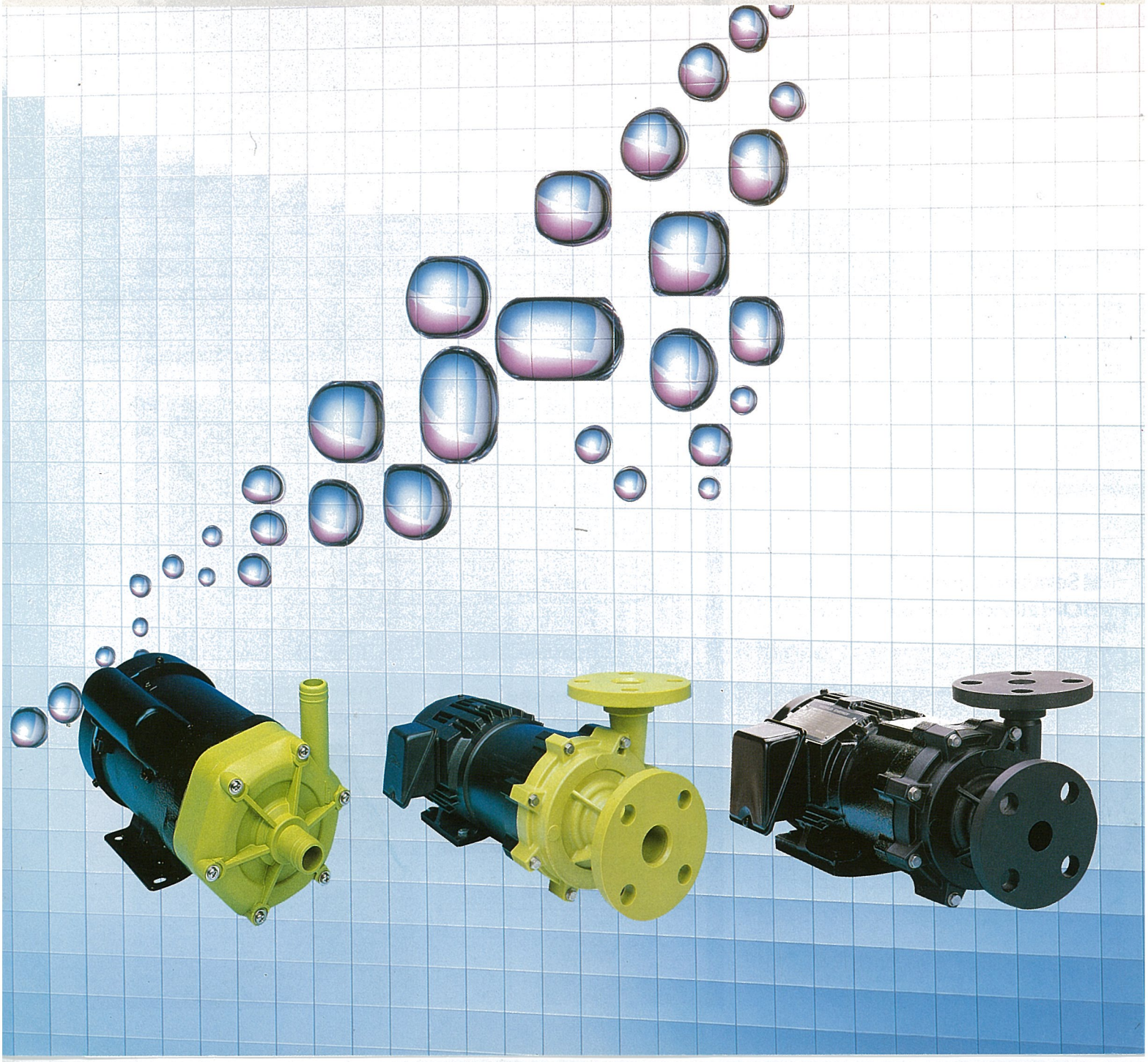
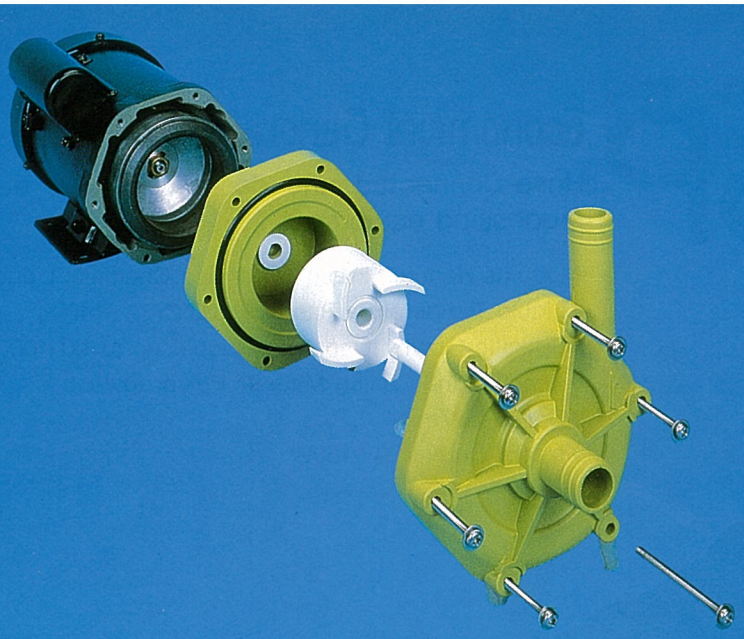
EBARA

CSI570E**A**

EBARA MAGNET-COUPLED PUMPS

Model NSP·NLPI·NLPII·NLFIII





Magnet-coupled Pumps of The Next Generation from Ebara

CLEAN

This is the magnet pump in which the isolated pump spindle and motor spindle are used for torque transfer through magnet coupling. As there is no liquid leakage, the environment will never be contaminated nor objects are subject to corrosion. Most recommended to be incorporated in units whose maintenance is rather difficult.

ECONOMICAL

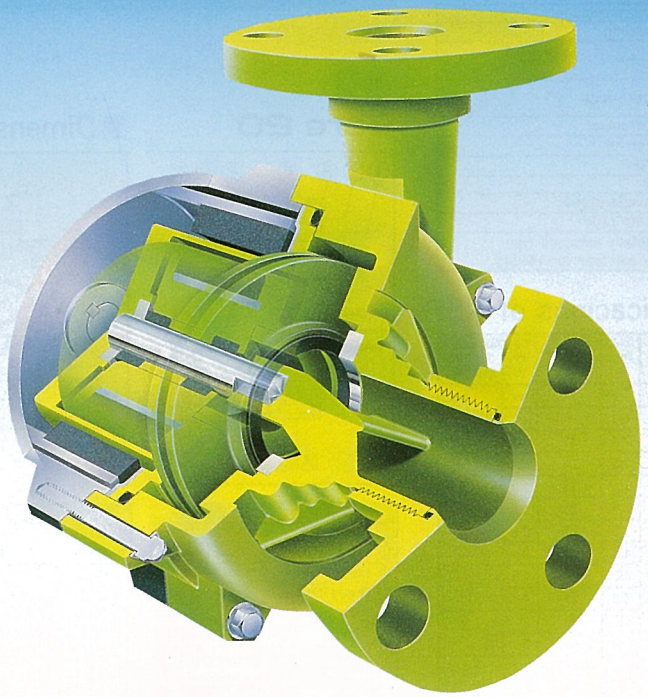
Excellent economy

There is no leakage - no possibility of wasting expensive liquid. No spindle sealing - no necessity of providing accessory equipments for external water injection, quench piping, etc. No heat loss - since liquid temperature need not be lowered for transfer of liquid.

SIMPLE

Easy Maintnance

The pumping unit fcatures a simple constructlon comprising only several modular complex parts. Daily maintenance, disassembly, and check can be done with ease.



SAFETY

Excellent Corrosion Resistance

In addition to the non-leakage feature, the casing is made of highly corrosion-resistant polypropylene. Ceramics and Rulon are used for spindle and bearings, allowing to handle practically all conceivable kinds of chemical liquid. Most suitable for the transfer of chemical liquid such as acids and alkali, and plays the role of a capable chemical pump.

VARIETY

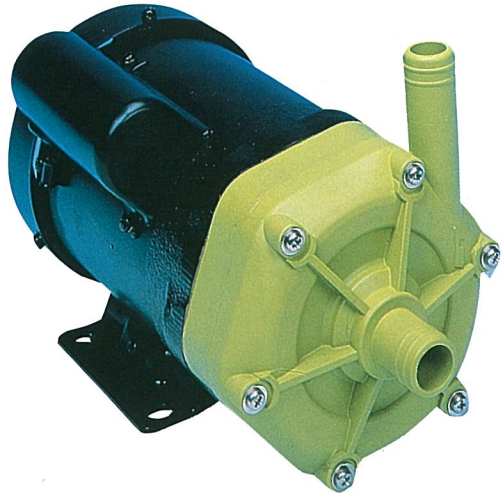
Diversified Line-up

The NSP Series has 7 models, NLPI Series 8, and NLPII Series 9, NLFIII Series 8 totaling 32 models in all. Available flow rates range from 1 to 460 liters per minute, and you can select the most suitable one.

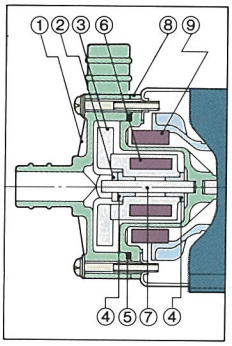
NSP Economical General-Purpose

Hose-Connected and designed to be easily incorporated in processing equipment.

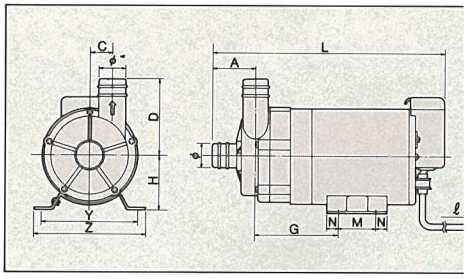
- Liquids Handled:Fresh Water and Chemical Liquors(Slurry should not be h
- Liquid Temperature Ranqe:0～60°C(32～140°F)
- Specific Gravity {Density} of Liquid: up to 1.0 {1000kg/m³}
- Impeller and Casing Material:Polypropylene
- Bore:14-27mm
- Motor Output:20～150W



Bore 17, 27



Dimensional Outline Drawing



	Part Name	Material
①	Casing	polypropylene
②	Thrust metal	ceramice
③	Impeller	polypropylene
④	Bearing metal	carbon
⑤	O ring	NBR
⑥	Driven magnet	ferrite
⑦	Shaft	ceramics
⑧	Can	polypropylene
⑨	Drive magnet	ferrite

Model		Moter Out-Put W	Bore	Dimensions								
50Hz	60Hz			A	C	D	G	H	L	N	M	Y	Z
17NSP520	17NSP630	20/30	17	38	25	63	63	50	206	8	44	90	10
27NSP520	27NSP630	20/30	27	47	22	69	78	50	226	8	44	90	10

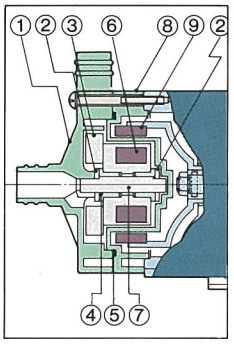
General Specification of EBARA magnet pumps

Item		NSP
Liquid handled	Liquid quality	fresh water, chemical liquor
	Liquid temperature	0~60° C
	Specific gravity{density}	1.0 or less {1000kg/m³or less}
	Slurry	should not be handled
Max. suction pressure		0.5 kgf/cm² {0.05MPa}
Structure	Impeller	open
	Radial bearing	sleeve
	Thrust bearing	disc
Connection		hose joint
Material	Casing	polypropylene
	Impeller	polypropylene
	Can	polypropylene
	Radial bearing	carbon
	Thrust bearing (rotating side)	——
	Thrust bearing (stationary side)	ceramics
	Shaft	ceramics
	Magnet	ferrite
	O ring	NBR
Motor	Pole	2
	Phase	single phase
	Voltage	100/110V
	Type	totally enclosed type (open type for 14NSP)

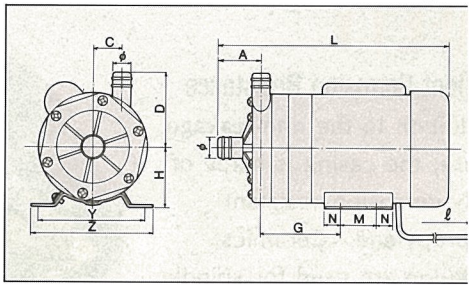
Performance Specificacions of NSP

Model	Size mm	Frequency Hz	Nominal output motor	Capacity ℓ/min	Total head m	Capacity ℓ/min	Total head m	Max working pressure kgf/cm² {MPa}
14NSP53	14	50	3	4	1.1	—	—	1.3 {0.13}
14NSP64		60	44	7	1.1	—	—	
17NSP520	17	50	20	10	2.4	18	1.7	1.4 {0.14}
17NSP630		60	30	10	3.4	20	2.4	
27NSP520	27	50	20	20	1.6	35	1.2	1.3 {0.13}
27NSP630		60	30	20	2.3	35	1.8	
20NSP530	20	50	30	15	3.3	25	2.3	1.6 {0.16}
20NSP645		60	45	15	4.3	25	3	
20NSP550		50	50	20	4.2	35	2.8	1.7

Bore 20



Dimensional Outline Drawing



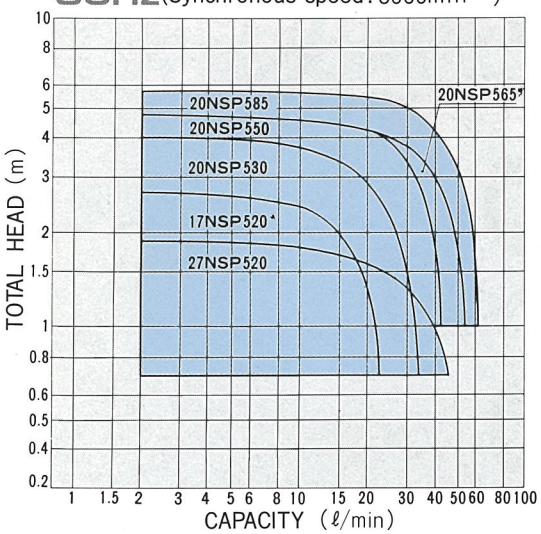
	Part Name	Material
①	Casing	polypropylene
②	Thrust metal	ceramice
③	Impeller	polypropylene

Model		Moter Out-Put W	Bore	Dimensions								
50Hz	60Hz			A	C	D	G	H	L	N	M	Y	Z
20NSP530	20NSP645	30/45	20	48	31	70	101	60	228	12	49	100	120

NLPI・NLPII

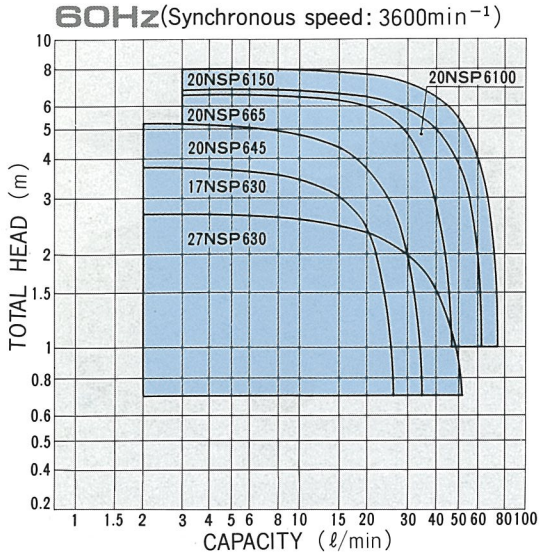
Selection Chart

50Hz(Synchronous speed: 3000min^{-1})



Selection Chart

60Hz(Synchronous speed: 3600min^{-1})

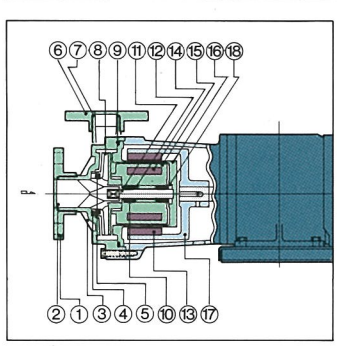


General Specification of EBARA magnet pumps

Item		NLP I	NLP II
Liquid handled	Liquid quality	fresh water, chemical liquor	
	Liquid temperature	0-60° C (fresh water)	
	Specific gravity (density)	1.2 or less {1200kg/m^3 or less}	
	Slurry	should not be handled	
Max suction pressure		0.5kgf/cm^2 {0.05MPa}	
Structure	Impeller	closed	
	Radial bearing	sleeve	
	Thrust bearing	disc	
Connection		flange (JIS10K equivalent)	
Material	Casing	polypropylene	
	Impeller	polypropylene	
	Can	polypropylene	
	Radial bearing	carbon	carbon
	Thrust bearing (rotating side)	teflon	teflon
	Thrust bearing (stationary side)	stainless steel	ceramics
	Shaft	stainless steel	ceramics
	Magnet	ferrite	
	O ring	EDDM	acid-resistant fluorinated rubber
Motor	Pole	2	
	Phase	3-phase	
	Voltage	200/220V	
	Type	totally enclosed fan cooled indoor type	

Performance Specificacions of NLP

	Frequency Hz	Model	Capacity m^3/min	Total head m	Capacity m^3/min	Total head m	Capacity m^3/min	Total head m	Max working pressure {kgf/cm^2}{MPa}
NLP I	50	25NLPI5.4	0.015	13.8	0.07	11.6	0.15	4.0	{2.1}{0.21}
		40NLPI5.75	0.015	17.8	0.12	14.2	0.23	5.0	2.6{0.26}
		50×40NLPI51.5	0.02	24.0	0.20	19.0	0.39	7.0	3.5{0.34}
		50×40NLPI52.2	0.02	25.0	0.26	21.0	0.46	10.0	3.5{0.34}
	60	25NLPI6.4	0.015	12.2	0.07	10.4	0.14	4.0	2.1{0.21}
		40NLPI6.75	0.015	17.6	0.12	14.2	0.23	5.0	2.6{0.26}
		50×40NLPI61.5	0.02	22.0	0.20	17.5	0.38	7.0	3.5{0.34}
		50×40NLPI62.2	0.02	24.0	0.26	20.0	0.46	10.0	3.5{0.34}
NLP II	50	25NLPII5.25	0.015	8.5	0.065	6.8	0.12	3.0	2.1{0.21}
		25NLPII5.4	0.015	13.8	0.07	11.6	0.15	4.0	2.1{0.21}
		40NLPII5.75	0.015	17.8	0.12	14.2	0.23	5.0	2.6{0.26}
		50×40NLPII51.5	0.02	24.0	0.20	19.0	0.39	7.0	3.5{0.34}
		50×40NLPII52.2	0.02	25.0	0.26	21.0	0.46	10.0	3.5{0.34}
	60	25NLPII6.4	0.015	12.2	0.07	10.4	0.14	4.0	2.1{0.21}
		40NLPII6.75	0.015	17.6	0.12	14.2	0.23	5.0	2.6{0.25}
		50×40NLPII61.5	0.02	22.0	0.20	17.5	0.38	7.0	3.5{0.34}
		50×40NLPII62.2	0.02	24.0	0.26	20.0	0.46	10,0	3.5{0.34}



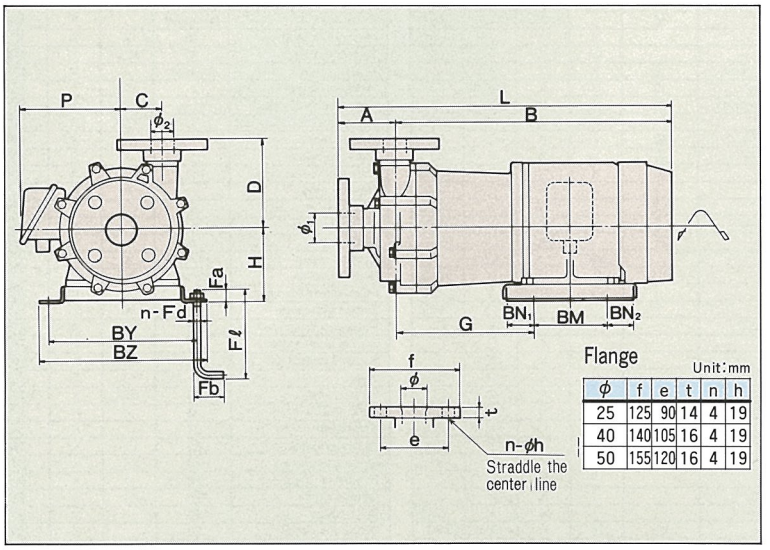
	Part Name	Material NLPI	Material NLPII
①	Suction flange	polypropylene	polypropylene
②	O ring	EPDM	acid-resistant fluorinated rubber
③	Casing set	polypropylene/ stainless steel	polypropylene/ceramics
④	Thrust metal	stainless steel	ceramics
⑤	Mouth ring	teflon	teflon
⑥	Discharge flange	polypropylene	polypropylene
⑦	O ring	EPDM	acid-resistant fluorinated rubber
⑧	Impeller	polypropylene	polypropylene
⑨	O ring	EPDM	acid-resistant fluorinated rubber
⑩	Bearing metal	carbon	carbon
⑪	shaft	stainless steel	ceramics
⑫	Spacer	polypropylene	polypropylene
⑬	Drive magnet	ferrite	ferrite
⑭	Driven magnet	ferrite	ferrite
⑮	Magnet	polypropylene	polypropylene
⑯	Can	polypropylene	polypropylene
⑰	Yoke	cast iron	cast iron
⑱	Thrust metal	stainless steel	ceramics

Reliable General-Purpose

Flange-connected and designed for use in chemical processes

- Liquids Handled:Fresh water and chemical liquors (Slurry should not be handled.)
- Liquid Temperature Range:0～60°C(32～140°F)
- Specific Gravity {Density} of Liquid:up to 1.2 {1200kg/m³}
- Impeller and Casing Material:polypropylene
- Bore:25～50mm
- Motor Output:0.25～2.2kW

Dimension Outline Drawing

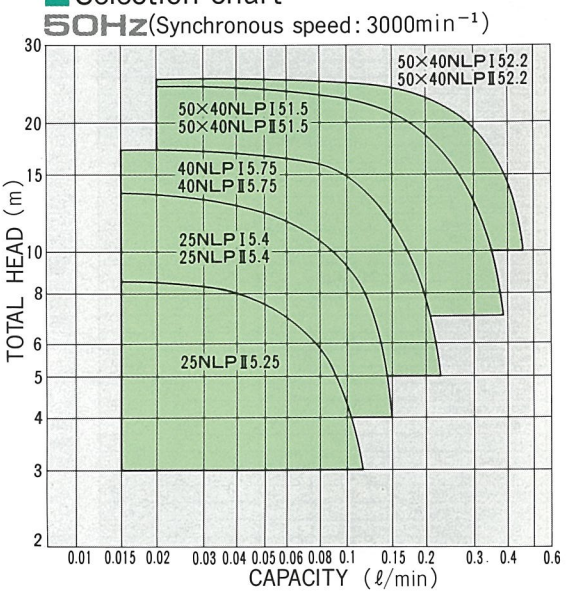


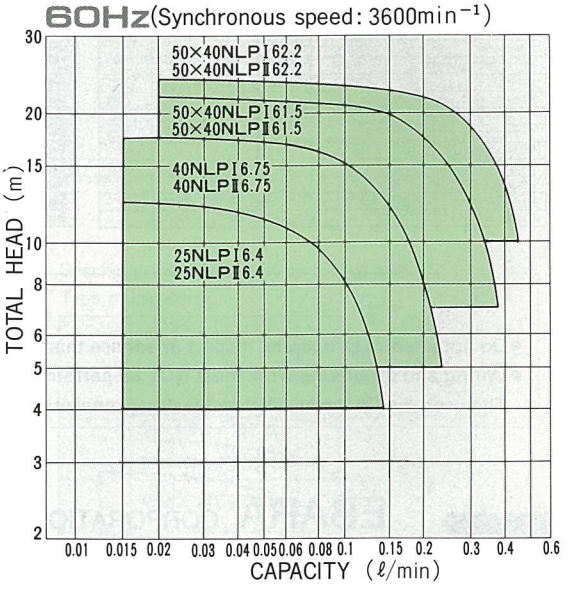
Flange

Unit:mm

ϕ	f	e	t	n	h
25	125	90	14	4	19
40	140	105	16	4	19
50	155	120	16	4	19

Selection chart





NLPI

Unit:mm

Frequency Hz	Model	Motor Output W	Suction Bore	Discharge Bore	Dimensions A	B	C	D	G	H	L	P	BN_1	BN_2	BM	BY	BZ	Anchor bolt n-Fd	Fℓ	Fa	Fd	Weight Mass kg
50	25NLPI 5.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	–	210	246	2-M10	125	20	40	20
	40NLPI 5.75	0.75	40	40	104.5	371	57.5	140	59.5	148	476.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLPI51.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLPI52.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39
60	25NLPI 6.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	–	210	246	2-M10	125	20	40	20
	40NLPI 6.75	0.75	40	40	104.5	371	57.5	140	59.5	148	475.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLPI61.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLPI62.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39

NLPII

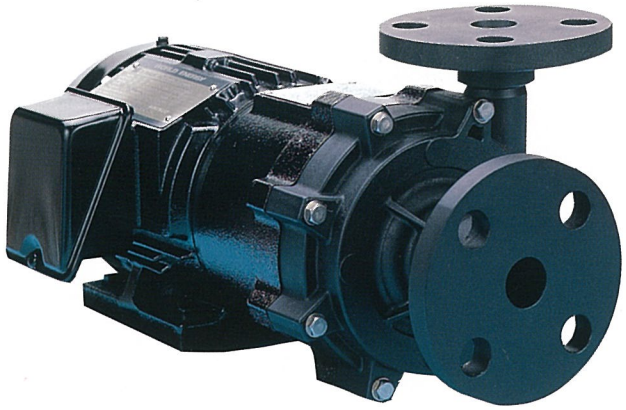
Unit:mm

Frequency Hz	Model	Motor Output W	Suction Bore	Discharge Bore	Dimensions A	B	C	D	G	H	L	P	BN_1	BN_2	BM	BY	BZ	Anchor bolt n-Fd	Fℓ	Fa	Fb	Weight Mass kg
50	25NLPII 5.25	0.25	25	25	91	312	51	114	153	129	403	132	110	110	–	210	246	2-M10	125	20	40	20
	25NLPII 5.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	–	210	246	2-M10	125	20	40	20
	40NLPII 5.75	0.75	40	40	104.5	371	57.5	140	59.5	148	475.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLPII51.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLPII52.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39
60	25NLPII 6.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	–	210	246	2-M10	125	20	40	20
	40NLPII 6.75	0.75	40	40	104.5	371	57.5	140	59.5	148	475.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLPII61.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLPII62.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39

NLFIII

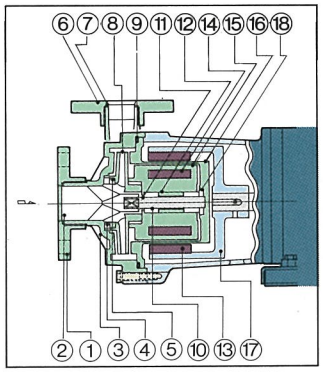
Leakproof Structure with Magnetic Coupling Tetrafluoride resin blocks corrosion

- Liquids Handled:Fresh Water and Chemical Liquors (Slurry Should not be handled.)
- Liquid Temperature Range:0～60°C(32～140°F)
- Specific Gravity {density} of Liquid:up to 2.0 {2000kg/cm³}
- Impeller and Casing Material:Polypropylene
- Bore:25～50mm
- Motor Output:0.4～2.2kW



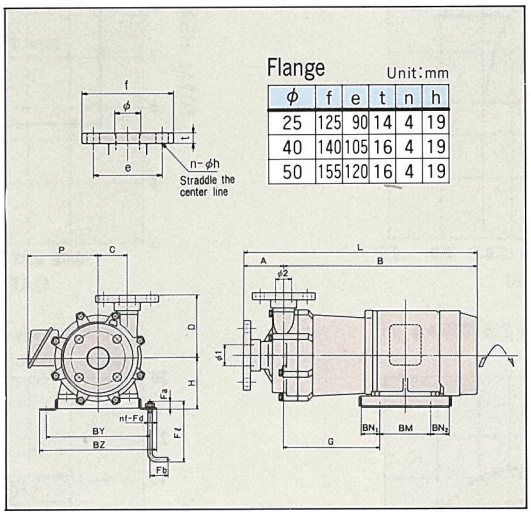
General Specification of EBARA magnet pumps

Item		NLFIII
Liquid handled	Liquid quality	fresh water, chemical liquor
	Liquid temperature	0～60°C (fresh water)
	Specific gravity {density}	2.0 or less {2000kg/m³ or less}
	Slurry	should not be handled
Max. suction pressure		0.5kgf/cm² {0.05MPa}
Structure	Impeller	closed
	Radial bearing	sleeve
	Thrust bearing	disc
Connection		flange (JIS 10Kequivalent)
Material	Casing	Ethylene Tetrafluoride Ethylene
	Impeller	
	Can	silicon carbide
	Radial bearing	silicon carbide
	Thrust bearing (rotating side)	teflon
	Thrust bearing (stationary side)	stainless steel
	Shaft	stainless steel
	Magnet	ferrite
	O-ring	acid-resistant fluorinated rubber
Motor	Pole	2
	Phase	3-phase
	Voltage	200/220V
	Type	totally enclosed fan cooled indoor type



	Part Name	Materials
①	Suction flange	ETFE
②	O-ring	Acid-resistant fluororubber
③	Casing	ETFE
④	Thrust metal	SiC
⑤	Mouth ring	SiC
⑥	Discharge flange	ETFE
⑦	O-ring	Acid-resistant fluororubber
⑧	Impeller	ETFE
⑨	O-ring	Acid-resistant fluororubber
⑩	Bearing metal	SiC
⑪	Shaft	SiC
⑫	Spacer	ETFE
⑬	Driving magnet	Ferrite
⑭	Driven magnet	Ferrite
⑮	Magnet can	ETFE
⑯	Can	ETFE
⑰	Yoke	FC20
⑱	Thrust metal	SiC

Dimensional Outline Drawing



Performance Specificacions of NLF

Frequency	Type of impeller	Model	CAPACITY m³/min	TOTAL HEAD m	CAPACITY m³/min	TOTAL HEAD m	CAPACITY m³/min	TOTAL HEAD m
50 Hz	G	25NLF IIIG5.4	0.015	13.0	0.080	9.7	0.135	4.5
		40NLF IIIG5.75	0.015	16.8	0.120	13.2	0.210	5.0
		50×40NLF IIIG51.5	0.020	22.7	0.200	18.2	0.355	9.0
		50×40NLF IIIG52.2	0.020	25.0	0.260	21.0	0.460	10.0
	F	25NLF IIIF5.4	0.015	10.4	0.060	8.8	0.117	4.5
		40NLF IIIF5.75	0.015	14.5	0.110	11.8	0.198	5.0
		50×40NLF IIIF51.5	0.020	18.7	0.170	15.3	0.290	9.0
		50×40NLF IIIF52.2	0.020	21.3	0.240	18.0	0.415	10.0
	E	25NLF IIIE5.4	0.015	8.1	0.050	6.9	0.100	3.5
		40NLF IIIE5.75	0.015	11.2	0.100	8.8	0.165	4.5
		50×40NLF IIIE51.5	0.020	15.2	0.150	12.5	0.252	8.0
		50×40NLF IIIE52.2	0.020	16.8	0.190	15.4	0.340	10.0
60 Hz	G	25NLF IIIG6.4	0.015	11.9	0.070	9.4	0.128	4.5
		40NLF IIIG6.75	0.015	15.9	0.120	13.0	0.210	5.0
		50×40NLF IIIG61.5	0.020	21.4	0.200	16.5	0.332	9.0
		50×40NLF IIIG62.2	0.020	24.0	0.260	20.2	0.460	10.0
	F	25NLF IIIF6.4	0.015	10.2	0.060	8.5	0.112	4.5
		40NLF IIIF6.75	0.015	13.8	0.110	11.2	0.190	5.0
		50×40NLF IIIF61.5	0.020	16.7	0.170	12.8	0.245	9.0
		50×40NLF IIIF62.2	0.020	19.2	0.240	16.0	0.375	10.0
	E	25NLF IIIE6.4	0.015	7.0	0.050	5.7	0.080	3.5
		40NLF IIIE6.75	0.015	10.5	0.100	7.7	0.146	4.5
		50×40NLF IIIE61.5	0.020	13.2	0.150	10.0	0.200	8.0
		50×40NLF IIIE62.2	0.020	15.7	0.190	13.6	0.300	10.0

Impellers G:Specific gravity {density} up to 1.2 {1200kg/m³}
F:Specific gravity {density} up to 1.5 {1500kg/m³}
E:Specific gravity {density} up to 2.0 {2000kg/m³}

External dimensions

Frequency Hz	Model	Moter output kW	Suction Bore φ1'	Discharge' Bore φ2	Dimensions A	B	C	D	G	H	L	P	BN1	BN2	BM	BY	BZ	Anchor bolt n-Fd	Fℓ	Fa	Fb	Weight kg {Mass}
50	25NLF III 5.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	—	210	246	2-M10	125	20	40	20
	40NLF III5.75	0.75	40	40	104.5	371	57.5	140	59.5	148	475.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLF III51.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLF III52.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39
60	25NLF III 6.4	0.4	25	25	91	312	51	114	153	129	403	132	110	110	—	210	246	2-M10	125	20	40	20
	40NLF III6.75	0.75	40	40	104.5	371	57.5	140	59.5	148	475.5	142	40	40	230	230	270	4-M10	125	20	40	28
	50×40NLF III61.5	1.5	50	40	89	397	65	140	258.5	105	486	142	115	35	100	186	215	4-M10	125	20	40	31
	50×40NLF III62.2	2.2	50	40	89	449	65	140	259.5	115	538	156	90	35	125	230	260	4-M12	160	20	50	39

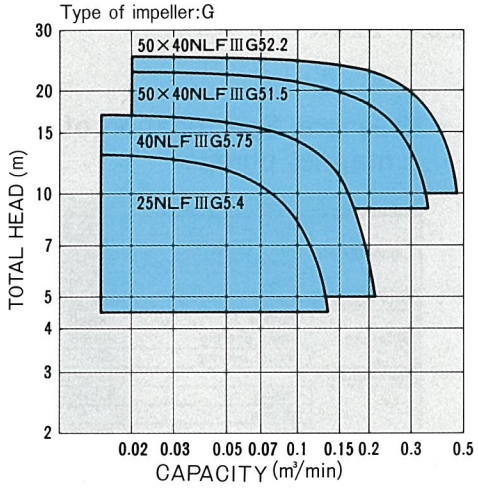
External dimensions are the same for all impellers, G, F and E.

NLF III

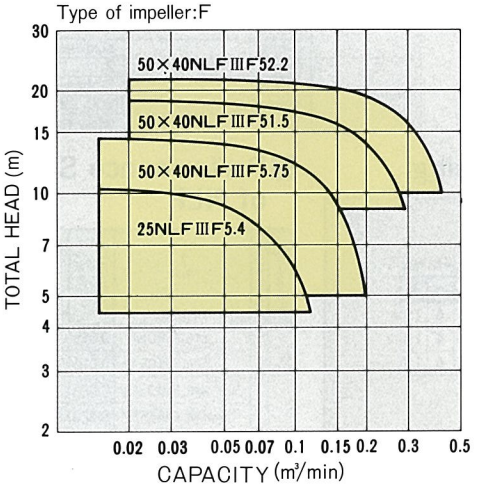
Selection chart

50Hz (Synchronous speed : 3000 min^{-1})

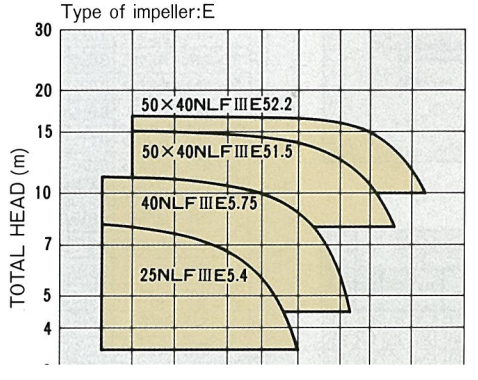
Specific gravity {density} = up to 1.2 {1200kg /m^3}
Type of impeller:G



Specific gravity {density} = up to 1.5 {1500kg /m^3}
Type of impeller:F

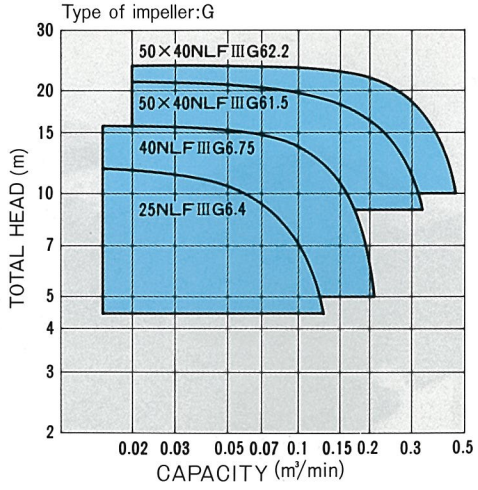


Specific gravity {density} = up to 2.0 {2000kg /m^3}
Type of impeller:E

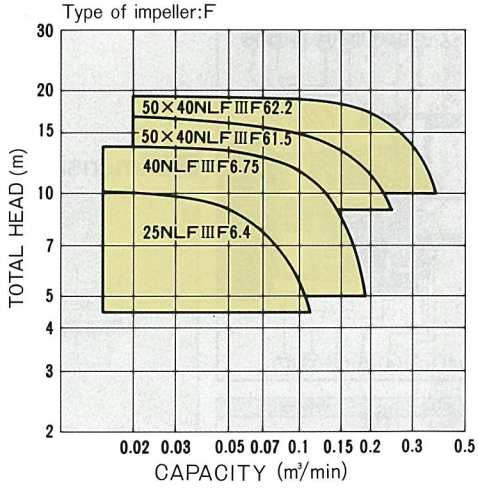


60Hz (Synchronous speed : 3600 min^{-1})

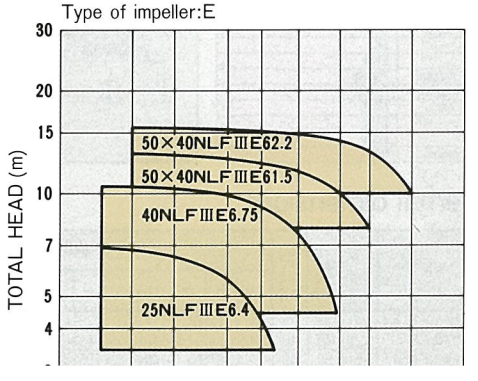
Specific gravity {density} = up to 1.2 {1200kg /m^3}
Type of impeller:G



Specific gravity {density} = up to 1.5 {1500kg /m^3}
Type of impeller:F



Specific gravity {density} = up to 2.0 {2000kg /m^3}
Type of impeller:E



List of liquids to be handled

This list has been prepared based on the corrosion resistance data of the materials suppliers. Corrosion due to fluid friction is not considered. As corrosion resistance is the only criterion, the specific gravity, viscosity, and vapor pressure of liquids are also not considered. Investigations based on these items, such as investigations of flow rate, total head, shaft horsepower, and suction performance, should be conducted separately.

Chemical liquids handled by model

Liquid name	Concentration (max)%	NSP	NLP-I	NLP-II	NLF-III
Sodium chlorite	10	×	×	×	○25℃
Adipic acid	50	○20℃	×	○20℃	○40℃
Sodium nitrite	40	○20℃	○25℃	○25℃	○30℃
Acetylene		○25℃	×	○25℃	○30℃
Aniline	100	×	○20℃	○25℃	○25℃
Linseed oil		○	○	○	○
Amines			×	×	○
Sulfurous acid	10	○40℃	×	○50℃	○50℃
Ammonum Sulfite		○40℃	×	○50℃	○50℃
Allyl alchohol		○20℃	×	○40℃	○40℃
Ammonia water	20	○40℃	○40℃	○40℃	○50℃
Isooctane		○20℃	×	○20℃	○25℃
Isopropanol		○	○	○	○
Ink				○	○
Whiskey		○40℃	○	○	○
Ethanol		○50℃	○	○	○
Ethylene glycol		○40℃	○	○	○
Zinc chloride	50	○20℃	○	○	○
Aluminum chloride	10	○	×	○	○50%
Potassium chloride	30	○20℃	×	○	○
Calcium chloride	30	○	×	○	○
Mercurous chloride	Saturated		×	○30℃	○30℃
Stannous chloride	50		×	○30℃	○30℃
Ferrous chloride	30	○	×	○	○
Mercuric chloride	6	○25℃	×	○25℃	○25℃
Stannic chloride			×	○	○
Ferric chloride	10	○	×	○	○
Sodium chloride	20	○	×	○	○
Nickel chloride	10	○	×	○	○
Barium chloride		×	×	×	○
Butadieve chloride		×	×	×	○
Magnesium chloride	30	○	×	○	○
Manganese chloride	20		×	○	○
Hydrochloric acid	30	×	×	×	○40℃
Potassium chlorate	6	○20℃	×	○40℃	○×
Calcium chlorate	50	×	×	○40℃	○40℃
Sodium chlorate	20	○20℃	×	○50℃	×
Aqua regia	3 : 1	×	×	×	○25℃
Sea water		○	×	○	○
Perchoric acid	40	×	×	×	○30℃
Ammonium perchlorate	10			○40℃	○20% 40℃
Potassium perchlorate	10	×	×	×	○40℃
Hydrogen peroxide	40	×	×	×	○40℃
Sodium peroxide	40	×	×	○20℃	○
Fruit acid			○	○	○
Fruit juice		○	○	○	○
Gasoline(high octane)	Refined	×	×	×	○24℃
Sodium pernitrate	5		×	○	○
Potassium permanganate	4	×	×	×	○30℃
Mustard oil				○	○
Citric acid	40	○40℃	○40℃	○40℃	○
Glycerine(Glycerol)	100	○40℃	○	○	○
Cresol		×	×	○20℃	○25℃
Chromic acid	5	×	×	○20℃	○50% 40℃
Potassium chromate	10		×	○40℃	○50℃
Chloroform		×	×	×	○24℃
Sodium silicato		×	○	×	○
Hydrofluorosilicacid		×	×	×	○40℃
Whale oil		×	×	×	○
Kerosene(lamp oil)		×	×	×	○
Crude oil		×	×	×	○

Liquid name	Concentration (max)%	NSP	NLP-I	NLP-II	NLF-III
Copper carbonate	Saturated		×	○40℃	○
Barium carbonate	Saturated		×	○	○
Magnesium carbonate	0.1		×	○	○
Tannic acid	10	○50℃	×	○50℃	○50℃
Sodium thiosulphate	20	○50℃	×	○50℃	○50℃
Starch Solution		○	○	○	○
Corn oil		○40℃	×	○40℃	○
Toluene(Toluol)		×	×	×	○24℃
Rapeseed oil			×	○	○
Naphtha		×	×	×	○
Lactic acid	10	○20℃	×	○20℃	○30℃
Perchlorethyl ene		×	×	×	○20℃
Picric acid	1	×	×	×	○20℃
Arsenic acid	10		×	○40℃	○40℃
Hydrazine		×	×	×	○30℃
Castor oil		○	×	○	○
Potassium ferricyanide	10	×	×	○30℃	○
Sodium ferricyanide	10	×	×	○30℃	○
Potassium ferrocyanide	20	×	×	×	○
Butanol		○40℃	○40℃	○40℃	○40℃
Ammonium fluoride	40		×	○	○
Potassium fluoride	40	×	×	×	○40℃
Hydrofluoric acid	40	×	×	×	○20℃
Sodium fluoride	2		×	○	○
Copper fluoride	0.5		×	×	○40℃
Magnesium fluoride	2	×	×	×	○40℃
Gluconic acid	30		×	○	○
Wine		○40℃		○	○
Freon	R11	×	×	×	○24℃
Heptane		○	×	×	○25℃
Boric acid	2	○	×	○	○10%
Plating Solution	Zinc (alkaline)		×	×	○
	Zinc (acid)		×	○	○
	Brass		×	○40℃	○
	Chrome		×	×	○
	Silver		×	○40℃	○
	Chrome Sulfate		×	○40℃	○
	Tin		×	○40℃	○
	Copper		×	×	○
	Lead		×	×	○
	Nickel		×	○	○
	Platinum		×	×	○
	Rhodium		×	×	○
Potassium iodide	50	○20℃	×	○20℃	○40℃
Sodium iodide	90		×	○20℃	○40℃
Hydroiodide acid	30	×	×	×	○40℃
Hydrogen sulfide		○30℃	○30℃	○30℃	○40℃
Sodium sulfide	30	○20℃	○20℃	○20℃	○25℃
Sulfuric acid	10	○30℃	×	○30℃	○50% 30℃
Zinc sulfate	30		×	○	○
Aluminum sulfate	20	○40℃	×	○40℃	○50℃
Magnesium ammonium sulfate	20		×	○	○
Potassium sulfate		○20℃	×	○	○
Calcium sulfate	0.1		×	○	○
Sodium sulfate	10	○	×	○	○
Ferrous sulfate	15	○	×	○	○
Ferric sulfate	20	○	×	○	○
Copper sulfate	5	○	×	○	○
Nicel sulfate	20	○	×	○	○
Magnesium sulfate		○40℃	×	○40℃	○40℃
Sodium phosphate	4	○20℃	×	○	○

Liquid name	Concentration (max)%	NSP	NLP-I	NLP-II	NLF-III
Mineral oil(petroleium)			×	×	○
Coconut oil		○40℃	×	○	○
Mixed acid		×	×	×	○25℃
Sodium acetate		○	×	○	○
Lead acetate	30	×	×	○	○
Sake (wine)		○	○	○	○
Sugar Solution		○	○	○	○
Hydraulic oil		×	×	×	○
Salad oil			×	○	○
Trichloroethyene(Lrichlene)	100	×	×	×	○24℃
Hypochloric acid	10	×	×	×	○
Sodium hypochlorite	10	×	×	×	○25℃
Lead cyanide	5		×	○	○
Silver cayride	Saturated		×	○40℃	○
Hydrocyanic acid	20	×	×	×	○
Sodium cyanide	30	40℃	×	○40℃	○50℃
Copper cyanide	Saturated		×	○40℃	○
Diethylene glycol		○		○	○
Carbnn tetrachloride		×	×	×	○20℃
Cyclohexanol		○20℃	×	○20℃	○20℃
Cyclohexane		×	×	○×℃	○24℃
Dichloroethylene		×	×	×	○24℃
Fatty acid(Various Kinds)	100		×	○20℃	○20℃
Dimethyl amine		×	×	×	○
Potassium bromide	20	○	×	○	○
Sodium bromide			×	○	○
Oxalic acid	5		×	○20℃	○50℃
Bromine water	Saturated	×	×	×	○
Sodium bisulfite	Saturated	×	×	○	○
Potassium bichromate	10	×	×	×	25℃
Sodium bichromate	50	×	×	×	○
Potassium bicarbonate	3		×	○	○
Sodium bicarbonate		○	×	○	○
Sodium bisulfate	5	×	×	○40℃	○
Juice		○	○	○	○
Tartaric acid	40	○40℃	×	○40℃	○
Nitric acid	40	×	×	×	40℃
Zinc nitrate	20		×	○	○
Aluminum nitrate	20	○	×	○	○
Ammonium nitrate	40	○	×	○	○
Potassium nitrate	20	×	×	×	○
Calcium nitrate	25	○	×	○	○
Silver nitrate	10		×	○	○
Mercurous nitrate	20		×	○20℃	○20℃
Ferrous nitrate	40		×	○	○
Mercuric nitrate	20		×	○20℃	○20℃
Ferric nitrate	10	○40℃	×	○40℃	○40℃
Copper nitrate	40			○40℃	○40℃
Nickel nitrate	20		×	○	○
Barium nitrate	5		×	○	○
Magnesium nitrate	20		×	○	○
Soy		○	○	○	○
Vinegar		○	○	○	○
Calcium hydroxide	0.1	○40℃	×	○40℃	○
Magnesium hydroxide	Saturated	○	×	○	○
Soap Solution		○40℃	○40℃	○40℃	○40℃
Gelatin		○	○	○	○
Soybean oil		○	×	○	○
Carbonic acid	Saturated	○	×	○	○
Ammonium carbonate	50	○40℃	×	○40℃	○40℃
Potassium carbonate	40	×	×	×	○
Sodium Carbonate	10	×	×	×	○50℃

⚠ CAUTION

- Do not attempt to operate, inspect or service this pump before you have read and understood manual of pump.
- Wiring and grounding work must NOT be performed by unqualified persons. It is extremely dangerous for unqualified persons to perform such work. The user should install electrical leakage breakers and overload safety devices to prevent electric shock and fire.

EBARA CORPORATION

Overseas Marketing & Sales Dept. Phone:81-3-5714-6111(TOKYO)

OVERSEAS OFFICE

Singapore Branch Office	Phone:65-862-3536
Beijing Office	Phone:86-10-6590-8150
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