

## Electric Pumps

### ■ List of the discharge volume by each model

Type	Maximum operating pressure (MPa)		Discharge volume (L/min) (50Hz)
One-stage type	MP-4	High pressure 70	0.4L/min
	MP-6		0.75L/min
	MP-12H		1.5L/min
	MP-15H		2.5L/min
	MP-17H		5.0L/min
	MP-20H		10.0L/min
	RP1.5		1.5L/min
	RP2.5		2.5L/min
	RP5.0		5.0L/min
	RP10		10.0L/min
Two-stage type	SMP-30	High pressure 70	0.2L/min
		Low pressure 1.5	2.0L/min
	SMP-40	High pressure 70	0.4L/min
		Low pressure 1.5	3.0L/min
	MP-5	High pressure 70	0.4L/min
		Low pressure 3	2.0L/min
	MP-10	High pressure 70	0.9L/min
		Low pressure 8	6.5L/min
	MP-12	High pressure 70	1.5L/min
		Low pressure 8	8.5L/min
	MP-15	High pressure 70	2.5L/min
		Low pressure 6	20.0L/min
	MP-17	High pressure 70	5.0L/min
		Low pressure 6	40.0L/min
	MP-20	High pressure 70	10.0L/min
		Low pressure 6	70.0L/min

※The above table shows the figures at 50 Hz.

### ■ Precautions for electric pumps

- ⚠ Carefully check the increase in oil temperature when the pump is used continuously.
- ⚠ The oil temperature should be kept between 0°C and 60°C. Usage exceeding the appropriate oil temperature range could cause troubles and accidents. The optional oil cooler should be used depending on the conditions of use.
- ⚠ The ambient temperature should be kept between 0°C and 40°C.
- ⚠ When the pump is used continuously, the normal pressure should be set between 70% and 80% of the pump's maximum operating pressure.
- ⚠ ISO VG 32 hydraulic oil should be used for the pumps up to MP-15 (3.7 kW), and ISO VG 46 hydraulic oil should be used for large-size electric pumps of MP-17 (7.5 kW) or larger.
- ⚠ Consult us if using hydraulic oil other than general hydraulic oil.
- ⚠ The hydraulic oil should be replaced immediately if dust enters, or the oil smells, turns milk-white due to the inclusion of water, or turns blackish-brown due to deterioration. In other any cases, the oil should be replaced once a year in principle.
- ⚠ The electric pumps must not be used in places where serious damage could result if the hydraulic oil is dispersed. In particular, they must not be used near fire as this could cause injury or fire, etc.

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