

1、 **Scope:** This instruction applies to 3-way, 1000 WOG(PN63), screwed end, directly mounted ISO 5211 flange, ball valve (200458 L ou 201458 T).

2、 **Warning(Restrictions on use)**

1)、 Temperature and Pressure limit

- The normal maximum operating pressure at maximum or minimum operating temperature is shown on nameplate.
- The operating temperature is within -50°C to 180°C for PTFE(pure-teflon) or RTFE seat and sealing. Others seat and sealing operating temperature shall be checked with TUNING .
- The nominal pressure (PN) rating describe maximum working pressure in cold working temperature (e.g. PN63(B 63) describe maximum working pressure 63 bar at $-39^{\circ}\text{C}\sim 40^{\circ}\text{C}$).

2)、 No throttling operation

- Don't leave the ball partly open(throttling operation), where the pressure drop and/or flow rate damage to the valve seats and/or ball.

3、 **Installation**

- 1)、 Remove the protective plastic cap on 3-threaded end, and clean or flush the valves.
- 2)、 Prior to mounting, flush and/or clean the pipeline to remove all accumulated extraneous matters, which matters shall damage to the seats and ball surface.
- 3)、 Make sure the flow direction, which direction mark is shown in handle. The valve may be fitted in any position on the pipeline.
- 4)、 Use conventional sealant(e.g. Teflon) on the threads.
- 5)、 Apply pipe wrench on the end cap of valve only while tightening. Tightening by using the valve body or handle can seriously damage the valve.
- 6)、 Unions to be installed before each end for easy installation and disassembly of the valve.
- 7)、 The pipeline shall be free of tension after installation.

4 、 **Operation and Use**

- 1)、 Make sure the pipeline must be flushed clean prior to operation.
- 2)、 The 20X458 series valves are allowed for $0^{\circ}\sim 90^{\circ}\sim 180^{\circ}\sim 270^{\circ}\sim 360^{\circ}$ by turning the handle based on different flow paths. The valves are also allowed locking in every 90° turn.
- 3)、 Mounting of actuators
This valve can be operated by actuator. Before mounting the actuator the stem(gland) nut(12) has to be secured by the stop-lock-cap(13). Then the actuator can be directly mounted on ISO 5211 mounting pad without any adapter or bracket. Make sure the mounted actuator must not cause a thrust load on the valve stem(5).
- 4)、 Operating torque requirements will vary depending on the length of time between cycle, media in the system line pressure and type of valve seat. The following table A are base on RTFE seats with clean cold water as the media.

Table A: Max Break-away torque value

Size	In-lb	N. m
1/4" 3/8"	53	6.0
1/2"	53	6.0
3/4"	80	9.0
1"	110	12.4
1 1/4"	130	15.0
1 1/2"	195	22.0
2"	293	33.0

Table B: Torque for stem nut tighten

Size	In-lb	N. m
1/4" 3/8"		
1/2"	70~80	8.0~9.0
3/4"	70~80	8.0~9.0
1"	90~100	9.0~11.3
1 1/4"	90~100	9.0~11.3
1 1/2"	140~160	15.8~18.1
2"	140~160	15.8~18.1

Table C: Torque for locking cap

Size	In-lb	N. m
1/4" 3/8"	1422	160
1/2"	1422	160
3/4"	2133	240
1"	2667	300
1 1/4"	3111	350
1 1/2"	3644	410
2"	3644	410

5、Maintenance

Long life and maintenance-free of valves can be maintained under normal working conditions and in accordance with pressure/temperature and corrosion data chart

Warning: ● Ball valves can trap pressurized fluid in ball cavity when closed position.

- Prior to maintenance, relieve the line pressure.

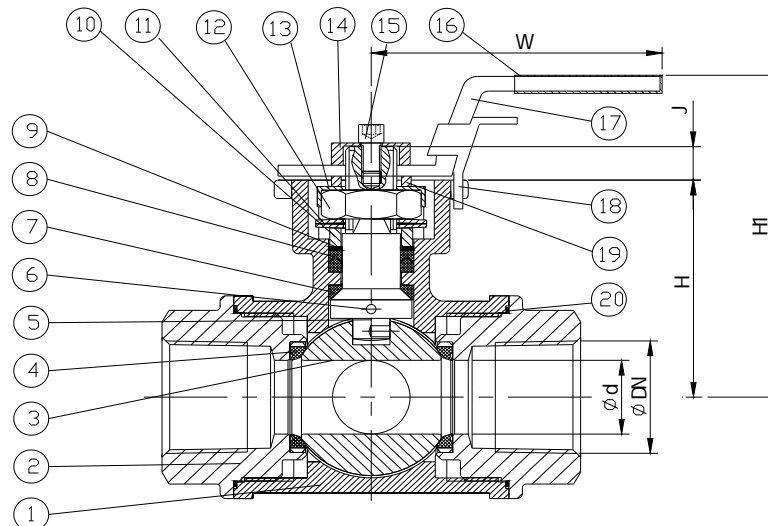
1)、Re-tighten Packing

For maximum stem packing life, proper packing adjustment procedure must be followed:

- Should a leakage occur at the gland packing, retighten the stem(gland)nut(12).
- Take care that the stem nut (12) is not tighten too much. Normally the leakage can be stopped by simply turning the stem nut(12) by 30° to 60° .

2)、Replacement of seats and seals

a)、Disassembly



- Before disassembly, make sure to discharge any hazardous media from the valve inside body cavity.
- Remove valves from pipeline.
- Remove handle nut(15), Washer(14), Handle(17), Stop-lock-cap(13), Stem nut(12), Belleville washer(11), Gland(10), Bushing(9).
- Remove all end cap(2), Body gasket(20), Ball seat(4), Ball(3).
- Push stem(5) down into body cavity and remove, then remove stem seal ring(7), V-ring packing(8) from the body(1).

Caution: Use care to avoid scratching the surface of stem and packing chamber.

b)、Reassembly

- Reassembly processes is reverse sequence of disassembly.
- Clean and inspect all parts, full replacement of all soft parts(seats and seals) are strongly recommended.
- Tighten the stem nut(12), using table B stipulated torque figure.
- If possible, test the valve, then cycle valve several times before resuming service.