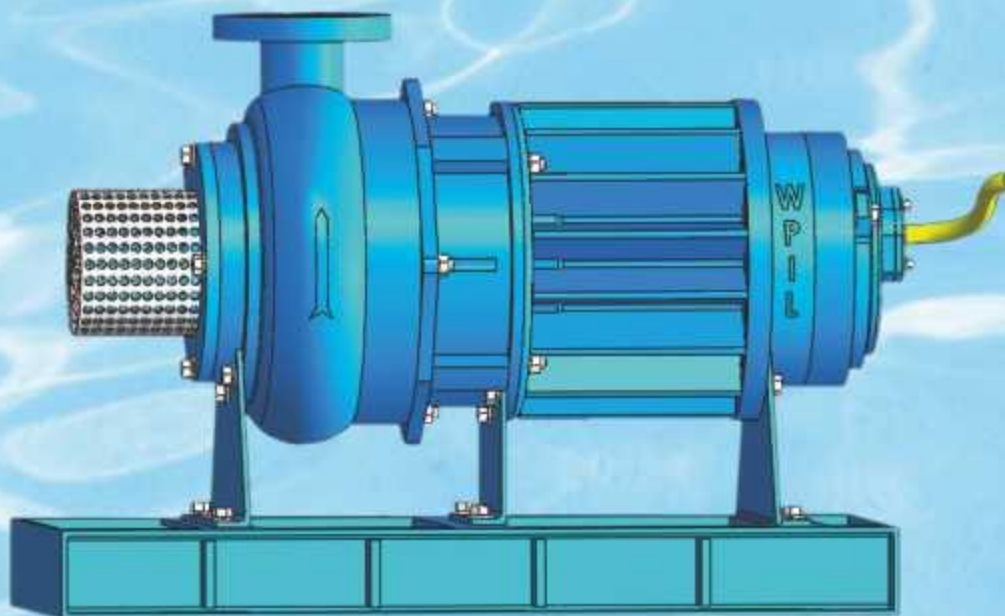




WPIL SUBMERSIBLE CENTRIFUGAL PUMP MOTOR SET

Engineered for excellence



Serving Society Since 1952

WPIL Limited

Visit: www.wpil.co.in

WPIL Engineered Submerged Pumps

Large engineered submersible pumps design from prestigious Johnston Pump Co., U.S.A. with continual improvement by in-house R&D recognized by Ministry of science & Technology Govt. of India.

Range

- Sizes :2" to 30" (delivery)
- Capacity : upto 11000 cu. mtr./hr.
- Ambient temperatures up to 55°C
- Head : upto 140mtrs.
- Custom designs for other parameters & applications.
- Pumps can be produced from existing range of solid handling and raw water handling pumps to suit any requirements.
- Special grade bearings available to suit various applications like VFD etc.



Applications

- General water supply
- Cooling Tower and power plants
- Canal
- Lift Irrigation
- Duplex & Super Duplex Stainless Steel
- Inconel, Hastelloy & other exotic materials.
- Other materials as per Applications.

Standards: Indian Standard 5600, 9283, 325; IEC & Hydraulic Institute of Standards , U.S.A.

Materials of Construction:

- Grey cast irons
- Bronzes
- Steels
- Stainless Steels
- Duplex & Super Duplex Stainless Steel
- Inconel , Hastelloy & other exotic materials.
- Other materials as per Applications

WPIL Engineered Motors

Engineered Submersible motor design are from world renowned HAYWARD TYLER of UK with designs engineered according to the customer's specifications and continual improvements with in-house R&D.

Standards: IEC / NEMA - MGI; IS:9283-1995 (Indian std) Motors for Submersible Pumps-sets.

- Motor frame sizes from 132 to 500 and above
- 2 to 16 pole designs (design in HT available)
- Voltage : 50hz - 400V, 600V, 3300V & 6600V
: 60hz - 480V, 3300V & 6600V
- Motors are supplied to suit horz./ vert. mountings, voltages and frequencies and starting.

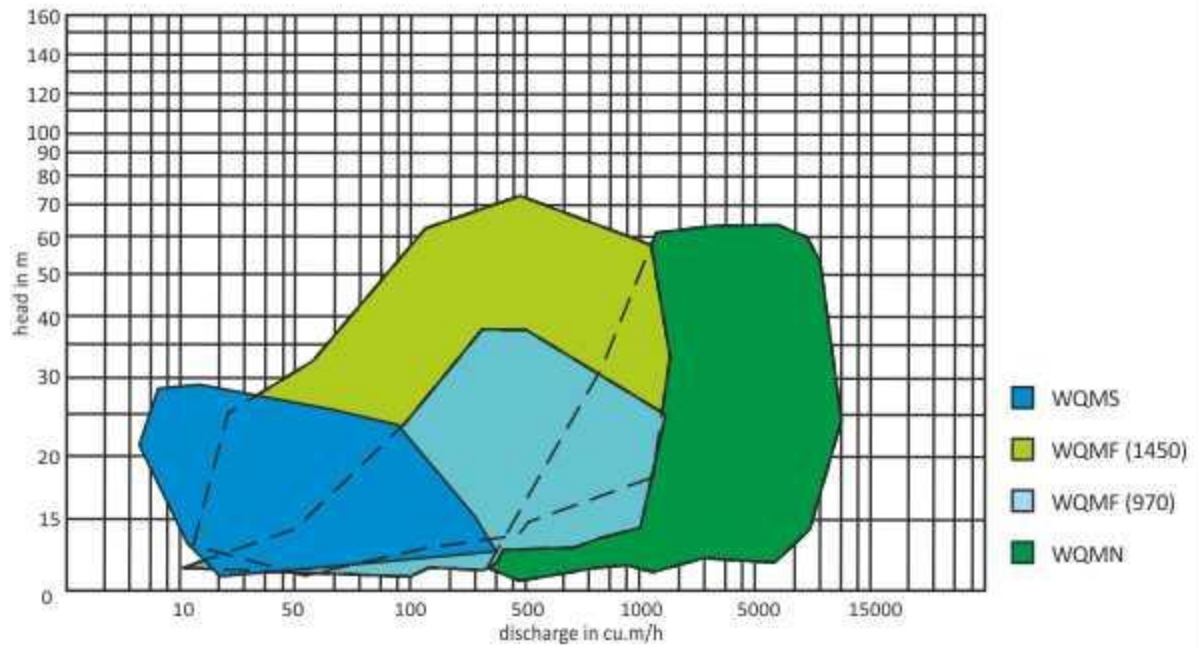


Features

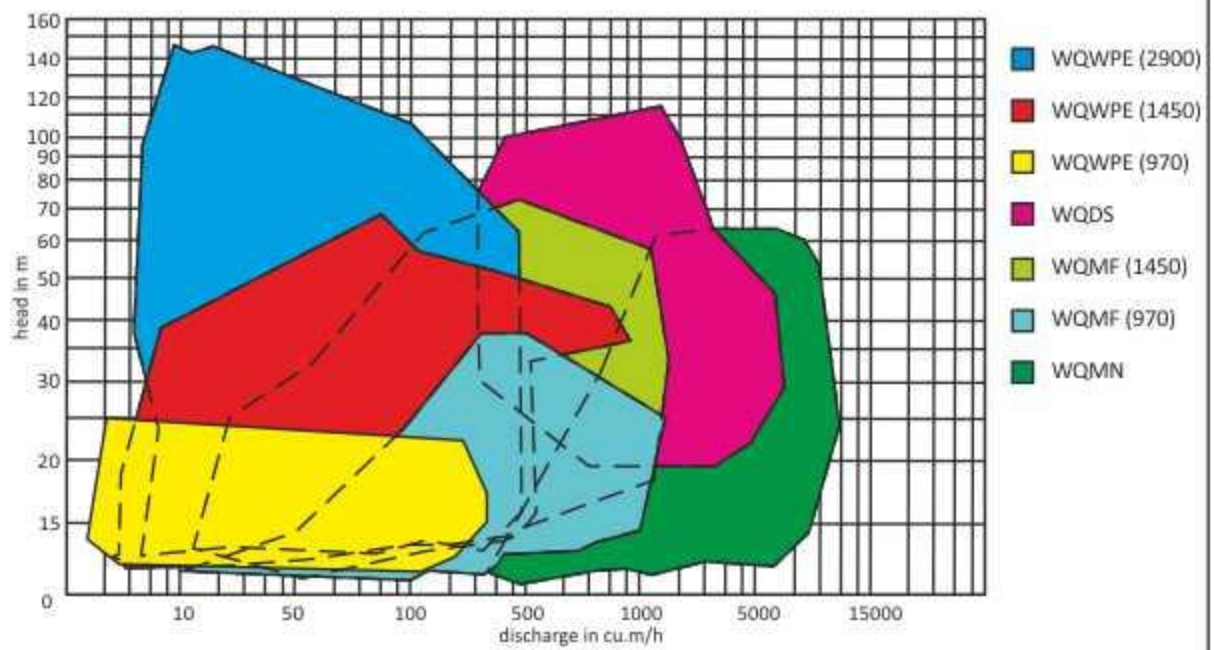
- The motor is submersible AC squirrel cage, induction type and dry type with class 'F' or 'H' insulation and IP 68 enclosure fitted with ball bearing & mechanical sealing to ensure in high depth submergence condition.
- The pump casing is volute casing which is suitable for both horizontal/ vertical installation. The impeller is mounted directly to the extended motor shaft.
- Common shaft of pump and motor is fitted with large L10 life grease lubricated bearings.
- The motors rotor is squirrel cage copper brazed type/ aluminum die cast.
- Thermal overload protectors (RTD) is embedded in stator windings to detect overheating and trip the motor, from control panel while temperature exceeds above 120°C.
- Moisture sensor is provides to detect primary mechanical seal's leakage.
- Oil chamber is provided for cooling and lubrication of mechanical seal (tandem), The primary (inboard) seal is of silicon carbide faces to withstand erosive wear due to any slit particles. The secondary (outboard) seal of carbon v/s silicon carbide.
- Heater can be provided on request.

Pump Performance Curves

Large Solids Handling



Raw Water Handling



WPIL Submerged Pump-Motor sets - Lower operating cost and Reliability

Heavy duty, long-life motors

Squirrel cage induction motors for Class S1 duty, designed and manufactured by WPIL. H or F Class insulated stator windings rated at 180°C (350°F).

Full range of sensors for extra operational safety

Stator Housing: leakage. A switch shuts the pump down if water is detected.

Stator Housing: temperature. Thermal sensors are embedded in the stator windings to prevent overheating.
Bearing Sensor: monitors bearing temperature (optional).

Larger bearing design

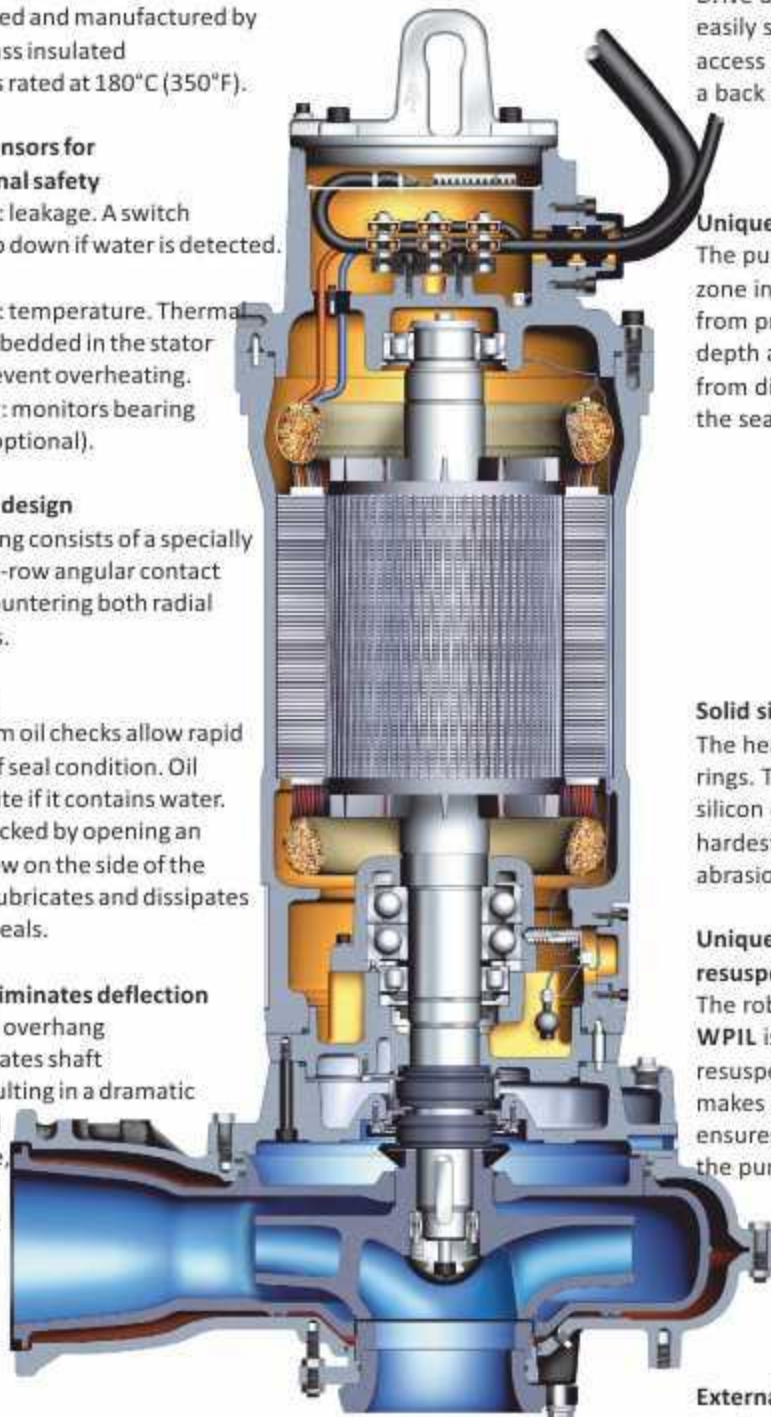
The main bearing consists of a specially developed two-row angular contact ball bearing, countering both radial and axial forces.

Easy oil checks

Easy-to-perform oil checks allow rapid investigation of seal condition. Oil turns milky white if it contains water. This can be checked by opening an inspection screw on the side of the pump. The oil lubricates and dissipates heat from the seals.

Shaft design eliminates deflection

The short shaft overhang virtually eliminates shaft deflection, resulting in a dramatic increase in seal and bearing life, low vibration and near-silent operation.



Fast access to wear parts

Drive unit and wet end easily separated for fast access to wear parts with a back pull-out function.

Unique double seal system

The pump is equipped with an isolation zone in order to release the seal system from pressures above the submersive depth and to prevent the solids from directly penetrating the seal system.



Solid silicon carbide seals

The heart of the seals are the mating rings. These are made from solid silicon carbide, the stiffest and hardest material, for increased abrasion resistance.

Unique agitator for maximum resuspension of solids

The robust axial flow agitator from WPIL is designed for maximum resuspension of settled particles. This makes them easier to transport and ensures a cleaner sump at the end of the pumping cycle.

External flushing

For liquids with a very high and sticky solid content, external flushing is possible. A hose feeds the isolation zone with clean water, preventing slurry from coming into contact with the seals.

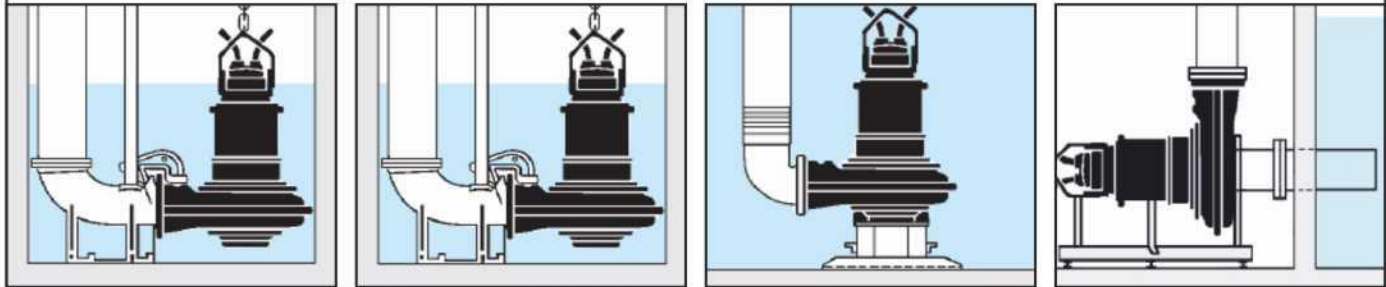
Material Combinations

Part Description	Standard MOC	Standard MOC	Steel Fitted	Zn.free Bronze Fitted	316 SS Fitted
Casing	Cast Iron	Cast Iron	Steel	Zn.free Bronze Fitted	Stainless Steel 316
Impeller	Cast Iron	Stainless Steel	Stainless Steel	Zn.free Bronze Fitted	Stainless Steel 316
Wear Ring	Cast Iron	Cast Iron	Steel	Bronze	Stainless Steel 316
Pump Shaft	Stainless Steel 410	Stainless Steel 410	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
Motor Bearing Housing adapter	Cast Iron	Cast Iron	Cast Iron	Bronze	Stainless Steel 316
Motor Body	Cast Iron	Cast Iron	Cast Iron	Bronze	Stainless Steel 316
Motor Stator	Silicon magnetic Steel M47	Silicon magnetic Steel M47	Silicon magnetic Steel M47	Silicon magnetic Steel M47	Silicon magnetic Steel M47
Motor Rotor	Silicon magnetic steel M47/ Copper or Al. bar	Silicon magnetic steel M47/ Copper or Al. bar	Silicon magnetic steel M47/ Copper or Al. bar	Silicon magnetic steel M47/ Copper or Al. bar	Silicon magnetic steel M47/ Copper or Al. bar
Motor Radial Bearing	Antifriction	Antifriction	Antifriction	Antifriction	Antifriction
Motor Thrust Bearings	Angular contact/ Roller antifriction	Angular contact/ Roller antifriction	Angular contact/ Roller antifriction	Angular contact/ Roller antifriction	Angular contact/ Roller antifriction
Seal	Double Mechanical Seal	Double Mechanical Seal	Double Mechanical Seal	Double Mechanical Seal	Double Mechanical Seal
Winding wire	EC grade F Class varnished copper	EC grade F Class varnished copper	EC grade F Class varnished copper	EC grade F Class varnished copper	EC grade F Class varnished copper
Lead cable	Flexible PVC insulated & sheathed tinned copper	Flexible PVC insulated & sheathed tinned copper	Flexible PVC insulated & sheathed tinned copper	Flexible PVC insulated & sheathed tinned copper	Flexible PVC insulated & sheathed tinned copper
RTD/ thermister/other	Moisture Probe	Yes	Yes	Yes	Yes

Note: Various material/ design combinations custom built are also provided.

Material standards	IS	Equivalent International Standards	
		BS	ASTM
Cast Iron	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
Carbon Steel	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
SS - CG8M	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
316 SS	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
SS 410	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
Bronze	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30
Zn free Bronze	Gr. FG 260 of IS 210 (1978)	BS EN 1561-GJL 200	ASTM - A 48 CL 30

Types of Installation



- Semi-permanent wet well installation
- Twin guide bars on a discharge connection
- Semi-permanent free standing installation
- Transportable with pipe or hose connection
- Vertically mounted
- Permanent dry well or inline installation
- Flange connections for suction and discharge pipework
- Horizontally mounted
- Permanent dry well or inline installation
- Flange connections for suction and discharge pipework

WPIL SERVED



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(Formerly Worthington Pump India Ltd.)

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