

Pneumatic cylinder

Type KR - B

double-acting

Linear Ball Cylinder
Ø 12 mm



This novel compact round cylinder is equipped with a precise ball row guide which is stressable on all sides. Its round design with continuous external thread M30x1.5 and the air ports on one side allow a quite simple and space-saving mounting. The counter nuts that are included in the supply allow exact and adjustable positioning. Two integrated sensor grooves ensure secure detection of the piston position by means of limit switches. The cylinders type KR are provided with threaded and fitting holes at the front side for tool attachment. The aluminium parts have a wear resisting hartcoat coating.

Technical Data:

Type	KR – 12/20 B
Design type	Pneumatic cylinder with linear ball guide
Stroke length [mm]	20
Fitting position	any
Adm. temperature range [°C]	-10 to +70
Medium	Filtered, oiled or non-oiled compressed-air (min. fineness 40µm)
Compressed-air supply	Front
Compressed-air [bar]	min. 2 ... max. 6
Materials	Sleeve, guide, plate, carriage, mounting plate: Al (hartcoat coating) Guides: 100 CR 6, piston rod: Ck 45 SL f7 Piston: Ms 58 Seals: NBR
Weights [gramme]	220

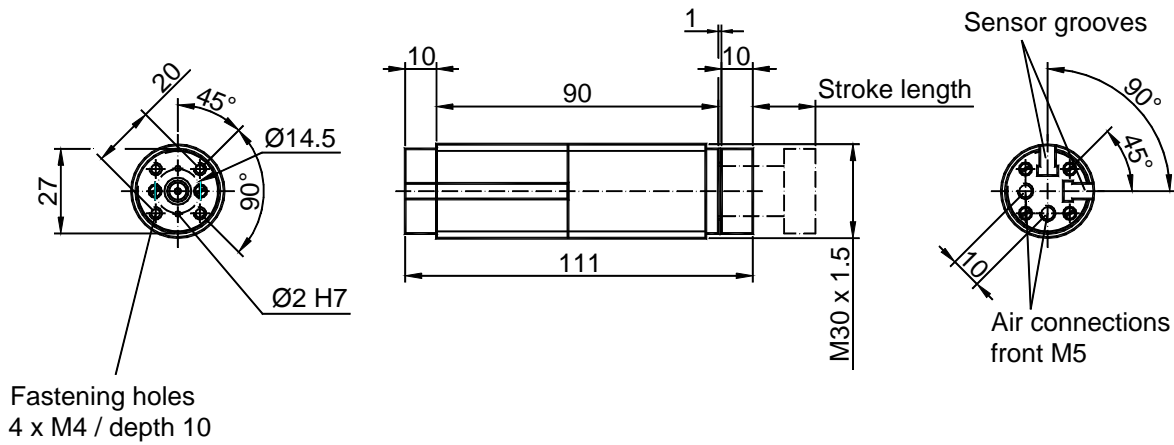
Delivery time on request

Pneumatic cylinder

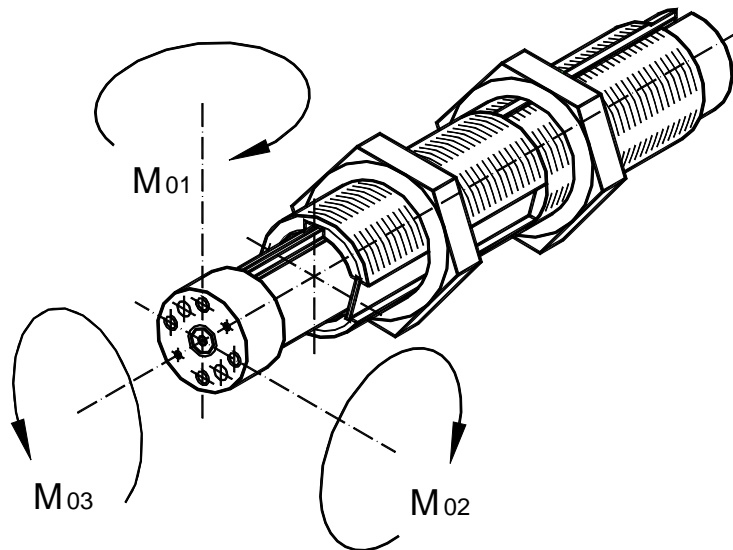


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Dimensions:



Admissible stress



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Admissible stress

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Longitudinal torque	Lateral torque	Transverse torque
$F_{01} \leq \frac{M_{01 \text{ zul.}}}{L_1 + A}$	$F_{02} \leq \frac{M_{02 \text{ zul.}}}{L_2 + A}$	$F_{03} \leq \frac{M_{03 \text{ zul.}}}{L_3 + B}$
$F_{01} \leq \frac{M_{01 \text{ zul.}}}{L_1 + C}$	$F_{02} \leq \frac{M_{02 \text{ zul.}}}{L_2 + B}$	$F_{03} \leq \frac{M_{03 \text{ zul.}}}{L_3 + C}$

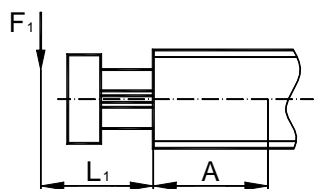
Admissible stress

Stroke length [mm]	20	
Ø / Type	M1/M2 Nm	M3 Nm
12 - B, KR	1,0	0,6

Correction factors:

Ø / Type	Stroke length [mm]	A [mm]	B [mm]	C [mm]
12 - B, KR	20	28,5	9	13,5

Example of calculation:



Stress - longitudinal torque M_1

Given qty: 12 - B, KR with a stroke length of 20 mm
 Lever arm $L_1 = 40 \text{ mm} = 0,04 \text{ m}$
 Longitudinal torque $M_1 = 1,0 \text{ Nm}$
 Correction factor $A = 28,5 \text{ mm} = 0,0285 \text{ m}$

$$\text{Required qty: } F_1 \leq \frac{M_1}{L_1 + A} = \frac{1,0 \text{ Nm}}{0,04 \text{ m} + 0,0285 \text{ m}} = 14,5 \text{ N}$$

All data based on tests conducted by Toss.