

No. 6970D

Bore clamp, hydraulic, eccentric

double acting,
max. operating pressure 250 bar,
min. operating pressure 40 bar.
Lateral compensation per clamp $\pm 0,25$ mm.



| Order no. | Article no. | Clamping force vertical [kN] | Clamping rim height min. for Al-alloy [mm] | dia. K [mm] | L | Weight [g] |
|-----------|--------------|------------------------------|--|-------------|----|------------|
| 323410 | 6970D-06-60 | 5,0 | 7 | 5,9 - 6,3 | 9 | 1000 |
| 324384 | 6970D-065-60 | 5,0 | 7 | 6,4 - 6,8 | 9 | 1000 |
| 323436 | 6970D-07-60 | 5,0 | 7 | 6,9 - 7,3 | 9 | 1000 |
| 324400 | 6970D-075-60 | 5,0 | 7 | 7,4 - 7,8 | 9 | 1000 |
| 323444 | 6970D-08-60 | 5,0 | 8 | 7,9 - 8,3 | 9 | 1000 |
| 324392 | 6970D-085-60 | 5,0 | 8 | 8,4 - 8,8 | 10 | 1000 |
| 323469 | 6970D-09-60 | 5,0 | 8 | 8,9 - 9,8 | 10 | 1000 |
| 323485 | 6970D-10-60 | 5,0 | 8 | 9,9 - 10,8 | 10 | 1000 |

Design:

The actuating piston is double-acting. Cylinder body, clamping segments and tensioning bolts are from hardened steel, gas-nitrided. Two-part clamping segments are externally serrated. A $\text{Ø } 8 \text{ H7}$ centring hole located on the underside for positioning the clamping elements. Supply scope includes three fastening screws. Oil supply via oil channel in 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 engage into clamping holes attached on one side with low depth, reliable 5-sided machining does not present a problem. Workpieces can be installed or removed automatically with handling devices.

Features:

Two clamping segments are spread in parallel, thus ensuring contact on the entire surface in every position of the tension bolt. This facilitates a high clamping power 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 max. pull-down stroke of approx. 0.2 mm during clamping.

The integrated air connection is used for cleaning the clamping control. With a suction volume flow meter, the volume flow is measured in the unclamped and clamped state of the workpiece. The difference is used for clamping control. The max. operating pressure should not exceed 6 bar here.

The holding bolts are sword-shaped for better pre-centring of the workpieces. The complete clamping-segment / tension bolt unit can be turned so that an optimal force flow towards the workpiece centre can be set and locked. By setting the clamping elements, overloading of the clamping hole (spreading force) with low clamping rim is avoided.

The drill clamp is simultaneously a contact surface for the workpiece. The workpiece contact surface is hard-metal coated ($\mu 0,3$), which markedly increases 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:

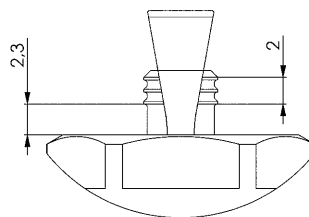
The lateral force when inserting the workpiece must not exceed the „lateral force“ table value. The radial force must be observed.

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

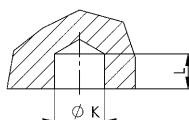
On request:

Drill clamps for other hole diameters available upon request.

A blow-out for cleaning the support or support control (pressure query) for blind holes is available on request.



Clamping hole in workpiece:



CAD

Subject to technical alterations.

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|-----------|-------------|------------------------------|--|-------------|----|------------|
| 323501 | 6970D-11-60 | 9,5 | 9 | 10,9 - 11,8 | 11 | 2000 |
| 323527 | 6970D-12-60 | 9,5 | 9 | 11,9 - 12,8 | 11 | 2000 |
| 323543 | 6970D-13-60 | 9,5 | 9 | 12,9 - 13,8 | 11 | 2000 |
| 323568 | 6970D-14-60 | 9,5 | 10 | 13,9 - 14,8 | 11 | 2100 |
| 323584 | 6970D-15-60 | 9,5 | 10 | 14,9 - 15,8 | 11 | 2100 |
| 323600 | 6970D-16-60 | 9,5 | 10 | 15,9 - 16,8 | 11 | 2100 |

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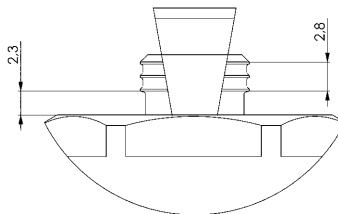
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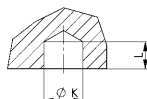
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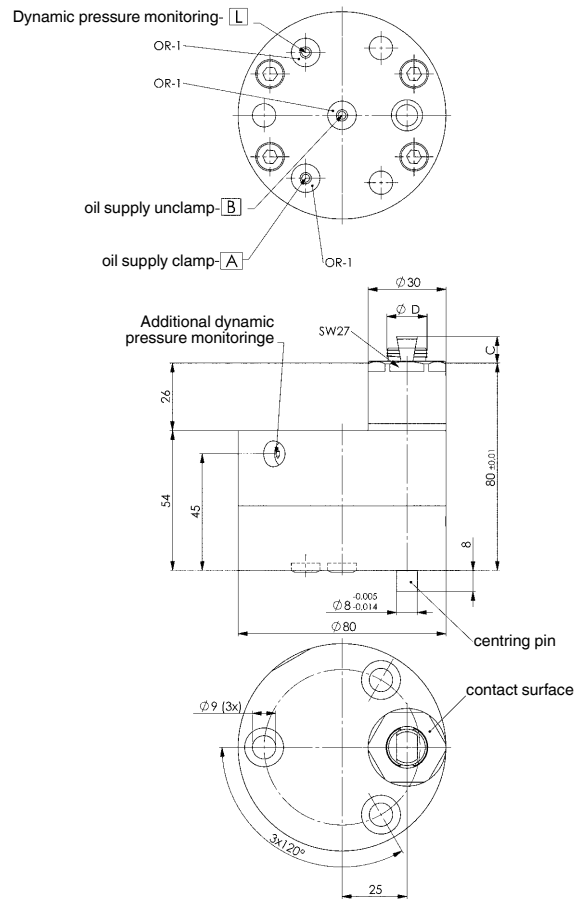
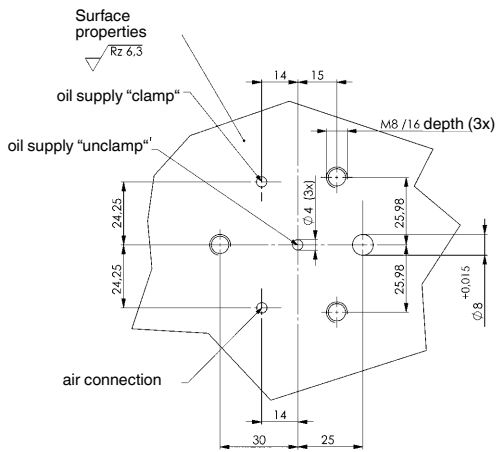
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Clamping hole in workpiece:



Drilling template device:



Dimensions:

| Order no. | Article no. | Permissible horizontal force [kN] | Radial force of sleeve segments [kN] | Expansion of sleeve [mm] | Clamping piston diameter [mm] | Vol. Sp [cm ³] | Vol. Lo [cm ³] | Side load (unclamped) [N] | C | dia. D | OR-1 O-ring Order No. |
|-----------|-------------|-----------------------------------|--------------------------------------|--------------------------|-------------------------------|----------------------------|----------------------------|---------------------------|------|--------|-----------------------|
| 323501 | 6970D-11-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 100 | 10,5 | 10,6 | 260448 |
| 323527 | 6970D-12-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 110 | 10,5 | 11,6 | 260448 |
| 323543 | 6970D-13-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 130 | 10,5 | 12,6 | 260448 |
| 323568 | 6970D-14-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 160 | 10,5 | 13,6 | 260448 |
| 323584 | 6970D-15-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 200 | 10,5 | 14,6 | 260448 |
| 323600 | 6970D-16-60 | 2,8 | 27 | 1,5 | 22 | 1,7 | 0,5 | 250 | 10,5 | 15,6 | 260448 |



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