



**Mounting and
Operating Instructions**

EB 8315 EN

Edition October 2014

Definition of signal words



DANGER!

Hazardous situations which, if not avoided, will result in death or serious injury



WARNING!

Hazardous situations which, if not avoided, could result in death or serious injury



NOTICE

Property damage message or malfunction



Note:

Additional information



Tip:

Recommended action

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1 General safety instructions

For your own safety, follow these instructions concerning the mounting, start up and operation of the actuator:

- The actuator is to be mounted, started up or operated only by trained and experienced personnel familiar with the product.
- According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.
- Any hazards that could be caused by the signal pressure or moving parts of the actuator are to be prevented by taking appropriate precautions.

To avoid damage to any equipment, the following also applies:

- Proper shipping and storage are assumed.

2 Design and principle of operation

The Type 3379 Pneumatic Actuator (with spring-return mechanism) is used in conjunction with a valve suitable for the food and pharmaceutical industries.

Principle of operation (Fig. 1)

The signal pressure p_{st} creates a force on the piston surface (5) which is counteracted by the spring(s) (4). The bench range is determined by the number of springs used and their compression, taking into account the rated travel.

The actuators are designed for a maximum travel of 15 mm. A spring compression is only possible with smaller travels.

The travel H is proportional to the signal pressure p_{st} . The operating direction of the actuator stem depends on how the springs are installed in the actuator.

The supply air is connected for both operating directions to the top connecting plate.

The connection between the actuator stem and the valve's plug stem differs depending on the valve used. Refer to the mounting and operating instructions of the corresponding valve for more details.

2.1 Versions

- **Type 3379-00:** Type 3379 Actuator combined with Type 3724 Electropneumatic Positioner (► EB 8395 EN)
- **Type 3379-01:** Type 3379 Actuator for on/off service
- **Type 3379-02:** Type 3379 Actuator combined with Type 4740 Electric Limit Switch

2.2 Operating direction

The operating direction is determined by how the springs are arranged in the actuator and its internal design (see Fig. 1):

- Actuator stem retracts
- Actuator stem extends



Note:

It is not possible to reverse the operating direction.

2.3 Fail-safe action

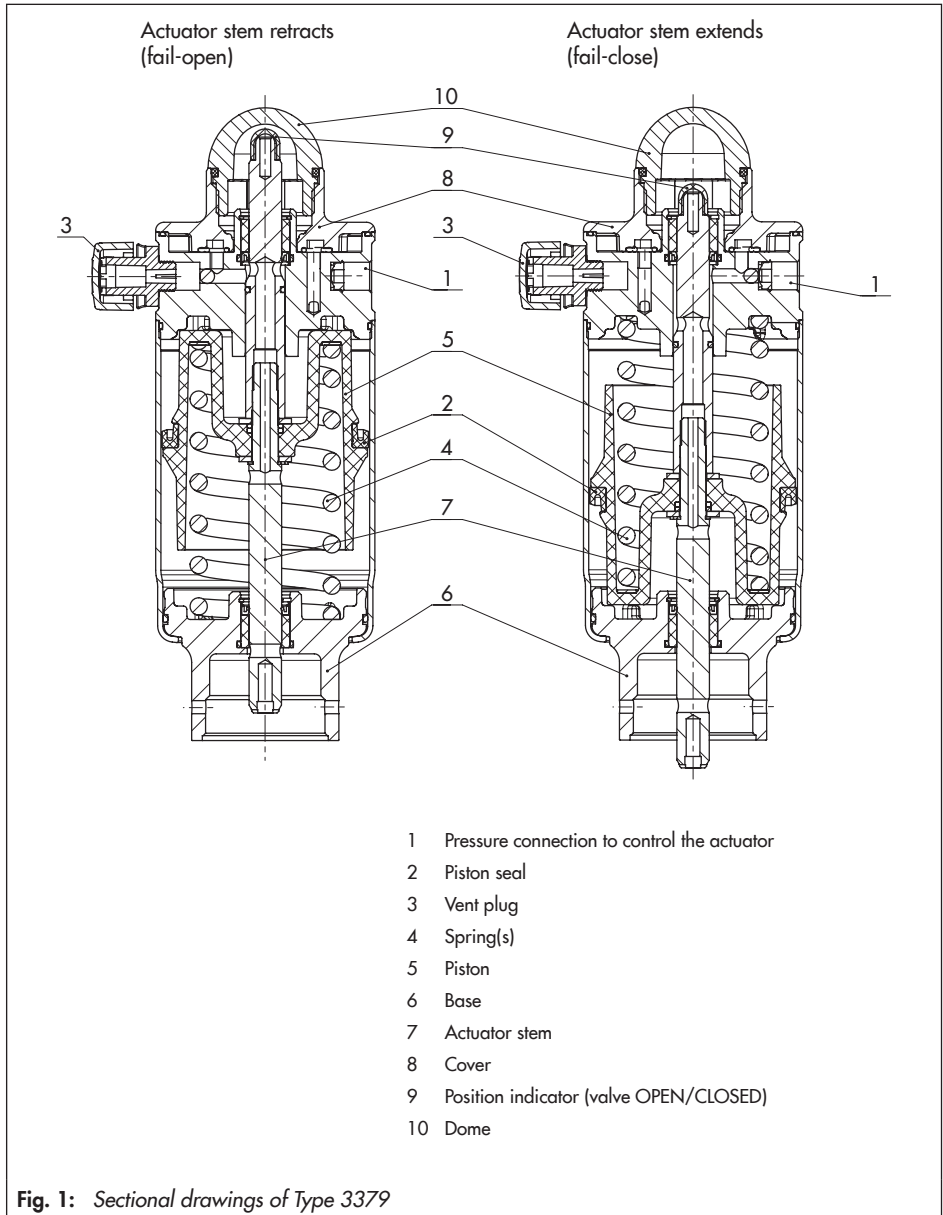
Depending on the operating direction of the actuator, the actuator has different fail-safe actions effective upon air supply failure.

Actuator stem extends (fail-close):

When the air supply fails, the spring force moves the stem downwards causing the valve to close.

Actuator stem retracts (fail-open):

When the air supply fails, the spring force moves the stem upwards causing the valve to open.



2.4 Technical data

Table 1: *General data*

Piston diameter	mm	63	90
	in	2.48	3.54
Effective area	cm ²	31	63
	in ²	4.8	9.8
Rated travel	mm	15	15
	in	0.59	0.59
Permissible ambient temperature	°C	0 to +60	0 to +60
	°F	+32 to +140	+32 to +140
Max. supply pressure	bar	8	8
	psi	116	116
Hysteresis	bar	0.4	0.3/0.5/0.6 ¹⁾
	psi	6	4.3/7.2/8.7

¹⁾ Depending on adjusted spring range

Table 2: *Fail-close version*

Piston diameter	mm	63	90				
	in	2.48	3.54				
Effective area	cm ²	31	63				
	in ²	4.8	9.8				
No. of springs		1	1	2			
Control pressure	bar	4	4.5	6			
	psi	58	65	87			
Nominal range	bar	2.3 to 3.7	2.5 to 4.0	3.3 to 5.6			
	psi	34 to 54	36 to 58	48 to 81			
Travel	mm	15	15	15			
	in	0.59	0.59	0.59			
Thrust	N	720	930	1590	2030	2090	2670
	lbf	162	209	357	456	470	600

Table 3: Fail-open version

Piston diameter	mm	63		90			
	in	2.48		3.54			
Effective area	cm ²	31		63			
	in ²	4.8		9.8			
No. of springs		1		1		1	
Control pressure	bar	6		6		4	
	psi	87		87		58	
Nominal range	bar	2.3 to 3.7		1.0 to 1.9		1.0 to 1.9	
	psi	34 to 54		15 to 28		15 to 28	
Travel	mm	15		15		15	
	in	0.59		0.59		0.59	
Thrust	N	720	930	2580	2830	1320	1570
	lbf	162	209	580	636	297	353

Table 4: Materials

Component	Material
Housing and cover	Stainless steel 1.4404 (316L)/1.4409 (CF3M)
Piston rod	1.4404 (316L)
Piston	Polyamide, glass fiber reinforced
Dome (visual indicator)	Polycarbonate
Bearing	Polymer
Springs	Spring steel, powder coated
Seals	NBR

Table 5: Weight

Piston diameter	mm	63 mm	90 mm
	in	2.48	3.54
Weight (approx.)	kg	2.5	3.5
	lb	5.5	7.7

3 Installation

All versions of the Type 3379 Pneumatic Piston Actuator are delivered ready-mounted on the valve. To start up the actuator, perform the pneumatic connections and, in versions with positioner or limit switch, also connect the electric wiring.

Further information:

Connection of the Type 3724 Positioner

See ► EB 8395 EN

Connection of the Type 4740 Limit Switch

See ► EB 8357 EN

3.1 Pneumatic connections

The customary fittings for metal and copper pipes or plastic hoses can be used to connect the supply air.

The exhaust air port is delivered fitted with a silencer. In versions with a positioner, this port is fitted with a stainless steel check valve.

3.2 Replacing the actuator

The procedure to remove and mount a new actuator is described in the mounting and operating instructions of the corresponding valve.

3.3 Aligning the actuator

Depending on the mounting position, it may be necessary to align the position of the pneumatic connections. Proceed as follows (Fig. 2):

For fail-open version:

1. Extend the actuator stem.
2. Push a rod with 2.5 mm diameter or a similar object, e.g. a screwdriver or SAMSON tool ¹⁾ through the holes on the actuator base to secure the actuator stem.
3. Insert suitable object, e.g. threaded rod or SAMSON tool ²⁾ into the exhaust air connection of the actuator and turn the actuator bonnet **clockwise** until the pneumatic connections are in the required position.

For fail-close version:

1. Push a rod with 2.5 mm diameter or a similar object, e.g. a screwdriver or SAMSON tool ¹⁾ through the holes on the actuator base to secure the actuator stem.
2. Insert suitable object, e.g. threaded rod or SAMSON tool ²⁾ into the supply connection of the actuator and turn the actuator bonnet **clockwise** until the pneumatic connections are in the required position.

¹⁾ Order no. 1281-0069

²⁾ Order no. 1281-0067 for Ø 63 mm actuator, order no. 1281-0068 for Ø 90 mm actuator

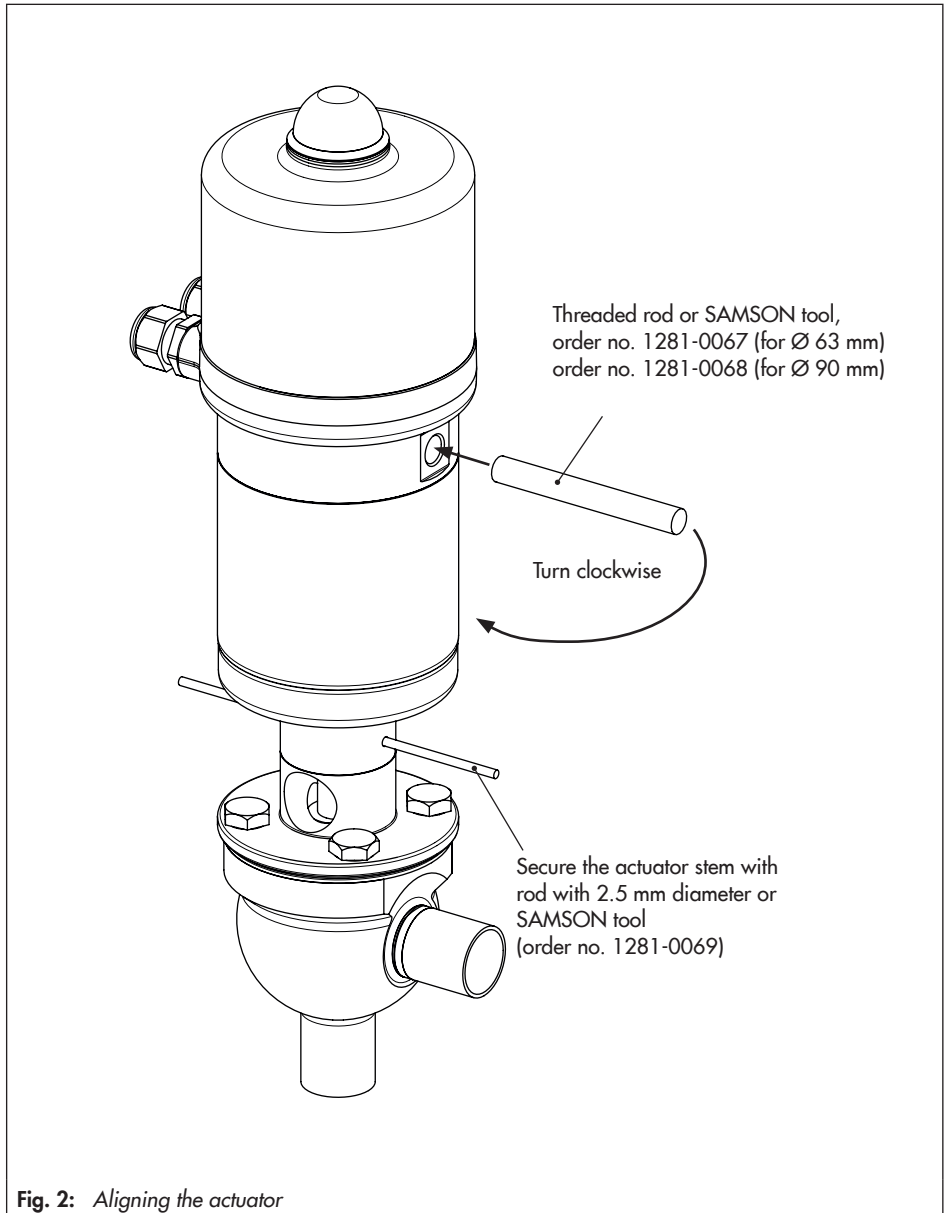


Fig. 2: *Aligning the actuator*

3.4 Removing and exchanging the actuator bonnet



WARNING!

Risk of injury due to compressed springs!

Do not dismantle the actuator!

Fig. 3 shows the different combinations (actuator with limit switch and actuator with positioner). The Type 4740 Limit Switch is mounted on the cover of the actuator. The Type 3724 Positioner is mounted without actuator cover directly to the basic module of the actuator.

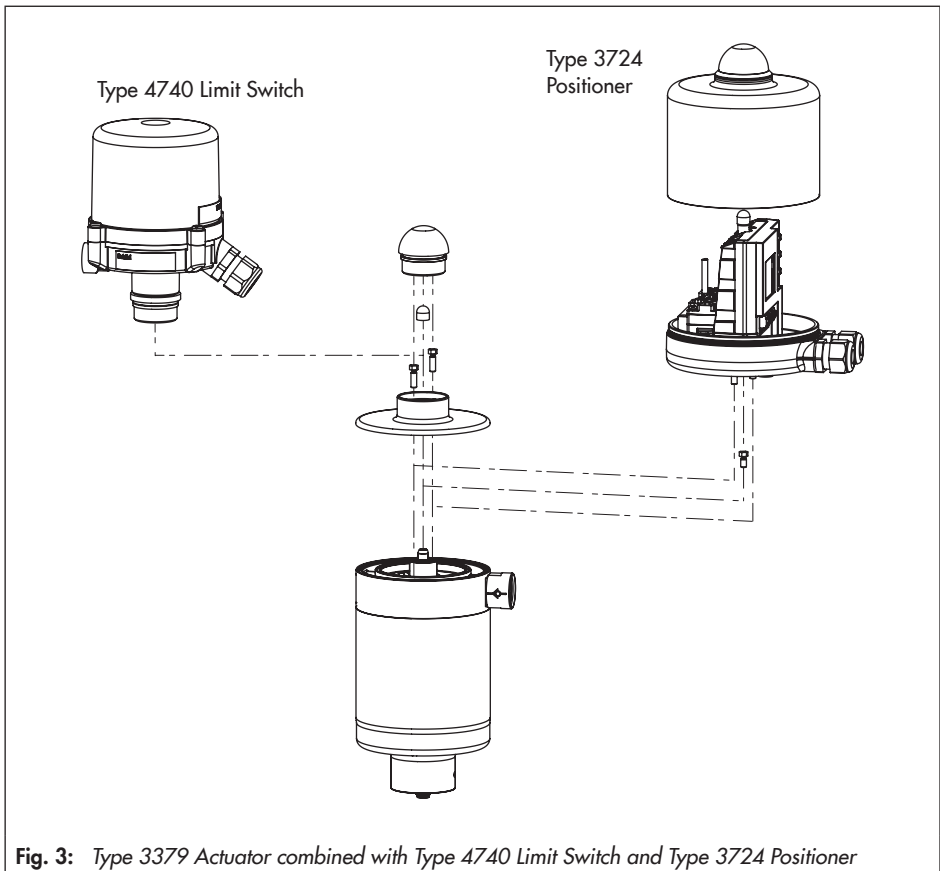


Fig. 3: Type 3379 Actuator combined with Type 4740 Limit Switch and Type 3724 Positioner

If the actuator is to be replaced or upgraded, remove the bonnet (cover, positioner or limit switch) of the actuator.

Make sure that the O-ring and molded seal are reinserted correctly after reassembly (Fig. 4).

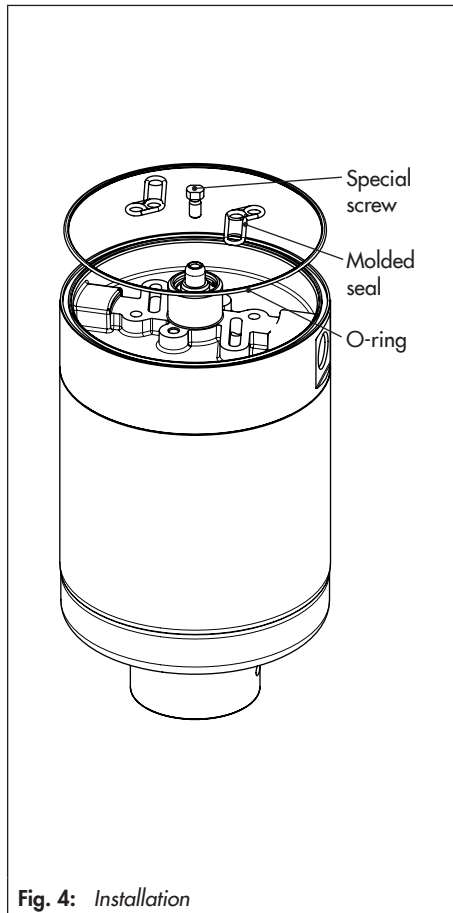


Fig. 4: Installation

3.4.1 Removing the cover

1. Unscrew dome (visual indicator).
2. Unthread both hexagon socket screws.
3. Remove the cover.

3.4.2 Removing the Type 4740 Limit Switch

1. Remove the limit switch as described in the Mounting and Operating Instructions ► EB 8357 EN.
2. The cover remains on the basis module.

3.4.3 Removing the Type 3724 Positioner

1. Remove the positioner as described in the Mounting and Operating Instructions ► EB 8395 EN.
2. If necessary, unscrew the special screw (belonging to the positioner).

4 Dimensions in mm

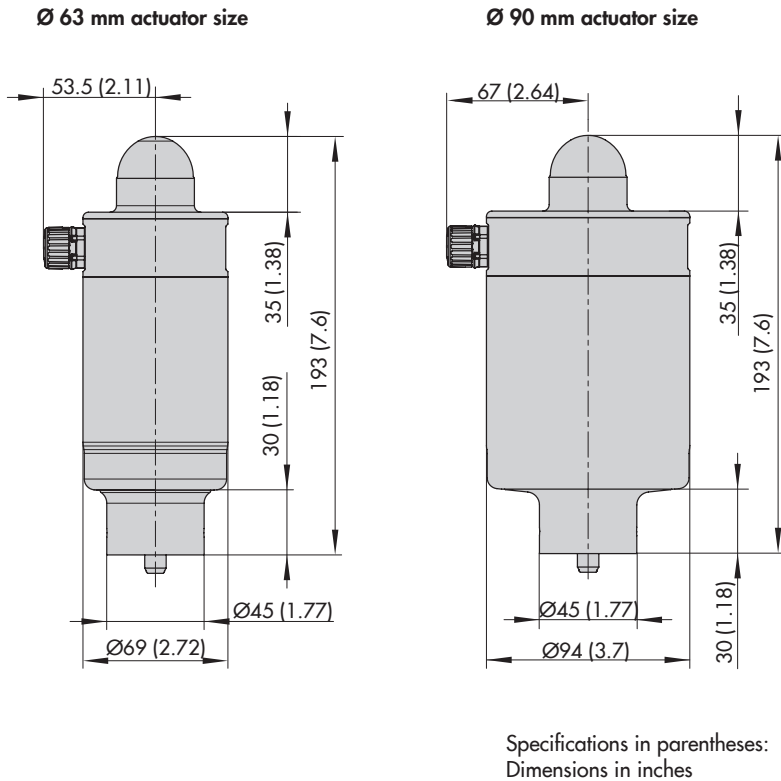
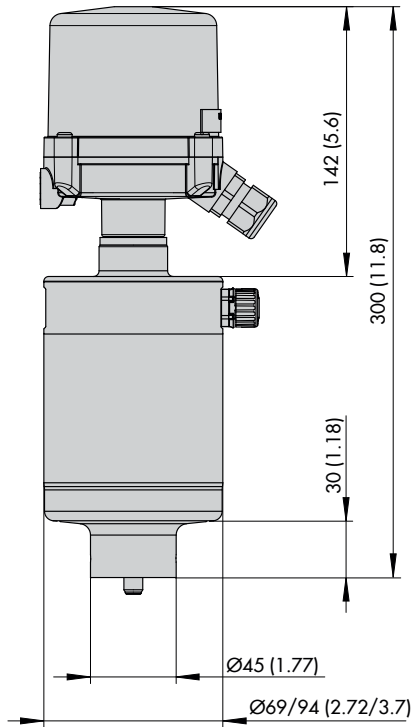
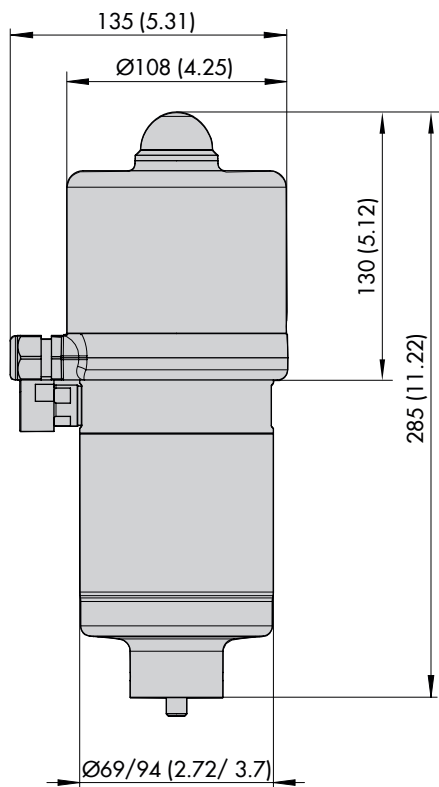


Fig. 5: Dimensional diagram of Type 3379-01 Actuator



Specifications in parentheses:
Dimensions in inches

Fig. 6: Dimensional diagram of Type 3379-02 Actuator



Specifications in parentheses:
Dimensions in inches

Fig. 7: Dimensional diagram of Type 3379-00 Actuator



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