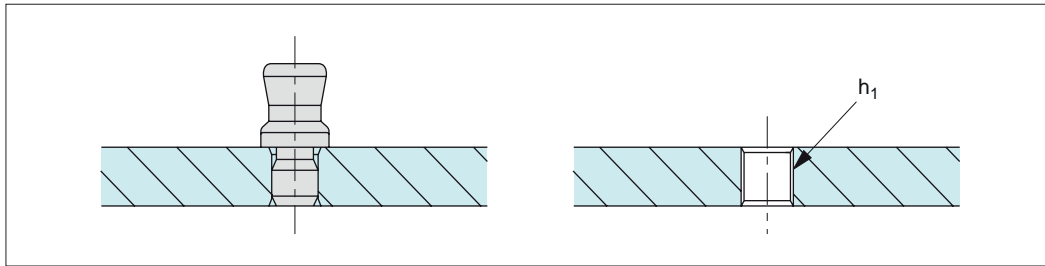
Pin 33923 for use in conjunction with one-

touch fasteners, ball clamping; 33924 through 33929. Pins for installation in material to minimum depth 6,0mm or greater. Recess of 0,5mm +0,1 is recommended to ensure full surface contact and achieve maximum strength of pin.

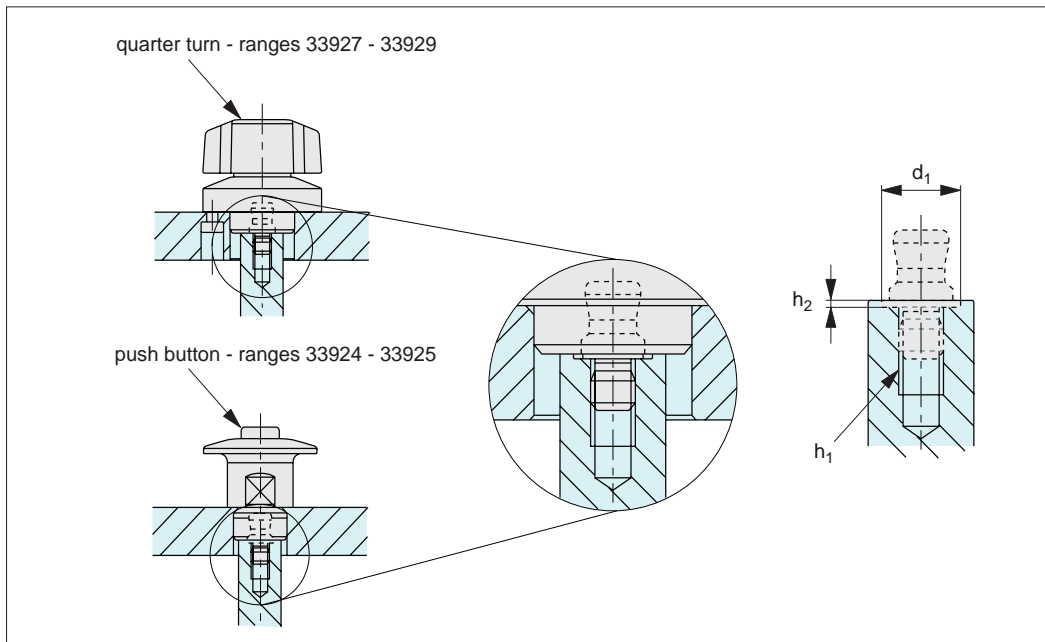
Order No.	d_1 -0.05 -0.10	d_2	l_1	l_2	A/F	Weight g
33923.W0006	6	M 4x0,7	5.8	7.6	5	2
33923.W0008	8	M 5x0,8	5.8	8.7	7	3



Installation Dimensions



Standard Mount



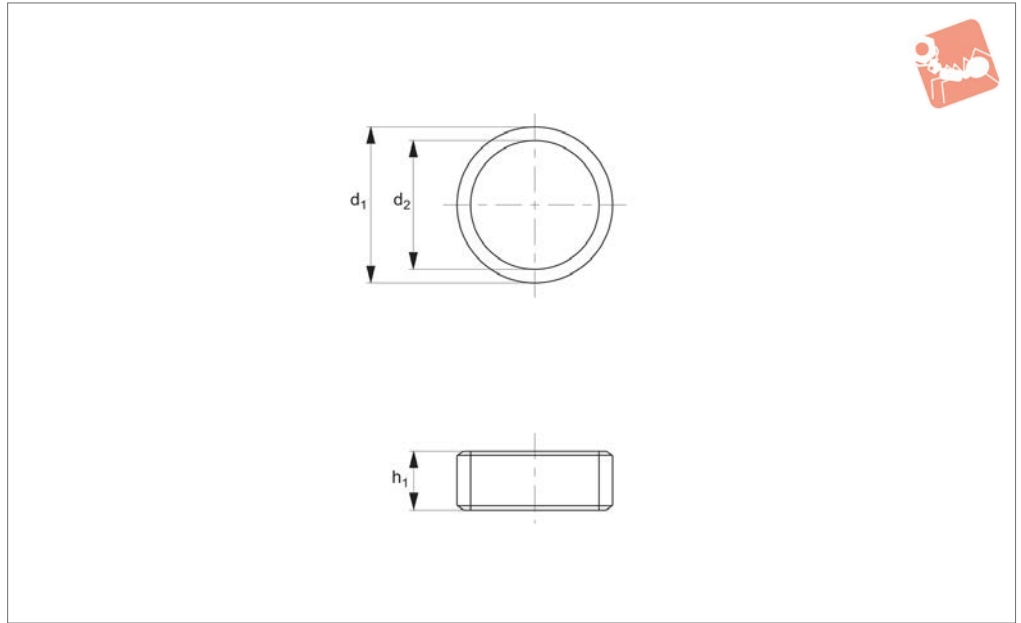
Recessed Mount

Prepare a tapped hole according to the thread of the pin. Ensure a counter bore is machined to depth h_2 to complete pin installation.

	Mounting type	h_1	h_2 +0,1	d_3
33923.W0006	Standard	M4x0,7	-	-
33923.W0006	Recessed	M4x0,7	0,5	7
33923.W0008	Standard	M5x0,8	-	-
33923.W0008	Recessed	M5x0,8	0,5	9



33926



Material

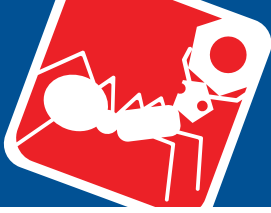
Stainless steel SUS303

Technical Notes

For use with one-touch fasteners 33924

and 33925. Spacer adapts thread length of one-touch fastener to different thread reaches on mounting panels of different thickness.

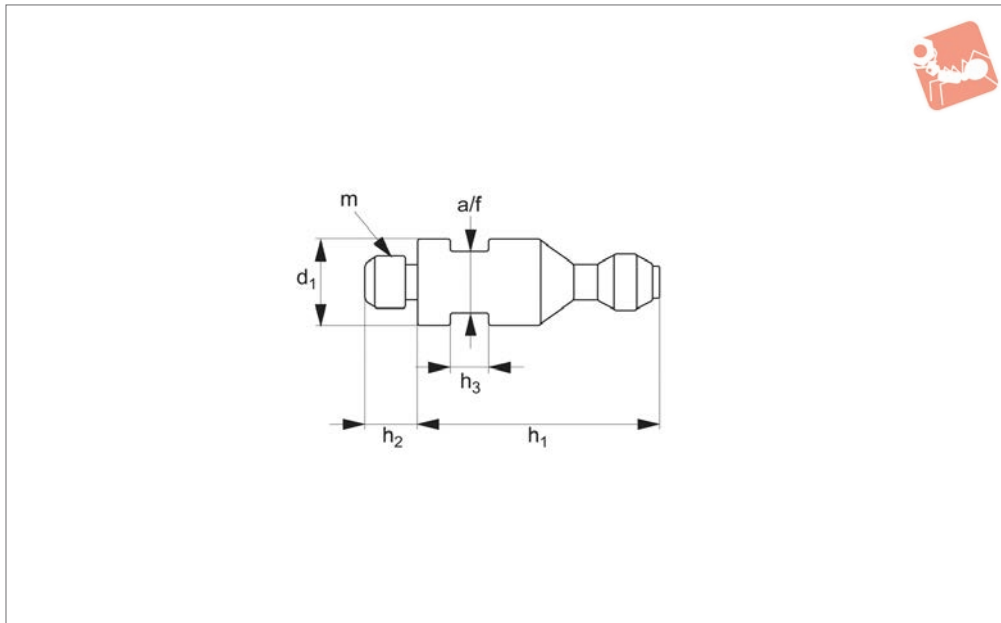
Order No.	For panel thickness	d_1	d_2 +0.2 +0.01	h_1 +0.05	Weight g
33926.W1604	6	19	16	4	2.5
33926.W1605	5	19	16	5	3.0
33926.W1606	4	19	16	6	3.5
33926.W1607	3	19	16	7	4.0



One-Touch Fastener - Ball Clamping pin



One Touch Fasteners



33930

ONE TOUCH FASTENERS

Material

Body: steel, nickel plated.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

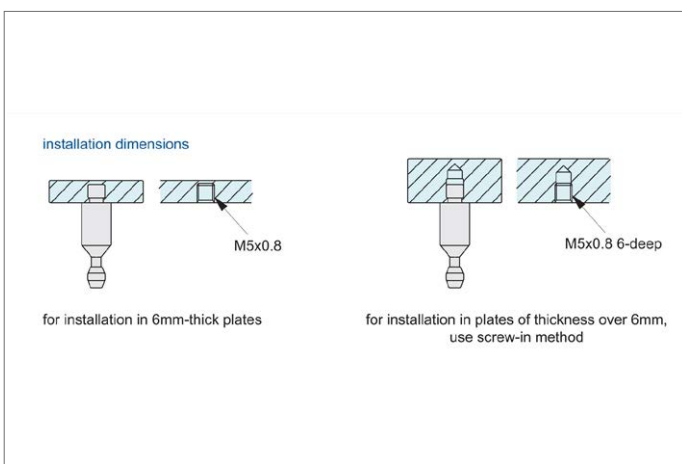
cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

Pin 33930 is for use inconjunction with

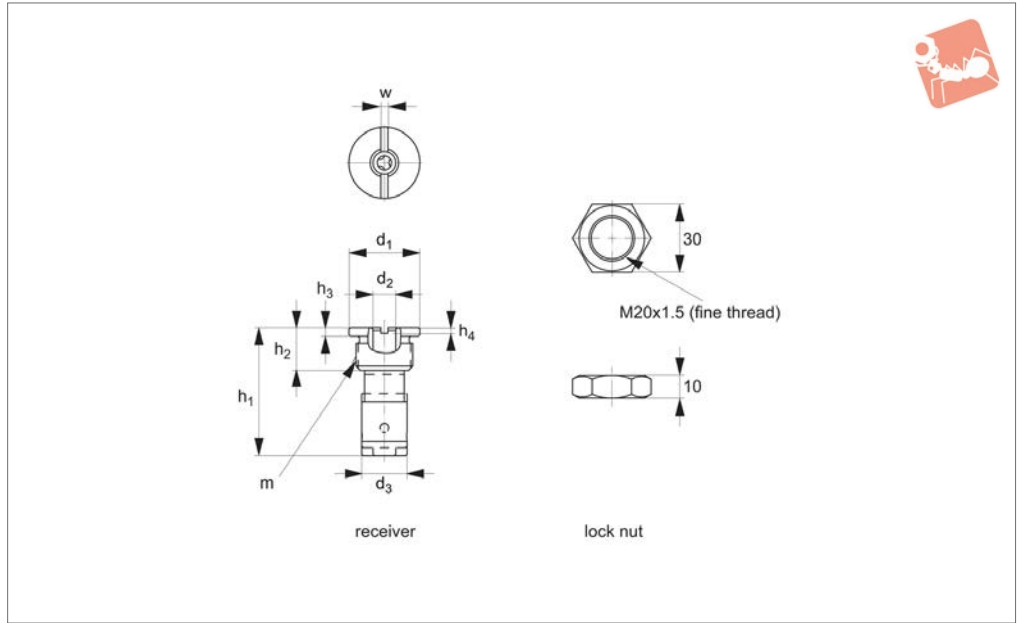
one-touch fasteners, ball clamping; 33934 and 33936. Suitable for panels/enclosures of 6 to 20 mm thickness. Requires an M 6 thread, 6mm deep for installation into blind hole. See technical pages for further information.

Order No.	d_1 -0.2 -0.4	h_1	h_2	h_3	m	A/F	Weight g
33930.W0008	Ø8	23	5	4	M 5x0,8	6	7





33934



Material

Body: steel, nickel plated.
Balls: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Used in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change

over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Temperature resistant to 180°C.

Important Notes

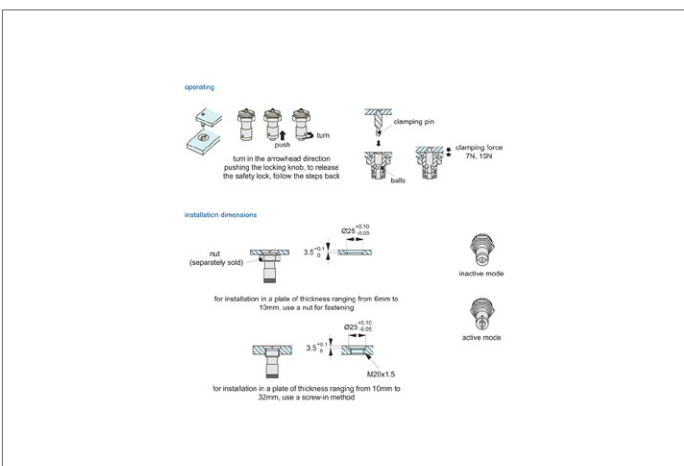
Suitable for panels/enclosures of 6 to 32 mm thickness. Used in conjunction with pin 33930. Offers a safety release feature to prevent accidental release in of pin/assembly.

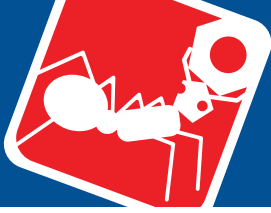
* Tensile strength stated is for locked position/state of the fastener.

Actuation:

Engage pin into receiver, a positive „click“ is heard, securing balls are engaged. Panels are securely fastened. To release, pull safety release housing on under side of receiver, balls are retracted and panel is released.

Order No.	Type	d ₁ tol. h9	d ₂ +0.10 +0.50	d ₃	h ₁	h ₂	h ₃	h ₄	m	w	Clamping force N	Shear strength N	Tensile strength N	Weight g
33934.W0807	Receiver	Ø26	Ø8	Ø16	45	15	3	2	M20x1,5	2,5	7	1800	1800	65
33934.W0815	Receiver	Ø26	Ø8	Ø16	45	15	3	2	M20x1,5	2,5	17	1800	1800	65



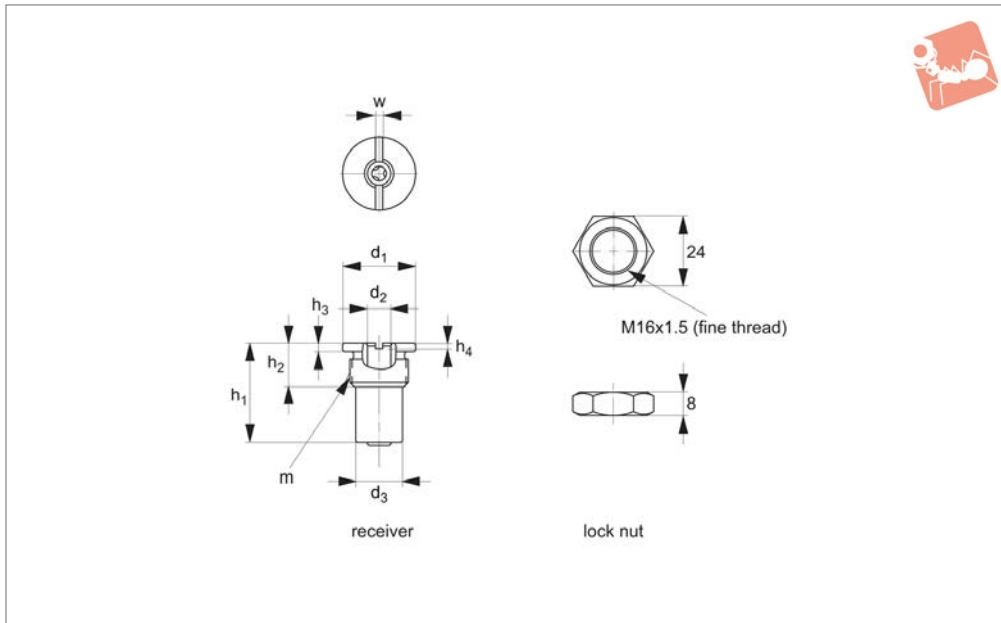


One-Touch Fastener - Ball Clamping

locating bush and receiver - mechanical release



One Touch Fasteners



33936

ONE TOUCH FASTENERS

Material

Body: steel, nickel plated.
Balls & spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change

over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery. Temperature resistant to 180°C.

Important Notes

Suitable for panels/enclosures of 6 to 32 mm thickness. Used inconjunction with pin 33930. Mechanical release only (no safety release).

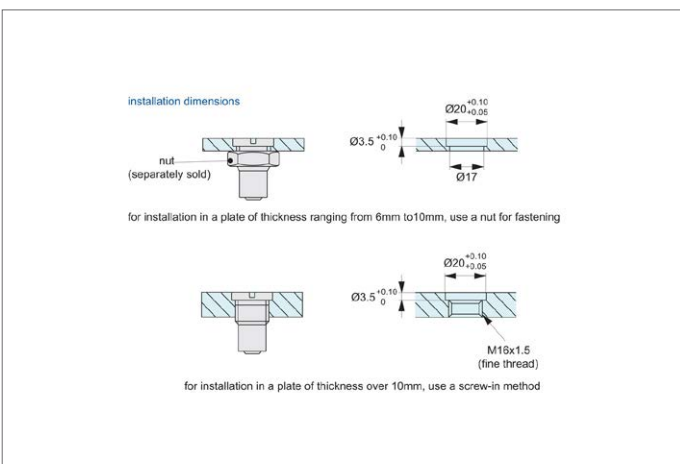
* Tensile strength stated is for locked posi-

tion/state of the fastener.

Actuation:

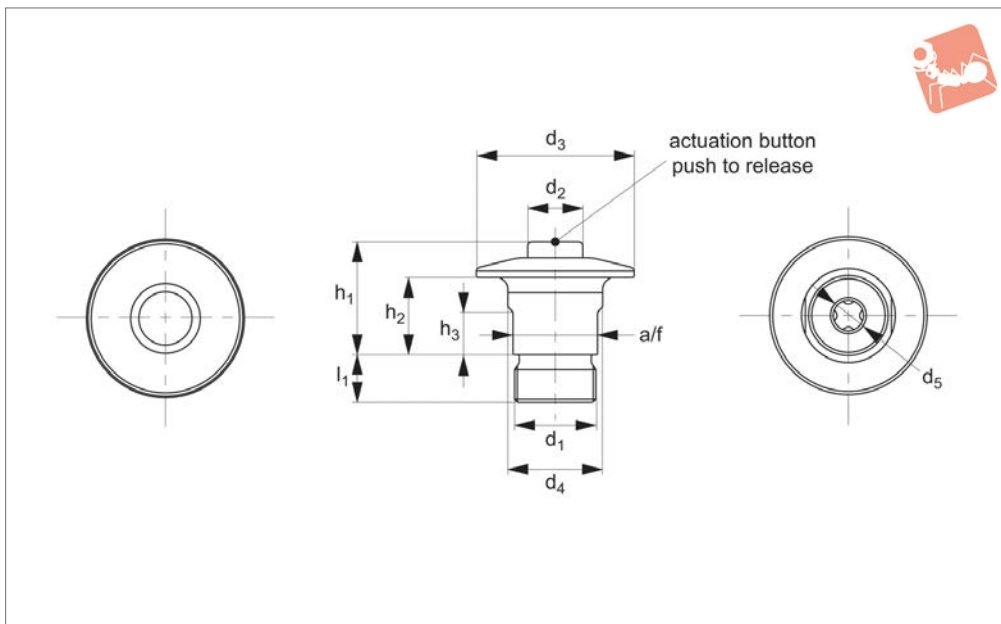
Engage pin into receiver, a positive „click“ is heard, securing balls are engaged. Panels are securely fastened. To release, simply pull panels apart with sufficient force to overcome securing balls, panel is released.

Order No.	Type	d ₁ tol. h9	d ₂ +0.10 +0.05	d ₃	h ₁	h ₂	h ₃	m	w	Clamping force N	Shear strength N	Tensile strength N	Weight g
33936.W0807	Receiver	Ø20	Ø8	Ø14	29	15	3	M16x1,5	2,5	7	1800	1800	30
33936.W0815	Receiver	Ø20	Ø8	Ø14	29	15	3	M16x1,5	2,5	15	1800	1800	30





33924



Material

Body: stainless steel SUS303
 Ball: stainless steel SUS440
 Spring: stainless steel SUS304
 O-Ring: fluororubber

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change

over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery. Temperature resistant to 180°C.

Tips

Used in conjunction with pin 33923. For highly accurate locating, use locating pins 36340 & 36341

Important Notes

Suitable for panel/enclosures of 3 to 10mm thickness.

Used in conjunction with pin 33923. Tensile strength stated is for locked position/state of fastener.

Actuation:

- Engage clamp over pin, no need to push button, a positive „click“ is heard.
- Securing balls are locked and panel fastened.
- To release; while pushing down on release button, lift panel from pin- panel is released.

Order No.	For single panel thickness	For pin dia.	d ₁	d ₂	d ₃	d ₄	d ₅ +0.4 +0.2	h ₁	h ₂	h ₃	l ₁	A/F	Clamping force N	Shear strength N	Tensile strength N	Weight g
33924.W1006	3-10	6	M16x1,0	11	32	19	6	23	15,5	8,5	9,5	17	6	1100	250	65

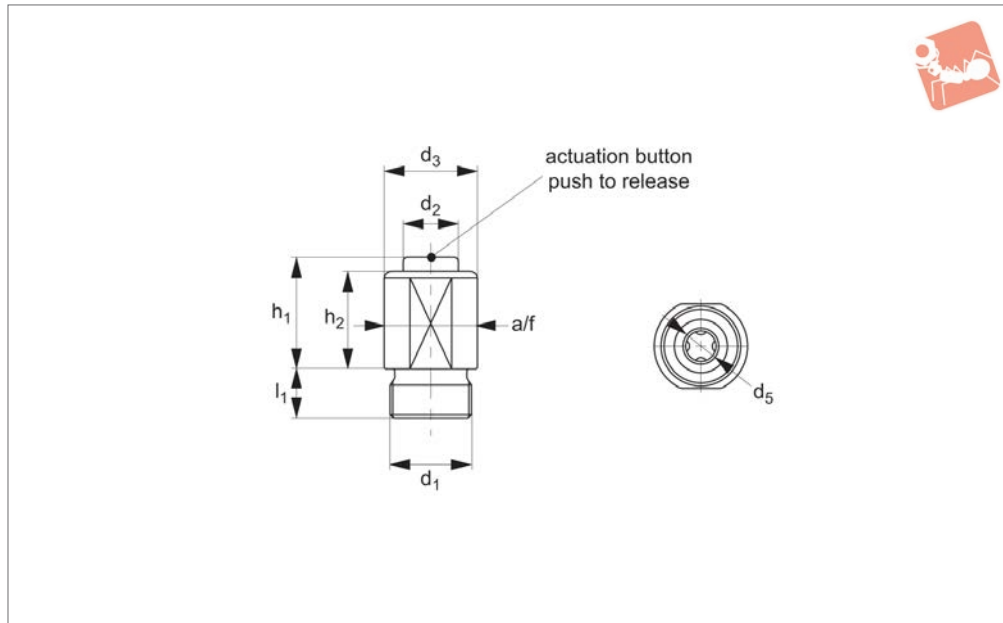


One-Touch Fastener - Ball Clamping

push button lock - straight body - stainless



One Touch Fasteners



33925

ONE TOUCH FASTENERS

Material

Body: stainless steel SUS303
 Ball: stainless steel SUS440
 Spring: stainless steel SUS304
 O-Ring: fluororubber

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery. Temperature resistant to 180°C.

Tips

Used in conjunction with pin 33923.

Important Notes

Suitable for pannel/enclosures of 3 to 27mm thickness. Used in conjunction

with pin 33923. Tensile strength stated is for locked position/state of fastener.

Actuation:

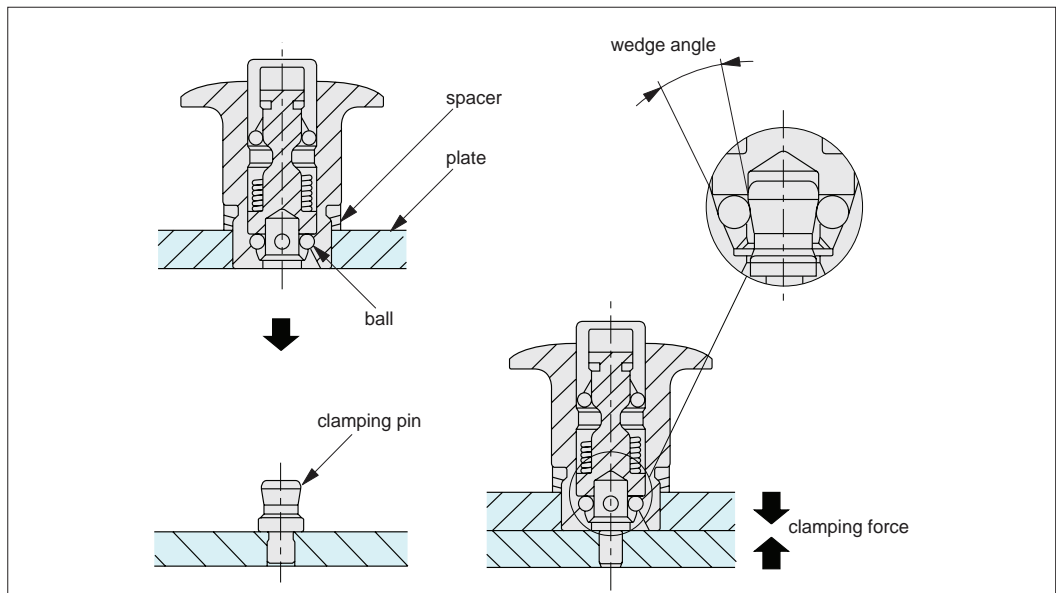
- To lock; engage clamp over pin, no need to push button, a positive „click“ is heard.
- Securing balls are locked and panel fastened.
- To release; while pushing down on release button, lift panel from pin- panel is released.

Order No.	For single panel thickness	For pin dia.	d ₁	d ₂	d ₃	d ₅ +0.4 +0.2	h ₁	h ₂	l ₁	A/F	Clamping force N	Shear strength N	Tensile strength N	Weight g
33925.W2706	3-27	6	M16x1,0	11	19	6	23	19.5	9.5	17	6	1100	250	50



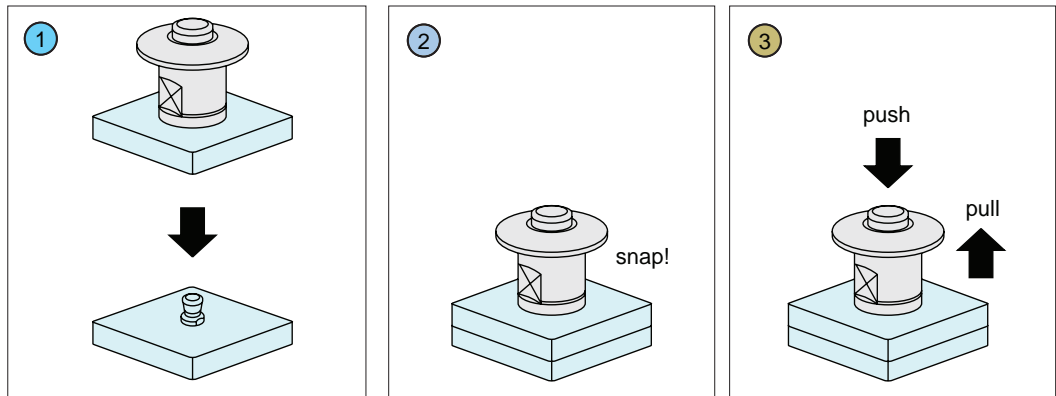
Operating Principle

Four ball bearings clamp onto the clamping pin (33923), the wedge shape of the pin draws the panels together during clamping.



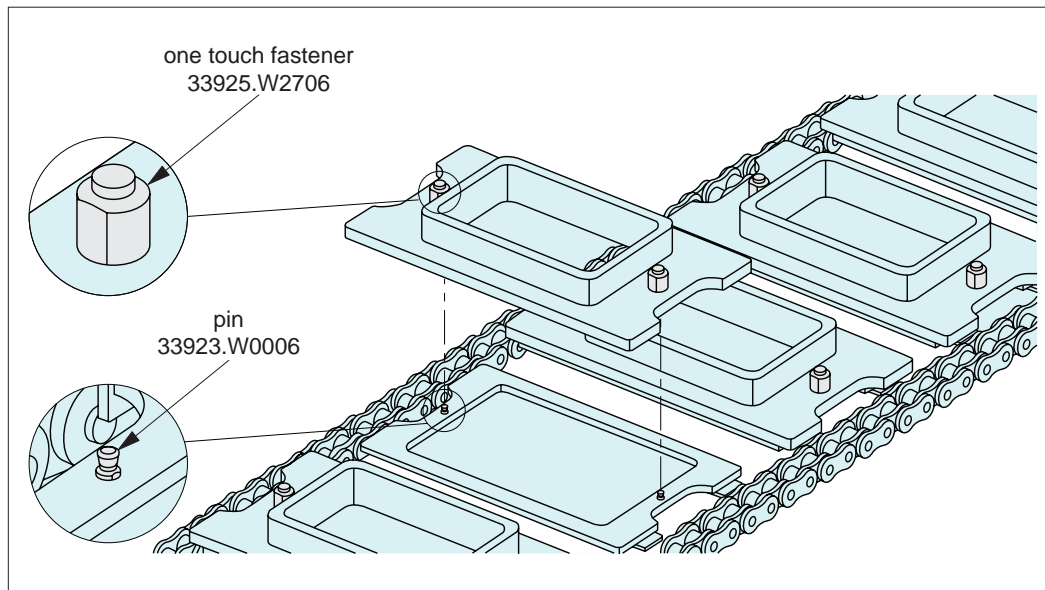
Operating Instructions

- 1 Engage clamp over pin, no need to push button, a positive "click" is heard.
- 2 Securing balls are locked and panel fastened.
- 3 To release; while pushing down on release button, lift panel from pin - panel is released.

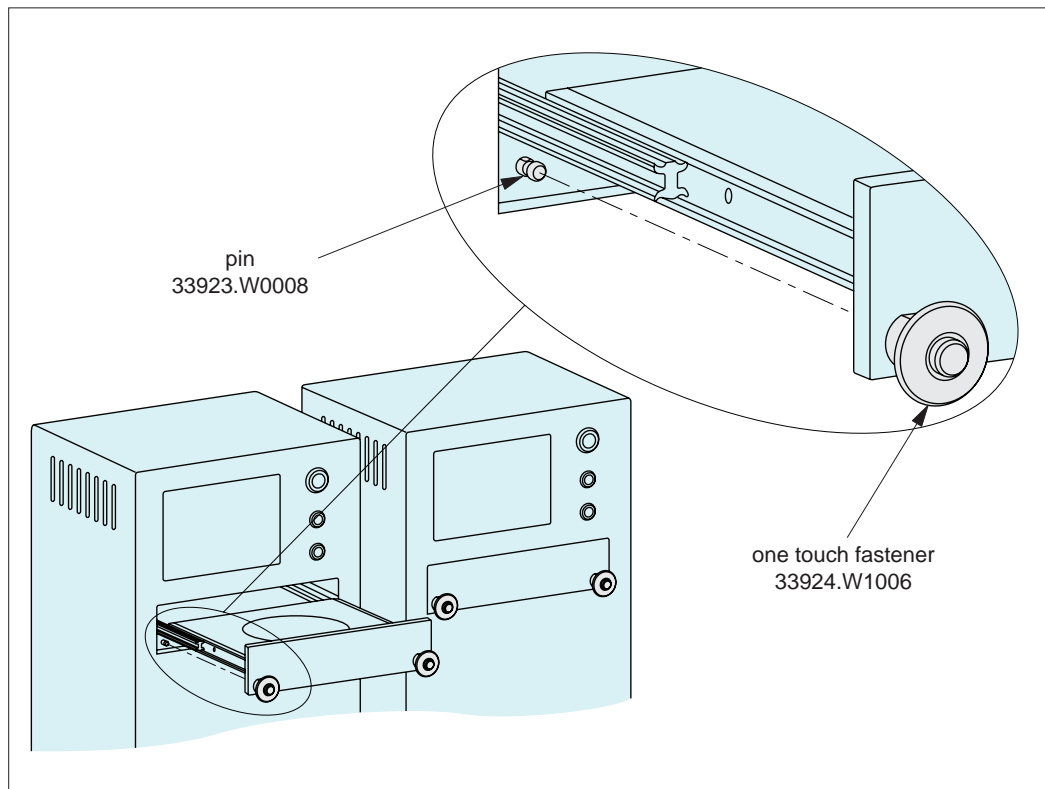




One Touch Fastener Applications



Changes of Trays and Containers on Conveyers



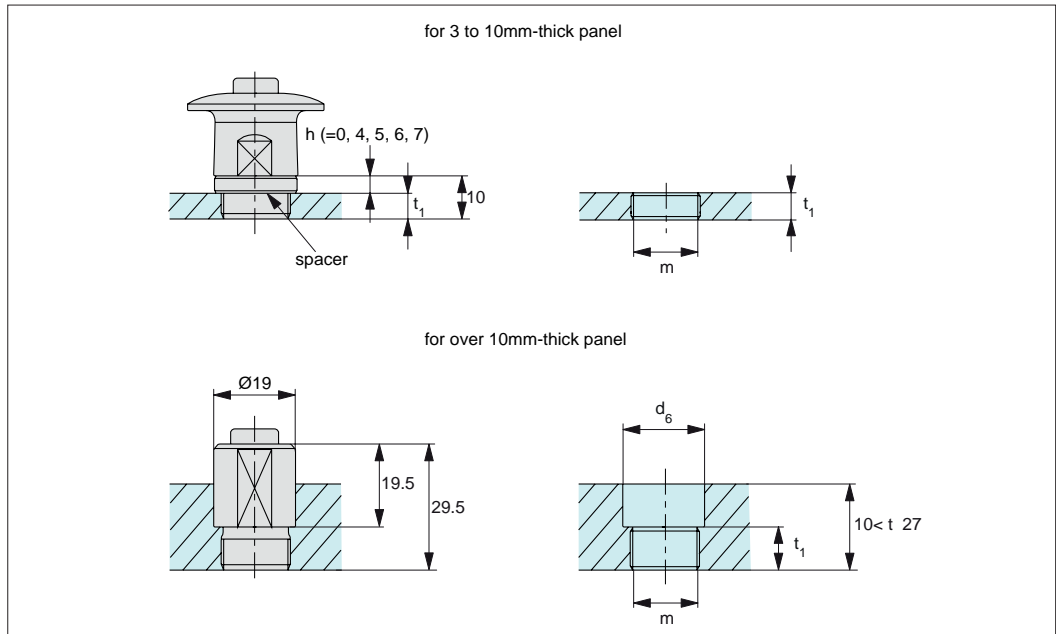
Securing Sliding Elements Such as Drawers

ONE TOUCH FASTENERS

ov-W33925-A-T-ball-clamping-one-touch-fasteners-installation-b-rmh - Updated - 27-10-2022



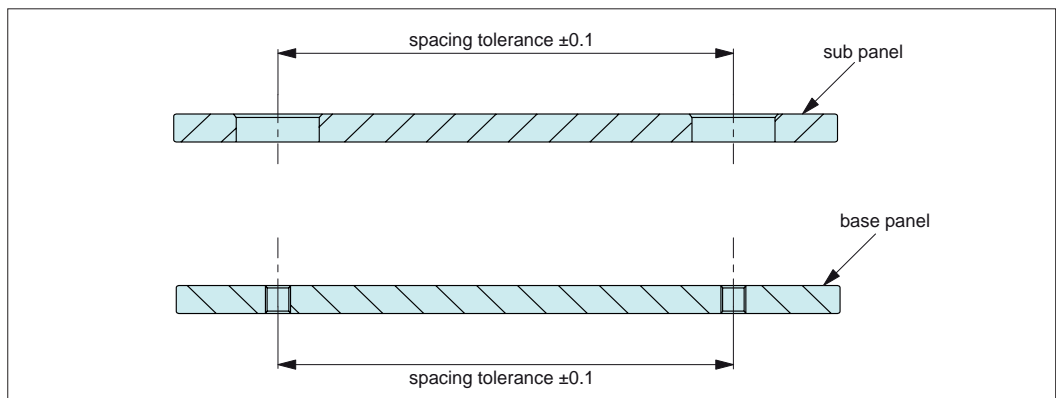
Installation Dimensions



Installation Best Practice

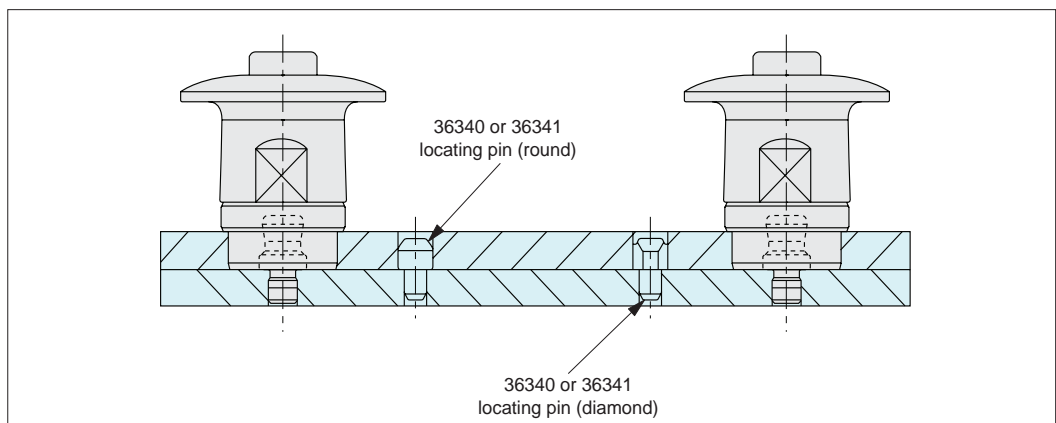
Panel Tolerances

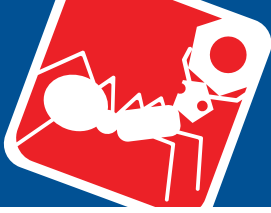
Spacing tolerance on both the sub panel and the base panel should be ± 0.1 .



Repeatability

For highly accurate locating, use locating pins 36340 or 36341. Repeatability of ± 0.25 is achievable.



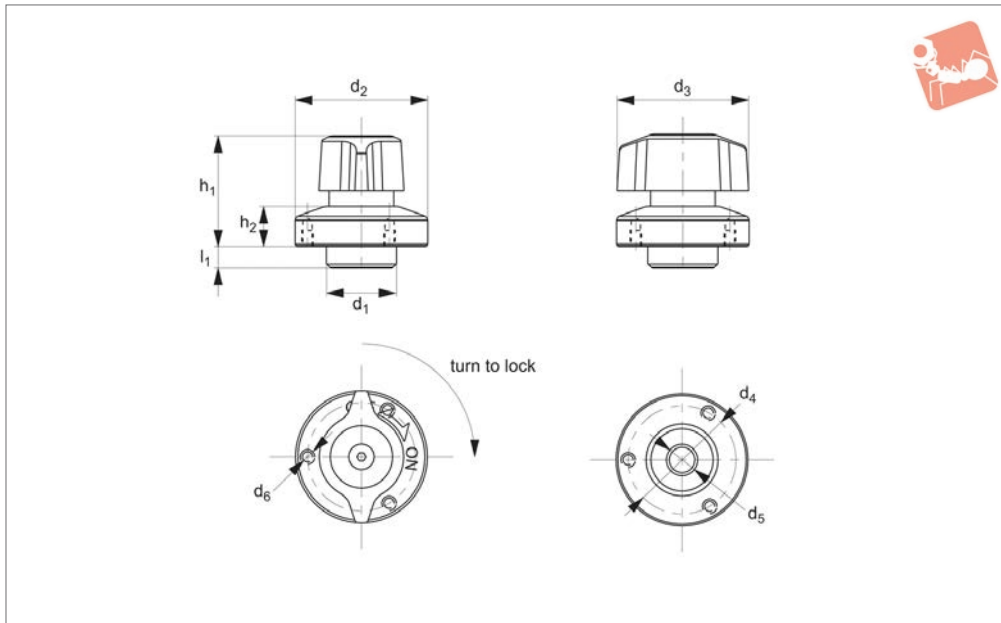


One-Touch Fastener - Ball Clamping

quarter turn lock - t-handle grip - steel



One Touch Fasteners



33927

ONE TOUCH FASTENERS

Material

Body & Shank: steel, nickel plated.
Knob: polyamide, black.
Ball & Spring: Stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling

processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Tips

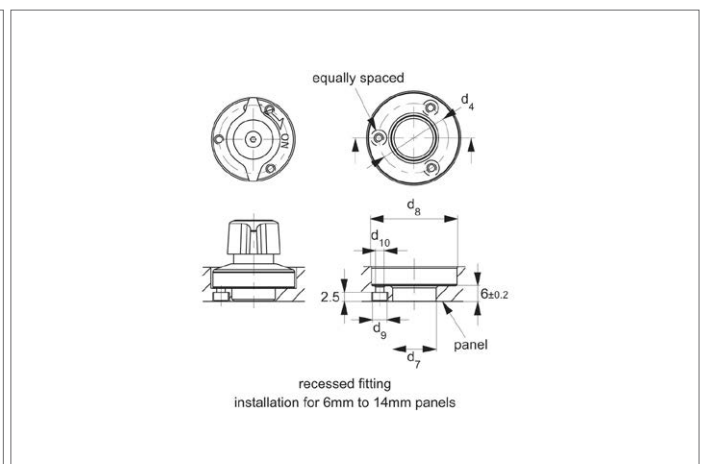
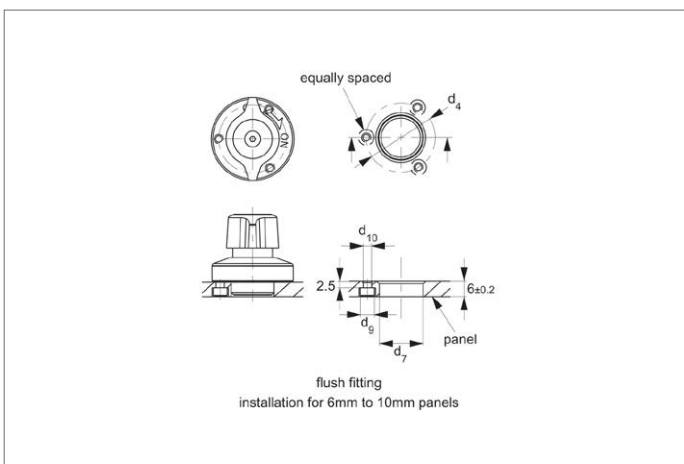
Used in conjunction with pin 33923.

For highly accurate locating, use locating pins 36340 & 36341.

Actuation

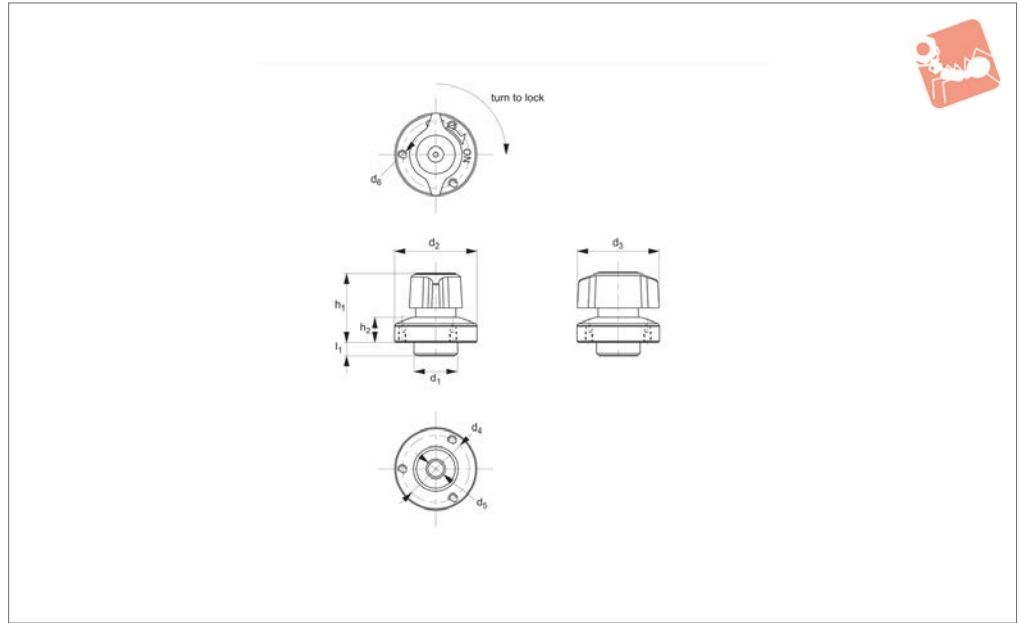
- Turn handle to off position, clamping balls are retracted. Engage panel and clamp over clamping pin. Turn handle on to position to clamp.
- To unclamp, reverse steps above.

Order No.	For single panel thickness	For pin dia.	d ₁ tol. h9	d ₂	d ₃	d ₄	d ₅ +0.4 +0.2	d ₆	h ₁	h ₂	l ₁	Clamping force N	Shear strength N	Tensile strength N	Weight g
33927.W1006	6-10	6	14	25	25	21	6	M2x0,4	23	6,5	5,5	7	1100	250	35
33927.W1408	6-14	8	18	34	34	28	8	M3x0,5	28	10,0	5,5	9	1800	400	85





33928



Material

Body & shank: steel, nickel plated.
 Knob: tainless steel.
 Ball & spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling

processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Tips

Used in conjunction with pin 33923.

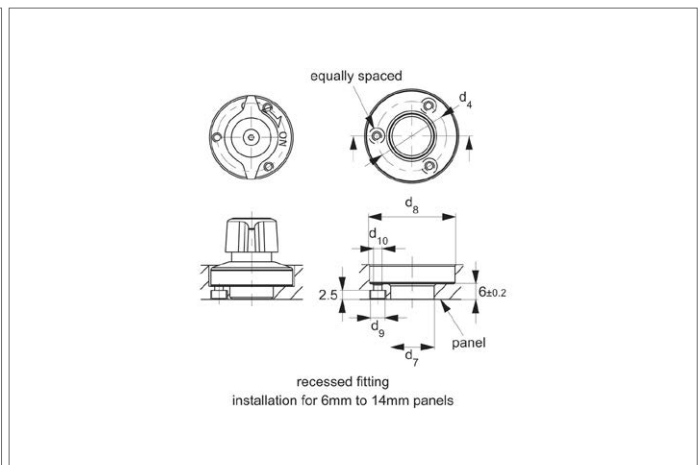
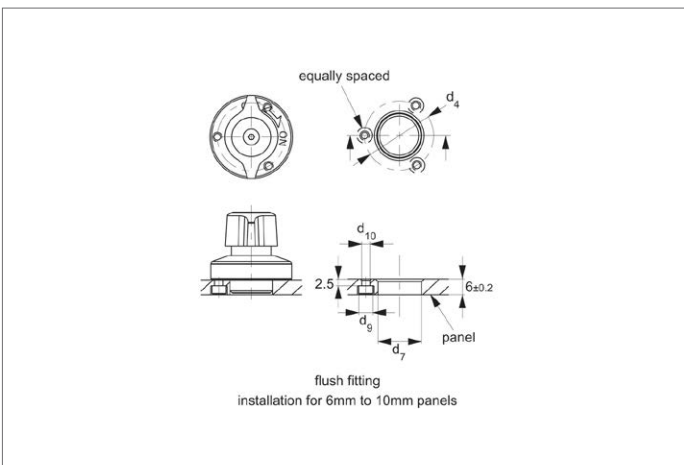
For highly accurate locating, use locating pins 36340 & 36341.

Actuation

-Turn handle to off position, clamping balls are retracted. Engage panel and clamp over clamping pin. Turn handle on to position to clamp.

-To unclamp, reverse steps above.

Order No.	For single panel thickness	For pin dia.	d ₁ tol. h9	d ₂	d ₃	d ₄	d ₅ +0.4 +0.2	d ₆	h ₁	h ₂	l ₁	Clamping force N	Shear strength N	Tensile strength N	Weight g
33928.W1006	6-10	6	14	25	25	21	6	M2x0,4	23	6,5	5,5	7	1100	250	35
33928.W1408	6-14	8	18	34	34	28	8	M3x0,5	28	10,0	5,5	9	1800	400	85



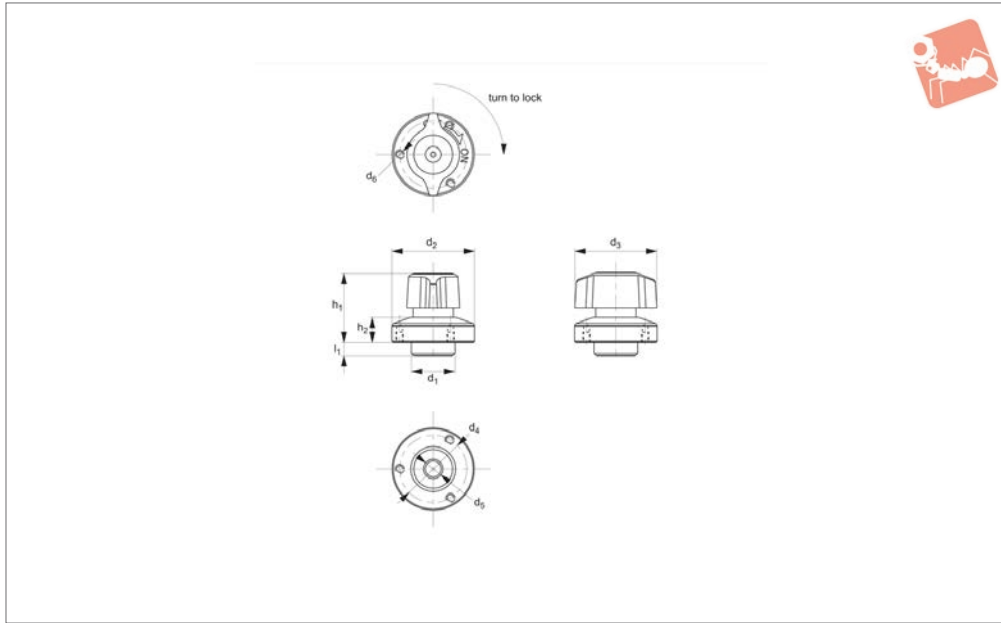


One-Touch Fastener - Ball Clamping

quarter turn lock - t-handle - stainless steel



One Touch Fasteners



33929

ONE TOUCH FASTENERS

Material

Body & shank: stainless steel.
Knob: stainless steel.
Ball & spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling

processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Tips

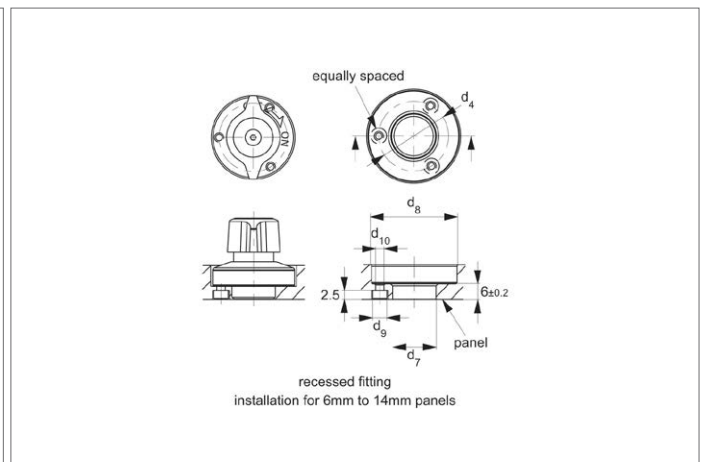
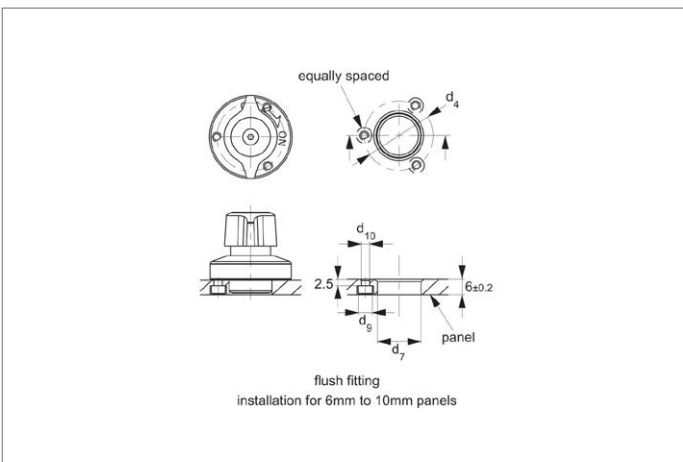
Used in conjunction with pin 33923.

For highly accurate locating, use locating pins 36340 & 36341.

Actuation

- Turn handle to off position, clamping balls are retracted. Engage panel and clamp over clamping pin. Turn handle on to position to clamp.
- To unclamp, reverse steps above.

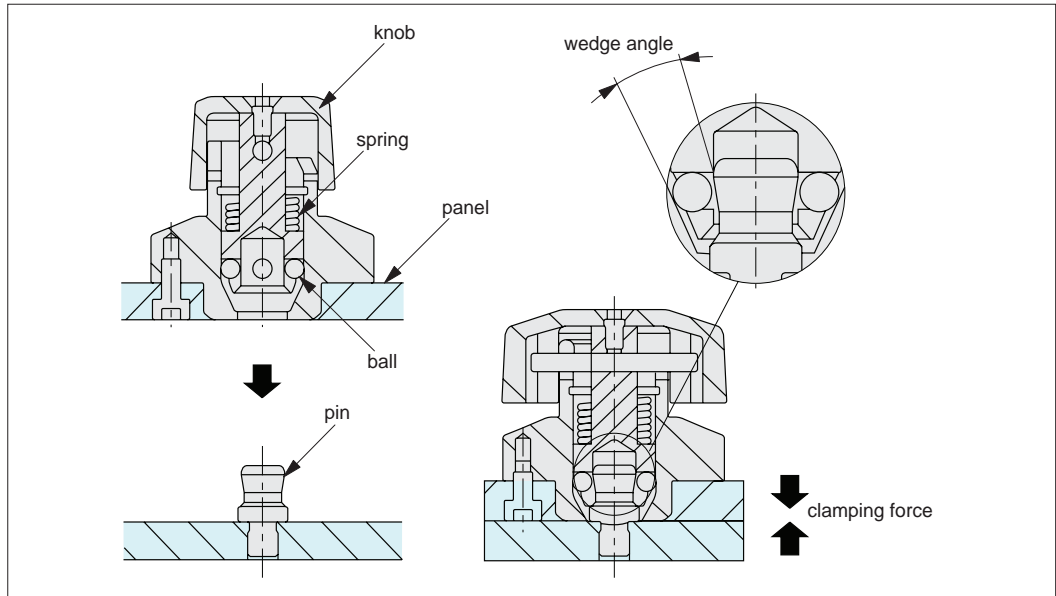
Order No.	For single panel thickness	For pin dia.	d ₁ tol. h9	d ₂	d ₃	d ₄	d ₅ +0.4 +0.2	d ₆	h ₁	h ₂	l ₁	Clamping force N	Shear strength N	Tensile strength N	Weight g
33929.W1006	6-10	6	14	25	25	21	6	M2x0,4	23	6,5	5,5	7	1100	250	35
33929.W1408	6-14	8	18	34	34	28	8	M3x0,5	28	10,0	5,5	9	1800	400	85





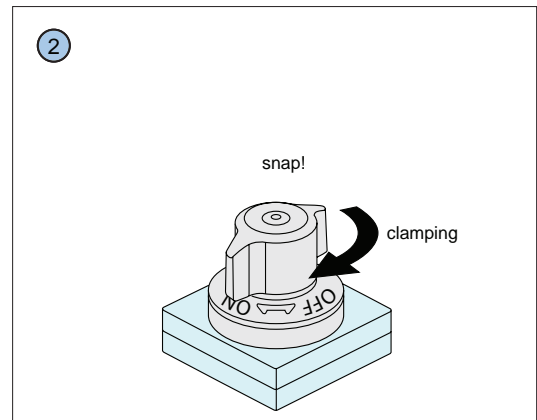
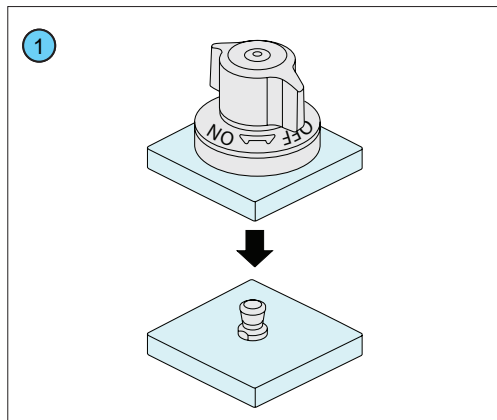
Operating Principle

Four ball bearings clamp onto the clamping pin, the wedge shape of the pin (33929) draws the panels together during clamping.



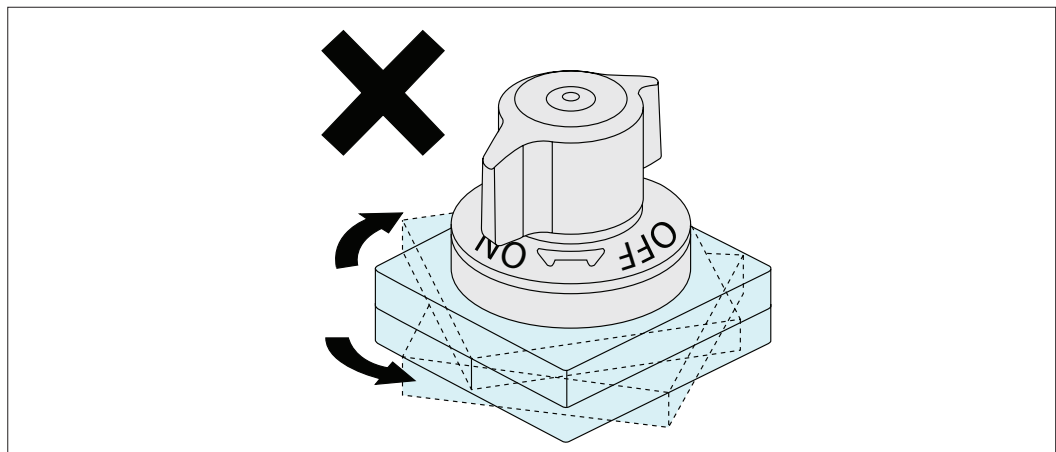
Operating Instructions

- 1 Turn handle to off position to retract the clamping balls. Engage panel and clamp over clamping pin. Turn handle on to position to clamp.
- 2 To unclamp, reverse steps above.



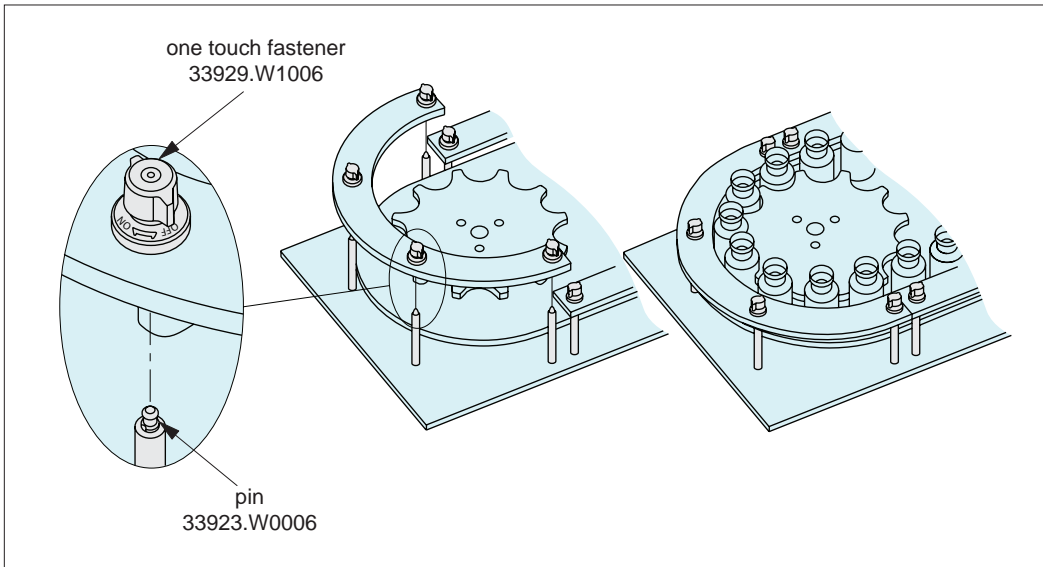
Warning

Rotation of either sub panel or base panel can result in one touch fastener unclamping. When either panel is at risk of rotating ensure a stop is in place.

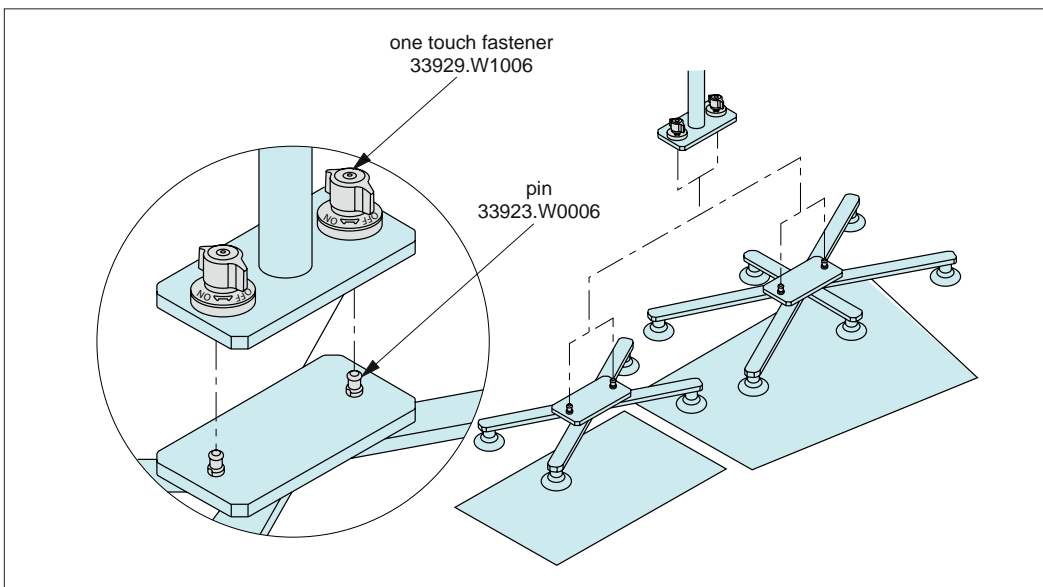




Applications



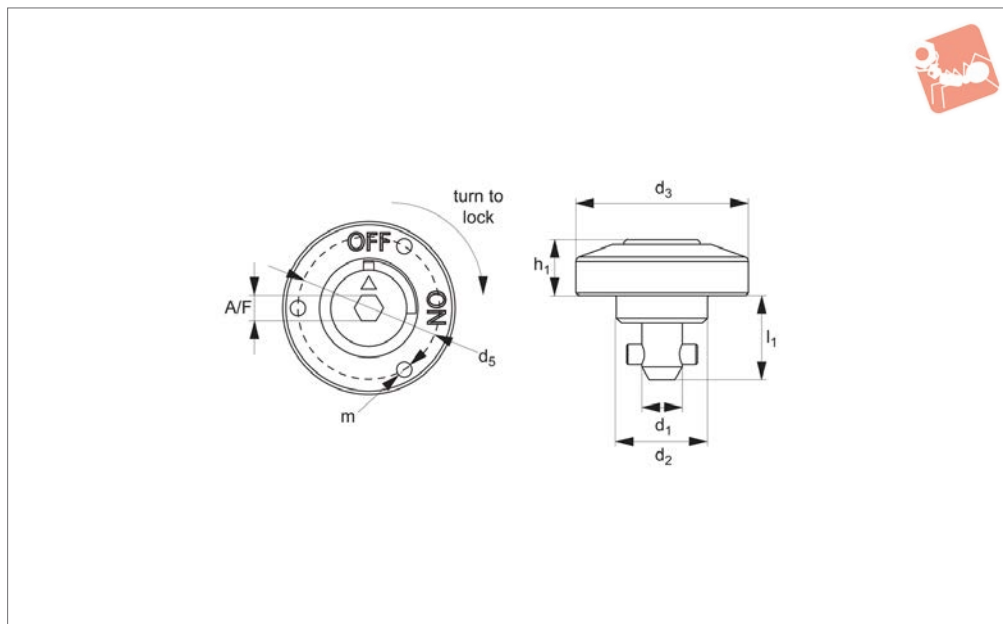
Changes of Guides Around Star Wheels



Changes of Suction Grippers for Wafer Handling



33945



Material

Body: stainless steel SUS303.
Shank: steel, nickel plated.
Pin: stainless SUS 304.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
Temperature resistant to 200°C.

Important Notes

Suitable for panels/enclosures of 6 to 20 mm thickness. For locating bushes see part

no. 33948 and 33949.

Actuation:

- Use suitable hex key to turn lock to off position. Present cover panel to frame and align to locking bush.
- With the hex key, now turn the lock back 45° to the on position; locking pin follows, tightening fastener and fastening panel.

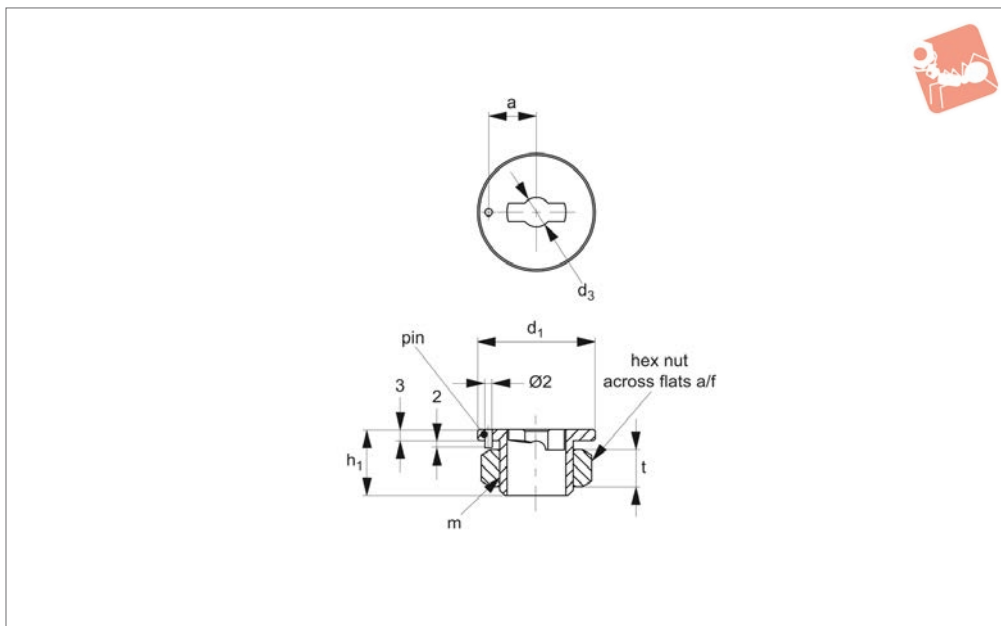
Order No.	For single panel thickness	Clamping force N	d ₁ -0.04, - tol. h9 0.08	d ₂	d ₃	l ₁	h ₁	m	Shear strength N	Tensile strength N	A/F	Weight g
33945.W1005	6 - 10	60	5	14	25	15,5	8	M 2x0,4	1800	1200	4	30
33945.W1408	6 - 14	90	8	18	34	17,0	11	M 3x0,5	3200	2600	5	105
33945.W2008	12 - 20	90	8	18	34	23,0	11	M 3x0,5	3200	2600	5	110



One-Touch Fastener - Cam Locking thin plate locating bush for quarter turn



One Touch
Fasteners



33948

ONE TOUCH FASTENERS

Material

Body: steel, nickel plated or stainless steel.

Nut: stainless steel.

Technical Notes

Used in conjunction with one-touch fasteners 33940 to 33946, locating bushes 33948 provide secure fastening of panels

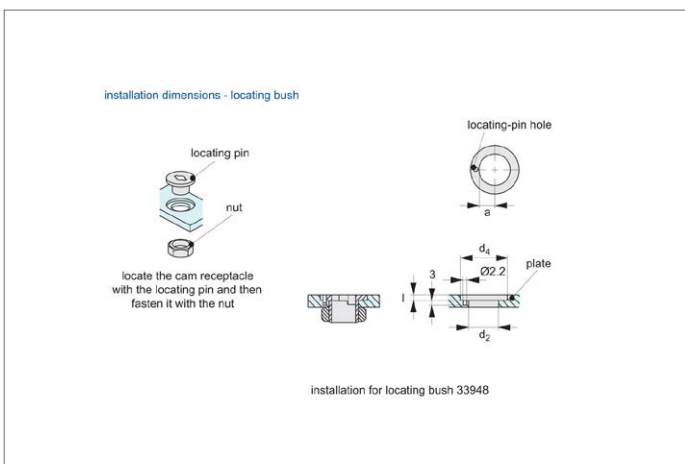
and covers. Locating bushes are of particular use in soft metals, such as aluminium where receiving surfaces may wear. One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. Temperature resistant to 200°C.

Important Notes

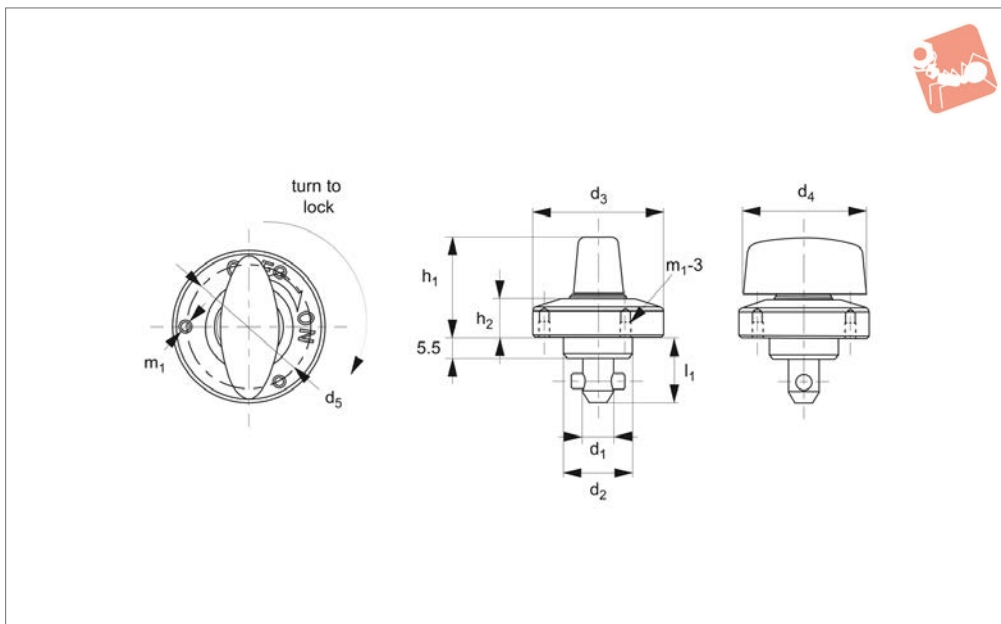
Suitable for panels/enclosures of 6 to 12 mm thickness. For one-touch fasteners see part nos. 33940 to 33946. For installation instructions see technical page.

Order No.	For single panel thickness	Material	d_1 -0.04 -0.08	d_2	d_3 +0.08 +0.04	d_4 +0.10 +0.05	a ±0.1	l_1	h_1	m	t	A/F	Weight g
33948.W0005	6-10	Steel	25	15	5	25	10,5	3,5	16	M14x1,5	8	22	40
33948.W0008	6-12	Steel	32	21	8	32	13,0	3,5	18	M20x1,5	10	30	55
33948.W0105	6-10	Stainless Steel	25	15	5	25	10,5	3,5	16	M14x1,5	8	22	40
33948.W0108	6-12	Stainless Steel	32	21	8	32	13,0	3,5	18	M20x1,5	10	30	55





33940



Material

Body: stainless steel SUS303.
Pin: stainless steel.
Knob: polyamide, black.
Spring: steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling

processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
Temperature resistant to 130°C.

Important Notes

Suitable for panels/enclosures of 6 to 20

mm thickness. For locating bushes see part no. 33948 and 33949.

Actuation:

- Turn handle to off position: present cover panel to frame and align to locating bush.
- Turn handle 45° to on position: locking pin follows cam, tightening fastener and securely fastening panel.

Order No.	For single panel thickness	Clamping force N	d_1 -0.04 -0.08	d_2 tol. h9	d_3	d_4	d_5	d_6 +0.10 +0.05	d_7	Weight g
33940.W1005	06-10	60	5	14	25	20	21	14	26	35
33940.W1408	6-14	90	8	18	34	32	28	18	35	105
33940.W2008	12-20	90	8	18	34	32	28	18	35	110

Order No.	d_8	d_9	l_1	m	Shear strength N	Tensile strength N
33940.W1005	4.4	2.4	15.5	M 2x0,4	1800	1200
33940.W1408	4.4	2.4	17.0	M 3x0,5	3200	2600
33940.W2008	6.5	3.4	23.0	M 3x0,5	3200	2600

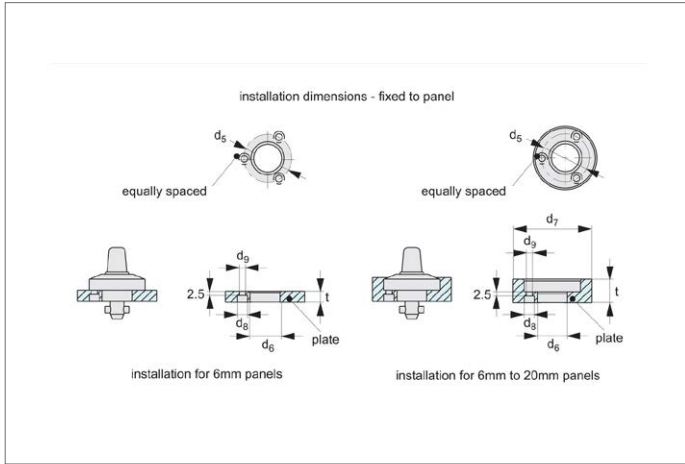


One-Touch Fastener - Cam Locking

quarter turn - t-handle grip -plastic

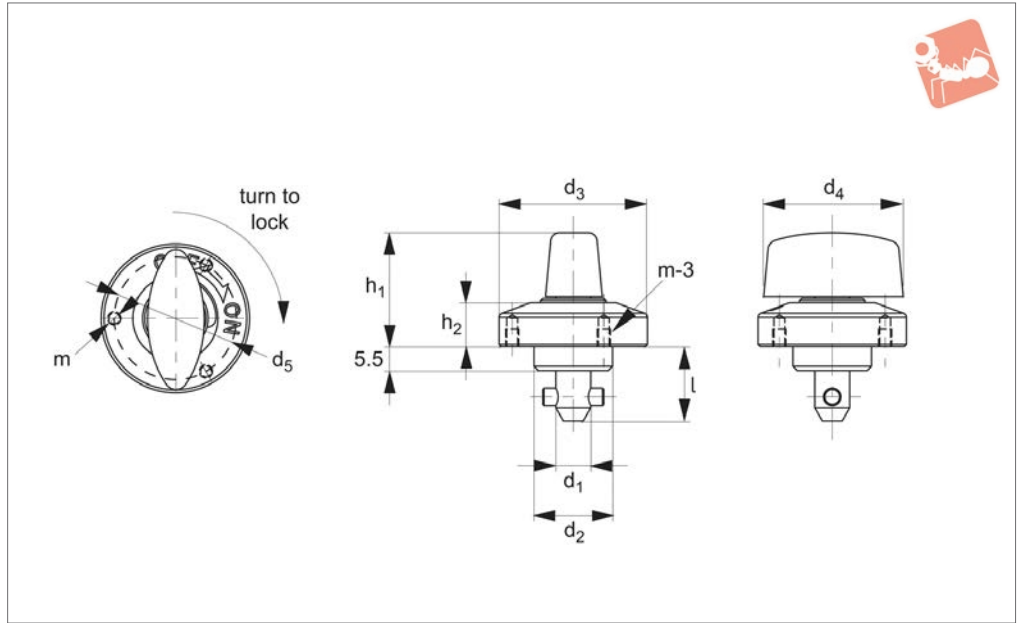


One Touch Fasteners





33942



Material

Body, Pin and Knob: SUS303 stainless steel.

Shank: S45C steel nickel plated.
Spring: SWOSC-V steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling

processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
Temperature resistant to 200°C.

Important Notes

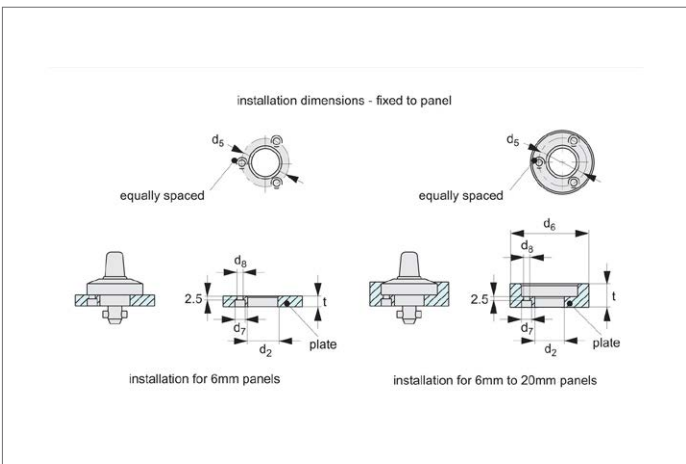
Suitable for panels/enclosures of 6 to 20

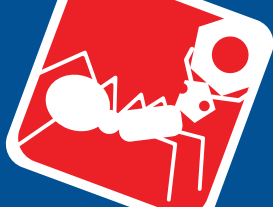
mm thickness. For locating bushes see part no. 33948 and 33949.

Actuation:

- Turn handle to off position: present cover panel to frame and align to locating bush.
- Turn handle 45° to on position: locking pin follows cam, tightening fastener and securely fastening panel.

Order No.	For single panel thickness	Clamping force N	d ₁ -0.04 -0.08	d ₂ tol. h9	d ₃	d ₄	d ₅	h ₁	h ₂	l	m	Shear strength N	Tensile strength N	Weight g
33942.W1005	6-10	60	5	14	25	20	21	19,0	6,5	15,5	M 2x0,4	1800	1200	40
33942.W1408	6-14	90	8	18	34	32	28	25,5	10,0	17,0	M 3x0,5	3200	2600	130
33942.W2008	12-20	90	8	18	34	32	28	25,5	10,0	23,0	M 3x0,5	3200	2600	135



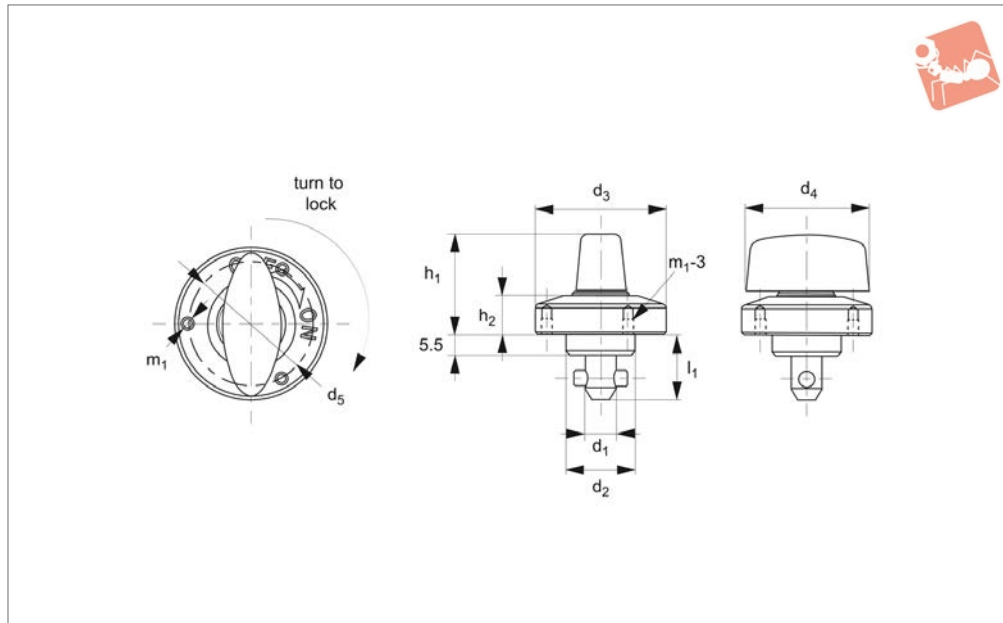


One-Touch Fastener - Cam Locking

quarter turn - t-handle grip - stainless



One Touch Fasteners



33943

ONE TOUCH FASTENERS

Material

Body and Shank: stainless steel SUS303.
Pin, Knob and Spring: stainless steel SUS304.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Temperature resistant to 200°C.

Important Notes

Suitable for panels/enclosures of 6 to 20 mm thickness. For locating bushes see part

no. 33948 and 33949.

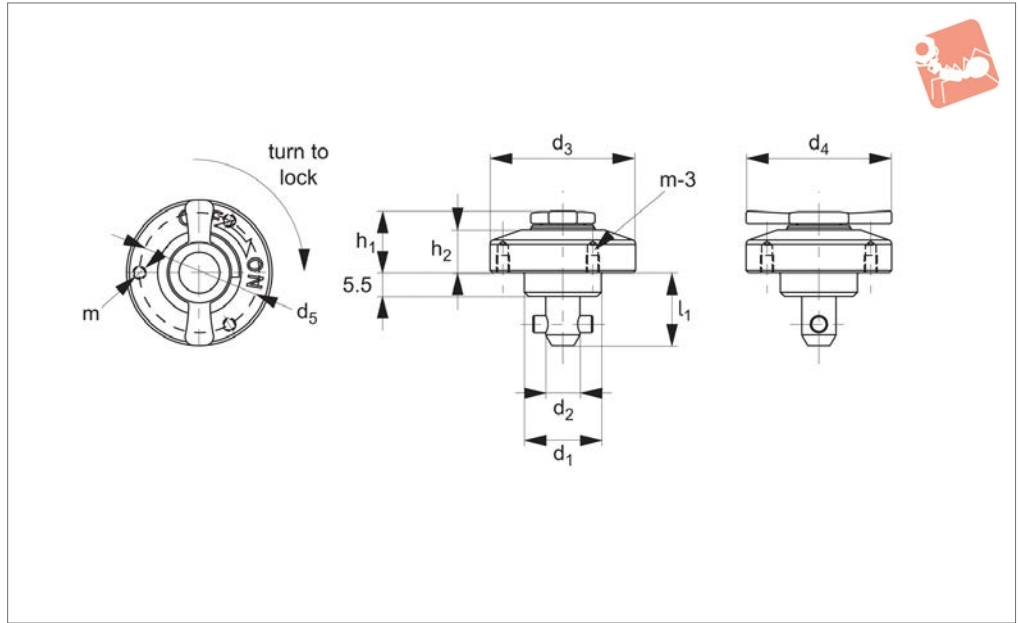
Actuation:

- Turn handle to off position: present cover panel to frame and align to locating bush.
- Turn handle 45° to on position: locking pin follows cam, tightening fastener and securely fastening panel.

Order No.	For single panel thickness	Clamping force N	d ₁ -0.04 - tol. h9 0.08	d ₂	d ₃	d ₄	d ₅	l ₁	h ₁	h ₂	m ₁	Shear strength N	Tensile strength N	Weight g
33943.W1005	6-10	60	5	14	25	20	21	15,5	19	6,5	M 2x0,4	1800	1200	35
33943.W1408	6-14	90	8	18	34	32	28	17,0	26	10,0	M 3x0,5	3200	2600	105
33943.W2008	12-20	90	8	18	34	32	28	23,0	26	10,0	M 3x0,5	3200	2600	110



33944



Material

Body and Shank: stainless steel SUS303
Pin, Knob, Spring: stainless steel SUS304.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of

cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time wasted in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery. Temperature resistant to 200°C.

Important Notes

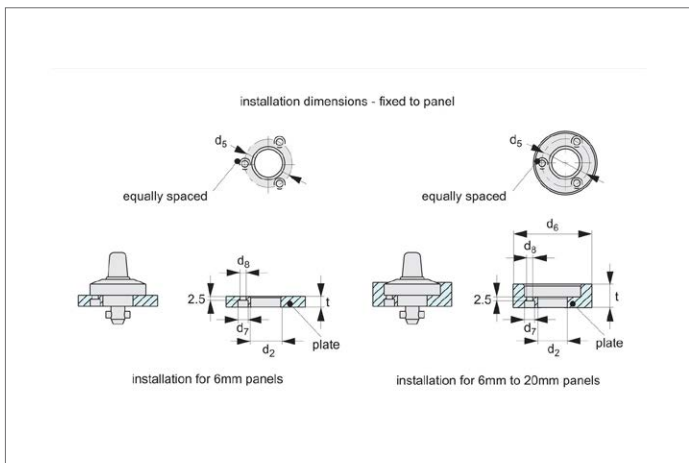
Suitable for panels/enclosures of 6 to 20

mm thickness. For locating bushes see part no. 33948 and 33949.

Actuation:

- Turn handle to off position: present cover panel to frame and align to locating bush.
- Turn handle 45° to on position: locking pin follows cam, tightening fastener and securely fastening panel.

Order No.	For single panel thickness	Clamping force N	d ₁ -0.04 - tol. h9 0.08	d ₂	d ₃	d ₄	d ₅	l ₁	h ₁	h ₂	m	Shear strength N	Tensile strength N	Weight g
33944.W1005	6-10	60	5	14	25	25	21	15,5	11,5	6,5	M 2x0,4	1800	1200	35
33944.W1408	6-14	90	8	18	34	34	28	17,0	14,0	10,0	M 3x0,5	3200	2600	80
33944.W2008	12-20	90	8	18	34	34	28	23,0	14,0	10,0	M 3x0,5	3200	2600	85



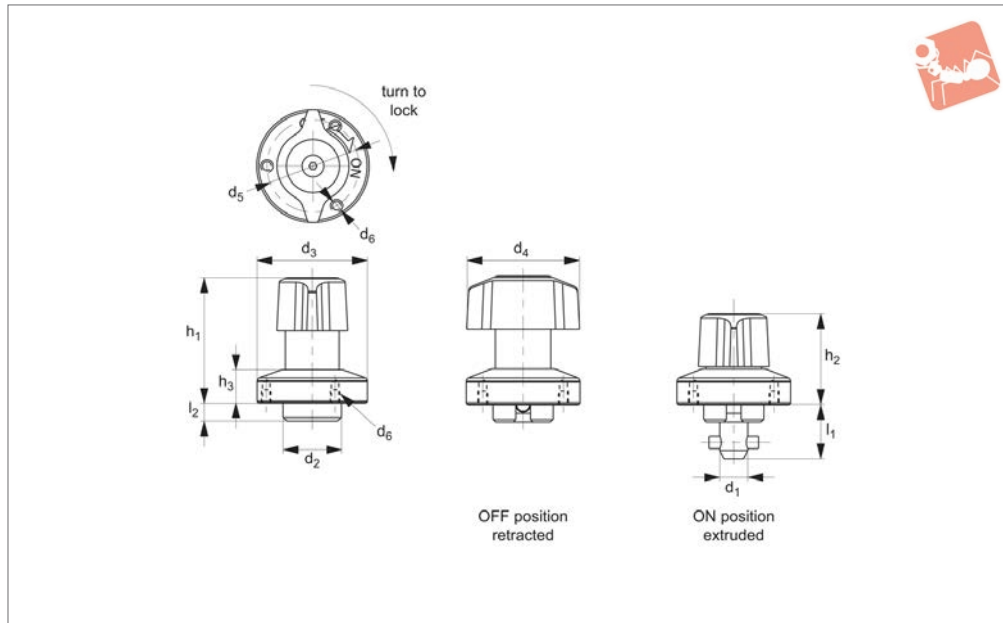


One-Touch Fastener- Cam Locking

retract - quarter turn - t-handle grip - plastic



One Touch Fasteners



33946

ONE TOUCH FASTENERS

Material

Body: steel, nickel plated.
Shank: steel, nickel plated.
Pin: stainless steel, SUS304.
Knob: polyamide, black.
Spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
Temperature resistant to 130°C.

Important Notes

One-touch fastener offers full retraction of clamping shank when part is unlocked, this offer's the benefit of enabling panels to be slid into position - especially useful with larger or oversized panels, and enables its use on sliding or linear rail applications to provide positive location

and clamping of parts.

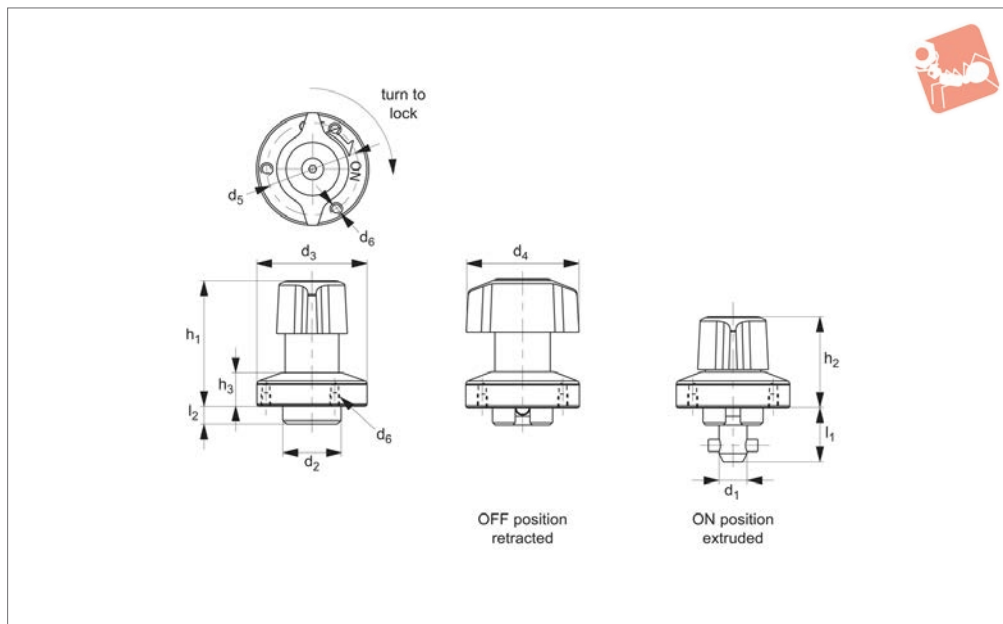
Actuation:

- Turn handle to off position, and ensure the shank is fully retracted.
- Place or slide the over in place and position over the locating bush.
- Turn handle to on position for clamping, an audible click is heard when fully clamped.
- To release, turn handle back to off position, the shank is fully retracted into clamp body assisted by the return spring.

Order No.	Single panel thickness	Clamping force N	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	l ₁	l ₂	h ₁	h ₂	h ₃	Shear strength N	Tensile strength N	Weight g
33946.W1005	6-10	60	5	14	25	25	21	M 2x0,4	15,5	5,5	30	20,0	6,5	1800	1200	40
33946.W1408	6-14	90	8	18	34	34	28	M 3x0,5	17,0	5,5	38	36,5	10,0	3200	400	100



33947



Material

Body: steel, nickel plated.
 Shank: steel, nickel plated.
 Pin: stainless steel, SUS304.
 Knob: stainless steel, SUS304.
 Spring: stainless steel.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.
 Temperature resistant to 200°C.

Important Notes

One-touch fastener offers full retraction of clamping shank when part is unlocked, this offer's the benefit of enabling panels to be slid into position - especially useful with larger or oversized panels, and enables its use on sliding or linear rail applications to provide positive location

and clamping of parts.

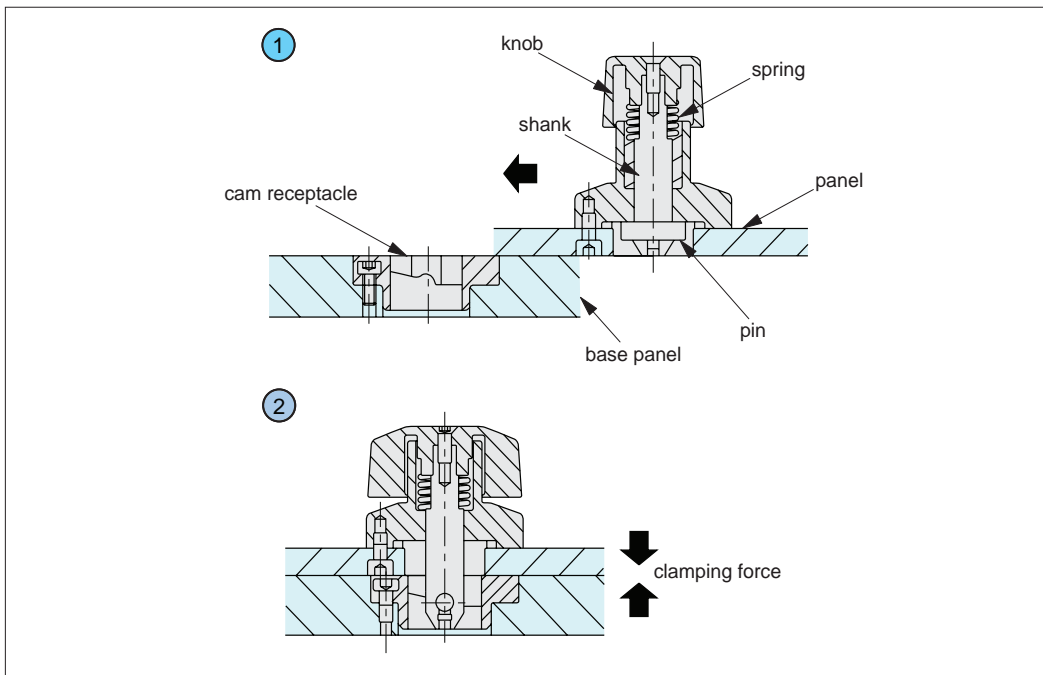
Actuation:

- Turn handle to off position, and ensure the shank is fully retracted.
- Place or slide the over in place and position over the locating bush.
- Turn handle to on position for clamping, an audible click is heard when fully clamped.
- To release, turn handle back to off position, the shank is fully retracted into clamp body assisted by the return spring.

Order No.	Single panel thickness	Clamping force N	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	l ₁	l ₂	h ₁	h ₂	h ₃	Shear strength N	Tensile strength N	Weight g
33947.W1005	6-10	60	5	14	25	25	21	M2x0,4	15,5	5,5	30	20,0	6,5	1800	1200	40
33947.W1408	6-14	90	8	18	34	34	28	M3x0,5	17,0	5,5	38	26,5	10,0	3200	400	100



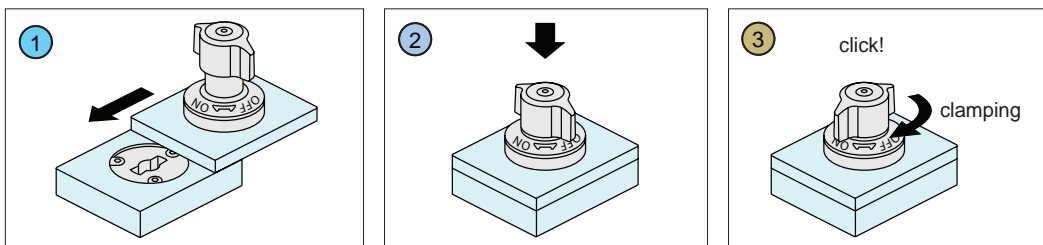
Operating Principle



- 1 The shank retracts at the unclamping position to enable operations without interference with the base panel.
- 2 When the pin contacts along the cam surface in the cam receptacle, the spring gets compressed to press down the panel.

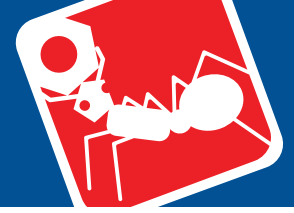
ONE TOUCH FASTENERS

Operating Instructions



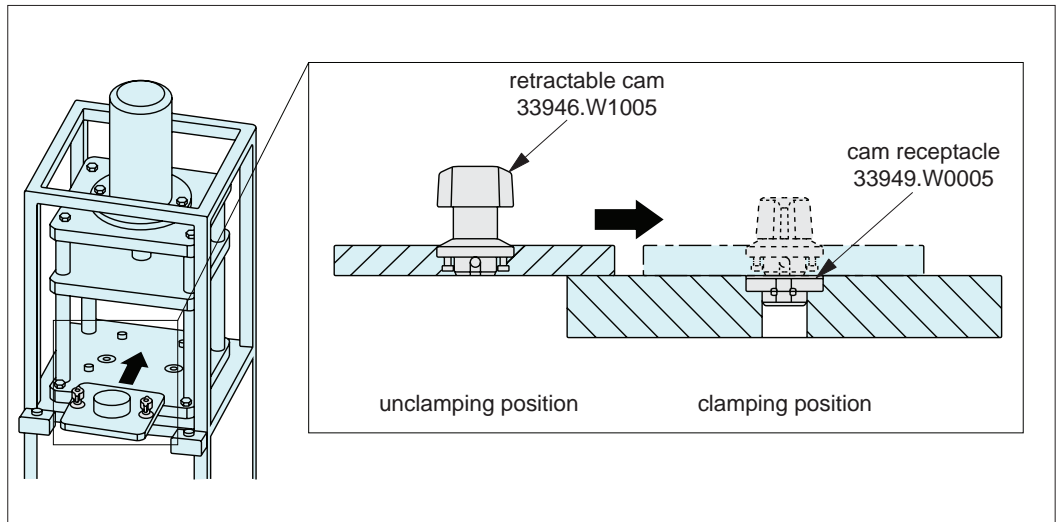
- 1 Ensure that the knob is positioned at the "OFF" mark and the pin is retracted.
- 2 Locate the cam receptacle directly under the fastener. Insert retracted pin by pressing the knob down.
- 3 Turn the knob to the "ON" mark for clamping. The knob clicks when clamped. Turning the knob to the "OFF" position, the pin returns automatically to the unclamping position.

ov-W33946-A-T-W33947-A-T-cam-locking-retract-overview-a-rmh - Updated - 28-10-2022

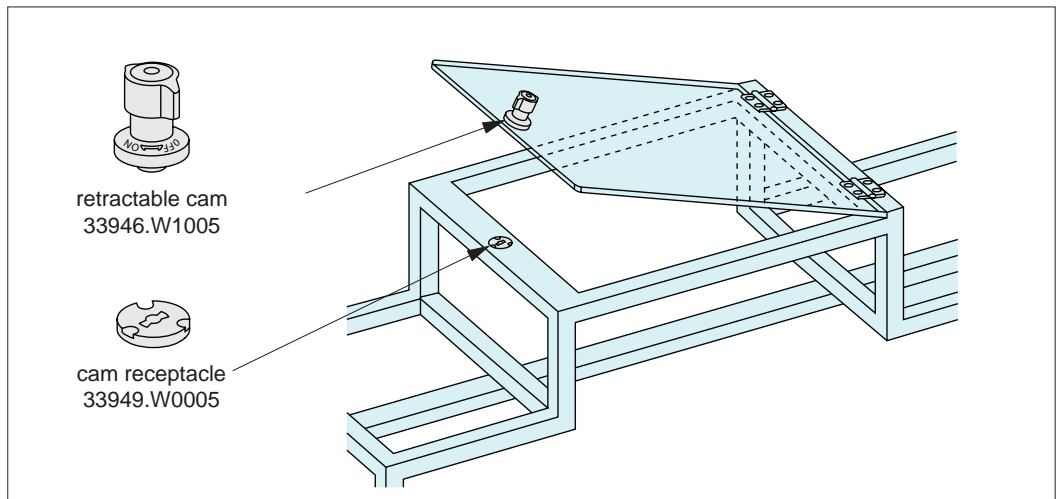


Applications

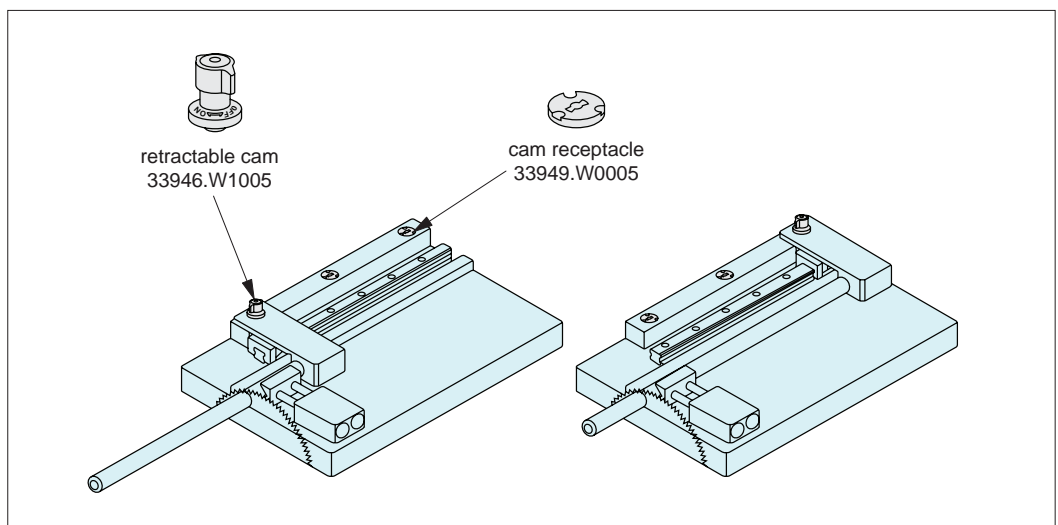
Changes of
Fixture Plates

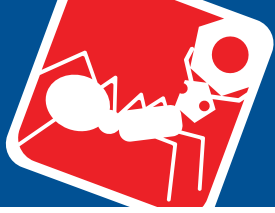


Lock for Doors

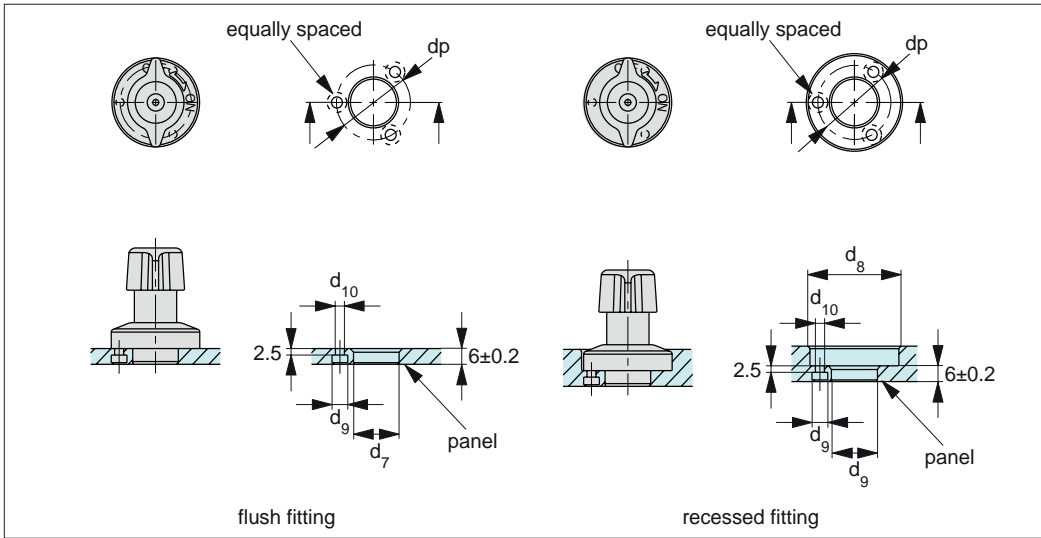


Adjustment of
Workpiece Guides

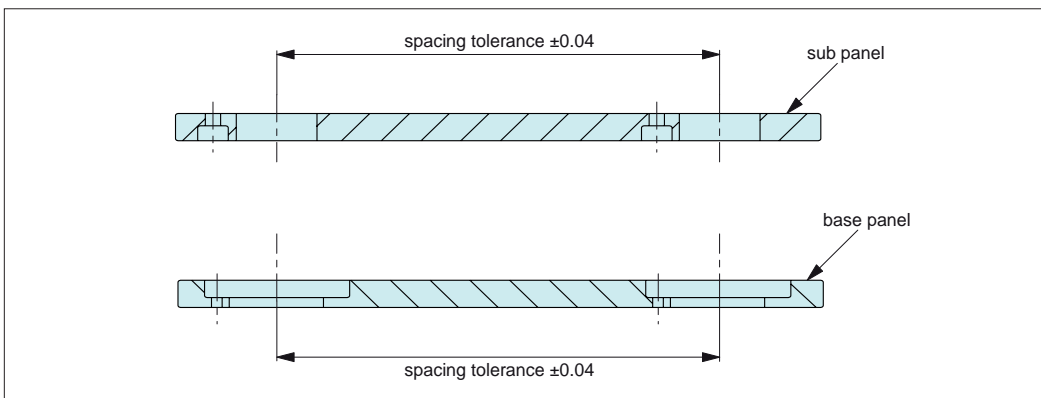




Installation Dimensions



Installation Best Practice

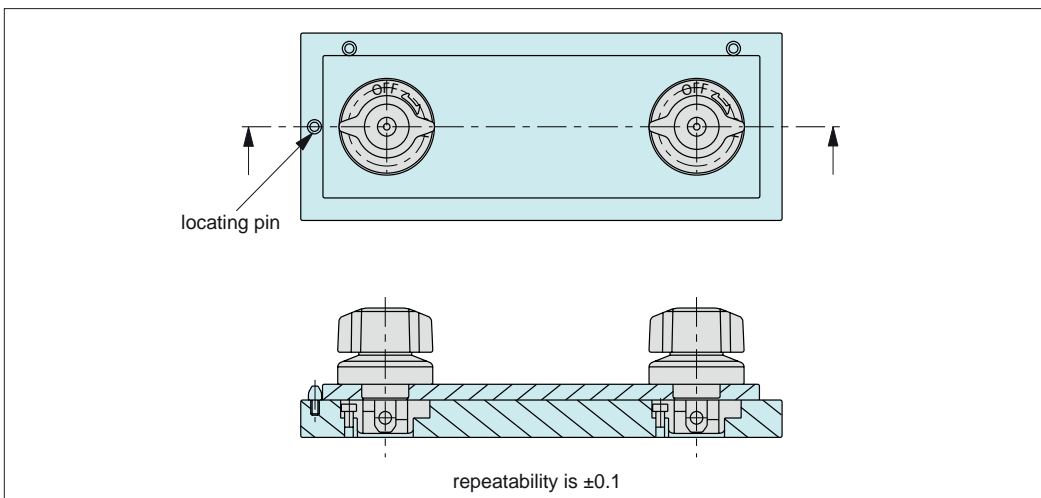


Machining Accuracy

Spacing tolerance on both the sub panel and the base panel should be ± 0.04 .

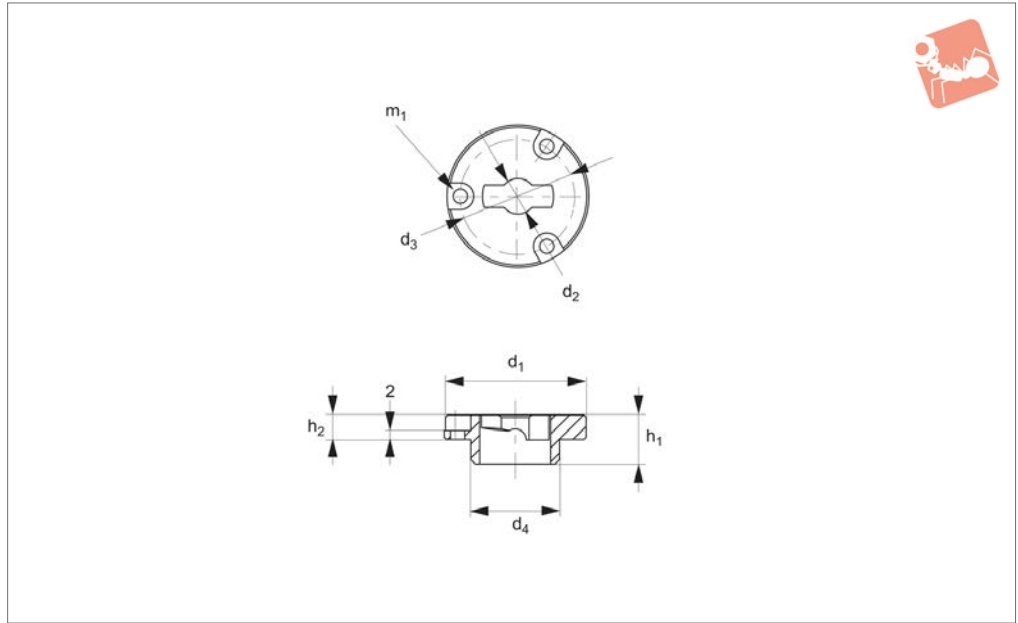
Repeatability

For highly accurate locating, use locating pins 36340 or 36341. Repeatability of ± 0.1 is achievable.





33949



Material

Body: steel, nickel plated or stainless steel.

Technical Notes

Used in conjunction with one-touch fasteners 33940 to 33946, locating bushes 3394820 provide secure fastening of panels and covers. Locating bushes are of

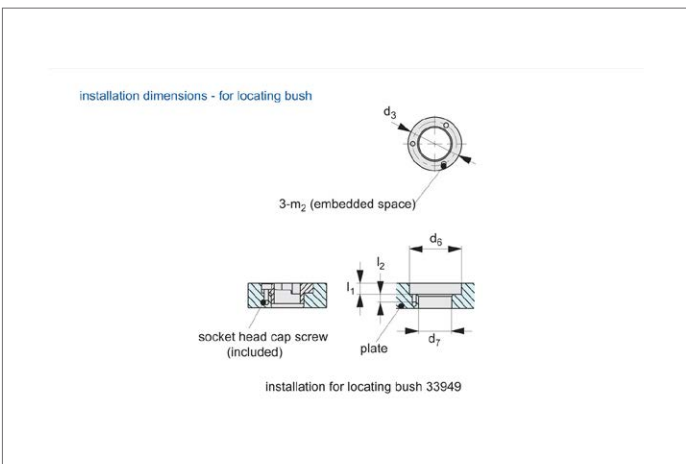
particular use in soft metals, such as aluminium where receiving surfaces may wear. One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts.

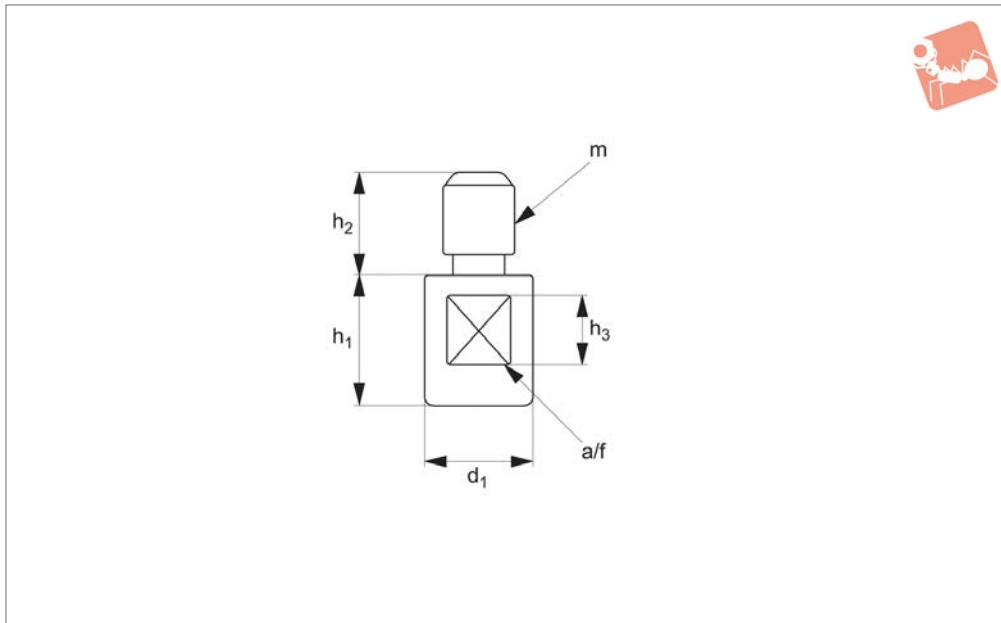
Temperature resistant to 200°C.

Important Notes

Suitable for panels/enclosures of 6 to 12 mm thickness. For one-touch fasteners see part nos. 33940 to 33946. For installation instructions see technical page.

Order No.	For single panel thickness	Material	d ₁	d ₂	d ₃	d ₄ -0.04 -0.08	d ₆	d ₇	l ₁	l ₂	h ₂	m ₁	m ₂	Weight g
33949.W0005	>10	Steel	25	5	21	14	26	14	5	4	4,5	M 2	M 2x0,4	20
33949.W0008	>12	Steel	32	8	26	20	33	20	6	5	5,5	M 3	M 3x0,5	35
33949.W0105	>10	Stainless Steel	25	5	21	14	26	14	5	4	4,5	M 2	M 2x0,4	20
33949.W0108	>12	Stainless Steel	32	8	26	20	33	20	6	5	5,5	M 3	M 3x0,5	35





33950

ONE TOUCH FASTENERS

Material

Body: steel, nickel plated.

Technical Notes

Used in conjunction with magnetic one-touch fasteners 33956, provides secure fastening of panels and covers. One-touch fasteners are the ideal solution for applica-

tions requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts.

Note: pin itself is not magnetic, it is for use with locating bush part no. 33956,

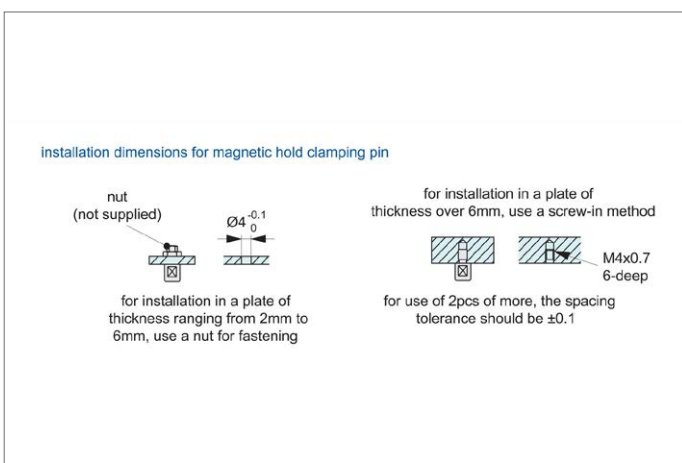
which contains magnet.

Important Notes

Suitable for panels/enclosures of 2 to 6 20 mm thickness.

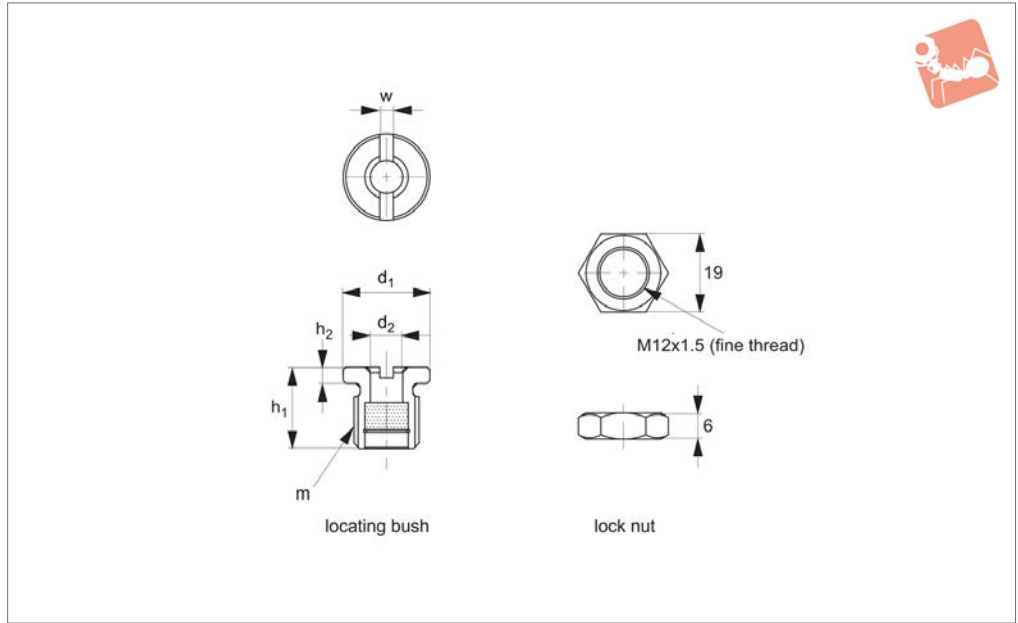
For installation instructions see technical page.

Order No.	For single panel thickness	d_1	h_1	h_2	h_3	m	A/F	Shear strength N	Weight g
33950.W0006	2 to 6	$-0.02 -0.04$ Ø6	7	5.8	4	M 4x0,7	5	900	2





33956



Material

Body: stainless steel.
Magnet: neodymium.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners

provide a quick, simple and secure change over solution - no time waste in unfastening screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Important Notes

Suitable for panels/enclosures of 2 to 6 mm thickness. For pin see part no. 33950. Part contains Neodymium magnets which in conjunction with one-touch pin no.

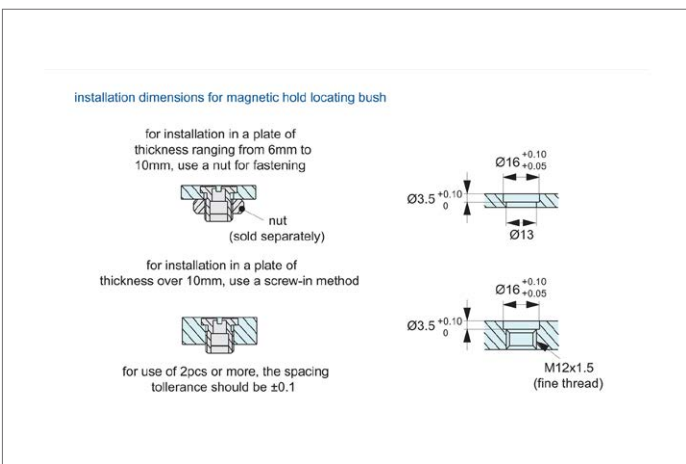
33950 creates a magnetic clamping force of 7 N.

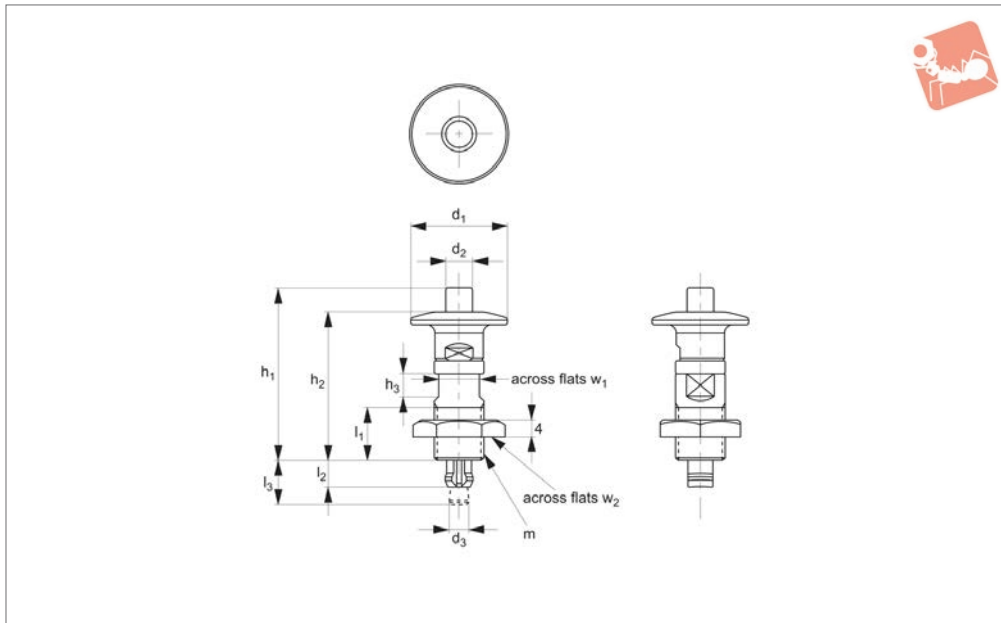
Actuation:

Engage pin into receiver, magnetic effect will take hold. Panels are securely fastened.

To release, simply pull panels apart with sufficient force to overcome magnetic holding force, panel is released.

Order No.	For single panel thickness	Type	d_1 tol. h9	d_2 $+0.10/+0.05$	h_1	h_2	m	w	Clamping force N	Weight g
33956.W0076	2 to 6mm	Bush	Ø16	Ø6	15	3	M12x1,5	2.5	7	12





33960

ONE TOUCH FASTENERS

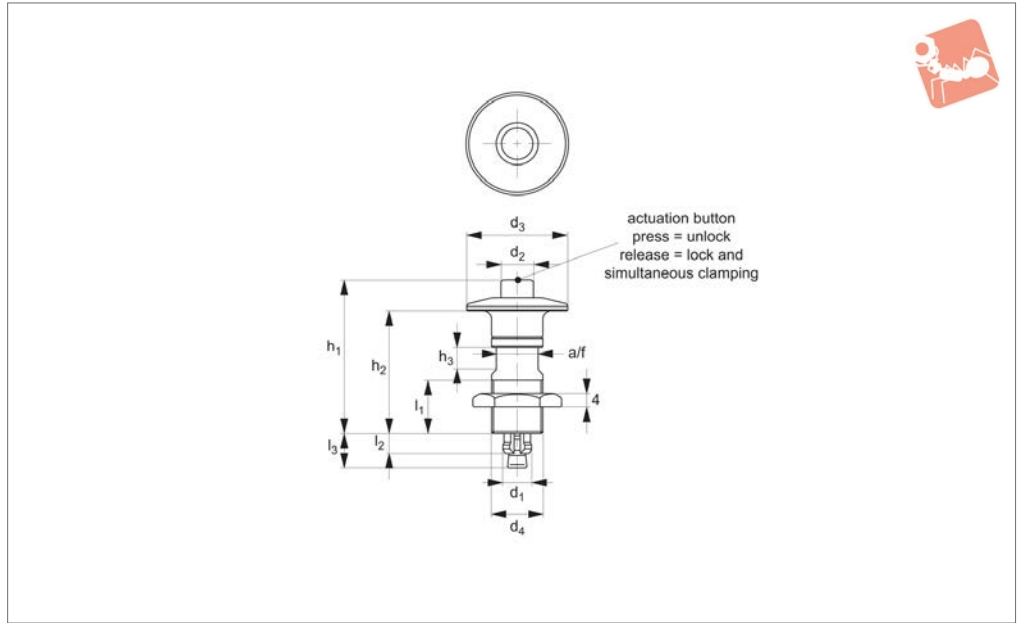
Material

Stainless steel.

Order No.	d	d ₁	d ₂	h	h ₁	h ₂	l	l ₁	l ₂	m	w	w ₁	Clamping force N	Shear strength	Tensile strength	Proper base plate thickness	Proper plate thickness	Weight g
33960.W6123	6,5	23	6,5	40	32	5,5	12,5	6,5	10,5	M12x1 (Fine thread)	10	19	3	200	150	3	3~8	41
33960.W6126	6,5	23	6,5	37	29	5,5	12,5	6,5	13,5	M12x1 (Fine thread)	10	19	3	200	150	6	3~8	40
33960.W8123	8,5	32	10	51	41,5	7	16,5	6,5	11	M16x1 (Fine thread)	14	24	6	400	300	3	3~12	88
33960.W8126	8,5	32	10	48	38,5	7	16,5	9,5	14	M16x1 (Fine thread)	14	24	6	400	300	6	3~12	88



33964



Material

Body: stainless steel SUS 303.
 Spacer: stainless steel SUS 303.
 Spring: stainless steel SUS 303.

Technical Notes

One-touch fasteners are the ideal solution for applications requiring rapid and recurring change over of tooling or set ups. Use in applications as diverse as bottling processes, machine covers, changing of cogs and drive belts. One-touch fasteners provide a quick, simple and secure change over solution - no time waste in unfaste-

ning screws or other permanent fixings, and no opportunity for lost fixings in your machinery.

Tips

For highly accurate locating, use locating pins 36340 and 36341.

Important Notes

Suitable for panels/enclosures of 3 to 12 mm.
 Unique locking and simultaneous clamping.

Actuation:

- While depressing the actuation button, align pin to receiving hole in frame.
- Once pin is aligned seated in the receiving hole, release button.
- Pin will retract, forcing clamping wedges to spread and pull the two panels together to securely fasten.
- To release, reverse steps described above.

Order No.	Single panel thickness mm	Receiver panel thickness	d ₁	d ₂	d ₃	d ₄	A/F	h ₁	Weight g
33964.W0803	3-8	3	6.5	6.5	23	M12x1	10	40	41
33964.W0806	3-8	6	6.5	6.5	23	M12x1	10	37	40
33964.W1203	3-12	3	8.5	10.0	32	M16x1	14	51	88
33964.W1206	3-12	6	8.5	10.0	32	M16x1	14	48	86

Order No.	h ₂	h ₃	l ₁	l ₂	l ₃	Clamping force N	Shear strength N	Tensile strength N
33964.W0803	32.0	5.5	12.5	6.5	10.5	3	200	150
33964.W0806	29.0	5.5	12.5	9.5	13.5	3	200	150
33964.W1203	41.5	7.0	16.5	6.5	11.0	6	400	300
33964.W1206	38.5	7.0	16.5	9.5	14.0	6	400	300

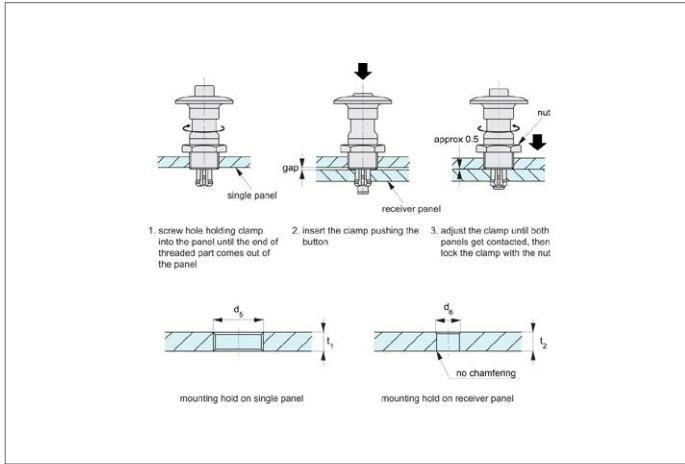


One-Touch Fastener - Pull Clamping

push button lock - button handle - stainless steel



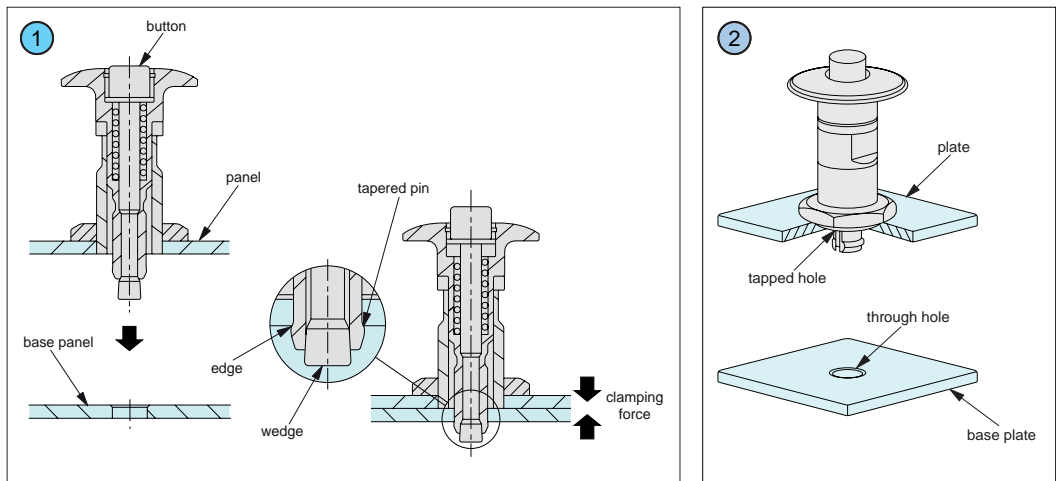
One Touch Fasteners





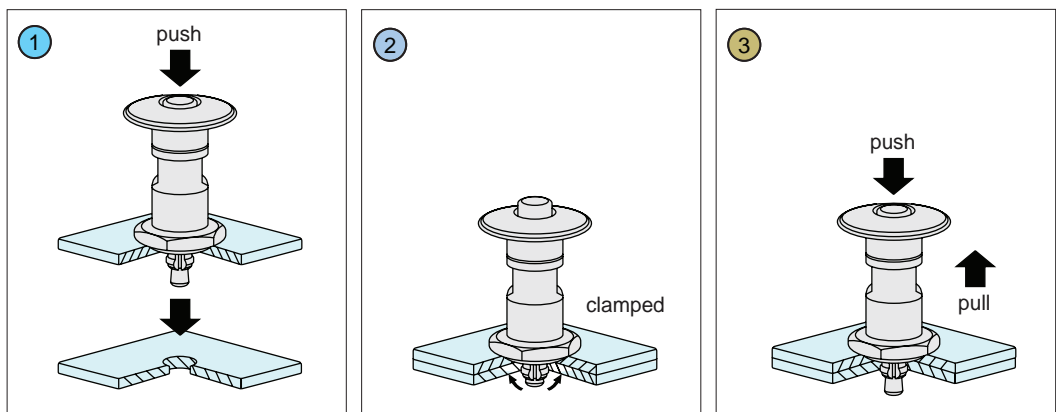
Operating Principle

- 1 The tapered pin expanded by the wedge pushes out against the edge of the hole on the base panel, and the two panels are clamped.
- 2 Just a tapped hole and a through hole are required.



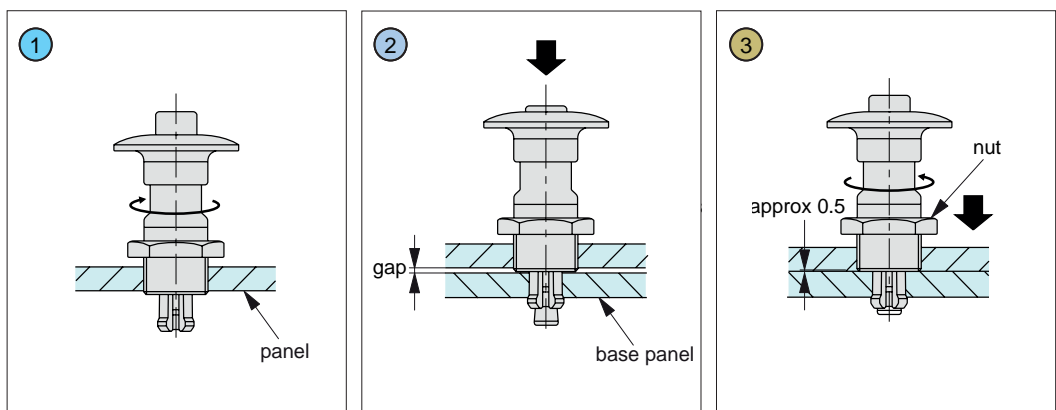
Operating Instructions

- 1 While depressing the actuation button, align the pin to receiving hole.
- 2 Once pin is aligned and seated in the receiving hole, release button. Pin will retract, forcing clamping wedges to spread and pull the two panels together to securely fasten.
- 3 To release, reverse steps described above.



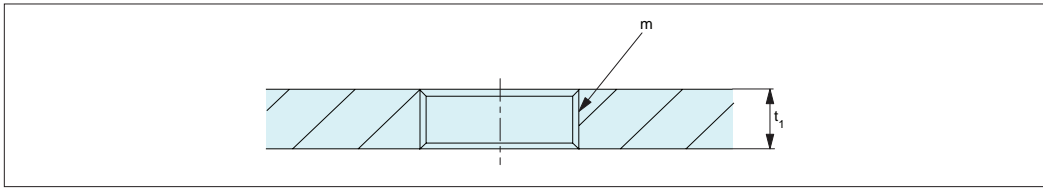
Installation Dimensions

- 1 Screw hole holding clamp into the panel until the end of threaded part comes out of the panel.
- 2 Insert the clamp pushing the button.
- 3 Adjust the clamp until the both panels get contracted and then lock the clamp with the nut.

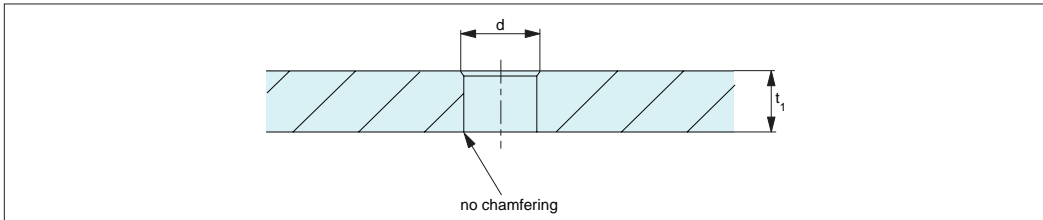




Mounting Hole on Panel

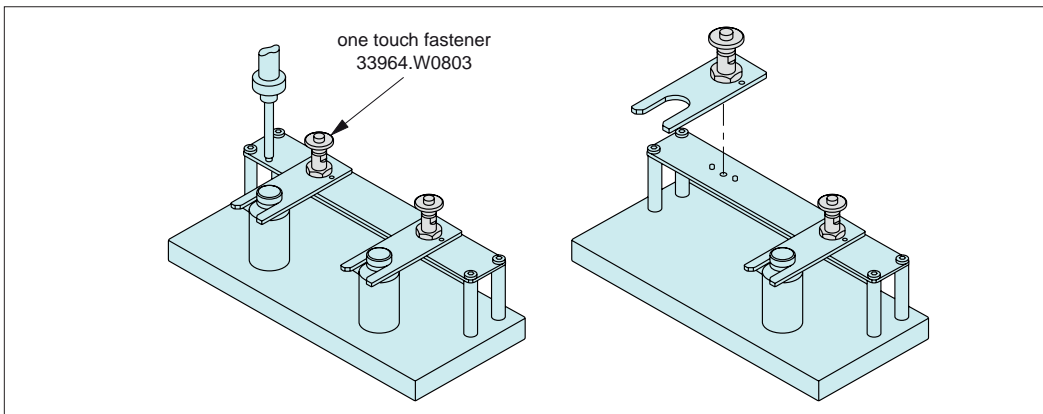


Mounting Hole on Base Panel



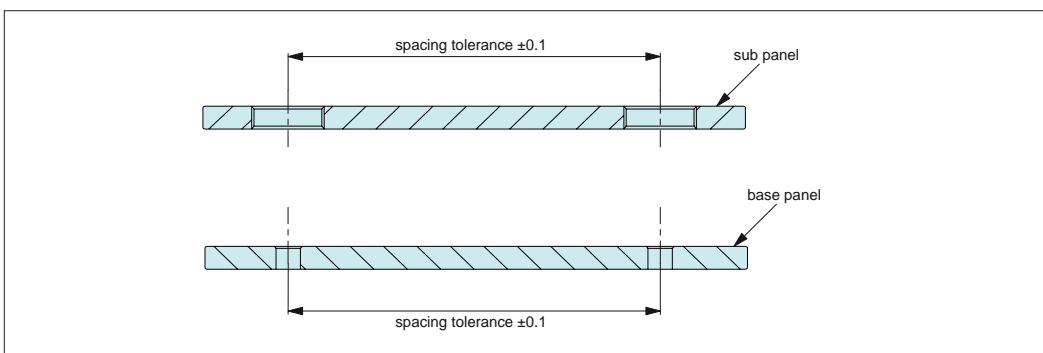
Use hard metals such as stainless steels for the base panel.

Applications



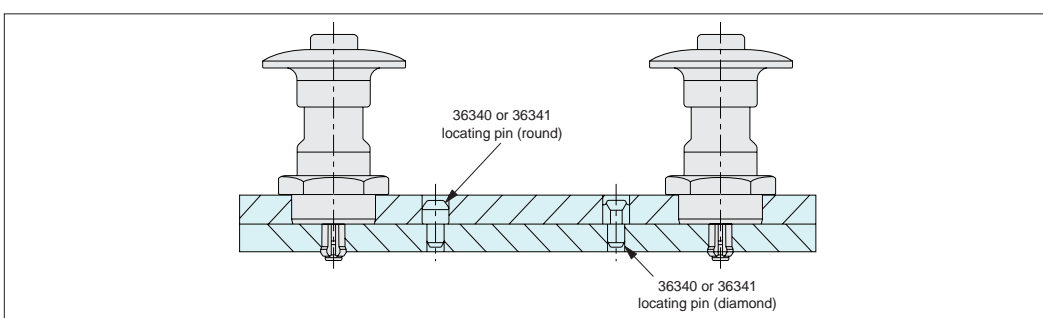
Changes of Holder Panel

Installation Best Practice



Machining Accuracy

Spacing tolerance on both the sub panel and the base panel should be ± 0.1 .

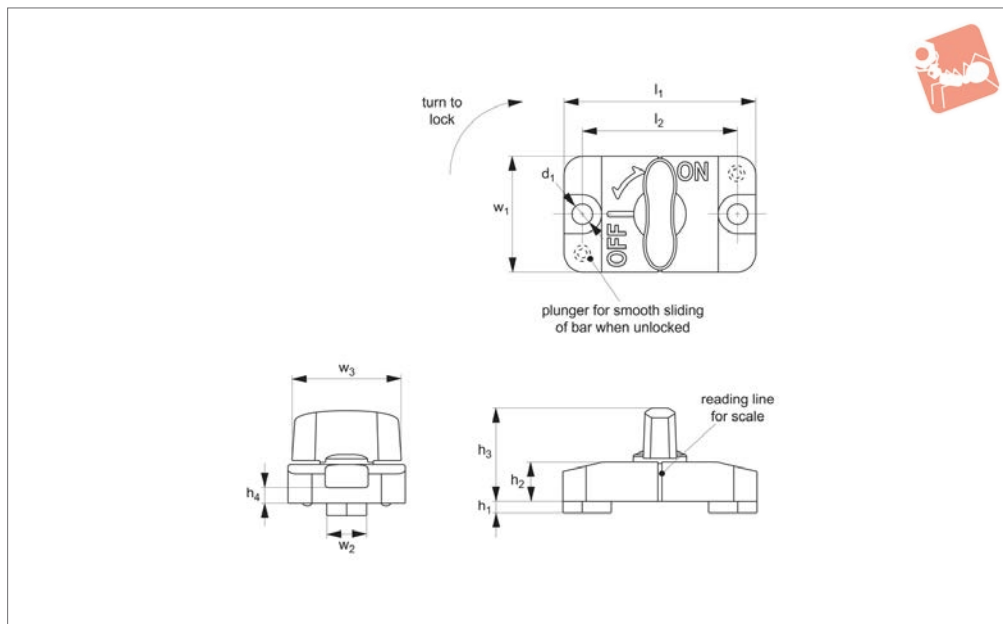


Repeatability

For highly accurate locating, use locating pins 36340 or 36341. Repeatability of ± 0.25 is achievable.



33970



Material

Body: die-cast zinc, chrome plated.
 Grip: polyamide plastic (black or orange), or stainless steel SUS304.
 Clamping shaft/wedge: stainless steel.
 Ball plunger: polyacetal.

Technical Notes

Sliding clamps are ideal for the quick positioning, locking, releasing and re-positioning of sliding bars in many applications. When additionally used with a scale plate (see part no. 33975, 33976 and 33977), the reading line on the sliding clamp enables quick, easy and accurate alignment.

The sliding clamp is mounted, for greater stability, in a fixed position in an assembly. With the clamp set to its off position the

sliding bar (not supplied) can be moved left or right, with two spring loaded ball plungers provide for free movement of bar. Once in its desired position the sliding bar can be locked in place, through a 90 degree turn of the sliding clamp's handle which engages the clamp's clamping shaft/wedge.

Please see technical diagram below for recommended machining details for your sliding bar (not supplied). Riser plates can be used to provide clearance between sliding bar and mounting surface to improve free running of sliding bar, see part no. 33971.

Temperature resistance up to 90°C.
 Max. static load up to 500N - please refer to performance graph below.

Important Notes

Sliding clamps are suited only to straight linear movement of sliding bar (not supplied), and do not tolerate any other applied loads.

Displacement of sliding bar, through repetitive use, will increase if excessive shock or vibration is present. Do not use sliding clamp in vertical applications where vibration is present.

Displacement will also increase with adhesion or immersion of oil or other foreign substances.

Ensure sliding bar is not bent nor warped as this may cause the sliding bar to slip even when sliding clamp is in its on position.

Order No.	For slot width	Handle	Slot depth min.	d ₁	h ₁	h ₂	h ₃	h ₄	Weight g
33970.W0103	10	Plastic, Orange	3	5.5	3	10	24	4.5	80
33970.W0106	10	Plastic, Orange	6	5.5	6	10	24	4.5	80
33970.W1103	10	Plastic, Black	3	5.5	3	10	24	4.5	80
33970.W1106	10	Plastic, Black	6	5.5	6	10	24	4.5	80
33970.W2103	10	Stainless	3	5.5	3	10	24	4.5	95
33970.W2106	10	Stainless	6	5.5	6	10	24	4.5	95

Order No.	l ₁	l ₂	w ₁	w ₂ 0 -0.05	w ₃	Static load N max.
33970.W0103	50	40	30	10	28	500
33970.W0106	50	40	30	10	28	500
33970.W1103	50	40	30	10	28	500
33970.W1106	50	40	30	10	28	500



Sliding Clamps - for Slotted Hole

quarter turn lock - t-handle grip - zinc



One Touch Fasteners

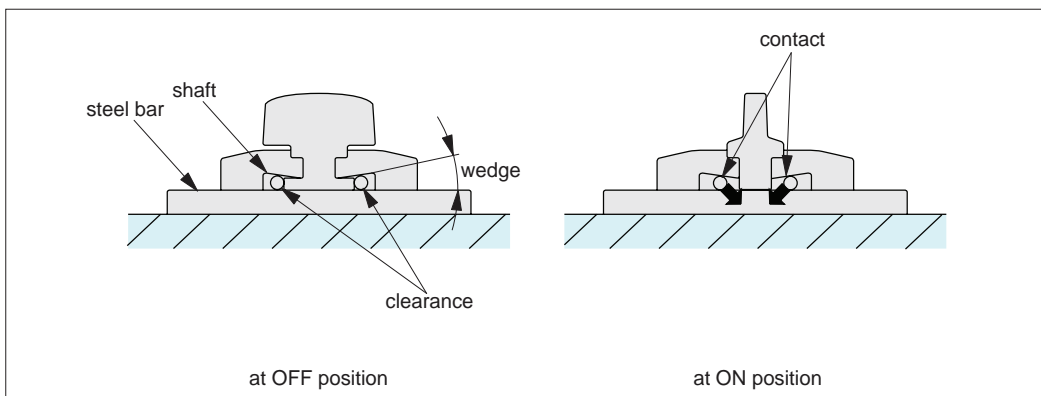
Order No.	l_1	l_2	w_1	w_2 0 -0.05	w_3	Static load N max.
33970.W2103	50	40	30	10	28	500
33970.W2106	50	40	30	10	28	500



Operating Principle

You can slide the steel bar when the knob is at the "OFF" position since there is clearance between the steel bar and the shafts.

The steel bar is locked when the knob is at the "ON" position since the shafts are pushed by the wedge.



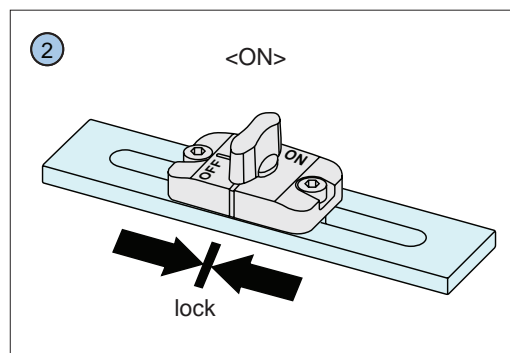
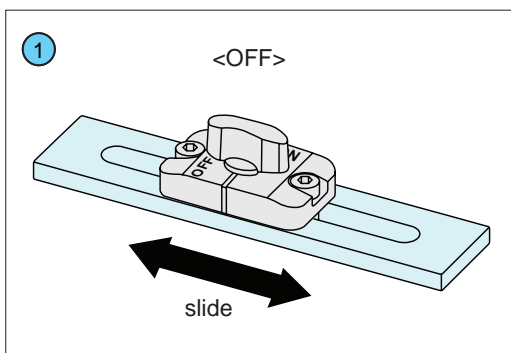
ONE TOUCH FASTENERS

Operating Instructions

1 The steel bar can slide to the right and left at the "OFF" position.

2 The steel bar is locked at the "ON" position.

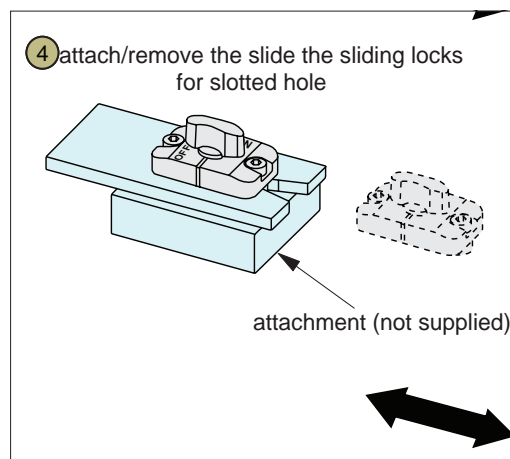
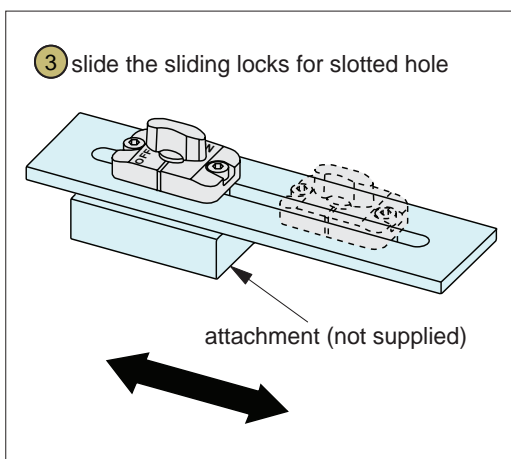
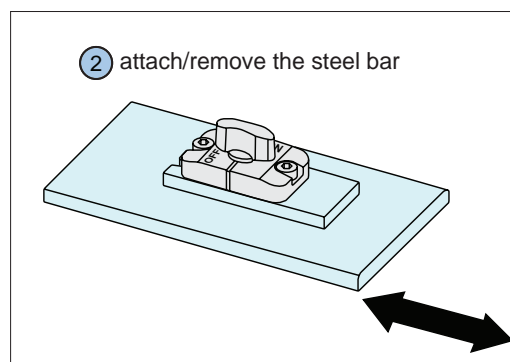
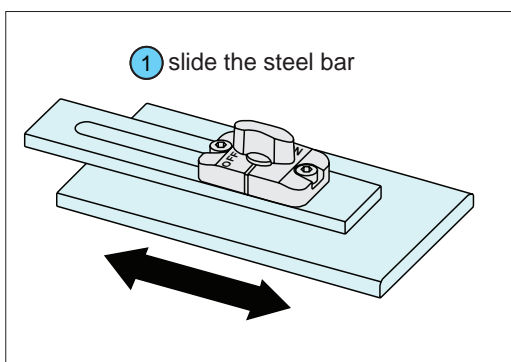
Note: The knob clicks at the "ON" and "OFF" positions, and this gives the operator confirmation it has locked/unlocked securely.



How to Use

Please refer to notes for safe use (last page of guide).

- 1 Slide the steel bar.
- 2 Attach/remove the steel bar.
- 3 Slide the sliding locks for slotted hole.
- 4 Attach/remove the sliding locks for slotted hole.





One-Touch Fastener - Sliding clamps

slotted hole - overview



33970

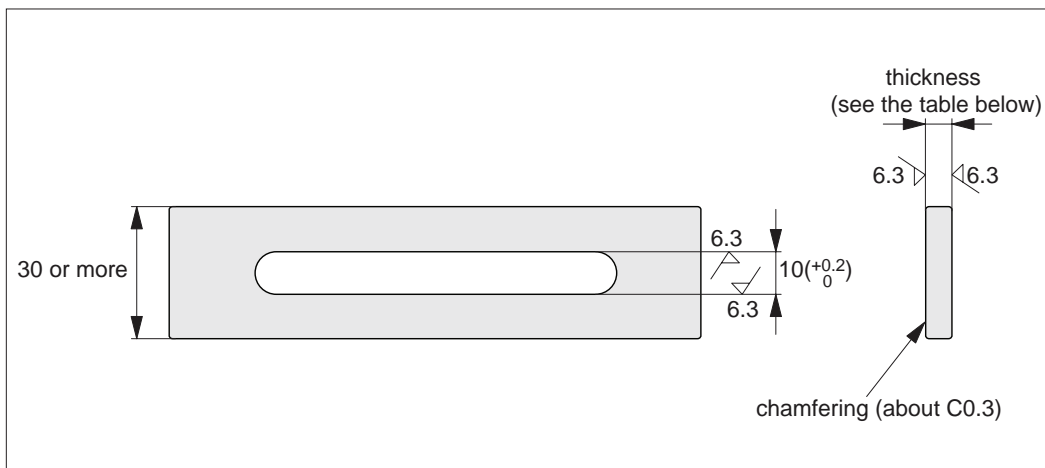
Positioning Elements

How to Use Steel Bar Materials

Usable Materials: Flat bar (JIS h14 grade) made of SS400, S45C or SUS304 etc.

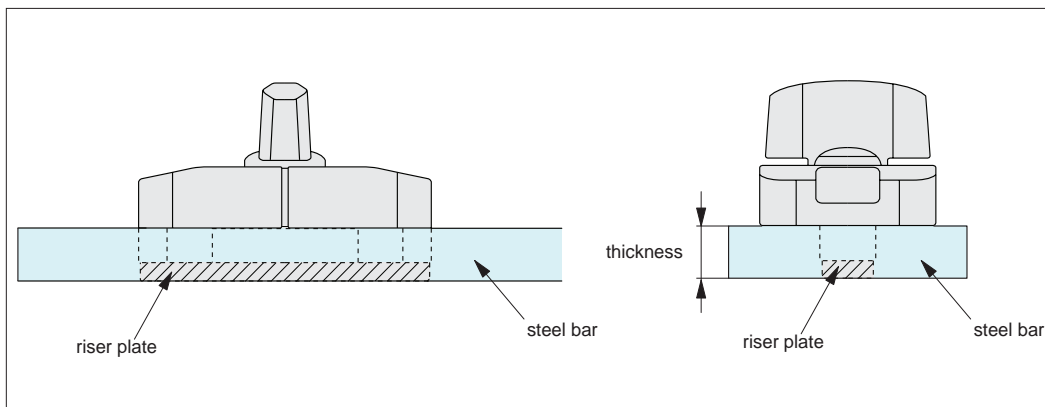
Machining of slotted hole: Recommended tolerance of the slotted hole to prevent chattering is shown left.

For more accurate sliding, machine the slotted hole to fit the dimension of 10mm (-0.05 to 0) on the bottom of sliding locks. Remove the burr around the slotted hole to ensure locking.



How to Use Riser Plate

Can be used for various steel thicknesses by attaching the riser plates (ordered separately, see 33971).

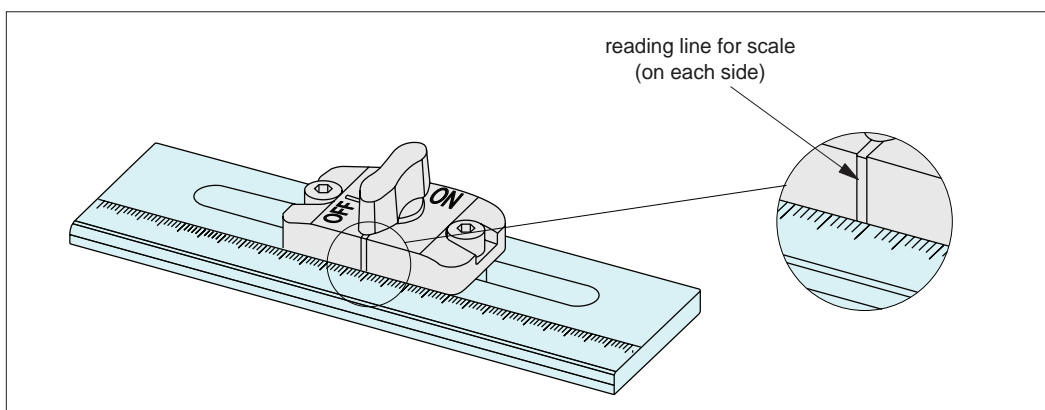


How to Use Scale Plate

You can read the scale with the line on the body of the sliding lock.

Scale plate is separately available.

See ranges 33975, 33976 and 33977.



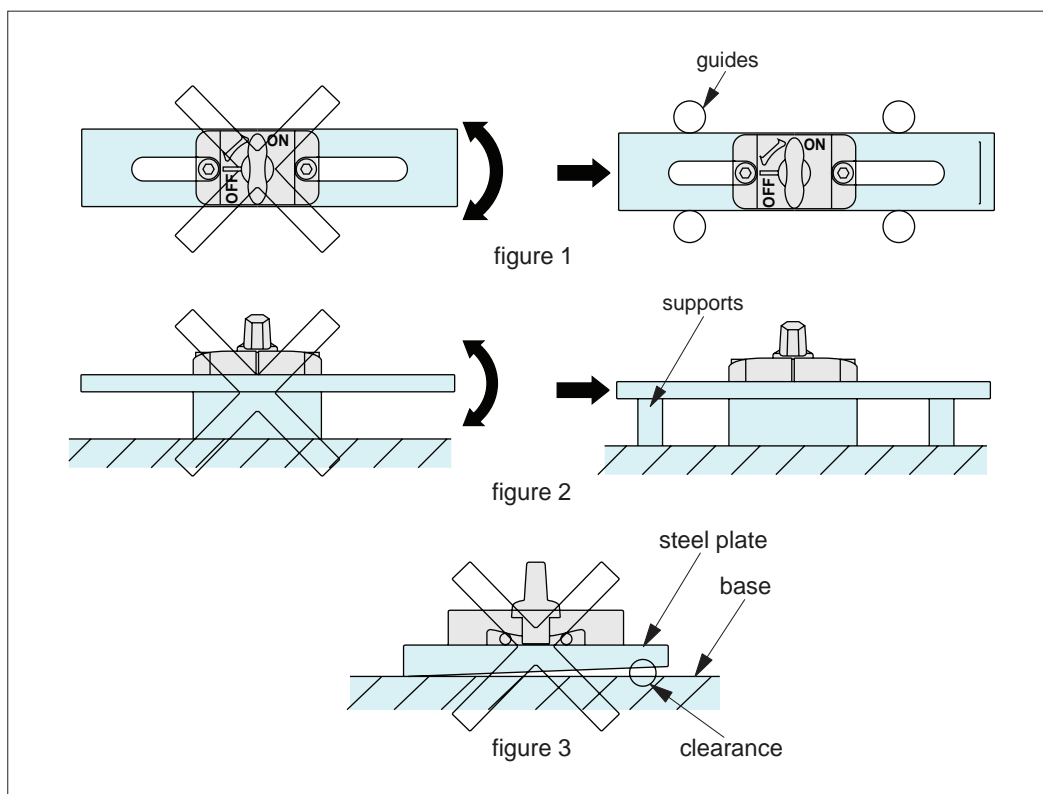
ONE TOUCH FASTENERS

ov-W33970-A-T-sliding-clamps-overview-b-rmh - Updated - 28-10-2022



Notes

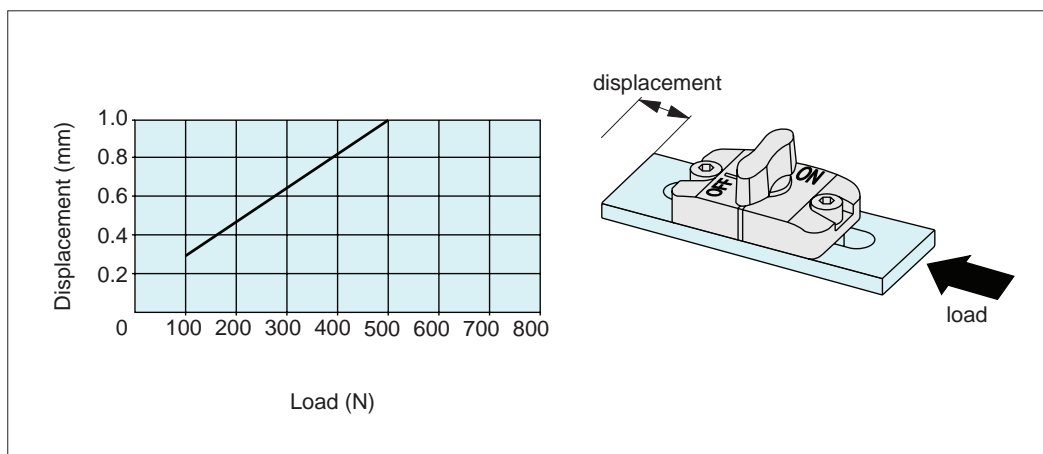
- Ensure that the knob is at the "OFF" position when mounting. Mounting of sliding locks the at "ON" position may cause damage.
- The displacement will increase with excess shock or vibration. Do not use this product vertically in environments where excess vibration is present.
- The displacement can increase with adhesion or contamination by oil or foreign substances.
- If the steel plate slips or chatters by the load applied to the steel plate, prepare guides or supports as needed. (See figure 1 and 2 below)
- Excess displacement or misalignment may be caused if there is a clearance between the steel bar and the base when the sliding locks at the "ON" position. (See figure 3 below) Ensure that the steel plate and the base are not bent or warped.

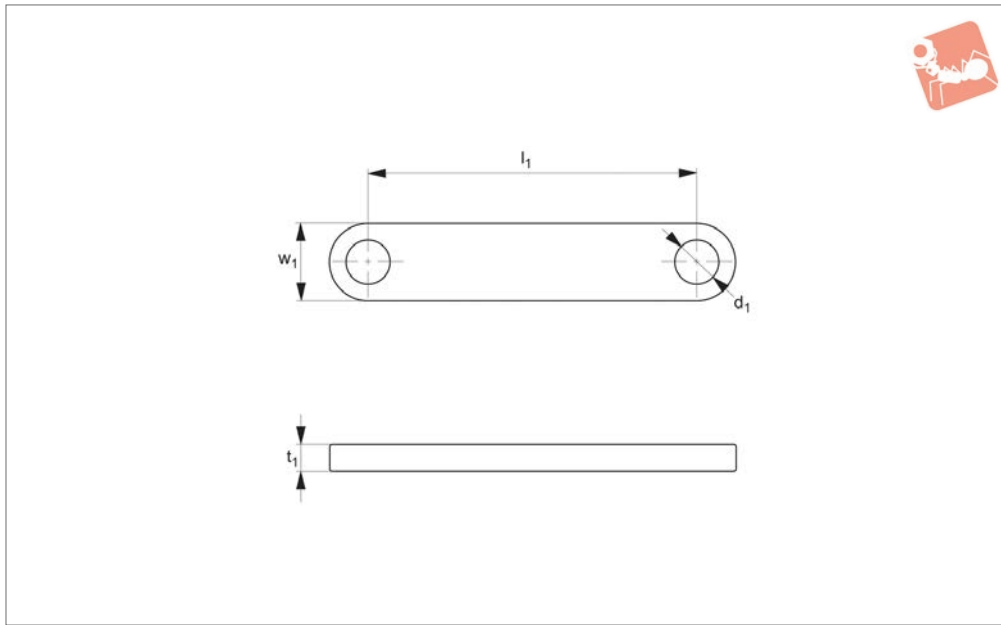


Performance Curve

The Displacement of Steel Bar by Axial Load (static load from single direction)

Note: The data is for a flat bar made of SUS304 stainless steel, SS400 steel and S45C steel. Using an aluminium flat bar the surface will be scratched or dent by applied load.





33971

ONE TOUCH FASTENERS

Material

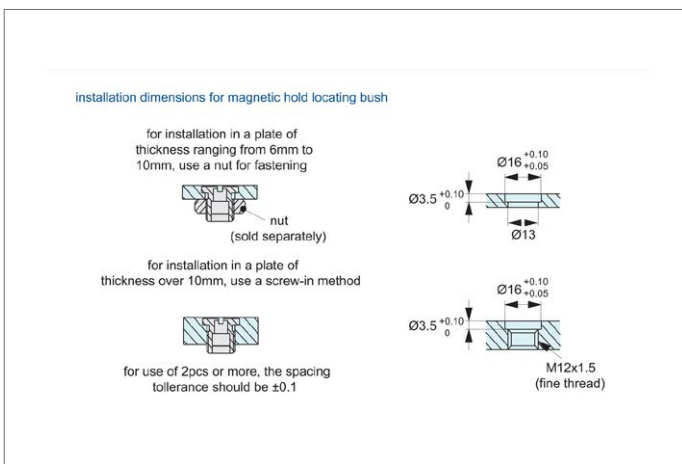
Body: 304 stainless steel.

of riser plate to clamp enables clamps use for sliding bars of varying thickness.

Technical Notes

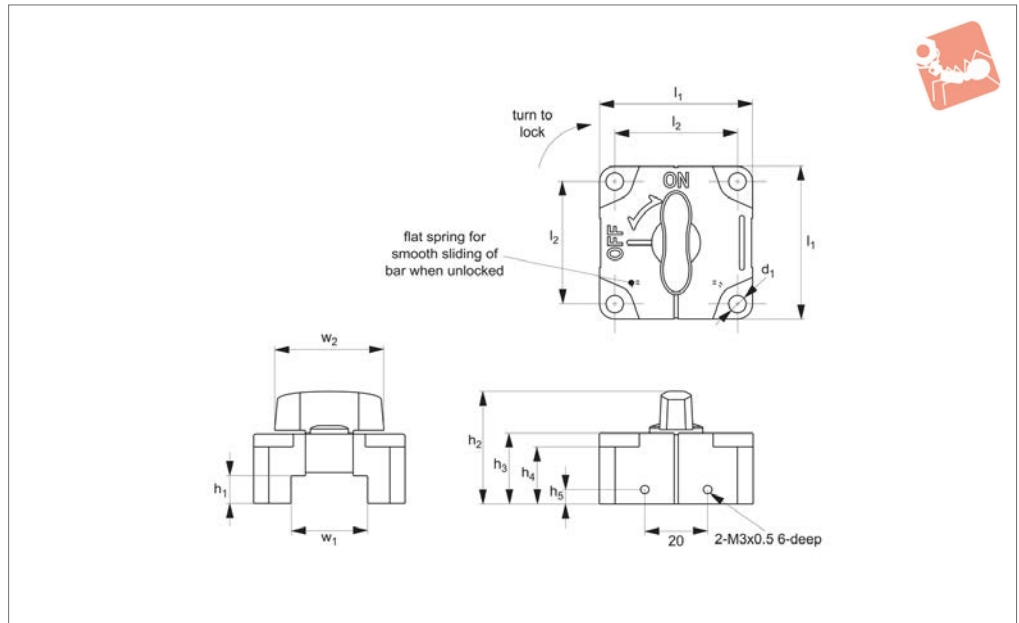
For use with sliding clamp 33970, addition

Order No.	d ₁	l ₁	w ₁	t ₁	Weight g
33971.W0002	5.5	40	9.5	2	6
33971.W0003	5.5	40	9.5	3	10





33972



Material

Body: die-cast zinc, chrome plated.
 Grip: polyamide plastic (black or orange), or stainless steel SUS304.
 Clamping shaft/wedge: stainless steel.
 Flat spring: phosphor bronze.

Technical Notes

Sliding clamps are ideal for the quick positioning, locking, releasing and re-positioning of sliding bars in many applications. When additionally used with a scale plate (see part no. 33975, 33976 and 33977), the reading line on the sliding clamp enables quick, easy and accurate alignment.

The sliding clamp is mounted, for greater stability, in a fixed position in an assembly. With the clamp set to its off position the sliding bar (not supplied) can be moved

left or right, with two spring loaded ball plungers provide for free movement of bar. Once in its desired position the sliding bar can be locked in place, through a 90 degree turn of the sliding clamp's handle which engages the clamp's clamping shaft/wedge.

Please see technical diagram below for recommended machining details for your sliding bar (not supplied). Riser plates can be used to provide clearance between sliding bar and mounting surface to improve free running of sliding bar, see part no. 33974.

Temperature resistance up to 90°C.
 Max. static load up to 800N - please refer to performance graph below.

Important Notes

Sliding clamps are suited only to straight linear movement of sliding bar (not supplied), and do not tolerate any other applied loads.

Displacement of sliding bar, through repetitive use, will increase if excessive shock or vibration is present. Do not use sliding clamp in vertical applications where vibration is present.

Displacement will also increase with adhesion or immersion of oil or other foreign substances.

Ensure sliding bar is not bent nor warped as this may cause the sliding bar to slip even when sliding clamp is in its on position.

Order No.	For bar width x height	Handle	d_1	h_1 +0.02	h_2	h_3	h_4	h_5	l_1	l_2	w_1 +0.05 -0.0	w_2	Weight g
33972.W0122	12x12	Plastic, orange	4.5	12	36	22	18.5	6.0	40	32	12	28	130
33972.W0166	16x16	Plastic, orange	4.5	16	40	26	22.5	8.0	40	32	16	28	150
33972.W0250	25x 9	Plastic, orange	5.5	9	37	23	18.5	4.5	50	40	25	35	220
33972.W0252	25x12	Plastic, orange	5.5	12	40	26	21.5	6.0	50	40	25	35	240
33972.W0322	32x12	Plastic, orange	5.5	12	40	26	21.5	6.0	50	40	32	35	220
33972.W0326	32x16	Plastic, orange	5.5	16	44	30	25.5	8.0	50	40	32	35	240
33972.W1122	12x12	Plastic, black	4.5	12	36	22	18.5	6.0	40	32	12	28	130
33972.W1166	16x16	Plastic, black	4.5	16	40	26	22.5	8.0	40	32	16	28	150
33972.W1250	25x 9	Plastic, black	5.5	9	37	23	18.5	4.5	50	40	25	35	220
33972.W1252	25x12	Plastic, black	5.5	12	40	26	21.5	6.0	50	40	25	35	240
33972.W1322	32x12	Plastic, black	5.5	12	40	26	21.5	6.0	50	40	32	35	220
33972.W1326	32x16	Plastic, black	5.5	16	44	30	25.5	8.0	50	40	32	35	240
33972.W2122	12x12	Stainless	4.5	12	36	22	18.5	6.0	40	32	12	28	145
33972.W2166	16x16	Stainless	4.5	16	40	26	22.5	8.0	40	32	16	28	165
33972.W2250	25x 9	Stainless	5.5	9	37	23	18.5	4.5	50	40	25	35	245



Sliding Clamps - for Solid Sliding Bar

quarter turn lock - t-handle grip - zinc

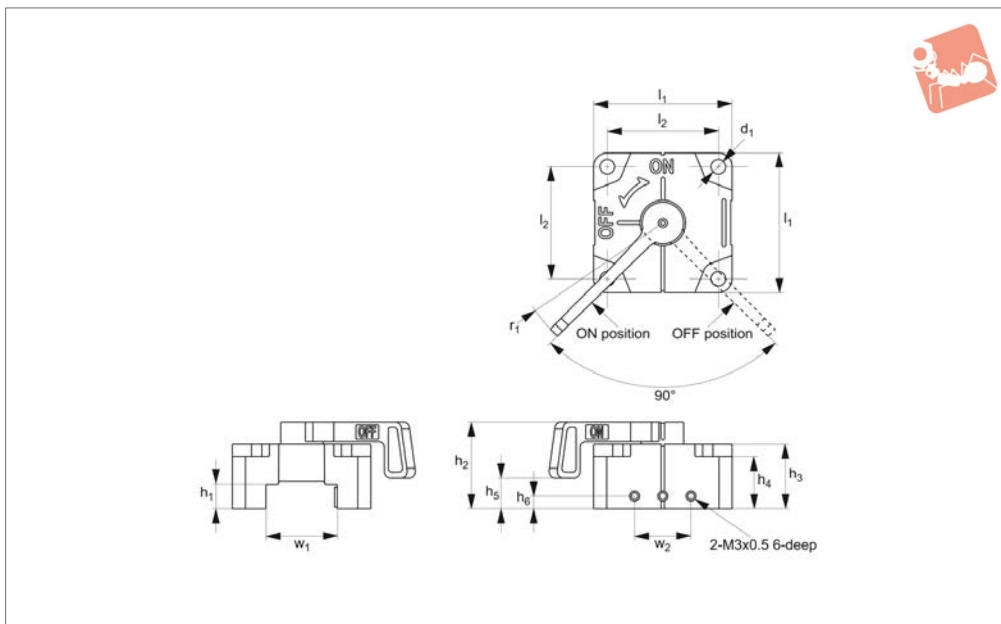


One Touch Fasteners

Order No.	For bar width x height	Handle	d ₁	h ₁ +0.02	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	w ₁ +0.05 -0.0	w ₂	Weight g
33972.W2252	25x12	Stainless	5.5	12	40	26	21.5	6.0	50	40	25	35	265
33972.W2322	32x12	Stainless	5.5	12	40	26	21.5	6.0	50	40	32	35	245
33972.W2326	32x16	Stainless	5.5	16	44	30	25.5	8.0	50	40	32	35	265



33973



Material

Body: die-cast zinc, chrome plated.
 Handle: stainless steel SUS304.
 Clamping shaft/wedge: stainless steel.
 Flat spring: phosphor bronze.

Technical Notes

Sliding clamps are ideal for the quick positioning, locking, releasing and re-positioning of sliding bars in many applications. When additionally used with a scale plate (see part no. 33975, 33976 and 33977), the reading line on the sliding clamp enables quick, easy and accurate alignment.

The sliding clamp is mounted, for greater stability, in a fixed position in an assembly. With the clamp set to its off position the sliding bar (not supplied) can be moved

left or right, with two spring loaded ball plungers provide for free movement of bar. Once in its desired position the sliding bar can be locked in place, through a 90 degree turn of the sliding clamp's handle which engages the clamp's clamping shaft/wedge.

Please see technical diagram below for recommended machining details for your sliding bar (not supplied). Riser plates can be used to provide clearance between sliding bar and mounting surface to improve free running of sliding bar, see part no. 33974.

Temperature resistance upto 90°C.
 Max. static load upto 800N - please refer to performance graph below.

Important Notes

Sliding clamps are suited only to straight linear movement of sliding bar (not supplied), and do not tolerate any other applied loads.

Displacement of sliding bar, through repetitive use, will increase if excessive shock or vibration is present. Do not use sliding clamp in vertical applications where vibration is present.

Displacement will also increase with adhesion or immersion of oil or other foreign substances.

Ensure sliding bar is not bent nor warped as this may cause the sliding bar to slip even when sliding clamp is in its on position.

Order No.	For bar width x height	Handle	d ₁	h ₁ +0.02	h ₂	h ₃	h ₄	h ₅	h ₆	l ₁	l ₂	w ₁ +0.05 - 0.0	w ₂	r ₁	Static load N max.	Weight g
33973.W2122	12x12	Stainless	4,5	12	29	22	18,5	11	6,0	40	32	12	20	46,0	500	150
33973.W2166	16x16	Stainless	4,5	16	33	26	22,5	15	8,0	40	32	16	20	46,0	500	160
33973.W2250	25x 9	Stainless	5,5	9	31	23	18,5	11	4,5	50	40	25	20	55,5	800	250
33973.W2252	25x12	Stainless	5,5	12	34	26	21,5	14	6,0	50	40	25	20	55,5	800	250
33973.W2322	32x12	Stainless	5,5	12	34	26	21,5	14	6,0	50	40	32	20	55,5	800	320
33973.W2326	32x16	Stainless	5,5	16	38	30	25,5	18	8,0	50	40	32	20	55,5	800	270



Sliding Clamps - for Solid Sliding Bar

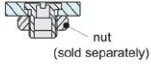
quarter turn lock - lever handle grip - zinc



One Touch Fasteners

installation dimensions for magnetic hold locating bush

for installation in a plate of thickness ranging from 6mm to 10mm, use a nut for fastening

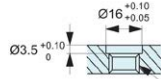
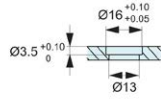


nut
(sold separately)

for installation in a plate of thickness over 10mm, use a screw-in method



for use of 2pcs or more, the spacing tolerance should be ± 0.1



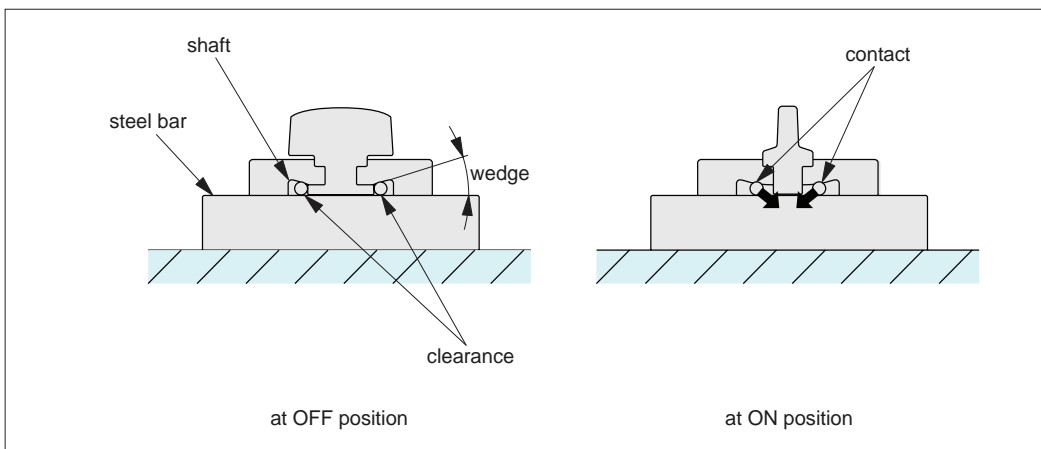
M12x1.5
(fine thread)



Operating Principle

You can slide the steel bar when the knob is at the "OFF" position since there is clearance between the steel bar and the shafts.

The steel bar is locked when the knob is at the "ON" position since the shafts are pushed by the wedge.

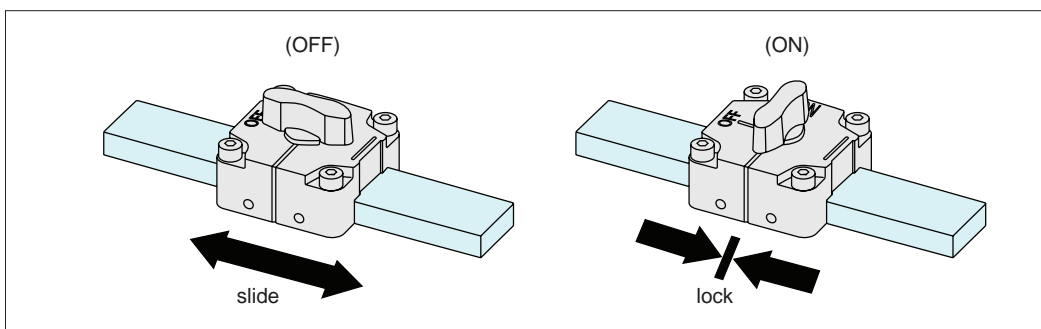


Operating Instructions

The steel bar can slide to right and left at the "OFF" position.

The steel bar is locked at the "ON" position.

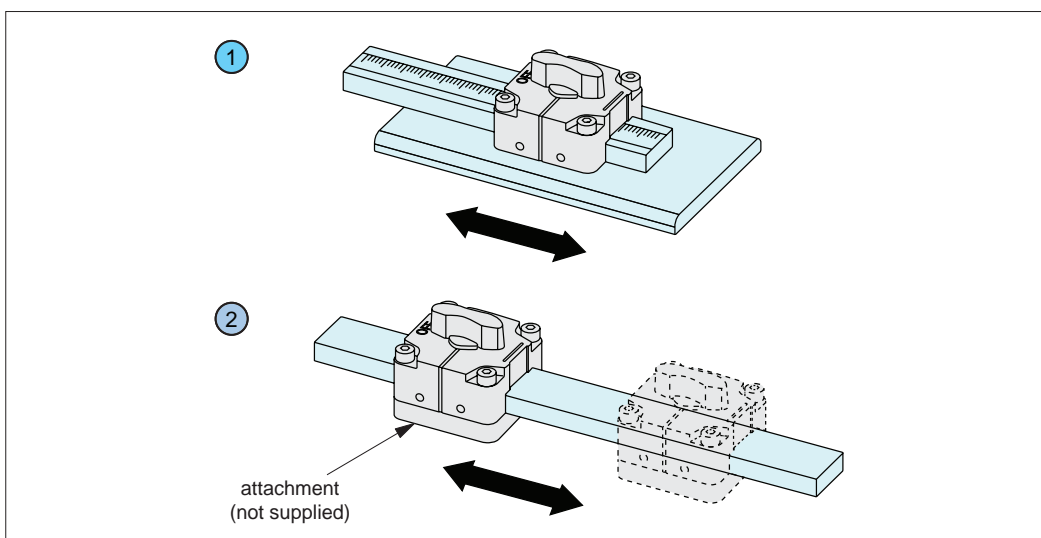
Note: The knob clicks at the "ON" and "OFF" positions, and this enables the operators to lock/unlock securely.



How to use

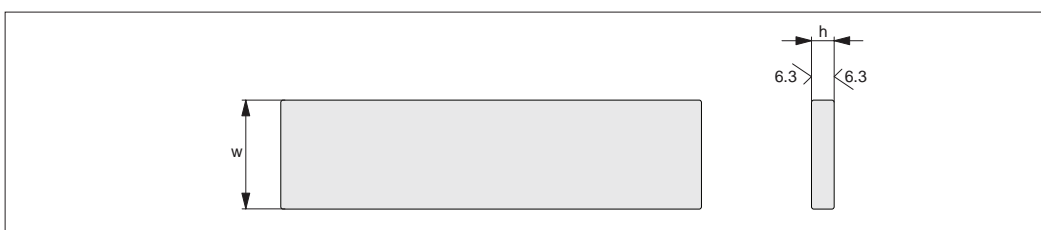
Please refer to notes for safe use (see last page of guide).

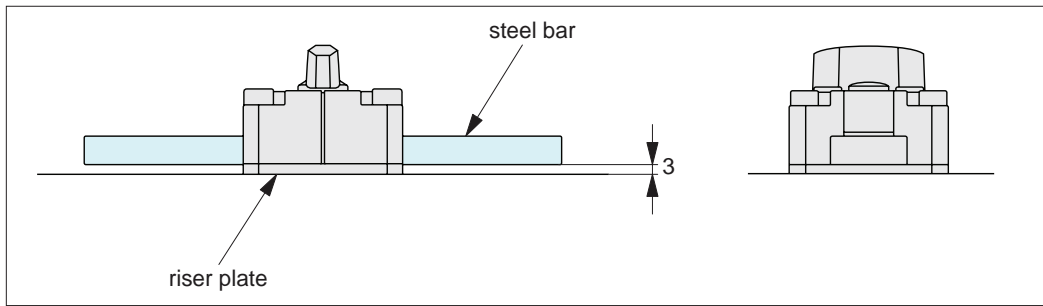
- 1 Slide the steel bar.
- 2 Slide the sliding locks for square bar.



How to use steel bar materials

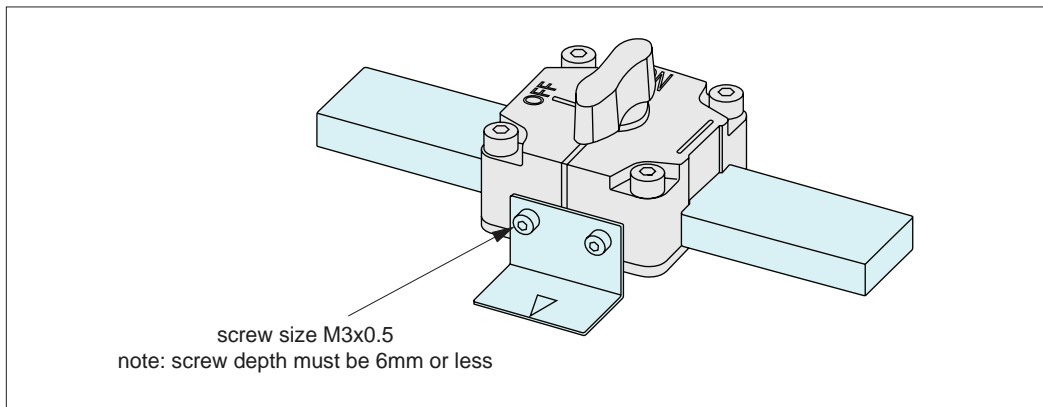
Usable Materials: Flat bar (JIS h14 grade) made of SS400, S45C or SUS304 etc.





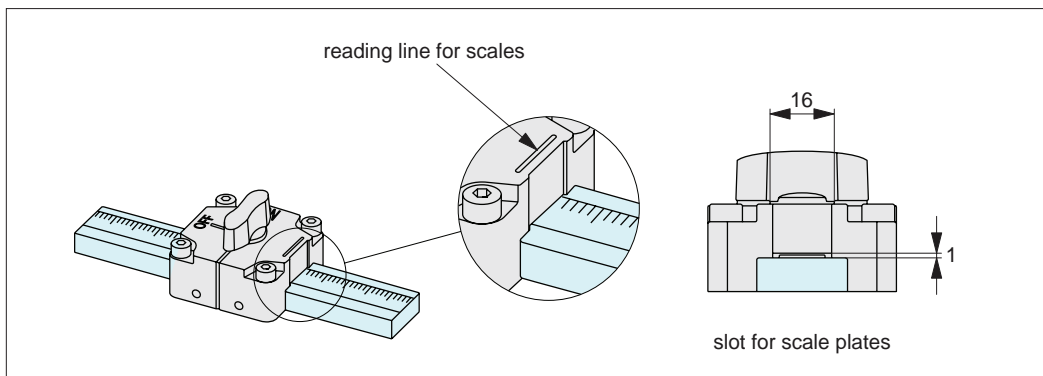
How to Use Riser Plate

Riser plates (to be ordered separately) can lift the steel bar to create a clearance between the steel bar and the base.



How to Use Tapped Holes on Side Surface

Can be used with attachments such as pointer plates and brackets.



How to Use Scale Plate

Scale plate can be put on the steel bar.

Note: Fit scale plate inside the slot in the figure below. Putting scale plate outside the slot cause interference between scale plate and sliding lock.

Scale plate is separately available.

See ranges 33975, 33976 and 33977.



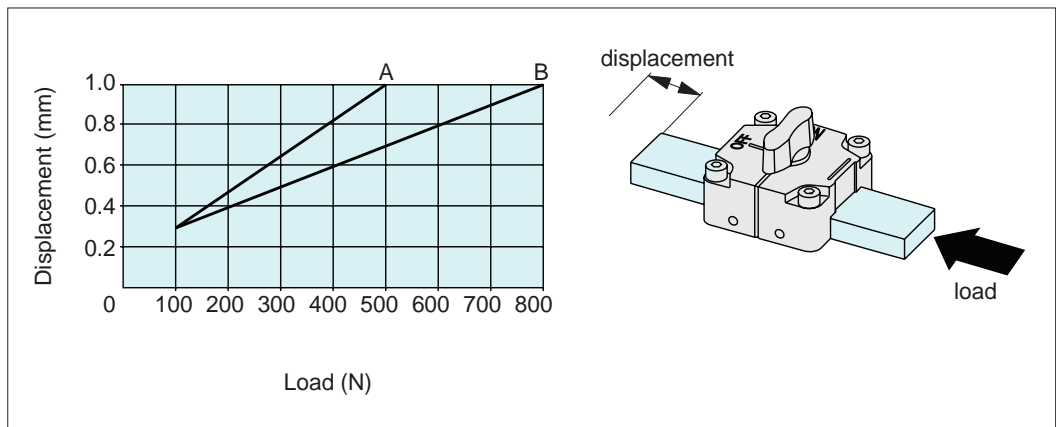
Performance Curve

Displacement of Steel Bar by Axial Load (static load from single direction)

A: For bar width x heights; 12x12mm and 16x16mm.

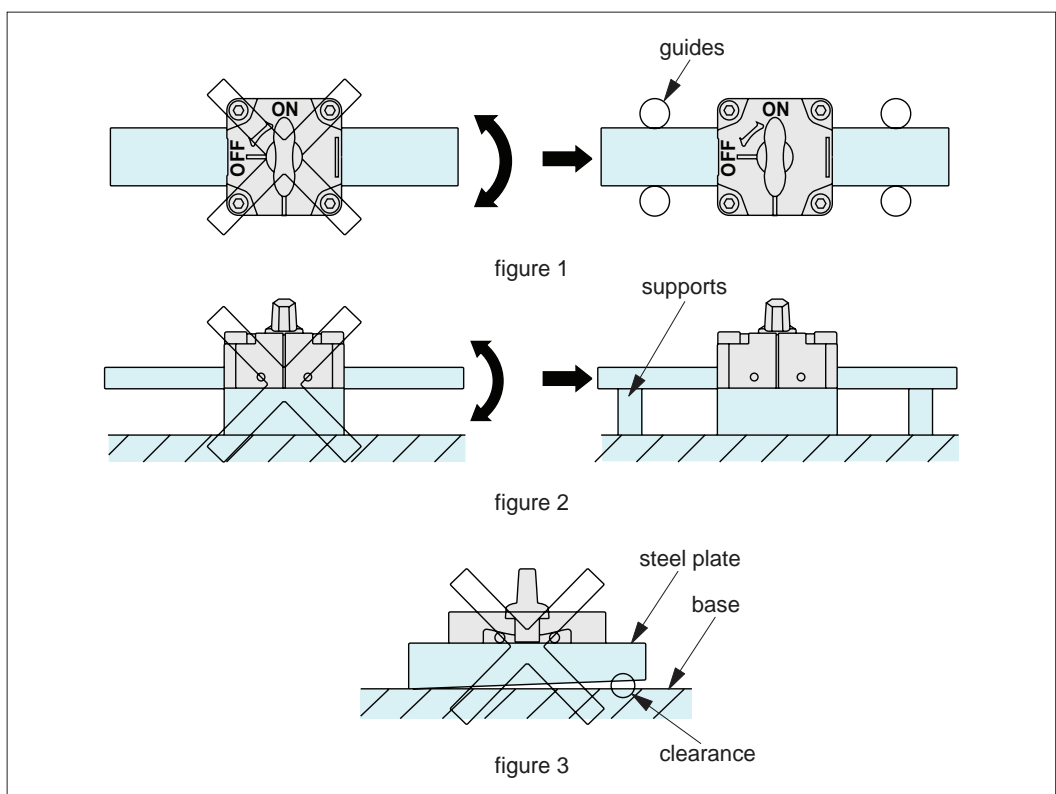
B: For bar width x heights; 25x9, 25x12, 32x12, 32x16.

Note: This data is for a flat bar made of SUS304 stainless steel, SS400 steel and S45C steel. Using an aluminium flat bar, the surface will be scratched or dented by applied load.



Notes

- Ensure that the knob is at the "OFF" position when mounting. Mounting of sliding locks at the "ON" position may cause damage.
- The displacement will increase with excess shock or vibration. Do not use this product vertically in environments where excess vibration is present.
- The displacement can increase with adhesion or contamination by oil or foreign substances.
- If the steel plate slips or chatters by the load applied to the steel plate, prepare guides or supports as needed. (See figure 1 and 2 below)
- Excess displacement or misalignment may be caused if there is a clearance between the steel bar and the base when the sliding locks at "ON" position. (See figure 3 below) Ensure that the steel plate and the base are not bent or warped.



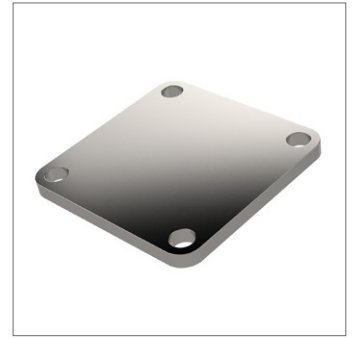
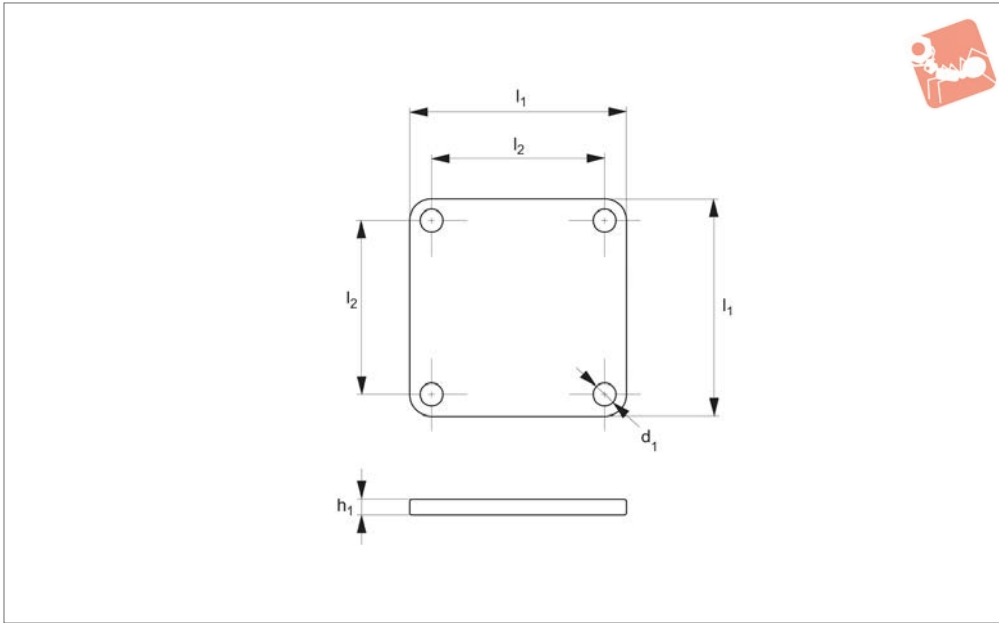


Riser Plates for Sliding Clamps

for 33972 and 33973



One Touch
Fasteners



33974

ONE TOUCH FASTENERS

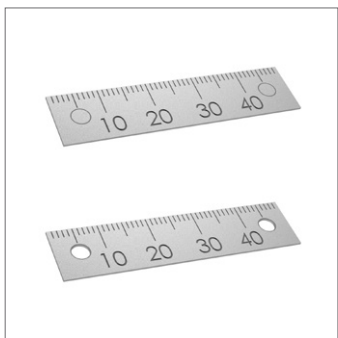
Material

Body: stainless steel, SUS 304

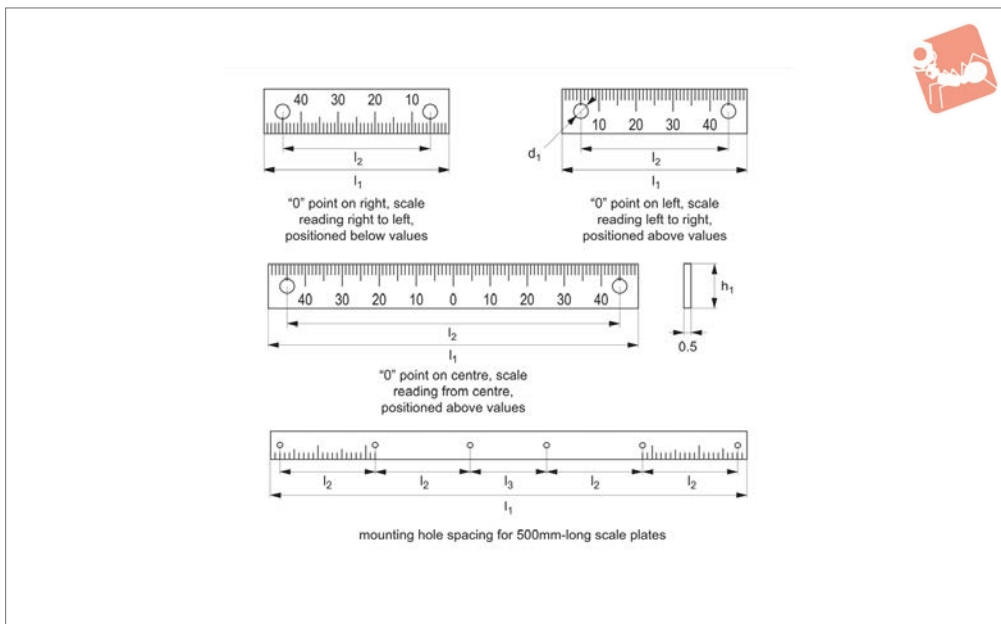
Technical Notes

To be used with sliding clamps part no. 33972 and 33973

Order No.	d_1	h_1	l_1	l_2	Weight g
33974.W4032	4.5	3	40	32	35
33974.W5040	5.5	3	50	40	55



33975



Material

Aluminium, with etched graduation/ markings.

Technical Notes

For use with sliding clamps 33970, 33972 and 33973. Markings are for indicative purposes, and are not intended for precise

measurement.

Adhesive mounting type: ensure receiving surface is clean and dirt free (features outline of screw hole location, not drilled).

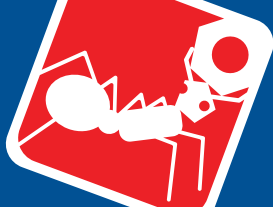
Screw mounting type: holes drilled to

3,5mm dia.

When selecting scale plate consider;

- direction scale reads (left to right, right to left or from centre).
- position of scale relative to number valves (above, below or both).

Order No.	Mounting type	Number of mounting holes	Direction of measurement	Scale position	d_1 (marked) drilled	h_1	l_1	l_2	l_3	Weight g
33975.W1005	Adhesive	2	Left	Top	(3,5)	12	50	40		0,8
33975.W1010	Adhesive	2	Left	Top	(3,5)	12	100	90		1,6
33975.W1015	Adhesive	3	Left	Top	(3,5)	12	150	70		2,4
33975.W1020	Adhesive	3	Left	Top	(3,5)	12	200	95		3,2
33975.W1030	Adhesive	2	Right	Top	(3,5)	12	50	40		0,8
33975.W1035	Adhesive	2	Right	Top	(3,5)	12	100	90		1,6
33975.W1040	Adhesive	3	Right	Top	(3,5)	12	150	70		2,4
33975.W1045	Adhesive	3	Right	Top	(3,5)	12	200	95		3,2
33975.W1055	Adhesive	2	Centre	Top	(3,5)	12	100	90		1,6
33975.W1060	Adhesive	3	Centre	Top	(3,5)	12	200	95		3,2
33975.W2005	Adhesive	2	Left	Bottom	(3,5)	12	50	40		0,8
33975.W2010	Adhesive	2	Left	Bottom	(3,5)	12	100	90		1,6
33975.W2015	Adhesive	3	Left	Bottom	(3,5)	12	150	70		2,4
33975.W2020	Adhesive	3	Left	Bottom	(3,5)	12	200	95		3,2
33975.W2030	Adhesive	2	Right	Bottom	(3,5)	12	50	40		0,8
33975.W2035	Adhesive	2	Right	Bottom	(3,5)	12	100	90		1,6
33975.W2040	Adhesive	3	Right	Bottom	(3,5)	12	150	70		2,4
33975.W2045	Adhesive	3	Right	Bottom	(3,5)	12	200	95		3,2
33975.W2055	Adhesive	2	Centre	Bottom	(3,5)	12	100	90		1,6
33975.W2060	Adhesive	3	Centre	Bottom	(3,5)	12	200	95		3,2
33975.W5005	Screw Mount	2	Left	Top	3,5	12	50	40		0,8
33975.W5010	Screw Mount	2	Left	Top	3,5	12	100	90		1,6
33975.W5015	Screw Mount	3	Left	Top	3,5	12	150	70		2,4
33975.W5020	Screw Mount	3	Left	Top	3,5	12	200	95		3,2
33975.W5025	Screw Mount	6	Left	Top	3,5	12	500	100	90	8,0
33975.W5030	Screw Mount	2	Right	Top	3,5	12	50	40		0,8
33975.W5035	Screw Mount	2	Right	Top	3,5	12	100	90		1,6
33975.W5040	Screw Mount	3	Right	Top	3,5	12	150	70		2,4
33975.W5045	Screw Mount	3	Right	Top	3,5	12	200	95		3,2
33975.W5050	Screw Mount	6	Right	Top	3,5	12	500	100	90	8,0



Scale Plates - Single Scale

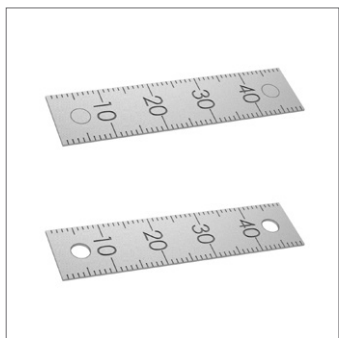
for sliding clamps 33970, 33972, 33973



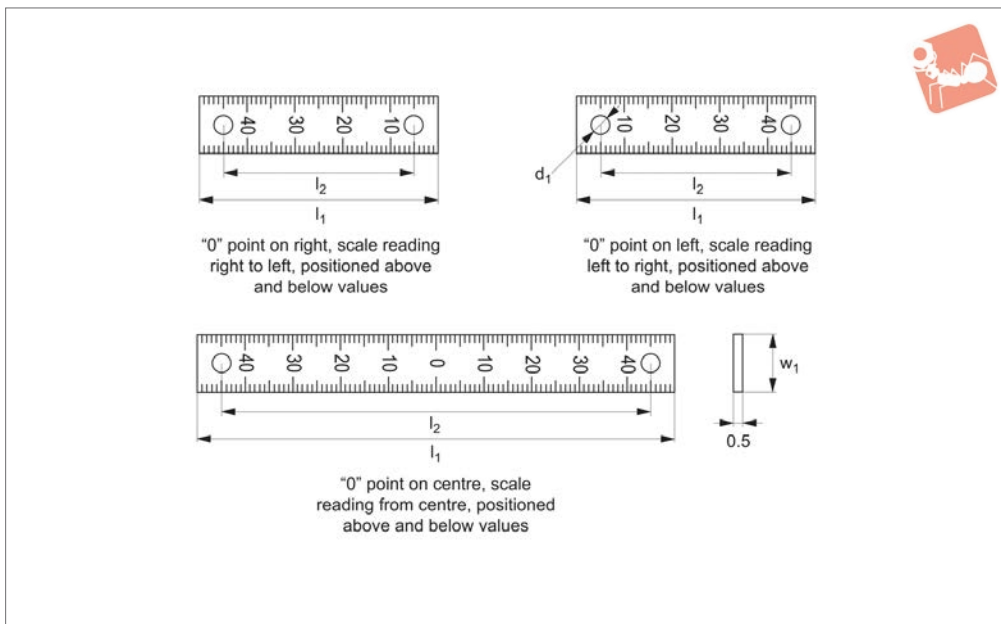
One Touch Fasteners

Order No.	Mounting type	Number of mounting holes	Direction of measurement	Scale position	d ₁ (marked) drilled	h ₁	l ₁	l ₂	l ₃	Weight g
33975.W5055	Screw Mount	2	Centre	Top	3,5	12	100	90		1,6
33975.W5060	Screw Mount	3	Centre	Top	3,5	12	200	95		3,2
33975.W5065	Screw Mount	6	Centre	Top	3,5	12	500	100	90	8,0
33975.W6005	Screw Mount	2	Left	Bottom	3,5	12	50	40		0,8
33975.W6010	Screw Mount	2	Left	Bottom	3,5	12	100	90		1,6
33975.W6015	Screw Mount	3	Left	Bottom	3,5	12	150	70		2,4
33975.W6020	Screw Mount	3	Left	Bottom	3,5	12	200	95		3,2
33975.W6025	Screw Mount	6	Left	Bottom	3,5	12	500	100	90	8,0
33975.W6030	Screw Mount	2	Right	Bottom	3,5	12	50	40		0,8
33975.W6035	Screw Mount	2	Right	Bottom	3,5	12	100	90		1,6
33975.W6040	Screw Mount	3	Right	Bottom	3,5	12	150	70		2,4
33975.W6045	Screw Mount	3	Right	Bottom	3,5	12	200	95		3,2
33975.W6050	Screw Mount	6	Right	Bottom	3,5	12	500	100	90	8,0
33975.W6055	Screw Mount	2	Centre	Bottom	3,5	12	100	90		1,6
33975.W6060	Screw Mount	3	Centre	Bottom	3,5	12	200	95		3,2
33975.W6065	Screw Mount	6	Centre	Bottom	3,5	12	500	100	90	8,0

ONE TOUCH FASTENERS



33976



Material

Aluminium, with etched graduation/ markings.

Technical Notes

For use with sliding clamps 33970, 33972 and 33973. Markings are for indicative purposes, and are not intended for precise

measurement.

Adhesive mounting type: ensure receiving surface is clean and dirt free (features outline of screw hole location, not drilled).

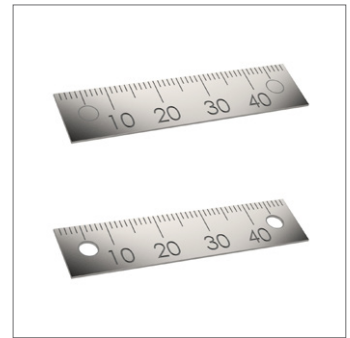
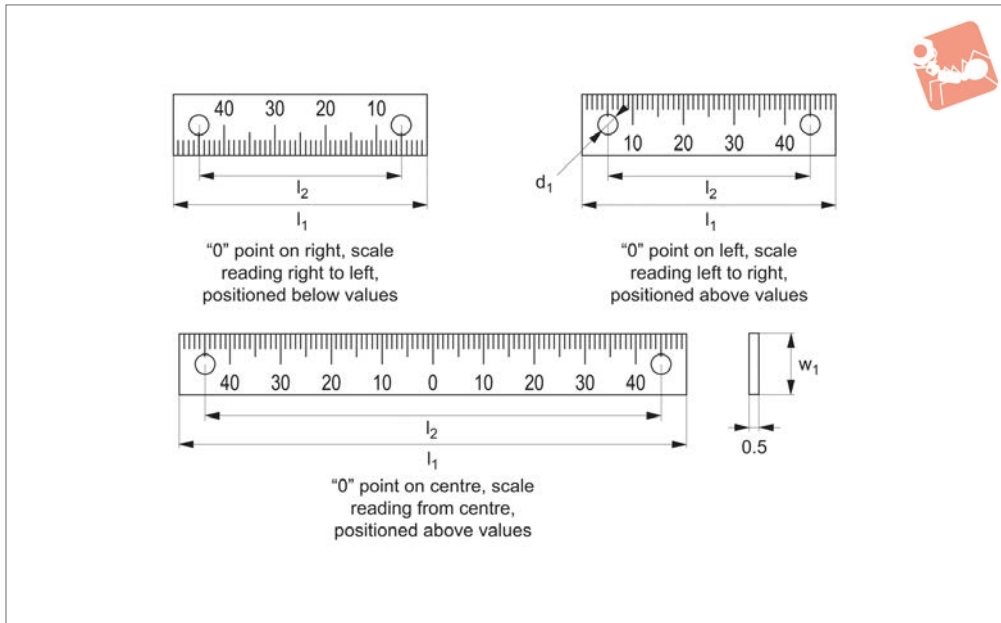
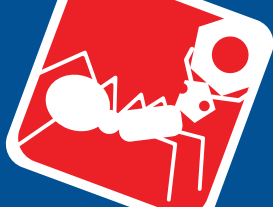
Screw mounting type: holes drilled to

3,5mm dia.

When selecting scale plate consider;

- direction scale reads (left to right, right to left or from centre).
- position of scale relative to number valves (above, below or both).

Order No.	Mounting type	Number of mounting holes	Location of „0“ point	d_1	l_1	l_2	w_1	Weight g
33976.W1005	Adhesive	2	Left	-	50	40	15	1
33976.W1010	Adhesive	2	Left	-	100	90	15	2
33976.W1015	Adhesive	2	Right	-	50	40	15	1
33976.W1020	Adhesive	2	Right	-	100	90	15	2
33976.W1025	Adhesive	2	Centre	-	100	90	15	2
33976.W5005	Screw Mount	2	Left	3.5	50	40	15	1
33976.W5010	Screw Mount	2	Left	3.5	100	90	15	2
33976.W5015	Screw Mount	2	Right	3.5	50	40	15	1
33976.W5020	Screw Mount	2	Right	3.5	100	90	15	2
33976.W5025	Screw Mount	2	Centre	3.5	100	90	15	2



33977

ONE TOUCH FASTENERS

Material

Stainless steel, with etched graduation/markings.

Technical Notes

For use with sliding clamps 33970, 33972 and 33973. Markings are for indicative purposes, and are not intended for precise

measurement.

Adhesive mounting type: ensure receiving surface is clean and dirt free (features outline of screw hole location, not drilled).

Screw mounting type: holes drilled to

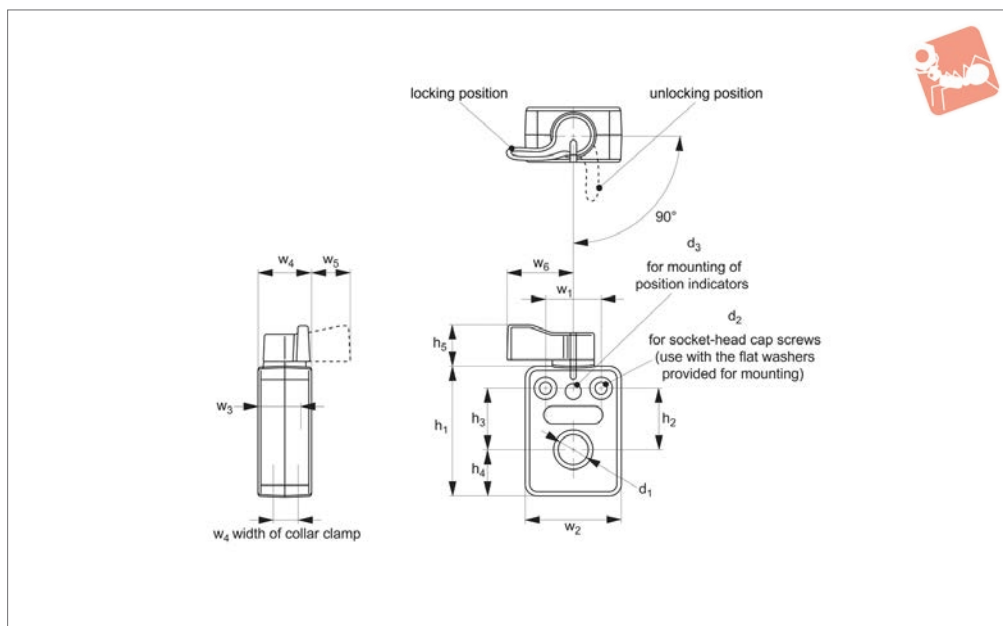
3,5mm dia.

When selecting scale plate consider;
 - direction scale reads (left to right, right to left or from centre).
 - position of scale relative to number valves (above, below or both).

Order No.	Mounting type	Number of mounting holes	Location of „0“ point	d ₁	l ₁	l ₂	w ₁	Weight g
33977.W1005	Adhesive	2	Top	-	50	40	12	2.4
33977.W1010	Adhesive	2	Top	-	100	90	12	4.7
33977.W1015	Adhesive	2	Top	-	50	40	12	2.4
33977.W1020	Adhesive	2	Top	-	100	90	12	4.7
33977.W1025	Adhesive	2	Top	-	100	90	12	4.7
33977.W5005	Screw-Mount	2	Top	3.5	50	40	12	2.4
33977.W5010	Screw-Mount	2	Top	3.5	100	90	12	4.7
33977.W5015	Screw-Mount	2	Top	3.5	50	40	12	2.4
33977.W5020	Screw-Mount	2	Top	3.5	100	90	12	4.7
33977.W5025	Screw-Mount	2	Top	3.5	100	90	12	4.7



33980



Material

Housing: Polyamide (glass-fibre reinforced)

Boss: Polyamide (glass-fibre reinforced)

Base: Polyamide (glass-fibre reinforced)

Insert: Stainless steel

Technical Notes

It has teeth inside and it engages at every 7.2° (=360°/ 50).

33981 pulls the spindle by the inner spring with 70N force to prevent chattering of the spindle. Note: The spindle should be fully inserted into the knob for 25mm.

Order No.	Handle	d ₁ for shaft dia. tol. h7	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄	Weight g
33980.W1308	Orange	8	M 4	6	48.5	23.5	22	17	50
33980.W1310	Orange	10	M 4	6	48.5	23.5	22	17	50
33980.W1312	Orange	12	M 4	6	48.5	23.5	22	17	50
33980.W1314	Orange	14	M 4	6	48.5	23.5	22	17	50
33980.W1512	Orange	12	M 5	6	69.0	17.0	30	26	100
33980.W1515	Orange	15	M 5	6	69.0	17.0	30	26	100
33980.W1516	Orange	16	M 5	6	69.0	17.0	30	26	100
33980.W1520	Orange	20	M 5	6	69.0	17.0	30	26	100
33980.W2308	Black	8	M 4	6	48.5	23.5	22	17	50
33980.W2310	Black	10	M 4	6	48.5	23.5	22	17	50
33980.W2312	Black	12	M 4	6	48.5	23.5	22	17	21
33980.W2314	Black	14	M 4	6	48.5	23.5	22	17	21
33980.W2512	Black	12	M 5	6	69.0	17.0	30	26	100
33980.W2515	Black	15	M 5	6	69.0	17.0	30	26	100
33980.W2516	Black	16	M 5	6	69.0	17.0	30	26	100
33980.W2520	Black	20	M 5	6	69.0	17.0	30	26	34

Order No.	h ₅	w ₁	w ₂	w ₃	w ₄	w ₅	w ₆	Allowable holding torque	
								Nm max.	Allowable sliding torque Nm max.
33980.W1308	15.5	21	36	14.0	20	15	25	3	400
33980.W1310	15.5	21	36	14.0	20	15	25	3	400
33980.W1312	15.5	21	36	14.0	20	15	25	4	400
33980.W1314	15.5	21	36	14.0	20	15	25	4	400
33980.W1512	15.5	34	51	12.5	20	15	25	5	500
33980.W1515	15.5	34	51	12.5	20	15	25	5	500
33980.W1516	15.5	34	51	12.5	20	15	25	6	500
33980.W1520	15.5	34	51	12.5	20	15	25	6	500
33980.W2308	15.5	21	36	14.0	20	15	25	3	400
33980.W2310	15.5	21	36	14.0	20	15	25	3	400
33980.W2312	15.5	21	36	14.0	20	15	25	4	400
33980.W2314	15.5	21	36	14.0	20	15	25	4	400
33980.W2512	15.5	34	51	12.5	20	15	25	5	500



Sliding Clamps - for Solid Round Bar

quarter turn lock- l-handle grip - polyamide



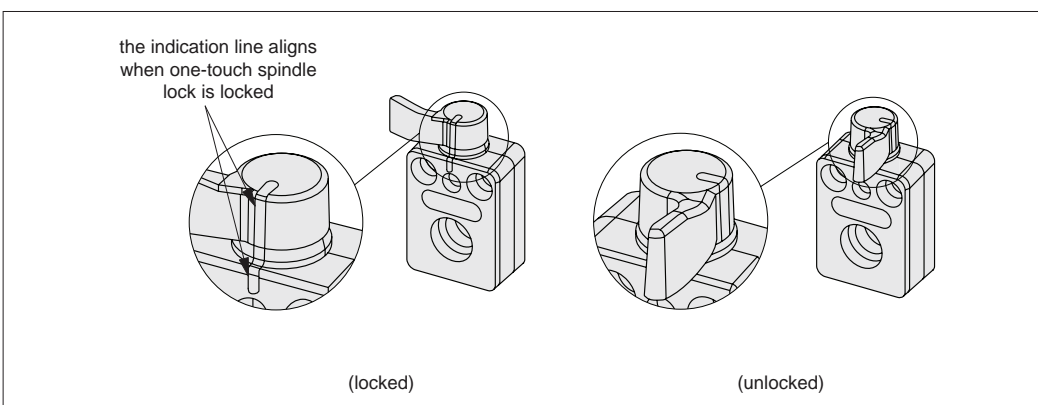
One Touch Fasteners

Order No.	h_5	w_1	w_2	w_3	w_4	w_5	w_6	Allowable holding torque Nm max.	Allowable sliding torque Nm max.
33980.W2515	15.5	34	51	12.5	20	15	25	5	500
33980.W2516	15.5	34	51	12.5	20	15	25	6	500
33980.W2520	15.5	34	51	12.5	20	15	25	6	500



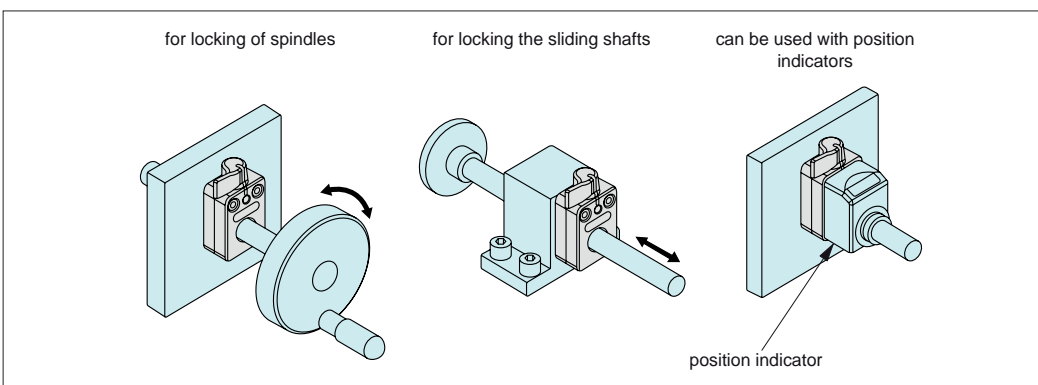
Operating Principle

- One-touch spindle locks enable quick and secure locking of shafts with one click of the knob.
- When one-touch spindle lock is operated, the knob clicks and the shaft is locked with a steady force. This provides reliable locking of shafts.
- The knob position and the indication line clearly indicate lock/unlock position.



Operating Instructions

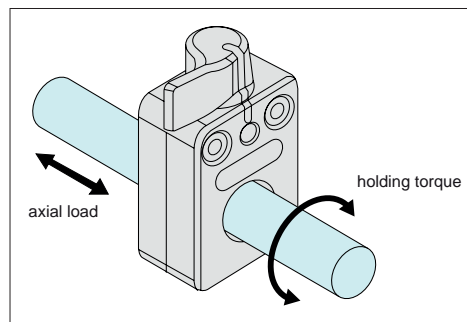
Note: To mount position indicators to one-touch spindle locks, use the rubber cushion supplied with position indicators.



Load Ratings

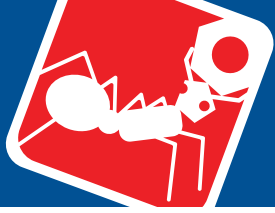
One-touch spindle locks can fix both revolving and sliding shafts.

For shaft $\varnothing h_7$	d_2	Max. holding torque Nm	Max. axial load N
8	M4	3	400
10	M4	3	400
12	M4	4	400
14	M4	4	400
12	M5	5	500
15	M5	5	500
16	M5	6	500
20	M5	6	500

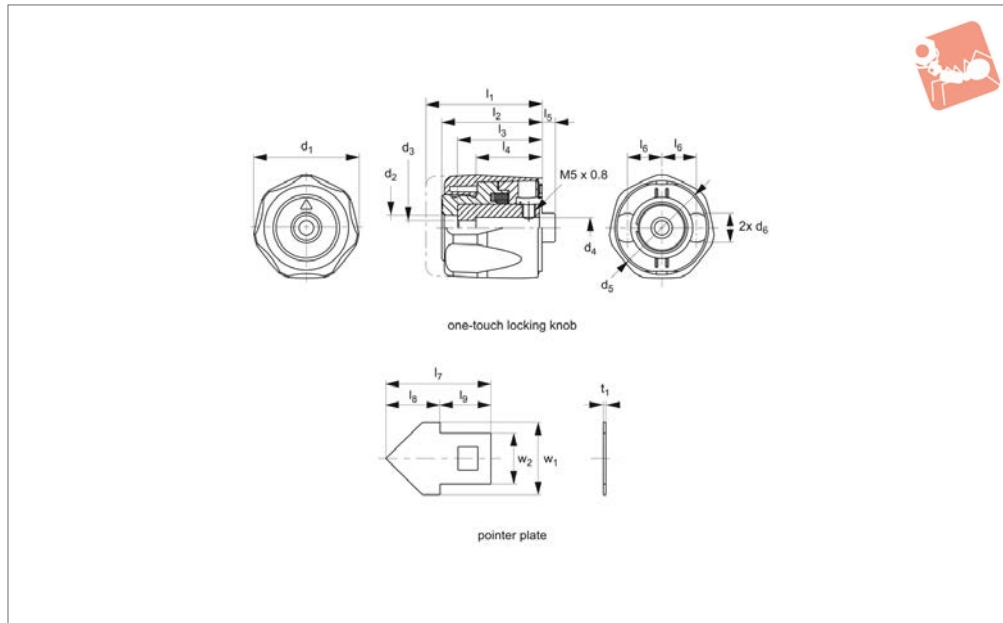


Notes

- This product cannot be used as bearings or guides for shafts.
- Shafts may slip in environments where shocks or vibrations are present.
- The allowable holding torque and the allowable sliding load may decrease with adhesion of particles or immersion in oil.



One-Touch Locking Knobs with safety indicator



33981

ONE TOUCH FASTENERS

Material

Grip: reinforced polyamide, black or orange.
 Central boss: reinforced polyamide, blue.
 Base indicator: reinforced polyamide, red.
 Pointer plate: stainless steel A2.
 Supplied with screws.

Technical Notes

One-touch locking knob enables one-touch locking and unlocking of spindle. One-Touch locking knob has an audible click to indicate locking and unlocking. Additionally the high visibility red colour of the base indicator is exposed to signify

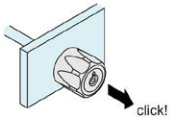
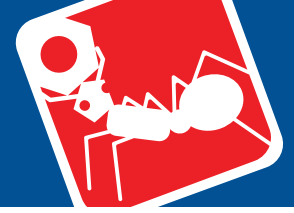
when knob is unlocked (when locked the red indicator is concealed).

Important Notes

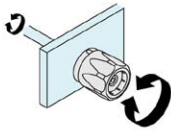
* Safety factor of 5.
 Pointer plate sold separately.

Order No.	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆ -0.2	l ₁	l ₂	l ₃	l ₄	l ₅	Weight g
33981.W4008	40	9.5	5.5	8	34	11	44	38	32	25	5	95
33981.W4010	40	9.5	5.5	10	34	11	44	38	32	25	5	90
33981.W4108	40	9.5	5.5	8	34	11	44	38	32	25	5	95
33981.W4110	40	9.5	5.5	10	34	11	44	38	32	25	5	90
33981.W0040	40	9.5	5.5	-	34	11	44	38	32	25	5	21

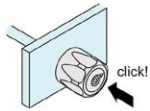
Order No.	l ₆	l ₇	l ₈	l ₉	w ₁	w ₂	t ₁	Type	Locking teeth	Spindle depth	Holding force kgf	Moment Mz in lock position Nm max.
33981.W4008	13	14.5	7.5	7	10	7	0.3	Black Knob	50 (7,2°)	25	70	28
33981.W4010	13	14.5	7.5	7	10	7	0.3	Black Knob	50 (7,2°)	25	70	28
33981.W4108	13	14.5	7.5	7	10	7	0.3	Orange Knob	50 (7,2°)	25	70	28
33981.W4110	13	14.5	7.5	7	10	7	0.3	Orange Knob	50 (7,2°)	25	70	28
33981.W0040	13	14.5	7.5	7	10	7	0.3	Pointer Plate	50 (7,2°)	25	70	28



by pulling the housing until it clicks, the teeth of the knob disengage from the base.



turn 33981 to rotate the spindle

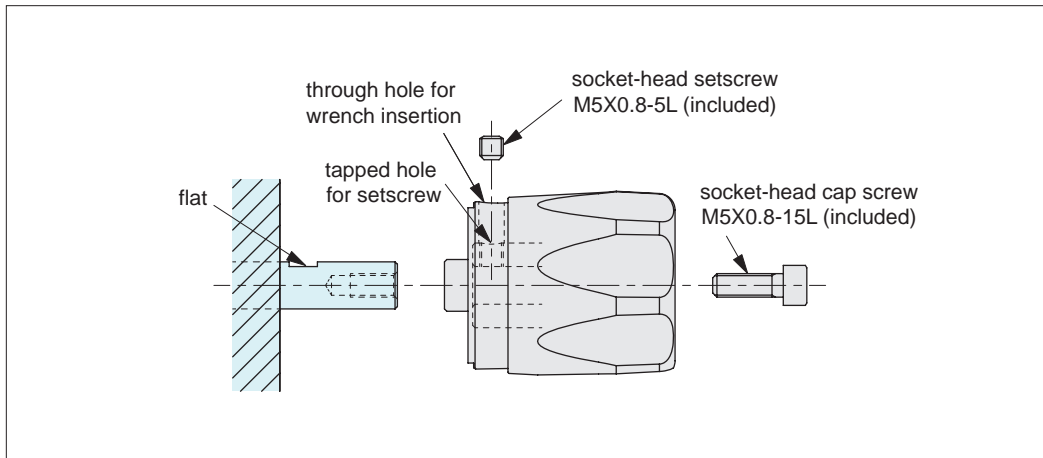


by pushing the housing until it clicks, the teeth engage again and lock the rotation of the spindle.

how to operate

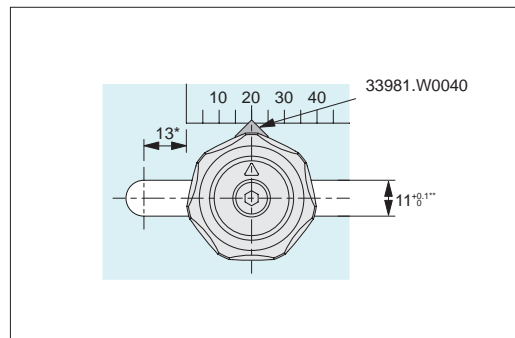
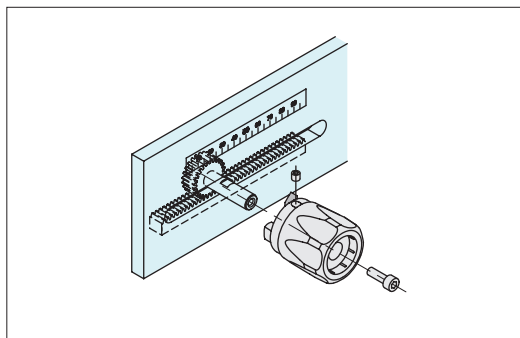


How to Install



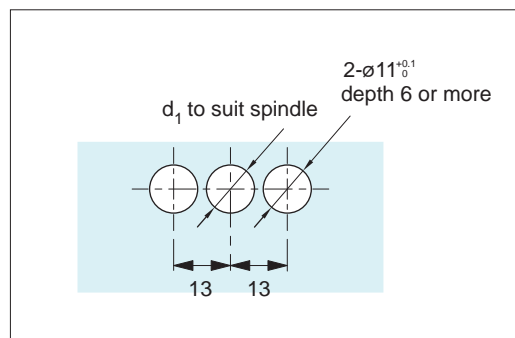
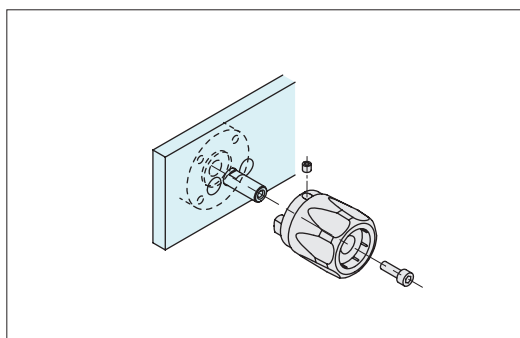
1. Pull the housing and align the through hole on the base and the tapped hole on the insert.
2. Align the flat and tapped hole on the insert and then mount the spindle.
3. Fix 33981 temporarily using M5X0.8-15L socket-head cap screw included.
4. Fix 33981 to the spindle temporarily using setscrew included.
5. Tighten M5X0.8-15L socket-head cap screw fully.
6. Tighten the setscrew fully.

Mounting Hole Dimensions



Rack and Pinion Application

*Prepare clearance of 13mm or more from the end of the required spindle stroke.
 **Recommended surface roughness is 1.6 for the inner surface of the slotted hole.

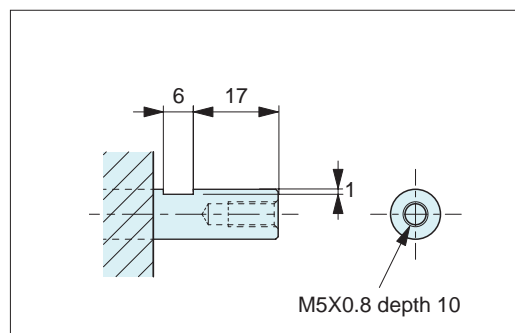
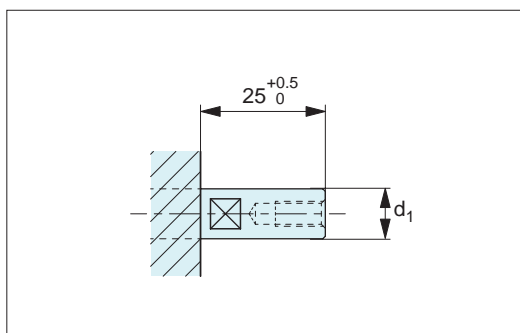


Lead Screw Application

d₁ to suit spindle

Size	d ₁
33981.W4008 / W4108	9
33981.W4010 / W4110	11

Mounting Spindle Dimension

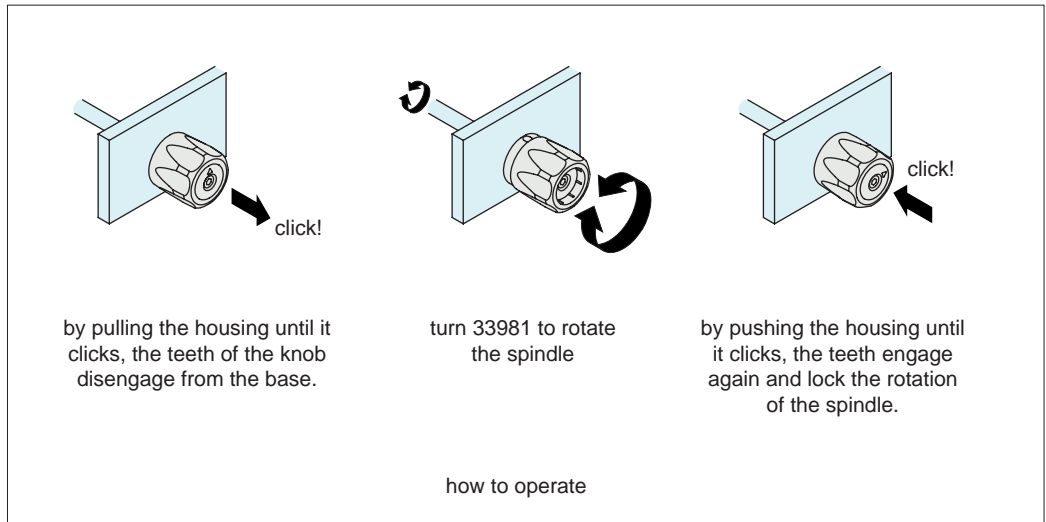


Spindle size

Size	d ₁ (g6)
33981.W4008 / W4108	8
33981.W4010 / W4110	10



Operation

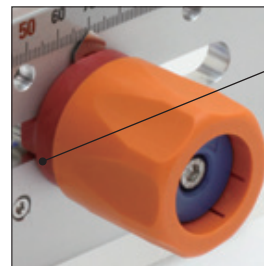


Clear Safety Indicator of Locked / Unlocked Position



Locked

Blue indicates safety to operate machine.



Unlocked

Red indicates caution to operate machine.

Holding Forces

One-Touch Locking Knob has 50 teeth and engages at every 7.2°. It pulls the spindle via the inner spring with 70N force to prevent chattering of spindle, with a max allowable moment at locking position of 28N·m (with 5 fold safety).

