

Operating and safety instructions

Mars ball valves series 33, 36, 39, 70, 79, 83, 88, 90, 90D, 99

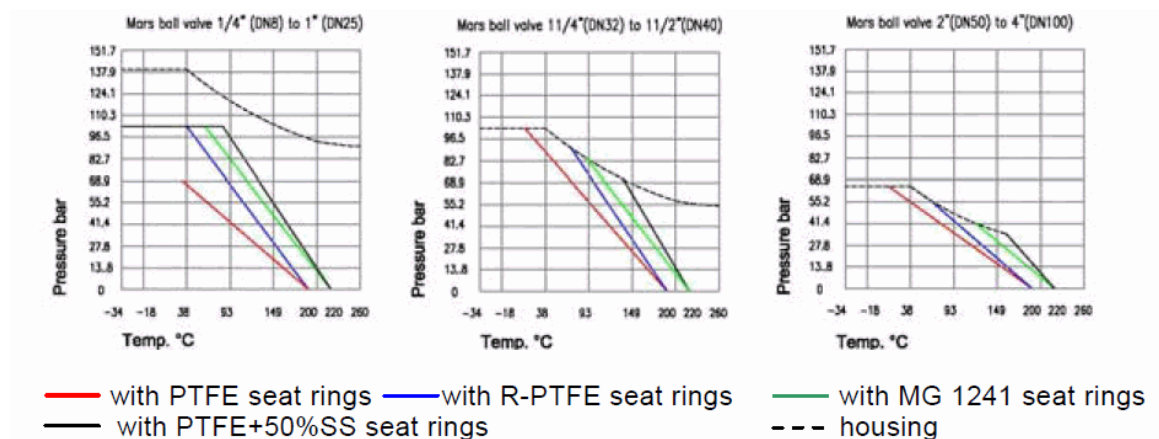
1 Safety instructions for the operator

1. The user must ensure that only authorised and trained persons work on the valve.
2. Personnel charged with the installation and adjustment of the valves, must only use suitable tools and protective clothing required for the place of operation.
3. The area where the valve is to be fitted must be clean and tidy.
4. To prevent injuries, the pipe must be depressurized, emptied and, if necessary, vented before fitting the valve.
5. Make sure that the pressure and temperature limits indicated on the ball valve rating plate correspond to, or are above, the operational pressure and temperature conditions. The product documentation includes a pressure/temperature diagram.
6. No work (assembly, dismantling) must be carried out on the valve while it is operational.
7. The safety regulations relating to the factory and the installation must be strictly adhered to during all work on valves.
8. The valve must only be stored with the ball position fully open, and with protective end caps.

2 Use for the purpose intended

The valve may only be used for shutting off or adjusting a flow. Media flowing through can be gas, liquid or solid matter in powder or granulated form. The individual valves must be marked according to the regulations and guidelines. The maximum permitted operating conditions (pressure, temperature) must be adhered to, in compliance with the applicable rules and regulations and the manufacturer's instructions. Where corrosive media are involved, the corrosion-resistance of the materials used in the valve must be observed.

3 Pressure-temperature chart of the seat rings



4 Pressure-temperature chart of the seat rings

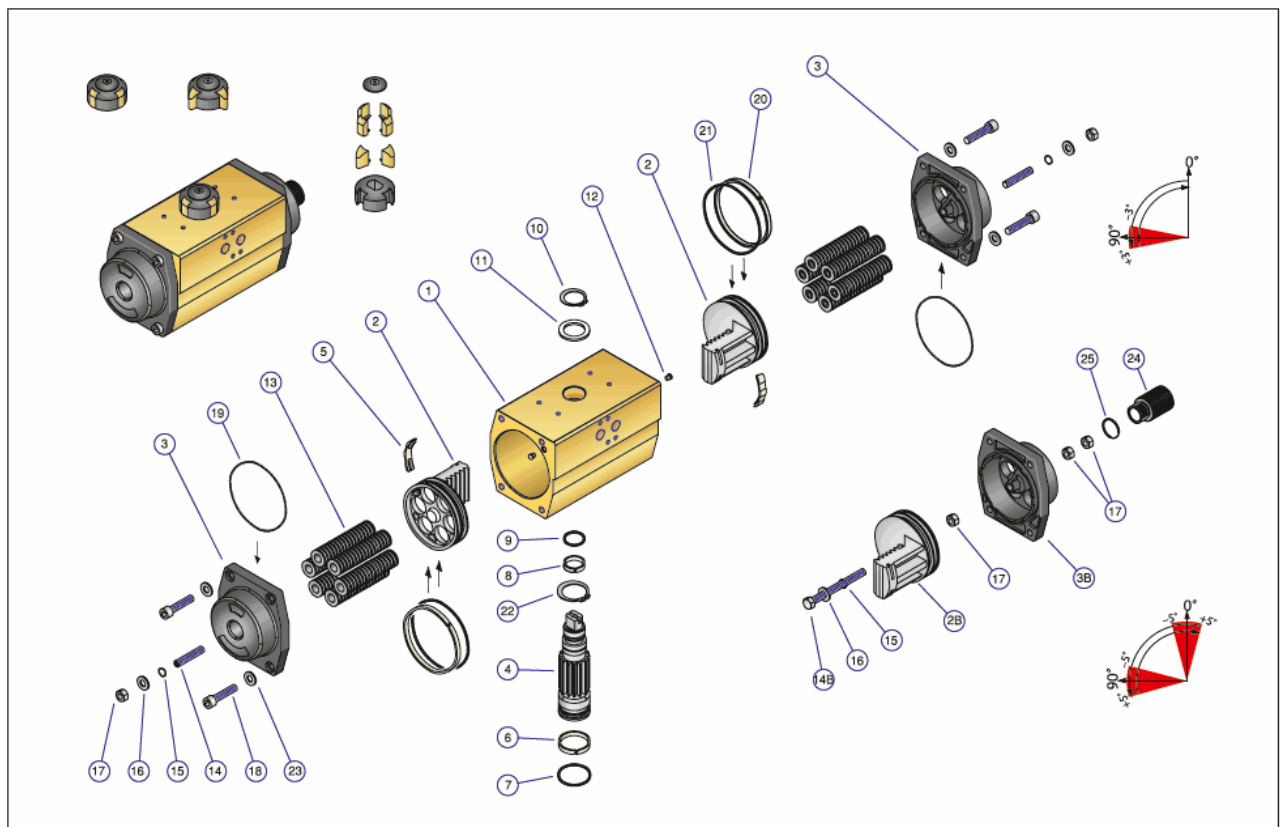
Danger note: First depressurize the system! Remove air connections before dismantling. Dismantling must be carried out in accordance with the usual safety regulations and safety goggles. Only hose assemblies tested in accordance with SN EN 12115 may be used.

1. Mark the position relative to the drive shaft to ensure correct assembly later on.
2. Remove the actuator.
3. Unscrew the end cap screws (pos. 18) evenly.
4. Remove the end caps (pos. 3).
5. Turn drive shaft (pos. 4) counterclockwise, thereby moving out piston (pos. 2) complete with sliding insert. Remove the piston.
6. Remove the circlips (pos. 10 and 22) on the upper and lower sides of the actuator.
7. Remove the drive shaft (pos. 4) downwards from the actuator housing. Take care that the outer teeth of the shaft do not damage the acutator bore.
8. Remove the bearing bushes (pos. 6 and 8) together with the drive shaft.
9. Clean parts .



10. Replace the O-rings and sliding bushings if necessary. (see parts list)
11. Reassemble the actuator in reverse order. (Lubricate parts)

Pos.	Description	Materials	Surface treatment	Pcs.
1	Body	Extruded aluminium	gold anodized	1
2	Piston	Aluminium die casting		2
3	End-cap	Aluminium die casting	Epoxy resin black	2
4	Pinion	Carbon steel	chemically nickel-plated	1
5	Piston guide	Delrin		2
6	Lower pinion guide ring	Delrin		1
7	O-Ring	Nitril		1
8	Upper pinion guide ring	Delrin		1
9	O-Ring	Nitril		1
10	Circlip	Steel	chemically nickel-plated	1
11	Distance ring	Nylon		1
12	Plug	Nitril		2
13	Springs	Spring steel	Cataphoresis	4-12
14	External adjusting screw	Steel		2
15	O-Ring	Nitril		2
16	Washer	Stainless steel		2
17	Stop nut	Stainless steel		2
18	Screw end cap	Stainless steel		8
19	O-Ring	Nitril		2
20	Piston guide ring	Delrin		2
21	Piston O-Ring	Nitril		2
22	Circlip anti-blow out	Steel	chemically nickel-plated	1
23	Washer	Stainless steel		8
24	Threaded cap	Stainless steel		1



5 Adjusting the end-caps (Pos.14)

1. Connect supply air to CLOSE connection and move actuator to CLOSE position.
2. While maintaining the air supply, loosen the lock nut of the stop screw OPEN and adjust the end stop. Turning in the stop screw reduces the swivel range. Adjustment range: +/- 5°.
3. Tighten the lock nut again.

Note: Under no circumstances may the stop screws be unscrewed when the actuator is under pressure. After adjusting the end stops, readjust the accessories mounted on top of the actuator (e.g. signal box, positioner).



6 General Informations

With standard function, i.e. clockwise closing, an air impact of air connection A results in an opening movement and a closing movement of air connection B.

For safety reasons never support the spring force of single-acting actuators with air pressure!

7 Customer Service

For further information or technical advice, please contact:

avintos AG
Weidenweg 17
CH-4310 Rheinfelden / Switzerland
Phone: +41 (0) 61 836 15 30
info@avintos.ch
<http://www.avintos.ch>

