



Indar Submersible Motors & Pumps

**SOLUTIONS FOR
THE ENTIRE WATER CYCLE**

Ingeteam

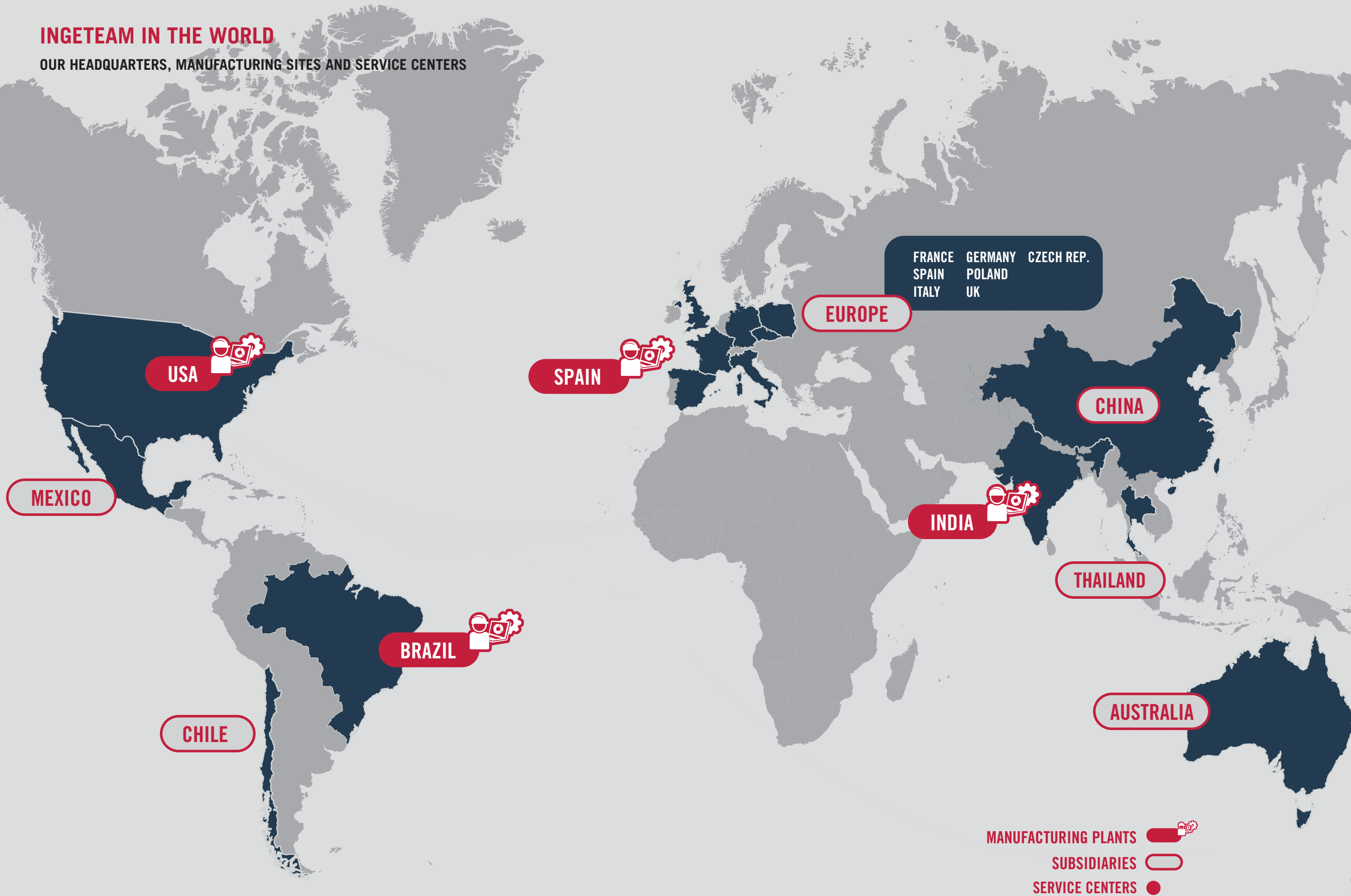


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INGETEAM IN THE WORLD

OUR HEADQUARTERS, MANUFACTURING SITES AND SERVICE CENTERS



1 | *Indar* PUMPING SOLUTIONS

INDAR PUMPING SOLUTIONS

**Committed to the efficient management
and use of water resources.**

- Indar submersible pumps systems.
- Indar electric motors.
- Frequency converters for power control.
- Wire to Water pumping solutions.
- Automation & eBoP of pumping stations.
- O&M services for water treatment plants.

COMPETITIVE ADVANTAGES

- Versatility and flexibility.
- Tailor made solutions.
- Pump and motor, both manufactured at Ingeteam.
- Own technology and designs.
- Short lead times.
- Testing in real conditions.

TURNKEY PROJECTS FROM START TO FINISH

- Analysis
- Definition and development
- Design, manufacture and testing
- Transport, assembly and commissioning
- Preventive and predictive maintenance and monitoring services
- Rehabilitation and repowering
- Replacements

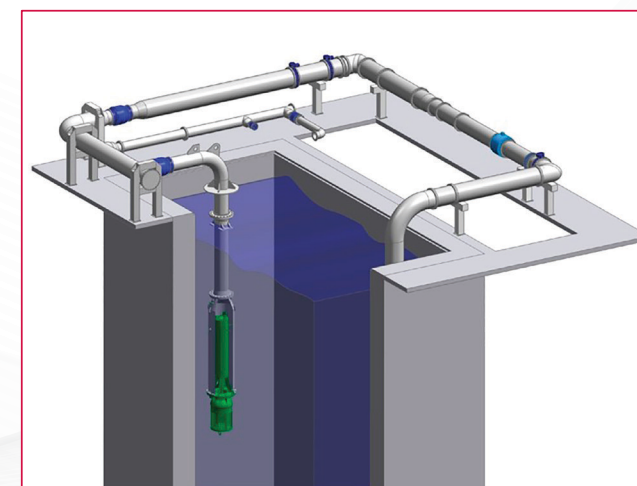
2 | WORLD CLASS TESTING FACILITIES



WORLD CLASS TESTING FACILITIES

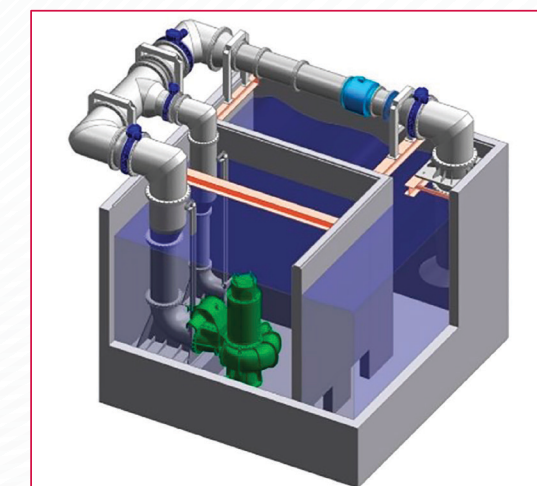
TESTING CAPABILITIES INCLUDE:

TEST BENCH - BEASAIN, SPAIN	
Features	Ranges
Flow	up to 92,500 US gpm
Head	up to 3,300 ft
Power	up to 5,400 HP (own gen set)
Voltage	up to 13.8 kV
Frequency	50 Hz, 60 Hz / Frequency Converter
Weight	88,200 lbs



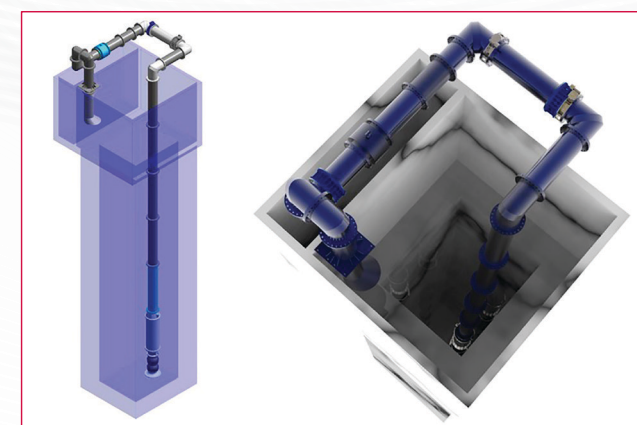
INDAR UGP / UGP - M

- Flow: up to 15,850 US gpm
- Head: up to 3,300 ft



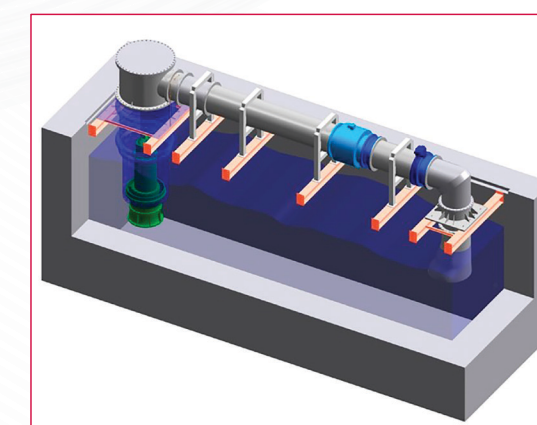
INDAR BF

- Flow: up to 59,500 US gpm
- Head: up to 330 ft



INDAR UGP / UGP - M

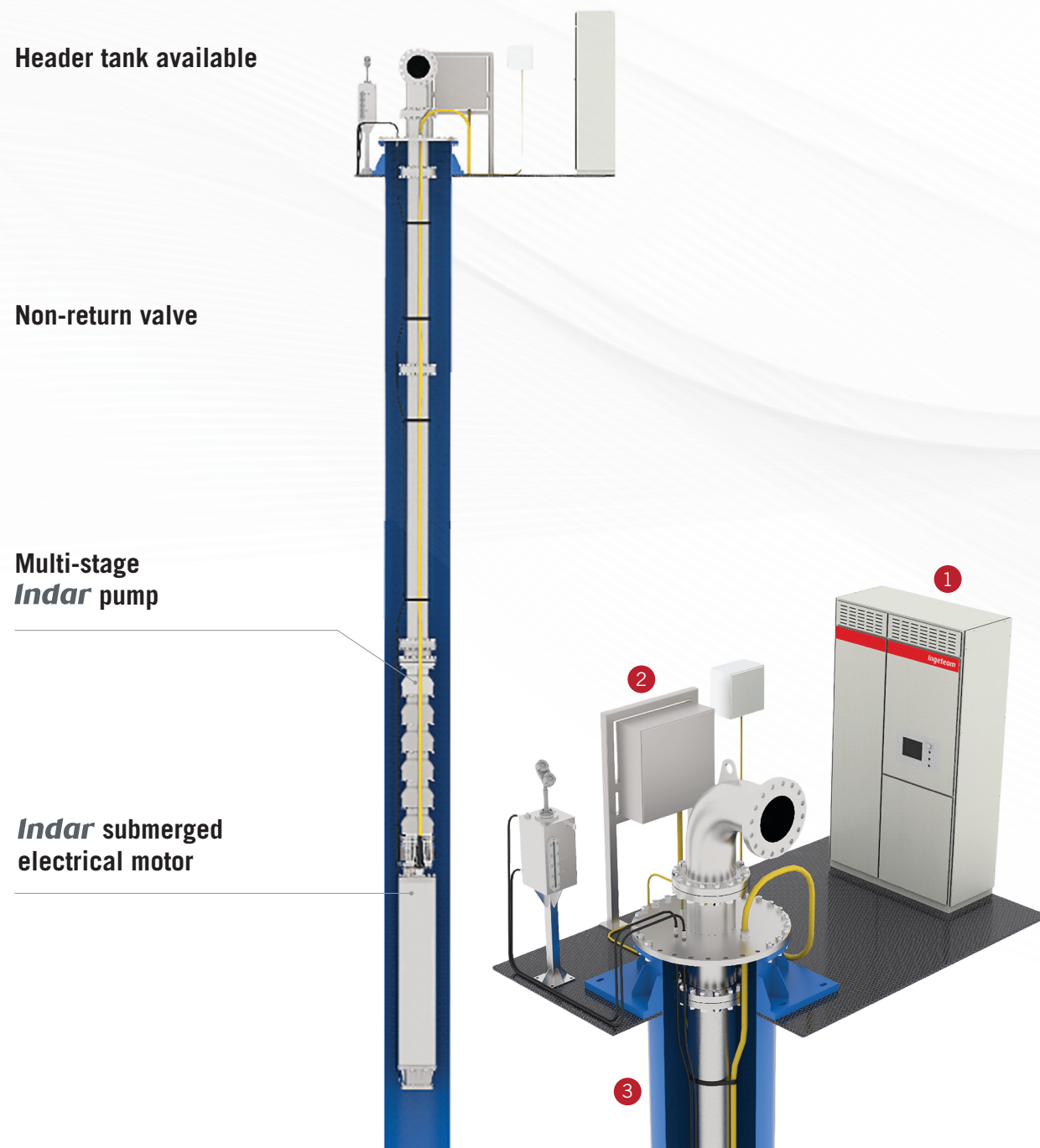
- Flow: up to 63,500 US gpm
- Head: up to 1,300 ft



INDAR H / HE

- Flow: up to 95,100 US gpm
- Head: up to 200 ft

3 | WIRE TO WATER



1 Equipment system

- **Indar** Submersible (eco-friendly) water filled motor and pump.
- Valves.
- Riser pipes.
- Wellhead with elbow, cable penetration, etc.
- Anodes.
- Anti fouling system.
- Transportation cradle.

2 Power control & monitoring

- Power control and automation.
- Header tank.
- Temperature monitoring.
- Vibration monitoring.

3 Service

- Field services.
- Repairs and overhauls.
- Rehabs and modernization.
- Spare parts management.
- Digital services.
- Ingeteam Water premium support.

INDAR UGP

Compact solution Indar UGP / ML motor pump.

Adapted to various configurations: Vertical, horizontal or inclined.

Hydraulic part

A customized hydraulic solution adequate to various operating scenarios.

Water-filled motor (free maintenance)

Maintenance-free and environmentally friendly.



Impeller

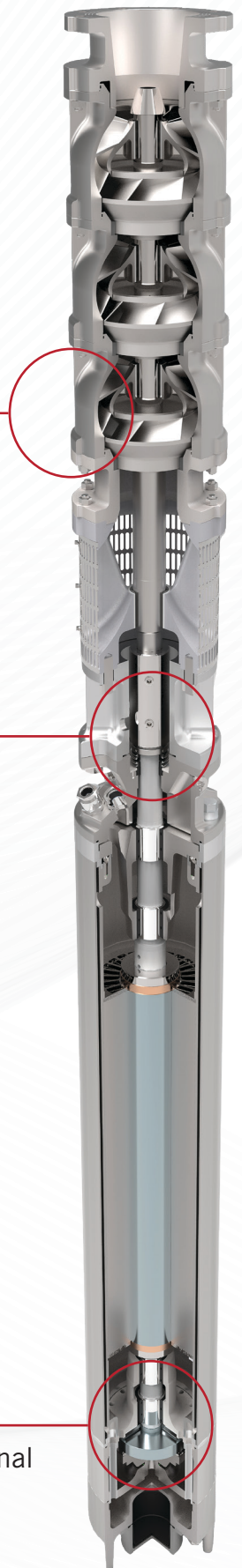
Customized to reduce operational costs.

Direct coupling

No mechanical losses.

Axial thrust bearing

Bi-directional bearing that makes the use of non-return valve optional (taking into account the results of surge analysis).



INDAR UGP-M

In installations where the water level is too low to ensure the required suction conditions, the UGP-M comes into play.

Higher water body utilization, lower NPSHR and lower submergence.

Enhanced cooling

The pumped fluid represents an additional cooling of the motor.

Cooling system

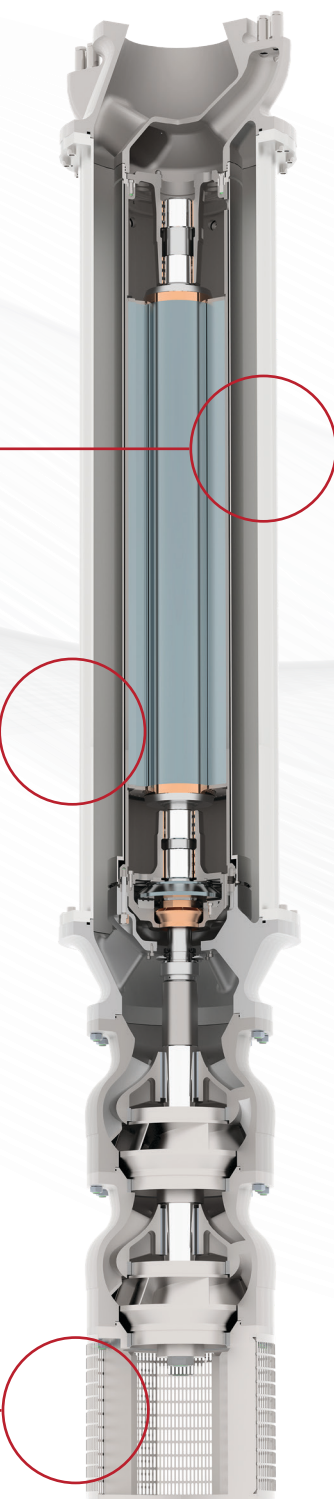
Ensures proper cooling by the flow of the discharged fluid.

NOTES

Intake bellmouth available (hydraulically optimized design to improve suction conditions).

Strainer (if required)

Adapted to the type of fluid to avoid particles inside the pump.



INDAR UGP & UGP-M

CHARACTERISTICS OF INDAR UGP & UGP-M

Technical features

- Starting from 8".
- Flows from 160 US gpm to 40,000 US gpm.
- Head from 70 ft to 3,300 ft.
- Power from 35 HP to 5,400 HP and Voltage up to 13.8 kV.
- Speed between 500 rpm to 3,600 rpm.
- **Materials:** Cast iron, stainless steel 316, duplex, super duplex.

Main advantages

- Rewindable stator.
- **Permanent magnet motors.**
- **Water-filled** motor.
- **Compact solution.** Direct coupling.
- Maintenance **free.**
- **Low-suction** UGP-M.
- Bi-directional **axial thrust bearing.**



INDAR HE

A mono block design pump with an axial impeller, a mixed-flow impeller or variable pitch propeller coupled to a submersible motor. An efficient cooling system allows the unit to operate continuously even under severe environmental conditions.

Air-filled motor

Water-filled and oil-filled motors also available depending on the application and client specifications.

Manufactured entirely in-house in our Beasain facilities in Spain.

Hydraulic part

Prevents clogging thanks to the hydraulic design of the impeller blades and high free ball passage.

As all Indar products, customisable to a wide range of materials.



Anchoring hook (easy removal)

Allowing easy installation and removal of the set.

Sensors

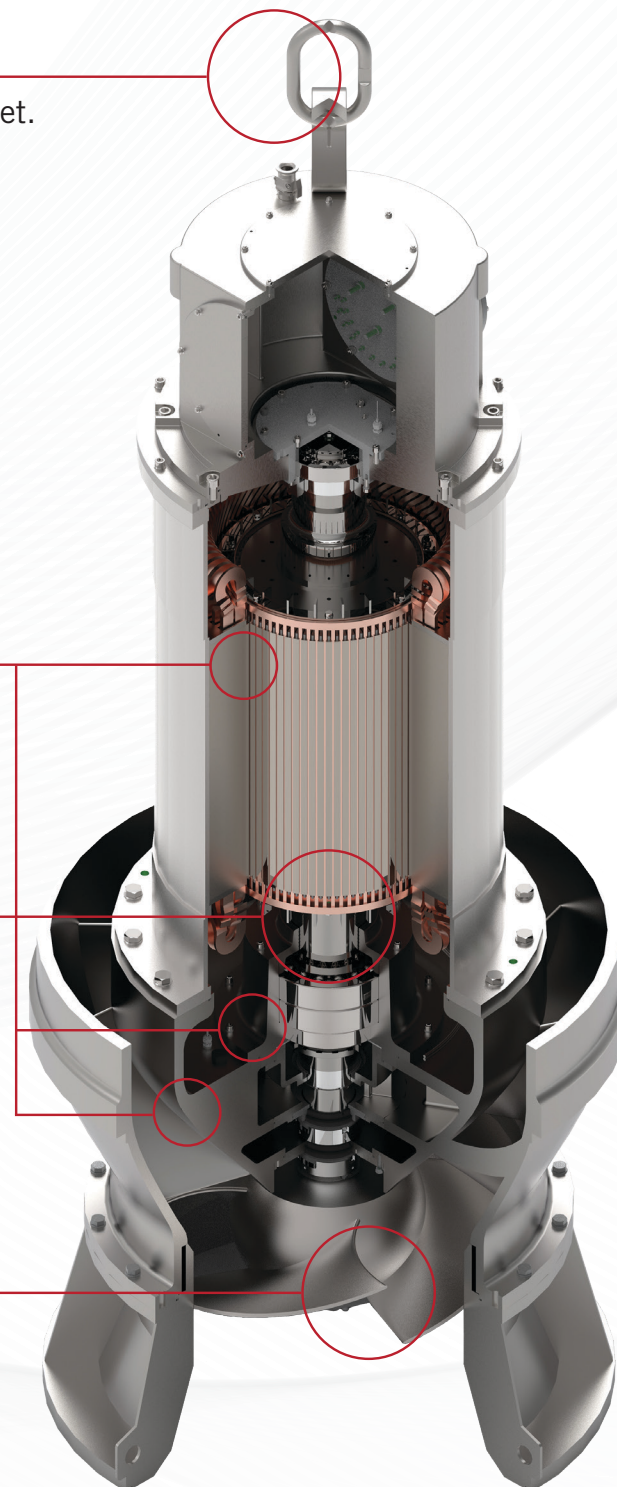
Oil-filled motor. Pt-100, vibration sensors, humidity sensors, etc.

Common shaft

To the rotor and the impeller, limiting efficiency losses.

Impeller

Allows reaching very high flows at lower manometric heads.



INDAR H

A variation to the HE pump, the H motor-pump set is installed within the discharge piping that also serves as a cooling system and allows to center and correctly position the pumping unit.

Protected cables

The cables are not in contact with the pumped water, which increases their lifetime.

Cooling system

Covers the motor and allows the circulation of the pumped water.



INDAR HE & H

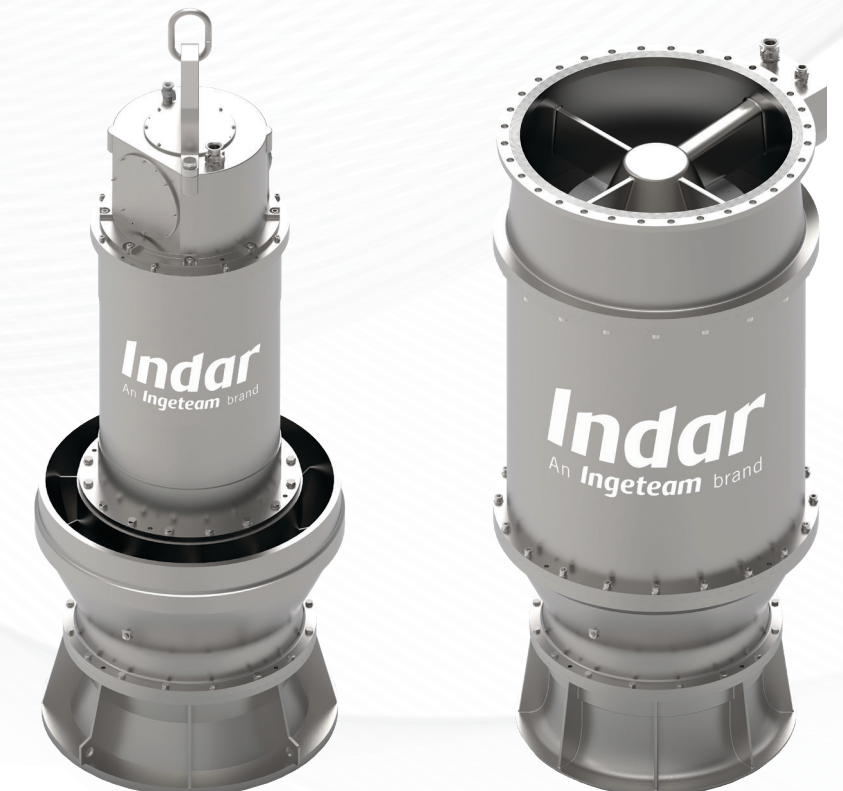
CHARACTERISTICS OF INDAR HE & H

Technical Features

- Flows from **9,500 US gpm** to **95,100 US gpm**.
- Head from **3 ft** to **100 ft**.
- Power from **70 HP** to **3,400 HP** and Voltage up to **13.8 kV**.
- Speed between **100 rpm** to **1,800 rpm**.
- **Materials:** Cast iron, stainless steel 316, duplex, super duplex.

Main Advantages

- Rewindable stator.
- **Permanent magnet motors.**
- Compact solution.
- H alternative available with **integrated cooling system** and **cable protection**.



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INDAR BF IP

Indar BF pump is a mono cellular design with a multi-channel radial impeller design and a submersible electrical Indar MF motor directly coupled to the pump.

It is a heavy-duty set especially designed for pumping water with solids, waste or rain, and for operating in harsh conditions with urban and industrial wastewater and/or raw water.

Air-filled motor

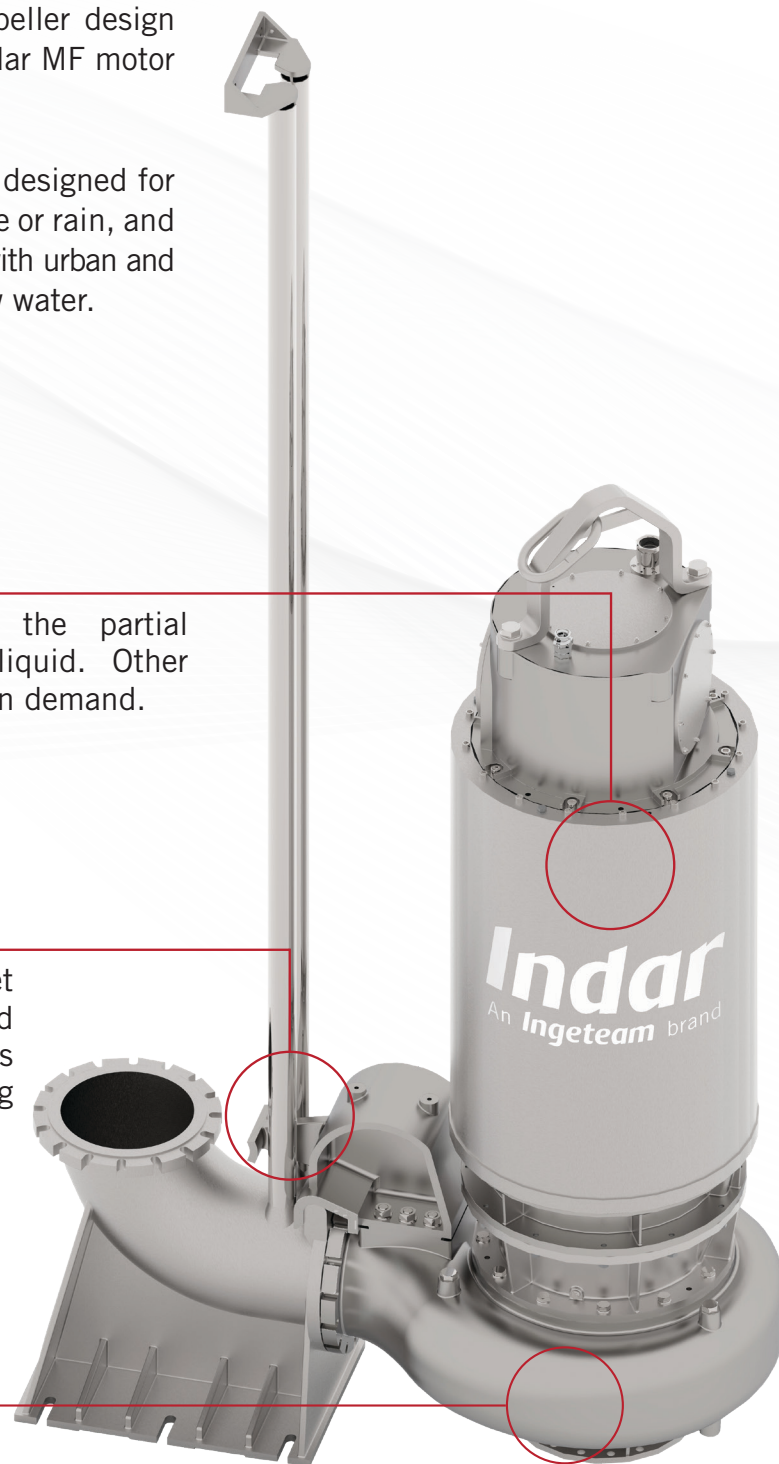
Forced cooling by allowing the partial circulation of the pumping liquid. Other cooling systems also available on demand.

Easy removal

The set is submerged in a wet well and for its installation and extraction the pump set includes the pump support, quick coupling and guide support.

Impeller

Allows great free ball passage.



Anchoring hook (easy removal)

Quick installation and hoisting of the pump done by a lifting chain or lifting device.

Sensors

Pt-100 and/or PTC, leakages, temperature, condensation and vibration. Sacrificial anodes.

Cooling system

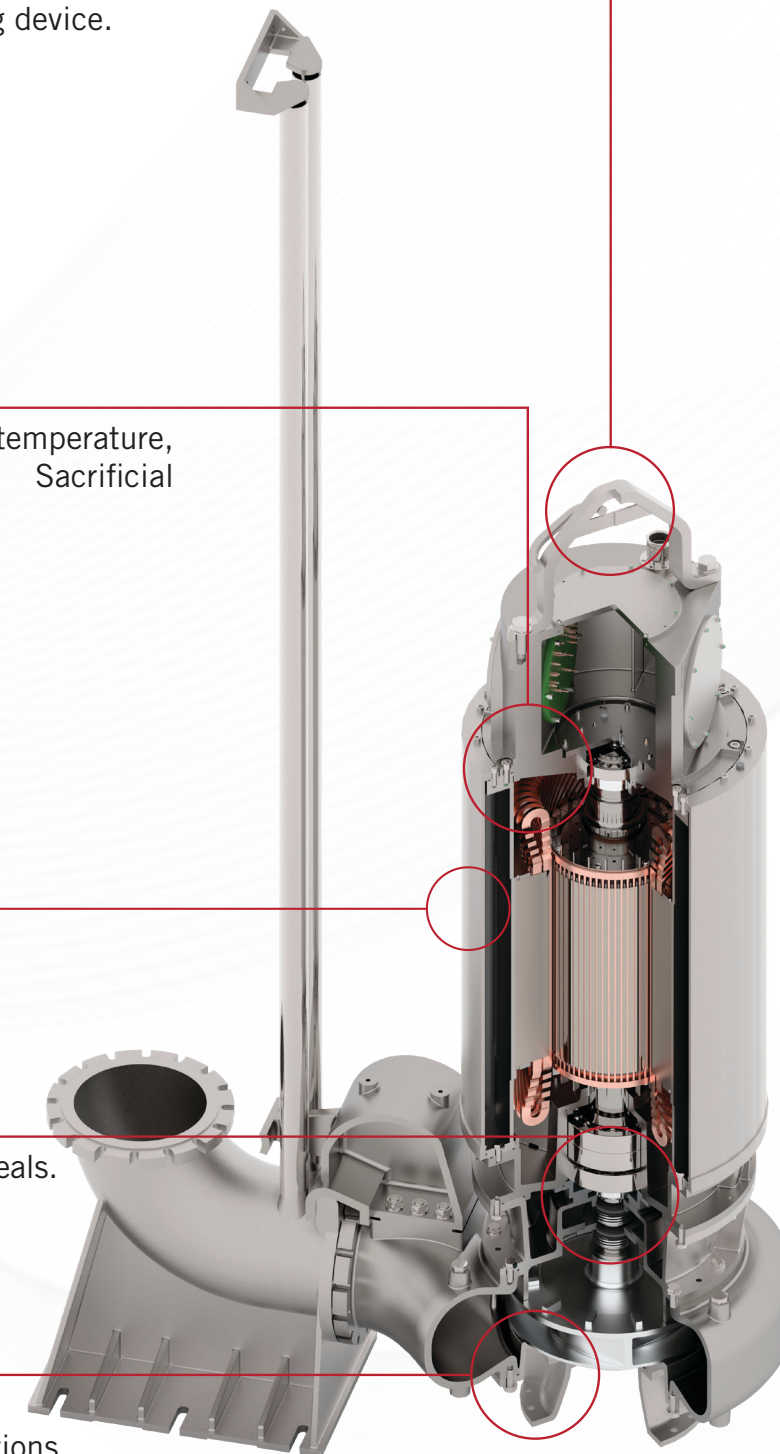
Open and/or closed system.

Sealing

Two bi-directional mechanical seals.

Suction bellmouth

Customizable to the client's need for optimum suction conditions.



INDAR BF IS

Air-filled motor

Submersible motor IP68, for wet or floodable conditions.

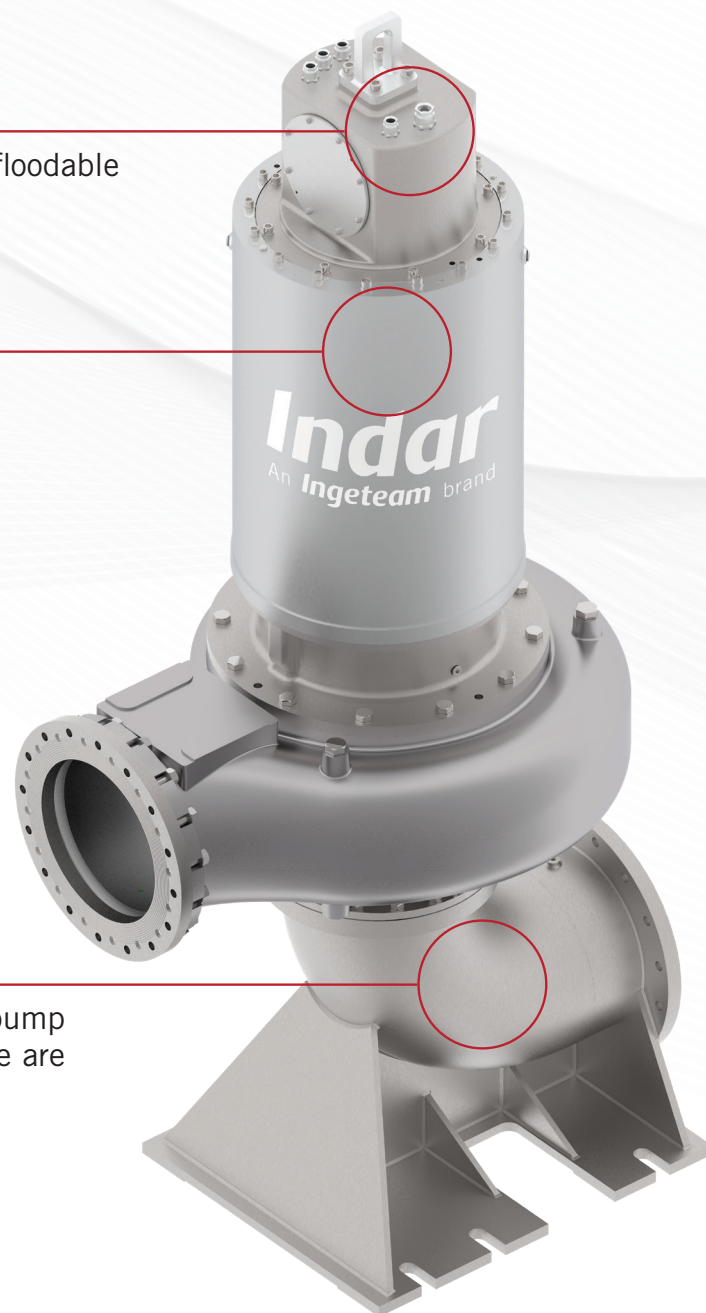
Cooling system

Cooling by the circulation of the pumping liquid and, if applicable, by the forced air ventilation inside the motor.

For certain motor ranges, cooling done by independent closed loop (water + glycol).

Hydraulic part

The set is installed in a dry well on a pump support and the suction and discharge are connected to the piping.



INDAR BF IP & BF IS

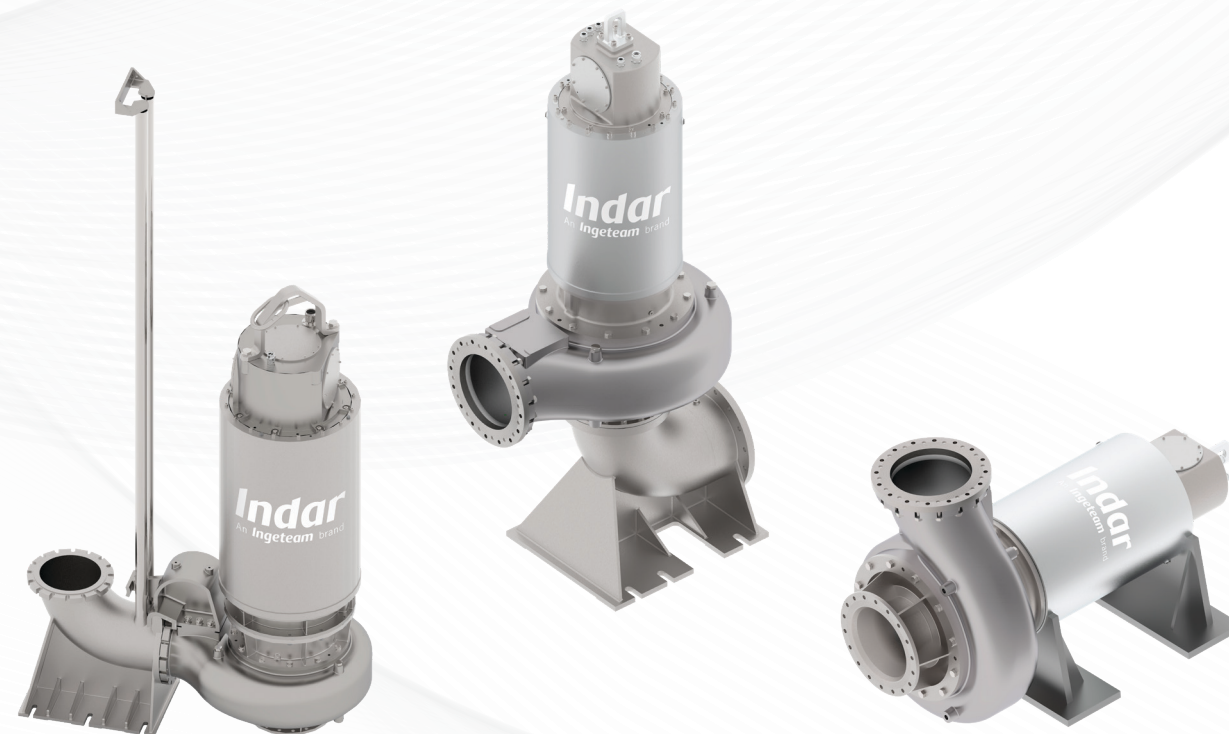
CHARACTERISTICS OF INDAR BF IP & BF IS

Technical Features

- Flows from **800 US gpm** to **60,000 US gpm**.
- Head from **20 ft** to **330 ft**.
- Power from **40 HP** to **4,000 HP** and Voltage up to **13.8 kV**.
- Speed between **300 rpm** and **1,800 rpm**.

Main Advantages

- Rewindable stator.
- **Permanent magnet motors.**
- Large solid passage.
- Compact solution.



Wet well

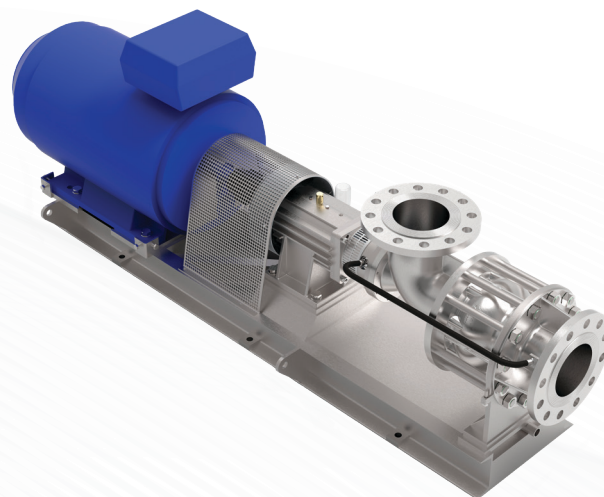
Dry well

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INDAR BR

Technical features

- Flows up to **92,500 US gpm**.
- Head up to **330 ft**.
- Power up to **500 HP** and Voltage up to **11 kV**.
- Indar BR pumps are booster pumps designed for reverse osmosis process. Available in standard and special stainless steel materials.



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INDAR ML

Technical features

- Size from **8" to 45"**.
- Power up to **5,400 HP** and Voltage up to **13.8 kV**.
- Speed from **500 rpm to 3,600 rpm**.
- Insulation **90°C**.
- **Materials:** Cast iron, 316 SS, 904-L, duplex, super duplex.
- Indar ML motors are asynchronous three-phase squirrel cage motors. Filled, cooled and lubricated only with water, they are rewindable and suitable for 50 Hz, 60 Hz, VFD.



INDAR PML

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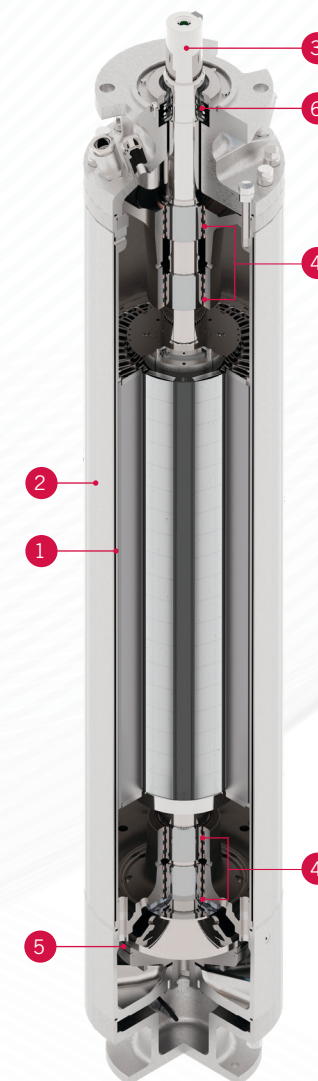
INDAR PML

Technical features

- Size from **10" to 45"**.
- Power up to **4,000 HP** and Voltage up to **13.8 kV**.
- Speed from **500 rpm to 3,600 rpm (with VFD)**.
- Insulation **90°C**.
- **Materials:** Cast Iron, 316 SS, 904-L, Duplex, Super Duplex.
- **Indar PML permanent magnet** version. Submersible synchronous motor, three-phase and water-filled. 50 Hz, 60 Hz, VFD.

Operational advantages:

- High efficiencies allow high operational savings. Over 2.5% of improvement in efficiency.
- Operational flexibility of the pumping system. Allows frequency variations for multiple duty points.
- Wider operation and range improving efficiency along the whole curve.
- Higher motor power in less space.
- Cable section reduction due to better motor efficiency. Better maneuvers for deep well and cost reduction.



1. Motor casing
2. Motor jacket
3. Rotor shaft end
4. Radial bearings
5. Axial thrust bearing
6. Mechanical seal

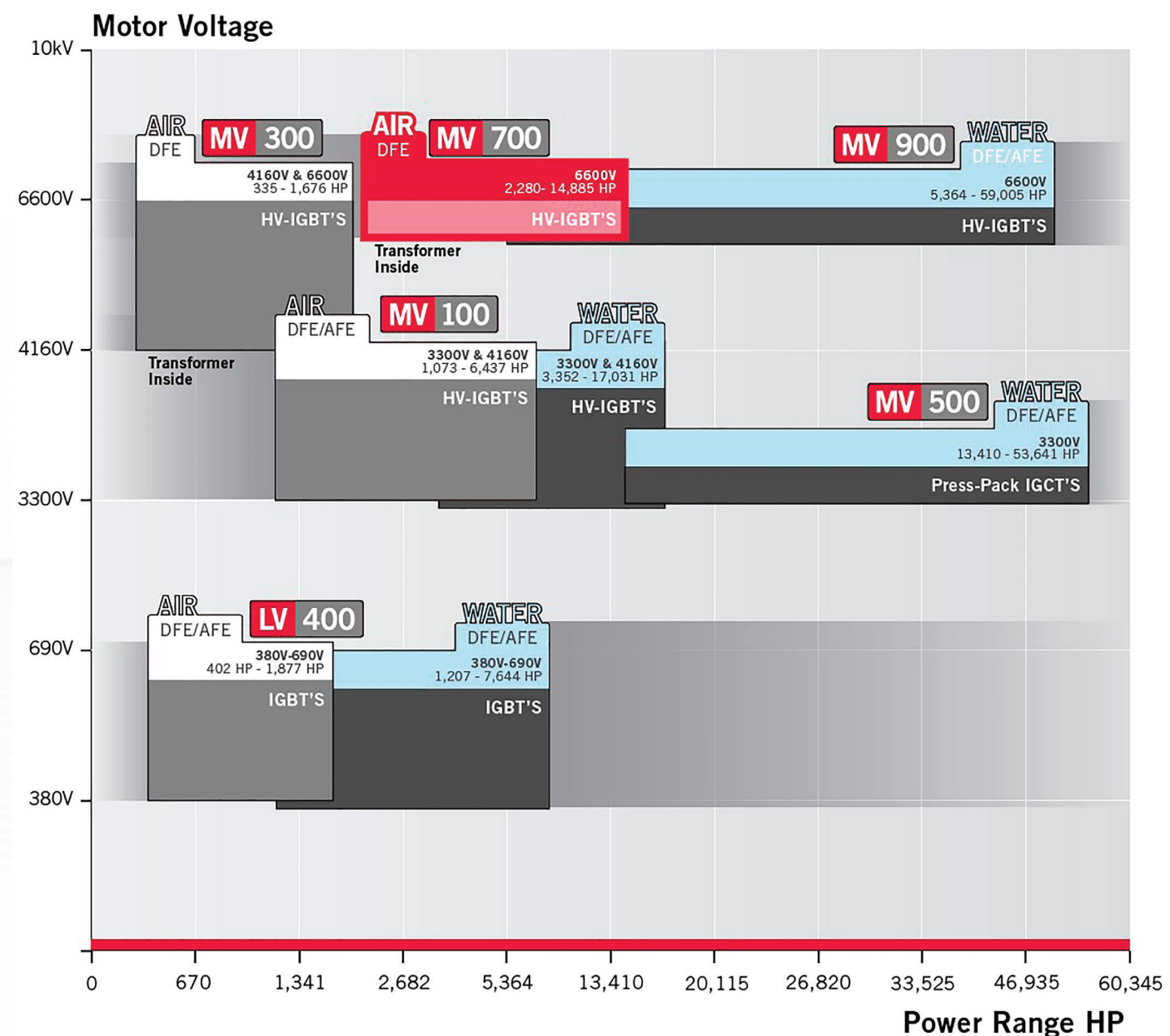
13 | POWER CONTROL: INGEDRIVE™ VFD

Ingeteam also provides starter cabinets MV switchgear for motor starting. Frequency converters LV and MV in order to reach wire to water concept.

Topologies and Configurations

INGEDRIVE™ can be applied to different sectors and custom made to specific requirements. It can control motors with one or several windings and cater to the needs of redundant, single - motor and multi - motor solutions. Parallel connection of several inverters to the same motor is feasible allowing higher converter output. It is also possible to connect several AFE rectifiers in parallel so that more power can be handled.

- Optimized
- Robust
- Reliable

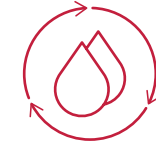


14 | APPLICATIONS



APPLICATIONS

Water Cycle



Water Supply



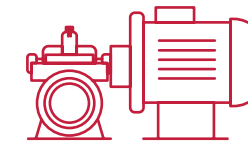
Wastewater Treatment



Desalination



Flood Control



Water Transmission System

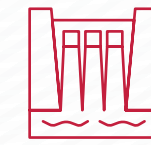
Energy



Oil & Gas



Offshore Wind



Pumped Storage

Industrial



Industrial



Shipyards



Mining



Carbon Capture

Agriculture / Aquaculture



Irrigation



Fish Farming

15 | INGETEAM WATER SERVICES

INGETEAM WATER SERVICES

INDARCARE

INDARCARE is a customized mobile and web application that covers all the stages and points of contact between Ingeteam and its customers. This service seeks customer satisfaction and the continuous improvement of products and services.

At Ingeteam, we create a bond through our supplied technology and build a loyal relationship offering the best service.

Partnering with us our customers are able to:

Through INDARCARE the clients are able to complete the Commissioning and Start-up of all their equipment, contact directly with Ingeteam upon any need or requirement of the installation, access our portfolio, and ask for technical and engineering assistance either through the phone using our Mobile App or through the Web version.

- Improve efficiency and reliability of the installation.
- Optimize costs and increase profit.
- Detect and repair failures promptly.

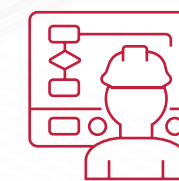
Our services



ELECTRICAL BALANCE OF PLANT (EBoP)



INGETEAM PREMIUM SUPPORT



FIELD SERVICES



REPAIRS & OVERHAULS



REHABS & RETROFIT



SPARE PARTS MANAGEMENT

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