

No. 6970

Bore clamp, hydraulic, centric

Single-acting, with spring return,
max. operating pressure 350 bar,
min. operating pressure 30 bar.
lateral compensation per clamp ± 0.25 mm.



Order no.	Article no.	Clamping force vertical [kN]	Clamping rim height min. [mm]	Permissible horizontal force [kN]	Radial force of sleeve segments [kN]	dia. K [mm]	L	Weight [g]
63651	6970-09	4	6	1,2	12	8,8-9,7	10	2600
60293	6970-10	4	6	1,2	12	9,8-10,7	10	2600
60301	6970-11	10	8	3,0	30	10,8-11,9	15	2600
60319	6970-12	10	8	3,0	30	12,0-12,9	15	2600
63677	6970-13	10	8	3,0	30	13,0-13,9	15	2600
60418	6970-14	10	8	3,0	30	14,0-14,9	15	2600
60434	6970-15	26	9	7,7	77	15,0-15,9	17	2800
60525	6970-16	26	9	7,7	77	16,0-16,9	17	2800
60426	6970-17	26	9	7,7	77	17,0-17,9	17	2800
63693	6970-18	26	9	7,7	77	18,0-18,9	17	2800
60616	6970-19	26	9	7,7	77	19,0-19,9	17	2800
60715	6970-20	31	10	9,2	92	20,0-20,9	17	2900
60723	6970-21	31	10	9,2	92	21,0-21,9	17	2900
63719	6970-22	31	10	9,2	92	22,0-22,9	17	2900
60731	6970-23	31	10	9,2	92	23,0-23,9	17	2900
60376	6970-24	31	10	9,2	92	24,0-24,9	17	2900
60384	6970-25	31	10	9,2	92	25,0-25,9	17	2900

Design:

The actuating piston is single-acting. Cylinder body, clamping segments and tensioning bolts from hardened steel, gas-nitrided. Four-part clamping segments are externally serrated. A $\varnothing 8$ H7 centring hole located on the underside of the clamping element. Two fastening screws are included in the supply scope. Oil supply via threaded connection or oil channel in the fixture body.

Application:

The hydraulic bore clamp is preferred for use on workpieces with complex external geometries that must be clamped for machining. After the clamping segments are applied to single-attachment clamping holes with low depth, a safe 5-sided processing can be performed without difficulty. Workpieces can be installed or removed automatically with handling devices.

Features:

The tension bolt has the shape of a four-sided pyramid at the coupling point to the clamping sleeve. The clamping sleeve segments have this shape also, thus ensuring contact on the entire surface in every position of the tension bolt. This facilitates a high clamping force and ensures very low wear. Elastic rings hold the clamping segments together and seal them against entry of chips. Depending on the material, the external serration is pressed into the clamping hole with more or less force, thus permitting the required positive fit. The built-in plate springs achieve a maximum pull-down stroke of approx. 0.2 mm.

The tension bolt has a pyramid shape for improved pre-centring of workpieces.

The bore clamp is also the contact surface for the workpiece. The workpiece contact surface is hard-metal coated ($\mu 0.3$), thereby significantly increasing the displacement force.

The eccentric arrangement of the clamping elements is especially suited for clamping workpieces with circumferential contact edge, such as gear and engine housings, oil pans and similar workpieces.

Note:

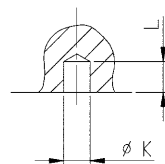
The lateral force when inserting the workpiece must not exceed the „lateral force“ table value. The radial force must be observed.

Please check with us for clamping hardened workpieces or those from GG / GGG.

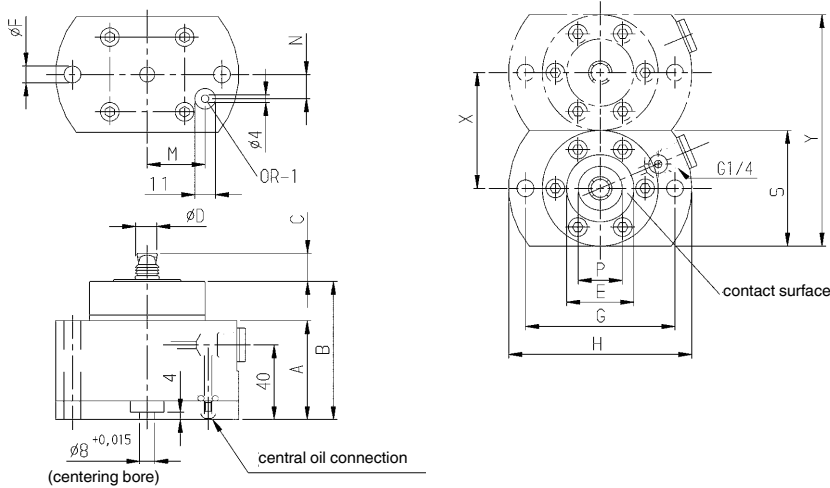
On request:

Bore clamps for other hole diameters available upon request.

Clamping hole in workpiece:



CAD



Dimensions:

Order no.	Article no.	Expansion of sleeve [mm]	Piston dia. [mm]	Vol. [cm ³]	Side load (unclamped) [N]	A	B ±0.01	C	dia. D	E	dia. F	G	H	M	N	P	S	X ±0.5	Y	OR-1 O-ring Order No.
63651	6970-09	1,4	28	0,5	50	53	75	9,5	8,5	36	9	80	98	31	13	15	62	62	124	260448
60293	6970-10	1,4	28	0,5	50	53	75	9,5	9,5	36	9	80	98	31	13	15	62	62	124	260448
60301	6970-11	1,7	32	1,6	150	53	75	14	10,5	36	9	80	98	31	13	19	62	62	124	260448
60319	6970-12	1,7	32	1,6	150	53	75	14	11,5	36	9	80	98	31	13	19	62	62	124	260448
63677	6970-13	1,7	32	1,6	150	53	75	14	12,5	36	9	80	98	31	13	19	62	62	124	260448
60418	6970-14	1,7	32	1,6	150	53	75	14	13,5	36	9	80	98	31	13	19	62	62	124	260448
60434	6970-15	1,7	40	3,8	200	53	75	16	14,5	36	13	90	115	35	15	24	62	62	124	260448
60525	6970-16	1,7	40	3,8	200	53	75	16	15,5	36	13	90	115	35	15	24	62	62	124	260448
60426	6970-17	1,7	40	3,8	200	53	75	16	16,5	36	13	90	115	35	15	24	62	62	124	260448
63693	6970-18	1,7	40	3,8	200	53	75	16	17,5	36	13	90	115	35	15	24	62	62	124	260448
60616	6970-19	1,7	40	3,8	200	53	75	16	18,5	36	13	90	115	35	15	24	62	62	124	260448
60715	6970-20	1,7	42	4,4	300	53	75	16	19,5	36	13	90	115	35	15	28	62	62	124	260448
60723	6970-21	1,7	42	4,4	300	53	75	16	20,5	36	13	90	115	35	15	28	62	62	124	260448
63719	6970-22	1,7	42	4,4	300	53	75	16	21,5	36	13	90	115	35	15	28	62	62	124	260448
60731	6970-23	1,7	42	4,4	300	53	75	16	22,5	62	13	90	115	35	15	32	62	62	124	260448
60376	6970-24	1,7	42	4,4	300	53	75	16	23,5	62	13	90	115	35	15	32	62	62	124	260448
60384	6970-25	1,7	42	4,4	300	53	75	16	24,5	62	13	90	115	35	15	32	62	62	124	260448



Subject to technical alterations.