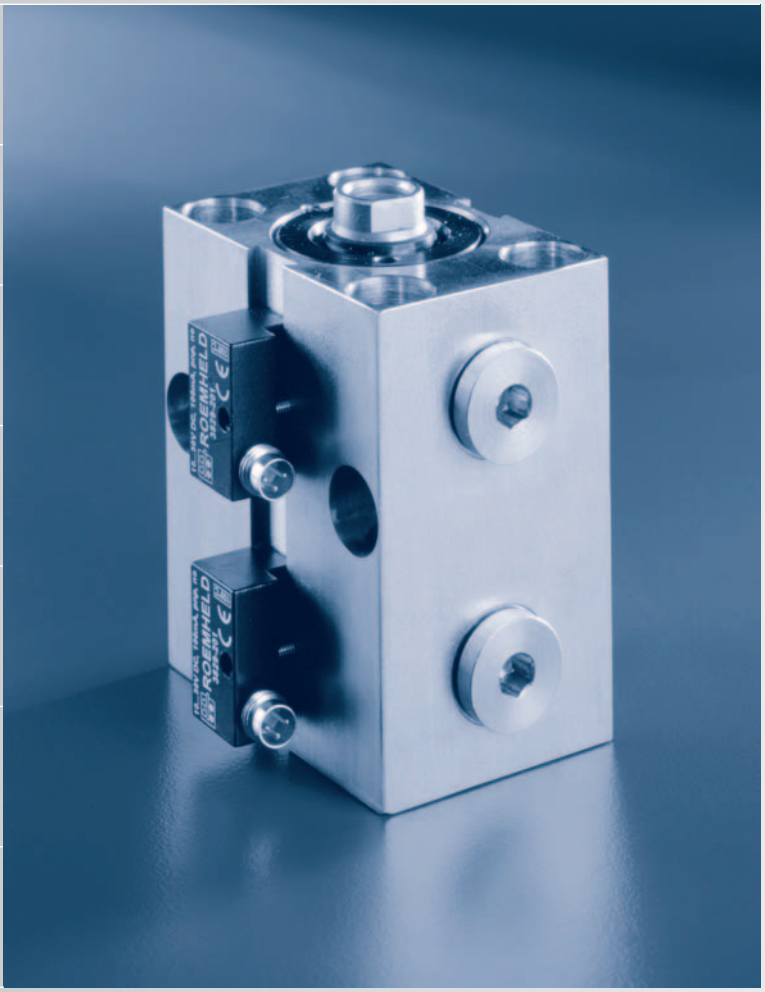
ROEMHELD

Program summary

BLOCK CYLINDERS

- up to operating pressures of 500 bar
- single and double acting
- steel, aluminium and bronze bodies
- piston diameters from 16 to 200 mm
- strokes from 8 to 1,200 mm
- position monitoring stroke end control
- stroke end cushioning anti-torsion device



Program summary BLOCK CYLINDERS

Max. operating pressure	500 bar				
Position monitoring	**without**			**with**	
Version	Standard	Piston rod with external thread	Pull-type cylinder	Stroke end control	Stroke end control/ Stroke end cushioning
					
Data sheet	**B 1.509**	**B 1.542**	**B 1.570**	**B 1.520**	**B 1.530**
Functioning	double and single acting	double acting	single acting	double acting	double acting
Body material	steel	steel	steel	steel	steel
Force to push at max. pressure	10…1,570 kN	24.5…156 kN	10…392 kN	10…392 kN	24…392 kN
Piston diameter	16…200 mm	25…63 mm	16…100 mm	16…100 mm	25…100 mm
Stroke	16…200 mm	50…63 mm	8…12 mm	16…100 mm	25…100 mm
Max. stroke speed	0.25 m/s	0.5 m/s	0.25 m/s	0.25 m/s	0.25 m/s
Hydraulic connection	pipe thread drilled channels	pipe thread drilled channels	pipe thread drilled channels	pipe thread drilled channels	pipe thread drilled channels
Stroke end cushioning	-	-	-	-	● (adjustable)
Anti-torsion device	-	-	-	-	-
External thread at the piston rod	❑	●	❑	❑	❑
Keyway in the body	■	■	■	■	■
Seals and max. operating temperature	NBR: +100°C FKM: +150°C	NBR: +100°C FKM: +150°C	NBR: +100°C FKM: +150°C	FKM: +150°C	NBR: +100°C FKM: +150°C
Stainless steel version	-	-	-	-	-
Accessories **Stroke end control and Position monitoring** • Sensors • Type • Adjustability of switching points • max. operating temperature	-	-	-	stroke end control • proximity sensors • inductive, pressure resistant • up to max. 5 mm before stroke end • +80°C or +120°C	stroke end control • proximity sensors • inductive, pressure resistant • up to max. 5 mm before stroke end • +80°C or +120°C

Legend: ● **Series production** ■ **Standard variant** **- not available** ❍ **Option** ❑ **Special version**

500 bar			350 bar		250 bar
with		without	with		with
with extended piston rod	for adjustable magnetic sensors	Built-in elements	for adjustable magnetic sensors	Polygonal piston rod	Hydraulic block cylinders
					
B 1.552	B 1.553	B 1.5401	B 1.554	B 1.560	B 1.590
double acting	double acting	double acting	double acting	double acting	double acting
steel	bronze	without	aluminium	aluminium	steel
24.5…156 kN	24.5…156 kN	10…392 kN	17.1…109 kN	28.1…68.7 kN	12.3…126 kN
25…63 mm	25…63 mm	16…100 mm	25…63 mm	32…50 mm	25…80 mm
20…50 mm	20…100 mm	16…100 mm	20…100 mm	25…100 mm	70…1,200 mm (continuous)
0.25 m/s	0.25 m/s	0.25 m/s	0.25 m/s	0.25 m/s	0.5 m/s
pipe thread drilled channels	pipe thread drilled channels	- -	pipe thread drilled channels	pipe thread -	pipe thread drilled channels
-	-	-	-	-	● (adjustable)
-	-	-	-	●	-
❑	❑	❑	❑	-	●
■	■	-	■	■	●
FKM: +150°C	NBR: +100°C FKM: +150°C	NBR: +100°C FKM: +150°C	NBR: +100°C FKM: +150°C	NBR: +100°C	FKM: +150°C
-	❍	-	❍	-	-
position monitoring • proximity sensors • inductive • complete stroke • +70°C or +120°C	position monitoring • magnetic sensors • complete stroke • +100°C	-	position monitoring • magnetic sensors • complete stroke • +100°C	position monitoring • magnetic sensors • complete stroke • +100°C	stroke end control • proximity sensors • inductive, pressure resistant • up to max. 5 mm before stroke end • +80°C or +120°C

Cylinder body materials

High alloy steel, bronze alloy and special aluminium alloys.

Piston materials

Case-hardening steel, hardened
Exceptions:
- B 1.542: high alloy steel, nitrated
- B 1.590: high alloy steel, chromium-plated

Block cylinders with aluminium or bronze bodies are alternatively also equipped with pistons made of stainless steel.

Sealing materials

- NBR = nitrile-butadiene rubber
  Trade name e.g.: Perbunan
  Operating temperature: -30 up to +100°C
- FKM = fluor caoutchouc
  Trade name e.g.: VITON®
  Operating temperature: -20 up to +150°C

Mounting position

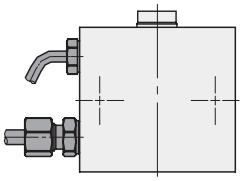
All block cylinders can be installed in any position.

Fittings

Fittings suitable for the Whitworth G tube thread correspond to DIN 2353, screwed plug type B according to DIN 3852 sheet 2 (with sealing edge or soft seal). For block cylinders with aluminium or bronze housing only fittings with soft seal (elastic seals) must be used.
Important! No additional sealing materials, such as Teflon ribbon, must be used!

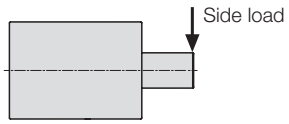
Venting of the spring area of single-acting block cylinders

If there is a possibility that aggressive cutting lubricants and coolants penetrate through the sintered metal air filter into the cylinder's interior, a vent hose has to be connected and be placed in a protected position.
For further notes and provisions see data sheet A 0.100.



Admissible side loads

Side loads stress the guides for the piston and piston rod of the cylinder and thereby cause a reduction in working life and leakages leading to the destruction of the cylinder.
For this reason, side loads should be avoided - especially with single-acting cylinders.
Under no circumstances must the cylinder side load exceed 3% of the cylinder force at maximum operating pressure (up to stroke of 50 mm). In the case of longer strokes please contact us.

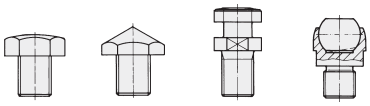


Leakage rate

ROEMHELD block cylinders do not leak oil when static. When displacing the piston a sealing with minimum leakage is obtained by the double piston sealing. For the life of the sealing dry operation has to be avoided, so that a residual lubricating film will be tolerated. Admissible guide values for 1000 double strokes and hydraulic oil HLP 22 are:
- up to 32 mm piston diameter: < 0.30 cm^3
- from 40 mm piston diameter: < 0.60 cm^3

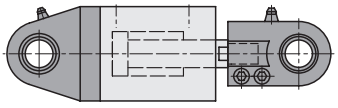
Accessory - Contact bolts

As accessory different contact bolts and coupling pins are available. See data sheet G 3.800



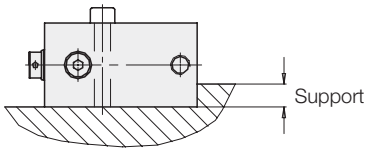
Accessory - Spherical bearing

As accessory for block cylinders with an external thread at the piston rod (data sheet B 1.542) spherical bearings are available. Bearing blocks are available for fixing at the cylinder bottom. Rod end bearings can be screwed and fixed onto the piston rod.



Mounting

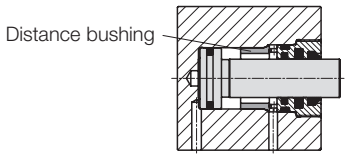
In principle, screws of tensile strength 8.8 can be used to secure the block cylinders.
If block cylinders are fastened with screws across the cylinder axis, they must be supported above a specific operating pressure.
Block cylinders: from 160 / 250 bar
Hydraulic block cylinders: from 100 / 160 bar
(Use as push cylinder / pull cylinder)



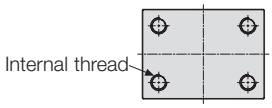
The support only has to be a few millimetres high.

Standard variants

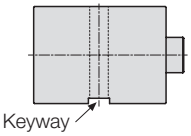
- **Stroke reduction by a bushing**
  A distance bushing is inserted on the piston rod side in the block cylinder with the next largest stroke and fastened inside the housing. That means the piston can no longer complete the extending stroke and the stroke is restricted by this internal stop, dependent on the length of the bushing.



- **Internal thread**
  For mounting of the block cylinders internal threads can be provided instead of the through holes, optionally at the piston rod side or the bottom side.



- **Keyway**
  As an alternative to a support, hydraulic block cylinders can be fitted in the housing with a keyway, which transfers the cylinder forces to the baseplate surface via a key.



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