DATA SHEET

T 8314-1 EN

Type 3275A Pneumatic Piston Actuator

Application

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

Actuator area **314, 380, 490 and 804 cm²**
Rated travel **15 to 30 mm**

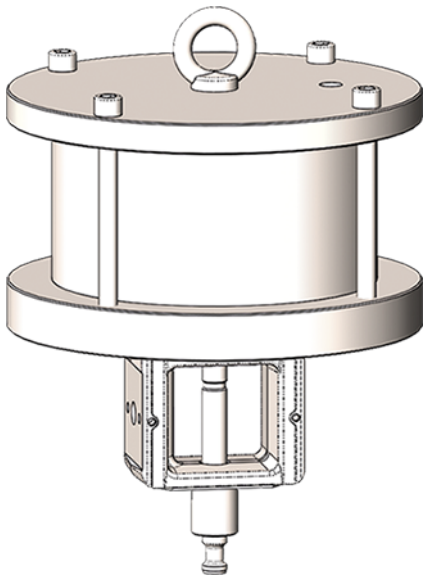


Fig. 1: *Type 3275A Piston Actuator, version with 314, 380 or 490 cm² actuator area*

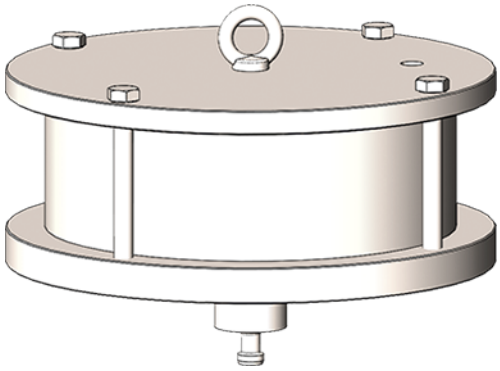


Fig. 2: *Type 3275A Piston Actuator, version with 804 cm² actuator area*

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 -60 to +80 °C

The actuators with 314, 380 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 3275A** · Pneumatic piston actuator (Fig. 1), 314, 380 or 490 cm² effective actuator area
– **Type 3275A** · Pneumatic piston actuator (Fig. 2), 804 cm² effective actuator area with positioner attachment to the NAMUR interface

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · samson@samsongroup.com · www.samsongroup.com

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Further versions

- **Deviating travels on request**
- Version with **side-mounted handwheel** · See Data Sheet ▶ T 8312
- **Special version with auxiliary spring** · To reach a defined end position upon supply air failure

Design and principle of operation

The double-acting Type 3275A Pneumatic Piston Actuator with 314, 380, 490 and 804 cm² actuator areas mainly consists of the cover (2 or 4), base (1 or 10) and piston (9). The stem connector clamps connect the actuator's piston stem (7) 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 ⅜ or G ½).

The actuators with 314, 380 and 490 cm² actuator areas are fixed to a yoke, which is designed to accommodate a pneumatic or electropneumatic positioner (see Fig. 4).

The actuator with 804 cm² area does need a yoke (see Fig. 5). 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.

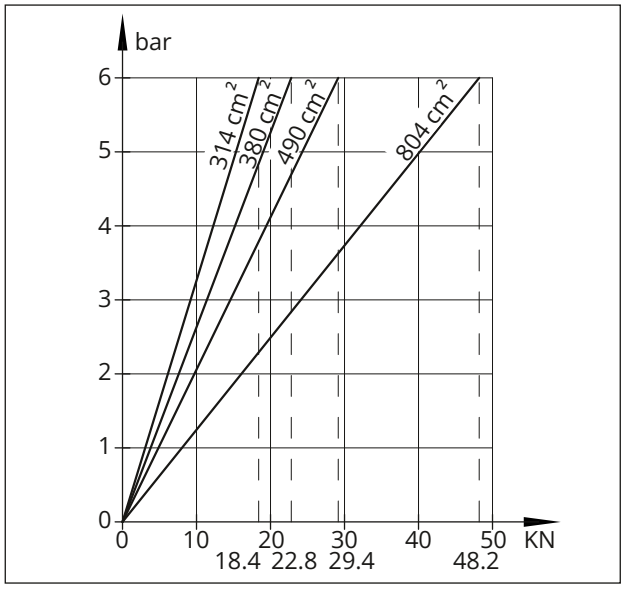


Fig. 3: *Diagram showing thrusts of Type 3275A Piston Actuator*

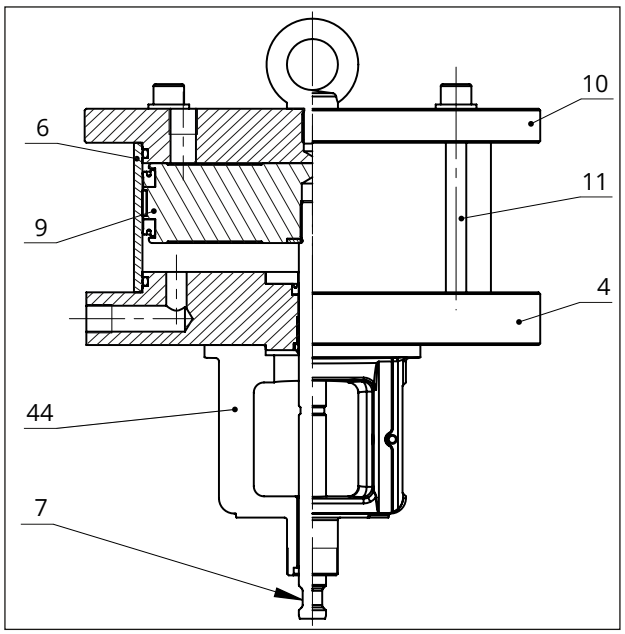


Fig. 4: *Type 3275A Piston Actuator, version with 314, 380 or 490 cm² actuator area*

4	Cover (314, 380, 490 cm²)	10	Base (314, 380, 490 cm²)
6	Cylinder tube	11	Tie rod
7	Piston stem	44	Yoke
9	Piston		

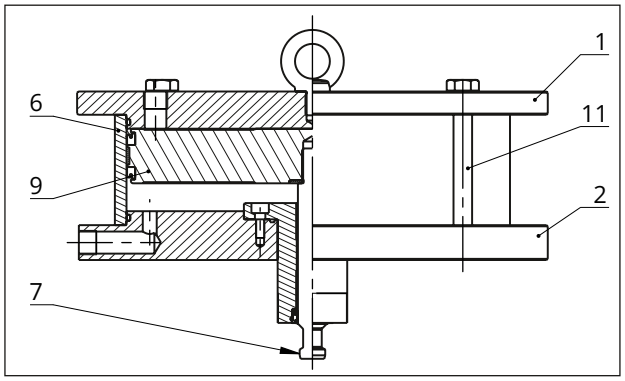


Fig. 5: *Type 3275A Piston Actuator, version with 804 cm² actuator area*

1	Base (804 cm²)	7	Piston stem
2	Cover (804 cm²)	9	Piston
6	Cylinder tube	11	Tie rod

Table 1: *Technical data for Type 3275A Pneumatic Piston Actuator*

Actuator area	**cm²**	**314**			**380**			**490**			**804**		
Supply pressure	Max.	6 bar			6 bar			6 bar			6 bar		
Rated travel	mm	15	19	30	15	19	30	15	19	30	15	19	30
Max. actuator travel	mm	33			33			33			33		
Travel volume	cm^3	471	597	942	570	722	1140	735	931	1470	1206	1528	2412
Air connection		G ⅜			G ⅜			G ½			G ½		
Max. permissible leakage (t ≥0 °C)		50 cm^3/min			50 cm^3/min			58 cm^3/min			70 cm^3/min		
Perm. temperature range for continuous operation		-60 to +80 °C											

Table 2: *Materials for Type 3275A Pneumatic Piston Actuator*

Material configuration	**Standard (aluminum)**	**Heavy-duty version (steel)**
Component	**Material**	**Material**
Cylinder tube	3.3206, anodized	1.0570, N+OX
Cover/base	3.3547, anodized	1.0570, N+OX
Piston	3.3547, anodized	1.0570, N+OX
Piston stem	1.4548.4	
Tie rod	A2	
Yoke/connection nipple	1.0460/1.0038	
Eyebolt	C15/A2	
Piston stem guide	PTFE/steel	
Piston guide band	PTFE	
Seals -60 to +80 °C	VMQ/TT-PU	

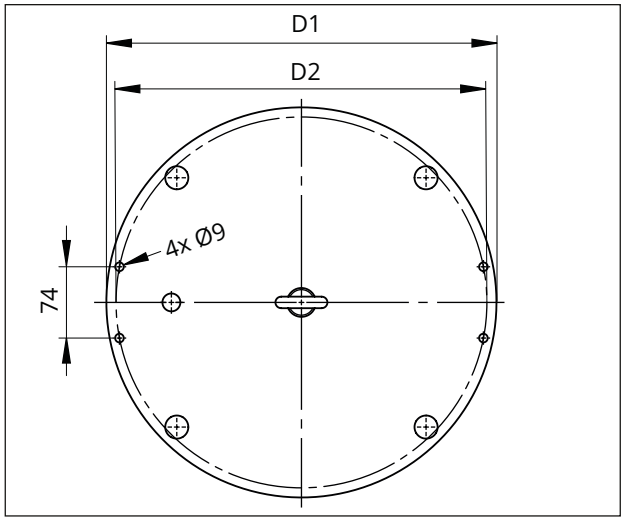
Table 3: *Dimensions for Type 3275A Pneumatic Piston Actuator*

Actuator area	**cm²**	**314**	**380**	**490**	**804**
D1	mm	268	288	318	405
D2	mm	248	268	298	385
H1 including lifting eyelet	mm	207	207	207	214
H2	mm	102	102	102	–
H3 (stem retracted)	mm	60	60	60	85

Table 4: *Weights for Type 3275A Pneumatic Piston Actuator*

Actuator area	**cm²**	**314**	**380**	**490**	**804**
Weight (standard)	kg (approx.)	17	20	23	41
Weight (heavy duty)	kg (approx.)	56	62	68	106

Dimensional drawings



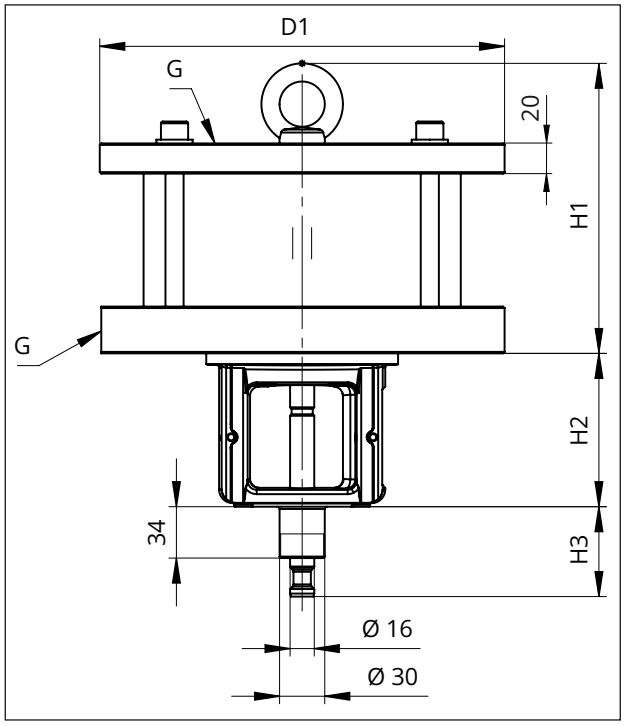


Fig. 6: *Type 3275A, version with 314, 380 or 490 cm²*

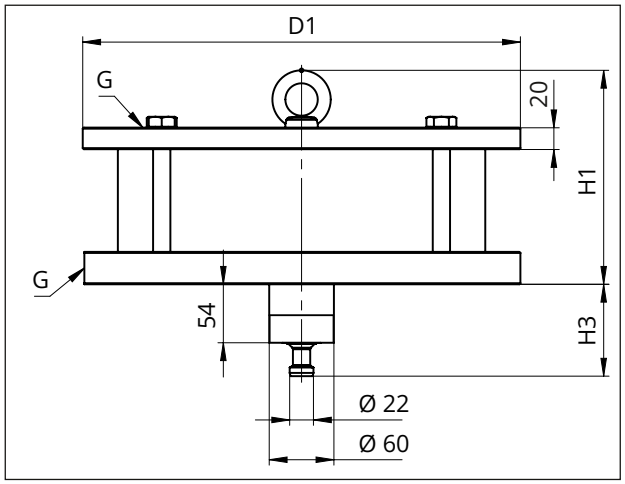


Fig. 7: *Type 3275A, version with 804 cm²*