

TYPE MMP

SEALLESS

SMALL STAINLESS STEEL MAGNET DRIVE PUMPS FOR EQUIPMENT USE

Motor output :

90W to 550W

[Highly reliable
block-building structure]

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.



Small size magnet drive pump

TYPE MMP -30°C~+150°C (MMP10:-20°C~+130°C)

90W/200W/400W/550W

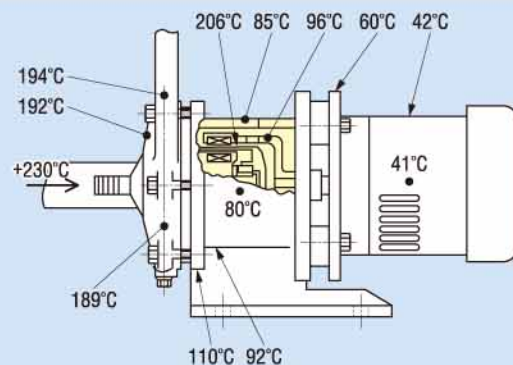


For liquid of high temperature

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)



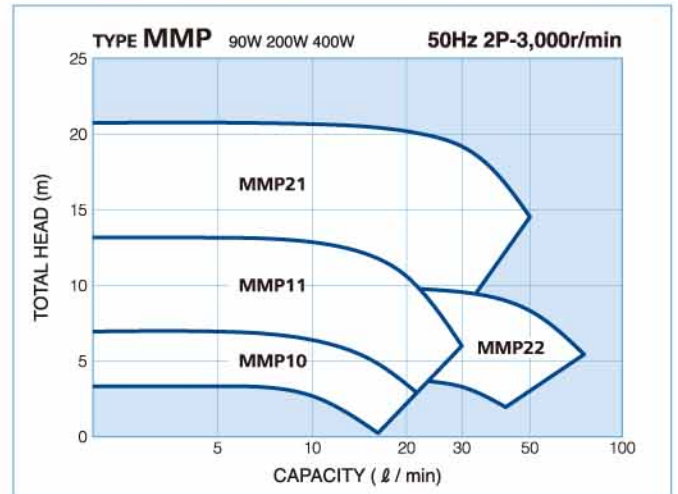
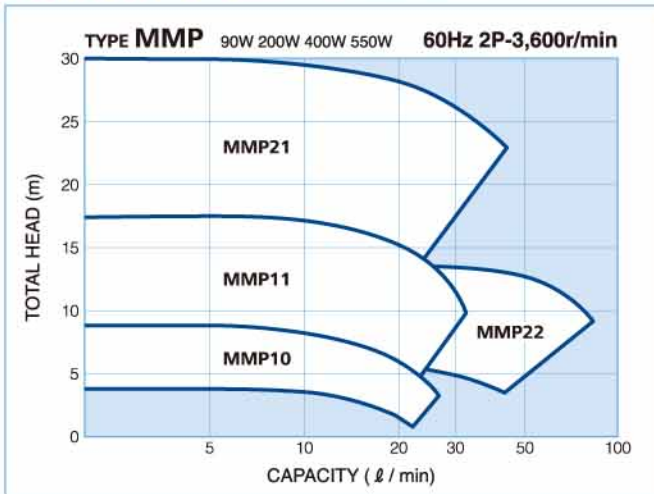
For liquid of low temperature

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.

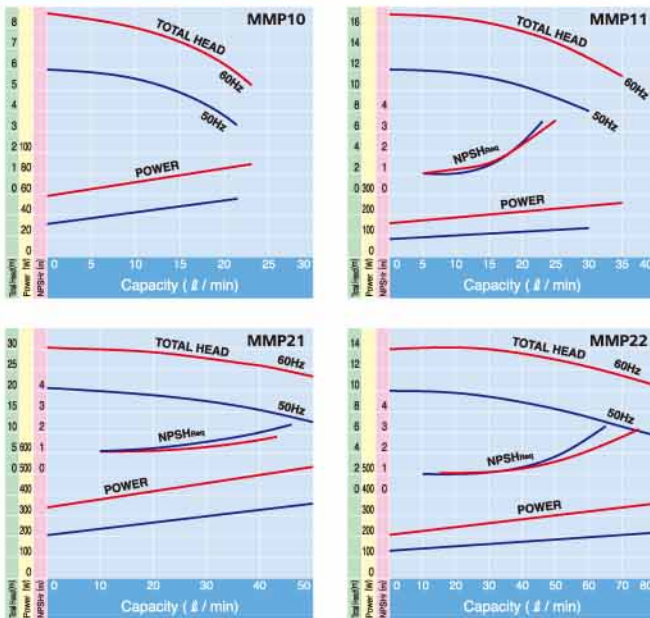


Selection charts



Performance curves

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



Legend: Total Head(m) (blue), Power(W) (red), NPSHreq(m) (green)

Specifications

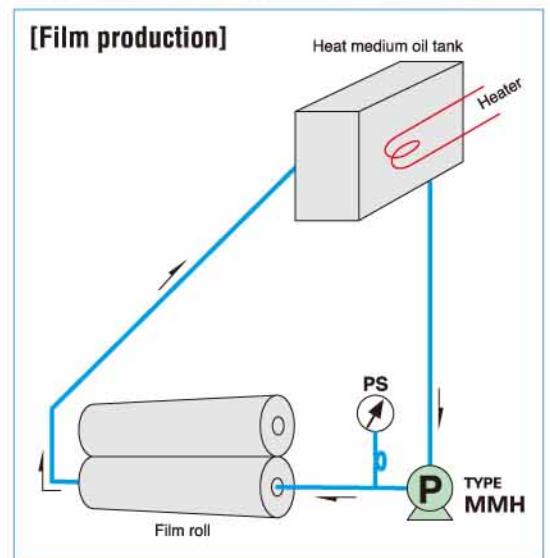
	MMP	MMH	MML
Frequency	50Hz		60Hz
Max. total head	20m		28m
Max. capacity	80 ℓ / min		80 ℓ / min
Max. temperature applicable	150°C(MMP10:130°C)	280°C	150°C
Min. temperature applicable	-30°C(MMP10:-20°C)	RT	-80°C
Max. liquid specific gravity	2		
Max. liquid viscosity	100mPa·s(cP)		
Design pressure	0.6MPaG (MMP21:1.0MPaG)		1.0MPaG
Bore (suction x discharge)	15x15mm ~ 25x20mm		
Flange standard	R thread / NPT thread		
Type of impeller	Closed		
Motor output rating	90W ~ 550W(2P)		200W ~ 550W(2P)
Pump material	SCS14(SUS316)		
Liquid-immersed bearings	SIC-D		

The performance curves for MMH and MML are same as MMP.
 # MMP10 is only for standard use (-20°C~+130°C).
 # MMP21 is only for standard use (1.0MPaG).
 # 0.55kW Motor is only TEFC.

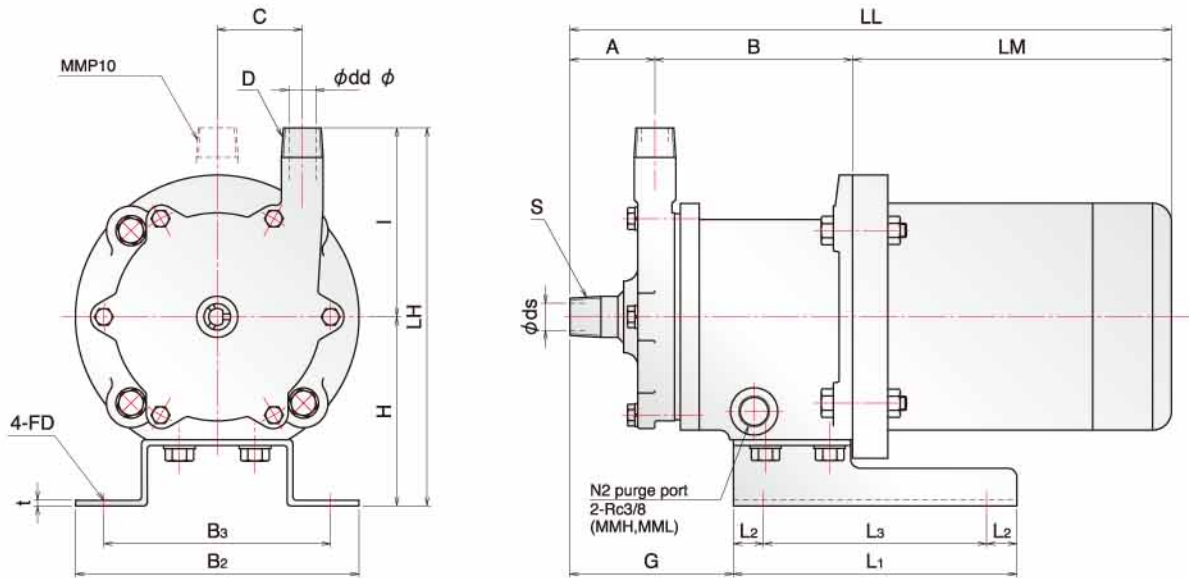
List of applications

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



Outline dimension

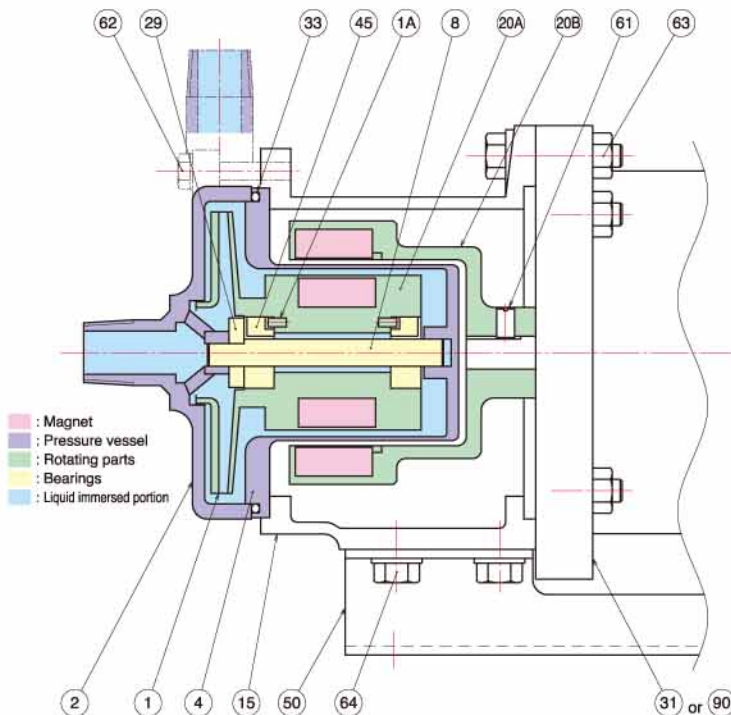


(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR							BASE PLATE						WEIGHT APPROX(kg)					
	FRAME SIZE	OUTPUT (W)	SUCT ds	DISCH S	DISCH dd	D	A	B	C	H	I	LH	LM	LL	G	L ₁	L ₂	L ₃	B ₂	B ₃	t	FD	PUMP	MOTOR	TOTAL
MMP10	-	90	15	R1/2	13	R1/2	45	118	0	65	70	135	120	283	60	90	15	60	110	95	6	$\phi 9$	6.8	2.5	9.3
	-	150	15	R1/2	13	R1/2	45	118	0	65	70	135	298	60	90	15	60	110	95	6	$\phi 9$	6.8	3.2	10.0	
MMP11	63M	200	15	R1/2	15	R1/2	45	104	45	100	100	200	209	358	86	150	16	118	150	120	3	$\phi 9.5$	8.0	8.0	16.0
	71M	400	15	R1/2	15	R1/2	45	111	45	100	100	200	231	387	(70)	150	16	118	150	120	3	$\phi 9.5$	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	$\phi 9.5$	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	$\phi 9.5$	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



31(90)	SPACER #2	SS400(SUS304)	1
64	BOLT WITH WASHER	SUS304	4 ^S
63	BOLT WITH WASHER	SUS304	4 ^S
62	BOLT WITH WASHER	SUS304	6 ^S
61	SET SCREW	SCM435	1
50	BASE #1	SUS304	1
45	BUSHING	SIC-D	2
33	O RING #4	PTFE	1
29	THRUST RING	SiC	1
20B	MAGNET	RARE EARTH	1 ^S
	MAGNET COUPLING(M)	FCD	1
20A	MAGNET	RARE EARTH	1 ^S
	MAGNET COUPLING(P)	SUS316	1
15	FRAME ADAPTER #1 #3	FC200	1
8	SHAFT	SIC	1
4	REAR CASING	SUS316	1
2	CASING	SCS14	1
1A	PIN	SUS316	2
1	IMPELLER	SCS14	1
MARK	NAME OF PART	MAT'L	No.REQ'D

#1. With MMP10, frame adapter (15) and base (50) come in one body.

#2. Spacer (31) is attached to MMP10 only.

Spacer (90) is attached to MMH and MML.

#3. Frame adapter (15) for MMH and MML comes in SCS13.

#4. ORING (33) for MMH and MML comes in GASKET.