

Sulzer Pumps' expertise is based on an understanding of the customers' needs. This expertise is offered to clients involved in the production of copper, zinc, nickel and aluminium. Sulzer pumps are tailor-made for difficult liquids, which mean that they are essential for corrosive liquids and also for liquids that are both corrosive and abrasive. By using Sulzer pumps in the metallurgical or mining industries, the user receives all the benefits associated with the traditional processes in the SX-EW (solvent extraction-electrowinning) processes.

AHLSTAR™ PROCESS PUMPS

The basic concept of AHLSTAR™ pumps resides in their reliability, strength and simplicity at the modular design level. Each pump type is custom-built for a specific application and is designed for a variety of clean, corrosive, abrasive and solids-containing liquids. Sulzer Pumps provides a low spare parts inventory because of the standardization of certain parts in the product family.

[Introduction to some AHLSTAR™ process pumps:](#)

APP PROCESS PUMPS

APP offers process pumps for clean, slightly abrasive or corrosive liquids and stocks of various kinds.

ASP PUMPS

ASP pumps are self-priming pumps for gas-containing liquids. Self-priming capability and an ability to handle gas-containing liquids are achieved with the internal vacuum pump. Both impellers of the ASP pump are on the same shaft.

WPP PUMPS

If you have to pump both erosive and corrosive liquids and slurries containing solid particles, the AHLSTAR™ WPP Wear Resistant Pump is designed for applications where normal centrifugal pumps quickly fail.

When a normal centrifugal pump is used in this application, there will be local erosion and abrasion due to the hydraulic design of the impeller and the volute casing, especially in the inlet pipe and in the volute casing near the wear ring and the cut water. All kinds of steps in and between the hydraulic parts cause turbulence and local erosion. Thin wall thicknesses and lack of renewable wearing parts in ordinary centrifugal pumps cause a short life time.

Design features and benefits of AHLSTAR™ WPP Wear Resistant Pumps: 1) Wear-resistant design. 2) The sideplate is adjusted externally to maintain a constant impeller clearance and continuous efficiency. 3) Backflow led smoothly towards the inlet flow. 4) Back and front vanes of the impeller minimize recirculation and wear. 5) Increased wall thicknesses in impeller, casing and sideplate. 6) Wear and corrosion resistant materials, chromium irons, martensitic and austenitic cast and duplex steels and also nickel alloys.

DYNAMIC SHAFT SEAL

The operating principle of the dynamic seal is simple. When the pump runs, the expeller generates a liquid ring in the annular seal chamber and evacuates the liquid pumped from the seal cavity. When the pump stops, the static seal tightens against the thrust ring, thus preventing any leakage. Mechanical wear, leakage and the need for sealing liquid have been practically eliminated. You do not need piping for sealing water. More than 20,000 AHLSTAR™ and Sulzer specialty pumps have been equipped with the dynamic seal successfully worldwide since 1987.

MATERIALS

Sulzer Pumps Finland has its own foundry where the company manufactures a wide range of materials to the customers' specifications. This foundry is specialized in manufacturing different grades of corrosion-resistant cast steels, martensitic, austenitic and duplex materials. The foundry can also manufacture special materials like titanium (ASTM B367 C-3 Titanium) and Hastelloy (ASTM A 494 N-7M).

The latest material option for Sulzer pumps is Avesta 654SMO™. This material is for applications where both corrosion and abrasion are present.

Avesta 654SMO™ is owned by Avesta Sheffield, which has granted Sulzer Pumps Finland Oy license to produce this material.

The AOD method (AOD = Argon Oxygen Decarburization), which our own foundry uses, was originally developed for the treatment of stainless steels. The stainless steels treated in the AOD converter have a low sulphur content. Sulphur and MnS sulphides reduce the pitting potential thus acting as the starting spots for corrosion. As to pitting corrosion, steels with a few sulphide inclusions and very little sulphur are better than the conventional stainless steels. The pitting potential is improved by means of the following elements: Cr, Mo and N.

[This year Sulzer Pumps Oy will be represented at the MiningWorld Central Asia 2005 Exhibition in Almaty.](#)