

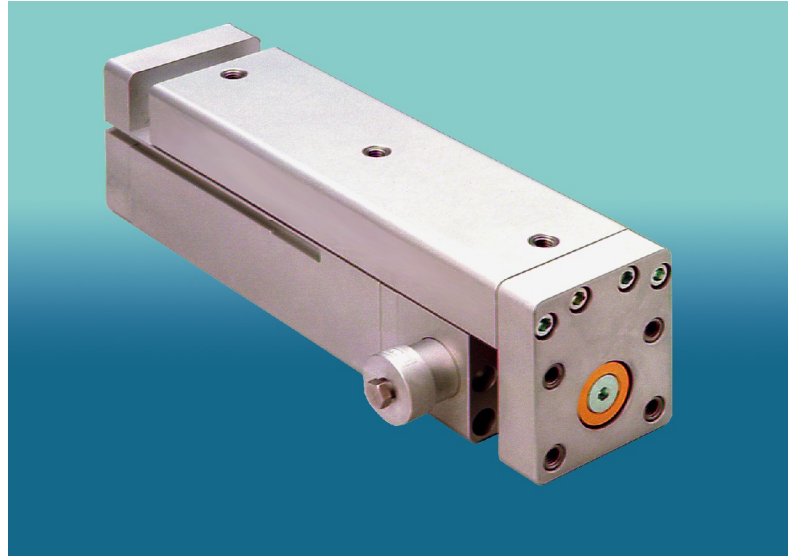
Pneumatic cylinder

TOSS[®]

Type C

Double-acting

∅ 40 mm
with clamping cartridge



The clamping cartridge offers secure holding and releasing of the carriage in any required position.

Technical data: Cylinder

Type	40 - C, KP (R or L)
Design type	Pneumatic cylinder with recirculating ball guide
Stroke length [mm]	25, 50, 80, 100, 125, 160, 200
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, lateral or combi-type
Compressed-air [bar]	min. 2 ... 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

Clamping cartridge

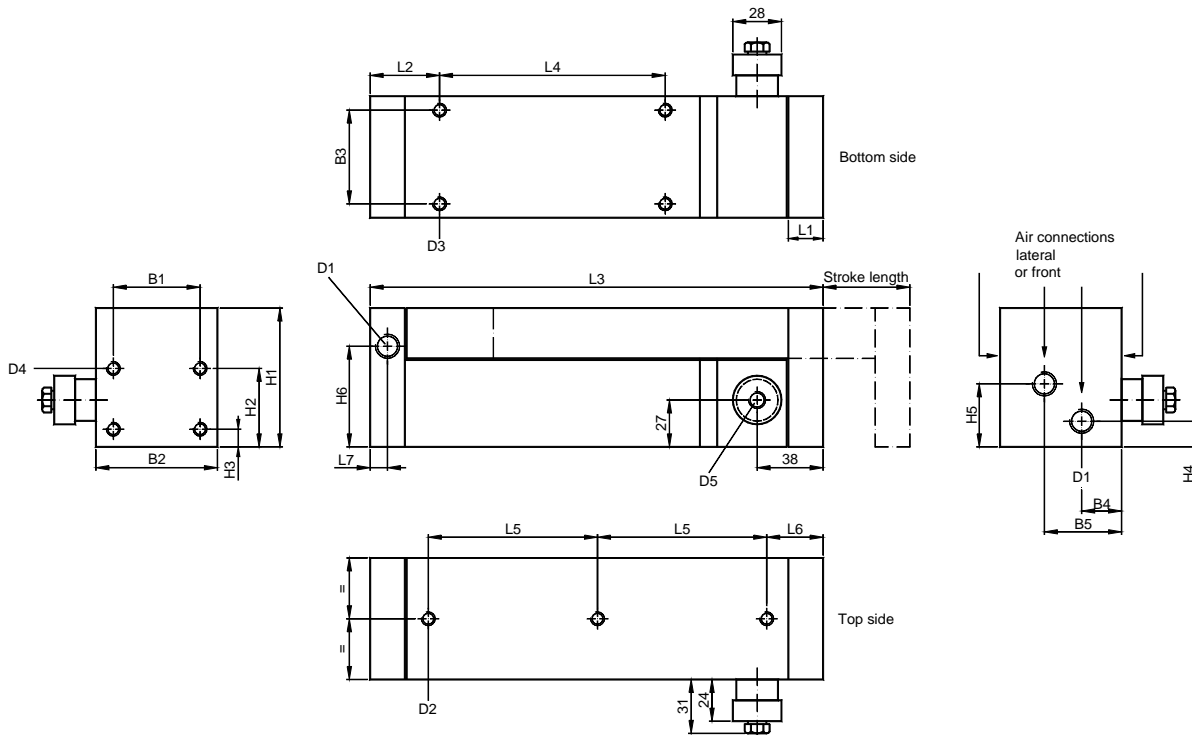
Mounting	Right or left
Static holding force [N]	1000
Working pressure [bar]	4 to 8
Materials	Sleeve, cap: Al, cylinder barrel: Ms 63 Piston: POM, clamping jaws: Ms 58 Seal: NBR, pressure springs: spring steel wire

Delivery time on request

Pneumatic cylinder



Type C, KP



Dimensions:

Piston ∅ [mm]	Piston rod ∅ [mm]	B1 [mm]	B2 [mm]	B3 [mm]	B4 [mm]	B5 [mm]	D1	D2/depth [mm]	D3/depth [mm]	D4/depth [mm]	D5	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]
40	16	50	70	54	22	44,5	G1/4	M8/7,5	M8/18	M8/10,5	G1/8	80	45,2	10,2	14	36,5

Piston - ∅ [mm]		Stroke length [mm]					
		25 / 50	80	100	125	160	200
40	H6	58,5	58,5	58,5	58,5	58,5	58,5
	L1	20	20	20	20	20	20
	L2	40	40	40	40	40	40
	L3	261	296	336	391	461	551
	L4	130	2 x 82,5	2 x 102,5	2 x 130	2 x 165	3 x 140
	L5	2 x 97,5	2 x 115	3 x 90	3 x 105	3 x 130	4 x 120
	L6	32,5	32,5	32,5	37,5	35	35
L7	10	10	10	10	10	10	

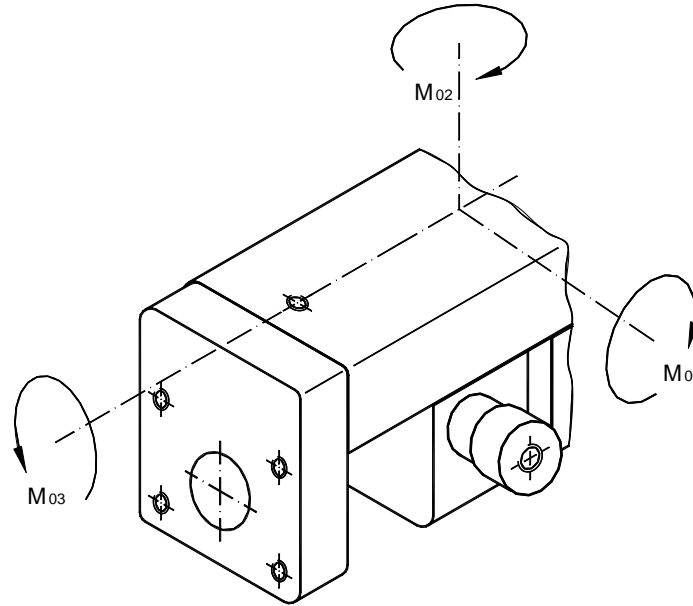
Weights: (gramme)

Piston - ∅ [mm]	Stroke length [mm]					
	25 / 50	80	100	125	160	200
40	3780					

Pneumatic cylinder

Admissible stress

Type C, KP



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

Pneumatic cylinder

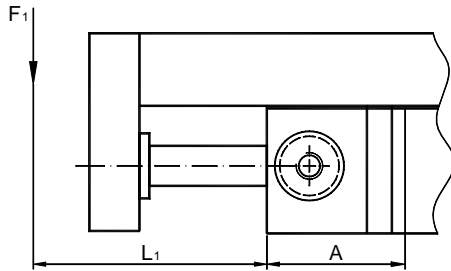
Admissible stress

Stroke length [mm]	25 / 50		80		100		125		160		200	
∅ / Type	M1/M2 Nm	M3 Nm	M1/M2 Nm	M3 Nm	M1/M2 Nm	M3 Nm	M1/M2 Nm	M3 Nm	M1/M2 Nm	M3 Nm	M1/M2 Nm	M3 Nm
40 - C, KP	8,4	5,0	9,0	5,5	11,2	7,5	14,4	10,5	17,6	9,5	22,3	9,5

Correction factors:

∅ / Type	Stroke length	A	B	C
	[mm]	[mm]	[mm]	[mm]
40 - C, KP	25 / 50	129,5	34,71	21,8
	80	132,0		
	100	142,0		
	125	157,0		
	160	160,5		
	200	185,5		

Example of calculation:



Stress - longitudinal torque M_1

Given qty: 40 - C, KP with a stroke length of 160 mm
 Lever arm $L_1 = 45 \text{ mm} = 0,045 \text{ m}$
 Longitudinal torque $M_1 = 17,6 \text{ Nm}$
 Correction factor $A = 160,5 \text{ mm} = 0,1605 \text{ m}$

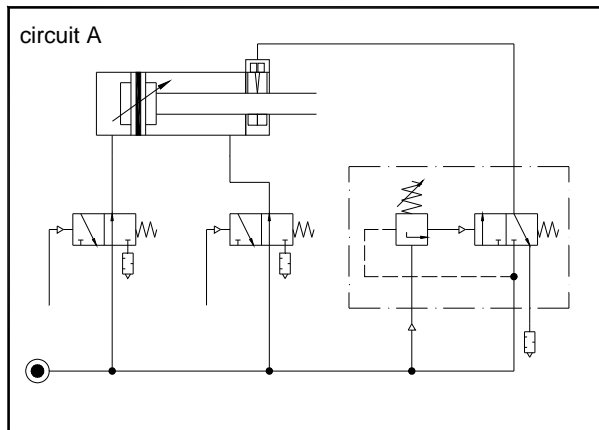
$$\text{Required qty: } F_1 \leq \frac{M_1}{L_1 + A} = \frac{17,6 \text{ Nm}}{0,045 \text{ m} + 0,1605 \text{ m}} = 86 \text{ N}$$

All data based on tests conducted by Toss.

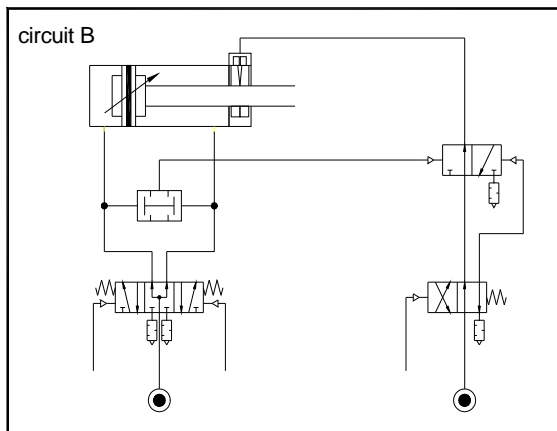
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Use instructions for:

TOSS Pneumatic cylinder with clamping cartridge



The clamping cartridge ensures secure holding of the piston rod during clamping, machining and handling processes as well as automatic holding in the event of energy failure (circuit A) by means of a safety switch.



In addition, the piston rod can be clamped in any desired position (circuit B). To prevent the cylinder from extending abruptly, the two sides of the piston must be pressurised before the clamping cartridge is released.

- The dynamic forces generated during operation may not exceed the static holding force (1000 N).
- The clamping cartridge may not be used for safety devices.

All cylinders featuring a clamping cartridge are supplied with a screw (G 1/8) in the compressed-air port. The clamping can be released manually by screwing down the screw.