kishor pumps

Designed for processes, Made for people.

Solutions for the water, wastewater & sewage plants

PUMPS | MIXERS | AERATORS

FreeLub Technology | RedAx Technology | XSpan | EquiThrux | SubArc Technology

Email: info@kishorpumps.com | **Web:** www.kishorpumps.com

TYPICAL PLANT LAYOUT

RAW SEWAGE PUMPING PIT

RAW SEWAGE PUMPS
A SERIES
FLOW RATE: UPTO 5000 m^3 / hr
HEAD: UPTO 100 mwc
POWER: UPTO 450 kW
SOLIDS SIZE: UPTO 100 mm
SOLIDS CONSISTENCY: <1%

BIOGAS GENSET

PRIMARY TREATED SEWAGE

PRIMARY CLARIFIED SEWAGE PUMPS
C SERIES
FLOW RATE: UPTO 500 m^3 / hr
HEAD: UPTO 40 mwc
POWER: UPTO 75 kW
SOLIDS SIZE: UPTO 50 mm
SOLIDS CONSISTENCY: <1%

TREATED EFFLUENT AFTER DISINFECTION

TREATED EFFLUENT PUMPS
F SERIES
FLOW RATE: UPTO 1000 m^3 / hr
HEAD: UPTO 120 mwc
POWER: UPTO 350 kW
SOLIDS SIZE: Nil
SOLIDS CONSISTENCY: Nil

SECONDARY TREATMENT (AEROBIC) BASIN

SUBMERSIBLE JET AERATOR
AIR FLOW: UPTO 440 m^3 / hr

SECONDARY TREATED SEWAGE

SECONDARY CLARIFIED SEWAGE PUMPS
F SERIES
FLOW RATE: UPTO 1000 m^3 / hr
HEAD: UPTO 120 mwc
POWER: UPTO 350 kW
SOLIDS SIZE: Nil
SOLIDS CONSISTENCY: Nil

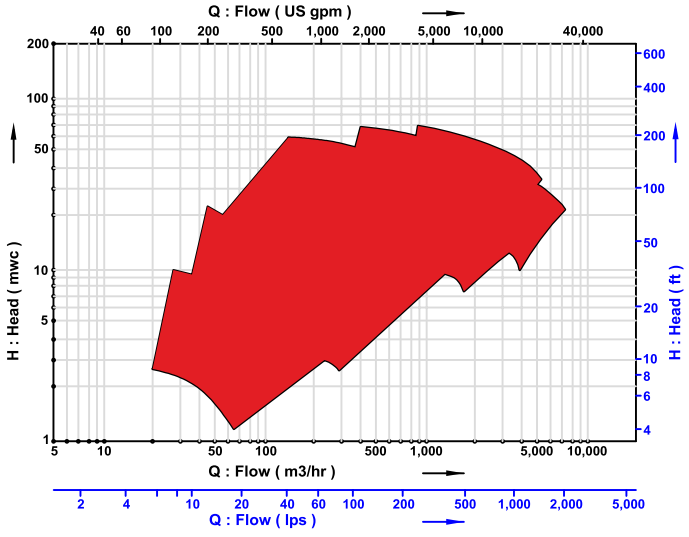
SECONDARY TREATMENT (AEROBIC) BASIN & BIOLOGICAL NUTRIENT REMOVAL (BNR)

SLUDGE PUMPS (RAS / SAS / WAS)
C SERIES
FLOW RATE: UPTO 500 m^3 / hr
HEAD: UPTO 40 mwc
POWER: UPTO 75 kW
SOLIDS SIZE: UPTO 50 mm
SOLIDS CONSISTENCY: < 3 - 5 %

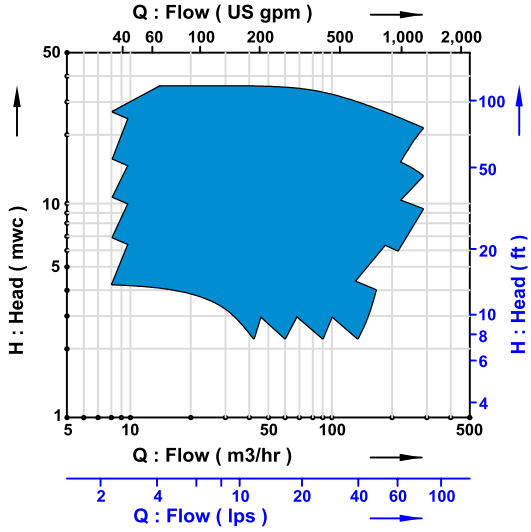
SUBMERSIBLE MIXERS
DIRECT DRIVE (D) / GEAR DRIVE (G)
MOTOR POWER: UPTO 12.5 kW

SUBMERSIBLE PROPELLER PUMPS
W SERIES
FLOW RATE: UPTO 10,000 m^3 / hr
HEAD: UPTO 8 mwc
POWER: UPTO 350 kW
SOLIDS SIZE: UPTO 50 mm
SOLIDS CONSISTENCY: < 3 - 5 %

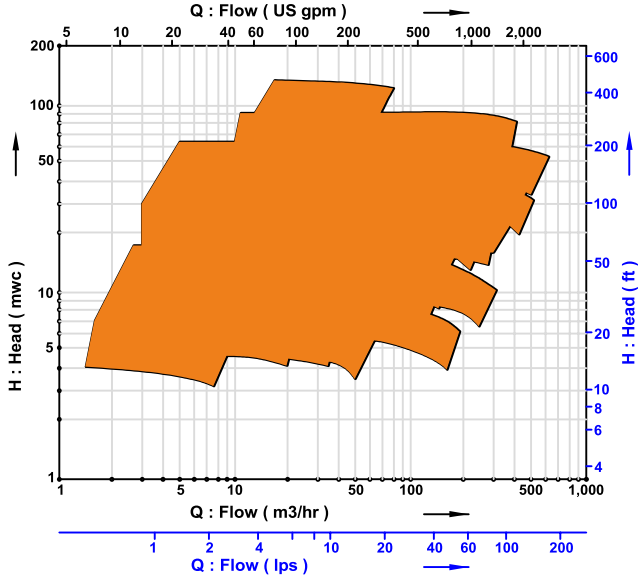
PERFORMANCE RANGE



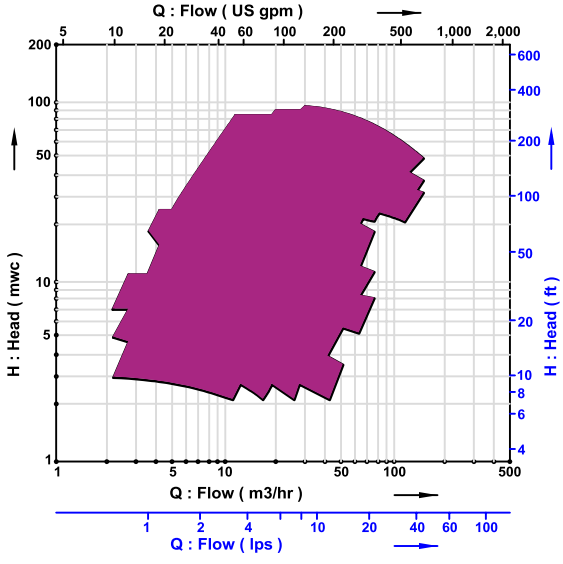
A SERIES
SOLID PASSAGE SIZE: UPTO 100 mm



C SERIES
SOLID PASSAGE SIZE: UPTO 50 mm



F SERIES
SOLID PASSAGE SIZE: Nil



D SERIES
SOLID PASSAGE SIZE: UPTO 25 mm

FLEXIBILITY IN INSTALLATION TYPE WITH SAME CASING & IMPELLER (SAME HYDRAULICS)

SUBMERSIBLE WET PIT
PUMP WITH STAND

SUBMERSIBLE WET PIT
PUMP FOR AUTO-COUPLING

HORIZONTAL DRY PIT
END SUCTION PUMP

VERTICAL SUBMERSIBLE
DRY PIT PUMP

HORIZONTAL SUBMERSIBLE
DRY PIT PUMP

VERTICAL DRY PIT PUMP

EFFECT OF SOLID PASSAGE SIZE ON PUMP EFFICIENCY

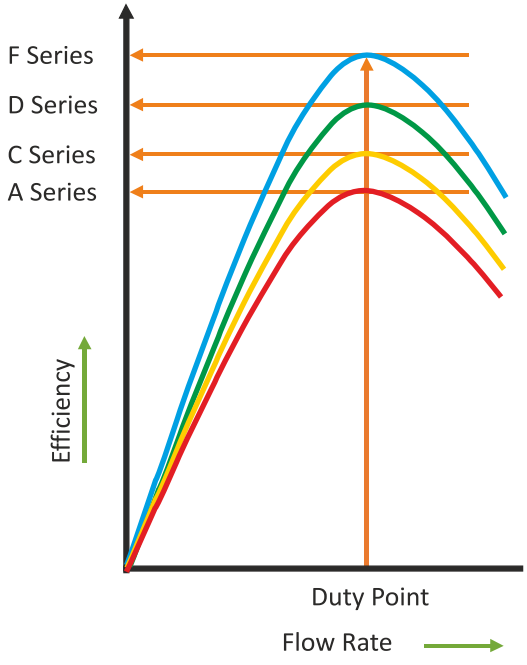
F Series - No solids passage

D Series - 25 mm solid passage

C Series - 50 mm solid passage

A Series - 100 mm solid passage

For the same duty point efficiency of the pump increases with decreasing solid passage size



UNIQUE SEAL PROTECTION SYSTEM:

A shaft mounted expeller protects the mechanical seals from hard solids preventing damage

DexPel™ Technology

JACKETED & NON-JACKETED CONFIGURATION

Pump with jacket

Pump without jacket

PRODUCT SPECIFICATIONS:

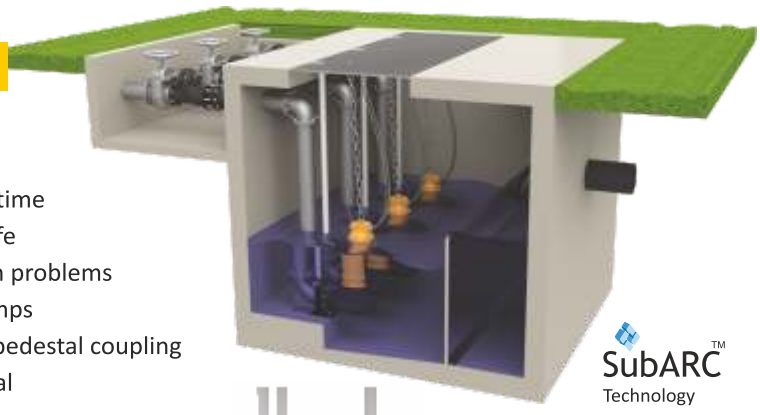
- Material options :CI, DI, NiCI, Ni-resist, CA 15, CF 8M, CD 4MCuN, CE 3MN, Ceramic coated impeller, etc
- Cable :PVC / Rubber insulated
- Motor rating :upto 600 hp (450 kW)
- Speed : 2900, 1450, 960, 725 rpm
- Protection : IP 68
- Insulation : F / H class
- Max submergence : upto 25 m depth
- VFD Compatibility : Yes
- Motor cooling : Pumped Liquid / External
- Frequency : 50 Hz (60 Hz on request)
- Voltage : 415 V (other voltage on request)
- Attachments : Cutter, Aerator, Stirrer

PUMP WITH STIRRER AT THE SUCTION

MECHANICAL SEAL CONFIGURATIONS TO SUIT APPLICATION REQUIREMENTS

* Sensors and jacket are optional

BENEFITS OF WET PIT INSTALLATION :



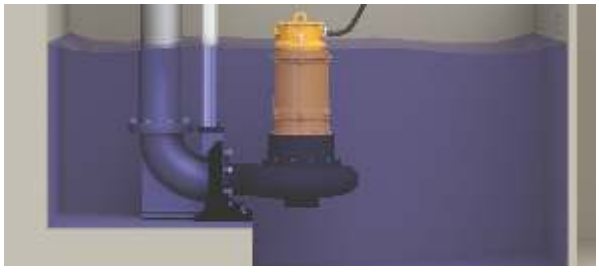
- Significant simplification of civil structure, elimination of dry pit for pumping
- Substantial reduction of civil construction cost and time
- Water cooling of the motor, enhancing the motor life
- Underground installation, hence no land acquisition problems
- No necessity to enter the pit for removal of the pumps
- Automatic sealing of the pumps at auto coupling / pedestal coupling
- No disturbance to the pipeline during pump removal
- No bolting for connecting pumps in pipeline
- Noiseless operation

SubARC™ Technology

- Universal coupling with either single or double guide rail
- Easy installation and removal of submersible pump

INSTALLATION OPTIONS FOR SUBMERSIBLE PUMPS

Wet pit - Submersible - Guide rail



- A fixed installation version in wet pit
- Pedestal coupling / autocoupling mounting
- Single / double guide rail arrangement
- Pipe connection

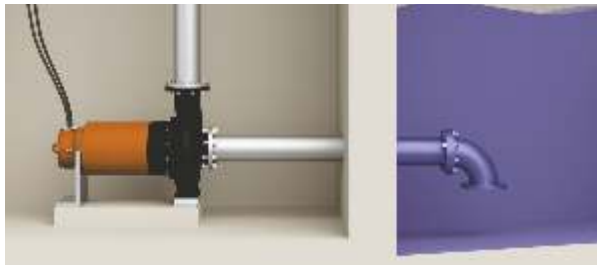
Dry pit - Vertical

- A fixed, permanent dry pit installation
- Base plate mounting with suction bend
- Pipe connection

Wet pit - Submersible - Strainer Base

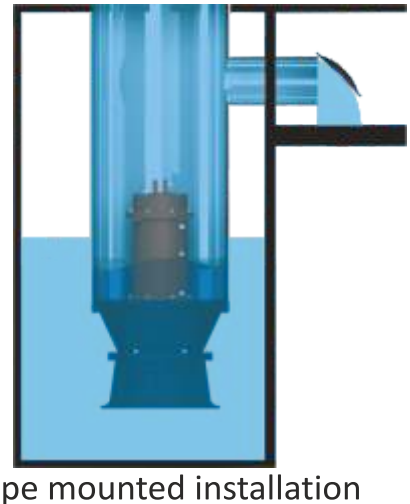
- A semi-permanent, free standing version in wet pit
- Strainer base mounting
- Ideal for portable applications, temporary installations
- Pipe or hose connection

Dry pit - Horizontal

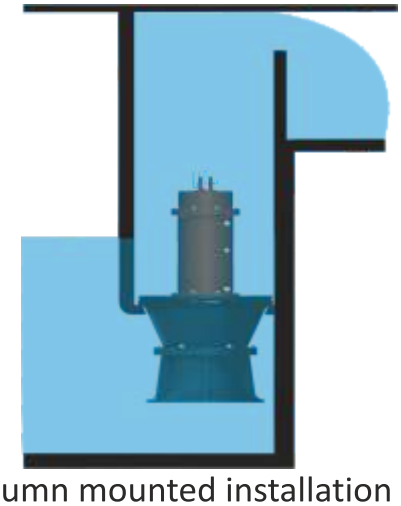


- A fixed permanent dry pit installation
- Base frame mounting with suction bend
- Pipe connection

INSTALLATION OPTIONS FOR SUBMERSIBLE PROPELLER PUMPS



Pipe mounted installation



Column mounted installation

UNIQUE BEARING SPAN DESIGN FOR HORIZONTAL END SUCTION PUMPS:

XSpan™
Technology

XSpan technology makes use of a scientifically designed bearing frame, which improves overall strength and stiffness of the pump. It mitigates the effect of undesirable hydraulic forces on the pump shaft, bearing and mechanical seal.

Benefits :

- Improved bearing life, less shutdowns and maintenance costs
- Increased mechanical seal life, due to less overhang and less shaft deflection
- Better mechanical stability over a wide operating range

PUMPS WITH JET AERATORS:

Submersible pumps with jet aerator attachment systems provide reliable & efficient aeration for biological treatment of waste. KISHOR's pioneering design of auto-coupling of pumps to the venturi enables ease of installation, commissioning and maintenance. The pump forces liquid through venturi injectors directly attached to the pump discharge branch, entraining in air from the atmosphere through air pipe connected to theinjectors. The air coming out of the diffuser nozzle inmillions of fine bubbles gets enough time to effectivelytransfer oxygen. The fine bubble size ensures maximum contact area.With deeper settings, the transfer is more. Due to horizontal ejection with high velocity, bubbles travellong distance before rising and cover wide areas foraeration. This type of submerged aerator causes muchmore agitation and intimate mixing as compared to surface aerator. The agitation created by jets preventssettlement of solids on the floor of the tank.

The pumps are free standing on the venturi which provides ease of removal on pump for routine maintenance. Conventional surface aerators and compressed diffusion system are fixed systems rendering them vulnerable to wear and tear due to lack of removability for maintenance. The aeration systems coupled with KISHOR mixers in the aeration basin provide more lateral movement of air bubbles ensuring further increased contact time for oxygen transfer.

APPLICATION AREAS:

- Domestic Sewage
- Tannery effluent
- Paper & Pulp
- Sugar Industry
- Dairies
- Distilleries
- Pharmaceutical
- Food & Beverage

RANGE:

- Air Flow : upto 440 m^3/hr
- Depth : upto 5 metres
- Motor Protection : IP68
- Insulation Class : Class F / H
- Installation : Vertical auto coupling

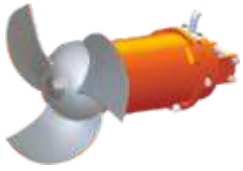
UNIQUE PRODUCT BENEFITS:

- Free standing auto-coupled installation
- Inbuilt strainer to avoid solids ingress
- No energy wasted in compression of air
- Multiple nozzles can be attached for more air
- VFD compatible to increase or decrease air
- No need for elaborate piping for air
- Fully repairable motor and pump assembly

Applications

- Sewage treatment plants
  - * Activated sludge treatment
  - * Bio-Reactor
  - * Grit chamber mixing
- Paper pulp chests
- Wastewater treatment & Zero Liquid Discharge (ZLD) plants
  - * Equalizing reservoir
  - * Chlorination basins
- Agriculture & water supply.

MIXERS & AGITATORS



Versions :

★ **KISHOR *XERON* D** is a direct drive version, normally used for small ponds or tanks with difficult, complicated geometry. Due to small propeller diameter, it can also be mounted in a shallow tank. It is ideal for turbulent, strong mixing as well as for loosening sediments.

★ **KISHOR *XERON* G** is a geared drive version for reduced speed, normally used for large ponds or tanks. It is effective in gentle mixing and circulation of waste water in ponds, tanks, channels, oxidation ditches, especially the longer ones.

Standard Performance Data:

- Temperature :max 40 deg C
- Viscocity of the liquid :max 20 cSt
- Sp. Gravity :upto 1.15
- Electric supply : 415 V , 50 Hz , 3 phase.
- Motor :'F' class insulation , IP 68 protection, designed for continuous operation
- Cable : 10 m
- Motor power :upto 12.5 kW
- VFD compatible design (Optional)
- Max solid content in the liquid 10% by weight

Standard Materials:

- Dome :Stainless steel (Only for XERON D)
- Impeller :Stainless steel (Only for XERON G)
- Shaft :SS / SS 420

*other materials available on request for the above

Unique Product Benefits :

- Self -cleaning , ideal for liquid with fibrous material
- Power saving , higher thrust at low horsepower
- Silent operation
- No shaft deflection , prolonged sea & bearing life
- User friendly design
- Easy to install, no downtime, no need to drain the tank
- Can fit any tank size & shape
- Adjustable to user's requirements
- Uniform mixing
- Saving of civil costs

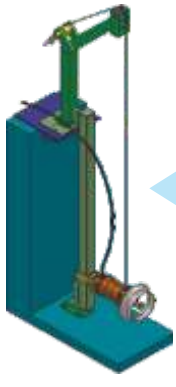
Designed for :

- Turbulent flow mixing
- Flash mixing
- Circulating
- Liquids with high solid contents
- Loosening of sedimentary deposits
- Homogenization of sludge

INSTALLATION OPTIONS :

Flexibase (SF) Mounting

- Predetermined fixed height from tank bottom
- Freedom to swing horizontally or vertically, while remaining inside liquid



Rotocoupling (SR) Mounting

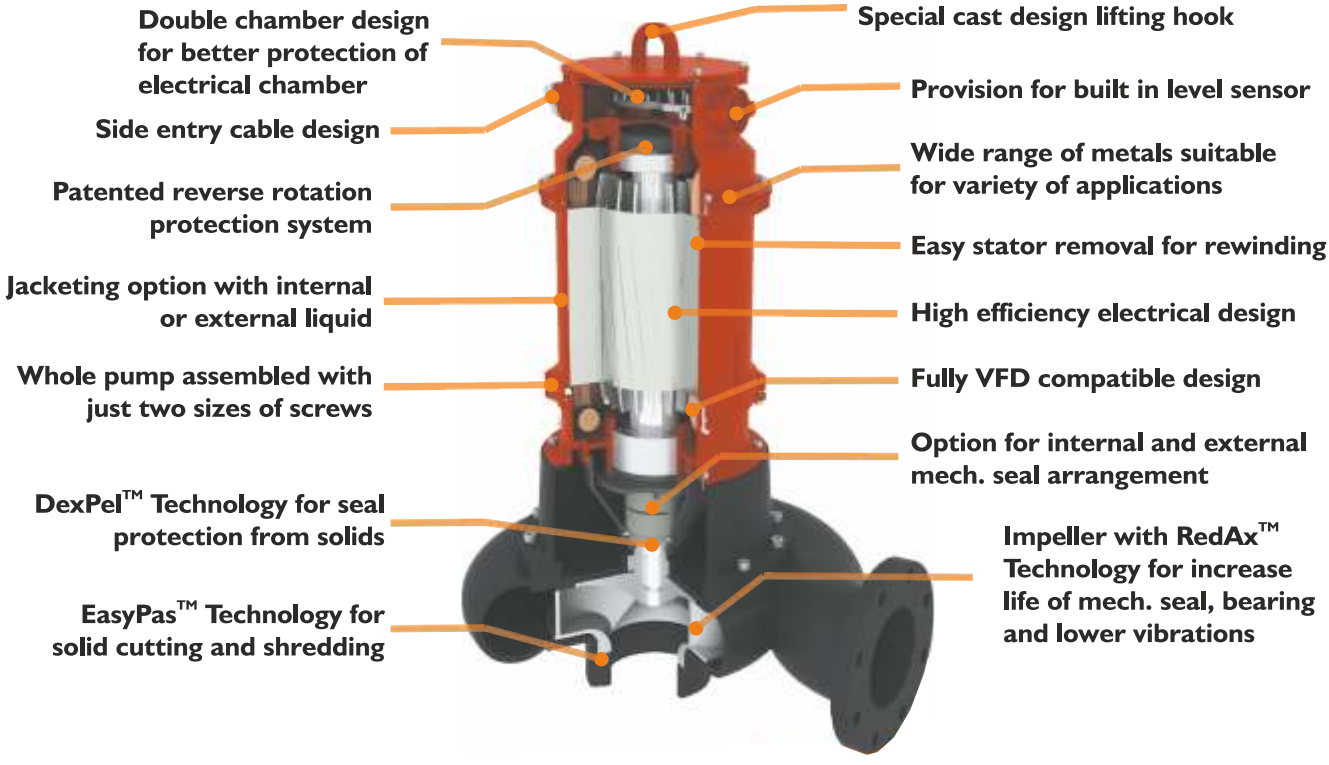
- Freedom to adjust height from tank bottom
- Freedom to swing horizontally or vertically, while remaining inside liquid
- Quick & easy removal in case of problem

Pentocoupling (SP) Mounting

- While remaining inside out liquid, height adjustment is possible
- Quick & easy removal in case of problem

UNIQUE DESIGN FEATURES:

Unique Features	Benefit to the user	Added Benefit
Site fittable cable design	Less risk of cable theft & damage during installation	Separate storage of cable untill final installation
Double chamber design	Protection from falling objects & dust into winding	Enhanced life during maintenance
User friendly stator fitment design	Rewinding possible, in case of accidental damage	No necessity to replace motor housing
Side entry cable	Natural bend position after installation	Avoids cable damage due to additional bend
Reverse rotation protection	Assurance of correct direction of rotation	Achievement of required duty points
Entire pump can be opened with single tool	Single tool needed for repair and maintenance	Easier maintenance and less downtime
VFD compatible designs	No bearing & winding damage due to VFD driven	Saving in cost and power
VPI & spl. insulation materials	Higher insulation strength	Longer winding life
RedAx™ technology	Increased bearing & mechanical seal life	Less downtime & low vibrations, low noise,
EasyPas™ technology	Reliable & easy handling fibrous solids	Clog-free pumping
SubArc™ technology	Easy installation & removal of pump	Less downtime
DexPel™ technology	Minimal abuse of abrasive solids & dirt into seal zone	Higher seal life
Choice of mechanical seal mounting	Double mechanical seals in tandem / back-to-back	Reliable shaft sealing
Internal / external media cooling jacket	Minimum left over dead volume in a tank	Quick removal of jacket for cleaning, if required
Ribless plain motor housing	No adherence of sludge, fibres on motor housing	Reliable heat dissipation
Investment cast* motors	Better heat dissipation	Higher motor efficiency, increased winding life
Scientifically designed in-built lifting hook	No risk of loosening and losing eyebolts	Safe & reliable lifting
Provision for additional sensors	Additional sensors on request	Helpful for maintenance
Modular & interchangeable design	Low spares inventory	Saving in spares cost
Heavy duty bearings & shaft design	No shaft deflection	Higher bearing & mech. seal life
Wide options of hydraulics	Efficient & dedicated hydraulics	Reliable pumping & saving in costs
CA 15 investment cast motors	Higher thermal conductivity	Increased life of winding & better efficiency
Wide spectrum of materials	Most appropriate material to suit application	Higher pump life
High efficiency impeller designs	Lower power input	Saving in power running cost



KISHOR make PUMP CONTROLLER :

Parameter / Feature	Basic	Advance	Professional	Premium
Operation				
Single pump	✓	✓	✓	✓
Multi pumps		✓	✓	✓
Metering				
Current, voltage (each phase)	✓	✓	✓	✓
Power factor & power	✓	✓	✓	✓
Total kWh consumed	Optional	Optional	✓	✓
Running hours & number of starts	Optional	Optional	✓	✓
Frequency, pump speed			✓	✓
Protections				
Seal failure	✓	✓	✓	✓
High winding temperature, overload	✓	✓	✓	✓
Reverse rotation	✓	✓	✓	✓
Unbalance current	✓	✓	✓	✓
Single phasing, phase failure & reversal	✓	✓	✓	✓
Overvoltage, undervoltage	✓	✓	✓	✓
Locked rotor	✓	✓	✓	✓
Short circuit	✓	✓	✓	✓
Low level trip, dry running	✓	✓	✓	✓
Water level controller (two point)	✓	✓	✓	✓
SMS remote alarm warnings	Optional	Optional	✓	✓
GSM status monitoring	Optional	Optional	✓	✓
Water level controller (three point)		Optional	✓	✓
Restart time delay, max. starts / hour			Optional	✓
Upper / lower bearing temperature			Optional	✓
Water level controller (digital)				Optional
Terminal chamber moisture sensor				Optional

About the Company :

With decades of experience and expertise, we have been partnering with industry majors across the world in the successful execution of projects with our application specific range of pumps including for seawater desalination, fertilisers, petrochemicals, pharmaceuticals, power generation, food & beverages, agro chemicals, slurry handling, and wastewater. KISHOR has always been a suitable partner for providing solutions engineering, lifelong performance and service support for the industry's pumping needs. Industry major's preferred choice and world's renowned consultants' approvals stand testimony to the fact that our pumps are widely accepted for quality and provide value for money.

Understanding the application and the customer's need has been at core of all the activities at KISHOR PUMPS. We, at KiSHOR PUMPS, understand your specific needs better than anyone else. Every product supplied by KISHOR PUMPS is selected by thoroughly studying the liquid being pumped, the piping systeme characteristics and the surrounding conditions that may affect the optimal performance of the pump. Our expertise in mechanical and hydraulic desigh, in addition to one the widest arrays of material options in the pump industry, help you select the right pump thus enabling the transfer of the desired liquid from the desired point to the required point in the most efficient and cost effective manner. The highest level of quality assurance procedures are followed in making every pump which ensures that there are no deviations from the customer's expectations and that the products perform their desired duty with a high level of reliability and durability.

kishor pumps
Designed for processes, Made for people.

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Regional Offices: Delhi | Vadodara | Mumbai | Chennai | Hyderabad | Kolkata