

ENGINE

Starting System - [2GR-FE] (Preparation) - Sienna

2GR-FE STARTING

RECOMMENDED TOOLS

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	09072-1C200	Vernier Calipers 150mm	-
	09080-1C110	Toyota Electrical Tester Set	-
	09080-2C100	Test Lead Set	-
	09905-00013	Snap Ring Pliers	-
	(09904-00090)	Claw Set	-

EQUIPMENT

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Ammeter	
Ohmmeter	
Torque wrench	
Service Wire Harness	
Sandpaper (#400)	

ENGINE

Starting System - [2GR-FE] (Service Specifications) - Sienna

2GR-FE STARTING

SERVICE DATA

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Starter assembly	Standard current	90 A or less at 11.5 V
Starter magnetic switch assembly resistance	Terminal 50 - Terminal C	Below 1 ohms
	Terminal 50 - Body	Below 2 ohms
Starter armature assembly resistance	Segment - Segment	Below 1 ohms
	Commutator - Armature coil core	10 kohms or higher
Starter armature assembly length	Standard length	3.1 to 3.8 mm (0.122 to 0.149 in.)
Starter commutator end frame assembly resistance	Positive (+) brush holder - Negative (-) brush holder	10 kohms or higher
Starter commutator end frame assembly length	Standard length	4.0 to 9.0 mm (0.158 to 0.354 in.)
Engine switch	Standard resistance 7 - 5 (Not pushed) 2 - 5 (Not pushed)	10 kohms or higher
	Standard resistance 7 - 5 (Pushed) 2 - 5 (Pushed)	Below 1 ohms
Ignition switch	Standard resistance Between all terminals	10 kohms or higher (LOCK)
	Standard resistance 2 - 3	Below 1 ohms (ACC)
	Standard resistance 2 - 3 - 4	Below 1 ohms (ON)
	Standard resistance 6 - 7	
	Standard resistance 1 - 2 - 4	Below 1 ohms (START)
	Standard resistance 6 - 7 - 8	
Starter relay	Standard resistance 3 - 5	Standard resistance 10 kohms or higher
		Below 1 ohms (when battery voltage applied to terminals 1 and 2)

TORQUE SPECIFICATIONS

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Part Tightened	N*m	kgf*cm	ft.*lbf
Terminal C x Lead wire	10	102	7
Starter assembly x Automatic transaxle assembly	37	377	27
Starter wire x Starter assembly	9.8	100	87 in.*lbf
Starter yoke assembly x Repair service starter kit	6.0	61	53 in.*lbf
Magnetic switch assembly x Repair service starter kit	7.5	76	66 in.*lbf