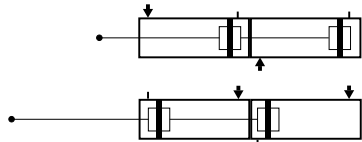


**FEATURES**

- Tandem-mounted cylinders with connected rods develop twice the force of a standard cylinder of the same diameter.
- This arrangement offers the advantage of providing a given force with a smaller frontal area than a standard cylinder developing the same force.

Note: Operation by a single 5/2 control valve is possible



**Force developed**

Ø (mm)	dynamic force developed (daN) as a function of pressure (bar)									
	2		4		6		8		10	
32	24	22	55	50	85	78	114	104	142	130
40	38	34	83	74	128	116	175	160	222	200
50	60	54	128	116	202	184	274	248	345	310
63	99	92	208	196	324	308	441	422	554	528
80	165	154	348	326	540	510	726	682	907	854
100	260	250	550	520	840	800	1150	1100	1425	1350

- Force developed on extension of the piston rod
- Force developed in retraction of the piston rod



**B**

**GENERAL**

<b>Detection</b>	<b>Equipped for magnetic position detectors</b>
<b>Fluid</b>	Air or neutral gas, filtered, lubricated or not
<b>Operating pressure</b>	10 bar max.
<b>Ambient temperature</b>	-20°C to +70°C
<b>Cushioning</b>	Pneumatic, adjustable at both ends by captive screws
<b>Standards</b>	ISO 15552-AFNOR NF ISO 15552-DIN ISO 15552
<b>Maximum stroke</b>	See below
<b>Control</b>	See above

**SPECIFICATIONS**

**DEFINING THE CYLINDER WITH PROFILED BARREL CATALOGUE NUMBER**

Standard version: profiled barrel with adjustable pneumatic cushioning, equipped for magnetic position detectors (T-slot grooves in 12 o'clock position). Other versions available (see tables below).

To order, please specify:

- **CYLINDER**
  - The cylinder type (profiled, with cushioning, equipped for magnetic position detectors).
  - The position of the T-slot groove or dovetail groove on the cylinder.
  - The cylinder diameter and its stroke
- **DETECTORS:** The magnetic position detectors must be ordered separately:
  - "T" model (see page P291), reed switch or magneto-resistive type

**453 5**

barrel	cylinder type		type
	cushioning	detection	
profiled barrel	with	equipped	41

groove position	type	
	position of the T-slot grooves on the profiled PES cylinder	12 o'clock
3 o'clock		3
6 o'clock		6
position of the dovetail grooves on the profiled PES cylinder	12 o'clock	9
	3 o'clock	0
	6 o'clock	3
	9 o'clock	6

Ø (mm)	standard stroke (mm) (1)									
	(recommended standard stroke)									
	25	50	80	100	125	160	200	250	320	400
32	●	●	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●	●	●	●
50-63	●	●	●	●	●	●	●	●	●	●
80	●	●	●	●	●	●	●	●	●	●
100	●	●	●	●	●	●	●	●	●	●

(1) Others strokes (consult us)

cylinder Ø	
type	Ø (mm)
3	32
4	40
5	50
6	63
8	80
1	100

**Ordering example:**

- profiled cylinder with pneumatic cushioning equipped for detectors = **41**
- T-slot grooves at 3 o'clock position = **3**
- Cylinder Ø 80 mm = **8**
- Stroke 100 mm = **0100**

Ordering catalogue number : **453541380100**

**OPTIONS**

- Other strokes on request
- Piston rod in 316L stainless steel, catalogue number: **995002** - in 303 stainless steel, catalogue number: **995202**
- Overlength piston rod in hard chrome steel, cat. n°: **995003** - in 316L stainless steel, cat. n°: **995004** - in 303 stainless steel, cat. n°: **995204**

**ACCESSORIES:** Protective groove cover and detector cable holder - see page P291

**MOUNTINGS:** see page P229-18

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### DEFINING THE CYLINDER WITH TIE-RODS CATALOGUE NUMBER

To order, please specify:

- Cylinder description : PES cylinder of **tandem, double force** type, with connected piston rods
- Catalogue number for PES with **tie rods** with pneumatic cushioning :

Ø (mm)	catalogue number	
	PES with aluminium barrel (equipped for magnetic detectors) (2)	maximum nominal stroke (mm)
32 (3)	45052049... (1)	160
40	45051075... (1)	250
50	45051076... (1)	300
63	45051077... (1)	300
80	45051078... (1)	400
100	45051079... (1)	400

125 to 200 mm bore: consult us

(1) Indicate stroke (in mm) - maximum stroke : see above


(2) **The magnetic position detectors are ordered separately:**

- "T" model (see page P291), reed switch or magneto-resistive type

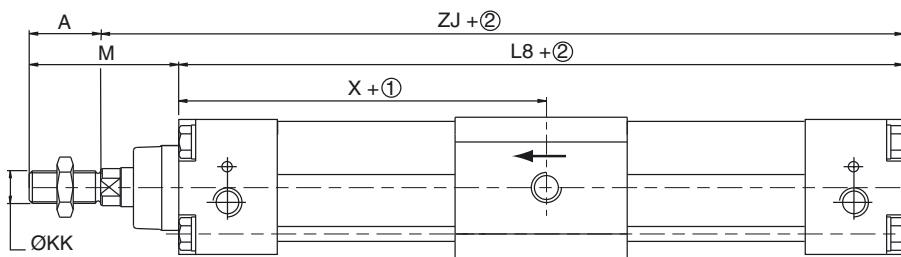
(3) In the case of use of a BIM magnetic detector on PES series 450 Ø 32, it is necessary to add the option code = **995125**

### OPTIONS

- Other strokes on request
- Piston rod in 316L stainless steel, catalogue number: **995002** - in 303 stainless steel, catalogue number: **995202**
- Overlength piston rod in hard chrome steel, cat. n°: **995003** - in 316L stainless steel, cat. n°: **995004** - in 303 stainless steel, cat. n°: **995204**

**MOUNTINGS:** Fastener codes and quantities (see page P229-18) 

**DIMENSIONS (mm)** 



Cylinder with **profiled barrel**  
Ø 32 to 100 mm

Cylinder with **tie rods**  
Ø 32 to 100 mm

- ① Stroke
- ② 2 x stroke

Ø (mm)	A	ØKK	L8	M	ZJ	X
32	22	M10x1,25	180	48	206	92
40	24	M12x1,25	198,5	54	228,5	100,5
50	32	M16x1,5	205	69	242	102,5
63	32	M16x1,5	233	69	270	116,5
80	40	M20x1,5	251,5	86	297,5	125,5
100	40	M20x1,5	243	91	294	121,5

NOTE: The two ports on the intermediate block are at 180°

