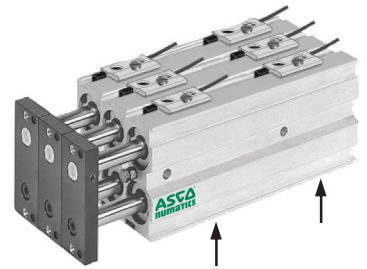


TWIN ROD / TWIN PISTON AIR CYLINDERS WITH PLAIN OR BALL BEARINGS LINEAR GUIDE

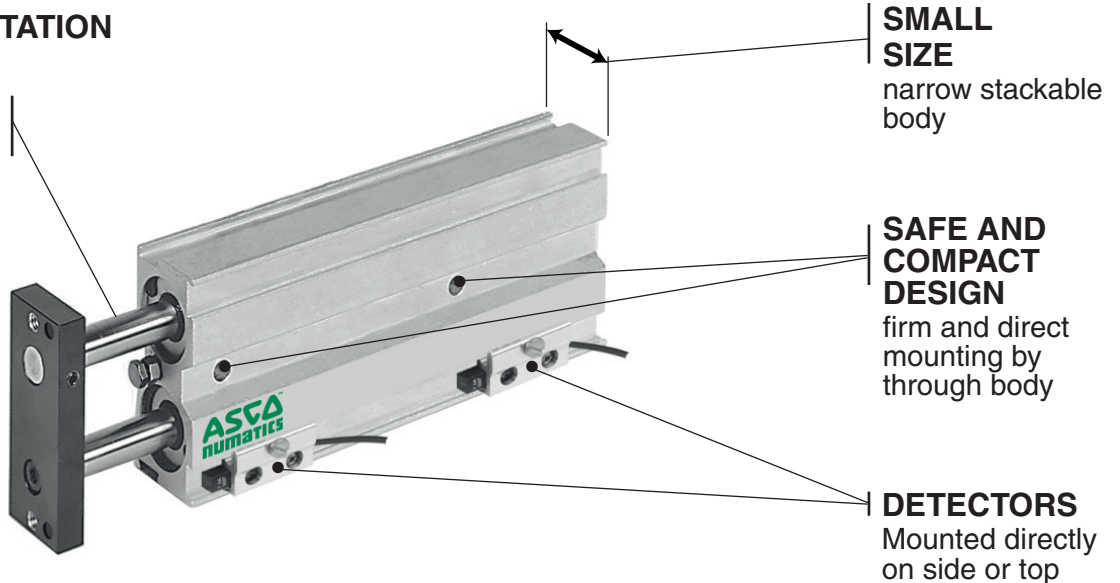
Types: P2L and P2B

- **INTEGRAL LINEAR AND ANTI-ROTATION GUIDES**
- **EASY MOUNTING**
compact design, narrow body, stackable,
ambidextrous, standard detector mountable in any
position, adjustable stroke



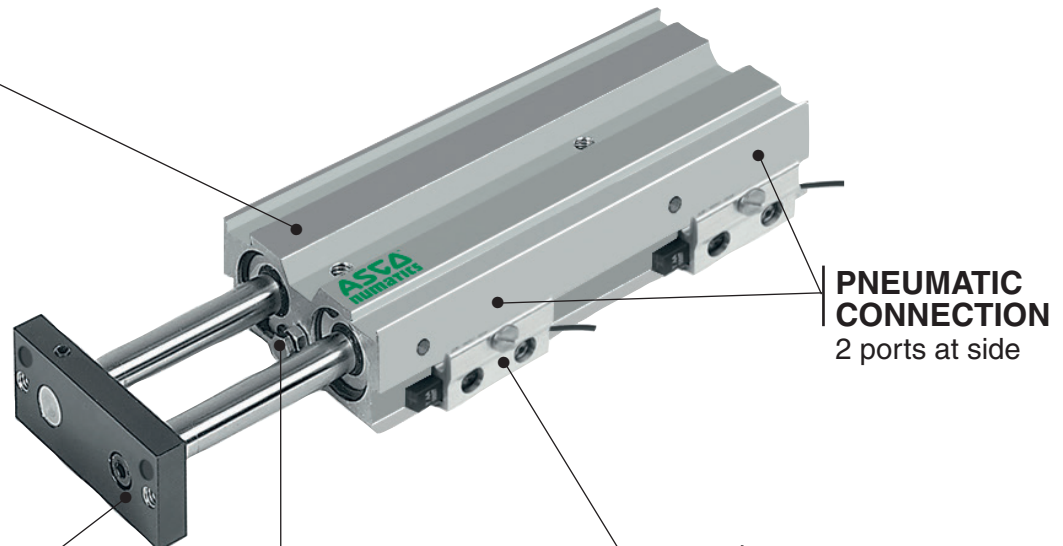
RUGGED ANTI-ROTATION SYSTEM

by two integral rods in actuator, precision-machined



HIGH PRECISION

with ball bearing linear guide version



EASE OF INSTALLATION

integral flange with calibrated holes for precise adaptation load

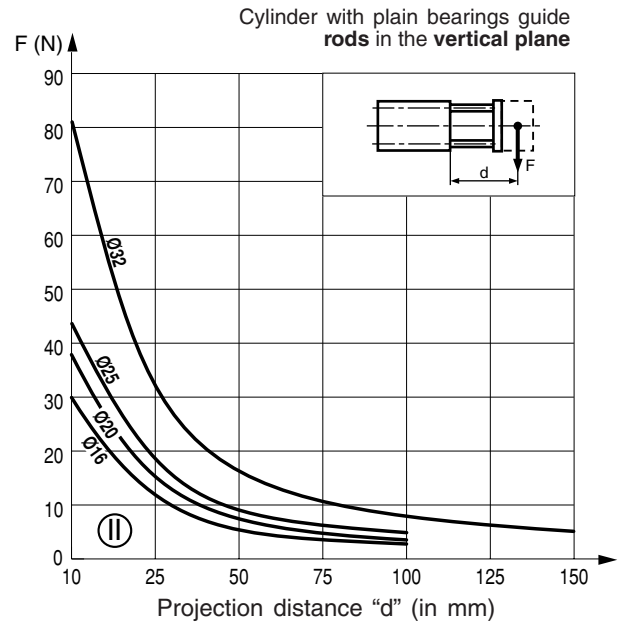
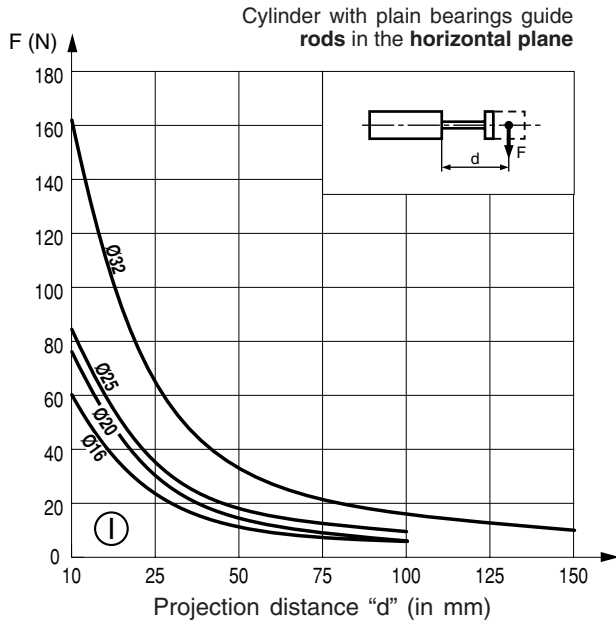
QUIET AND USER FRIENDLY

adjustable stop with elastic cushioning reducing noise, adjustable stroke

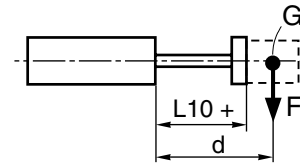
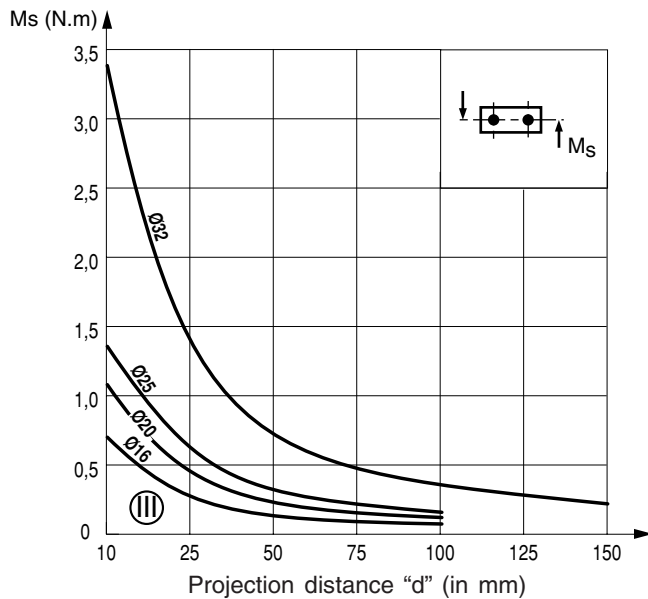
POSITION MONITORING

by standard reed switch or electronic magnetic detectors "T" types (common to all cylinders)

● **MAXIMUM ADMISSIBLE LOAD "F" ON THE ROD END**



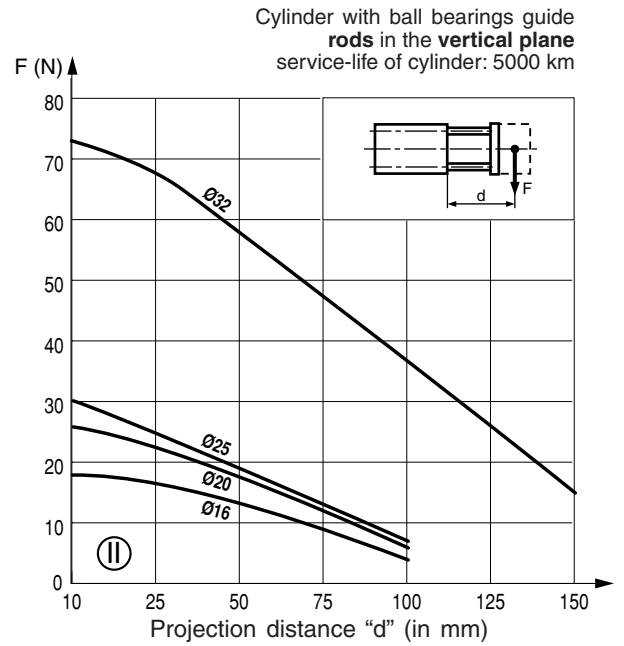
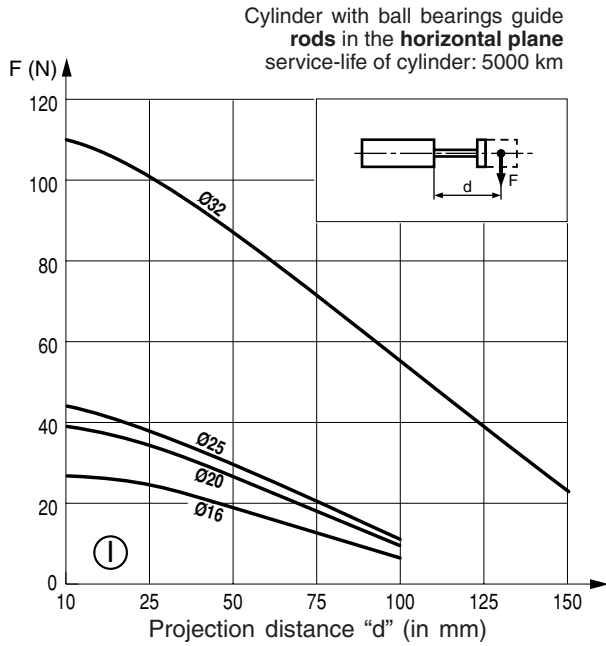
● **MAXIMUM ALLOWABLE MOMENTS "Ms" AT ROD END**



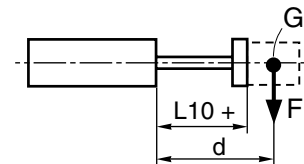
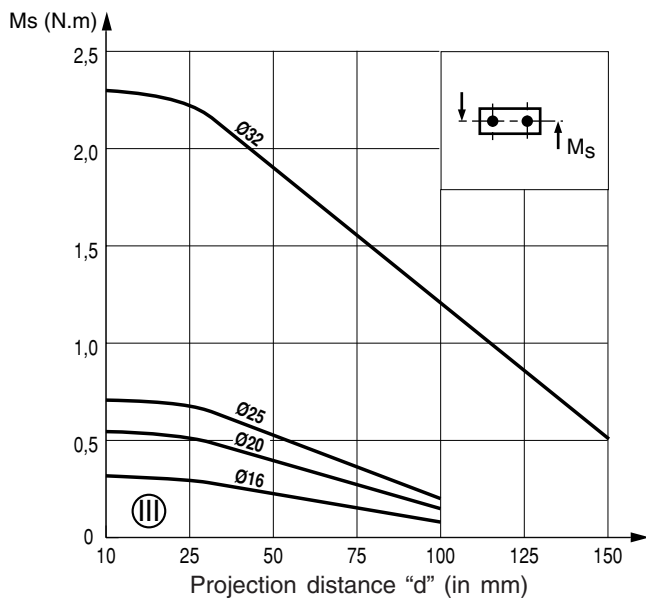
d = the projection distance (in mm) corresponding to the dimension $L10$ + the stroke length + the distance from the load centre of gravity (G) to the mating surface of the cylinder flange

Note: the values in charts (I), (II) and (III) correspond to those in regular horizontal movement. In the event of vibration or jerky movement, **halve** the maximum allowable values.

● **MAXIMUM ADMISSIBLE LOAD "F" ON THE ROD END**



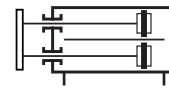
● **MAXIMUM ALLOWABLE MOMENTS "Ms" AT ROD END**



d = the projection distance (in mm) corresponding to the dimension L10 + the stroke length + the distance from the load centre of gravity (G) to the mating surface of the cylinder flange

Note: the values in charts (I), (II) and (III) correspond to those in regular horizontal movement. In the event of vibration or jerky movement, **halve** the maximum allowable values.

Whatever the stroke of the cylinder, its movement is only a small proportion of the travel (not more than 30 mm), it is necessary to reduce the maximum allowable torques and loads by multiplying the values taken from charts (I), (II) and (III) by coefficient 0.6. The curves allow for this reduction in performance.



SPECIFICATION

TYPE OF CYLINDER	: double acting, double piston
FLUID	: air or neutral gas, filtered, lubricated or not
PRESSURE	: 2 to 7 bar
AMBIENT TEMPERATURE	: + 5 °C, + 60 °C
CUSHIONING	: elastic
MAXIMUM SPEED	: 0,5 m/s
MAX. STROKE	: 100 mm (Ø16 ... 25) - 160 (Ø32)
STROKE ADJUST RANGE	: nominal stroke +0 to -5 mm (retracted rods)
POSITIONS CONTROL	: with Reed switches or electronic (magnetoresistant) detectors



FORCE DEVELOPED BY CYLINDER

Bore Ø (mm)	Rod Ø (mm)	Piston cross-section (cm ²)		Dynamic force developed (daN) as a function of input pressure (bar)							
				1		3		5		7	
				●	○	●	○	●	○	●	○
16	8	4	3	3,4	2,5	11,3	8	16,7	13,6	26,4	18,6
20	10	6,3	4,7	5,6	4,3	18,2	13,8	27	23	40,8	32,3
25	12	9,8	7,55	8,5	6,5	27	20,9	45,1	36,4	66,6	50,4
32	16	16,1	12,1	13,1	10	45,2	32,8	77	58,2	109	79,5

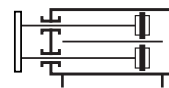
- Force developed with rod out (rod extending)
- Force developed with rod returned (rod retracting)

CHOICE OF EQUIPMENT

Bore Ø (mm)	CODES (1)	RÉFÉRENCES (1) (2)	Standard stroke (mm)							Ø Connection		
			10	25	40	50	80	100	125		160	
16	44750034 ⁽¹⁾	P2L 16 NA ⁽¹⁾ - DM	●	●	●	●	●	●				M5
20	44750035 ⁽¹⁾	P2L 20 NA ⁽¹⁾ - DM	●	●	●	●	●	●				M5
25	44750036 ⁽¹⁾	P2L 25 NA ⁽¹⁾ - DM	●	●	●	●	●	●				M5
32	44750037 ⁽¹⁾	P2L 32 NA ⁽¹⁾ - DM	●	●	●	●	●	●	●	●	●	G 1/8

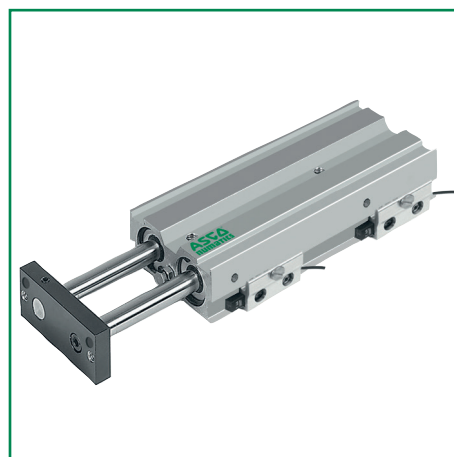
- (1) State the stroke (in mm) preferably selecting the above standard strokes. Other strokes on request. Max. strokes capability: Ø 16-20-25: 100 mm, Ø 32 : 160 mm
 (2) **Magnetic detectors are to be ordered separately**

MOUNTING DETECTORS ON P2L (see following page)



SPECIFICATION

TYPE OF CYLINDER	: double acting, double piston
FLUID	: air or neutral gas, filtered, lubricated or not
PRESSURE	: 2 to 7 bar
AMBIENT TEMPERATURE	: + 5 °C, + 60 °C
CUSHIONING	: elastic
MAXIMUM SPEED	: 0,5 m/s
MAX. STROKE	: 100 mm (Ø16 ... 25) - 160 (Ø32)
STROKE ADJUST RANGE	: nominal stroke +0 to -5 mm (retracted rods)
POSITIONS CONTROL	: with Reed switches or electronic (magneto-resistant) detectors



FORCE DEVELOPED BY CYLINDER

Bore Ø (mm)	Rod Ø (mm)	Piston cross-section (cm ²)		Dynamic force developed (daN) as a function of input pressure (bar)							
				1		3		5		7	
				●	○	●	○	●	○	●	○
16	8	4	3	3,4	2,5	11,3	8	16,7	13,6	26,4	18,6
20	10	6,3	4,7	5,6	4,3	18,2	13,8	27	23	40,8	32,3
25	12	9,8	7,55	8,5	6,5	27	20,9	45,1	36,4	66,6	50,4
32	16	16,1	12,1	13,1	10	45,2	32,8	77	58,2	109	79,5

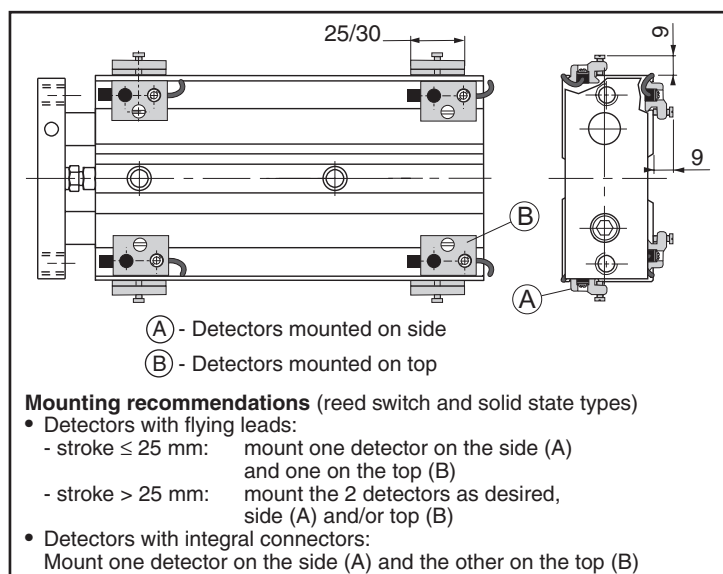
- Force developed with rod out (rod extending)
- Force developed with rod returned (rod retracting)

CHOICE OF EQUIPMENT

Bore Ø (mm)	CODES (1)	RÉFÉRENCES (1) (2)	Standard stroke (mm)						Ø Connection		
			10	25	40	50	80	100		125	160
16	44750030 ⁽¹⁾	P2B 16 NA ⁽¹⁾ - DM	●	●	●	●	●	●			M5
20	44750031 ⁽¹⁾	P2B 20 NA ⁽¹⁾ - DM	●	●	●	●	●	●			M5
25	44750032 ⁽¹⁾	P2B 25 NA ⁽¹⁾ - DM	●	●	●	●	●	●			M5
32	44750033 ⁽¹⁾	P2B 32 NA ⁽¹⁾ - DM	●	●	●	●	●	●	●	●	G 1/8

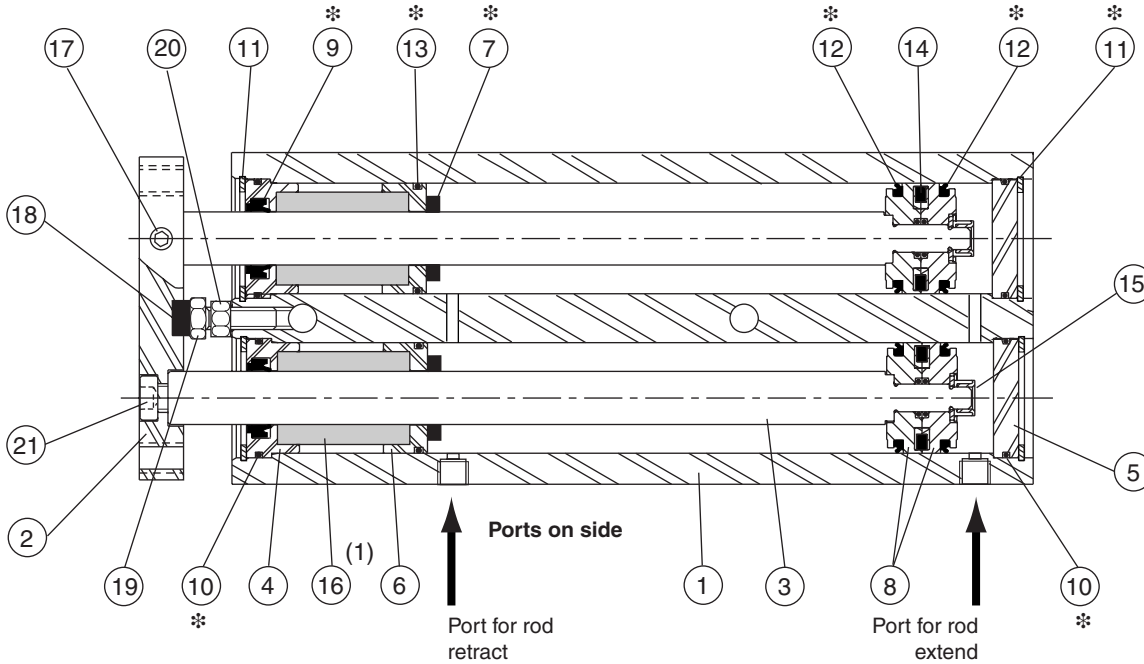
- (1) State the stroke (in mm) preferably selecting the above standard strokes. Other strokes on request. Max. strokes capability: Ø 16-20-25: 100 mm, Ø 32 : 160 mm
 (2) Magnetic detectors are to be ordered separately

MOUNTING DETECTORS ON P2L - P2B



CONSTRUCTION - LOCATION OF AIR INLET PORTS

• The air inlet ports are located on the side of the cylinder



Item	Description	Material
1	Body	Aluminium alloy
2	Plate	Aluminium alloy
3	Piston rod	Bearing steel hard chrome
4	Inner guide support	Aluminium alloy
5	End plug	Aluminium alloy
6	Inner guide support	Aluminium alloy
7	Elastic stop	TPE*
8	Piston	POM (polyacetal)
9	Rod seal	PUR (polyurethane)
10	O-ring	NBR (nitrile)
11	Circlip	Steel

Item	Description	Material
12	Piston seal	PUR (polyurethane)
13	O-ring	NBR (nitrile)
14	Magnet	Ferrite
15	Nut	Steel
16 ⁽¹⁾	Linear motion guide	Steel (balls) / bronze (bush)
17	Hexsocket head screw	Steel
18	Elastic stop	NBR (nitrile)
19	Adjustable stop	Steel
20	Back-nut	Steel
21	Hexsocket head screw	Steel

(1) Plain bearing (P2L) or ball bearing (P2B) linear motion guides

* (thermoplastic polyester elastomer)

SPARE PARTS KITS

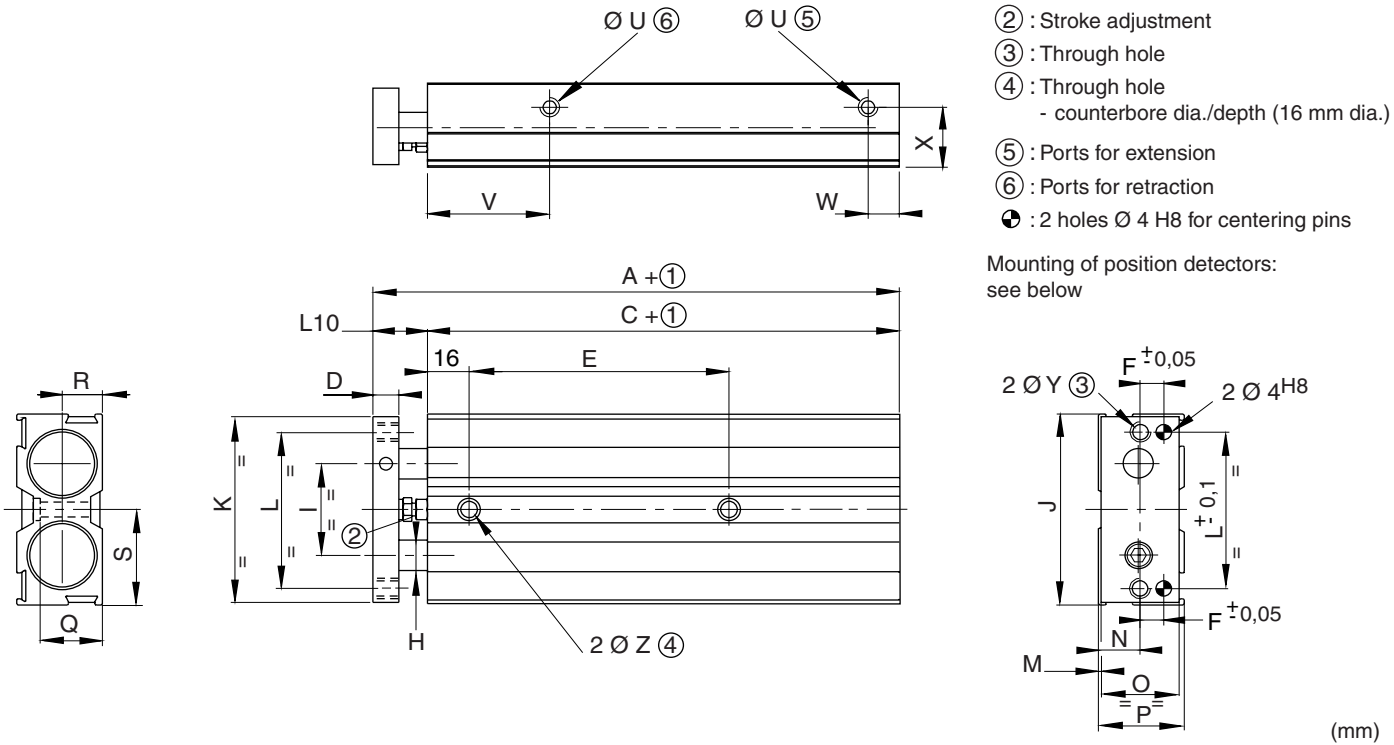
CYLINDER BORE	Cylinder type P2B - P2L	CODES (items marked with a *: 7 and 9 to 13)
16	Designed for detector	97802175
20	Designed for detector	97802176
25	Designed for detector	97802177
32	Designed for detector	97802178

NOTE: For best results, use grease supplied in each kit. Supplementary tube available (11 cm³) on request, code: 97802100

DIMENSIONS

- ① : + 1 stroke (rod retracted)
+ 2 strokes (rod extended)
- ② : Stroke adjustment
- ③ : Through hole
- ④ : Through hole
- counterbore dia./depth (16 mm dia.)
- ⑤ : Ports for extension
- ⑥ : Ports for retraction
- ⊕ : 2 holes Ø 4 H8 for centering pins

Mounting of position detectors:
see below



bore (mm)	DIMENSIONS (mm)																Screws recommended for the cylinder installation	
	A (depending on stroke)	C (depending on stroke)	D	E (depending on stroke) **								F	H	I	J	K		L
				10	25	40	50	80	100	125	160							
16	85,7	67,2	8	34,5	34,5	42	47	75	85	-	-	6	8	24	52	50	42	M4 x 25 M5 x 25 M5 x 35 M6 x 45
20	96,2	77,2	8	51	38,5	46	51	81	91	-	-	7,5	10	30	63	61	52	
25	101	80	10	57	44,5	52	57	90	100	-	-	9	12	36	75	73	64	
32	116,9	92,1	12	60	75	90	100	130	150	175	210	11	16	44	98	88	72	

bore (mm)	L10	M	N	O	P	Q	R	S	U	V	W	X	Y	Z (4)
16	18,5	1	10,5	19	24,5	16,5	10,5	26	M5	37,5	10	17	M5	Ø 5 - Ø7,5 / 3,5
20	19	1	13	24	28	20,5	12,5	31,5	M5	46	13	18,5	M5	Ø 5,4
25	21	1	16	30	33	26,5	15,5	37,5	M5	47	11	23,5	M6	Ø 5,4
32	24,8	1	20	38	40	33,5	19,5	49	G1/8	56,5	13	30	M6	Ø 6,4

** Dimensions for P2L/P2B with non-standard strokes.

bore (mm)	E (depending on stroke)				
	(0...11)	(12...24)	(26...79)	(81...99)	(101...159)
16	34,5	47	22 + (8)	35 + (8)	-
20	38,5	51	26 + (8)	41 + (8)	-
25	44,5	57	32 + (8)	50 + (8)	-
32	50 + (9)	50 + (9)	50 + (9)	50 + (9)	50 + (9)

- (8) : + 1/2 stroke
- (9) : + stroke

WEIGHTS

(kg)

bore (mm)	STROKE (mm)							
	10	25	40	50	80	100	125	160
16	0,280	0,320	0,360	0,380	0,460	0,510	-	-
20	0,440	0,490	0,540	0,580	0,690	0,760	-	-
25	0,660	0,740	0,810	0,860	1,020	1,120	-	-
32	1,160	1,280	1,400	1,480	1,720	1,880	2,080	2,360

