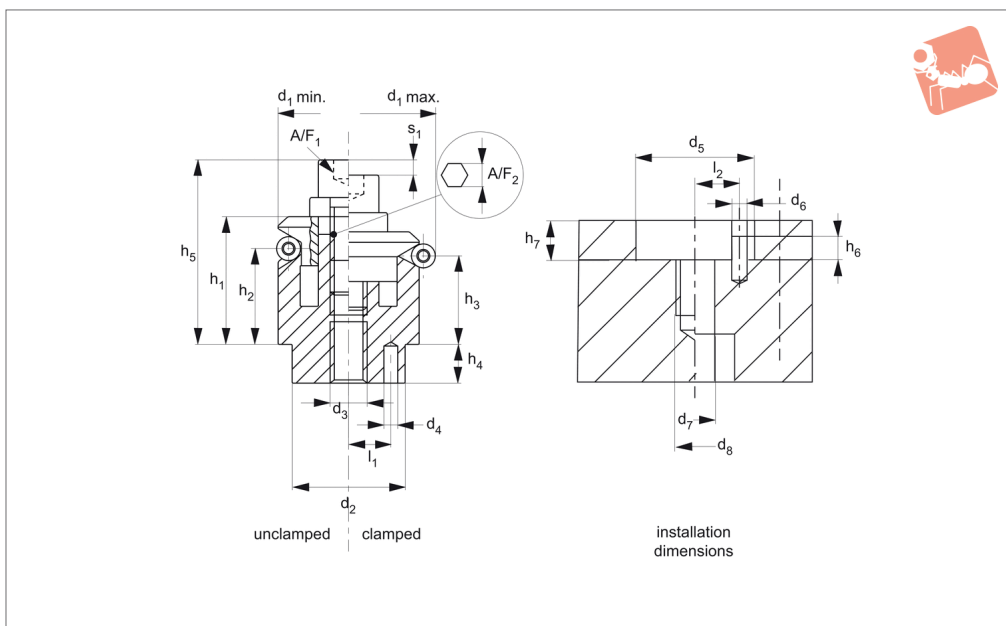




# Internal Centering Clamps

standard version - for casts and forgings

## Bore Clamping



12071

BORE CLAMPING

### Material

Body: tool steel, blackened.  
Top cone: case hardened stainless steel 1.4112, blackened and ground.  
Ball: stainless steel, 1.4034, hardened and ground.  
Spring: stainless steel, 1.4310 (AISI 301).

### Technical Notes

For deep installation applications, „d<sub>2</sub>

max.“ must be maintained for clearance. A locking pin can be used for precise ball positioning.  
Suitable for concentric positioning and chucking inside holes, repeatability and rotary accuracy ±0,025.

### Tips

Precise self-centering, providing clamping and positioning of components.

### Important Notes

If machining delicate components, see parts 12061.

Order No.	h <sub>1</sub> -1	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub> ±0.1	d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> tol. f7	d <sub>3</sub>	d <sub>4</sub> +0.3	d <sub>5</sub> tol. H7	d <sub>6</sub>	Weight g
12071.W0211	8.6	3.9	3.2	3.5	11.7	14.2	10	M 4	1.5	10	1.5	9.0
12071.W0214	14.2	9.8	8.6	4.5	14.5	18.5	12	M 4	2.0	12	2.0	20.0
12071.W0218	16.5	11.6	10.4	5.5	18.5	22.5	15	M 5	2.5	15	2.5	39.0
12071.W0222	19.6	14.1	12.9	7.0	22.5	26.5	20	M 6	3.0	20	3.0	60.0
12071.W0226	19.8	14.1	13.0	7.0	26.5	30.5	20	M 6	3.0	20	3.0	86.0
12071.W0230	23.2	14.1	11.8	9.0	30.5	38.5	25	M 6	4.0	25	4.0	125.0
12071.W0238	27.2	18.0	15.7	11.0	38.5	46.5	30	M 8	4.0	30	4.0	233.0
12071.W0246	27.1	18.0	15.7	11.0	46.5	54.5	30	M 8	4.0	30	4.0	323.0
12071.W0254	40.6	23.7	19.1	15.0	54.5	70.5	45	M10	5.0	45	5.0	653.0
12071.W0270	46.1	28.3	23.7	17.0	70.5	86.5	60	M12	5.0	60	5.0	1271.0
12071.W0286	51.2	30.3	25.6	25.0	86.5	102.5	60	M16	5.0	60	5.0	1783.0

Order No.	d <sub>7</sub>	d <sub>8</sub>	h <sub>4</sub>	h <sub>5</sub> -2	h <sub>6</sub>	h <sub>7</sub> +0.5	l <sub>2</sub> ±0.1	Stroke s <sub>1</sub>	t <sub>1</sub>	A/F <sub>1</sub>	A/F <sub>2</sub>	Clamping force kN max.	Torque to Nm max.
12071.W0211	4	M 4	3.5	14.7	2.0	3.5	3.5	1.3	4	3	-	0.5	5
12071.W0214	4	M 4	5.5	19.2	2.5	5.5	4.5	2.3	6	3	5	3.5	5
12071.W0218	5	M 5	7.5	22.7	3.5	7.5	5.5	2.3	7	4	5	4.5	10
12071.W0222	6	M 6	6.0	28.6	3.5	6.0	7.0	2.3	8	5	6	5.0	17
12071.W0226	6	M 6	6.0	28.8	3.5	6.0	7.0	2.3	8	5	6	5.0	17
12071.W0230	6	M 6	7.0	32.2	3.5	7.0	9.0	4.6	8	5	6	5.0	17
12071.W0238	8	M 8	7.5	39.2	4.5	7.5	11.0	4.6	10	6	8	6.5	43
12071.W0246	8	M 8	7.5	39.2	6.5	7.5	11.0	4.6	10	6	8	6.5	43
12071.W0254	10	M10	9.0	54.6	6.5	9.0	15.0	9.2	12	8	10	8.0	79
12071.W0270	12	M12	10.0	63.1	6.5	10.0	17.0	9.2	15	10	12	10.0	141
12071.W0286	16	M16	10.0	72.2	6.5	10.0	25.0	9.2	15	14	17	10.0	354



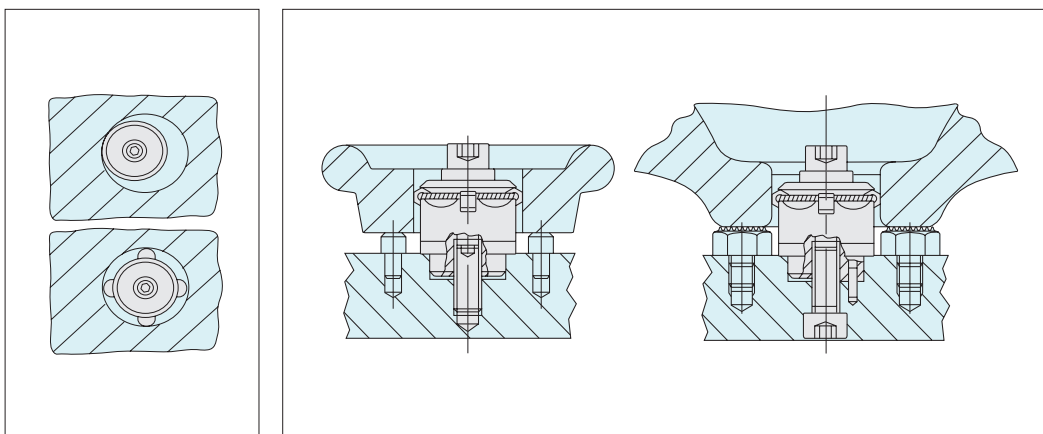
The internal centering clamp provides autocentric chucking inside both round and square holes, at the simple turn of a hexagon screw. Precise self-centering is achieved through the expansion of the ring of balls which, during clamping, are pressed outward across a precision cone. As the outer diameter 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

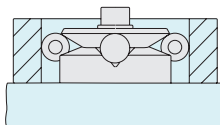
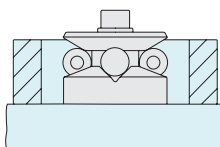
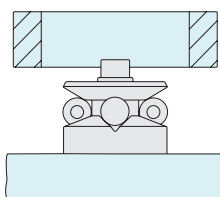
### Manual from above



**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.

