



# Selection of PM Motors

## ■ Selection of Magnet (1)

We provide three different materials for magnets, the choice depending on the necessary torque and rotor inertia requirements, etc. Please note that the price of magnets varies depending on the material. In principle, we make the selection of material ourselves, doing our very best to keep prices low while ensuring the necessary torque. Of course, you, as our customer, can also specify the magnet material that you require. We have two methods of assembling the rotor - adhesive type, or plastic molding - and the selection of method is based on a consideration of the difference in cost and manufacturing technology. Depending on the assembly method used, there are variations in cost and rotor inertia.

### Combination of Motor Size and Magnet Material

- MSPL ----- Ferrite plastic magnet
- MS50 ----- Polar anisotropy ferrite sintered magnet
- MS70 ----- ~~N~~-Fe-B bonded magnet

	MSPL	MS50	MS70
PM10S			
PM15S			
PM20S			
PM20L			
PM25S			
PM25L			
PM35S			
PM35L			
PM42S			
PM42M			
PM42L			
PM55L			

### ■ Selection of Magnet (2)

The differences in torque arising from the choice of magnet material are roughly as shown below.

The figures are shown as an index conversion value where MS50 is 100.

MSPL	75
MS50	100
MS70	115



### Standard Inertia for Each Motor Size

[g·cm<sup>2</sup>]

	MSPL	MS50		MS70	
		MOLD	ADHESIVE	MOLD	ADHESIVE
PM10S					0.02
PM15S					0.04
PM20S					0.30
PM20L					0.43
PM25S			0.72		0.67
PM25L			1.17		0.88
PM35S	2.86		4.84	2.85	3.51
PM35L	5.15	7.75	7.81	4.47	5.79
PM42S	8.1	11.37	13.91	7.36	10.26
PM42M	8.01	14.36		7.03	
PM42L	12.91	22.09	22.82	11.08	18.53
PM55L	41.3	80.02	92.14	33.2	60.13

\* For MS50 and MS70, the mold type is the standard specification. An adhesion type is applied only at the demand on characteristic (a big inertia is needed) etc., while it becomes factor a cost-up.