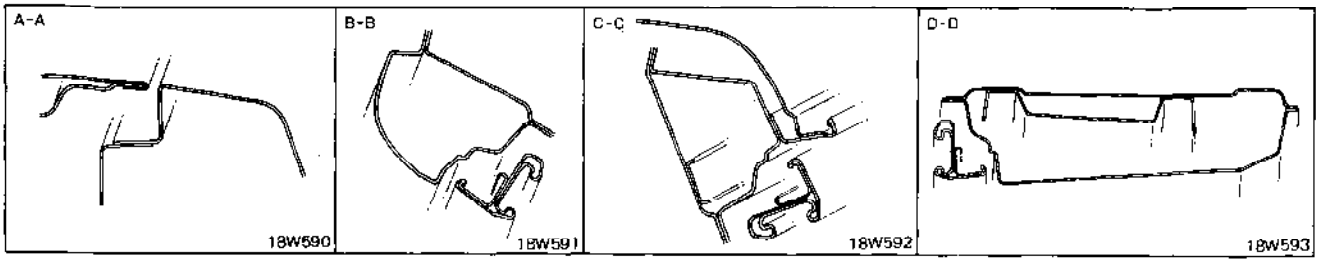
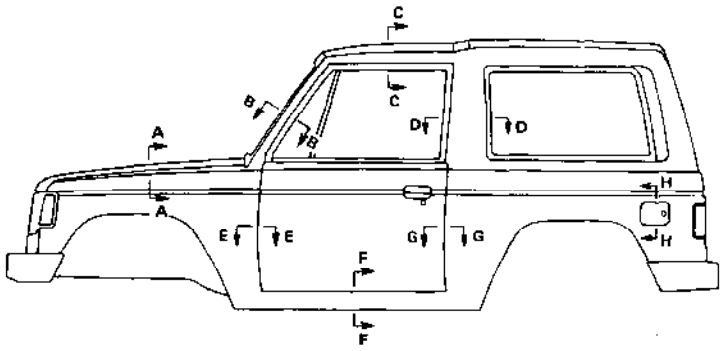
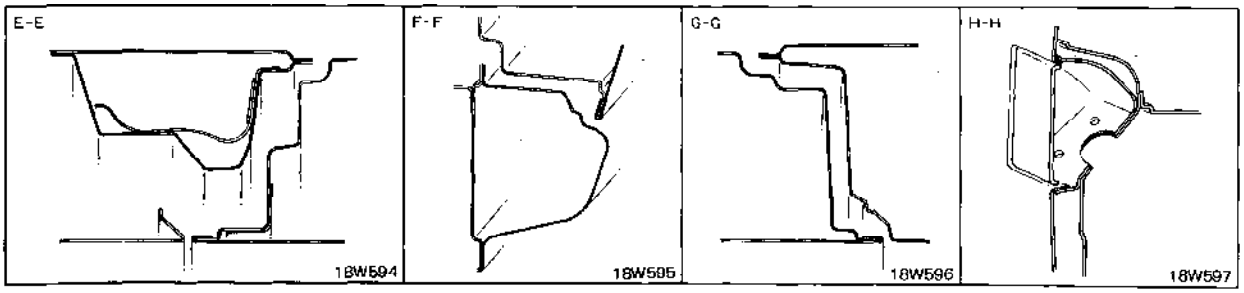
Description		L042G	NJLF/H	NULF/H	VNJLF/H	VKJLF/H	VNULF/H	VKULF/H
Engine								
Model No.					G54B			
Type					In-line OHC			
Number of cylinders					4			
Bore					91.1 mm (3.59 in.)			
Stroke					98.0 mm (3.86 in.)			
Piston displacement					2,555 cm^3 (155.9 CID)			
Compression ratio					8.2			
Firing order					1-3-4-2			
Basic ignition timing					7°BTDC ± 2°			
Transmission & transfer case								
Model No.			KM145	KM145	KM145	KM146	KM145	KM146
Type			5-speed manual	5-speed manual	5-speed manual	3-speed automatic	5-speed manual	3-speed automatic
Gear ratio								
Transmission		1st	3.740	3.740	3.740	2.745	3.740	2.745
		2nd	2.136	2.136	2.136	1.543	2.136	1.543
		3rd	1.360	1.360	1.360	1.000	1.360	1.000
		4th	1.000	1.000	1.000	–	1.000	–
		5th	0.856	0.856	0.856	–	0.856	–
		Reverse	3.578	3.578	3.578	2.214	3.578	2.214
Transfer case		High	1.000	1.000	1.000	1.000	1.000	1.000
		Low	1.944	1.944	1.944	1.944	1.944	1.944
Final ring gear ratio			4.625 4.875*	4.625 4.875*	4.625 4.875*	4.222 4.625*	4.625 4.875*	4.222 4.625*
Clutch								
Type			Dry single disc & diaphragm spring	Dry single disc & diaphragm spring	Dry single disc & diaphragm spring	–	Dry single disc & diaphragm spring	–
Chassis								
Tire size					215SR15			
Front suspension								
Type					Wishbone compression type			
Spring constant (Wheel position)					22 N/mm (123 lbs./in.)			
Rear suspension								
Type					Asymmetrical semi-elliptic leaf spring			
Spring constant								
At load of 1,000-2,500 N (220-551 lbs.)					24 N/mm (134 lbs./in.)			
At load of 4,670-8,870 N (1,030-1,955 lbs.)					56 N/mm (314 lbs./in.)			
Brakes								
Type		Front			Disc			
		Rear			Drum (Leading and trailing)			
Power steering								
Gear type					Integral type (Recirculating ball nut)			
Gear ratio					16.4			
Fuel tank capacity					60 liters (15.9 U.S. gal./13.2 Imp. gal.)			

*Optional for Federal (not available in California).


A-A
18W590
B-B
18W591
C-C
18W592
D-D
18W593


C
B
B
C
D
D
A
A
H
H
E
E
G
G
F
F

18W589


E-E
18W594
F-F
18W595
G-G
18W596
H-H
18W597

GENERAL SPECIFICATIONS

Master cylinder	
Type	Tandem type
I.D. mm (in.)	22.22 (.87)
Brake booster	
Type	Vacuum type
Effective dia. of power cylinder mm (in.)	203.2 (8.0)
Boosting ratio [Brake pedal depressing force]	4.0
Front brakes	
Type	F-type disc
Disc O.D. mm (in.)	255 (10.04)
Disc thickness mm (in.)	20 (.79)
Pad thickness mm (in.)	10.5 (.41)
Cylinder I.D. mm (in.)	53.97 (2.12)
Clearance adjustment	Automatic
Rear brakes	
Type	Leading and trailing shoe type drum
Drum I.D. mm (in.)	254 (10.0)
Lining thickness mm (in.)	4.6 (.18)
Cylinder I.D. mm (in.)	20.64 (.81)
Clearance adjustment	Automatic
Parking brakes	
Type	Mechanical brake acting on rear wheels
Brake engagement	Lever type
Cable routing	V-type

SERVICE SPECIFICATIONS

Standard values	
Brake pedal height mm (in.)	191-196 (7.5-7.7)
Stop light switch outer case to pedal arm clearance mm (in.)	0.5-1.0 (.02-.04)
Brake pedal free play mm (in.)	10-15 (.4-.6)
Brake pedal to floorboard clearance mm (in.)	95 (3.7) or more
Booster push rod to master cylinder piston clearance mm (in.)	0.1-0.5 (.004-.020)
Disc brake dragging force N (lbs.)	74 (16)
Brake shoe outside diameter mm (in.)	253.2-253.5 (9.97-9.98)
Parking brake lever stroke	4-6 clicks
Repair limit	
Brake disc runout mm (in.)	0.15 (.006)
Service limits	
Master cylinder body to piston clearance mm (in.)	0.15 (.006)
Pad thickness mm (in.)	1.0 (.04)
Disc thickness mm (in.)	18.4 (.72)
Lining thickness mm (in.)	1.0 (.04)
Drum I.D. mm (in.)	256.0 (10.08)
Wheel cylinder body to piston clearance mm (in.)	0.15 (.006)

Stop Light

Stop light does not illuminate

Is fuse No. 7 good?
- No → Short circuit in harness (damaged harness, burnt covering, etc.) → Repair harness and replace fuse
- Yes ↓

Is there 12 V between 0.85-GR wire of stop light switch and ground?
- No → Open circuit in harness between fuse block and stop light switch → Repair the harness
- Yes ↓

Is there 12 V between 0.85 wire of stop light switch and ground when brake pedal is depressed?
- No → Stop light switch defective / Stop light switch mounted at incorrect position → Replace stop light switch / Adjust stop light switch mounting position
- Yes ↓

Check with stop light switch ON

Is there 12 V between 0.85-G wire of hazard warning switch and ground?
- No → Open circuit in harness between stop light switch and hazard warning switch → Repair the harness
- Yes ↓

Is there 12 V between 0.85-WG wire of hazard warning switch and ground?
- No → Hazard warning switch defective → Replace the hazard warning switch
- Yes ↓

Is there 12 V between 0.85-WG wire of column switch and ground?
- No → Open circuit in harness between hazard warning switch and column switch → Repair the harness
- Yes ↓

Is 12 V indicated between column switch connector's WL wire and ground and VR wire and ground?
- No → Column switch defective → Replace the column switch
- Yes ↓

Left stop light:
Is 12 V indicated between 0.3-GY wire of rear combination light (left) and ground?
Right stop light
Is 12 V indicated between 0.3-GL wire of rear combination light (right) and ground?
- No → Open circuit in harness between column switch and stop light bulb → Repair the harness
- Yes ↓

Is there 12 V in B wire of stop light bulb connector?
- No → Open circuit in stop light bulb → Replace the light bulb
- Yes ↓

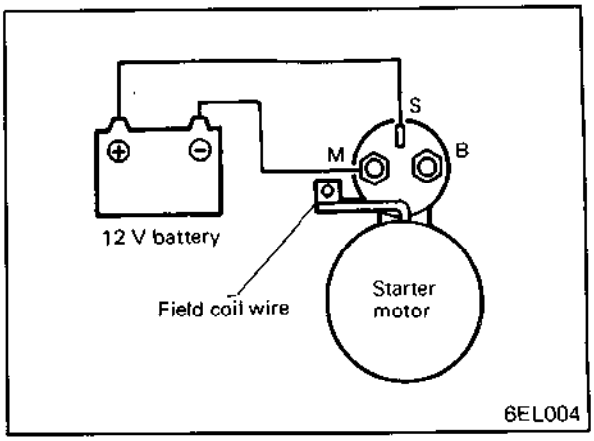
Ground circuit defective → Correct ground circuit harness or correct ground connection

Pull-in Test of Magnetic Switch

1. Disconnect field coil wire from M-terminal of magnetic switch.
2. Connect a 12 V battery between S-terminal and M-terminal. (6EL004)

Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

3. If pinion moves out, then pull-in coil is good. If it doesn't, replace magnetic switch.

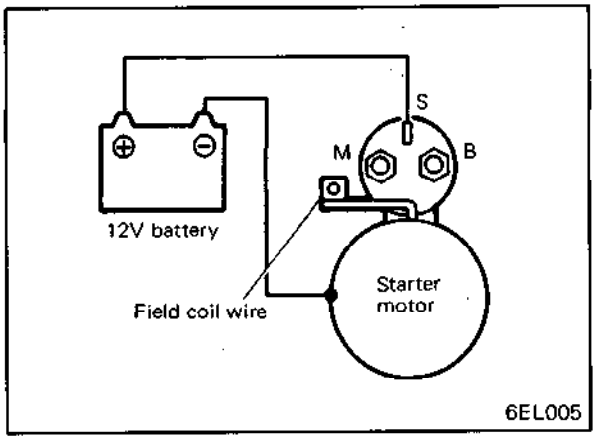


Hold-in Test of Magnetic Switch

1. Disconnect field coil wire from M-terminal of magnetic switch.
2. Connect a 12 V battery between S-terminal and body. (6EL005)

Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

3. If pinion remains out, everything is in order. If pinion moves in, hold-in circuit is open. Replace magnetic switch.

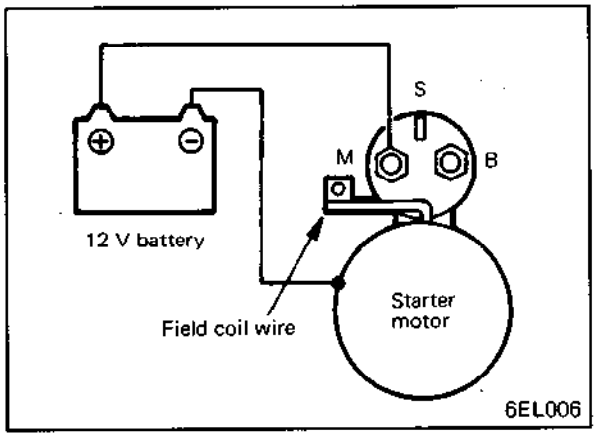


Return Test of Magnetic Switch

1. Disconnect field coil wire from "M" terminal of magnetic switch.
2. Connect a 12 V battery between M-terminal and body. (6EL006)

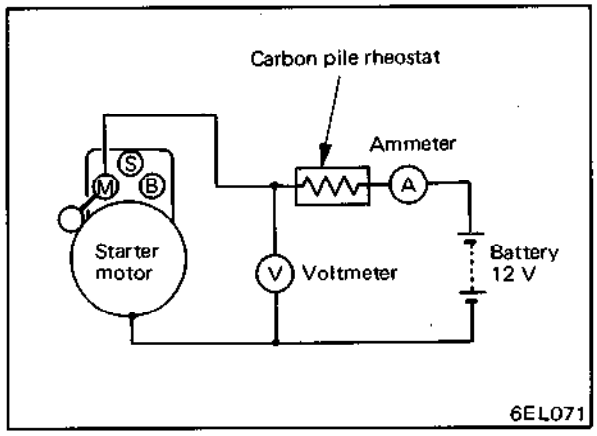
Caution
This test must be performed quickly (in less than 10 seconds) to prevent coil from burning.

3. Pull pinion out and release. If pinion quickly returns to its original position, everything is in order. If it doesn't replace magnetic switch.



Free Running Test

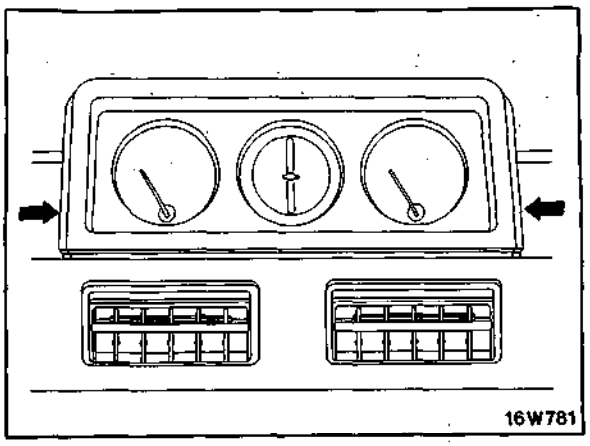
1. Place starter motor in a vise equipped with soft jaws and connect a fully-charged, 12 volt battery to starter motor as follows:
2. Connect a test ammeter (100 amperes scale) and carbon pile rheostat in series with battery positive post and starter motor terminal.
3. Connect a voltmeter (15 volt scale) across starter motor.
4. Rotate carbon pile to full-resistance position. (6EL071)



Removal

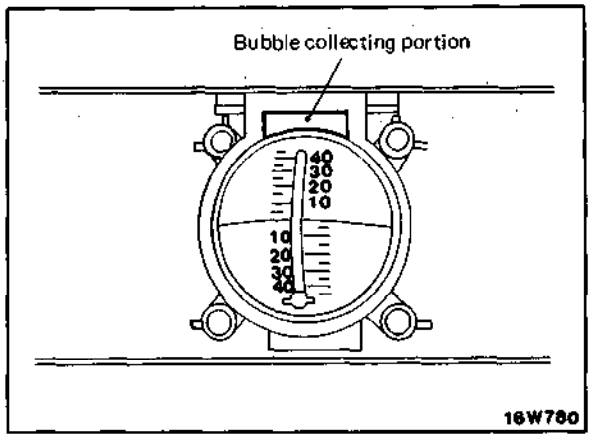
1. Remove the combination meter. (Refer to p. 8-134.)
2. Remove the pad. (16W781)
3. Remove the meter case attaching screws.
4. Disconnect the connectors of the meter harness located behind the meter case.
5. Remove the inclinometer from the meter case.

Caution
To prevent internal trouble, the meter must not be dropped or subjected to shock or must not be abruptly inclined to the extent that the maximum indication angle is exceeded.



Installation

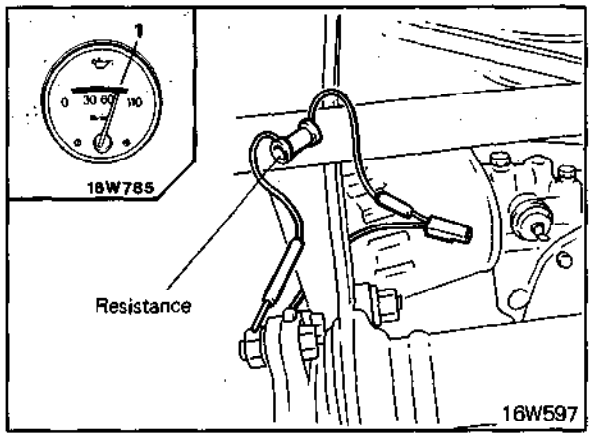
1. Make sure that all water bubbles in the oil case are collected in the upper bubble collecting portion before installation. (16W780)
2. With the vehicle in a level postiion (unladen), check to ensure that the spherical dial and pointer indicate a level position.
3. If the spherical dial and pointer do not indicate that the vehicle is level, adjust the inclinometer by inserting shims between it and either the combination gauge bracket or the instrument panel. If the pointer indication is very far from horizontal, replace the inclinometer.



OIL PRESSURE GAUGE AND UNIT

Removal

1. Remove the combination meter.
2. Remove the pad.
3. Disconnect the oil pressure gauge from the meter wiring harness.
4. Remove the oil pressure gauge to meter case attaching screws.



Inspection

OIL PRESSURE GAUGE INDICATION TEST
Disconnect the wiring connector from the oil pressure gauge unit inside the engine compartment.
Connect a resistance to the connector, and then confirm the gauge indications. (16W785, 16W597)

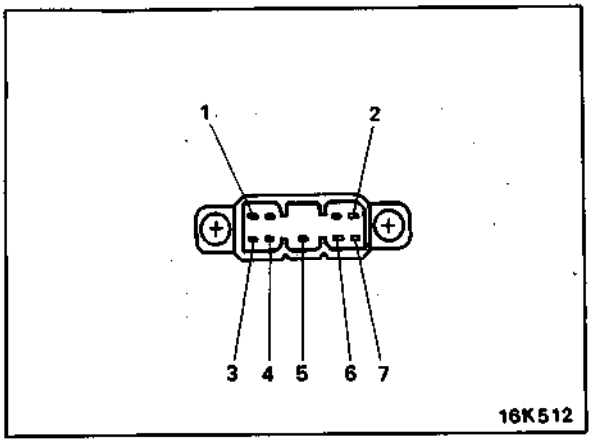
Indication point	Resistance value
(1) 588 kPa (85 psi)	120Ω

POWER WINDOW SWITCH

Inspection

MAIN SWITCH

Check for continuity in accordance with the following connection table.

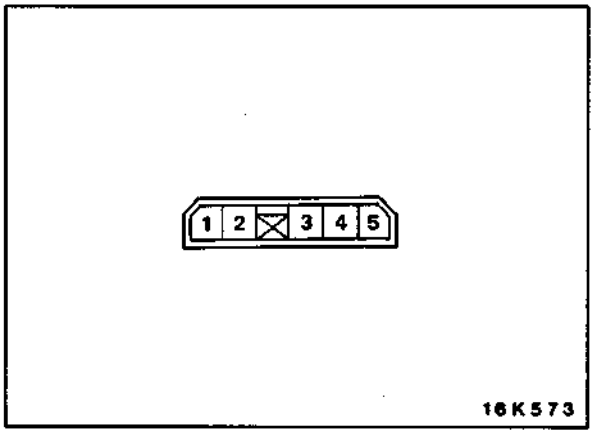


Switch \ Terminal		L.H. side				R.H. side				LOCK	
		1	4	3	6	2	4	7	6	4	5
Power window switch (manual)	UP	○—○		○—○		○—○		○—○			
	OFF	○		○—○	○	○		○—○	○		
	DOWN	○	○—○		○	○	○—○		○		
Lock switch	ON (LOCK)										
	OFF (FREE)									○	○

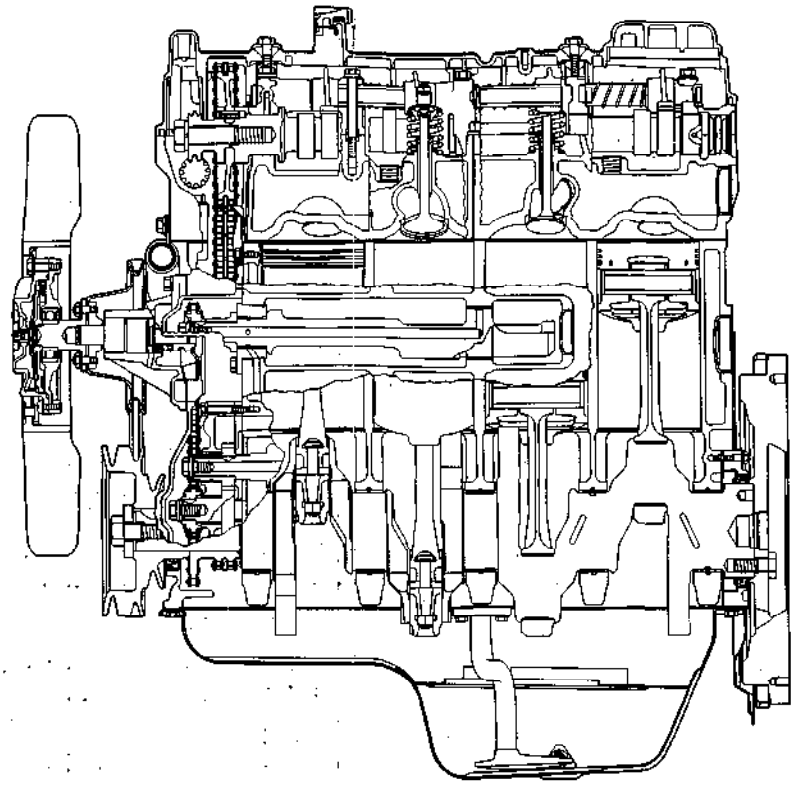
SUB SWITCH

Check for continuity in accordance with the following connection table.

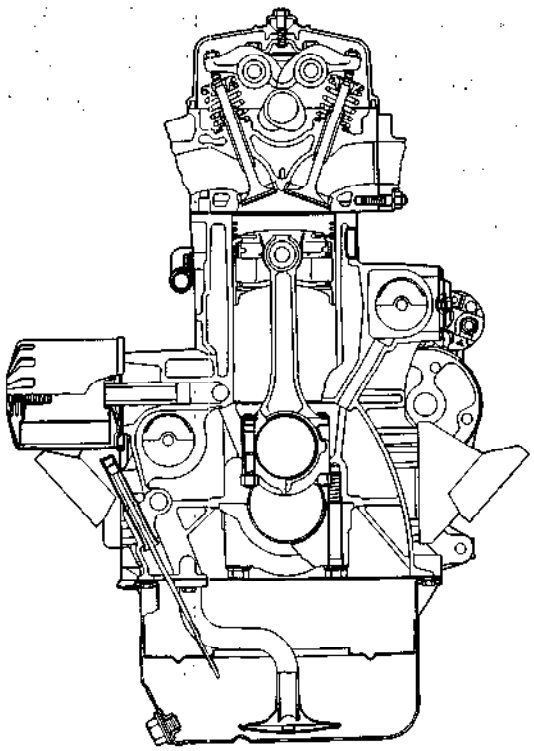
Switch \ Terminal	2	1	5	4	3
UP	○—○		○		○
OFF		○	○—○	○	○
DOWN	○	○—○		○	



G54B ENGINE



5EN116

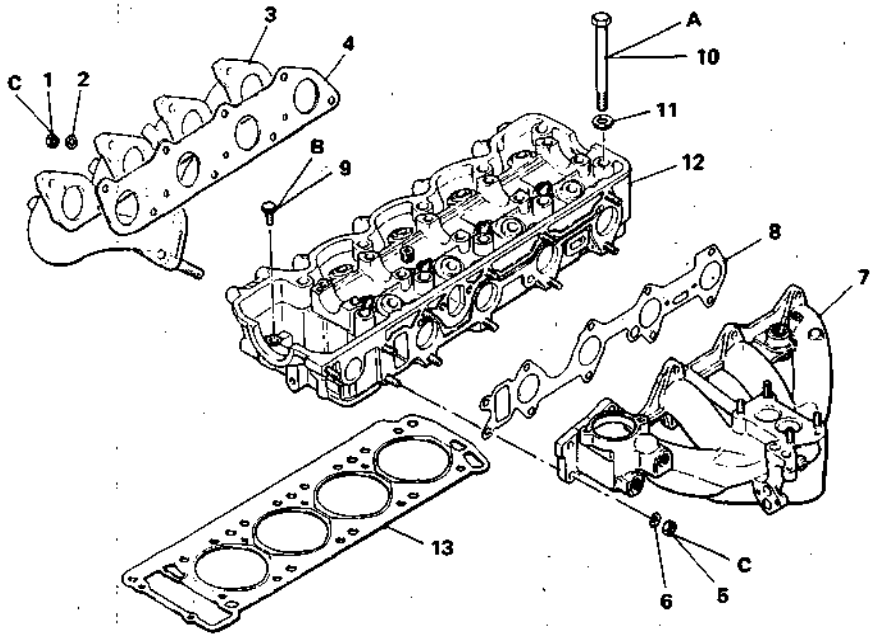


5EN117

COMPONENTS

1. Nut (8)
2. Plain washer (7)
3. Exhaust manifold
4. Exhaust manifold gasket
5. Nut (9)
6. Spring washer (9)
7. Intake manifold
8. Intake manifold gasket
9. Flange bolt (2)
10. Cylinder head bolt (10)
11. Washer (10)
12. Cylinder head
13. Cylinder head gasket

NOTE
Numbers show order of disassembly.
For reassembly, reverse order of disassembly.

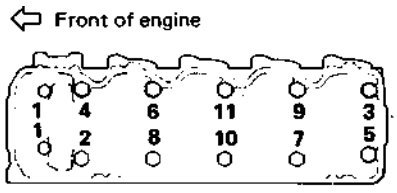


		Nm	ft.lbs.
A	Cold engine	89-98	65-72
	Hot engine	98-107	73-79
B		15-21	11-15
C		15-19	11-14

5EN086

REMOVAL

1. Remove cylinder head bolts in sequence shown in illustration. (5EN015)
2. Cylinder head bolts can be loosened with ordinary socket wrench or special tool MD998051.



5EN015

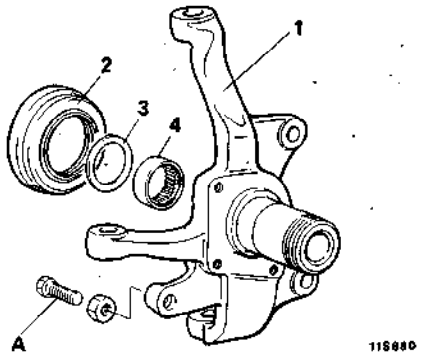
GENERAL SPECIFICATIONS

Suspension system	Independent double wishbone with torsion bar and telescopic shock absorber
Torsion bar	
Length x O.D. mm (in.)	1,277.5 x 24.5 (50.30 x .96)
Spring constant (wheel position) N/mm (lbs./in.)	22 (123)
Shock absorber	
Type	Hydraulic cylindrical double-acting type
Maximum length mm (in.)	335 (13.19)
Compressed length mm (in.)	215 (8.46)
Stroke mm (in.)	120 (4.72)
Damping force [at 0.3 m/sec. (0.984 ft./set.)]	
Expansion N (lbs.)	2,250 (495)
Contraction N (lbs.)	1,100 (242)
Wheel bearing	
Type	Tapered roller bearing
Dimensions (O.D. x I.D.) mm (in.)	
Outer	73.431 x 45.242 (2.891 x 1.781)
Inner	73.431 x 45.242 (2.891 x 1.781)
Drive shaft	
Joint type Outer	B.J.
Inner	D.O.J.
Length Right mm (in.)	528.5 (20.8)
(Joint to joint) Left mm (in.)	605.6 (23.8)
Inner shaft	
Shaft overall length mm (in.)	431 (17.0)
Bearing	
O.D. x I.D. mm (in.)	62 x 35 (2.44 x 1.38)
Differential	
Final ring gear type	Hypoid gear
Reduction ratio	
Manual transmission	4.625
Optional for Federal (not available in California)	4.875
Automatic transmission	4.222
Optional for Federal (not available in California)	4.625
Differential gear type	Straight bevel gear
Number of teeth	
Drive gear	
Manual transmission	37
Optional for Federal (not available in California)	39
Automatic transmission	38
Optional for Federal (not available in California)	37
Drive pinion	
Manual transmission	8
Automatic transmission	9
Optional for Federal (not available in California)	8
Side gear	14
Pinion gear	10

COMPONENTS

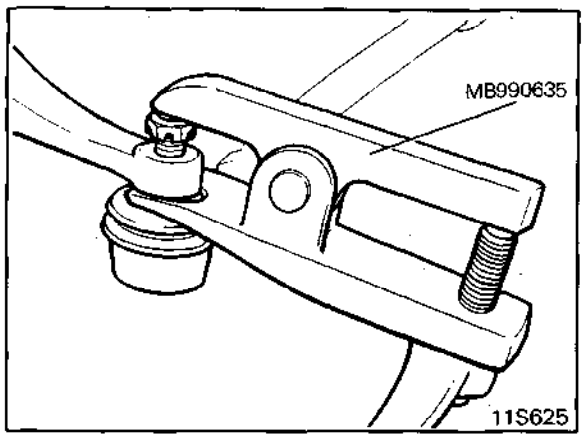
1. Knuckle
2. Oil seal
3. Spacer
4. Needle bearing

	Nm	ft. lbs.
A	50-60	36-43

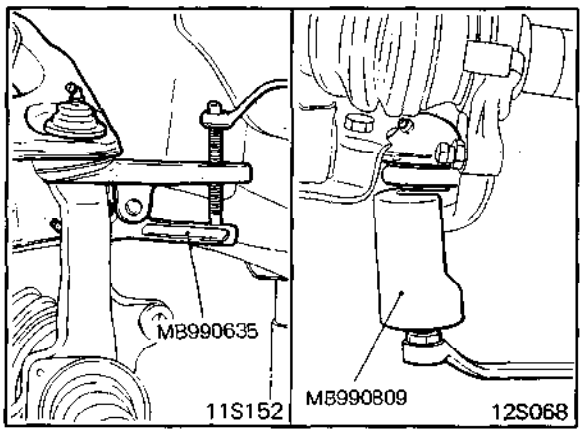


REMOVAL

1. Remove the front hub assembly. (Refer to p. 2-27.)
2. Remove the dust cover.
3. Disconnect the tie rod from the knuckle with a special tool. (11S625)



4. Using the special tools, remove the upper and lower ball joints. (11S152, 12S068)
5. Remove the knuckle from the drive shaft.



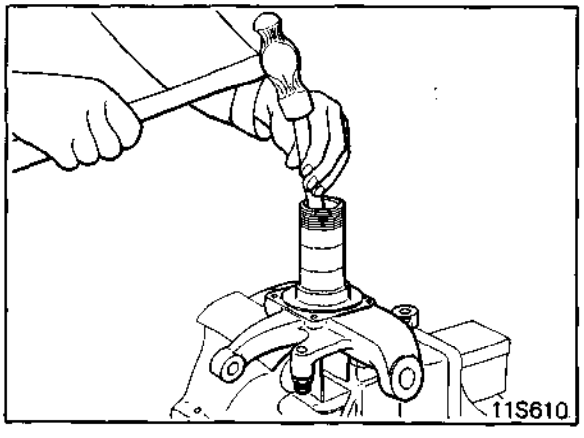
INSPECTION

1. Check needle bearing for wear or damage.
2. Check knuckle for cracks or bends.
3. Check knuckle spindle for wear or pounding.

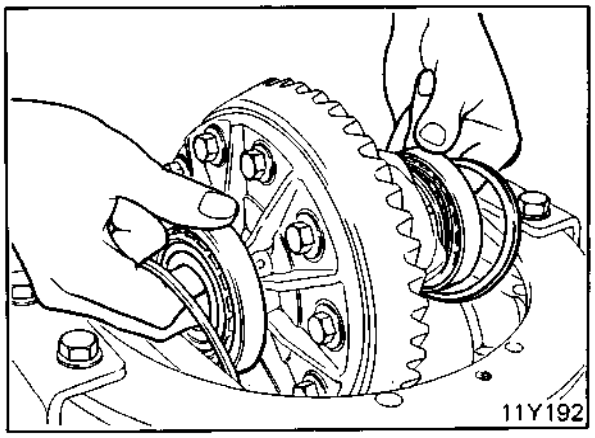
BEARING REPLACEMENT

1. Remove the oil seal and then remove the spacer.
2. Remove the needle bearing by tapping the needles uniformly. (11S610)

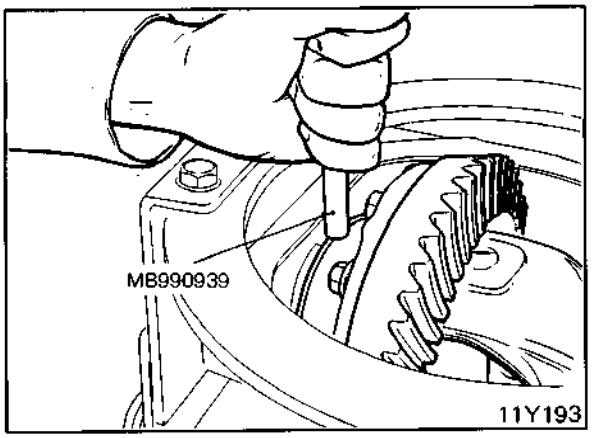
Caution
Once removed, the needle bearing must not be reused.



(5) Install the side bearing adjusting spacers and differential case assembly, on the gear carrier as shown in the illustration.

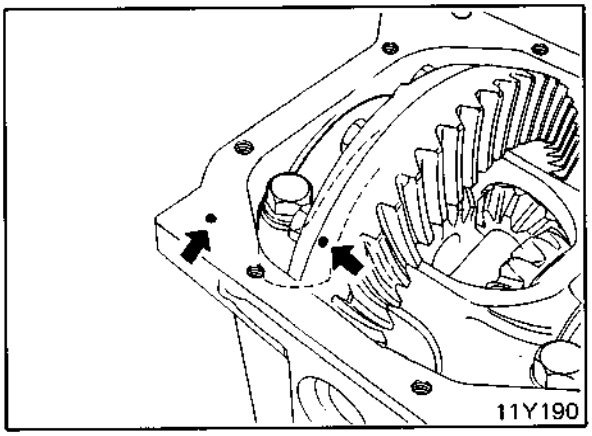


(6) Tap the side bearing adjusting spacers with a brass bar to fit them into the side bearing outer race.



(7) Align the mating marks on the gear carrier and the bearing cap, and then tighten the bearing cap. (11Y 190)

(8) Measure the final ring gear backlash. (Refer to GROUP 3.)



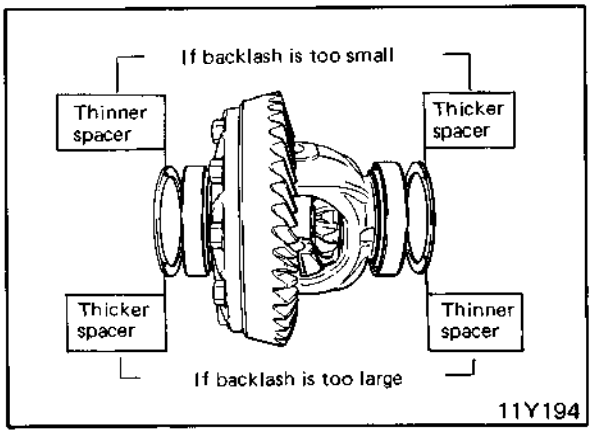
(9) Select the side bearing adjusting spacers as illustrated, and then adjust the final ring gear backlash between the ring gear and the drive pinion. (11Y194)

NOTE

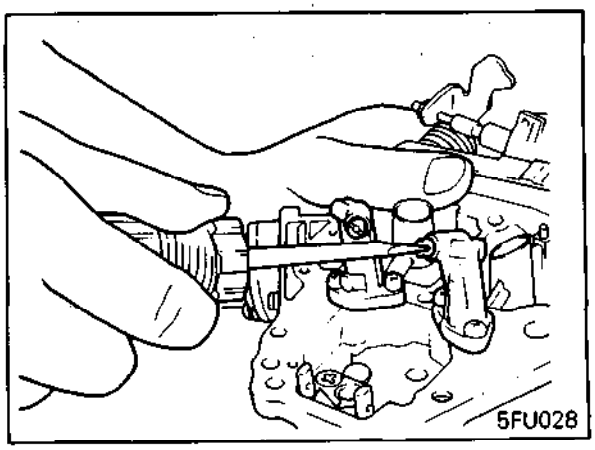
Be sure to select the side bearing adjusting spacers on the drive pinion side and on the ring gear side so that the total thickness is equal to that obtained from the calculation in step (4).

When selecting the side bearing adjusting spacers, keep the number of spacers to a minimum.

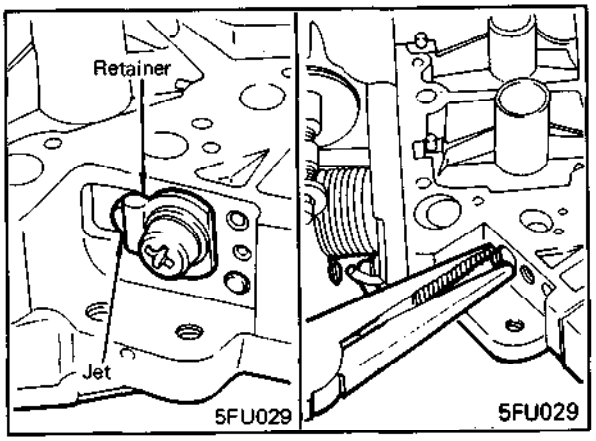
3. Torque all parts to specifications during assembly.



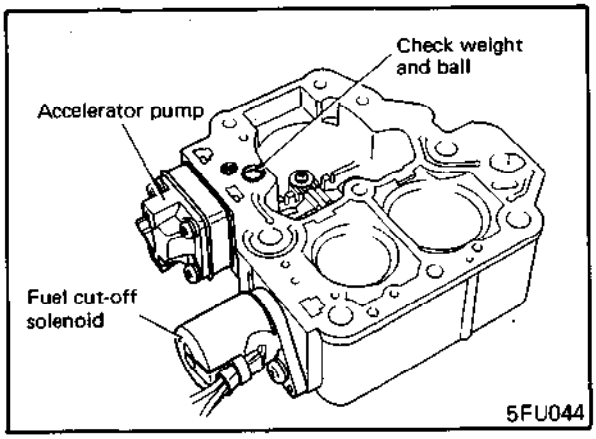
17. Remove the main jets from the jet blocks. When the main jet is to be removed, use a screwdriver with proper blade for slot in jet.



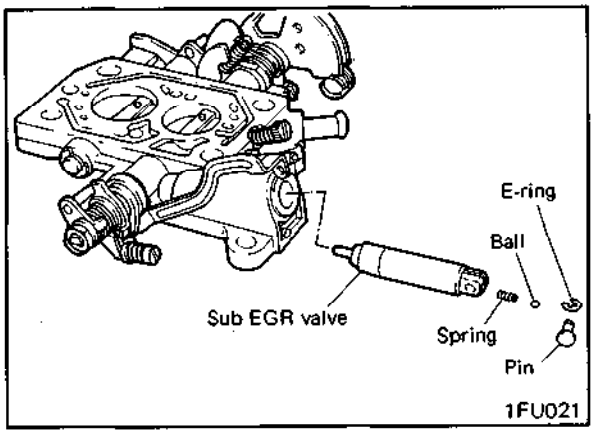
18. Remove the pilot jet retainer and pull out the secondary pilot jet with pliers.



19. Remove the accelerator pump and fuel cut-off solenoid.

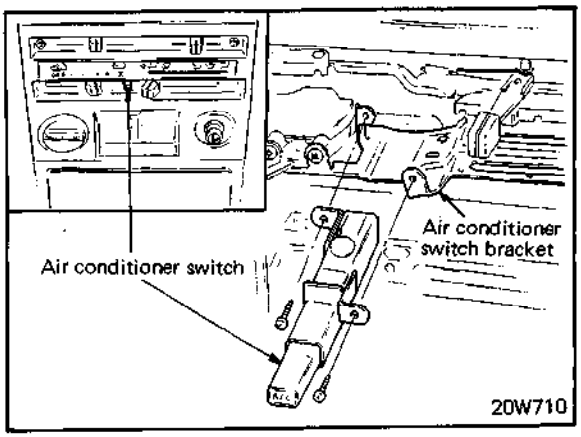


20. Remove the snap ring from the sub EGR control valve pin.
21. Remove the pin and then remove the link from the valve. Then take out the little steel ball and spring from the sub EGR control valve.
22. Remove the sub EGR control valve from the throttle body.



REMOVAL

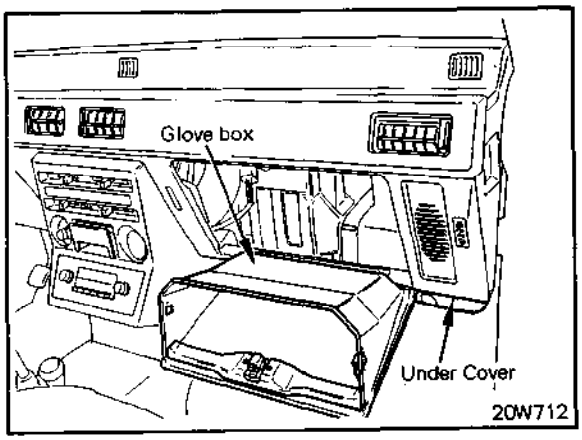
1. Remove the knob of the control lever.
2. Remove the control panel by pushing it from behind.
3. Remove the A/C switch attaching screws.
4. Disconnect the A/C switch harness.
5. Remove the A/C switch.



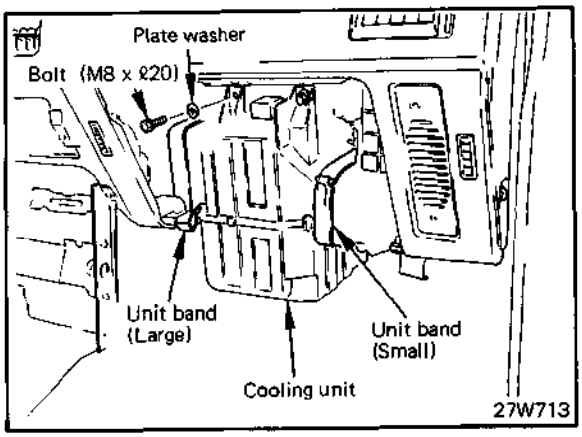
COOLING UNIT

REMOVAL

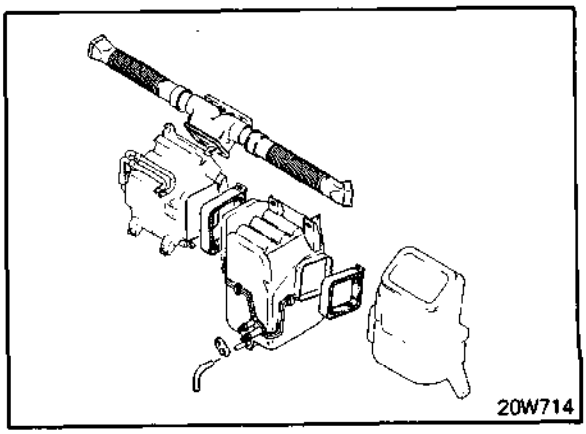
1. Remove the glove box. The glove box should be removed with the lower frame attached. (20W712)
2. Disconnect the glove box switch harness at the round topped terminal.
3. Remove the lap heater duct.
4. Remove the under tray stay.



5. Disconnect the duct joint.
   Loosen the duct joint tightening bolt to free the duct joint. (Heater unit side, blower motor side)



6. Disconnect the A/C switch harness and air-conditioner harness.



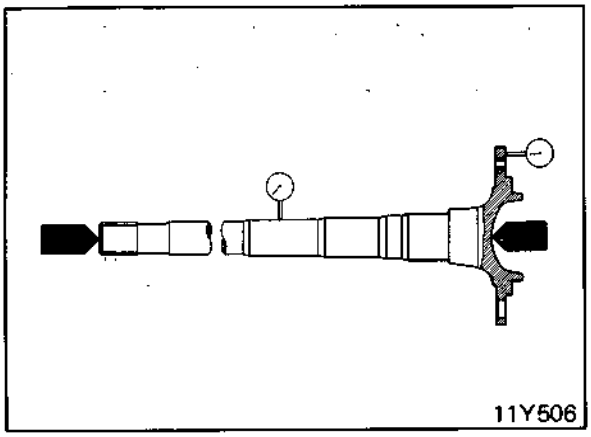
INSPECTION

1. Check dust cover for deformation and damage.
2. Check oil seal for damage.
3. Check inner and outer bearings for seizure, discoloration and rough raceway surface.
4. Check axle shaft for cracks, wear and damage.

Checking of the Axle Shaft for Runout

With the axle shaft supported at the center holes on both ends, measure the axle shaft flange face for runout with a dial indicator.

Axle shaft runout [Service limit] .....
0.1 mm (.004 in.)



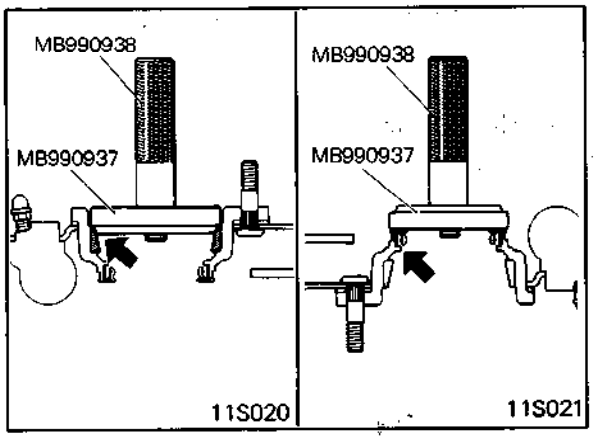
REASSEMBLY

1. Apply the specified wheel bearing grease to the outside circumference of the bearing outer race.

Recommended multipurpose grease .....
SAE J310a, NLGI grade #2EP

2. Press the bearing outer race into the bearing case with the special tools. (11S020)
3. Apply the specified wheel bearing grease to the outside circumference of the new oil seal. (11S021)

Recommended multipurpose grease .....
SAE J310a, NLGI grade #2EP

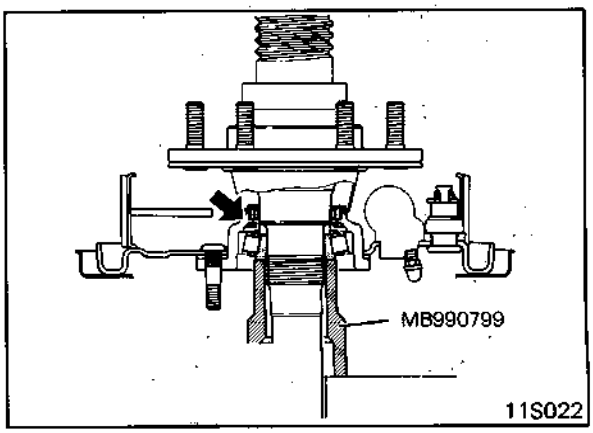


4. Press the new oil seal into the bearing case with the special tools until it is flush with the surface of the bearing cases. (11S021)
5. Apply the specified wheel bearing grease to the lip of the oil seal.

Recommended multipurpose grease .....
SAE J310a, NLGI grade #2EP

6. Apply the specified wheel bearing grease to the roller surfaces of the bearing inner race.

Recommended multipurpose grease .....
SAE J310a, NLGI grade #2EP



7. Install the rear brake assembly, the bearing case, and the bearing inner race in that order to the axle shaft.
8. Press the bearing inner race onto the axle shaft with the special tool. (11S022)