



EBARA

CS1610EF

PULP PUMP

Model ULP



Papyrus is a perennial plant which thrives near water in Africa's interior. About 4,000 years ago, the pith of the stem was thinly sliced and pasted together to form a sheet material which served as a support for written symbols and images. The word "papyrus" is the root of our word paper.

The Pulp Pump of the Future

Maintenance

- Simpler adjustment of the clearance of the front side of the impeller.
- Reduction of maintenance times.

Performance

- Oil leaks from the bearing housing have been eliminated thanks to a specially designed labyrinth seal.
- Variety of shaft seal.

Durability

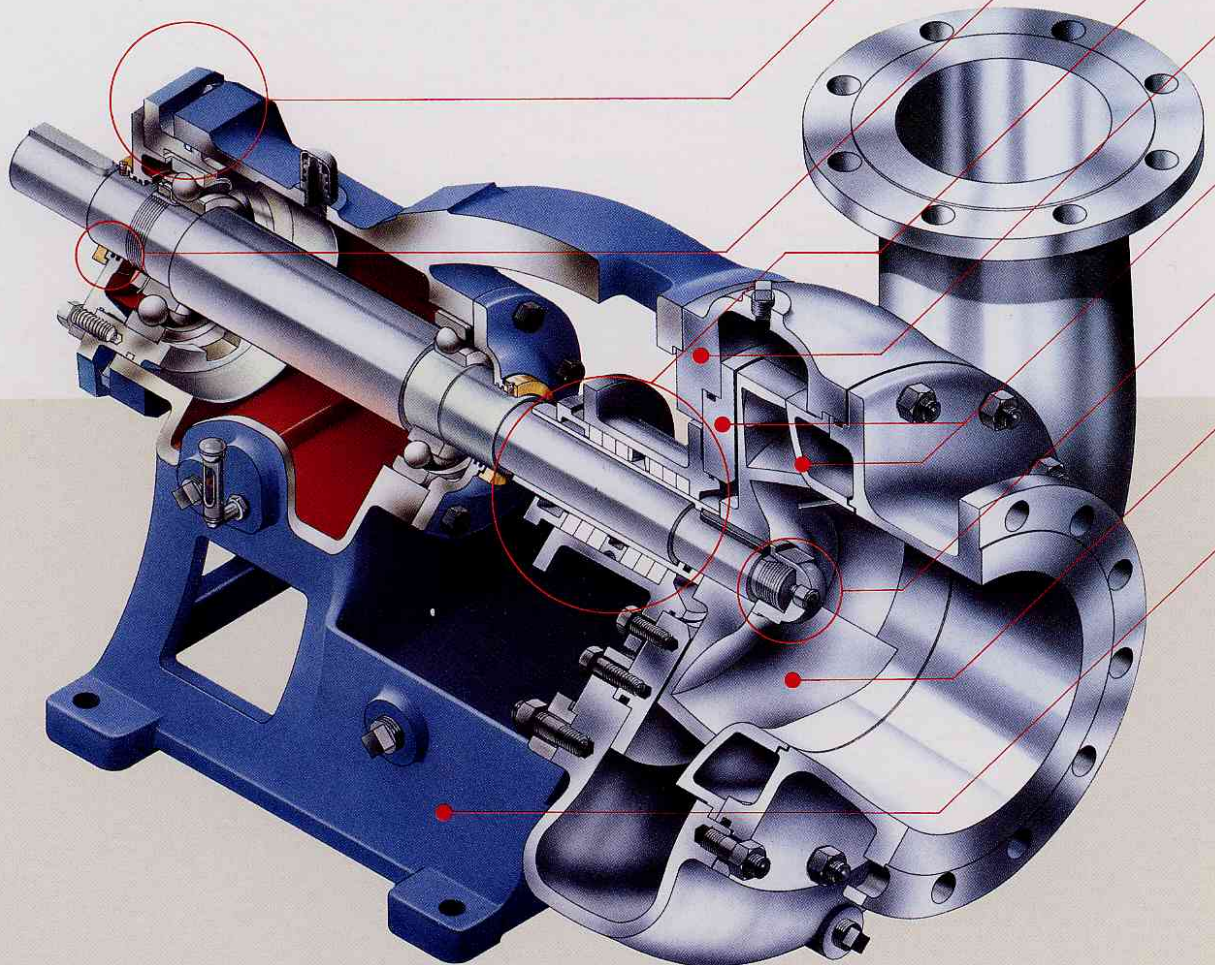
- Prevention of casing wear by side plates.

Economy

- Overall improved efficiency significantly reduces running costs.

Reliability

- The unique bracket support system ensures stable running.



Features of the Ebara Pulp Pump

● Clearance Adjustment Mechanism

Adjustment of clearance between the impeller and the front side plate can be carried out externally, without disassembling the pump, thus reducing the time required for impeller replacement.

● Labyrinth Seal

Lubricating oil is sealed with a specially designed labyrinth seal which is non-contact type to the shaft. This labyrinth seal eliminates oil leak from the bearing housing without any damage to the shaft.

● Variable Shaft Seal

The stuffing box is separated from the casing, makes it easier to adapt to a wide variety of mechanical seals.

● Triple division of the casing

Triple division of the casing makes it easy to disassemble and re-assemble the pump without removing the casing from the discharge pipe.

This means a major reduction in the time required for maintenance.

● Side plates

Side plates are provided both front side and backside of the impeller to prevent wear of the casing and suction cover.

● Impeller mounting

The use of both impeller nut (right-handed screw) and hexagonal bolt (left-handed screw) eliminates the adjustment work even when replacing the impeller and shaft sleeve.

This means a major reduction in maintenance time.

● Impeller

The unique hydraulic design produces highly-efficient pumping and reduces running costs.

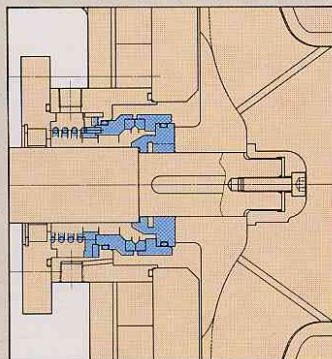
● Bracket support-type bearing casing

The bracket support system used to support the pump casing allows only a minimum vibrations and ensures completely stable operation. It is particularly effective with pulp liquids containing bubbles.

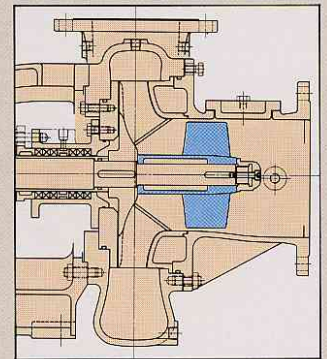
Options

Mechanical seal

Stationary mechanical seal



Booster Impeller



To improve the environments around the pump and simplifying maintenance

The spring does not come into contact with the liquid pulp.

This effectively eliminates leaks which may be caused by any malfunction of the spring. There is no need for any external feed of water; quenching needs during pump operations. Carry out cleaning of the stuffing box while the pump is stopped.

Liquid pulp has extremely poor fluidity when pulp density reaches around 5%. This means that the liquid does not flow smoothly from the pump suction the impeller. To ensure a smooth and constant flow even when pulp density reaches 5.1% and greater, a booster impeller is provided in front of impeller.

Specifications

Standard specification

Liquid specifications		0.3-5% pulp liquid(maximum 6%)	
Temperature		0-95℃	
Maximum operating pressure		Gauge pressure:7-13 kgf/cm ² {0.686-1.274MPa} .Varies according to model.	
Maximum suction pressure		Gauge pressure:3kgf/cm ² {0.294MPa}. However, it should be less than (the maximum operating pressure — shut off pressure).	
Installation site		Indoor,Outdoor	
		Stainless steel for main parts	Stainless steel
Material	Casing	FC200	SCS13
	Impeller	SCS13	SCS13
	Shaft	SUS304	SUS304
	Shaft sleeve	SUS304	SUS304
	Gland packing	P#6501L(carbon fiber)	P#4506L(inorganic alamid fiber)
Structure	Shaft seal	Gland packing, non water cooling	
	Flushing method	External flushing	
	Bearing	Ball bearing, non water cooling	
	Lubrication	Oil bath	
	Casing split	Front cover vertical split	
	Impeller type	Full open	
Flange rating	Suction	JIS10K RF	
	Discharge	JIS10K RF	
Nozzle direction	Suction	END	
	Discharge	TOP	
Rotation		Clockwise viewed from driver	
Drive method		Direct-coupled driver	

Standard Accessories

Common base plate, Coupling (both the pump side and driver side), external flushing piping , bracket drain piping, anchor bolts, coupling guard , casing drain plug, air vaive,

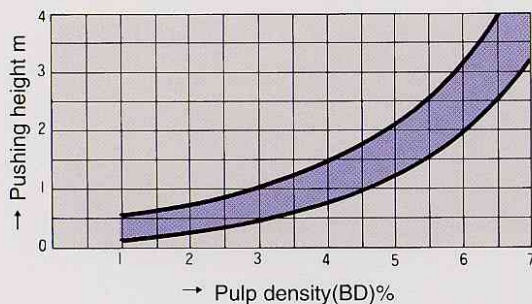
Option

Structure	Shaft seal	Mechanical seal(stationary)
Material	Casing	SCS14,SCS16,SCS11
	Impeller	SCS14,SCS16,SCS11
	Shaft	SUS316,SUS316L,SUS329J1
	Shaft sleeve	Base metal:SUS304,SUS316,SUS16L,SUS329J1
	(surface processing)	Coating material:Stellite,colmony,ceramics,METCO 16c
Coupling		Labflex
Coupling guard		Enclosure type, Enclosure type with hinges
When pulp density is between 5.1% and 6%		With booster impeller(The suction cover includes a handhole cover).

Pressure / Companion gauge(diaphragm type)
Gauge piping, Companion flange(with bolts and nuts), Special tools

Performance

Required suction head for standard pulp pump.



1. If the pulp density exceeds 4% ,there is a reduction in discharge volume and total head compared to water. In such a case, the discharge volume reduces to approximately 50% and the total head veduces to approximately 80% at pulp density of 6%

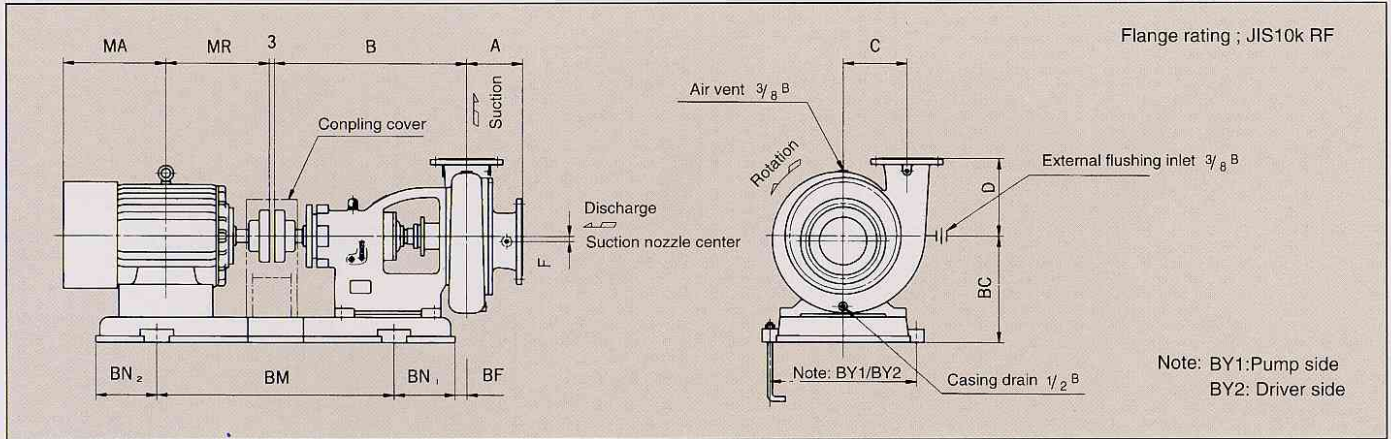
2. The pulp liquid tends to include air which is difficult to release. There is also a tendency to separate into the water and the pulp fibers. Therefore it is required to provide a suction head. Approximately 3 meters at 6%, approximately 2 meters at 5% and approximately 1.5 meters at 4%.(See table at left).

3. The table below shows the proper in side velocity of the suction pipe for the pulp liquid.

Proper inside velocity of suction pipe.

Type of liquid	Density(BD%)	Velocity
Water		3.0 ~ 3.5m/s
White water		2.5 ~ 3.0m/s
Pulp liquid	1 ~ 2%	1.5 ~ 1.1m/s
Pulp liquid	2 ~ 4%	1.1 ~ 0.7m/s
Pulp liquid	4 ~ 6%	0.7 ~ 0.5m/s

Outline dimensions



Unit: mm

Pump								
Nozzle size	Frame number	A	B	C	D	BF	F	Weight (mass) kg
125 × 100	27445	170	560	165	210	60	10	125
125 × 100	32445	180	560	180	260	60	0	150
150 × 100	27445	185	565	185	230	65	5	130

Driver						Common base							
Frame number	Output kW		Shaft diameter	MR	MA	Weight (mass) kg		BN ₁	BN ₂	BM	BC	BY ₁ /BY ₂	Weight (mass) kg
	4-pole	6-pole				4-pole	6-pole						
100L	2.2	1.5	28	193	173	30	30	155	155	500	275	390/310	40
112M	3.7	2.2	28	200	175	41	42	155	155	500	275	390/310	40
132S	5.5	3.7	38	239	205	63	62	170	170	680	285	390/390	50
132M	7.5	5.5	38	258	225	75	81	170	170	680	285	390/390	50
160M	11	7.5	42	323	255	107	111	170	170	680	285	390/390	50
160L	15	11	42	345	275	127	136	170	170	680	285	390/390	50
180M	18.5 / 22	15	48	351.5	325	160 / 174	165	180	180	780	295	480/480	55
180L	30	18.5 / 22	55	370.5	344	207	190 / 200	180	180	780	295	480/480	55

Unit: mm

Pump								
Nozzle size	Frame number	A	B	C	D	BF	F	Weight (mass) kg
125 × 100	3946A	180	695	220	270	65	0	230
150 × 125	3246A	195	695	210	250	65	5	220
200 × 150	2746A	210	715	225	240	85	10	220
200 × 150	3246	215	715	240	265	85	5	260

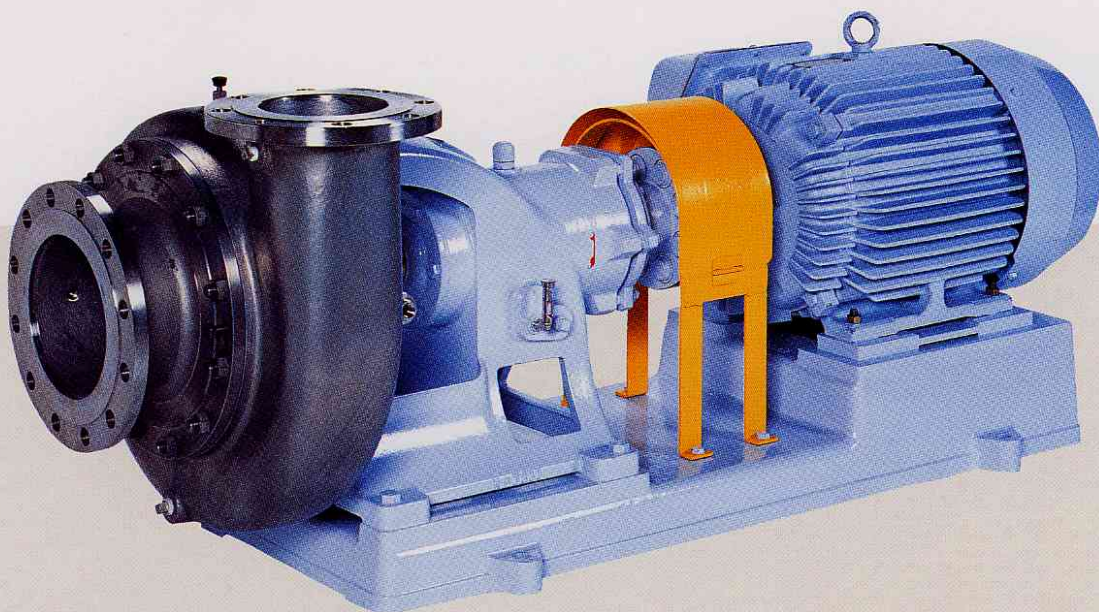
Driver						Common base							
Frame number	Output kW		Shaft diameter	MR	MA	Weight (mass) kg		BN ₁	BN ₂	BM	BC	BY ₁ /BY ₂	Weight (mass) kg
	4-pole	6-pole				4-pole	6-pole						
132S	5.5	3.7	38	239	205	63	62	175	175	800	370	480/390	60
132M	7.5	5.5	38	258	225	75	81	175	175	800	370	480/390	60
160M	11	7.5	42	323	255	107	111	175	175	800	370	480/390	60
160L	15	11	42	345	275	127	136	175	175	800	370	480/390	60
180M	18.5 / 22	15	48	351.5	325	160 / 174	165	200	200	860	380	490/490	75
180L	30	18.5 / 22	55	370.5	344	207	190 / 200	200	200	860	380	490/490	75
200L	37 / 45	—	60	425.5	377	270 / 350	—	200	200	860	380	490/490	75
225S	55	—	65	432	388	390	—	220	220	960	380	600/600	100

Outline dimensions

Unit: mm

Pump								
Nozzle size	Frame number	A	B	C	D	BF	F	Weight (mass) kg
150 × 100	4648AT	195	855	250	300	90	5	440
200 × 150	3948A	200	860	240	280	95	25	360
200 × 150	4648AT	215	865	275	310	100	20	460
200	3948A	210	870	260	310	105	5	440
250 × 200	3248A	240	890	265	285	125	20	520
250 × 200	4648TX	240	880	290	350	115	25	550
250	3948T	280	885	305	350	120	10	530
250 × 200	4648TY	280	875	300	335	110	15	540
350 × 300	3948	280	895	320	350	130	0	550

Frame number	Driver						Common base						
	Output kW		Shaft diameter	MR	MA	Weight (mass) kg		BN ₁	BN ₂	BM	BC	BY ₁ /BY ₂	Weight (mass) kg
	4-pole	6-pole				4-pole	6-pole						
160M	11	7.5	42	323	255	107	111	220	220	960	460	640/500	120
160L	15	11	42	345	275	127	136	220	220	960	460	640/500	120
180M	18.5 / 22	15	48	351.5	325	160 / 174	165	220	220	960	460	640/500	120
180L	30	18.5 / 22	55	370.5	344	207	190 / 200	220	220	960	460	640/500	120
200L	37 / 45	30 / 37	60	425.5	377	270 / 350	275 / 295	220	220	960	460	640/500	120
225S	55	45	65	432	388	390	540	240	240	1040	460	640/640	150
250S	75	55	75	463.5	501	590	560	240	240	1040	460	640/640	150
250M	90	75	75	482.5	520	670	640	240	240	1040	460	640/640	150
280S	110	—	85	544	579	860	—	280	280	1160	480	640/740	170
280M	132	—	85	569.5	604.5	940	—	280	280	1160	480	640/740	170
315S	160	—	95	589	640	1140	—	280	280	1160	480	640/740	170





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