

T 8314 EN

Type 3275 Pneumatic Piston Actuator

Application

Double-acting pneumatic piston actuator for the Type 3241 PSA Valve

Actuator area	314, 490, and 804 cm²
Rated travel	15 to 30 mm

The actuators are mainly used with Type 3241 Valves in pressure swing adsorption (PSA) plants.

- Low overall height
- Powerful thrust thanks to the supply pressure of max. 6 bar
- Low friction
- Temperature range from -30 to $+80$ °C

The actuators with 314 and 490 cm² areas are fixed to a yoke, which is designed to accommodate a pneumatic or electropneumatic positioner. This type of direct attachment has the following advantages:

- Tight and exact mechanical linkage
- No misalignment during transport
- Travel pick-off protected against touching and external influences that meets the requirements of the German Accident Prevention Regulations (VBG 5)
- Simple pneumatic connection between actuator and positioner

The actuator with 804 cm² area does need a yoke. The valve accessories are mounted over the NAMUR interface.

Versions

- **Type 3275** · Pneumatic piston actuator (Fig. 1), 314 cm² effective actuator area
- **Type 3275** · Pneumatic piston actuator, 490 cm² effective actuator area
- **Type 3275** · Pneumatic piston actuator, 804 cm² effective actuator area with positioner attachment to the NAMUR interface



Fig. 1: Type 3275 Piston Actuator with integrated attachment of the positioner and solenoid valve on Type 3241 PSA Valve

Further versions

- **Larger travels** on request
- **Extended temperature range down to -40 °C** on request
- Version with side-mounted handwheel · Data Sheet **▶ T 8312**
- **Special version with auxiliary spring** · To reach a defined end position upon supply air failure

Principle of operation

The double-acting Type 3275 Pneumatic Piston Actuator with 314, 490, and 804 cm² actuator areas consists of the cover (4), base (10), and piston (9). The stem connector clamps connect the actuator's piston rod (1) with the plug stem of the globe valve.

The signal pressure p_{st} creates the force $F = p_{st} \cdot A$ at the piston surface A , which is opposed by the corresponding counter-pressure. The piston is pressurized with the supply air over the two connections (G ³/₈ or G ¹/₂).

The actuators with 314 and 490 cm² actuator areas are fixed to a yoke, which is designed to accommodate a pneumatic or electropneumatic positioner. See Fig. 2.

The actuator with 804 cm² area does need a yoke (see Fig. 3). The valve accessories are mounted over the NAMUR interface.

The double-acting piston actuator has no springs. A defined final position is not reached when the signal pressure is reduced or the air supply fails.

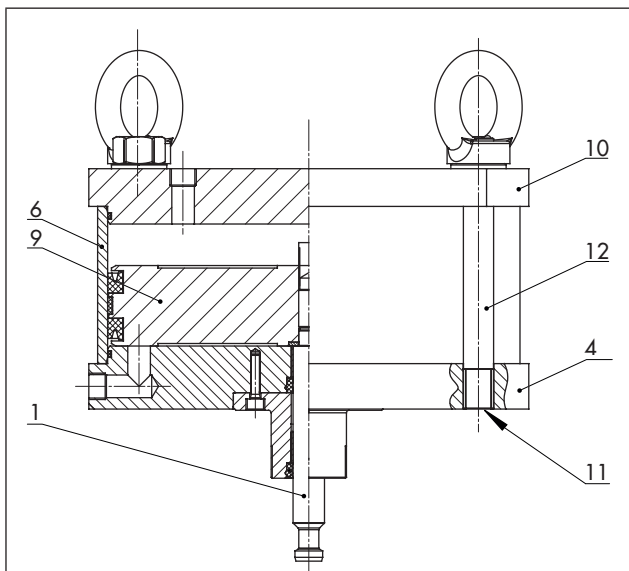


Fig. 3: Type 3275 Pneumatic Piston Actuator, version with 804 cm² actuator area

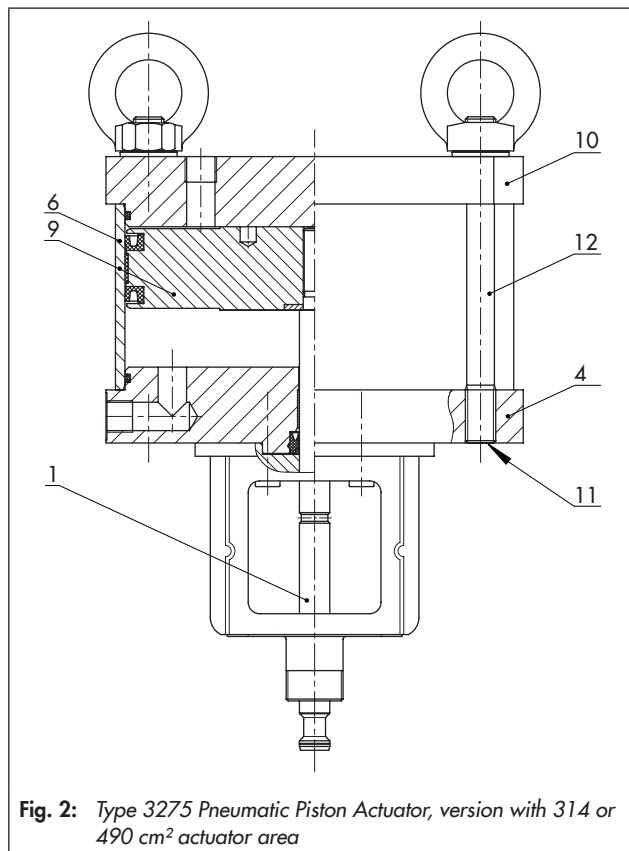


Fig. 2: Type 3275 Pneumatic Piston Actuator, version with 314 or 490 cm² actuator area

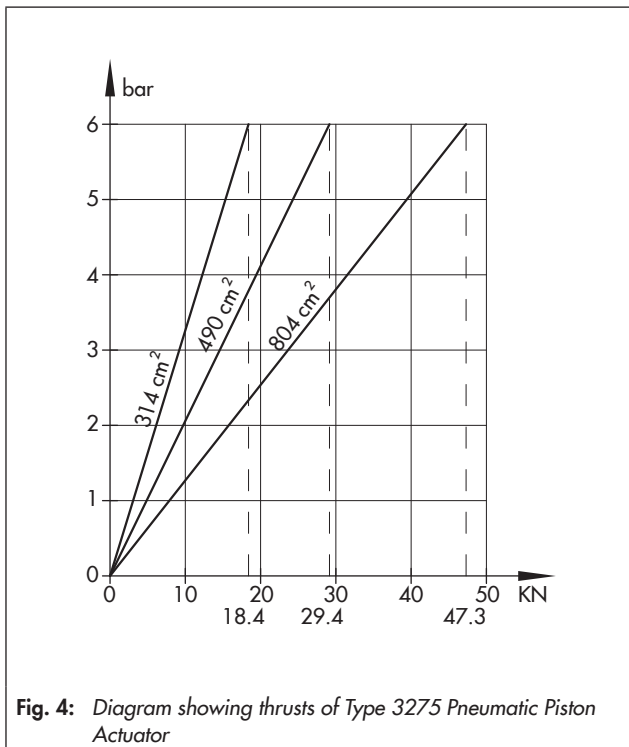


Fig. 4: Diagram showing thrusts of Type 3275 Pneumatic Piston Actuator

Legend for Fig. 2 and Fig. 3

1	Piston rod	10	Base
4	Cover	11	Collar nut
6	Pipe	12	Linkage
9	Piston		

Table 1: Technical data

Version	Type	3275					
Actuator area	cm ²	314		490		804	
Supply pressure	Max.	6 bar		6 bar		6 bar	
Rated travel	mm	15	30	15	30	15	30
Travel volume	cm ³	471	942	735	1470	1206	2412
Air connection		G 3/8		G 1/2		G 1/2	
Max. permissible leakage (t ≥ 0 °C)		50 cm ³ /min		58 cm ³ /min		70 cm ³ /min	
Perm. temperature range for continuous operation		-30 to +80 °C · Extended temperature range down to -40 °C on request					
Compliance		EAC					

Table 2: Materials

Cylinder tube	3.3206, anodized
Bonnet/bottom section	3.3547, anodized
Piston guide band	PTFE
Piston rod	1.4548.4
Piston rod guide	Iglidur
Ring nut	C15/A2E
Yoke	1.0460
Seals	NBR/PU

Table 3: Dimensions and weights

Actuator	Type	3275					
Actuator area	cm ²	314		490		804	
Rated travel	mm	15	30	15	30	15	30
Travel volume	cm ³	471	942	735	1470	1206	2412
□	mm	220		280		350	
H1 including lifting eyelet	mm	225 ¹⁾		250 ¹⁾		286	
H2	mm	102		102		-	
H3 (rod retracted)	mm	60		60		88	
Air connection		G 3/8		G 1/2		G 1/2	
Weight	kg	10		17		21	

¹⁾ Different dimensions may arise with the special version (e.g. for low temperatures)

