313 6723.

# Rodless Pneumatic Cylinder

## ø 16-80 mm

OSP — ORIGA SYSTEM PLUS

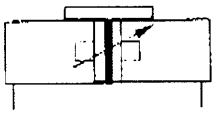
**Characteristics according to VDI 3292** Pressures quoted as gauge pressure

| Characteristics | | Symbol | Unit | Description |
|---|---|---|---|---|
| **General Features** | | | | |
| Type | | | | Rodless cylinder |
| Series | | | | OSP-P |
| System | | | | Double-acting, with cushioning, position sensing capability |
| Mounting | | | | See drawings |
| Air Connection | | | | Threaded |
| Ambient temperature range | | $\vartheta_{min}$ $\vartheta_{max}$ | °C °C | -10 +80 Other temperature ranges on request |
| Weight (mass) | | | kg | See table below |
| Installation | | | | In any position |
| Medium | | | | Filtered, unlubricated compressed air (other media on request) |
| Lubrication | | | | Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease |
| Material | Cylinder Profile | | | Anodized aluminium |
| | Carrier (piston) | | | Anodized aluminium |
| | End caps | | | Aluminium, lacquered |
| | Sealing bands | | | Stainless steel |
| | Seals | | | NBR (Option: Viton®) |
| | Screws | | | Galvanized steel Option: stainless steel |
| | Dust covers, wipers | | | Plastic |
| Max. operating pressure | | $p_{max}$ | bar | 8 |

**Standard Versions:**
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

**Special Versions:**
- Stainless steel screws
- Slow speed lubrication
- Viton seals
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves

**Series OSP-P..**

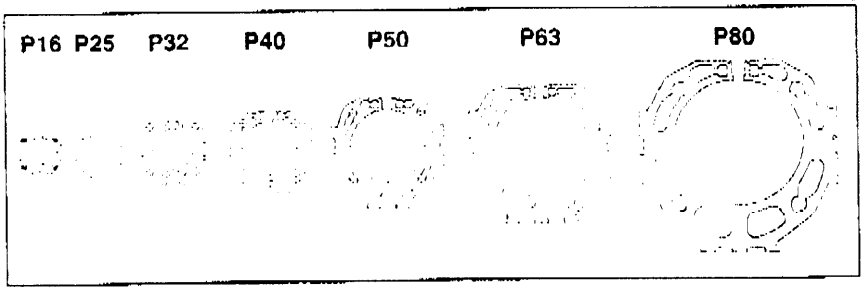


- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm (longer strokes on request)

**Weight (mass) kg**

| Cylinder series (Basic cylinder) | Weight (Mass) kg At 0 mm stroke | per 100 mm stroke |
|---|---|---|
| OSP-P16 | 0.22 | 0.1 |
| OSP-P25 | 0.65 | 0.197 |
| OSP-P32 | 1.44 | 0.354 |
| OSP-P40 | 1.95 | 0.415 |
| OSP-P50 | 3.53 | 0.566 |
| OSP-P63 | 6.41 | 0.925 |
| OSP-P80 | 12.46 | 1.262 |

**Size Comparison**




For **linear guides** see 1.40.001E to 005E
For **proximity sensors** see 1.45.100E,
For **mountings and accessories** see 1.45.001E to 008E

**Data Sheet No. 1.10.002E-1**

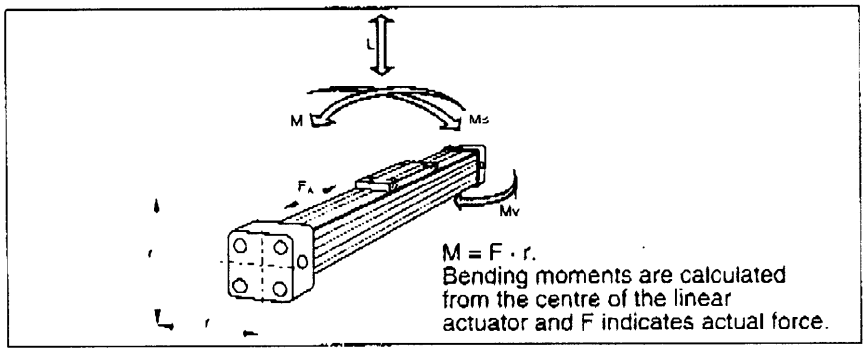
HOERBIGER ORIGA

## Loads, Forces and Moments

Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions. The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. **Load and moment data are based on speeds v ≤ 0.5 m/s.**



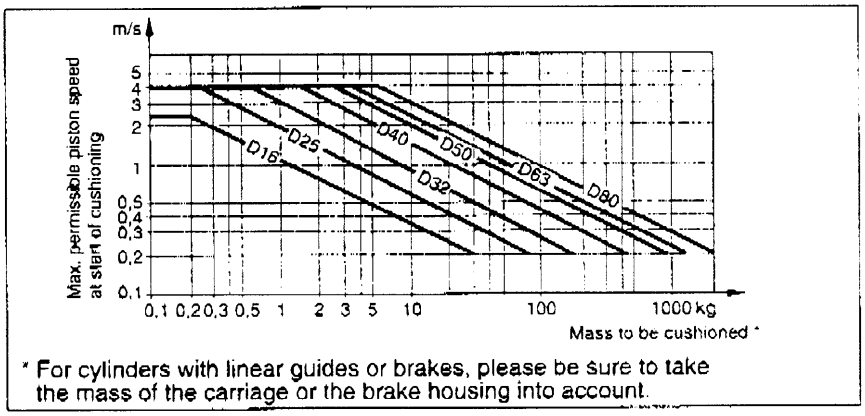

M = F · r.
Bending moments are calculated from the centre of the linear actuator and F indicates actual force.

| Cylinder-Series [mm Ø] | Theoretical Action Force at 6 bar [N] | effektive Action Force $F_A$ at 6 bar [N] | max. Moments M [Nm] | Ms [Nm] | Mv [Nm] | max. Load L [N] | Cushion Length [mm] |
|---|---|---|---|---|---|---|---|
| **OSP-P10**[1] | 47 | 32 | 1 | 0.2 | 0.3 | 20 | 2.5 |
| **OSP-P16** | 120 | 78 | 4 | 0.45 | 0.5 | 120 | 11 |
| **OSP-P25** | 295 | 250 | 15 | 1.5 | 3 | 300 | 17 |
| **OSP-P32** | 483 | 420 | 30 | 3 | 5 | 450 | 20 |
| **OSP-P40** | 754 | 640 | 60 | 6 | 8 | 750 | 27 |
| **OSP-P50** | 1178 | 1000 | 115 | 10 | 15 | 1200 | 30 |
| **OSP-P63** | 1870 | 1550 | 200 | 12 | 24 | 1650 | 32 |
| **OSP-P80** | 3016 | 2600 | 360 | 24 | 48 | 2400 | 39 |

1) Rodless Pneumatic Cylinder according to Series P 210, more information on request

## Cushioning Diagram

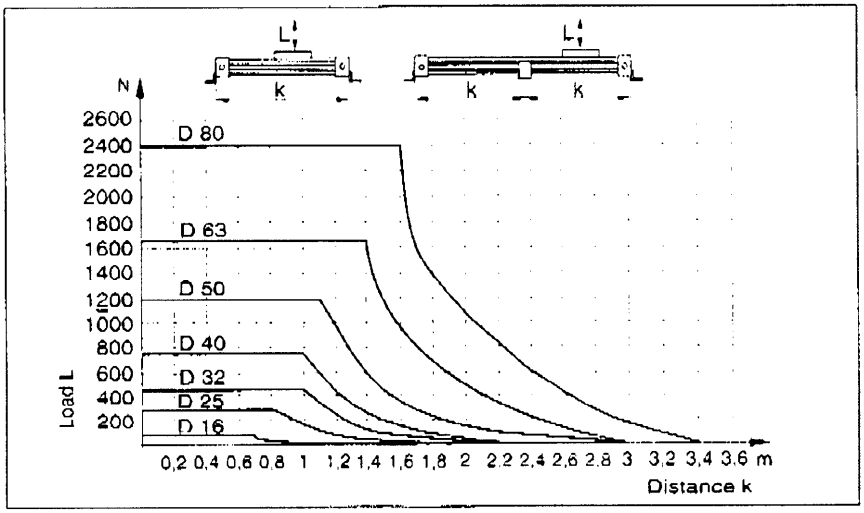
Work out your expected moving mass and read off the maximum permissible speed at start of cushioning.
Alternatively, take your desired speed and expected mass and find the cylinder size required.
Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder. If these maximum permissible values are exceeded, additional shock absorbers must be used.
**Please ask for info on the optional adaptable cushioning system.**




* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

## Mid-Section Supports

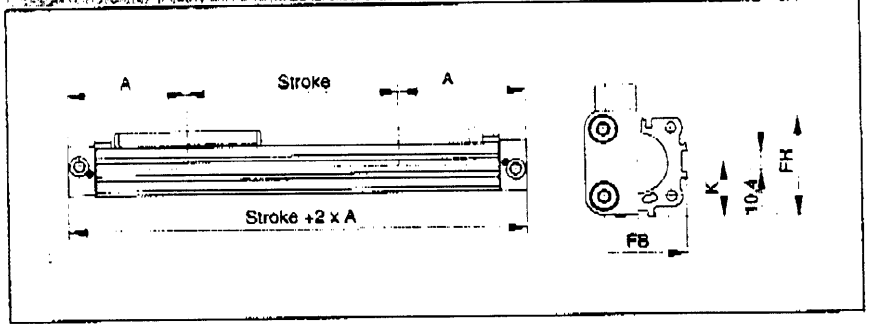
To avoid excessive bending and oscillation of the cylinder, mid-section supports are required dependent on specified stroke lengths and applied loads.

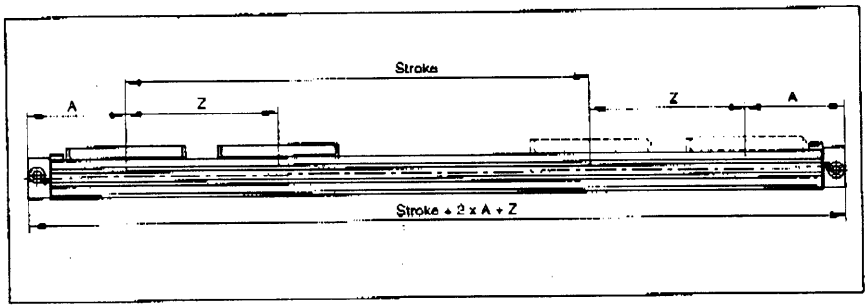



The diagram shows the maximum possible unsupported length dependent on the load. Deformation of 0.5 mm maximum between supports is permissible.

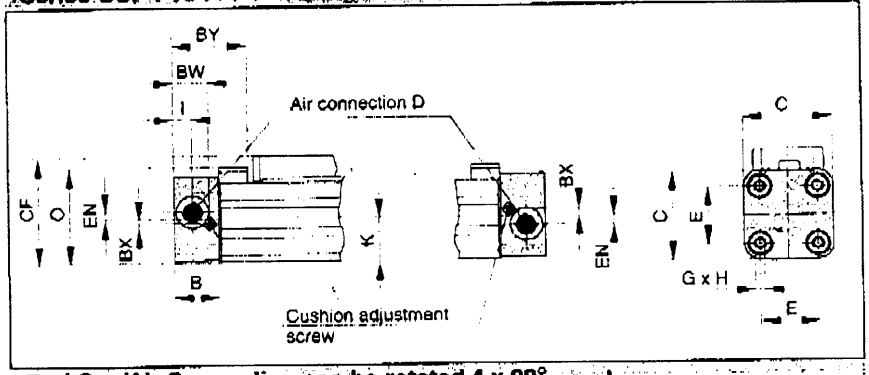
Mid-section supports are clamped on to the dovetail profile of the cylinder. They can also withstand axial forces. For types and dimensions see 1.45.004E.

## Dimensions of Basic Cylinder OSP-P

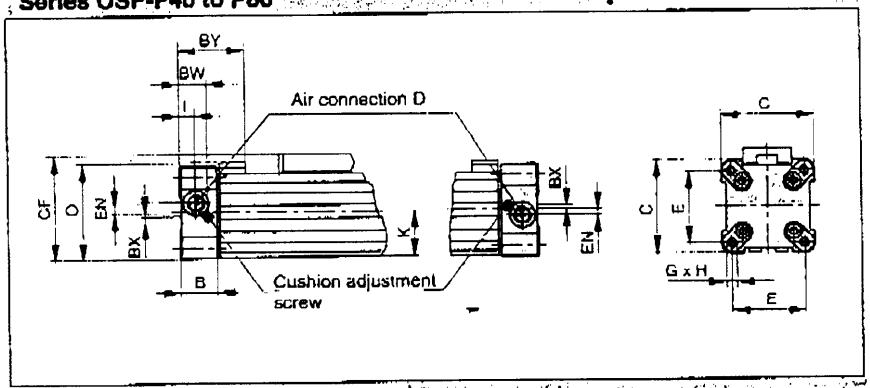



## End Cap/Air Connection can be rotated 4 x 90°
## Series OSP-P16 to P32




## End Cap/Air Connection can be rotated 4 x 90°
## Series OSP-P40 to P80




## Cylinder
## Stroke and Dead Length A

- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.

## Tandem Cylinder

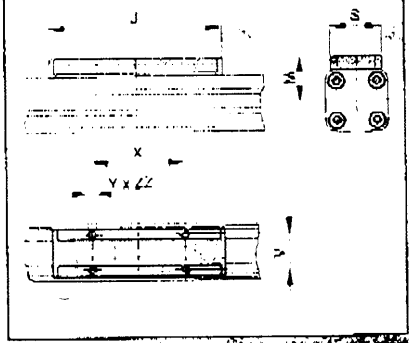
Two pistons are fitted: dimension "Z" is optional. (Please note minimum distance "Zmin").

- Free choice of stroke length up to 6000 mm in 1 mm steps.
- Longer strokes on request.
- **Stroke length to order is stroke + dimension "Z"**

**Please note:**

**To avoid multiple actuation of sensors, the second piston is not equipped with magnets.**

## Carrier
## Series OSP-P16 to P80

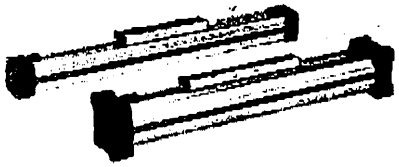



## Dimension Table (mm)

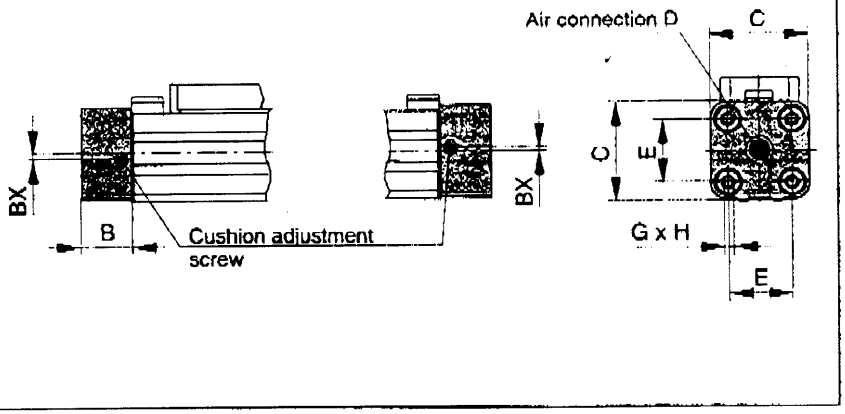
| Cylinder Series | A | B | C | D | E | G | H | I | J | K | M | O | S | V | X | Y | Z min | BW | BX | BY | CF | EN | FB | FH | ZZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OSP-P16 | 65 | 14 | 30 | M5 | 18 | M3 | 9 | 5.5 | 69 | 15 | 23 | 33.2 | 22 | 16.5 | 36 | M4 | 81 | 10.8 | 1.8 | 28.4 | 38 | 3 | 30 | 27.2 | 7 |
| OSP-P25 | 100 | 22 | 41 | G1/8 | 27 | M5 | 15 | 9 | 117 | 21.5 | 31 | 47 | 33 | 25 | 65 | M5 | 128 | 17.5 | 2.2 | 40 | 52.5 | 3.6 | 40 | 39.5 | 8 |
| OSP-P32 | 125 | 25.5 | 52 | G1/4 | 36 | M6 | 15 | 11.5 | 152 | 28.5 | 38 | 59 | 36 | 27 | 90 | M6 | 170 | 20.5 | 2.5 | 44 | 66.5 | 5.5 | 52 | 51.7 | 10 |
| OSP-P40 | 150 | 28 | 69 | G1/4 | 54 | M6 | 15 | 12 | 152 | 34 | 44 | 72 | 36 | 27 | 90 | M6 | 212 | 21 | 3 | 54 | 78.5 | 7.5 | 62 | 63 | 10 |
| OSP-P50 | 175 | 33 | 87 | G1/4 | 70 | M6 | 15 | 14.5 | 200 | 43 | 49 | 86 | 36 | 27 | 110 | M6 | 251 | 27 | - | 59 | 92.5 | 11 | 76 | 77 | 10 |
| OSP-P63 | 215 | 38 | 106 | G3/8 | 78 | M8 | 21 | 14.5 | 256 | 54 | 63 | 107 | 50 | 34 | 140 | M8 | 313 | 30 | - | 64 | 117 | 12 | 96 | 96 | 16 |
| OSP-P80 | 260 | 47 | 132 | G1/2 | 96 | M10 | 25 | 22 | 348 | 67 | 80 | 133 | 52 | 36 | 190 | M10 | 384 | 37.5 | - | 73 | 147 | 16.5 | 122 | 122 | 20 |

## Air Connection on the End-face

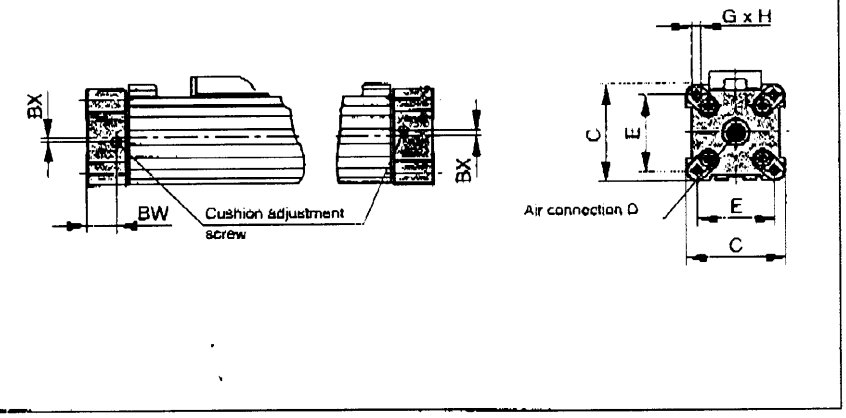
In some situations it is necessary or desirable to fit a special end cap with the air connection on the end-face instead of the standard end cap with the air connection on the side. The special end cap can also be rotated 4 x 90° to locate the cushion adjustment screw as desired. Supplied in pairs.



Series OSP-P16 to P32




Series OSP-P40 to P80




**Dimension Table (mm)**

| Cylinder Series | B | C | D | E | G | H | BX | BW |
|---|---|---|---|---|---|---|---|---|
| OSP-P16 | 14 | 30 | M5 | 18 | M3 | 9 | 1.8 | 10.8 |
| OSP-P25 | 22 | 41 | G1/8 | 27 | M5 | 15 | 2.2 | 17.5 |
| OSP-P32 | 25.5 | 52 | G1/4 | 36 | M6 | 15 | 2.5 | 20.5 |
| OSP-P40 | 28 | 69 | G1/4 | 54 | M6 | 15 | 3 | 21 |
| OSP-P50 | 33 | 87 | G1/4 | 70 | M6 | 15 | – | 27 |
| OSP-P63 | 38 | 106 | G3/8 | 78 | M8 | 21 | – | 30 |
| OSP-P80 | 47 | 132 | G1/2 | 96 | M10 | 25 | – | 37.5 |