Bombas PEMO

2022

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PROCEMAX

PEMO PUMPS

PROCEMAX

Puntos Clave

Las mejores características de Procemax:

- Pequeña & Eficiente
- Respuestas Rápidas
- Soluciones Personalizadas
- Profesionales con larga experiencia en Minería

Represente en Chile para:

Haiwang 海王

PEMO PUMPS

SCP Silicon Carbide Products

COMPOSIT

SIZETEC, INC. SIZING TECHNOLOGY & EQUIPMENT

Servicios de Consultoría para Procesamiento Minerales

Algunos de nuestros clientes

SIOM

SQM

CODELCO

CMP UNA EMPRESA DEL GRUPO CAP

Bombas horizontales

Principales Aplicaciones

- Plantas de Electricidad y FGD
- Minería, Canteras y material de lavado de Agregados
- Transferencia de pulpa de carbón
- Molinos y Pits de Ceniza
- Pulpas Arena Marina
- Pulpas de Cal
- Pulpa y Papel
- Industria Química
- Minería subterránea

Características

- Tipo de sello: Double Elastomer Bellow mechanical seal in tándem back to back configuration
- Bearings: Oil lubricated, over-sized for longer bearing life in the most severe conditions
- Low Maintenance
- Pump-motor coupling: V-belts or Flexible coaxial joint
- Custom built: According to customer specifications

BOMBAS HORIZONTALES

SERIES:

AO/TD

AO/AB

AO/AB/DC-TC

AO/TD SERIES 1

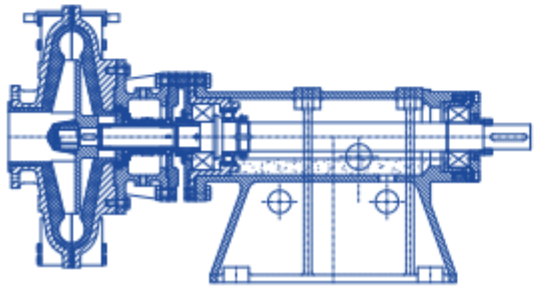
Designed for heavy-duty slurry and/or acid applications. Suitable for pumping acid and liquids with high concentrations of abrasive particles.

CAPACITY
20 to 6,600 gpm (5 to 1,500 m^3/hr)

MAX DISCHARGE PRESSURE
Up to 70 psig (5 bar)

KEY FEATURES

- **End Suction**
- **Mechanical Seals**: Work under the discharge pressure and must be flushed 15 PSI higher than the discharge pressure



AO/AB SERIES 2

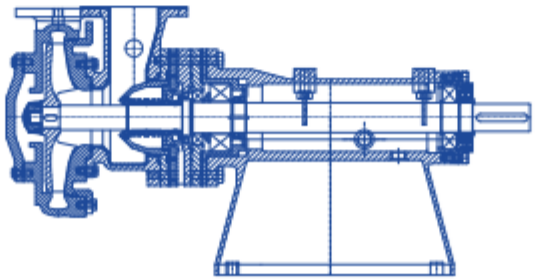
Designed for slurry and/or acid applications. Suitable for pumping acid and liquids with high concentrations of abrasive particles, not recommended where particle size is higher than mesh #14-20.

CAPACITY
20 to 6,600 gpm (5 to 1,500 m^3/hr)

MAX DISCHARGE PRESSURE
Up to 100 psig (7 bar)

KEY FEATURES

- **Special AB Side Suction**: To prevent problems to the mechanical seals that work only under the suction pressure
- **Mechanical Seals**: Work under the discharge pressure and must be flushed 15 PSI higher than the suction (or inlet) pressure



AO/AB/DC-TC SERIES 3

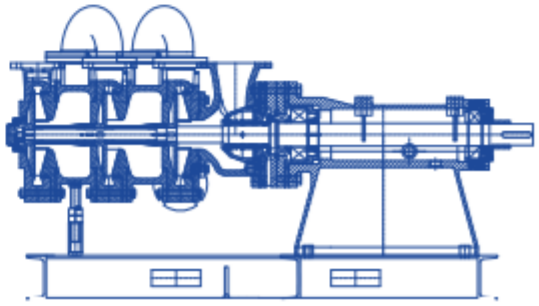
Multi-stage versions suitable for pumping liquids with high concentrations of abrasive particles in applications where the required discharge pressure is up to 290 psi (20 bar), not recommended where particle size is higher than mesh #14-20.

CAPACITY
20 to 4,800 gpm (5 to 1,100 m^3/hr)

MAX DISCHARGE PRESSURE
Up to 290 psig (20 bar)

KEY FEATURES

- **Special AB Side Suction**: Same as AB design, but in multi-stage version
- **High Pressure**: Heavy-duty design, with oversized shaft and increased L10 bearing
- **Mechanical Seals**: Work under the discharge pressure and must be flushed 15 PSI higher than the suction (or inlet) pressure



BOMBAS HORIZONTALES

SERIES AO/TD

PEMO's AO/TD Series pumps were designed to operate at various pressures, pumping high percentage solids, as well as highly abrasive and/or highly corrosive liquids.

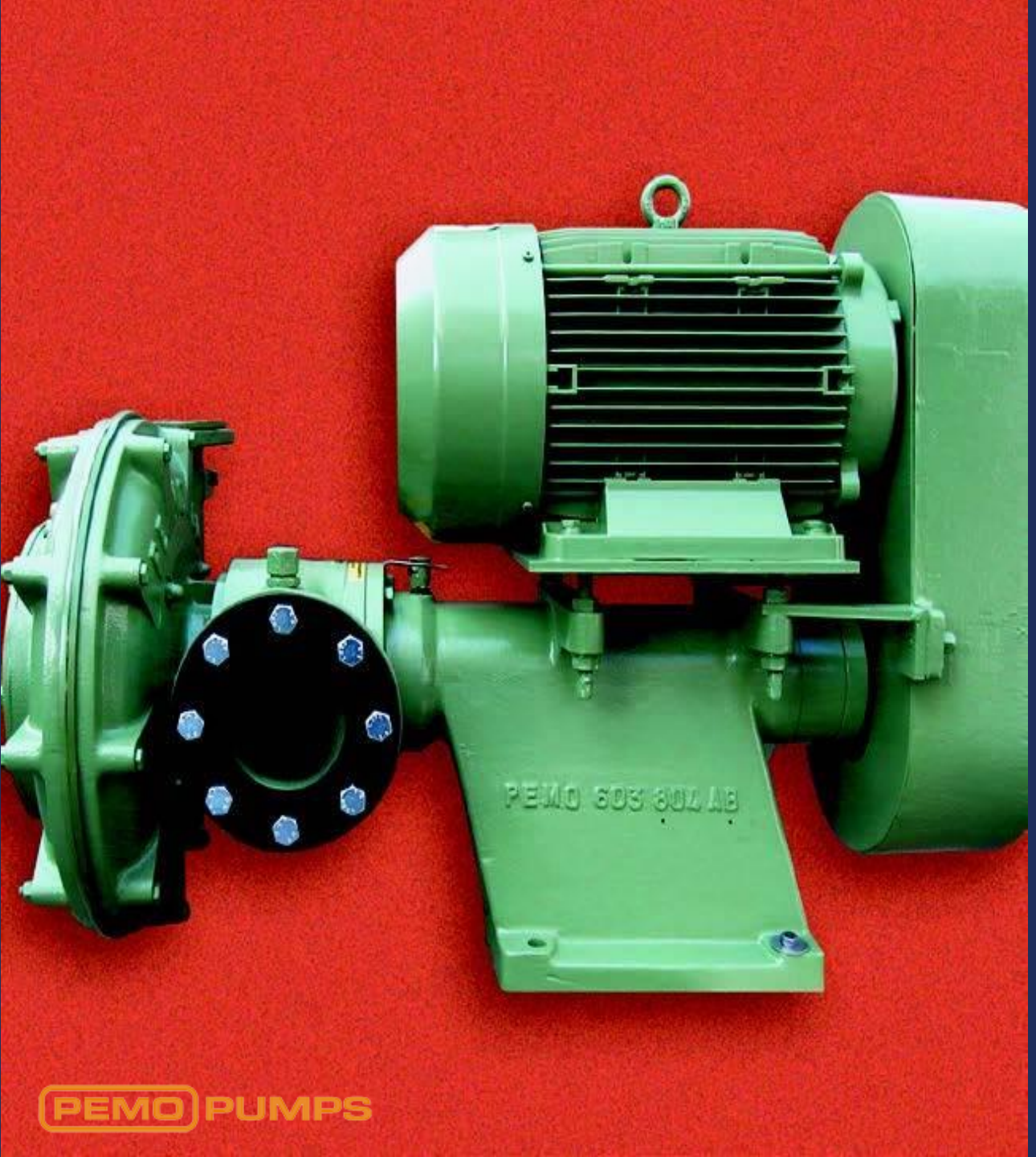
They feature an end suction, rather than a side suction. The AO/TD sealing arrangement consists of a double mechanical seal configuration requiring a clean water flush system.

A flush system pumps water into the mechanical seal housing at a pressure approximately 15 psig higher than the rated discharge pressure of the pump. Pump casing and impeller materials are rubber lined or hardalloy (700 – 800 bhn). The shaft material is standard 12% chrome alloy with optional materials, (316SS, Duplex SS, Hastelloy, etc.), available.

AO/TD pumps are also designed with over-sized bearings for handling various demanding operating conditions and extending MTBR intervals.

AO/TD pumps can be flex coupled or belt-driven. The main advantage of the belt-driven feature is that the correct operating speed can be easily determined or corrected to meet customer requirements.

The AO/TD Series pumps have a maximum 200 hp rating.



BOMBA HORIZONTALES – SERIES AO/AB/TC

PEMO's AO/AB Series pumps were designed to operate at various pressures, pumping high percentage solids, as well as highly abrasive and/or highly corrosive liquids.

They feature a side suction, rather than an end suction. The AO/AB sealing arrangement consists of a double mechanical seal configuration requiring a clean water flush system.

A flush system pumps water into the mechanical seal housing at a pressure approximately 15 psig higher than the rated suction (or inlet) pressure of the pump. Pump casing and impeller materials are rubber lined or hardalloy (700 – 800 bhn).

The shaft material is standard 12% chrome alloy with optional materials, (316SS, Duplex SS, Hastelloy, etc.), available. AO/AB pumps also designed with over-sized bearings for handling various demanding operating conditions and extending MTBR intervals. AO/AB pumps can be flex coupled or belt-driven.

The main advantage of the belt-driven feature is that the correct operating speed can be easily determined or corrected to meet customer requirements.

The AO/AB Series pumps have a maximum 400 hp rating.

BOMBAS HORIZONTALES

SERIES:

AO/TI

AO/TD

SERIES	MODEL	POWER (hp)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
1	33	up to 4	80	65	1
1	302	up to 4	100	65	1.5
1	403	up to 12	180	100	2
1, 2, 3	503	up to 25	220	150	2.5
1, 2, 3	S-FP	up to 25	260	220	2.5
1, 2	533	up to 25	400	150	3
1, 2, 3	603	up to 40	480	165	3
1, 2, 3	603-H	up to 40	550	220	3
1, 2	804	up to 40	660	85	3
1, 2, 3	K125	up to 50	660	165	3
1, 2, 3	K125-H	up to 50	660	250	3
1, 2, 3	1004	up to 60	1000	150	4
1, 2, 3	1004-H	up to 60	1300	250	4
2	1706/99	up to 75	1600	150	6
2	1706/99-H	up to 75	1600	250	6
2	G230	up to 100	2400	150	8
1, 2, 3	P200-H	up to 150	2500	250	7
2	M280	up to 200	5400	250	8
2	I-270	up to 150	3200	150	8
2	C300	up to 250	6600	150	10

BOMBAS HORIZONTALES

SERIES:

AO/AB/TC

PEMO MULTI-STAGE HORIZONTAL PUMPS

2 Stage 3 Stage

MODEL	POWER (hp)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
503	up to 50	220	300	2.5
S-FP	up to 60	260	380	2.5
S-FP	up to 100	260	450	2.5
603	up to 50	480	300	3
603-H	up to 60	550	350	3
603-H	up to 100	550	450	3
K125	up to 75	660	300	3
1004	up to 100	1000	300	4
1004-H	up to 150	1300	350	4
1004-H	up to 200	1300	450	4
P200-H	up to 200	2500	350	7
M280	up to 400	5000	350	8

PEMO PUMPS

Bombas verticales

Principales Aplicaciones

- Plantas de Electricidad y FGD
- Minería, Canteras y material de lavado de Agregados
- Transferencia de pulpa de carbón
- Molinos y Pits de Ceniza
- Pulpas Arena Marina
- Pulpas de Cal
- Pulpa y Papel
- Industria Química
- Minería subterránea

BOMBAS VERTICALES

SERIES:

JOLLY

MEC

AUS

PEMO PUMPS

JOLLY SERIES

Designed for pumping acid liquids even with high concentrations of abrasive particles.

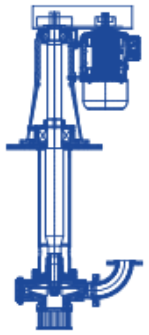
CAPACITY
20 to 6,600 gpm
5 to 1,500 m³/hr

HEAD
160 ft (50 m)

MAX DISCHARGE PRESSURE
Up to 100 psig (7 bar)

KEY FEATURES

- **Type of seal:** Rubberized shaft bushing and Hardalloy sleeve
- **Low maintenance**
- **Pump-motor coupling:** V-belts or Flexible coaxial joint
- **Custom built to customer specifications**
- Length of pump under base can reach 20' max
- Always supported above the baseplate by bearings inside the base
- Using a sleeve bushing sealing system, cannot run dry under a certain level



MEC SERIES

Designed for highly abrasive liquids, highly acid liquids, and highly acid liquids with abrasive suspensions.

CAPACITY
20 to 6,600 gpm
5 to 1,500 m³/hr

HEAD
160 ft (50 m)

MAX DISCHARGE PRESSURE
Up to 100 psig (7 bar)

KEY FEATURES

- **Type of seal:** Rubberized shaft bushing and Hardalloy sleeve
- **Low maintenance**
- **Pump-motor coupling:** Flexible coaxial joint
- Standard lengths of pump under base are 3 - 5 - 7 ft
- Using a sleeve bushing sealing system, cannot run dry under a certain level
- Standard flex coupled or standard lifting cage

AUS SERIES

Designed to run under the severest, where flow is intermittent. Suitable to operate in dry running condition.

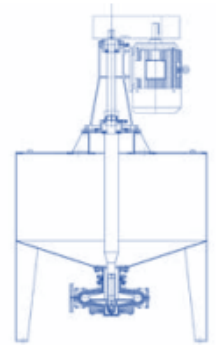
CAPACITY
20 to 6,600 gpm
5 to 1,500 m³/hr

HEAD
115 ft (35 m)

MAX DISCHARGE PRESSURE
Up to 70 psig (5 bar)

KEY FEATURES

- **Type of seal:** None
- **Low maintenance**
- **Pump-motor coupling:** V-belts or Flexible coaxial joint
- Can operate in dry condition, since there is no mechanical seal or soft packing
- Fluid inlet normally above the casing, but also located at bottom for units with double-sided impellers
- Can be installed inside or outside of tanks
- Height of suction up to 5' (1.5 m)



BOMBA VERTICAL – SERIE JOLLY

The Jolly Series vertical centrifugal pumps have a robust design with the shaft supported above the base plate by up to three bearings. This design supports the suspended pump end allowing it to operate bearing free.

All pump end materials are rubber lined or hardalloy (700 – 800 bhn).

Optional materials for the shaft and column pipe are 316 SS, Duplex SS, Hastelloy, etc.

The pump shaft is designed to minimize shaft wear utilizing a combination rubber bushing and shaft sleeve bearing close to the pump end. This arrangement creates a natural seal and the designated wear parts can be easily replaced during a repair cycle.

The Jolly Series pumps can be flex-coupled or belt driven. The main advantage of the belt driven option is that the correct operating speed can be determined or corrected based on the customer's application requirements.

BOMBAS VERTICALES – SERIE MEC

The MEC Series pumps are basically the same as the Jolly Series, except they are designed to operate suspended from a cable or chain inside tanks or wet wells.

MEC pumps are available only in flex-coupling configurations in three lengths of 3, 5 and 7ft (water level to centerline of pump volute casing).

•Caudal: de 5 a 1500 m^3/h.

•Presión máxima disponible: de 6 a 7 bar.

BOMBA VERTICAL – SERIE AUS

The AUS Series vertical pumps are also basically the same as the Jolly series, but have “Run Dry” capability for minimizing routine maintenance.

This “run dry” design also allows the pump to operate in multiple suction conditions, such as flooded suction or dry suction (no available fluid), and run continuously without damage.

•Caudal: de 5 a 1500 m³/h.

•Presión máxima disponible: de 6 a 7 bar.

BOMBAS VERTICALES – SERIE AUS

PEMO HARDALLOY VERTICAL PUMPS END

PUMP MODEL	POWER (hp)	SPEED (rpm)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
S-FP	5.5 to 25	1750 - 3500	260	190	2.5
603-H	15 to 40	1750 - 3500	550	165	3
K125-H	15 to 50	1150 - 1750	660	165	3
1004-H	25 to 60	880 - 1150	1300	165	4
1706/99-H	40 to 75	880 - 1150	1600	165	6
M280	100 to 200	550 - 880	5400	165	8

PEMO RUBBER LINED VERTICAL PUMPS ENDS

Puede ser usada en cualquier bomba vertical de las series (Jolly/MEC/AUS)

PUMP MODEL	POWER (hp)	SPEED (rpm)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
33	1.5 to 4	1750 - 3500	80	65	1
302	3 to 4	1750 - 3500	100	65	1.5
403	5.5 to 12	1750 - 3500	180	100	2
503	5.5 to 25	1750 - 3500	220	150	2.5
533	5.5 to 25	1750 - 3500	400	150	3
603	15 to 40	1750 - 3500	480	165	3
804	15 to 40	1750 - 3500	660	85	3
K125	25 to 50	880 - 1150	660	165	3
1004	25 to 60	880 - 1150	1000	150	4
1706/99	40 to 75	880 - 1150	1600	150	6
G230	40 to 100	550 - 880	2400	150	8
I-270	60 to 150	550 - 880	3200	150	8
C300	75 to 250	550 - 880	6600	150	10

PEMO PUMPS

Bombas sumergibles y doble cuerpo

All metal, the PEMO submersible pumps are designed with long life and low maintenance as a priority. The wetted parts of the pump, (volute(s), impeller(s), inlet flange(s), and shaft sleeve(s) are made of an extremely hard iron alloy called, “Hardalloy” which has a hardness rating of over 800 bhn. The hardness of the pump components is the key to reliable performance in rugged applications ranging up to 70% solids, with max size of particles up to 20mm in diameter.

Flows can range from 30 to 3,200 GPM, with heads up to 165 feet TDH.

BOMBAS SUMERGIDAS

•Proyectadas para aplicaciones con lodos muy abrasivos.

•Las bombas PEMO sumergidas estándar están disponibles con una gama de potencia de 1 a 100 hp, y una velocidad de 735 a 2900 rpm.

•Caudal: 300 a 600 m^3/h

•Máxima presión disponible: de 6 a 7 bar

•Las juntas mecánicas son de carburo de silicio o tungsteno.

•Los cojinetes están lubricados con grasa y realizados para durar mucho tiempo.

•Todas las bombas PEMO sumergidas están dotadas de sonda térmica (para controlar la temperatura del motor) y sonda de nivel de aceite (para detectar eventuales infiltraciones en la cámara de aceite).

•Todas las bombas PEMO sumergidas se entregan con un dispositivo eléctrico que analiza las señales provenientes de la sonda térmica y de la sonda de aceite.

BOMBAS DOBLE CUERPO – SERIES AO/AB/DC (Versión doble cuerpo)

•Proyectadas para aplicaciones con lodos y/o ácidos.

•La serie AO/AB/DC es la solución ideal para la alimentación de filtros-prensa o para el transporte de lodos a largas distancias, con fuertes pérdidas de carga a través de las tuberías.

•Para el bombeo de líquidos ácidos, el eje y el alojamiento de la junta mecánica pueden ser de aleaciones especiales.

•Las partículas pueden alcanzar 1 mm de diámetro (obviamente, esto depende de las aplicaciones específicas).

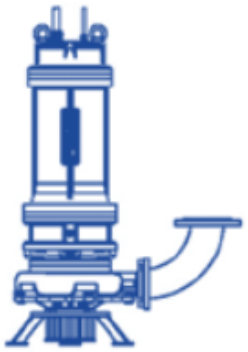
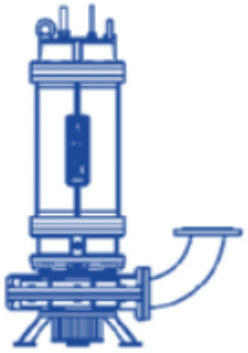
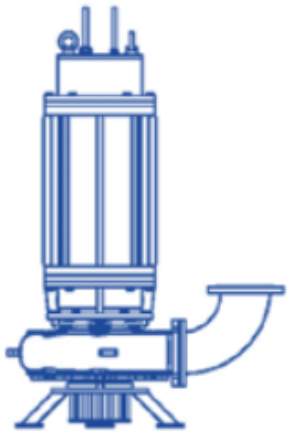
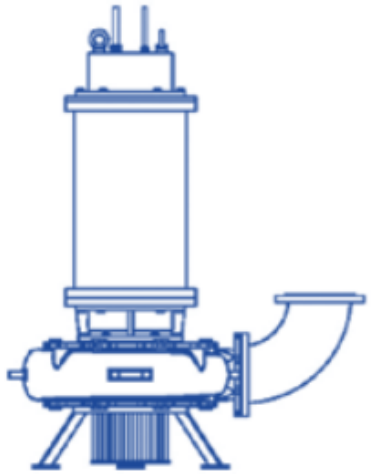
•Caudal: de 5 a 900 m^3/h.

•Altura máxima (para algunas versiones de Hardalloy): 210 m/H2O.

BOMBAS SUMERGIBLES

SERIES:

- S-FP
- 603-H
- K125-H
- 1004-H
- 1706/99-H

S-FP	603-H	K125-H	1004-H	1706/99-H
Designed for severe duty submersible applications with abrasive, corrosive slurries. **Power plants. Underground mines.**	Designed for submersible low solids content applications requiring high heads. **Power plants. Seawater sand slurry. Lime slurry.**	Used in submersible application with large, clogging or stringy material. **Mining. Coal and slurry transfer. Mill scale and ash pits.**	For submersible low solids content applications requiring high heads. **Barge clean-out. Tank sludge cleanout.**	Designed for severe duty submersible applications with abrasive, corrosive slurries. **Power plants. Deep or inaccessible wells.**
CAPACITIES 30 to 260 gpm 7 to 60 m³/hr	CAPACITIES 60 to 550 gpm 15 to 120 m³/hr	CAPACITIES 90 to 800 gpm 20 to 180 m³/hr	CAPACITIES 200 to 1,250 gpm 45 to 280 m³/hr	CAPACITIES 200 to 1,800 gpm 45 to 400 m³/hr
HEADS 20 to 165 ft 6 to 50 m	HEADS 20 to 165 ft 6 to 50 m	HEADS 20 to 165 ft 6 to 50 m	HEADS 20 to 150 ft 6 to 45 m	HEADS 20 to 135 ft 6 to 42 m
WEIGHT 660 lb 300 kg	WEIGHT 950 lb 430 kg	WEIGHT 1100 lb 500 kg	WEIGHT 1430 lb 650 kg	WEIGHT 2200 lb 1000 kg
				

PEMO PUMPS

RUBBER LINED SUBMERSIBLE PUMPS

PEMO's Submersible Pump design includes:

- Hardalloy or rubber lined pump ends
- Rubber lined design includes Hardalloy impellers
- Volutes and impellers are abrasion resistant coated
- Double mechanical seals, (hard faced)
- Double row ball bearings, (top and bottom)
- High efficiency, air filled motors, (IE3) (10 meter long power cord)
- Motor thermal probes for over heat protection of the motor stator
- Seal leak detection probes, (mechanical seal oil chamber)
- Pump stand for free standing bottom mount pump operation
- Optional mechanically or hydraulically driven agitators
- Optional float switches for level sump level control

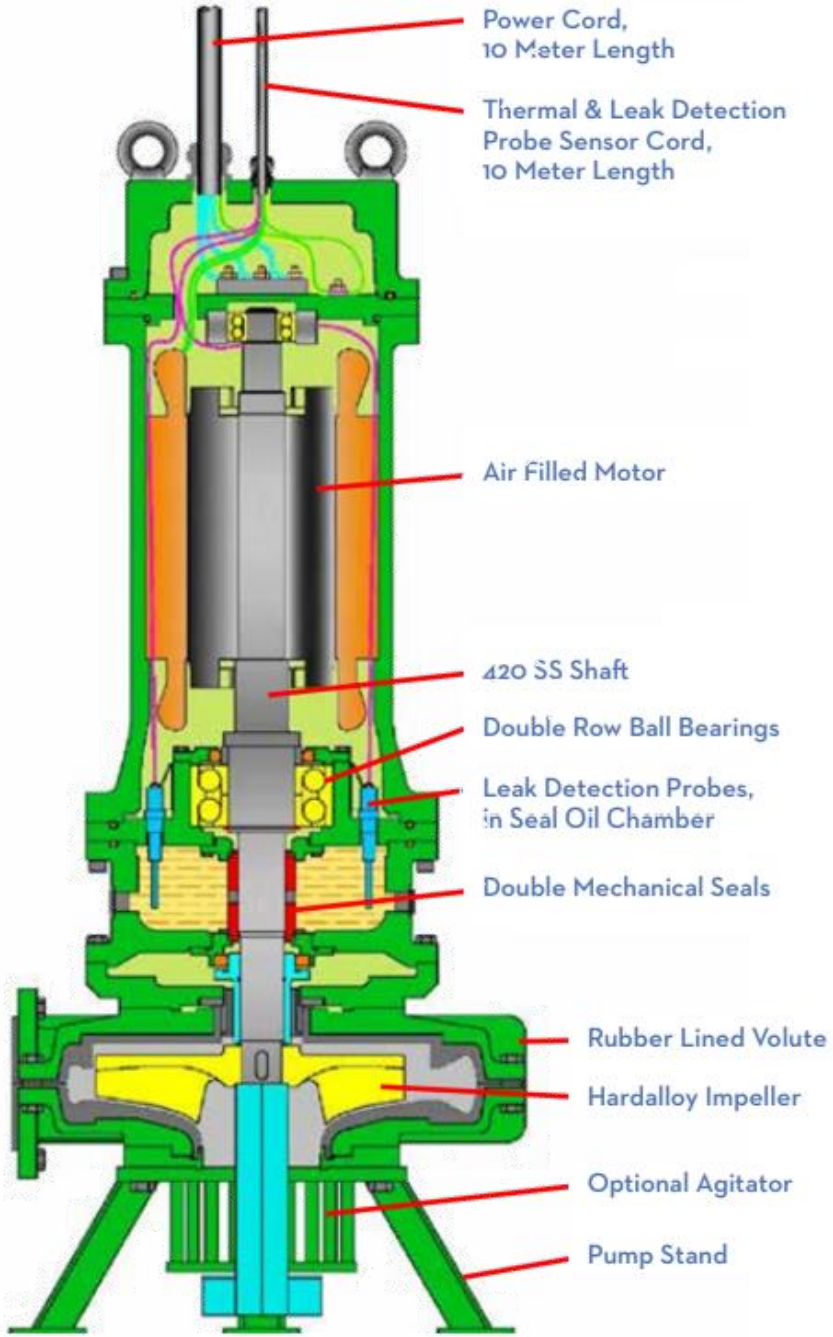
PEMO Submersible Pumps will provide years of trouble free service.

Coupled to the heavy-duty waterproof electric fully submersible motor through a coupling cage containing the dual opposed seal with independent permanent lubrication.

They are ideal for use in deep wells where a vertical pump would be too costly or impossible to install.

Pemo Submersible Pumps are installed without masonry or special structures. They can be set on the bottom of the well or hung from a rope, chain or other suspension devices.

A float switch controls the pump, keeping it constantly covered with fluid.



PEMO PUMPS

RUBBER LINED SUBMERSIBLE PUMPS

HARDALLOY CONSTRUCTION

- Impeller, volutes, sleeves, suction covers and discharge elbows all Hardalloy
- Built-in thermal overload protection
- Double mechanical seals
- Moisture detection
- Heavy-duty lip seals
- Heavy-duty thrust bearings
- Shafts made of 420 SS
- Custom designed pumps can be provided for specific applications
- Can be operated at higher temperatures and longer cycle times

PUMP MODEL	POWER (hp)	SPEED (rpm)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
S-FP	5.5 to 25	1750 - 3500	260	165	2.5
603-H	15 to 40	1750 - 3500	550	165	3
K125-H	15 to 50	1150 - 1750	800	165	3

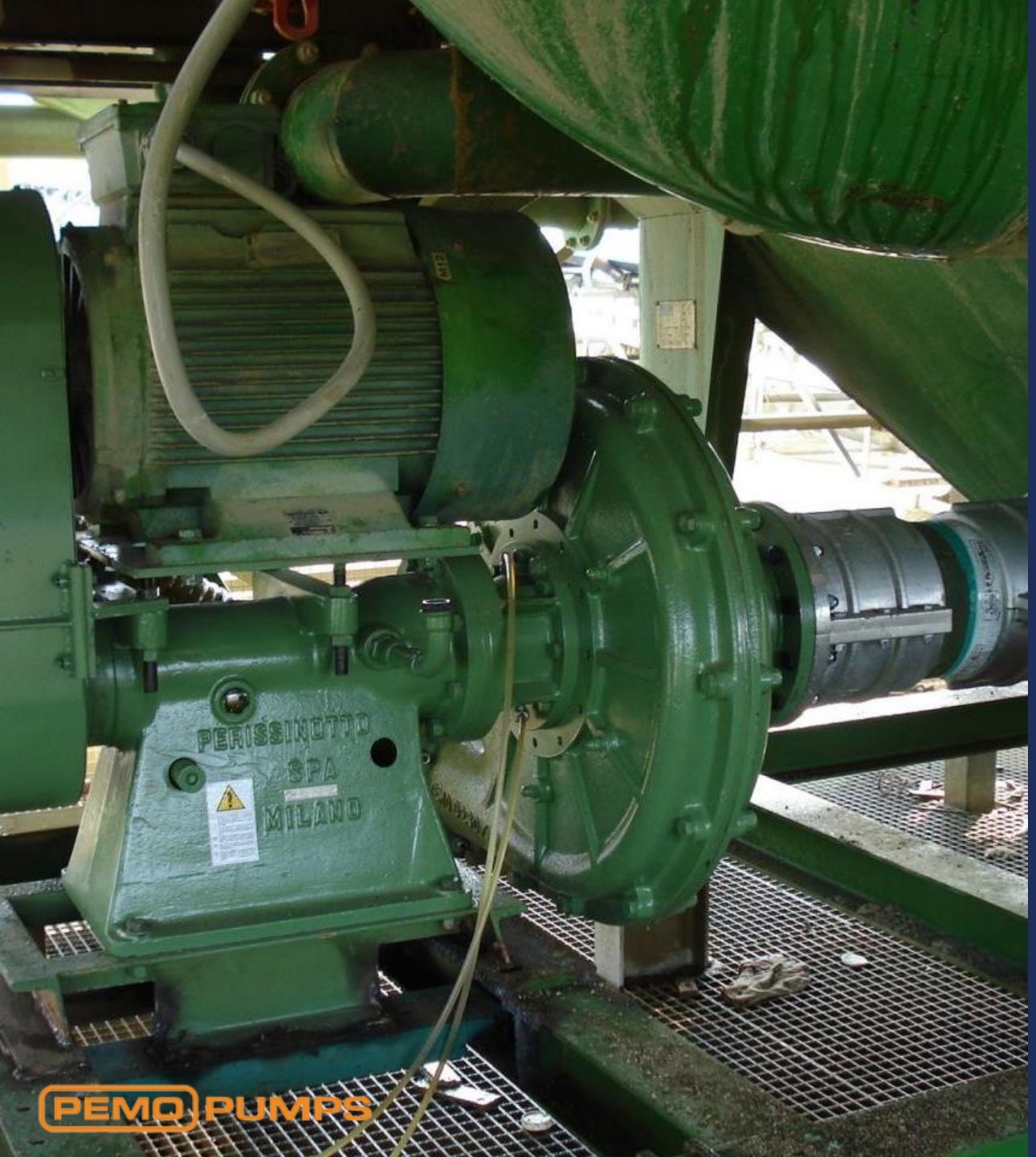
RUBBER LINED CONSTRUCTION

- Rubber lined versions with Hardalloy-impellers
- Designed for heavy-duty slurry applications with rubber lined casings
- Power ranging from 1 to 100 hp, and speeds from 735 to 3,500 rpm
- Capacities up to 1,585 gpm (360 m^3/h)
- Maximum available pressures from 88 to 103 psi (6-7 bar)
- Mechanical seals are of Silica or Tungsten Carbide
- Bearings are grease lubricated to deliver long-life
- Thermal probes (for the control of motor temperature) and oil level probes (for slurry leak detection inside the oil chamber)
- Electric device for the analysis of the signals from the thermal probes

PUMP MODEL	POWER (hp)	SPEED (rpm)	MAX FLOW (gpm)	MAX HEAD (ft)	DISCHARGE (in)
33	1.5 to 4	1750 - 3500	80	65	1
302	3 to 4	1750 - 3500	100	65	1.5
403	5.5 to 12	1750 - 3500	180	100	2
503	5.5 to 25	1750 - 3500	220	150	2.5
533	5.5 to 25	1750 - 3500	400	150	3
603	15 to 40	1750 - 3500	480	165	3
804	15 to 30	1750 - 3500	660	85	3
K125	25 to 50	1150 - 1750	660	165	3
1004	25 to 60	1150 - 1750	1000	130	4
1706/99	40 to 75	880 - 1150	1600	120	6
G230	40 to 100	880 - 1150	2400	120	8
I-270	60 - 150	880 - 1150	3200	120	8

PEMO PUMPS

Aplicaciones Bombas



MINAS Y EXTRACCIÓN DE MATERIAS PRIMAS

•Las bombas Pemo son ampliamente utilizadas en estos sectores, gracias a la amplia gama de modelos y configuraciones disponibles. Las bombas para estas aplicaciones están disponibles en versión horizontal, vertical y sumergida.

•Las bombas Pemo están proyectadas específicamente para fluidos abrasivos y/o ácidos/corrosivos, y están disponibles en diferentes materiales: revestimientos de goma, aleación Hardalloy PEMO (750-800 HB), acero inoxidable y Hastelloy.

•Algunos modelos pueden funcionar a una presión máxima de 20 bar.

•Las aplicaciones de las bombas Pemo incluyen el transporte de lodos concentrados a embalses, la alimentación de hidrociclones para la recuperación de arenas y la alimentación de filtros-prensa.

TRANSPORTE DE LODOS

•Las bombas Pemo se utilizan frecuentemente para el transporte de lodos. Los modelos para estas aplicaciones están disponibles en versión horizontal, vertical o sumergida.

•Las bombas horizontales serie AO/AB y AO/AB/DC son utilizadas para lodos concentrados o espesados, en espesadores o clarificaciones de embalse, o en instalaciones de filtro-prensa, cuando hay pérdidas de presión en las tuberías debido a los largos recorridos.

•Gracias a la aspiración lateral, la máxima presión sobre los órganos de estanqueidad no supera la del fluido que entra (a diferencia de las bombas de aspiración frontal, en las que la presión es equivalente a la más alta en la salida de la bomba). De esta forma se reduce el desgaste de las juntas, aumentando su duración y mejorando la fiabilidad de las bombas.

•Algunos modelos pueden funcionar con un caudal de hasta 1500 m^3/h. La altura máxima de algunos modelos puede alcanzar los 150 m/H2O.

ALIMENTACIÓN DE HIDROCICLONES

•Cualquier modelo de bomba Pemo puede ser utilizado para transportar lodo a los hidrociclones, con el objetivo de separar la arena y las partículas más pesadas.

•Algunos modelos pueden funcionar con un caudal de hasta 1500 m^3/h.

•Presión estándar: hasta 3 bar.

•Las superficies en contacto con el material bombeado para este tipo de uso están revestidas de goma o Hardalloy PEMO (750-800 HB).

NUEVAS TECNOLOGÍAS PARA LA ALIMENTACIÓN DE HIDROCICLONES

•En 2008, la empresa Perissinotto SpA amplió su serie de bombas PEMO verticales AUS, extendiendo la producción a modelos de mayores dimensiones con el objetivo de ofrecer caudales más elevados. Estos nuevos modelos fueron propuestos a diferentes clientes y, a continuación, comparados con las bombas tradicionales, utilizadas habitualmente para alimentar los hidrociclones.

•Gracias a los rotores abiertos y a la ausencia de órganos de estanqueidad, además de otras características especiales, la evaluación de los costes de funcionamiento de estas bombas mostró un ahorro de energía de aproximadamente el 15-30 % con respecto a las bombas horizontales tradicionales, en la mayor parte de las aplicaciones.

•En estas aplicaciones, la serie AUS funciona en forma óptima si la aspiración se realiza en cubas de hasta 2 m de altura.

OTRAS APLICACIONES

Bombas horizontales de doble cuerpo para filtros-prensa.

Bombas para transporte de lodos.

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