



Starline S.p.A.

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QUALITY MANAGEMENT SYSTEM

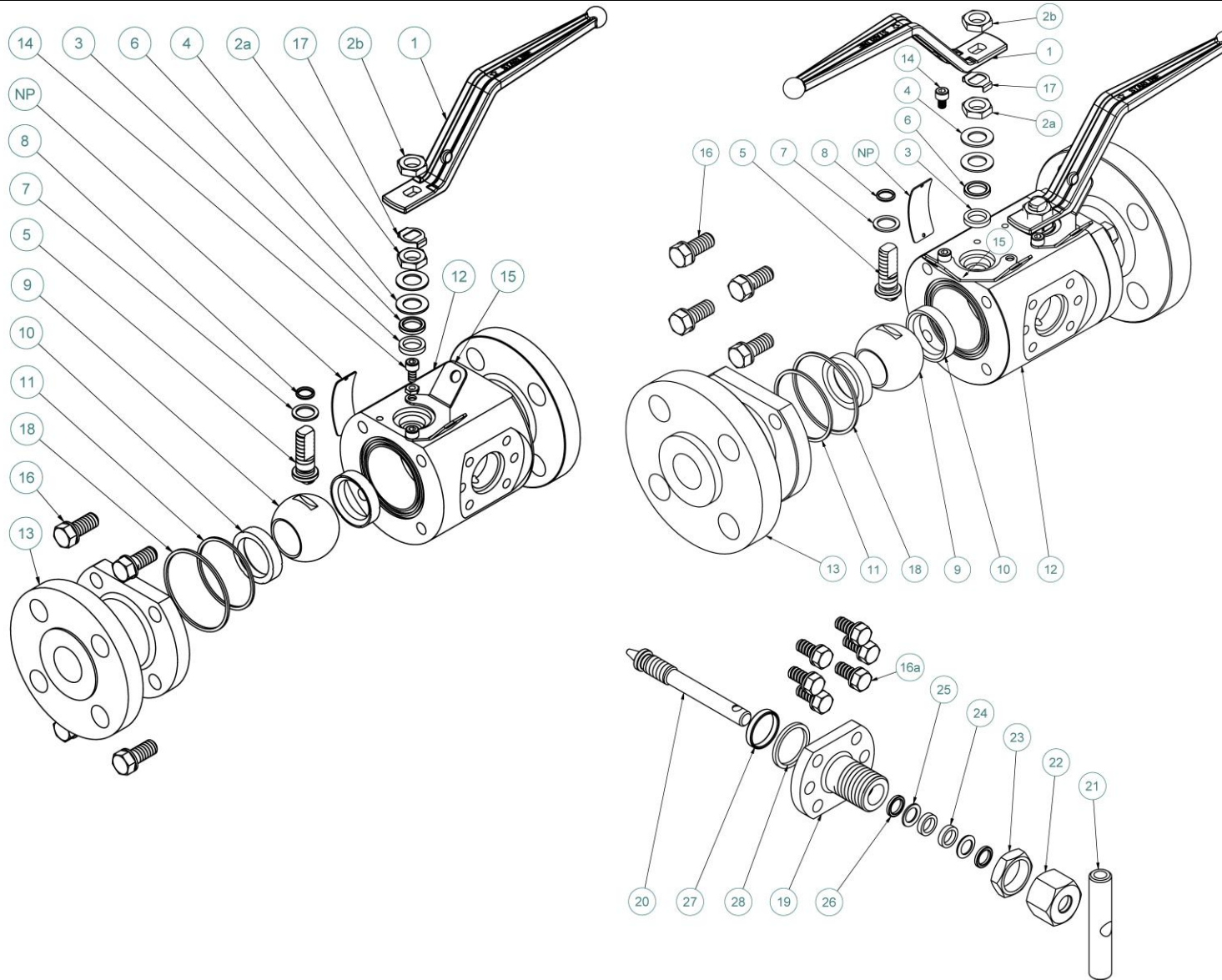


MANUAL INSTRUCTION No.124-SBB-DBB /13 FOR
STORAGE , INSTALLATION, OPERATION AND MAINTENANCE
FOR STARLINE BALL VALVES SINGLE BLOCK AND BLEED
AND DOUBLE BLOCK AND BLEED TYPE FLOATING

REFERENCE: STARLINE CATALOGUE: Q.A.M. AND PURCHASE ORDER

SINGLE / DOUBLE BLOCK AND BLEED TYPE FLOATING

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ITEM NO.	SBB QTY.	DBB QTY.	PART NAME	SPARE PART
NP	1	1	Name Plate	
1	1	2	Handle	
2A - 2B	2	4	Handle nut	
3	1	2	Packing ring	X
4	2	4	Spring washers	
5	1	2	Stem + antistatic device	
6	1	2	Gland packing	
7	1	2	Thrust washer	X
8	1	2	Stem O-ring	X
9	1	2	Ball	
10	2	4	Seats	X
11	1	2	1° Body seals	X
12	1	1	Body	
13	1	2	End connections	
14	2	2	Stop-pin	
15	1	2	Locking Device	
16	4	8	Bolts	
16A	6	6	Needle Bolts	
17	1	2	Stop washer	
18	1	2	2° Body seals	X
19	1	1	Needle Body	
20	1	1	Needle Stem	
21	1	1	Needle Handle	
22	1	1	Packing Nut	
23	1	1	Lock Nut	
24	2	2	Packing Ring	X
25	2	2	Anti-extrusion Ring	X
26	3	3	Gland Packing	
27	1	1	Needle O-Ring	X
28	1	1	Needle Gasket	X


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1.0 SCOPE

This manual is intended as a guide to assist customers or end-users for storage , installation, and maintenance of Starline ball valves for specific project
For this reason these instruction are applicable only for specific valves.

2.0 APPLICABILITY

This manual is applicable to Starline ball valves in scope of supply of customer PO indicated in the cover.

3.0 STORAGE

3.1 INFORMATION ON SURFACE PROTECTION (EXTERNAL/INTERNAL) AND PACKING DETAILS.

- before shipment from Starline factory all Carbon Steel valves (A105-LF2) are protected against corrosion by phosphating treatment.
- all Stainless Steel valves (304-316-F51-F44-F321 etc.) are pickled and passivated
- External surface is additionally protected by an approved paint system

3.2 CAUTION AND MAINTENANCE PERIOD -IF BALL VALVES ARE NOT DESTINATED FOR IMMEDIATE USE FOLLOWING CAUTIONS MUST BE TAKEN:

- if possible it would be advisable to leave the ball valves in their own packing cases during the entire period of storage.
- ball valve must remain in open position during all this time
- in order to prevent any damage, the protective plastic cover on the ends of the valves shall not be removed.

3.3 ATMOSPHERIC PROTECTION

- it is advisable to store the valve in waterproof conditions in a building with an adequate roof.
- Ball valves shall be protected to safeguard against all the environments: humidity, moisture, rain, dust, dirt, sand, mud, salt air and seawater.
- all valves to be stored in closed and dry conditions.

3.4 LONG STORAGE PERIOD

- Valves to be stored for a long time shall be checked by the quality control personnel every 6 months.

3.5 MAINTENANCE DURING STORAGE PERIOD

- internal surface must be inspected to check complete dust or other foreign parts absence
- old rust or any dust must be removed by wiping with proper solvent
- after cleaning, ball valves must be lubricated by using an adequate lubricant
- ball valves must be operated for a least 2 complete cycles

4.0 INSTALLATION

4.1 INSTALLATION POSITION



- the ball valves may be installed in any position (horizontal or vertical) using a standard pipe fitting practices
- SBB valves shall be installed minding the inlet and outlet port; following the plant design

4.2 INFORMATION AND CAUTION BEFORE INSTALLATION OF THE VALVE

- pipe must be free of tension
- pipe must be flushed with clean air/water to clean the dirt, burrs, calamines, welding residues etc. which would damage ball and seats
- the valve must be kept in OPEN POSITION during installation and protective plastic cover must be removed only at the moment of installation
- ball valves normally have a space between ball and inside cavity of the body which could trap the product, care should be taken to drain the cavity.

4.3 INSTALLATION OF FLANGED ENDS

- Easy fitting on the adequate bolts, nuts and gaskets.

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5.0 OPERATION

CAUTION! During the operation the ball valves must be in either complete OPEN or CLOSED position in order to ensure their smooth and efficient working and long duration of seats.

Leaving the ball in half open position could eventually cause damage to the soft seats.

5.1 MANUAL OPERATION

- The opening and closing of the valve is done by turning the handle a quarter turn (90°)
- valve is in open position when the handle is in line with the valve and pipe line
- valve is in closed position when the handle is across the pipe line

6.0 MAINTENANCE

CAUTION! Before starting the maintenance be sure that all pressure on the pipe is relieved.

- open and close the ball valve at least once to release the pressure completely also from the valve body.
- Open the drain valve to release also the body pressure

the ball valves if correctly used, normally do not need any internal lubrication and maintenance. However, when necessary, ball , or seats can be replaced only by relatively qualified personnel following the instruction of the manual without needs to use any machinery. for further information about the recommended SPARE PARTS LIST please check drawing, catalogue or contact the factory.

6.1 STEAM LEAKAGE

- If leakage is evident on stem packing area, it can be eliminated by increasing the tightness of the lock nut (2B). In case leakage is still persisting the replacement of the stem packing (3) is recommended. For handle nut and lock nut (2A)-(2B) tightness see table.

6.2 BODY SEALS LEAKAGE

- Check for the tightness of the body bolts (16) according to table in case it is still leaking, it is necessary to replace the body seals (11)-(18).

6.3 IN LINE OR SEATS LEAKAGE

- Check that valve is in fully closed position if so and the leakage is persisting the valve must be disassembled to replace damaged parts.

7.0 MAINTENANCE

Maintenance on Starline valves is negligible since no lubrication is necessary.

Should the maintenance be required, the 3 pieces valves permit very easy service directly on site, reducing both time required and costs involved.

Only few spares are needed, as you can see at page 1 of this manual in the component table.

Caution! Before starting the maintenance, be sure that all the pressure on the pipe and valve body is relieved.

Refer to site/plant Health and Safety instruction and rules before the starting any operation.

7.1 VALVE DISASSEMBLY

- Optional part like locking device shall not be un-mounted. as it is an optional part it will not be indicated on general drawing on firs page.
- Set the valve in open position, take out the adaptor bolts (16) and close the ball
- Remove the adaptor flange (13), ball (9), seats (10) and body seals (11)-(18)
- Remove the handle nut (2A), handle (1), stop washer (17), lock nut (2B), spring washer (4), gland packing (6).
- Push the stem (5) into the body (12), remove the packing ring (3) from the body and o-ring (8), plus thrust washer (7) from stem.
- Repeat all the points for the other side
- Unscrew the handle stop dowel and take out the handle (21)
- Unscrew the packing nut and the lock nut (22) – (23)
- Unscrew the needle body bolts (16A), take out the needle body (19) from the body (12) .
- Take out the needle o-ring (27) and needle gasket (28)
- Unscrew the needle stem (20)
- Take out the gland packing, packing ring and antiextrusion ring (22) - (24) -(25)

At this point the valve is completely dissassembled and you can proceed to replace all the parts as suggested at page 1 of this manual.


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7.2 VALVE REASSEMBLY

- After having completed the above replacements, you can proceed to valve reassembly as below.
- Take care to clean the valve before reassembly operations!
- Replace thrust washer (7) and o-ring (8) and then insert the stem from the body .
- Install the packing ring (3), gland packing (6), spring washer (4), lock nut (2B) and tighten.
- To avoid rotation of stem, apply temporarily the handle. Install stop washer (17), handle (1) and handle nut (2A) .
- Place the stem in close position and insert the seat (10) and the ball (9) in the same position.
- Rotate the ball in open position, insert the body seals,
- Put the adaptor flange (13), with seat (10) on the body .
- Tighten the adaptor bolts (16) (refer to torque table in attached) being careful to do it correctly (first bolt and then the corresponding one at 180°).
- Operate the valve to verify that everything is all right.
- Operate the valve and perform at least 10 complete rotations at 360° to allow each part to be settled in its own housing.
- Repeat the same operations (above points) for the other side
- Insert the needle stem (20) in the needle body (19), install the needle gasket (28) and needle o-ring (27)
- Put the needle (19) on the body (12) and take care not to damage the needle gasket (28) or the needle o-ring (27)
- Tighten the needle bolts (part. n. 16a) being careful to do it correctly (first bolt and then the corresponding one at 180°) (refer to torque table in attached).
- Insert the antiextrusion ring, packing ring and gland packing (22) - (24) - (25) in the needle body (19)
- Tighten the packing nut and the lock nut (22) – (23) (refer to torque table in attached)
- Insert the handle (21) in the needle stem (20) and fix with the handle stop dowel (21)

At this point the valve is ready to be put in the line again.

For more information about the recommended spares, please check carefully at page 1 of this manual.

Torque table for valve bolts and nuts

VALVE SIZE	HANDLE NUT 2 A and LOCK NUT 2 B			BODY BOLTS PART No. 16		
	DIMENSIONS	Nm	INCH LBS	DIMENSIONS	Nm	INCH LBS
DN 15	M10x1	8	70	M8x16	35	310
DN 20-25	M12x1.25	15	130	M10x20	50	440
DN 32-40-50	M15x1.5	25	220	M12x25	70	620
DN 65	M22x1.5	40	355	M12x25	70	620
DN 80-100	M24x2	50	440	M12x30 - 35	70	620
DN 150	M36x2			M14x37		