SANWA PUMP

Sanwa Stainless Steel Magnetic Drive Pumps

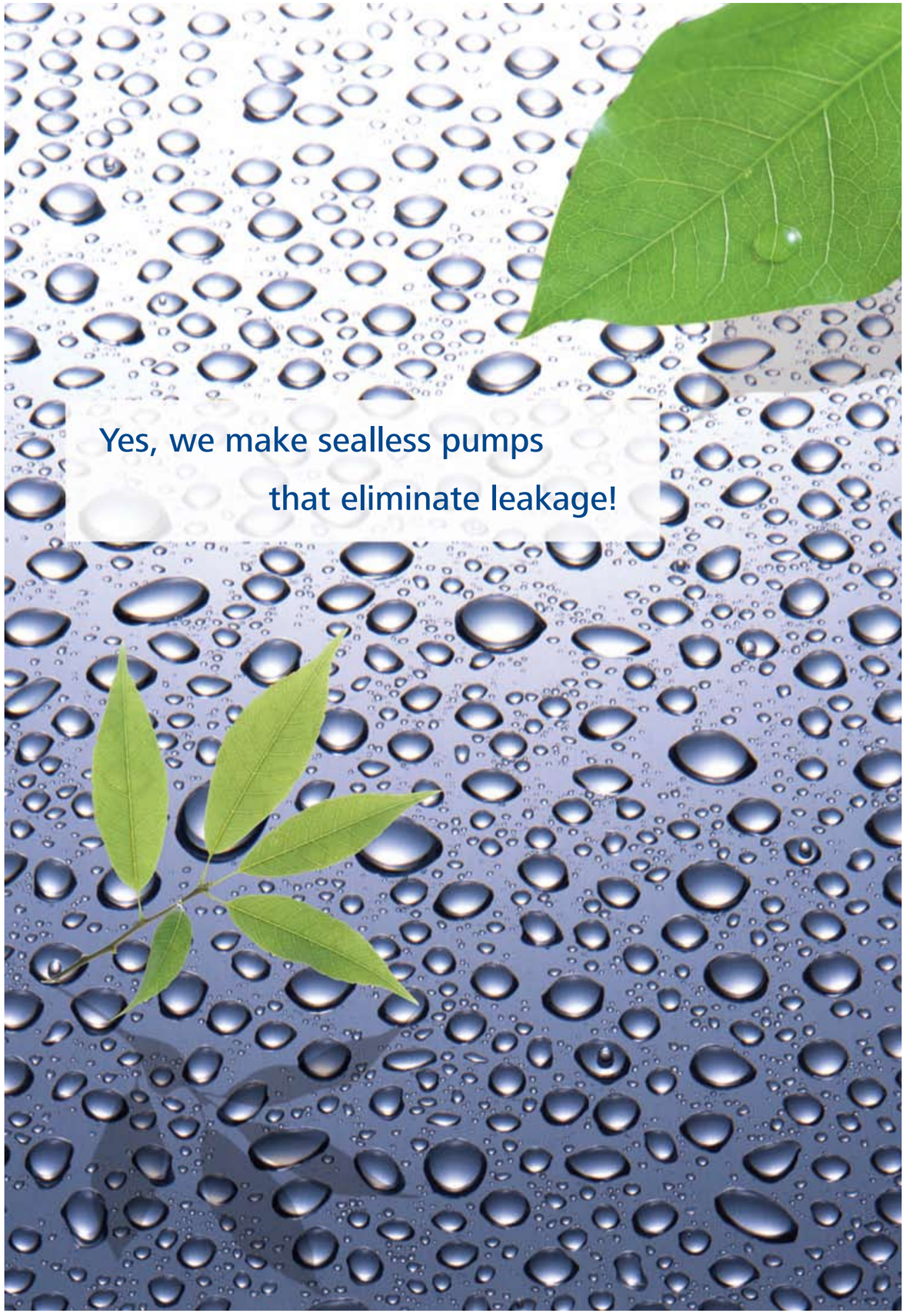
MAGPAC® series

Seal-less Magnet Drive Pumps.
Stainless steel made.
Closed coupled type.

MANUFACTURER SANWA HYDROTECH CORPORATION

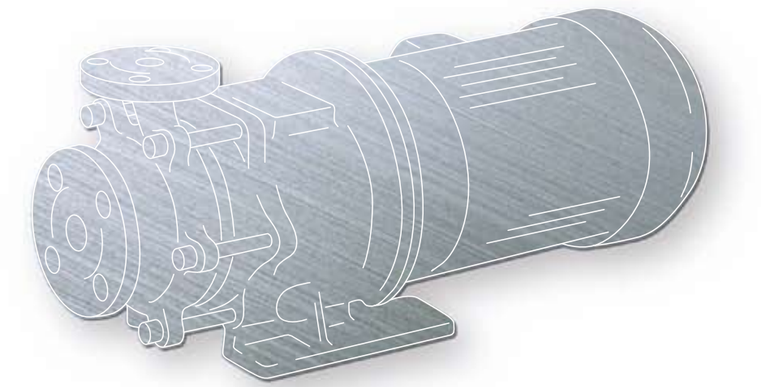
www.sanwapump.com

www.sanwapump.co.jp



Sanwa's sealless magnetic drive pumps take a bold step while entering into a new age.

As we enter the 21st Century, environmental concerns, new technology, and renovated manufacturing techniques makes changes in pumping equipment mandatory....yet, very feasible.
Stainless steel, sealless magnet drive pumps with leak free construction, safety, reliability and long life can now fullfil today's pumping requirements and demands.



MAGPAC® series

Contents

TYPE MA/MB

SEALLESS

COMPACT STAINLESS STEEL MAGNETIC DRIVE PUMPS

Motor output :

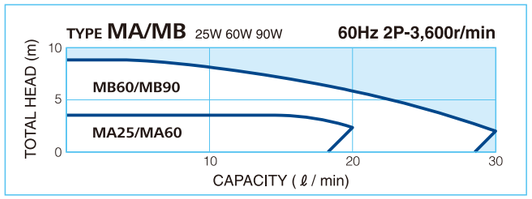
25W to 90W

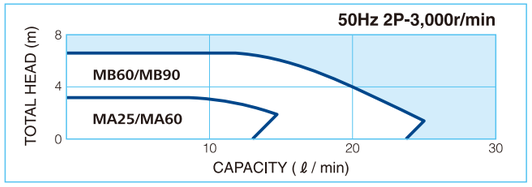
- **Leak free**, **highly reliable** sealless magnetic drive pump.
- Handle product **temperatures up to 130˚C (266˚F)**.
- **Very compact and minimum weight**.
- **304SS construction** for excellent corrosion resistance.
- **SiC-D low friction bearings withstand accidental dry-run on start up**.
- **Practically maintenance free** construction, requires minimum parts inventory.

TYPE MA 25W/60W

TYPE MB 60W/90W

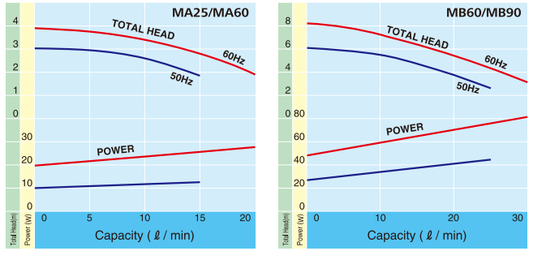
Selection charts





Performance curves

(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)

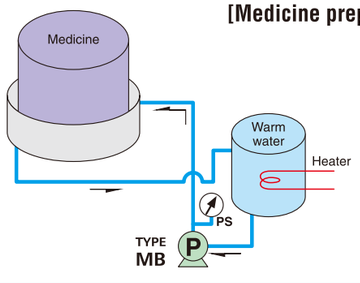


: Total Head(m) : Power(W)

Specifications

	MA		MB	
Frequency	50Hz	60Hz	50Hz	60Hz
Max. total head	3m	3.5m	6m	8m
Max. capacity	15 ℓ /min	20 ℓ /min	20 ℓ /min	20 ℓ /min
Max. temperature applicable	130˚C			
Min. temperature applicable	-20˚C			
Max. liquid specific gravity	1.1(MA25) , 2(MA60)		1.1	
Max. liquid viscosity	50mPa·s(cP)			
Design pressure	0.6MPaG			
Bore (suction x discharge)	14x12mm		14x13mm	
Flange standard	R thread			
Type of impeller	Open		Closed	
Motor output rating	25W/60W		60W/90W	
Pump material	SCS13(SUS304)			
Liquid-immersed bearings	SiC-D			

Application example



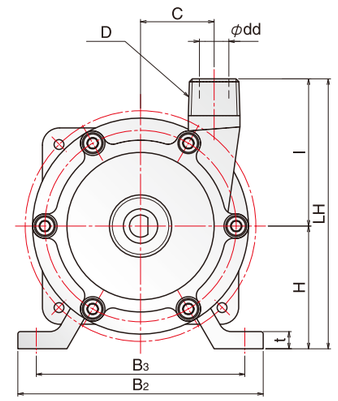
#In the case of low temperature liquid (0C°or less), problems may occur depending on the installation environment. Please contact us before purchasing (before using).

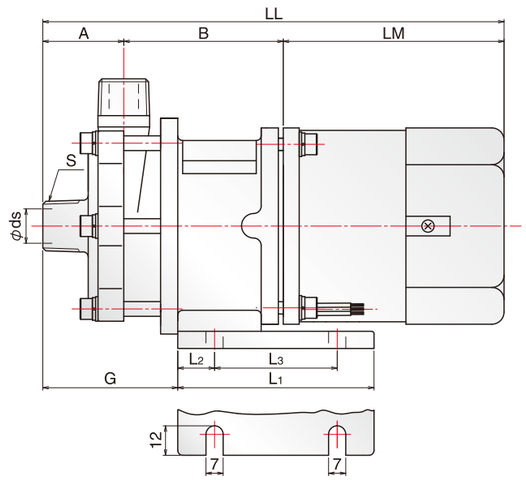
SHUT OUT LEAKS · STAINLESS STEEL · SIC-D BEARING · HIGH TEMP 130°C OK! · LOW TEMP -20°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE · SMALL & SLIM · QUICK LEADTIME

MAGPAC® series

MA / MB

Outline dimension



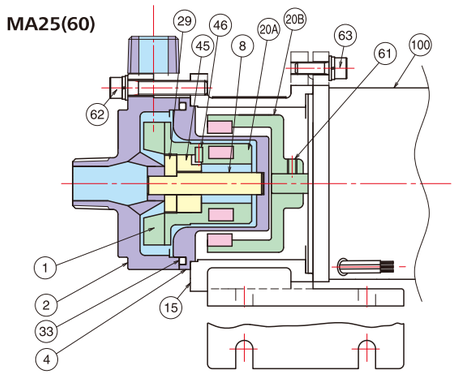


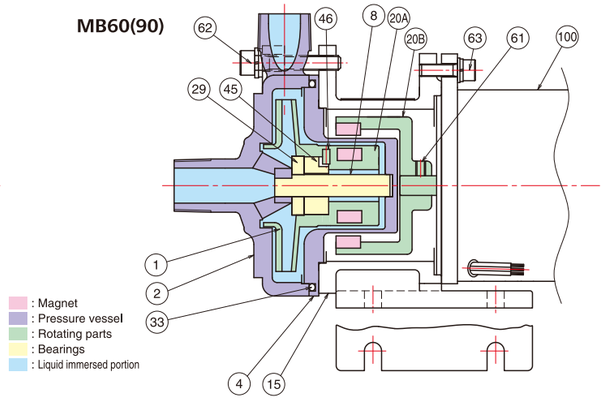
(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR								BASE PLATE							WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (W)	SUCT		DISCH		A	B	C	H	I	LH	LM	LL	G	L_1	L_2	L_3	B_2	B_3	t	PUMP	MOTOR	TOTAL
			ds	S	dd	D																		
MA25	–	25	14	R1/2	12	R1/2	33	65	30	50	60	110	90	188	55	80	15	50	100	85	7	2.2	1.3	3.5
MA60	–	60											120	218								2.2	2.0	4.2
MB60	–	60	14	R1/2	13	R1/2	45	64	0	50	70	120	120	229	66	80	15	50	100	85	7	2.4	2.0	4.4
MB90	–	90								55		125				85	21					2.6	2.6	5.2

LM,LL dimensions and motor weight may vary depending on motor used.

Construction and materials





: Magnet
: Pressure vessel
: Rotating parts
: Bearings
: Liquid immersed portion

MARK	NAME OF PART	MAT'L	No.REQ'D
	MAGNET	RARE EARTH	1S
20B	MAGNET COUPLING(M)	SS400	1
	MAGNET	RARE EARTH	1S
20A	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
8	SHAFT	SiC	1
4	REAR CASING	SUS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

MARK	NAME OF PART	MAT'L	No.REQ'D
100	MOTOR	–	1
63	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	4S
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	4Sor6S
61	SET SCREW	SCM435	1
46	PIN	SUS	1
45	BUSHING	SiC-D	1
33	O RING	PTFE	1
29	THRUST RING	SiC	1

Examples of usage

- Semiconductor and liquid crystal processing
- Freezer and cooling device
- Various physicochemical equipment
- Laboratory and testing equipment
- Pharmaceutical and food processing

TYPE MMP

SEALLESS

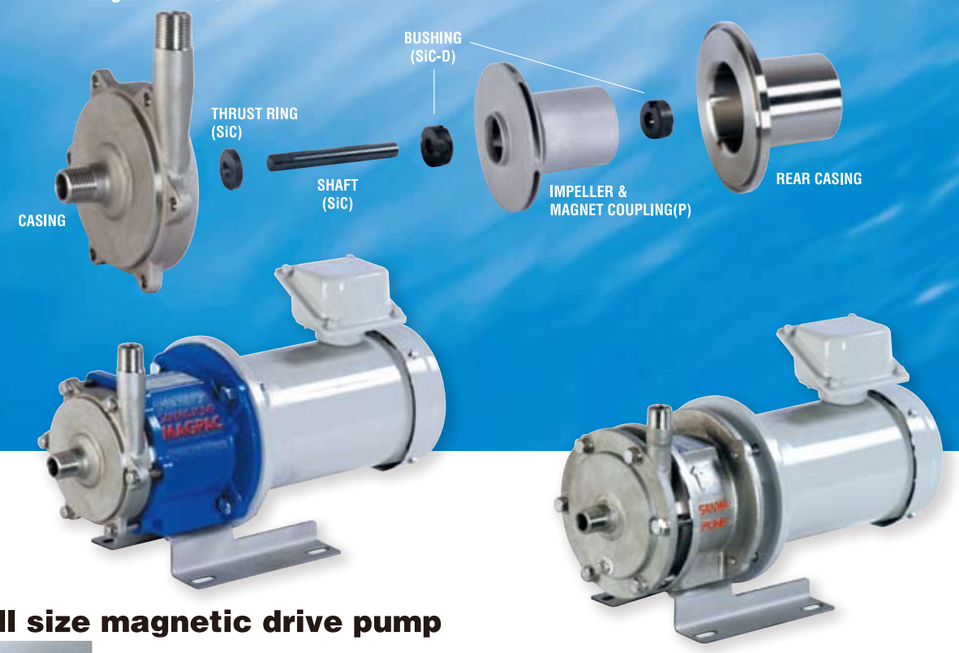
SMALL STAINLESS STEEL MAGNETIC DRIVE PUMPS FOR EQUIPMENT USE

Motor output :

200W to 550W

The type MMP is a **small** MAGPAC Series stainless steel pump which is suitable for handling both **high and low temperature** products. Leak proof design, coupled with **SiC-D low friction bearings with minimum wear and yet withstandable at dry run on start-up**. Since motor is a separate entity, explosion proof requirements are not a problem. **Excellent pump for OEM service**. If temperatures exceed these specifications, see types below.

[Highly reliable block-building structure]



Small size magnetic drive pump

TYPE MMP -30°C~+150°C 200W/400W/550W

#Gasket (or O-ring) material depends on the liquid temperature.

For liquid of low temperature

TYPE MML -80°C~+150°C 200W/400W/550W

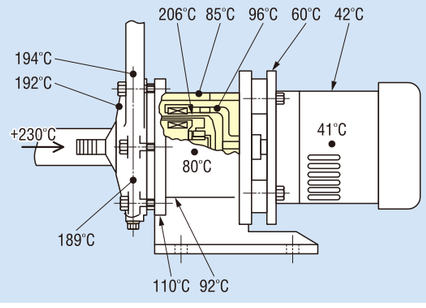
- Sealed spacer protects motor from excess cold temperatures.
- Nd magnets and low temperature gasket material is used in these pumps.
- Nitrogen purge port is provided to prevent moisture from freezing in the frame adapter.

For liquid of high temperature

TYPE MMH RT~+280°C 200W/400W/550W

- Open spacer between pump and motor eliminates excess heat transfer to motor.
- For high temperatures, SmCo magnets and high temperature gasket material are used.
- High pressure containment is standard on these models.
- >230°C, Flange Fitting and No Casing Drain.

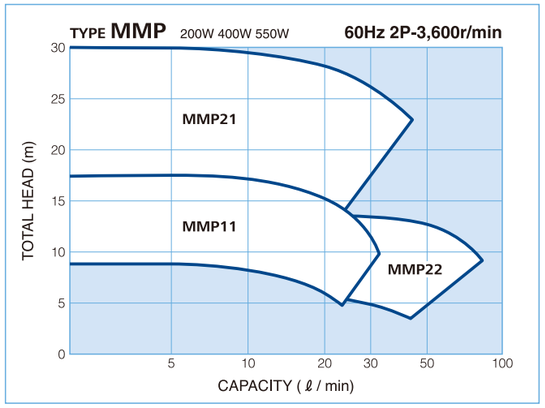
Example of temperature distribution at each pump part in high temperature liquid application. (TYPE MMH)

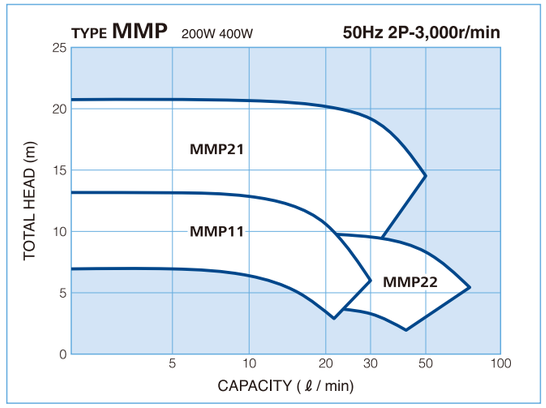


#In the case of low temperature liquid (0C°or less), problems may occur depending on the installation environment. Please contact us before purchasing (before using).

SHUT OUT LEAKS | STAINLESS STEEL | SiC-D BEARING | HIGH TEMP 280°C OK! | LOW TEMP -80°C OK! | EASY MAINTENANCE | HIGHLY RELIABLE | HIGHLY DURABLE | QUICK LEADTIME

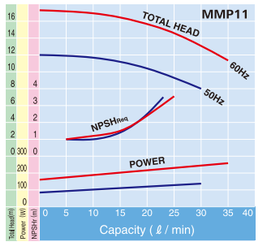
Selection charts

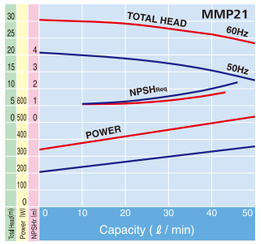


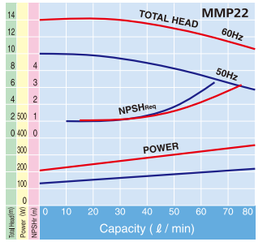


Performance curves

(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)







: Total Head(m)
: Power(W)
: NPSHreq(m)

Specifications

	MMP	MMH	MML
Frequency	50Hz		60Hz
Max. total head	20m		28m
Max. capacity	80 ℓ /min		80 ℓ /min
Max. temperature applicable	150°C	280°C	150°C
Min. temperature applicable	-30°C	RT	-80°C
Max. liquid specific gravity	2		
Max. liquid viscosity	100mPa·s(cP)		
Design pressure	0.6MPaG (MMP21:1.0MPaG)	1.0MPaG	
Bore (suction x discharge)	15x15mm ~ 25x20mm		
Flange standard	R thread / NPT thread		
Type of impeller	Closed		
Motor output rating	200W ~ 550W(2P)		
Pump material	SCS13(SUS304), SCS14(SUS316)		
Liquid-immersed bearings	SiC-D		

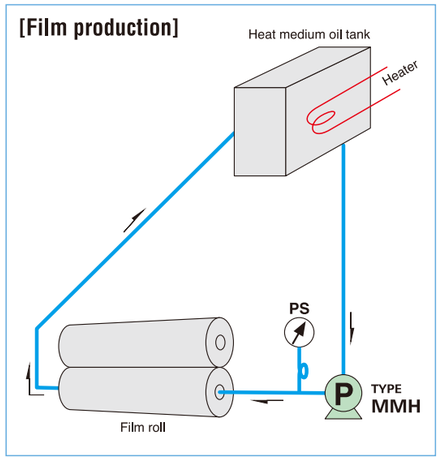
The performance curves for MMH and MML are same as MMP.
MMP21 is only for standard use (1.0MPaG).
0.55kW Motor is only TEFC.

List of applications

Use	Liquid specification	Function/evaluation
Washing device	Exfoliation liquid; 130°C·15m x 20 ℓ /min	Heat, permeation-resistant
	Hydrocarbon system; 110°C·10m x 5 ℓ /min	Vacuum, cavitations free
	Alcoholic system; 120°C·10m x 20 ℓ /min	Heat-resistant, cavitations
	Freon replacing material; 10m x 20 ℓ /min	Durability and reliability
Atomic power/Drainage	30~40°C·15m x 30 ℓ /min	No leak and reliability
Pure water processing	20~30°C·15m x 20 ℓ /min	No leak, little dust making
Sterilizer/Hot water	130°C·16m x 30 ℓ /min	
Absorption type freezer	Lithium bromide; 120°C·10m x 10 ℓ /min	Vacuum, Pressure-proof
Low temperature chiller	Fluorinert, Galden; -50°C·15m x 10 ℓ /min	No leak, low noise, high heat efficiency
	Heat medium; 150°C·25m x 10 ℓ /min	Explosion-proof, Heat- resistant
Filter	Various medicines; 50°C·15m x 10 ℓ /min	Durability, wear-resistant
Solvent collector	Organic solvent; 50°C·15m x 5 ℓ /min	Explosion-proof, no leak
	For heat medium, Pressurized hot water	No leak, high reliability
Fine chemicals	**Various chemicals**	No leak, high reliability

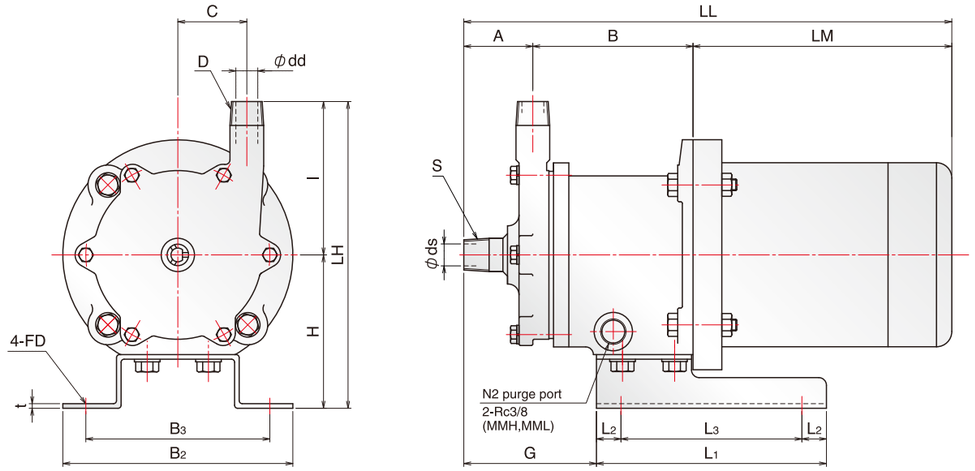
Application example

[Film production]



MAGPAC® series
MMP(MMH,MML)

Outline dimension

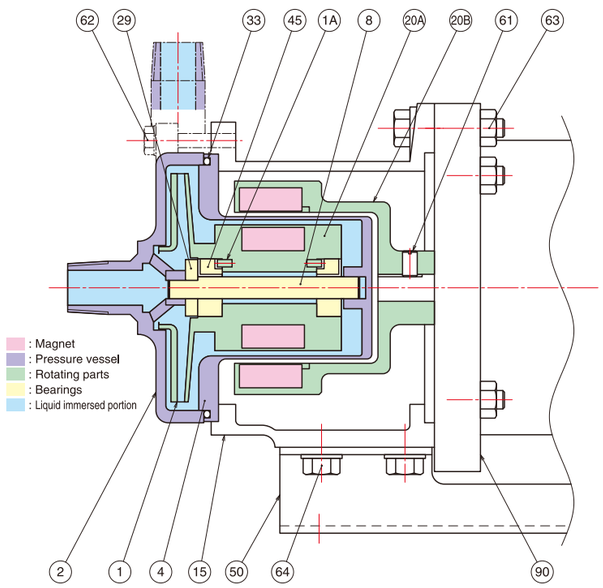


(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR								BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (W)	SUCT		DISCH		A	B	C	H	I	LH	LM	LL	G	L1	L2	L3	B2	B3	t	FD	PUMP	MOTOR	TOTAL
			ds	S	dd	D																			
MMP11	63M	200	15	R1/2	15	R1/2	45	104	45	100	100	200	209	358	86	150	16	118	150	120	3	ϕ9.5	8.0	8.0	16.0
	71M	400						111					231	387	(70)								8.0	11.0	19.0
MMP21	71M/71S	400/550	20	R3/4	20	R3/4	50	112	50	100	120	220	231	393	77	150	16	118	150	120	3	ϕ9.5	11.0	11.0	22.0
MMP22	71M/71S	400/550	25	R1	20	R3/4	60	113	45	100	100	200	231	404	103 (87)	150	16	118	150	120	3	ϕ9.5	10.0	11.0	21.0

#LM,LL dimensions and motor weight may vary depending on motor used.
#Figures in brackets are for MMH11,22 and MML11,22.

Construction and materials



MARK	NAME OF PART	MAT'L	No.REQ'D
(90)	SPACER #1	SS400(SUS304)	1
64	BOLT WITH WASHER	SUS304	4S
63	BOLT WITH WASHER	SUS304	4S
62	BOLT WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
50	BASE	SUS304	1
45	BUSHING	SiC-D	2
33	O RING #3	PTFE	1
29	THRUST RING	SiC	1
	MAGNET	RARE EARTH	1S
20B	MAGNET COUPLING(M)	FCD	1
	MAGNET	RARE EARTH	1S
20A	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER #2	FC200	1
8	SHAFT	SiC	1
4	REAR CASING	SUS	1
2	CASING	SCS	1
1A	PIN	SUS	2
1	IMPELLER	SCS	1

#1. Spacer (90) is attached to MMH and MML.
#2. Frame adapter (15) for MMH and MML comes in stainless steel.
#3. ORING (33) for MMH and MML comes in GASKET.

Magnetic drive pumps play active roles in various industries.

- Electronics
- Environmental
- Energy
- Fuel cell
- Chemical industry
- Food industry
- Pharmaceutical
- Bio technology

At "Sanwa Hydrotech," we have been working hard to develop new, acid-proof alloys and pump styles, unlimited by conventional concepts of how pumps ought to work. We also promote developments in pump solutions by introducing state-of-the-art technologies. Thanks to these efforts, we have been able to establish a wide line of "Sanwa Brand" pumps, each of which has earned a good reputation. Among these are our stainless steel magnetic drive pump "MAGPAC series," which have captured the top share in the domestic market. Currently, the pumps in this series are being used in various fields, from the oil and chemical industries to IT industries such as semiconductor and LCD manufacturers.

TYPE MP

SEALLESS

MID-SIZE STAINLESS STEEL MAGNETIC DRIVE PUMPS

Motor output :

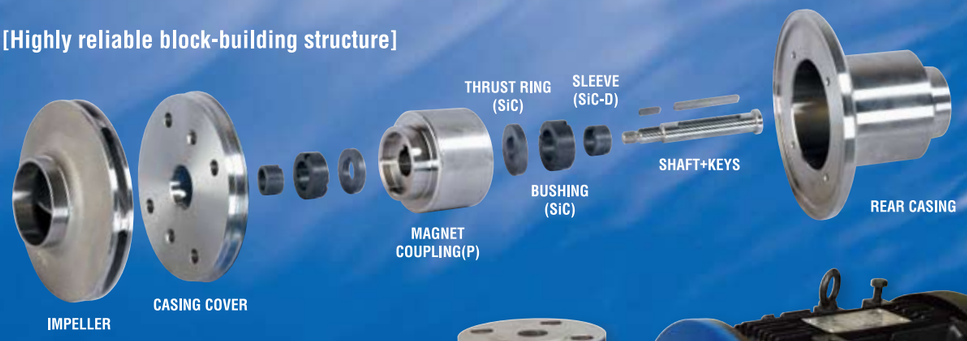
0.75kW to 15kW

Extention 11kW,15kW

The MP pumps are considered the core of the MAGPAC series pumps. Their three outstanding features, **sealless design**, **reliability** and **practically maintenance free** service makes them the most versatile of all the MAGPAC series pumps.

With efficiencies equaling mechanical seal pumps and **SiC-D dry-run-withstandable bearings**, these pumps are the logical choice for nearly all pump applications. For temperatures exceeding these specification select additional models below.

[Highly reliable block-building structure]



Seal less magnetic drive pump

TYPE MP -30°C~+150°C 0.75kW~15kW

#Gasket material depends on the liquid temperature.

For liquid of low temperature

TYPE ML

-80°C~+150°C
0.75kW~15kW

- Nitrogen purge port is provided to prevent moisture from freezing in the frame adapter.
- Rare earth Nd magnets are used.
- Low temperature gasket material is used.

For liquid of high temperature

TYPE MH

RT~+280°C
0.75kW~15kW

- Fin type frame adapter dissipates heat away from pump.
- Rare earth SmCo magnets are used.
- High temperature gasket material is used.

Specifications

	MP	MH	ML
Frequency	50Hz		60Hz
Max. total head	80m		120m
Max. capacity	1100 ℓ /min		1300 ℓ /min
Max. temperature applicable	150°C	280°C	150°C
Min. temperature applicable	-30°C	RT	-80°C
Max. liquid specific gravity	2		
Max. liquid viscosity	300mPa·s(cP)		
Design pressure	1.0MPaG(210, 220, 221, 222, 420, 421, 541, 542) 1.2MPaG(4220, 4220LF, 5430, 8415, 8420, 8515) 1.6MPaG(5225LF)		
Bore(suction x discharge)	25x20mm~80x50mm		
Flange standard	JIS 10K RF / ASME 150LB RF		
Type of impeller	Closed		
Motor output rating	0.75kW~15kW(2P)		
Pump material	SCS13(SUS304), SCS14(SUS316), ALLOY20, Hastelloy C equivalent		
Liquid-immersed bearings	SiC-D		

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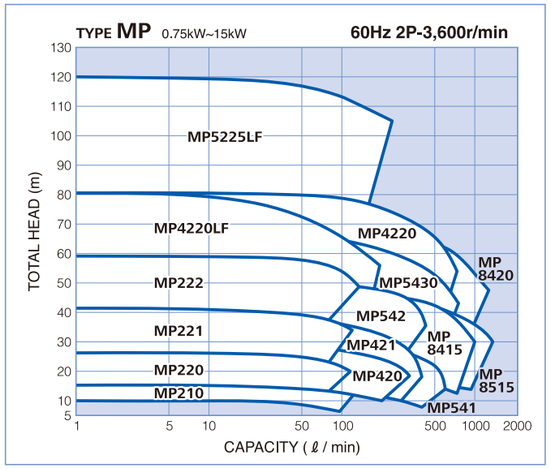
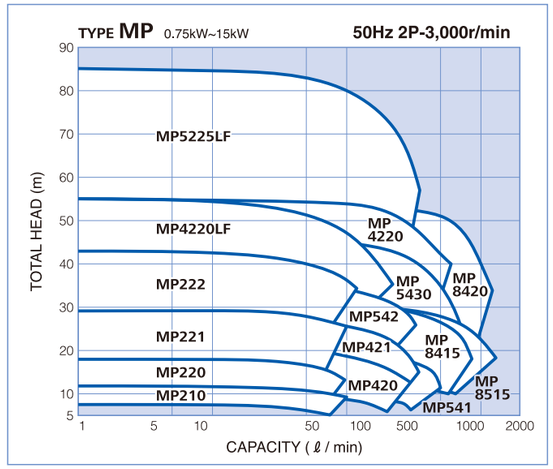
Selection charts

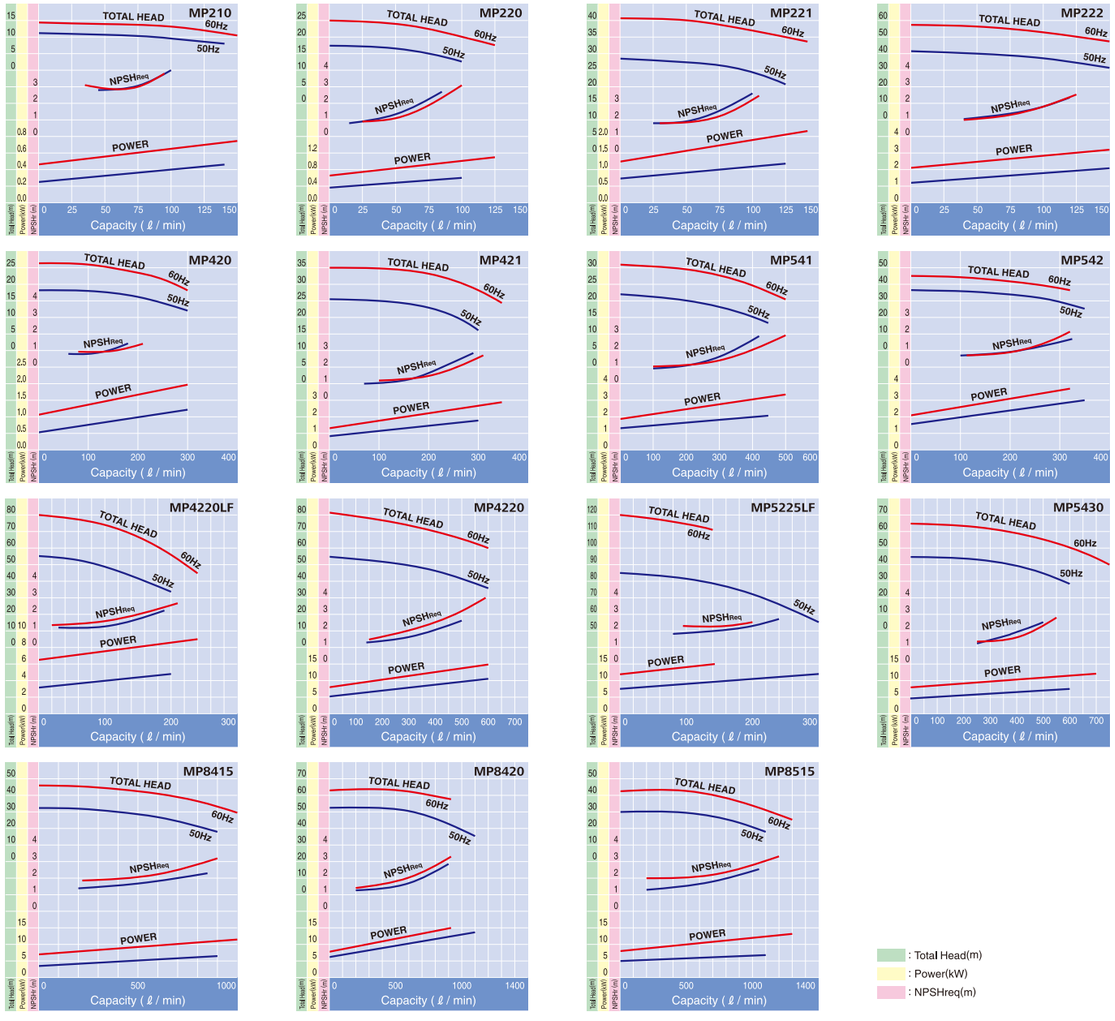




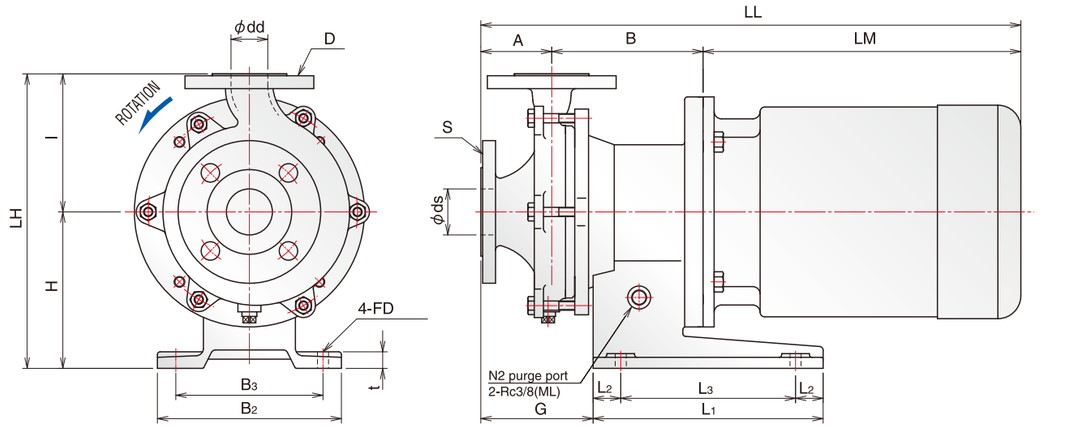
Performance curves for MH and ML are same as MP.

Performance curves

(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)



Outline dimension



(In the unit of mm)

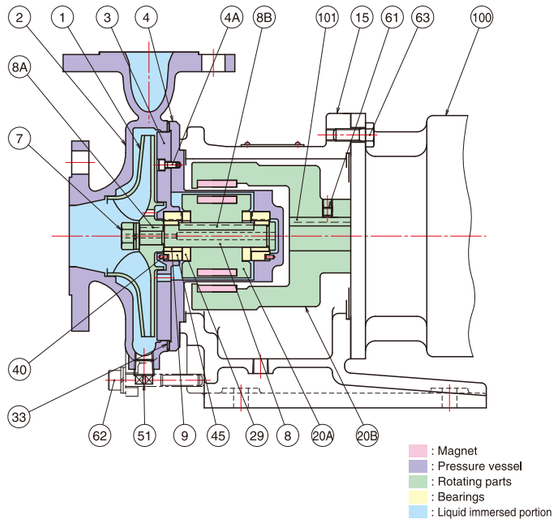
PUMP SIZE	MOTOR		BORE				PUMP & MOTOR							BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (kW)	SUCT ds	SUCT S	DISCH dd	DISCH D	A	B	H	I	LH	LM	LL	G	L1	L2	L3	B2	B3	t	FD	PUMP	MOTOR	TOTAL
MP210	80M	0.75	25		20		75	170	110	105	215	235.5	480.5	125	180	30	120	160	130	12 #	ϕ12	22	13.5	35.5
	90L	1.5										273	518										19.5	41.5
MP220	80M	0.75	25		20		60	170	110 #	120	230 #	235.5	465.5	110	180 #	30	120 #	160 #	130 #	12 #	ϕ12	23	13.5	36.5
	90L	1.5										273	503										19.5	42.5
MP221	90L	1.5,2.2	25		20		65	165	170	130	300	302	532	110	250	30	190	200	160	18	ϕ12	27	24	51
	(100L)112M	(2.2),3.7						175				326	566									30	36	66
MP222	90L	1.5,2.2	25		20		65	165	170	140	310	302	532	110	250	30	190	200	160	18	ϕ12	29	24	53
	(100L)112M	(2.2),3.7						175				326	566									33	36	69
MP420	80M	0.75	40		25		75	170	170	135	305	235.5	480.5	125	250	30	190	200	160	18	ϕ12	29	13.5	42.5
	90L	1.5,2.2										302	547										24	53
MP421	90L	1.5,2.2	40		25		75	170	170	135	305	302	547	125	250	30	190	200	160	18	ϕ12	30	24	54
	(100L)112M	(2.2),3.7						180				326	581									34	36	70
MP541	90L	2.2	50		40		80	170	170	140	310	302	552	130	250	30	190	200	160	18	ϕ12	31	24	55
	(100L)112M	(2.2),3.7						180				326	586									35	36	71
MP542	90L	2.2	50		40		65	165	170	150	320	302	532	110	250	30	190	200	160	18	ϕ12	34	24	58
	(100L)112M	(2.2),3.7						175				326	566									38	36	74
MP4220LF	112M	3.7	40		25		102	258	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	68	36	104
	132S,M	5.5,7.5										369.5	729.5									70	63	133
	160M,L	11,15						288	250		415	503	893		450		350	300	250			86	109	195
MP4220	112M	3.7	40		25		102	258	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	68	36	104
	132S,M	5.5,7.5										369.5	729.5									70	63	133
	160M,L	11,15						288	250		415	503	893		450		350	300	250			86	109	195
MP5430	112M	3.7	50		40		102	258	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	72	36	108
	132S,M	5.5,7.5										369.5	729.5									74	63	137
	160M,L	11,15						288	250		415	503	893		450		350	300	250			90	109	199
MP8415	112M	3.7	80		40		102	258	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	72	36	108
	132S,M	5.5,7.5										369.5	729.5									74	63	137
	160M,L	11,15						288	250		415	503	893		450		350	300	250			90	109	199
MP8420	112M	3.7	80		40		102	263	212	215	427	326	691	180	350	50	250	250	200	20	ϕ15	74	36	110
	132S,M	5.5,7.5										369.5	734.5									76	63	139
	160M,L	11,15						293	250		465	503	898		450		350	300	250			92	109	201
MP8515	112M	3.7	80		50		102	263	212	210	422	326	691	180	350	50	250	250	200	20	ϕ15	74	36	110
	132S,M	5.5,7.5										369.5	734.5									76	63	139
	160M,L	11,15						293	250		460	503	898		450		350	300	250			92	109	201
MP5225LF	112M	3.7	50		25		102	263	212	215	427	326	691	180	350	50	250	250	200	20	ϕ15	84	36	120
	132S,M	5.5,7.5										369.5	734.5									86	63	149
	160M,L	11,15						293	250		465	503	898		450		350	300	250			102	109	211

JIS 10K RF or ASME 150LB RF

JIS 10K RF or ASME 150LB RF

LM,LL dimensions and motor weight may vary depending on motor used. # Figures in brackets are for MH220 and ML220.

Construction and materials



MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
63	HEXAGON HEAD BOLT	SUS304	4S
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
51	PLUG	SUS	1
45	BUSHING	SiC	2
40	PIN	SUS	2
33	SHEET GASKET	PTFE	1
29	THRUST RING	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
9	SLEEVE	SiC-D	2
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7	IMPELLER NUT WITH WASHER	SUS	1S
4A	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
4	REAR CASING	SUS	1
3	CASING COVER	SUS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
64	HEXAGON HEAD BOLT	SUS304	4
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON HEAD BOLT	SUS304	8
61	SET SCREW	SCM435	1
51	PLUG	SUS	1
45	BUSHING	SiC	2
40	SET SCREW	SUS	3
33	SHEET GASKET	PTFE	1
29	THRUST RING	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
9	SLEEVE	SiC-D	2
8D	SLEEVE BOLT SET SCREW	SUS	1
8C	SLEEVE BOLT	SUS	1
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7A	IMPELLER NUT SET SCREW	SUS	1
7	IMPELLER NUT	SCS	1
4A	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
4	REAR CASING	SUS	1
3	CASING COVER	SCS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

Examples of applicable liquid

Acrylic acid	Chlorosulfonic acid	Butadiene
Acetaldehyde	Hot oil, hot water	Fluorinert
Acetone	Acetic acid	Freon
Ammoniacal liquor	Phosphorus trichloride	Hexane
Isopropyl alcohol	Ethylene oxide	Hexamethylene Diisocyanate
Ethanol	Cyclohexane	Benzene
Ethylene glycol	Pure water	Formalin
Oxy phosphorus chloride	Styrene	Maleic acid
Octanol	Hydrocarbon	Methanol
Hydrogen peroxide water	Trichloroethylene	Methyl ethyl ketone
Caustic soda	Toluene	Sulfuric acid
Xylene	Kerosene	**Various chemicals**
Glycine soda	Oleum Fuming sulfuric acid	**Various heat medium liquid**
Chloroform(TrichloroMethane)	Phenol	**Various coolant liquid**

Efficiency compared with seal pump (our products)

	Pump performance	Efficiency
MAGPAC MP542	300 ℓ /min x 26m 3,000 rpm	55%
Mechanical seal pump		JIS (A) 53%

Example - Spare parts savings in Jap.Yen (10 to 20 pumps in service)

Mechanical seal pump	MAGPAC, MP	Difference
Sleeve <50%> @25,000yen x 5sets Mechanical <50%> @35,000yen x 5sets	Liquid- immersed bearings <10%> @50,000yen x 1set	Store space is cut down to 1/10th
Total 300,000yen	50,000yen	250,000yen+α

TYPE MPO

SEALLESS

OPEN-IMPELLER STAINLESS STEEL MAGNETIC DRIVE PUMPS

Motor output :

0.2kW to 15kW

- Sealless magnetic drive pump with **open impeller**.
- Sealless magnetic drive construction will not leak !
- Capable of **handling some sludge and slurries**.
- **Very low NPSH**.
- Pumps **can be electro polished** for handling DI, H2O, etc (Option).
- Very easy to disassemble and reassemble when required.
- **SiC-D bearings withstand accidental dry-run on start up**.

Extention
11kW,15kW

TYPE MPO -30°C~+150°C 0.75kW~15kW

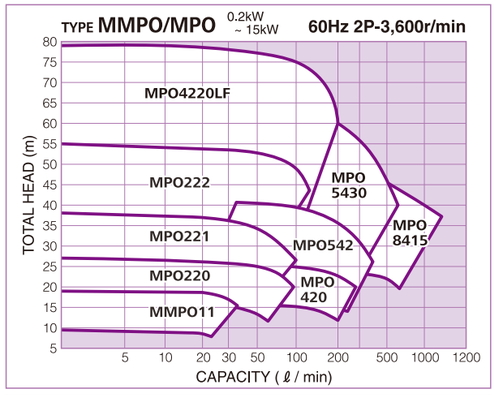
#Gasket material depends on the liquid temperature.

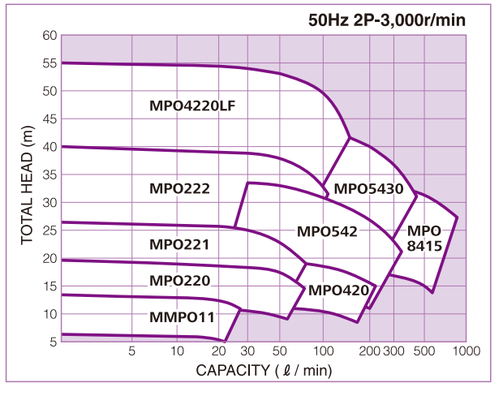
TYPE MMPO -30°C~+150°C 200W,400W

#O-ring material depends on the liquid temperature.

Open type impeller

Selection charts





Specifications

	MMPO		MPO	
Frequency	50Hz	60Hz	50Hz	60Hz
Max. total head	12m	18m	54m	73m
Max. capacity	40 ℓ /min	45 ℓ /min	800 ℓ /min	1100 ℓ /min
Max. temperature applicable	150°C			
Min. temperature applicable	-30°C			
Max. liquid specific gravity	2			
Max. liquid viscosity	100mPa·s(cP)		300mPa·s(cP)	
Design pressure	0.6MPaG		1.0MPaG(220, 221, 222, 420, 542) 1.2MPaG(4220LF, 5430, 8415)	
Bore(suction x discharge)	15x15mm		25x20mm~80x40mm	
Flange standard	R thread / NPT thread		JIS 10K RF / ASME 150LB RF	
Type of impeller	Open type		Open type	
Motor output rating	200, 400W		0.75~15kW	
Pump material	SCS13(SUS304), SCS14(SUS316)		SCS13(SUS304), SCS14(SUS316), ALLOY20, Hastelloy C equivalent	
Liquid-immersed bearings	SiC-D		SiC-D	

Applicable slurry liquid

Waste water	Clay, active carbon, catalyst
Inorganic slurry	Iron sulfide,silica
Iron oxide, titanium oxide	Various organic slurry liquid

Can correspond to liquid such as this;

Please inquire about the corresponding conditions.

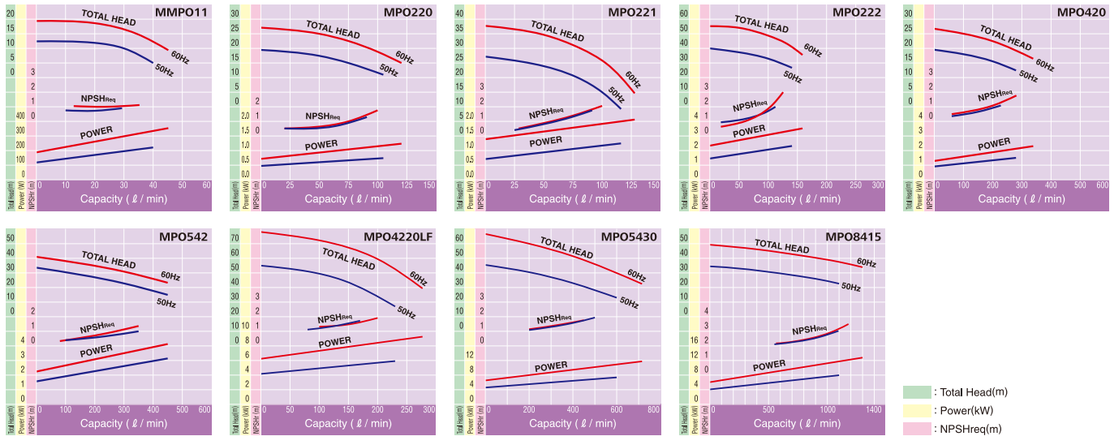
#In the case of low temperature liquid (0C°or less), problems may occur depending on the installation environment. Please contact us before purchasing (before using).

SHUT OUT LEAKS · STAINLESS STEEL · SIC-D BEARING · HIGH TEMP 150°C OK! · LOW TEMP -30°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE · SLURRY

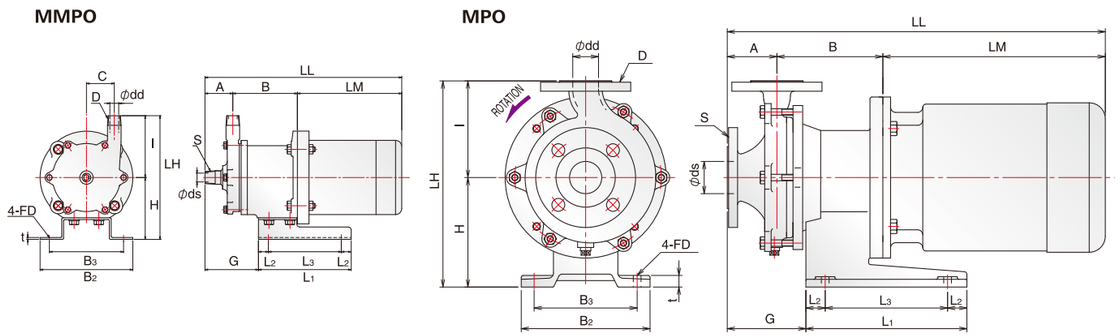
MAGPAC® series
MPO / MMPO

Performance curves

(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)



Outline dimension



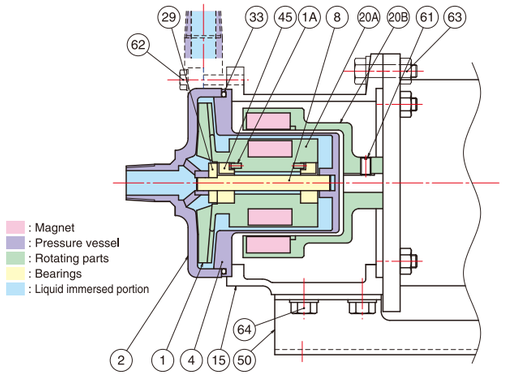
(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR								BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (kW)	SUCT		DISCH		A	B	C	H	I	LH	LM	LL	G	L_1	L_2	L_3	B_2	B_3	t	FD	PUMP	MOTOR	TOTAL
			ds	S	dd	D																			
MMPO11	63M	0.2	15	R1/2	15	R1/2	45	104	45	100	100	200	209	358	86	150	16	118	150	120	3	ϕ9.5	8	8	16
	71M	0.4						111					231	387										11	19
MPO220	80M	0.75	25	JIS 10K RF or ASME 150LB RF	20	JIS 10K RF or ASME 150LB RF	60	170	–	110	120	230	235.5	465.5	110	180	30	120	160	130	12	ϕ12	23	13.5	36.5
	90L	1.5											273	503										19.5	42.5
MPO221	90L	1.5, 2.2	25		20		65	165	–	170	130	300	302	532	110	250	30	190	200	160	18	ϕ12	27	24	51
	(100L)112M	(2.2), 3.7						175					326	566									30	36	66
MPO222	90L	1.5, 2.2	25		20		65	165	–	170	140	310	302	532	110	250	30	190	200	160	18	ϕ12	29	24	53
	(100L)112M	(2.2), 3.7						175					326	566									33	36	69
MPO420	90L	1.5, 2.2	40		25		75	170	–	170	135	305	302	547	125	250	30	190	200	160	18	ϕ12	29	24	53
	(100L)112M	(2.2), 3.7						180					326	581									34	36	70
MPO542	90L	1.5, 2.2	50		40		65	165	–	170	150	320	302	532	110	250	30	190	200	160	18	ϕ12	34	24	58
	(100L)112M	(2.2), 3.7						175					326	566									38	36	74
MPO4220LF	112M	3.7	40		25		102	258	–	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	68	36	104
	132S,M	5.5, 7.5											369.5	729.5									70	63	133
	160M,L	11, 15						288		250		415	503	893		450		350	300	250			86	109	195
MPO5430	112M	3.7	50		40		102	258	–	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	72	36	108
	132S,M	5.5, 7.5											369.5	729.5									74	63	137
	160M,L	11, 15						288		250		415	503	893		450		350	300	250			90	109	199
MPO8415	112M	3.7	80		40		102	258	–	212	165	377	326	686	175	350	50	250	250	200	20	ϕ15	72	36	108
	132S,M	5.5, 7.5											369.5	729.5									74	63	137
	160M,L	11, 15						288		250		415	503	893		450		350	300	250			90	109	199

Outline dimensions are quite same as type MMP and MP. # LM,LL dimensions and motor weight may vary depending on motor used.

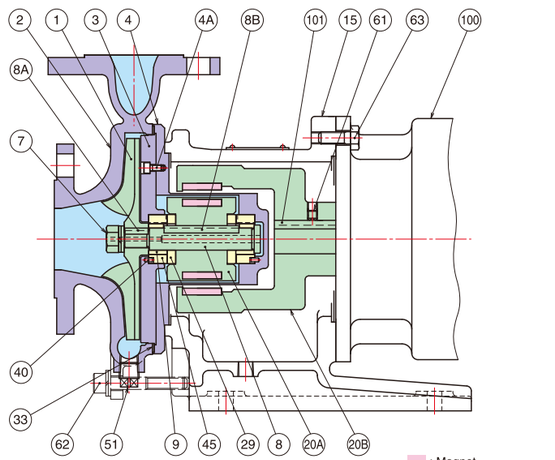
Construction and materials

MMPO



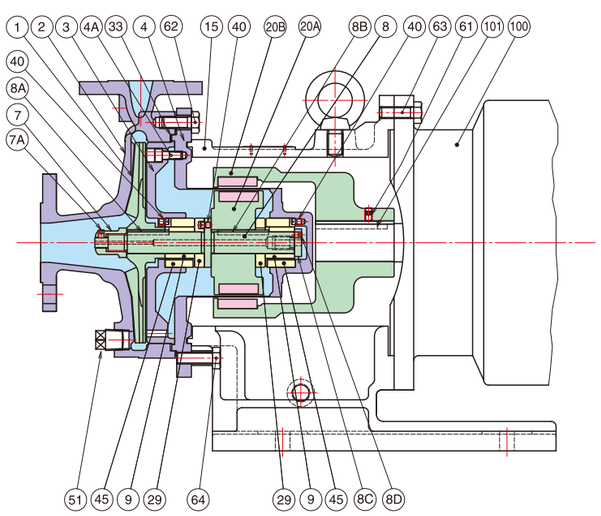
MARK	NAME OF PART	MAT'L	No.REQ'D
64	BOLT WITH WASHER	SUS304	4S
63	BOLT WITH WASHER	SUS304	4S
62	BOLT WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
50	BASE	SUS304	1
45	BUSHING	SiC-D	2
33	O RING	PTFE	1
29	THRUST RING	SiC	1
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
8	SHAFT	SiC	1
4	REAR CASING	SUS	1
2	CASING	SCS	1
1A	PIN	SUS	2
1	IMPELLER	SCS	1

MPO



MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
51	PLUG	SUS	1
45	BUSHING	SiC	2
40	PIN	SUS	2
33	SHEET GASKET	PTFE	1
29	THRUST RING	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
9	SLEEVE	SiC-D	2
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7	IMPELLER NUT WITH WASHER	SUS	1S
4A	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
4	REAR CASING	SUS	1
3	CASING COVER	SUS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

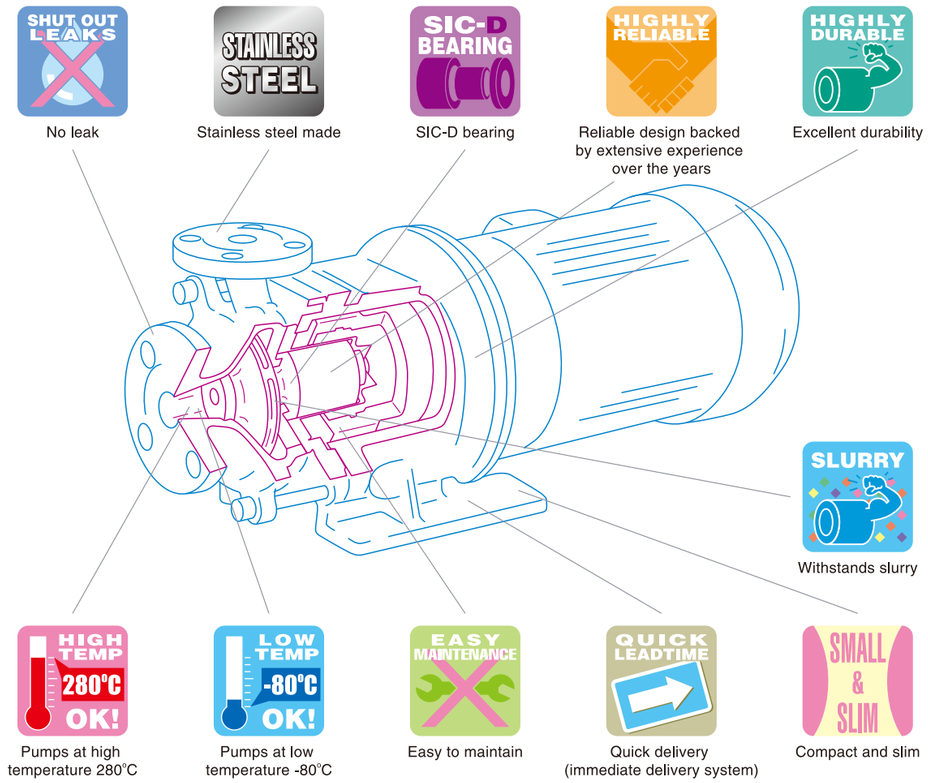
MPO(4220LF, 5430, 8415)



MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
64	HEXAGON HEAD BOLT	SUS304	4
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON HEAD BOLT	SUS304	8
61	SET SCREW	SCM435	1
51	PLUG	SUS	1
45	BUSHING	SiC	2
40	SET SCREW	SUS	3
33	SHEET GASKET	PTFE	1
29	THRUST RING	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FC200	1
9	SLEEVE	SiC-D	2
8D	SLEEVE BOLT SET SCREW	SUS	1
8C	SLEEVE BOLT	SUS	1
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7A	IMPELLER NUT SET SCREW	SUS	1
7	IMPELLER NUT	SCS	1
4A	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
4	REAR CASING	SUS	1
3	CASING COVER	SCS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

We're exploring a new era for stainless steel "Magnetic Drive Pumps" without seals

Developing a pump without seals brought the following three features. All of them expand the range of applications for Magnetic Drive Pumps even further into existing and new fields.



This leaflet shows the various features of each magnetic drive pump using the icons above.

Three features of Magnetic drive pumps

1st feature : No leaks, at all, of any kind

Seal pumps inevitably leak from the seal due to the construction of shaft seal.
In order to eliminate this problem, the seal-less magnetic drive pumps eliminate the power-transfer shaft, which is connected to the impeller directly. Instead, magnetic drive pumps are designed to perform power-transfer with a permanent magnet through the wall of pump rear casing.
No shaft seal is required and therefore no-leak.
This no-leak feature makes it reliable and safe.

2nd feature : Tough and highly durable

The working temperature and pressure range of seal-less magnetic drive pump is much wider than that of conventional seal pump.
Seal pumps have limited resistance to heat & cold and low pressure withstanding capability due to the shaft seal.

3rd feature : Easy to maintain

The magnetic drive pumps have a long MTBF (Mean Time Between Failure) rating. Simple and compact design provides easy maintenance.

TYPE MSW

SEALLESS

STAINLESS STEEL REGENERATIVE TURBINE VANE MAGNETIC DRIVE PUMPS

Motor output :

0.75kW to 3.7kW

- The best selection for **low flow / high head applications**.
- No leakage because of magnetic drive (sealless) construction.
- **SiC-D bearings withstand accidental dry-run on start up.**
- **Low heat rise** and **low minimum flow**.
- Quieter than typical mechanical seal pumps.
- **Steep performance curve** and dependable capacity regardless of pressure variations.
- Can be run in reverse without any problem.

Cascade-bladed impeller ➡

TYPE MSW -30°C~+150°C 0.75kW~3.7kW

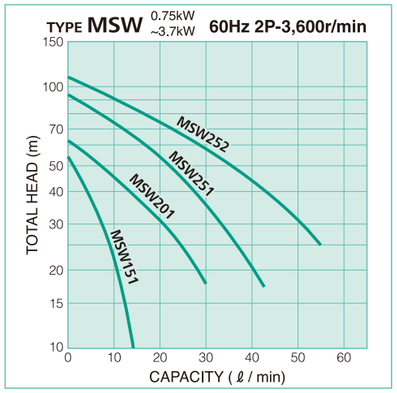
#O-ring material depends on the liquid temperature.

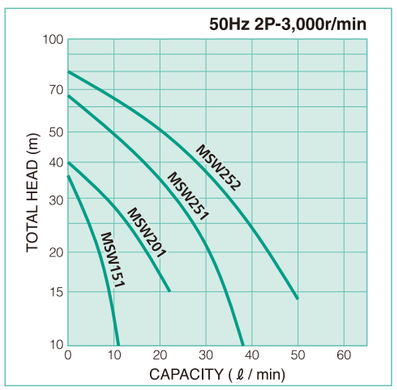
For liquid of high temperature

TYPE MHW RT~+230°C 0.75kW~3.7kW

- Fin type frame adapter dissipates heat away from pump.
- High temperature SmCo magnets are used for temperatures above 150°C.

Selection charts

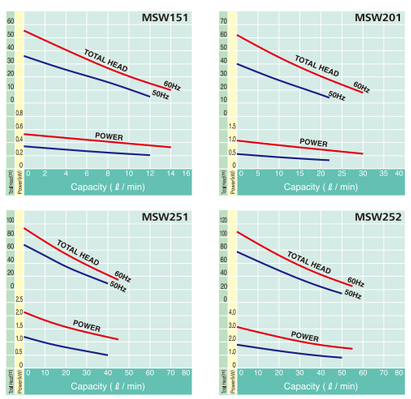




Specifications

	MSW	MHW
Frequency	50Hz	60Hz
Max. total head	65m	90m
Max. capacity	45 ℓ /min	50 ℓ /min
Max. temperature applicable	150°C	230°C
Min. temperature applicable	-30°C	RT
Max. liquid specific gravity	2	
Max. liquid viscosity	50mPa·s(cP)	
Design pressure	1.6MPaG	
Bore (suction x discharge)	15x15~25x25mm	
Flange standard	Rc thread / JIS 10K RF / ASME 150LB RF	
Type of impeller	Cascade blades	
Motor output rating	0.75~3.7kW(2P)	
Pump material	SCS14(SUS316)	
Liquid-immersed bearings	SiC-D	

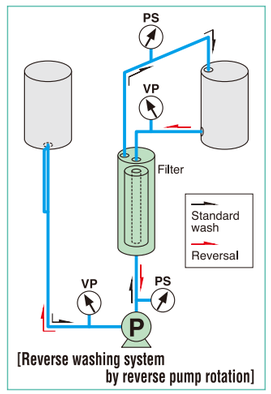
Performance curves (60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)



: Total Head(m) : Power(kW)

Use	Liquid used
Washing device	Exfoliation liquid
	Hydrocarbon system
	Alcoholic system
Synchrotron orbital radiation/Cooling device	Freon replacing material
Pure water processing	Lithium bromide
Sterilizer/Hot water	Pure water
Absorption type freezer	Ozone water
Low temperature chiller	Fluorinert, Galden
Temperature controller/Dryer	Heat medium
Filter	Various medicines
Solvent collector	Organic solvent
Fine chemicals	**Various chemicals**

Application example



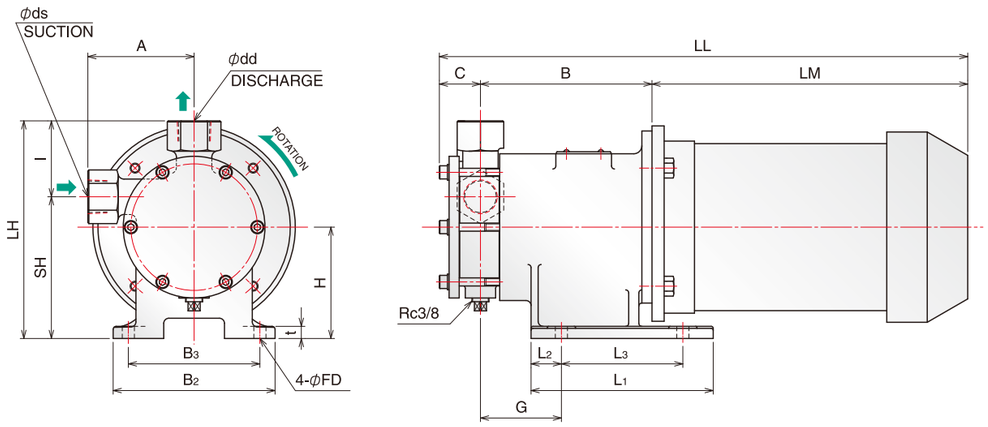
[Reverse washing system by reverse pump rotation]

SHUT OUT LEAKS · STAINLESS STEEL · SiC-D BEARING · HIGH TEMP 200°C OK! · LOW TEMP -30°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE · QUICK LEADTIME

MAGPAC® series

MSW(MHW)

Outline dimension

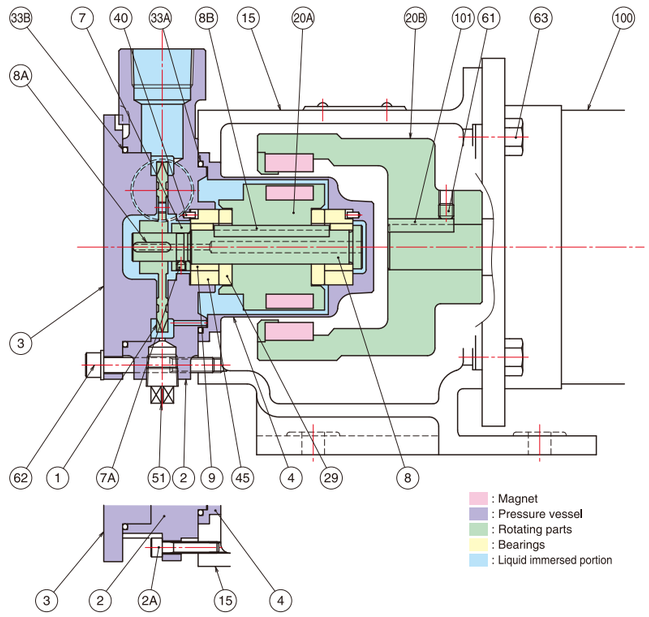


(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR									BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (kW)	SUCT ds	SUCT S	DISCH dd	DISCH D	A	B	C	H	I	SH	LH	LM	LL	G	L_1	L_2	L_3	B_2	B_3	t	FD	PUMP	MOTOR	TOTAL
MSW151	80M	0.75	15	Rc1/2	15	Rc1/2	80	165	35	110	55	135	190	235.5	435.5	76	180	30	120	160	130	12	ϕ12	16	13.5	29.5
MSW201	80M	0.75	20	Rc3/4	20	Rc3/4	80	170	37	110	55	135	190	235.5	442.5	80	180	30	120	160	130	12	ϕ12	20	13.5	33.5
	90L	1.5												273	480										19.5	39.5
MSW251	90L	1.5,2.2	25	Rc1	25	Rc1	105	170	41	110	75	140	215	302	513	80	180	30	120	160	130	12	ϕ12	20	24	44
	(100L)	(2.2)						180		170		200	275	306	527		250		190	200	160	18		25	34	59
MSW252	90L	2.2	25	Rc1	25	Rc1	105	170	45	110	75	140	215	302	517	80	180	30	120	160	130	12	ϕ12	20	24	44
	(100L),112M	(2.2),3.7						180		170		200	275	326	551		250		190	200	160	18		25	36	61

LM,LL dimensions and motor weight may vary depending on motor used.

Construction and materials



MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
51	PLUG	SUS316	1
45	BUSHING	SiC	2
40	PIN	SUS316	2
33B	O RING	PTFE	1
33A	O RING	PTFF	1
29	THRUST RING	SiC	2
	MAGNET	RARE EARTH	1S
20B	MAGNET COUPLING(M)	FCD	1
	MAGNET	RARE EARTH	1S
20A	MAGNET COUPLING(P)	SUS316	1
15	FRAME ADAPTER	FC200	1
9	SLEEVE	SiC-D	2
8B	COUPLING KEY(P)	SUS316	1
8A	IMPELLER KEY	SUS316	1
8	SHAFT	SUS316	1
7A	SET SCREW	SUS316	2
7	SET RING	SUS316	1
4	REAR CASING	SUS316	1
3	CASING COVER	SUS316	1
2A	HEXAGON SOCKET HEAD CAP SCREW	SUS304	2
2	CASING	SCS14	1
1	IMPELLER	SUS316	1

TYPE MCK

SEALLESS

SELF PRIMING STAINLESS STEEL REGENERATIVE TURBINE VANE MAGNETIC DRIVE PUMPS

Motor output :

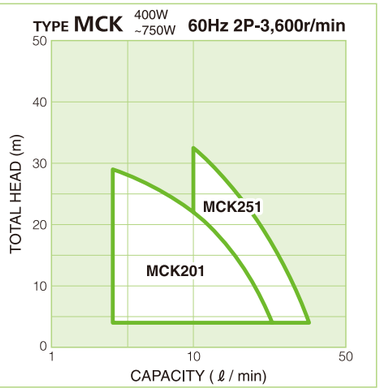
400W to 750W

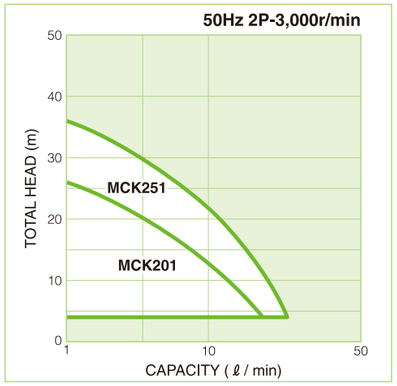
- **Excellent self priming capability.**
- No leakage because of magnetic drive (sealless) construction.
- **SiC-D bearings withstand accidental dry-run on start up.**
- **Low heat rise** and **low minimum flow.**
- Quieter than typical mechanical seal pumps.
- **Steep performance curve** and dependable capacity regardless of pressure variations.

Cascade-bladed impeller ➡

TYPE MCK 0°C~+80°C 400W~750W

Selection charts





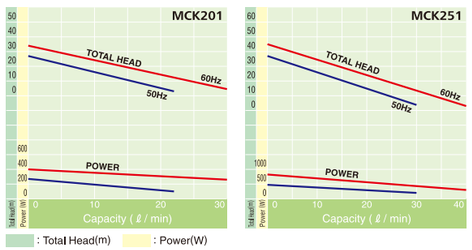
Specifications

	MCK201		MCK251	
Frequency	50Hz	60Hz	50Hz	60Hz
Max. total head	20m	20m	30m	30m
Max. capacity	6 ℓ /min	14 ℓ /min	6 ℓ /min	14 ℓ /min
Max. temperature applicable	80°C			
Min. temperature applicable	0°C			
Max. liquid specific gravity	1.1			
Max. liquid viscosity	30mPa·s(cP)			
Design pressure	0.6MPaG			
Bore (suction x discharge)	20x20mm		25x25mm	
Flange standard	Rp thread			
Type of impeller	Cascade blades			
Motor output rating	400W		750W	
Pump material	SCS13(SUS304)			
Check valve	FKM #			
Liquid-immersed bearings	SiC-D			

NBR is available on request.

Performance curves

(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)

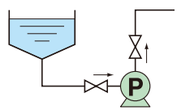


Examples of usage

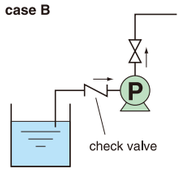
Washing device
Pump up chemical liquid

Example

case A



case B



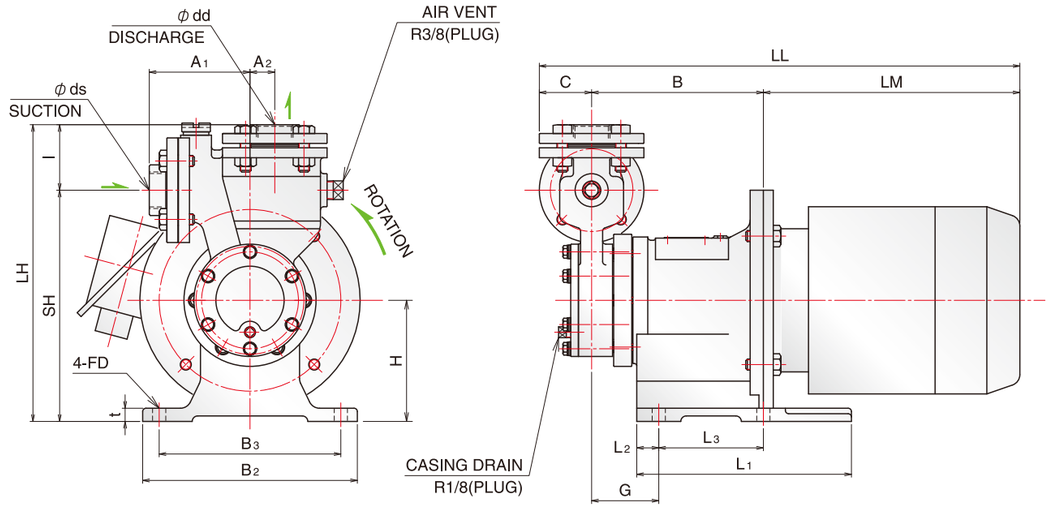
For organic solvent, acetone, ether, methyl chloride, benzene etc... TYPE MCK shall be used for case A or case B.

SHUT OUT LEAKS · STAINLESS STEEL · SiC-D BEARING · HIGH TEMP 80°C OK! · LOW TEMP 0°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE · SMALL & SLIM · QUICK LEADTIME

MAGPAC® series

MCK

Outline dimension

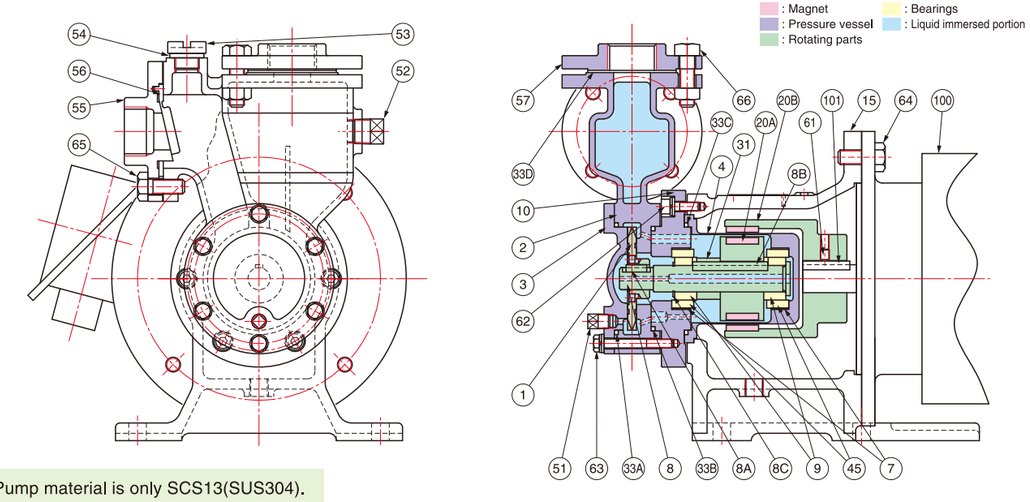


(In the unit of mm)

PUMP SIZE	MOTOR		BORE		PUMP & MOTOR										BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (W)	ds	dd	A1	A2	B	C	H	I	SH	LH	LM	LL	G	L1	L2	L3	B2	B3	t	FD	PUMP	MOTOR	TOTAL
MCK201	71M	400	20 Rp3/4	20 Rp3/4	91	20	140	42.5	90	65	180	245	231	413.5	45	200	20	100	190	160	12	ϕ12	13.5	11.0	24.5
MCK251	80M	750	25 Rp1	25 Rp1	91	22.5	156	47.5	110	60	210	270	235.5	439	61	195	20	95	195	165	12	ϕ12	16.0	13.5	29.5

LM,LL dimensions and motor weight may vary depending on motor used.

Construction and materials



Pump material is only SCS13(SUS304).

MARK	NAME OF PART	MAT'L	No.REQ'D
9	SLEEVE	SiC-D	2
8C	RETAINING RING	SUS304	1
8B	COUPLING KEY	SUS630	1
8A	IMPELLER KEY	SUS304	1
8	SHAFT	SUS304	1
7	TOLERANCE RING	SUS301	2
4	REAR CASING	SUS316	1
3	CASING COVER	SCS13	1
2	CASING	SCS13	1
1	IMPELLER	SUS304	1

MARK	NAME OF PART	MAT'L	No.REQ'D
33C	O RING	PTFE	1
33B	O RING	PTFE	1
33A	O RING	PTFE	1
31	SPACER	SUS304	1
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	SS400	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS316	1
15	FRAME ADAPTER	FC200	1
10	HOLDER	SUS304	1

MARK	NAME OF PART	MAT'L	No.REQ'D
61	SET SCREW	SCM435	2
57	DISCHARGE NOZZLE	SUS13	1
56	CHECK VALVE	FKM #	1
55	SUCTION NOZZLE	SUS304	1
54	O RING	PTFE	1
53	PLUG	SUS316	1
52	PLUG	SUS316	1
51	PLUG	SUS316	1
45	BUSHING	SiC	2
33D	GASKET	PTFE	1

MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	-	1
100	MOTOR	-	1
66	HEXAGON HEAD BOLT & NUT	SUS304	4S
65	HEXAGON HEAD BOLT	SUS304	4
64	HEXAGON HEAD BOLT	SUS304	4
63	HEXAGON HEAD BOLT WITH WASHER	SUS304	6S
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	6S

TYPE MPCP

SEALLESS

VERTICAL IN-LINE, STAINLESS STEEL MAGNETIC DRIVE PUMPS

Motor output :

0.4kW to 5.5kW

- **Space saving vertical construction.**
- **304SS and 316SS** provide excellent corrosion resistance.
- Leak free (sealless) magnetic drive construction.
- **Eliminates expensive foundations, base plates and grouting.**
- **Easy to install and remove** if necessary.
- **SiC-D bearings withstand accidental dry-run on start up.**(MPCP25, 250~502only)
- Design provides easy assembly and disassembly.

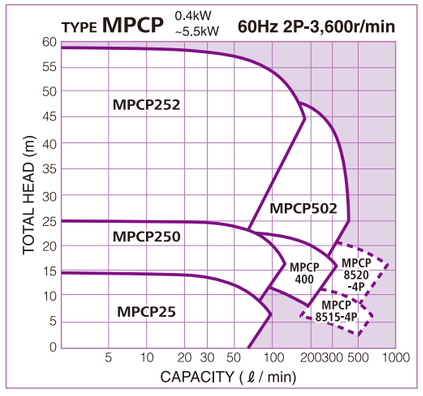
TYPE MPCP25 400W

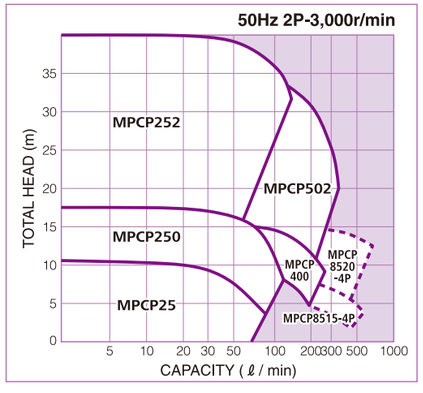
TYPE MPCP250~8520 0.75kW~5.5kW

#O-ring material depends on the liquid temperature. #Gasket material depends on the liquid temperature.

(Note) Pump stand is option.

Selection charts





Specifications

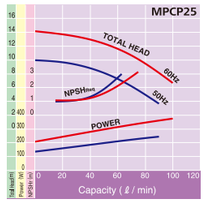
	MPCP25		MPCP250~502		MPCP8515,8520	
Frequency	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Max. total head	9m	13m	36m	55m	14m	20m
Max. capacity	90 ℓ /min	100 ℓ /min	350 ℓ /min	350 ℓ /min	700 ℓ /min	900 ℓ /min
Max. temperature applicable	150°C					
Min. temperature applicable	-30°C					
Max. liquid specific gravity	2					
Max. liquid viscosity	100mPa·s(cP)		300mPa·s(cP)			
Design pressure	0.6MPaG		1.0MPaG		1.2MPaG	
Bore (suction x discharge)	25x25mm		25x25~50x50mm		80x50mm	
Flange standard	JIS 10K RF / ASME 150LB RF					
Type of impeller	Closed type					
Motor output rating	400W		0.75~3.7kW(2P)		2.2~5.5kW(4P)	
Pump material	SCS13(SUS304),SCS14(SUS316)					
Liquid-immersed bearings	SiC-D				SiC	

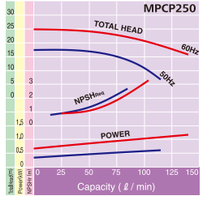
Performance curves

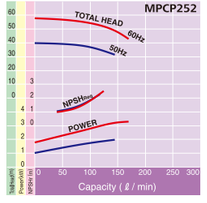
(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)

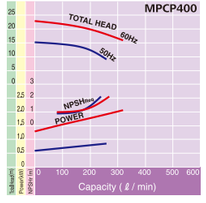
: Total Head(m) : Power(kW)

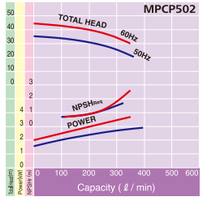
: NPSHreq(m)

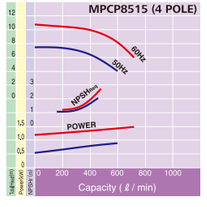


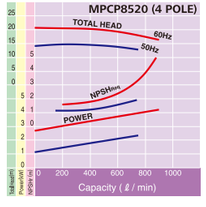










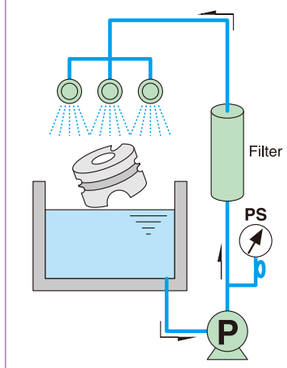


SHUT OUT LEAKS · STAINLESS STEEL · SiC-D BEARING · HIGH TEMP 150°C OK! · LOW TEMP -30°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE

MAGPAC® series

Sister Products **MPCP**

Application example



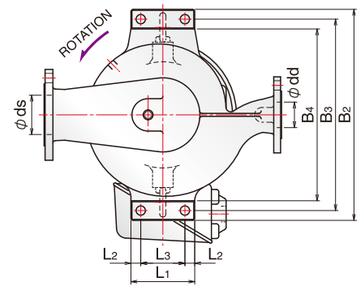
[Surface treating system for aluminum auto parts]

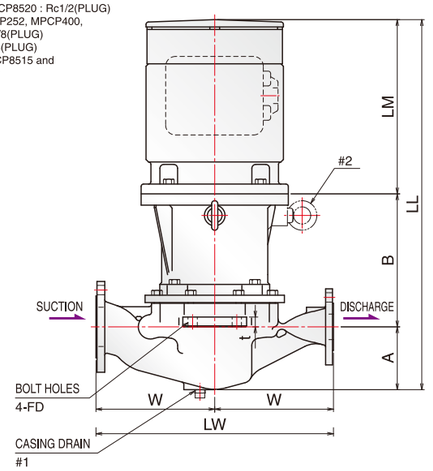
Typical usage

Petrochemical industry
Chemical plants
For cold and hot water circulation
For general industries
For setting to various machines and equipment

Outline dimension

#1. MPCP8515, MPCP8520 : Rc1/2(PLUG)
MPCP250, MPCP252, MPCP400,
MPCP502 : Rc3/8(PLUG)
MPCP25 : Rc1/4(PLUG)
#2. Eye bolt for MPCP8515 and MPCP8520 only.



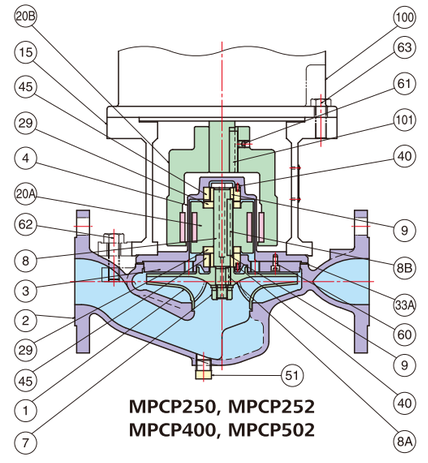


(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR						BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (kW)	SUCT ds	SUCT S	DISCH dd	DISCH D	A	B	W	LW	LM	LL	L_1	L_2	L_3	B_2	B_3	B_4	t	FD	PUMP	MOTOR	TOTAL
MPCP25	71M	0.4	25	JIS 10K RF or ASME 150LB RF	25	JIS 10K RF or ASME 150LB RF	50	112,5	100	200	231	393,5	60	10	40	160	140	115	10	ϕ10	13	11	24
MPCP250	80M	0.75	25		25		58	170	130	260	235,5	463,5	85	12.5	60	250	225	200	10	ϕ12	24	13.5	37.5
	90L	1.5									273	501										19.5	43.5
MPCP252	90L	1.5,2.2	25		25		61	165	140	280	302	528	100	12.5	75	280	250	220	12	ϕ15	30	24	54
	(100L)112M	(2.2),3.7						175			326	562										36	66
MPCP400	80M	0.75	40		40		73	170	135	270	235,5	478,5	85	12.5	60	250	225	200	10	ϕ12	26	13.5	39.5
	90L	1.5,2.2									302	545										24	50
MPCP502	90L	2.2	50		50		91	169	160	320	302	562	100	12.5	75	280	250	220	12	ϕ15	34	24	58
	(100L)112M	(2.2),3.7						179			326	596										36	70
MPCP8515	100L	2.2	80		50		120	273	210	420	311	704	130	20	90	380	340	300	20	ϕ19	72	33	105
MPCP8520	112M	3.7	80		50		128	271	242	484	326	725	130	20	90	430	390	350	20	ϕ19	73	42	115
	132S	5.5									369,5	768,5									78	64	142

MPCP8515,MPCP8520 are used only with 4 POLE motor. # LM,LL dimensions and motor weight may vary depending on motor used.

Construction and materials



MPCP250, MPCP252
MPCP400, MPCP502

: Magnet
: Pressure vessel
: Rotating parts
: Bearings
: Liquid immersed portion

#5. For MPCP8515 and MPCP8520 regular SiC sleeves are used. (SiC-D sleeves are optional.)
#6. 1 pce. of thrust ring is used for MPCP25.
#7. SiC-D bushings are used for MPCP25.

MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON HEAD BOLT	SUS304	6
61	SET SCREW	SCM435	2
60	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
51	PLUG	SUS	1
45	BUSHING #7	SiC	2
40	PIN	SUS	1
33A	GASKET	PTFE	1
30	SET SCREW	SUS	3
29	THRUST RING #6	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	SS400	1
10A	SET SCREW	SUS	1
10	SLEEVE BOLT	SUS	1
9	SLEEVE #5	SiC-D	2
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7A	SET SCREW	SUS	1
7	IMPELLER NUT	SUS	1
4	REAR CASING	SUS	1
3	CASING COVER	SUS	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

TYPE MPJ

SEALLESS

JACKETED, STAINLESS STEEL MAGNETIC DRIVE PUMPS

Motor output :

0.75kW to 3.7kW

- Simple cost effective **semi-jacketed** magnetic drive pump which provides excellent heat retention to product.
- **Used to maintain process temperature for heat sensitive liquids.**
- Pump corrosion resistance is provided with **304SS and 316SS construction.**
- Magnetic drive (sealless) construction eliminates leakage.
- **SiC-D bearings withstand accidental dry-run on start up.**
- Dependable, low maintenance and extremely reliable.

TYPE MPJ -30°C~+150°C 0.75kW~3.7kW

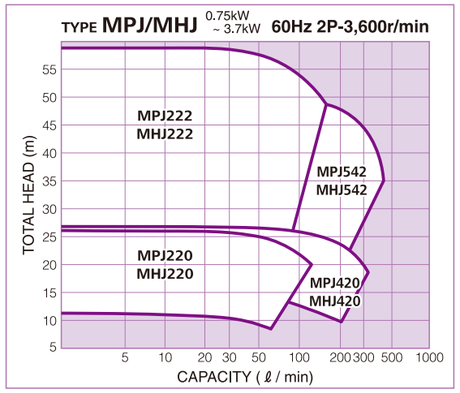
#Gasket material depends on the liquid temperature.

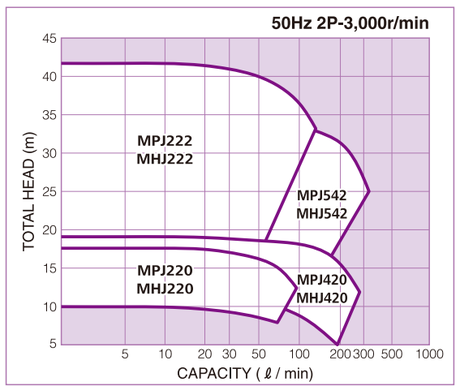
For liquid of high temperature

TYPE MHJ RT~+280°C 0.75kW~3.7kW

- Fin type frame adapter dissipates heat away from pump.
- High temperature SmCo magnets are used for temperatures above 150˚C.
- High temperature gasket material is used.

Selection charts





Specifications

	MPJ	MHJ
Frequency	50Hz	60Hz
Max. total head	40m	58m
Max. capacity	300 ℓ /min	300 ℓ /min
Max. temperature applicable	150˚C	280˚C
Min. temperature applicable	-30˚C	RT
Max. liquid specific gravity	2	
Max. liquid viscosity	300mPa·s(cP)	
Design pressure	1.0MPaG(Jacket:1.2MPaG)	
Bore (suction x discharge)	25x20~50x40mm	
Flange standard	JIS 10K RF / ASME 150LB RF	
Type of impeller	Closed type	
Motor output rating	0.75~3.7kW(2P)	
Pump material	SCS13(SUS304),SCS14(SUS316), ALLOY20, Hastelloy C equivalent	
Liquid-immersed bearings	SiC-D	

Typical usage

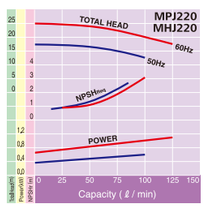
- Petrochemical industry
- Chemical Industry
- For cold and hot water circulation
- For general industries
- For setting to various machines and equipment

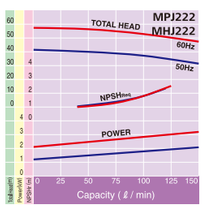
Performance curves

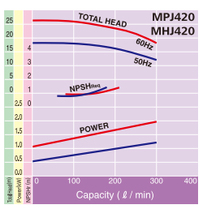
(60Hz 2P-3,600r/min,50Hz 2P-3,000r/min)

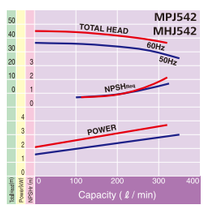
: Total Head(m) : Power(kW)

: NPSHreq(m)







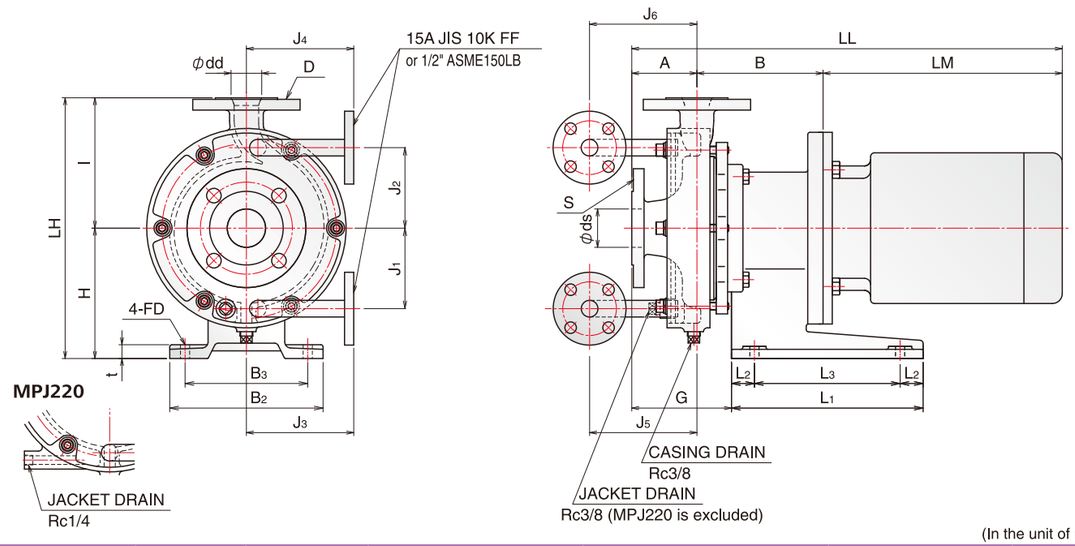


SHUT OUT LEAKS · STAINLESS STEEL · SiC-D BEARING · HIGH TEMP 200°C OK! · LOW TEMP -30°C OK! · EASY MAINTENANCE · HIGHLY RELIABLE · HIGHLY DURABLE

MAGPAC® series

Sister Products **MPJ(MHJ)**

Outline dimension

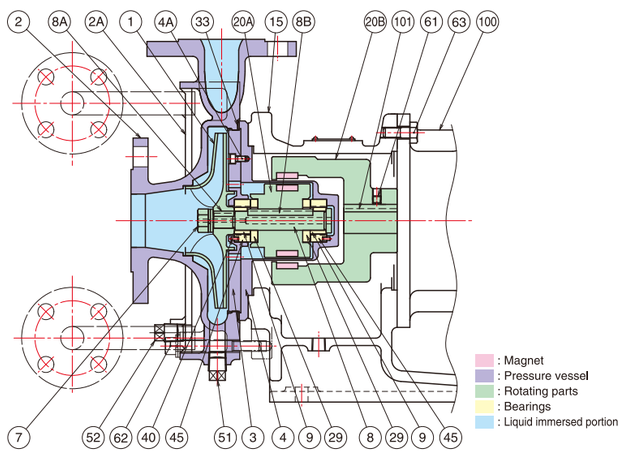


(In the unit of mm)

PUMP SIZE	MOTOR FRAME SIZE	MOTOR OUTPUT (kW)	BORE SUCT ds	BORE SUCT S	BORE DISCH dd	BORE DISCH D	A	B	H	I	LH	LM	LL	G	L1	L2	L3	B2	B3	t	FD	J1	J2	J3	J4	J5	J6	WEIGHT APPROX(kg) PUMP	MOTOR	TOTAL
MPJ220	80M	0.75	25	JIS 10K RF or ASME 150LB RF	20	JIS 10K RF or ASME 150LB RF	80	170	170	140	310	235.5	485.5	130	250	30	190	200	160	18	ϕ12	80	80	140	140	140	140	30	13.5	43.5
MHJ220	90L	1.5										275	525															30	16.5	46.5
MPJ420	80M	0.75	40		25		95	170	170	150	320	235.5	500.5	145	250	30	190	200	160	18	ϕ12	80	80	140	140	140	140	31	13.5	44.5
MHJ420	90L	1.5,2.2										275	540															31	16.5	47.5
MPJ222	90L	1.5	25		20		85	165	170	160	330	275	525	130	250	30	190	200	160	18	ϕ12	100	100	140	140	140	140	32	18	50
MHJ222	(100L)112M	(2.2),3.7						175				326	586															36	37	73
MPJ542	90L	2.2	50		40		85	165	170	170	340	275	525	130	250	30	190	200	160	18	ϕ12	100	100	140	140	140	140	37	18	55
MHJ542	(100L)112M	(2.2),3.7						175				326	586															41	37	78

LM,LL dimensions and motor weight may vary depending on motor used.

Construction and materials



MARK	NAME OF PART	MAT'L	No.REQ'D
101	COUPLING KEY(M)	S45C	1
100	MOTOR	-	1
63	HEXAGON HEAD BOLT	SUS304	4
62	HEXAGON SOCKET HEAD CAP SCREW WITH WASHER	SUS304	6S
61	SET SCREW	SCM435	1
52	PLUG	FCMB	1
51	PLUG	SUS	1
45	BUSHING	SiC	2
40	PIN	SUS	2
33	SHEET GASKET	PTFE	1
29	THRUST RING	SiC	2
20B	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1S
	MAGNET COUPLING(P)	SUS	1
15	FRAME ADAPTER	FCD	1
9	SLEEVE	SiC-D	2
8B	COUPLING KEY(P)	SUS	1
8A	IMPELLER KEY	SUS	1
8	SHAFT	SUS	1
7	IMPELLER NUT WITH WASHER	SUS	1S
4A	HEXAGON SOCKET HEAD CAP SCREW	SUS	4
4	REAR CASING	SUS	1
3	CASING COVER	SUS	1
2A	CASING JACKET	SS400	1
2	CASING	SCS	1
1	IMPELLER	SCS	1

A Table of Standard Manufacturing Specification for the SANWA MAGPAC SERIES PUMPS

MAGPAC® series
Standard Specification

Pump Type	Standard Centrifugal								Open Impeller			
	MA		MB		MMP [MMH MML]		MP [MH ML]		MMPO		MPO	
Frequency (Hz)	50	60	50	60	50	60	50	60	50	60	50	60
Max. total head (m)	3	3.5	6	8	20	28	80	120	12	18	54	73
Max. capacity (ℓ /min)	15	20	20	20	80	80	1100	1300	40	45	800	1100
Max. temperature applicable #1 (℃)	130				150 [280]		150 [280]		150		150	
Min. temperature applicable #1 (℃)	-20				-30 [-80]		-30 [-80]		-30		-30	
Max. liquid specific gravity	1.1(MA25) 2(MA60)		1.1		2		2		2		2	
Max. liquid viscosity (mPa·s,cP)	50				100		300		100		300	
Design pressure (mPaG)	0.6				0.6 [1.0 1.0](MMP21:1.0)		1.0 , 1.2 , 1.6 #4		0.6		1.0 , 1.2 #5	
Bore <suction x discharge> (mm)	14x12		14x13		15x15~25x20		25x20~80x50		15x15		25x20~80x40	
Piping connection (Flange standard)	R thread				R thread		JIS 10K RF		R thread		JIS 10K RF	
					NPT thread		ASME 150LB RF		NPT thread		ASME 150LB RF	
					#2							
Type of impeller	Open type		Closed type		Closed type		Closed type		Open type		Open type	
Motor output rating (or Rated motor output)	25/60W		60/90W		200~550W		0.75~15kW		200 , 400W		0.75~15kW	
(Synchronized) number of revolution (rpm)	3000/3600				3000/3600		3000/3600		3000/3600		3000/3600	
Material for pump body: SCS13(SUS304)	O				O		O		O		O	
Material for pump body: SCS14(SUS316)	-				O		O		O		O	
Material for pump body: ALLOY20	-				-		O		-		O	
Material for pump body: Hastelloy C equivalent	-				-		O		-		O	
Number of pump type	2	2			3 [3 3]		15 [15 15]		1		8	
Remarks					#3				Low NPSH model		Low NPSH model	
Typical type (or model)												

Pump Type	Vertical In-Line						Jacketed Casing		Regenerative turbine vane		Self Priming Regenerative turbine vane				Pump Type
	MPCP						MPJ [MHJ]		MSW [MHW]		MCK				
	25		250~502		8515,8520						201		251		
Frequency (Hz)	50	60	50	60	50	60	50	60	50	60	50	60	50	60	Frequency (Hz)
Max. total head (m)	9	13	36	55	14	20	40	58	65	90	20	20	30	30	Max. total head (m)
Max. capacity (ℓ /min)	90	100	350	350	700	900	300	300	45	50	6	14	6	14	Max. capacity (ℓ /min)
Max. temperature applicable #1 (℃)	150						150 [280]		150 [230]		80				Max. temperature applicable #1 (℃)
Min. temperature applicable #1 (℃)	-30						-30		-30		0				Min. temperature applicable #1 (℃)
Max. liquid specific gravity	2						2		2		1.1				Max. liquid specific gravity
Max. liquid viscosity (mPa·s,cP)	100		300		300		300		50		30				Max. liquid viscosity (mPa·s,cP)
Design pressure (mPaG)	0.6		1.0		1.2		PUMP:1.0 JACKET:1.2		1.6		0.6				Design pressure (mPaG)
Bore <suction x discharge> (mm)	25x25		25x25~50x50		80x50		25x20~50x40		15x15~25x25		20x20		25x25		Bore <suction x discharge> (mm)
Piping connection (Flange standard)	JIS 10K RF						JIS 10K RF		Rc thread		Rp thread				Piping connection (Flange standard)
	ASME 150LB RF						ASME 150LB RF		JIS 10K RF						
									ASME 150LB RF						
Type of impeller	Closed type						Closed type		Cascade type		Cascade type				Type of impeller
Motor output rating (or Rated motor output)	400W		0.75~3.7kW		2.2~5.5kW		0.75~3.7kW		0.75~3.7kW		400W		750W		Motor output rating (or Rated motor output)
(Synchronized) number of revolution (rpm)	3000/3600				1500/1800		3000/3600		3000/3600		3000/3600				(Synchronized) number of revolution (rpm)
Material for pump body: SCS13(SUS304)	O						O		-		O				Material for pump body: SCS13(SUS304)
Material for pump body: SCS14(SUS316)	O						O		O		-				Material for pump body: SCS14(SUS316)
Material for pump body: ALLOY20	-						O		-		-				Material for pump body: ALLOY20
Material for pump body: Hastelloy C equivalent	-						O		-		-				Material for pump body: Hastelloy C equivalent
Number of pump type	1		4		2		4 [4]		4 [4]		1		1		Number of pump type
Remarks	In-line pump						Jacketed pump				Self priming				Remarks
Typical type (or model)															Typical type (or model)

When your requirements exceed the above specifications, please consult factory.
#1. When temperatures fluctuate between extreme high and low please consult factory.
#2. >230℃, Flange Fitting(JIS 10K RF/ASME 150LB RF).
#3. >230℃, No Casing Drain.
#4. Design pressure : 1.0MPaG(210, 220, 221, 222, 420, 541, 542) / 1.2MPaG(4220, 4220LF, 5430, 8415, 8420, 8515) / 1.6MPaG(5225LF)
#5. Design pressure : 1.0MPaG(220, 221, 222, 420, 542) / 1.2MPaG(4220LF, 5430, 8415)

Heavy Duty Series, Family of Stainless Steel Magnetic Drive Pump

META SERIES

TYPE MET

Motor output :
Max.110kW

TYPE MTFO

Motor output :
Max.22kW

The use of monitor is recommended.

TYPE MPM2 522

Multi-stage magnetic drive volute pump

That ensures marvelous performance.
Large flow 250 ℓ /min, High head 100m(60Hz)

The monitor protects the pump from cavitation and dry run.

Pump Protector DRN

Operation

Monitor measures irregular pumping conditions such as dry run, shut off, cavitation or de-couple operation. A built in relay shuts down the motor/pump when power is below the established setting. (Other optional devices are available)

SANWA PUMP

MANUFACTURER SANWA HYDROTECH CORPORATION

鈞能實業有限公司
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FAX:(07)823-2238
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