

**STARTING (2RZ-FE, 3RZ-FE)**

SS04B-01

**SERVICE DATA**

Starter (1.4 kW type)	Rated voltage and output power		12 V 1.4 kW
	No-load characteristics	Current	90 A or less at 11.5 V
		rpm	3,000 rpm or more
	Brush length	STD	15.5 mm (0.610 in.)
		Minimum	10.0 mm (0.394 in.)
	Spring installed load	STD	17.6 – 23.5 N (1.79 – 2.41 kgf, 3.9 – 5.3 lbf)
		Minimum	11.8 N (1.2 kgf, 2.6 lbf)
	Commutator Diameter	STD	30 mm (1.18 in.)
		Minimum	29 mm (1.14 in.)
	Undercut depth	STD	0.6 mm (0.024 in.)
		Minimum	0.2 mm (0.008 in.)
	Circle runout	Maximum	0.05 mm (0.0020 in.)
	Magnetic switch		
Contact plate for wear	Maximum	0.9 mm (0.035 in.)	
Starter (2.0 kW type)	Rated voltage and output power		12 V 2.0 kW
	No-load characteristics	Current	100 A or less at 11.5 V
		rpm	2,500 rpm or more
	Brush length	STD	15.0 mm (0.591 in.)
		Minimum	9.0 mm (0.355 in.)
	Spring installed load	STD	21.5 – 27.5 N (2.19 – 2.81 kgf, 4.9 – 6.2 lbf)
		Minimum	12.7 N (1.3 kgf, 2.7 lbf)
	Commutator Diameter	STD	35 mm (1.38 in.)
		Minimum	34 mm (1.34 in.)
	Undercut depth	STD	0.7 mm (0.028 in.)
		Minimum	0.2 mm (0.008 in.)
Circle runout	Maximum	0.05 mm (0.0020 in.)	
Magnetic switch			
Contact plate for wear	Maximum	0.9 mm (0.035 in.)	
Field coil resistance	At 20°C (68°F)	1.5 – 1.9 Ω	