

Pneumatic cylinder

TOSS[®]

Type B, EW

single-acting

Linear Ball Slide

Ø 10/16/20

25/32/40 mm



The cylinder type B is provided with a single compressed-air supply for the forward stroke at the front or the side of the mounting plate. The reverse stroke for initial position is effected by a reset spring.

Technical data:

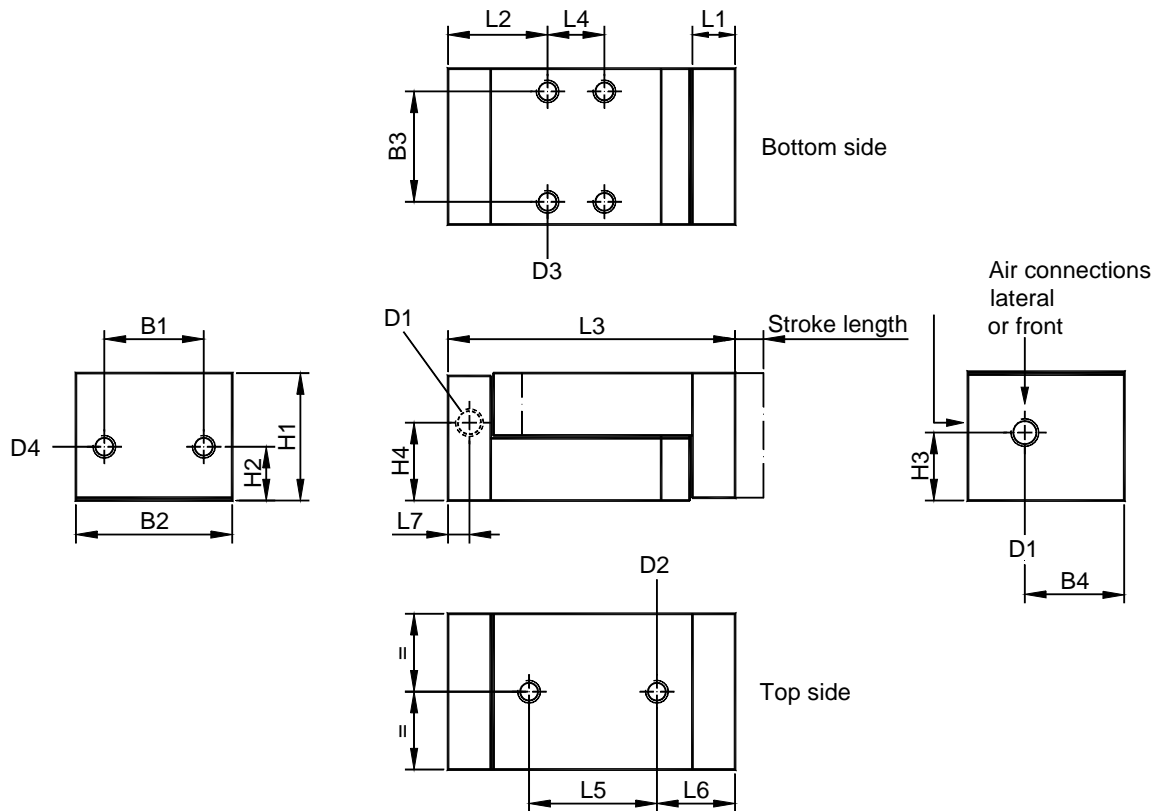
Type	10 - B, EW	16 - B, EW	20 - B, EW	25 - B, EW	32 - B, EW	40 - B, EW
Design type	Pneumatic cylinder with linear ball guide, single-acting with reset spring					
Stroke length [mm]	10					
Fitting position	any					
Adm. temperature range [°C]	-10 to +70					
Medium	Filtered, oiled or non-oiled compressed-air (min. fineness 40 µm)					
Compressed-air supply	Front or lateral					
Compressed-air [bar]	min. 4 ... max. 6					
Materials	Base body, upper part, mounting plate, cover, piston plate: Al Guides: 100 CR 6, piston rod: Ck 45 SL f7 Piston: NBR Seals: NBR, cylinder barrel: Ms 63 Pressure spring: spring steel wire (stainless)					

Weights: (gramme)

Stroke length [mm]	Piston - Ø [mm]					
	10	16	20	25	32	40
10	200	275	335	650	850	1350

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Dimensions:

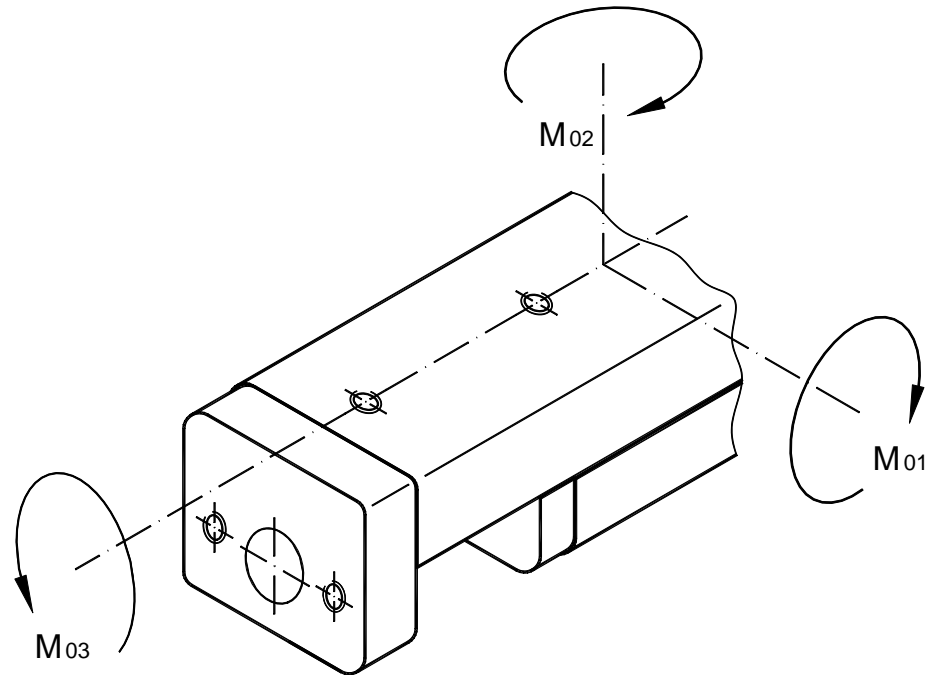
Piston ∅ [mm]	Piston rod ∅ [mm]	B1 [mm]	B2 [mm]	B3 [mm]	B4 [mm]	D1	D2/depth [mm]	D3/depth [mm]	D4/depth [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L1 [mm]	L2 [mm]	L7 [mm]
10	5	26	35	25	21	M5	M6/5,5	M5/10	M6/11,5	26	10,5	14	14,5	12	27	6
16	8	30	40	30	25,5	M5	M6/5,5	M6/11	M6/11,5	32	12,0	15,5	18,5	12	27	6
20	8	30	40	30	24,5	M5	M6/8,0	M6/14	M6/11,5	39,5	15,5	20	8,3	12	22	6
25	10	35	55	39	34,75	G1/8	M8/7,5	M8/16	M8/10,5	45	19,0	24	28	15	35	7,5
32	12	45	65	49	40,5	G1/8	M8/7,5	M8/18	M8/10,5	50	20,0	28,3	31,3	15	35	7,5
40	15	50	70	54	44,5	G1/4	M8/10,5	M8/18	M8/10,5	65	27,0	36,5	40,5	20	40	10

Stroke length [mm]	Piston - ∅ [mm]				
	10 / 16	20	25 / 32	40	
10	L3	80	80	101	116
	L4	15	25	20	25
	L5	31	31	45	50
	L6	24,0	24,0	27,5	32,5

Admissible stress

Pneumatic cylinder

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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

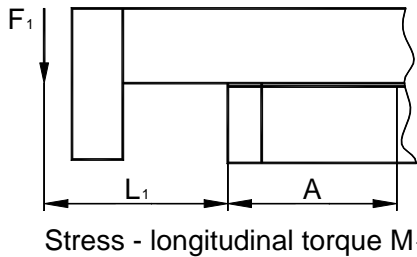
Pneumatic cylinder

Stroke length [mm]	10	
Ø / Type	M1/M2 Nm	M3 Nm
10 - B, EW	1,37	1,04
16 - B, EW	1,52	1,15
20 - B, EW	1,67	1,27
25 - B, EW	3,32	2,65
32 - B, EW	4,60	3,87
40 - B, EW	5,06	4,42

Correction factors:

Ø / Type	Stroke length [mm]	A [mm]	B [mm]	C [mm]
10 - B, EW	10	40,6	17,25	10,4
16 - B, EW	10	40,6	19,75	11,5
20 - B, EW	10	40,6	19,75	13,6
25 - B, EW	10	49,2	27,25	16,0
32 - B, EW	10	49,7	32,25	17,7
40 - B, EW	10	49,7	34,75	20,8

Example of calculation:



Given qty: 25 - B, EW with a stroke length of 10 mm
 Lever arm $L_1 = 40 \text{ mm} = 0,04 \text{ m}$
 Longitudinal torque $M_1 = 3,32 \text{ Nm}$
 Correction factor $A = 49,2 \text{ mm} = 0,0492 \text{ m}$

$$\text{Required qty: } F_1 \leq \frac{M_1}{L_1 + A} = \frac{3,32 \text{ Nm}}{0,04 \text{ m} + 0,0492 \text{ m}} = 37,2 \text{ N}$$

Cylinder data view: (effective surfaces, theoretical forces)

Cylinder - Ø [mm]	Piston rod - Ø [mm]	Piston surface - A [cm ²]	Impact force 6 bar [N]	Return force of spring at stroke 10 [N]
10	5	0,8	30	19
16	8	2,0	90	30
20	8	3,1	140	47
25	10	4,9	240	56
32	12	8,0	415	65
40	15	12,3	680	75