



Instructions for installation, operating and maintenance of the series A20D ball valves

grey or blue handlever = standard ball valve

1. General Information

For the protection of the ball and seat ring, piping should be flushed prior to installation of the valve and cleaned from any impurities, welding residues etc. The selection of the ball valve is the responsibility of the operator. Dimensions, materials and range of operation of the ball valve can be found in the Series „A20D“ ball valve brochure.

2. General installation

The direction of flow and the mounting position of the ball valve can be freely selected (exception ball valve with relief bore and direction arrow). Assembly must be carried out according to the recognised rules of the technology. In case that the ball valves have weld end, the connections at the welds should be free of scale and grease (bare metal). The sealing surface of the connection must not be damaged.

2.1 Installation of the ball valve in open position

In order to avoid a damage on the ball, we recommend the assembly in the open position. For actuated valves the "fail-safe position" is to be borne in mind, or if necessary dismantle the actuator unit prior installation in the pipe line.

2.2 Installation of the ball valve in closed position

The ball, seat and support ring can easily fall out. The ball projects over the middle part in size DN 65 - DN 100 valves. In order to avoid damages on the ball at welded connections, the piping should be able to be slightly pressed apart.

3. Assembly in the plant

The type A20D can be recognised by its blue or grey handlever. The ball valves with welding ends (2) will be delivered slightly screwed to protect the body sealings (un –pressed body sealing). Therefore we recommend to disassemble the weld connections and weld into the pipeline. The middle part should be replaced by a welding calibre to define measure A1.

During welding cleanness has to be considered. After welding and cool down the middle part can be screwed stress relieved under consideration of the torques of the body screws (please see page 3).

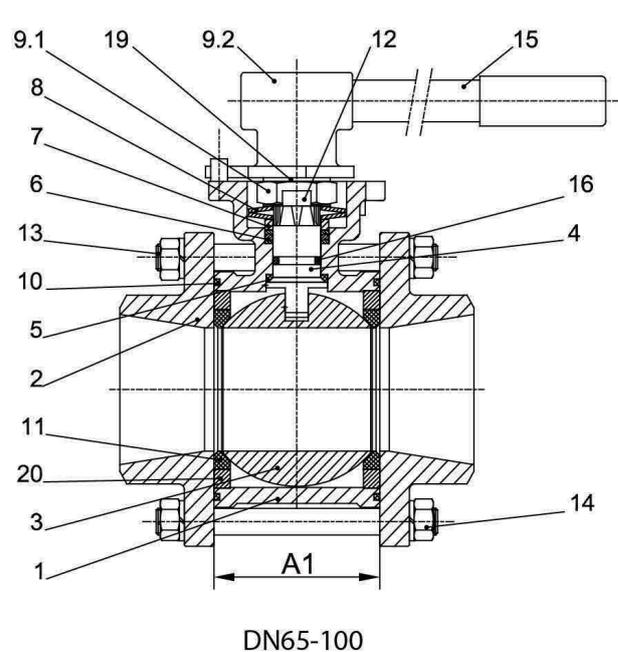
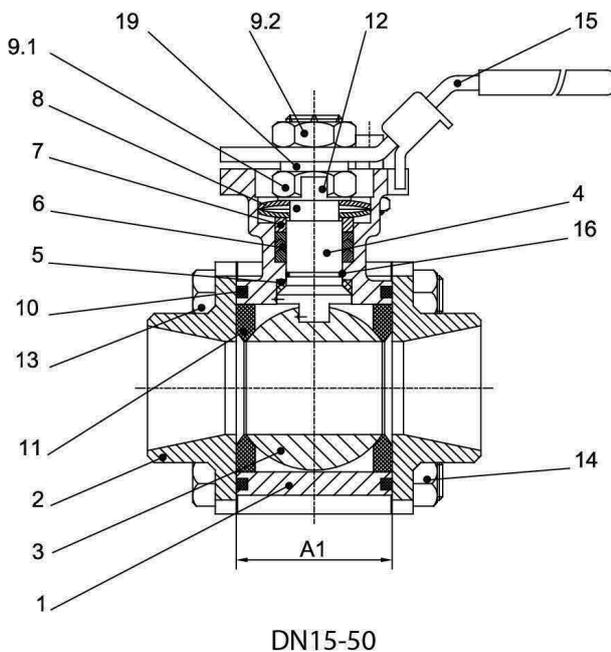
4. Replacement of seats and seals

Care must be taken to ensure that the ball valve has cooled down and is pressure-less prior to dismantling. To relieve internal pressure, the ball valve should be opened and closed once. Only original spare parts have to be used.

Loosen nuts (14), remove hexagon bolts (13) and remove the ball valve middle part in the open position (1) and then rotate to the closed position. Remove the body seals (10), seat rings (11) with support rings (20) (for DN 65 - DN 100 only) and the ball (3). Remove nut, adapter (for DN 65 - DN 100 only) (9.2) and handle (15) or actuator unit, open the locking plate (12), and remove nuts (9.1), belleville spring washer(8), pressure ring (7) and spacer ring (19). Move the spindle (4) inwards with a nylon hammer and remove, then remove the O-ring (16), packing (6) and sealing ring (5). Clean the spindle (4) and body (1) free of any residues.

5. Assembly

Push the sealing ring (5) onto the spindle (4), then pull on the O-ring (16). Lubricate spindle with grease (recommendation: Fin Food Grease 2) and place from the inside into the body (1). Insert PTFE packing (6) Put pressure ring (7) and belleville spring washer (8), put locking plate (12), screw on the nut (9.1) and tighten with the torques given below, secure the nut (9.1) with the locking plate (12). Put the handlever (15), screw on the nut (for the DN 65 - DN 100 adapter only) and tighten. Open the ball valve with the handlever (15) and check for operational reliability. Insert the ball (3), the cleaned support ring (20) (for DN 65 - DN 100 only), the seat rings (11) and the body seals (10) into the body (1). Lubricate body bolts with grease (recommendation: Fin Food Grease 2) (prevents corrosion); mount body and connections with nuts (14) and bolts (13) and tighten the body bolt (page 3) with the tightening torques given below, taking section 2 into consideration.



Tightening torques for the body bolts 13/14 with lubricated thread:

DN	8/10	15	20	25	32	40	50	65	80	100
Bolt/nut (13/14)	M6	M6	M8	M8	M10	M10	M12	M14	M16	M16
Tightening torque Nm	10	14	17	22	24	41	45	49	54	57

Tightening torques for the spindle nut (9.1)

DN	8/10	15	20	25	32	40	50	65	80	100
Tightening torque Nm	10	10	13	13	16	16	22	22	25	25

6. Operation/ Commissioning

During operation the ball valve must not be dismantled, nor may the bolts be replaced. A function test has to be carried out during start-up. If there is any doubt about the functionality, the ball valve has to be replaced.

7. Maintenance and storage

Provided that the ball valves are correctly designed, have been assembled according to the instructions and are operated in an on/off function, the ball valves do not require any special maintenance (apart from wear parts). In case of leakage, tighten up the body bolts (13) or the spindle nut (9.1), or replace the seat (11) or the spindle packing (6) (take note of section 4). If tightness is not achieved, the faulty parts must be replaced according to the instructions under paragraph 4. The ball valves are to be stored in open position and protected from grime and damage.

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