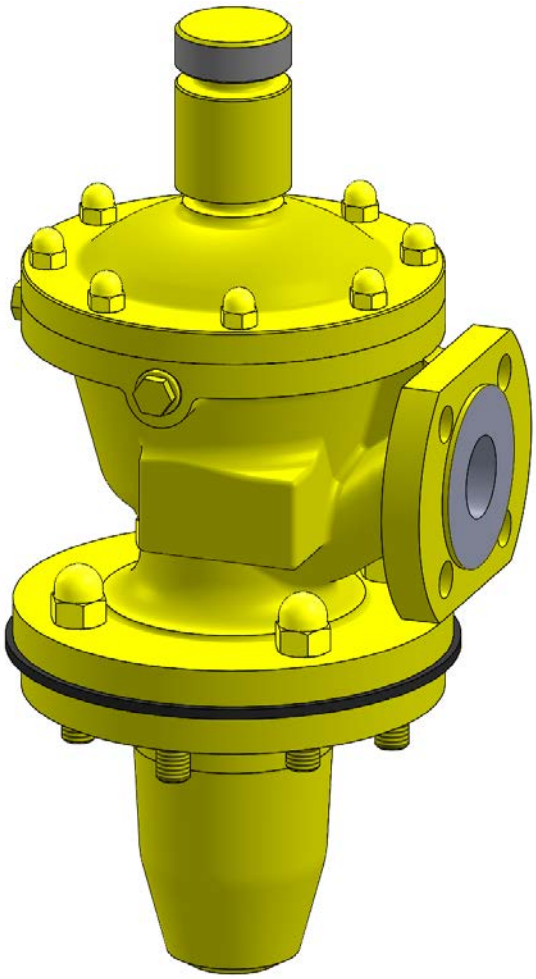
PHÖNIX STRACK DAUME REGELARMATUREN S+P Solent & Pratt Phönix Ltd



Transportation Valve

Type 309.40 & 41

PN 25 & Class 150

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PHÖNIX VALVE GROUP

Transportation Valve *Bellows Sealed*

Model 309.40 & 41

For top loading of Rail Cars and Road Tankers

Applications & Design Features

TPED 2010/35/EU

euro chlor 17.
Approval No. 20/03

Applications

Model 309.40 & 41 is designed for the safe rail and road transport of hazardous materials involving lethal, toxic, corrosive, or inflammable fluids.

The most common applications are

- Dry Chlorine (Cl2) liquid or gas service temperature -40°C to 120°C / -40°F to 248°F
- Anhydrous Hydrofluoric acid (HF)
- Phosgene (COCl2)
- Methyl Mercaptan (CH4S)
- Vinyl Chloride (C2H3Cl)
- Ammonia (NH3)
- Sulphur Dioxide (SO2)
- Propane (C3H6)
- Butane (C4H10)
- fluids of similar nature.

Model 309.40 & 41 is a combination of a spring loaded Ball Check Valve and a pneumatically operated Bellows Sealed Angle Valve. Both are mounted separately to the manway cover of the portable tank. The Check Valve is located directly underneath the Angle Valve and flush mounted with the top of the manway cover. This protects the integrity of the Check Valve and prevents product spill in the event that an accident (e.g. roll over) damages the above mounted Angle Valve. The torsion-proof multiple-wall hydroformed Bellows reliable prevents stem leakage. Metal-to-metal or soft seating are available seating options for the Angle Valve.
Model 309.40 & 41 conforms with TPED 2010/35/EU, GEST 17/492, EN 14432 DIN 26028 and CEFIC UN 14 and has been approved by Euro Chlor for compliance with the requirements for the transport of liquid chlorine. In addition the valve is approved by several European railways for use within their respective territories.

Design features

Bellows

- exposed/flushed to product flow for self cleaning
- multiple walls and hydroformed bellows
- up to 20.000 bellows operations guaranteed

Bodies

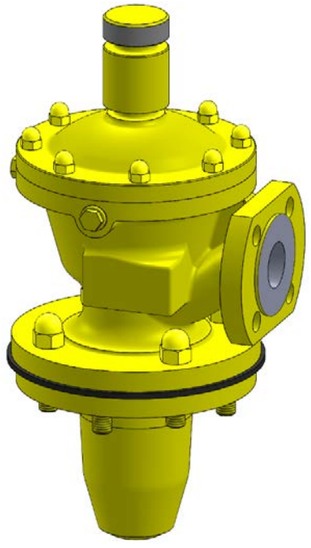
- bodies are one-piece forgings or castings with larger than required wall thickness and integral flanges
- no welds in pressure boundary

Seats

- angle valve disc either with soft seal or metal-to-metal seal
- knife edge seat for bubble-tight shutoff
- replaceable disc for inexpensive maintenance
- internal spring loaded Ball Check Valve with soft seal PTFE ball

Actuator

- internal Diaphragm Actuator
- fail position close
- with locking cap to prevent involuntarily opening during transport



= zero emissions, zero seat leakage, low maintenance

Transportation Valve *Bellows Sealed*

Model 309.40 & 41

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Applications & Design Features

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Function

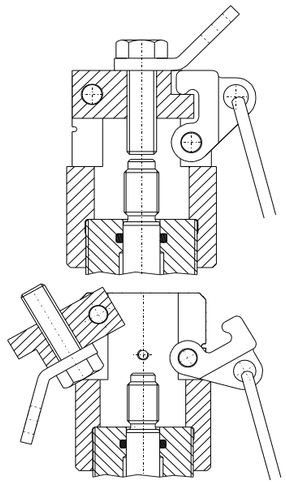
Model 309.40 & 41 is a combination of an air-to-open, fail-to-close Angle Globe Valve and an independently mounted Ball Check Valve. The Check Valve is flush-mounted with the top of the manway cover directly below the Angle Valve. Both valves are fail closed by spring load. During transport the Angle Valve Stem is additionally secured with a transport Locking Cap to avoid an involuntary opening. For loading or unloading the actuator can be operated with dry clean air (80-100 psi / 5,5-7 barg) or Nitrogen. The supply pressure forces the stem downwards, lifting the angle valve disc from its seat and – with further downward movement - opens the Check Valve. On air failure the springs of the Angle Valve and the Check Valve reseat both valves independently and simultaneously into their seats.

If no air supply is available the valve can be operated with the Manual Override (see figure). the device is mounted onto the top of the valve, replacing the transport locking cap. It has a build-in trip device to operate as a quick-closing element for emergency operation. A strong release cord or wire rope must be connected to the spring lock of the trip device to enable remote operation. Once the trip device is released both valves are shut immediately.

Quick Closing & Manual Opening Device

<u>Applications as Emergency Closing Mechanism</u>

- A ripcord shall be attached to the spring lock to enable a safe distance operation
- In case of an emergency pull the ripcord to unlock the safety device
- Valve closes in a fraction of a second by spring force

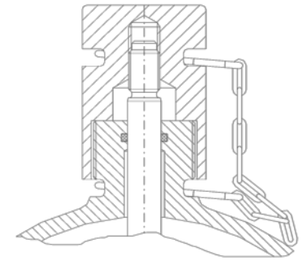


<u>Applications as Manual Opening Mechanism</u>

- For opening mechanism turn the hexagon bolt on top clockwise
- For closing mechanism turn the hexagon bolt on top anticlockwise

Transport Locking Device

- Prevents involuntarily opening during transport caused e.g. by shocks from the rails or similar
- To be screwed-on after each loading /unloading procedure and tightened by hand



Model 309.40 & 41

For top loading of Rail Cars and Road Tankers

Standard Materials of Construction

TPED 2010/35/EU

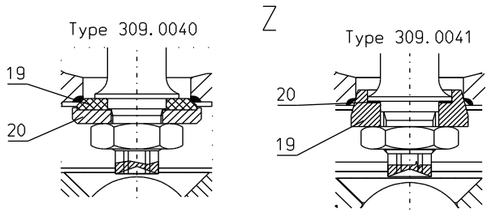
Approval No. 20/03

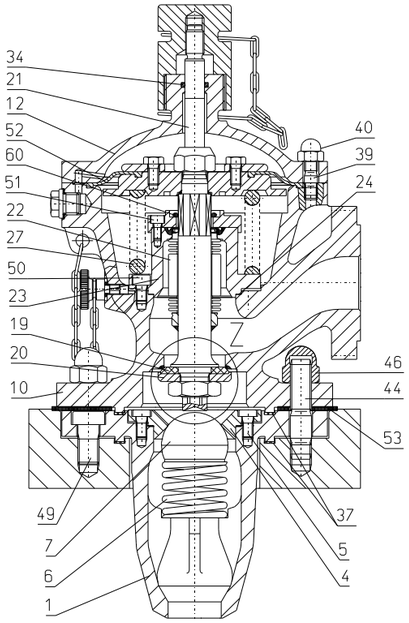
Options

Other customer specific designs on request!
Other materials per customer requirements
are available!

Notes

Phönix reserves the right to change product design and specification without notice!





Materials

Item	Part Name	low temp. Carbon steel -40°C up to 120°C	low temp. Carbon steel -40°F up to 248°F
1	Body / Ball Valve	1.6220	A352 LCC
4	Seat	1.4541	AISI 321
5	Cylindric bolt	A4-70	A4-70
6	Spring	1.4310	A313
7	Ball	SIL C 4400 / PTFE	SIL C 4400 / PTFE
10	Body / Angle Valve	1.6220	A352 LCC
	Seat overlay	1.4316	AWS 308LSi
12	Bonnet	1.0566	A350 LF2
19	Soft disc (…0040)	PTFE	PTFE
20	Disc support (…0040)	1.0715	AISI 1213
19	Hard Disc (…0041)	2.4819	Hastelloy C-276
20	Gasket (…0041)	SIL C 4400 / PTFE	SIL C 4400 / PTFE
21	Stem	1.4541	AISI 321
22	Bellows	2.4819 / 2.4360	Hastelloy C-276 / UNS N04400
23	Hat with welding	1.0460	A105
24	Gasket	SIL C 4400 / PTFE	SIL C 4400 / PTFE
27	Spring	1.4310	A313
34	O-Ring	Neoprene	Neoprene
37	Gasket	SIL C 4400 / PTFE	SIL C 4400 / PTFE
39	Stud bolt	8.8	8.8
40 / 46	Cap nut	6	6
44 / 49	Stud bolt	1.7225	A320 L7M
50 / 51	Cylindric bolt	8.8	8.8
52	Diaphragm	EPDM - fabric	EPDM - fabric
53	Gasket	Foam rubber	Foam rubber
60	O-Ring	VITON-FKM-FPM 85	VITON-FKM-FPM 85

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For top loading of Rail Cars and Road Tankers

PN25 & Class 150 Size DN40 & NPS 1½

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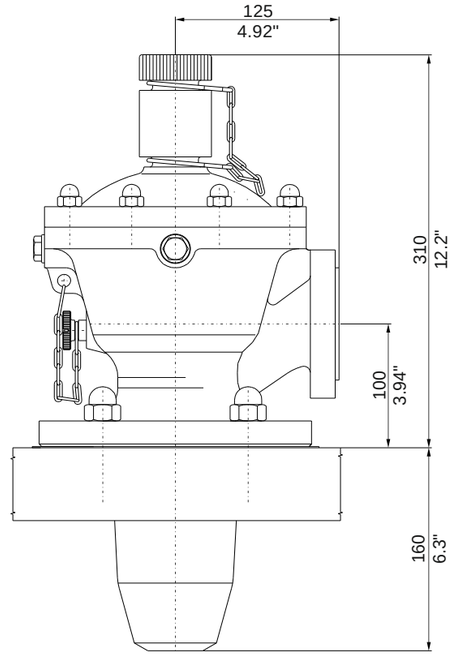
Testing / Marking

- test and design acc. to DIN EN 14432, GEST 17/492
- standard tests acc. to DIN EN 14432, GEST 17/492, DIN EN 12266
- marking acc. to TPED, DIN EN 14432, GEST 17/492

Preservation

- drying at a temperature of 120°C (248°F) for at least 3 hours
- stuffing of drying agents (silica gel) into the valve
- blanking of inlet and outlet orifice with suitable gaskets and bolted flanges to avoid entry of moisture into the valve
- disc secured in closed position
- unfinished surfaces protected against rust
- lubrication with chlorofluorinated grease



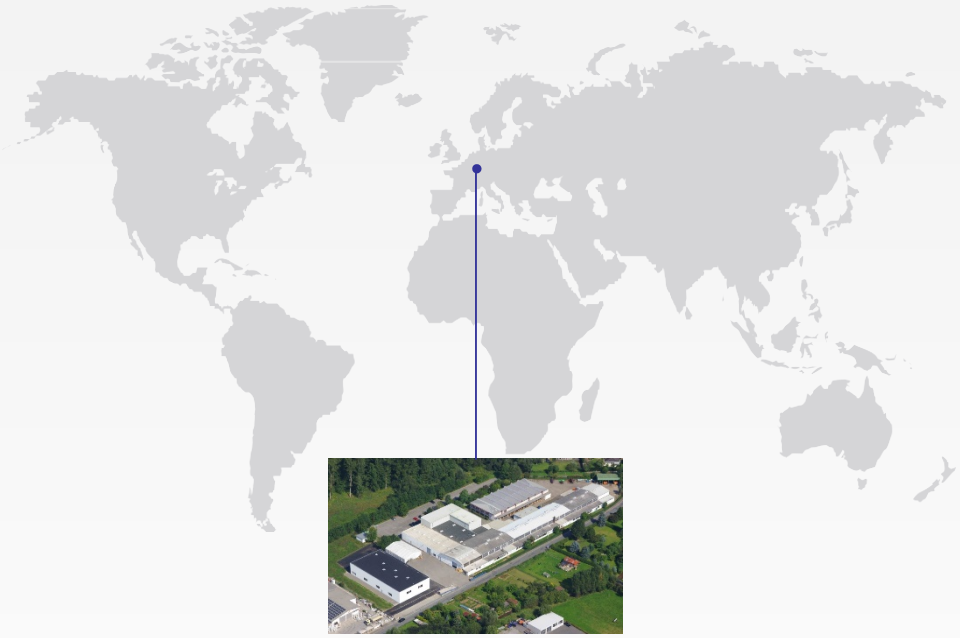
Technical data & weight & flow coefficient

Size	DN40 / NPS 1½
Rating	PN25 / Class 150
Flow rate	K_V = 23 m³/h / C_V = 27 US Gal/min with flow through both valves
Service temperature	-40°C to 120°C / -40°F to 248°F for standard material configuration
Weight	38 kg / 84 lbs

Standard connections

Ball Check Valve	
To manway cover	Flange DN80 PN25/40, lower side tongue, upper side groove per DIN2512
To suction pipe	Butt welding end for pipe DN40 per DIN EN12627 or NPS 1½ per ASME B16.25
Angle Valve	
To Check Valve	Flange DN80 PN25/40, tongue per DIN2512
To loading rack	Flange DN40 PN25 DIN2501 form D or NPS 1½ Class 150 ASME B16.5 RF
Pneum. actuator	
To air supply	3 holes with G ⅜ or NPT ⅜

Contact us



Volkmarsen, Germany

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