



**Coolant Temp Sensor  $\Omega$** 

68°F (20°C) 2.1 - 2.9 k $\Omega$   
 122°F (50°C) 0.68 - 1.00 k $\Omega$   
 194°F (90°C) 0.236 - 0.260 k $\Omega$

**O<sub>2</sub> Sen Heater 1  $\Omega$** 

At 77°F (25°C) 3.3 - 4.0  $\Omega$

**O<sub>2</sub> Sen Heater 2  $\Omega$** 

At 77°F (25°C) 5.0 - 7.0  $\Omega$

**Intake Air Temp Sensor**

77°F (25°C) 1.9 - 2.1 k $\Omega$

176°F (80°C) 0.31 - 0.37 k $\Omega$

**Crankshaft/Camshaft P/Sen POS/Phase**

At 77°F (25°C) Except 0  $\Omega$  or infinite  $\Omega$

**Fuel Tank Temp Sensor**

68°F (20°C) 2.3 - 2.7 k $\Omega$

122°F (50°C) 0.79 - 0.90 k $\Omega$

**Throttle Control Motor  $\Omega$** 

At 77°F (25°C) Approx. 1 - 15  $\Omega$

**Electrical****Ignition System**

Firing Order 1-2-3-4-5-6

**Battery Specs.**

Type USA 80D23L

Capacity (V/AH) 12 V/ 55 AH

Cold Crank Current 582 A @ 0°F (-18°C)

**Charging System**

Alternator Type **A3TG0191**

Nom. Rated Out 12 V/ 110 A

Reg. Volt 14.1 - 14.7 V

Hot Out Amp More than 37 A /1300 rpm

More than 92 A /2500 rpm

More than 103 A /5000 rpm

**VQ35DE**

**EPA Mileage Estimate**  
(city/highway)

**A/T**  
19/26

**M/T**  
20/27



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2004 G35 Sedan – VQ Engine

## **PREPARATION**

**Make sure that the following parts are in order.**

1. Battery
2. Ignition system
3. Engine oil and coolant levels
4. Fuse
5. ECM harness connector
6. Vacuum hoses
7. Air intake system (Oil filler cap, oil level, etc.)
8. Fuel pressure
9. Engine compression
10. Throttle valve
11. Evaporative emission canister purge control valve.

**Note:**

- On A/C equipped vehicles, turn A/C "Off" for testing.
- Transmission should be in "Park" or "Neutral".
- "CO" probe should be inserted into exhaust approximately 16 inches.
- Turn off headlamps, heater blower, rear defogger, etc.
- Front wheels pointed straight.
- Perform inspection with cooling fans "Off".



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# Quick Reference Specifications

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2004 G35 Sedan – A/T

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Notes

## RE5R05A

Trans Code **91x17**

**A/T Fluid Type** Nissan Matic 'J' ONLY (P/N 999MP-MTJ00P)  
**Oil Capacity** 10 7/8 qt  
**A/T Cooler Type** Fin Type Structure  
**A/T Fluid Level**

### Up-Shift Schedule Range (at normal operating temp.) mph(km/h)

	Half Throttle	Full Throttle		
D <sub>1</sub> → D <sub>2</sub>	29 - 31 (46 - 50)	36 - 39 (58 - 62)	<input type="text"/>	<input type="text"/>
D <sub>2</sub> → D <sub>3</sub>	44 - 49 (71 - 79)	56 - 61 (90 - 98)	<input type="text"/>	<input type="text"/>
D <sub>3</sub> → D <sub>4</sub>	66 - 73 (107 - 117)	84 - 90 (135 - 145)	<input type="text"/>	<input type="text"/>
D <sub>4</sub> → D <sub>5</sub>	84 - 90 (135 - 145)	125 - 131 (201 - 211)	<input type="text"/>	<input type="text"/>

### Complete Clutch Lock-Up mph(km/h)

	Lock-up ON	Lock-up OFF	
<b>Closed Throttle</b>	35 - 40 (56 - 64)	33 - 38 (53 - 61)	<input type="text"/>
<b>Half Throttle</b>	104 - 109 (168 - 176)	81 - 86 (131 - 139)	<input type="text"/>

### Slip Lock-Up mph(km/h)

	Lock-up ON	Lock-up OFF	
Slip Lock-up ON (D5)	27 - 32 (44 - 52)	25 - 30 (41 - 49)	<input type="text"/>
Slip Lock-up OFF (D4)	23 - 28 (37 - 45)	21 - 26 (34 - 42)	<input type="text"/>

### Stall Rpm

R, D, 2, 1 position 2,600 - 2,900 rpm

### Line Pressure psi(kg/cm<sup>2</sup>)

	At Curb Idle	At Stall rpm		
R - Position	57 - 64 (4.0 - 4.5)	247 - 274 (17.3 - 19.3)	<input type="text"/>	<input type="text"/>
D,M - Position	54 - 61 (3.8 - 4.3)	190 - 218 (13.3 - 15.3)	<input type="text"/>	<input type="text"/>

### Solenoid Valves

	Resistance	Pin Number	
Line Pressure Sol. Valve	3 - 9 Ω	7	<input type="text"/>
Torque Converter Clutch Sol. Valve	3 - 9 Ω	8	<input type="text"/>
Input Clutch Sol. Valve	3 - 9 Ω	6	<input type="text"/>
High & Low Rev. Clutch Sol. Valve	3 - 9 Ω	3	<input type="text"/>
Front Brake Sol. Valve	3 - 9 Ω	5	<input type="text"/>
Direct Clutch Sol. Valve	3 - 9 Ω	4	<input type="text"/>
Low Coast Brake Sol. Valve	20 - 40 Ω	2	<input type="text"/>

### A/T Fluid Temp. Sensor

Condition	ATF Temp Sensor 1	ATF Temp Sensor 2	
32° F (0° C)	2.2 V, 15 kΩ	2.2 V, 10 kΩ	<input type="text"/>
68° F (20° C)	1.8 V, 6.5 kΩ	1.7 V, 4 kΩ	<input type="text"/>
176° F (80° C)	0.6 V, 0.9 kΩ	0.45 V, 0.5 kΩ	<input type="text"/>

### Revolution Sensor

Test Condition: Use CONSULT-II pulse frequency measuring function.

Sensor. 1: Veh. Speed 31 mph in 4<sup>th</sup> gear, with closed throttle position switch "OFF".

Sensor. 2, & Rev sensor: Veh. Speed 12 mph in 1<sup>st</sup> gear, with closed throttle position switch "OFF".

<b>Turbine Rev. Sensor 1 &amp; 2</b>	1.3 kHz	<input type="text"/>
<b>Rev Sensor</b>	185 Hz	<input type="text"/>



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2004 G35 Sedan – A/T

## **PRECAUTIONS**

- Before performing any diagnostic test, vehicle should be driven for approximately 10 minutes to raise transmission to the proper operating temperature of 122° to 176°.
- During stall testing, never hold throttle wide open for more than 5 seconds at a time. Extended stall testing can overheat transmission and cause serious damage.
- Nissan **Matic 'J'** ATF is the only fluid accepted for warranty, service contracts and goodwill repairs.
- Before performing any internal repairs, thoroughly clean the outside of the transmission case to prevent contamination.
- Use lint free cloth or towels for wiping parts. Common shop towels can leave contaminating fibers on the transmission parts and cause improper transmission operation.
- When servicing the valve body, valves, sleeves, plugs, etc. should slide along the bores in the valve body under their own weight.
- Before assembly, apply a coat of ATF to all internal transmission parts. Use petroleum jelly to protect o-rings and seals, or to hold bearings and washers in place during assembly.

**Important Note:** Nissan **Matic 'J'** must be used in performing repairs paid by Infiniti for the 2003 and later G35, such as warranty, service contract, or good-will repairs. There will not be reimbursement for repairs when non-genuine Nissan **Matic 'J'** is used.



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# Quick Reference Specifications

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## FS6R31A

### Clutch

Clutch Control System	Hydraulic	<input type="checkbox"/>
Master Cyl. Inner Dia.	5/8 in (15.87 mm)	<input type="checkbox"/>
Operating Cyl. Inner Dia.	3/4 in (19.05 mm)	<input type="checkbox"/>
Clutch Disc		
(outer, inner, thickness)	9.84 x 6.69 x 0.126 in (250 x 170 x 3.2 mm)	<input type="checkbox"/>
Wear Limit	0.012 in (0.3 mm)	
Runout Limit	0.028 in (0.7 mm) or less	<input type="checkbox"/>
	[measured at 9.45 in (240 mm) diameter]	
<b>Clutch Cover</b>	Model 250	
Set-load	880 kg (8,630 N)	<input type="checkbox"/>
Diaphragm spring		
Lever height	1.555 - 1.634 in (39.5 - 41.5 mm)	<input type="checkbox"/>
Uneven limit of diaphragm		
spring toe height	0.02 in (0.5 mm)	<input type="checkbox"/>
Clutch Pedal		
Clearance "C"	0.004 - 0.039 in (0.1 - 1.0)	

### Refill Capacity (75W-85 API GL-4)

FS6R31A 3-1/4 qt

### Gear End Play

Counter gear	0.0 - 0.004 in (0.0 - 0.1 mm)	<input type="checkbox"/>
Main drive gear	0.0 - 0.004 in (0.0 - 0.1 mm)	<input type="checkbox"/>
Main shaft front side	0.0 - 0.004 in (0.0 - 0.1 mm)	<input type="checkbox"/>
Main shaft rear side	0.0 - 0.004 in (0.0 - 0.1 mm)	<input type="checkbox"/>

### Clearance Between Baulk Ring And Gear

	Standard	Wear Limit	
1st 3rd, & 4th gear Inner (A)	0.02 - 0.028 in (0.5 - 0.7 mm)	0.012 in (0.3 mm)	<input type="checkbox"/>
1st gear Outer (B)	0.039 - 0.059 in (1.0 - 1.5 mm)	0.028 in (0.7 mm)	<input type="checkbox"/>
3rd, & 4th gear (B)	0.033 - 0.059 in (0.85 - 1.35 mm)	0.028 in (0.7 mm)	<input type="checkbox"/>
2nd gear Inner (A)	0.02 - 0.028 in (0.5 - 0.7 mm)	0.012 in (0.3 mm)	<input type="checkbox"/>
2nd gear Outer (B)	0.02 - 0.028 in (0.5 - 0.7 mm)	0.012 in (0.3 mm)	<input type="checkbox"/>
2nd Main gear taper cone (C)	0.028 - 0.049 in (0.7 - 1.25 mm)	0.012 in (0.3 mm)	<input type="checkbox"/>
5th & 6th Gear	0.028 - 0.049 in (0.7 - 1.25 mm)	0.02 in (0.5 mm)	<input type="checkbox"/>
Reverse	0.03 - 0.047 in (0.75 - 1.2 mm)	0.02 in (0.5 mm)	<input type="checkbox"/>

### Snap Rings

See service manual MT section, "Service Data and Specifications (SDS) for details.



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2004 G35 Sedan – M/T

## **PRECAUTIONS**

- Infiniti does not recommend flywheel resurfacing. If flywheel is not within specification, replacement is recommended.
- Refill transmission with the proper viscosity and amount of gear lube for the anticipated temperatures.
- To help prevent clutch judder, avoid excessive grease to clutch disc splines, input shaft and throwout bearing. Be sure to clean off any excessive grease.
- On rear wheel drive vehicles, inspect the shift control lever bushing for wear and proper alignment prior to reinstallation of a removed transmission.
- To avoid transmission contamination, inspect the shift lever dust boot for cracks or damage, and replace if needed. Install plastic wire ties to insure a tight fit of the boot to the shifter and housing.
- Before reinstallation of a removed transmission, inspect the engine to transmission alignment dowels for damage. Damaged dowels can cause misalignment of the engine to transmission, and this can cause the transmission to jump out of gear.



2004 G35 Sedan – Heater & A/C

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**AIR CONDITIONER**

**Compressor**

Make Calsonic Kansei V-6  
Type V-6 Variable Displacement

**Compressor Clutch**

Disc-to-Pulley Clearance 0.012 - 0.024 in (0.25 - 0.60 mm)

**Refrigerant**

Type HFC-134a (R134a)  
Capacity 1.21 lb (.55 kg)

**Refrigerant Oil**

Type Nissan Type "S" Lub.  
Capacity 6.0 fl oz  
Oil to AddPer  
Evaporator 2.5 oz (75 ml)  
Condenser 1.2 oz (35 ml)  
\*Liquid Tank 0.3 oz (10 ml)  
Large Refrig. Leak 1.0 oz (30 ml)  
Compressor  
(\*Add only if comp. is not replaced.)

**Engine Idle w/A/C On**

(in Neutral) 775 rpm or more

**Performance Test**

**Recirculating-to-Discharge Air Temp**

Relative Humidity	Recirc. Air Temp. at Blower Assy. Inlet	Discharge Air Temp. at Center Ventilator		
	F° (C°)	F° (C°)		
50 - 60 %	68°(20°)	43 - 46° (6.1 - 7.8°)	<input type="text"/>	<input type="text"/>
	77°(25°)	48 - 52° (8.8 - 11.0°)	<input type="text"/>	<input type="text"/>
	86°(30°)	54 - 59° (12.1 - 15.0°)	<input type="text"/>	<input type="text"/>
	95°(35°)	62 - 68° (16.5 - 19.8°)	<input type="text"/>	<input type="text"/>
	104°(40°)	71 - 78° (21.8 - 25.4°)	<input type="text"/>	<input type="text"/>
60 - 70 %	68°(20°)	46 - 49° (7.8 - 9.6°)	<input type="text"/>	<input type="text"/>
	77°(25°)	52 - 56° (11.0 - 13.3°)	<input type="text"/>	<input type="text"/>
	86°(30°)	59 - 64° (15.0 - 17.8°)	<input type="text"/>	<input type="text"/>
	95°(35°)	68 - 74° (19.8 - 23.1°)	<input type="text"/>	<input type="text"/>
	104°(40°)	78 - 84° (25.4 - 29.1°)	<input type="text"/>	<input type="text"/>

**Ambient Air Temp-to-Operating Pressure**

Air temperature F° (C°)	Relative Humidity 50-70%			
	High-pres.	Low-pres.		
68°(20°)	117 - 144 psi	26 - 33 psi	<input type="text"/>	<input type="text"/>
77°(25°)	146 - 179 psi	28 - 35 psi	<input type="text"/>	<input type="text"/>
86°(30°)	174 - 213 psi	32 - 38 psi	<input type="text"/>	<input type="text"/>
95°(35°)	182 - 223 psi	36 - 44 psi	<input type="text"/>	<input type="text"/>
104°(40°)	203 - 249 psi	41 - 50 psi	<input type="text"/>	<input type="text"/>



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2004 G35 Sedan – Heater & A/C

## **PERFORMANCE TEST CONDITIONS**

- Vehicle indoors or in the shade
- Doors closed
- Windows open
- Hood open
- Temperature on "Max" setting
- Discharge air on "Face Vent"
- Recirculation switch on "Recirc"
- Fan speed on "High"
- A/C switch "On" and verify A/C Clutch engagement
- Engine speed at idle
- Operate the A/C system for 10 minutes before taking measurements

### **Precautions:**

1. When removing the compressor, store it in the same position as it is mounted in the vehicle. Failure to do so may cause lubricant to enter the low pressure chamber and cause compressor damage.
2. Allow components stored in cool areas to warm to area temperatures before removing seals. This prevents condensation from forming inside A/C components.



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# Quick Reference Specifications

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2004 G35 Sedan – Suspension

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## WHEEL ALIGNMENT (UNLADEN)

### Suspension Inspection

#### Ball Joint End Play

Axial End Play 0 in (0 mm)

#### Front Wheel Bearing

Axial End Play 0.0020 in (0.05 mm) or less

#### Rear Wheel Bearing

Axial End Play 0.0020 in (0.05 mm) or less

Wheel Runout  
Max. Lateral / Radial Runout:  
0.012 in (0.3 mm) or less

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

### Wheel arch Height (Unladen)

	Front Height (Hf)	Rear Height (Hr)
205/65 R16 (A/T)	27.99 in (711 mm)	27.68 in (703 mm)
215/55 R17 (A/T)	27.99 in (711 mm)	27.72 in (704 mm)
215/55 R17 (M/T)	27.95 in (710 mm)	27.69 in (703 mm)

<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

### Front Wheel Alignment

Toe-in	Range	Nominal
Total toe-in	0.0 - 0.08 in (0 - 2 mm)	0.04 in (1 mm)

### Front Wheel Turning Angle (full turn)

In/Wheel Range	37.5° - 40.5° (41°30' - 37°30')
In/Wheel Nominal	40.5° (40°30')
Out/Wheel Nominal	32.5° (32°30')

<input type="text"/>
<input type="text"/>
<input type="text"/>

### Camber

Range	-0.83° to 0.67 (-0°50' to 0°40')
Nominal	-0.08° (-0°05')
Lt/Rt Difference	0.75° (0°45') or less

<input type="text"/>	<input type="text"/>
<input type="text"/>	

### Caster

Range	7.00° - 8.50° (7°00' - 8°30')
Nominal	7.75° (7°45')
Lt/Rt Difference	0.75° (0°45') or less

<input type="text"/>	<input type="text"/>
<input type="text"/>	

### Kingpin Offset

Range	3.75° - 5.25° (3°45' - 5°15')
Nominal	4.5° (4°30')

### Rear Wheel Alignment

Toe-in	Range	Nominal
Total toe-in	0.0 - 0.217 in (0.0 - 5.5 mm)	0.11 in (2.8 mm)

### Camber

Range	-1.08° to -0.08° (-1°05' to -0°05')	-1.17° to -0.17° (-1°10' to -0°10')
Nominal	-0.58° (-0°35')	-0.67° (-0°40')

<input type="text"/>	<input type="text"/>
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**W/Lug Nut Torque** 72-87 ft/lb (10-12 kg/m)



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2004 G35 Sedan – Suspension

## **PRELIMINARY INSPECTION**

- Check tires for wear and proper inflation
- Check wheel runout
- Check front wheel bearings excessive play
- Check front suspension for excessive play
- Check steering linkage for excessive play
- Check struts for leakage and condition
- Check vehicle for proper ride height

### **Precautions**

1. When installing rubber parts, final tightening must be carried out under unladen conditions with the tires on the ground.
2. Recheck alignment after installing removed suspension components.



2004 G35 Sedan – Brakes

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Notes

**BRAKE SYSTEM**

Brake Model Code	<b>Front Disc Brake CLZ25VD</b>	<b>Rear Disc Brake AD14VE</b>				
<b>Brake Fluid</b>	DOT 3 (Recommended)					
<b>Master Cyl. Bore Dia.</b>	1 in (25.4 mm)		<input type="text"/>			
<b>Cylinder Bore Dia.</b>	2.252 in (57.2 mm)	1.6874 in (42.86 mm)				
<b>Brake Pad Dimensions</b>						
Length	4.94 in (125.6 mm)	3.27 in (97.4 mm)	<input type="text"/>			
Width	1.81 in (46.0 mm)	1.3 in (33.9 mm)	<input type="text"/>			
Thickness	0.43 in (11.0 mm)	0.335 in (10.0 mm)	<input type="text"/>			
<b>Brake Pad Wear Limit</b>						
Min. Thickness	0.079 in (2.0 mm)	0.079 in (2.0 mm)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Brake Rotor Dimensions</b>						
Standard Thickness	0.945 in (24 mm)	0.63 in (16 mm)	<input type="text"/>			
<b>Brake Rotor Repair/Wear Limits</b>						
Max. Runout	0.0028 in (0.07 mm)	0.0039 in (0.1 mm)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Min. Thickness	0.886 in (22.0 mm)	0.55 in (14 mm)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Max. Thk. Variation	0.0006 in (0.015 mm)	0.0006 in (0.015 mm)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Brake Pedal Dimen.</b>						
Free Height 'H'	6.34 - 6.73 in (161 - 171 mm)		<input type="text"/>			
Depressed Height 'D'	3.54 in (90 mm) or more		<input type="text"/>			
Pedal Free Play 'A'	0.12 - 0.43 in (3.0 - 11.0 mm)		<input type="text"/>			
Switch Clearance 'C'	0.0291 - 0.0772 in (0.74 - 1.96 mm)		<input type="text"/>			
<b>Brake Booster</b>	<b>Vacuum Type</b>					
Input Rod Length	4.92 in (125 mm)			<input type="text"/>		
<b>Parking Drum Brake</b>	<b>DS17HF</b>					
Inside Diameter	6.77 in (172 mm)			<input type="text"/>	<input type="text"/>	
<b>Brake Shoe Dimension</b>						
Thickness	0.126 in (3.2 mm)			<input type="text"/>	<input type="text"/>	
<b>Parking Drum Brake Repair/Wear Limit</b>						
Max Inside Diameter	6.77 in (172.0 mm)			<input type="text"/>	<input type="text"/>	
Shoe Minimum Thk.	0.059 in (1.5 mm)			<input type="text"/>	<input type="text"/>	
<b>Parking Brake Control</b>	Number of Notches 3 - 4			<input type="text"/>		
<b>Wheel Lug Nut</b>	72-87 ft lb (10-12 kg-m)					



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2004 G35 Sedan – Brakes

## **PRECAUTIONS**

1. Never reuse drained brake fluid.
2. Be careful not to splash brake fluid on painted surfaces.
3. Use clean brake fluid to clean or wash master cylinder wheel cylinders, and disc brake calipers parts.
4. Mineral oils such as gasoline and kerosene should not be used. They can cause damage to rubber parts of the hydraulic system.
5. Use flare nut wrench when removing or installing brake line fittings.
6. Always torque brake lines.
7. Always replace brake pad shims when replacing brake pads.

### **Warning:**

Clean brake pads and shoes with a dust collector to minimize the hazard of airborne particles or other materials.



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2004 G35 Sedan – Electrical

## ELECTRICAL

### Wire Color Code

B = Black	BR = Brown
W = White	OR = Orange
R = Red	P = Pink
G = Green	PU = Purple
L = Blue	GY = Gray
Y = Yellow	SB = Sky Blue
LG = Light Green	CH = Dark Brown
DG = Dark Green	

When a wire color is striped, the base color is given first, followed by the stripe color. Example L/W = Blue with white stripe

### Battery specification:

Type	80D23L
Capacity	12 V / 55 AH
Cold cranking current	582 A
Load test at 3 × AH for 15 seconds.	

### Battery charging rates:

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

Do not charge battery over 50 ampere rate.

Do not "quick charge" a fully discharged battery.

If battery electrolyte temperature rises above 140°F, stop charging.

### Starter:

Type	S114-880 Hitachi Gear reduction type
No-load current	Less than 90 A
No-load RPM	More than 2,880

### Alternator:

Type	A3TG0191 Mitsubishi
Nominal Rating	12 V / 110 A
Output current A/RPM (with 13.5 V applied)	More Than 37 / 1,300 More Than 92 / 2,500 More Than 103 / 5,000
Regulated Output Voltage	14.1 - 14.7

**Oil Pressure Switch:**

Oil pressure PSI	Engine Speed (rpm)
More Than 14	Idle
More Than 43	2000
More Than 57	6000

**Bulb Specifications:**

Exterior

Item	Wattage (12V)
Headlamp Low	35 (D2R Xenon)
Low	55 (H1 Halogen)
High/Fog	60/55 (HB2)
Front Turn Signal	21 (amber)
Rear Turn Signal	21
Parking Lamp	5
Stop/Tail Lamp	LED
Center Stop Lamp	LED
Back-up Lamp	18
Rear side marker	LED
Front side marker	3.8
License Plate Lamp	5

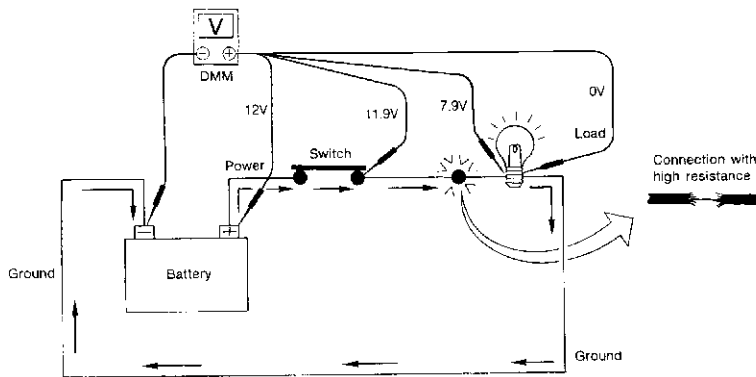
Interior

Item	Wattage (12V)
Glove box Lamp	1.4
Ignition Key Hole Lamp	1.4
Ashtray Lamp	1.4
Cigarette Lighter Lamp	1.4
Spot lamp	8
Personal Lamp	8
Step Lamp	5
Trunk Room Lamp	3.4
Vanity Mirror Lamp	1.32

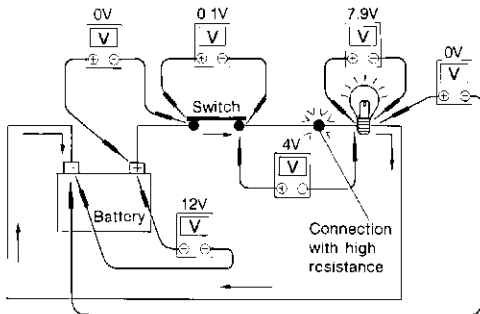
**How to perform voltage drop test: See Illustrations**

Symptom: Dim bulb or no operation

0 (zero) ohm resistance between switch and bulb



AGI069



1. Connect the voltmeter as shown, starting at the battery and working your way around the circuit.
2. An unusually large voltage drop will indicate a component or wire that needs to be repaired. In the illustration, the poor connection causes a 4 volt drop.

The chart that follows illustrates some maximum allowable voltage drops. These values are given as a guideline, the exact value for each component may vary.

COMPONENT	VOLTAGE DROP
Wire	negligible <.001 volts
Ground Connections	Approx. 0.1 volts
Switch Contacts	Approx. 0.3 volts

AGI055

2004 G35 Sedan – Electrical

## BATTERY CONDITION

### Battery Sulphation:

A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates. To determine if a battery has been sulfated, note its voltage and current when charging. If low current and higher voltage are observed in the initial stages of charging a sulfated battery is likely. A sulfated battery may sometimes be brought back into service by means of a long slow charge, 12 hours or more.

### Checking Battery Specific Gravity With Hydrometer

Hydrometer temperature correction

Battery electrolyte temp. °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (129)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	-0.004
16 (60)	-0.008
10 (50)	-0.012
4 (39)	-0.016
-1 (30)	-0.020
-7 (20)	-0.024
-12 (10)	-0.028
-18 (0)	-0.032

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged

- Do not quick charge a fully discharged battery.
- After charging, if the specific gravity of any two cells varies more than .050, the battery should be replaced.