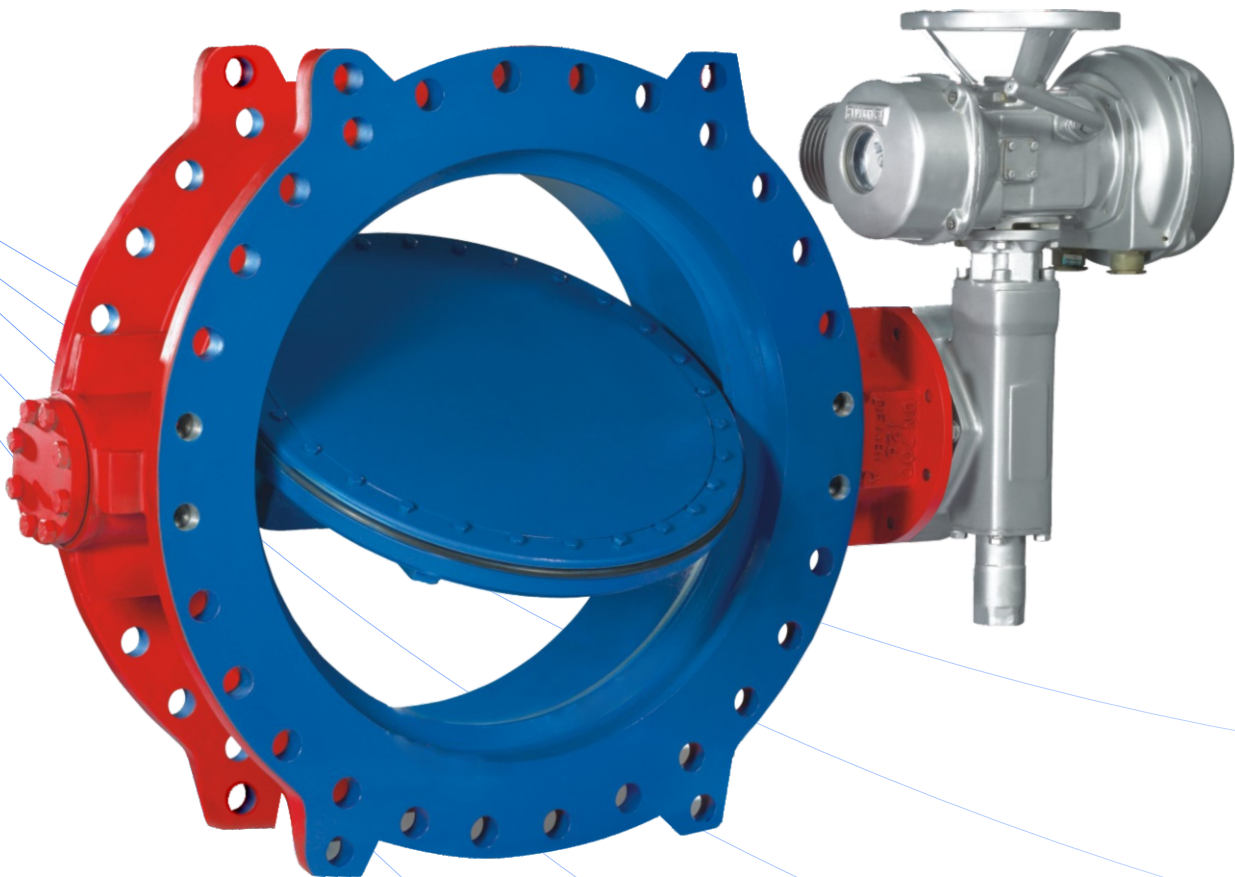




BUTTERFLY VALVE

**IN COMPLIANCE TO
EN 593 and AWWA C 504**

Series 7500



First issue Aug -2014 : Rev-0 Aug-2014

Dembla Butterfly Valves

Dembla is a leading Control Valve manufacturing company in INDIA developing AWWA Butterfly Valves to meet application requirements of Water and Waste Water treatment industries, Water distribution systems, Power plants and Industrial plants. Dembla products are recognised for Quality and Reliability.

Series 7500 Butterfly Valves meet the latest requirement of AWWA C 504 / BS EN 593 standard. The Valve designs are backed by Computer Aided Software and proper Safety Factors considerations for working components to ensure trouble free long performance life.

Dembla Butterfly Valve components are machined on sophisticated machining centers to achieve consistent error free valve operations. Each valve undergoes Quality Control Inspection and Testing to meet AWWA C 504 / EN 12266-1 Testing requirements.



Specifications

Sizes	:	DN 100 Thru DN 2500 4" Thru 100"
Design and Manufacturing	:	Conforms to AWWA C 504 requirements Conforms to EN 593 requirements
Pressure Class	:	Pressure Rating PN10 / PN16 / PN25 / PN40
Working Temperature	:	-20°C to +70°C
End Connection	:	Double Flanged
Disc Construction	:	Double Offset
Seal Construction	:	Seal clamped mechanically on Disc
Flow Direction	:	Bi directional
Actuators	:	Manual Gear Operator Electrical Actuator
Options	:	▶ Floor Stand ▶ Rubber Lining on Body and Disc. ▶ Epoxy Fusion bonded on Body and Disc.

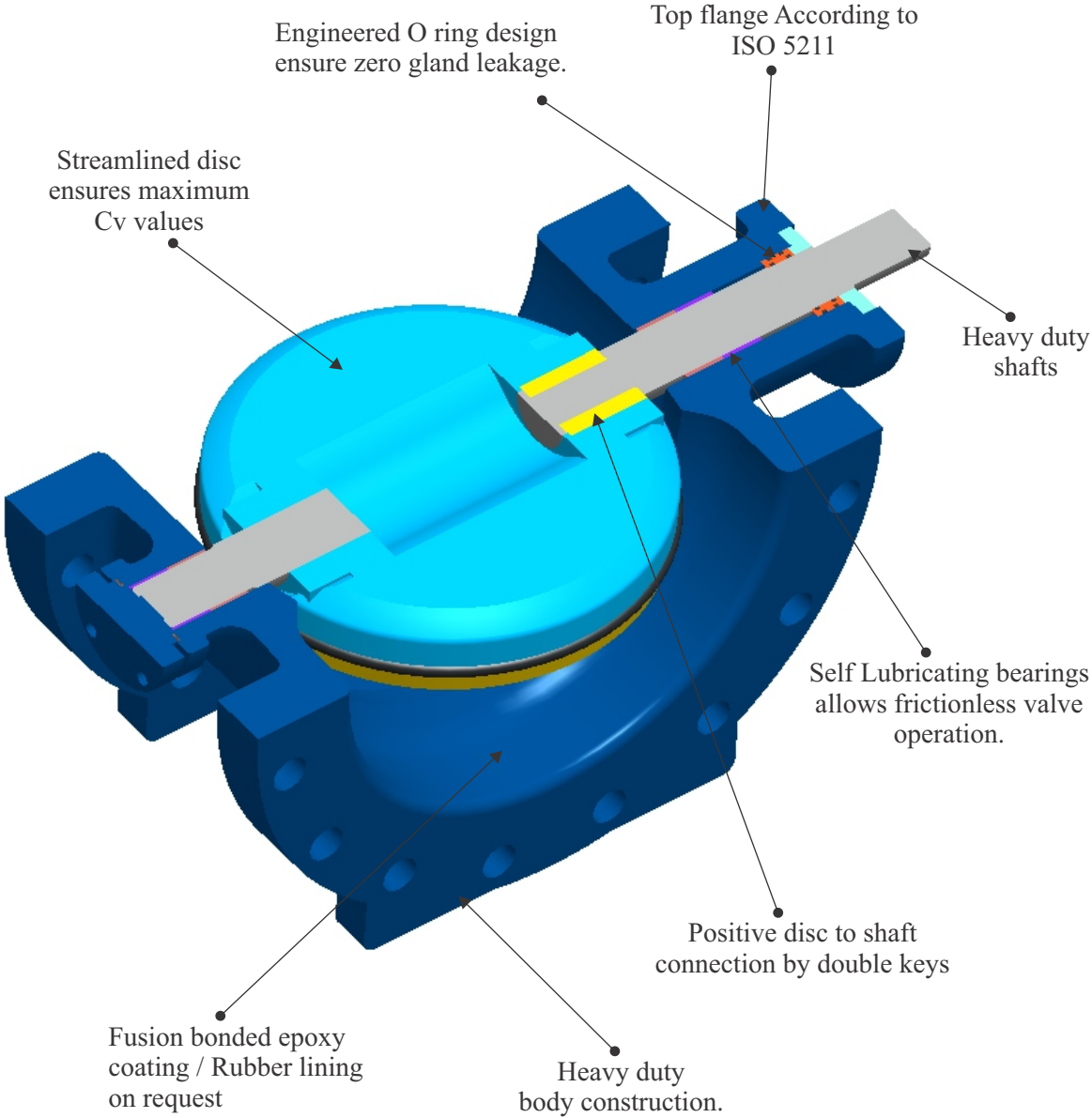
Conformity To Codes

Design Standard	:	AWWA C 504 EN 593 (which replaces DIN 3354 and BS 5155)
Face to Face Dimension	:	EN 558-1 / BS 5752 Basic Series 14 (which replaces BS 5155)
Flange Dimension	:	ASME B16.5, ASME B16.5 Class B DIN EN 1092-1 / EN 1092 - 2 (PN10-PN16-PN25-PN40) AWWA C 207
Testing	:	EN 12266 / API 598

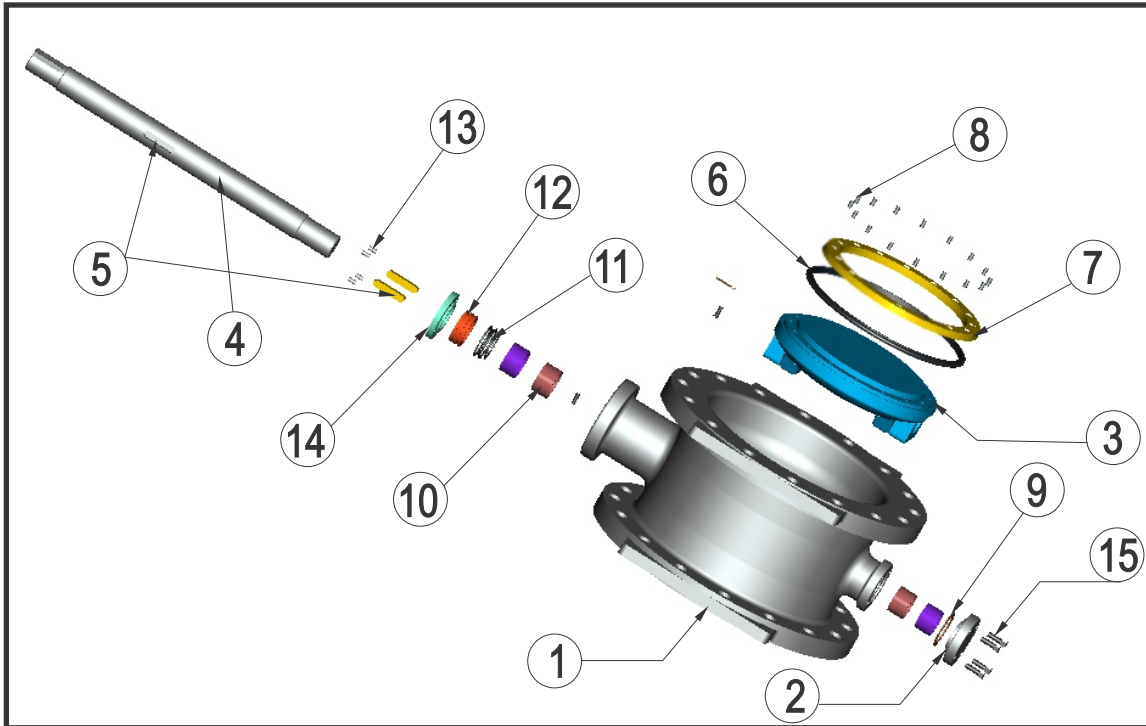
Applications

- Raw and Drinking Water
- Air
- Gas
- Water Supply
- Water Transport
- Water Distribution
- Gas Supply

Features



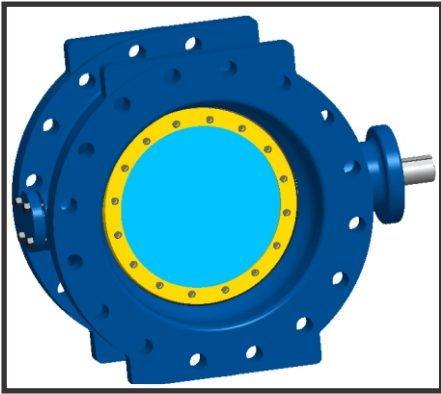
Material of Construction



Sr. No.	Part Name	Materials
1	Valve Body	Ductile Iron A 536 Gr. 65-45-12, GGG40/50, D2 Ni, Cast Iron, A 126 Class B, Carbon steel, A 216 Gr. WCB
2	End Cover	Ductile Iron A 536 Gr. 65-45-12, GGG40/50, D2 Ni, Cast Iron, A126 Class B, Carbon steel, A 216 Gr. WCB
3	Disc	Ductile Iron A 536 Gr. 65-45-12, GGG40/50, D2 Ni, Cast Iron, A126 Class B, Carbon steel, A 216 Gr. WCB
4	Valve Shaft	SS 410, SS 316, 17-4PH, DUPLEX, SUPER DUPLEX
5	Disc Keys	SS 410, SS 316.
6	Seal Ring	NBR, EPDM, VITON.
7	Seal Retainer	Ductile Iron A 536 Gr. 65-45-12, D2 Ni, Cast Iron, A 126 Class B, Carbon steel, A 216 Gr. WCB
8	Seal Retainer Screws	Carbon Steel, Stainless Steel.
9	Body Gasket	PTFE, Spiral Wound Graphite Filled.
10	Guide Bush	Carbon Steel, Stainless Steel, PTFE Coated, Bronze.
11	Gland 'O' Ring	NBR, EPFM, VITON.
12	Gland Bush	Delrin / Bronze
13	Gland Bolts	Carbon Steel, Stainless Steel.
14	Gland Flange	DI, Carbon Steel, Stainless Steel.
15	End Cover Bolt	Carbon Steel, Stainless Steel.

Design Details

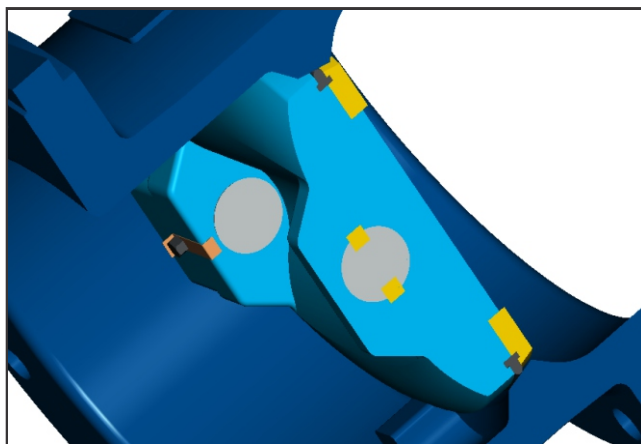
Body Construction



Bodies are available in Double Flanged Construction with Face to Face dimensions as per AWWA C 504/ISO5752 Series 13 Short pattern and ISO 5752 Series 14 Long pattern. With Long pattern bodies the disc remains within body at 45° Disc rotation. Valve bodies conform to AWWA C 504 Class B designation, suitable for a maximum velocity of 16 feet per second in the up stream pipe section. Overlay of SS Super Duplex or SS304/ SS 316 or Incoloy can be provided at seat contact. This provides a corrosion resistant edge for mating with the rubber seal. The mating contact is machined through 360° for complete tight shut off capability. Flange drilling can be provided per EN1092-1/EN1092-2, ASME B 16.5 and AWWA C 207 standards.

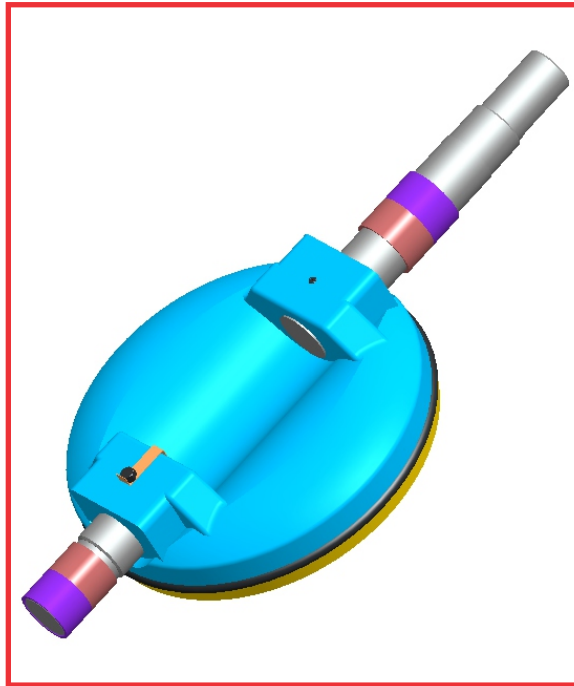
Valve Shaft

Valve shafts are with Blow out Proof construction. Shafts are constructed to corrosion resistant AISI 410 or AISI 316. Shaft design consists of a two piece hub type shaft with key or square connection for actuator. The out board end of the shafts are permanently marked to show the disc position in relation to the shaft. The shafts are connected to the disc hubs using double keys.



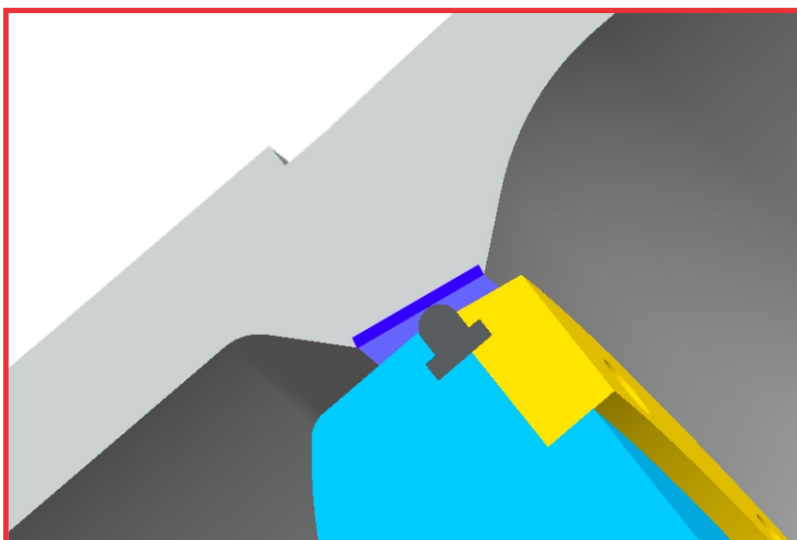
Double Offset Disc

The Disc construction is Double Offset suitable for 360° sealing. The sealing surfaces are away from Valve shaft avoiding continuous seat contact points like centre disc construction. The cam like motion of disc produces high sealing with less torque requirements. As disc moves to slight open position it eliminates the engagement between rubber seal and body seat. This feature allows longer seal life. Rubber seal is clamped mechanically on the disc. Disc geometry provides optimum flow and lower head loss. Disc hubs are designed to the requirement of AWWA C 504.



Body Seat Overlay

The Body seat is provided with Metal Overlay. The Overlay materials may be Stainless Steel 304,316, 904 L or Nickel providing the corrosion and abrasion resistant to Water and Sea Water applications. The Overlay is polished for smooth disc operation and better sealing characteristics.

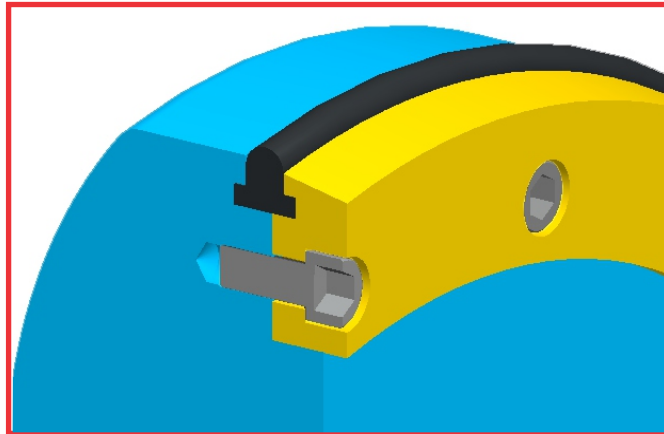


Bearings

Self lubricating sleeve type bearings are used in both trunions of valve body. Bearings are made up of Teflon lined on SS or bronze backed providing low coefficient of friction essential for low operational torque and great resistance to corrosion.

Rubber Seal Ring

Seal rings are located at disc. Seal materials are EPDM , NBR ,Viton. Tee profiled rubber seal is secured tightly to disc with seal retainer avoiding any chance of seal being pull out during operation under high velocity flow condition. The seal retainers are shaped to allow flexibility of rubber seal for an axial movement due to forces created by line pressure providing tight shut condition in either direction of flow when valves is fully closed. The sealing becomes more effective as the line pressure increases.



Fusion Bonded Epoxy Coating

The Valves Body from inside and upto gasket facing on flange and Disc are coated with high build epoxy paint to a DFT 300 microns.



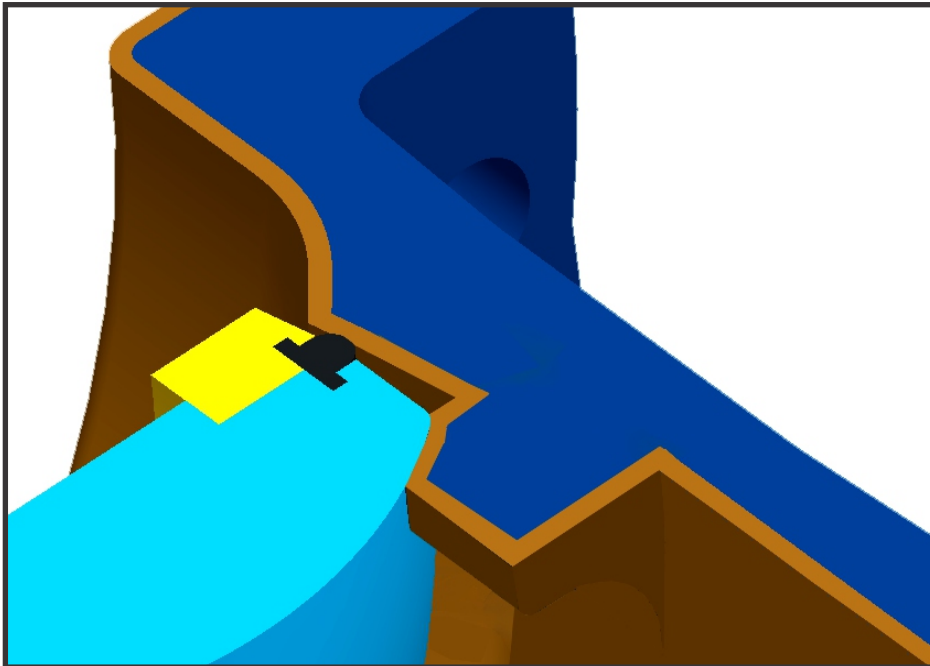
Proven Rubber Lining

Dembla valves are employed with 4 to 5 mm thick Ebonite or EPDM Rubber lining. The lining process involves stages of :

- (1) Shot Blasting of Body / Disc surface to near white metal as per SA 2.1/2 requirements
- (2) The lining is applied by hand layup process by lining experts. The bond strength meets the requirements of AWWA C 504 i.e. (ASTM D 429 Method B). The test requires a 1" (25 mm) wide strip of rubber to withstand a minimum 75 lbs pull force (at a 90° angle) before the rubber gets teared away. The test shall pass if the rubber tears before the bond between rubber and metal surface gives way. This is to ensure that bond adhesion of rubber with metal is stronger than rubber itself. After making rubber overlay, the lined unit is put under a massive steam autoclave. The steam is purged in to the autoclave at pressure of 40 to 50 psig for curing the rubber bond. After curing the rubber hardness is maintained to 70 to 75 shore 'D'.

All the lined surfaces are checked for :-

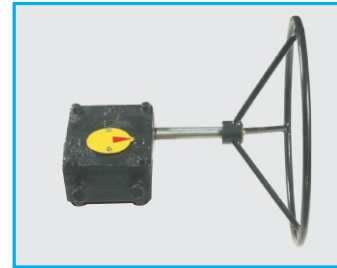
- (1) Rubber lining thickness using a digital liner thickness meter.
 - (2) Hardness test at various places.
 - (3) Air bubble trap or discontinuity or crack in the lining using spark test method at 20,000 volts.
- The spark test is carried out for the entire surfaces of lining.



Actuators

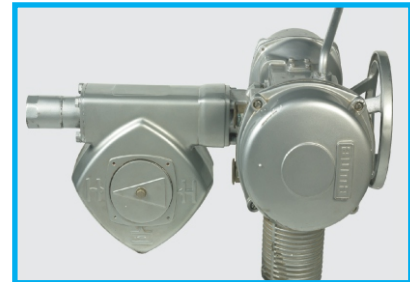
Manual Gear Operators

- Dembla offers a wide range of Manual Gear Operator models to suit exact Torque requirements of AWWA C 504. These operators are available with Handwheel as standard and with chain wheel and 2" Square Nut options.
- The actuators consist of worm gear arrangement housed in cast iron housing with life time lubrication. The gear operator models are selected having a gear ratio not to exceed 80 pounds pull at the handwheel rims to meet the required operator torque.
- The travel limiting stops for open and close positions are adjustable with easy adjustments of stop nuts. The limit stops are designed to withstand a pull of 300 pounds at handwheel rims.
- The pointer on the actuator provides clear indication of valve position.
- Weather proof housing for buried services.



Electric Motor Operators

Dembla provides valves with electric motor actuators produced by leading manufacturers. A wide range of electrical actuators are available fulfilling the requirements of AWWA C 504.



Accessories Options

For Pneumatic Actuator

Following Accessories are offered as per Customers requirements :

- ▶ Pneumatic Valve Positioners,
- ▶ Electro Pneumatic Valve Positioners,
- ▶ Air Filter Regulators,
- ▶ Air Lock Relays,
- ▶ Air Volume Boosters,
- ▶ Limit Switches,
- ▶ Proximity Switches,
- ▶ Solenoid Valves,
- ▶ Position Feedback Transmitters,
- ▶ Quick Exhaust Valves,
- ▶ I/P Converters.



Limit Switch



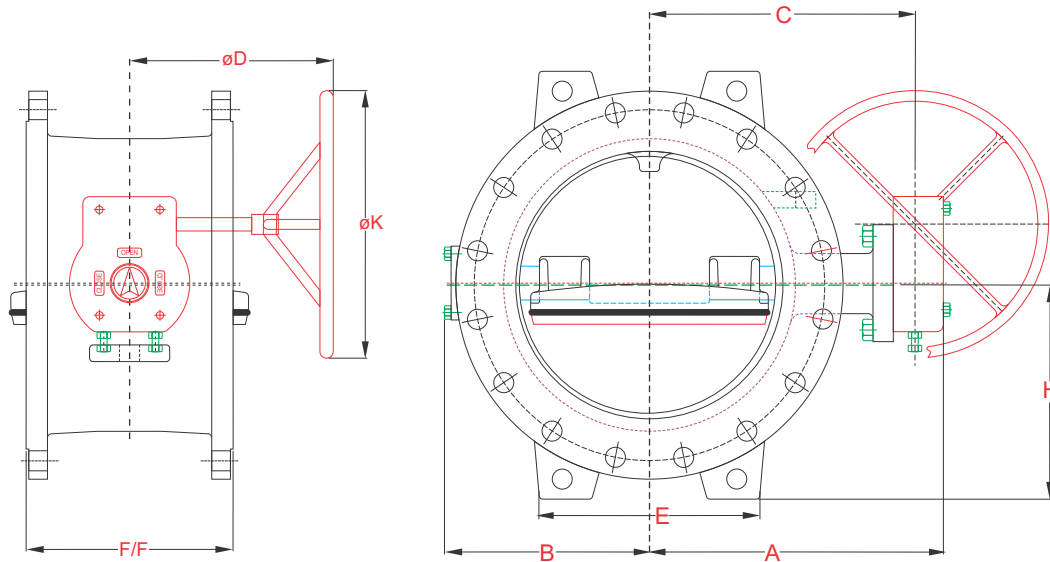
Smart Positioner



Electro Pneumatic Positioner

Dembla Valves | 7500

Overall Dimensions



PN 10

DN	F/F	F/F	E	A	B	C	D	øK	H	Gearbox
100	190	127	154	215	120	245	200	175	110	TMWG - 225
125	200	140	175	230	135	260	200	175	125	TMWG - 225
150	210	140	200	258	160	288	200	175	143	TMWG - 225
200	230	152	238	285	185	315	200	175	170	TMWG - 225
250	250	165	270	328	218	358	200	175	198	TMWG - 225
300	270	178	311	348	248	378	200	175	223	TMWG - 225
350	290	190	355	390	277	420	200	175	253	TMWG - 225
400	310	216	390	460	310	515	295	500	283	TMWG - 1500
450	330	222	430	498	335	553	295	500	308	TMWG - 1500
500	350	229	460	540	365	605	315	500	335	TMWG - 2750
600	390	267	540	600	410	665	155	500	375	TMWG - 2750
700	430	292	620	660	480	725	315	500	448	TMWG - 2750
750	450	305	668	685	512	750	315	500	478	TMWG - 2750
800	470	318	700	715	548	730	315	500	508	TMWG - 2750
900	510	330	780	765	598	830	315	500	553	TMWG - 2750
1000	550	410	840	880	655	958	600	700	615	WG 75 - S 5
1100	590	440	930	930	710	1008	600	700	672	WG 75 - S 5
1200	630	470	1015	1020	760	1115	656	800	728	WG 100 - S 5
1300	670	500	1090	1070	810	1165	656	800	784	WG 100 - S 5
1400	710	530	1170	1130	870	1225	656	950	838	WG 100 - S 5
1500	750	560	1250	1250	930	1375	750	950	898	WG 120 - S 6
1600	790	600	1340	1310	1010	1435	750	950	958	WG 120 - S 6
1800	870	670	1480	1420	1030	1545	890	950	1058	WG 120 - S 12
2000	950	760	1620	1530	1200	1655	890	950	1164	WG 120 - S 12
2200	1030	840	1780	1635	1320	1820	960	950	1225	WG 200 - S 10
2400	1110	920	1930	1750	1440	1935	960	950	1380	WG 200 - S 10
2500	1150	1000	2000	1800	1490	1985	1030	950	1440	WG 200 - S 18

Overall Dimensions

PN 16

DN	F/F	F/F	E	A	B	C	D	øK	H	Gearbox
100	190	127	132	215	120	245	200	175	110	TMWG - 225
125	200	140	150	230	135	260	200	175	125	TMWG - 225
150	210	140	171	258	160	288	200	175	143	TMWG - 225
200	230	152	204	298	185	338	230	250	170	TMWG - 500
250	250	165	243	330	230	370	230	250	203	TMWG - 500
300	270	178	276	366	270	410	245	350	230	TMWG - 750
350	290	190	312	416	300	461	295	500	260	TMWG - 1500
400	310	216	348	456	330	501	295	500	290	TMWG - 1500
450	330	222	384	505	380	570	315	500	320	TMWG - 2750
500	350	229	429	540	402	605	315	500	358	TMWG - 2750
600	390	267	504	635	465	710	421	500	420	WG - 55 / S
700	430	292	546	660	506	735	421	500	460	WG - 55 / S
750	450	305	580	710	534	788	560	700	484	WG 75 - S 25
800	470	318	615	765	560	843	560	700	513	WG 75 - S 25
900	510	330	675	815	620	893	600	700	563	WG 75 - S 5
1000	550	410	753	890	670	968	600	700	628	WG 75 - S 5
1100	590	440	822	970	745	1065	656	800	685	WG100 - S 5
1200	630	470	891	1035	802	1130	656	800	743	WG 100 - S 5
1300	670	500	951	1090	850	1185	656	800	793	WG 100 - S 5
1400	710	530	1010	1140	912	1235	662	800	843	WG 100 - S 6
1500	750	560	1080	1200	974	1295	662	800	904	WG 100 - S 6
1600	790	600	1158	1315	1040	1440	750	950	965	WG 120 - S 6
1800	870	670	1278	1425	1145	1610	892	950	1165	WG 120 - S 12
2000	950	760	1407	1545	1275	1670	818	950	1173	WG 120 - S 10
2200	1030	840	1590	1610	1330	1795	960	950	1210	WG 200 - S 10
2400	1110	920	1700	1690	1410	1875	1030	950	1260	WG 200 - S 18
2500	1150	1000	1810	1750	1490	1935	1030	950	1320	WG 200 - S 18

PN 25

DN	F/F	F/F	E	A	B	C	D	øK	H	Gearbox
100	190	127	160	215	120	245	200	175	118	TMWG - 225
125	200	140	180	230	145	260	200	175	135	TMWG - 225
150	210	140	204	268	160	308	230	250	150	TMWG - 500
200	230	152	250	298	195	338	230	250	180	TMWG - 500
250	250	165	286	350	230	394	245	350	212	TMWG - 750
300	270	178	330	400	275	445	245	500	243	TMWG - 1500
350	290	190	375	440	300	485	245	500	273	TMWG - 1500
400	310	216	420	495	335	560	315	500	310	TMWG - 2750
450	330	222	456	555	365	630	421	500	335	WG 55 / S
500	350	229	496	560	400	625	315	500	365	TMWG - 2750
600	390	267	575	668	460	747	440	500	423	T 725 / S
700	430	292	652	750	520	828	560	700	480	WG 75 - S 25
750	450	305	690	790	550	868	560	700	512	WG 75 - S 25
800	470	318	738	822	590	900	560	700	543	WG 75 - S 25
900	510	330	805	870	642	948	600	700	593	WG 75 - S 5
1000	550	410	898	990	710	1085	656	800	660	WG 100 - S 5
1200	630	470	920	1010	760	1105	656	800	720	WG 100 - S 5
1400	710	530	970	1070	820	1195	748	950	785	WG 120 - S 6
1600	790	600	1010	1150	870	1275	892	950	840	WG 120 - S 12

PN 40

DN	F/F	E	A	B	C	D	øK	H	Gearbox
100	190	160	205	120	235	200	175	118	TMWG - 225
125	200	180	230	145	260	200	175	135	TMWG - 225
150	210	230	258	165	298	230	250	150	TMWG - 500
200	230	280	300	205	340	230	250	188	TMWG - 500
250	250	350	351	240	395	245	350	225	TMWG - 750
300	270	380	380	278	425	295	500	258	TMWG - 1500
350	290	420	465	310	530	315	500	290	TMWG - 2750
400	310	470	520	350	598	421	500	330	WG 55 / S
450	330	530	550	370	625	421	500	343	WG 55 / S
500	350	580	592	420	670	440	500	378	T 725 / S
600	390	620	655	490	733	560	500	445	WG 75 - S 25
700	430	670	720	550	798	560	700	510	WG 75 - S 25
800	470	720	790	610	868	560	700	570	WG 75 - S 25
900	510	780	850	680	928	560	700	645	WG 75 - S 5
1000	550	830	910	730	1005	656	800	715	WG 100 - S 5



Dembla

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