

T 8314-1 EN

Type 3275-A 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:

- Firm 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-A** · Pneumatic piston actuator (Fig. 1), 314 cm² effective actuator area
- **Type 3275-A** · Pneumatic piston actuator (Fig. 1), 490 cm² effective actuator area
- **Type 3275-A** · Pneumatic piston actuator (Fig. 2), 804 cm² effective actuator area with positioner attachment to the NAMUR interface

Further versions

- **Deviating travels 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

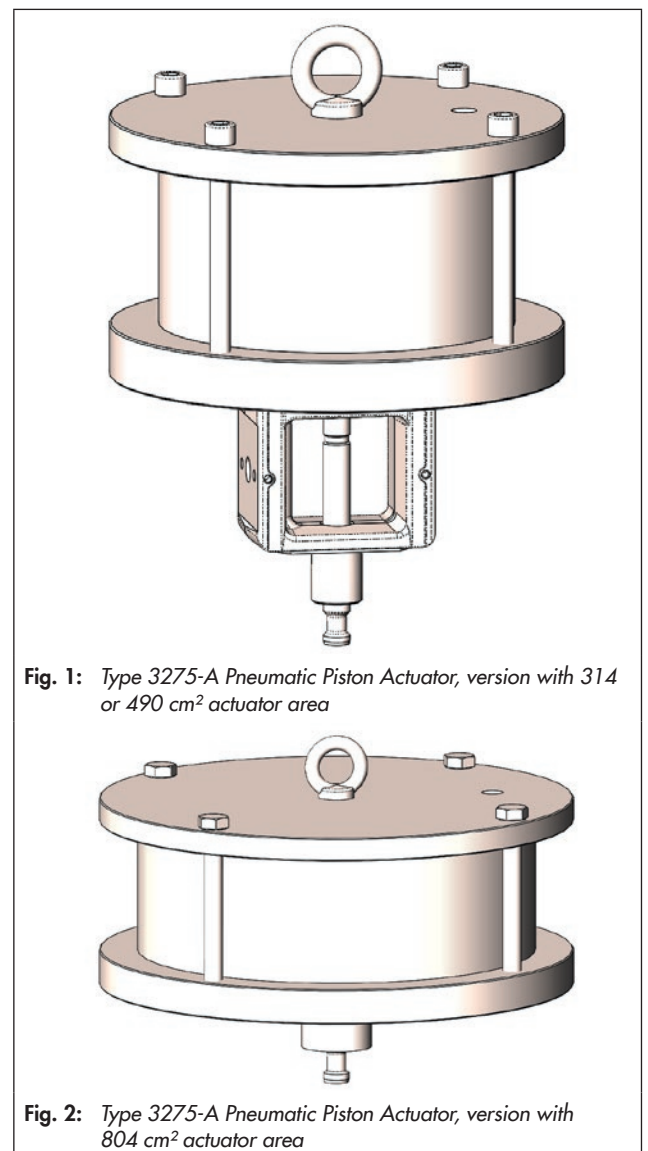


Fig. 1: Type 3275-A Pneumatic Piston Actuator, version with 314 or 490 cm² actuator area

Fig. 2: Type 3275-A Pneumatic Piston Actuator, version with 804 cm² actuator area

Principle of operation

The double-acting Type 3275-A 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 $\frac{3}{8}$ or G $\frac{1}{2}$).

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. 3.

The actuator with 804 cm² area does need a yoke (see Fig. 4). 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.

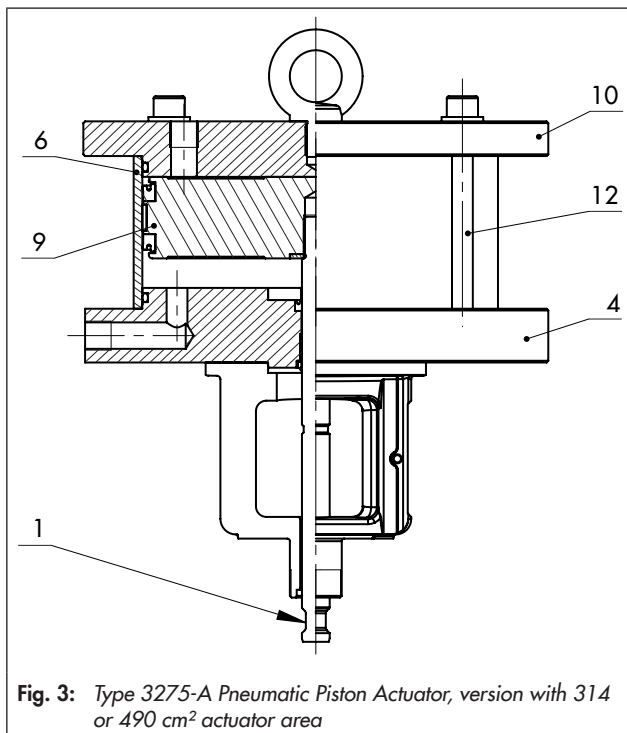


Fig. 3: Type 3275-A Pneumatic Piston Actuator, version with 314 or 490 cm² actuator area

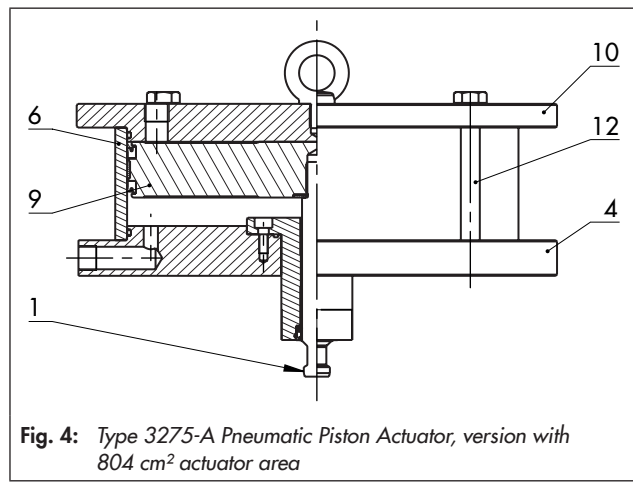


Fig. 4: Type 3275-A Pneumatic Piston Actuator, version with 804 cm² actuator area

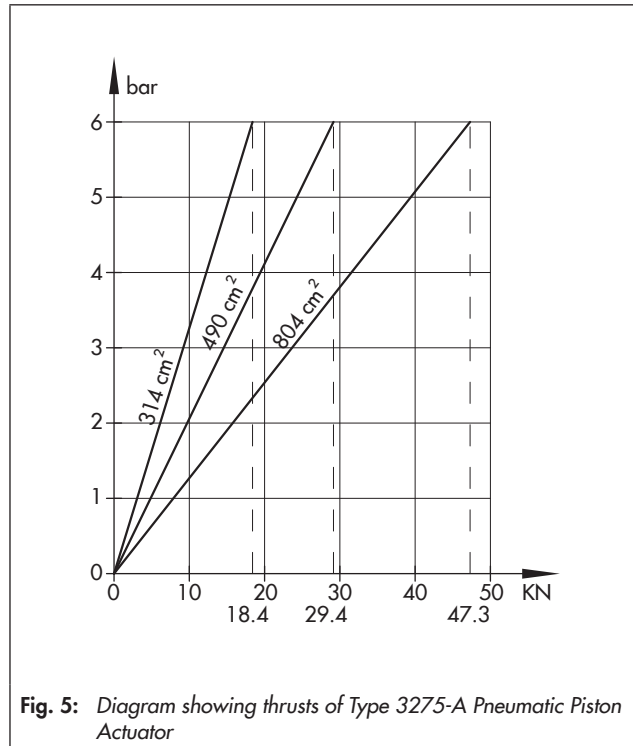


Fig. 5: Diagram showing thrusts of Type 3275-A Pneumatic Piston Actuator

Legend for Fig. 3 and Fig. 4

1	Piston rod	9	Piston
4	Bonnet	10	Base
6	Pipe	12	Linkage

Table 1: Technical data

Version	Type	3275-A								
Actuator area	cm ²	314			490			804		
Supply pressure	Max.	6 bar			6 bar			6 bar		
Rated travel	mm	15	19	30	15	19	30	15	19	30
Max. actuator travel	mm	33			33			33		
Travel volume	cm ³	471	597	942	735	931	1470	1206	1528	2412
Air connection		G 3/8			G 1/2			G 1/2		
Max. permissible leakage (t ≥ 0 °C)		70 cm ³ /min			70 cm ³ /min			70 cm ³ /min		
Perm. temperature range for continuous operation		-60 to +80 °C								
Compliance		EAC								

Table 2: Materials

Material version	Standard version (aluminum)	Heavy-duty version (steel)
Part	Material	Material
Cylinder tube	3.3206, anodized	1.0570, N+OX
Bonnet/bottom section	3.3547, anodized	1.0570, N+OX
Piston	3.3547, anodized	1.0570, N+OX
Piston rod	1.4548.4	1.4548.4
Connecting rod	A2	
Yoke/connection nipple	1.0460/1.0038	
Ring bolt	C15/A2	
Piston rod guide	PTFE/steel	
Piston guide band	PTFE	
Seals -60 to +80 °C	VMQ/TT-PU	

Table 3: Dimensions and weights

Actuator	Type	3275-A								
Actuator area	cm ²	314			490			804		
Supply pressure	Max.	6 bar			6 bar			6 bar		
Rated travel	mm	15	19	30	15	19	30	15	19	30
Max. actuator travel	mm	33			33			33		
D1	mm	268			318			405		
H1 including lifting eyelet	mm	207			207			214		
H2	mm	102			102			-		
H3 (rod retracted)	mm	60			60			85		
Weight (standard version)	kg	17			23			41		
Weight (heavy-duty version)	kg	56			68			106		

