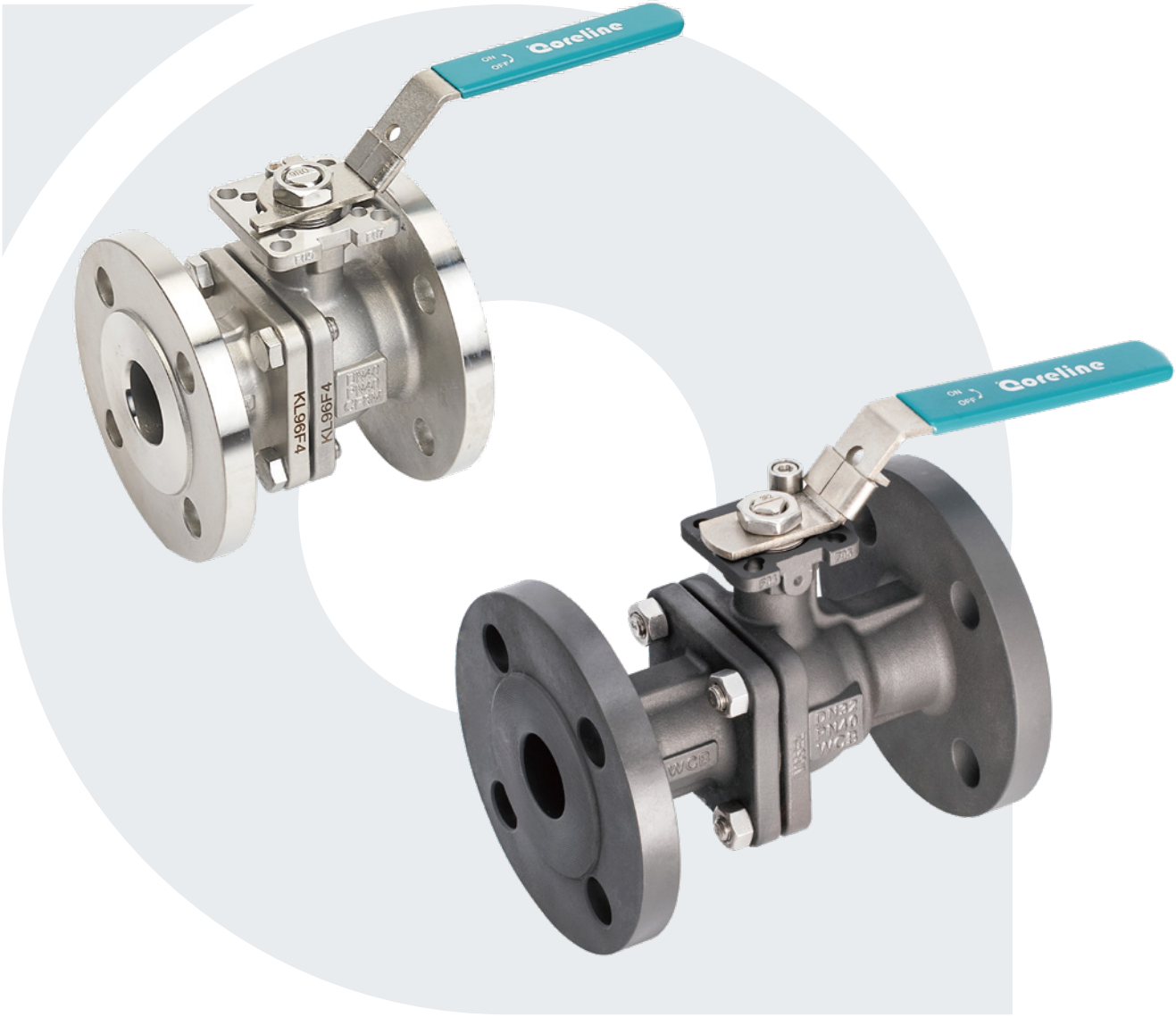
Coreline Installation-Operation-Maintenance Manual

2pc Flanged Ball Valve

Fig.150/151



CE API607 ISO10497 SIL3

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Storage information

• Valves should be stored indoors in a dry, clean, and ventilated area at –20°C to +50°C, humidity < 75%.
• Keep valves in fully open position, with plastic protectors on flange ends.
• Avoid direct sunlight, corrosion, and stacking heavy loads.
• For long-term storage, apply anti-rust oil on machined surfaces.
• Inspect every 3 months for corrosion, damage, or stiffness.

Pipe cleaning

• Clean the pipeline before valve installation to remove dirt, welding slag, and debris.
• Ensure the pipe flange surfaces are smooth.
• If cleaning after installation, keep the valve in open position and do not operate until flushing is complete.

Valve installation

• Use proper flange gaskets.
• Align pipes; flanges must be parallel and clean.
• Insert valve between flanges and tighten bolts evenly in a crisscross pattern.
• Follow recommended torque values (see Table 1).
• Fasteners must meet local safety standards.

Operation instructions

• Operate valve with a quarter-turn (90°) handle rotation.
Clockwise = Closed (OFF), Counterclockwise = Open (ON).

- Valve in OPEN position: The handle is in line with the valve or pipeline.
- Valve in CLOSED position: The handle is across the pipeline.

Use and maintenance

• Operate valve at least twice per week to prevent jamming.
• Inspect every 3 months: check for leaks, looseness, or wear.
• Only trained personnel should operate or maintain the valve.
• If equipped with an actuator, follow actuator's manual for servicing.

Replace the seat and packing

Note: Stem seal leakage may be corrected by tightening the packing nut to flatten the belleville washers. If leakage continues or the valve torque becomes excessive, then the seal/packing must be replaced.
Before replacing the thrust washer and the packing, the pipeline must be de-pressurized.
• Rremove flange nuts and bolts and carefully lift the valve from the pipeline to avoid scratching or damaging serrated gasket. The big diameter valves are heavy and should be adequately supported before removing them from the line.
• Loosen the stem nut and remove the handle or actuators. Then remove lock cap, packing nuts, belleville washers and gland.
• Use proper wrench to remove body bolt nuts, then lift the body end. The valve seat will come out with the body end and then remove the body seat and gasket.
• Rotate stem so the valve is in fully closed position. Carefully take out the ball to make sure there is no damage to the ball surface, use a strap and lift device if necessary.
• Take out the other seat.
• The stem must be removed from inside of the body. Slightly push the stem head to loose the stem. The stem washer and the O-ring should come out together with the stem.
• Remove the stem packing from the body.

Visual inspection

• Clean and inspect all metal parts before reassembly.
• Ball and stem do not require replacement unless visibly worn or corroded.
• All soft parts (seats, seals, packing) should be replaced during disassembly or overhaul.
• Valves can be assembled and operated dry, but using a light, media-compatible lubricant is recommended to ease assembly and reduce startup torque.

Assembly

• Install one seat in the body cavity with the curved side facing the ball.
• Fit the stem seal and O-ring onto the stem, then insert the stem upward through the body.
• Install packing, gland, and belleville washers, then screw on the packing nut. Lock it with the cap.
• Mount the stem washer and handle, then secure with the stem nut.
• Turn handle to the closed position, align the ball slot with the stem, and insert the ball. Turn to open to hold it in place.
• Install the second seat into the opposite body side.
• Insert the body seal gasket and align the body and end flange bolt holes properly.
Note: The body flange pattern differs from the line flange — ensure correct alignment. Avoid damaging the gasket.
• Install and tighten the cap end bolts in a crisscross pattern using correct torque (see Table 1).
Ensure the valve is in the open position during tightening. At least one bolt thread should remain visible.
• Open and close the valve fully to complete seat-to-ball sealing.

Valve tests

Make pressure test of the valve prior to place it back into pipeline.
• Fix the valve on the pressure test machine between a mating flanges with full bolting and suitable gaskets. Orient valve so seat to be tested is facing upwards.

Pressure test

• Introduce 6bar air. Carefully operate the valve under the given air pressure, and then slowly close to make sure the cavity is pressurized. Put water into the upper port to cover the ball and then visually check if there are bubbles. If bubbles appear, pour water out and then operate the valve several times and recheck. Reverse the valve and put air pressure to the port just checked to check for leakage in the other port.
• Check stem seal by covering the stem top area with water/soap solution. Tighten stem seal if leakage occurs until leakage just stops.
• Apply a water pressure test according to API598.

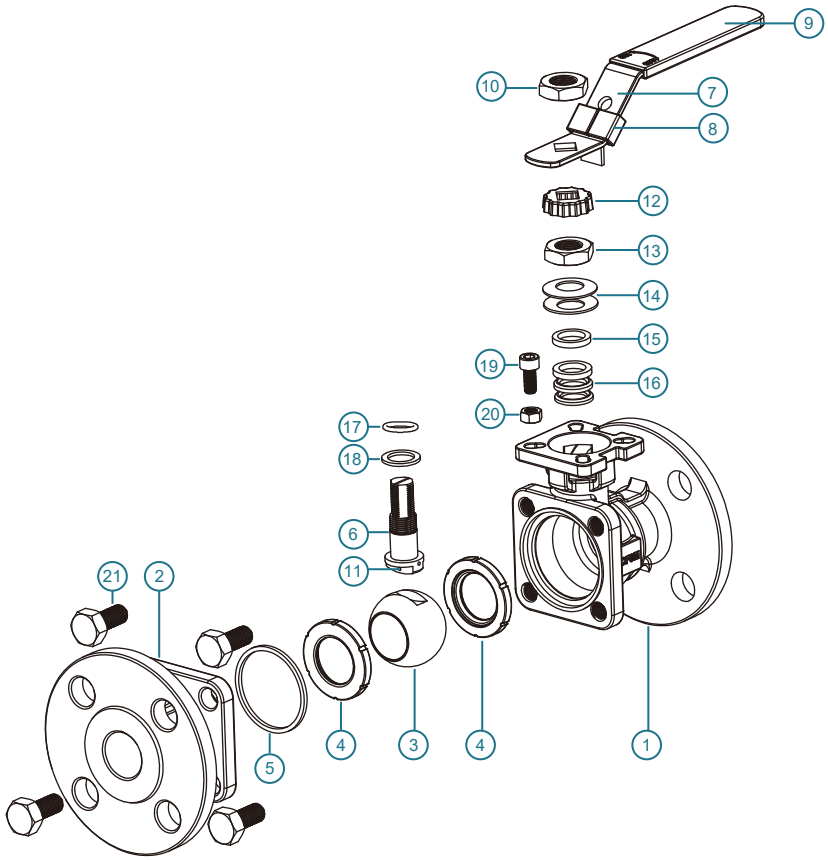
Valve torque test

Coreline Fig.150/151 ball valves are applied with below torques (See Table 1) when the valves are delivered.

SIZE		Fig.150 torque	Fig.151 torque	Body bolt	Stem nut
INCH	DN	[Nm]			
1/2"	15	8	8	20-23	14.3
3/4"	20	8	10	23-26	14.3
1"	25	16	12	31-34	14.3
1 1/4"	32	26	20	34-36	19.4
1 1/2"	40	50	32	41-46	22.4
2"	50	55	45	41-46	22.4
2 1/2"	65	95	80	41-46	22.4
3"	80	104	110	56-61	32.7
4"	100	200	150	56-61	32.7

Table 1

*) Torque value is based on PTFE+25% carbon seat and it includes 30% safty factor. (Test: 0bar differential pressure, ambient temperature, non-lubricating).



Material part list

No.	Part name	Material	No.	Part name	Material
1	Body	A351 CF8M	9	Handle sleeve	Vinyl
		A351 CF8	10	Nut	SS304
		A216 WCB	11	Anti-static device	SS316
2	Body cap	A351 CF8M	12	Lock cap	SS304
		A351 CF8	13	Nut	SS304
		A216 WCB	14	Belleville washer	SS301
3	Ball	SS316	15	Gland	SS304
		SS304	16	V-ring packing	*) PTFE+25% carbon
4	Seat	*) PTFE+25% carbon	17	O-ring	FPM
5	Gasket	*) PTFE+25% carbon	18	Stem sealing	PTFE
6	Stem	SS316	19	Stop bolt	SS304
		SS304	20	Nut	SS304
7	Handle	SS304	21	Body bolt	SS304
8	Locking device	SS304			

*) Other material available on request.

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