

Sulzer Pumps for Nickel Applications





Our Experience Dedicated to Your Success

The global metal processing industry has been undergoing significant changes over the past years and now finds itself in a new era.

Go beyond the limits

A shortage of skilled workers coupled with stricter environmental regulations have prompted a change in the market dynamics; the trend is now towards remote metals operations where more reliable pumps and pumping equipment, that are less labor intensive, are required.

In such a complex market, only a few manufacturers manage to understand the challenges faced in metal pumping applications. Sulzer pushes technologies to their limits and beyond in order to develop state-of-the-art pumps and agitators, capable of meeting even the most demanding needs of customers.

Designed to withstand highly abrasive environments

Reliability is crucial in metal industry. Due to processing, erosion, corrosion and lack of regular maintenance, pump efficiency and reliability are continuously challenged. Sulzer Pumps is well aware of the harsh conditions and develops equipment engineered to a high standard. Its experience and product knowhow are dedicated to providing sustainable and reliable solutions, selecting the most appropriate product and material, to sustain the changing environment in metal industry.

More than a pump supplier

Sulzer supplies a complete pumping and agitation packages for metal processing industry, from clear liquid to light slurry process to submersible and dewatering pumps including full services and support.

By working together with Sulzer, customers benefit from:

- Increased time between failures with extended run times on equipment
- Lower energy consumption due to high efficiencies and optimum selections
- Reduced capital costs and increased profitability with current products, optimizing interchangeability between common parts
- Reduced downtime costs due to improved pump reliability
- Cutting edge technologies from a pump supplier with a strong engineering heritage and a comprehensive local support network



Nickel Smelters

Granulated waters with solid particles

AHLSTAR W/WPT wear and corrosion resistant process pumps

- Open and wear resistant impeller
- Wear resistant chromium iron material A532 IIIA (5B)
- Double mechanical shaft seal or unique dynamic shaft seal

Cooling waters

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Closed, high efficiency and low NPSHr impeller
- Cast iron material A48 CL 35B (53) or stainless steel material ASTM A890 3A (41)
- Unique dynamic shaft seal

Collected floor liquids

AHLSTAR A-S/APT-S self priming process pumps or WPP-S/WPT-S wear resistant self priming process pumps

- Open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Integrated vacuum structure

Leaching of Nickel Matte

Corrosive and crystallizable liquids

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Open, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Double mechanical shaft seal or dynamic shaft seal

Corrosive, incrustable and clarified liquids

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Closed impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Unique dynamic shaft seal

Corrosive and erosive liquids containing solid particles

AHLSTAR W/WPT wear and corrosion resistant process pumps

- Corrosion and wear resistant, open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 1B (4L), ASTM A890 5A (4T) or Avesta 654 SMO (4U) *
- Double mechanical shaft seal or dynamic shaft seal

Collected floor liquids

AHLSTAR A-S/APT-S self priming process pumps or WPP-S/WPT-S wear resistant self priming process pumps

- Open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Integrated vacuum structure



Extraction Processes

Nickel and cobalt solutions and washing waters

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Open, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Double mechanical shaft seal or dynamic shaft seal

Precipitation Processes

Nickel and cobalt solutions and mixed liquids

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Open, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Double mechanical shaft seal or dynamic shaft seal

Liquids containing solid particles

AHLSTAR W/WPT wear and corrosion resistant process pumps

- Corrosion and wear resistant, open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 1B (4L), ASTM A890 5A (4T) or Avesta 654 SMO (4U) *
- Double mechanical shaft seal or dynamic shaft seal



*Trademark owned by Outokumpu Stainless which has granted Sulzer Pumps Finland Oy licence to produce this material.



Hydrogen Reduction Processes

Crystallizable solutions

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Open, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Double mechanical shaft seal or dynamic shaft seal

Incrystallizable solutions

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Closed high efficiency and low NPSHr impeller
- Corrosion and wear resistant material ASTM A890 3A (41)
- Unique dynamic shaft seal

Collected floor liquids

AHLSTAR A-S/AST-S self priming process pumps or WSP/WST wear resistant self priming process pumps

- Open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Integrated vacuum structure

Gas Scrubbing

Corrosive circulation water of the scrubber

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Closed impeller
- Corrosion and wear resistant stainless steel material ASTM A890 1B (4L)
- Unique dynamic shaft seal

Electrowinning

Nickel sulfate and sulfuric acid

AHLSTAR A/APT process pumps or CPT chemical process pumps

- Closed, high efficiency and low NPSHr impeller
- Various stainless steel materials from ASTM A890 3A (41) to ASTM A890 5A (4T)
- Double mechanical shaft seal or dynamic shaft seal
- Special floating installation



Other Utilities

Water transport

The SJP vertical wet pit pumps are primarily used in water lift, transfer and cooling water applications. ZPP, Z22 and SMD single stage double suction pumps are designed for applications including cooling and circulating water pumping. AHLSTAR NVP/NVT non-clogging vertical pumps are intended for all kinds of hard applications with wastewater, slurries or waste stock.

Boiler feed

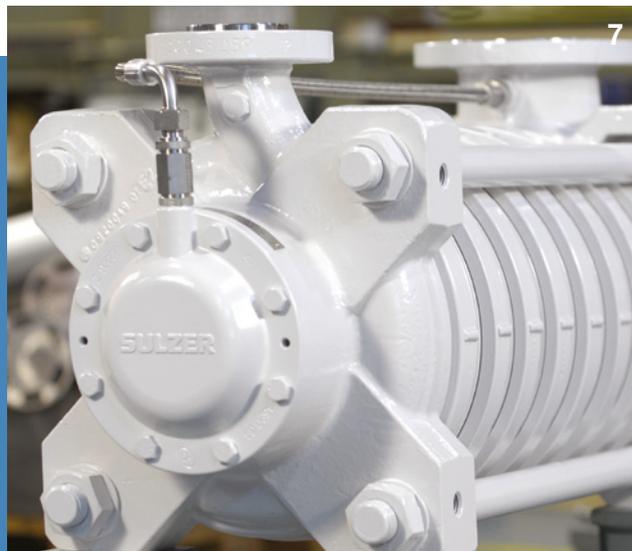
The MBN high pressure multistage pumps are used for pumping clean or slightly contaminated liquids in high pressure applications in various industries. The M series of ring section multistage pumps consist of MB, MC, MD and ME ranges. A wide range of common hydraulic components and bearing assemblies are used within the 4 standard pressure ranges.

Submersible dewatering pumps

The submersible dewatering pumps XJ and XJS are ideal for pumping dirty water or sludge in harsh mining environment. Pumps are built in with Aqua-Tronic intelligence to ensure safe and smart operation.

High head mine dewatering

The HPH/HPL multistage pumps are specifically designed for mine dewatering applications. Their robust construction is designed to combat the highly abrasive environment in which they operate.



Sulzer Product Range

Product type	Name	Capacities	Heads	Pressures	Temperatures
Multistage	HPH	130 to 1,000 m ³ /h 680 to 5,000 USgpm	120 to 1,800 m 600 to 5,000 ft	180 bar 2,610 psi	Up to 105°C Up to 220°F
	HPL	36 to 1,000 m ³ /h 170 to 5,000 USgpm	40 to 400 m 190 to 1,300 ft	40 bar 560 psi	Up to 105°C Up to 220°F
	MBN	Up to 700 m ³ /h Up to 3,080 USgpm	Up to 900 m Up to 2,950 ft	Up to 100 bar Up to 1,450 psi	Up to 180°C Up to 355°F
	MSD	Up to 3,200 m ³ /h Up to 14,000 USgpm	Up to 2,900 m Up to 9,500 ft	Up to 300 bar Up to 4,400 psi	Up to 205°C Up to 400°F
End suction	AHLSTAR	Up to 9,000 m ³ /h Up to 40,000 USgpm	Up to 160 m Up to 525 ft	Up to 25 bar Up to 360 psi	Up to 210°C Up to 410°F
	ZE/ZF	Up to 2,600 m ³ /h Up to 11,440 USgpm	Up to 300 m Up to 1,000 ft	Up to 100 bar Up to 1,450 psi	Up to 425°C Up to 800°F
	CPT	Up to 1,600 m ³ /h Up to 7,000 USgpm	Up to 220 m Up to 720 ft	Up to 26 bar Up to 375 psi	Up to 260°C Up to 500°F
Submersible	ABS XJ and J	Up to 1,220 m ³ /h Up to 5,390 USgpm	Up to 100 m Up to 330 ft	Up to 13 bar Up to 190 psi	Up to 40°C Up to 104°F
	ABS XJS	Up to 110 m ³ /h Up to 475 USgpm	Up to 40 m Up to 130 ft	Up to 5.2 bar Up to 75 psi	Up to 40°C Up to 104°F
	ABS XFP	Up to 8,780 m ³ /h Up to 38,675 USgpm	Up to 110 m Up to 360 ft	Up to 15 bar Up to 220 psi	Up to 40°C Up to 104°F
Vertical	NKP/NKT	Up to 430 m ³ /h Up to 1,900 USgpm	Up to 60 m Up to 200 ft	Up to 10 bar Up to 150 psi	Up to 95°C Up to 205°F
	NVP/NVT	Up to 1,200 m ³ /h Up to 5,400 USgpm	Up to 85 m Up to 280 ft	Up to 10 bar Up to 150 psi	Up to 95°C Up to 205°F
	SJP	200 to 25,500 m ³ /h 900 to 240,000 USgpm	Up to 12 m Up to 40 ft	Up to 2 bar Up to 30 psi	Up to 50°C Up to 120°F
Double suction	SMN	Up to 10,000 m ³ /h Up to 44,000 USgpm	Up to 200 m Up to 650 ft	Up to 30 bar Up to 435 psi	-10 to 50°C 15 to 120°F
	ZPP	Up to 30,000 m ³ /h Up to 132,000 USgpm	Up to 160 m Up to 525 ft	Up to 25 bar Up to 362 psi	Up to 120°C Up to 250°F
	Z22	Up to 17,000 m ³ /h Up to 75,000 USgpm	Up to 220 m Up to 720 ft	Up to 25 bar Up to 362 psi	Up to 140°C Up to 280°F

Product type	Name	Impeller diameter	Shaft length	Power
Agitator	SALOMIX® L	Up to 8,000 mm Up to 315 in	Up to 30 m Up to 100 ft	Up to 450 kW Up to 600 hp
	Scaba	Up to 8,000 mm Up to 315 in	Up to 30 m Up to 100 ft	Up to 450 kW Up to 600 hp

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