



EBARA

PROCESS PUMP

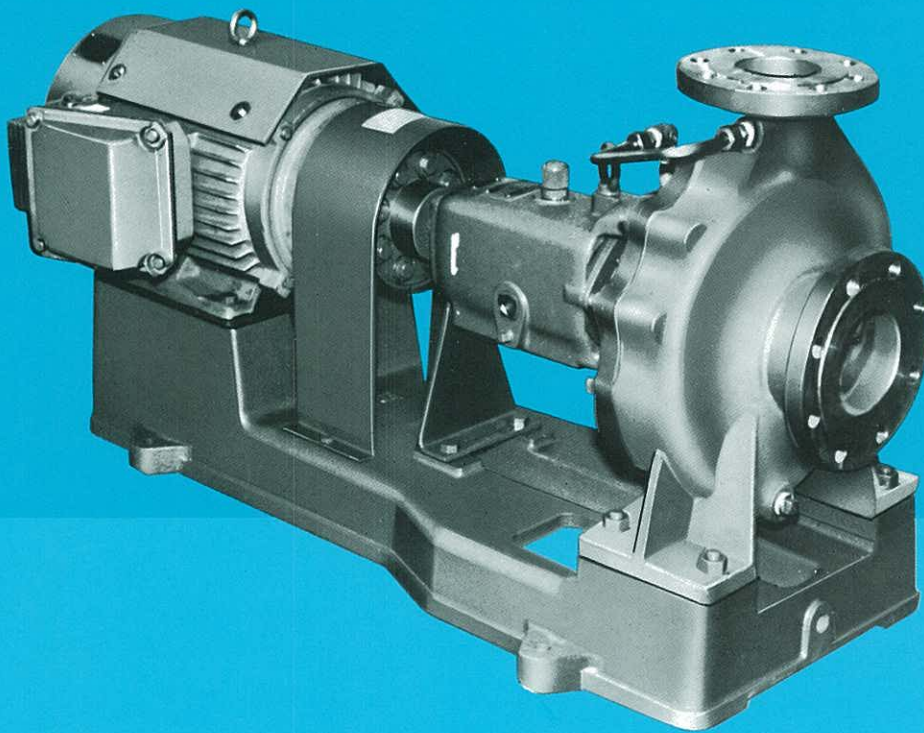
Single Stage, End Suction, Foot Support

CS1150EQ

Model

IFW

ISO 2858 **Bep**



PROCESS PUMP

Single Stage, End Suction, Foot Support

Model

IFW

ISO 2858



EBARA PROCESS PUMPS MODEL IFW of single stage, end suction, foot supported, horizontal type have been widely used in the chemical industry, petroleum refineries, the petrochemical industry and other industries

for many years. Many improvements have been recently made on this pump to enhance its performance. "The money saver" Our modern mass production facilities enable us to pass the cost-savings on to you. Unique

design of this high performance pump features stainless steel, cast steel casing or cast iron for superior and extended low-cost operation.

Applications

- Chemical Industry
- Petroleum Refineries
- The Petrochemical Industry
- Other Industries

Ratings

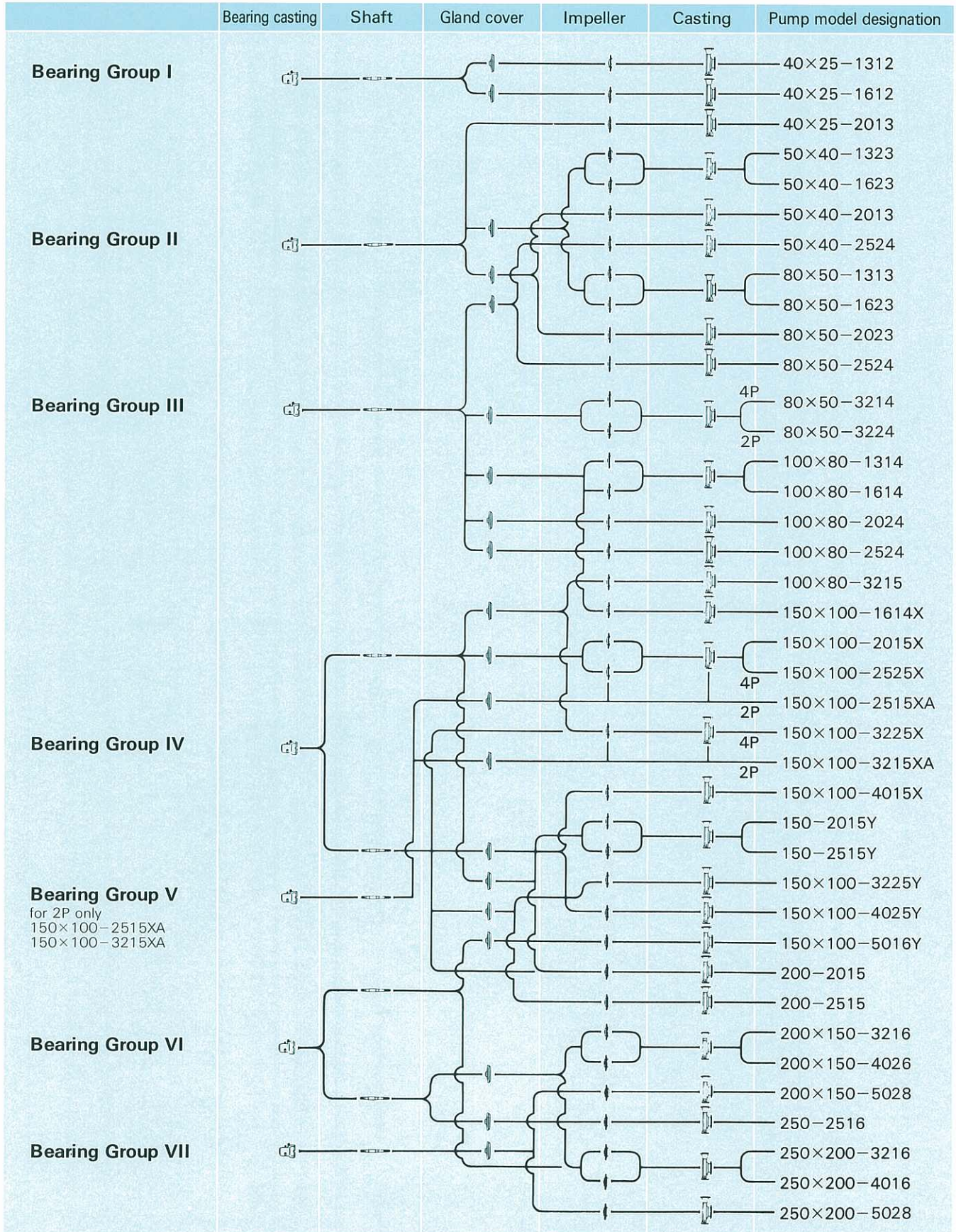
Capacities	To 24 m ³ /min (3700 USGPM)
Heads	To 140 m (470 ft)
Discharge pressures	To gauge pressure 1.57MPa(230PSI) {16kgf/cm ² }
Max. allowable suction pressures	To gauge pressure 0.88MPa(130PSI) {9kgf/cm ² }
Hydrostatic test pressures	To gauge pressure 2.3MPa(340PSI) {24kgf/cm ² }
Speed	50 Hz 1450 or 2950 min ⁻¹ 60 Hz 1750 or 3550 min ⁻¹
Max. allowable speed	To 3600 min ⁻¹
Rotation	Clockwise viewed from inboard side
Impeller type	Enclosed
Temperatures	Stainless steel: -50°C to 200°C (-58°F to 392°F) Cast steel: -5°C to 200°C (-23°F to 392°F) Cast iron: -15°C to 150°C (-5°F to 300°F)
Flange rating	JIS10KRF/ANSI 150 RF (Stainless steel, Cast steel) JIS10KFF/ANSI 125 FF (Cast Iron)
Nozzles	End-Top
Stuffing box	Suitable for conventional packing & mechanical seal

Features

- Foot support and heavy duty design.
- Back pull-out casing.
- Full compliance with ISO 2858 specifications.
- All components have been designed for maximum parts interchangeability.
- Flexibility of design handles wide range of liquids.
- All sizes stocked for fast shipment.
- Low NPSH performance.

Wide-Range for Best Choice!!

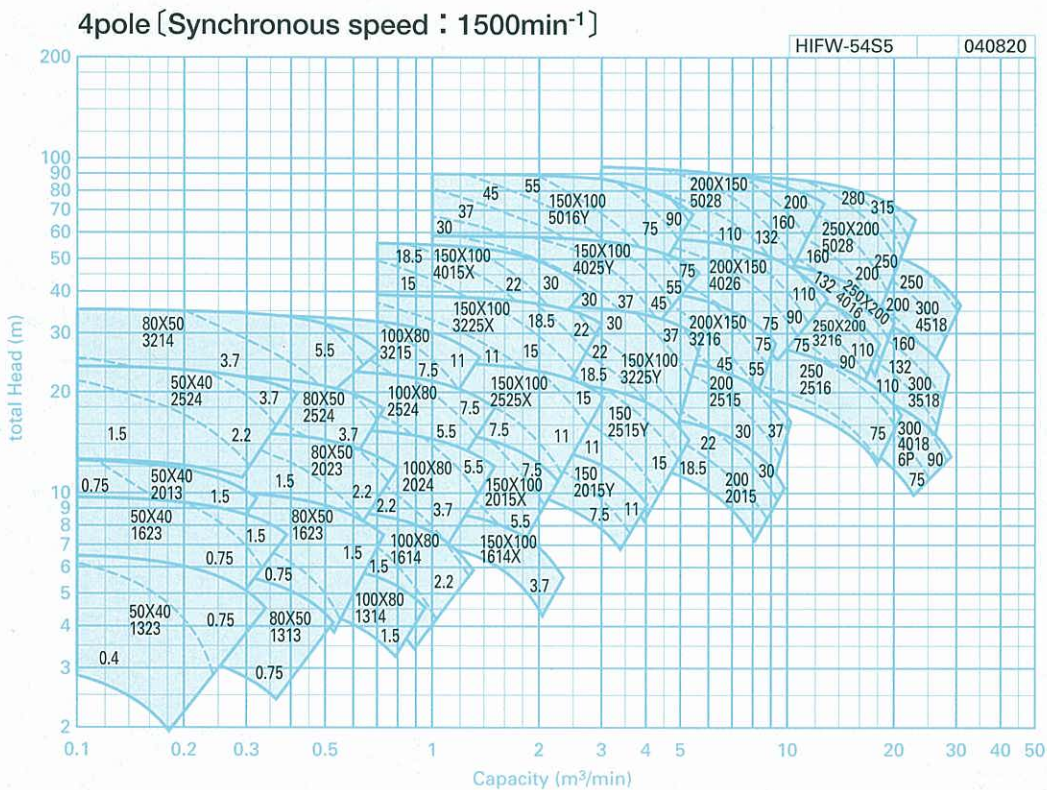
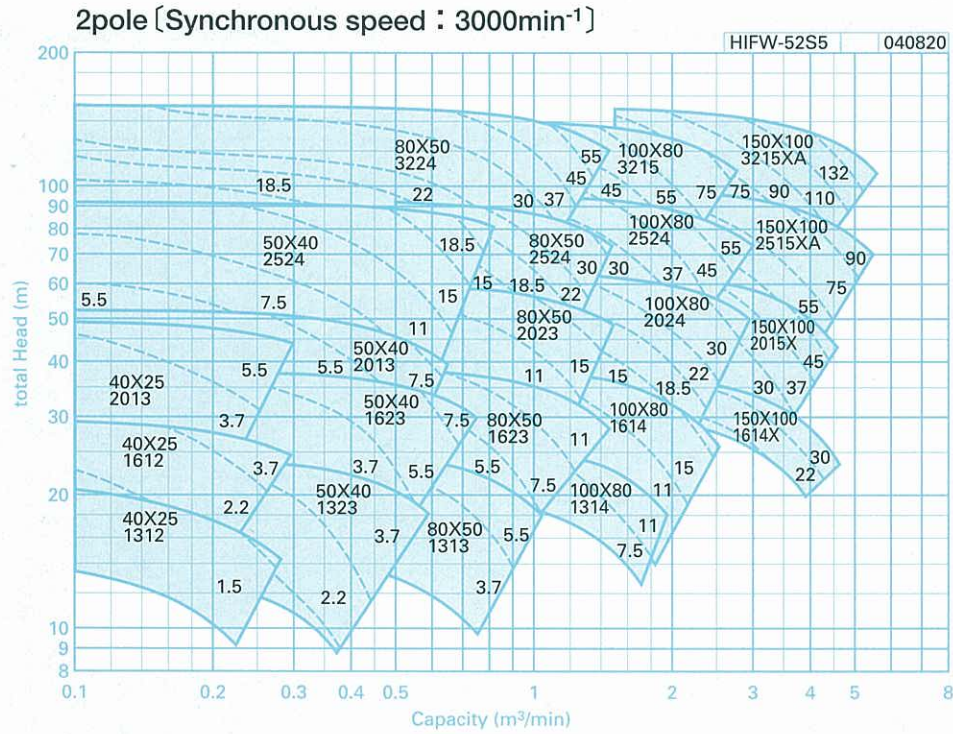
Availability in modules provides complete interchangeability of components between different types and permits pump selections best suited for the given specifications.



Selection Chart



50Hz

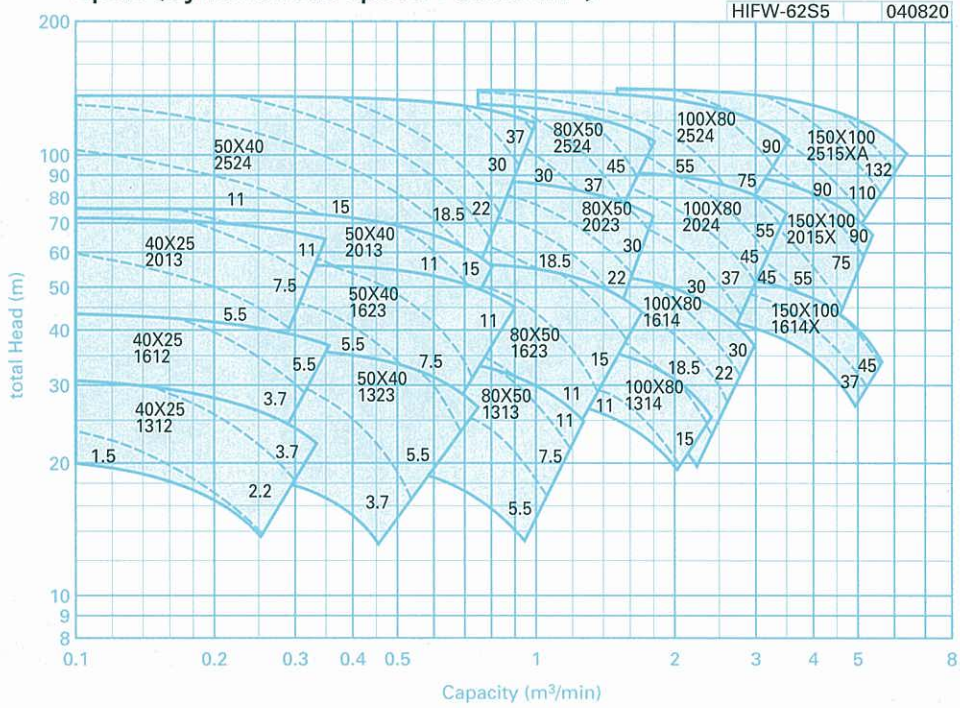


Selection Chart

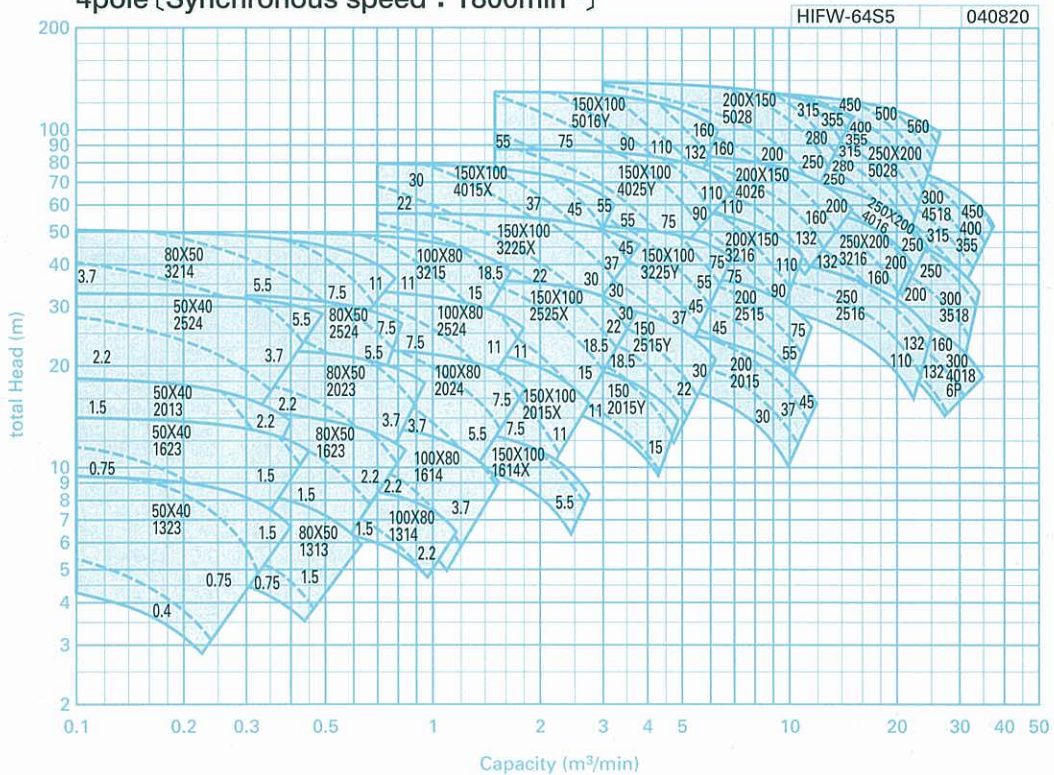


60Hz

2pole [Synchronous speed : 3600min⁻¹]



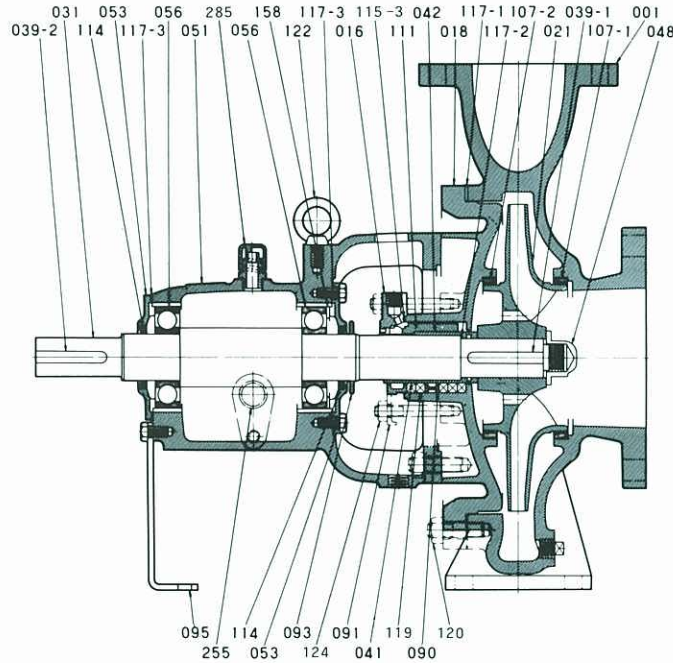
4pole [Synchronous speed : 1800min⁻¹]



Construction



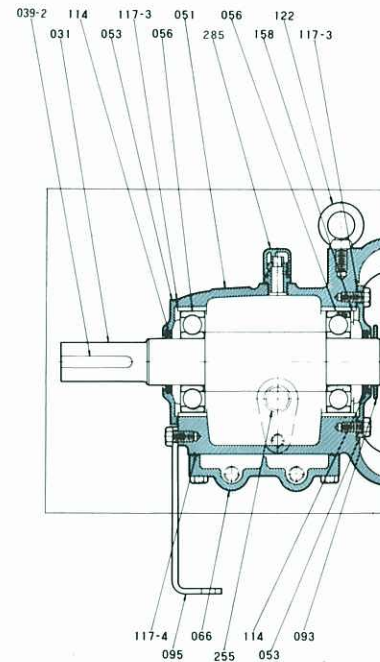
Sectional Drawing of Standard Type (Cast Iron)



Part List

No.	Name of part	Material		Quantity
		Cast iron	Ductile cast iron	
001	Casing	FC250	FCD	1
016	Mechanical seal cover	SUS304	SUS304	1
018	Gland cover	FC250	FCD	1
021	Impeller	FC200	FC200	1
031	Shaft	S35C	S35C	1
039-1	Impeller key	S50C	S50C	1
039-2	Coupling key	S50C	S50C	1
041	Packing sleeve	SUS403	SUS403	1
042	Mechanical seal sleeve	SUS316	SUS316	1
048	Impeller nut	S30C	S30C	1
051	Bearing casing	FC200	FC200	1
053	Bearing cover	FC200	FC200	2
056	Ball bearing	—	—	2
066	Cooling cover	FC200	FC200	1
090	Lantern ring	SUS304	SUS304	1
091	Packing gland	FC150	FC150	1
093	Flinger	SUS304	SUS304	1
095	Stay	SS400	SS400	1
107-1	Liner ring	FCD400	FCD400	1
107-2	Liner ring	FCD400	FCD400	1
111	Mechanical seal	—	—	1
114	Oil seal	SPHC/NBR	SPHC/NBR	2
115-3	O-ring for mechanical seal cover	Teflon	Teflon	1
117-1	Gasket for casing	V#6500	V#6500	1
117-2	Gasket for shaft sleeve	V#6500AC	V#6500AC	1
117-3	Gasket for bearing cover	OIL SHEET	OIL SHEET	1
117-4	Gasket for cooling cover	NBR	NBR	2
119	Gland packing	P#6501L	P#6501L	5
120	Casing bolt	SS400/SUS403	SS400/SUS403	1 set
122	Hook bolt	S20C	S20C	1
124	Gland bolt	SUS403	SUS403	2,4
158	Wave washer	SK5	SK5	1
255	Oil level gauge	Synthetic rubber/Glass	Synthetic rubber/Glass	1
285	Air Breather	Polycarbonate	Polycarbonate	1

Bearing Casing with Cooling Jacket

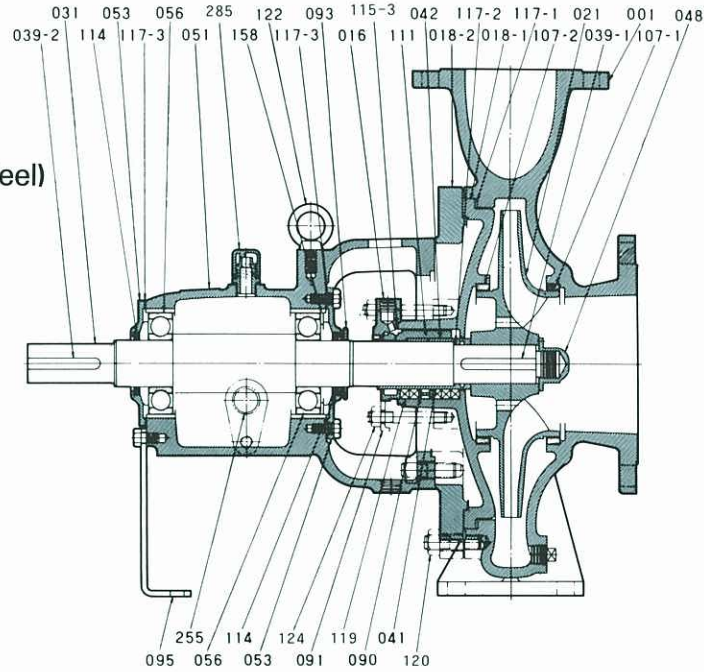


- (Note) 1. Combinations of parts in other materials than listed are also available upon request.
 2. Packing/gasket material letters is as following.
 P: Nippon Pillar made.
 V: Nippon Valqua made.

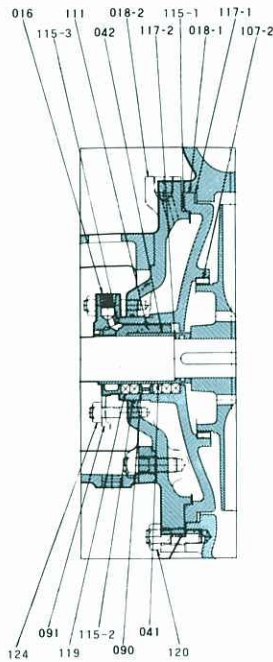
Construction



Sectional Drawing of Standard Type (Stainless steel, Cast steel)



Stuffing Box with Cooling Jacket



(Note) Stuffing box with Cooling Jacket is available with stainless steel and cast steel pumps only.

Part List

No.	Name of part	Material			Quantity
		Stainless steel	Cast steel		
001	Casing	SCS14	SCS13	SC480	1
016	Mechanical seal cover	SUS316	SUS304	SUS304	1
018-1	Gland cover (I)	SCS14	SCS13	SC480	1
018-2	Gland cover (II)	FCD400	FCD400	FCD400	1
021	Impeller	SCS14	SCS13	FC200	1
031	Shaft	SUS316	SUS304	S35C	1
039-1	Impeller key	SUS316	SUS316	S50C	1
039-2	Coupling key	S50C	S50C	S50C	1
041	Packing sleeve	SUS316	SUS304	SUS420J1	1
042	Mechanical seal sleeve	SUS316	SUS304	SUS403	1
048	Impeller nut	SUS316	SUS304	S30C	1
051	Bearing casing	FC200	FC200	FC200	1
053	Bearing cover	FC200	FC200	FC200	2
056	Ball bearing	—	—	—	2
066	Water-cooling cover	FC200	FC200	FC200	1
090	Lantern ring	SUS316	SUS304	SUS304	1
091	Packing gland	SCS14	SCS13	FC150	1
093	Flinger	SUS316	SUS304	SUS304	1
095	Stay	SS400	SS400	SS400	1
107-1	Liner ring	SUS316	SUS304	FCD400	1
107-2	Liner ring	SUS316	SUS304	FCD400	1
111	Mechanical seal	—	—	—	1
114	Oil seal	SPHC/NBR	SPHC/NBR	SPHC/NBR	2
115-1	O-ring for gland cover	NBR	NBR	NBR	1
115-2	O-ring for gland cover	NBR	NBR	NBR	1
115-3	O-ring for mechanical seal cover	Teflon	Teflon	Teflon	1
117-1	Gasket for casing	V#6500AC	V#6500AC	V#6500AC	1
117-2	Gasket for shaft sleeve	V#6500AC	V#6500AC	V#6500AC	1
117-3	Gasket for bearing cover	OIL SHEET	OIL SHEET	OIL SHEET	2
117-4	Gasket for water-cooling cover	NBR	NBR	NBR	1
119	Gland packing	P#6501L	P#6501L	P#6501L	5
120	Casing bolt	SUS403	SUS403	SUS403	1 set
122	Hook bolt	S20C	S20C	S20C	1
124	Gland bolt	SUS316	SUS304	SUS403	2,4
158	Wave washer	SK5	SK5	SK5	1
255	Oil level gauge	Synthetic rubber/Glass	Synthetic rubber/Glass	Synthetic rubber/Glass	1
285	Air Breather	Polycarbonate	Polycarbonate	Polycarbonate	1

(Note) 1. Combinations of parts in other materials than listed are also available upon request.

2. Packing/gasket material letters is as following.

P: Nippon Pillar made.

V: Nippon Valqua made.

Shaft Sealing System



	A	B	C
1	<p>1A Balanced seal (Standard type)</p>	<p>1B Balanced seal (Quench type)</p>	<p>1C Double seal (Open air-side balanced type)</p>
2	<p>2A Unbalanced seal (Standard type)</p>	<p>2B Unbalanced seal (Quench type)</p>	<p>2C Double seal (Open air-side unbalanced type)</p>
3	<p>3A Metal bellows (Standard type)</p>	<p>3B Mono Coil Seal</p>	<p>3C Outside seal</p>
4	<p>4A Gland packing (Standard type)</p>	<p>4B Gland packing (Quench type)</p>	<p>1. Dimensions of the shaft sealing packing box are subject to ISO-3069. Mechanical seal is standardized to DIN 24690 in type and dimensions.</p> <p>2. Other shaft sealing systems are available to meet different service requirements.</p>

Dimensions



Unit : mm

Pump Model	Motor		Pump				Common base						Motor		*		Anchor bolt			Wt (Mass) kg	Coupling				
	Frame	kW	P ₁	P ₂	H ₁	H ₂	A	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	M ₁	*M ₂	LA	X	Fd	Fb		Fe	Fh	Fw	CLA	CLAB
200×150 IFWM	200L	35	160	670	450	450	110	1405	230	940	235	670	490	425.5	377	1636.5	4	M16	70	245	315	130	468	224	8-20
	3216	225S	55	160	670	450	455	110	1635	270	1060	305	670	432	388	1654	4	M16	70	245	315	130	520	224MB	8-20
200×150 IFWM	250S	75	160	670	450	430	110	1640	270	1060	310	670	670	463.5	501	1798.5	4	M16	70	245	315	130	517	250MB	8-25
	4026	250M	90	160	670	450	430	110	1640	270	1060	310	670	482.5	520	1836.5	4	M16	70	245	315	130	517	250MB	8-25
	280S	110	160	670	450	430	110	1640	270	1060	310	670	670	544	579	1957	4	M16	70	245	315	130	512	280MB	8-28
	280M	132	160	670	450	430	110	1640	270	1060	310	670	670	569.5	604.5	2008	4	M16	70	245	315	130	512	280MB	8-28
	315S	160	160	670	450	430	110	1670	300	1200	170	750	750	589	640	2063	4	M20	85	315	400	150	535	GEAR CP	
200×150 IFWM	250S	75	180	820	560	515	110	1840	300	1200	340	670	670	463.5	501	1968.5	4	M20	85	315	400	150	683	280	8-28
	5028	250M	90	180	820	560	515	110	1840	300	1200	340	670	482.5	520	2006.5	4	M20	85	315	400	150	683	280	8-28
	280S	110	180	820	560	490	110	1820	300	1200	320	670	670	544	579	2127	4	M20	85	315	400	150	684	280MB	8-28
	280M	132	180	820	560	490	110	1820	300	1200	320	670	670	569.5	604.5	2178	4	M20	85	315	400	150	684	280MB	8-28
	315S	160	180	820	560	490	110	2050	340	1320	390	750	750	589	640	2233	4	M20	85	315	400	150	701	GEAR CP	
	315M	200	180	820	560	490	110	2050	340	1320	390	750	750	614.5	665.5	2284	4	M20	85	315	400	150	701	GEAR CP	
250 IFWM	225S	55	225	695	560	490	170	1545	270	1060	215	750	550	432	388	1744	4	M20	85	315	400	150	631	224MB	8-20
	2516	250S	75	225	695	560	490	170	1650	270	1060	320	750	463.5	501	1888.5	4	M20	85	315	400	150	663	250MB	8-25
	250M	90	225	695	560	490	170	1650	270	1060	320	750	750	482.5	520	1926.5	4	M20	85	315	400	150	663	250MB	8-25
	280S	110	225	695	560	490	170	1850	300	1200	350	750	750	544	579	2047	4	M20	85	315	400	150	697	280MB	8-28
	280M	132	225	695	560	490	170	1850	300	1200	350	750	750	569.5	604.5	2098	4	M20	85	315	400	150	697	280MB	8-28
	315S	160	225	695	560	490	170	1850	300	1200	350	750	750	589	640	2153	4	M20	85	315	400	150	730	GEAR CP	
250×200 IFWM	250S	75	180	670	560	490	170	1650	270	1060	320	750	750	463.5	501	1818.5	4	M20	85	315	400	150	622	250MB	8-25
	3216	250M	90	180	670	560	490	170	1650	270	1060	320	750	482.5	520	1856.5	4	M20	85	315	400	150	622	250MB	8-25
	280S	110	180	670	560	520	170	1650	270	1060	320	750	750	544	579	1977	4	M20	85	315	400	150	645	280MB	8-28
250×200 IFWM	4016	280M	132	180	670	560	490	170	1850	300	1200	350	750	569.5	604.5	2028	4	M20	85	315	400	150	683	280MB	8-28
	315S	160	180	670	560	490	170	1850	300	1200	350	750	750	589	640	2083	4	M20	85	315	400	150	690	GEAR CP	
	315M	200	180	670	560	490	170	1850	300	1200	350	750	750	614.5	665.5	2134	4	M20	85	315	400	150	690	GEAR CP	
	280M	132	200	820	630	540	170	2120	340	1320	460	750	750	569.5	604.5	2198	4	M20	85	315	400	150	859	280MB	8-28
250×200 IFWM	5028	315S	160	200	820	630	575	170	2120	340	1320	460	750	589	640	2253	4	M20	85	315	400	150	871	GEAR CP	
	315M	200	200	820	630	575	170	2120	340	1320	460	750	750	614.5	665.5	2304	4	M20	85	315	400	150	871	GEAR CP	

- Notes: 1. Motor output classification numbers shown are for ordinary E class totally-enclosed, fan-cooled low-voltage 3-phase squirrel-cage induction motors under JEM-1400-1983
 2. M₂ and LA dimensions marked with an asterisk vary to a certain extent, depending on motor manufacturers.
 3. Dimensions are subject to change without notice.



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