

GN 411.2

Centring bore clamps



Material

Black-oxide hardened steel, blank hardened steel clamping balls and clamping segments.

Standard versions available

- Version **K**: with clamping balls.
- Version **S**: with clamping segments.

Special executions on request

Centring bore clamps GN 411.1 for hydraulic or pneumatic operation.

Features

With Centring bore clamps GN 411.2 workpieces can be centrally positioned and clamped from the inside of the bore.

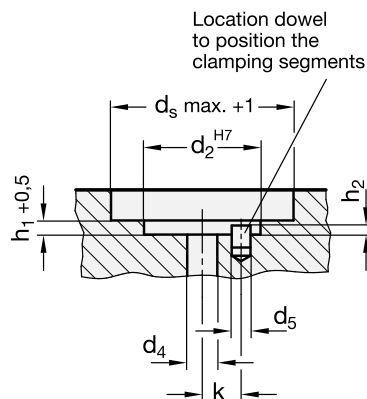
In addition they offer the following advantages:

- Precise self centering
- Repetitive accuracy: ± 2.025
- Accuracy of concentricity: ± 0.025
- Solid and stable clamping through either 3 or 6 contact points on the workpiece
- Clamping of workpieces with uneven or irregular surface (such as castings)
- Distortion free clamping
- Reduced height
- Can be fitted in any position
- Large adjustable clamping range
- Down force clamping

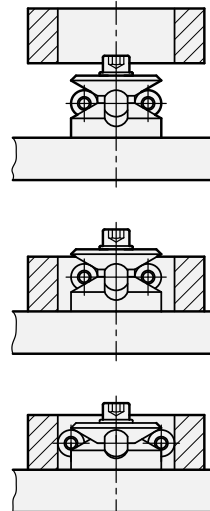
Applications

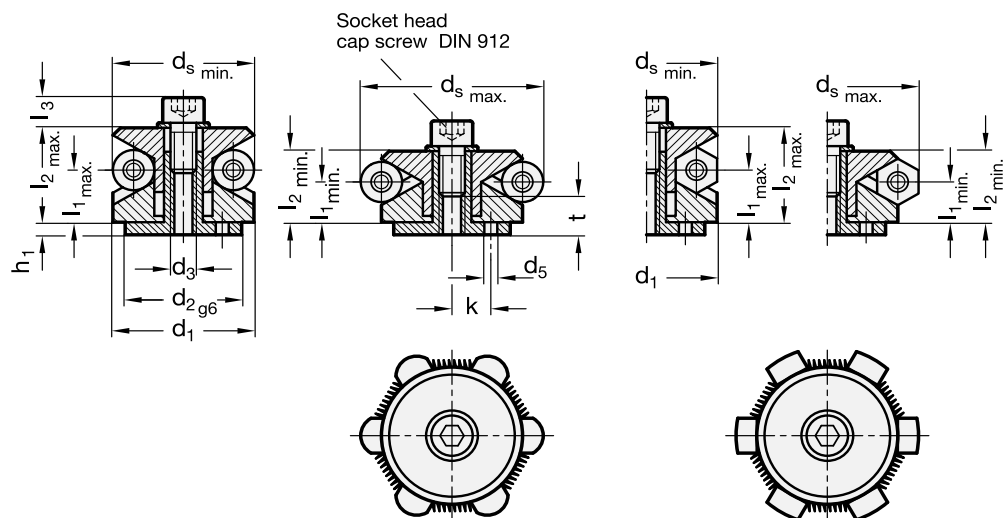
A circular ball cage containing 3 or 6 balls is forced outwards over an accurately guided cone by means of a screw which, through the exerted thrust, will enlarge the outside diameter of the circular ball cage. This in turn will lead to a firm contact between the Centring clamp and the bore of the workpiece. Type K (with balls) is used for clamping applications where minute ball marks at the contact points with the workpiece are acceptable.

Type S (with clamping segments) is used in such cases where marks at the clamping points on the workpiece would not be acceptable.



The recess d_s is only required for clamping very low parts.





Standard Elements	Main dimensions																Clamping force in kN	Clamping points no.	g
	Description	d ₁	d _s min.	d _s max.	d ₂	d ₃	d ₄	d ₅	h ₁	h ₂	k ±0.1	l ₁ min.	l ₁ max.	l ₂ min.	l ₂ max.	l ₃			
GN 411.2-11.7-K	11.7	11.7	14.2	10	M3	3.3	1.5	3.5	2.5	3.5	8.6	9.2	10.5	12	3.5	6	3	0.5	15
GN 411.2-14.5-K	14.5	14.5	18.5	12	M4	4.3	2	5.5	3.5	4.5	7.9	9.1	11.8	14.1	5.6	6	3	3.5	20
GN 411.2-14.5-S	14.5	14.5	18.5	12	M4	4.3	2	5.5	3.5	4.5	7.9	9.1	11.8	14.1	5.6	6	3	3.5	20
GN 411.2-18.5-K	18.5	18.5	22.5	15	M5	5.3	2.5	7.5	3	5.5	10.4	11.6	14.3	16.6	7	10	3	4.5	39
GN 411.2-18.5-S	18.5	18.5	22.5	15	M5	5.3	2.5	7.5	3	5.5	10.4	11.6	14.3	16.6	7	10	3	4.5	39
GN 411.2-22.5-K	22.5	22.5	26.5	15	M6	6.4	3	6	4	7	13.9	15.1	17.8	20.1	9	10	3	5	60
GN 411.2-22.5-S	22.5	22.5	26.5	15	M6	6.4	3	6	4	7	13.9	15.1	17.8	20.1	9	10	3	5	61
GN 411.2-26.5-K	26.5	26.5	30.5	20	M6	6.4	3	6	4.5	7	13.9	15.1	17.8	20.1	9	10	3	5	86
GN 411.2-26.5-S	26.5	26.5	30.5	20	M6	6.4	3	6	4.5	7	13.9	15.1	17.8	20.1	9	10	3	5	87
GN 411.2-30.5-K	30.5	30.5	38.5	25	M6	6.4	4	7	4.5	9	12.8	15.2	19.6	24.2	9.2	12	3	5	125
GN 411.2-30.5-S	30.5	30.5	38.5	25	M6	6.4	4	7	4.5	9	12.8	15.2	19.6	24.2	9.2	12	3	5	127
GN 411.2-38.5-K	38.5	38.5	46.5	30	M8	8.4	4	7.5	4.5	11	15.7	18.1	22.5	27.1	10.5	12	6	6.5	233
GN 411.2-38.5-S	38.5	38.5	46.5	30	M8	8.4	4	7.5	4.5	11	15.7	18.1	22.5	27.1	10.5	13	6	6.5	235
GN 411.2-46.5-K	46.5	46.5	54.5	30	M8	8.4	4	7.5	4.5	11	15.7	18.1	22.5	27.1	10.5	13	6	6.5	323
GN 411.2-46.5-S	46.5	46.5	54.5	30	M8	8.4	4	7.5	4.5	11	15.7	18.1	22.5	27.1	10.5	13	6	6.5	325
GN 411.2-54.5-K	54.5	54.5	70.5	45	M10	10.5	5	9	5.5	15	19	23.7	31.4	40.7	13.5	14	6	8	653
GN 411.2-54.5-S	54.5	54.5	70.5	45	M10	10.5	5	9	5.5	15	19	23.7	31.4	40.7	13.5	14	6	8	660
GN 411.2-70.5-K	70.5	70.5	86.5	60	M12	13	5	10	5.5	17	23.6	28.3	36.3	45.6	16	16	6	10	1271
GN 411.2-70.5-S	70.5	70.5	86.5	60	M12	13	5	10	5.5	17	23.6	28.3	36.3	45.6	16	16	6	10	1280
GN 411.2-86.5-K	86.5	86.5	102.5	60	M12	13	5	10	5.5	17	23.6	28.3	36.3	45.6	16	16	6	10	1783
GN 411.2-86.5-S	86.5	86.5	102.5	60	M12	13	5	10	5.5	17	23.6	28.3	36.3	45.6	16	16	6	10	1792