The Right Valve • The Right Application • Right now!

JFLOW SERIES BALL VALVES
(DM9900 SERIES)
SEGMENTED V-BALL VALVE
INSTALLATION – MAINTENANCE MANUAL

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1. GENERAL PRECAUTIONS:

a. Material Selection:
Make sure to choose correct material of the valve for different applications prior to obtaining the valve. The user should be aware of the service condition and fluid properties. Fluid undergoes property changes with respect to outside factors, particularly fluid left inside the sealed cavity.

b. Pressure-Temperature rating:
When temperature and pressure exceed allowable value, valve failure may occur. User should be aware of the excessive pressure and temperature at nearby pipeline systems can also cause valve failure as well. The recommended working condition for actuator is from 0C to 80C.

c. Static electric effect:
The ball valves are provided with anti-static devices as required for ball-stem-body. When service conditions require electrical continuity to prevent static discharge, the user is responsible for specifying static grounding.

d. Fire safe condition:
N/A.

e. Liquids with high fluid velocity:
When ball valves must be operated frequently on liquids with very high velocity, a check shall be made with the valve distributor or manufacturer for appropriate advice to minimize the possibility of seat deformation, especially when they are highly pressurized on high-temperature line.

f. Throttling service:
Segmented valves are generally recommended for throttling service, though on-off functions are applicable. High fluid velocity or the presence of solid particles in suspension will further reduce seat life in throttling applications. **The possibility is that the seats will be pulled out & cut off by the ball.**

g. Do not open the bonnet or cap when bearing pressure. Valve is not equipped with pressure access device. User should check it by other method through its piping system.

h. Do not touch the surface of valve on high temperature.

i. Not allowed for unstable fluid, otherwise specified with category III in Declaration of conformity or/and in the user manual.

2. DELIVERY CONDITION AND STORAGE:

Valves will stay in the open condition during transportation. For incoming QC, it must check:

a. Packing condition: Is there any damaged during the transportation.
b. The bolts of cap and yoke: to make sure the bolt does not loosen when it arrived.

Valves must be stored in an indoor warehouse to avoid dust and other foreign object.

3. INSTALLATION AND OPERATION:

3.1 Handling:

During the ball valve installation, it must follow the procedure to handle on both sides of the body. If using cable for big size valves, make sure the cable is strong enough to ensure proper safety guidelines during the installation. Do not lift valve by the valve handle at anytime.

3.2 Cleaning:

Even if the valves were transported under a clean environment, operator must check for any foreign bodies or dust inside the bore. If there is, clean it before installation. Operator should clean the valve with water, compression air, or steam (automation valve shall be cleaned only with water or steam, the compression air is not allowed). For cleaning operation, the first step is to put the valve bore perpendicular to the ground and clean, ensuring that all the dust is removed from the bore. The second step is to check and clean all the connecting pipe bores and connection areas. To avoid blocking and leakage there should be no dust, rust or foreign bodies allowed.

3.3 Valve Installation (Install to the pipeline system):

a. Direction

Most of the valves do not restrict the flow direction.

b. Position

The body, cap and gasket are in the connection area of ball valve and pipeline. The bear weight ability and gradient are very important to the pipe installation. Do not make the pressure from the pipeline and stress to concentrate on the connecting area of body and cap. It will cause the deformed and leakage, and the ball, seat, and stem will stick, leaking, and damage.

c. Systems hydrostatic test

Before delivery, valves are tested 1.5 times the allowable pressure at ambient temperature in open position. After installation, the piping system may be subject to system tests, as condition not to exceed the above mentioned pressure.

3.4 Operation

a. For manual operation, shift the handle in counter clockwise and clockwise for changing flow. Be sure to lift the locking device.

4. SERVICE:

4.1 After installation to pipeline, it is necessary to check the function of the product. Thus, operate the valve about 3 times to ensure the function.
4.2 The whole pipeline system may be tested with a proper pressure. User shall take care that the testing pressure shall not be exceeded 1.5 times the allowed working pressure.
4.3 After the pressure testing, user shall operate the valve again about 3 times to ensure the function.

5. CAUTION:

5.1 Never let the product exceed its allowed condition, such as pressure, temperature and fluid.

5.2 If the product has any inappropriate use, the product may become damaged however there may be no immediate signs. User should change the product to avoid danger in the future.

6. MAINTENANCE:

6.1 Maintenance frequency

The maintenance frequency is determined upon the application of ball valve. User shall consider the time interval depending on the kind of fluid, flow velocity, operation frequency, high-pressure effect and high-temperature effect etc.

6.2 Disassembly

a. The user should check the service kit of DM9900, if available in the local market, if not, please do not disassemble the valve, otherwise, please make an order from the original manufactory for the service kit. (suggestion: every time you dismantle the ball valve, we recommend replacing it with new seals and seats of the valve to prevent leaking before assembling)

b. To dismantle the valve you must follow the procedure and drawings and be careful as mentioned below.

c. It doesn't matter where the position of the valve is located, usually it contains the pipeline fluid, so operator must be very careful when removing the valve from the pipe. You must open the ball a little and let the fluid come out slowly. The operator also needs to watch out for any poisonous and inflammability objects, if there is any.

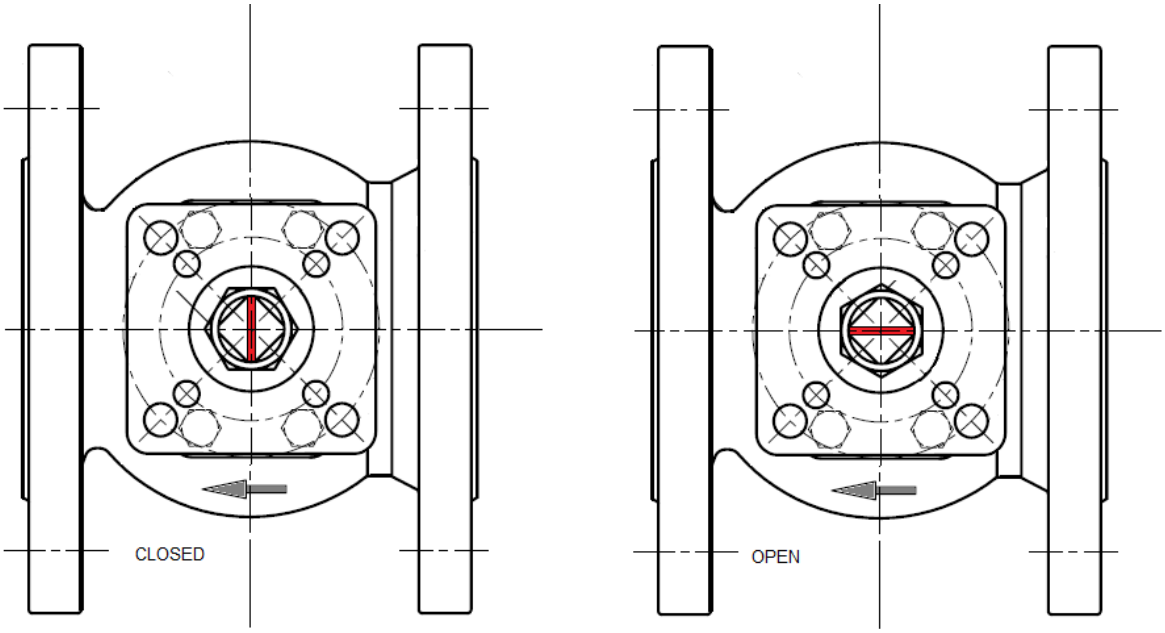
d. To dismantle the valve body, release the end cap carefully. You should take care while dismantling the ball to avoid the seat retainer from falling down from the end cap.
e. To lift the ball by hoist, it must make the protection on corner to avoid the ball damaged by metal contact. The right position for store the valve is put the open end on the ground. This procedure is protecting the surface of the ball.

6.3 Parts inspection, maintenance and replacement
a. Check the surface of ball is it scraped? It may use the PT for inspection if necessary. If there is any damage on the surface, than find out the cause such as the dirt fluid…etc. It must avoid the damage factors as far as possible.
b. The damaged of the ball surface, to gauge is it located on the contacting area of ball or ball seat? If this is the case, than the ball must take a fine milling. If there is heavy damage, than it must weld and re-machine again. If it cannot be repaired than change a new ball.
c. If the scraped area is not at the location described in the item above, than it must re-fine milling the damaged area again. Otherwise, the ball will damage the soft seat during the open and close operation or it will dig out the ball seat and cause a heavy damage to ball and seat.
d. Check the wall thickness of valve body and cap. The minimum thickness shall be maintained in according to EN12516-1 table 10.
e. To inspect the surface of soft seat, has it any scrape mark, concave, dusts (including weld dregs, iron bits, sand…etc.), abrasion, abnormal press scrape, and a tiny scrape. Usually, the scrape mark and damage by dusts will occur the same time as ball damage. It is the root cause for leakage. If leakage occur before repairing, than suggest to change a new soft seat (PTFE or RTFE). The mark from press or fine scrape is happen in an abnormal operation pressure. It must reconsider to choice a right valve.
f. The stem packing may be replaced by the new parts after dismantle the valve. User shall make sure that your distributor able to serve the same packing of your valve if you do not have a service pack.

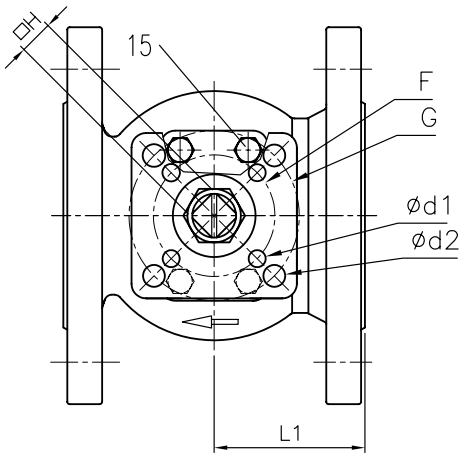
g. To do the final inspection for a valve, it must operate 10 times of open and close to ensure all the parts are assembled correctly. To ensure the torque is not the same in operation, than it may have some parts in a not corrected position or interference. It must dismantle and re-assembly. Otherwise, it is easy to damage if let this valve work on a pipeline under high pressure.

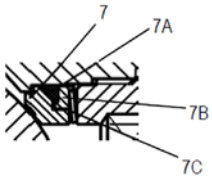
6.4 Assembly

For assembly process, it takes the opposite way of dismantle process. The stopper must be located at the right place, otherwise, the open and close operation will be opposite.

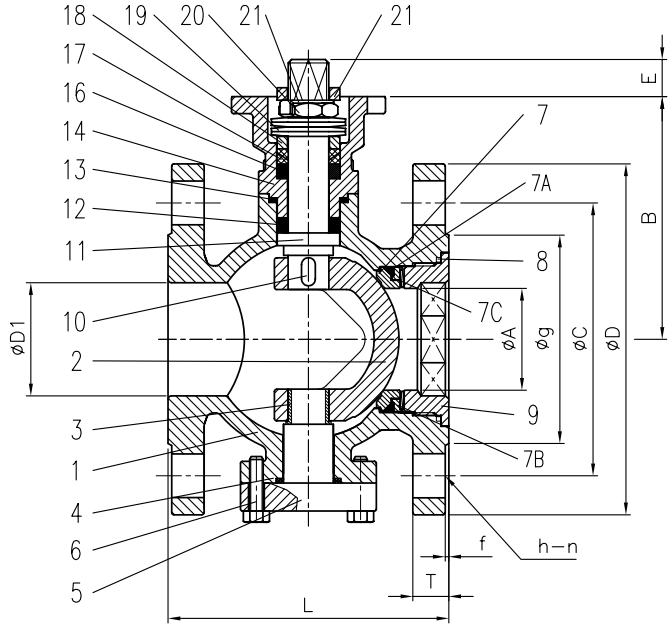


DM9900F SERIES - 1 1/2" - 6" ANSI 150 FLANGED





Metal Seat Detail



Soft Seat

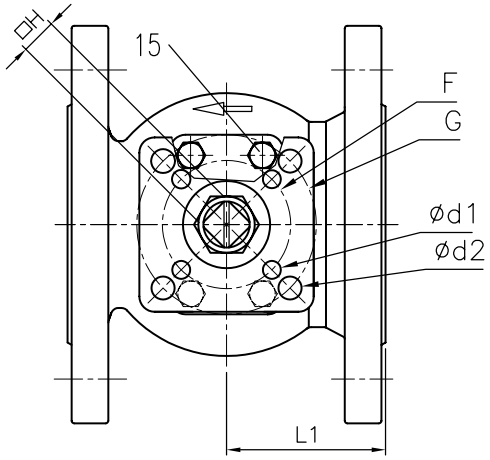
NO.	NAME OF PARTS	MATERIALS
1	BODY	A351 Gr. CF8M
2	BALL SEGMENT	CF8M(HARDENED-N)
3	BEARING	17-4PH
4	GASKET	GRAPHITE
5	TRUNNION CAP	A351 Gr. CF8M
6	TRUNNION CAP BOLTS	SS 304
7	SEAT	SS316+STELLITED
7A	SEAT BACK SEAL	GRAPHITE
7B	SEAT HOUSING	SS 316
7C	SPRING DISK	SS 301
8	INSERT GASKET	GRAPHITE
9	INSERT CAP	A351 Gr. CF8M
10	KEY	SS 316
11	STEM	SS 316
12	BEARING	GRAPHITE
13	BONNET GASKET	GRAPHITE
14	BONNET	A351 Gr. CF8M
15	BONNET BOLTS	SS 304
16	BEARING	GRAPHITE
17	STEM PACKING	GRAPHITE
18	GLAND	SS 304
19	BELLEVILLE WASHER	SS 301
20	STEM NUT	SS 304
21	NUT STOP	SS 304
22	SPACE WASHER	SS 304

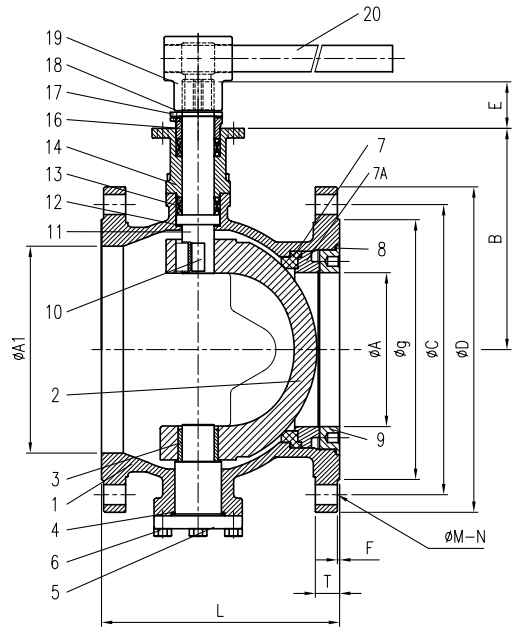
NO.	NAME OF PARTS	MATERIALS
1	BODY	A351 Gr. CF8M
2	BALL SEGMENT	A351 Gr. CF8M
3	BEARING	PTFE+50%SS
4	GASKET	TFM1600
5	TRUNNION CAP	A351 Gr. CF8M
6	TRUNNION CAP BOLTS	SS 304
7	SEAT	TFM1600
7A	SEAT HOUSING	SS 316
7B	BACK-UP SEAL	VITON(O-RING)
8	INSERT GASKET	TFM1600
9	INSERT CAP	A351 Gr. CF8M
10	KEY	SS 316
11	STEM	SS 316
12	BEARING	TFM4215
13	BONNET GASKET	TFM1600
14	BONNET	A351 Gr. CF8M
15	BONNET BOLTS	SS 304
16	BEARING	TFM4215
17	STEM PACKING	TFM1600
18	GLAND	SS 304
19	BELLEVILLE WASHER	SS 301
20	STEM NUT	SS 304
21	NUT STOP	SS 304
22	SPACE WASHER	SS 304

UNIT: MM/INCH

SIZE		A	B	E	L		L1	H	D1	F	G	d1	d2	FLANGE DIMENSIONS (CLASS 150)						
					ISA	CLASS 150								D	BOLT HOLE c	h	n	t	g	f
1½"	MM	35	107	14	114	165.1	57	14	38	50	70	7	9.2	127	98.5	15.9	4	14.2	73.2	1.5
	INCH	1.378	4.213	0.55	4.50	6.50	2.244	0.551	1.496	1.969	2.756	0.276	0.362	5.0	3.88	0.625	4	0.56	2.88	0.06
2"	MM	45	107	14	124	178	62	14	50	50	70	7	9.2	152	120.5	19.1	4	15.7	91.9	1.5
	INCH	1.772	4.213	0.55	4.88	7.00	2.441	0.551	1.969	1.969	2.756	0.276	0.362	6.0	4.75	0.750	4	0.62	3.62	0.06
3"	MM	66	140.2	24	165.1	203	87	17	82.5	70	102	9.2	11.4	190	152.5	19.1	4	19.1	127	1.5
	INCH	2.598	5.520	0.94	6.50	8.00	0.425	0.669	3.248	2.756	4.016	0.362	0.449	7.5	6.0	0.750	4	0.75	5.00	0.06
4"	MM	80.2	154.6	24	193.5	228.6	102.8	17	97.5	70	102	9.2	11.4	229	190.5	19.1	8	23.9	157.2	1.5
	INCH	3.157	6.087	0.94	7.62	9.00	4.047	0.669	3.839	2.756	4.016	0.362	0.449	9.0	7.5	0.750	8	0.94	6.19	0.06
6"	MM	114	192	26	228.6	266.7	124	22	153	102	125	11.4	13.5	279	241.5	22.2	8	25.4	215.9	1.5
	INCH	4.488	7.559	1.02	9.00	10.50	4.881	0.866	6.024	4.016	4.921	0.449	0.531	11.0	9.5	0.875	8	1.00	8.50	0.06

DM9900F SERIES - 8" - 12" ANSI 150 FLANGED (SOFT SEAT)





NO.	NAME OF PARTS	MATERIALS OPTION	
1	BODY	A351 Gr. CF8M	A216 Gr. WCB
2	BALL SEGMENT	A351 Gr. CF8M	———
3	BEARING	PTFE+50%SS	———
4	GASKET	TFM1600	———
5	TRUNNION CAP	A351 Gr. CF8M	A216 Gr. WCB
6	TRUNNION CAP BOLTS	SS 304	———
7	SEAT	TFM1600	———
7A	SEAT HOUSING	SS 316	A216 Gr. WCB
8	INSERT GASKET	TFM1600	———
9	INSERT CAP	A351 Gr. CF8M	A216 Gr. WCB
10	KEY	SS 316	———
11	STEM	SS 316	———
12	THRUST WASHER	TFM1600	———
13	BEARING	TFM4215	———
14	BONNET	A351 Gr. CF8M	A216 Gr. WCB
15	BONNET BOLTS	SS 304	———
16	GLAND	A351 Gr. CF8	———
17	STOP	SS 304	———
18	STOP RING	SS 304	———
19	HANDLE HEAD	FCD45	———
20	HANDLE TUBE	CARBON STEEL	———

UNIT: MM/INCH

SIZE		A	A1	B	E	L	L1	H	F	d1	FLANGE DIMENSIONS (CLASS 150)						
											D	BOLT HOLE			t	g	f
												C	h	n			
8"	MM	152	205	240	58	243	140	28	125	M12	343	298.5	22.3	8	29	270	1.5
	INCH	5.98	8.07	9.45	2.28	9.56	5.51	1.102	4.92		13.5	11.75	0.875	8	1.14	10.63	0.06
10"	MM	192	259	276	58	297	176	28	125	M12	406	362	25.4	12	30.5	324	1.5
	INCH	7.56	10.20	10.87	2.28	11.69	6.93	1.102	4.92		16.0	14.25	1.000	12	1.20	12.75	0.06
12"	MM	225	300	302	64	338	207	36	140	M16	483	432	25.4	12	32	381	1.5
	INCH	8.86	11.81	11.89	2.52	13.31	8.15	1.417	5.51		19.0	17.00	1.000	12	1.26	15.00	0.06

DM9900FLANGED 0812

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