

**Flow**Line

*Series 70S*

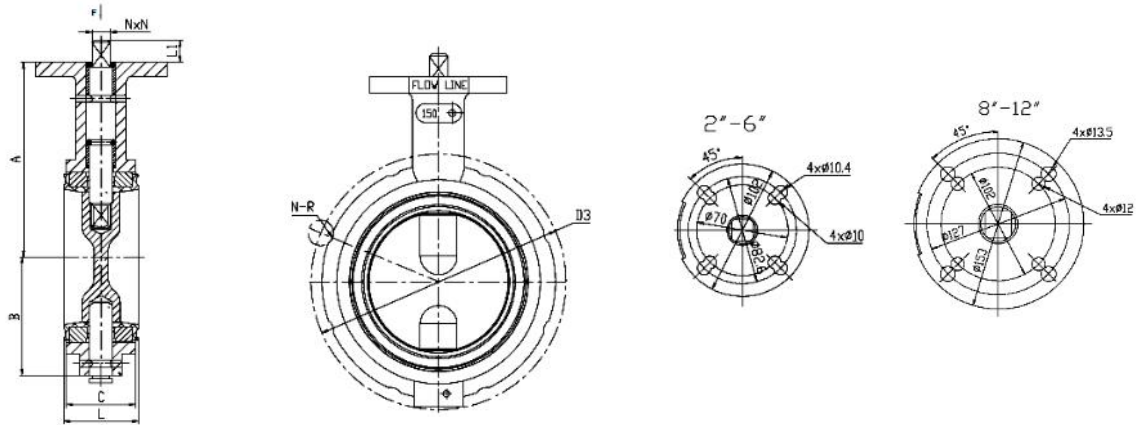


**Oil Field and Marine Butterfly Valves**

**Sizes 2" - 12"**

# ENGINEERING

## DIMENSIONS



Size	A	B	C	L	D3	N-R	NxN	Weight
2"	3.94	2.57	1.75	1.87	4.25	4-R.32	.55x.55	6
2.5"	4.44	2.82	1.89	2.01	5.5	4-R.43	.55x.55	7
3"	4.84	3.07	1.87	2.01	6	6-R.43	.55x.55	8
4"	6	3.64	2.11	2.27	7.5	8-R.43	.55x.55	12
5"	6	4.17	2.24	2.4	8.5	8-R.55	.67x.67	15
6"	6.5	4.76	2.24	2.4	9	8-R.39	.67x.67	18
8"	8.06	5.91	2.55	2.72	11.75	8-R.55	.87x.87	29
10"	9.97	7.09	2.74	2.9	14.25	12-R.59	.87x.87	43
12"	10.91	9.21	3.26	3.4	-	12-R.55	.87x.87	71

## TORQUE

Shutoff Pressure	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
50 psi	66	96	150	225	350	450	750	1325	2250
75 psi	98	141	237	261	504	651	1050	1778	2990
100 psi	103	148	249	343	531	685	1105	1872	3147
125 psi	107	155	260	376	553	714	1151	1950	3279
150 psi	110	158	265	384	564	728	1275	1989	3345
175 psi	121	175	283	417	632	814	1337	2320	3923
200 psi	132	192	300	450	700	990	1500	2650	4500
250 psi	145	211	318	486	770	990	1695	2995	5085
285 psi	160	232	337	528	847	1089	1915	3384	5746

## CV VALUES

Degrees	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
10°	2	3	8	17	47	91	116	223	303
20°	3.5	5	16	33	94	182	231	446	605
30°	8	11	23	57	143	248	330	633	825
40°	21	27	50	110	231	396	528	935	132
50°	40	52	92	182	380	627	858	132	206
60°	87	121	147	297	578	902	145	209	313
70°	10	172	224	462	908	138	250	363	552
80°	14	253	420	773	148	206	415	671	102
90°	17	332	473	913	165	217	425	709	107

## MATERIALS OF CONSTRUCTION

<p><b>Body</b></p> <ul style="list-style-type: none"> <li>Cast Iron ASTM A-126 Class B</li> <li>Ductile Iron ASTM A-536 (65-45-12)</li> <li>Ductile Iron ASTM A-395</li> <li>316 Stainless Steel ASTM A-351 CF8M</li> <li>304 Stainless Steel</li> </ul>	<p><b>Stem</b></p> <ul style="list-style-type: none"> <li>416 Stainless Steel ASTM A-582 Type 416</li> <li>316 Stainless Steel A-276 Type 316</li> <li>Monel</li> </ul>
<p><b>Disc</b></p> <ul style="list-style-type: none"> <li>Electroless Nickel Plated Ductile Iron ASTM A-536 (65-45-12)</li> <li>Aluminum Bronze ASTM B-148 (954)</li> <li>316 Stainless Steel ASTM A-251 (CF8M)</li> <li>Nylon 11 Coated Ductile Iron ASTM</li> </ul>	<p><b>Seat</b></p> <ul style="list-style-type: none"> <li>Buna N-FDA Food Grade 0° to +180°</li> <li>EPDM FDA Food Grade -30° to +275°</li> <li>Viton® - FDA Food Grade 0° to +375°</li> <li>Silicon—FDA Food Grade -80° to +450°</li> <li>Hypalon 0° to +180°</li> </ul>

Viton® is a registered trademark of the E.I. DuPont De Nemours Company. FKM is the ASTM D1418 designation for Fluorinated Hydrocarbon elastomers, such as Viton® (DuPont) and Flourel® (3M).

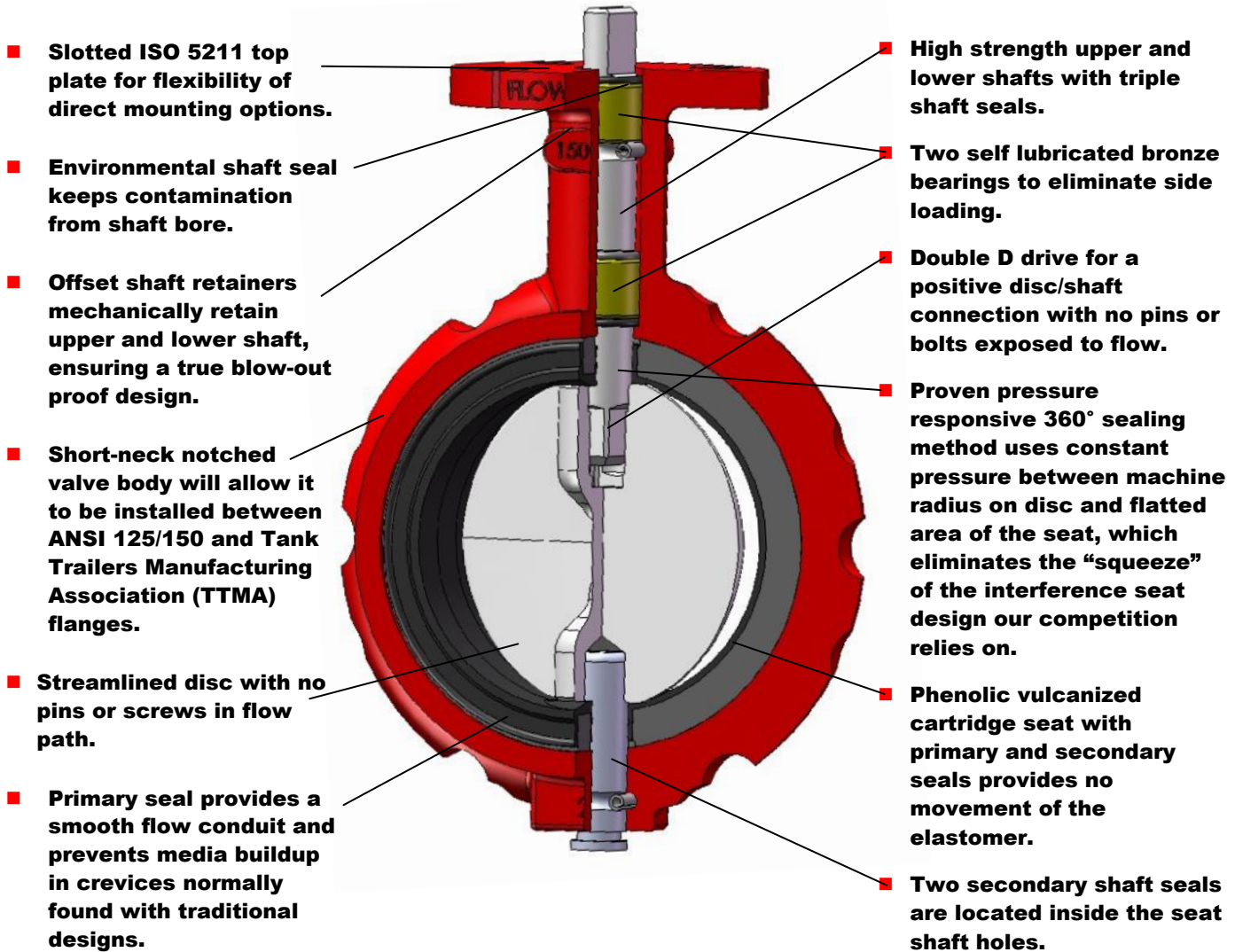
## COMPONENTS

Qty	Description
1	Body
1	Disc
1	Upper Shaft
1	Lower Shaft
1	Seat
2	Shaft Retainers
1	Bearing Retainer
1	Environmental Shaft Seal
2	Secondary Shaft Seals
1	Thrust Bearing
1	Inboard Bearing

- ◆ Torque chart is to be used as a guide only.
- ◆ These torque ratings do not apply to every possible service criteria, which may affect seating and un-seating torque.
- ◆ Torque vales are applicable to Flow Line Series 70S.
- ◆ Do not apply a safety factor to the above torque values when sizing actuators.
- ◆ Dynamic Torque should always be a consideration when sizing valves with high differential pressures.

# FEATURES

The **Series 70S** Wafer Style is a heavy-duty cartridge seated butterfly valve compatible with ANSI 125/150 weld -neck, slip-on, and threaded flange standards. 2" - 12" valves are fully rated to 200 psi, bi-directional, dead-end service. Valves with undercut discs to 50 psi are also available through the size range. All Series 70S valves, regardless of the rated working pressure, are vacuum rated to 29.29" of Mercury Gauge (0 Micron).



## RECOMMENDED SPECIFICATIONS

- Short neck notched valve body will allow it to be installed between ANSI 125/150 and Tank Trailers Manufacturing Association (TTMA) flanges.
- Valve has a streamlined disc design with no pins or screws in the flow path, and is designed for high Cv and lower pressure drop.
- Upper and lower shaft design to utilize triple shaft seals, as standard.
- Blow-out proof design utilizing a Double D drive for a positive disc/shaft connection.
- Pressure responsive 360° sealing design will use constant pressure between machined radius on disc and flatted area of the seat.
- Valve to be Flow Line Series 70S design.

## COATINGS

Flow Line Series 70S butterfly valve bodies are polyester coated as standard. Polyester is a significant upgrade to paint or two-part epoxy coatings. Our standard polyester coating offers outstanding protection against abrasion and corrosion. The Flow Line polyester coating is not affected by outdoor exposure and maintains excellent resistance to UV rays.

TEST	RESULT
Salty Fog Test	No change in excess of 2000 hours
Outdoor Weathering (UV Rays)	No change in excess of 12 months
50% Sulfuric Acid Test	No change for 48 hours

# ACTUATION



## Applicable Standards

- ANSI B16.1 Conforms to ANSI Class 125 flange drilling.
- ANSI B16.5 Conforms to ANSI 150 flange drilling.
- ANSI B16.42 Conforms to ANSI Class 150 flange drilling, body-wall thickness, and pressure-temperature ratings.
- ANSI B16.104 Exceeds Class VI shutoff requirements.
- API 609 Butterfly Valve Category A.
- AWWA C504 Diameter of stainless steel shaft exceeds AWWA Class 75B standard. Body-wall thickness exceeds the AWWA Class 150B standard for butterfly valves.
- MSS SP-25 Markings and identification conform to requirements.
- MSS SP-67 Butterfly valves
- ISO 5211 Actuator Mounting
- USCG **Category "A" Title 46, CFR, Part 56**
- ABS American Bureau of Shipping
- MRO 175 NACE

## Warranty

All products manufactured by Flow Line Valve and Controls, LLC. are warranted against defects in material and workmanship for a period of 2 years following the date of purchase.

All statements, technical information, and recommendations in the bulletin are for general use only. Flow Line Valve and Controls, LLC. Is not responsible for suitability or compatibility of these products in relation to system requirements. Consult Flow Line Valve and Controls, LLC.'s distributors or factory for the specific requirements and material selection for your intended application. Flow Line Valve and Controls, LLC. reserves the right to change or modify product or product design without prior notice. Flow Line Valve and Controls, LLC. is not responsible for editorial or pictorial errors within this literature.