



Engine Electrical System

General Information



Specifications

Starting system

Engine / Transaxle			J3 TCI Diesel	
Item			M/T	A/T
	Type		Pre-engaged drive	
Starter motor	Output	(V-KW)	12-2.2	

Charging system

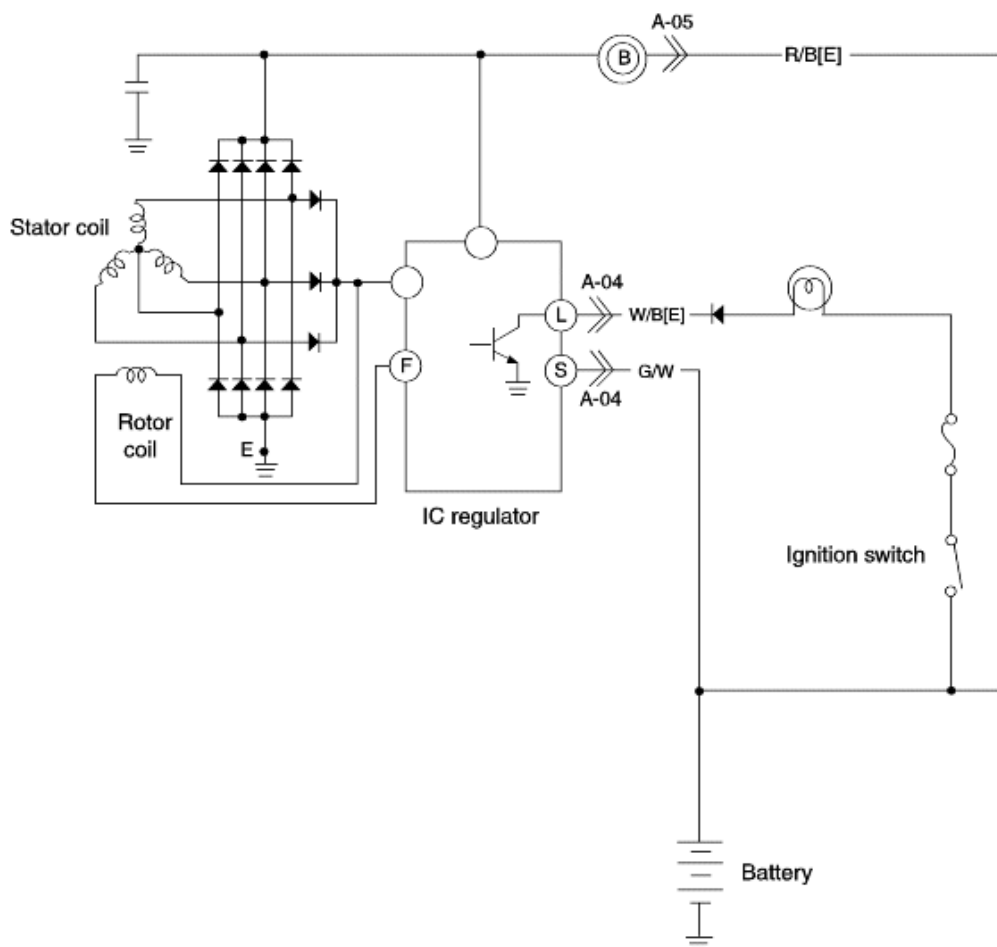
Engine/Transaxle			J3 TCI Diesel	
Item			M/T	A/T
Battery	Voltage	(V)	12V-negative	
	Type		□ PT80-33FL MF	
	Capacity (20 hour rate)	(AH)	□ 80AH	
Alternator	Type		AC	
	Output	(V-A)	12-110	
	Regulator type		Transistorized (Built-in IC regulator)	
	Regulator voltage	(V)	14.1-14.7	

Engine Electrical System

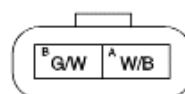
Charging System - Alternator



Circuit diagram



A-04 Alternator (B)



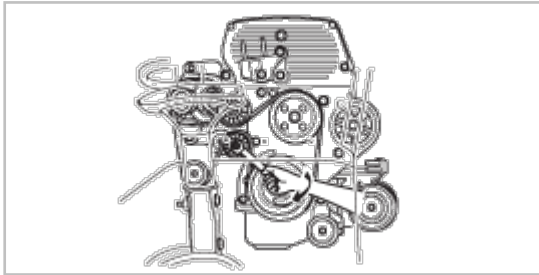
A-05 Alternator (B)



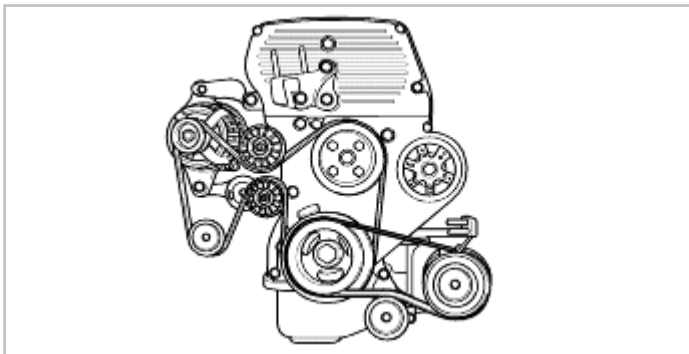


Removal and replacement

1. Disconnect negative battery cable.
2. Lower an auto tensioner with spanner and then remove drive belt.



3. Remove "B" terminal lead and then disconnect alternator "L" and "S" terminal connector.
4. Remove alternator.



5. Install in reverse order of removal.

Tightening torque :

33.2 lb·ft (45.1 N·m, 4.6 kg·m)



Engine Electrical System

Charging System - Battery



Inspection

Electrolyte level

1. Check whether or not the electrolyte level lines between "upper level" line and "lower level" line.
2. If low, add distilled water to "upper level" line.
Do not overfill.

Specific gravity of electrolyte

1. Measure specific gravity with a hydrometer.

Specific gravity :

1.27~1.29 (at 77°F [25°C])

Terminal and cable

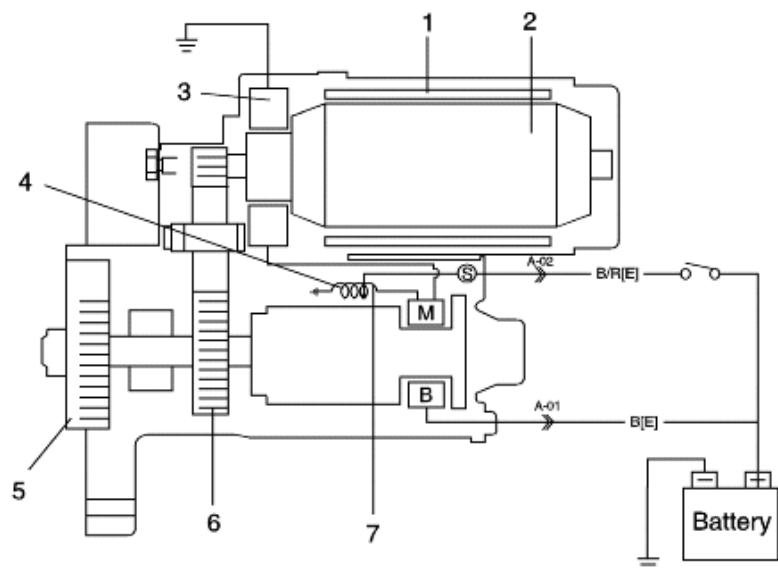
1. Check that battery terminal connections are tight to ensure good electrical connections.
2. Check for corroded or frayed battery cables.
3. Check rubber protector on positive terminal for proper coverage.
4. Clean terminals, if necessary, and lightly coat them with grease.

Engine Electrical System

Starting System - Starter

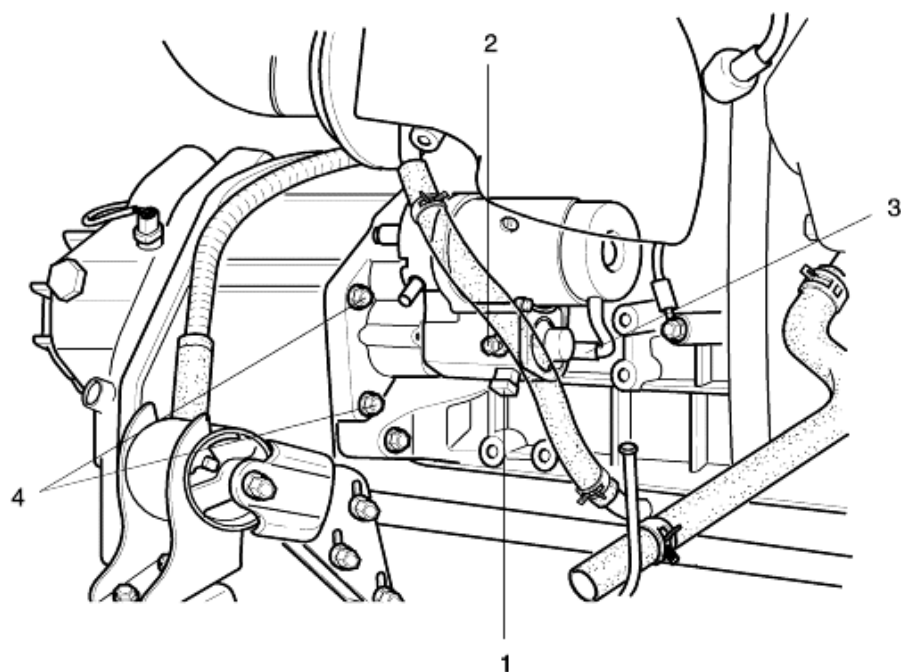


Structural view



1. Magnetic
2. Armature
3. Brush
4. Hold-in coil

5. Drive pinion
6. Reduction gear
7. Pull-in coil

**Component**

- 1. S terminal
- 2. B terminal

- 3. M terminal
- 4. Bolts



Inspection

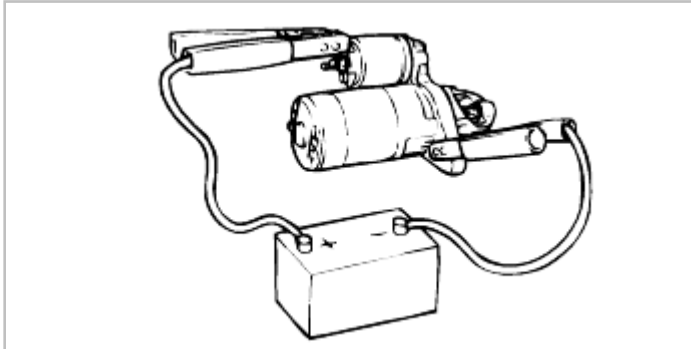
Solenoid

Pull-out test

NOTICE

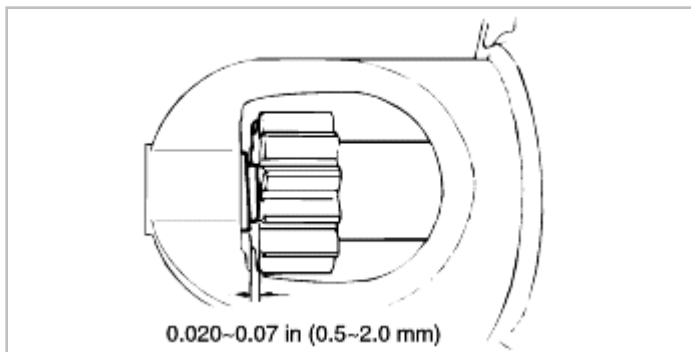
Be careful not to let electricity flow continuously for more than 10 seconds.

1. Apply battery power to the "S" terminal and ground starter motor body. Pinion will eject outward and the stop.



2. Measure clearance (pinion gap) between pinion and stopper.

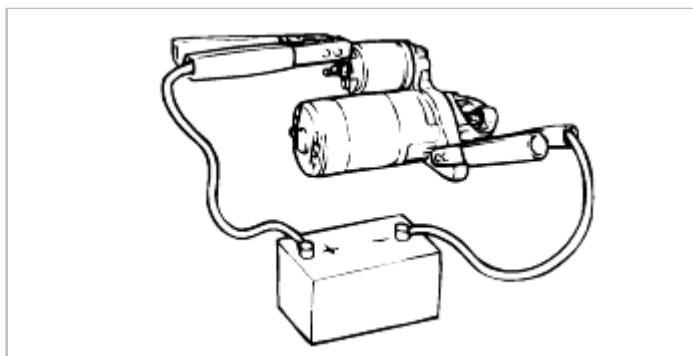
Pinion gap : 0.020~0.079 in (0.5~2.0 mm)



3. If pinion gap is not within specified range, adjust it by increasing or decreasing the number of washers used between solenoid and drive housing.
The gap will become smaller if the number of washers is increased.

Return test

1. Disconnect the wire from the "S" terminal, and then connect the battery between the "M" terminal and the body.



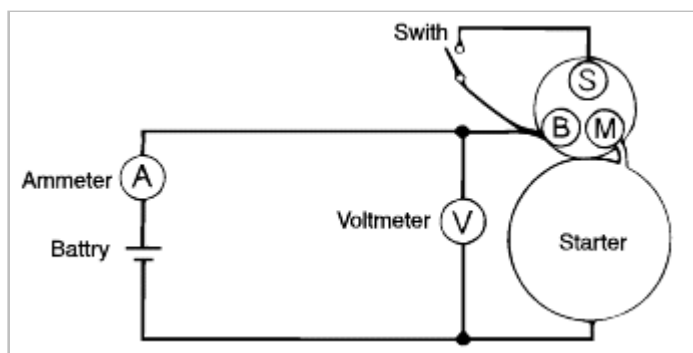
2. Pull out the over-running clutch with a flat-tip screwdriver, and then check that the over-running clutch returns to its original position when released.

No-load test

1. Form a test circuit with a volt meter and an ammeter.

NOTICE

Use wires as thick as possible and tighten each terminal fully.



2. Close switch to run the starter.
3. Check the following.

		J3 TCI
Voltage	(V)	11.0
Current	(A)	Below 130
Gear shaft speed	(rpm)	Above 4500

4. If any abnormality is noted, check it according to "INSPECTION".

Removal and replacement

1. Remove the battery negative cable.
2. Inspect the parts, replace and repair as necessary.
3. Install in the reverse order of removal.

Inspection

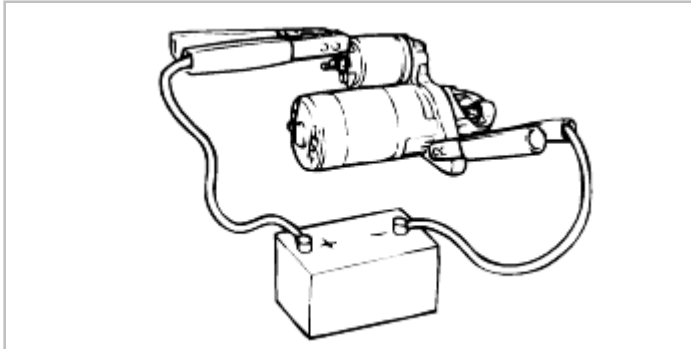
Solenoid

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NOTICE

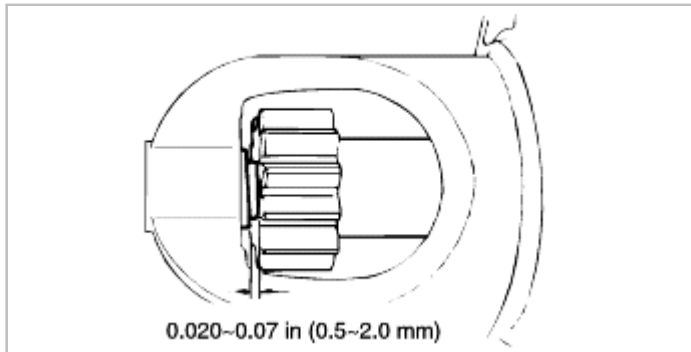
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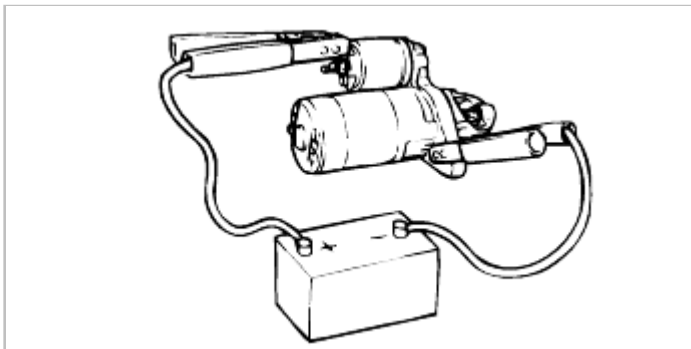
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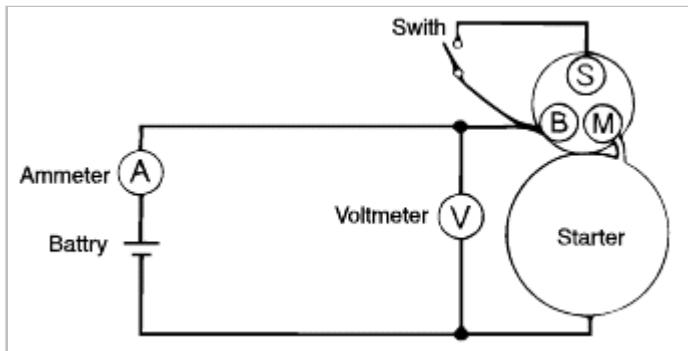
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