

# Operating Instruction

## PL 40/12-U-PFS

### Sense of symbols

**⚠ Safety instructions**, must be considered!  
Disregarding these instructions can lead to personal injury and property damage.

**ℹ Advices**, non-compliance of these, as well as the technical data, lead to the loss of the warranty.

### Description

PL 40/12-HUB/VSP-zzz-U-PFS-ST/SV-12/6

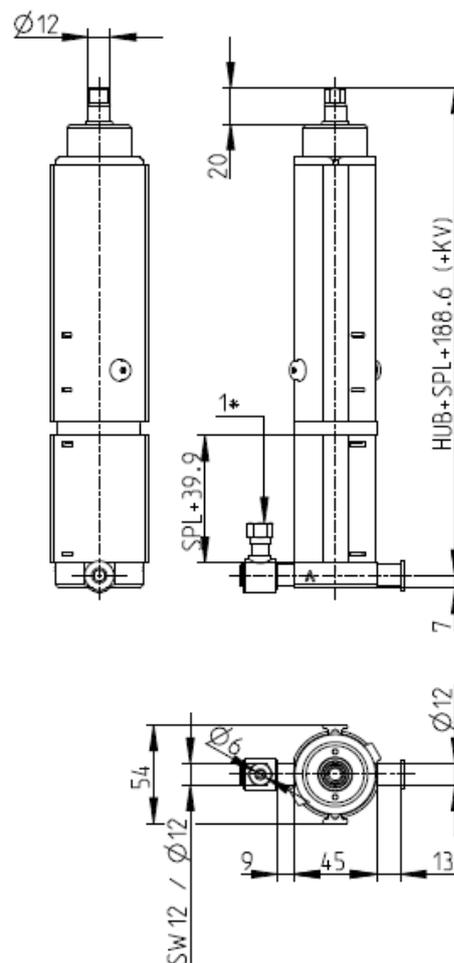
PL	pneumatic ventilation cylinder made of aluminium
40	piston-Ø [mm]
12	Ø of rustproof steel-piston rod [mm]
HUB	stroke [mm]
VSP	reservoir volume (customer information) [l]
zzz	piston rod mounting (picture 4)
U	connections at lower end / mounting at lower end
ST	plug
SV	swivel screw fitting
12	shaft diameter SD (picture 1) [mm]
6	pipe connection (picture 1 / 1*) [mm]

### Intended use

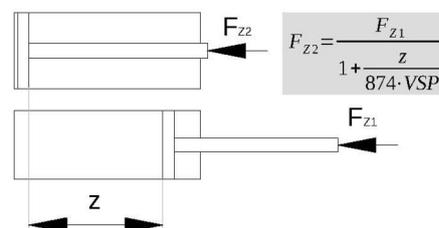
The cylinder is used for opening and closing windows, louvers and flaps in the roof area (no free access by non-system persons). The cylinder extends at pressurization, at exhaust through the integrated pressure reservoir retract the cylinder self-consistent (exhaust Q=53NI/min).

### Technical data

fluid medium	compressed air (filtered through filter element)
operating pressure	6-10bar
max. static housing pressure	40bar
ambient atmosphere	non-corrosive
temperature range	-25°C - +60°C
max. locking force	6500N
pushing force $F_D$ (6bar/10bar)	753N/1256N
pulling force $F_{Z1}$ (6bar/10bar)	662N/1119N
pulling force $F_{Z2}$	see picture 2 (z...stroke)
compressed air supply	at lower end (picture 2 / 1*)



picture 1: dimensional drawing



picture 2: pulling force retracted

## Mounting

-  Handling of the cylinder only with gloves and suitable working clothes.
-  Prepare the installation space of the cylinder in such a way that there is no risk of crushing (e.g.: providing protection plates).
-  The cylinder mounting must be designed according to the cylinder forces.

The following must be observed before mounting:

-  Check the completeness of the scope of supply. Check cylinder and piston rod for transport damages. Check the piston rod and the unlocking screws for corrosion.

## Cylinder bottom mounting

Mount the cylinder with the fixing material (see *scope of supply*).

-  Regard direction of arrow according to picture 5 / 3\*! Tightening torque 20-30Nm.

## Piston rod mounting

Mount the piston rod over the appropriate mounting version in the provided mounting.

### Eye bolt

-  Regard the adjustment range! To prevent the eye bolt from being unscrewed, the nut must be countered.

### Spring locking bolt

-  The spring locking bolt (picture 4 / 2\*) must be locked again, as in the delivery condition.

## Compressed air supply

Connect the cylinder to the compressed air supply (picture 1 / 1\*).

## Commissioning

Before commissioning, the following must be regarded:

-  Check if the cylinder can pass through its full stroke without collision with other parts of the system. In this case, it is also important to take care of deformations at maximum load and maximum pressure.
-  Check the function of the end position locking (if existing).

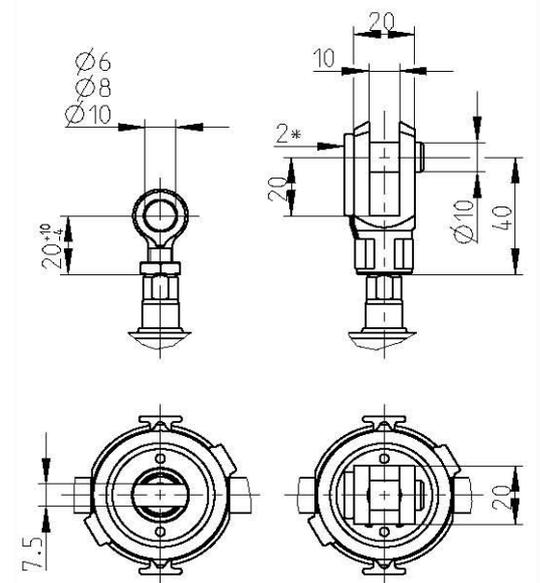
## Scope of supply

cylinder PL  
 plug ST 12-1/8"-D  
 swivel screw fitting SV 6-12-1/8"  
 piston rod mounting  
 documentation

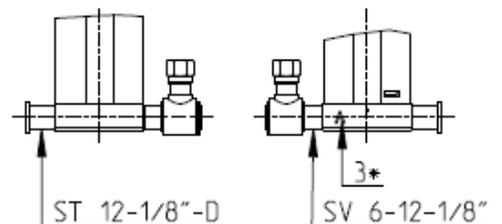
## Reservoir length SPL

$$SPL [mm] = \frac{VSP [l] \cdot 10^6 \cdot 4}{d^2 [mm] \cdot \pi}$$

picture 3: formular reservoir length



picture 4: piston rod mounting



picture 5: direction of arrow

## Normal operation

**!** In the event of a power failure, the cylinder retract automatically. The cylinder has no internal protection against crushing.

## Locking

- The cylinder is in the retracted end position, pressureless, locked.
- Unlocking:  
Pneumatic: Apply pressure to the compressed air supply.  
Manual: Pull on the unlocking device (picture 6).

**!** Release the locking under load will cause the window, louver or flap to move. This can lead to serious injury.

## Maintenance

**i** Maintenance must be carried out once a year by a trained specialist.

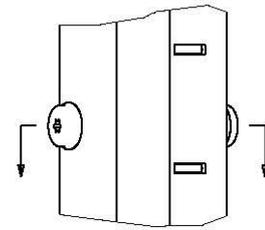
The following points must be checked:

- Check unlocking screws for rust-freeness.
- Check the seal ring of the unlocking screw for wear, damage and sealing to the housing.
- Check the piston rod for rust-freeness, damage and cleanliness (clean if necessary).
- Check wiper for piston rod for wear and sealing to piston rod.
- Check all cylinder parts for tightness (it is absolutely necessary to check the cylinder in any lifting position).
- Check for dustiness (clean if necessary).

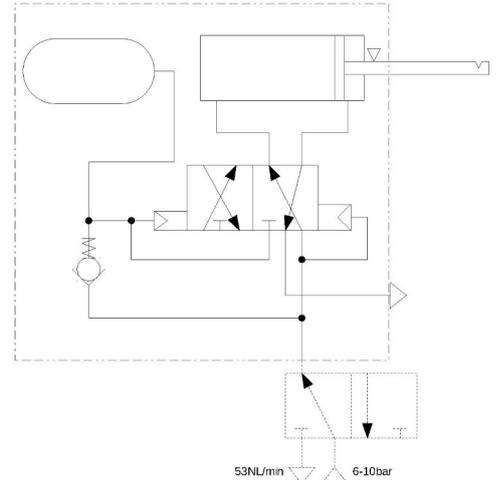
## Disassembling/troubleshooting

**!** Even if the cylinder is exhausted, or the compressed air supply is disconnected, there is a risk that there is still a pressure in the compressed air reservoir. In this case, be careful when disassembling the fixture (plug, swivel screw fitting, clevis, eye bolt, etc.). To exhaust the compressed air reservoir, loosen the plug (see picture 5) two turns, thus releasing the possible pressure. The cylinder can move thereby (loading case).

**i** The cylinder is not allowed to open. The unauthorized opening of the cylinder leads to the exclusion of liability and to the loss of the warranty.



picture 6: locking



picture 7: circuit diagramm

## Disposal

The cylinder is made of the following materials: rubber compound (NBR), plastic (POM), aluminium (AlCuMgPb, AlMgSi0.5), steel (1.4104).

**!** The cylinder must be disposed of according to national regulations.