







# **PUMPIRAN**

**General Products Catalogue** 





















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#### • Vision:

To continue our domestic success and be recognized as the most competitive pump manufacturing company in the Global Market.

#### • Mission:

Our mission is designing and manufacturing of various types of pumps, Electro pumps and related parts. We also provide technical and engineering services for meeting demands of internal and foreign markets. We strive to provide the best solutions for our clients by employing the most skilled and knowledgeable staff, trained in most advanced technology and quality standards. We are proficient in modern supply chain management systems and after sale services support.

#### Organizational values and beliefs:

- 1. Protect customers, staffs, shareholders and partner rights and continuously meeting and exceeding their satisfaction.
- 2. Responsibility to the community, environment and effective utilization of resources.
- 3. Respect for human rights and dignity.
- 4. Developing and cultivating employee participation and teamwork culture.
- 5. Adopting Total Quality Management in all levels of organization.



General Information

#### **History:**

**PUMPIRAN** was founded in 1973, and from the beginning a license agreement with **KSB** company of Germany was signed which lasted 20 years. Now more than 1000 educated and experienced staffs are working in it's engineering, production, and laboratories. The total area for manufacturing workshops, laboratories, and administration is around 75000 square meters located in 160000 square meters of space.

**PUMPIRAN** has been active in design and manufacturing variety of pumps for water, oil, energy and other related industries. Variety of materials such as cast iron, brass, steel alloy and steel parts are used in production and are distributed within the country and the worldwide market.

**PUMPIRAN** is now proudly a holding company and majority shareholder of the following entities:

- Pumpiran: Manufacturer of various kinds of Submersible Electro Pumps, High Pressure Pumps, Centrifugal Pumps and Split Case Pumps.
- Navid Sahand: Manufacturer of various kinds of Sewage & Drainage Pumps, Mixed Flow & Propeller Pumps, Oil and Petrochemical Pumps (API).
- Navid Motor: Manufacturer of various kinds of Industrial & Domestic Electric Motors and Special Pumps.
- Persia Pump: Manufacturer of various kinds of Centrifugal Pumps and Special Pumps.

- Semnan Energy: Manufacturer of various kinds of Hot Water Circulating Pumps and Domestic Pumps.
- Tolombe Sazan: After Sale Service Spare Manufacturer and Parts Distribution.
- Azar Fulad godaz: Casting of various kinds of plain carbon steel, low-alloy and high - alloy steel and stainless steel parts.
- Rasha: Manufacturer of various kinds of Foundry Parts.
- Moin Abshar: Designing and Installation of Pumping Stations.
- Peyvand Avijeh: Import, Export and Consulting.

#### **Certification:**

#### **PUMPIRAN** has:

- Quality management system certificate, ISO 9001-2008
- Environmental management systems certificate, ISO 14001 - 2004
- OH & S management system certificate, OHSAS 18001 - 2007
- Laboratory accreditation certificate, ISO/IEC 17025-2005
- CE certificate
- Customer satisfaction management certificate, ISO 10002-2004 for all its operations.

**PUMPIRAN** has agencies in most cities of Iran and some foreign countries.











#### **OUR QUALITY**

In order to realize the diverse needs of customers and comply with legal requirements, PUMPIRAN has obtained a variety of standards. To provide high quality products, meeting the demands of customers, compliance with legal issues and possible environmental contamination, **PUMPIRAN** has designed its systems where in the design and production, consideration has been made to all rules and regulations related to product quality, product safety issues, users and environmental aspects related to product. To achieve these goals, PUMPIRAN with its long-standing experience in the field of compliance standard and documentation has taken Integrated Management Systems (IMS) certification. Also, in order to solve problems quickly, employees are encouraged to participate in decision making process for continuous quality improvement of products and customer satisfaction. By establishing proposals system, effective steps has been take to attract employees in increasing quality under efficacy of 5S system which favorable activity context has provided.

Quality circles activated to support corporate decision making process, institutionalization participatory management in productive activities and clarifying the duties of sections and units. Each circuit consists of representatives from quality control, manufacturing, engineering, planning, purchasing, maintenance and sale departments.

In order to solve problems quickly circuits have sections every day.











РИН В ОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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#### PUMPIRAN LABORATORIES

**PUMPIRAN** test shops obtained ISO/IEC 17025-2005 as the first company in Iranian pump industry. Accurate and prompt test services do effort to satisfy costumers. **PUMPIRAN** has established two test shops to meet the growing demand of the industry. No.1 as production line end test, and No.2 for high power rang equipped with medium voltage and law voltage electric supply systems. Tests are taken according to latest version of international standards as API, DIN, ISO and Iran national standards.

**PUMPIRAN** test rig is known as an accredited test facility of Iran national standard organization and committed to confidant and truthfulness of it's experts. Accurate measurements for hydraulic and electric tests are basic functions in official competency.

Also test facilities have competency certificate from National Accreditation Center of Iran **(NACI)** as the member of International Laboratories Accreditation Center **(ILAC)**.

Our experts participate in collection of acceptance test standards for rotodynamic pump and specification of class I, II, III pumps as national standards.





### **SERVICES**

AFTER SALE PUMPIRAN offers suitable after sale services. Meeting all the request and needs of our customers is the core mission of the company.

**PUMPIRAN** beliefs high quality service is the base for customer satisfaction.

Experienced and educated staffs are ready to offer quality services and depending on the high technical knowledge could present initiative solutions for solving problems.

Engineers and technicians in spread after sale service network are beside of customers to answer questions and evaluating problems to find proper and comprehensive solutions.

Maintenance program has a very important role in increasing durability and efficiency of equipment.

PUMPIRAN provides high quality spare parts and guarantees long term operation of all it's products.

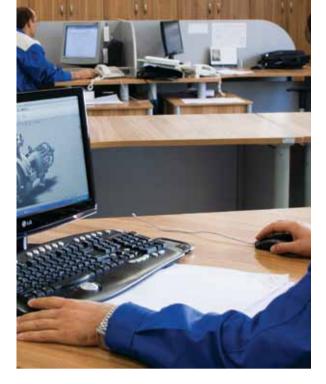
Educational seminars for governmental organizations, industries, refineries and universities about principles of selection, installation and operation of pump are main part of after sale service activities.





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### ENGINEERING SERVICES

**PUMPIRAN** Engineering Department is responsible for design and production according to customer specification. They assist in selection of variety of catalogs, brochures and provided technical information for customer needs. They help the end users and pump station operators about frequently asked questions such as electro pump align, correct installation level of suction (inlet pipe), effect of temperas viscosity and speciation of pumping media.

Applying different materials including gray cast iron nodular cast iron brass, cast steel and stainless steel provides ability of widely using our products for handling sewage, chemicals, hydrocarbon.

They provide expert advice regarding liquid analysis, PH, corrosion, sediments, introduce size and type of pumps and offer best solution.

The Engineering Department provides all technical documents, parts analysis for pattern making and look for suitable new subjects to apply international standards for production process.

On site educational seminars for companies such as water, waste water organization, maintenance refineries and universities are held by our experts for proper selection, installation, operation and maintenance of the equipment.

The Engineering Department also works closely with consulting organization on making the right choices when it comes to structure and specification of products. Renewing existing equipment in pump station and water supply systems and pumping circuits in various processes is part of their consulting area.





### API pumps materials in PUMPIRAN

**PUMPIRAN** with 4 decade diligently activities in pump industry, has high valuable experience in casting according to API standard for process pumps.

• **Group I** (Casings: Cast Iron , Impeller: Cast Iron or Bronze)

**Application:** Drinking water , Condensate water , Cooling tower water , Hot and process water under 120 °C

- **S1 Group** (Casings: Carbon Steel , Impeller:Cast Iron) **Application:** Crude oil , Gas oils , Ammoniac , Propane , Butane , Liquid gas from -198 $^{\circ}$ C to +230 $^{\circ}$ C , Sulfuric acid above 85% viscosity (T < 38  $^{\circ}$ C )
- **S6 Group** (Casings: Carbon Steel , Impeller: Stainless Steel with 12% chrome)

**Application:** Hot and process water , Boiler feed pump , Condensate oil and Hydrocarbons above +230°C

• **S8 Group** (Casings: Carbon Steel , Impeller: Austenitic Stainless Steel)

**Application:** Distilled water, Mono Ethanol Amine, De Ethanol Amine and Three Ethanol Amine (MEA,DEA,TEA)

• **C6 Group** (Casings and Impeller: Stainless Steel with 12% chrome)

**Application:** Hot and process water , Boiler feed pump , Oil product with high temperature

• **A8 Group** (Casings and Impeller: Austenitic Stainless Steel (316))

**Application:** Food industry, Condensate gas under zero temperature, Sulfuric acid under 85% viscosity, Calcium Carbonate with high temperature

• **D Group** (Casings and Impeller: Duplex and Super Duplex Steel)

**Application:** Brine water , Sea water , Sour water , Waste water with  $H_3S$ 

<sup>1)</sup>Pump parts material will select and recommend to customer respect to liquid physical properties and chemical analysis.

<sup>2)</sup>All material combination are changeable and available on request.





	WATER DISTRIBUTION SYSTEMS	AIR CONDITION SYSTEMS	INDUSTRIAL PROCESSES	RESIDENTIAL & OFFICE	AGRICULTURAL & IRRIGATION	MINING	FIRE FIGHTING	WASTE WATER SYSTEM
CENTRIFUGAL PUMPS								
HIGH DELIVERY CENTRIFUGAL PUMPS								
ETABLOC ELECTROPUMPS								
SELF-PRIMING PUMPS								
CIRCULATOR ELECTROPUMPS								
VERTICAL OPEN WELL PUMPS								
HIGH PRESSURE CENTRIFUGAL PUMPS								
HIGH PRESSURE MC200& CV 200 PUMPS								
SUBMERSIBLE PUMPS								
SINGLE PHASE SUBMERSIBLE ELECTROPUMPS								
API 610 BB1								
VERTICAL DOUBLE SUCTION ELECTROPUMPS								
HOT OIL ELECTROPUMPS								
CHEMICAL PROCESS ELECTROPUMPS								
API 610 PUMPS(OH2)								
API 610 VS4 / VS5								
API 610 BB5								
API 610 VS1								
API 610 BB2								
API 610 BB3								
MARINE PUMPS		_						
HEAVY DUTY SLUDGE PUMPS	_				_			
DSP - FIRE FIGHTING PUMPS		_						
ETA ALT - FIRE FIGHTING PUMPS								
DIESEL PUMPS								
API 610 BB4								
API 610 VS6								
SEWAGE ELECTROPUMPS								
SUBMERSIBLE AXIAL FLOW ELECTRO PUMPS								



For ground water, rain water, surface water (drinking water), water treatment facilities, agricultural lands and gardens irrigation, water disalination.



For central heating water, cooling circuits in airconditioning systems and cooling towers, boiler feed water, condensate, industrial pools.

Air condition system



For handling aggressive organic and inorganic liquids in the chemical, petrochemical industries, power plant, processing industries, lubricants, food stuffs and cellulose industries.



For hot water and cooling water recirculation, domestic water supply system, irrigation system, booster pumps .

Residential and office



For surface water recovery, rivers, deep / semi-deep wells, traditional irrigation system pressurized irrigation for drip irrigation, garden irrigation, agricultural land drainage.



Mining

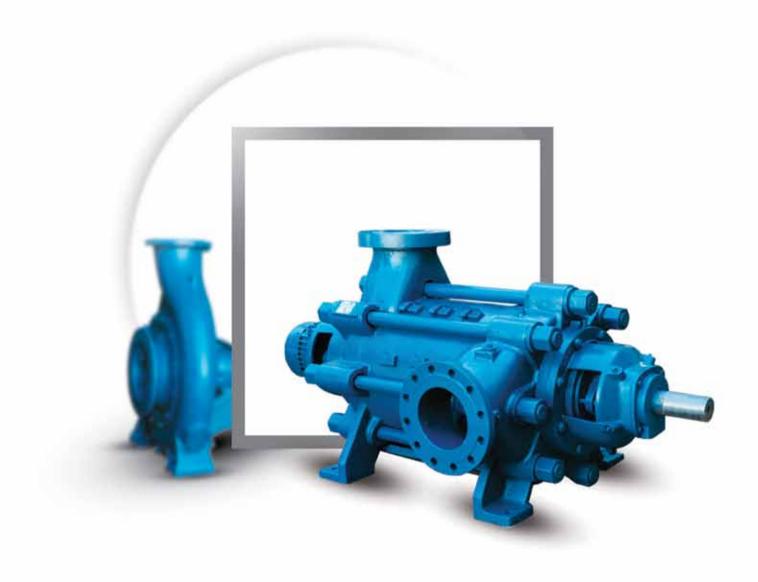
For pumping abrasive media, acidic media, pumping in steel, paper industries, drainage in mines.

Fire fighting

Fire fighting packages for factories and industrial/ residential complexes, off shore, oil tankers, refineries, petrochemical industries, airports, airplane shelters.

For waste water grids, ground water drainage, waste water disalination, drainage of under ground passages, surface water or rain water pumping, waste and sewage disposal.

**Waste water systems** 







#### **CENTRIFUGAL PUMPS**

#### **CONSTRUCTION:**

Centrifugal pump with volute casing, horizontal installation, single stage, overhung impeller, single and center end suction, separate coupling. Main dimensions and nominal performance in accordance with DIN 24255. Impeller is dynamically balanced. The shaft is sealed either by a soft packing or by a mechanical seal. It is protected with a renewable chrome nickel steel sleeve in the region of the shaft seal.

Radial and axial forces on shaft are supported by two grease lubricated deep groove ball bearings on backside of impeller. An oil lubricated version is available on request. The pumps are built so that the complete pump rotor, including the bearing bracket can be dismantled as a unit towards the drive end, casing remains on piping system.

#### **APPLICATION:**

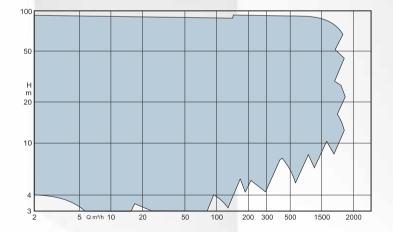
For irrigation, municipal and industrial water supply, also cooling and heating circulation system fields.

#### **PUMP SPECIFICATIONS:**

Output size: 32 to 300 mm Capacity: 5 to 1650 m $^3$ /h Head: 5 to 90 m

Operating temperature with:

- Soft packing box from -10°C to 110°C - Mechanical seal from -10°C to 140°C Test pressure: 16 bar







#### **CONSTRUCTION:**

Centrifugal pump with volute casing, horizontal installation, single stage, overhung impeller, single and center end suction, separately coupled.

Impeller is dynamically balanced. The shaft is sealed by a soft packing .It is protected by a renewable chrome nickel steel sleeve in the region of the shaft seal.

Radial and axial forces on shaft are supported by two deep groove ball bearings on backside of impeller. Ball bearings are lubricated by oil and grease lubricated is available on request.

#### **APPLICATION:**

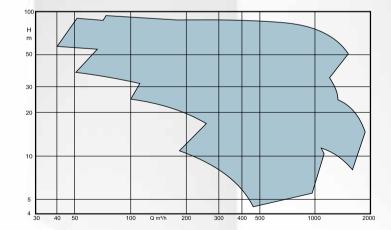
For irrigation, municipal and industrial water supply, also cooling and heating circulation system fields.

#### **PUMP SPECIFICATIONS:**

Output size: 100 to 300 mm Capacity: 40 to  $1800 \text{ m}^3/\text{h}$  Head: 5 to 90 m

Operating temperature with:

- Soft packing box from -10°C to 110°C
- Mechanical seal from -10°C to 140°C
Test pressure: 12 bar





#### **ETABLOC ELECTROPUMPS**

#### **CONSTRUCTION:**

Volute casing pumps, single-stage, with rating to EN 733. The shaft is fitted with a replaceable shaft sleeve in the shaft seal area. Volute casing and impeller supplied with replaceable wear rings.

Pump and motor flanged together to form a closecoupled unit, with standardized motor. Pump shaft and motor shaft are rigidly connected.

Three-phase squirrel cage motor drives at 1450 rpm and 2900 rpm.

#### **APPLICATION:**

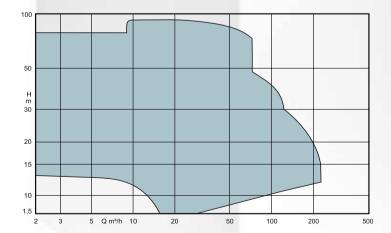
For irrigation and industrial water supply, drainage, condensate pumps, cooling water and hot water, oil transmission.

#### **PUMP SPECIFICATIONS:**

Output size: 32 to 150 mm
Capacity: Up to 230 m³/h
Head: Up to 92m

Operating temperature with:

- Soft packing box from -10 °C to 110 °C - Mechanical seal from -10 °C to 140 °C Test pressure: 10 bar





#### SELF PRIMING PUMPS

#### **CONSTRUCTION:**

Self priming pump is a centrifugal pump of rugged design for easy maintenance applications. With installation above ground, the pump unit is accessible at all times. For suction lift no external priming facilities are required and highly contaminated liquids can be pumped.

It features heavy duty construction, superior priming capabilities and low maintenance costs. It also features a back pull out design that allows servicing without disturbing the piping or the electric motor.

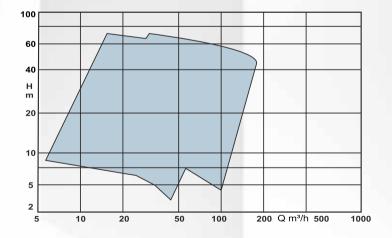
It is simple and trouble-free as a conventional centrifugal pump, but with self priming abilities on suction lifts.

#### **APPLICATION:**

It is suitable for liquids than contains raw sewage, debris, sludge or plant waste and is used by contractors, farmers, builders, plumbers, municipalities and all industry for rough applications.

#### **PUMP SPECIFICATIONS:**

Output size: Up to 100 mm Capacity: Up to 140 m $^3$ /h Head: Up to 60m Operating temperature:  $^{-10}$  ° C to 100 ° C Test pressure: 10 bar









#### **CIRCULATOR ELECTROPUMPS**

#### **CONSTRUCTION:**

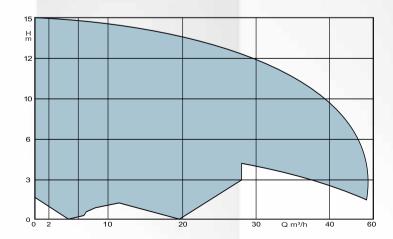
Centrifugal in line Pump with volute casing horizontal installation single stage. Impeller is dynamically balanced. The shaft is sealed by mechanical seal and made of steel. It is protected with a copper sleeve in the region of the shaft seal for easily lubrication used from phosphorus - bronze bearings.

#### **APPLICATION:**

For circulation water in "Heating & Cooling " and domestic hot water fields.

#### **PUMP SPECIFICATIONS:**

output size: Up to 100 mm Capacity: Up to  $60 \text{ m}^3\text{/h}$  Head: Up to 15 m Operating temprature: Up to  $110 \text{ }^\circ\text{C}$  Test pressure: 2 bar







#### VERTICAL OPEN WELL PUMPS

#### CONSTRUCTION:

Wet installation in stationary and transportable design. Submersible, single or multi stage, radial split casing. The individual casing parts are sealed by O-ring. In contrast with typical drainage electro pumps the motor is bottom part of assembly. This construction has advantage where ambient temperature is high.

Three-phase electrical motor is used.

Fitted at pump and motor end the bearing are grease-lubricated ball bearings. Electropump have two mechanical seals independent of the direction of rotation on the pump side.

#### **APPLICATION:**

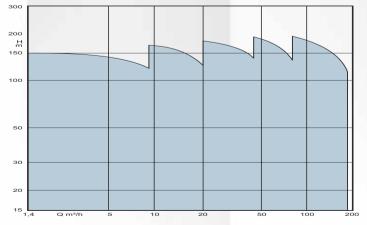
For sump drainage, open well, surface water 300 collection sumps for flood water or water leakage in mine and drilling.

#### **PUMP SPECIFICATIONS:**

Output size: 32 to 80 mm Capacity: Up to 180 m<sup>3</sup>/h Head: Up to 180 m

Operating temperature with:

-10°C to 110°C - Soft packing box from - Mechanical seal from -10°C to 140°C 30 bar Test pressure:





### HIGH PRESSURE CENTRIFUGAL PUMPS

#### **CONSTRUCTION:**

Horizontal high pressure centrifugal pump with impellers between bearings, separately coupled, multistage, radial (vertical) split cases. The individual casing parts are sealed by O-ring or flat gasket and are clamped together by external tie bolt.

The pump feet are cast integrally with the suction and discharge casings and are arranged beneath the pump.

Radial and axial forces on shaft are supported by two grease lubricated deep groove ball bearings on two sides of impellers.

#### **APPLICATION:**

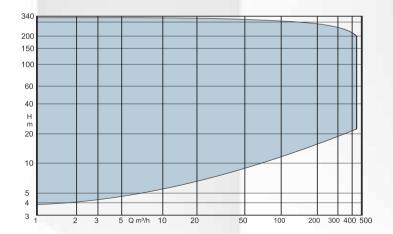
For municipal and industrial water supply in water works, pressure boosting installation, irrigation sprinkler plants, as boiler feed pumps, condensate pumps, cooling water and hot water circulation pumps and fire pumps.

#### **PUMP SPECIFICATIONS:**

Output size: 32 to 150 mm Capacity: 2 to 440 m $^3$ /h Head: Up to 300 m

Operating temperature with:

- Soft packing box from -10°C to 110°C - Mechanical seal from -10°C to 140°C Test pressure: 40 bar





### HIGH PRESSURE MC200 & CV200 PUMPS

#### **CONSTRUCTION:**

Horizontal high pressure centrifugal pump with impellers between bearings, separately coupled multistage radial split cases.

The individual casings parts are sealed by O-ring or flat gasket and are clamped together by external tie bolt. The pump feet are cast integrally with the suction and discharge casings, and are arranged beneath the pump. Radial and axial forces on shaft are supported by two oil lubricated ball or roller bearings on two sides of impellers. Axial thrust also compensated by hydraulic balancing piston.

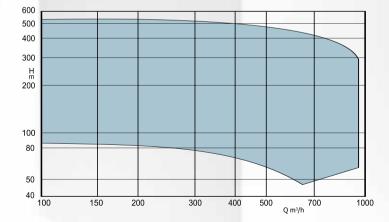
#### **APPLICATION:**

For municipal and industrial water supply in water works, pressure boosting, irrigation, sprinkler plants, boiler feed pumps, condensate pumps, cooling water and hot water circulation pumps and fire pumps.

#### **PUMP SPECIFICATIONS:**

Output size: Up to 200 mm
Capacity: Up to 930 m³/h
Head: Up to 510 m
Operating temperature with:

- Soft packing box from -10°C to 110°C
- Mechanical seal from -10°C to 140°C
Test pressure: 75 bar







## SUBMERSIBLE SERIES three phase submersible electropumps



### SUBMERSIBLE PUMPS

### **CONSTRUCTION:**

Single or multi-stage, single-flow centrifugal pumps in ring-section design. For vertical and depend on number of stages and to motor size also for angled and horizontal installation. Radial or mixed-flow hydraulics with reducible impellers. The stage casings of radial pumps are connected by means of tie bands, these of mixed flow pumps by means of studs. Suction casing between pump and motor with suction strainer as protection of pump against coarse impurities of the liquid handled.

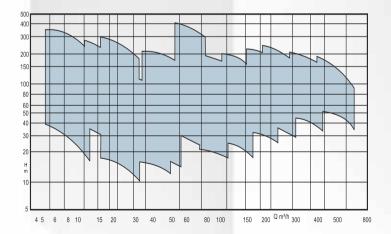
Pumps normally are produced with non-return valve.

### **APPLICATION:**

Delivery of clean or slightly contaminated water for general water supply duties, in irrigation and sprinkling systems, in pressure boosting plants, in emergency water supply, in ground-water lowering and maintaining plants. In addition, they are used in mining, in sprinkler installation, in fountains. Admissible contents of sand in the liquid handled: 50 g/m<sup>3</sup>.

### **PUMP SPECIFICATIONS:**

Output size:  $1\frac{1}{2}$  to 8 inch Capacity: Up to  $580 \text{ m}^3\text{/h}$  Head: Up to 432 m Temperature of liquid handled: Up to  $30^{\circ}\text{C}$  Electromotor power: 1.5 to 350 kW



# SUBMERSIBLE SERIES single phase submersible electropumps



### **CONSTRUCTION:**

Single or multistage, single-flow, centrifugal pumps in ring-section design. For vertical and depend on number of stages and to motor size also for angled and horizontal installation. Suction casing between pump and motor with suction strainer as protection of pump against coarse impurities of the liquid handled.

Pumps normally are produced with non-return valve.

Oil filled motors, rewindable, NEMA standard couplings, designed acc. to IEC 34.

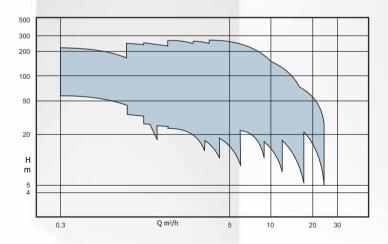
### **APPLICATION:**

Delivery of clean or slightly contaminated water for general water supply duties, in irrigation and sprinkling systems, in pressure boosting plants, house hold application for village houses and villas, where three-phase electric supply is not accessible.

### **PUMP SPECIFICATIONS:**

Output size: 1¼ to 2 inch
Capacity: Up to 24 m³/h
Head: Up to 263 m
Test pressure: 39 bar
Electromotor power: 0.37 to 2.2 kW











### **CONSTRUCTION:**

Horizontal single stage axially split volute casing pump with double entry radial impeller. Horizontal drive shaft stub is optional at left hand or right hand side. Closed impeller is balanced statically and dynamically according to ISO 1940.

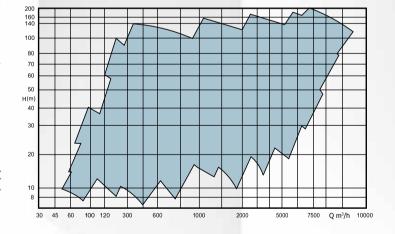
Pump bearings are equipped with coated deep groove ball bearing with no need for lubrication.

### **APPLICATION:**

For water works, irrigation and drainage pumping stations, power plants for industrial water supply, in shipbuilding and offshore production, fire fighting and marine applications as well as general applications in refineries.

### **PUMP SPECIFIACTIONS:**

Output size: Up to 700 mm Capacity: Up to 9000 m $^3$ /h Head: Up to 190 m Operating temperature: Up to140 $^{\circ}$ C Test pressure: 30 bar







Vertical single stage axially split volute casing pump with double entry radial impeller.

Compact design makes vertical electropumps suitable choice for pumping stations.

Vertical double suction electropump (DSP-V) is an exclusively designed in PUMPIRAN company based on customer's demand.

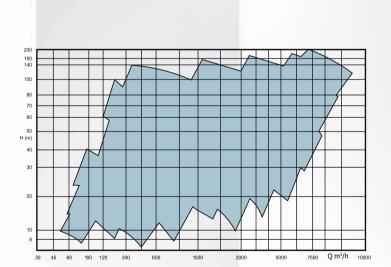
The pump is equipped with hydro-dynamic bearing with cooling system and minimum maintenance is required.

### **APPLICATION:**

For water works, irrigation and drainage pumping stations, power plants, industrial water supply systems, fire fighting systems, marine applications as well as general applications in refineries.

### **PUMP SPECIFIACTIONS:**

Output size: Up to 700 mm Capacity: Up to 9000  $m^3/h$  Head: Up to 190m Operating temperature: Up to 140°C Test pressure: 30 bar









### **HOT OIL ELECTROPUMPS**

### **CONSTRUCTION:**

Especial designed centrifugal pump suitable for pumping hot oil up to 300°C. Horizontal, radial split volute casing, single stage, end suction, air - cooled with closed impeller and mechanical seal for heat transfer circulating systems.

Main dimensions of pump are according to EN 733/ DIN 24255.

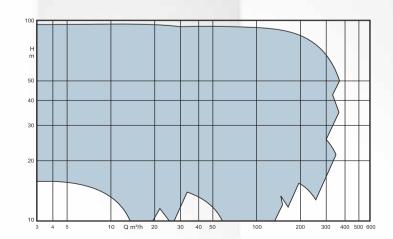
Two deep groove ball bearings (DIN 625) make the pump suitable for pumping oil.

### **APPLICATION:**

For chemical, pharmacological, food stuffs, plastic, weaving, leather, paper, paint, electrical and steel industries.

### **PUMP SPECIFICATIONS:**

Output size: 32 to 100 mm Capacity: Up to  $350 \text{ m}^3\text{/h}$  Head: Up to 95 m Operating temperature: Up to  $300 \text{ }^{\circ}\text{C}$  Test Pressure: 15 bar





Horizontal, radial split volute casing pump in back pull-out design according to ISO 5199, with radial impeller, single-entry, single stage.

Shaft, Shaft protecting sleeve, mechanical seal / packing depend exclusively on the bearing bracket size; therefore these parts are identical for several pump sizes.

### **APPLICATION:**

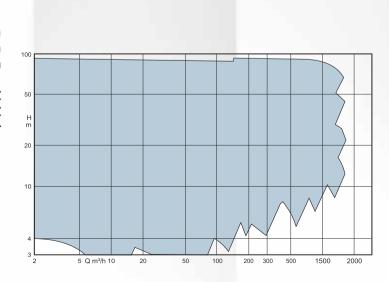
For handling aggressive organic and inorganic liquids in the chemical and petrochemical industries, refinery off-sites, the paper and cellulose industries, the food stuffs industry, the sugar industry, sea water desalination plants, power stations.

### **PUMP SPECIFICATIONS:**

Output size: 32 to 100 mm
Capacity: Up to 1650 m³/h
Head: Up to 95m

Operating temperature with:

- Soft packing box from -10 °C to 110 °C - Mechanical seal from -10 °C to 260 °C Test pressure: 46 bar





### 

### **API 610 OH2**

### **CONSTRUCTION:**

Varity of special design centrifugal pump with suitable for pumping hot media up to 260°C (500°F) temperature. Horizontal, radial split volute casing pumps in back pull - out design, to API 610 and ISO 13709, with radial impeller, single flow, single stage, centerline pump feet.

Pump model with inducer and shaft seal are available on request.

### **APPLICATION:**

For pumping hydrocarbons, oil, chemicals and aggressive media in steel industries, petrochemicals and refineries.

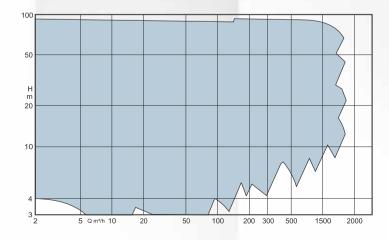
### **PUMP SPECIFICATIONS:**

Output size: 40 to 300m Capacity: 5 to 1650  $\,\mathrm{m}^3/\mathrm{h}$  Up to 95m

Operating temperature with:

- Soft packing box from -10 °C to 110 °C - Mechanical seal from -10 °C to 260 °C Test pressure: 60 bar









### **API 610 VS4, VS5**

### **CONSTRUCTION:**

Centrifugal pumps are vertical suspended, over hung, single stage, soft packed stuffing box or mechanical seal, installation wet or dry and process pump. This model could be according the requirements of API 610/ ISO 9905/ ISO 9908.

Volute casing radial split, with submerged suction and top discharge, for vertical installation in closed tanks under atmospheric pressure (wet installation).

### **APPLICATION:**

For handling neutral digressing and phosphating solutions, washing water with degreasing agents, dipping paints and with API guidelines proven performer in chemical and hydrocarbon processing, delivering reliable performance in a wide range of applications.

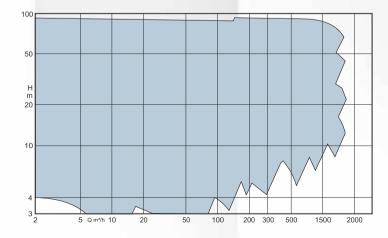
### **PUMP SPECIFICATIONS:**

Output size: Up to 300 mm Capacity: Up to 1650 m³/h Head: Up to 95 m

Operating temperature with:

- Soft packing box from -10 °C to 110 °C - Mechanical seal from -10 °C to 140 °C Test pressure: 60 bar









### **API 610 BB5**

### **CONSTRUCTION:**

Horizontal, multi-stage barrel casing

- Maximum safety due to double casing design
- Full cartridge pullout design for rapid changeover
- Inspection and overhaul without disconnection of main pipe work
- Single or double entry first stage impeller available
- Axial thrust compensated by balance piston
- Design features to eliminate the need for prewarming on most application

### **APPLICATION:**

- Boiler feed pumps in central station and large industrial fossil-fueled power plants.
- High pressure and/or high temperature pumps in oil refineries or chemical plants.
- High pressure oil field water injection and offshore hydrocarbon condensate reinjection pumps.
- •Pipeline pumps for unusually high pressures, very high vapor pressure

### **PUMP SPECIFICATIONS:**

Output size: up to 260 mm
Capacity: up to 4000 m³/h
Head: Acc. to request m

Operation temperature with:

- Mechanical seal from up to 220° C Test pressure: 1.5 X MAWP



VERTICAL SUSPENDED SERIES Centrifugal purpos



### **API 610 VS1**

### **CONSTRUCTION:**

The vertical pump is ideal for agricultural pumping, municipal and plant water supply, drainage, flood control, pipeline pumping, power plant service, petrochemical applications, high pressure pumping and other industrial uses of all types.

Vertical turbine pumps are typically used wherever a liquid needs to be pumped upward from ground water tables (deep well pumps), manmade underground storage (caverns) or open bodies of liquid such as oceans, rivers, lakes, cooling ponds, tanks and sumps.

### **APPLICATION:**

- Water well, or bore hole installations, using either a surface-mounted driver or a close-coupled submersible motor.
- Loading pumps in underground caverns used for storing petroleum products. The pump is mounted in a caisson.
- Dewatering pumps in mines. The pump is mounted in a mine shaft

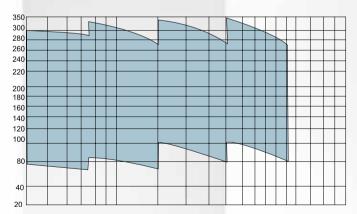
### **PUMP SPECIFICATIONS:**

Output size: up to 510 mm
Capacity: up to 900 m³/h
Head: up to 300 m

Operation temperature with:

- Mechanical seal from up to 120° C Test pressure: up to 54 bar







### **API 610 BB2**

### **Design specifications:**

- Single or two stage between bearings
- Horizontal, radial split casing
- Single or double volute
- Mechanical seal (single, double, tandem)

### **Applications:**

Pumping of:

- Hydrocarbons
- Chemicals, neutral and aggressive liquids
- Sea water

### **Advantages:**

Small axial thrust
Small shaft deflection, especially in the seal chamber
low spare part need
Short time for dismantling
Casing with piping remains during dismantling

### **Exploitation:**

Pipeline Chemical Plants Refineries Plants for gas production Offshore

Maximum Head	Up to 200m per stage
Shaft seal type	Gland packing, Mechanical seal
Maximum drive rating	3300 kW
Type of installation	Stationary
Flow rate	20 to 10000 m <sup>3</sup> /h
Maximum speed of rotation	3500 1/min
Temperature	-20 to +300 °C



### **API 610 BB3**

### **Design specifications:**

- · Horizontal, axially split multi stage pump
- Double volute, with overflow return channels
- Stiff shaft supported by internal, product lubricated sliding bearings
- Opposed side suction and discharge nozzles in bottom half of the casing
- Dismantling without breaking pipe lines
- Mechanical seal (single, double, tandem)

### **Applications:**

Pumping of:

- Crude oil
- Petrochemical products
- Sea water
- · Feed water

### **Advantages:**

- Control of all clearances and setting due to inner case design
- Only one external high pressure seal
- High compensation of hydraulic axial thrust
- · Small axial thrust bearing
- Lower leakage loss through piston, resulting in higher efficiency
- Dynamically balanced rotating assembly
- Higher critical speed due to the supporting effect of centre stage piston
- Impeller shaft and wear parts remove as complete unit
- Easy to inspect

### **Exploitation:**

- Pipeline pumps
- Injection pumps

Maximum Head	Up to 2000m
Shaft seal type	Gland packing, Mechanical seal
Maximum discharge pressure	150 bar
Maximum drive rating	3300 kW
Flow rate	80 to 3200 m³/h
Maximum speed of rotation	3500 1/min
Temperature	-20 to +200 °C

### MARINE SERIES



### **MARINE PUMPS**

### **CONSTRUCTION:**

Shipboard machinery must be specially designed and adapted to fit in the limited space available on board.

Marine pump is centrifugal, vertical and horizontal, single stage to use in ships. The high performance pump with easy and simple maintenance and service is designed for corrosive environment.

The shaft is sealed by soft packing or mechanical seal.

### **APPLICATION:**

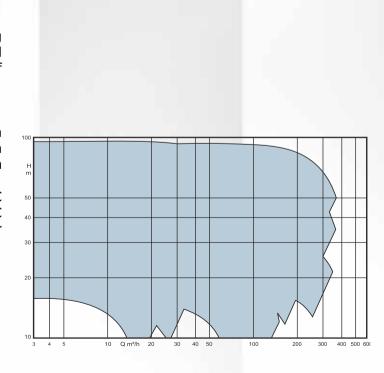
For condensate water in ships, circulation cooling water of diesel engine, cooling water of main and auxiliary ship engine and balancing water supply of ship weight.

### **PUMP SPECIFICATIONS:**

Output size: 32 to 100 mm Capacity: 5 to 350 m $^3$ /h Head: 5 to 90m

Operating temperature with:

- Soft packing box from -10 °C to 110°C - Mechanical seal from -10 °C to 140°C Test pressure: 16 bar







Centrifugal pump with volute casing, horizontal installation, single stage, overhung impeller, single and center end suction, separately coupled. Impeller is dynamically balanced. The shaft is sealed by a soft packing. Discharge nozzle is on the upper left, if viewed from shaft end. An external source used for cooling and flashing of stuffing box also preventing of penetration of abrasive liquid. One of the most important features of these pumps is the use of changeable wear parts.

### **APPLICATION:**

Pumping of difficult materials, some of which are as drilling mud, clay water, heavy chemicals, grout, wax, also paper, sugar, detergent industries and general applications like irrigation, domestic water supply and light chemicals.

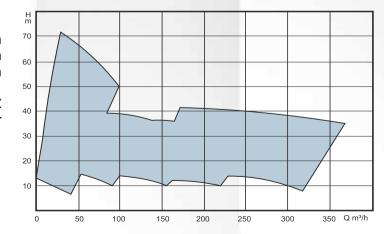
### **PUMP SPECIFICATIONS:**

Output size: 50 to 150 mm Capacity: Up to 350  $\,\mathrm{m}^3/\mathrm{h}$  Head: Up to 70m

Operating temperature with:

-Soft packing box from -10 °C to 110 °C

Test pressure: 10 bar









### **DSP-FIRE FIGHTING PUMPS**

These pumps normally are designed to provide a pressurized supply of water for firefighting systems. As a fire-extinguishing agent, water acts by cooling the source of combustion, and can be applied by various methods to obtain the greatest degree of heat removal.

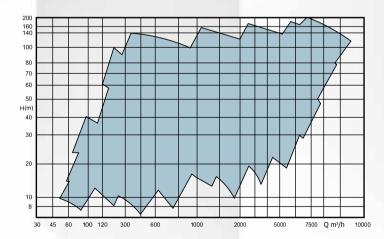
In the event of a fire, either the opening of a fire hydrant or the automatic initiation of a fixed sprinklers installation usually initiates the demand for water. The sudden fall in pressure in the fire system rising main causes the main pumps to automatically start and provide the required flow of water to the points of application.

Most systems have a small, electrically driven auxiliary pump, which automatically maintains the pressurization of the fire fighting system and compensates for small leakages in the system. The auxiliary pump operates automatically under pressure switch control.

The main pumps are designed to provide the supply of pressurized water to the fire fighting system. These can be initiated either manually or automatically as required.

### **APPLICATION:**

Sprinklers, water curtains, hydration columns, fire hydrants, all require a water supply permanently available from a pressurized network.





### **ETA ALT- FIRE FIGHTING PUMPS**

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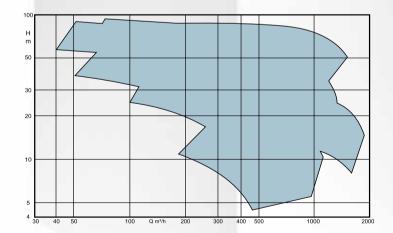
The sudden fall in pressure in the fire system rising main causes the main pumps to automatically start and provide the required flow of water to the points of application.

Most systems have a small, electrically driven auxiliary pump, which automatically maintains the pressurization of the fire fighting system and compensates for small leakages in the system. The auxiliary pump operates automatically under pressure switch control.

The main pumps are designed to provide the supply of pressurized water to the fire fighting systems. These can be initiated either manually or automatically as required.



Sprinklers, water curtains, hydration columns, fire hydrants, all require a water supply permanently available from a pressurized network.





### **DIESEL PUMPS**

### **CONSTRUCTION:**

Diesel driven water pump with easy transport configuration it can be used for variety of applications in areas have no access to electric network.

These pumps are movable and portable mounted on two wheels trailer sets or mounted on four wheels trailer sets that driven by diesel engine.

The engine is fitted with a spark arrestor and automatic over-speed shutdown.

### **APPLICATION:**

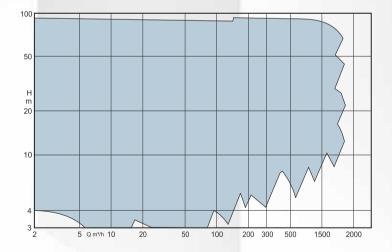
For handling water from dams, rivers, water distribution channels, drainage flood, local authorities, building sites, farmers, plant hirers.

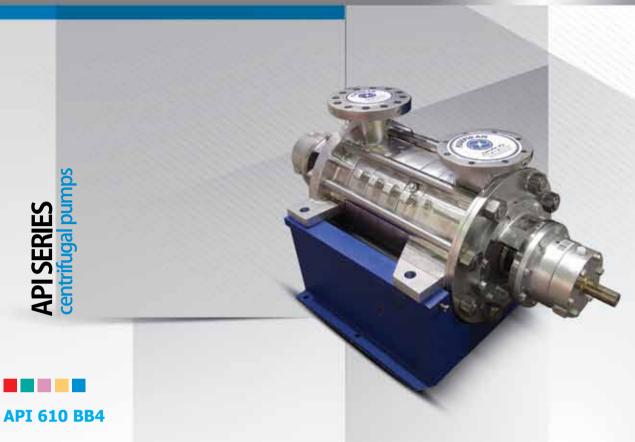
### **PUPM SPECIFICATIONS:**

Outpout size: 100 to 300 mm Capacity: 40 to 1800 m $^3$ /h Head: 5 to 90 m

Operating temperature with:

- Soft packing box from -10 °C to 110°C - Mechanical seal from -10 °C to 140 °C Test pressure: 16 bar





Horizontal high pressure centrifugal pumps with impellers between bearings, separately coupled, multistage, radial (vertical) split cases. The individual casings parts are sealed by O-ring or flat gasket and are clamped together by external tie bolt. The pump feet are cast integrally with the suction and discharge casings, and are arranged beneath the pump.

Radial and axial forces on shaft are supported by two grease lubricated deep groove ball bearings on two sides of impellers.

### **APPLICATION:**

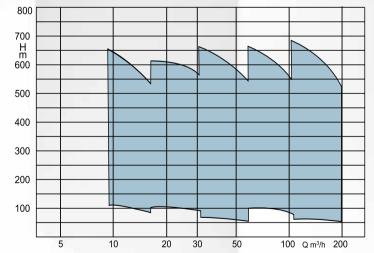
For transport the clear water and the neutral liquid, municipal and industrial water supply in water works, pressure boosting installation, irrigation sprinkler plants, as boiler feed pumps, condensate pumps, cooling water and hot water circulation pumps and fire pumps.

### **PUMP SPECIFICATIONS:**

Output size: 50 to 150 mm Capacity: 10 to 200 m $^3$ /h Head: 50 to 700 m

Operation temperature with:

- Soft packing box from 0 °C to 80 °C Test pressure: 100 bar



VERTICAL SUSPENDED SERIES



### API 610 VS6

### **CONSTRUCTION:**

The pump is a vertical, with barrel, multistage diffuser type:

 Single Suction First Stage Impeller designed for applications and typically used in 50 Hz combined cycle plants

The impellers are closed type with replaceable wear surface. The bowl is provided with replaceable, stationary wear rings and designed to incorporate product lubricated journal bearings.

### **APPLICATION:**

- Condensate and heater drain pumps for power plant service.
- Process pumps for products with limited NPSH available.
- Small boiler feed pumps for industrial applications.
- Cryogenic process and transfer pumps.
- Loading pumps on tank farms.
- Booster pumps for pipelines handling either water or petroleum products.

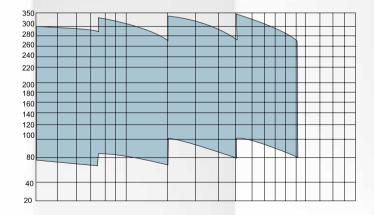
### **PUMP SPECIFICATIONS:**

Output size: up to 510 mm
Capacity: up to 900 m³/h
Head: up to 300 m

Operation temperature with:

- Mechanical seal from: up to 120° C Test pressure: up to 54 bar









Wet installation in stationary and transportable design. Submersible, single stage, single entry, non-self-priming close-coupled units.

They are available with free-flow impellers and single vane impellers.

Three-phase electrical motor is used.

Fitted at pump and motor end bearing are grease-lubricated ball bearings. Electropump have two mechanical seals independent of the direction of rotation on the pump side.

### **APPLICATION:**

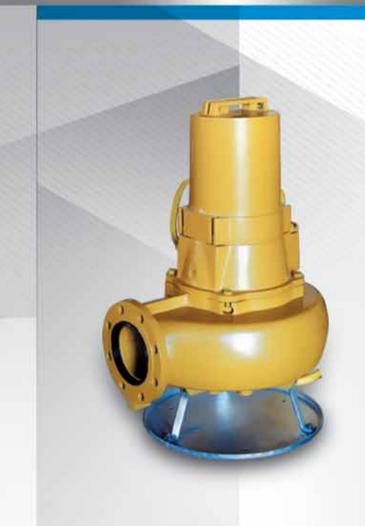
For pumping all types of sewage and effluent in water treatment and industry, especially untreated sewage with long fibrous and solid substances, liquids containing air and gas as well as raw, active digested sludge.

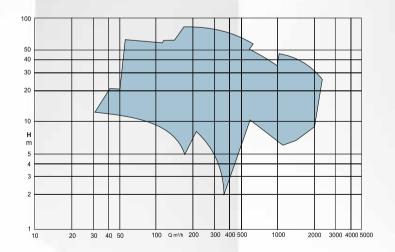
### **PUMP SPECIFICATIONS:**

Output size: 50 to 350 mm Capacity: Up to 2000 m $^3$ /h Head: Up to 70m

Operating temperature with:

- Mechanical seal: Up to 50°C Test pressure: 12 bar





### SUBMERSIBLE SERIES Axial Flow Electro pumps



### **CONSTRUCTION:**

Wet-well, single-stage submersible motor pumps in discharge tube, with single-entry axial propeller .

### **APPLICATION:**

- Irrigation and drainage pumping stations
- Storm water pumping stations
- Raw and clean water transport in waterworks and sewage treatment systems
- Cooling water transport in power stations and industrial plants
- Industrial water supply

### **PUMP SPECIFICATIONS:**

Output size: 350 to 1200 mm
Capacity: 20 to 2500 Lit/s
Head: 2 to 16m
Operating temperature: Up to 50°C
Sealing: Mechanical seal
Test pressure: 4 bar



