ROEMHELD
HILMA ▪ STARK

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information

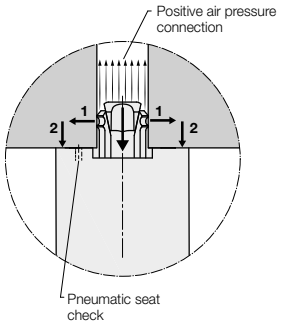
Power Workholding - S026

Bore Clamps

eccentric design, seat check + clamping and unclamping monitoring, for bore holes Ø 8 – 12 mm, double acting, max. operating pressure 120 bar

Advantages

- Axial clamping in simple smooth bore holes
- Machining from 5 sides is possible
- Compact eccentric design for limited space
- Different support heights
- Hardened support height
- Easy exchange of clamping bushings and clamping bolt
- Corrosion-protected components
- 3 pneumatic monitoring functions can be connected
- Integrated positive air pressure function
- Hydraulic and pneumatic supply via drilled channels
- Integrated bleeding screws
- Mounting position: any

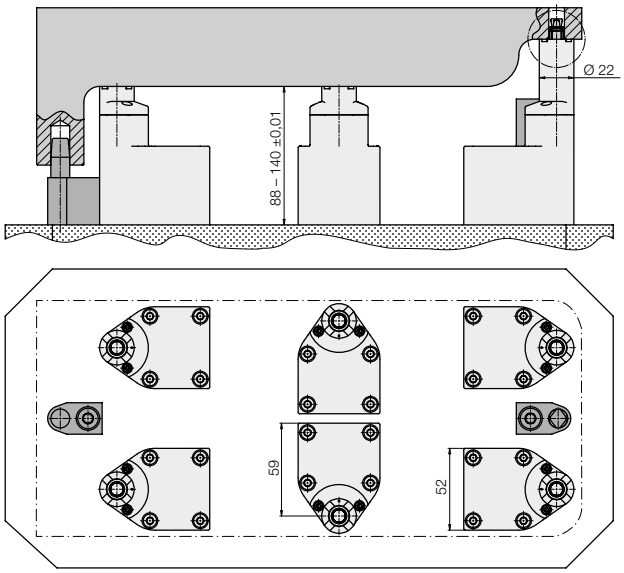


Application

The hydraulically-operated bore clamp is particularly suitable for clamping in workpieces with smooth bore holes in the support surface ranging from 8 to 12 mm in diameter.
The workpiece is put directly onto the hardened surface of the bore clamp and will not be deformed during clamping.
Since clamping is effected within the bore, the remaining surfaces are free for machining on 5 sides.

Description

In the body of the bore clamp a double-acting hydraulic cylinder is mounted.
The piston operates a tie rod that is eccentrically arranged at the edge of the housing in which the clamping bolt is safely engaged.
After unclamping the workpiece support, the clamping bolts and the clamping bushing can be very quickly replaced. The bore clamp can remain on the fixture and no hydraulic oil can escape.



Important notes!

The bore clamp has no centring function. To insert and position the workpiece, suitable stops or centring bolts must be provided.
These also have to absorb the occurring side loads during machining.
Required positioning accuracy ± 0.4 mm.
The penetration depth for the form-fit toothing depends on the strength of the material. Thus, hardened, highly-tempered but also too soft materials cannot be used.
The tapering of the bore hole should not exceed 3°. In case of doubt we recommend a clamping test.
If swarf or liquids penetrate into an open clamping bore, blast air must be continuously switched on.

Pneumatic monitoring functions

The workpiece is correctly clamped, if

- the seat check responds,
- the clamping monitoring responds and
- the hydraulic operating pressure is available.

Noticeable errors:

- Workpiece is not unclamped
- Workpiece is not placed correctly
- Bore hole too large for clamping bushing
- Conical bore hole
- Bore out of tolerance
- Workpiece material too hard or too soft
- Clamping bushing worn or defective
- No hydraulic pressure

Positive air pressure connection

A separate connection for positive air pressure protection is not required since the exhaust air of the clamping and unclamping monitoring is used for this purpose

Clamping principle

The workpiece shall be firmly hold in a smooth bore hole and pulled onto the hardened support surface with the highest possible force.
This is only possible if there can be a form-fit connection between the clamping bushing and the bore hole wall.
Therefore, the drill bushing has two circumferential points on the outer diameter similar to a thread. The points are hardened so that they can penetrate into the softer material of the workpiece.

Function

1. After pressurising, the clamping bolt will be retracted. The four-part clamping bushing will be expanded and the points penetrate into the bore hole wall.
2. With the penetration of the points increases the hydraulic pressure and thus the pulling and clamping force.

Subject to modifications