Application Note

FESTO

Mounting of the ADN-S and AEN-S cylinders size 6 and 10

This Application note provides information on how to mount correctly cylinders ADN-S/AEN-S size 6 and 10 on the front and back sides.

ADN-S
AEN-S

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1 Components used

Type/Name	Description
AEN-S-10-* (4891760)	Compact single-acting cylinder
Loctite 243	Threadlocking material for general use
Torque Wrench	Torsiometer - torque screwdriver 150 cNm (0 – 1.5 Nm)
Internal hex head screw M3	M3 screws with 8.8 strength class

Table 1.1: Components list

2 Introduction

2.1 Why correct mounting is important

This application note will show what types of mounting are available for the ADN-S/AEN-S size 6 and 10, how to correctly mount them to the surface area and how to avoid any deviations from alignment, that could cause unwanted and improper operations or any other type of damage to the workpiece or actuator itself.

2.2 Types of mounting positions

Since ADN-S/AEN-S size 6 and 10 compact cylinders do not have any mounting accessories, there are only three ways of mounting options (through mounting holes on the housing).

1 Mounting with 2x bolts (M3) with back end facing the mounting face and piston looking outwards.

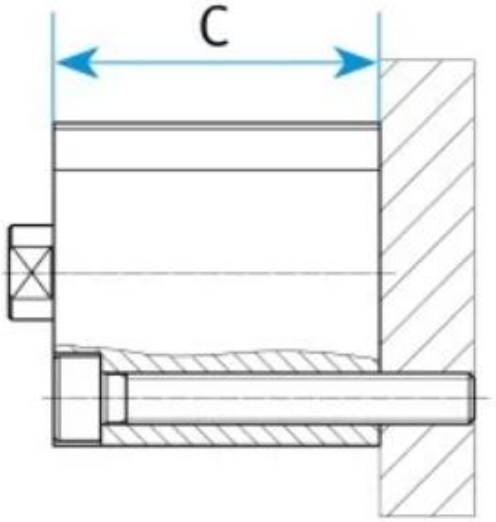


Fig. 2.1: Mounting type - back

2 Mounting with 2x bolts (M3) with front end facing the mounting face and piston going through the hole in the mounting plate.

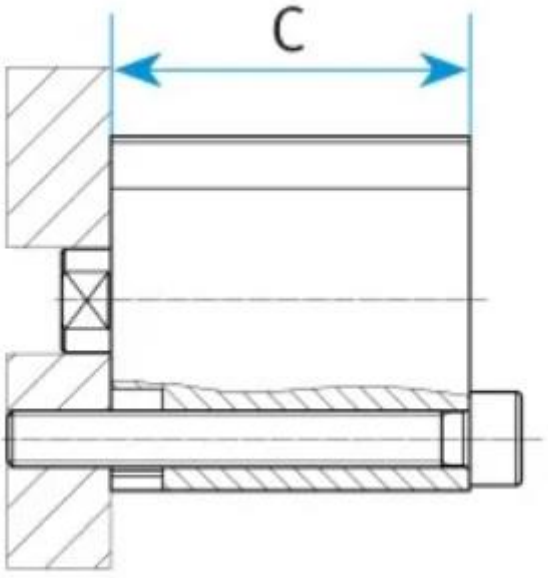


Fig. 2.2: Mounting type - front

3 Mounting with 2x bolts (M3) on one of the sides of the cylinder, vertically or horizontally.

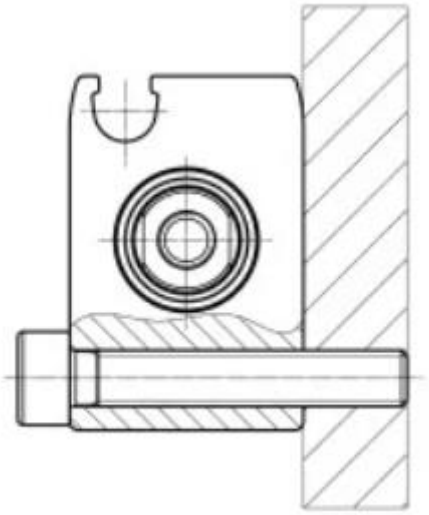
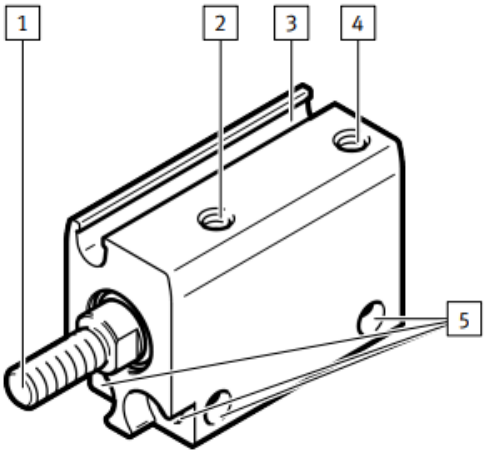


Fig. 2.3: Mounting type - side

2.3 3D product design

Below is a complete visual representation of size 6 & 10 pneumatic actuator with all mounting and pneumatic connections.



1 Thread for mounting the payload
2 Pneumatic port 1
3 Slot for proximity switch
4 Pneumatic port 2
5 Through-hole for mounting (4x)

Fig. 2.4: Figure naming

Note

Please note that even there is a size difference between 6 & 10 size actuators, this only effects the overall dimensions and piston threads sizes of the cylinder. Check below for mounting information for both sizes:

- Pneumatic connection – M3
- Through-hole size – 3.3 mm
- C-slot sensor rail

3 Mounting

3.1 Preparations

To mount ADN-S / AEN-S correctly, handle the cylinder carefully to avoid damage to the cylinder barrel and piston rod.

➔ **Note**

Note the following points:

- Mounting without distortion
- Compliance with the permissible loads as per catalogue specifications

Avoid mechanical alignment inaccuracy between the piston rod and, for example, an external guide by precise alignment. A rigid coupling will reduce the service life and adversely affect the function of the cylinder.

3.2 Mounting actuator to the plate without deviations

Due to the screw connection in the lower area, tilting creates a small gap in the upper part between the drive and the mounting plate. With a tightening torque of 1.2 Nm, this should only be between **0.02 - 0.05** mm.

Fig. 3.1: Non-center bolt mounting

3.2.1 Incorrect mounting

Fastening with too high torque (> 1.2 Nm). The cylinder tilts due to too much tightening of the fastening screws.

Fig. 3.2: Over-tightened cylinder

This creates gap between mounting face and actuator greater than allowed > **0.02 - 0.05** mm.

3.2.2 Correct mounting

Fixing with correct torque. The cylinder lies almost flat against the front side

Fig. 3.3: Correct position

Correct mounting should prevent unwanted damage and prolong the service life of ADN-S/AEN-S cylinders.

3.2.3 Technical information

For secure attachment of the ADN-S and AEN-S cylinders of sizes 6 and 10, the use of a torque wrench is recommended. When using thread locker paint, which is also recommended, the torque should be reduced

Torque	**Value**
Max. tightening torque **without** thread lock	1.2 Nm
Max. tightening torque **with** thread lock	0.9 Nm

Table 3.1: Torque values

Fig. 3.4: LOCTITE 243 thread lock