Enriching Lives

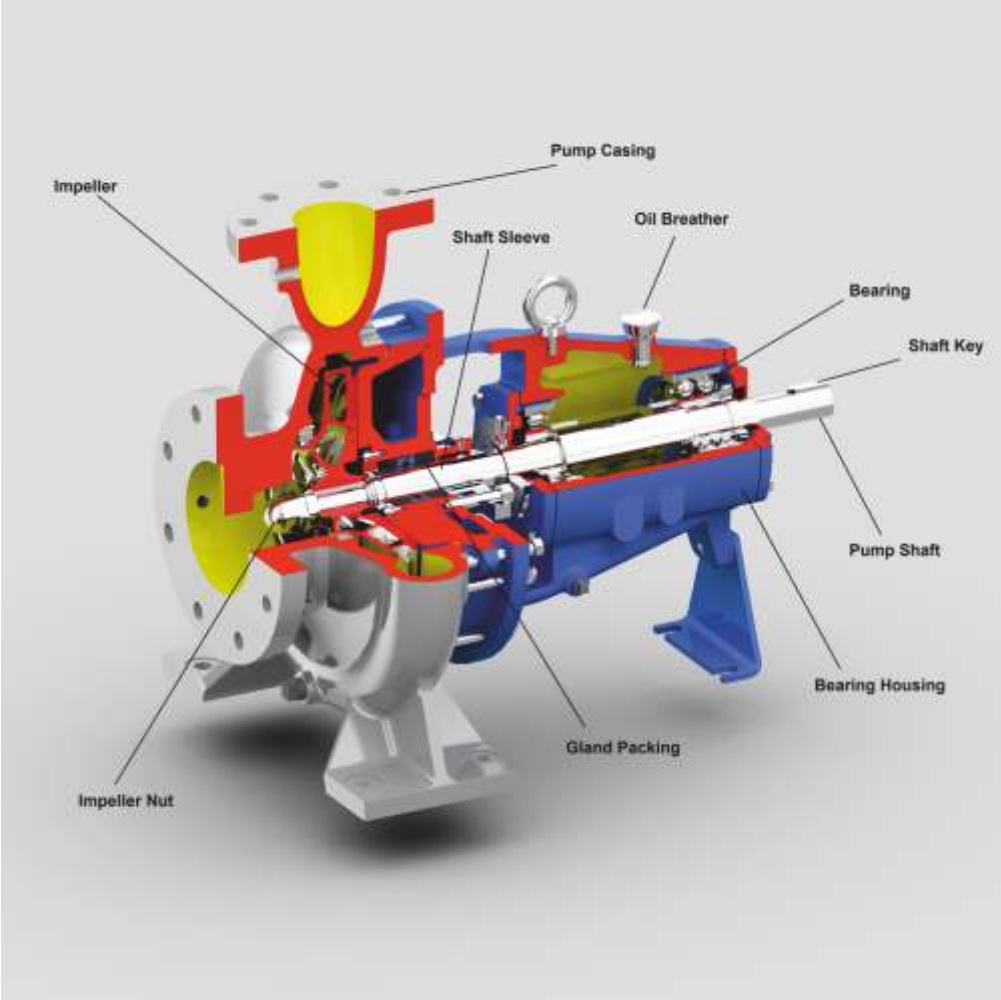
# KIRLOSKAR PROCESS PUMP - GK(P)

ISO 2858 / DIN EN 22858 / ISO 5199

CE Ex

KIRLOSKAR BROTHERS LIMITED

## KIRLOSKAR PROCESS PUMP - GK(P)




## PERFORMANCE RANGE:

| | | |
|---|---|---|
| Discharge capacity (Q) | : | Up to 500 $m^3$/hr (at 1450 rpm) |
| Delivery head (H) | : | Up to 150 m |
| Available nominal speeds (n) | : | 2900, 1450, 980 rpm at 50 Hz and 3500, 1750, 1150 rpm at 60 Hz |
| Max. operating pressure (P) | : | 16 bar (Suction pressure 5 bar) |
| Temperature range (t) | : | -50 °C up to +350 °C |
| Pump Sizes (DN) | : | 25 mm to 150 mm |

## APPLICATIONS:

- GK(P) pumps are used for handling various types of chemical liquids from various process industries.
- GK(P) pump is End suction centrifugal Process pump.
- Pump dimensions are fully confirming to ISO 2858/DIN EN 22858 and technically meeting requirements of ISO 5199

## COMPONENTS:

**Casing:**
The casing has axial suction and top centre line delivery with self venting design. Smooth hydraulic passage ensures high efficiency. Delivery flanges and supporting feet are integrally cast with casting

**Impeller:**
The impellers are of enclosed type. Hydraulic balancing of impellers is achieved by balancing holes or back vanes depending upon magnitude of axial thrust. The impellers are statically and dynamically balanced.

**Shaft:**
Shaft is supported between antifriction ball bearings. The shaft is critically machined and ground to maintain geometrical accuracies.

**Wear Rings:**
Replaceable wear rings are provided on Casing and Impeller.

**Impeller Nut:**
Impeller nut is positively locked on shaft with the help of Helicoil insert.

**Bearing Housing:**
Bearing housing supports shaft. Antifriction Ball and Roller Bearings are used to support the shaft in bearing housing

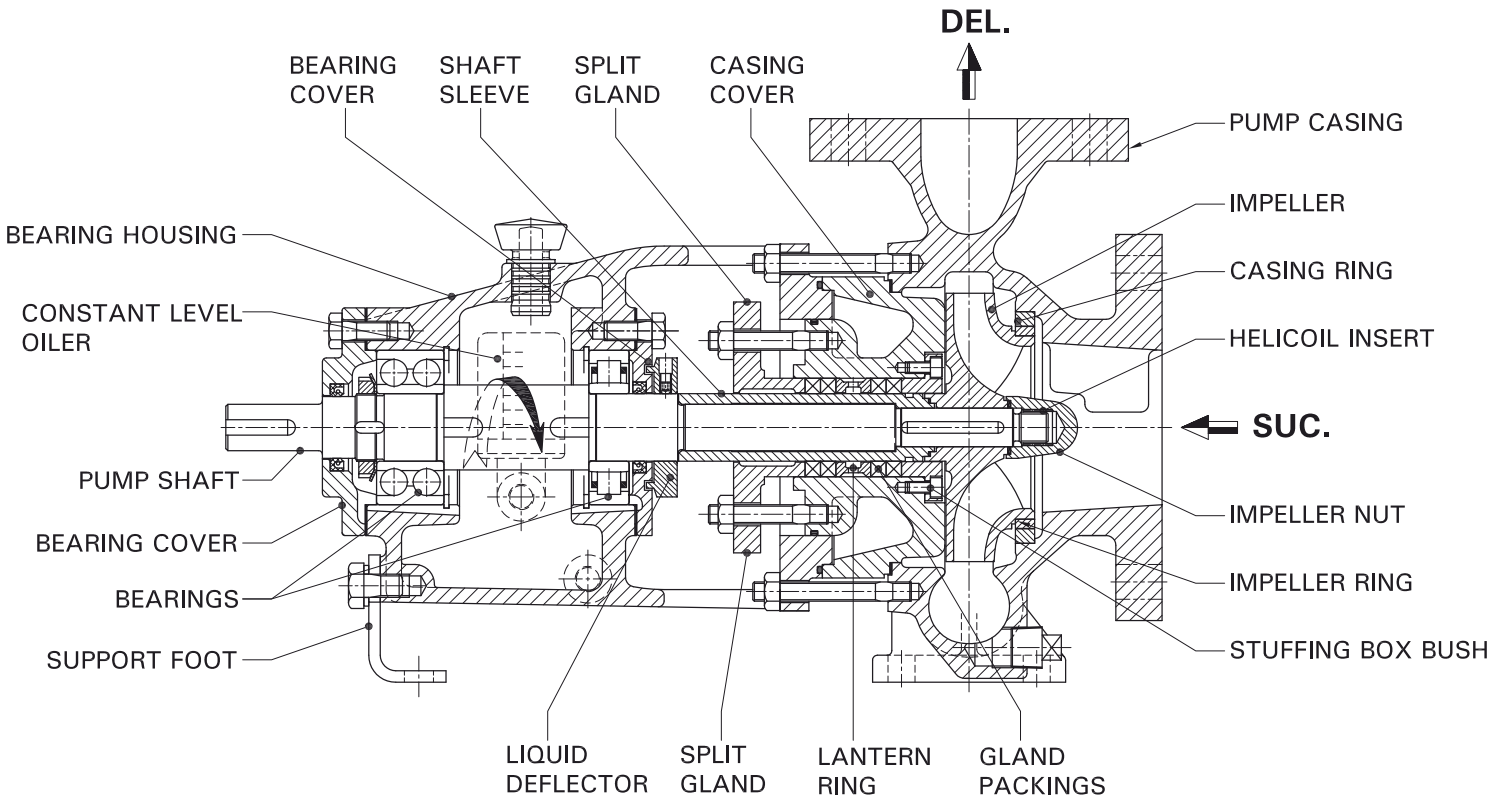
**Direction of Rotation:**
Clockwise when viewed from driving end.

**Drive:**
Pumps can be driven by an electric motor or an engine.

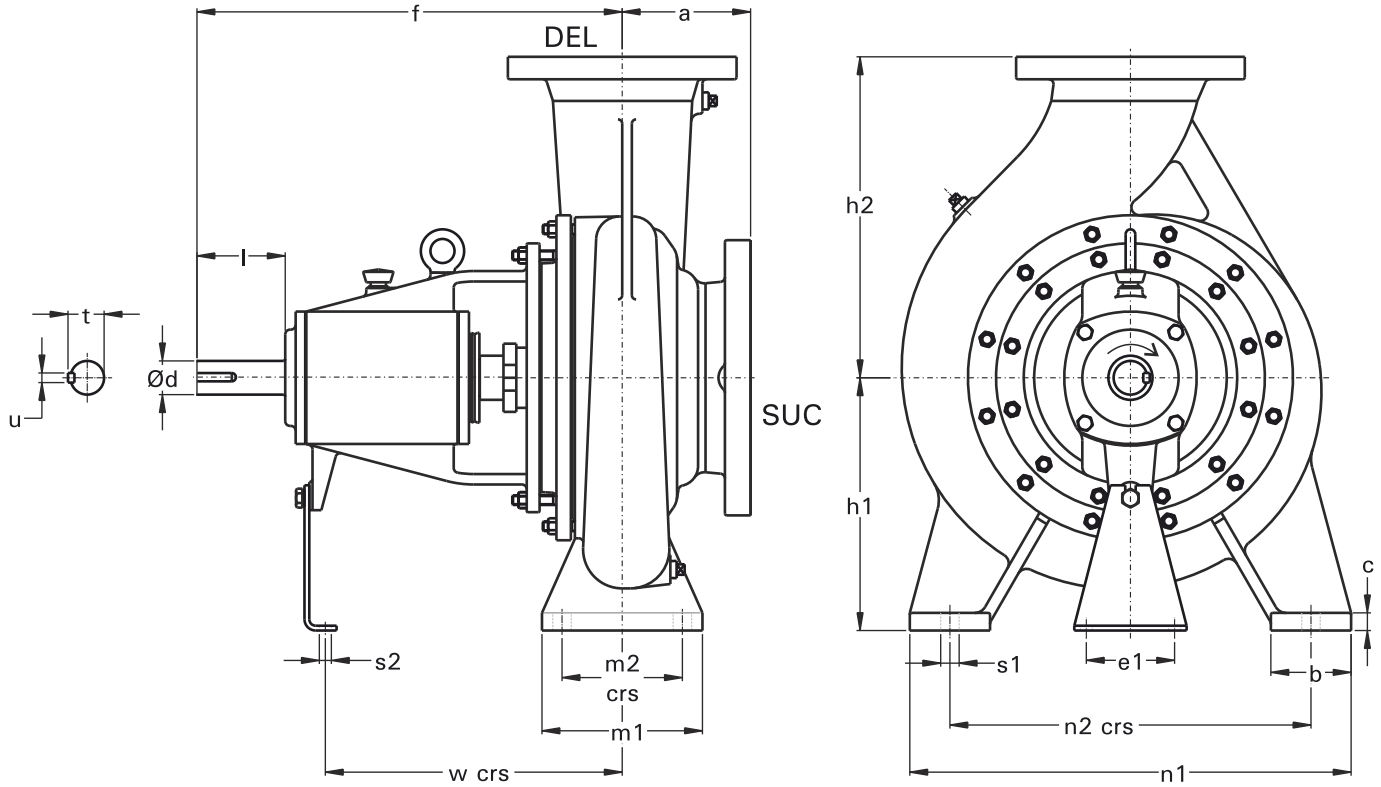
## CONSTRUCTIONAL FEATURES:

- Design is in compliance to ISO 5199.
- Wide range of hydraulics to meet the customer's requirements
- Back pullout design for ease and quicker maintenance.
- Enclosed impeller having smooth hydraulic passages for better efficiency.
- Modular design concept for maximum interchangeability of components among different pump models.
- Heavy duty construction for continuous operation.
- Available in variety of material of constructions for the liquid to be pumped.
- Availability of cooling jackets to cool stuffing box for liquids having temperature more than 105°C.
- Angular contact ball bearings to take Axial thrust.
- Roller bearing to take care Radial load.
- Positive locking of impeller on shaft with the help of impeller nut and helicoil insert.
- Labyrinth type metallic liquid deflector to protect bearings from ingress of process liquid, dust at non-driving end.
- Optional provision of bearing isolators at driving end and non driving end bearings.
- Available in soft gland packing as well as mechanical seal version in standard stuffing box bore and optional taper (conical) bore construction.
- Top centerline discharge with foot mounted as well as centerline mounted volute casing.
- Pump can be offered with all API seal flushing plans of mechanical seal flushing and pump cooling water pipings
- Flange drilling : As per ASME B16.5 class 150 FF optional class 300 and PN 16 and PN 25 as per DIN standard (Optional).

## CROSS-SECTION WITH MAJOR COMPONENTS:



## GENERAL OUTLIVE DIMENSIONS OF GK(P) FOOT MOUNTED PUMPS:

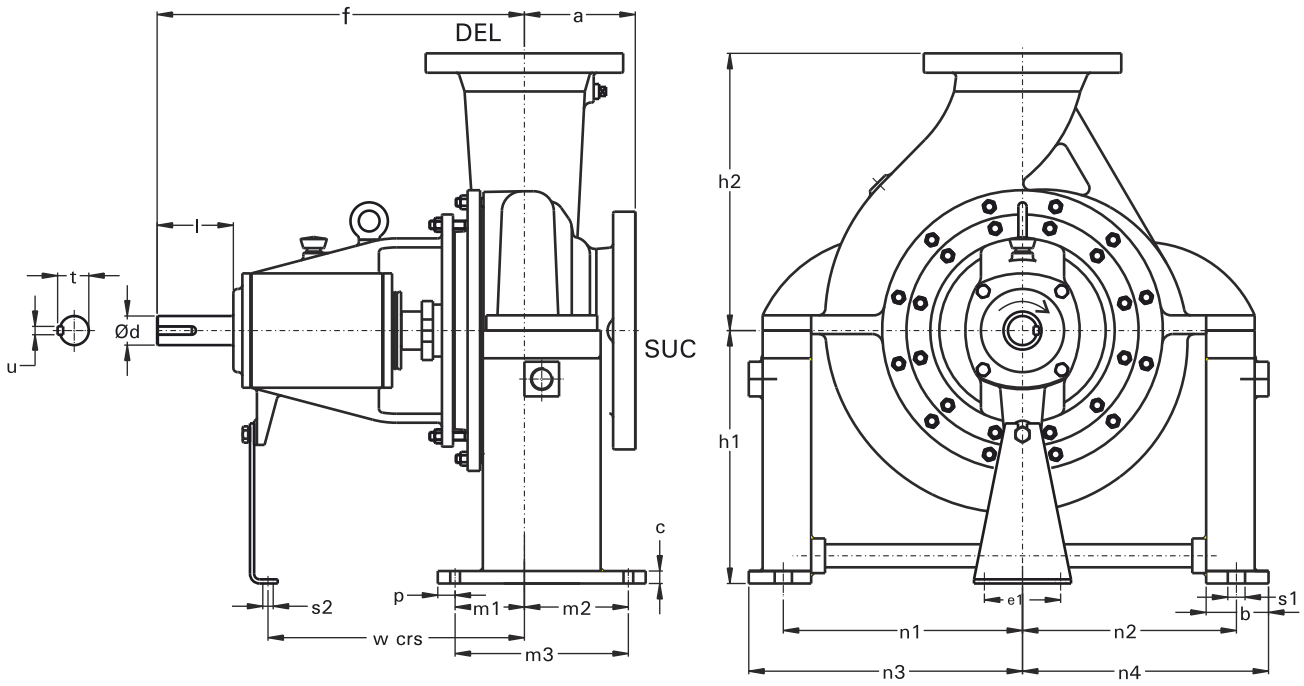



| PUMP SIZE | DRIVING UNIT | PUMP DIMENSIONS | | | | | | FOOT DIMENSIONS | | | | | | | | | | SHAFT END | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DEL | SUC | a | f | h1 | h2 | b | c | m1 | m2 | n1 | n2 | w | s1 | s2 | e1 | Ød | l | t | u |
| 32/13 | 7 | 32 | 50 | 80 | 385 | 112 | 140 | 50 | 14 | 100 | 70 | 190 | 140 | 285 | 14 | 15 | 110 | 24 | 50 | 27 | 8 |
| 32/16,32/16A | | | | | | 132 | 160 | | | | | 240 | 190 | | | | | | | | |
| 32/20,32/20A | | | | | | 160 | 180 | | | | | | | | | | | | | | |
| 40/13 | | 40 | 65 | | | 112 | 140 | | | | | 210 | 160 | | | | | | | | |
| 40/16 | | | | | | 132 | 160 | | | | | 240 | 190 | | | | | | | | |
| 40/20,40/20A | | | | 100 | | 160 | 180 | | | | | 265 | 212 | | | | | | | | |
| 50/13 | | 50 | 80 | | | 132 | 160 | | | | | 240 | 190 | | | | | | | | |
| 50/16,50/16A | | | | | | 160 | 180 | | | | | 265 | 212 | | | | | | | | |
| 50/20 | | | | | | 160 | 200 | | | | | | | | | | | | | | |
| 65/13 | | 65 | 100 | | | 160 | 180 | 65 | | 125 | 95 | 280 | 212 | | | | | | | | |
| 25/26A | 7A | 25 | 50 | 100 | 500 | 180 | 225 | 65 | 14 | 125 | 95 | 320 | 250 | 370 | 14 | 15 | 110 | 32 | 80 | 35 | 10 |
| 32/26 | | 32 | 50 | | | | | | | | | | | | | | | | | | |
| 40/26 | | 40 | 65 | | | | | | | | | | | | | | | | | | |
| 40/32 | | | | 125 | | 200 | 250 | | | | | 345 | 280 | | | | | | | | |
| 50/26 | | 50 | 80 | 125 | | 180 | 225 | | | | | 320 | 250 | | | | | | | | |
| 50/32 | 7A/10* | | | | | 225 | 280 | | | | | 345 | 280 | | | | | | | | |
| 65/16 | | 65 | 100 | 100 | | 160 | 200 | | | | | 280 | 212 | | | | | | | | |
| 65/20 | | | | | | 180 | 225 | | | | | 320 | 250 | | | | | | | | |
| 65/26,65/26N | | | | 125 | | 200 | 250 | 80 | 16 | 160 | 120 | 360 | 280 | | 18 | | | | | | |
| 80/16 | | 80 | 125 | | | 180 | 225 | 65 | 14 | 125 | 95 | 320 | 250 | | 14 | | | | | | |
| 80/20 | | | | | | | 250 | | | | | 345 | 280 | | | | | | | | |
| 80/26 | | | | | | 225 | 280 | 80 | 16 | 160 | 120 | 400 | 315 | | 18 | | | | | | |
| 100/16 | | 100 | 125 | 150 | | | | 65 | 14 | 125 | 95 | 320 | 250 | | 14 | | | | | | |
| 100/20 | | | | 125 | | 200 | 280 | 80 | 16 | 160 | 120 | 360 | 280 | | 18 | | | | | | |
| 65/32 | 12 | 65 | 100 | 125 | 530 | 225 | 280 | 80 | 16 | 160 | 120 | 400 | 315 | 370 | 18 | 15 | 110 | 42 | 110 | 45 | 12 |
| 80/32 | | 80 | 125 | | | 250 | 315 | | | | | | | | | | | | | | |
| 80/40,80/40N | | | | | | 280 | 355 | | | | | 435 | 355 | | | | | | | | |
| 100/26 | | 100 | 125 | 140 | | 225 | 280 | | | | | 400 | 315 | | | | | | | | |
| 100/32 | | | | | | 250 | 315 | | | | | | | | | | | | | | |
| 100/40 | | | | | | 280 | 355 | 100 | 18 | 200 | 150 | 500 | 400 | | 23 | | | | | | |
| 125/26 | | 125 | 150 | | | 250 | 355 | 80 | 16 | 160 | 120 | 400 | 315 | | 18 | | | | | | |
| 125/32 | | | | | | 280 | 355 | 100 | 18 | 200 | 150 | 500 | 400 | | 23 | | | | | | |
| 125/40,125/40N | | | | | | 315 | 400 | | | | | | | | | | | | | | |
| 150/32,150/32N | | 150 | 200 | 160 | | 315 | 400 | | 22 | | | | 450 | | | | | | | | |
| 150/40 | | 150 | 200 | 160 | | 315 | 450 | | 18 | | | 550 | 450 | | | | | | | | |

* REFER ENGINEERING

Note: These are tentative dimensions. Certified dimensions will be submitted against order.

## GENERAL OUTLIVE DIMENSIONS OF GK(P) CENTER LINE MOUNTED PUMPS:




| PUMP SIZE | DRIVING UNIT | PUMP DIMENSIONS | | | | | | FOOT DIMENSIONS | | | | | | | | | | | | | | SHAFT END | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DEL | SUC | a | f | h1 | h2 | b | c | m1 | m2 | m3 | n1 | n2 | n3 | n4 | w | s1 | s2 | e1 | p | Ød | l | t | u |
| 32/13 | 7 | 32 | 50 | 80 | 385 | 200 | 140 | 64 | 15 | 72 | 88 | 190 | 125 | 125 | 157 | 157 | 285 | 14 | 15 | 110 | 15 | 24 | 50 | 27 | 8 |
| 32/16,32/16A | | | | | | | 160 | | | | | | 155 | 145 | 187 | 177 | | | | | | | | | |
| 32/20,32/20A | | | | | | | 180 | | | | | | 170 | 165 | 202 | 197 | | | | | | | | | |
| 40/13 | | | | | | | 140 | | | | | | 135 | 125 | 167 | 157 | | | | | | | | | |
| 40/16 | | 40 | 65 | | | | 160 | | | | | | 170 | 165 | 202 | 197 | | | | | | | | | |
| 40/20,40/20A | | | | 100 | | | 180 | | | | | | | | | | | | | | | | | | |
| 50/13 | | 50 | 80 | | | | 160 | | | | | | | | | | | | | | | | | | |
| 50/16,50/16A | | | | | | | 180 | | | | | | | | | | | | | | | | | | |
| 50/20 | | | | | | | 200 | | | | | | | | | | | | | | | | | | |
| 65/13 | | 65 | 100 | | | | 180 | | | | | | | | | | | | | | | | | | |
| 25/26A | 7A | 25 | 50 | | 500 | 250 | 225 | | | | | | 220 | 220 | 252 | 252 | 370 | | | | | 32 | 80 | 35 | 10 |
| 32/26 | | 32 | | | | | | | | | | | | | | 257 | | | | | | | | | |
| 40/26 | | 40 | 65 | | | | | | | | | | | | | 252 | | | | | | | | | |
| 40/32 | | | | 125 | | | 250 | | | | | | | | | | | | | | | | | | |
| 50/26 | | 50 | 80 | | | | 225 | | | | | | | | | | | | | | | | | | |
| 50/32 | 7A/10* | | | | | | 280 | 90 | | 89.5 | 110.5 | 230 | 260 | 240 | 305 | 285 | | | | | | | | | |
| 65/16 | | 65 | 100 | 100 | | | 200 | 64 | | 72 | 88 | 190 | 210 | 175 | 242 | 207 | | | | | | | | | |
| 65/20 | | | | | | | 225 | | | | | | | | | | | | | | | | | | |
| 65/26,65/26N | | | | | | | 250 | 90 | | 89.5 | 110.5 | 230 | 260 | 230 | 305 | 275 | | | | | | | | | |
| 80/16 | | 80 | 125 | 125 | | | 225 | 64 | | 72 | 88 | 190 | 210 | 175 | 242 | 207 | | | | | | | | | |
| 80/20 | | | | | | | 250 | | | | | | | | | | | | | | | | | | |
| 80/26 | | | | | | 280 | 280 | 90 | 18 | 100 | 150 | 300 | 310 | 295 | 355 | 340 | | 23 | | | 25 | 42 | 110 | 45 | 12 |
| 100/20 | | 100 | | | | 250 | | | | 89.5 | 110.5 | 230 | 260 | 230 | 305 | 275 | | 18 | | | | | | | |
| 65/32 | 12 | 65 | 100 | 125 | 530 | 280 | | | | 92.5 | 107.5 | | | 240 | | 285 | | 14 | | | | | | | |
| 80/32 | | 80 | 125 | 140 | | 315 | 315 | | | | | | | | | | | 18 | | | | | | | |
| 80/40,80/40N | | | | | | 365 | 355 | | | | | | | | | | | | | | | | | | |
| 100/26 | | 100 | 125 | | | 280 | 280 | | 15 | 92.5 | 107.5 | 230 | 260 | 230 | 305 | 275 | | 18 | | | 15 | | | | |
| 100/32 | | | | | | 315 | 315 | | 18 | 100 | 150 | 300 | 310 | 295 | 355 | 340 | | 23 | | | 25 | | | | |
| 100/40 | | | | | | 365 | 355 | | | | | | | | | | | | | | | | | | |
| 125/26 | | 125 | 150 | | | 315 | | | | | | | | | | | | | | | | | | | |
| 125/32 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 125/40,125/40N | | | | | | 365 | 400 | | | | | | 355 | 315 | 400 | 360 | | | | | | | | | |
| 150/32,150/32N | | 150 | 200 | 160 | | | 450 | | | | | | 385 | 345 | 430 | 390 | | | | | | | | | |
| 150/40 | | | | | | | | | | | | | | | | | | | | | | | | | |

* REFER ENGINEERING

Note: These are tentative dimensions. Certified dimensions will be submitted against order.

## MATERIAL OF CONSTRUCTION

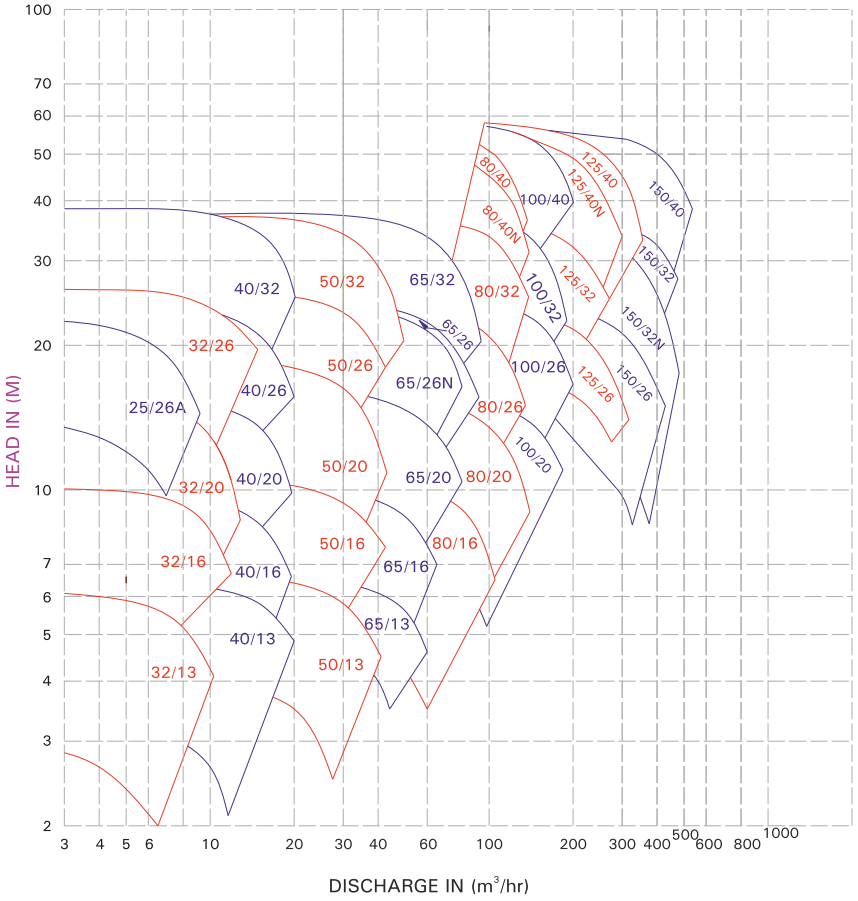
| Component Description | Standard MOC | Option 1 | Option 2 | Option 3 | Option 4 | Option 5 |
|---|---|---|---|---|---|---|
| Pump Casing | Cast Iron - IS 210-FG 260 | Duplex ASTM A240M -UNS S31803 | ASTM-A890/890M-CE3MN-5A Super Duplex (UNS 32760) | Alloy 20 ASTM B473 UNS8020-ALLOY20 | ASTM A494 - Hastelloy B | ASTM A494 - Hastelloy C |
| Casing Cover | Cast Iron - IS 210-FG 260 | | | | | |
| Pump Shaft | Stainless Steel ASTM A276 Type 316 and 316L | Duplex ASTM A240M -UNS S31803 | ASTM-A276 UNS 32760 ( UNS 32760) | Alloy 20 ASTM B473 UNS8020- | MONEL BS3076-NA18 ( K-Monel 500) | |
| Bearing Housing | Cast Iron - IS 210-FG 260 | | | | | |

## MATERIAL STANDARDS - GENERAL INFORMATION

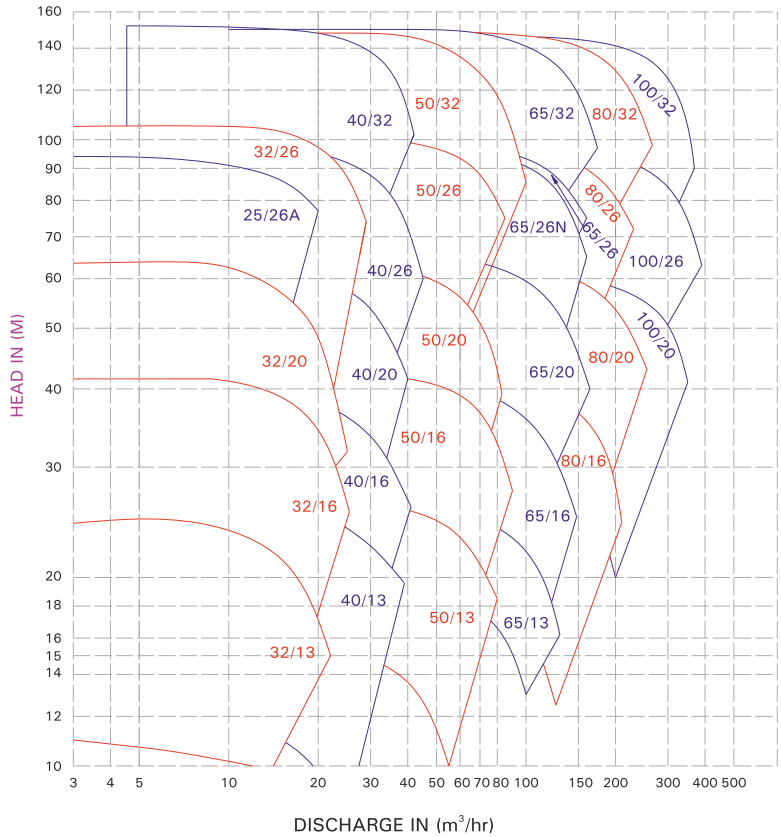
| Material Type | Indian Standard (IS) | American standard (ASTM) | DIN |
|---|---|---|---|
| **Cast Iron** | | | |
| Cast Iron | IS 210 Gr. FG 260 | ASTM A48 Class 40 | (0.6025)DIN 1691 GG25 |
| **Spheroidal Graphite Cast Iron** | | | |
| SG Iron (Ductile Iron) | IS 1865 Gr 400/15 | A536, 60-40-18 | (0.7040)DIN1693 GGG40 |
| SG Iron (Ductile Iron) | IS 1865 Gr 500/7 | A536, 65-45-12 | (0.7050)DIN1693 GGG50 |
| **Carbon steel** | | | |
| Carbon steel (Wrought) | IS 1570 (part II) Gr. 40C8 | ASTM A107 Gr. 1040 | (1.1186)C40E/CK40 |
| Carbon steel (Wrought) | IS 1570 (part II) Gr. 20C8 | ASTM A107 Gr. 1020 | (1.0402)C22 |
| MS Steel | MS IS 2062 - Fe 410 W A | ASTM-A283 GR.D | DIN 1700 GR ST4-2 FABRICATED STEEL44 |
| **Cast Steel Grades** | | | |
| Cast steel | | ASTMA 216 Gr. WCB | 1.0619(GS-C25) |
| **Cast Stainless Steel** | | | |
| Stainless Steel CF8M | IS 3444 Gr. 4 | ASTMA 351 Gr. CF8M | 1.4408(GX5CrNiMo19-11-2) |
| Stainless Steel CF8M | IS 3444 Gr. 4 | ASTMA 743 Gr. CF8M | 1.4408(GX5CrNiMo19-11-2) |
| Stainless Steel CF3M | IS 3444 Gr. 16 | ASTMA 351 Gr. CF3M | 1.4409(GX2CrNiMo19-11-2) |
| Stainless Steel CF3M | IS 3444 Gr. 16 | ASTMA 743 Gr. CF3M | 1.4409(GX2CrNiMo19-11-2) |
| Stainless Steel CF8 | IS 3444 Gr. 1 | ASTMA 351 Gr. CF8 | 1.4301(X5CrNi18-10) |
| Stainless Steel CF3 | IS 3444 Gr. 15 | ASTMA 351 Gr. CF3 | 1.4306(X2CrNi19 11) |
| **Cast Chromium StainlessSteel** | | | |
| Stainless Steel CA15 | IS 3444 Gr. 10 | ASTMA 217 Gr. CA15 | 1.4106&1.448(DIN17445 GX12Cr14) |
| Stainless Steel CA15 | IS 3444 Gr. 10 | ASTMA 743 Gr. CA15 | 1.4106&1.448(DIN17445 GX12Cr14) |
| Stainless Steel CA6NM | IS 3444 Gr. 24 | ASTMA 487 Gr. CA6NM | 1.4313&1.4317(GX5CrNiMo13-4) |
| Stainless Steel CA6NM | IS 3444 Gr. 24 | ASTMA 743 Gr. CA6NM | 1.4313&1.4317(GX5CrNiMo13-4) |
| **Chromium StainlessSteel Round Bar Matterial** | | | |
| Stainless steel 410 | IS 1570 (part V) Gr. X12Cr12 | ASTMA 276 type 410 | 1.4006(X10Cr13) |
| Stainless steel 420 | IS 1570 (part V) Gr. X20Cr13 | ASTMA 276 type 420 | 1.4021(X20Cr13) |
| Stainless steel 431 | IS 1570 (part V) Gr. X15Cr16Ni2 | ASTMA 276 type 431 | 1.4057(X20CrNi17) |
| Stainless steel 316 | IS 1570 (part V) Gr. X04Cr17Ni12Mo2 | ASTMA 276 type 316 | 1.4401(X5CrNiMo17122) |
| Stainless steel 316L | IS 1570 (part V) Gr. X02Cr17Ni12Mo2 | ASTMA 276 type316L | 1.4404(X2CrNiMo1810) |
| **Cast Duplex Steel** | | | |
| Duplex Steel 1A | | ASTMA 890 Gr. CD4MCu | 25Cr-5Ni-Mo-Cu |
| Duplex Steel 2A | | ASTMA 890 Gr. CE8MN | 24Cr-10Ni-Mo-N |
| Duplex Steel 3A | | ASTMA 890 Gr. CD6MN | 25Cr-5Ni-Mo-N |
| Super Duplex steel 4A | | ASTMA 890 Gr. CD3MN | 25Cr-7Ni-Mo-N |
| Super Duplex steel 5A | | ASTMA 890 Gr. CE3MN | 24Cr-10Ni-Mo-N |
| **Non Ferious Materials** | | | |
| Bronze | IS 318 Gr. LTB2 (CuSn5Zn5Pb5C) | ASTMB 584 - C90500 | DIN 1705 Rg 5 |
| Phosphor Bronze | IS 28 Gr. 1 (CuSn11PC) | | |
| Zinc Free Bornze | IS 28 Gr. 1 (CuSn10C) | | |

## FAMILY CURVES :

GK(P) PUMPS FAMILY CURVE AT 1450 RPM




GK(P) PUMPS FAMILY CURVE AT 2900 RPM



## Notes :

## Notes :

## 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. As the market leader in fluid management, KBL provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, oil & gas and marine & defence. We engineering and manufacturing 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 and expanded 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 BV (Kirloskar Pompen BV since June 2014), a joint venture between Kirloskar Brothers International BV 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. KBL has a joint venture company with Ebara Corporation, Japan since 1988 for the manufacture of API 610 standard pumps. Kirloskar Corrocoat Private Limited is joint venture cooperation with Corrocoat Ltd., UK since 2006. KBL acquired The Kolhapur Steel Limited in 2007 and Hematic Motors in 2010 (Now KPML). In 2014, KBL aquired SyncroFlo. Inc, the largest independent fabricator of commercial and municipal domestic water.
KBL has eight manufacturing facilities in India at Kirloskarvadi, Dewas, Kondhapuri, Shirval, Sanand, Kaniyur, Kolhapur and Karad. In addition, KBL has seven 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 plants of KBL are ISO 9001, ISO 14001 and OHSAS 18001 standards certified. They apply Total Quality Management tools using European Foundation for Quality Management (EFQM) model. The Kirloskarvadi plant of KBL is a state of art integrated manufacturing facility having one of Asia's largest hydraulic research centre with testing facility up to 5000 kW and 50,000 $m^3$/ hour.

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

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Enriching Lives

**KIRLOSKAR BROTHERS LIMITED**
A Kirloskar Group Company

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