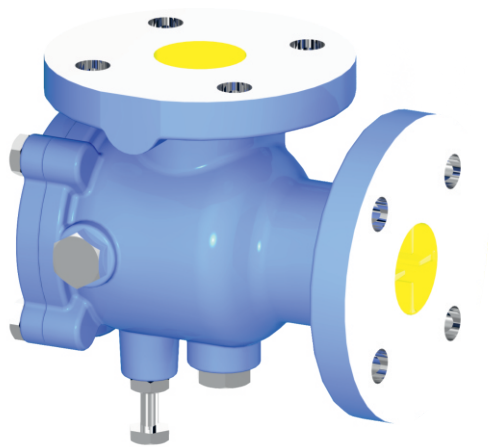




Enriching Lives



SUCTION DIFFUSER AND TRIPLE DUTY VALVE

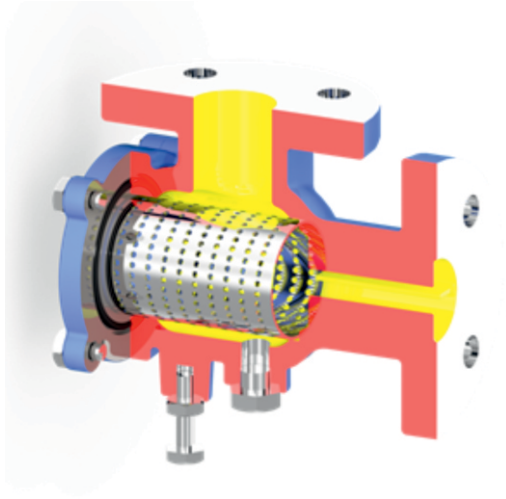
KIRLOSKAR BROTHERS LIMITED

A kirloskar Group Company

GENERAL INFORMATION

SUCTION DIFFUSER

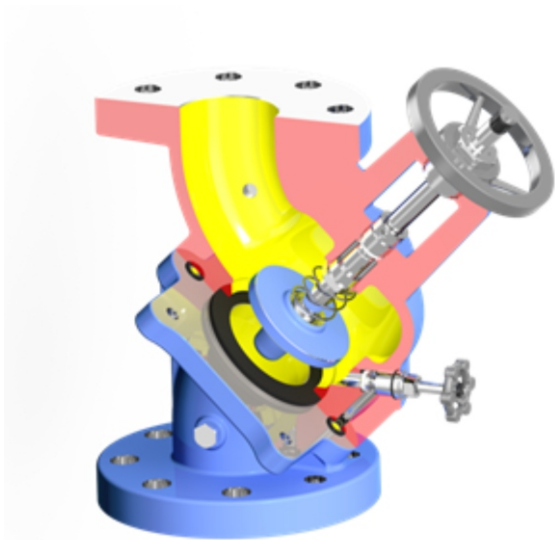
General Description:



- 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

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:

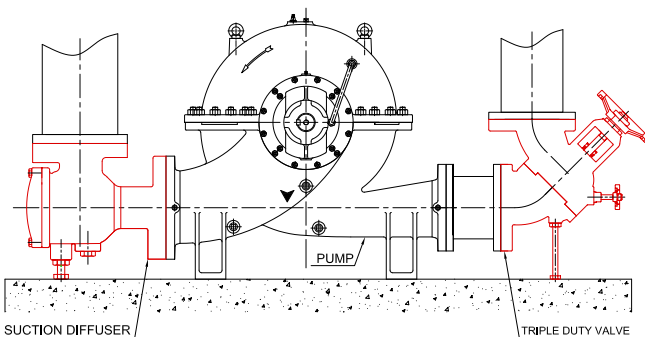
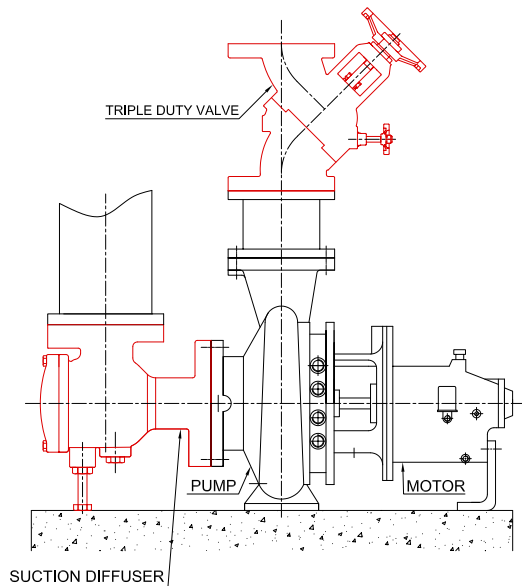
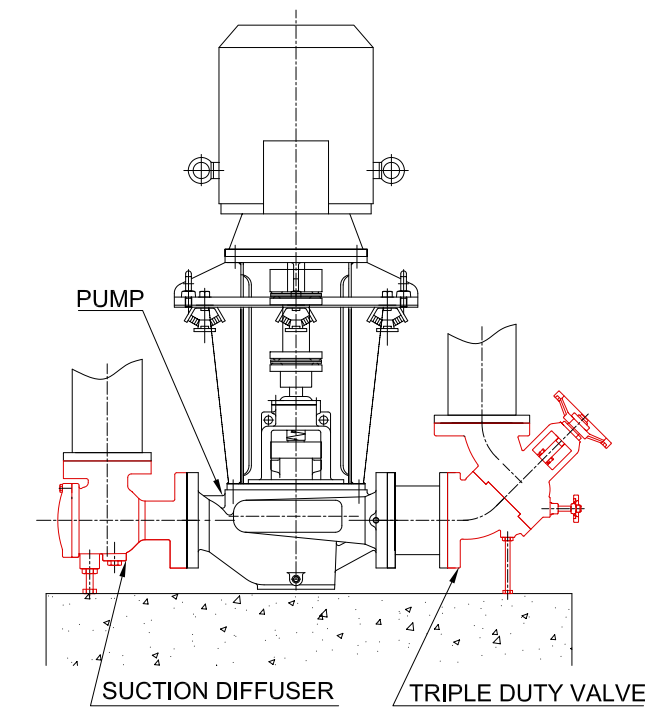
HVAC Building and construction (Multi storied buildings /Shopping Complexes /Auditoriums / Indoor Stadium / Airports / Refrigeration System)

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.

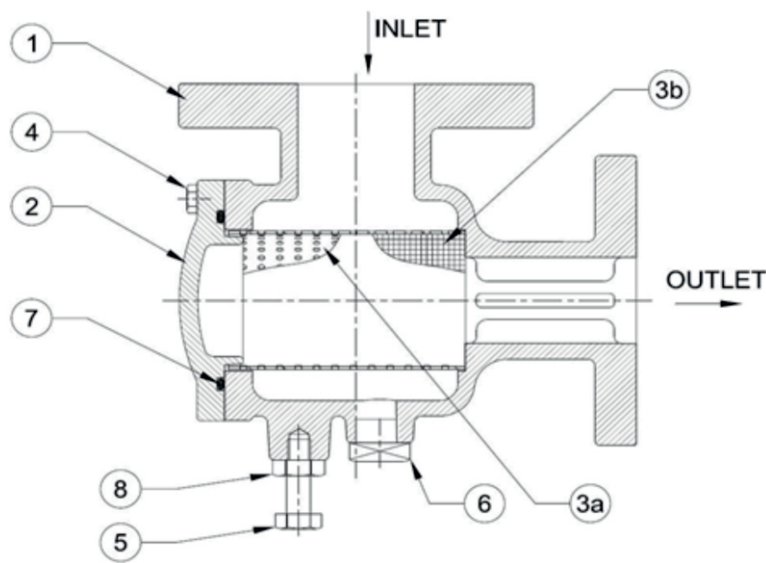


Triple Duty Valve Features:

- 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

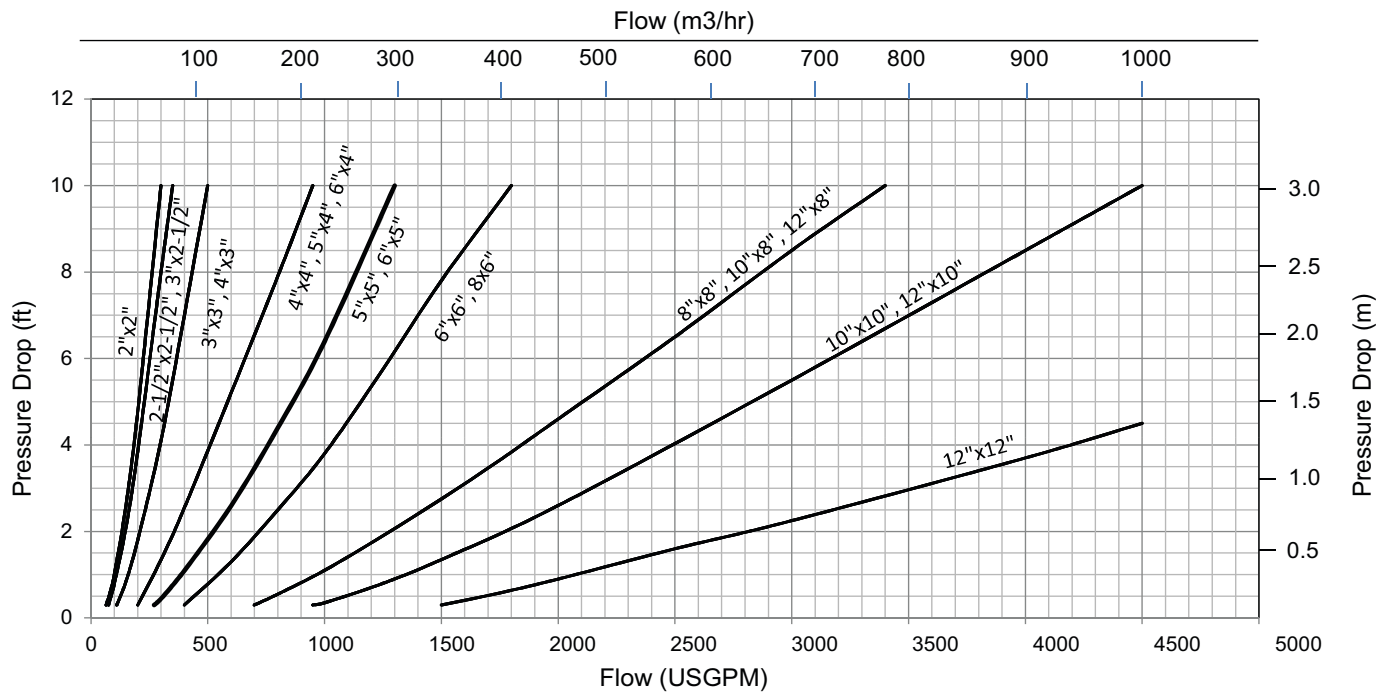
| Parameter | Class125 | Class250 |
|--------------------------|-----------------|-----------------------|
| Flow media | Water | Water |
| Max working pressure | 150psi/10.3bar | 250psi/17.2bar |
| Max liquid temp | 176 °F/80 °C | 176 °F/80 °C |
| Shell test pressure | 225psi/15.5bar | 375psi/25.9bar |
| 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

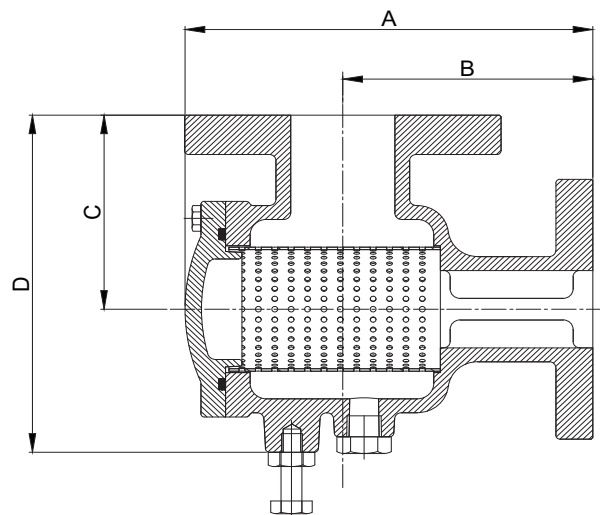
MATERIAL STANDARD – GENERAL INFORMATION

| 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 | | | | | | Note : All dimensions are in inches | | | | |
|-------------------------------------|-----|-----|-----|-----|-----|-------------------------------------|-------|-------|-------|-------|
| Size (inch) [In x Out] | A | B | C | D | L | A | B | C | D | L |
| [2X1.5] | 220 | 130 | 102 | 184 | 110 | 8.66 | 5.12 | 4.02 | 7.24 | 4.33 |
| [2X2] | 220 | 130 | 102 | 184 | 110 | 8.66 | 5.12 | 4.02 | 7.24 | 4.33 |
| [2.5X2] | 249 | 153 | 126 | 218 | 133 | 9.8 | 6.02 | 4.96 | 8.58 | 5.23 |
| [2.5X2.5] | 249 | 153 | 126 | 218 | 133 | 9.8 | 6.02 | 4.96 | 8.58 | 5.23 |
| [3X2] | 283 | 180 | 143 | 245 | 155 | 11.14 | 7.09 | 5.63 | 9.65 | 6.1 |
| [3X2.5] | 283 | 180 | 143 | 245 | 155 | 11.14 | 7.09 | 5.63 | 9.65 | 6.1 |
| [3X3] | 283 | 180 | 143 | 245 | 155 | 11.14 | 7.09 | 5.63 | 9.65 | 6.1 |
| [4X3] | 328 | 213 | 165 | 293 | 177 | 12.91 | 8.39 | 6.5 | 11.54 | 6.96 |
| [4X4] | 322 | 213 | 165 | 296 | 177 | 12.68 | 8.39 | 6.5 | 11.65 | 6.96 |
| [5X4] | 374 | 240 | 175 | 323 | 205 | 14.72 | 9.45 | 6.89 | 12.72 | 8.07 |
| [5X5] | 370 | 229 | 175 | 323 | 205 | 14.56 | 9.02 | 6.89 | 12.72 | 8.07 |
| [6X4] | 448 | 256 | 202 | 373 | 233 | 17.64 | 10.08 | 7.95 | 14.69 | 9.17 |
| [6X5] | 415 | 256 | 202 | 373 | 233 | 16.34 | 10.08 | 7.95 | 14.69 | 9.17 |
| [6X6] | 448 | 256 | 203 | 375 | 233 | 17.64 | 10.08 | 7.99 | 14.76 | 9.17 |
| [8X6] | 498 | 302 | 253 | 445 | 285 | 19.61 | 11.89 | 9.96 | 17.52 | 11.22 |
| [8X8] | 498 | 302 | 253 | 445 | 285 | 19.61 | 11.89 | 9.96 | 17.52 | 11.22 |
| [10X8] | 598 | 364 | 292 | 525 | 363 | 23.54 | 14.33 | 11.5 | 20.67 | 14.29 |
| [10X10] | 598 | 364 | 292 | 525 | 363 | 23.54 | 14.33 | 11.5 | 20.67 | 14.29 |
| [12X8] | 732 | 455 | 329 | 598 | 430 | 28.82 | 17.91 | 12.95 | 23.54 | 16.92 |
| [12X10] | 732 | 455 | 329 | 598 | 430 | 28.82 | 17.91 | 12.95 | 23.54 | 16.92 |
| [12X12] | 748 | 455 | 329 | 598 | 430 | 29.45 | 17.91 | 12.95 | 23.54 | 16.92 |

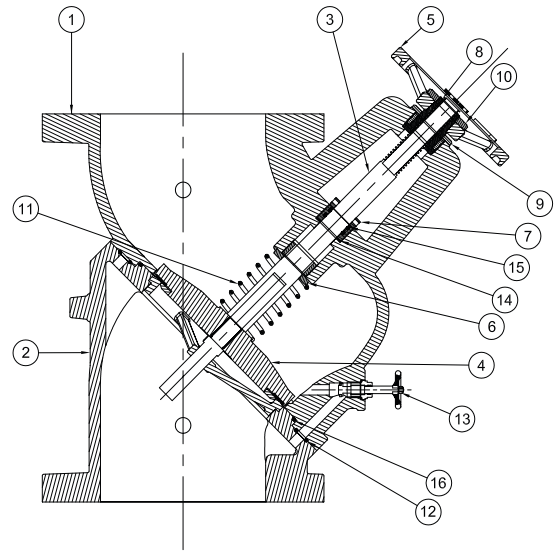
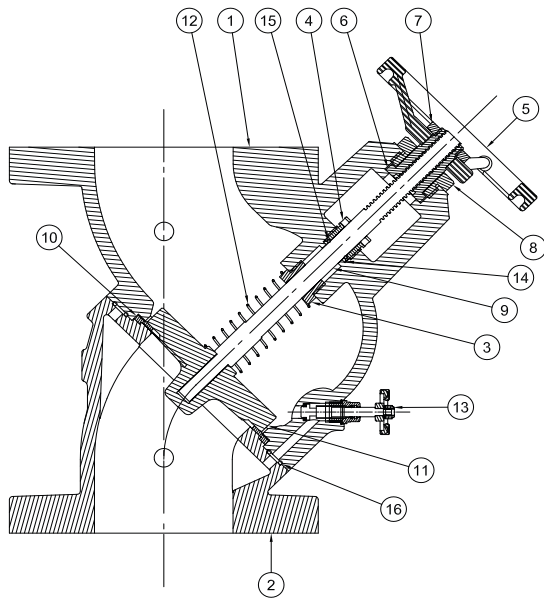
Note: Dimensions for the sizes above 12" up to 24" is available on request.

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"to8" | S.No. | Size 10"to20" |
| 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.

TECHNICAL SPECIFICATION

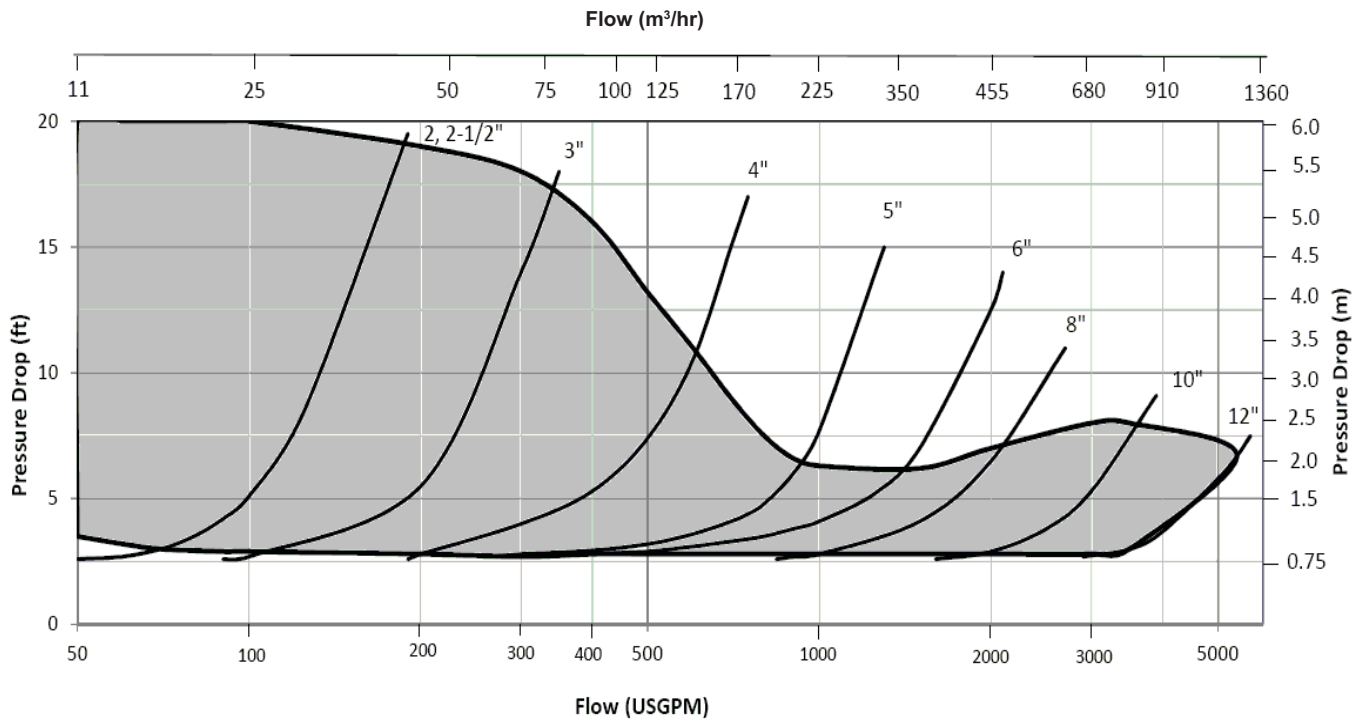
| Parameter | Class125 | Class250 |
|--------------------------|---|--|
| Flow media | Water | Water |
| Max working pressure | 150psi/10.34bar | 250psi/17.2bar |
| Max liquid temp | 176 ° F/80 ° C | 176 ° F/80 ° C |
| Shell test pressure | 225psi/15.5bar | 375psi/25.9bar |
| Material of Construction | | |
| 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 | SS ASTM A351 Gr. CF8 (for 2" - 5") CI IS 210 Gr. FG 260 (for 6" - 14") | SS ASTM A351 Gr. CF8 (for 2" - 5") SGI IS 1865 Gr. 500/7 (for 6" - 14") |
| 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 Standard (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



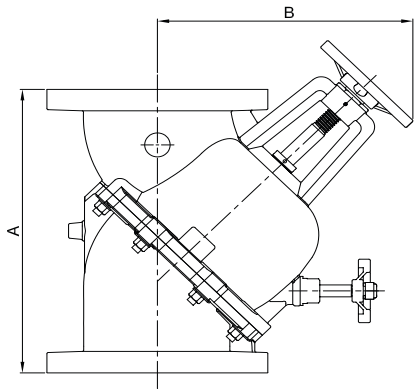
VALVE SELECTION CRITERIA

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

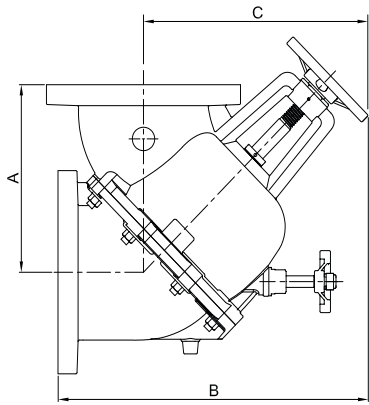
| Size | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A | 235 | 250 | 300 | 351 | 370 | 461 | 556 | 631 | 710 | 777 |
| B | 227 | 248 | 268 | 310 | 345 | 370 | 436 | 555 | 602 | 629 |

Note: All dimensions are in mm.

CLASS 125 / 250

| 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 |

Note: All dimensions are in inches.



CLASS 125 / 250

| 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 | |

Note: All dimensions are in mm.

CLASS 125 / 250

| 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 |

Note: All dimensions are in inches.

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

NOTES

[illegible]

ABOUT KBL

Kirloskar Brothers Limited (KBL) is a world class pump manufacturing company with expertise in engineering and manufacture of systems for fluid management. Established in 1888 and incorporated in 1920, KBL is the flagship company of the \$ 2.1 billion Kirloskar Group. KBL, a market leader, provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, oil & gas and marine & defence. We engineer and manufacture industrial, agriculture and domestic pumps, valves and hydro turbines.

In 2003, KBL acquired SPP Pumps, United Kingdom and established SPP INC, Atlanta, USA, as a wholly owned subsidiary of SPP, UK to expand its international presence. In 2007, Kirloskar Brothers International B.V., The Netherlands and Kirloskar Brothers (Thailand) Ltd., a wholly owned subsidiary in Thailand, were incorporated. In 2008, KBL incorporated Kirloskar Brothers Europe B.V. (Kirloskar Pompen B.V. since June 2014), a joint venture between Kirloskar International B.V. and Industrial Pump Group, The Netherlands. In 2010, KBL further consolidated its global position by acquiring Braybar Pumps, South Africa. SPP MENA was established in Egypt in 2012. In 2014, KBL acquired SyncroFlo Inc., the largest independent fabricator of commercial and municipal domestic water booster pumps.

To further strengthen its global position, in 2015, Kirloskar Pompen B.V. acquired Rodelta Pumps International, The Netherlands.

KBL has joint venture cooperation with Ebara, Japan since 1988 for the manufacture of API 610 standard pumps. Kirloskar Corrocoat Private Limited is a joint venture cooperation with Corrocoat, UK since 2006. KBL acquired The Kolhapur Steel Limited in 2007 and Hematic Motors in 2010.

KBL has eight manufacturing facilities in India at Kirloskarvadi, Dewas, Kondhapuri, Shirwal, Sanand, Kaniyur, Kolhapur and Karad. In addition, KBL has global manufacturing and packaging facilities in Egypt, South Africa, Thailand, The Netherlands, United Arab Emirates, United Kingdom and United States of America. KBL has 12,700 channel partners in India and 80 overseas and is supported by best-in-class network of Authorised Centres and Authorised Refurbishment Centres across the country.

All the manufacturing facilities at KBL are certified for ISO 9001, ISO 14001, ISO 50001, BS OHSAS 18001 and SA8000. In addition, the Kirloskarvadi plant is also certified for N & NPT Stamp. KBL's corporate office in Pune is certified for ISO 9001 & Sa8000.

The factories deploy Total Quality Management tools using European Foundation for Quality Management (EFQM) model. The Kirloskarvadi plant of KBL is a state-of-the-art integrated manufacturing facility having Asia's largest hydraulic research centre with testing facility upto 5000 kW and 50,000 m³/hr.

KBL is the ninth pump manufacturing company in the world to be accredited with the N and NPT certification by American Society of Mechanical Engineers (ASME).

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

KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

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OUR COMPANIES



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