

MAZDA PUMP MANUFACTURING CO., LTD. MAZDA PUMP ENGINEERING CO., LTD.

GENERAL CATALOG

To the next stage.

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Lineup

Horizontal pump

- Horizontal centrifugal pump Centrifugal pump Mixed flow pump Axial flow pump
 - | Horizontal ceramic liner pump
- Horizontal self-priming pump
- Valveless pump

Vertical pump

- Vertically suspended pump Centrifugal pump Mixed flow pump
- NON-LEAK pump
- Vertical self-priming pump

Specialized pump

- Metal pump
- Wesco pump

Standard material pump

Horizontal centrifugal pumps

This pump has been used in a variety of applications based on a lot of experience and technology for over a century.



No.	Description	Material	No.	Description	Material
100	Casing	PILOMET 26A	376A	Bearing Cover	FC200
149	Mech. Seal Cover	SCS14	376B	Bearing Cover	FC200
201	Suction Cover	PILOMET 26A	377	Adjust Nut	BC2
230	Impeller	PILOMET 26A	424A	Ball Bearing	SUJ2
242	Impeller Lock Nut	PILOMET 26A	424B	Ball Bearing	SUJ2
260	Pump Shaft	SUS403Q	426A	Oil Seal	NBR
270	Shaft Sleeve	PILOMET 26	426B	Oil Seal	NBR
280	Impeller Nut	PILOMET 26A	464	Quenching Pipe	SUS304
321	Mechanical Seal	SiC:SiC	641	Pan	SUS316
360	Frame	FC200	651	Spray Cover	Clear PVC
375	Bearing Case	FC200			

Applicable materials

PILOMET (Stainless steel)

- PILON
- · SWEISEN Rubber lining
- Titanium

[Features]

[Applications]

With various materials, structures and original type of sealing system, these pump can resolve any, even insignificant problem unlike the common manufacturter. And with our traditional heavy-duty designs and Build-to-order manufacturing enable the custom designs to comply flexibly for the modifications.

Horizontal centrifugal pump Suitable for Eelectrolytic solutions for plating, Eelectrolytic solutions for non-ferrous metals, Waste liquids, Dust from blast furnaces and sintering furnaces, Ccorrosive, and liquids.

Large horizontal centrifugal pumps

Since development in 1972, we have been supplying this pump in Japan and also overseas with gaining experience in the field continuously.



No.	Description	Material	No.	Description	Material
100	Casing	FC250, SRL	375A	Bearing Case	FC200
143.2	Back Wear Plate	PILOMET 27	375B	Bearing Case	FC200
144	Casing Ring	PILOMET 27	376A	Bearing Cover	FC200
200	Casing Cover	FC250, SRL	376B	Bearing Cover	FC200
201	Suction Cover	FC250, SRL	376C	Bearing Cover	FC200
230	Impeller	PILOMET 27	377	Adjust Nut	SCS13
242	Impeller Lock Nut	PILOMET 26A	424A	Ball Bearing	SUJ2
260	Pump Shaft	SUS403Q	424B	Ball Bearing	SUJ2
280	Impeller Nut	PILOMET 26A	464	Quenching Pipe (inlet)	SUS304
321	Mechanical Seal	SiC:SiC	465	Quenching Pipe (outlet)	SUS304
360	Frame	FC200	641	Pan	SUS316
366	Frame Support	FC200			

SRL: Natural soft rubber lining

Applicable materials

Natural soft rubber

Chloroprene rubber

 Applicable with material PILOMET 26A, 26, 27, or 68 stainless steel.

Applications

Large number of absorber circulation pump has been installed for power generation facilities, FGD system, absorption towers, etc. Applicable with suction size up to 700A (8000m3/h)

[Features]

Variety of materials enable to design pumps which has excellent anti-corrosion and anti-wear characteristics.

Horizontal self-priming pumps

With the development in long-term, this pump realized the superior service life by the new design even for fluid contained slurry slurry contained fluid which is not suitable for self-priming pump.



No.	Description	Material	No.	Description	Material
100	Casing	PILOMET 26A	376B	Bearing Cover	FC200
149	Mech. Seal Covrer	SCS14	424A	Ball Bearing	SUJ2
178	Drain Flange	PILOMET 26A	424B	Ball Bearing	SUJ2
179	Cap Nut	PILOMET 26A	426A	Oil Seal	NBR
200	Casing Cover	PILOMET 26A	426B	Oil Seal	NBR
230	Impeller	PILOMET 26A	464	Quenching Pipe	SUS304
260	Pump Shaft	SUS403Q	500	Valve Flange	PILOMET 26A
270	Shaft Sleeve	PILOMET 26	501	Disk	PILOMET 26A
280	Impeller Nut	PILOMET 26A	503	Valve Pin	High nickel alloy
321	Mechanical Seal	SiC:SiC	509	Valve Plug	PILOMET 26A
360	Frame	FC200	641	Pan	SUS316
375	Bearing Case	FC200	651	Spray Cover	Clear PVC
376A	Bearing Cover	FC200			

Applicable materials

[Applications]

PILOMET (Stainless steel)

PILON

- · SWEISEN
- Rubber lining

[Features]

pump is considered as unsuitable.

Suitable for pumping up liquid from the pit, and for processing residual liquid.

With a wide range of material and design, our pump can lift up the fluid contained slurry although self-priming

NON-LEAK pumps

To comply for the customer's voice such as "it is too much work to disassemble and assemble pumps," we developed the pump which saves disassemble process of piping and realize the easy maintenance. These pumps have been well reputed by wide range of customers since 1991.



No.	Description	Material	No.	Description	Material
100	Casing	PILOMET 26A	424A	Ball Bearing	SUJ2
149	Mech. Seal Cover	SCS14	424B	Ball Bearing	SUJ2
200	Casing Cover	PILOMET 26A	426A	Oil Seal	NBR
212	Seat Flange	SS400	426B	Oil Seal	NBR
230	Impeller	PILOMET 26A	464	Quenching Pipe (inlet)	SUS304
241	Locking Washer	S50CM	465	Quenching Pipe (outlet)	SUS304
260	Pump Shaft	SUS403Q	535A	V-Pulley	FC200
270	Shaft Sleeve	PILOMET 26	535B	V-Pulley	FC200
321	Mechanical Seal	SiC:SiC	537	V-Belt	Synthetic rubber
360	Frame	FC200	600	Bed	SS400
375	Bearing Case	FC200	623	Motor	
376A	Bearing Cover	FC200	651	Spray Cover	Clear PVC
376B	Bearing Cover	SS400			

Applicable materials

[Applications] NON-LEAK pumps are suitable for transferring highly concentrated acidic and alkaline slurries.

PILOMET (Stainless steel)

• PILON

· SWEISEN

Rubber lining

 \cdot Titanium

[Features]

With V-belt drive of vertical structure as standard, pump performance can be controlled easily by adjusting rotating speed. Easy process of disassembly enables to assemble & disassemble in short time. And this pump is contributed well in wide range of application such as slurry liquid, acidic or alkaline liquids.

Axial flow and mixed flow pumps

Manufacturing process of salt in Japan has been realized by using evaporating concentration and crystallization technologies. These technologies have also been applied in various industries to regenerate, downsizing, and reducing the weight.



No.	Description	Material	No.	Description	Material
100	Casing	PILOMET 68	366	Frame Support	FC200
140	Guide Vanes	PILOMET 68	375	Bearing Case	FC200
147	Stuffing Box	SCS14	376A	Bearing Cover	FC200
148	Insert Case	PILOMET 68	376B	Bearing Cover	FC200
149	Mech. Seal Cover	SCS14	377	Adjust Nut	SUS304
230	Impeller	PILOMET 68	424A	Ball Bearing	SUJ2
242	Impeller Lock Nut	PILOMET 68	424B	Ball Bearing	SUJ2
260	Pump Shaft	SUS316	426A	Oil Seal	NBR
270A	Shaft Sleeve	PILOMET 68	426B	Oil Seal	NBR
270B	Shaft Sleeve	PILOMET 68	432	Bearing Collar	SS400
280	Impeller Nut	PILOMET 68	460	Sealing Pipe (inlet)	SUS304
321	Mechanical Seal	WC:WC/ceramic: carbon	461	Sealing Pipe (outlet)	SUS304
332	Mech. Fitting Ring Set Plate	SUS316	641	Pan	SUS316
360	Frame	FC200			

Applicable materials

PILOMET (Stainless steel)

PILON

· SWEISEN

Rubber lining

Applications

Applicable with circulating pumps for device.

[Features]

Even for the hard condition with concentrated slurry, this pump can be used for circulation without clogged at impeller. Additionally, these pumps can handle various fluids with improved materials and shaft sealing.

Applicable with circulating pumps for process of evaporation and concentration device and crystallization

Vertically suspended pumps

This pump was developed by various technologies which has been acquired in the hard conditions of sulfuric acid production facilities. This pump is applied in the wide of fields still at present.



INO.	Description	materiai
100	Casing	PILOMET 26A
109	Column	PILOMET 26A
116	Lifting Pipe	PILOMET 26A
117	Bend Pipe	PILOMET 26A
118	Set Flange	FC200
119	Gland	FC200
120	Gland Packing	PTFE (with graphite)
126	Suction Pipe	PILOMET 26A
154	Casing Bush	PILON 3
201	Suction Cover	PILOMET 26A
230	Impeller	PILOMET 26A
260	Pump Shaft	SUS329J1, S45CN
270	Shaft Sleeve	PILOMET 30A
280	Impeller Nut	PILOMET 26A
294	Drip Seal	PVC
360	Frame	FC200
363	Motor Pedestal	FC200
375A	Bearing Case	FC200
375B	Bearing Case	FC200
376A	Bearing Cover	FC200
376B	Bearing Cover	FC200
389	Gas Seal Packing Case	PILON3
391	Gas Seal Gland	FC200
392	Gas Seal Packing	PTFE (with graphite)
393	Oil Seal Case	FC200
424A	Ball Bearing	SUJ2
424B	Ball Bearing	SUJ2
426A	Oil Seal	NBR
426B	Oil Seal	NBR
426C	Oil Seal	NBR
428	Dust Seal	Felt
534	Coupling	FC200
603	Sole Plate	FC200
640	Strainer	PILOMET 26A
656	Shim Washer	C2680

Applicable materials

PILOMET (Stainless steel)

· PILON

SWEISENRubber lining

• Titanium

Metal pumps

Combination of improved design and materials realize the continuous running under high temperature. Large number of installation records is the evidence of reliability and high technology.



Applicable materials

PILOMET (Stainless steel)
PILON

Ceramic

[Applications] Metal pumps are suitable for transfer potassium.

[Features]

These pumps safely replace manual ladling from furnaces with shorter work time, thereby improving the work environment. The volume of pumping can be adjusted by controlling the rotation speed.

[Features]

[Applications]

submersible pumps, but also as out-of-pit pump exceptionally.

Additionally this pump can be used for strong acid and strong alkaline liquid.

Seal-less structure enables the leakage free. Also it prevents the trouble by cavitation and incomplete pumping.

Large number of installation records at sulfuric acid plant. Generally, such pumps are installed at pit as

No.	Description	Material
100	Casing	PILOMET 17
109A	Column	SUS316L
109B	Column	SUS316L
109C	Column	SUS316L, SUS304
116A	Lifting Pipe	SUS316L
116B	Lifting Pipe	SS400, Ceramic
117	Bend Pipe	PILOMET 17
201	Suction Cover	PILOMET 17
230	Impeller	PILOMET 17
260	Pump Shaft	SUS316L, Stellite Coating
292	Grease Fringer	SS400
360	Frame	FC200
363	Motor Pedestal	SS400
375	Bearing Case	FC200
376	Bearing Cover	FC200
377	Adjust Nut	SUS304
393	Oil Seal Case	SS400
422	Intermediate Bearing	Carbon
423	Intermediate Bearing Case	SUS316L
424A	Ball Bearing	SUJ2
424B	Ball Bearing	SUJ2
426A	Oil Seal	NBR
426B	Oil Seal	NBR
426C	Oil Seal	NBR
441	Metal Holder	SUS316L
534A	Coupling	SS400
534B	Coupling	FC200
538	Bushing	Leather
602	Frame	SS400

Metal pumps are suitable for transfer stirring of aluminum, zinc, lead, bismuth, tin, molten salt, sodium and

Valveless pumps

Bestselling products in half a century since r its debut and, gaining deep rooted popularity by unique technology.



No.	Description	Material	No.	Description	Material
100	Casing	PILOMET 26A	375	Bearing Case	FC200
149	Mech. Seal Cover	SCS14	376A	Bearing Cover	FC200
201	Suction Cover	PILOMET 26A	376B	Bearing Cover	FC200
203	Inspection Hole Cover	SUS304	424A	Ball Bearing	SUJ2
230	Impeller	PILOMET 26A	424B	Ball Bearing	SUJ2
260	Pump Shaft	SUS403Q	426A	Oil Seal	NBR
270	Shaft Sleeve	PILOMET 26	426B	Oil Seal	NBR
280	Impeller Nut	PILOMET 26A	464	Quenching Pipe	SUS304
321	Mechanical Seal	SiC:SiC	641	Pan	SUS316
360	Frame	FC200	651	Spray Cover	Clear PVC
367	Frame Flange	FC200			

Applicable materials

[Applications]

PILOMET (Stainless steel)SWEISEN

Suitable for transferring gas-liquid combinations in chemical plants and wastewater treatment facilities. Please refer page 11 for other applications.

* Gas-liquid combinations :Lliquids containing bubbles.

[Features] Vacuum level achieves at 600mmHg but has the capability of discharging liquid. This pump can transfer the solvents which is difficult to pump without any problem. Once liquid is initially injected into the casing, pump can operate without further priming. (can keep running even if the air is contained into the pump) Suction power is very strong compared to other self priming pumps.

01 Purpose of suction transferring for drum cans

Pump can transfer the liquid of drum completely with contained air.

Even if air is contained into the pump, possible to continue pumping next drum without suspension.

03 Extraction of filtrate can be performed with a single pump unit.



Previously equipment such as vacuum pump, vacuum tank, vacuum cut, and spill pit are required, Valveless pump can filtrate by itself with the strong enough suction power.

Operating principle of the valveless pump

- When the pump run with sealing the liquid in the casing as shown in the figure on the right, the liquid flows eccentrically by the centrifugal force of the impeller, and it creates belt-shaped circulating flow along the inner wall of the casing.
- When a crescent-shaped space is formed in the impeller, air flows into this space. As it passes through the center of the divider, this air is pushed out to the center of the crescent-shaped space.
- If a suction inlet (S) and discharge port (D) are equipped, air will flow continuously from (S) to (D).
- In other words, when the air is discharged due to the action of the water piston, liquid enters the pump, then it is possible to pump continuously same as centrifugal vortex pump.

Application examples:

Transferring liquids containing air or viscous liquids.



This pump can pump out froth occurred by detergent, bubbles on the surface of pit or tanks, foaming liquids, oils, and solvents.



Suction power is very strong compared to other self-priming pump, suitable to use for liquids such as solvents with low temperatures. (Possible to use for hot water at approx..90 $^{\circ}$ C)



How to select materials



Pump materials

Material		Type	Generic name	Description of materials	Past applications	
Allov	SWEISEN	SWEISEN	High silicon	O A multi-purpose material resistant for sulfuric	Chemical and sulfuric acid plants, etc.	
cast steel	UTLICE.		cast iron	acid solution which has been inherited for generations since the foundation of Mazda Pump in 1916.		
				This material is suitable for handling sulfuric acid, nitric acid, phosphoric acid, chromic acid, and hypochlorous acid, etc.		
		SWEISEN 3		O A corrosion-resistant alloy based on SWEISEN Sweisen combined withwith the addition of molybde- num, with excellent hydrochloric acid resistance.		
	PILON	PILON 1	Gray cast iron	FC200 equivalent.	General chemical plants, etc.	
		PILON 2	Low alloy cast	O PILON products id developed by Mazda Pump	Sulfuric acid manufacturing plants, etc.	
		PILON 3	steel	based on its long-term experience in manufacturing pumps for sulfuric acid manufacturing facilities. This		
		PILON 4		pump is suitable for handling concentrated sulfuric		
		PILON 5		trated sulfuric acid, and concentrated sulfuric acid in		
		PILON 8 Hardest	High-chromium	Abrasion resistant materials that are suitable for highly alkaline and concentrated slurry liquids	Power plants (flue gas desulfurization equipment) chemical plants etc.	
		Others: As specified by customers	-	Alloy cast steel-type materials that can be specified by the customer.	Research and development plants, etc.	
Alloy cast stain-	PILOMET alloy	PILOMET 11	Duplex stainless steel	Suitable for handling dilute sulfuric acid, concentrat- ed sulfuric acid, fuming sulfuric acid, seawater, sea- water electrolytes, etc.	Sulfuric acid, seawater electrolysis, copper electrolysis plants, etc.	
less steel		PILOMET 26A	· · · · · · · · · · · · · · · · · · ·	Suitable for dilute sulfuric acid, concentrated sulfuric acid, waste treatment liquid, electrolytic solutions, plating liquids, etc.	Sulfuric acid, seawater electrolysis, copper electrolysis, plating plants, etc.	
		PILOMET 26		A material consisting of PILOMET 26A that has un- dergone heat treatment to improve its wear resis- tance to slurry liquids.		
		PILOMET 27	High hardness duplex stainless steel	A material that achieves a good balance between corrosion resistance and abrasion resistance by in- creasing the hardness of duplex stainless steel.	Power plants (flue gas desulfurization equipment) phosphoric acid plants, etc.	
		PILOMET 30		A material that improves the hardness of PILOMET 27 for anti-corrosion and anti-wear applications.	Plants and other applications that require both anti-corrosion and anti-wear characteristics	
		PILOMET 33	Duplex stainless steel	A material ideal for handling phosphoric acid solution containing gypsum slurry.	Plants for phosphoric acid containing slurry, etc.	
		PILOMET 55	High alloy austenite stainless steel	A material ideal for handling electrolytic solutions, plating solutions, phosphoric acid, gas cleaning solutions, etc.	Phosphoric acid, electrolysis, and plating plants	
		PILOMET 68	High Ni-Cr stainless steel	A material ideal for handling dilute sulfuric acid con- taining halogens, gas cleaning liquids, etc. (equiva- lent to Hastelloy C).	Salt purification, cleaning and cooling of gases containing halogens etc.	
		PILOMET E08		A material based on PILOMET 68 with improved hard- ness for anti-corrosion and anti-wear applications.	Cleaning and cooling of gasses containing halogens and slurry, etc.	
		PILOMET 17	Special heat-resistant stainless steel	A material ideal as a pump material for molten metals such as aluminum alloy, zinc, lead, bismuth and tin.	Aluminum casting, molten metal plating plants, etc.	
		PILOMET ST	Special stainless steel	A material ideal as a pump material for molten metal such as zinc.	Molten metal plating plants, etc.	
		PILOMET NI	Nickel alloy	A material ideal for handling high-temperature and high-concentration sodium hydroxide.	Seawater electrolysis, soda plants, etc.	
		PILOMET CN7MS	High alloy stainless steel	A material ideal for handling specialized plating liq- uids (equivalent to CN7MS).	Special plating plants, etc.	
	General- purpose	SCS13	Austenite stainless steel	A material ideal for handling general-purpose corro- sive liquids.	General chemical plants, etc.	
	stainless	SCS14				
	01001	Others: As specified	_	Allov cast steel-type materials that can be specified	Research and development plants, etc.	
Non-	Rubber	by customers Natural,hard	Natural, hard	by the customer. A material ideal for handling corrosive liquids that	Chemical plants, etc.	
ferrous metals	lining	Natural,soft	Natural, soft	cannot be covered using metals alone.	Power generation plants (flue gas desulfur-	
		Chloroprene	Chloroprene		ization equipment), chemical plants, etc.	
	Titanium	Titanium (JIS-2/3)	Industrial titanium	A material ideal for handling chlorine water and sodi- um hypochlorite.	Seawater electrolysis, soda plants, etc.	
		Titanium palladium (JIS-12/13)	Industrial titanium palladium			
	Ceramic	-	-	A material ideal as a pump material for molten such as aluminum and zinc.	Aluminum casting, molten metal plating plants, etc.	

At its manufacturing plant, Mazda Pump uses the following metals.

How to select a mechanical seal and gland packing





Inexpensive and excellent self-lubricating characteristics

Excellent anti-chemical and self-lubricating characteristics

Characteristics of shaft sealing method

Feature	Mechanical seals	Gland packings
Leakage	Leakage is very small volume, usually 3 cc/hr or less for mechanical seals in pumps, environmentally friendly.	These are very large. Leakage on the order of 1,000 cc/hr is unavoidable, which affects other parts due to the leaked liquid, and impacts the environment.
Lifespan	Continuous operation is usually possible for one to two years.	Replacement needs to be done frequently, and the sleeves need to be replaced.
Retightening adjustment	No retightening is required because the seal follows the spring.	Packings wear quickly, and retightening needs to be done once in a while.
Friction resistance	Friction resistance is small due to a small sliding area.	Friction is a large due to a large friction area.
Cost	Although the initial cost is high, the low running cost makes the overall cost low.	Although the initial cost is low, the high running cost makes the overall cost high.
Handling	Care is required in handling as these seals are precision mechanical parts.	Replacement is easy.
Maintenance	The pump needs to be disassembled.	The pump does not require disassembly.

Gland packing



Excellent anti-chemical characteristics Suitable for liquid that cannot contain carbon (concentrated sulfuric acid, nitric acid, hydrofluoric acid, chromic acid, food, etc.).



[Structure of metal and suction pipe for a vertical model]







🏠 MAZDA PUMP

www.mazdapump.co.jp/e/e-index.htm

We, Mazda Pump , design and manufacture a wide range of chemical pumps in response to our customers' requests. Our versatile know-how and advanced technologies as a specialized manufacturer enable us to satisfy all kinds of needs.

We propose pumps optimized for specific tasks and we also provide expert advice on selecting pump materials, so please feel free to contact us.

(As a specialized manufacturer of pump, we propose the most suitable pump to resolve customer's problem or any difficulty such as selection of material with our expertise and advanced technologies.)

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