TYPE MMP

SEALLESS

SMALL STAINLESS STEEL MAGNET DRIVE PUMPS FOR EQUIPMENT USE

Motor output :

90W 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 magnet drive pump

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

90W/200W/400W/550W

For liquid of low temperature

TYPE MML -80°C~+150°C 200W/400W/550W

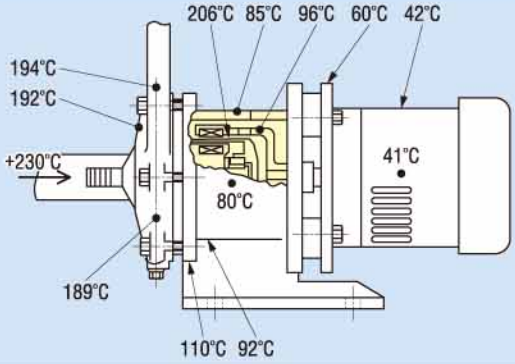
- Sealed spacer protects motor from excess cold temperatures.
- Nd magnets and low temperature gasket material is used in these pumps.
- Nitrogen purge port is provided to prevent moisture from freezing in the frame adapter.

For liquid of high temperature

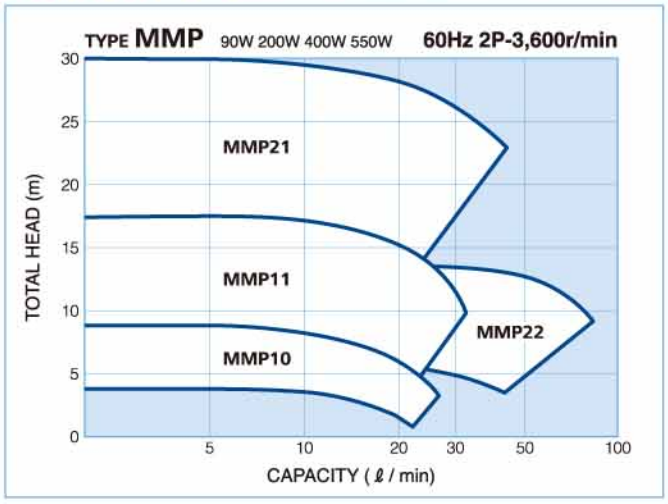
TYPE MMH RT~+280°C 200W/400W/550W

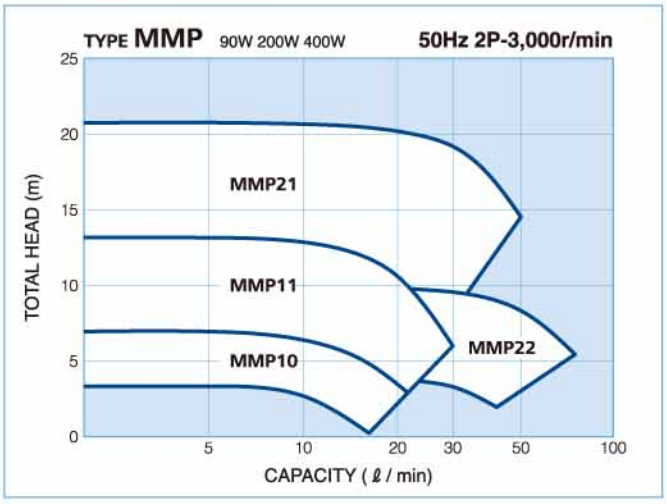
- Open spacer between pump and motor eliminates excess heat transfer to motor.
- For high temperatures, SmCo magnets and high temperature gasket material are used.
- High pressure containment is standard on these models.
- >230°C, Flange Fitting and No Casing Drain.

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



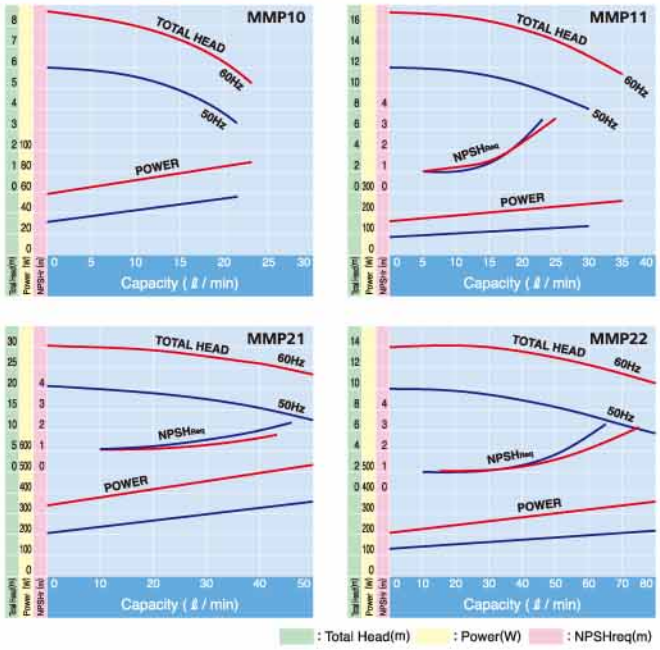
Selection charts





Performance curves

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



Specifications

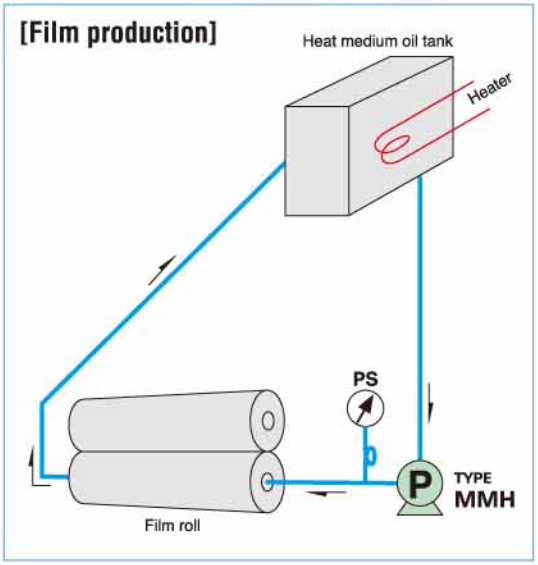
	MMP	MMH	MML
Frequency	50Hz		60Hz
Max. total head	20m		28m
Max. capacity	80 ℓ /min		80 ℓ /min
Max. temperature applicable	150°C(MMP10:130°C)	280°C	150°C
Min. temperature applicable	-30°C(MMP10:-20°C)	RT	-80°C
Max. liquid specific gravity	2		
Max. liquid viscosity	100mPa·s(cP)		
Design pressure	0.6MPaG (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.

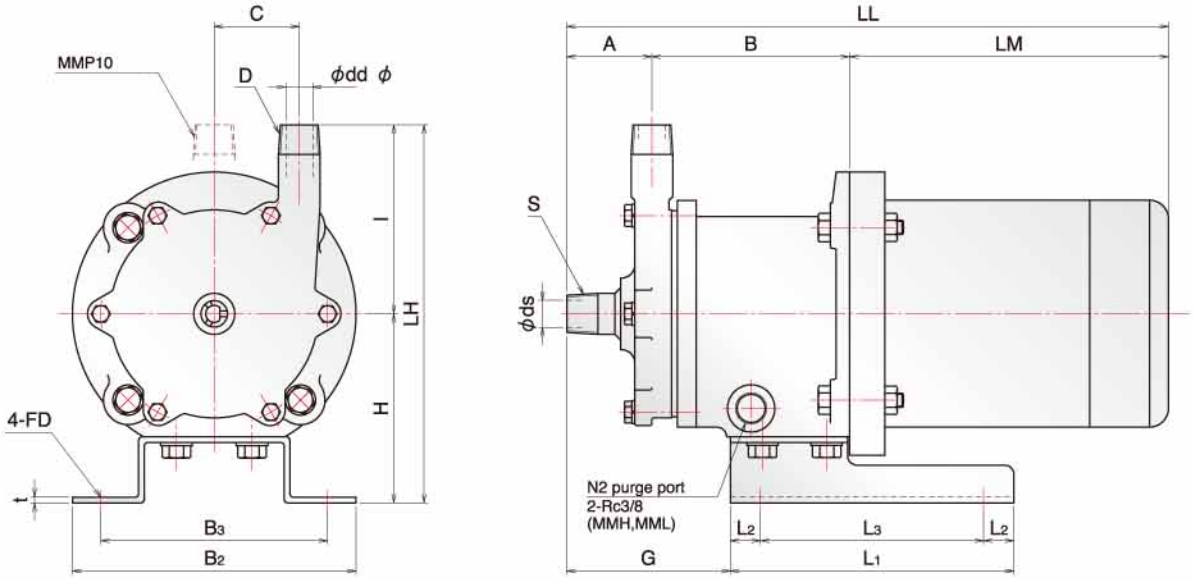
List of applications

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

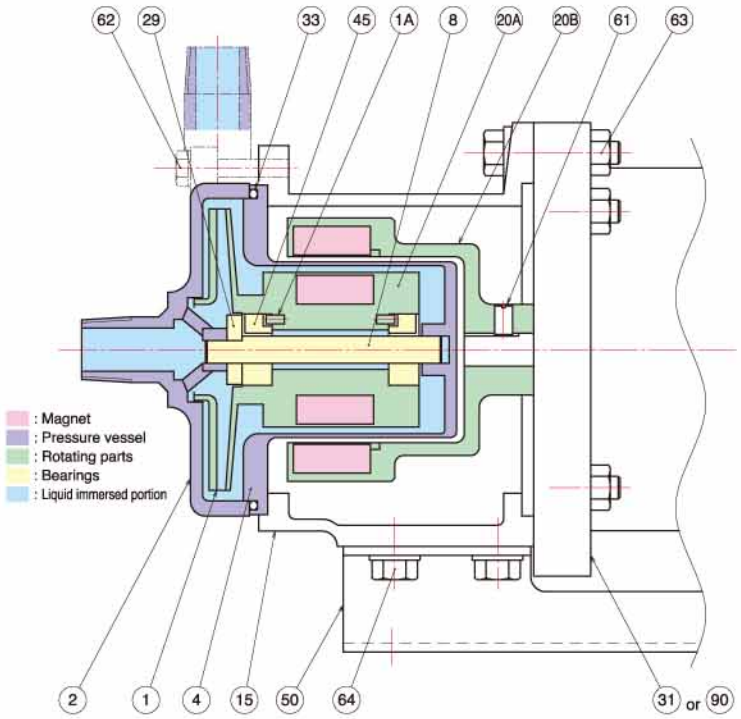


(In the unit of mm)

PUMP SIZE	MOTOR		BORE				PUMP & MOTOR								BASE PLATE								WEIGHT APPROX(kg)		
	FRAME SIZE	OUTPUT (W)	SUCT ds	SUCT S	DISCH dd	DISCH D	A	B	C	H	I	LH	LM	LL	G	L1	L2	L3	B2	B3	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	ϕ9	6.8	2.5	9.3
	-	150											135	298									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	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
31(90)	SPACER #2	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 #1	SUS304	1
45	BUSHING	SiC-D	2
33	O RING #4	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)	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

#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.