



Enriching Lives

SUCTION DIFFUSER and TRIPLE DUTY VALVE



KIRLOSKAR BROTHERS LIMITED

Established 1888

A Kirloskar Group Company

NOTES

ABOUT KBL

Kirloskar Brothers Limited (KBL) is a world-class pump manufacturing company with expertise in the engineering and manufacturing of fluid management systems. Established in 1888 and incorporated in 1920, KBL is the mother company of the Kirloskar Group. KBL provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, building & construction, oil & gas industry, and marine & defence. KBL manufactures industrial, agriculture and domestic pumps, valves and hydro-turbines.

Over the years, KBL has developed innovative products, which have enabled it to carve a niche globally. It is a global conglomerate and is equipped with the best technologies in the world. It is also India's largest centrifugal pump manufacturer with nine manufacturing facilities in India along with other international subsidiaries and operations in the Netherlands, South Africa, Thailand, the United Kingdom, and the United States of America. KBL has over 16,000 channel partners globally and is supported by best-in-class Pan-India network of authorised service and refurbishment centres.

KBL is the first Indian pump manufacturing company to be certified for Integrated Management System, (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018).

Its factories deploy Total Quality Management tools using the European Foundation for Quality Management (EFQM) model.

Indian subsidiaries and joint ventures

- Kirloskar Ebara Pumps Limited (KEPL) manufactures API, Non-API pumps, and steam turbines.
- Kirloskar Corrocoat Private Limited (KCPL) is the leading solution provider in long-term corrosion protection and energy conversion.

- Karad Projects and Motors Limited (KPML) is a motor manufacturing company with expertise in the manufacture of stampings, stators, rotors, AC rotating machines, aluminium die-cast connecting rods and pump assemblies. It also houses a notable foundry facility specialising in the manufacture of a wide range of carbon steel, alloy steel, stainless steel and cast iron castings for industries such as pumps, valves, turbines, shipping, heavy engineering applications and more.

International, subsidiaries and joint ventures

- SPP Pumps Limited, United Kingdom is a 140-year-old leading pumps manufacturer of centrifugal pumps and associated systems, a global principal in the design, supply and servicing of pumps, renowned fire pump packages and high-quality equipment for a wide range of applications and industry sectors. It is the largest pump manufacturer in the United Kingdom.
- SyncroFlo, Inc., United States of America manufactures pre-assembled pumping systems and provides solutions for HVAC systems, fire protection and turf irrigation.
- Rodelta Pumps International is a Dutch pump manufacturing company that offers products for flood control, irrigation, drinking water, wastewater, pulp & paper, power, chemical, oil & gas and general industries.
- Kirloskar Brothers Thailand Limited (KBTL), Bangkok is the Thailand Board of Investment (BOI) promoted headquarters and assembly plant of the KBL Group companies for the ASEAN and East Asia regions.
- Braybar Pumps (Pty) Limited, Republic of South Africa is engaged in the manufacturing and sales of high-head multi-stage pumps, rubber-lined slurry pumps and metal-lined bearings.

Pumps | Valves | Hydro Turbines | Turnkey Projects

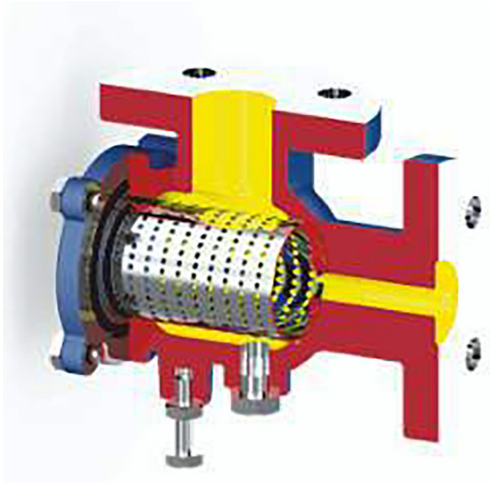
Water Resource Management | Irrigation | Power | Industry | Oil & Gas | Marine & Defence | Building & Construction | Distribution (Small Pumps) | Valves | Customer Service & Spares



Global Headquarter:
"Yamuna", Baner, Pune.

GENERAL INFORMATION

SUCTION DIFFUSER



General Description:

- Installed at the inlet of the pump
- Serves as a filter to remove suspended debris
- Straighten the flow at the inlet of the impeller
- Streamlines the flow at inlet of the pump
- Cast Iron body for Class 125 and Ductile Iron for Class 250
- Flanges as per ASME B16.1 standard
- Acts as an 90° elbow

APPLICATIONS:

- HVAC Building and construction (multi-storied buildings / shopping complexes / auditoriums / indoor stadium / airports / refrigeration system)
- Industry (pharmaceuticals / bottling plants / chemical / food and beverages)

TRIPLE DUTY VALVE



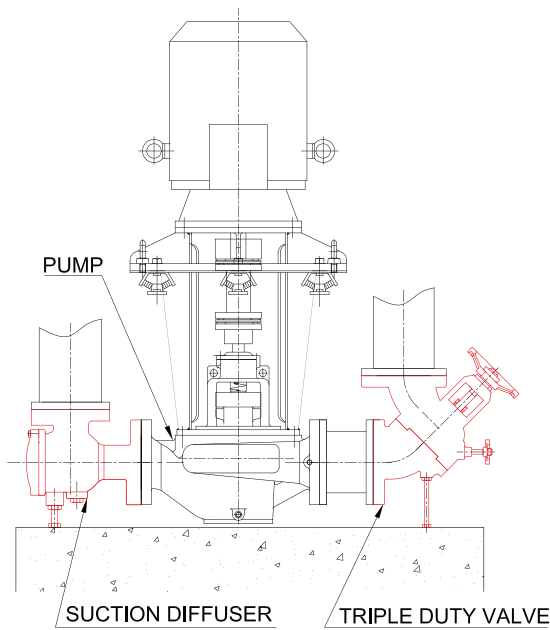
General Description:

- Installed at the discharge side of pump systems
- Spring-loaded disc prevents valve chattering
- Balancing valve / Priming with by-pass function
- Inline or 90° flow arrangement is possible in the same design
- Cast Iron body for Class 125 and Ductile Iron for Class 250
- Flanges as per ASME B16.1 standard
- Throttling operation
- Tight shut off function

APPLICATIONS:

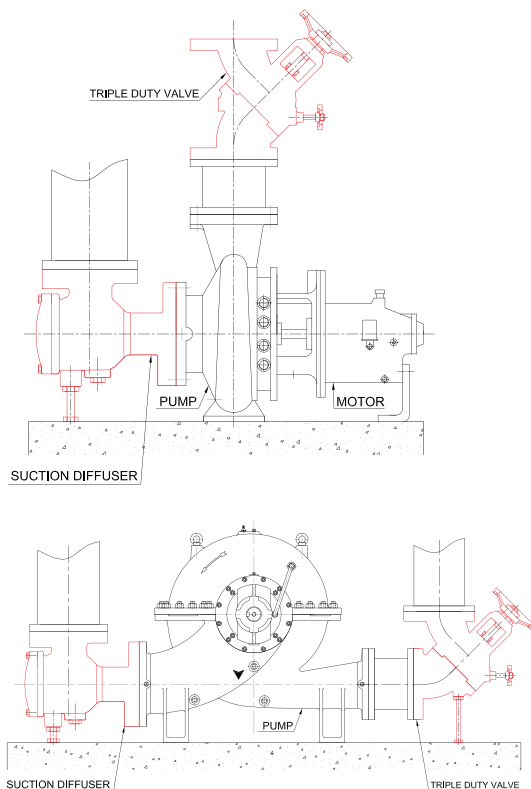
- HVAC systems (multi-storied buildings / shopping complexes / auditoriums / indoor stadium / airports / refrigeration system)
- Industry (pharmaceuticals / bottling plants / chemical / food and beverages)

FEATURES AND MOUNTING ARRANGEMENT



Suction Diffuser Features:

- No separate strainers and 90° Elbow required.
- Variable inlet and outlet sizes to suit pipe fitting.
- Removable SS-304 fine mesh serves as a filtering element.
- Baffles straightens flow, reduce turbulence and guides flow to pumping unit.
- Product engineered using CFD technique to reduce pressure drop.
- Lesser room space as it can be directly bolted to the suction side of the pumping unit.
- Designed with reduced delivery diameter, separate reducers are eliminated.
- Drain arrangement for online maintenance as well as bosses for pressure gauges at the inlet and outlet flanges.
- Adjustable support and easy maintenance

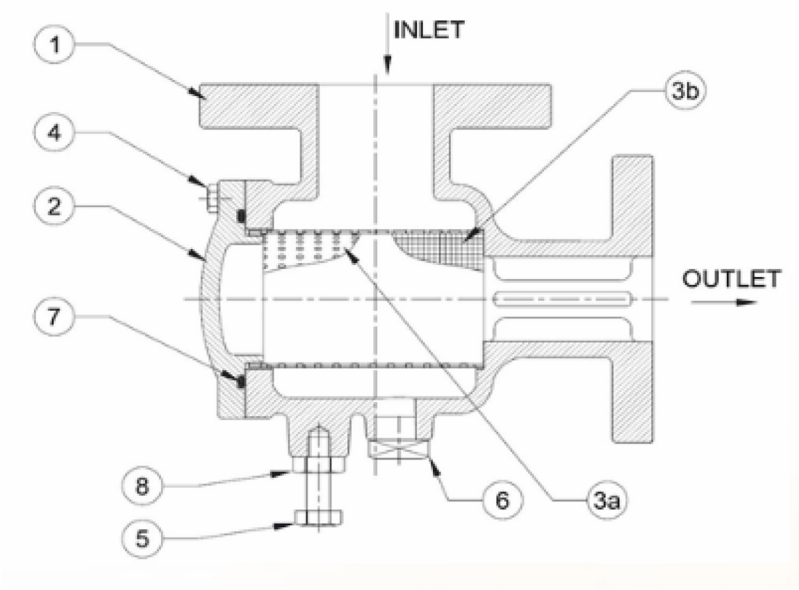


Triple Duty Valve Features:

- Performs as spring-loaded non-slam check, balancing, shut-off, priming through by-pass and throttling valve.
- Soft seated externally guided disc ensures a leak tight seal.
- Mating threaded parts are dissimilar non-galling materials.
- Product engineered using CFD technique to reduce pressure drop.
- Re-positional inlet body viz. two types of mounting arrangement I-type (180° angle) and L-type (90° angle).
- NPT drain plug at the inlet and outlet body.
- Lesser room space compared to conventional pumping system.

SUCTION DIFFUSER

GENERAL ARRANGEMENT & PART LIST



S. No.	Part Description
1	Body
2	End Cap
3a	Strainer
3b	Startup fine mesh
4	Hex-head bolt
5	Adjustable screw
6	Drain plug
7	O-ring
8	Lock Nut

Note: This is representative drawing for all models

TECHNICAL SPECIFICATIONS

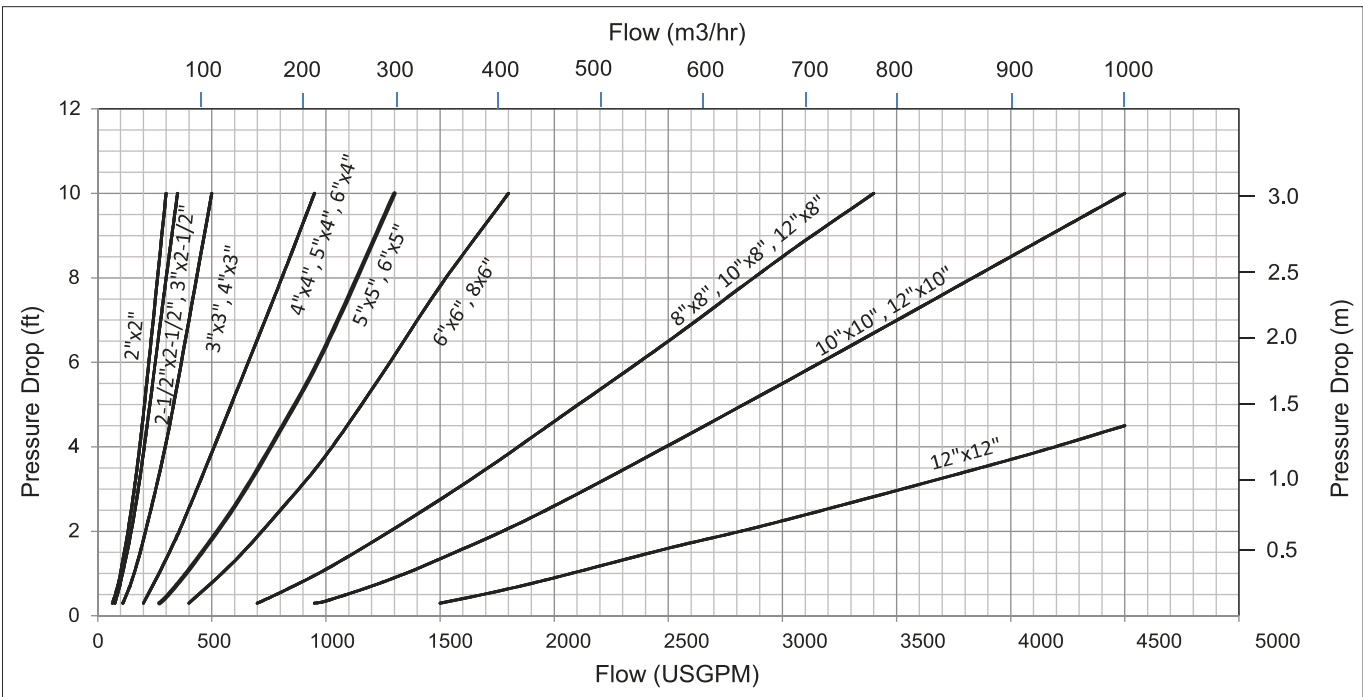
Parameter	Class 125	Class 250
Flow media	Water	Water
Max working pressure	150psi/10.3bar	250psi/17.2bar
Max liquid temp	176°F/80°C	176°F/80°C
Shell test pressure	225psi/15.5bar	375psi/25.9bar
Material of Construction		
Body	Cast Iron	SG Iron (DuctileIron)
Cover plate	Cast Iron	SG Iron (DuctileIron)
Strainer	Stainless Steel	Stainless Steel
Strainer mesh	Stainless Steel	Stainless Steel
Plug (NPT)	Stainless Steel	Stainless Steel
O-ring	Nitrile rubber	Nitrile rubber

TECHNICAL SPECIFICATION

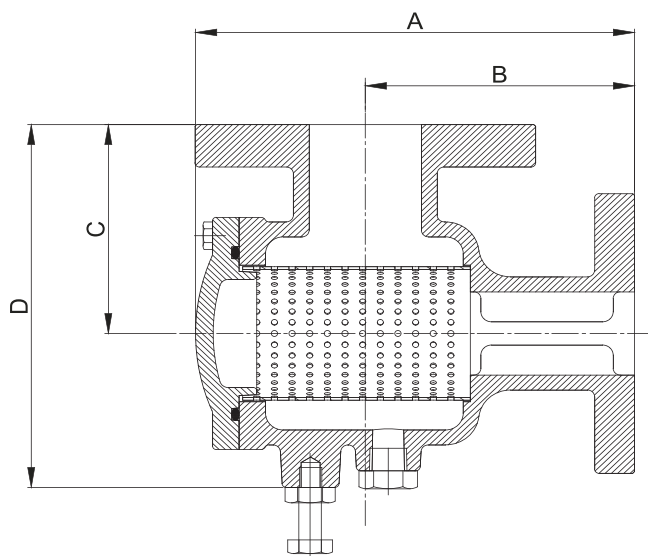
MATERIAL STANDARD – GENERAL INFORMATION

Material Type	Indian Standards (IS)	American Standard (ASTM)	British Standard (BSEN)
Cast Iron	IS210 Gr. FG260	ASTM A48 Class 40	BSEN1561EN-GJL-250
Cast Iron	IS210 Gr. FG200	ASTM A48 Class 30	BSEN1561EN-GJL-200
SG Iron (Ductile Iron)	IS1865 Gr. 500/7	ASTM A536 Gr. 70-50-05	BSEN1563EN-GJS-500-7
Stainless Steel	IS6603 Gr. 04Cr19Ni9	ASTM A240 Type 304	BSEN10088-2Gr1.4301
Stainless Steel	IS6603 Gr. 04Cr19Ni9	ASTM A276 Type 304	BSEN10088-3 Gr1.4301

SUCTION DIFFUSER PRESSURE DROP CURVE



SIZE CHART



CLASS 125/250

Note : All dimensions are in inches					
Size (inch) [In x Out]	A	B	C	D	L
[2X1.5]	220	130	102	184	110
[2X2]	220	130	102	184	110
[2.5X2]	249	153	126	218	133
[2.5X2.5]	249	153	126	218	133
[3X2]	283	180	143	245	155
[3X2.5]	283	180	143	245	155
[3X3]	283	180	143	245	155
[4X3]	328	213	165	293	177
[4X4]	322	213	165	296	177
[5X4]	374	240	175	323	205
[5X5]	370	229	175	323	205
[6X4]	448	256	202	373	233
[6X5]	415	256	202	373	233
[6X6]	448	256	203	375	233
[8X6]	498	302	253	445	285
[8X8]	498	302	253	445	285
[10X8]	598	364	292	525	363
[10X10]	598	364	292	525	363
[12X8]	732	455	329	598	430
[12X10]	732	455	329	598	430
[12X12]	748	455	329	598	430

Note : All dimensions are in inches				
A	B	C	D	L
8.66	5.12	4.02	7.24	4.33
8.66	5.12	4.02	7.24	4.33
9.8	6.02	4.96	8.58	5.23
9.8	6.02	4.96	8.58	5.23
11.14	7.09	5.63	9.65	6.1
11.14	7.09	5.63	9.65	6.1
11.14	7.09	5.63	9.65	6.1
12.91	8.39	6.5	11.54	6.96
12.68	8.39	6.5	11.65	6.96
14.72	9.45	6.89	12.72	8.07
14.56	9.02	6.89	12.72	8.07
17.64	10.08	7.95	14.69	9.17
16.34	10.08	7.95	14.69	9.17
17.64	10.08	7.99	14.76	9.17
19.61	11.89	9.96	17.52	11.22
19.61	11.89	9.96	17.52	11.22
23.54	14.33	11.5	20.67	14.29
23.54	14.33	11.5	20.67	14.29
28.82	17.91	12.95	23.54	16.92
28.82	17.91	12.95	23.54	16.92
29.45	17.91	12.95	23.54	16.92

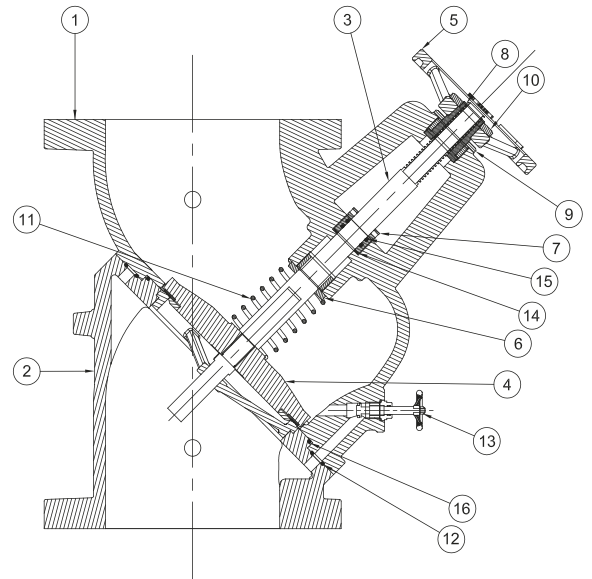
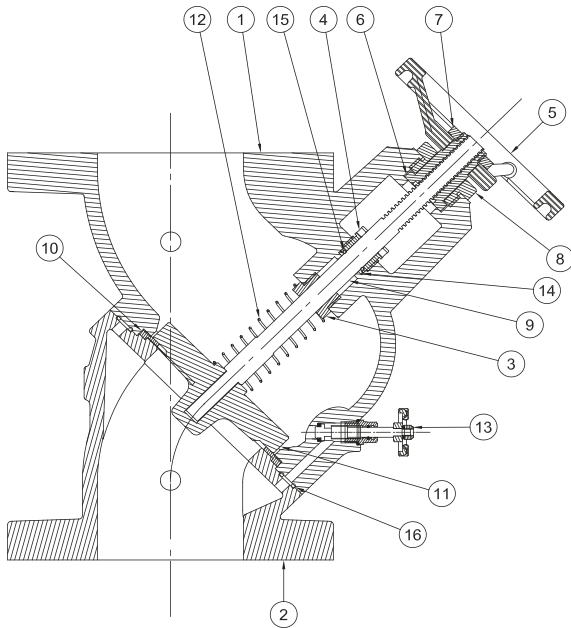
Note: Dimensions for the sizes above 12" up to 24" is available on request.

VALVE SELECTION CRITERIA:

Please consider suction diffuser losses from the pressure drop chart given above to fix pump NPSHR to suit the pump performance.

TRIPLE DUTY VALVE

GENERAL ARRANGEMENT & PART LIST



Part Description		Part Description	
S. No.	Size 2" to 8"	S. No.	Size 10" to 20"
1	Outlet body	1	Outlet body
2	Inlet body	2	Inlet body with spider
3	Stem guide bush	3	Stem
4	Gland nut	4	Disc
5	Hand-wheel	5	Hand-wheel
6	Yoke sleeve	6	Stem guide bush
7	Lock nut	7	Gland nut
8	Yoke nut	8	Yoke sleeve
9	Stem	9	Yoke nut
10	Rubber seat	10	Lock nut
11	Disc	11	Spring
12	Spring	12	Mating flange seal O-ring
13	By pass valve	13	By pass valve
14	Gland nut O-ring	14	PTFE seal
15	PTFE seal	15	Gland nut O-ring
16	Mating flange seal O-ring	16	Mating flange face seal O-ring

Note: These are representative drawings for all models.

TRIPLE DUTY VALVE

TECHNICAL SPECIFICATION

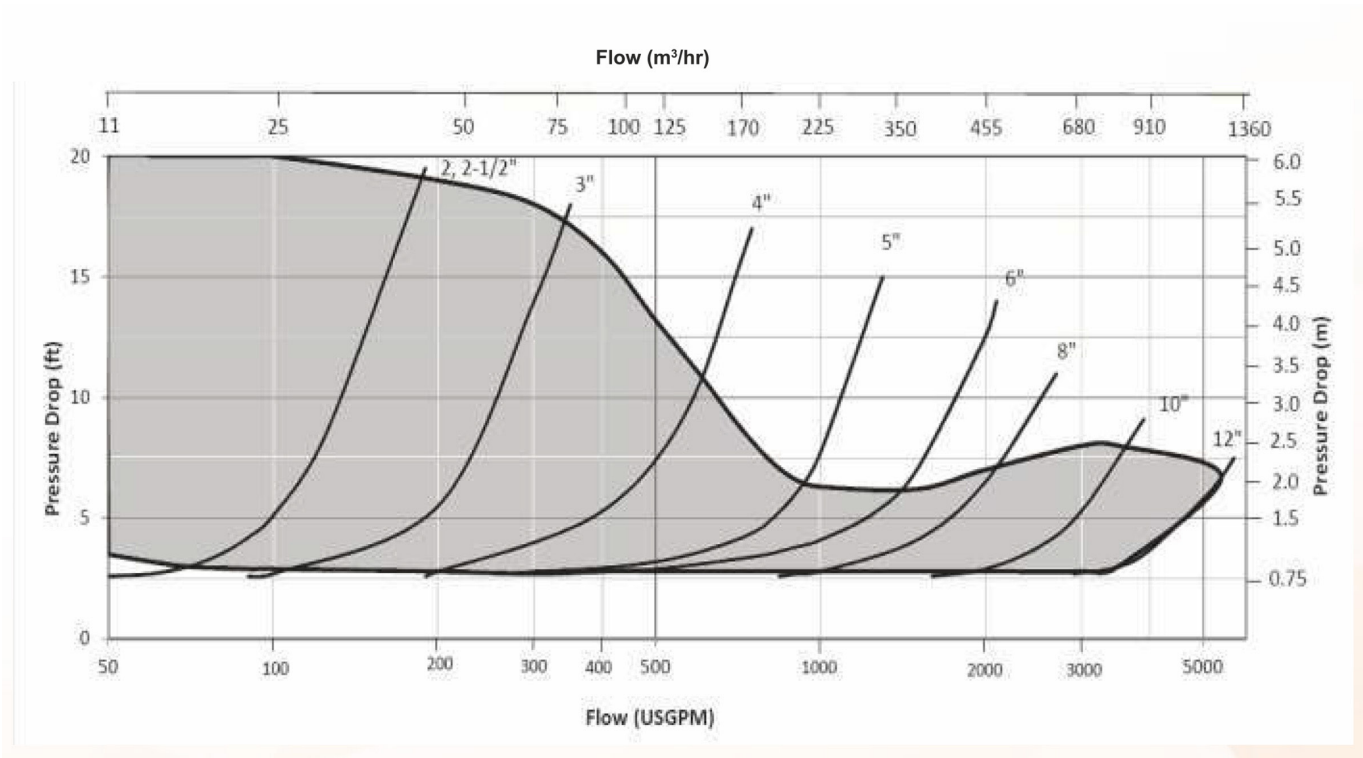
Parameter	Class 125	Class 250
Flow media	Water	Water
Max working pressure	150psi/10.34bar	250psi/17.2bar
Max liquid temp	176°F/80°C	176°F/80°C
Shell test pressure	225psi/15.5bar	375psi/25.9bar
Material of Construction		
Inlet body	Cast Iron	SG Iron (DuctileIron)
Outlet body	Cast Iron	SG Iron (DuctileIron)
Stem	Stainless Steel	Stainless Steel
Spring	Stainless Steel	Stainless Steel
Stem packing	PTFE	PTFE
Disc	Cast Iron	Cast Iron
Disc stem	Stainless Steel	Stainless Steel
Sealing rubber	Nitrile rubber	Nitrile rubber
By pass stem	Stainless Steel	Stainless Steel
By pass packing	PTFE	PTFE
Hand-wheel	Cast Iron	Cast Iron

MATERIAL STANDARD – GENERAL INFORMATION

Material Type	Indian Standards (IS)	American Standard (ASTM)	British Standard (BSEN)
Cast Iron	IS 210 Gr. FG260	ASTM A48 Class 40	BS EN 1561 EN- GJL-250
Cast Iron	IS 210 Gr. FG200	ASTM A48 Class 30	BS EN 1561 EN- GJL-200
SG Iron (Ductile Iron)	IS 1865 Gr. 500/7	ASTM A536 Gr. 70-50-05	BS EN 1563 EN- GJS-500-7
Stainless Steel	IS 6603 Gr. 04 Cr19Ni9	ASTM A240 Type 304	BS EN 10088-2 Gr1.4301
Stainless Steel	IS 1570 Gr. 12Cr12	ASTM A276 Type 410	BS EN 10083-3 Gr1.4006

TRIPLE DUTY VALVE

TRIPLE DUTY VALVE SELECTION CURVE



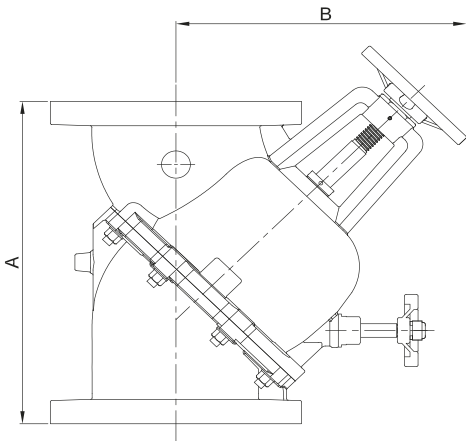
VALVE SELECTION CRITERIA

Maximum flow rate:

Preference should be given to select the valve of minimum pressure drop from the above pressure drop chart.

TRIPLE DUTY VALVE

SIZE CHART



CLASS 125 / 250

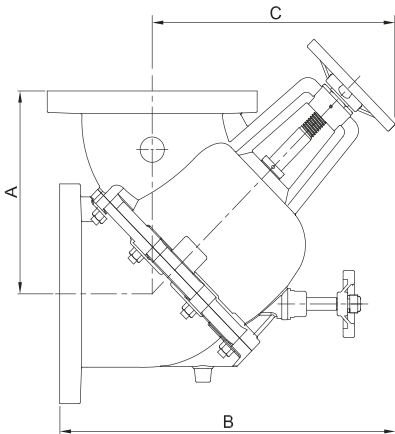
Note: All dimensions are in mm.

Size	2	2.5	3	4	5	6	8	10	12	14
A	235	250	300	351	370	461	556	631	710	777
B	227	248	268	310	345	370	436	555	602	629

CLASS 125 / 250

Note: All dimensions are in inches.

Size	2	2.5	3	4	5	6	8	10	12	14
A	9.25	9.84	11.81	13.82	14.57	18.15	21.89	24.84	27.95	30.59
B	8.94	9.76	10.55	12.20	13.58	14.57	17.17	21.85	23.70	24.76



CLASS 125 / 250

Note: All dimensions are in mm.

Size	2	2.5	3	4	5	6	8	10	12	14
A	171	183	209	270	257	311	363	436	481	525
B	288	309	353	390	454	520	626	750	831	881
C	227	248	268	310	345	370	436	555	602	

CLASS 125 / 250

Note: All dimensions are in inches.

Size	2	2.5	3	4	5	6	8	10	12	14
A	6.73	7.20	8.23	10.63	10.12	12.24	14.29	17.17	18.94	20.67
B	11.34	12.17	13.90	15.35	17.87	20.47	24.65	29.53	32.72	34.69
C	8.94	9.76	10.55	12.20	13.58	14.57	17.17	21.85	23.70	24.76

Dimensions for the sizes above 12" up to 24" is available on request

NOTES



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KIRLOSKAR BROTHERS LIMITED

Established 1888
A Kirloskar Group Company

REGISTERED OFFICE & GLOBAL HEADQUARTERS

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Website: www.kirloskarpumps.com | **CIN No.** L29113PN1920PLC000670

OUR COMPANIES



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Republic of South Africa



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India



KIRLOSKAR BROTHERS (THAILAND) LIMITED
Thailand



KIRLOSKAR CORROCOAT PRIVATE LIMITED
India



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