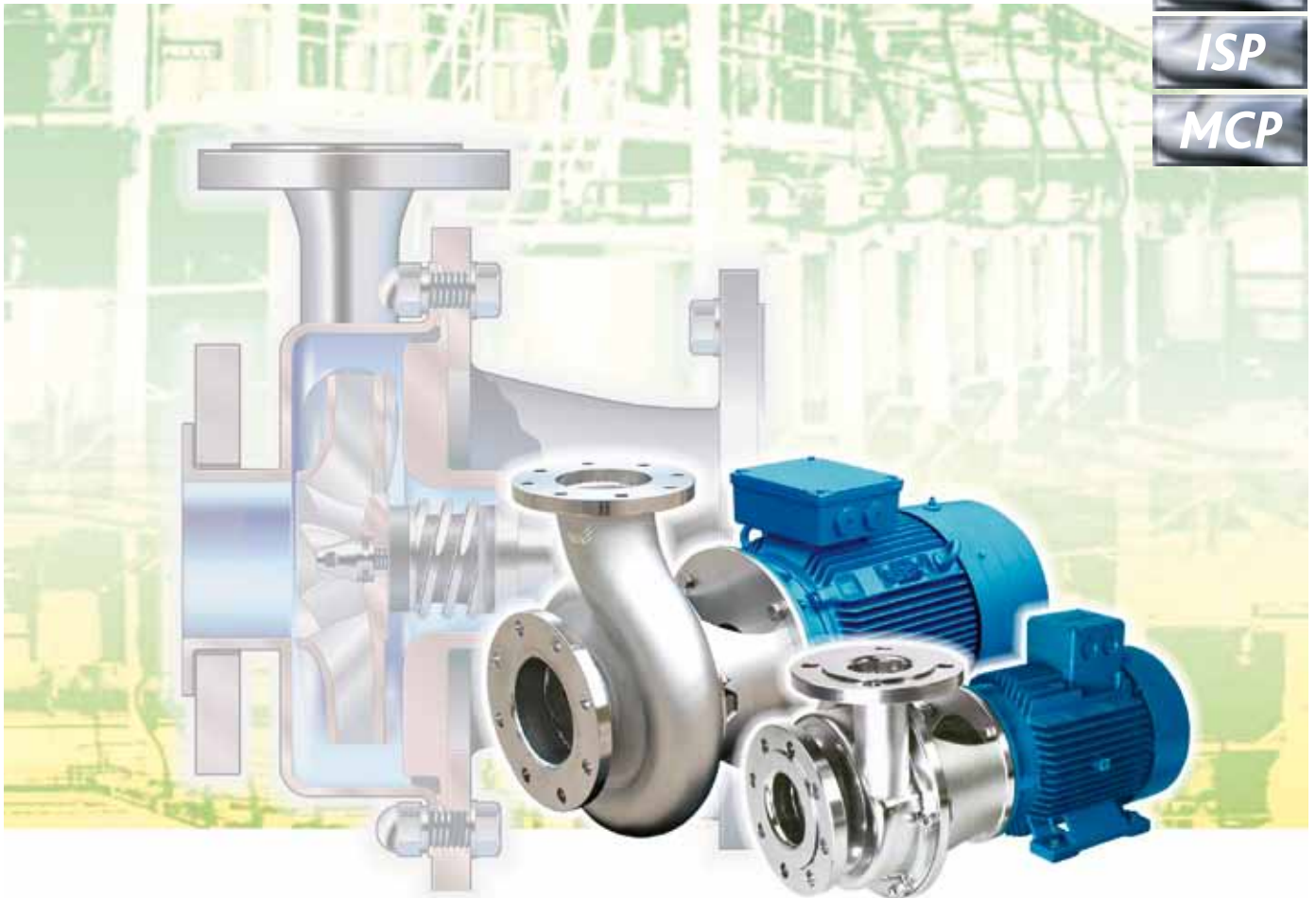


Stainless steel centrifugal pumps

FOR GENERAL AND PROCESSING INDUSTRIES

- ICP
- IRP
- IFF
- ISP
- MCP



For over 30 years the **ICP2** pump has proven itself as a very reliable process pump in the general processing industries. After the successful expansion with the **ICP3** pump, the quest for larger flows and heads has led to the development of the new **MCP3** pump. These pumps are extremely efficient and have reduced noise levels.

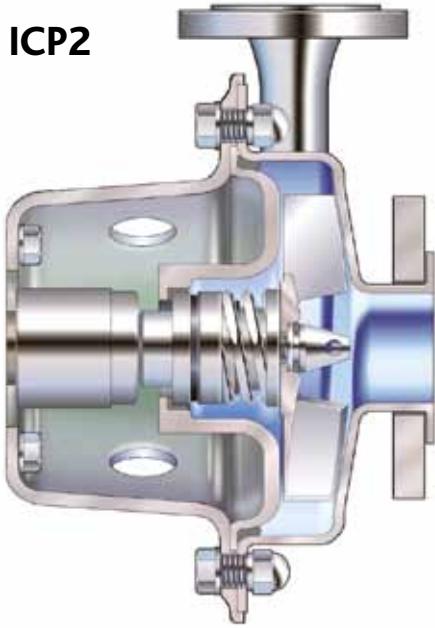
Electropolished stainless steel, standard motors and seals form the main characteristics of these pump series.

All these characteristics together with the solid construction and the large passages, make these pumps excellent to pump impure, aggressive and light chemical liquids.

The **IFF** (with vortex impellers), **ISP** self priming and **IRP** air handling pump series are derived from the **ICP** pump series.

Centrifugal pumps

ICP2



ICP2 process pump

- Made in stainless steel 1.4404/316L or duplex
- Pump casing and backplate in formed plate with thicknesses up to 20 mm
- Open impeller with very low NPSH value and large passage, excellent for liquids containing occasional small impurities. Cast according to the lost wax principle
- Surface finish: electropolished
- Mechanical seals according to EN 12756
- Motors according to IEC specification
- The standard connections for inlet and outlet are BSP (male) or EN 1092-1 flanges

The **ICP+** is a variant with food connections (DIN 11851, etc.) which are often used in the food industry (e.g. CIP processes) for non-hygienic applications. A motor shroud is often supplied as an option for this type of pump.

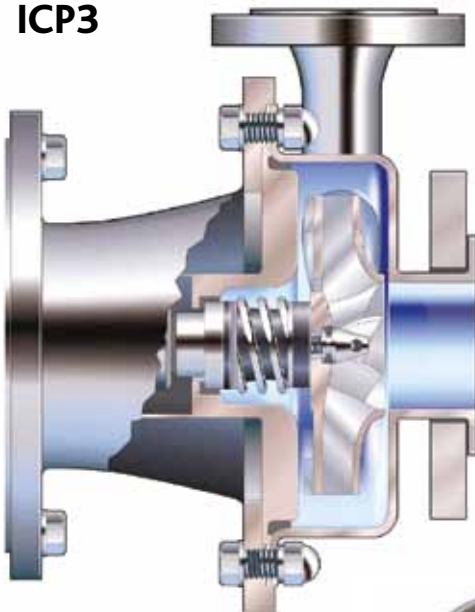


ICP2



ICP+

ICP3



ICP3 process pump

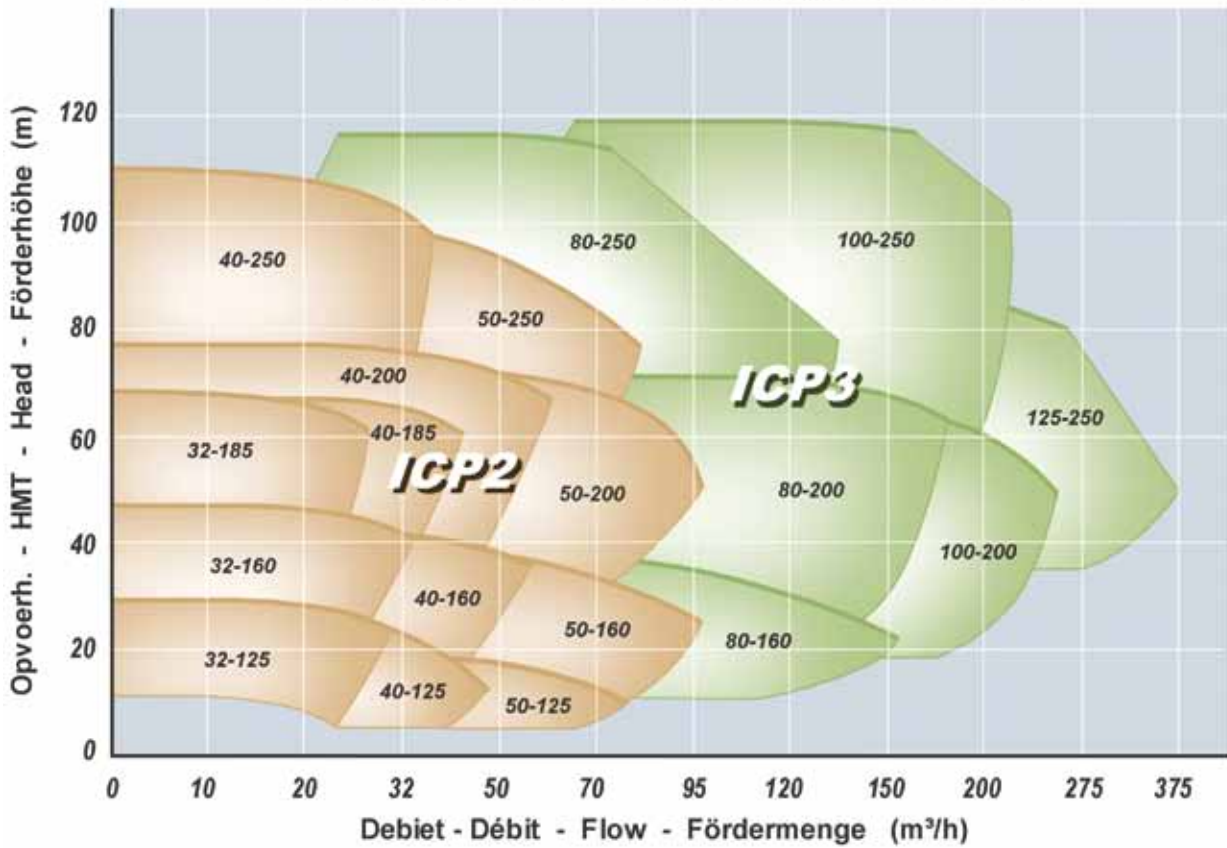
- Made in stainless steel 1.4404/316L or duplex
- Pump casing and backplate in formed plate with thicknesses up to 30 mm
- Closed duplex impellers, cast according to the lost wax principle. Large passage, excellent for liquids containing small impurities. The blades are formed three dimensionally with a very low NPSH value
- Surface finish: electropolished
- Mechanical seals according to EN 12756
- Motors according to IEC specification
- The standard connections are EN 1092-1 flanges



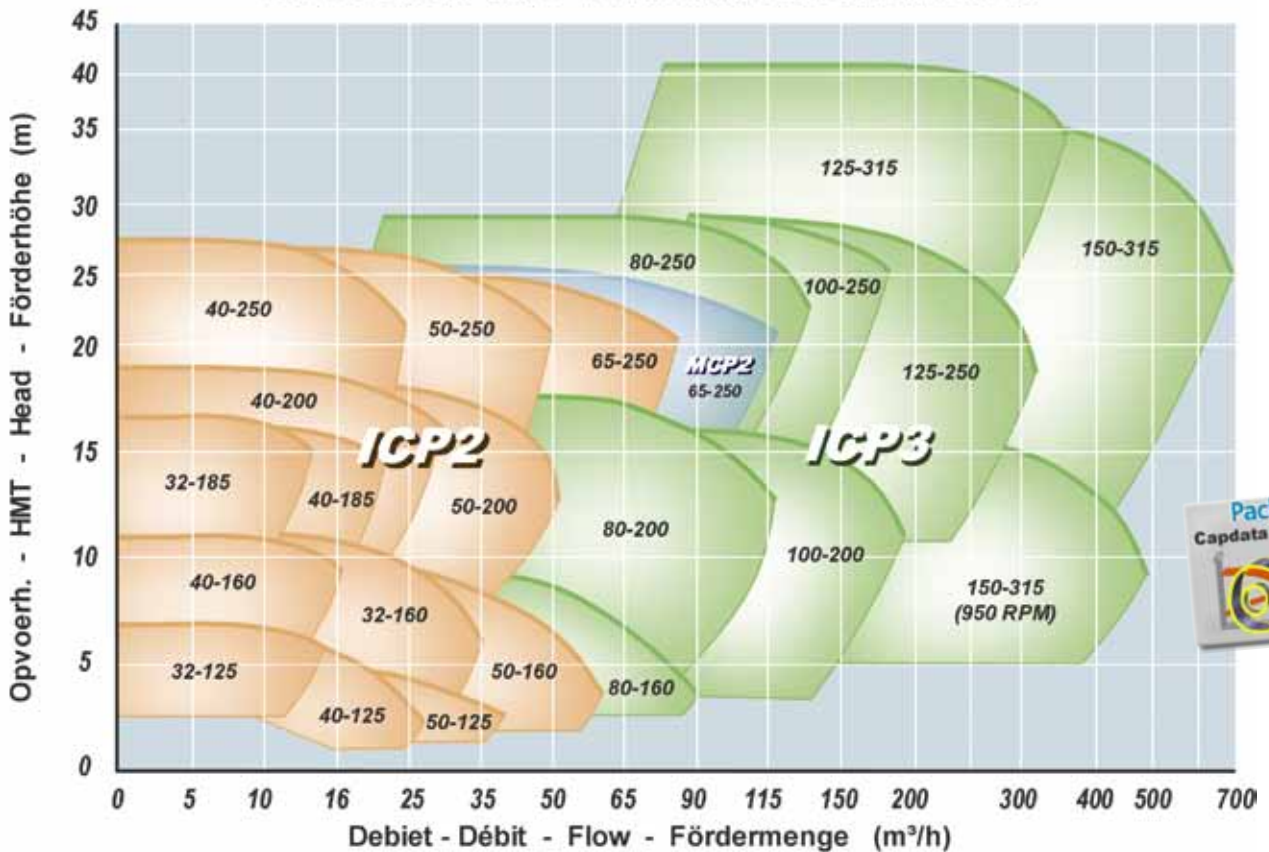
ICP3

Capacity range

END SUCTION PUMPS - Performance curves at 2900 RPM

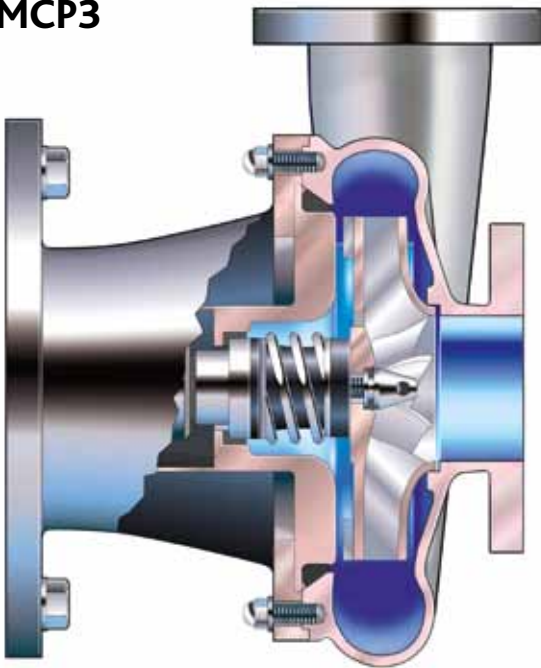


END SUCTION PUMPS - Performance curves at 1450 RPM



High capacity centrifugal pumps

MCP3



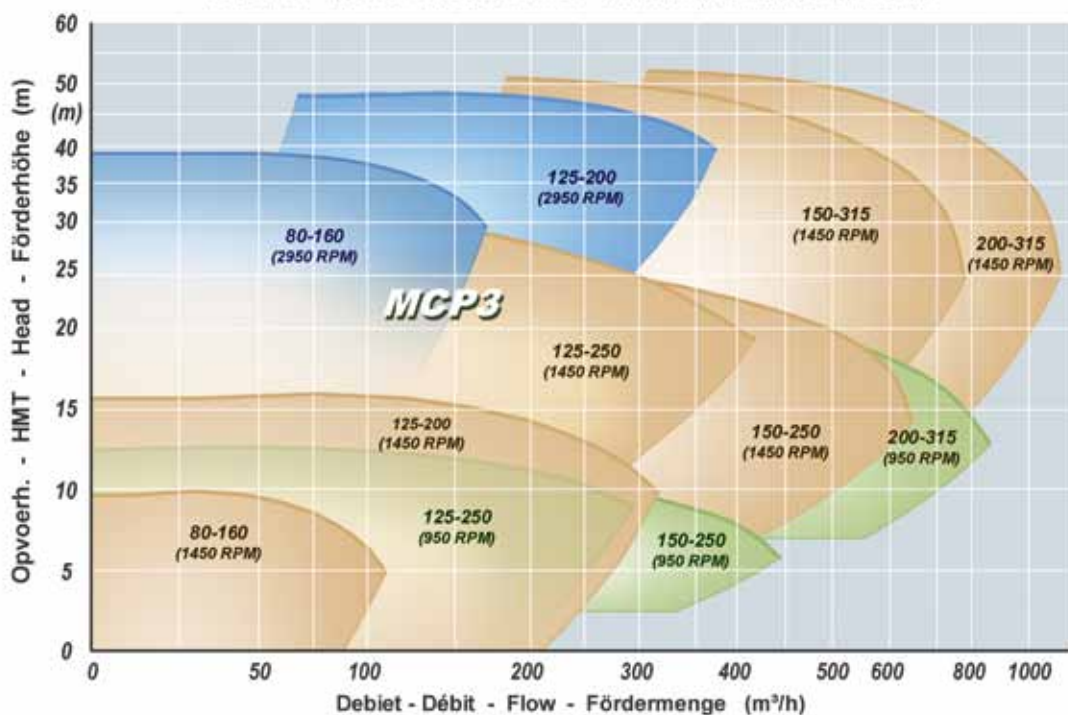
MCP3-process pump

- All wetted parts in 1.4404/316L or duplex
- Cast pump casing and impeller produced by lost wax method.
- **Extremely efficient and reduced noise levels.**
- The closed impeller features three dimensionally profiled blades with large passages. Excellent for liquids containing small solids and low NPSH applications
- Electropolished surface finish
- Mechanical seal in accordance with EN 12756
- Motors are to IEC specification
- Standard connections to EN 1092-1 type 01 flanges. Sanitary flanges are available

The **MFP3** is a variant for the food industry with hand polished internal welds.

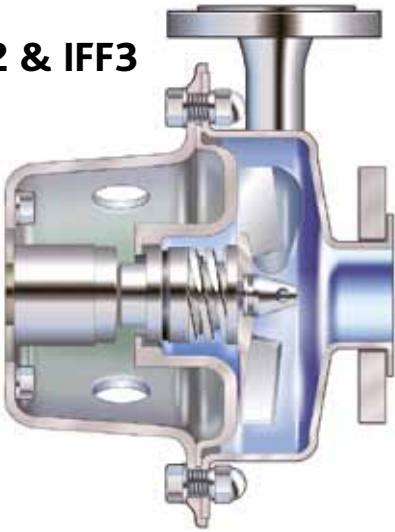


MCP3 END SUCTION PUMPS - Performance curves at 50 Hz



Non-clogging pumps

IFF2 & IFF3

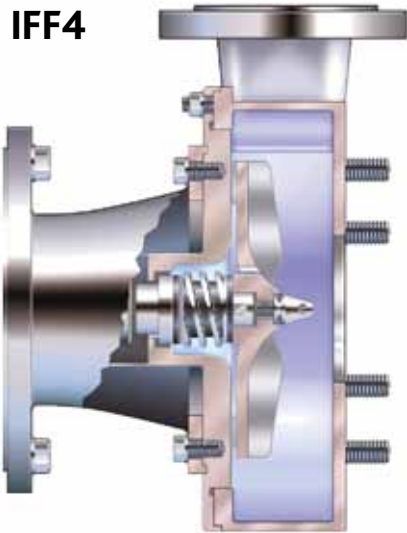


IFF2, IFF3 & IFF4 vortex pumps

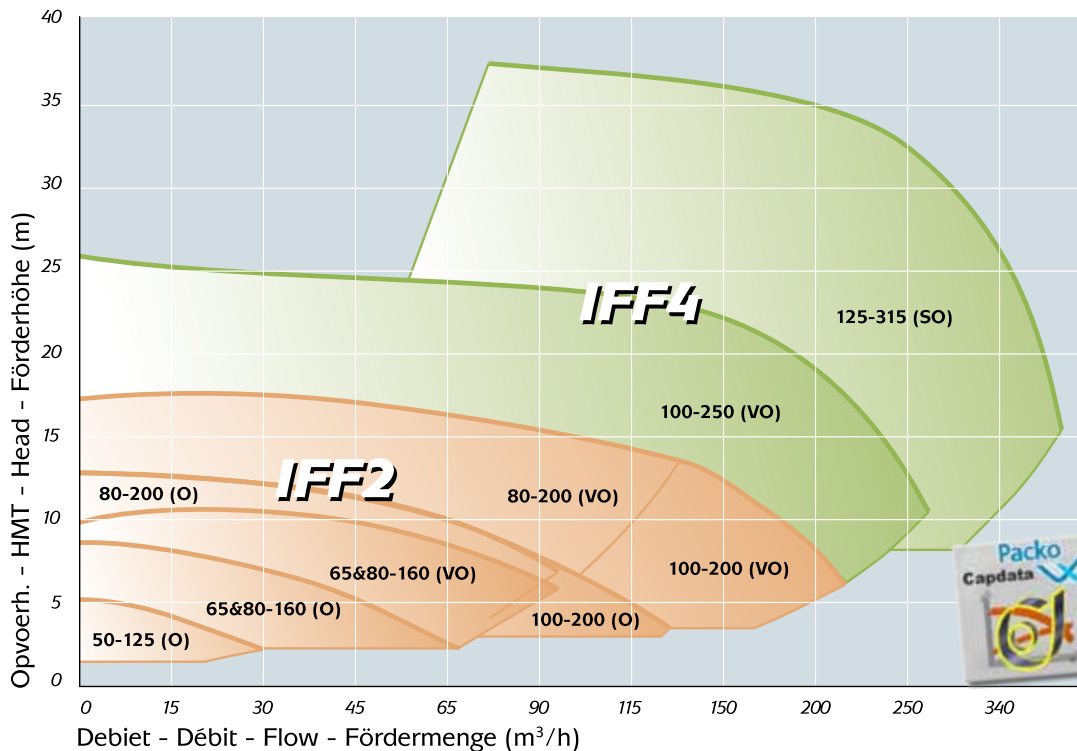
The IFF pump series are a variant of the ICP series. The IFF pumps have a thicker pump casing and large passage impellers. This makes them particularly suitable for liquids containing solids. Depending on the medium, open, semi-open or vortex impellers are supplied. The impellers are cast according to the lost wax principle or welded.

- Finish: electropolished
- Mechanical seals according to EN 12756
- Motors according to IEC specification
- **IFF2**: the standard connections are BSP (male) or EN 1092-1 flanges
- **IFF4**: the standard connections are EN 1092-1 flanges

IFF4



FREE FLOW Pumps - Performance curves at 1450 RPM



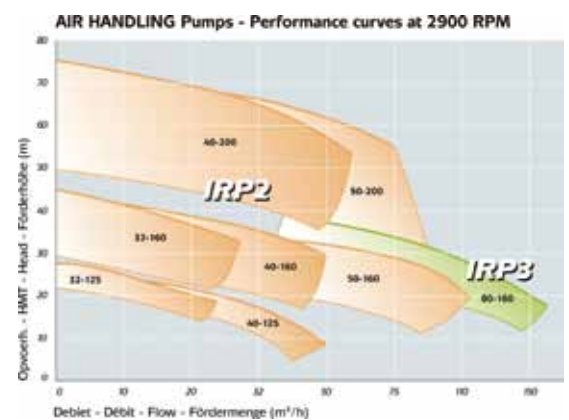
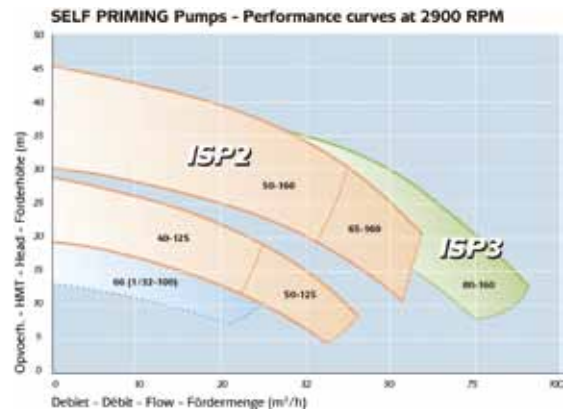
Self-priming and air handling pumps

Self-priming pumps

The **ISP** is a self-priming pump. It can lift liquid from a lower level into the pump.

Air handling pumps

The **IRP** is an air handling pump. It is not really meant to lift liquids, but to transfer liquids with large amounts of air or gas without choking or blocking as a normal centrifugal would do when a large amount of air enters the pump casing.



ISP2

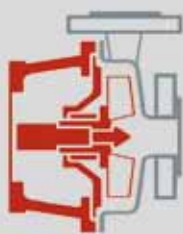


IRP2

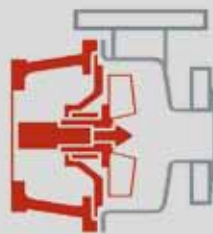
Advantages

- Large clearances between the impeller and the pump casing allows small impurities to pass without causing wear (contrary to liquid ring pumps). As a consequence, the pump performance remains the same even after several years of operation.
- Lower NPSH values and higher efficiency compared with liquid ring pumps.
- Flat head-flow curve. The pump can run against a closed valve without providing extra high pressure or absorbing more power.

Modular Concept



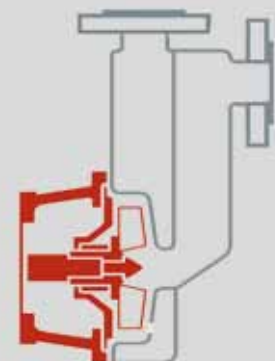
ICP



IFF



IRP



ISP

The **ICP**, **IFF**, **IRP** and **ISP** series consist of the same components. Only the pump casing (and for some IFF pumps also the impeller) is different. This minimises the spare parts stock.

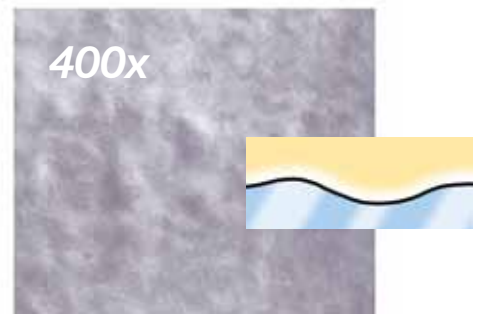
Vertical cantilever pumps (ICP-IM) and pumps on pedestal can be supplied and some models are available in vertical In-Line (ICP-IL) construction.

A very functional pump design

Extra corrosion resistant

Material: 1.4404/316L stainless steel

- High quality stainless steel AISI 316L is the basis for all Packo pumps:
- Pump casings are made of thick cold/hot-rolled plate: 100 % non porous.
 - Impellers are investment cast. They are stainless steel 316L or duplex.



Finish: electrolytically polished

All Packo pumps are electrolytically polished. This leads to an increased **corrosion resistance** due to the higher percentage of chromium and nickel at the surface. Also the internal tension concentrations are alleviated which significantly reduces the possibility of tension corrosion.

Electropolishing leads to extremely low micro roughness, resulting in a substantially increased resistance to the adhesion of products. The result: excellent ease of cleaning.

3 seal diameters

- Packo uses only 3 seal diameters for all pump series between 1 and 75 kW. This minimises the spare parts stock.
- There are a wide range of seal types, - configurations and material combinations available, depending on the application or customer's preferences.



Standard components

- The mechanical seals and pump casing seals are all standard components and they are available all over the world.
- The motors are also standard (IEC or NEMA). In this way, the pump can without any problem be factory fitted or subsequently changed to have motors with special characteristics (explosion proof, special voltage, special dimensions, etc.).



Heavy construction

Packo pumps are much more solid than the traditional "water pumps" in thin stainless steel deep drawn plate

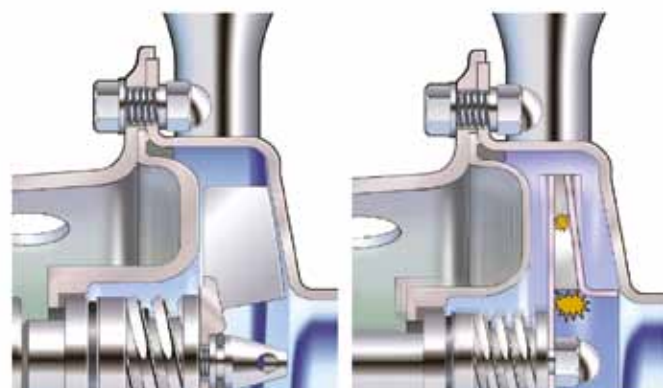
The open cast impellers are

- more solid
- less sensitive to crevice corrosion
- less sensitive to obstruction

Pump casing and backplate are also much thicker.

This leads to

- extra seal stability in water hammer applications
- improved wear resistance against abrasive liquids



Packo offers more



Inducer

Pumps tailored to the needs of the customers

Thanks to its flexible organisation and its strong know-how, Packo has also become a specialist in the construction of tailor-made pumps: special dimensions, extremely low NPSH values, magnetically driven pumps. These pumps are developed in accordance with our customers needs for end users, OEM's or other pump manufacturers.



ICP IM



ICP IL



ICP CA



Capdata – Computer aid for the selection of pumps

To complement the large pump range Packo have developed a powerful pump selection package (CAPDATA). Not only is it the most convenient way to select the correct pump, but it also contains drawings, parts lists and programs that calculate the influence of the viscosity and variable speed on pump curves or friction losses in your system.

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