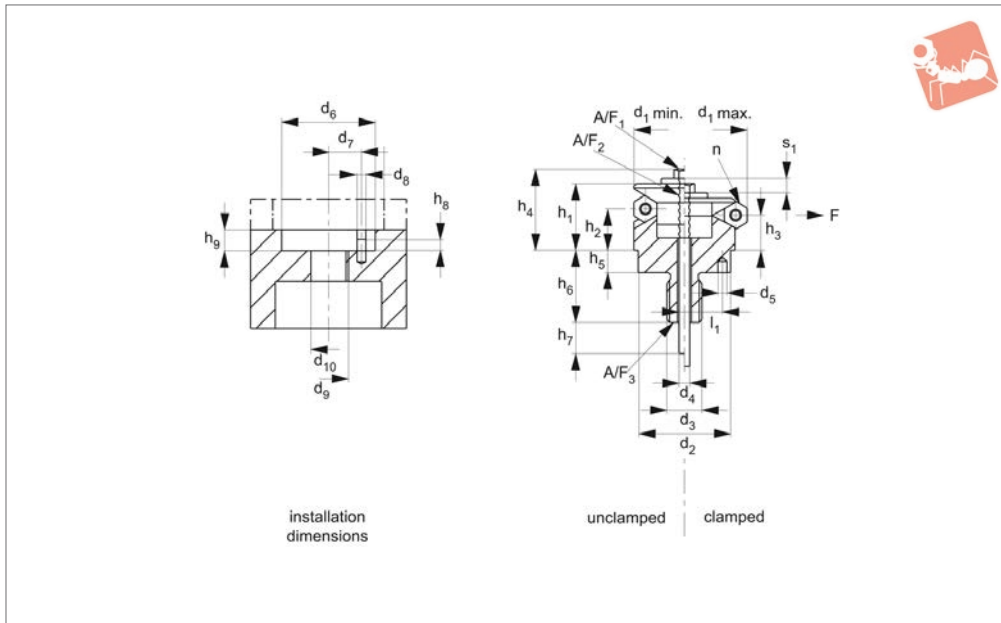
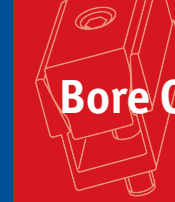




# Internal Centering Clamps

rear actuated - for delicate components

## Bore Clamping



12062

BORE CLAMPING

### Material

Body: tool steel 1.2842, blackened.  
 Top cone: steel 1.4112, case hardened, blackened and ground.  
 Ball: steel, hardened and ground.  
 Spring: steel (AISI 301, 1.4310).

### Technical Notes

Suitable for concentric positioning and

chucking inside holes with surfaces prone to damage.  
 Locking pin for precise ball positioning.  
 Pull down version can be actuated from rear either manually, or via pneumatic hydraulic cylinder attached to thread „ $d_5$ “ at rear of clamp.  
 For deep installation applications, „ $d_2$

max“ must be maintained for clearance.  
 Repeatability and rotational accuracy,  $\pm 0,025$ .

### Tips

Suitable for perforated walls prone to damage, machining centres, welding devices, transfer units, assembly units etc.

Order No.	$h_1$	$h_2$	$h_3$	$l_1$ $\pm 0.1$	$d_1$ min.	$d_1$ max.	$d_2$	$d_3$	$d_4$	$d_5$ $+0.3$	$d_6$ tol. H7	$d_7$ $\pm 0.1$	$d_8$	Weight g
12062.W0214	14.2	9.8	8.6	4.5	14.5	18.5	12	M 6	M 3	2.0	12	4.5	2.0	21
12062.W0218	16.6	11.5	10.4	5.5	18.5	22.5	15	M 8	M 4	2.5	15	5.5	2.5	46
12062.W0222	19.7	14.1	13.0	7.0	22.5	26.5	20	M10	M 5	3.0	20	7.0	3.0	78
12062.W0226	19.9	14.2	13.0	7.0	26.5	30.5	20	M10	M 5	3.0	20	7.0	3.0	96
12062.W0230	23.2	14.0	11.7	9.0	30.5	38.5	25	M12	M 6	4.0	25	9.0	4.0	143
12062.W0238	27.2	18.0	15.5	11.0	38.5	46.5	30	M12	M 6	4.0	30	11.0	4.0	250
12062.W0246	27.2	18.0	15.7	11.0	46.5	54.5	30	M12	M 6	4.0	30	11.0	4.0	340
12062.W0254	40.7	23.7	19.1	15.0	54.5	70.5	45	M14x1,5	M 8	5.0	45	15.0	5.0	680
12062.W0270	46.0	28.1	23.5	17.0	70.5	86.5	60	M16x1,5	M 8	5.0	60	17.0	5.0	1300
12062.W0286	51.1	30.1	25.5	25.0	86.5	102.5	60	M16x1,5	M10	5.0	60	25.0	5.0	2060

Order No.	$d_9$	$d_{10}$ $+0.5$	$h_4$ $-2$	$h_5$	$h_6$ $+1$	$h_7$ $\approx$	$h_8$ $+1$	$h_9$ $+0.5$	$n_1$	Stroke $s_1$	$A/F_1$	$A/F_2$	$A/F_3$	Clamping force kN max.	Torque to Nm max.
12062.W0214	M 6	6	17.0	5.5	14.1	12	2.5	5.5	3	2.3	6	3	10	3.5	2
12062.W0218	M 8	8	20.5	7.5	18.2	14	3.5	7.5	3	2.3	7	5	13	4.0	5
12062.W0222	M10	10	24.4	6.0	17.4	15	3.5	6.0	3	2.3	8	6	16	4.5	10
12062.W0226	M10	10	24.6	6.0	17.4	15	3.5	6.0	3	2.3	8	6	16	4.5	10
12062.W0230	M12	12	28.8	7.0	21.9	20	3.5	7.0	3	4.6	10	6	18	4.5	17
12062.W0238	M12	12	33.1	7.5	22.5	20	4.5	7.5	6	4.6	10	8	18	6.5	17
12062.W0246	M12	12	33.1	7.5	22.5	20	6.5	7.5	6	4.6	10	8	18	6.5	17
12062.W0254	M14x1,5	14	50.0	9.0	24.9	32	6.5	9.0	6	9.2	13	10	21	8.0	43
12062.W0270	M16x1,5	16	55.3	10.0	29.4	20	6.5	10.0	6	9.2	13	12	24	10.0	43
12062.W0286	M16x1,5	16	61.5	10.0	29.4	25	6.5	10.0	6	9.2	16	12	24	12.5	79



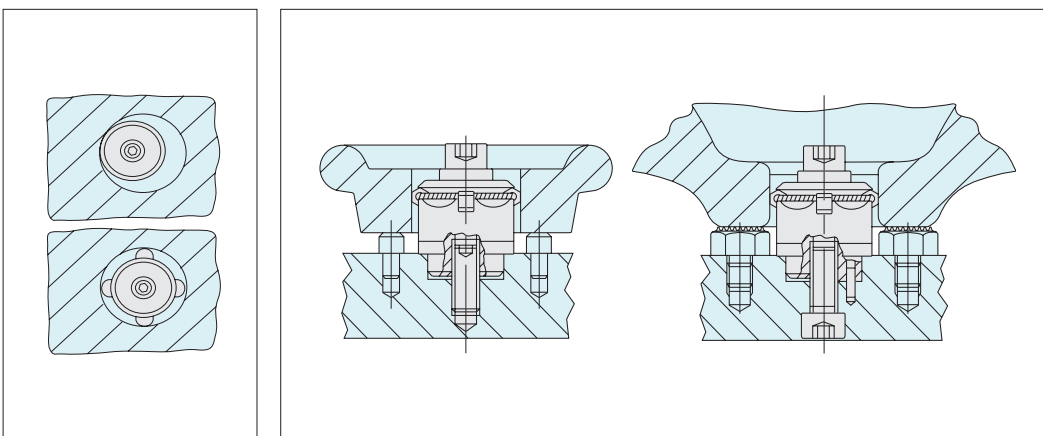
The internal centering clamp provides auto-centric chucking inside both round and square holes, at the simple turn of a hexagon screw. Precise self-centering is achieved through the expansion of the ring of balls which, during clamping, are pressed outward across a precision cone. As the outer diameter of the clamp changes the balls transmit force between its body and the bore. The clamps are used in machining and welding fixtures, product assemblies and transfer units.



## Advantages

- Easy to use.
- Precise self-centering and downhold clamping minimising tolerance errors.
- 3 or 6 points of clamping for maximum stability.
- Clamping on uneven surfaces, such as casts and forgings.
- Low height clamping element.
- Bore sizes 11 to 102mm.
- Repeatable positioning accuracy  $\pm 0,025$  and rotational accuracy  $\pm 0,025$ .
- Easily actuated by the turn of a screw.
- Clamping of workpieces with perforated walls without distortion.
- Actuation from above or below.

## Centering



## Actuation Models

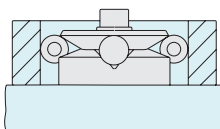
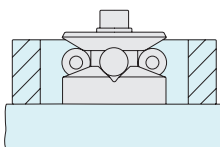
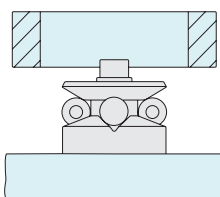
### Manual from above



**12061** - for delicate workpieces (non-marking).



**12071** - for cast and more robust workpieces.



### Manual, hydraulic or pneumatic from below



**12062** - for delicate workpieces (non-marking).



**12072** - for cast and more robust workpieces.

