Torishima Pump Global Network

CAL (Cast Iron)
CAR (Stainless Steel)

End-Suction Volute Pump

TORISHIMA

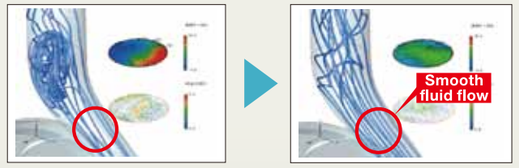
Go Green with
The Eco-Pumps

CAL: Cast Iron
CAR: Stainless Steel
(10bar)

Energy Saving	・High-Efficiency Pump ・Impeller Trimmed to Exactly Meet Customer Specification ・Ultra High Efficiency Motor (Equivalent to IEC IE3)
Downsizing	・Higher Speed Enables Same Duty to be Achieved with Smaller Pump
Easy Maintenance	・Simple Maintenance with Mechanical Seals ・Excellent Parts Interchangeability ・Back Pull-Out Design
Convinience	・Low NPSH (High Suction Performance) ・Stable Operation
Safety	・Shaft Guard and Totally Enclosed Coupling Guard

Optimized Hydraulic Performance

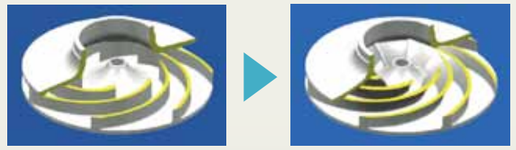
CFD (Computational Fluid Dynamics) optimized casing design ensures smooth fluid flow.



Before CFD analysis　　**After CFD analysis**

3D High-Efficiency Impeller

Three dimensional curved impeller optimizes smooth fluid flow.



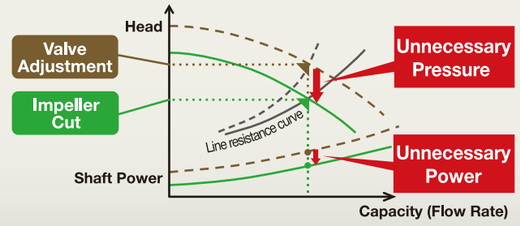
2D impeller　　**3D impeller**

Meeting Customer's Specification (Impeller cut)

The impeller diameter can be cut to meet the customer's specification to reduce unnecessary power consumption.

Defined Size **doesn't match customer's specific duty resulting in unecessary power consumption**

Impeller Cut **Meet's customer's specific duty to optimize power consumption**

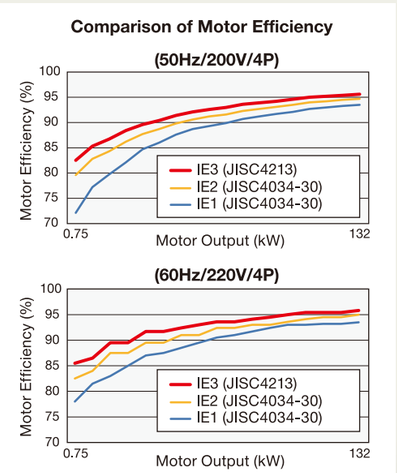


TU Motor (Torishima Ultra High Efficiency Motor)

IEC (International Electronical Commission) classifies IE1 (standard), IE2 (high efficiency), IE3 (premium efficiency) by motor efficiency. TU motor is equivalent to IE3.

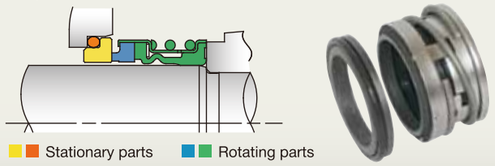
- ***Iron losses are reduced*** by use of high quality magnetic steel sheet.
- ***Copper losses are reduced*** by coil combination and optimized iron core configuration.
- ***Mechanical losses are reduced*** by downsized fan.
- ***Reduced noise***

Motors of the following power output are in regular stock.
2P: 0.75kW to 22kW
4P: 0.75kW to 55kW

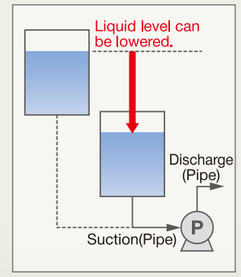


Mechanical Seal as Standard

Standard mechanical seal (rubber bellows type) is easy to install and does not damage shaft, thus eliminating need for shaft sleeve.
Minimal leakage from seal improves cleanliness around pump.



Low NPSH / Stable Operation



Enhanced Safety with Shaft Guard and Totally Enclosed Coupling Guard

The Eco-Pumps (CAL/CAR) are equipped with a shaft guard and totally enclosed coupling guard. A totally enclosed coupling guard improves safety and maintenance compared to an existing coupling guard due to the wide area of coverage.

Existing Pump with Standard Coupling Guard and No Shaft Guard

Totally Enclosed Coupling Guard and Shaft Guard

Shaft Guard

Totally Enclosed Coupling Guard

All CAL/CAR series pumps are equipped with shaft guard.

Applied condition of enclosed coupling guards:
TU motor: 2P-55kW or less, 4P-110kW or less
Coupling diameter: 280mm or less
Motor size and frame depends on manufacturer selected.

Higher Speed Enables Pump Size to be Reduced

Increasing the pump speed by using a 2 pole motor reduces the pump size and weight.

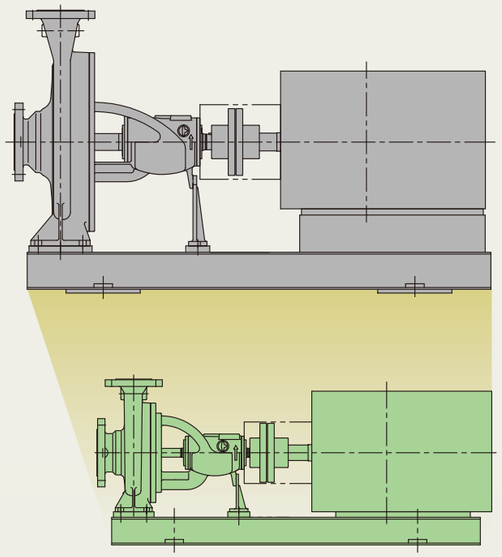
Conditions: total head of 50m, capacity of 1m^3/min, 60Hz

Pole number: 4P
Pump size: CAL80-400
Motor output: 18.5kW
Weight: ***400kg***

Pole number: 2P
Pump size: CAL50-200
Motor output: 15kW
Weight: ***209kg***

Weight reduced by 47% compared to 4P!

=(400−209)÷400×100



The above diagram describes characteristics of 2P.
We can provide the design for 4P as well.
Weight includes pump, base plate, motor and coupling.
Motor weight differs depending on manufacturer.

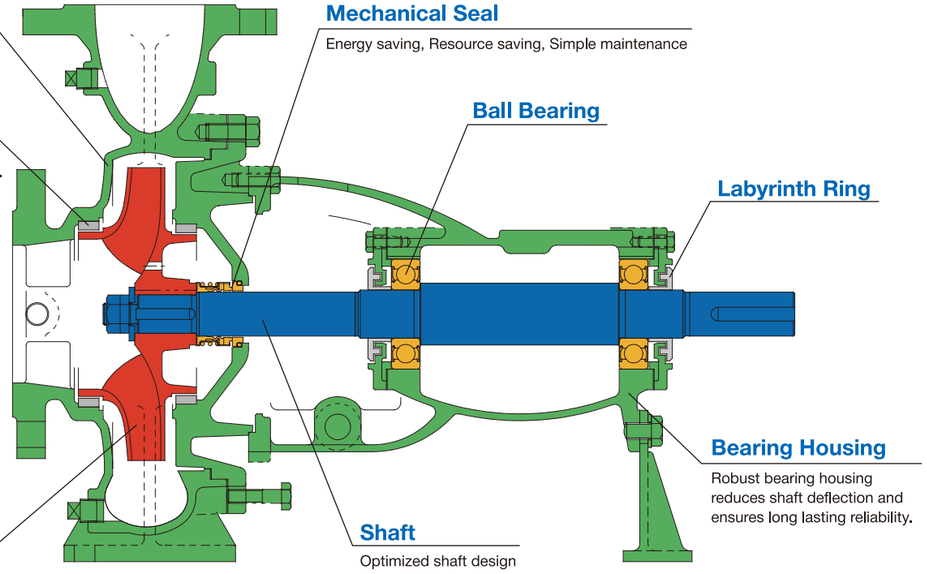
Applications

Utility	Co-generation	Cooling water pump, Hot water (circulation) pump
	Air conditioning	Cold water pump, Cooling water pump, Hot water pump
	Drainage treatment	Raw water pump, Filtrate pump, Back wash pump, Transfer pump
	Pure water facility	Raw water pump, RO wash pump, Recovering back wash pump, Filtrate water pump
Iron and Metal	Power generation	Deaerator feed water pump
	Hot rolling	Transfer pump, Hot water pump, Water pumping pump, Filtrate pump, Back wash pump,
	Flue gas desulfurization	Cooling water pump, Industrial water pump
	Roll coolant	Spray pump
	Plating	Wash pump (Rinse pump)
Food and Beverage	Manufacturing process	Cold water pump, Cooling water pump (Circulation / Boost), Recycle water pump, Filtrate pump, Sprinkling pump
	Refrigerator	Chilled pump, Defrost pump
	CIP system	CIP supply / return pump
Automobile (Painting plant)	Degreasing process	Degreasing pump, Hot / Cold water wash pump, Spray pump
	Transformation process	Chemical pump, Hot / Cold water wash pump, Pure water pump
	Electrodeposition process	Electrodeposition liquid circulation pump, Wash pump, Pure water pump
Garbage incinerating piant	Power generation	Deaerator feed water pump, Condensate pump,
	Heat decrease tower	Heat decrease pump, Spray pump for heat decrease tower
	Drainage	Reuse water pump (pumping, transferring, feeding)
Other liquid handled	Brain, Acetone, Calcium chloride, Kalium chloride, Alkaline solution, Ethylene glycol, Agua fortis, Sulfate, Sodium hydroxide, Ammonia liquor, Caustic soda, etc. *Please ask about special fluid.*	

Specification

		CAL (Cast Iron) 	CAR (Stainless Steel) 
Handled liquid	Kinds	Clean water, Warm water, Oil, Chemical medicine, Alkaline solution, Brine, Heat transfer media, Abrasive slurry liquid under 3wt%, etc.	Pure water, Hot water, Sea water, Salted water, Refrigerant, Electrodeposition paint, Abrasive slurry liquid under 3wt%, etc.
	Temperature	Standard: -10℃ to +80℃ Option: -30℃ to +350℃	Standard: -10℃ to +80℃ Option: -40℃ to +140℃
Max. discharge pressure		Standard: 1MPa (10kgf/cm^{2}G) Option: 1.4MPa (14kgf/cm^{2}G)	1MPa (10kgf/cm^{2}G)
Max. suction pressure		0.8MPa (8kgf/cm^{2}G)	0.8MPa (8kgf/cm^{2}G)
Design	Impeller	Closed	Closed
	Shaft seals	Standard: Single mechanical seal (Rubber bellows) Option: Double mechanical seal, Gland packing	Standard: Single mechanical seal (Rubber bellows) Option: Double mechanical seal, Gland packing
	Water injection for bearing	Standard: Internal injection Option: Quenching, Flushing	Standard: Internal injection Option: Quenching, Flushing
	Lubricated bearing	Standard: Grease lubrication Option: Oil lubrication	Standard: Grease lubrication Option: Oil lubrication
Flange standard, Suction / Discharge direction		JIS 10K R.F. Shaft direction suction / Vertical top discharge	JIS 10K R.F. Shaft direction suction / Vertical top discharge
Pump material	Casing	Standard: FC250 Option: FCD400	Standard: SCS13 Option: SCS14
	Impeller	Standard: FC200 Option: SCS13	Standard: SCS13 Option: SCS14
	Shaft	Standard: SUS420J2 Option: SUS329J1+S45C,SUS304	Standard: SUS304 Option: SUS316,SUS329J1+S45C
	Case wear ring	Standard: PSG Option: SUS304	—

Design Features



Volute Casing
CFD optimized volute casing for high efficiency.

Wear Ring
Cast Iron CAL series pumps include wear rings as standard. Wear rings are not necessary for stainless steel CAR series.

High Efficiency 3D Impeller
Closed impeller is designed for stable operation as well as high efficiency and low NPSH characteristics.

Mechanical Seal
Energy saving, Resource saving, Simple maintenance

Ball Bearing

Labyrinth Ring

Bearing Housing
Robust bearing housing reduces shaft deflection and ensures long lasting reliability.

Shaft
Optimized shaft design

Parts Interchangeability

■2P type Same color and number in the same parts indicate interchangeability.

Pump type \ Parts	Casing	Casing Cover	Bearing Housing	Shaft	Mechanical Seal
32-125	1	1	1	1	1
40-125	2				
65-125	3				
32-160	4	2			
40-160	5				
50-160	6				
32-200	7	3			
40-200	8				
50-200	9				
80-160	10	4	2	2	2
80-200	11	5	3	3	
32-250	12	6			
40-250	13				
50-250	14				
80-250	15	7			

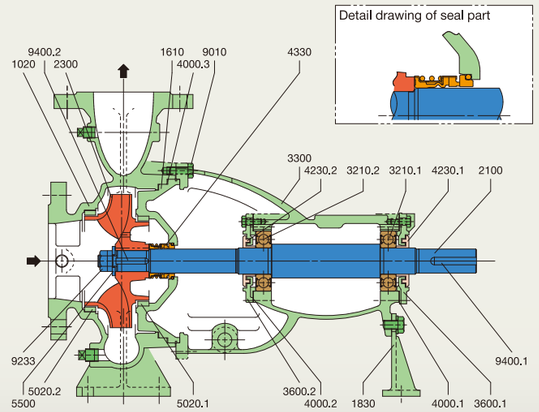
■4P type Same color and number in the same parts indicate interchangeability.

Pump type \ Parts	Casing	Casing Cover	Bearing Housing	Shaft	Mechanical Seal
32-125	1	1	1	1	1
40-125	2				
65-125	3				
32-160	4	2			
40-160	5				
50-160	6				
65-150	7				
32-200	8	3			
40-200	9				
50-200	10				
65-190	11				
80-150	12	4	2	2	2
80-190	13	5			
100-190	14				
32-250	15	6			
40-250	16				
50-250	17				
65-240	18	7			
80-240	19				
100-245	20				
100-250	21				
50-315	22	8			
65-310	23				
80-310	24				
100-310	25				
150-190	26	9	3	3	3
150-200					
125-240	27	10			
125-250					
200-240	28	11	4	4	
200-250					
125-310	29	12			
125-315					
80-400	30	13	3	3	
100-400	31	14	4	4	
125-400	32				
150-310	33	15	5	5	4
150-315					
150-390	34	16			
150-400					

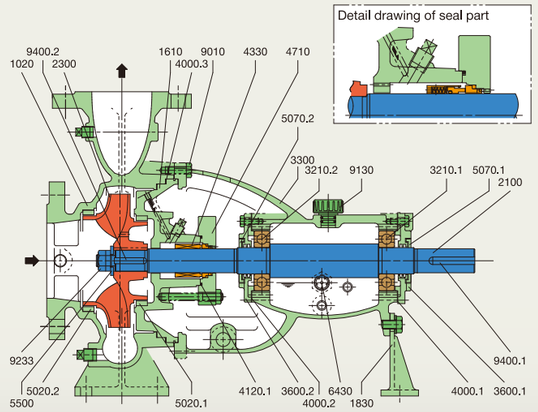
Pump Sectional Drawing

The basic structure is same between CAL and CAR for parts interchangeability. CAR, which is made from stainless, does not require case wear ring. Due to adopting build to order method, various combination with pump material, seal and bearing is available according to liquids kinds and temperature.

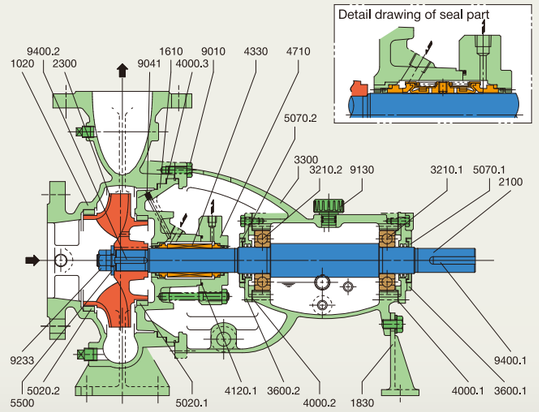
Sstandard
Seal: Mechanical seal
Bearing: Grease lubrication



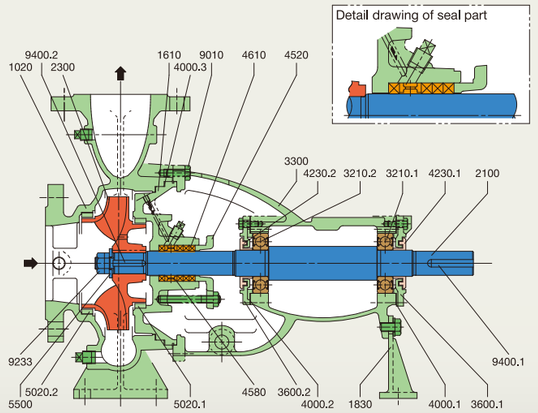
Option
Seal: Mechanical seal + Water cooling
Bearing: Oil lubrication



Option
Seal: Double mechanical seal
Bearing: Oil lubrication



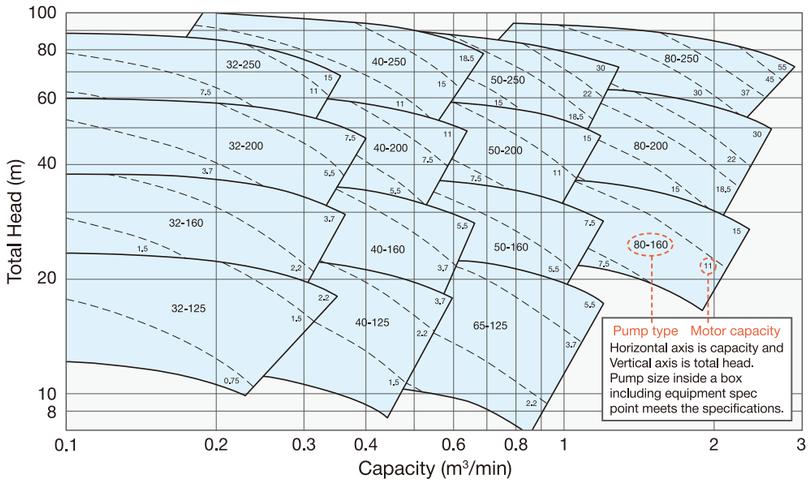
Option
Seal: Gland packing
Bearing: Grease lubrication



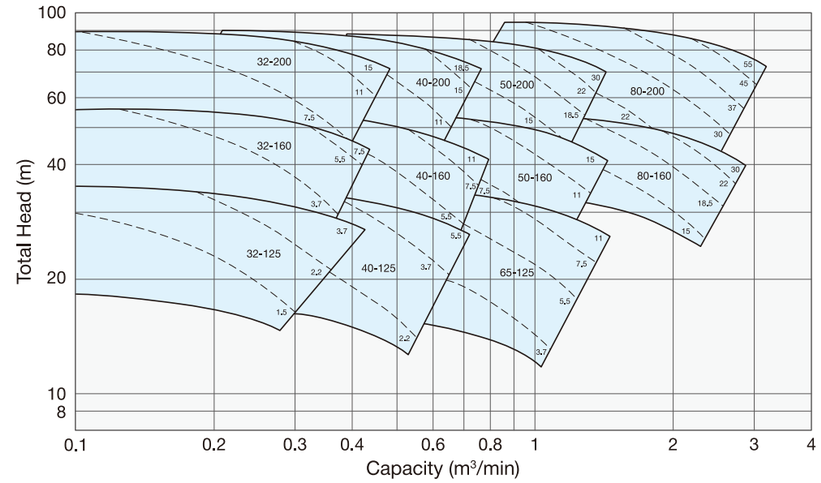
Parts number	Parts name	Parts number	Parts name	Parts number	Parts name	Parts number	Parts name
1020	Volute casing	3600.2	Bearing cover	4580	Lantern ring	9010	Hex. bolt
1610	Casing cover	4000.1	Flat gasket	4610	Gland packing	9041	Nock
1830	Support foot	4000.2	Flat gasket	4710	Seal cover	9130	Plug
2100	Shaft	4000.3	Flat gasket	5020.1	Casing wear ring	9233	Lock nut
2300	Impeller	4120.1	O-ring	5020.2	Casing wear ring	9400.1	Key
3210.1	Deep groove ball bearing	4230.1	Labyrinth ring	5070.1	Deflector	9400.2	Key
3210.2	Deep groove ball bearing	4230.2	Mechanical seal	5070.2	Deflector		
3300	Bearing housing	4330	Shaft box gland	5500	Washer		
3600.1	Bearing cover	4520		6430	Oil gauge		

CAL (Cast Iron) Selection Range Charts

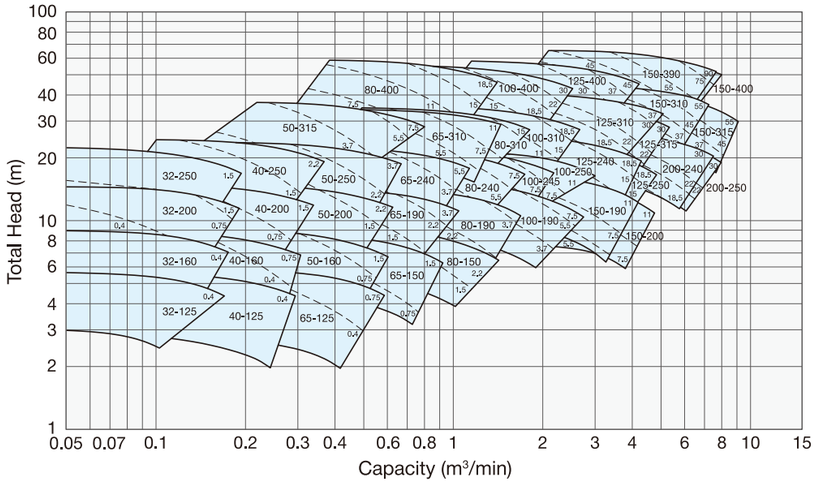
50Hz-2P (3000min^{-1})



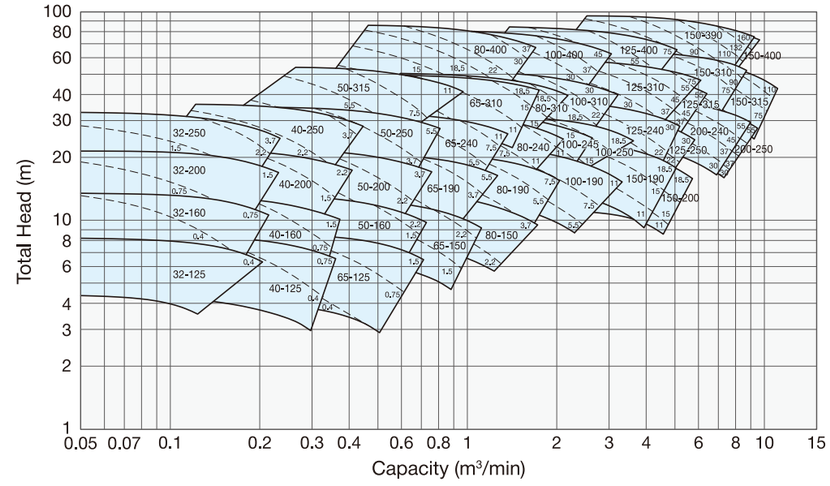
60Hz-2P (3600min^{-1})



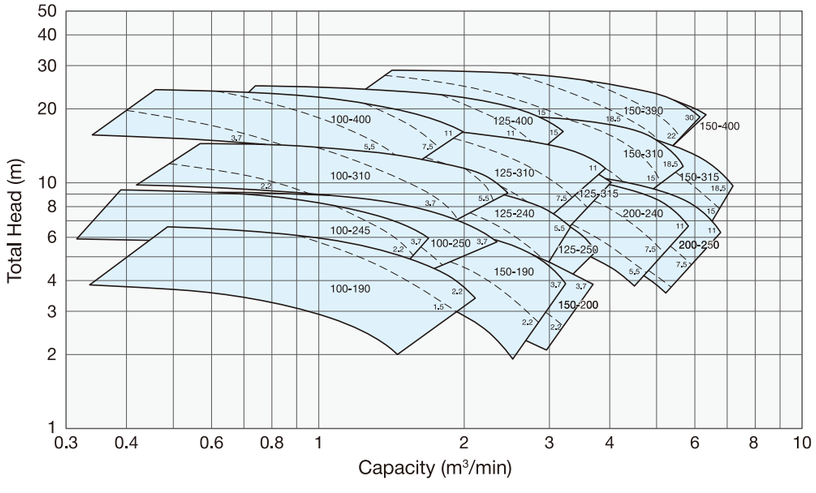
50Hz-4P (1500min^{-1})



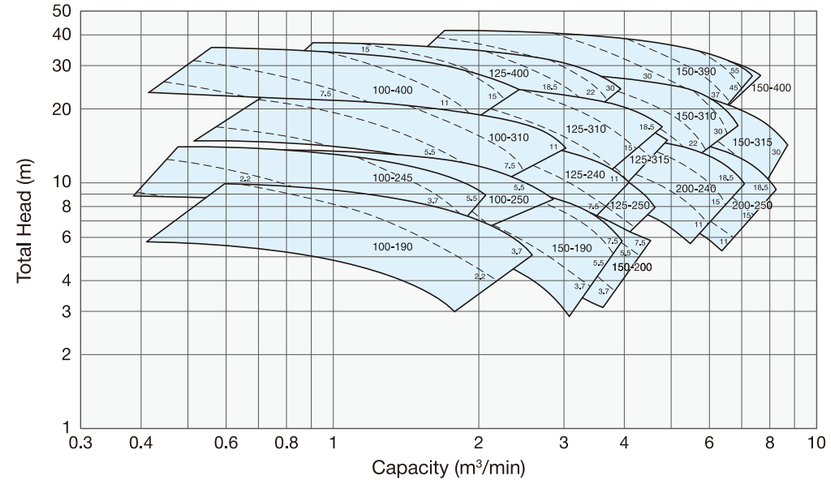
60Hz-4P (1800min^{-1})



50Hz-6P (1000min^{-1})

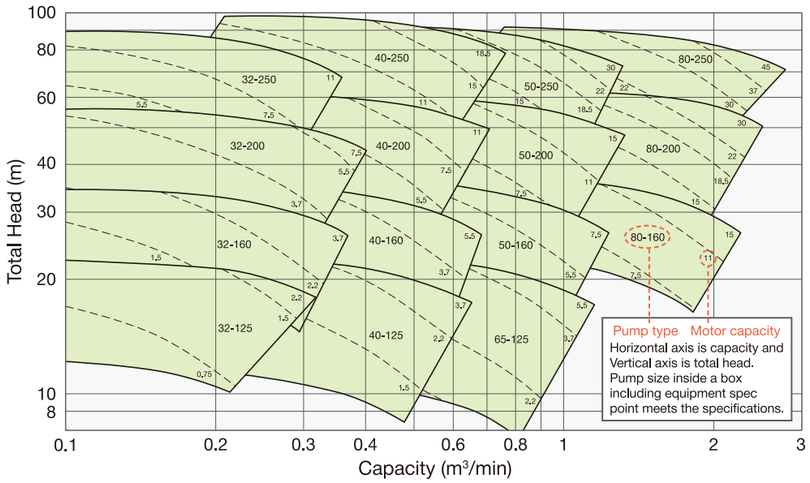


60Hz-6P (1200min^{-1})

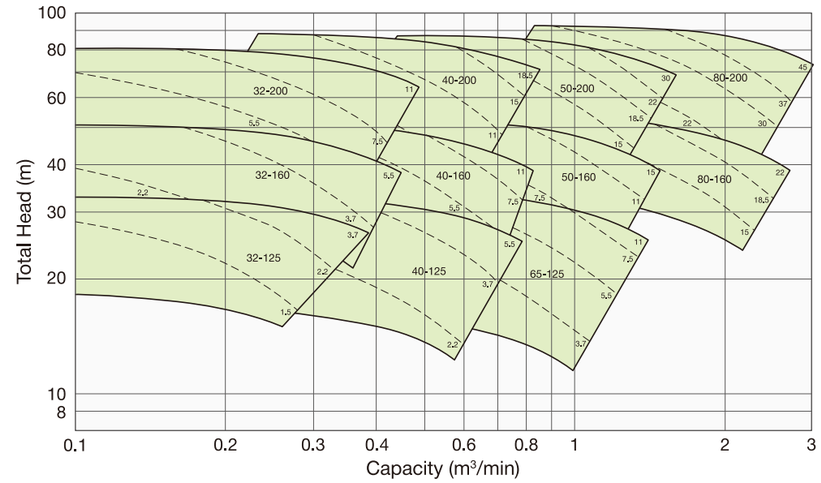


CAR (Stainless Steel) Selection Range Charts

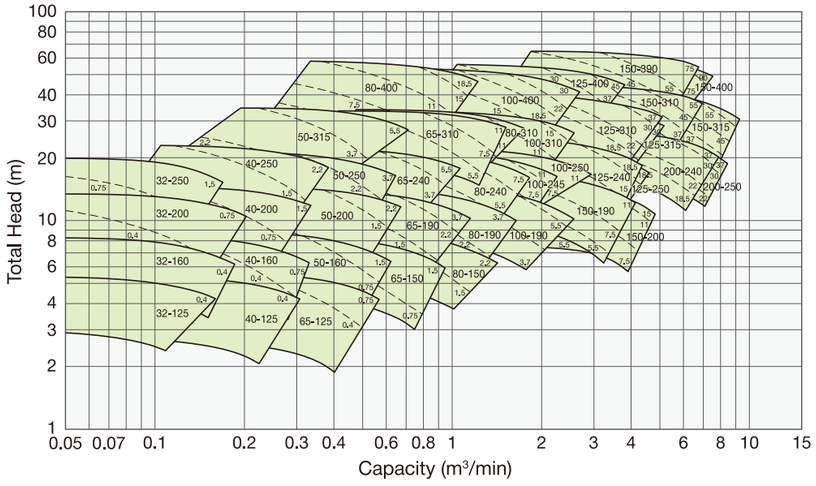
50Hz-2P (3000min^{-1})



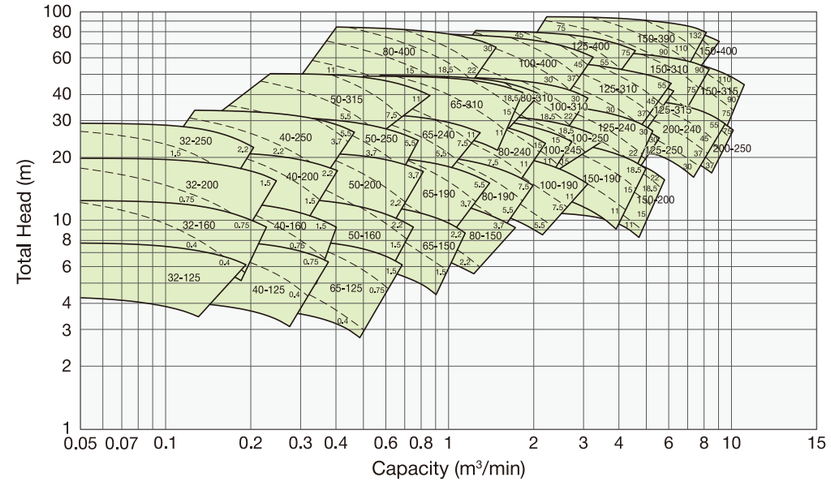
60Hz-2P (3600min^{-1})



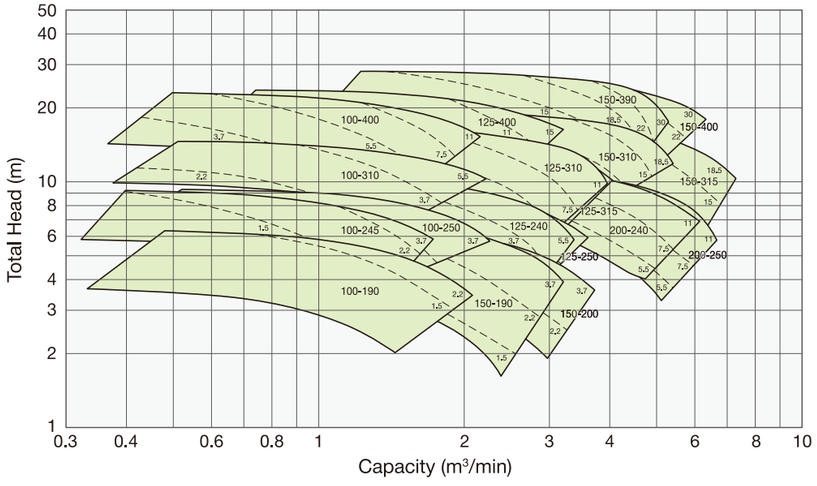
50Hz-4P (1500min^{-1})



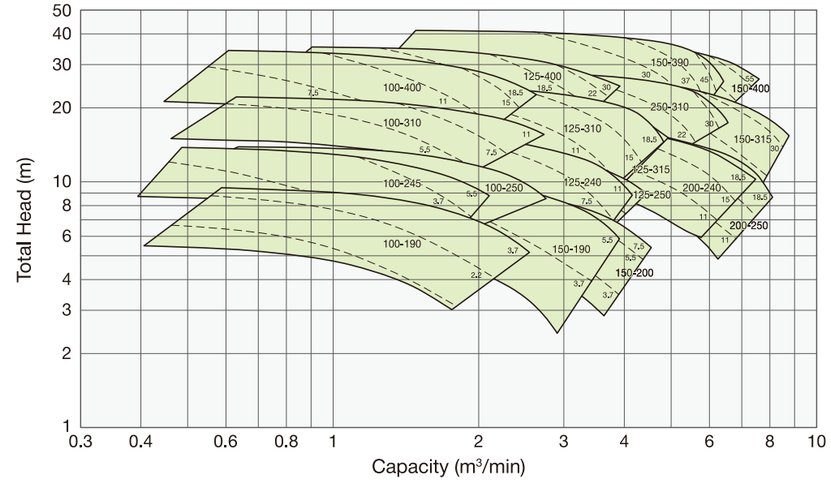
60Hz-4P (1800min^{-1})



50Hz-6P (1000min^{-1})



60Hz-6P (1200min^{-1})

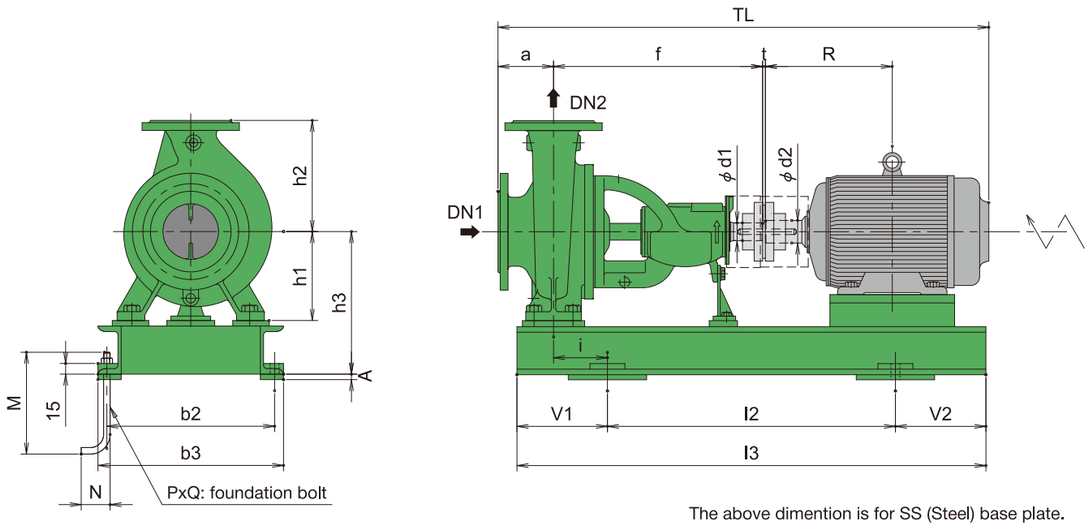


Dimension Table

- Flange standard CAL: JIS10K RF / CAR: JIS10K RF
- Dimension in the table is based on totally enclosed fan-cooled motor.
  Note: Motor size and frame depends on manufacturer selected.
- */** in the table indicate that motor frame is the same but shaft diameter (d2) is different.
- Base plate material FC: Cast Iron SS: Steel
  Option: FC (Cast Iron) can be replaced with SS (Steel).

FC Base Plate

SS Base Plate



The above dimention is for SS (Steel) base plate.
FC (Cast Iron) base plate follows above.

Dimension Table for 2P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions										Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial	b3	I3	A	Wt.	h3	i	b2	I2	M	N	P	Q	V1	V2	t	Wt.	TL
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2																	
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	---	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm
32-125 40-125	50 65	32 40	80 80	360 360	112 112	140 140	24 24	27 28	28 29	71M	120	14	FC	370	740	0	19.2	157	30	330	550	200	50	4	M12	95	95	3	1.1	681
										80	140	19	FC	370	740	0	18.9	157	30	330	550	200	50	4	M12	95	95	3	1.1	725.5
										80M	140	19	FC	370	740	0	18.9	157	30	330	550	200	50	4	M12	95	95	3	1.1	705
										90S	156	24	FC	370	740	0	18.1	157	30	330	550	200	50	4	M12	95	95	3	1.1	750.5
										90L	168.5	24	FC	370	740	0	18.1	157	30	330	550	200	50	4	M12	95	95	3	1.1	775.5
										100L	193	28	FC	370	740	0	18.5	157	30	330	550	200	50	4	M12	95	95	3	1.6	809
										112M	200	28	FC	370	740	0	15.7	157	30	330	550	200	50	4	M12	95	95	3	1.6	834.5
										132S	239	38	FC	370	820	0	21.9	177	20	330	650	200	50	4	M12	85	85	3	3.2	897
32-160 40-160 65-125	50 65 80	32 40 65	80 80 100	360 360 360	132 132 132	160 160 180	24 24 24	28 30 31	30 31 33	80	140	19	FC	370	740	0	19.7	177	30	330	550	200	50	4	M12	95	95	3	1.1	745.5
										80M	140	19	FC	370	740	0	19.7	177	30	330	550	200	50	4	M12	95	95	3	1.1	725
										90S	156	24	FC	370	740	0	19	177	30	330	550	200	50	4	M12	95	95	3	1.1	770.5
										90L	168.5	24	FC	370	740	0	19	177	30	330	550	200	50	4	M12	95	95	3	1.1	795.5
										100L	193	28	FC	370	740	0	19.1	177	30	330	550	200	50	4	M12	95	95	3	1.6	829
										112M	200	28	FC	370	740	0	18.7	177	30	330	550	200	50	4	M12	95	95	3	1.6	854.5
										132S	239	38	FC	370	820	0	16.5	177	20	330	650	200	50	4	M12	85	85	3	3.2	917
										160M	323	42	SS	430	1000	0	41	250	110	400	660	200	50	4	M12	170	170	3	5.4	1071
										160L	345	42	SS	430	1000	0	41	250	110	400	660	200	50	4	M12	170	170	3	6.7	1115

Dimension Table for 2P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions										Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial	b3	I3	A	Wt.	h3	i	b2	I2	M	N	P	Q	V1	V2	t	Wt.	TL
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2																		
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	---	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm
32-200 40-200 50-160	50 65 80	32 40 50	80 80 100	360 360 360	160 160 160	180 180 180	24 24 24	36 37 32	38 39 33	90L	168.5	24	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.1	795.5
										100L	193	28	FC	370	740	0	20.4	205	30	330	550	200	50	4	M12	95	95	3	1.6	829
										112M	200	28	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.6	854.5
										132S	239	38	FC	370	820	0	20	205	20	330	650	200	50	4	M12	85	85	3	3.2	917
										160M	323	42	SS	430	1000	0	39	250	110	400	660	200	50	4	M12	170	170	3	5.4	1071
										160L	345	42	SS	430	1000	0	39	250	110	400	660	200	50	4	M12	170	170	3	6.7	1115
										180M	351.5	48	SS	430	1000	0	42	270	110	400	660	200	50	4	M12	170	170	3	9.0	1107
50-200	80	50	100	360	160	200	24	37	39	112M	200	28	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.6	854.5
										132S	239	38	FC	370	820	0	20	205	20	330	650	200	50	4	M12	85	85	3	3.2	917
										160M	323	42	SS	430	1000	0	39	250	110	400	660	200	50	4	M12	170	170	3	5.4	1071
										160L*	345	42	SS	430	1000	0	39	250	110	400	660	200	50	4	M12	170	170	3	6.7	1115
										160L**	345	48	SS	430	1000	0	39	250	110	400	660	200	50	4	M12	170	170	3	9.0	1033.5
										180MA	351.5	48	SS	430	1030	0	44	270	110	400	660	200	50	4	M12	170	200	3	9.0	1135
										180M*	351.5	48	SS	430	1030	0	44	270	110	400	660	200	50	4	M12	170	200	3	9.0	1107
										180M**	351.5	55	SS	430	1030	0	44	270	110	400	660	200	50	4	M12	170	200	4	13.9	1041
										180L	370.5	55	SS	430	1030	0	44	270	110	400	660	200	50	4	M12	170	200	4	13.9	1146
										200LA	395.5	55	SS	470	1120	0	53	292	130	440	740	200	50	4	M12	190	190	4	13.9	1234
										200L	395.5	55	SS	470	1120	0	53	292	130	440	740	200	50	4	M12	190	190	4	13.9	1214.5
										225S	402	55	SS	530	1250	10	71	342	145	490	840	250	63	4	M16	205	205	4	13.9	1231
80-160	100	80	125	470	160	225	32	50	52	132S	239	38	SS	350	1000	0	33	250	110	320	660	200	50	4	M12	170	170	3	3.2	1052
										160M	323	42	SS	430	1120	0	36	250	130	400	740	200	50	4	M12	190	190	3	5.4	1206
										160L*	345	42	SS	430	1120	0	36	250	130	400	740	200	50	4	M12	190	190	3	6.7	1250
										160L**	345	48	SS	430	1120	0	36	250	130	400	740	200	50	4	M12	190	190	3	9.0	1168.5
										180MA	351.5	48	SS	430	1180	0	46	270	130	400	740	200	50	4	M12	190	250	3	9.0	1270
										180M*	351.5	48	SS	430	1180	0	46	270	130	400	740	200	50	4	M12	190	250	3	9.0	1242
										180M**	351.5	55	SS	430	1180	0	46	270	130	400	740	200	50	4	M12	190	250	4	13.9	1176
										180L	370.5	55	SS	430	1180	0	46	270	130	400	740	200	50	4	M12	190	250	4	13.9	1281
										200LA	395.5	55	SS	470	1250	10	63	317	145	430	840	250	63	4	M16	205	205	4	13.9	1369
										200L	395.5	55	SS	470	1250	10	63	317	145	430	840	250	63	4	M16	205	205	4	13.9	1349.5
										225S	402	55	SS	530	1250	10	65	342	145	490	840	250	63	4	M16	205	205	4	13.9	1366
32-250 40-250 50-250 80-200	50 65 80 100	32 40 50 80	100 100 100 125	470 470 470 470	180 180 180 180	225 225 225 250	32 32 32 32	54 55 57 60	56 58 59 62	112M	200	28	FC	900	870	0	30.6	225	5	480	700	200	50	4	M12	100	100	3	3.2	989.5
										132S	239	38	FC	930	1000	0	33.9	225	0	480	740	200	50	4	M12	95	95	3	3.2	1052
										160M	323	42	SS	470	1120	0	45	270	115	440	740	200	50	4	M12	190	190	3	5.4	1206
										160L*	345	42	SS	470	1120	0	45	270	115	440	740	200	50	4	M12	190	190	3	6.7	1250
										160L**	345	48	SS	470	1120	0	45	270	115	440	740	200	50	4	M12	190	190	3	9.0	1168.5
										180MA	351.5	48	SS	470	1180	0	45	270	115	440	740	200	50	4	M12	190	250	3	9.0	1270
										180M*	351.5	48	SS	470	1180	0	45	270	115	440	740	200	50	4	M12	190	250	3	9.0	1242
										180M**	351.5	55	SS	470	1180	0	45	270	115	440	740	200	50	4	M12	190	250	4	13.9	1176
										180L	370.5	55	SS	470	1180	0	45	270	115	440	740	200	50	4	M12	190	250	4	13.9	1281
										200LA	395.5	55	SS	530	1250	10	67	317	130	490	840	250	63	4	M16	205	205	4	13.9	1369
										200L	395.5	55	SS	530	1250	10	67	317	130	490	840	250	63	4	M16	205	205	4	13.9	1349.5
										225S	402	55	SS	530	1250	10	69	342	130	490	840	250	63	4	M16	205	205	4	13.9	1366
										225MA	414.5	55	SS	530	1250	10	69	342	130	490	840	250	63	4	M16	205	205	4	13.9	1410
										225M	414.5	55	SS	530	1250	10	69	342	130	490	840	250	63	4	M16	205	205	4	13.9	1463.5
										250SA	463.5	60	SS	530	1250	10	76	370	130	490	840	250	63	4	M16	205	205	4	21.0	1481.5
										250M	452.5	55	SS	530	1250	10	76	370	130	490	840	250	63	4	M16	205	205	4	13.9	1527
80-250	100	80	125	470	225	280	32	67	70	160M	323	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	5.4	1206
										160L*	345	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	6.7	1250
										160L**	345	48	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	9.0	1168.5
										180MA	351.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1270
										180M*	351.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1242
										180M**	351.5	55	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	4	13.9	1176
										180L	370.5	55	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	4	13.9	1281
										200LA	395.5	55	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	13.9	1369
										200L	395.5	55	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	13.9	1349.5
										225S	402	55	SS	530	1250	10	65	342	115	490	840	250	63	4	M16	205	205	4	13.9	1366
										225MA	414.5	55	SS	530	1250	10	65	342	115	490	840	250	63	4	M16	205	205	4	13.9	1410
										225M	414.5	55	SS	530	1250	10	65	342	115	490	840	250	63	4	M16	205	205	4	13.9	1463.5
										250SA	463.5	60	SS	530	1250	10	74	370	115	490	840	250	63	4	M16	205	205	4	21.0	1481.5
										250M	452.5	55	SS	530	1250	10	74	370	115	490	840	250	63	4	M16	205	205	4	13.9	1527

Dimension Table

Dimension Table for 4P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions												Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial	b3	I3	A	Wt.	h3	i	b2	I2	M	N	P	Q	V1	V2				t	Wt.	TL
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2																				
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	—	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm
32-125 40-125	50 65	32 40	80 80	360 360	112 112	140 140	24 24	27 28	28 29	71M	120	14	FC	370	740	0	19.2	157	30	330	550	200	50	4	M12	95	95	3	1.1	681
										80	140	19	FC	370	740	0	18.9	157	30	330	550	200	50	4	M12	95	95	3	1.1	726
										80M	140	19	FC	370	740	0	18.9	157	30	330	550	200	50	4	M12	95	95	3	1.1	705
32-160 40-160 65-125	50 65 80	32 40 65	80 80 100	360 360 360	132 132 132	160 160 180	24 24 24	28 30 31	30 31 33	71M	120	14	FC	370	740	0	20	177	30	330	550	200	50	4	M12	95	95	3	1.1	681
										80	140	19	FC	370	740	0	19.7	177	30	330	550	200	50	4	M12	95	95	3	1.1	726
										80M	140	19	FC	370	740	0	19.7	177	30	330	550	200	50	4	M12	95	95	3	1.1	705
										90L	169	24	FC	370	740	0	19	177	30	330	550	200	50	4	M12	95	95	3	1.1	776
32-200 40-200 50-160 65-150	50 65 80 80	32 40 50 56	80 80 100 100	360 360 360 360	160 160 160 160	180 180 180 180	24 24 24 24	36 37 32 34	38 39 33 36	71M	120	14	FC	370	740	0	21.2	205	30	330	550	200	50	4	M12	95	95	3	1.1	701
										80	140	19	FC	370	740	0	20.9	205	30	330	550	200	50	4	M12	95	95	3	1.1	746
										80M	140	19	FC	370	740	0	20.9	205	30	330	550	200	50	4	M12	95	95	3	1.1	725
										90L	168.5	24	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.1	796
										100L	193	28	FC	370	740	0	20.4	205	30	330	550	200	50	4	M12	95	95	3	1.6	838
										112M	200	28	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.9	855
50-200 65-190	80 80	50 65	100 100	360 360	160 160	200 200	24 24	37 41	39 43	80	140	19	FC	370	740	0	21.7	205	30	330	550	200	50	4	M12	95	95	3	1.1	746
										80M	140	19	FC	370	740	0	20.9	205	30	330	550	200	50	4	M12	95	95	3	1.1	725
										90L	168.5	24	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.1	796
										100L	193	28	FC	370	740	0	20.4	205	30	330	550	200	50	4	M12	95	95	3	1.6	838
										112M	200	28	FC	370	740	0	20.1	205	30	330	550	200	50	4	M12	95	95	3	1.9	855
										132S	239	38	FC	370	820	0	20	205	20	330	650	200	50	4	M12	85	85	3	3.2	917
80-150	100	80	100	470	160	200	32	47	49	90L	169	24	SS	320	870	0	30	250	90	290	600	200	50	4	M12	150	120	3	3.2	906
										100L	193	28	SS	320	870	0	30	250	90	290	600	200	50	4	M12	150	120	3	3.2	948
										112M	200	28	SS	320	870	0	29	250	90	290	600	200	50	4	M12	150	120	3	3.2	965
										132S	239	38	SS	350	1000	0	33	250	110	320	660	200	50	4	M12	170	170	3	3.2	1027
32-250 40-250 50-250 65-240 80-190	50 65 80 80 100	32 40 50 65 80	100 100 100 100 100	470 470 470 470 470	180 180 180 180 180	225 225 225 225 225	32 32 32 32 32	49 50 52 55 52	51 53 54 58 56	80	140	19	FC	520	900	0	33.8	225	5	480	700	200	50	4	M12	100	100	3	3.2	881
										80M	140	19	FC	520	900	0	33.8	225	5	480	700	200	50	4	M12	100	100	3	3.2	860
										90L	168.5	24	FC	520	900	0	33	225	5	480	700	200	50	4	M12	100	100	3	3.2	931
										100L	193	28	FC	520	900	0	33.4	225	5	480	700	200	50	4	M12	100	100	3	3.2	973
										112M	200	28	FC	520	900	0	30.6	225	5	480	700	200	50	4	M12	100	100	3	3.2	990
										132S	239	38	FC	520	930	0	33.9	225	0	480	740	200	50	4	M12	95	95	3	3.2	1052
										132M	258	38	FC	520	930	0	33.9	225	0	480	740	200	50	4	M12	95	95	3	5.4	1090
										160M	323	42	SS	470	1120	0	45	270	115	440	740	200	50	4	M12	190	190	3	5.4	1206
80-240 100-190	100 125	80 100	100 125	470 470	200 200	250 280	32 32	63 64	62 67	100L	193	28	FC	520	900	0	34	245	5	480	700	200	50	4	M12	100	100	3	3.2	973
										112M	200	28	FC	520	900	0	33.6	245	5	480	700	200	50	4	M12	100	100	3	3.2	990
										132S	239	38	FC	520	930	0	35	245	0	480	740	200	50	4	M12	95	95	3	3.2	1052
										132M	258	38	FC	520	930	0	35	245	0	480	740	200	50	4	M12	95	95	3	5.4	1090
										160M	323	42	SS	470	1120	0	49	292	100	440	740	200	50	4	M12	190	190	3	5.4	1206
										160L	345	42	SS	470	1120	0	49	292	100	440	740	200	50	4	M12	190	190	3	6.7	1250
50-315	80	50	100	470	225	280	32	70	71	100L	193	28	FC	520	900	0	35.1	270	5	480	700	200	50	4	M12	100	100	3	3.2	948
										112M	200	28	FC	520	900	0	34.9	270	5	480	700	200	50	4	M12	100	100	3	3.2	965
										132S	239	38	FC	520	930	0	36.3	270	0	480	740	200	50	4	M12	95	95	3	3.2	1027
										132M	258	38	FC	520	930	0	36.3	270	0	480	740	200	50	4	M12	95	95	3	5.4	1065
										160M	323	42	SS	470	1120	0	51	315	115	440	740	200	50	4	M12	190	190	3	5.4	1181
										160L	345	42	SS	470	1120	0	51	315	115	440	740	200	50	4	M12	190	190	3	6.7	1225
100-245 100-250 65-310 80-310	125 125 80 100	100 100 65 80	125 125 125 125	470 470 470 470	225 225 225 225	280 280 280 280	32 32 32 32	71 71 76 78	75 75 72 76	112M	200	28	FC	520	900	0	34.9	270	5	480	700	200	50	4	M12	100	100	3	3.2	990
										132S	239	38	FC	520	930	0	36.3	270	0	480	740	200	50	4	M12	95	95	3	3.2	1052
										132M	258	38	FC	520	930	0	36.3	270	0	480	740	200	50	4	M12	95	95	3	5.4	1090
										160M	323	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	5.4	1206
										160L*	345	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	6.7	1250
										160L**	345	48	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	9.0	1169
										180MC	351.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1270
										180M*	351.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1242
										180M**	351.5	55	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	4	13.9	1184
										180LC	370.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1308
										180L	370.5	55	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	4	13.9	1281
										200LC	395.5	55	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	13.9	1369
										200L*	395.5	55	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	13.9	1395
										200L**	425.5	60	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	21.0	1380
100-310	125	100	125	470	250	315	32	81	91	132S	239	38	FC	520	930	0	37.7	295	0	480	740	200	50	4	M12	95	95	3	3.2	1052
										132M	258	38	FC	520	930	0	37.7	295	0	480	740	200	50	4	M12	95	95	3	5.4	1090
										160M	323	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	5.4	1206
										160L*	345	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	6.7	1250
										160L**	345	48	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	9.0	1169
										180MC	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1270
										180M*	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1242
										180M**	351.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1184

Dimension Table for 4P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions												Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial	b3	I3	A	Wt.	h3	i	b2	I2	M	N	P	Q	V1	V2				t	Wt.	TL
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2																				
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	---	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm
100-310	125	100	125	470	250	315	32	81	91	180LC	370.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1308
										180L*	370.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1281
										180L**	400.5	60	SS	470	1250	10	66	367	115	430	840	250	63	4	M16	205	205	4	21.0	1272
										200LC	395.5	55	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	13.9	1369
										200L*	395.5	55	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	13.9	1395
										200L**	425.5	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1380
										225SC	432	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1415
										225S*	432	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1471
										225S**	432	65	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1396
150-190 150-200 125-240 125-250	150 150 150 150	150 150 125 125	140 140 140 140	470 470 470 470	250 250 250 250	315 315 355 355	42 42 42 42	95 95 103 103	103 103 113 113	112M	200	28	FC	520	900	0	36.1	295	5	480	700	200	50	4	M12	100	100	3	5.4	1004.5
										132S	239	38	FC	520	930	0	37.7	295	0	480	740	200	50	4	M12	95	95	3	5.4	1067
										132M	258	38	FC	520	930	0	37.7	295	0	480	740	200	50	4	M12	95	95	3	5.4	1105
										160M	323	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	5.4	1221
										160L*	345	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	6.7	1265
										160L**	345	48	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	9.0	1183.5
										180MC	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1285
										180M*	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1257
										180M**	351.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1199
										180LC	370.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1323
										180L*	370.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1296
										180L**	400.5	60	SS	470	1250	10	66	367	115	430	840	250	63	4	M16	205	205	4	21.0	1287
										200LC	395.5	55	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	13.9	1384
										200L*	396	55	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	13.9	1409.5
										200L**	425.5	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1394.5
										225SC	432	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1430
										225S*	432	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1486
										225S**	432	65	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1411
80-400	100	80	125	470	280	355	42	128	128	132S	239	38	SS	510	1000	0	60	372	80	480	660	200	50	4	M12	170	170	3	5.4	1052
										132M	258	38	SS	510	1000	0	60	372	80	480	660	200	50	4	M12	170	170	3	5.4	1090
										160M	323	42	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	5.4	1206
										160L*	345	42	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	6.7	1250
										160L**	345	48	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	9.0	1168.5
										180MC	351.5	48	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	9.0	1270
										180M*	351.5	48	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	9.0	1242
										180M**	351.5	55	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	4	13.9	1184
										180LC	370.5	48	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	3	9.0	1308
										180L*	370.5	55	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	4	13.9	1281
										180L**	400.5	60	SS	530	1250	10	77	397	115	490	840	250	63	4	M16	205	205	4	21.0	1272
										200LC	395.5	55	SS	590	1400	10	89	397	140	550	940	250	63	4	M16	230	230	4	13.9	1369
										200L*	395.5	55	SS	590	1400	10	89	397	140	550	940	250	63	4	M16	230	230	4	13.9	1394.5
										200L**	425.5	60	SS	590	1400	10	89	397	140	550	940	250	63	4	M16	230	230	4	21.0	1379.5
										225SC	432	60	SS	590	1400	10	92	397	140	550	940	250	63	4	M16	230	230	4	21.0	1415
										225S*	432	60	SS	590	1400	10	92	397	140	550	940	250	63	4	M16	230	230	4	21.0	1471
										225S**	432	65	SS	590	1400	10	92	397	140	550	940	250	63	4	M16	230	230	4	21.0	1396
125-310 125-315 100-400	150 150 125	125 125 100	140 140 140	530 530 530	280 280 280	355 355 355	42 42 42	140 140 156	151 151 157	160L*	345	42	SS	530	1250	10	81	400	95	490	840	250	63	4	M16	205	205	3	6.7	1325
										160L**	345	48	SS	530	1250	10	81	400	95	490	840	250	63	4	M16	205	205	3	9.0	1243.5
										180MC	351.5	48	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	3	9.0	1345
										180M*	351.5	48	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	3	9.0	1317
										180M**	351.5	55	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	4	13.9	1259
										180LC	370.5	48	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	3	9.0	1383
										180L*	370.5	55	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	4	13.9	1356
										180L**	400.5	60	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	4	21.0	1347
										200M	406.5	65	SS	590	1400	10	91	400	120	550	940	250	63	4	M16	230	230	4	21.0	1381.5
										200LC	395.5	55	SS	590	1400	10	91	400	120	550	940	250	63	4	M16	230	230	4	13.9	1444
										200L*	395.5	55	SS	590	1400	10	91	400	120	550	940	250	63	4	M16	230	230	4	13.9	1469.5
										200L**	425.5	60	SS	590	1400	10	91	400	120	550	940	250	63	4	M16	230	230	4	21.0	1454.5
										225SC	432	60	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1490
										225S*	432	60	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1546
										225S**	432	65	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1471
										225MC	444.5	60	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1515
										225M	444.5	60	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1568.5
										250SC	463.5	70	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	31.0	1556.5
										250M*	482.5	65	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1607.5
										250M**	482.5	75	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	31.0	1632

Dimension Table

Dimension Table for 4P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions														Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial																					
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2		b3	l3	A	Wt.	h3	i	b2	l2	M	N	P	Q	V1	V2	t	Wt.	TL				
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	—	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm				
125-400 200-240 200-250	150 200 200	125 200 200	140 160 160	530 530 530	315 315 315	400 375 375	42 42 42	165 158 158	182 174 174	160L	345	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1263.5				
										180MC	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1365				
										180M*	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1337				
										180M**	351.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1279				
										180LC	370.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1403				
										180L*	370.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1376				
										180L**	400.5	60	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	21.0	1367				
										200M	406.5	65	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1401.5				
										200LC	395.5	55	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	13.9	1464				
										200L*	395.5	55	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	13.9	1489.5				
										200L**	425.5	60	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1474.5				
										225SC	432	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1510				
										225S*	432	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1566				
										225S**	432	65	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1491				
										225S***	432	75	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	31.0	1551				
										225MC	444.5	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1535				
										225M*	444.5	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1588.5				
										225M**	444.5	75	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	31.0	1551				
										250SC	463.5	70	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1576.5				
										250S	463.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1574				
										250MC	482.5	70	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1614.5				
										250M*	482.5	65	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	21.0	1627.5				
										250M**	482.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1652				
										280SB	544	80	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1765.5				
										280S	514	75	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	31.0	1718.5				
										280M*	539.5	75	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	31.0	1769.5				
										280M**	569.5	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1777				
150-310 150-315 150-390 150-400	200 200 200 200	150 150 150 150	160 160 160 160	530 530 530 530	315 315 315 315	400 400 450 450	48 48 48 48	188 188 204 204	198 198 217 217	180MC	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1365				
										180M*	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1337				
										180M**	351.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1279				
										180LC	370.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1403				
										180L*	370.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1376				
										180L**	400.5	60	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	21.0	1367				
										200M	406.5	65	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1401.5				
										200LC	395.5	55	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	13.9	1464				
										200L*	395.5	55	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	13.9	1489.5				
										200L**	425.5	60	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1474.5				
										225SC	432	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1510				
										225S*	432	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1566				
										225S**	432	65	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1491				
										225S***	432	75	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	31.0	1551				
										225MC	444.5	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1535				
										225M*	444.5	60	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1588.5				
										225M**	444.5	75	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	31.0	1551				
										250SC	463.5	70	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1576.5				
										250S*	463.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1574				
										250S**	493.5	85	SS	640	1400	10	99	435	120	600	940	250	63	4	M16	230	230	4	45.0	1551				
										250MC	482.5	70	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1614.5				
										250M*	482.5	65	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	21.0	1627.5				
										250M**	482.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1652				
										250M***	512.5	85	SS	640	1400	10	99	435	120	600	940	250	63	4	M16	230	230	4	45.0	1606				
										280SB	544	80	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1765.5				
										280S*	514	75	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	31.0	1718.5				
										280S**	544	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1726				
										280MB	569.5	80	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1816				
										280M*	539.5	75	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	31.0	1769.5				
										280M**	569.5	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1777				
										315SB	589	85	SS	710	1600	10	109	445	160	670	1060	250	63	4	M16	270	270	4	61.0	1855				

Dimension Table for 6P Motor Drive

Pump Sizes	Pump									Motor			Base Plate					Foundatiion Dimensions														Coupling		Refer.
	Bore		Dimension				Axle	Weight		Frame	Dimension		Mate-rial																					
	DN1	DN2	a	f	h1	h2	d1	Grade L	Grade R		R	d2		b3	l3	A	Wt.	h3	i	b2	l2	M	N	P	Q	V1	V2	t	Wt.	TL				
	mm	mm	mm	mm	mm	mm	mm	kg	kg	---	mm	mm	---	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm			mm	mm	mm	kg	mm				
100-190	125	100	125	470	200	280	32	64	67	100L	193	28	SS	380	870	0	41	292	60	350	600	200	50	4	M12	150	120	3	3.2	972.5				
										112M	200	28	SS	380	870	0	41	292	60	350	600	200	50	4	M12	150	120	3	3.2	989.5				
										132S	239	38	SS	430	1000	0	46	292	80	400	660	200	50	4	M12	170	170	3	3.2	1052				
										132M	258	38	SS	430	1000	0	46	292	80	400	660	200	50	4	M12	170	170	3	5.4	1090				
										160M	323	42	SS	470	1120	0	49	292	100	440	740	200	50	4	M12	190	190	3	5.4	1206				
										160L	345	42	SS	470	1120	0	49	292	100	440	740	200	50	4	M12	190	190	3	6.7	1250				
100-245 100-250	125 125	100 100	125 125	470 470	225 225	280 280	32 32	71 71	75 75	112M	200	28	SS	430	870	0	45	317	60	400	600	200	50	4	M12	150	120	3	3.2	989.5				
										132S	239	38	SS	430	1000	0	49	317	80	400	660	200	50	4	M12	170	170	3	3.2	1052				
										132M	258	38	SS	430	1000	0	49	317	80	400	660	200	50	4	M12	170	170	3	5.4	1090				
										160M	323	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	5.4	1206				
										160L	345	42	SS	470	1120	0	52	317	100	440	740	200	50	4	M12	190	190	3	6.7	1250				
										180M	351.5	48	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	3	9.0	1308				
										180L	370.5	55	SS	470	1180	0	55	317	100	440	740	200	50	4	M12	190	250	4	13.9	1363				
										200L	425.5	60	SS	530	1250	10	74	342	115	490	840	250	63	4	M16	205	205	4	21.0	1438.5				
100-310	125	100	125	470	250	315	32	81	91	132S	239	38	SS	430	1000	0	51	342	80	400	660	200	50	4	M12	170	170	3	3.2	1052				
										132M	258	38	SS	430	1000	0	51	342	80	400	660	200	50	4	M12	170	170	3	5.4	1090				
										160M	323	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	5.4	1206				
										160L	345	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	6.7	1250				
										180M	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1308				
										180L	370.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1363				
										200L	425.5	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1438.5				
										225S	432	65	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1479				
150-190 150-200 125-240 125-250	150 150 150 150	150 150 125 125	140 140 140 140	470 470 470 470	250 250 250 250	315 315 355 355	42 42 42 42	95 95 103 103	103 103 113 113	112M	200	28	SS	430	870	0	46	342	60	400	600	200	50	4	M12	150	120	3	5.4	1004.5				
										132S	239	38	SS	430	1000	0	51	342	80	400	660	200	50	4	M12	170	170	3	5.4	1067				
										132M	258	38	SS	430	1000	0	51	342	80	400	660	200	50	4	M12	170	170	3	5.4	1105				
										160M	323	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	5.4	1221				
										160L	345	42	SS	470	1120	0	56	342	100	440	740	200	50	4	M12	190	190	3	6.7	1265				
										180M	351.5	48	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	3	9.0	1323				
										180L	370.5	55	SS	470	1180	0	58	342	100	440	740	200	50	4	M12	190	250	4	13.9	1378				
										200L	425.5	60	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1453.5				
										225S	432	65	SS	530	1250	10	75	367	115	490	840	250	63	4	M16	205	205	4	21.0	1494				
125-310 125-315 100-400	150 150 125	125 125 100	140 140 140	530 530 530	280 280 280	355 355 355	42 42 42	140 140 156	151 151 157	160L	345	42	SS	530	1250	10	81	400	95	490	840	250	63	4	M16	205	205	3	6.7	1325				
										180M	351.5	48	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	3	9.0	1383				
										180L	370.5	55	SS	530	1250	10	80	400	95	490	840	250	63	4	M16	205	205	4	13.9	1438				
										200L	425.5	60	SS	590	1400	10	91	400	120	550	940	250	63	4	M16	230	230	4	21.0	1513.5				
										225S	432	65	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	21.0	1554				
										250S	463.5	75	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	31.0	1556.5				
										250M	482.5	75	SS	590	1400	10	87	400	120	550	940	250	63	4	M16	230	230	4	31.0	1651.5				
125-400 200-240 200-250	150 200 200	125 200 200	140 160 160	530 530 530	315 315 315	400 375 375	42 42 42	165 158 158	182 174 174	180M	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1403				
										180L	370.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1458				
										200L	425.5	60	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1533.5				
										225S	432	65	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1574				
										250S	463.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1576.5				
										250M	482.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1671.5				
										280S	544	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1765.5				
										280M	569.5	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1816				
150-310 150-315 150-390 150-400	200 200 200 200	150 150 150 150	160 160 160 160	530 530 530 530	315 315 315 315	400 400 450 450	48 48 48 48	188 188 204 204	198 198 217 217	180M	351.5	48	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	3	9.0	1403				
										180L	370.5	55	SS	590	1250	10	90	435	95	550	840	250	63	4	M16	205	205	4	13.9	1458				
										200L	425.5	60	SS	590	1400	10	99	435	120	550	940	250	63	4	M16	230	230	4	21.0	1533.5				
										225S	432	65	SS	590	1400	10	95	435	120	550	940	250	63	4	M16	230	230	4	21.0	1574				
										250S	463.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1576.5				
										250M	482.5	75	SS	640	1450	10	107	435	120	600	940	250	63	4	M16	230	280	4	31.0	1671.5				
										280S	544	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1765.5				
										280M	569.5	85	SS	710	1600	10	109	435	160	670	1060	250	63	4	M16	270	270	4	45.0	1816				

Motor Paremeter Comparison Table by Motor Type

2P Motor

Frame size	Center height	Shaft dia.	Totally enclosed fan-cooled (TU motor)		Drip-proof		Increased-safety explosion-proof		Flame-proof	
	R	d2	Output	Weight	Output	Weight	Output	Weight	Output	Weight
---	mm	mm	kW	kg	kW	kg	kW	kg	kW	kg
71M	120	14	0.4	7	-	-	0.4	7.2	0.4	17
80	140	19	-	-	-	-	-	-	-	-
80M	140	19	0.75	18	0.75	9	0.75	11.5	0.75	26
90S	156	24	-	-	-	-	-	-	-	-
90L	168.5	24	1.5 2.2	27.5 28	1.5 2.2	15.5 16	1.5	18.5	1.5 2.2	29 42
100L	193	28	-	-	-	-	2.2	29.5	-	-
112M	200	28	3.7	47	3.7	27	3.7	40	3.7	58
132S	239	38	5.5 7.5	73	5.5 7.5	34 42	5.5	60	5.5 7.5	74 80
160M	323	42	11 15	133 135	11 15	65 75	7.5 -	85 -	11 15	125
160L*	345	42	18.5	156	18.5	85	11	115	18.5	160
160L**	345	48	-	-	22	105	-	-	-	-
180M*	351.5	48	22	235	-	-	15 18.5	150	22	205
180MA	351.5	48	-	-	-	-	-	-	-	-
180M**	351.5	55	-	-	30	120	-	-	-	-
180L	370.5	55	30	248	37 45	190 195	-	-	-	-
200LA	395.5	55	-	-	-	-	-	-	-	-
200L	395.5	55	37 45	333 357	-	-	22	240	30	345
225S	402	55	55	467	-	-	30 37	310	37	390
225MA	414.5	55	-	-	-	-	-	-	-	-
225M	414.5	55	-	-	-	-	-	-	45	450
250SA	463.5	60	-	-	-	-	-	-	-	-
250M	452.5	55	-	-	-	-	45	550	55	590

4P Motor

Frame size	Center height	Shaft dia.	Totally enclosed fan-cooled (TU motor)		Drip-proof		Increased-safety explosion-proof		Flame-proof	
	R	d2	Output	Weight	Output	Weight	Output	Weight	Output	Weight
---	mm	mm	kW	kg	kW	kg	kW	kg	kW	kg
71M	120	14	0.4	8	-	-	0.4	9	0.4	17
80	140	19	-	-	-	-	-	-	-	-
80M	140	19	0.75	11	0.75	10.5	0.75	12	0.75	28
90L	168.5	24	1.5	20	1.5	16	1.5	20	1.5	30
100L	193	28	2.2	25	2.2	22	2.2	33	2.2	45
112M	200	28	3.7	37	3.7	30	3.7	41	3.7	58
132S	239	38	5.5	49	5.5	40	5.5	60	5.5	77
132M	258	38	7.5	60	7.5	51	7.5	74	7.5	95
160M	323	42	11	85	11	70	11	98	11	115
160L*	345	42	15	105	15	85	15	115	15	145
160L**	345	48	-	-	18.5	110	-	-	-	-
180MC	351.5	48	-	-	-	-	-	-	-	-
180M*	351.5	48	18.5 22	130 145	-	-	18.5	165	18.5 22	200
180M**	351.5	55	-	-	22 30	125 170	-	-	-	-
180LC	370.5	48	-	-	-	-	-	-	-	-
180L*	370.5	55	30	175	-	-	-	-	-	-
200LC	395.5	55	-	-	-	-	-	-	-	-
200L*	395.5	55	-	-	-	-	-	-	30	375
200L**	425.5	60	37 45	230 250	-	-	22	230	-	-
180L**	400.5	60	-	-	37 45	195 210	-	-	-	-
225SC	432	60	-	-	-	-	-	-	-	-
225S*	432	60	-	-	-	-	-	-	37	440
225S**	432	65	55	275	-	-	30 37	295	-	-
200M	406.5	65	-	-	55	240	-	-	-	-
225MC	444.5	60	-	-	-	-	-	-	-	-
225M	444.5	60	-	-	-	-	-	-	45	500
250SC	463.5	70	-	-	-	-	-	-	-	-
250M*	482.5	65	-	-	-	-	-	-	55	600
250M**	482.5	75	90	520	-	-	45 55	550	-	-
225S	432	75	-	-	75	350	-	-	-	-
225M	444.5	75	-	-	90	380	-	-	-	-
250S	463.5	75	75	470	-	-	-	-	-	-
250MC	482.5	70	-	-	-	-	-	-	-	-
280SB	544	80	-	-	-	-	-	-	-	-
280S*	514	75	-	-	-	-	-	-	75	780
280M*	539.5	75	-	-	-	-	-	-	90	920
280M**	569.5	85	132	800	-	-	75	800	-	-
250S	493.5	85	-	-	110	500	-	-	-	-
250M***	512.5	85	-	-	132	565	-	-	-	-
280S**	544	85	110	685	-	-	-	-	-	-
280MB	569.5	80	-	-	-	-	-	-	-	-
315SB	589	85	-	-	-	-	-	-	-	-

6P Motor

Frame size	Center height	Shaft dia.	Totally enclosed fan-cooled (TU motor)		Drip-proof		Increased-safety explosion-proof		Flame-proof	
	R	d2	Output	Weight	Output	Weight	Output	Weight	Output	Weight
---	mm	mm	kW	kg	kW	kg	kW	kg	kW	kg
100L	193	28	1.5	38	-	-	-	-	-	-
112M	200	28	2.2	46	-	-	-	-	-	-
132S	239	38	3.7	68	-	-	-	-	-	-
132M	258	38	5.5	79	-	-	-	-	-	-
160M	323	42	7.5	125	-	-	-	-	-	-
160L	345	42	11	140	-	-	-	-	-	-
180M	351.5	48	15	250	-	-	-	-	-	-
180L	370.5	55	18.5 22	225	-	-	-	-	-	-
200L	425.5	60	30 37	385	-	-	-	-	-	-
225S	432	65	45	500	-	-	-	-	-	-
250S	463.5	75	55	565	-	-	-	-	-	-
250M	482.5	75	75	640	-	-	-	-	-	-
280S	544	85	90	750	-	-	-	-	-	-
280M	569.5	85	110	725	-	-	-	-	-	-

Note: Totally eclosed fan-cooled motor is only available for TU motor, Torishima Ultra motor.

Potential Energy Saving with the Eco-Pump

The Eco-Pumps reduce power consumption by 10~30%!

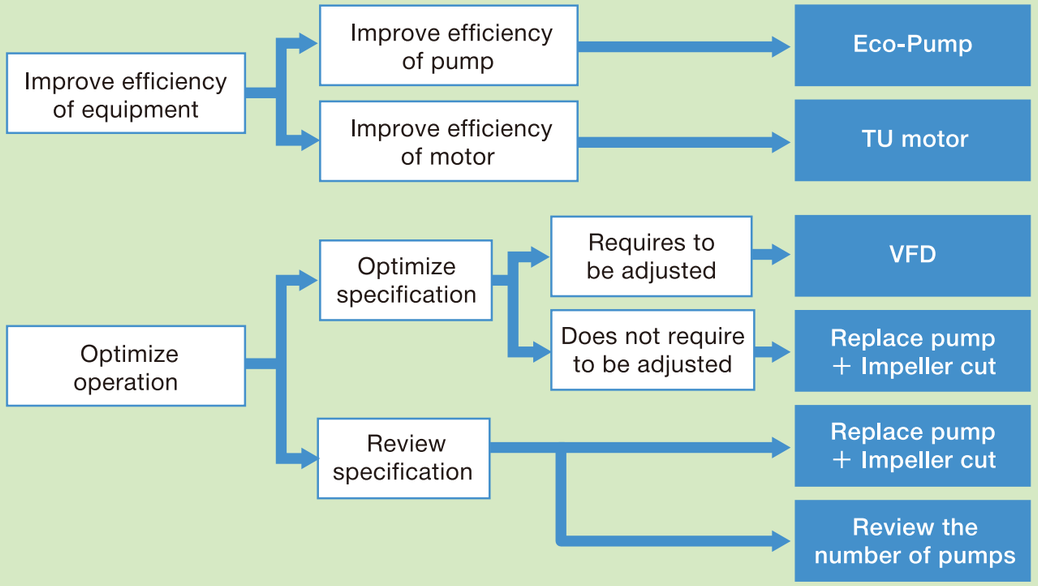
Factory (Textile)	Factory (Beverage)	Health-care Facility	Swimming School	Hotel	Commercial Facility
Power Consumption 39.2% DOWN	Power Consumption 36.6% DOWN	Power Consumption 17.5% DOWN	Power Consumption 40% DOWN	Power Consumption 9.3% DOWN	Power Consumption 28% DOWN
CO_2 Emission 63.4ton DOWN	CO_2 Emission 99.3ton DOWN	CO_2 Emission 151ton DOWN	CO_2 Emission 8.7ton DOWN	CO_2 Emission 16.7ton DOWN	CO_2 Emission 20ton DOWN

The above figures are a few examples of successfull installation of the Eco-Pumps in various industries.

6 typical examples where big engery savings can be expected:

- Pump flow rate controlled by valve
- Pump operating at fixed speed
- Pump with high annual operating hours
- Pump with oversized motor
- Old pump
- Pump for new facility

We propose several solutions depending on your situation:



Would you like to try to select an Eco-Pump that meets your requirements, look at testimonials, or just learn more about the Eco-Pumps?
Then please visit the Eco-Pump website:
www.torishima.co.jp/en/ecopump/index.html