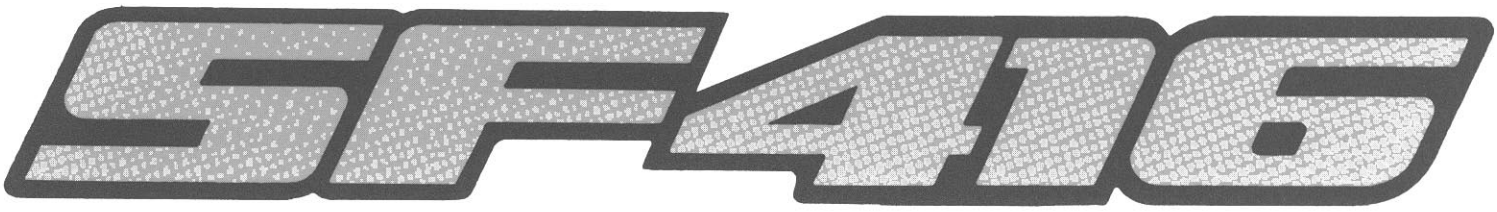
SUZUKI



SERVICE MANUAL

SUZUKI
Caring for Customers
99500-71C10-01E
(英)

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VEHICLE LIFTING POINTS

Fig. 0A-6 and 0A-7 indicate the methods of lifting the car using a hoist, and Fig. 0A-8 and 0A-9 show additional locations for lifting with a floor jack.

WARNING:

- **When using frame contact hoist, apply hoist as shown below (right and left at the same position). Lift up the car till 4 tires are a little off the ground and make sure that the car will not fall off by trying to move car body in both ways. Work can be started only after this confirmation.**
- **Before applying hoist to underbody, always take car balance throughout service into consideration. Car balance on hoist may change depending of what part to be removed.**
- **Make absolutely sure to lock hoist after car is hoisted up.**
- **If the car to be jacked up only at the front or rear end, be sure to block the wheels in order to ensure safety. After the car is jacked up, be sure to support it on stands. It is extremely dangerous to do any work on the car raised on jack alone.**

PRECAUTION AGAINST TIPPING

On front-wheel drive cars, the centerline-of-gravity is further forward than on rear-wheel drive car. Therefore, **whenever removing major components from the rear** of the car, while supported on a hoist, it is **mandatory** to support the car in a manner to prevent the possibility of the car tipping forward.

When using frame contact hoist:

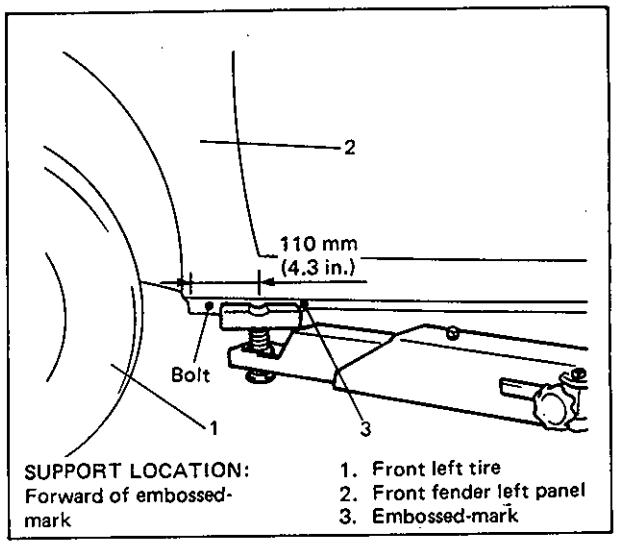


Fig. 0A-6 Front Support Location

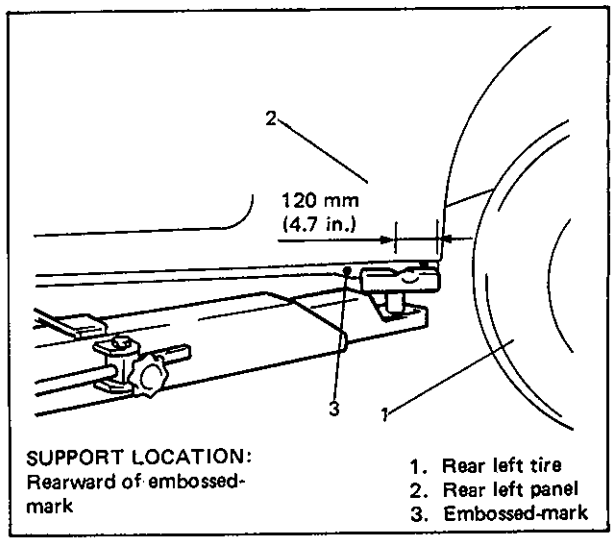


Fig. 0A-7 Rear Support Location

IGNITION SYSTEM

2-1
Spark Plugs Replacement

1) Disconnect high tension cords at spark plugs. To avoid inside damage of cords, DO NOT pull on cords for disconnection. Pull on cap.

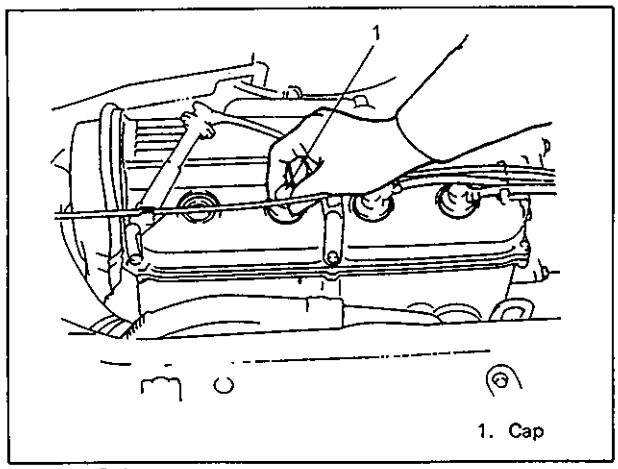


Fig. 0B-2-1

2) Dust off cylinder head around spark plugs.
3) Using a spark plug wrench, remove spark plugs.
4) Check plug gaps of new spark plugs, and adjust them to specification as necessary.

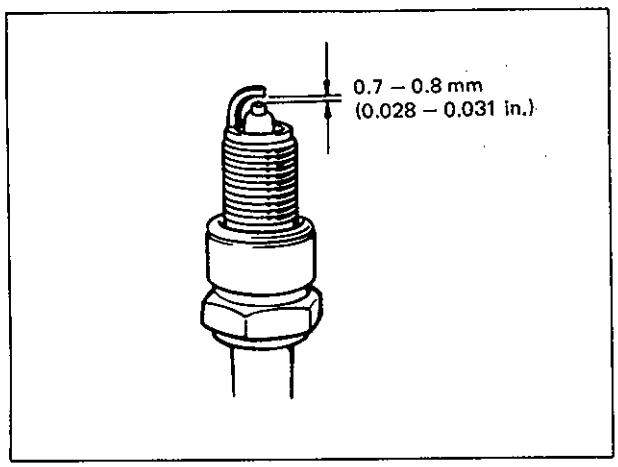


Fig. 0B-2-2

NOTE:
Make sure to use new plugs of specified heat range and size.

PLUG SPECIFICATION

Maker	Heat range Standard type
NGK	BKR6E or BK6E
NIPPONDENSO	K20PR-U or K20P-U

As can be seen in the above table, there are two types of spark plugs for this car, one without R included in its code and the other with R. Which one is used depends on countries. Look at the label attached to the car. If originally equipped plug was with R included in its code, replacement plug should have R in its code, too.

5) Install new spark plugs. Tighten plugs to specification.
6) Connect high tension cords to spark plugs. DO NOT push cords for connection. Push caps.

Tightening torque for spark plug	N·m	kg-m	lb-ft
	20 – 30	2.0 – 3.0	14.5 – 21.5

2-2
Distributor Cap and Rotor Inspection

1) Inspect distributor cap and rubber caps for cracks.
2) Inspect center electrode and terminals for wear.
3) Inspect rotor for cracks, and its electrode for wear.
4) Repair or replace as necessary any component which is found to be in malcondition as described above.

NOTE:
Dust and stains found within distributor can be cleaned by using a dry, soft cloth.

Battery Electrolyte Level Check
Check that the electrolyte level of all battery cells is between the upper and lower level lines on the case.

Engine Drive Belt(s) Inspection
Inspect all belts for cracks, fraying and wear. Adjust or replace as needed.

[WHILE OPERATING CAR]

Horn Operation
Check to make sure that horn works when its button is pushed at its any part.

Windshield Wiper and Washer Operation
Check wipers and washer for proper operation. Also check spray direction of washer fluid.
Check wiper blades for wear or cracks whenever they fail to wipe clean. If necessary, replace.

Windshield Defroster
Periodically check that air comes out from defroster outlet when operating heater or air conditioner.
Set fan switch lever to "HI" position for this check.

Steering System Operation
Be alert for any changes in steering action. An inspection or service is needed when: the steering wheel is harder to turn or has too much free play, or if there are strange sounds when turning.

Brake System Operation
Be alert to abnormal noise, increase in brake pedal travel or repeated pull to one side when braking.
When any of such conditions is noted, check brake system. If brake warning light stays on or keeps flashing, there may be some trouble in brake system.
Also, test parking brake by pulling parking brake lever.

Exhaust System Operation
Be alert for any changes in the sound of the exhaust system or any smell of fumes. These are signs the system may be leaking or overheating. Have it check and/or repaired at once.

Tire and Wheel Operation
Be alert to vibration of the steering wheel or seat at normal highway speeds. This may mean a wheel balance is needed. Also, a pull right or left on a straight, level road may show the need for a tire pressure adjustment or wheel alignment.

MAINTENANCE RECOMMENDED UNDER SEVERE DRIVING CONDITIONS

Follow this schedule if your car is mainly operated under one or more of the following conditions:

- When most trips are less than 4 miles (6 kilometers).
- When most trips are less than 10 miles (16 kilometers) and outside temperatures remain below freezing.
- Idling and/or low-speed operation in stop-and-go traffic.
- Operating in dusty areas.

Schedule should also be followed if the car is used for delivery service, police, taxi or other commercial applications.

Interval: This interval should be judged by odometer reading or months, whichever comes first.	This table includes services as scheduled up to 60,000 miles (100,000 km) mileage. Beyond 60,000 miles (100,000 km), carry out the same services at the same intervals respectively.																			
	Miles (x 1,000)	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
	Km (x 1,000)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	Months	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
1. ENGINE																					
1-1. Water pump belt (tension, damage)		–	–	–	–	–	–	–	–	–	I	–	–	–	–	–	–	–	–	–	I
1-2. Valve lash (clearance)		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
1-3. Engine oil and filter		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1-4. Cooling system hoses and connections (leakage, damage)		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
1-5. Engine coolant		–	–	–	–	–	–	–	–	–	R	–	–	–	–	–	–	–	–	–	R
1-6. Exhaust system (leakage, damage, tightness)		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
1-7. Wiring harness and connections		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	I
2. IGNITION SYSTEM																					
2-1. Spark plugs		–	–	–	–	–	–	–	–	–	R	–	–	–	–	–	–	–	–	–	R
2-2. Ignition wiring		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	R
3. FUEL SYSTEM																					
3-1. Air cleaner filter element		I	I	I	I	I	I	I	I	I	R	I	I	I	I	I	I	I	I	I	R
3-2. Fue tank, cap & lines (leakage, damage)		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
4. BRAKE																					
4-1. Brake discs, pads, drums and shoes (thickness, wear, damage)		–	I	–	I	–	–	–	I	–	–	–	I	–	–	–	I	–	–	–	I
4-2. Brake hoses and pipes (leakage, damage, clamp)		–	I	–	I	–	–	–	I	–	–	–	I	–	–	–	I	–	–	–	I
4-3. Brake fluid		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	R
4-4. Brake lever and cable (damage, stroke, operation)		–	I	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
4-5. Brake pedal		–	–	–	–	I	–	–	–	–	I	–	–	–	–	I	–	–	–	–	I
5. CHASSIS AND BODY																					
5-1. Tires/wheel discs (wear, damage, rotation)		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
5-1. Wheel bearings (loose, wear, noise, damage)		–	–	–	I	–	–	–	I	–	–	–	I	–	–	–	I	–	–	–	I
5-2. Drive axle boots (breakage, damage)		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
5-3. Suspension system (tightness, damage, rattle, breakage)		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
5-4. Steering system (tightness, damage, breakage, rattle)		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
5-5. Power steering (if equipped)		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
5-6. Manual transmission oil (leakage, level)		–	I	–	R	–	I	–	R	–	I	–	R	–	I	–	R	–	I	–	R
5-7. Automatic transmission	Fluid level	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I
	Fluid change	–	–	–	–	R	–	–	–	–	R	–	–	–	–	R	–	–	–	–	R
	Fluid hose	–	–	–	–	–	–	–	–	–	–	–	–	–	–	R	–	–	–	–	–
5-8. Door hinges & Gear shift control lever/cables		–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I	–	I

NOTES: "R" : Replace or change "I" : Inspect and correct or replace if necessary

DIAGNOSIS

Trouble	Possible cause	Remedy
Heater blower won't work even when its switch is ON.	Blower fuse blown	Replace fuse to check for short.
	Blower register faulty	Check continuity.
	Blower motor faulty	Replace motor.
	Wiring or grounding faulty	Repair as necessary.
Incorrect temperature output	Control cables broken or binding	Check cables.
	Air damper broken	Repeir damper.
	Air ducts clogged	Repair air ducts.
	Heater radiator leaking or clogged	Replace radiator.
	Heater hoses leaking or clogged	Replace hoses.

ON-CAR SERVICE

HEATER BLOWER MOTOR

NOTE:

Heater blower motor unit in left-hand steering car and that in right-hand steering care are symmetrical.

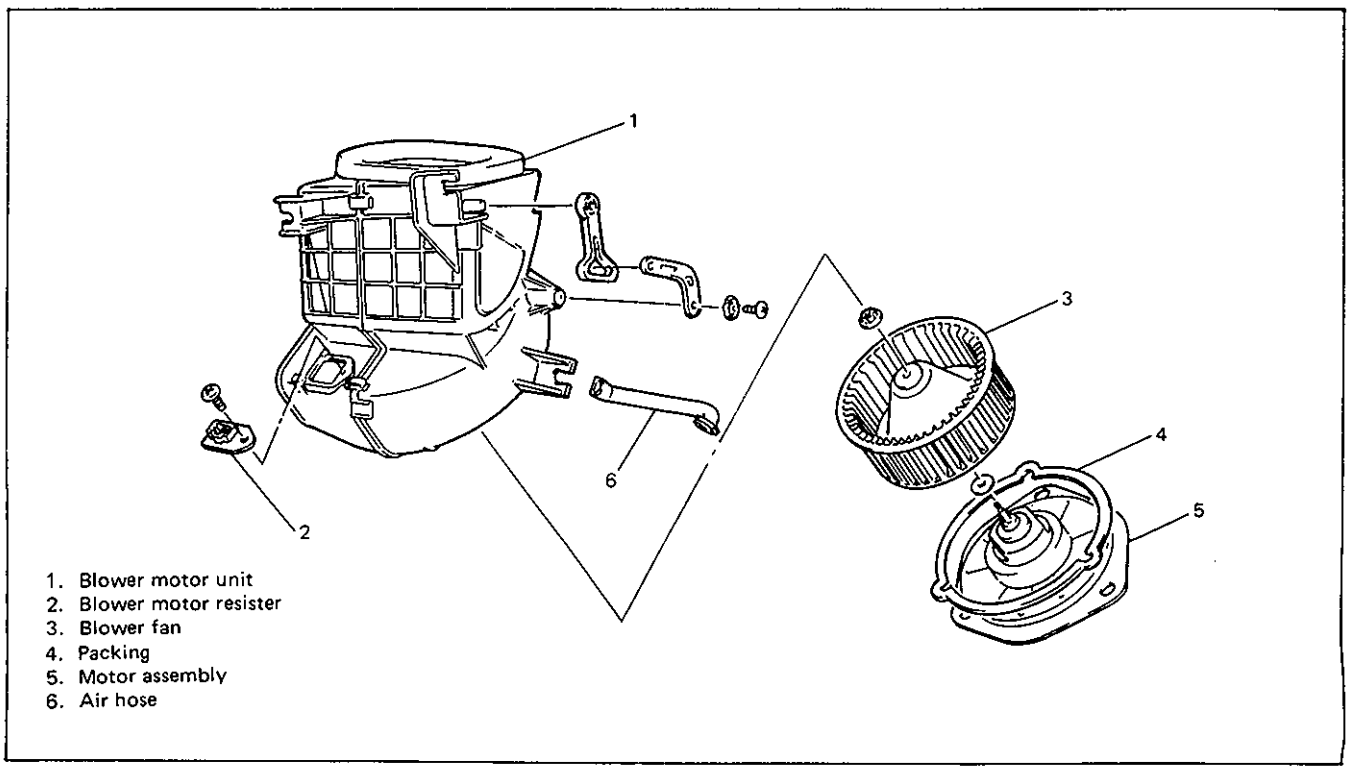


Fig. 1A-3

REAR BUMPER

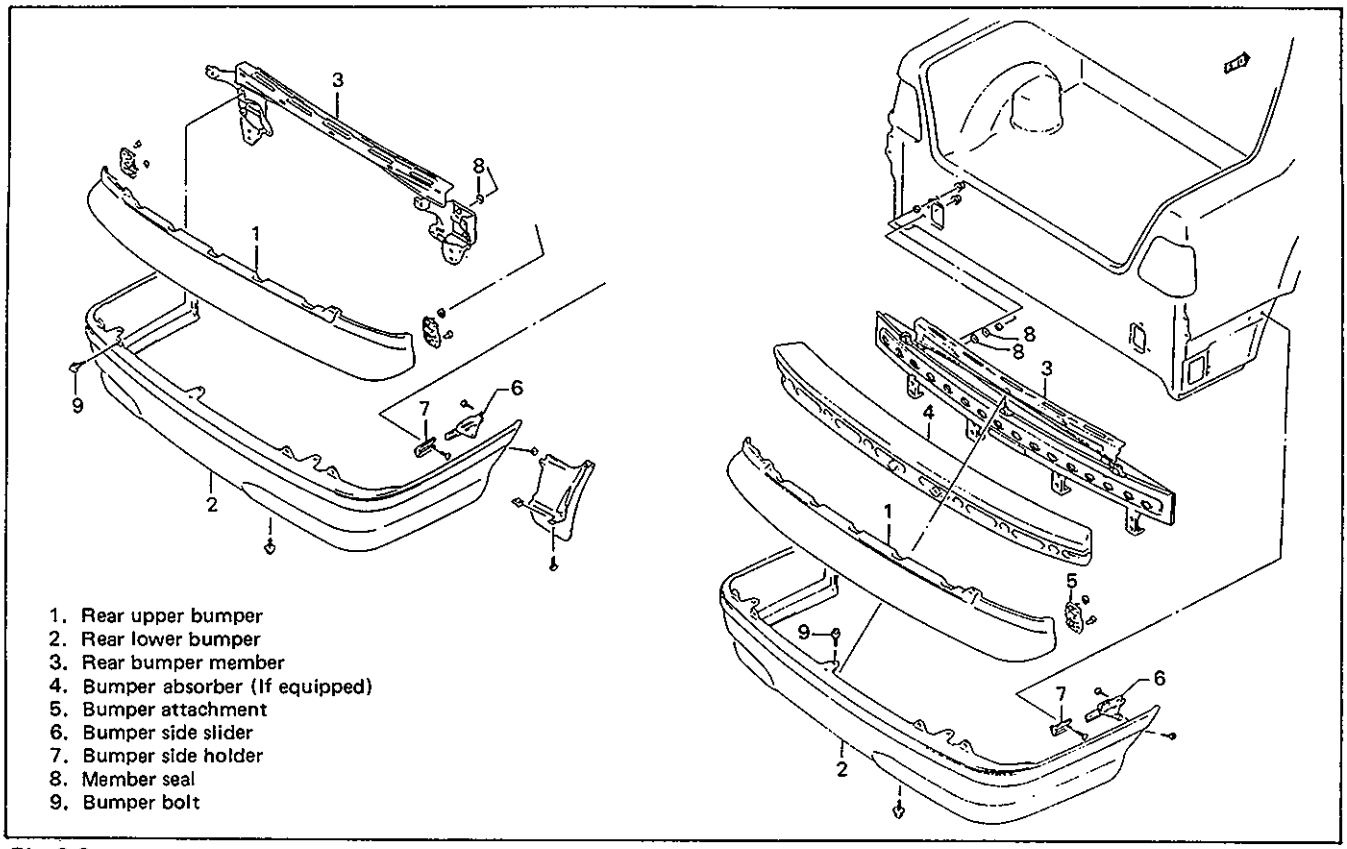


Fig. 2-3

REMOVAL

1) Remove mud flaps. (If equipped)
2) Remove bumper fitting nuts shown in Fig. 2-4.

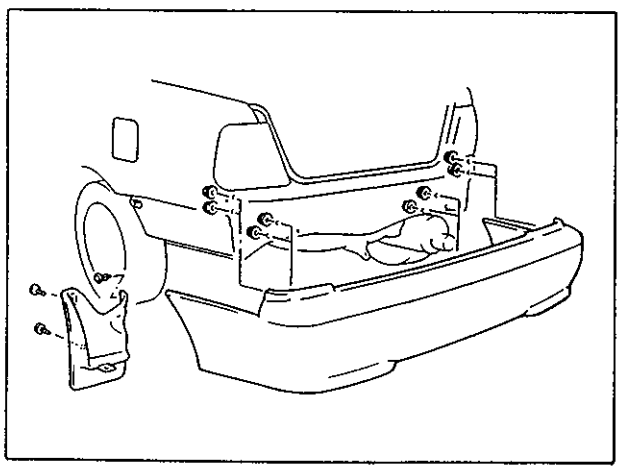


Fig. 2-4

3) Slide bumper (with bumper member) backward to remove it.

INSTALLATION

1) Slide bumper onto side attachments on both fenders.
2) Install removed parts in reverse order of removal.

RADIAL TIRE LEAD

"Lead" is the deviation of the car from a straight path on a level road even with no pressure on the steering wheel.

Lead is usually caused by:

1) Incorrect alignment.
2) Uneven brake adjustment.
3) Tire construction.

The way in which a tire is built can produce lead in a car. An example of this is placement of the belt. Off center belts on radial tires can cause the tire to develop a side force while rolling straight down the road. If one side of the tire has a little larger diameter than the other, the tire will tend to roll to one side. This will develop a side force which can produce car lead.

The procedure in Fig. 3-4 should be used to make sure that front alignment is not mistaken for tire lead.

1) Part of the lead diagnosis procedure is different from the proper tire rotation pattern currently in the owner and service manuals. If a medium to high mileage tire is moved to the other side of the car, be sure to check that ride roughness has not developed.
2) Rear tires will not cause lead.

VIBRATION DIAGNOSIS

Wheel unbalance causes most of the highway speed vibration problems. If a vibration remains after dynamic balancing, its possible causes are as follows.

1) Tire runout.
2) Wheel runout.
3) Tire stiffness variation.

Measuring tire and/or wheel free runout will uncover only part of the problem. All three causes, known as loaded radial runout, must be checked by using a Tire Problem Detector (TPD). If TPD is not available, alternative method of substituting known good tire and wheel assemblies on the problem car can be used, although it takes a longer time.

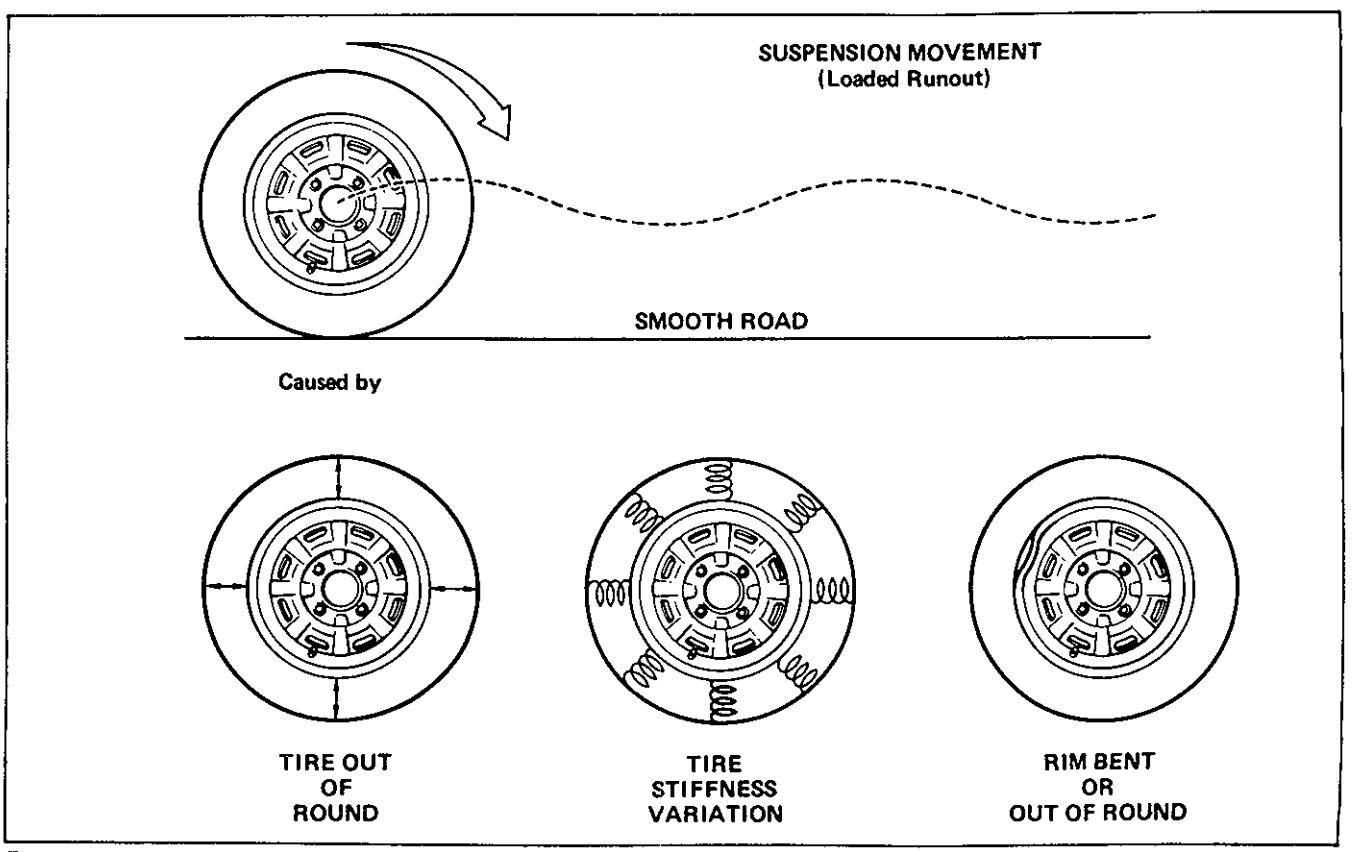


Fig. 3-5 Vibration

3. REMOVE AND INSTALL RACK BOOT/TIE ROD

REMOVAL

1) Remove steering gear case by performing Steps 1) – 8) in Item 2 REMOVAL of this section.
2) For ease of adjustment after installation, make marking of tie rod end lock nut position on tie rod thread.

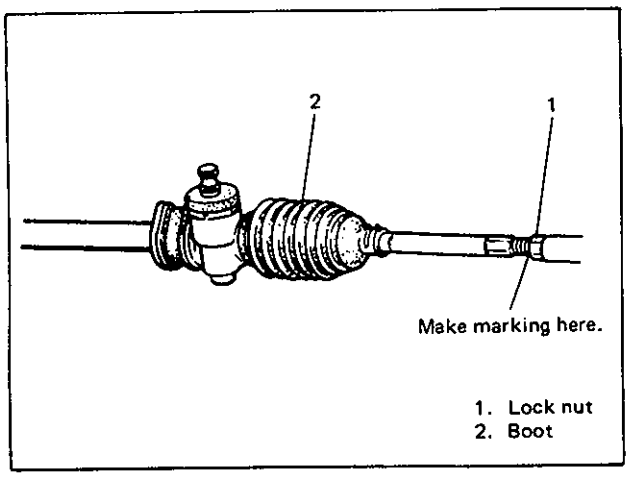


Fig. 3B-16

3) Loosen tie rod end lock nut and remove tie rod end.
4) Remove boot wire and clip.

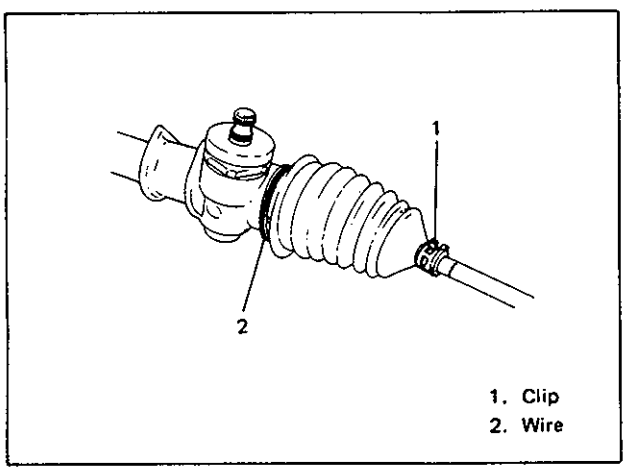


Fig. 3B-17

5) Remove boot from tie rod.
6) Unbend bent part of tie rod lock washer and remove tie rod from rack.

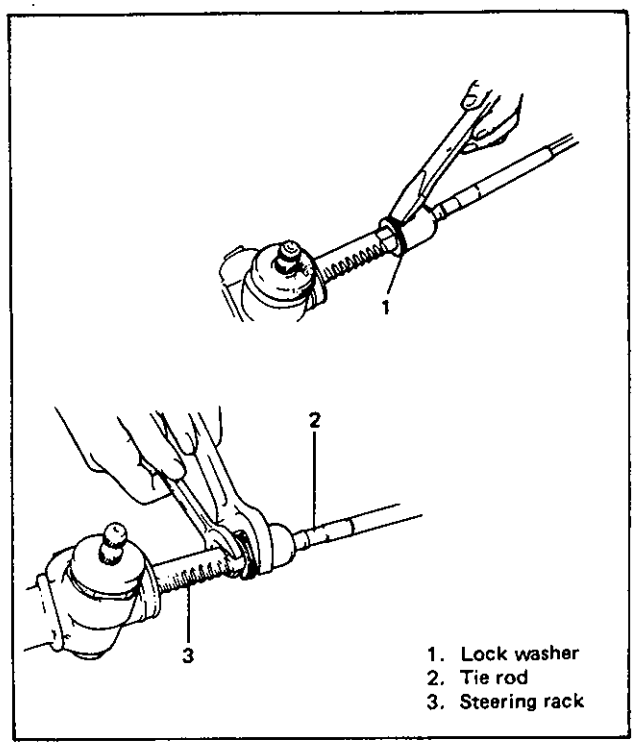


Fig. 3B-18

SPECIAL TOOLS

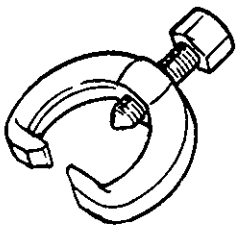
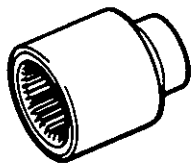
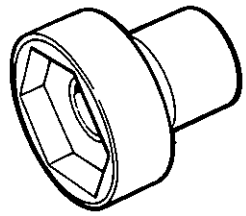
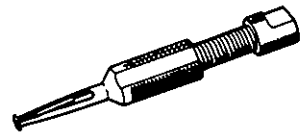
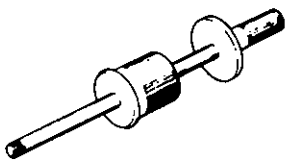
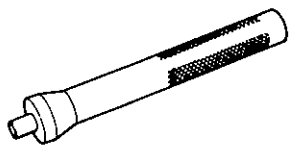
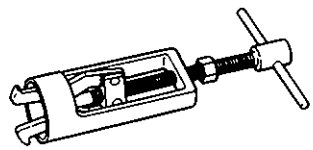
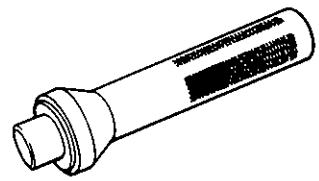
 09913-65210 Tie-rod end remover	 09944-18211 Pinion torque checking socket	 09944-28211 43 mm Socket (Pinion bearing plug remover)	 09921-20200 Pinion bearing remover
 09930-30102 Sliding shaft	 09943-88211 Pinion bearing installer	 09944-48210 Rack bush remover	 09943-78210 Rack bush installer

Fig. 3B-50

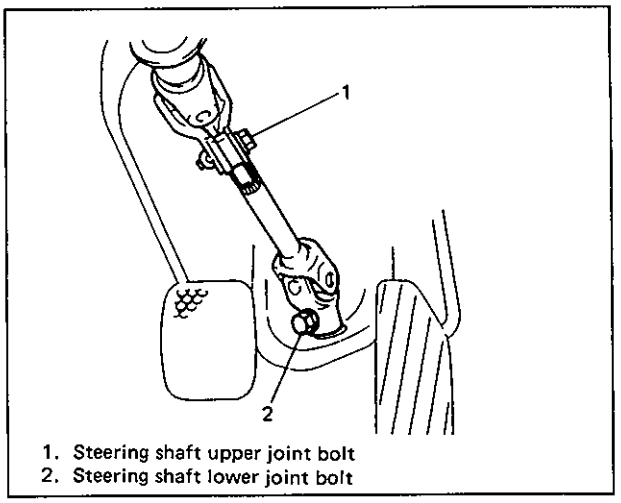
DIAGNOSIS

Condition	Possible Cause	Correction
Steering wheel feels heavy (at low speed)	1. Fluid deteriorated, low viscocity, different type of fluid mixed	Replace fluid.
	2. Pipes or hoses deformed, air entering through joint	Replace defective part.
	3. Insufficient air purging from P/S circuit	Purge air.
	4. P/S belt worn, lacking in tension	Adjust belt tension or replace belt as necessary.
	5. Tire inflation pressure excessively low	Inflate tire.
	6. Front end alignment maladjusted	Check and adjust front end alignment.
	7. Steering wheel installed improperly (twisted)	Install steering wheel correctly.
	8. Bind in tie rod or tie rod end ball joint	Replace defective part.
	9. P/S pump hydraulic pressure fails to increase	Replace P/S pump.
	10. P/S pump hydraulic pressure increases but slowly	Replace P/S pump.
	NOTE: **Make sure to warm up engine fully before measuring hydraulic pressure from pump.**	
Steering wheel feels heavy momentarily when turning it to the left (right)	1. Air drawn in due to insufficient amount of fluid	Add fluid and purge air.
	2. Slipping P/S belt	Adjust belt tension or replace belt as necessary.
	3. Refer to check items 9 and 10 in above section	
No idle-up	1. P/S pump pressure switch defective	Replace P/S pump pressure switch.
Poor recovery from turns	NOTE: **To check steering wheel for recovery, with car running at 22 mile/h (35 km/h), turn it 90° and let it free. It should return more than 60°.**	
	1. Deformed pipes or hoses	Replace defective part.
	2. Steering column installed improperly	Install steering column correctly.
	3. Front end alignment maladjusted	Check and adjust front end alignment.
	4. Ball joints binding	Replace defective part.
	5. Refer to items 9 and 10 in above section	

STEERING GEAR BOX

Removal

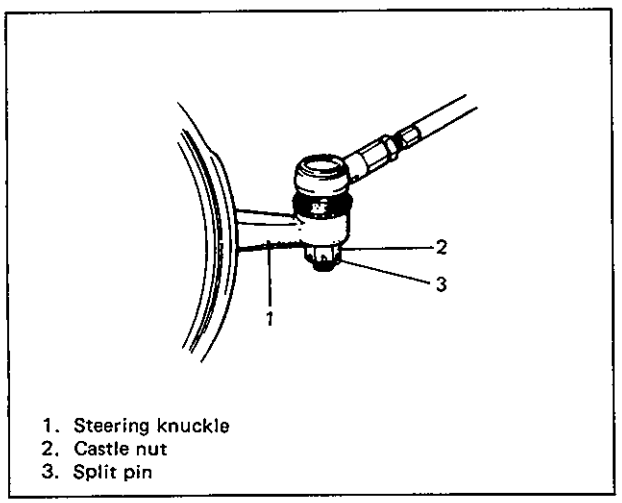
1. Loosen steering shaft upper joint bolt (but it must not be removed).
2. Remove lower joint bolt and separate pinion and lower joint.



1. Steering shaft upper joint bolt
2. Steering shaft lower joint bolt

Fig. 3B1-40 Removing Joint Bolt

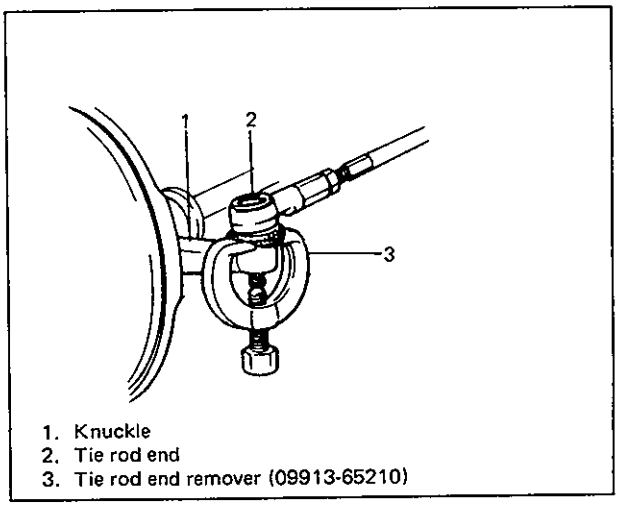
3. Jack up vehicle and remove both right and left wheels.
4. Remove split pin and then remove tie rod castle nut from steering knuckle.



1. Steering knuckle
2. Castle nut
3. Split pin

Fig. 3B1-41

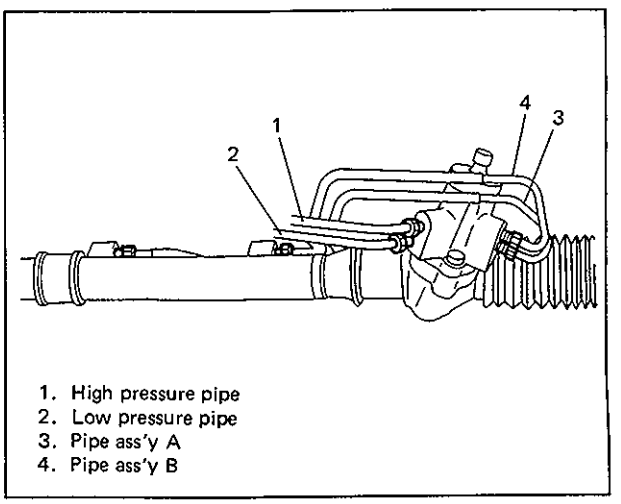
5. Using special tool, remove tie rod end from knuckle.



1. Knuckle
2. Tie rod end
3. Tie rod end remover (09913-65210)

Fig. 3B1-42 Removing Tie Rod End

6. Remove exhaust pipe.
7. For A/T model:
   Remove engine rear torque rod with torque rod bracket.
   For M/T model:
   Disconnect both gear shift control shaft and extension rod at their transmission side.
8. Remove all pipes from steering gear box.



1. High pressure pipe
2. Low pressure pipe
3. Pipe ass'y A
4. Pipe ass'y B

Fig. 3B1-43 Removing Pipes

9. Remove steering gear box mounting bolts and then remove steering gear box from car.

3. Apply DEXRON-II to each vane and install it to rotor with its R part faced outward as shown below.

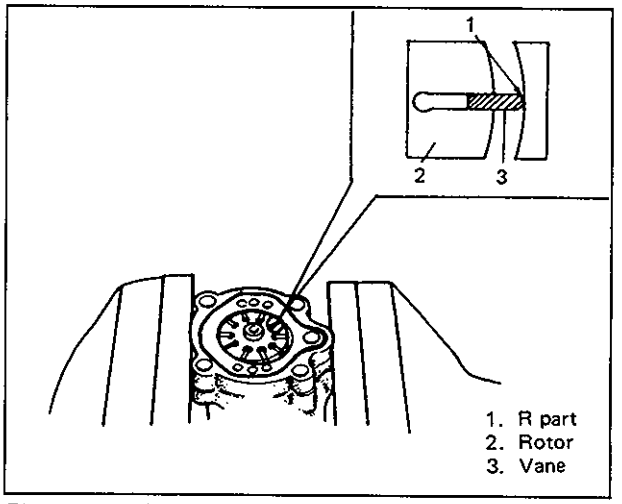


Fig. 3B1-68 Installing Vane

4. Apply DEXRON-II to O-ring and install it to pump body securely.
5. Install cam ring.

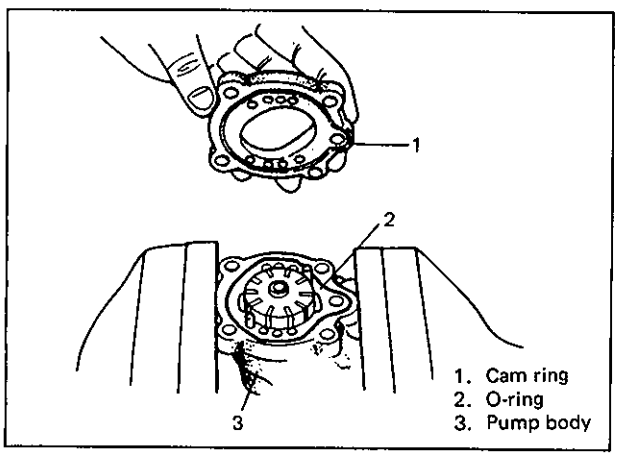


Fig. 3B1-69 Installing Cam Ring

6. Install snap ring to shaft.
7. Tighten cover bolts to specified torque.

Tightening torque for cover bolts	N·m	kg-m	lb-ft
	18 – 22	1.8 – 2.2	13.5 – 15.5

NOTE:
After installing cover, check to make sure that shaft can be turned by hand.

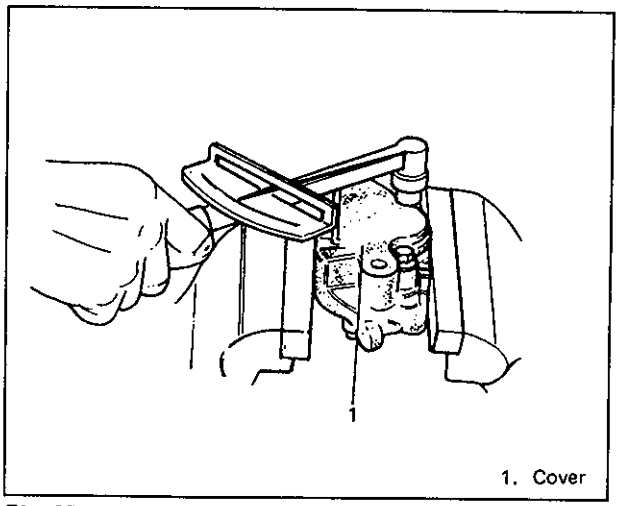


Fig. 3B1-70 Installing Cover

8. Check that flow control valve slides smoothly and tighten discharge (delivery) connector to specified torque.

Tightening torque for discharge connector	N·m	kg-m	lb-ft
	40 – 60	4.0 – 6.0	29.0 – 43.0

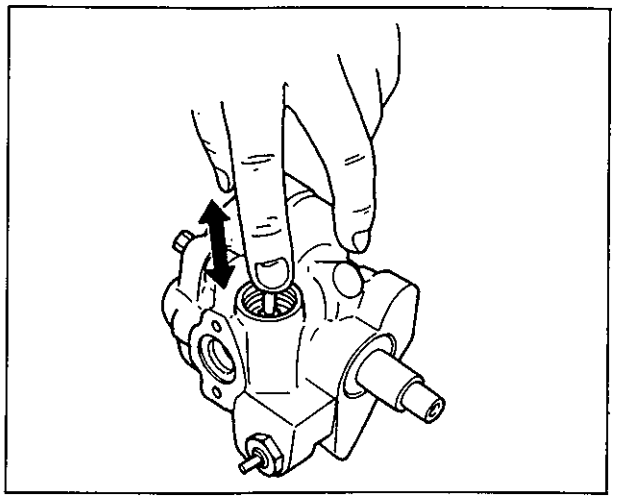


Fig. 3B1-71 Installing Flow Control Valve

5. REMOVE AND INSTALL STEERING SHAFT LOWER JOINT

REMOVAL

1) Set front wheels in straightforward state and remove steering shaft joint cover.
2) Remove steering shaft joint bolts.

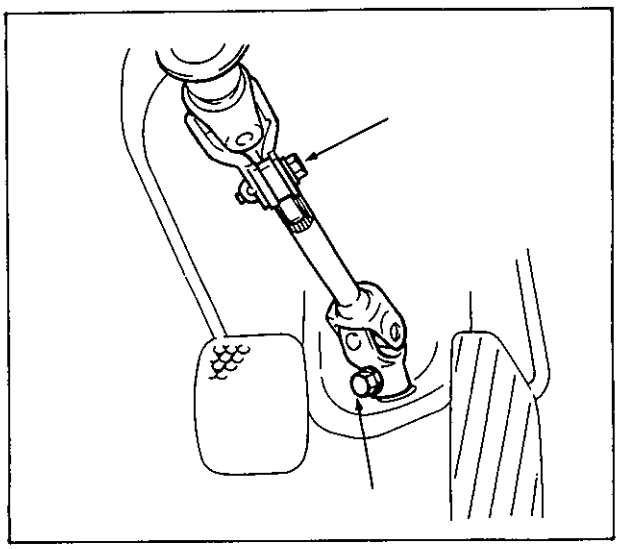


Fig. 3C-19

3) Remove steering shaft lower joint.
   If it's hard to remove, loosen steering column mounting nuts a little.

INSTALLATION

1) Align flat part of lower joint shaft with bolt hole of upper joint as shown. Then insert lower joint shaft into upper joint.

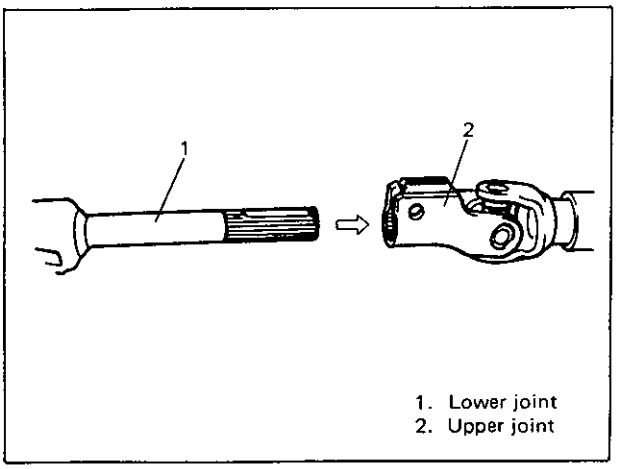


Fig. 3C-20

2) Be sure that front wheels and steering wheel are in straightforward state and insert lower joint into steering pinion shaft.
3) If steering column nuts were loosened in removal, torque lower bracket nuts to below specification first.

N·m	kg-m	lb-ft
11 – 17	1.1 – 1.7	8.0 – 12.0

And then torque upper bracket nuts to specification.

N·m	kg-m	lb-ft
11 – 17	1.1 – 1.7	8.0 – 12.0

4) Torque steering shaft joint bolts to specification.

N·m	kg-m	lb-ft
20 – 30	2.0 – 3.0	14.5 – 21.5

5) Install steering shaft joint cover.

4. REMOVE AND INSTALL WHEEL HUB, WHEEL STUD/WHEEL BEARING OUTSIDE INNER RACE

REMOVAL

1) Hoist car and remove wheel.
2) Uncalk drive shaft nut.
3) Depress foot brake pedal and hold it there. Remove drive shaft nut.
4) Remove caliper carrier bolts.

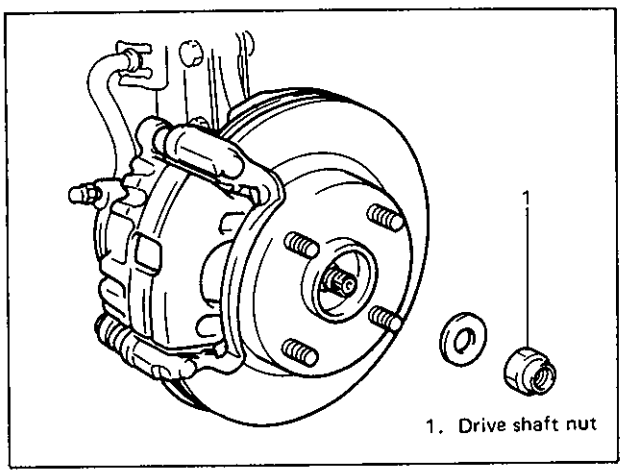


Fig. 3D-4-1

5) Remove caliper with carrier.
6) Remove disc screws.
7) Pull brake disc off by using two 8 mm bolts.

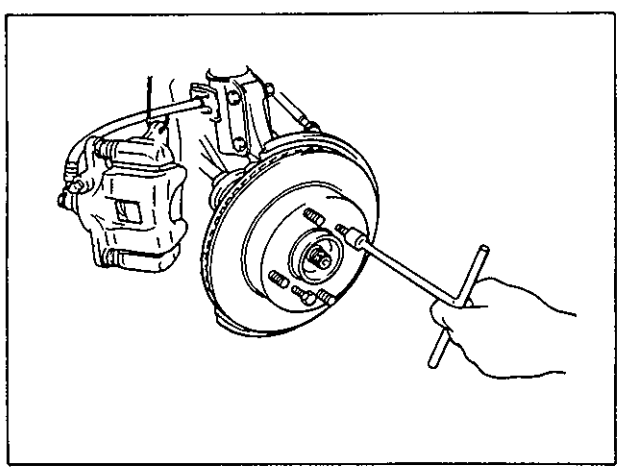


Fig. 3D-4-2

8) Pull out wheel hub with special tools (B) and (C).

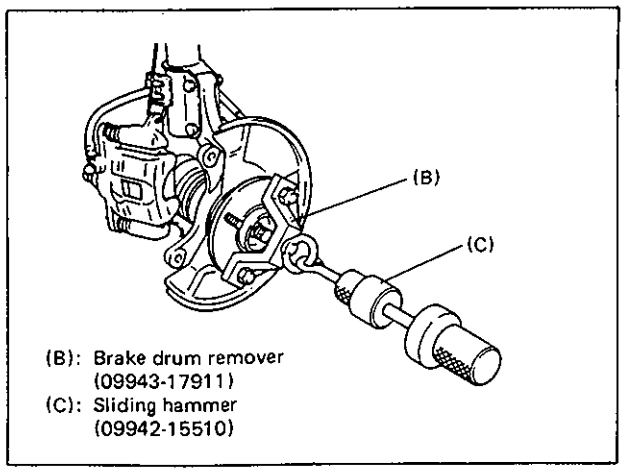


Fig. 3D-4-3

9) Remove hub bolts.

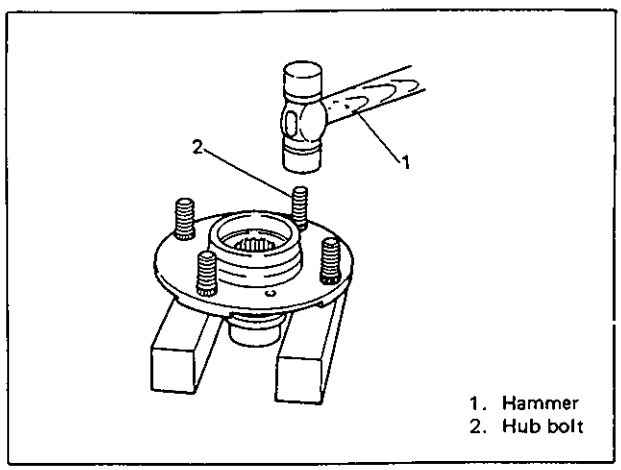


Fig. 3D-4-4

10) Remove wheel bearing inner race.

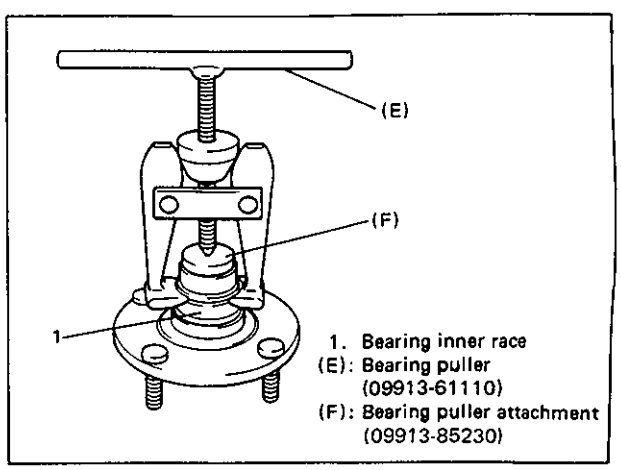
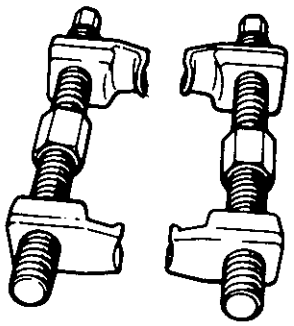
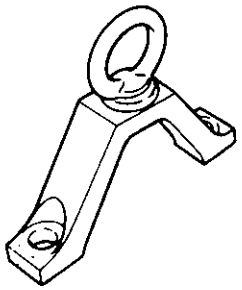


Fig. 3D-4-5

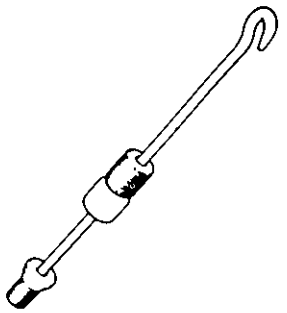
SPECIAL TOOLS



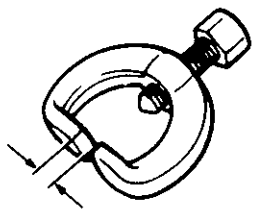
09940-71430
Spring compressor



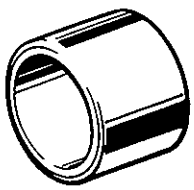
09943-17911
Front wheel hub remover
(Brake drum remover)



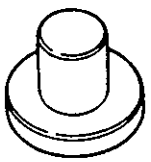
09942-15510
Sliding hammer



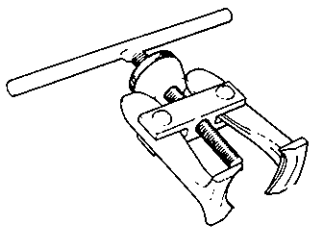
09913-65210
Tie-rod end remover



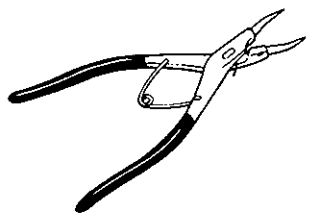
09944-78210
Bearing installer support



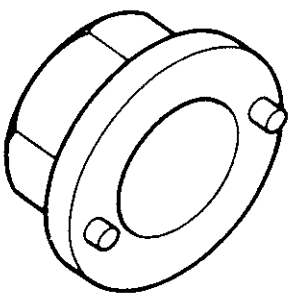
09913-85230
Bearing puller attachment



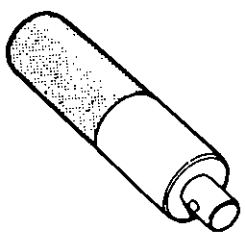
09913-61110
Bearing puller



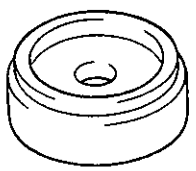
09900-06108
Snap ring pliers
(closing type)



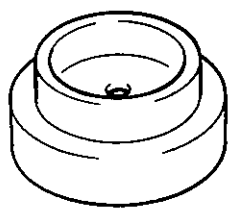
09944-98010
Bearing installer



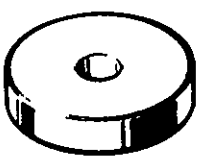
09924-74510
Bearing installer handle



09951-16090
Bearing & oil seal installer



09944-66010
Oil seal installer



09944-68510
Bearing installer
attachment

Fig. 3D-7-9

4) With strut extended fully, install upper part of strut to car body and tighten support nuts to specified torque.
If upper part of strut does not reach car body, raise jack under suspension arm a little.

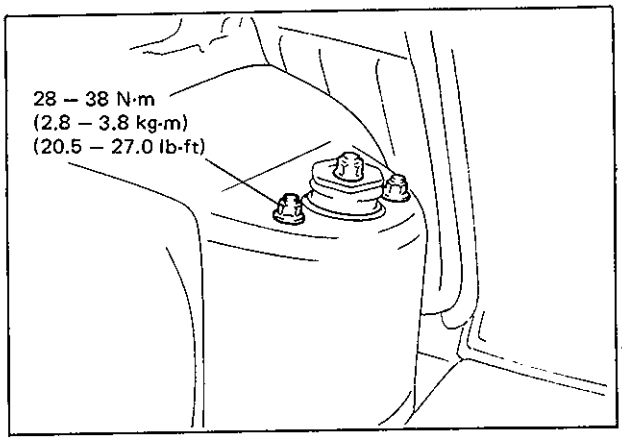


Fig. 3E-31

5) Remove jack from under suspension arm.
6) Tighten wheel nuts to specified torque (Refer to Fig. 3E-53).
7) Lower hoist.

WHEEL HUB AND REAR SUSPENSION KNUCKLE

REMOVAL

1) Perform Steps 1) to 4) of brake back plate REMOVAL on page 5-43.
2) Disconnect brake hose bracket from knuckle.

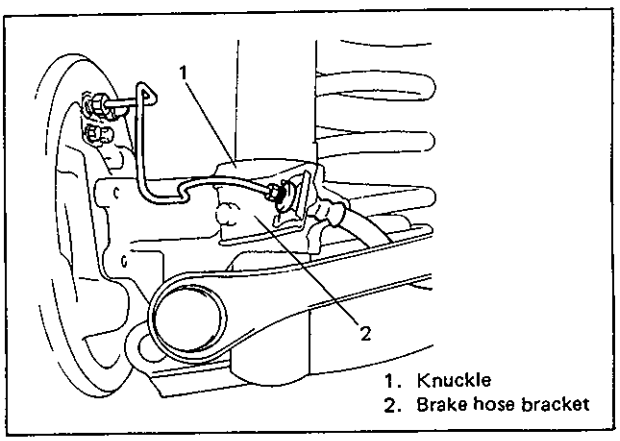


Fig. 3E-32

3) Disconnect brake pipe from wheel cylinder and put wheel cylinder breather plug cap onto pipe to prevent fluid from spilling.

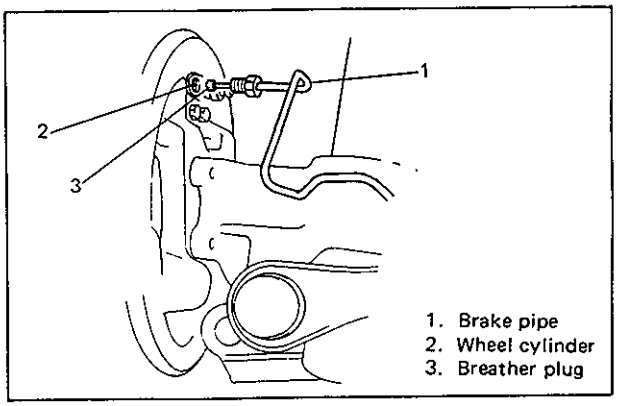


Fig. 3E-33

4) Remove brake back plate from knuckle.

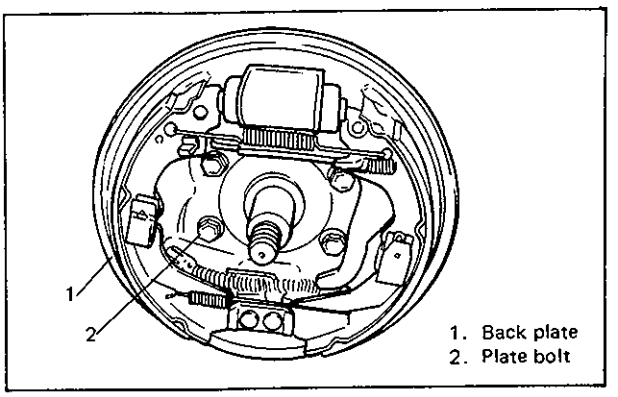


Fig. 3E-34

5) Place jack under suspension arm so as to prevent it from lowering.
6) Remove nut and washer from inside (body center side) of control rod. As preparatory step of this removal, check stamped line on washer to use for guide in reinstallation. Refer to SUSPENSION ARM REMOVAL 2) on p. 3E-5 for details.
Remove LSPV stay bolts (if equipped) from control rod.
7) Remove outside (wheel side) of control rod from rear knuckle stud bolt and disconnect stabilizer bar from suspension arm.

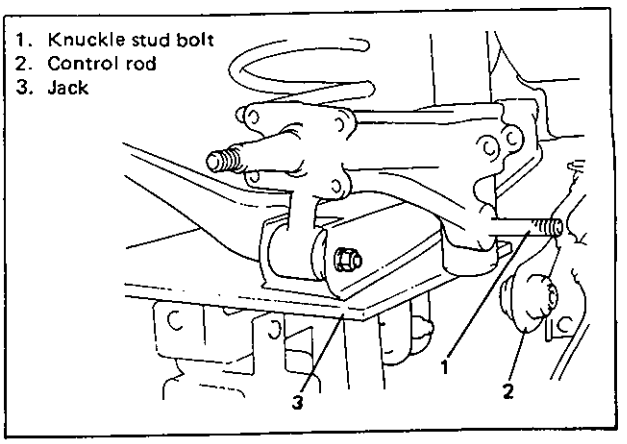


Fig. 3E-35

SECTION 3F

WHEELS AND TIRES

NOTE:
All wheel fasteners are important attaching parts in that they could affect the performance of vital parts and system, and/or could result in major repair expense. They must be replaced with one of the same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during reassembly to assure proper retention of all parts.
There is to be no welding as it may result in extensive damage and weakening of the metal.

CONTENTS

GENERAL DESCRIPTION

TIRES

This car is equipped with P165/65R 14 tire.
The tire is of tubeless type. The tire is designed to operate satisfactorily with loads up to the full rated load capacity when inflated to the recommended inflation pressures.
Correct tire pressures and driving habits have an important influence on tire life. Heavy cornering, excessively rapid acceleration, and unnesessary sharp braking increase tire wear.

WHEELS

Standard equipment wheels are 14 x 5J steel or aluminum wheels.

REPLACEMENT TIRES

When replacement is necessary, the original equipment type tire should be used. Refer to the Tire Placard.
Replacement tires should be of the same size, load range and construction as those originally on the car. Use of any other size or type tire may affect ride, handling, speedometer/odometer calibration, car ground clearance and tire or snow chain clearance to the body and chassis.

INSPECTION

- Check boots for breakage or deterioration. Replace them as necessary.
- Check circlip, snap ring and boot bands for breakage or deformation. Replace as necessary.

DISASSEMBLY (Center Shaft and Center Bearing Support)

1. Remove right side oil seal from center bearing support.
2. Remove circlip.

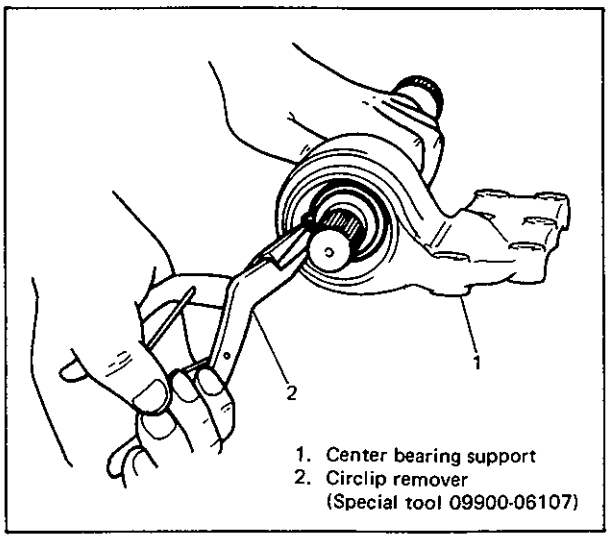


Fig. 4-13

3. By using hydraulic press, draw out center shaft from center bearing.

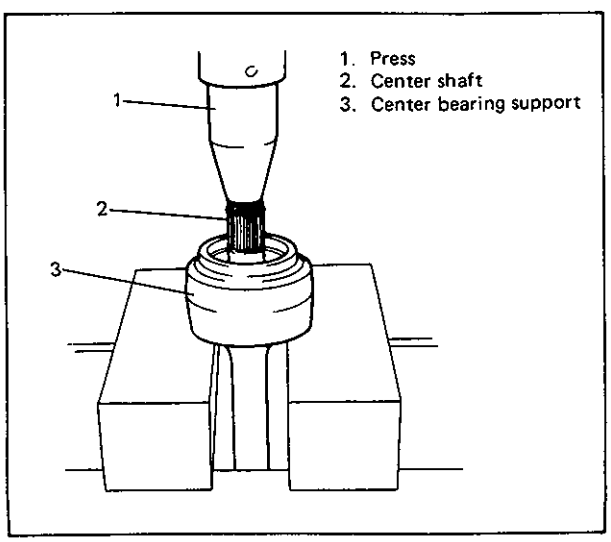


Fig. 4-14

4. Remove left side oil seal from center bearing support.
5. Remove bearing support circlip.

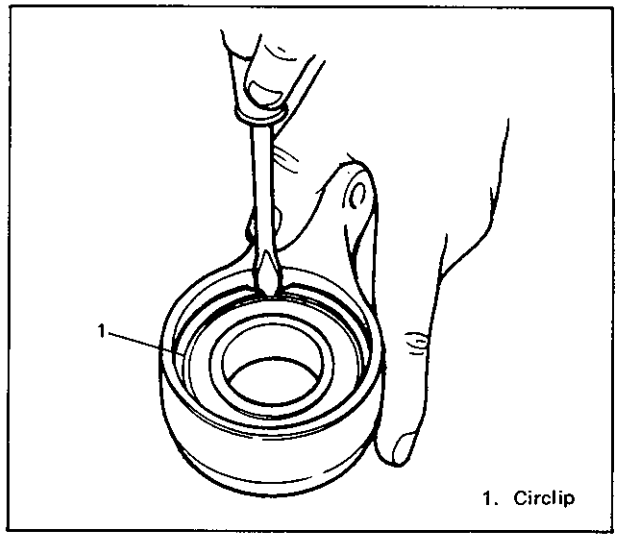


Fig. 4-15

6. Remove center bearing from center bearing support.

REASSEMBLY (Drive Shaft)

1. Wash disassembled parts (except boots). After washing, dry parts completely by blowing air.
2. Clean boots with cloth. DO NOT wash boots in degreaser, such as gasoline or kerosene, etc. Washing in degreaser causes deterioration of boot.

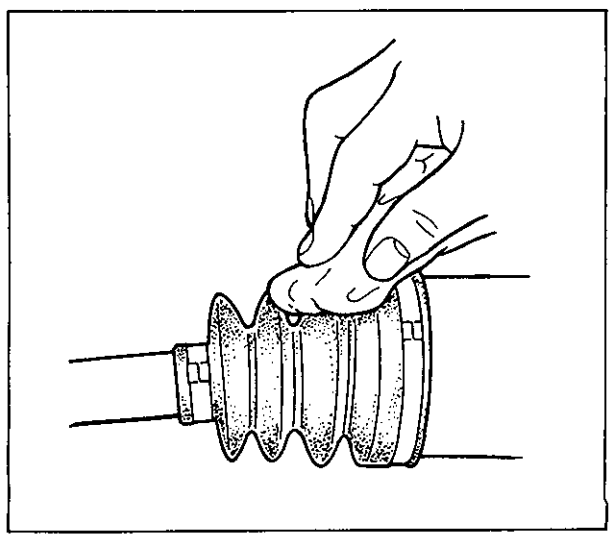


Fig. 4-16

SECTION 5

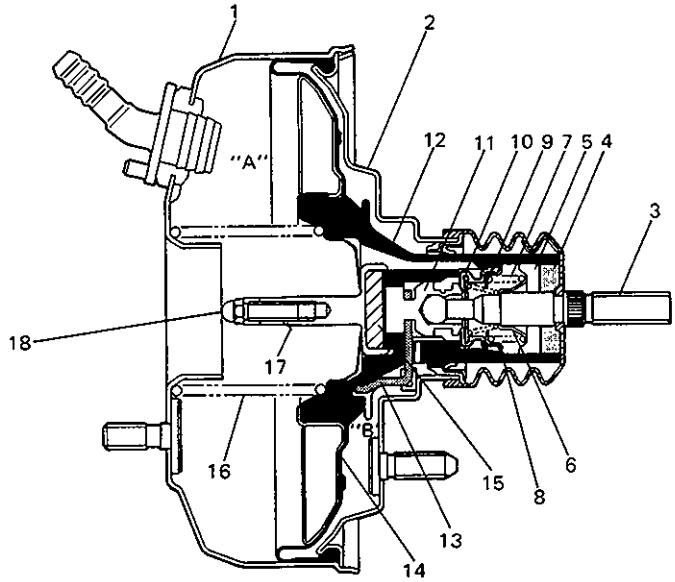
BRAKES

NOTE:

All brake fasteners are important attaching parts in that they could affect the performance of vital parts and systems, and/or could result in major repair expense. They must be replaced with one of same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during reassembly to assure proper retention of all parts. There is to be no welding as it may result in extensive damage and weakening of the metal.

CONTENTS

Booster OPERATION



1. Booster No. 1 body
2. Booster No. 2 body
3. Valve operating rod
4. Air cleaner element
5. Air cleaner separator
6. Air valve spring retainer
7. Air valve return spring
8. Control valve spring retainer
9. Control valve spring
10. Booster control valve
11. Booster air valve
12. Booster piston
13. Valve stopper key
14. Booster diaphragm
15. Reaction disc
16. Booster piston return spring
17. Booster piston rod
18. Booster rod adjust screw

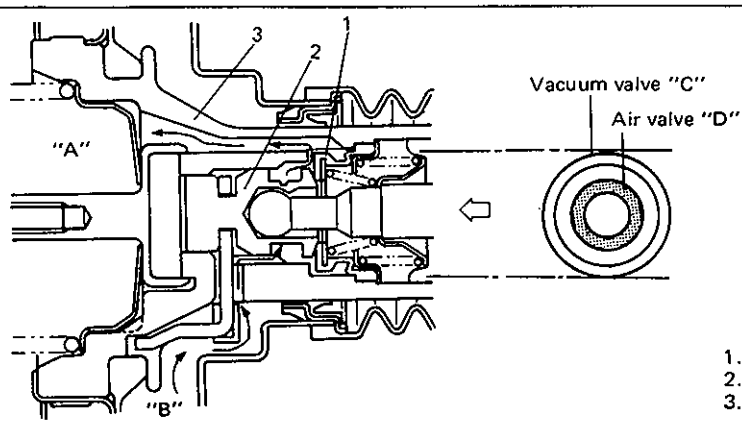
Fig. 5-14 Vacuum Booster Assembly

When the brake pedal is depressed, the force is transmitted to the piston of the master cylinder through the valve operating rod, booster air valve, reaction disc and piston rod. At the same time, the force of the booster piston developed due to the pressure difference between the two chambers "A" and "B" in the above figure is added to it.

The end of the booster control valve has a double function of a vacuum valve and air valve. That is, as shown in the figure, the booster control valve closes between the "A" and "B" chambers as its outer end "C" contacts the booster piston seat and opens as "C" leaves the booster piston seat (vacuum valve function). Also it closes between the "B" chamber and outside air as its inner end "D" contacts the air valve seat and opens as "D" leaves the air valve seat (air valve function).

When foot brake pedal is not depressed

The valve operating rod is pushed to the right by the spring force as shown. The air valve is also enough to the right to contact the valve stopper key as shown. In this state, the vacuum valve (control valve "C") is open and the air valve (control valve "D") is closed. Thus the chambers "A" and "B" conduct and share the same negative pressure (because of no pressure difference) which allows the return spring to push the booster piston to the right.



1. Booster control valve
2. Booster air valve
3. Booster piston

Fig. 5-15

4. REAR BRAKE SHOE INSPECTION

Inspection should be carried out on following points after brake pedal travel "B" (pedal arm to wall clearance) check as described in Item 3 on page 5-20 of this section, even when it is more than 60 mm (2.36 in.).

For brake shoe inspection, refer to INSPECT BRAKE SHOE & LINING of this section, page 5-45.

5. BRAKE PEDAL PLAY INSPECTION

Pedal play should be within below specification. If out of specification, check stop light switch for proper installation position and adjust if necessary.

Also check pedal shaft bolt and master cylinder pin installation for looseness and replace if defective.

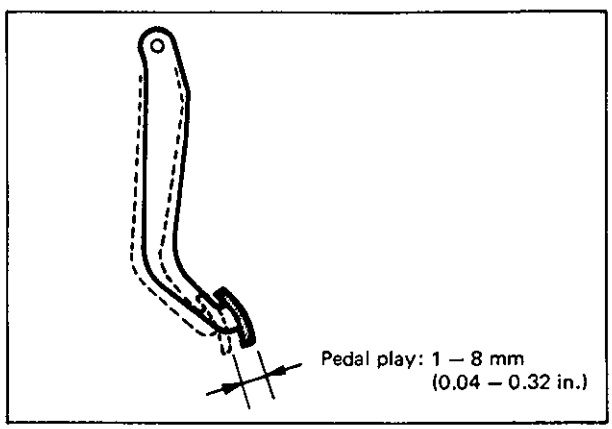


Fig. 5-23

6. REAR DRUM BRAKE SHOE ADJUSTMENT

Rear brake has self-adjusting mechanism but it does require adjustment for proper drum to shoe clearance when brake shoe has been replaced or brake drum has been removed for some other service.

Adjustment is automatically accomplished by depressing brake pedal 3 to 5 times with approximately 30 kg (66 lbs) load after all parts are installed.

Then check brake drum for dragging and brake system for proper performance. After lowering car from hoist, brake test should be performed.

7. MASTER CYLINDER INSPECTION

Check for a cracked master cylinder casting or brake fluid around the master cylinder. Leaks are indicated only if there is at least a drop of fluid. A damp condition is not abnormal.

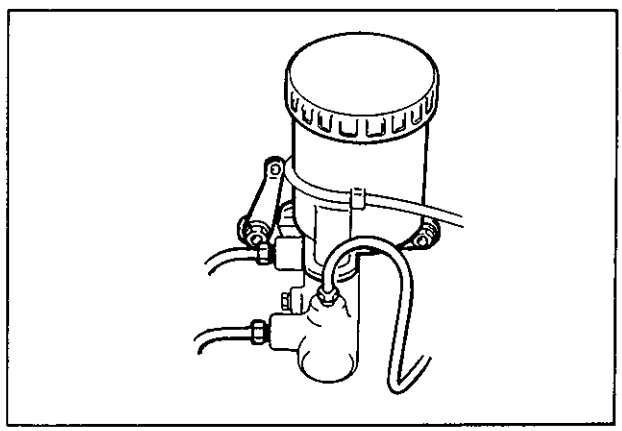


Fig. 5-24

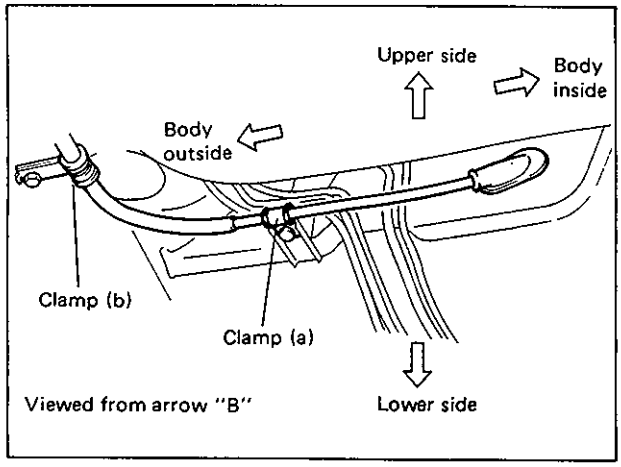


Fig. 5-43

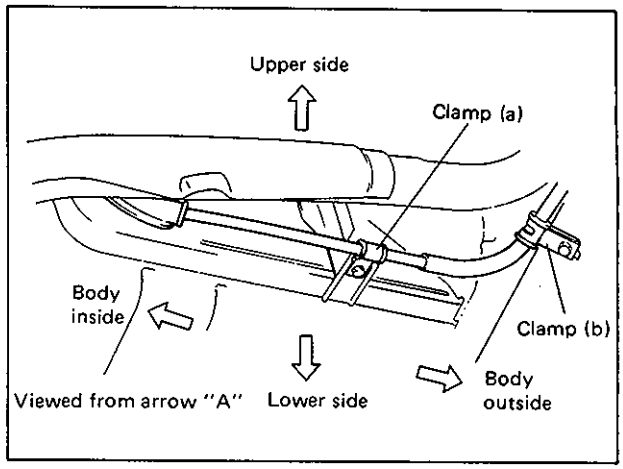


Fig. 5-44

2. REMOVE AND INSTALL BRAKE SHOE

REMOVAL

1) Perform steps 1) to 6) of brake drum REMOVAL.
2) Remove shoe hold down springs by turning shoe hold down pins as shown.

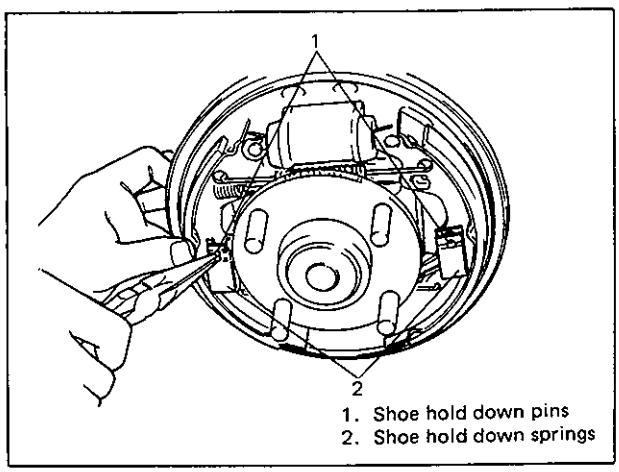


Fig. 5-84

3) Disconnect parking brake shoe lever from parking brake cable and remove brake shoes.

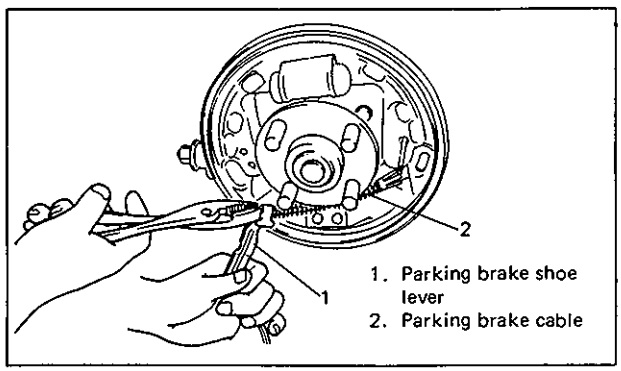


Fig. 5-85

4) Remove strut and springs.
5) Remove parking brake shoe lever from shoe rim.

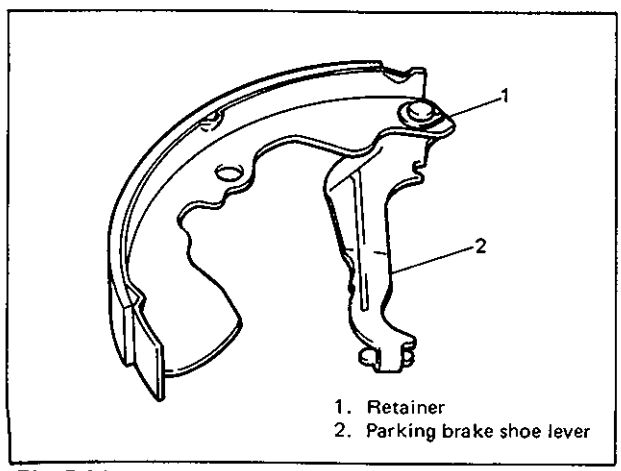


Fig. 5-86

INSTALLATION

1) Assemble parts as shown in reverse order of removal.

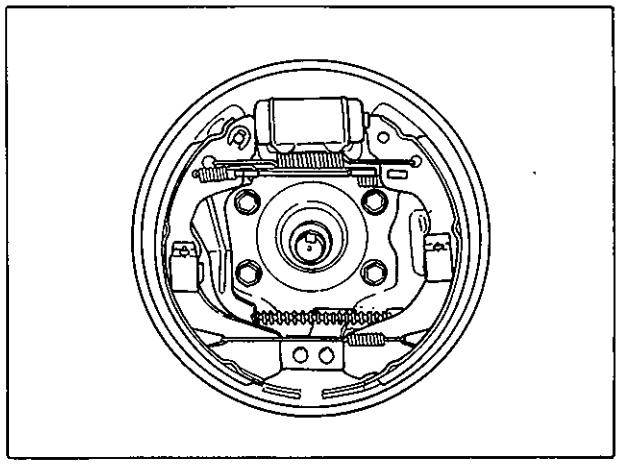


Fig. 5-87

2) Install shoe hold down springs by pushing them down in place and turning hold down pins.

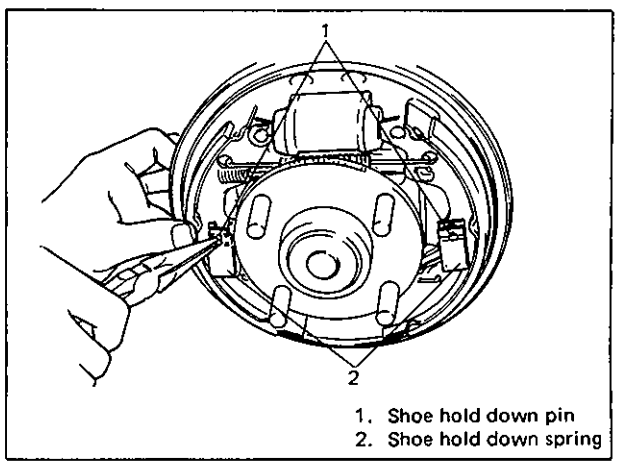


Fig. 5-88

3) For procedure hereafter, refer to steps 1) to 8) of BRAKE DRUM INSTALLATION on page 5-40.

LSPV (Load Sensing Proportioning Valve) R & I

1. REMOVE AND INSTALL LSPV

REMOVAL

1) Clean around reservoir cap and take out fluid with syringe or such.
2) Hoist car.
3) Disconnect brake pipes from LSPV.

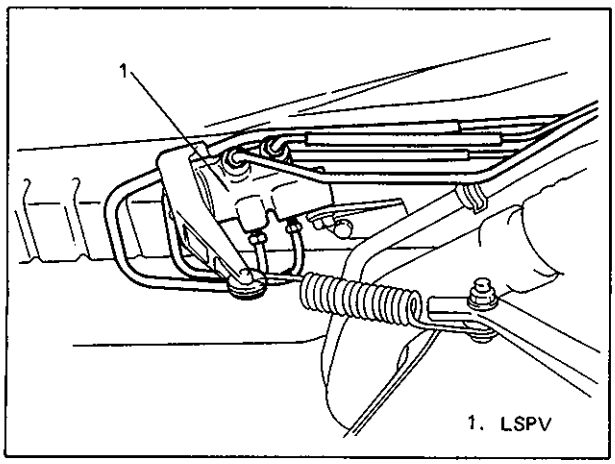


Fig. 5-103-1

4) Remove LSPV assembly from car body.

NOTE:
As shown in figure below, LSPV assembly should be removed together with its spring and stay installed as they are.

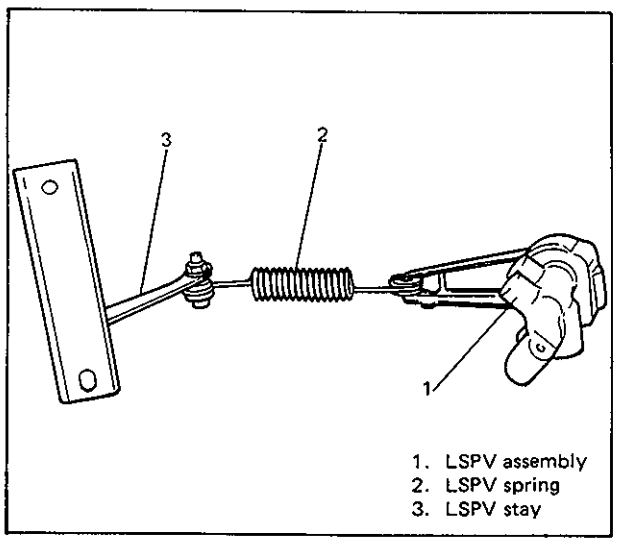


Fig. 5-103-2

5) Remove spring and stay from lever.

CAUTION:
- **None of below indicated screw of LSPV assembly should be loosened or tightened.**
- **LSPV assembly must not be disassembled. Replace with new one if defective.**

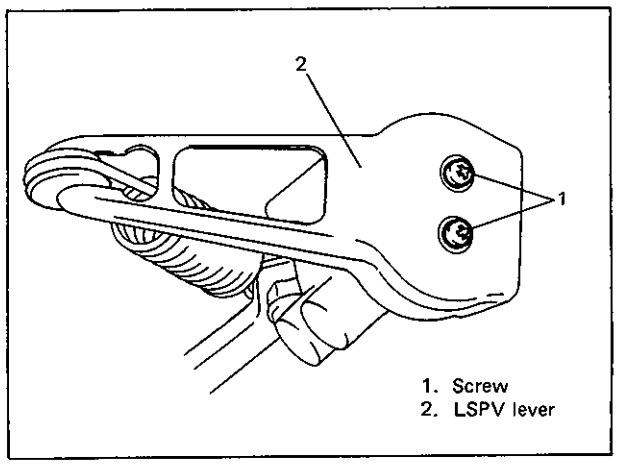


Fig. 5-103-3

INSTALLATION

CAUTION:
Refer to above CAUTION.

Install by reversing removal procedure, noting the following.

1) Apply multi-purpose grease to upper and lower joint of coil spring.

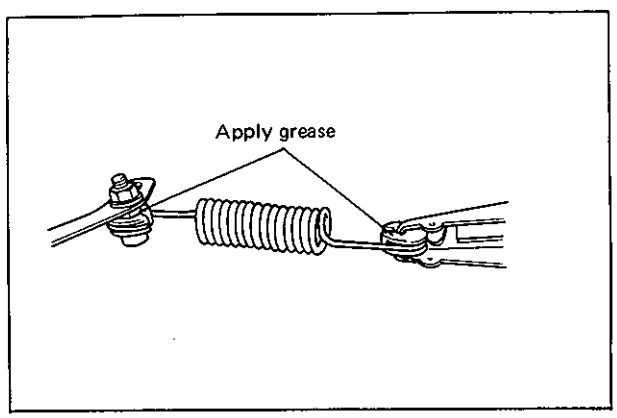


Fig. 5-103-4

NOTE:
When holding No. 2 body, use care so that diaphragm is not caught by projections at 12 locations around No. 1 body.

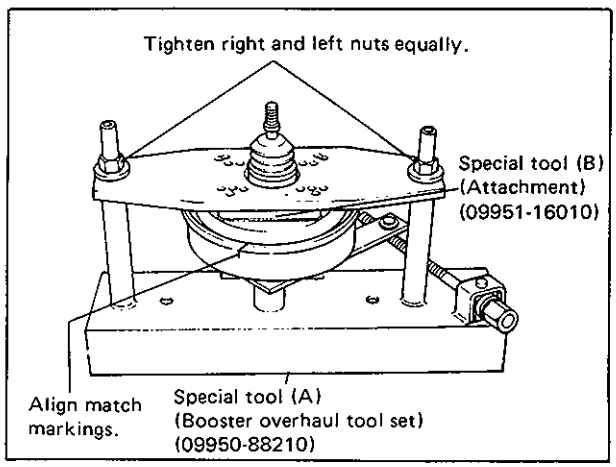


Fig. 5-135

12) Turn special tool bolt counterclockwise until No. 1 body projecting part comes to mid-position of No. 2 body depressed parts as shown.

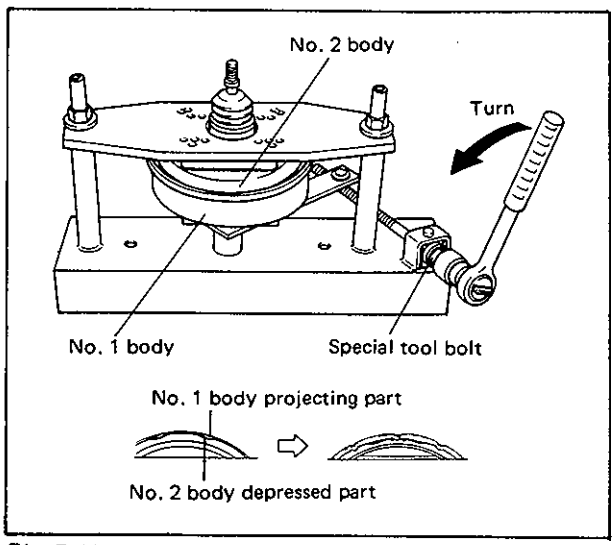


Fig. 5-136

13) Remove booster from special tool.
14) Install push rod clevis so that dimension "A" as shown below is within 114.5 – 115.5 mm (4.51 – 4.54 in) and torque nut to specification.

NOTE:
Dimension "A" does not include thickness of gasket.

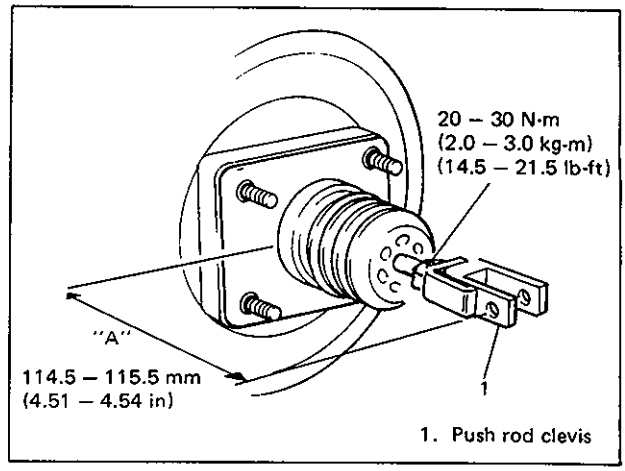


Fig. 5-137

NOTE:
Whenever booster was disassembled, make sure to check clearance between piston rod and master cylinder piston after reassembly. (For details, refer to page 5-62.)

15) For installation of booster, see steps 1) to 10) of its INSTALLATION on page 5-51.

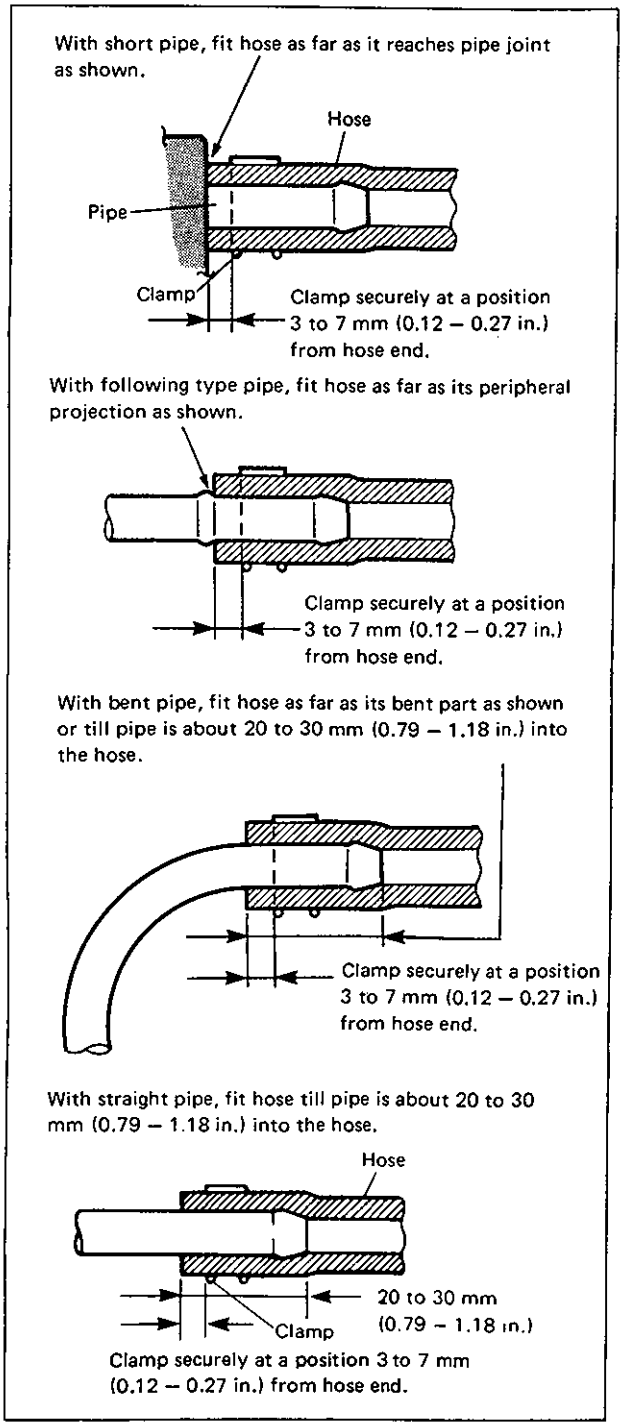


Fig. 6-3 Hose Connection

FUEL PRESSURE RELIEF PROCEDURE (for injector model)

CAUTION:
This work must not be done when engine is hot. If done so, it may cause adverse effect to catalyst.

After making sure that engine is cold, relief fuel pressure as follows.

1. Place transmission gear shift lever in "Neutral" (Shift selector lever to "P" range for A/T model), set parking brake, and block drive wheels.
2. Remove main fuse box cover and engine cooling water reservoir from its bracket.
3. Detach main fuse box from body and disconnect coupler from fuel pump relay.

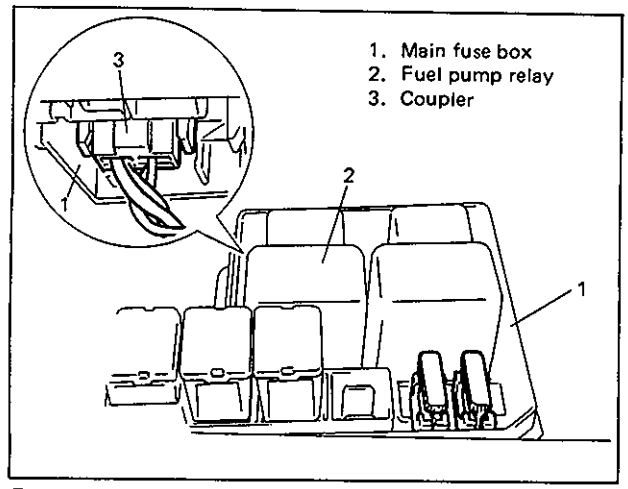


Fig. 6-4 Disconnecting Fuel Pump Relay Coupler

4. Remove fuel filler cap to release fuel vapor pressure in fuel tank and then reinstall it.
5. Start engine and run it till it stops for lack of fuel. Repeat cranking engine 2 – 3 times for about 3 seconds each time to dissipate fuel pressure in lines. Fuel connections are now safe for servicing.
6. Upon completion of servicing, connect coupler to fuel pump relay and fix main fuse box.

GENERAL DESCRIPTION

ENGINE

The engine is a water-cooled, in line 4 cylinders, 4 stroke cycle gasoline unit equipped with its S.O. H.C. (Single Overhead Camshaft) valve mechanism arranged for "V"-type valve configuration and 16 valves (IN 2 and EX 2/one cylinder).

The single overhead camshaft is mounted over the cylinder head: it is driven from crankshaft through timing belt and opens and closes its valves via the rocker arms.

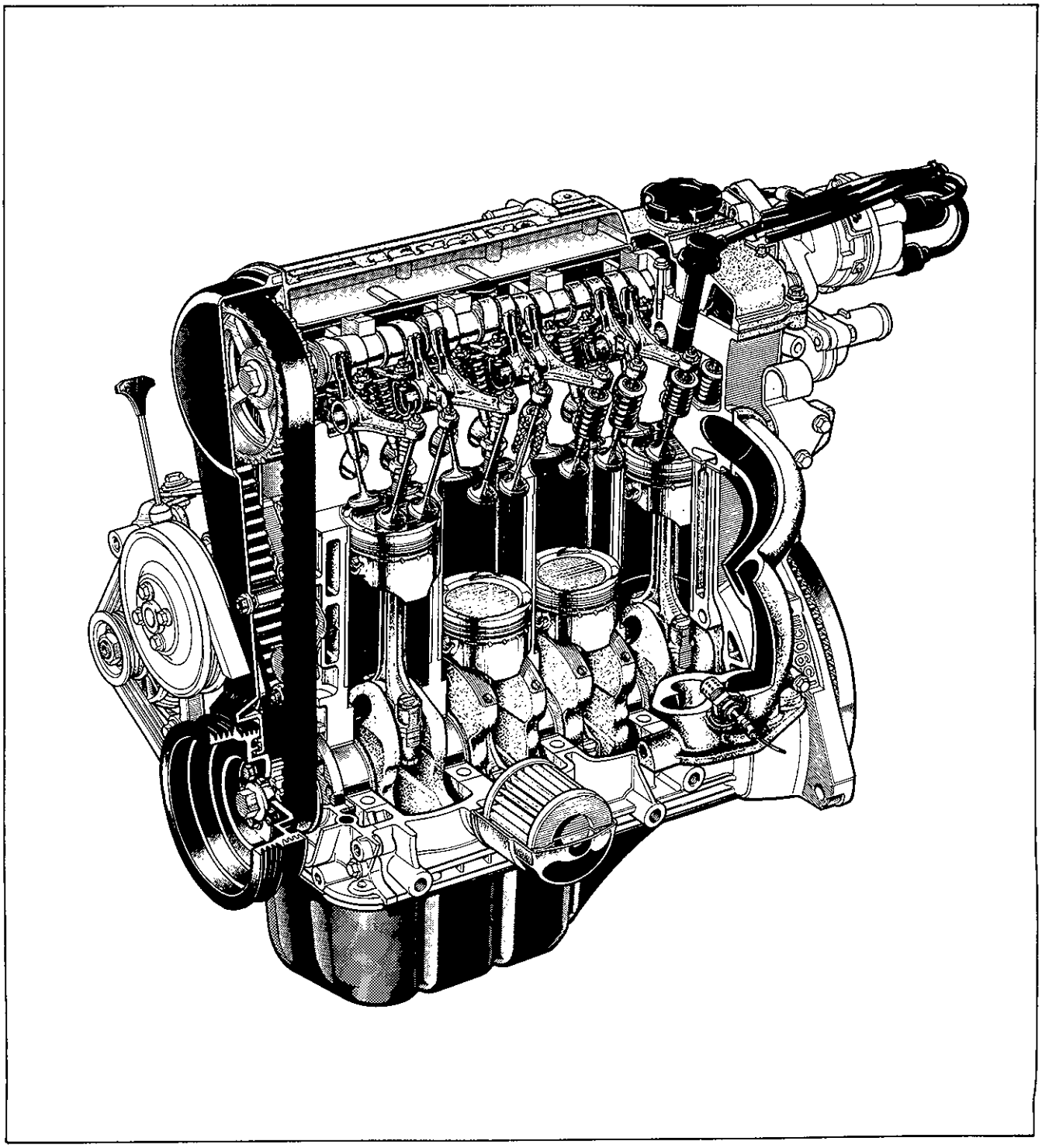


Fig. 6A-1 Engine Construction

5. If valve lash is out of specification, adjust it to specification by turning adjusting screw after loosening lock nut. After adjustment, tighten lock nut to specified torque while holding adjusting screw stationary with screwdriver, and then make sure again that valve lash is within specification.

		When cold (Coolant temperature is 15 – 25°C or 59 – 77°F)	When hot (Coolant temperature is 60 – 68°C or 140 – 154°F)
Valve clearance specification	Intake	0.08 – 0.12 mm (0.0031 – 0.0047 in)	0.12 – 0.16 mm (0.0047 – 0.0063 in)
	Exhaust		

Tightening torque for adjusting screw lock nut	N·m	kg-m	lb-ft
	10 – 13	1.0 – 1.3	7.5 – 9.0

6. After checking and adjusting valve lashes at valves ①, ②, ⑤ and ⑦, rotate crankshaft exactly one full turn (360°), and check the same at valves ③, ④, ⑥ and ⑧. Adjust them as necessary.
7. After checking and adjusting all valves, reverse removal procedure for installation.

REMOVE OR DISCONNECT

1. Hoist car.
2. Drain engine oil by removing drain plug.

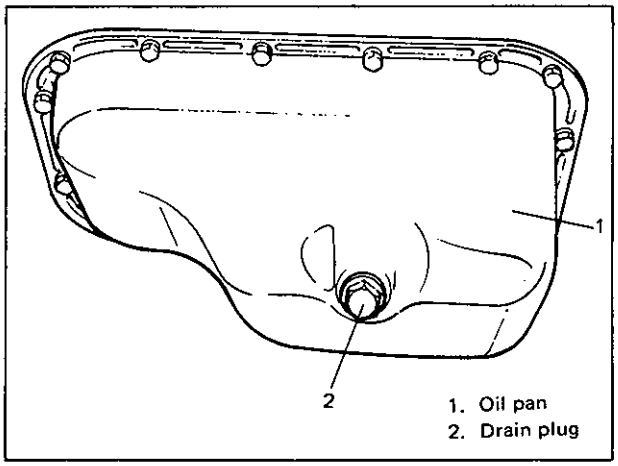


Fig. 6A-43 Drain Plug

3. Clutch housing (torque converter housing for A/T) lower plate.
4. Oil pan from cylinder block.
5. Oil pump strainer.

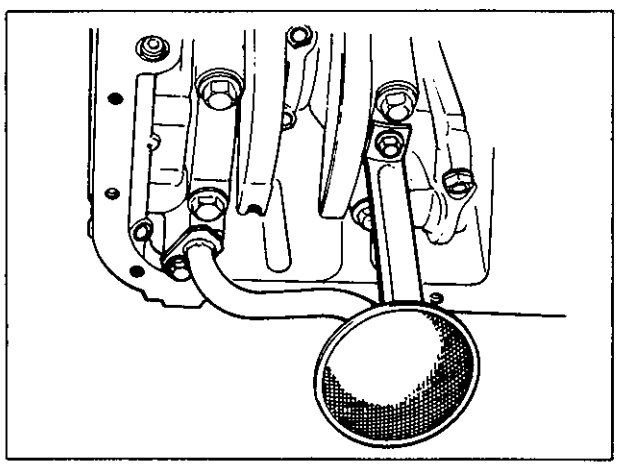


Fig. 6A-44 Oil Pump Strainer

CLEAN

- Inside of oil pan and oil pump strainer screen.

INSTALL OR CONNECT

1. Oil pump strainer.
   Install seal in such position as shown in Fig. 6A-45.
   Tighten strainer bolt first and then bracket bolt to specified torque.

Tightening torque for bolts	N·m	kg-m	lb-ft
	9 – 12	0.9 – 1.2	7.0 – 8.5

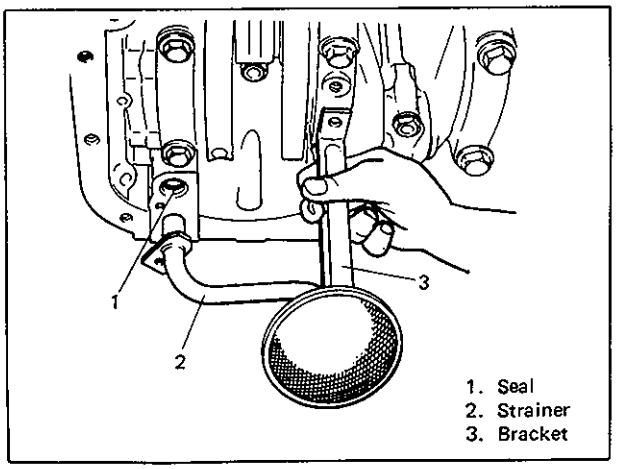


Fig. 6A-45 Installing Seal and Strainer

2. Clean mating surfaces of oil pan and cylinder block. Remove oil, old sealant, and dusts from mating surfaces.
   After cleaning, apply silicon type sealant to oil pan mating surface continuously as shown in Fig. 6A-46.

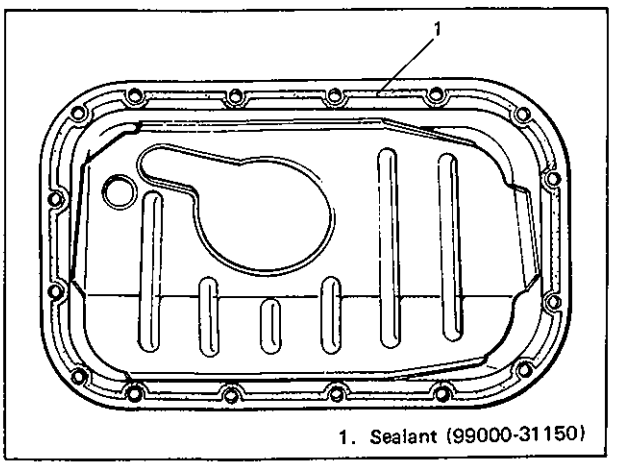
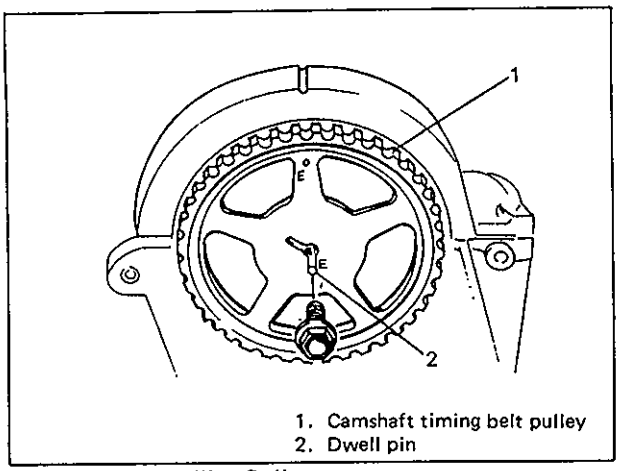


Fig. 6A-46 Applying Sealant to Oil Pan

3. Oil pan to cylinder block.
   After fitting oil pan to block, run in securing bolts and start tightening at the center: move wrench outward, tightening one bolt at a time. Tighten bolts to specified torque.

Tightening torque for oil pan bolt and nut	N·m	kg-m	lb-ft
	9 – 12	0.9 – 1.2	7.0 – 8.5

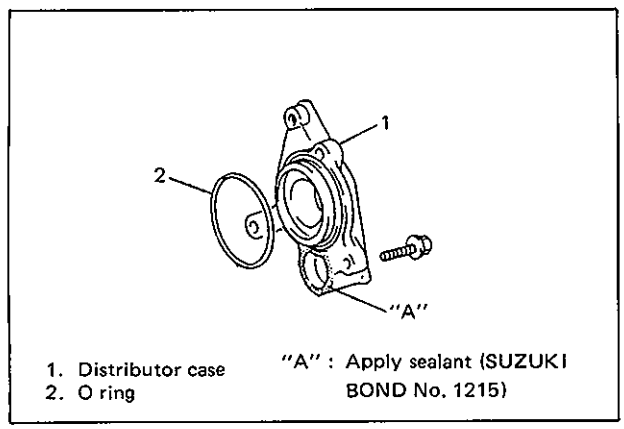


1. Camshaft timing belt pulley
2. Dwell pin

Fig. 6A-77 Installing Pulley

10. After applying sealant to part "A" as shown in figure below, install distributor case to cylinder head and tighten its fixing bolts to specified torque.

Tightening torque for distributor case bolt	N·m	kg-m	lb-ft
	9 – 12	0.9 – 1.2	7.0 – 8.5



1. Distributor case
2. O ring

"A" : Apply sealant (SUZUKI BOND No. 1215)

Fig. 6A-77-1

11. Distributor assembly.
12. Belt tensioner, timing belt, outside cover, crankshaft pulley and water pump belt as priviously outlined.
13. Adjust valve clearance as priviously outlined.
14. Cylinder head cover and air cleaner assembly.
15. Negative cable at battery.
16. Adjust ignition timing. Refer to section 6F for adjustment.

PISTONS, PISTON RINGS, CONNECTING RODS AND CYLINDERS

REMOVE OR DISCONNECT

1. Cylinder head from cylinder block as previously outlined.
2. Drain engine oil.
3. Oil pan and oil pump strainer as previously outlined.
4. Mark cylinder number on all pistons, connecting rods and rod bearing caps, using silver pencil or quick drying paint.
5. Rod bearing caps.
6. Install guide hose over threads of rod bolts. This is to prevent damage to bearing journal and rod bolt threads when removing connecting rod.

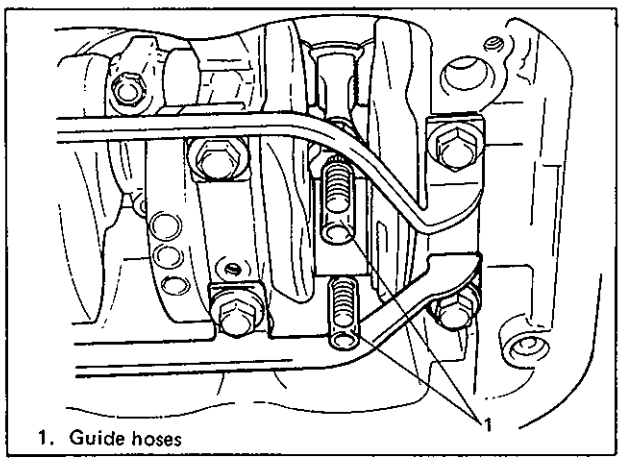


Fig. 6A-106 Installing Guide Hoses

7. Decarbon top of cylinder bore before removing piston from cylinder.
8. Push piston and connecting rod assembly out through the top of cylinder bore.

DISASSEMBLY

1. Using piston ring expander, remove two compression rings (Top and 2nd) and oil ring from piston.
2. Piston pin from connecting rod.
   - Ease out piston pin circlips, as shown.

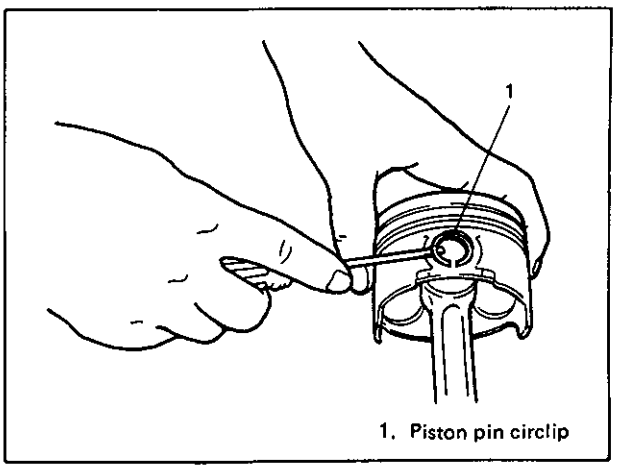


Fig. 6A-107 Removing Piston Pin Circlips

- Force piston pin out.

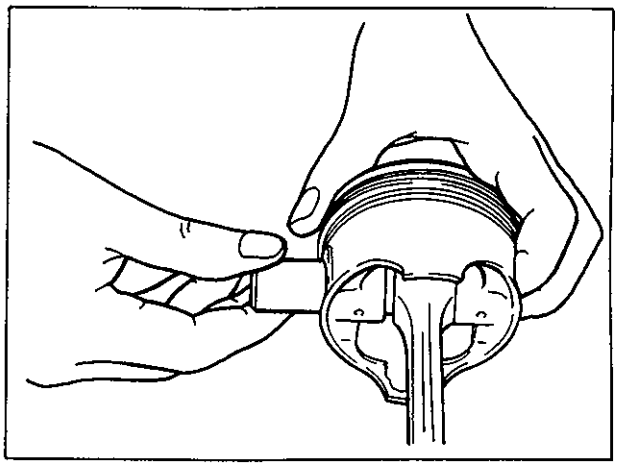
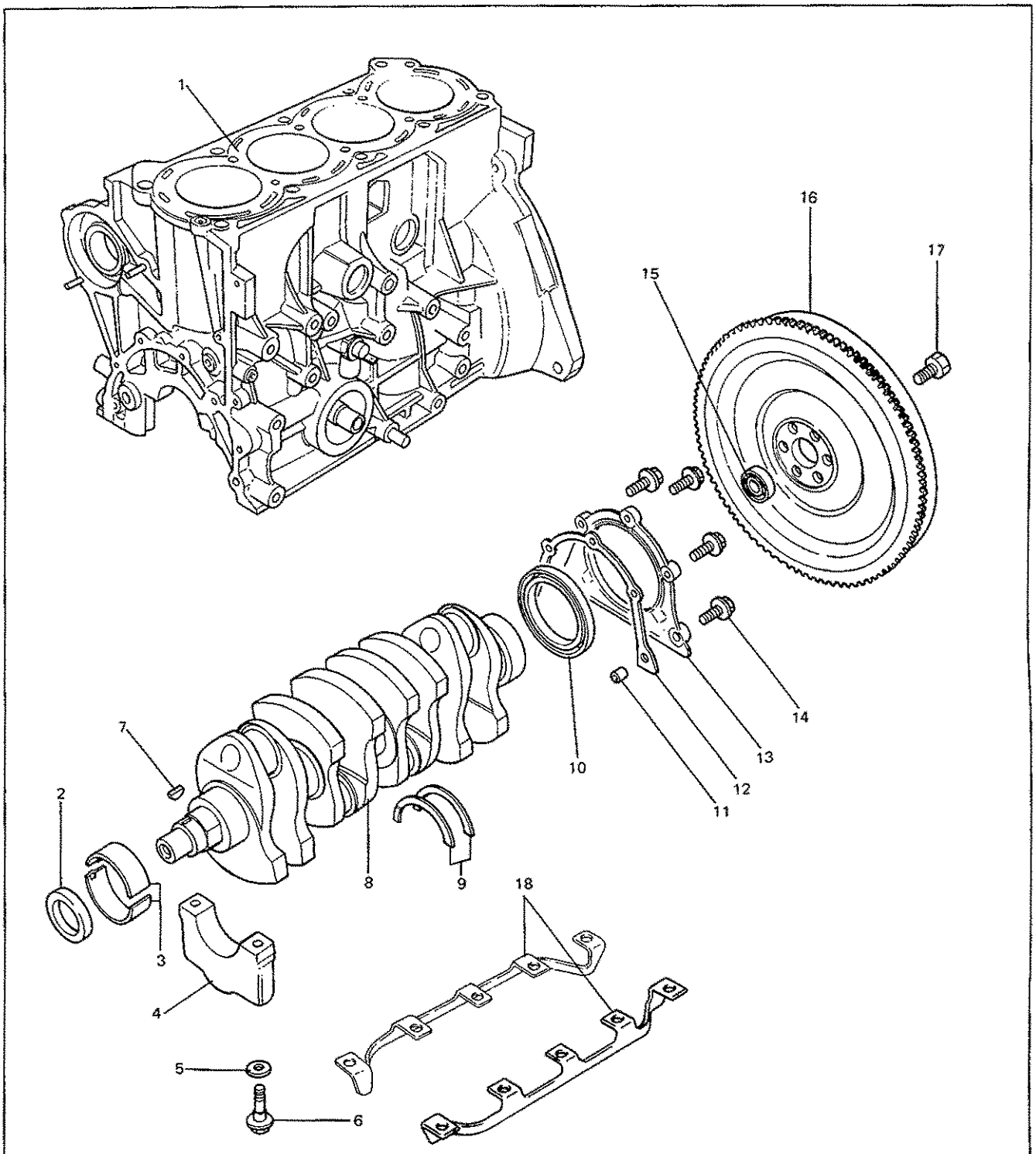


Fig. 6A-108 Removing Piston Pin

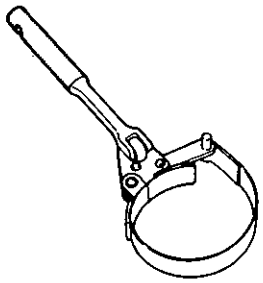
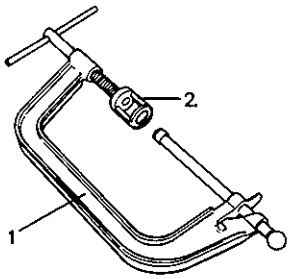
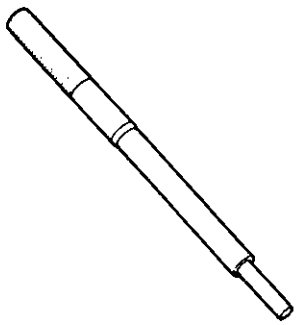
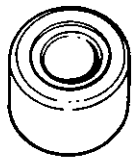
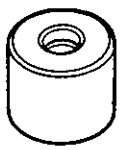
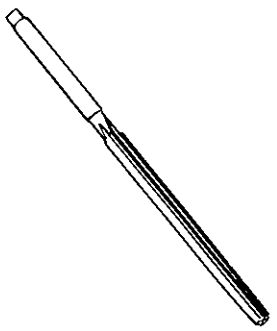
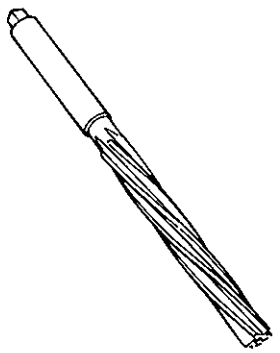
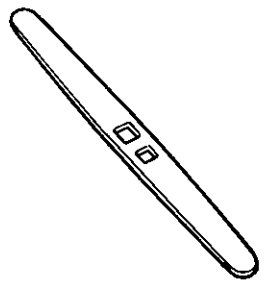
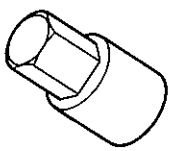
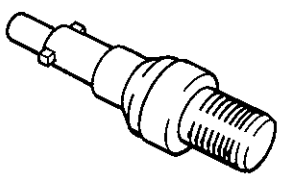
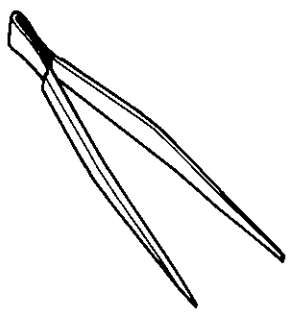
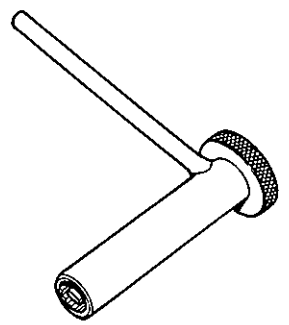
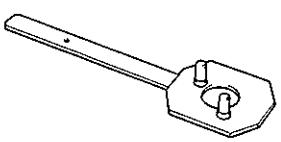
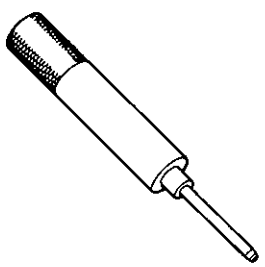
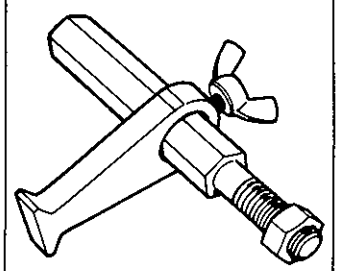
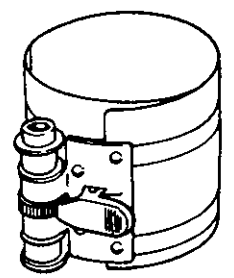
MAIN BEARINGS, CRANKSHAFT AND CYLINDER BLOCK



1. Cylinder block
2. Front oil seal
3. Main bearing
4. Bearing cap
5. Cap washer
6. Cap bolt
7. Timing pulley key
8. Crankshaft
9. Thrust bearing
10. Rear oil seal
11. Pin
12. Oil seal housing gasket
13. Oil seal housing
14. Housing bolt
15. Input shaft bearing
16. Flywheel
17. Flywheel bolt
18. Bearing cap stiffener

Fig. 6A-133 Main Bearing, Crankshaft and Cylinder Block

SPECIAL TOOLS

 09915-47310 Oil filter wrench	 1. 09916-14510 Valve lifter 2. 09916-14910 Valve lifter attachment	 09916-44910 Valve guide remover	 09916-56011 Valve guide installer attachment
 09917-98221 Valve stem seal installer	 09916-34550 Reamer (5.5 mm)	 09916-38210 Reamer (11 mm)	 09916-34541 Reamer handle
 09919-16020 17 mm socket	 09915-67010 Compression gauge attachment (C)	 09916-84510 Forceps	 09917-18210 Tappet adjuster wrench
 09917-68220 Camshaft pulley holder	 09916-58210 Valve guide installer handle	 09924-17810 Flywheel holder	 09916-77310 Piston ring compressor

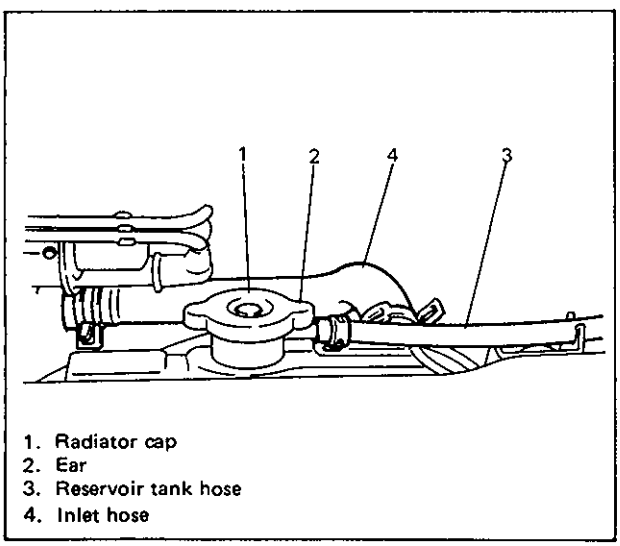
COOLING SYSTEM SERVICE

WARNING:
To help avoid danger of being burned, do not remove radiator cap while engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure if cap is taken off too soon.

Cooling system should be serviced as follows.

1. Check cooling system for leakage or damage.
2. Wash radiator cap and filler neck with clean water by removing radiator cap when engine is cold.
3. Check coolant for proper level and freeze protection.
4. Using a pressure tester, check system and radiator cap for proper pressure holding capacity 0.9 kg/cm^2 (12.8 psi, 90 kPa). If replacement of cap is required, use proper cap specified for this vehicle.
5. Tighten hose clamps and inspect all hoses. Replace hoses whenever cracked, swollen or otherwise deteriorated.
6. Clean frontal area of radiator core.

NOTE:
After installing radiator cap to radiator, make sure that its ear is aligned with reservoir tank hose as shown in figure. If not, turn cap more to align its ear with hose.



1. Radiator cap
2. Ear
3. Reservoir tank hose
4. Inlet hose

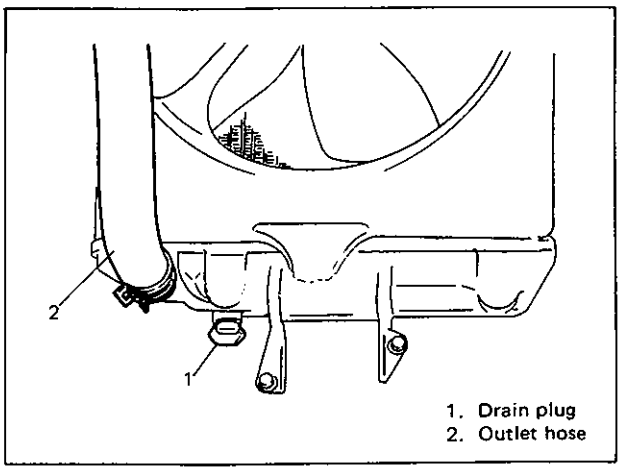
Fig. 6B-9 Installation of Radiator Cap

COOLING SYSTEM FLUSH AND REFILL

1. Remove radiator cap when engine is cool:
   Turn cap slowly to the left until it reaches a "stop" (Do not press down while turning it.) Wait until pressure is relieved (indicated by a hissing sound) then press down on cap and continue to turn it to the left.

WARNING:
To help avoid danger of being burned, do not remove radiator cap while engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure if cap is taken off too soon.

2. With radiator cap removed, run engine until upper radiator hose is hot (this shows that thermostat is open and coolant is flowing through system).
3. Stop engine and open radiator drain plug to drain coolant.



1. Drain plug
2. Outlet hose

Fig. 6B-10 Radiator Drain Plug

4. Close drain plug. Add water until system is filled and run engine until upper radiator hose is hot again.
5. Repeat steps 3 and 4 several times until drained liquid is nearly colorless.
6. Drain system and then close radiator drain plug tightly.
7. Disconnect hose from water reservoir tank. Remove tank and pour out any fluid. Scrub and clean inside of tank with soap and water. Flush it well with clean water and drain. Reinstall tank and hose.

FUEL TANK AND FUEL PUMP

The fuel tank is located under the rear of the car. The fuel pump and fuel level gauge are installed on the upper part of fuel tank. Whenever servicing the fuel level gauge or the fuel pump, the fuel tank must be removed from the body.

NOTE:
For fuel pump of Electronic Fuel Injection model, refer to SECTION 6E.

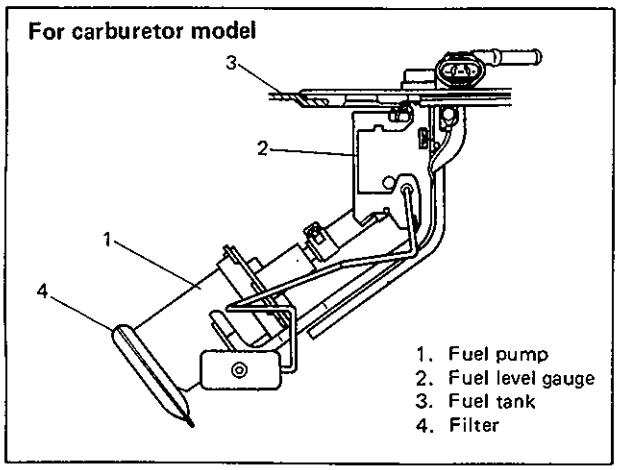


Fig. 6C-2 Fuel Pump and Level Gauge

The fuel pump (carburetor model) is a low pressure type electromagnetic pump. It is installed in the fuel tank as outlined previously.
When the engine starts running and the generator generating electricity, the current from its L terminal flows through the fuel pump relay to run the fuel pump.

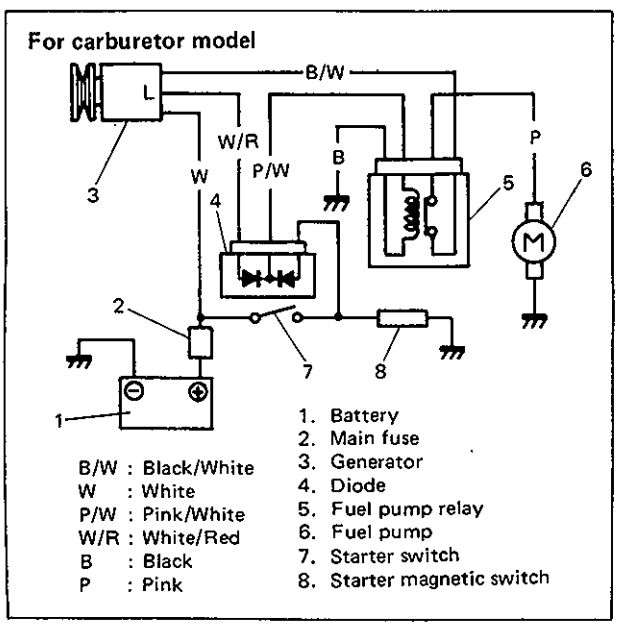


Fig. 6C-2-1

FUEL FILTER

The fuel filter is located in front of fuel tank as shown in Fig. 6C-1.
As it can't be disassembled, it must be replaced as an assembly.

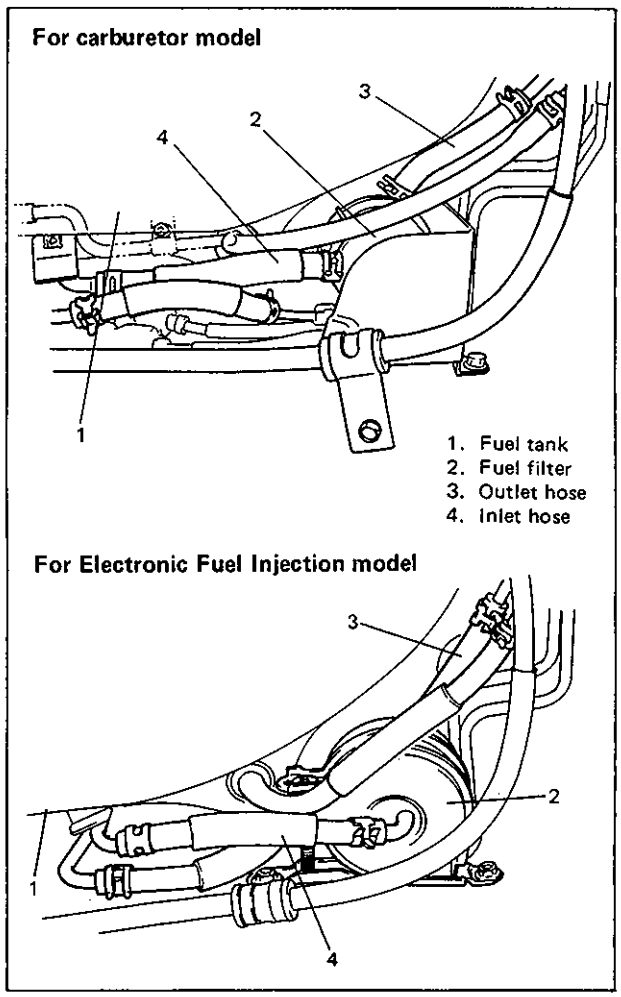
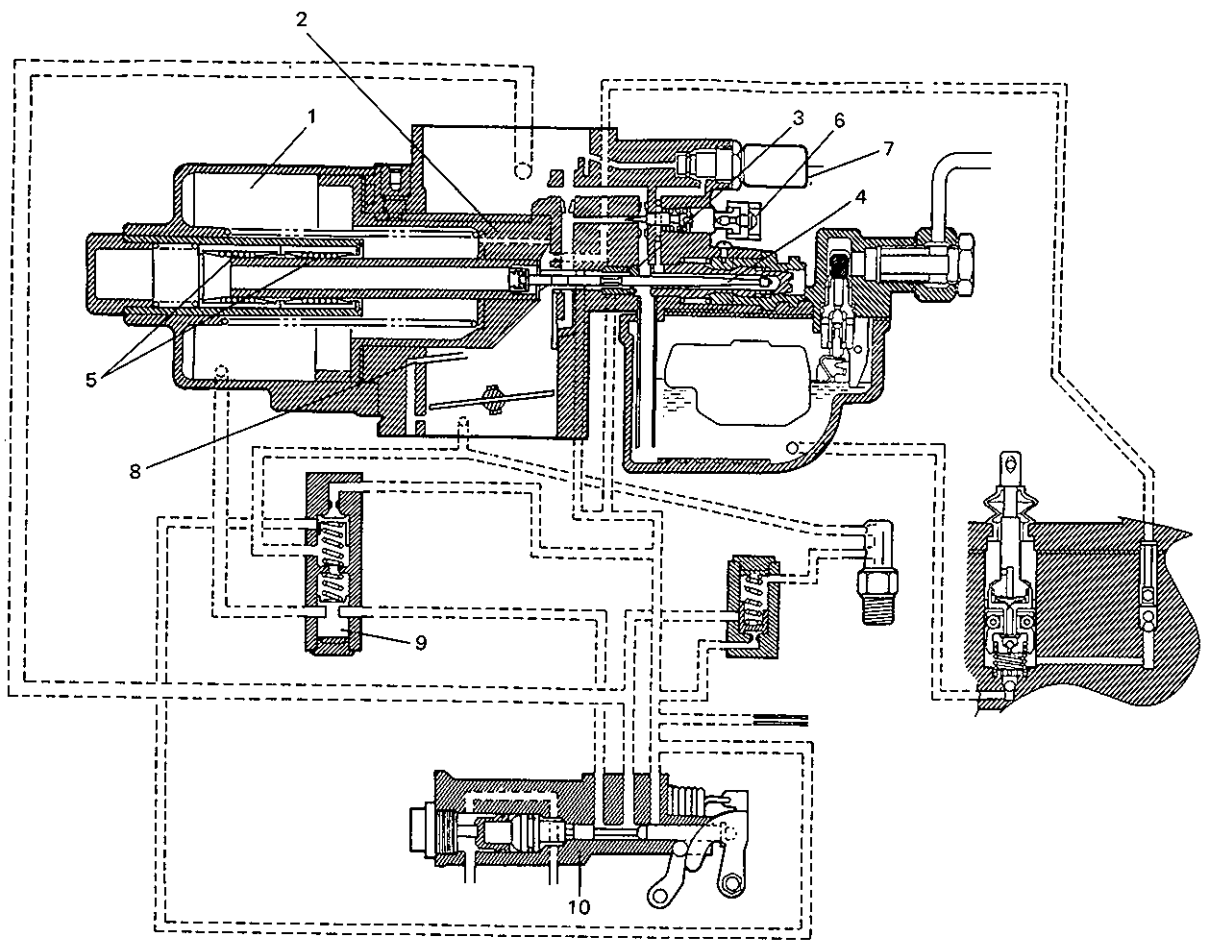


Fig. 6C-3 Fuel Filter

GENERAL DESCRIPTION

This carburetor is of one-barrel, variable-venturi type.

In the carburetor, there are one throttle valve and one suction piston and the fuel supply passage remains almost the same throughout the start, low speed and high speed driving conditions. The speed of the air flow is maintained almost constant by varying the section of the venturi automatically to the amount of air required by the engine. The gas flow is regulated by the annular clearance between the metering needle and jet controlled in accordance with the piston movement, thus a proper air/fuel mixture ratio is obtained.



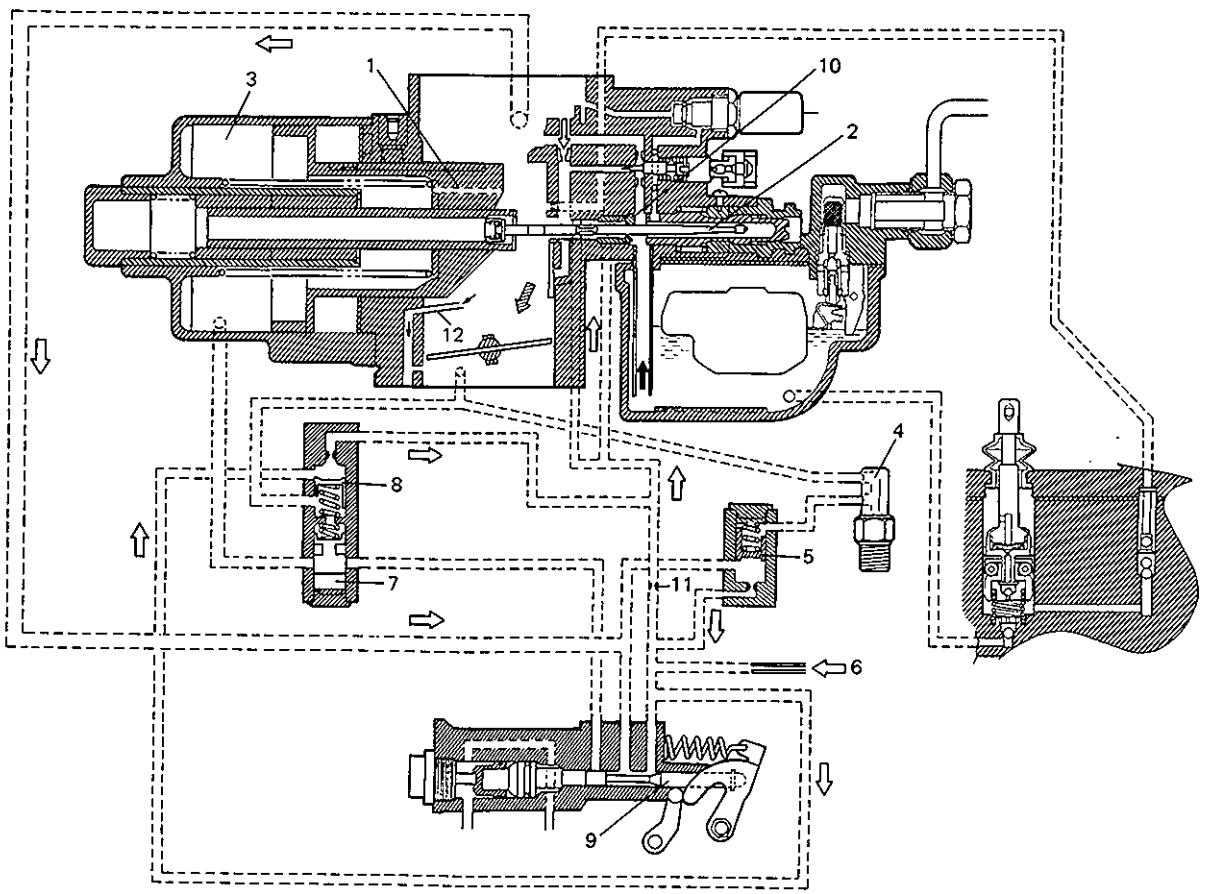
1. Suction chamber
2. Suction piston
3. Main jet
4. Metering needle
5. Linear ball bearing
6. Idle mixture adjusting screw
7. Fuel cut solenoid valve
8. Fuel trap tube
9. Piston breaker
10. Cold enrichment compensator

Fig. 6D-1

WHEN IDLING

(with engine warmed up)

1) The thermo wax is fully expanded, the cold enrichment rod opens its passage fully and the mount of bleeding air is controlled by the main air-bleed.
2) The throttle opens to the idle opening because the thermo wax is expanded.
3) The No. 1 and No. 2 breaker valves as well as the power valve open to allow more air to bleed.
4) The fuel trap tube guides the fuel flowing along the suction piston to underside of the throttle valve to stabilize idling.



1. Suction piston
2. Metering needle
3. Suction chamber
4. BVSV
5. No. 2 breaker
6. No. 1 breaker
7. Breaker piston
8. Power valve
9. Cold enrichment compensator
10. Main jet
11. Main air bleed

Air and fuel mixture
Bleed air
Fuel

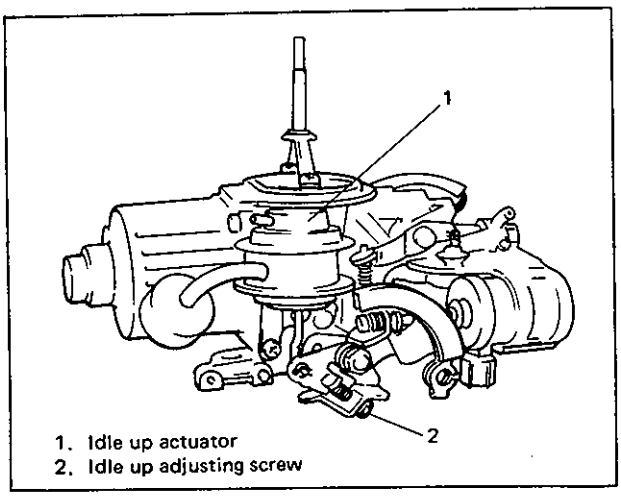
Fig. 6D-15

ADJUSTMENT

If VSV, actuator, hose wiring harness and battery capacity are normal and yet idle up speed is not attained, adjust as follows.

1) Warm up engine.
2) Turn ON headlight. Engine speed in this state should be within specification below.
   If not within specification, adjust with idle up adjusting screw.

Engine idle speed when idle up system in operation (Headlight turns ON)	800 ± 50 r/min



1. Idle up actuator
2. Idle up adjusting screw

Fig. 6D-24-2

IDLE UP (For Automatic transmission)

Inspection

1. Adjust idle speed to specification and maintain engine at that speed.

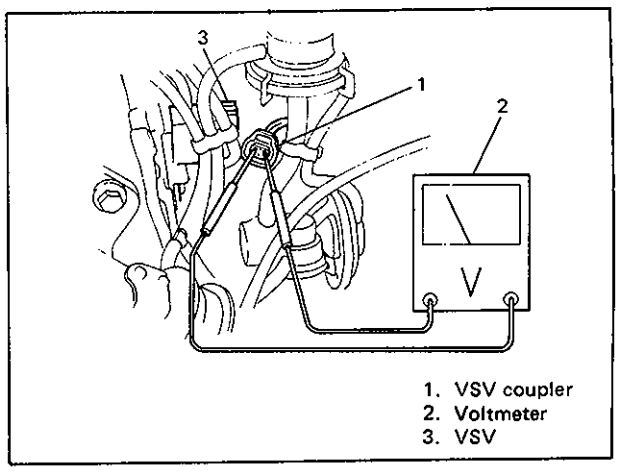
2) Shift selector lever to each of "R", "D", "2" and "L" ranges and check that engine idle speed is within specification below.

Engine idle speed when idle up system is operated (at D range)	700 – 750 r/min

3) Shift selector lever to "P" range and turn steering wheel fully and while holding it there lightly, check that actuator rod pushes down throttle lever a little further than the ordinary idle speed position. (If equipped with P/S system.)
4) If found faulty, check following parts individually according to each procedure.

[VSV and its circuit] (For car without P/S system)

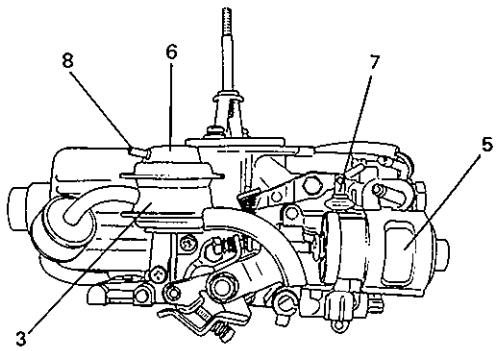
1) Make sure that selector lever is shifted to "P" range.
2) Disconnect VSV vacuum hoses from gas filter and actuator.
3) Turn ignition switch to "ON" position.
4) By blowing air into hose disconnected from actuator, make sure there is continuity between these hoses. Then, shift selector lever to "N" range and also check to make sure that there is continuity between these hoses.
5) Shift selector lever to "R" range, by blowing air into the hose disconnected from actuator, make sure that there is no continuity between hoses. Also, with selector lever shifted to "D", "2" and "L" ranges, check to make sure that there is no continuity between these hoses in each range. If found faulty in steps 4) and 5), proceed to following checks.
6) With ignition switch at "OFF" position, disconnect lead wire coupler from VSV.
7) Turn ignition switch to "ON" position.
8) Connect voltmeter to coupler terminals. Shift selector lever to "P" and then "N" ranges and check that voltmeter indicates 0V in each range. Also, shift selector lever to "R". "D", "2" and "L" ranges and check that voltmeter indicates about 12V in each range.



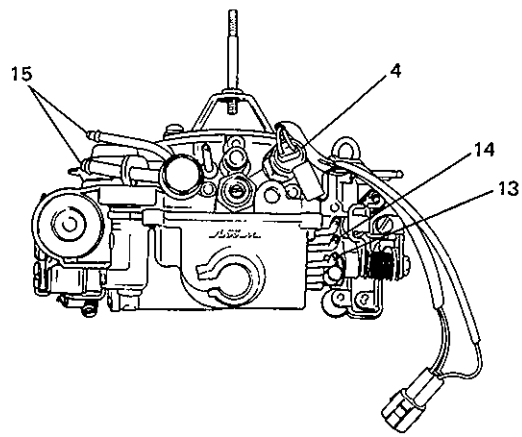
1. VSV coupler
2. Voltmeter
3. VSV

Fig. 6D-25-1

Right side view



Rear view



1. Suction piston
2. Cold enrichment compensator
3. Throttle positioner
4. Fuel cut solenoid valve
5. Fuel cut solenoid
6. Idle up opener
7. Acceleration pump
8. To VSV
9. To VCV No. 1
10. To BVSV
11. To water pump
12. To intake manifold
13. To TWSV
14. To distributor
15. To fuel hose

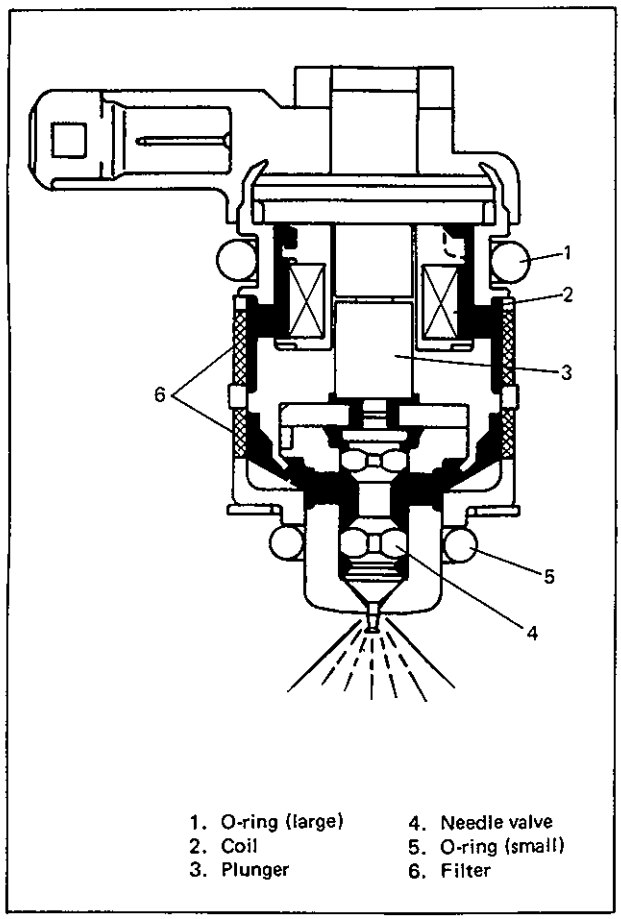
Fig. 6D-46-1

FUEL INJECTOR

It is an electromagnetic type injection nozzle which injects fuel in the throttle body bore according to the signal from ECM.

Operation

When the solenoid coil of the injector is energized by ECM, it becomes an electromagnet and attracts the plunger. At the same time, the needle valve which is incorporated with the plunger opens and the injector which is under the fuel pressure injects fuel in conic dispersion. As the lift stroke of the needle valve of the injector is set constant, the amount of fuel injected at one time is determined by the length of time during which the solenoid coil is energized (injection time).



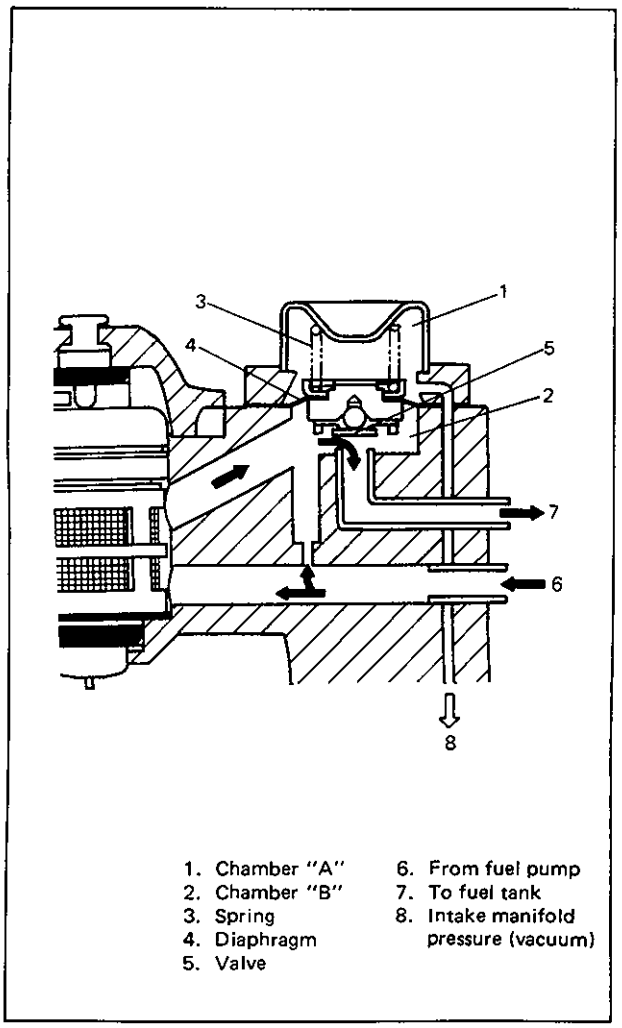
1. O-ring (large)
2. Coil
3. Plunger
4. Needle valve
5. O-ring (small)
6. Filter

Fig. 6E-7 Fuel Injector Cross-Section

FUEL PRESSURE REGULATOR

The fuel pressure regulator is diaphragm-operated relief valve consisting of diaphragm, spring and valve. It keeps the fuel pressure applied to the injector 1.8 kg/cm² (180 kPa, 25.6 psi) higher than that in the intake manifold at all times.

The pressure applied to the chamber "A" of fuel pressure regulator is intake manifold pressure and that to the chamber "B" is fuel pressure. When the fuel pressure rises more than 1.8 kg/cm² (180 kPa, 25.6 psi) higher than the intake manifold pressure, the fuel pushes the valve in the regulator open and excess fuel returns to the fuel tank via the return line.



1. Chamber "A"
2. Chamber "B"
3. Spring
4. Diaphragm
5. Valve
6. From fuel pump
7. To fuel tank
8. Intake manifold pressure (vacuum)

Fig. 6E-8 Pressure Regulator Cross-Section

ECM uses the signal from TPS as one of the signals to control fuel injector, ISC solenoid valve and EGR VSV.

Air Temperature Sensor (ATS)

Located at the side of air cleaner case, this sensor constantly measures the temperature of the air entering there and converts a change in the air temperature into that in resistance through its thermister. That is, as air temperature lowers, resistance increases and as it rises, resistance decreases. As air density of the intake air varies with variation in temperature, ECM, by monitoring the resistance, adjusts the amount of fuel injection according to the air temperature.

Water Temperature Sensor (WTS)

Located at the side of throttle body, this sensor measures the temperature of the engine cooling water and converts its change into that in resistance through the thermister like the air temperature sensor.

That is, as cooling water temperature lowers, resistance increases and as it rises, resistance decreases.

By monitoring the resistance of the water temperature sensor, ECM detects the engine cooling water temperature and that affects most systems under the control of ECM.

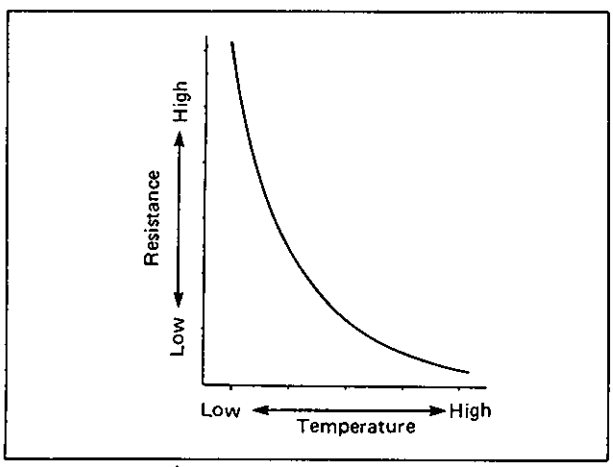


Fig. 6E-22 Air/Water Temperature Sensor Characteristic

Oxygen Sensor

The oxygen sensor is located on the exhaust manifold to detect the concentration of oxygen in the exhaust gases. It consists of the zirconia element (with thin platinum surface coating) which generates electromotive force, lead wire which draws out the electromotive force and cover and housing which protect the zirconia element from damage.

The zirconia element, by its property, generates the electromotive force when a difference in oxygen concentration exists between its faces. As its temperature rises, the change of the electromotive force is amplified by catalytic reaction of the platinum. The oxygen sensor makes use of this property. As atmosphere is introduced into the oxygen sensor, the inside of the zirconia element is exposed to the atmosphere and outside to exhaust gases. Thus the difference in concentration between the inside and the outside of the zirconia element varies with the oxygen concentration in the exhaust gases.

The large concentration difference results in about 1V of the electromotive force and small difference results in about 0V. To put in other words, if the amount of oxygen in the exhaust gases is less (air-fuel mixture is richer than the stoichiometric mixture), about 1V of electromotive force is generated and if more (air-fuel mixture is leaner than the stoichiometric mixture), almost none is generated.

In this way, the oxygen sonsor detects whether the oxygen concentration is high or low (or the mixture is leancer or richer than the stoichiometric mixture).

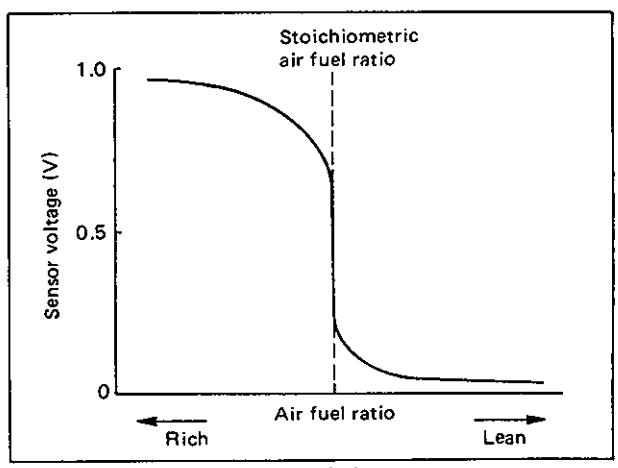
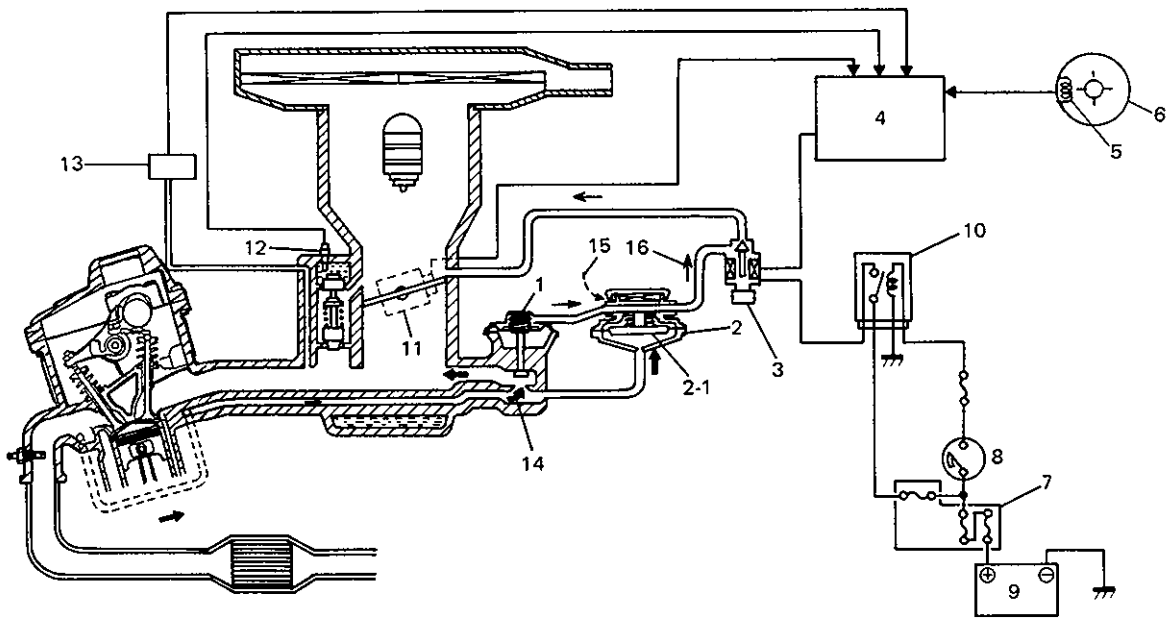


Fig. 6E-23 Output Characteristic

- When engine cooling water temperature is low.
- When throttle valve is at idle position.
- When engine is running under high load.
- When intake manifold pressure is low.

Other than the above, EGR valve opens and closes in accordance with the EGR modulator operation.



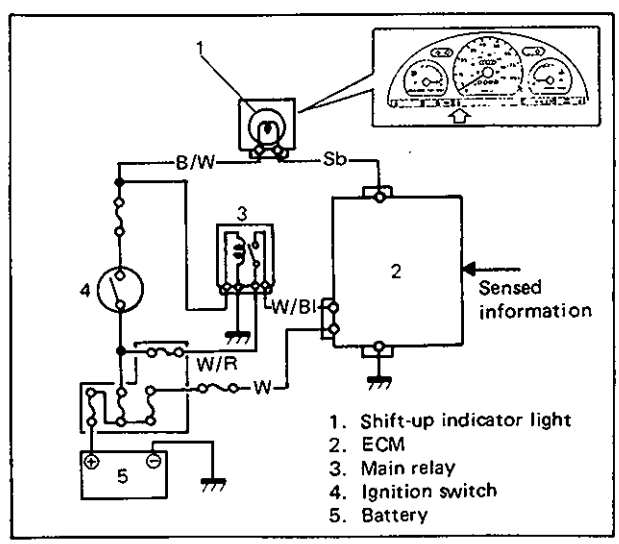
1. EGR valve
2. EGR modulator
2-1. Modulator valve
3. VSV
4. ECM
5. CAS
6. Distributor
7. Main fuse box
8. Main switch
9. Battery
10. Main relay
11. TPS
12. WTS
13. Pressure sensor
14. Exhaust gas
15. Air
16. Vacuum

Fig. 6E-33 EGR System

SHIFT-UP INDICATOR LIGHT CONTROL SYSTEM (If equipped)

This system is intended for economical driving by using proper gear positions. When the following conditions are all met, it turns ON the shift-up indicator light included in the meter cluster, but for 5 seconds at the longest, so as to urge the driver to shift up the gear.

- Car speed is higher than 5 km/h (3.1 mile/h)
- Both idle switch and wide open switch are OFF
- Engine speed is higher than a specified speed (The specified engine speed varies with the intake manifold pressure and engine cooling water temperature.)



1. Shift-up indicator light
2. ECM
3. Main relay
4. Ignition switch
5. Battery

Fig. 6E-34 System Circuit

A-3 "CHECK ENGINE" LIGHT CIRCUIT CHECK

("CHECK ENGINE" LIGHT DOESN'T FLASH OR JUST REMAINS ON EVEN WITH SPARE FUSE CONNECTED TO DIAGNOSIS SWITCH TERMINAL.)

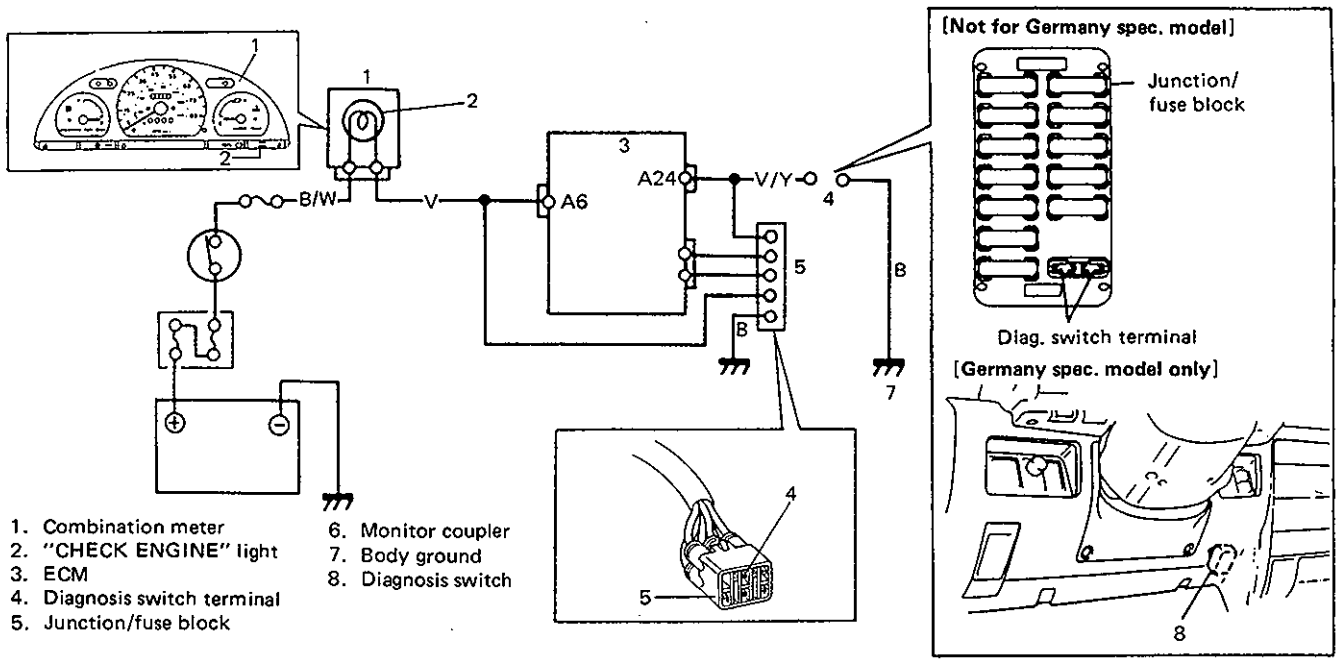


Fig. 6E-48 "CHECK ENGINE" Light Circuit

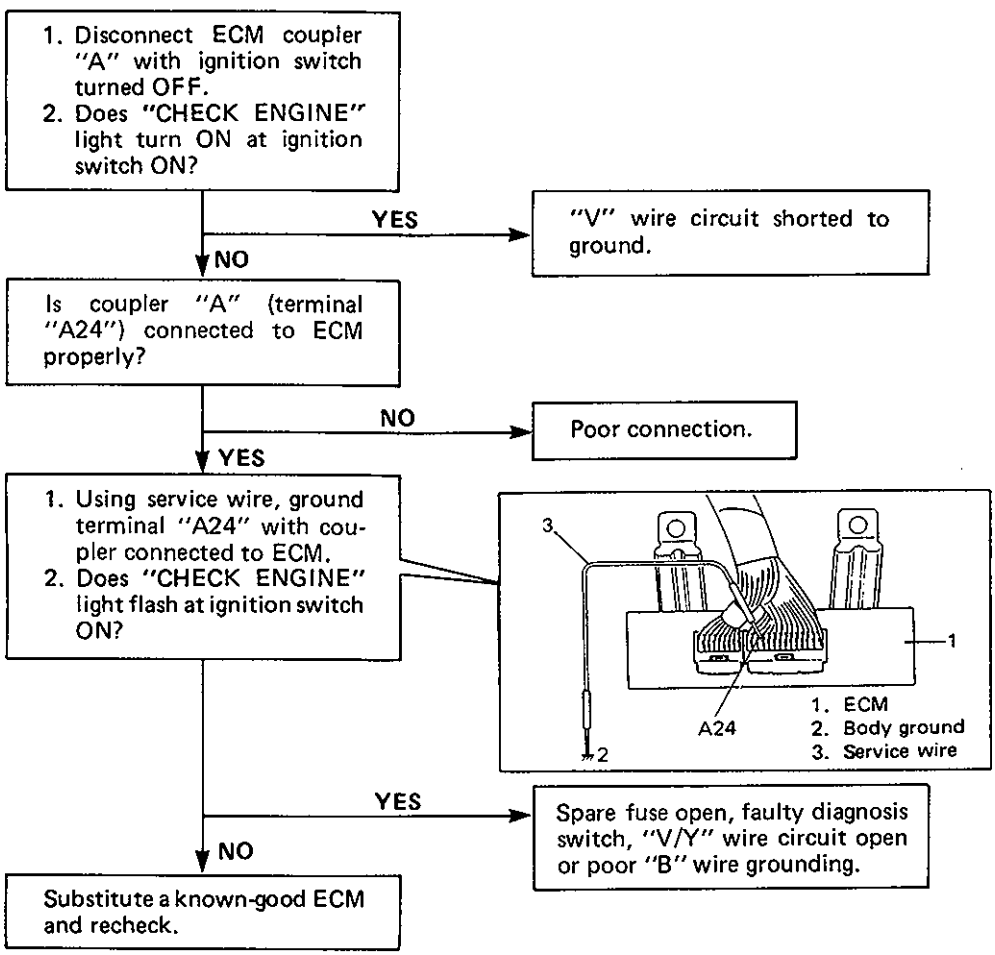
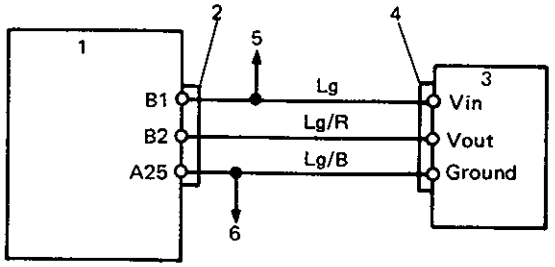


Fig. 6E-49 Diagnositc Flow Chart A-3 for "CHECK ENGINE" Light Circuit

CODE NO. 32 PS (PRESSURE SENSOR) CIRCUIT (SIGNAL VOLTAGE HIGH – HIGH PRESSURE – LOW VACUUM)



1. ECM
2. ECM coupler
3. PS
4. PS coupler
5. To TPS
6. To other sensors

Fig. 6E-70 PS Circuit

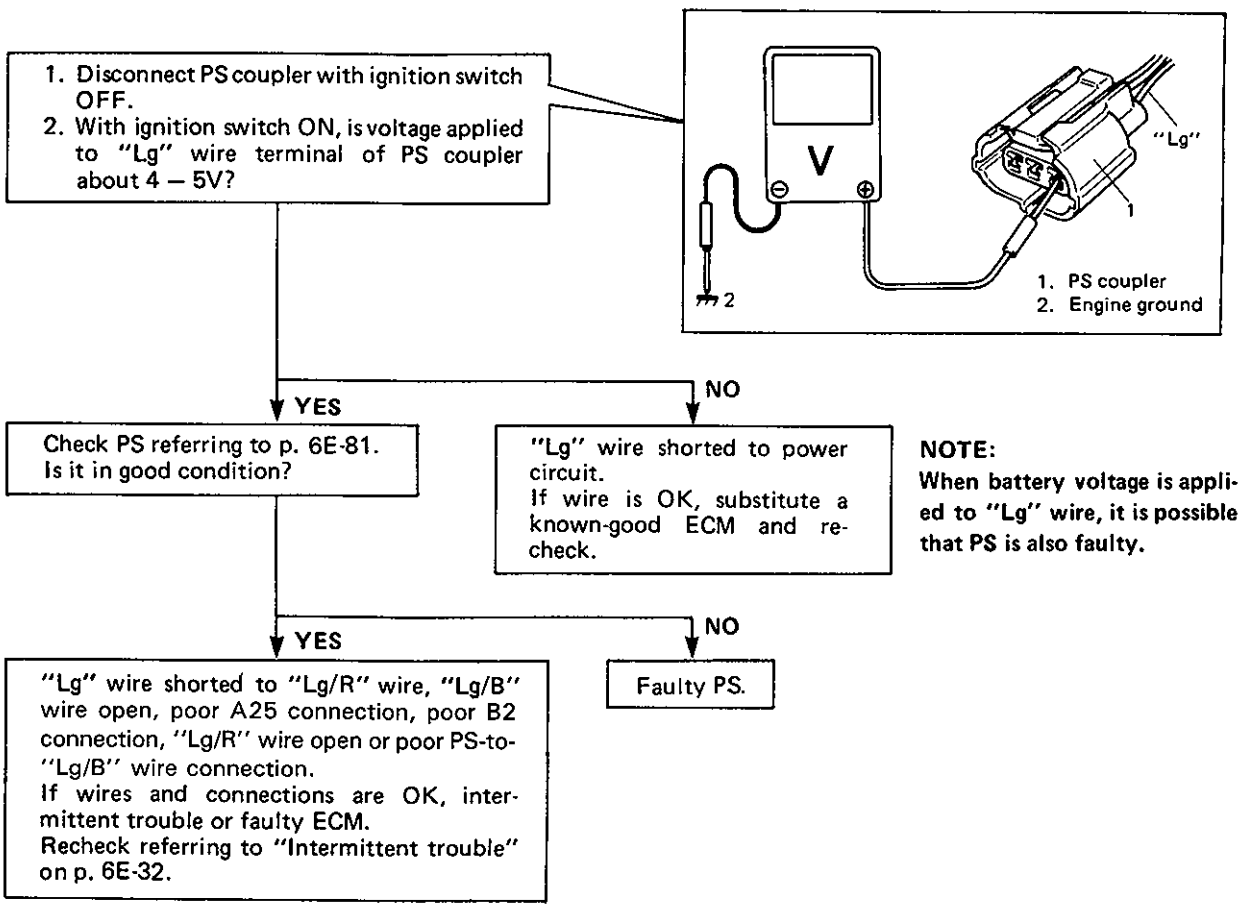


Fig. 6E-71 Diagnostic Flow Chart for Code No. 32

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B-2 FUEL PUMP AND ITS CIRCUIT CHECK

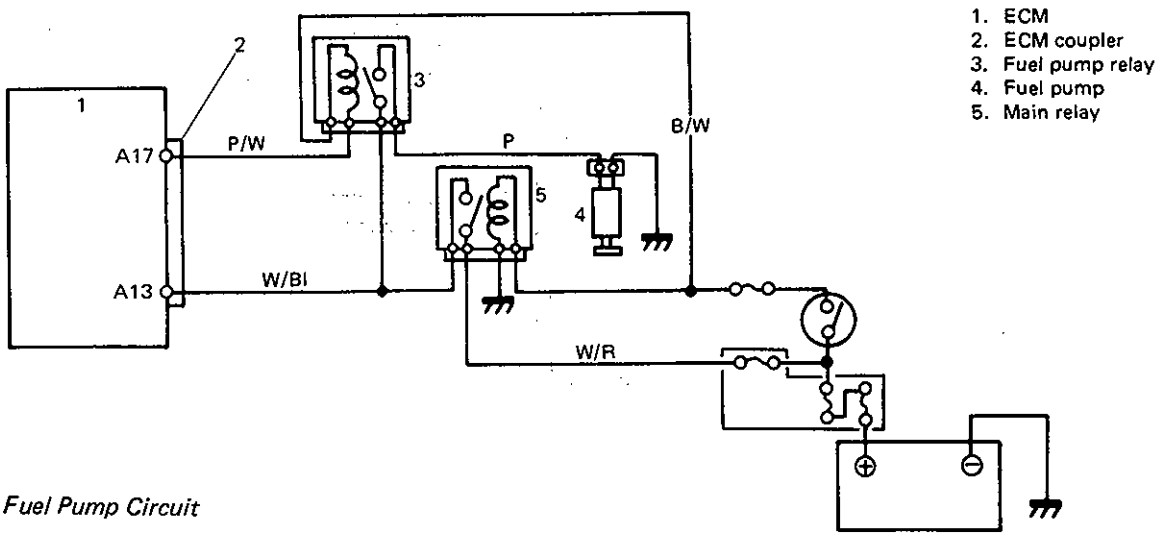


Fig. 6E-78 Fuel Pump Circuit

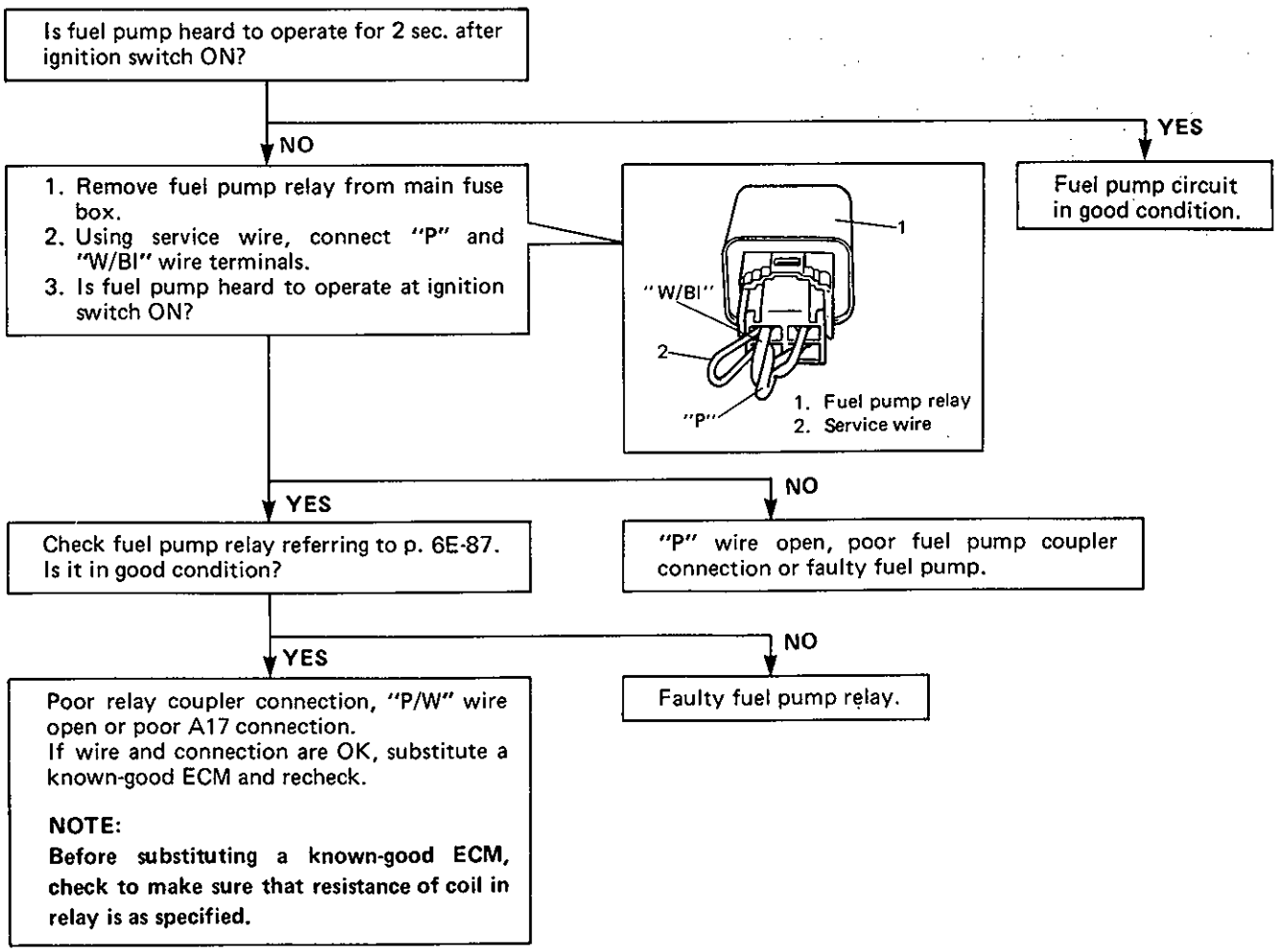


Fig. 6E-79 Diagnostic Flow Chart B-2 for Fuel Pump and Its Circuit Check

ON CAR SERVICE

GENERAL

When hoses have been disconnected and system's component removed for service, be sure to reinstall component properly, and route and connect hose correctly after service. Refer to Emission Control Information Label for proper connection of hoses.

ACCELERATOR CABLE ADJUSTMENT

Check accelerator cable for play and adjust if necessary.

Cable play should be within specification. If out of specification, loosen accelerator cable lock nut and adjust by turning adjusting nut. Be sure to tighten lock nut securely after adjustment.

Accelerator cable play	3 – 5 mm (0.12 – 0.20 in.)

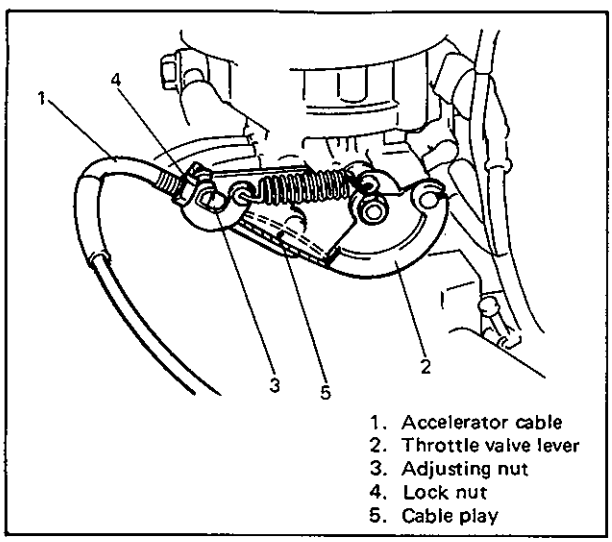


Fig. 6E-91 Accelerator Cable Play

IDLE SPEED/ISC DUTY ADJUSTMENT (INCLUDING AIR-CONDITIONER VSV ADJUSTMENT)

Before idle speed/ISC duty and adjustment, make sure to the following.

- Lead wires and hoses of Electronic Fuel Injection and engine emission control systems are connected securely.
- Accelerator cable has some play, that is, it is not tight.
- Ignition timing is within specification.
- All of electrical loads except ignition are switched off.
- Air-conditioner is OFF, if equipped.
- Air cleaner has been properly installed and is in good condition.

After above items are all confirmed, check idle speed and ISC duty as follows.

NOTE:

Before starting engine, place transmission gear shift lever in "Neutral" (shift selector lever to "P" range for A/T model), and set parking brake and block drive wheels.

1. Warm up engine to normal operating temperature.
2. Set tachometer
3. Using service wire, ground "Diagnosis switch terminal" in monitor coupler so that ECM outputs ISC duty through "Duty output terminal" and make sure that "CHECK ENGINE" light indicate diagnostic code No. 12.

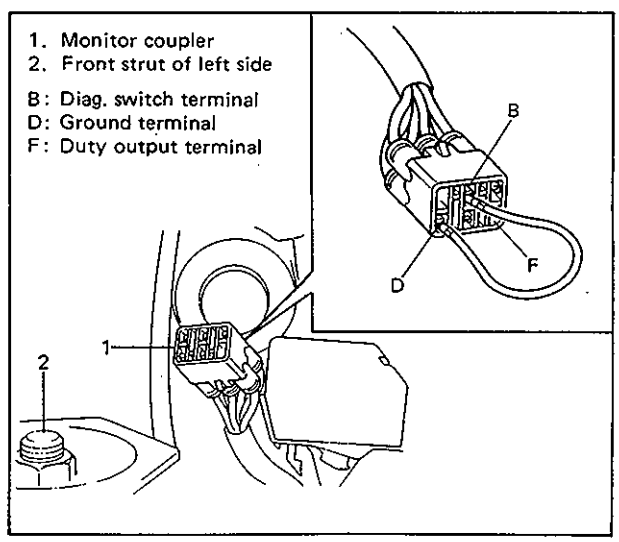


Fig. 6E-92 Grounding Diag. Switch Terminal

Removal

NOTE:
Use care when handling fuel injector especially not to damage filter and its needle.
Also, because injector is an electrical component, it should not be immersed in any type of liquid solvent or cleaner, or it may get damaged.

1. Relieve fuel pressure according to procedure described in Section 6.
2. Disconnect battery negative cable at battery.
3. Remove air cleaner assembly referring to section 6A.
4. Remove air cleaner mounting stay for throttle body.
5. Remove injector cover and upper insulator. Then open claws of injector after removing coupler cover and disconnect coupler from it.

NOTE:
Use care not to break claws by opening them too far outward.

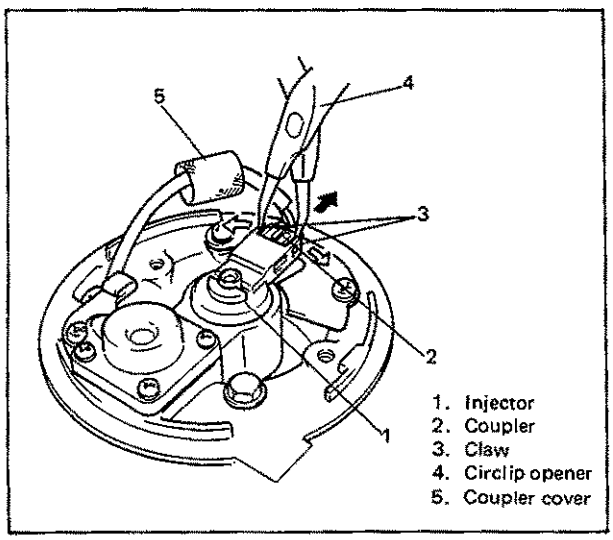


Fig. 6E-111 Disconnecting Coupler

6. Remove injector from throttle body.

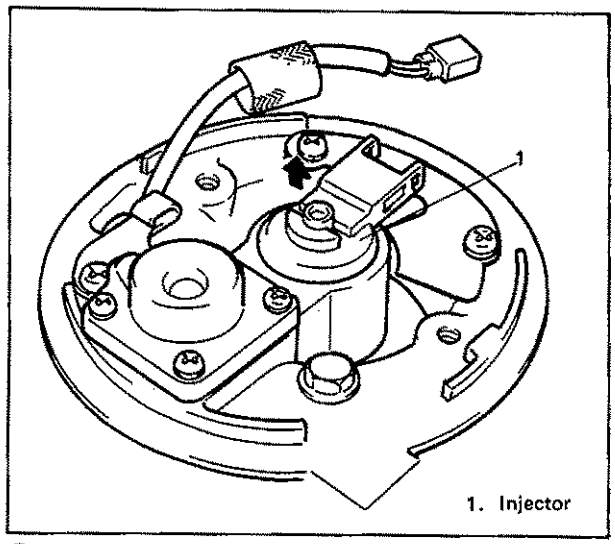


Fig. 6E-112 Removing Injector

Inspection

Check fuel injector filter for evidence of dirt and contamination. If present, clean and check for presence of dirt in fuel lines and fuel tank.

Installation

1. Apply thin coat of spindle oil or gasoline to new upper and lower O-rings, install lower O-ring to injector cavity and upper O-ring to injector.
2. Install new lower insulator to injector cavity.

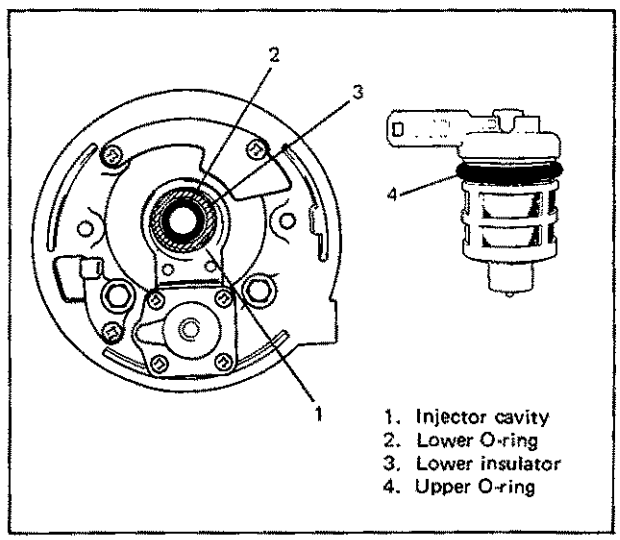


Fig. 6E-113 Installing O-rings and Insulator

EGR CONTROL SYSTEM

System Inspection

NOTE:

Before inspection, check to make sure that gear shift lever is in neutral position (with A/T model, selector lever in "P" range) and that parking brake lever is pulled all the way up.

1. When engine is cool (cooling water temperature is below 40°C, 104°F), start engine and race it, and check that EGR valve diaphragm is not operating in this state.

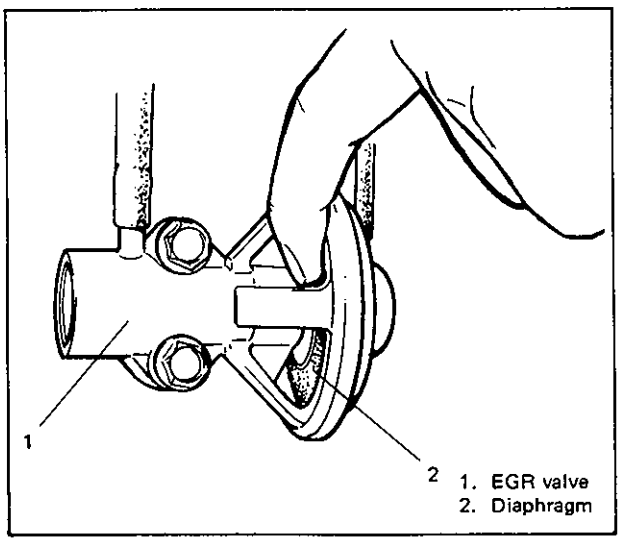


Fig. 6E-144 Checking EGR Valve Diaphragm

2. Warm up engine to normal operating temperature and race it after warming up. Then check to be sure that diaphragm moves toward 1 in Fig. 6E-145 during acceleration and toward 2 during deceleration.

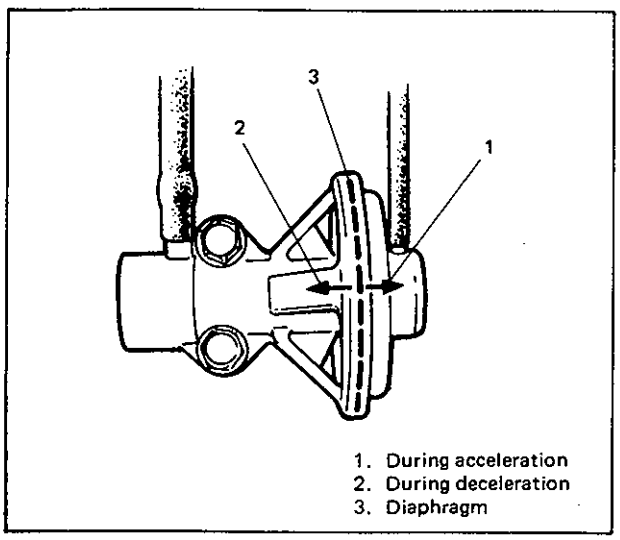


Fig. 6E-145 Movement of EGR Valve Diaphragm

If EGR valve fails to operate properly, check vacuum hoses, EGR valve, EGR modulator and VSV.

3. Keep engine running at idle speed and open EGR valve by hand, and engine should either stop or reduce its speed. If neither occurs, EGR passage is clogged. Clean it.

Vacuum Hose Inspection

Check hoses for connection, leakage, clog and deterioration. Replace as necessary.

EGR Valve Inspection

1. Disconnect vacuum hose from EGR modulator.
2. Connect vacuum pump gauge to its hose.
3. Check that EGR valve diaphragm moves smoothly and that it is held at the same position when 20 cmHg vacuum is applied to EGR valve.

   If diaphragm doesn't move smoothly, or it isn't held at the same position, replace EGR valve.

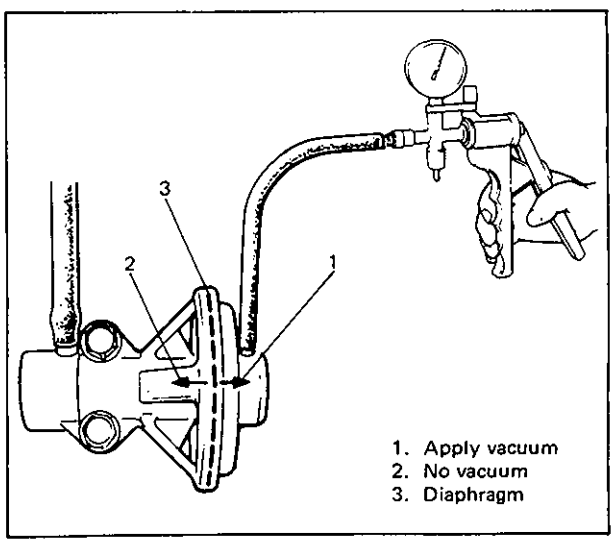


Fig. 6E-146 Checking EGR Valve

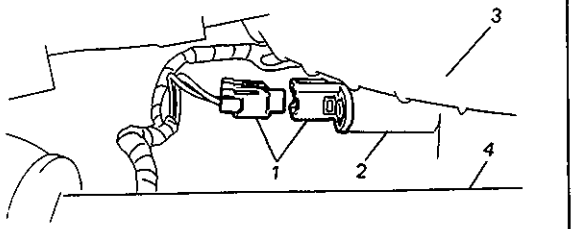
4. After checking, be sure to connect vacuum hose.

ON CAR SERVICE

IGNITION SPARK TEST

1. Disconnect injector coupler at throttle body side. (Electronic fuel injection model only.)

WARNING:
(Electronic fuel injection model only)
Without disconnection of injector coupler, combustible gas may come out from spark plug holes during this test and may get ignited in engine room.



1. Injector coupler
2. Throttle body
3. Air cleaner case
4. Cylinder head cover

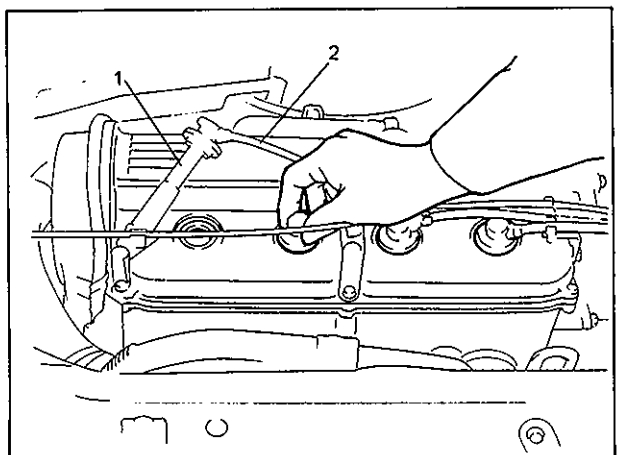
Fig. 6F-3 Disconnecting Injector Coupler

2. Remove spark plugs and connect them to high tension cords, and then ground spark plugs.
3. Crank engine and check if each spark plug sparks.
4. If no spark is emitted, inspect high tension cords, spark plugs, ignition coil, distributor, etc.

HIGH TENSION CORDS

1. Remove high tension cord at ignition coil while gripping its cap.
2. Remove distributor cap installed with high tension cords.
3. Remove high tension cord clamp from cylinder head cover.
4. Pull out high tension cords from spark plugs while gripping each cap.

CAUTION:
- **Removal of high tension cords together with clamps will be recommended so as not to damage their inside wire (resistive conductor).**
- **For the same reason, pull out each connection by gripping cap portion.**

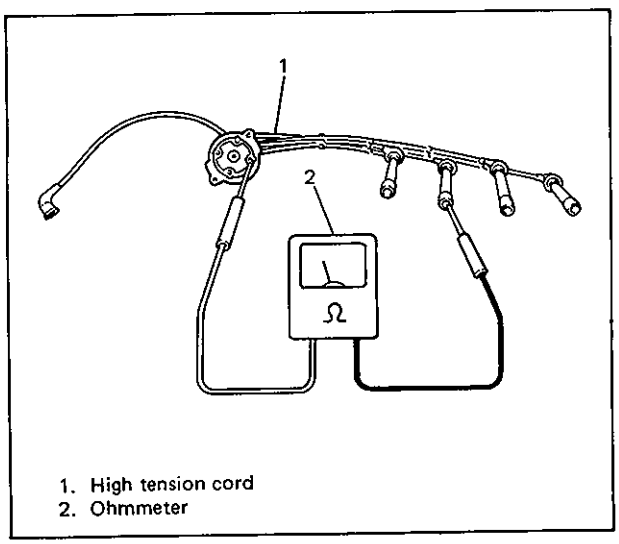


1. Cap
2. High tension cord

Fig. 6F-4 Removing High Tension Cord

5. Measure resistance of high tension cord by using ohmmeter.

High tension cord resistance	10 – 22 kΩ/m 3.0 – 6.7 kΩ/ft



1. High tension cord
2. Ohmmeter

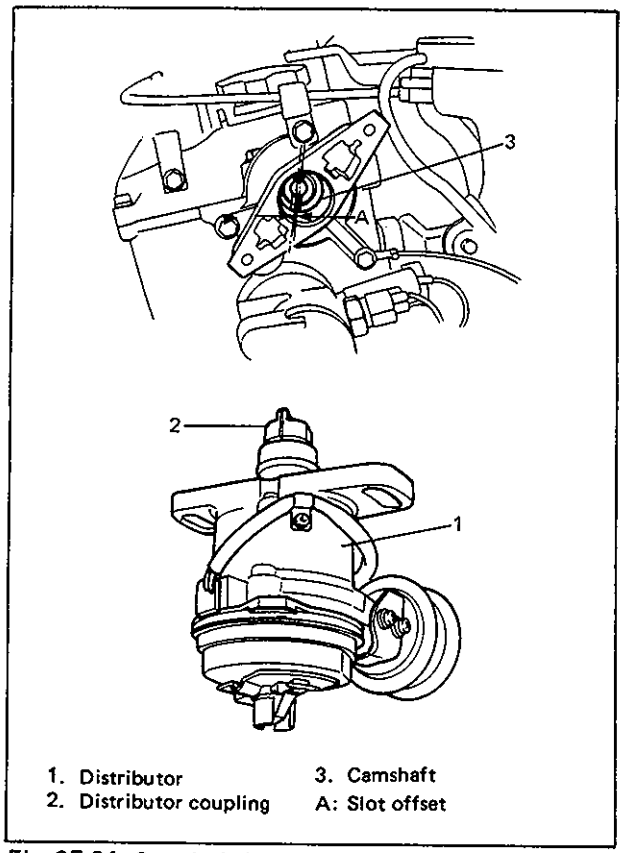
Fig. 6F-5 Measuring High Tension Cord Resistance

REMOUNTING

NOTE:

- **Before installing distributor, check to make sure that its O ring is in good condition.**
- **If new O ring is installed, apply oil.**

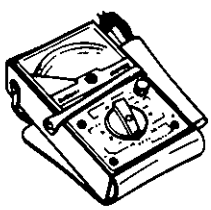
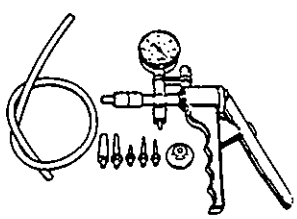
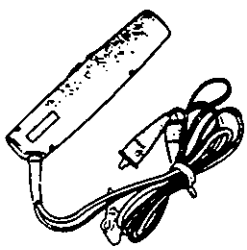
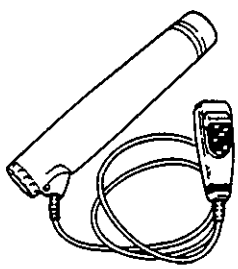
1. Install distributor without cap to camshaft. Fit the dogs of distributor coupling into the slots of camshaft, when installing. The dogs of distributor coupling are offset. Therefore, if the dogs can not be fitted into the slots, turn the distributor shaft by 180 degree and try again.
2. Lightly install flange bolts and prepare for ignition timing adjustment.
3. Check to make sure that rotor is in good condition.
4. Inspect distributor cap and clean or replace as required.
5. Make sure that distributor cap gasket is placed properly and install cap, and then fasten it with screws.
6. Connect distributor lead coupler.



1. Distributor
2. Distributor coupling
3. Camshaft
A: Slot offset

Fig. 6F-34 Camshaft Slot and Coupling

SPECIAL TOOLS

			
09900-25002 Pocket tester	09917-47910 Vacuum pump gauge	09900-27301 Timing light (DC 12V)	09930-76420 Timing light (Dry cell type)

REDUCTION TYPE STARTING MOTOR

A reduction type starting motor has a planetary gear reduction system which reduces armature revolutions and transmits a higher torque to the pinion. It is more compact, lighter in weight and provides higher output than a conventional type starting motor.

Given here is a description on its reduction system which is the main difference compared with the conventional type. For the rest, refer to description on the conventional type starting motor as the same servicing procedures are applicable commonly.

REDUCTION SYSTEM

Disassembly

1. Remove magnetic switch.
2. Remove housing bolts, then remove motor assembly with end housing, reduction gear assembly (center bearing & shock absorber) with overrunning clutch and drive lever.

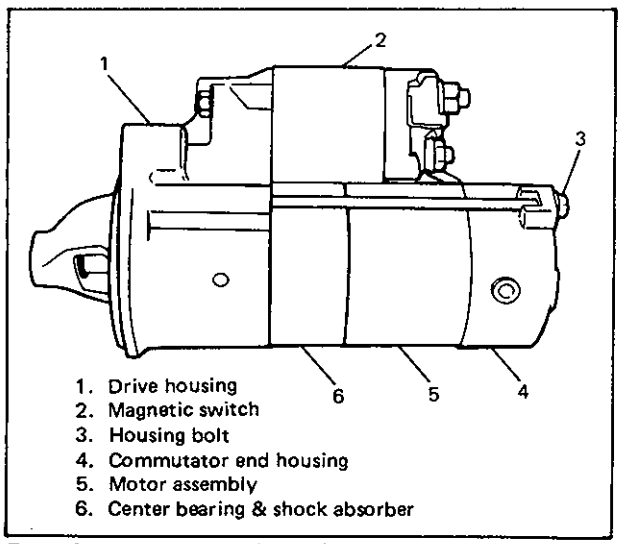


Fig. 6G-15 Reduction Type Starting Motor

3. To overhaul reduction gear assembly, remove plate, planetary gears and washer.

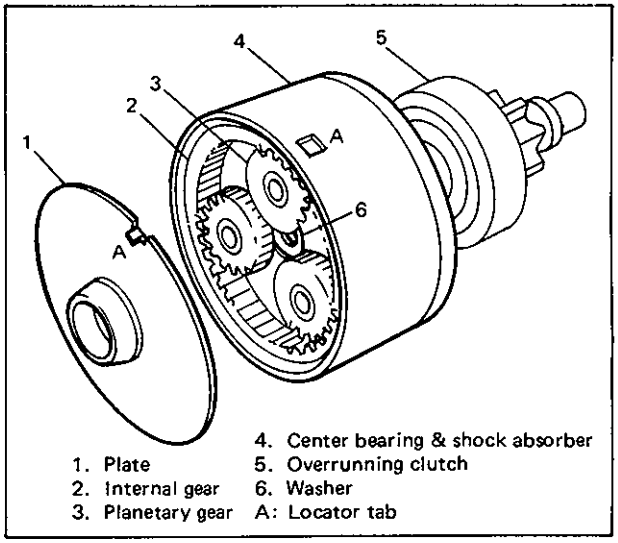


Fig. 6G-16 Reduction Gear Assembly

4. Remove snap ring, then pull out pinion stop ring and overrunning clutch.

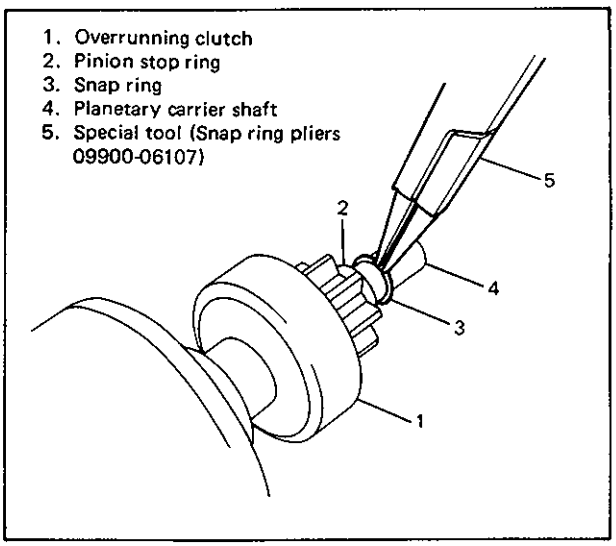


Fig. 6G-17 Removing Overrunning Clutch

5. Using special tool, remove circlip, then take out planetary carrier shaft from center bearing & shock absorber.

MOTOR BRUSH

REMOVAL

1) Remove rear bracket.

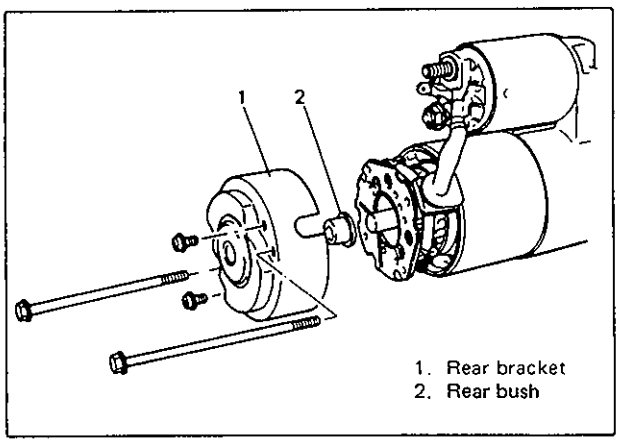


Fig. 6G1-9

2) Remove brush holder and brushes.

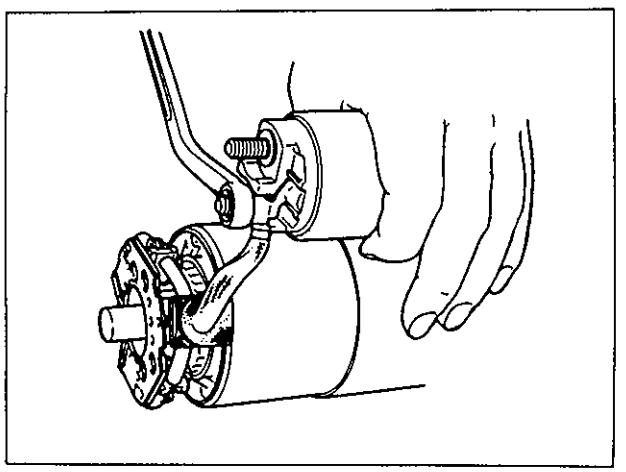


Fig. 6G1-10

INSTALLATION

Install in reverse order of REMOVAL, noting the following.

1) Apply grease. (Refer to Fig. 6G1-2.)
2) Install brush holder to armature while pushing 4 brushes outward.

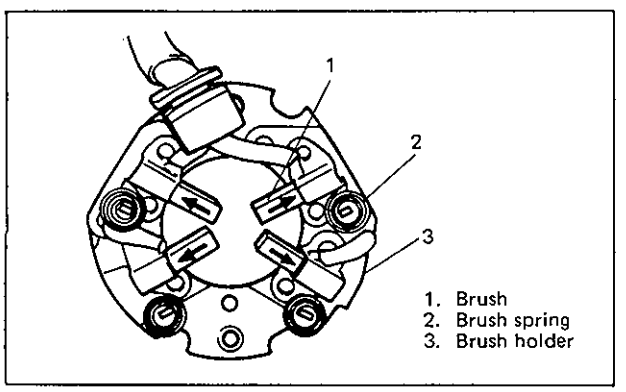


Fig. 6G1-11

3) Install rear bracket.
4) Check motor for operation. (See page 6G1-15.)

REAR BUSH (BEARING)

REMOVAL

1) Remove rear bracket.
2) Remove rear bracket cap, and then remove rear bush.

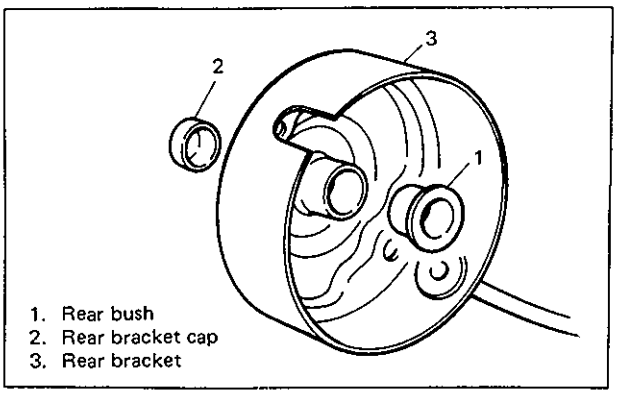


Fig. 6G1-12-1

INSTALLATION

1) Install rear bush as shown below.

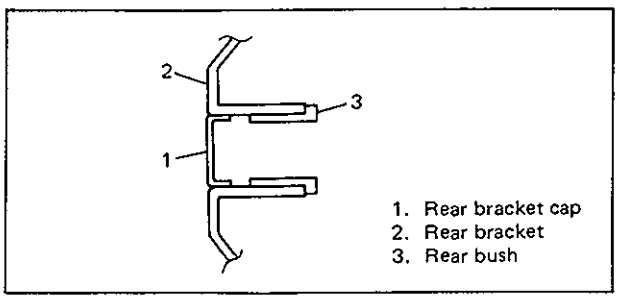


Fig. 6G1-12-2

2) Install rear bracket cap as shown above.
3) Apply grease. (Refer to Fig. 6G1-2.)
4) Install rear bracket.

SPECIFICATIONS

Voltage	12 volts
Output	1.2 kW
	*1.4 kW
Rating	30 seconds
Direction of rotation	Clockwise as viewed from pinion side
Brush length	17.5 mm (0.69 in.)
Number of pinion teeth	8
No-load characteristic	50 – 75A maximum at 11.0 volts, 3,000 r/min (rpm) minimum
	*50 – 75A maximum at 11.0 volts, 2,900 r/min (rpm) minimum
Load characteristic	300A maximum at 7.7 volts, 0.93 kg-m torque, 850 r/min (rpm) minimum
	*300A at 7.7 volts, 1.06 kg-m torque, 930 r/min (rpm) minimum
Locked rotor current	780A maximum at 4.0 volts, 1.9 kg-m minimum
	*980A maximum at 4.0 volts, 2.6 kg-m minimum
Magnetic switch operating voltage	8 volts maximum

NOTE:
Data marked with asterisk (*) is applicable to power steering system equipped car.

UNIT REPAIR OVERHAUL

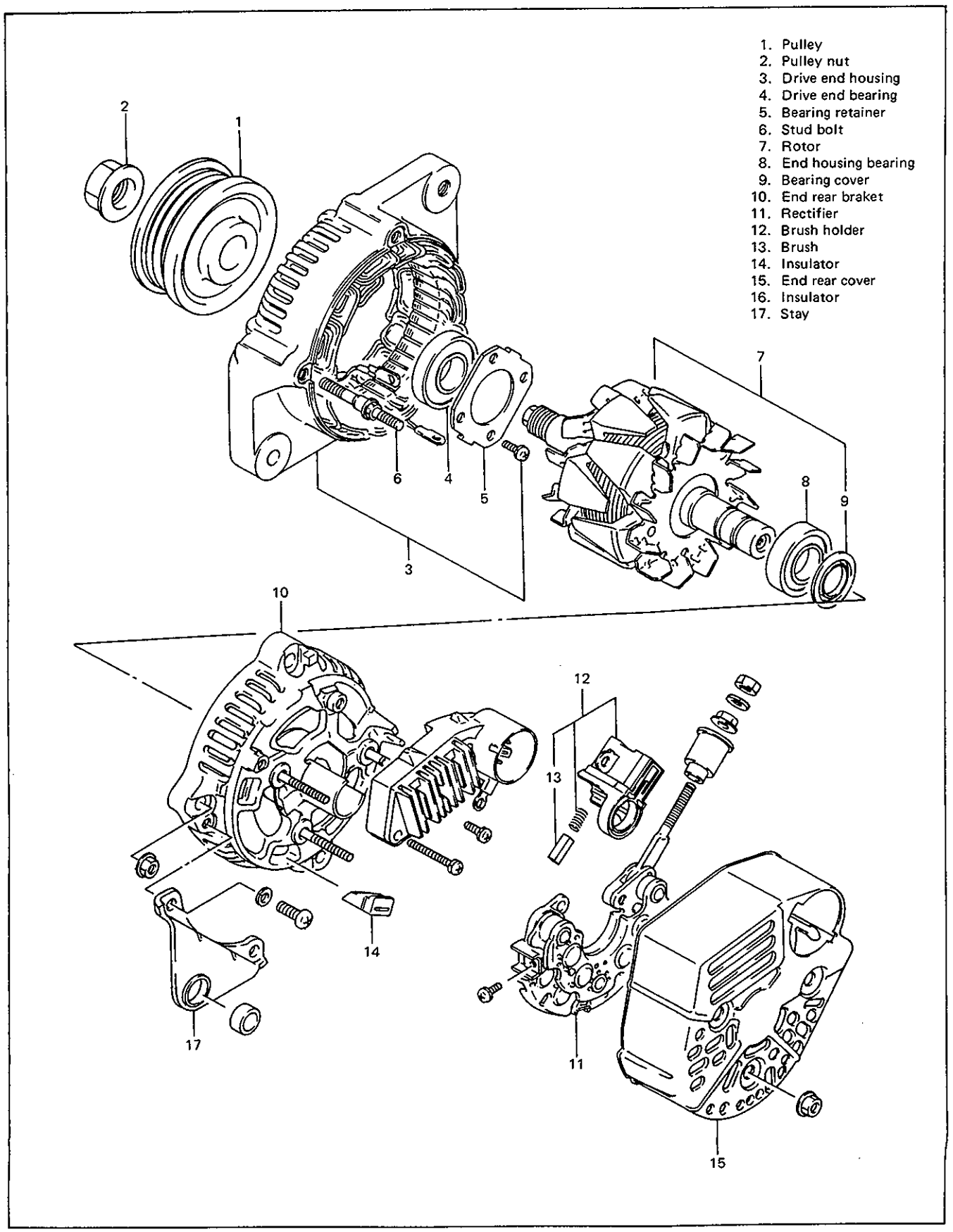


Fig. 6H-9 Generator Exploded View

3. INTAKE AIR TEMPERATURE CONTROL SYSTEM

(Applicable to vehicle equipped with thermo-wax in the air cleaner case)

This system helps to improve fuel vaporization by controlling the temperature of the intake air almost at a constant level automatically regardless of driving conditions and outside temperature, to distribute the mixture to each cylinder evenly and to stabilize the air/fuel mixture ratio.

In the air cleaner case, there is a thermo wax which senses the temperature of the intake air and connected to the thermo wax are a rod and damper.
When the temperature of the intake air is low, this wax moves the damper through the rod to close the fresh air passage. Then the air warmed up in the exhaust manifold is drawn into the engine.

As the temperature of the intake air to which the thermo wax is exposed rises, the thermo wax moves the damper so that it opens the passage of the fresh air and closes that of the warm air.

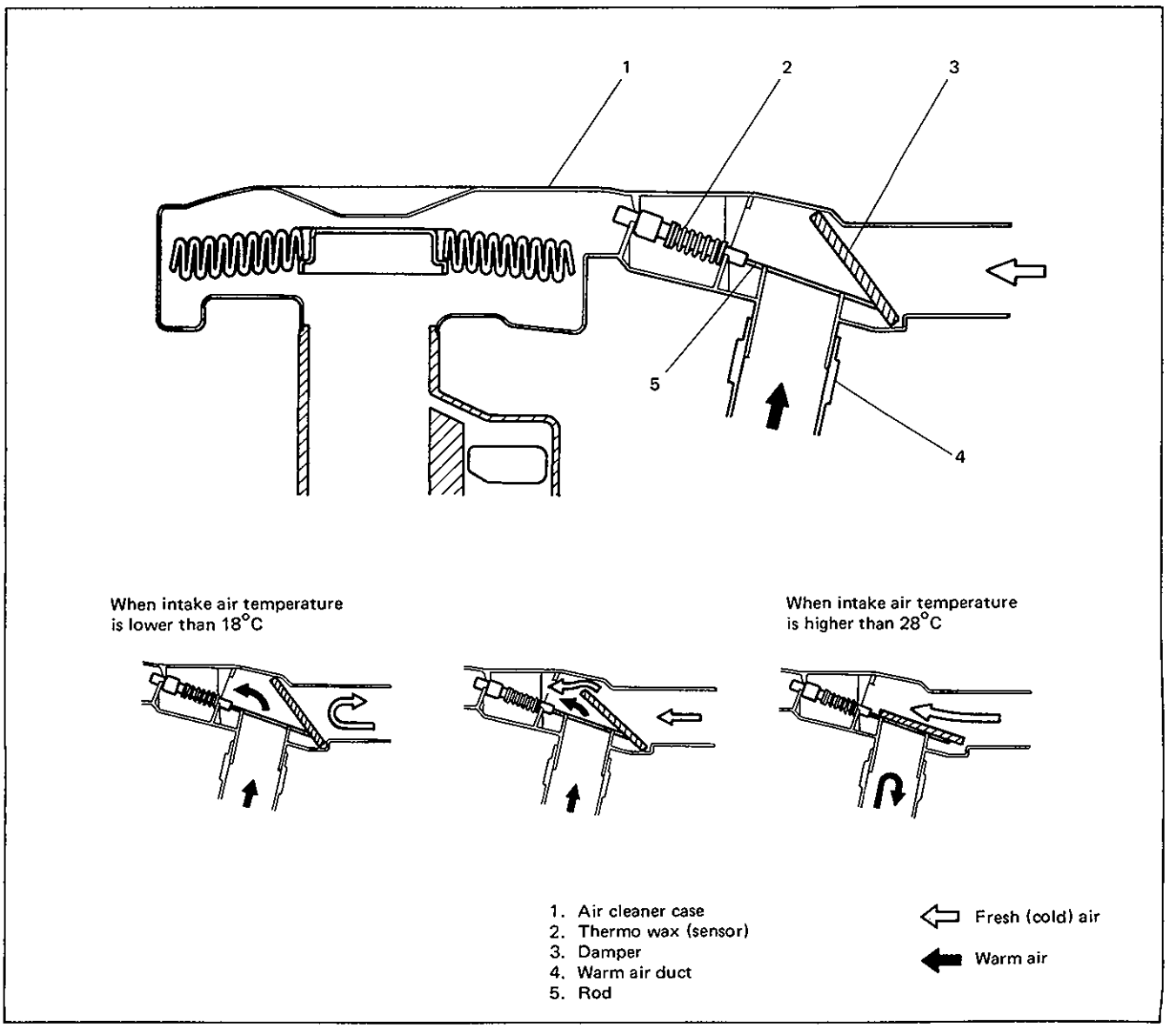
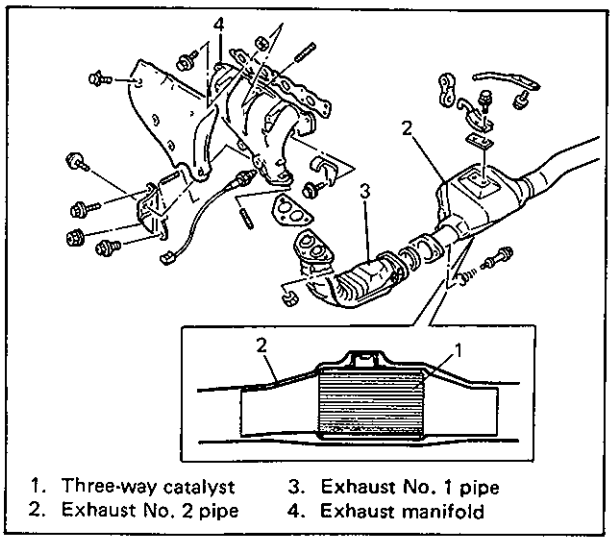


Fig. 6J-5

THREE-WAY CATALYST

The three-way catalyst is provided in the exhaust system (exhaust No. 2 pipe). The function of the catalyst is to reduce the emission of CO, HC and NOx in the exhaust gas by oxidizing or converting them into CO_2, H_2O and N_2 respectively.



1. Three-way catalyst
2. Exhaust No. 2 pipe
3. Exhaust No. 1 pipe
4. Exhaust manifold

Fig. 6J1-4 Catalytic Converter

ON CAR SERVICE

GENERAL

When the emission control hoses are disconnected and the system's component is removed for service, reinstall the component properly, and route and connect hoses correctly after service.

PCV SYSTEM

NOTE:

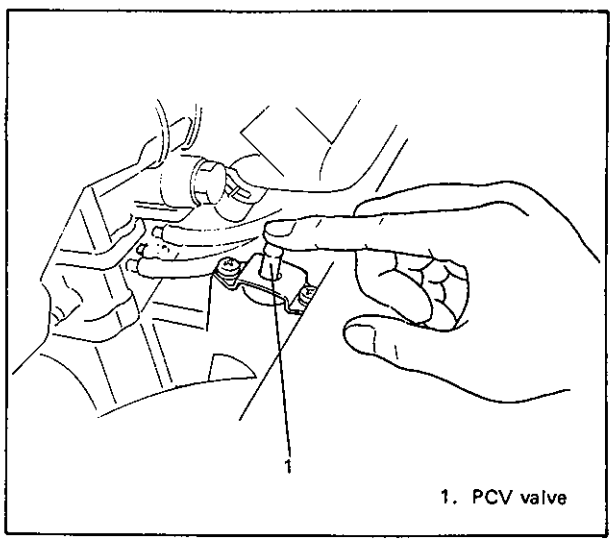
Be sure to check that there is no obstruction in PCV valve or its hoses before adjusting engine idle speed, for obstructed PCV valve or hose hampers its accurate adjustment.

PCV HOSE INSPECTION

Check hoses for connection, leakage, clog, and deterioration. Replace as necessary.

PCV VALVE INSPECTION

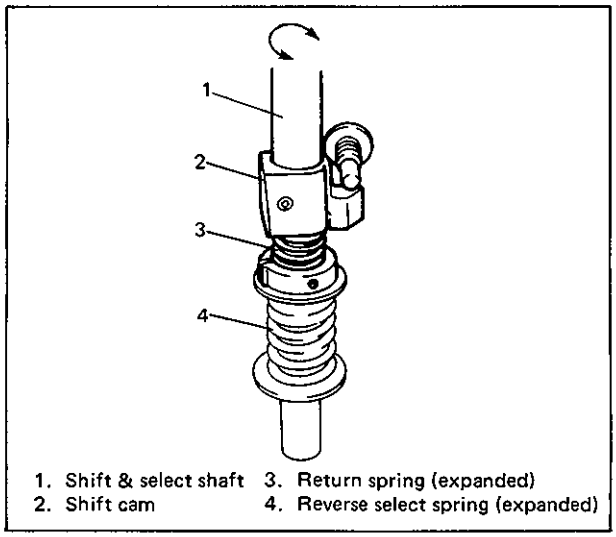
1. Disconnect PCV hose from PCV valve.
2. Run engine at idle.
3. Place your finger over end of PCV valve to check for vacuum. If there is no vacuum, check for clogged valve. Replace as necessary.



1. PCV valve

Fig. 6J1-5 Checking Vacuum

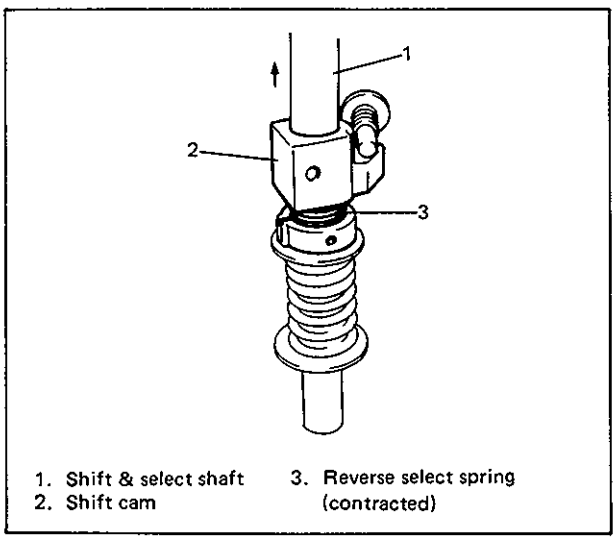
1. When shift lever is at neutral position between 3rd and 4th gear, shift cam is under guide bolt and can turn freely clockwise (to 3rd gear) and counterclockwise (to 4th gear).



1. Shift & select shaft
2. Shift cam
3. Return spring (expanded)
4. Reverse select spring (expanded)

Fig. 7A-5 Neutral of 3rd – 4th Position

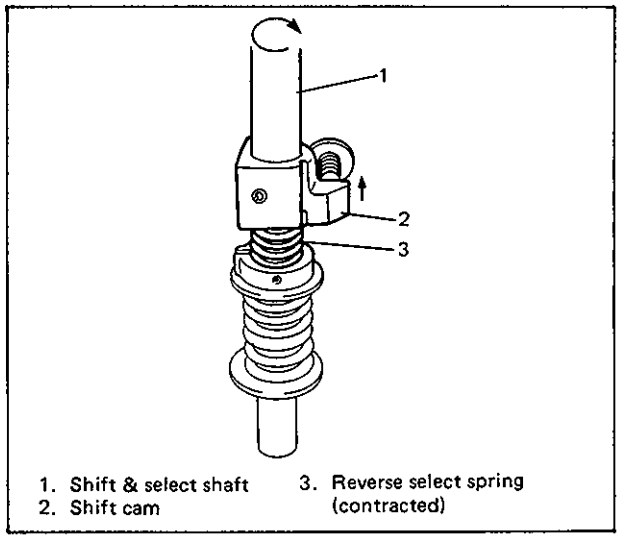
2. When shift lever is shifted toward the right from neutral position, shift and select shaft moves up but shift cam is restricted by guide bolt and return spring is contracted.



1. Shift & select shaft
2. Shift cam
3. Reverse select spring (contracted)

Fig. 7A-6 Neutral of 5th – REV Position

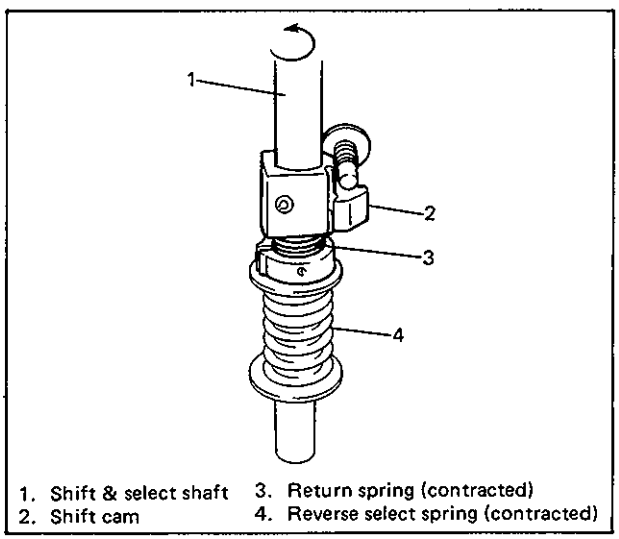
3. When shift lever is shifted to 5th gear, shift & select shaft turns clockwise letting shift cam off from guide bolt and pushed up by return spring. In this state, movement of shift cam is restricted by guide bolt and therefore, gear-shift to reverse is not attainable.



1. Shift & select shaft
2. Shift cam
3. Reverse select spring (contracted)

Fig. 7A-7 Shifted in 5th Speed

4. When shift lever is shifted from neutral position between 5th gear and reverse gear to reverse gear, shift cam turns counterclockwise to a tain reverse gear.



1. Shift & select shaft
2. Shift cam
3. Return spring (contracted)
4. Reverse select spring (contracted)

Fig. 7A-8 Shifted in Reverse

14. Remove reverse shaft bolt with washer.
15. Remove transmission case outside bolts and clutch housing bolts.

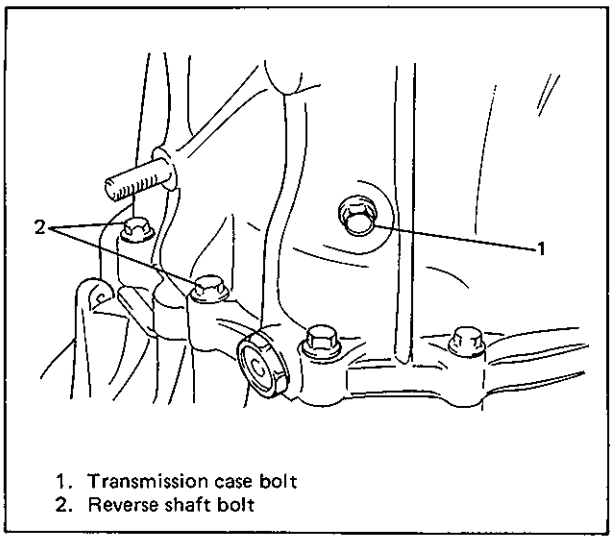


Fig. 7A-29 Removing Case Bolts

16. Tapping left case flanges with plastic hammer, remove left case.
17. Pull out reverse gear shaft, then take off reverse idler gear.
18. Pull out 5th & reverse (REV) gear shift guide shaft together with 5th & reverse (REV) gear shift shaft.

NOTE:
When removing 5th & REV gear shift shaft and guide shaft, push up high speed gear shift shaft and shift it to 4th to facilitate removal of 5th & REV shifter.

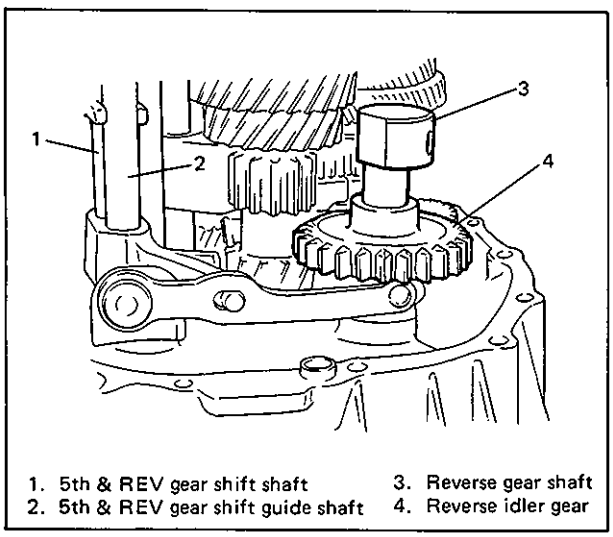


Fig. 7A-30 Removing Reverse Idler Gear

19. Tapping input shaft end with plastic hammer, push it out as assembly from case a little, then take out input shaft assembly, counter shaft assembly, high speed gear shift shaft and low speed gear shift shaft all at once.

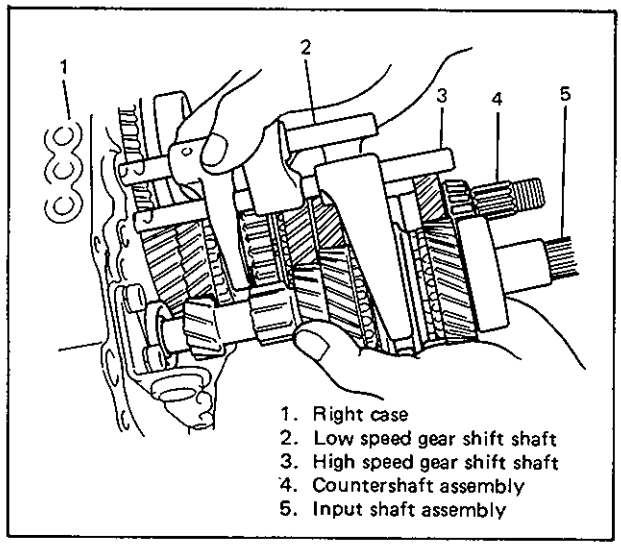


Fig. 7A-31 Removing Input and Counter Shafts

20. Remove countershaft left bearing cup from left case.
21. Remove differential side left oil seal also from left case.
22. Remove differential gear assembly from right case.
23. Remove bolt and then pull out speedometer driven gear case with gear.

CAUTION:
Be careful not to damage speedometer driven gear case when removing it.

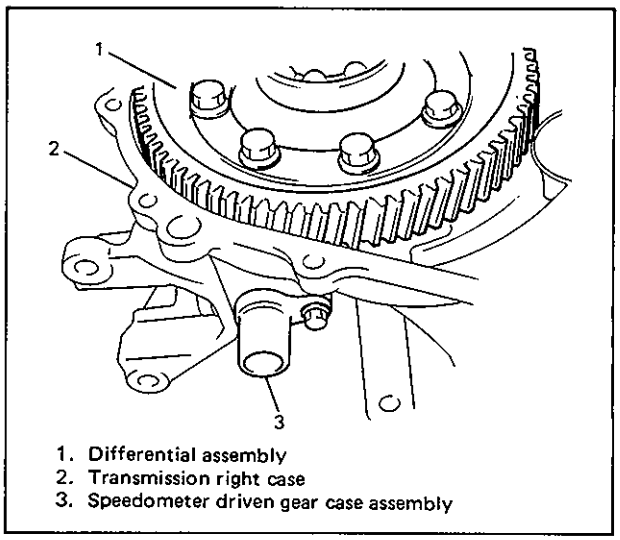
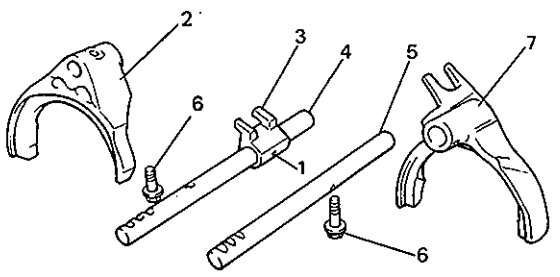


Fig. 7A-32 Removing Differential Assembly



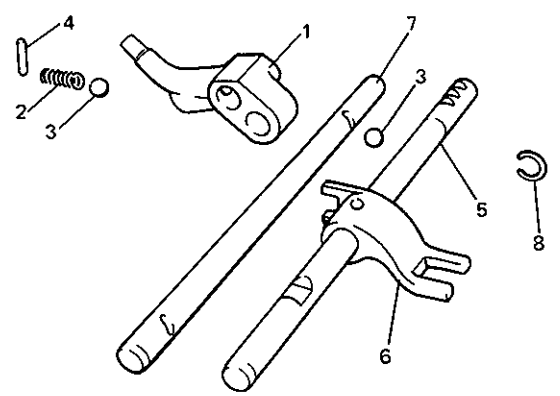
1. Spring pin (Apply spring pin remover 09922-85811)
2. Low speed gear shift fork
3. Low speed gear shift yoke
4. Low speed gear shift shaft
5. High speed gear shift shaft
6. Bolt
7. High speed gear shift fork

Fig. 7A-63 Assembling Low and High Speed Shifters

5th & REV Gear Shifter

1. Disassemble component parts by using spring pin remover 4.5 mm (09922-85811) and hammer.
2. Replace or correct parts as required and assemble shafts making sure that component parts are in proper order as shown below.

NOTE:
Install 2 steel balls in reverse gear shift arm without fail.



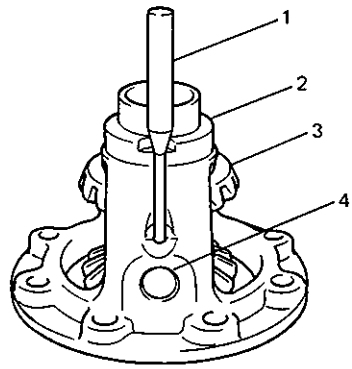
1. Reverse gear shift arm
2. Reverse gear shift arm spring
3. Steel ball
4. Spring pin
5. 5th & REV gear shift shaft
6. 5th & REV gear shift yoke
7. 5th & REV gear shift guide shaft
8. C-ring

Fig. 7A-64 Assembling 5th & REV Shifter

DIFFERENTIAL ASSEMBLY

Disassembly

1. Using special tool, remove R bearing.
2. Take out speedometer drive gear.
3. Remove L bearing by using puller while supporting its center shaft as described above.
4. Support differential case with soft jawed vise and remove 8 final gear bolts then take out final gear.
5. Using special tool and hammer, drive out differential side pinion shaft pin and then disassemble component parts.



1. Special tool (Spring pin remover 09922-85811)
2. Differential case
3. Differential gear
4. Differential pinion shaft

Fig. 7A-65 Removing Spring Pin

Adjustment and Reassembly

Judging from abnormality noted before disassembly and what is found through visual check of component parts after disassembly, prepare replacing parts and proceed to reassembly. Make sure that all parts are clean.

1. Assemble differential gear and measure thrust play of differential gear as follows.

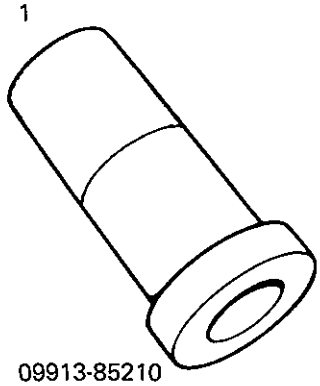
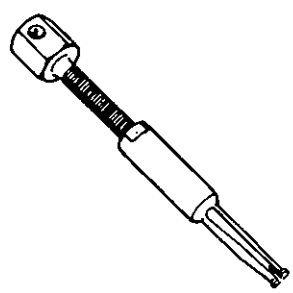
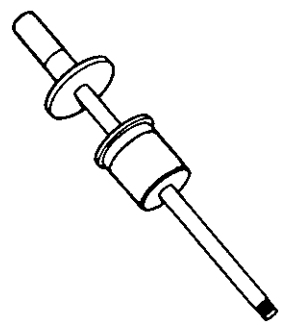
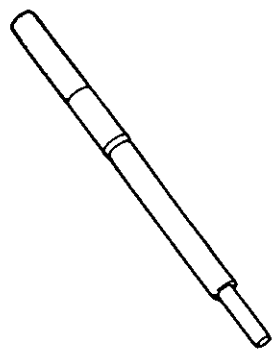
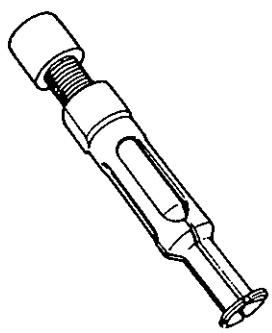
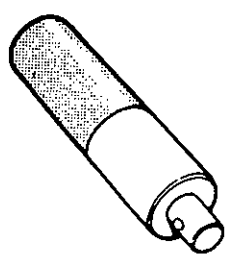
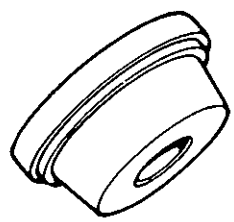
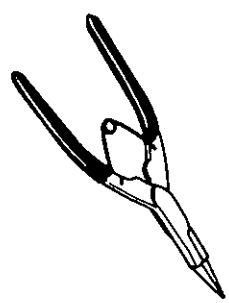
Left side

- Hold differential assembly with soft jawed vise and apply measuring tip of dial gauge to top surface of gear.
- Using 2 screwdrivers, move gear up and down and read movement of dial gauge pointer.

REQUIRED SERVICE MATERIALS

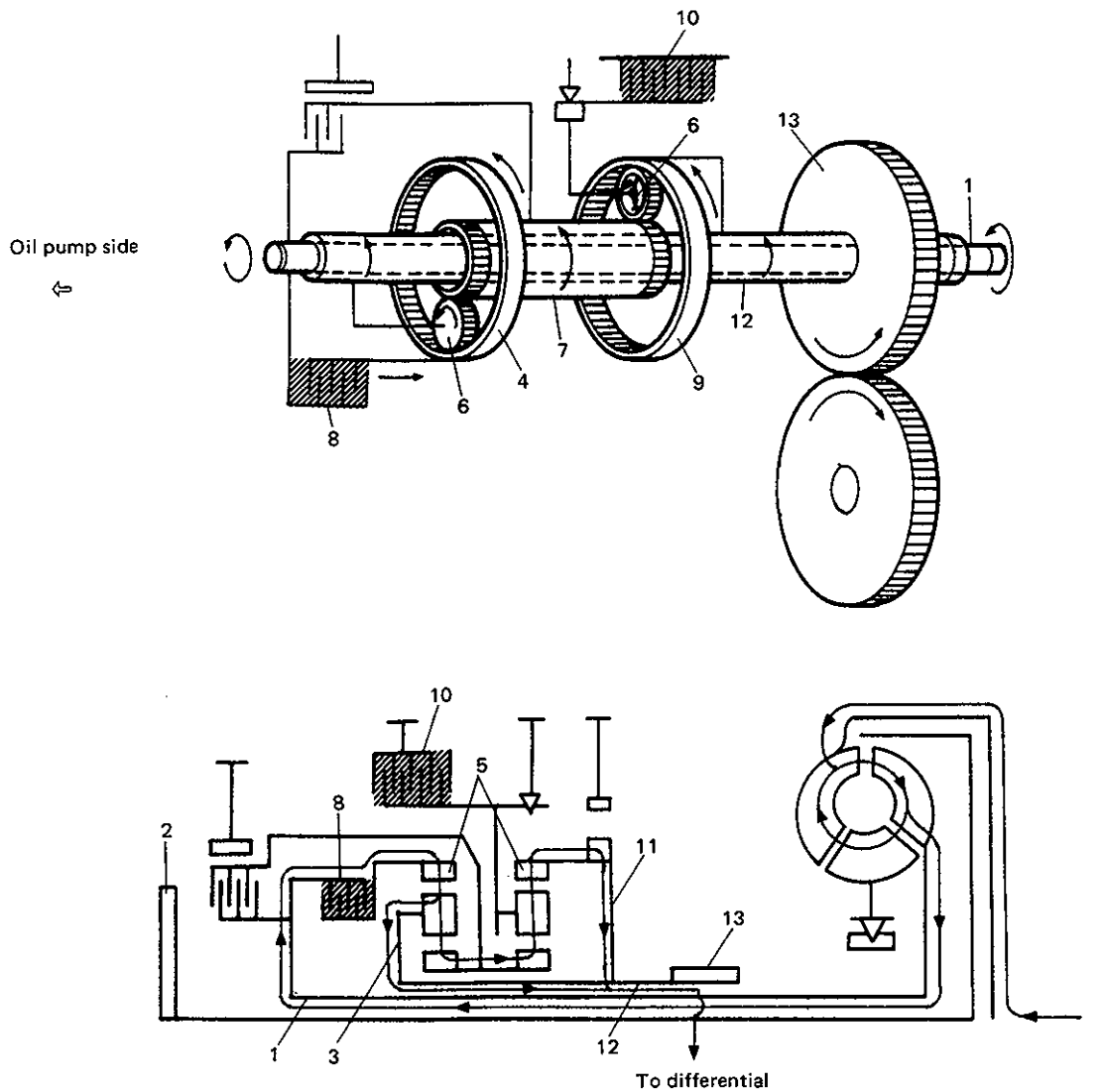
MATERIAL	RECOMMENDED SUZUKI PRODUCT	USE
Lithium grease	SUZUKI SUPER GREASE A (99000-25010)	• Oil seal lips • Gear shift control lever • Gear shift control shaft bushes
Sealant	SUZUKI BOND NO. 1215 (99000-31110)	• Oil drain plug • Gear shift shaft bolt • Mating surface of transmission case • Mating surface of side cover
Thread lock cement	THREAD LOCK 1322 (99000-32110)	• Control lever knob • Reverse gear shift lever bolts • Oil gutter bolt • Left case plate screws

SPECIAL TOOLS

1  09913-85210 Bearing installer	2  09917-58010 Bearing installer	3  09930-30102 Sliding shaft	4  09916-46010 Valve guide remover
5  09923-74510 Bearing remover	6  09913-75820 Installer attachment	7  09924-84510-004 Bearing installer adapter (C)	8  09900-06107 Snap ring pliers (Opening type)

"L" RANGE

The torque flow from the engine is the same as at the 1st gear in "D" range, but in this range, the first reverse brake, under oil pressure, interrupts counterclockwise revolution of the rear planetary ring gear ass'y which occurs when the engine brake is applied. In other words, when driving in "D" range, the clockwise revolution of the rear planetary ring gear ass'y is stopped by means of the one-way clutch, but when the engine brake is applied, the reverse torque (counterclockwise) from the output shaft acts to prevent the one-way clutch from operating and the rear planetary carrier idles. This puts the first reverse brake into operation so as to hold the rear planetary carrier stationary.
Thus powerful engine braking is provided.



1. Input shaft
2. Oil pump
3. Front planetary carrier
4. Front planetary ring gear
5. Internal gear
6. Pinion gear
7. Sun gear
8. Forward clutch
9. Rear planetary ring gear
10. First reverse brake
11. Rear planetary ring gear
12. Output shaft
13. Output gear

Fig. 7B-3-4

HYDRAULIC CIRCUIT

"D" RANGE, 1ST GEAR

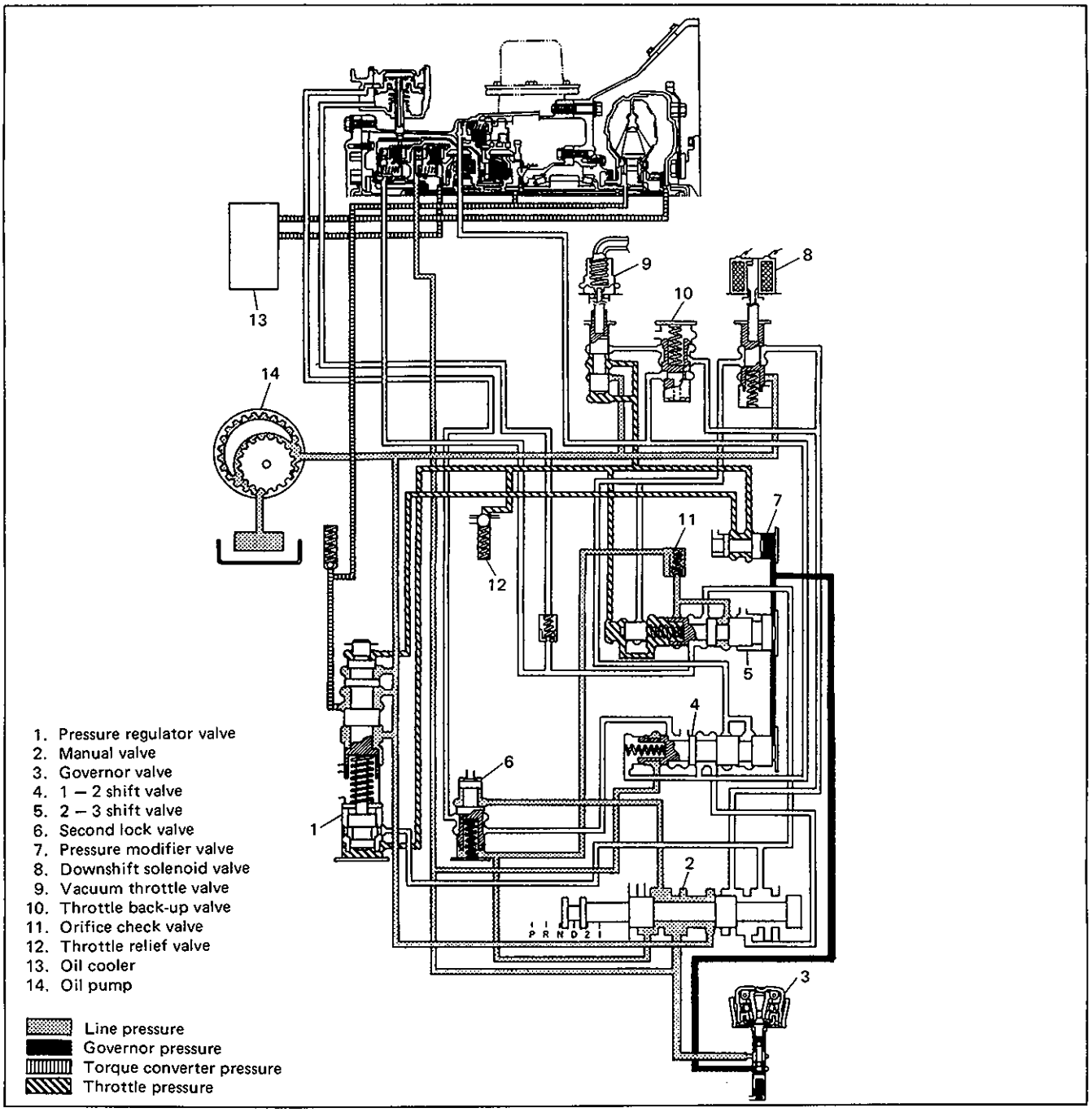


Fig. 7B-5-1

The line pressure generated by the oil pump at the engine start is regulated by the pressure regulator valve and sent to the manual valve. A part of it acts on the forward clutch which is then engaged to shift the transmission to 1st gear. As the car speed increases and the governor pressure rises, the throttle pressure is applied to the pressure regulator valve, causing the regulated line pressure through the pressure modifier valve to lower. A part of the line pressure sent to the pressure regulator valve joins the torque converter pressure and is delivered to the torque converter.

BRAKE INTERLOCK SYSTEM (If equipped)

This system is so designed that selector lever cannot be shifted from "P" range position unless the ignition switch is turned to "ON" and brake pedal is depressed. Also, ignition key cannot be pulled out of key hole unless select lever is in "P". These mechanism are as follows.

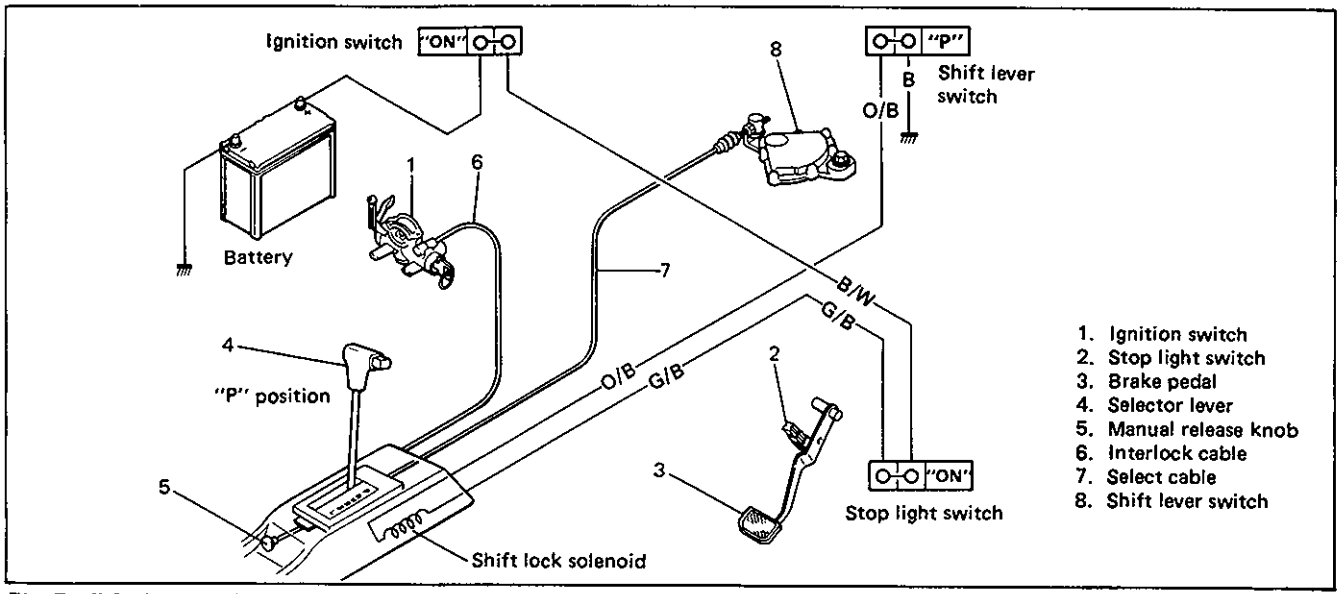


Fig. 7B-7-3 Automatic Transmission Brake Interlock System Circuit

STEERING LOCK

When selector lever is in position other than "P", lock lever interrupts key cylinder to turn to "LOCK" position, thus steering is kept to be operated free. However, when selector lever is shifted in "P", lock lever is released, thus allowing ignition key to be removed and then steering is locked.

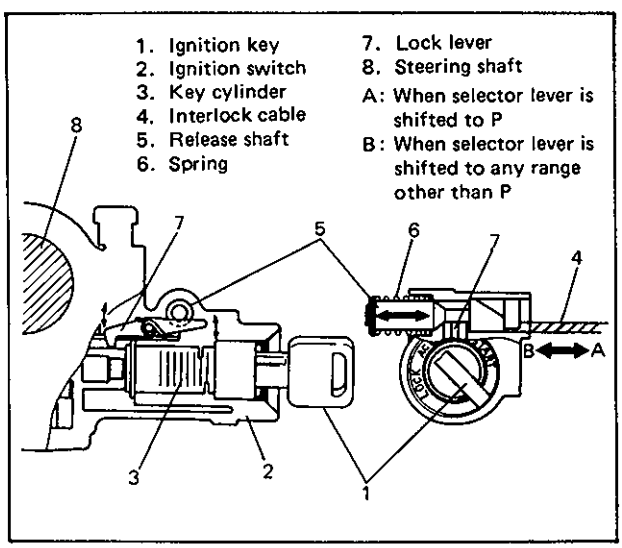


Fig. 7B-7-4 Ignition Switch Lock Mechanism

SHIFT LOCK SOLENOID

Unless ignition key is turned to "ON" and brake pedal is depressed, selector lever is kept in "P" by interruption of lock plate which is pushed by solenoid spring. However, when key is switched to "ON" and brake pedal is depressed, lock plate is turned back by solenoid magnetic force, thus allowing selector lever to be shifted.

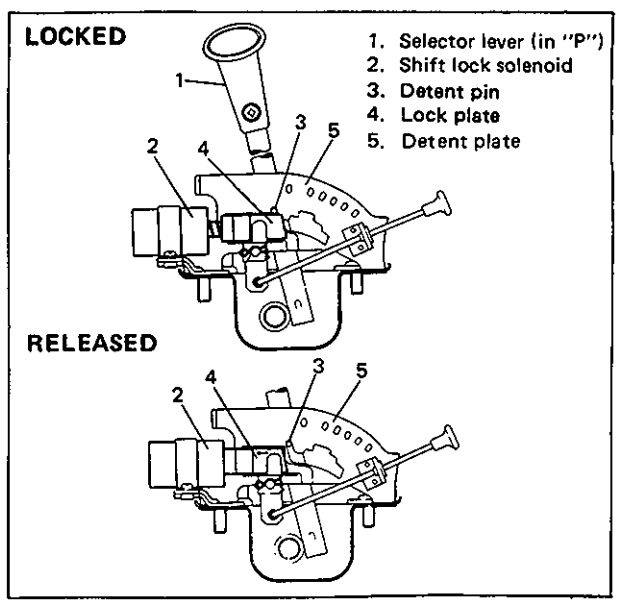


Fig. 7B-7-5

NO GEAR SHIFT, HIGH GEAR SHIFT POINT

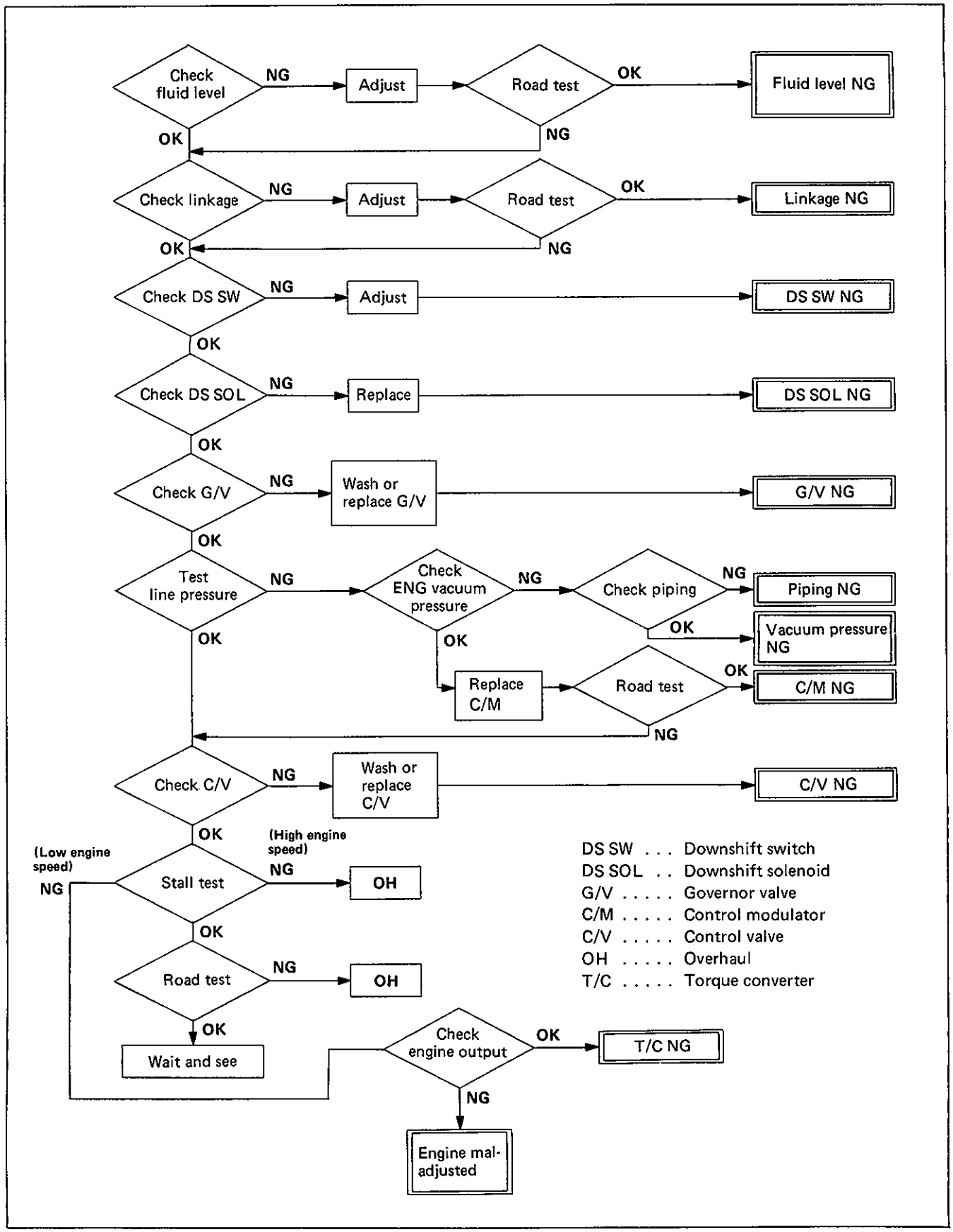


Fig. 7B-8-5

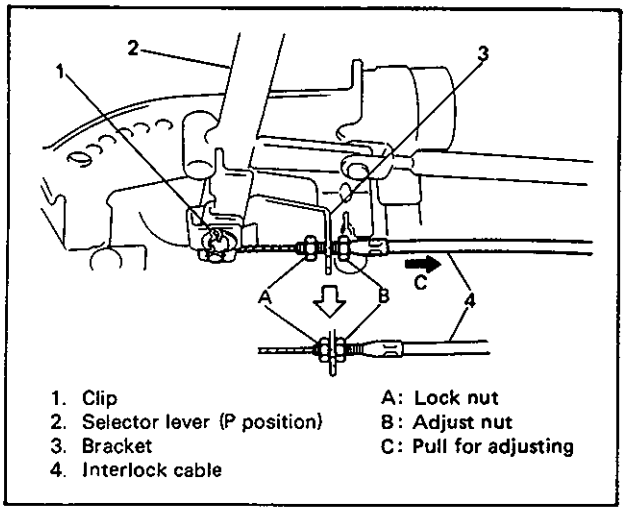


Fig. 7B-9-13

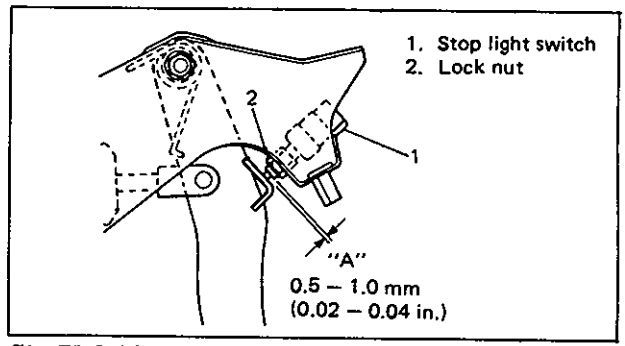


Fig. 7B-9-14 Stop Light Switch

STOP LIGHT SWITCH

Removal and Installation

1. Remove negative battery cable from battery.
2. Remove steering joint cover to gain access to stop light switch.
3. Disconnect stop light switch electrical connector.
4. Remove stop light switch from pedal bracket.
5. To install stop light switch, reverse removal procedure.

Adjustment

Adjustment should be made as follows when installing stop light switch.

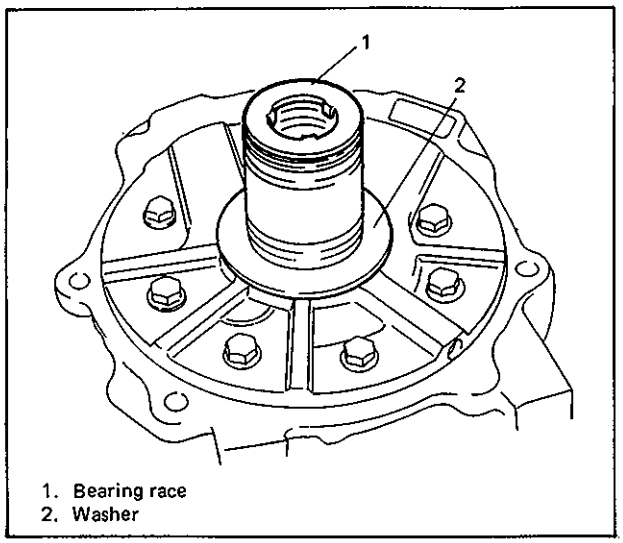
Pull up brake pedal toward you and while holding it there, adjust switch position so that clearance between the end of thread and brake pedal contact plate (shown as "A" in figure) is within 0.5 – 1.0 mm (0.02 – 0.04 in.). Then tighten lock nut to the specified torque.

Tightening torque for stop light switch nut	10 – 15 N·m 1.0 – 1.5 kg-m 7.5 – 10.5 lb-ft

SYSTEM INSPECTION

1. Check to make sure that selector lever cannot be moved to any other range from "P" range position when ignition switch key is at "ACC" or "LOCK" position or it is removed from keyhole of ignition switch.
2. Shift selector lever to "P" range position and check for the following.
   - Ignition key can be turned between "LOCK" and "ACC" positions back and forth and also it can be removed from ignition switch.
   - When manual release knob is operated, selector lever can be shifted from "P" range position to any other range regardless of brake pedal operation or ignition switch key position.
   - When ignition switch is turned "ON" and brake pedal is depressed, selector lever can be shifted from "P" range position to any other range.
3. With selector lever shifted to any position other than "P" range, check that ignition key cannot be turned between "ACC" and "LOCK" positions in either direction and it cannot be removed from ignition switch unless it is at "LOCK" position.

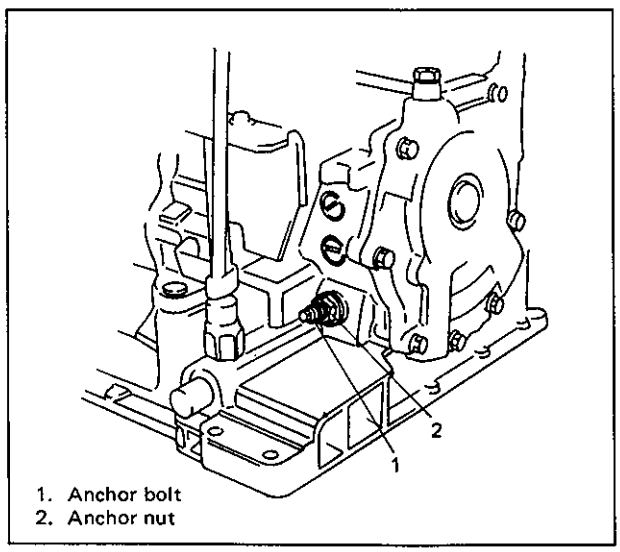
15) Remove oil pump fixing bolt, oil pump ass'y and gasket. Then remove forward clutch bearing race and direct clutch washer from oil pump ass'y.



1. Bearing race
2. Washer

Fig. 7B-11-9

16) Loosen anchor nut and anchor bolt.

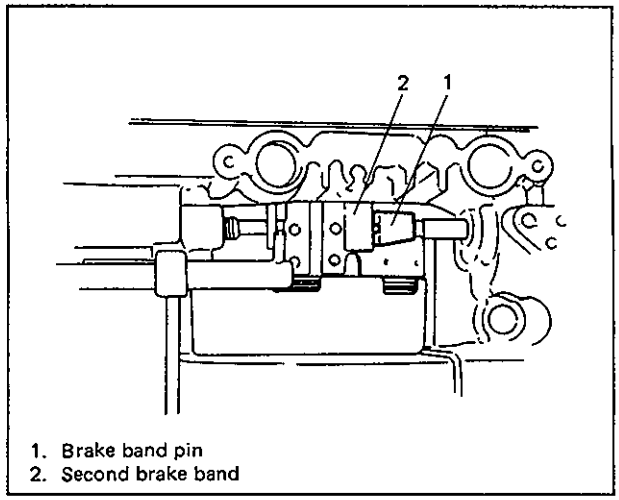


1. Anchor bolt
2. Anchor nut

Fig. 7B-11-10

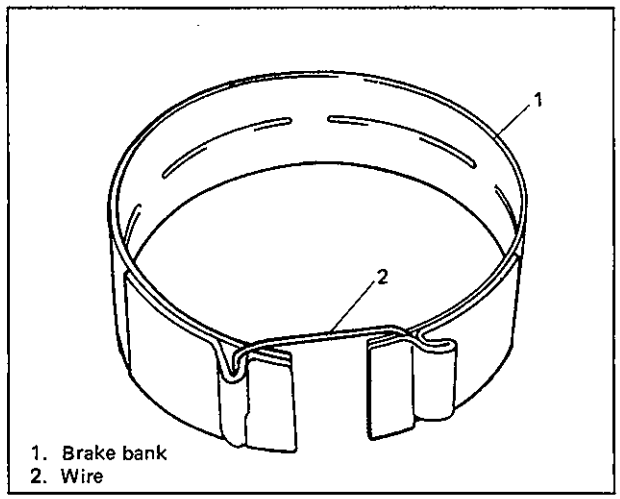
17) Remove second brake band pin and then second brake band.

CAUTION:
Keep brake band in proper state by using wire or the like. Should its opening be opened wider, crack may occur in its fusing.



1. Brake band pin
2. Second brake band

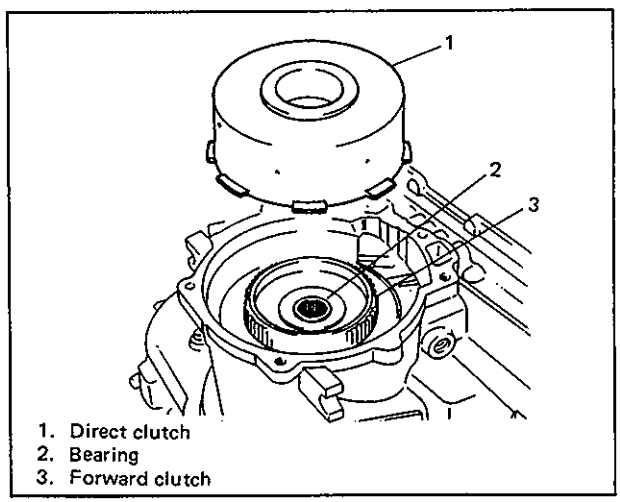
Fig. 7B-11-11



1. Brake bank
2. Wire

Fig. 7B-11-12

18) Remove direct clutch ass'y, bearing and forward clutch ass'y.



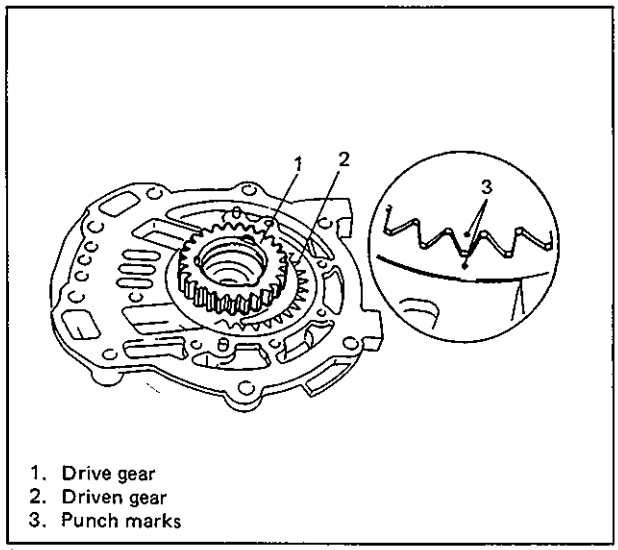
1. Direct clutch
2. Bearing
3. Forward clutch

Fig. 7B-11-13

Check for wear, damage or cracks.
Replace oil seal if necessary and apply grease to its lip portion slightly when it is installed.

Assembly

1) Install driven gear and drive gear to oil pump body by aligning their punched marks.

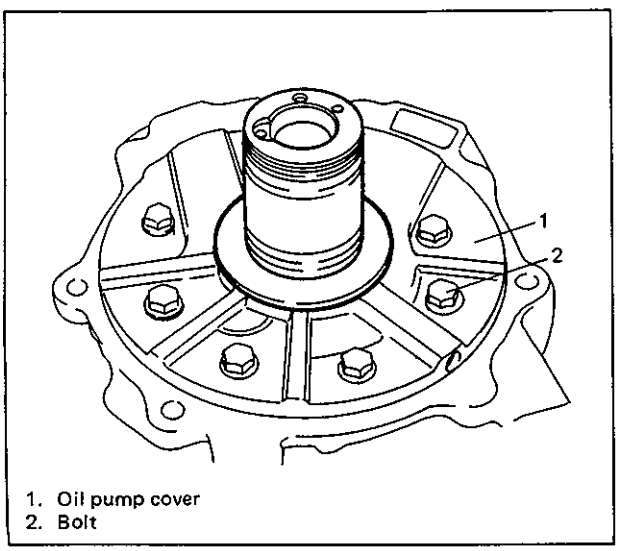


1. Drive gear
2. Driven gear
3. Punch marks

Fig. 7B-12-8

2) Install oil pump flange.
3) Install oil pump cover by aligning knock pin on oil pump body and tighten its fixing bolts to specified torque.

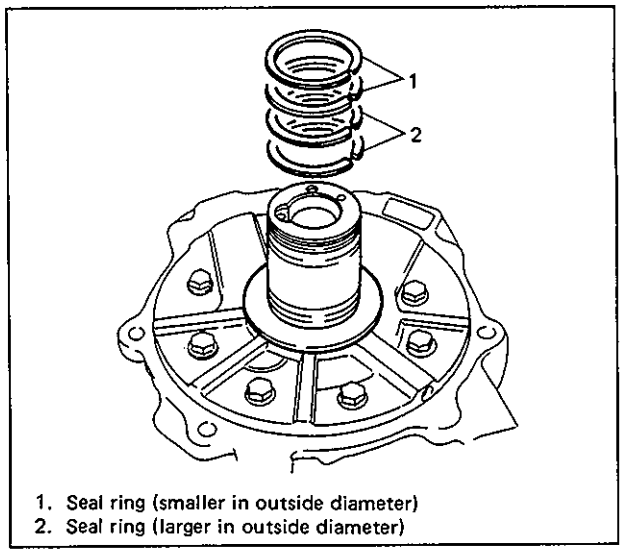
Tightening torque for oil pump cover bolts	N·m	kg-m	lb-ft
	11 – 14	1.1 – 1.4	8.0 – 10.0



1. Oil pump cover
2. Bolt

Fig. 7B-12-9

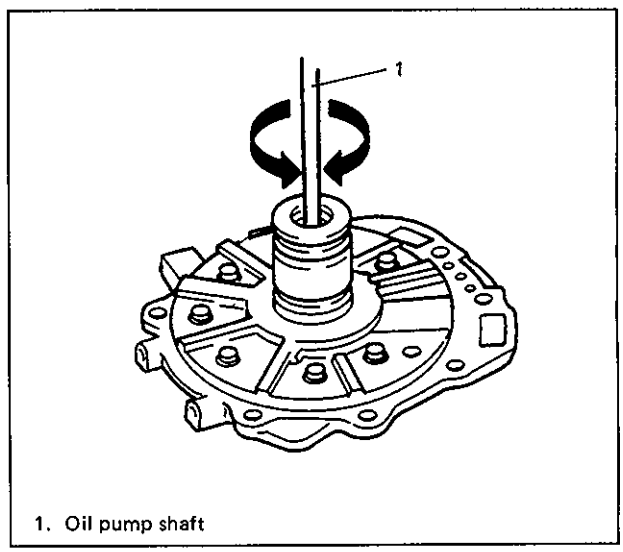
4) Install seal ring.



1. Seal ring (smaller in outside diameter)
2. Seal ring (larger in outside diameter)

Fig. 7B-12-10

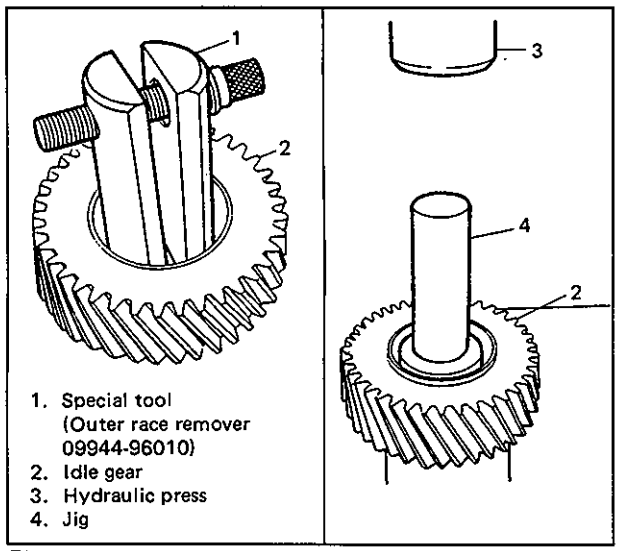
5) Install oil pump shaft to oil pump and check to make sure that shaft turns smoothly.



1. Oil pump shaft

Fig. 7B-12-11

3) Using special tool and hydraulic press, remove bearing outer race.



1. Special tool (Outer race remover 09944-96010)
2. Idle gear
3. Hydraulic press
4. Jig

Fig. 7B-18-3

Inspection

- Check bearing for smooth rotation. If not, replace both bearing and outer race.

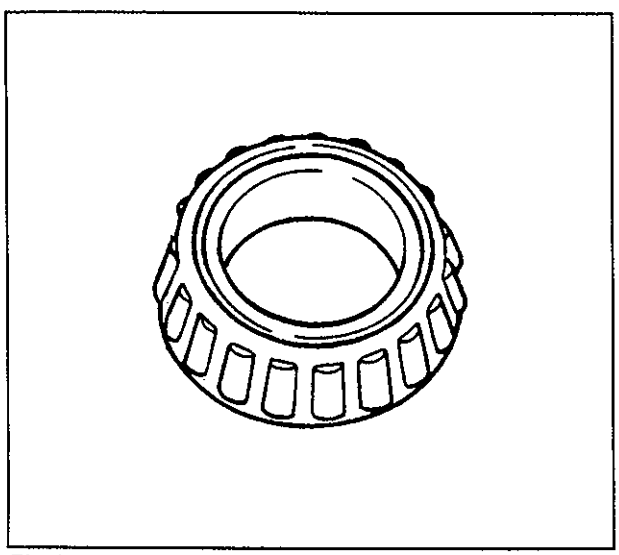
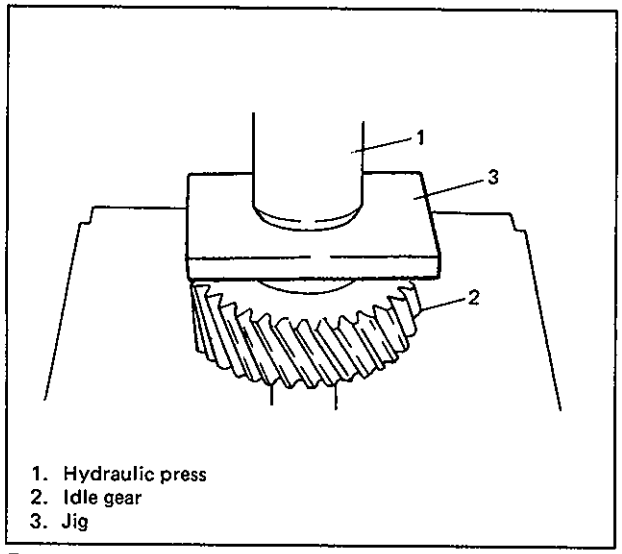


Fig. 7B-18-4

- Check idle gear for damage and wear and replace if check result is not satisfactory.

Assembly

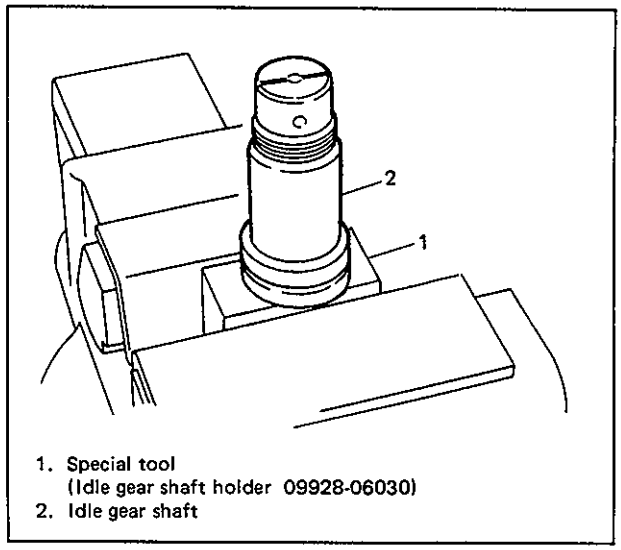
1) Using hydraulic press as shown below, install bearing outer race.



1. Hydraulic press
2. Idle gear
3. Jig

Fig. 7B-18-5

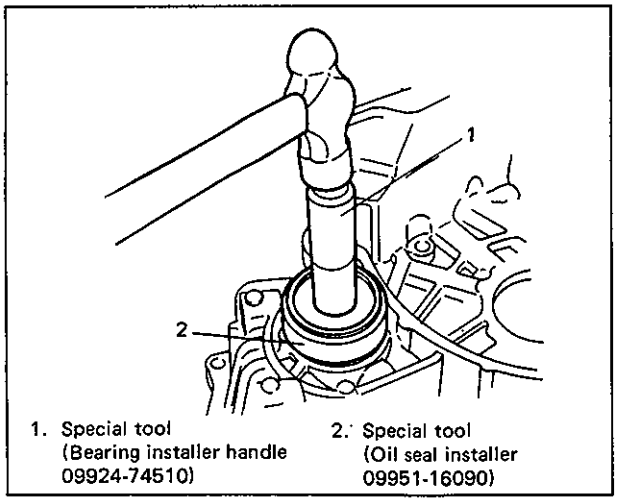
2) With special tool held between jaws of vise, set idle gear shaft onto it.



1. Special tool (Idle gear shaft holder 09928-06030)
2. Idle gear shaft

Fig. 7B-18-6

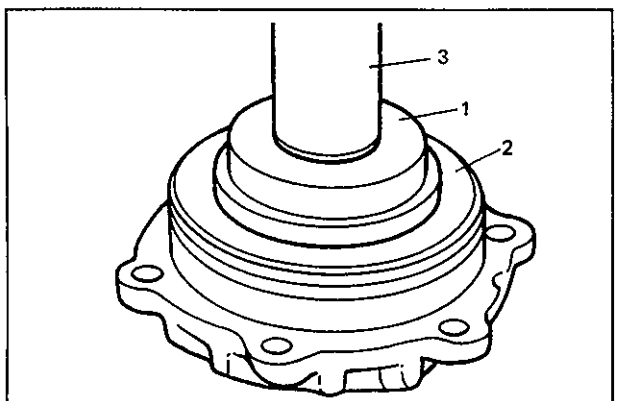
2) Using special tool, install a new oil seal to converter housing.



1. Special tool (Bearing installer handle 09924-74510)
2. Special tool (Oil seal installer 09951-16090)

Fig. 7B-30-2

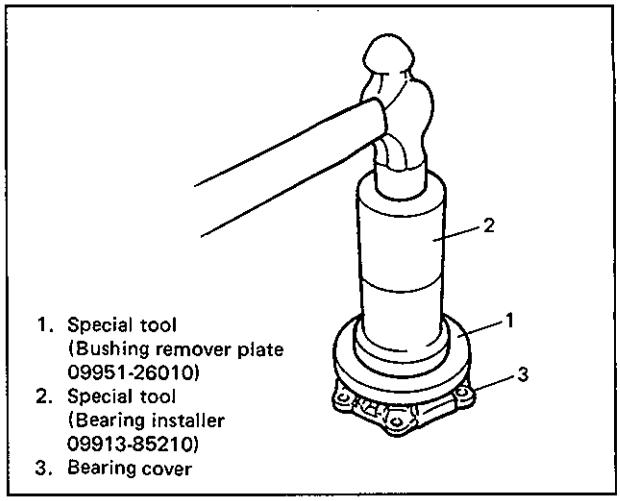
3) Using special tool and hydraulic press, install bearing outer race to bearing cover.



1. Special tool (Bearing installer adaptor 09941-34513-004)
2. Bearing cover
3. Hydraulic press

Fig. 7B-30-3

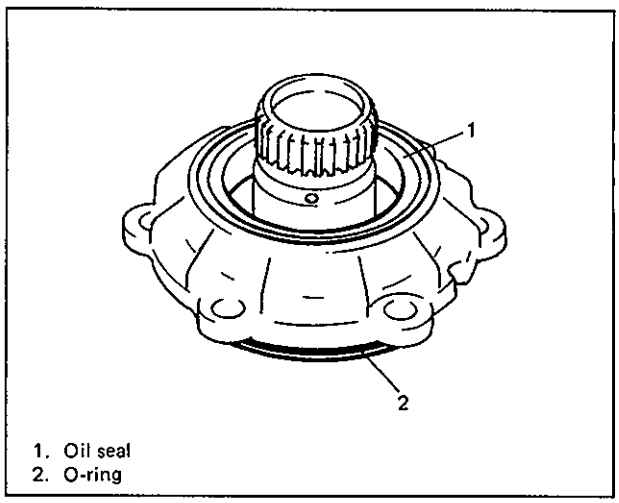
4) Using special tool, install new oil seal to bearing cover.



1. Special tool (Bushing remover plate 09951-26010)
2. Special tool (Bearing installer 09913-85210)
3. Bearing cover

Fig. 7B-30-4

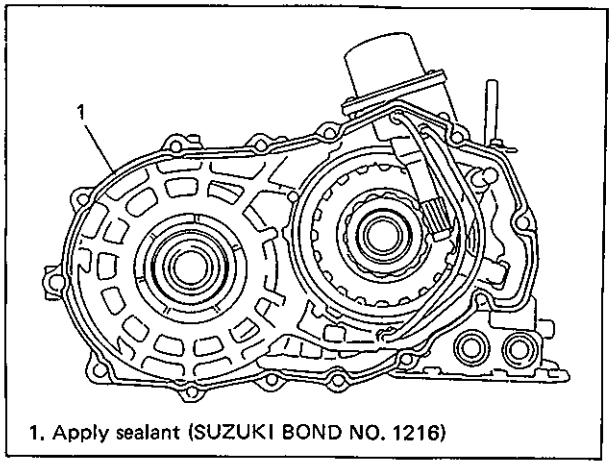
5) Install new O-ring to bearing cover.



1. Oil seal
2. O-ring

Fig. 7B-30-5

40) Install differential ass'y.
41) Clean mating surfaces of converter housing and transmission case and apply thin and even coat of sealant to them.

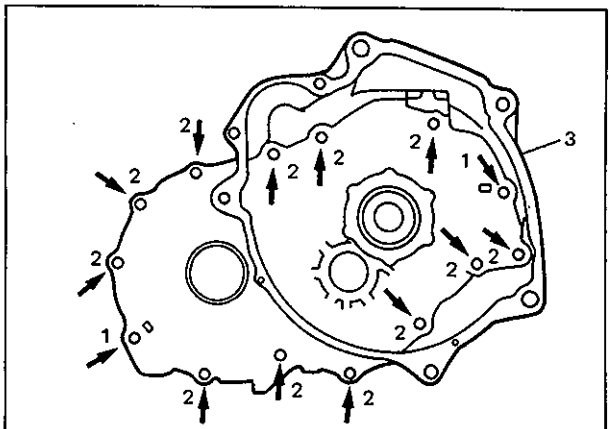


1. Apply sealant (SUZUKI BOND NO. 1216)

Fig. 7B-30-39-1

Then install transmission case and tighten bolts to specified torque.

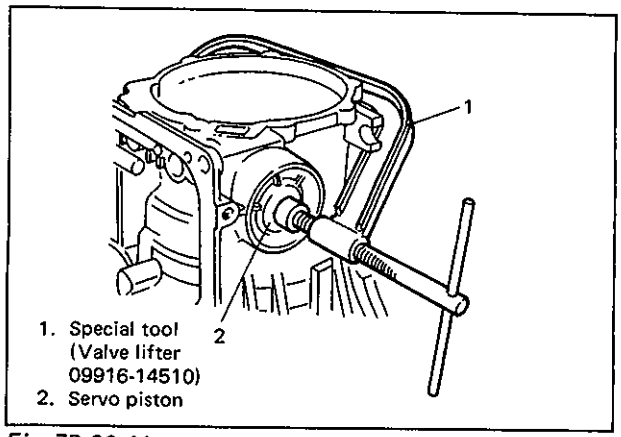
Tightening torque for transmission case fixing bolt	N·m	kg-m	lb-ft
	30 – 47	3.0 – 4.7	22.0 – 33.5



1. Bolt (longer)
2. Bolt (shorter)
3. Transmission case

Fig. 7B-30-40

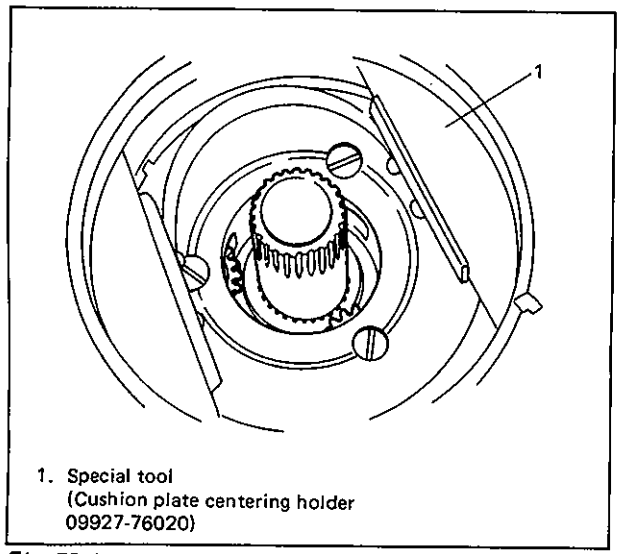
42) With spring fitted to band servo piston ass'y, install it to transmission case. Then using special tool, install snap ring.



1. Special tool (Valve lifter 09916-14510)
2. Servo piston

Fig. 7B-30-41

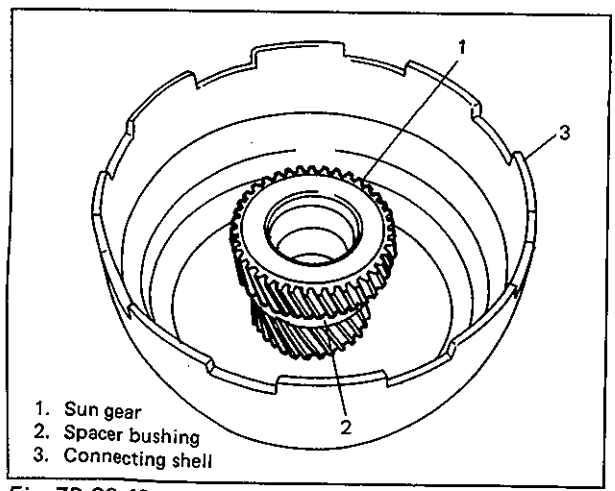
43) Remove special tool from transmission case.



1. Special tool (Cushion plate centering holder 09927-76020)

Fig. 7B-30-42

44) Install bearing with its black part facing up.
45) With spacer bushing fitted to sun gear, install it to connecting shell.



1. Sun gear
2. Spacer bushing
3. Connecting shell

Fig. 7B-30-43

46) Install connecting shell.

SECTION 7C1

CLUTCH

CONTENTS

GENERAL DESCRIPTION

The clutch is a hydraulically controlled diaphragm spring clutch of a dry single disc type. The diaphragm spring is of a tapering-finger type, which is a solid ring in the outer diameter part, with a series of tapered fingers pointing inward.

The disc, carrying four torsional coil springs, is positioned on the transmission input shaft with an involute spline fit.

The clutch cover is secured to the flywheel, and carries the diaphragm spring in such a way that the peripheral edge of the spring pushes on the pressure plate against the flywheel (with the disc in between), when the clutch release bearing is held back. This is the engaged condition of the clutch.

Depressing the clutch pedal causes the release bearing to advance and pushes on the tips of the tapered fingers of the diaphragm spring. When this happens, the diaphragm spring pulls the pressure plate away from the flywheel, thereby interrupting the flow of drive from flywheel through clutch disc to transmission input shaft.

DISASSEMBLY AND ASSEMBLY CLUTCH OPERATING CYLINDER

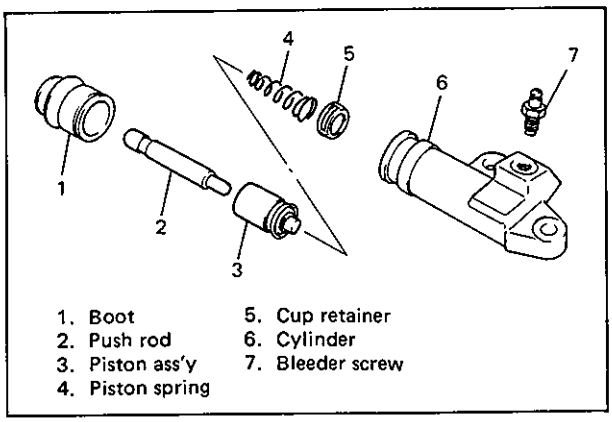


Fig. 7C1-8-1

DISASSEMBLY

1) Remove boot and then push rod.
2) Remove piston by blowing compressed air into bolt hole where hose was connected, using care to prevent it from jumping out.

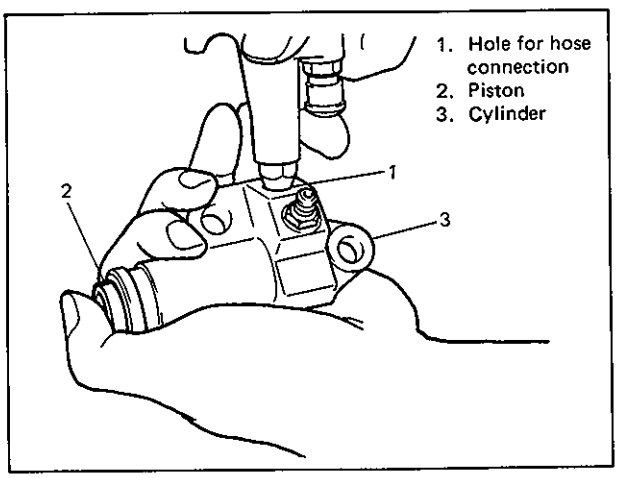


Fig. 7C1-8-2

INSPECTION

Inspect all disassembled parts for wear or damage, and replace parts if necessary.

NOTE:

- **Wash disassembled parts with brake fluid.**
- **Do not reuse piston cups.**

Inspect cylinder bore for scoring or corrosion. It is best to replace corroded cylinder. Corrosion can be identified as pits or excessive roughness.

NOTE:

Polishing bore of cylinder with anything abrasive is prohibited, as damage to cylinder bore may occur.

Rinse cylinder in clean brake fluid. Shake excess rinsing fluid from cylinder. Do not use a cloth to dry cylinder, as lint from cloth cannot be kept away from cylinder bore surfaces.

ASSEMBLY

NOTE:

Before installation, wash each part in specified brake fluid.

1) Assemble piston referring to Fig. 7C1-8-1.
2) Apply brake fluid to piston ass'y and inside of cylinder.
3) Install piston ass'y into cylinder. When inserting it, be careful not to cause damage to lip of piston cup.

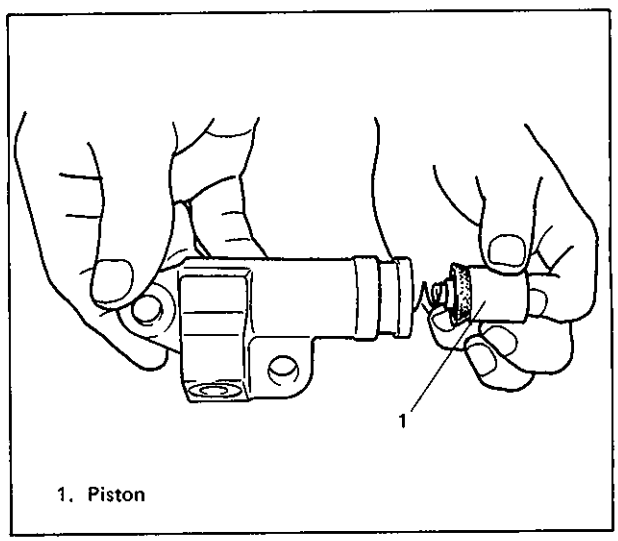


Fig. 7C1-8-3

4) Install boot and push rod.
5) For installation of operating cylinder to car body, refer to CYLINDER INSTALLATION described previously.

BODY ELECTRICAL SYSTEM

FUSES

The main fuse block is located on the fender apron panel in the engine room and junction/fuse block is installed to underside of instrument cover panel.
The designation and location of each fuse are shown below.

CAUTION:
- **When replacing a fuse, be sure to use one having a correct rated amperage.**
- **Before replacing a fuse, turn OFF every switch of electric equipments including main switch.**

MAIN FUSE BLOCK CIRCUIT

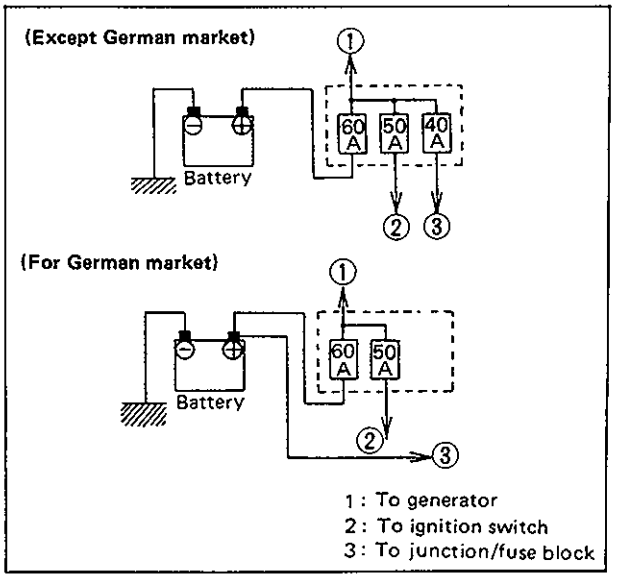
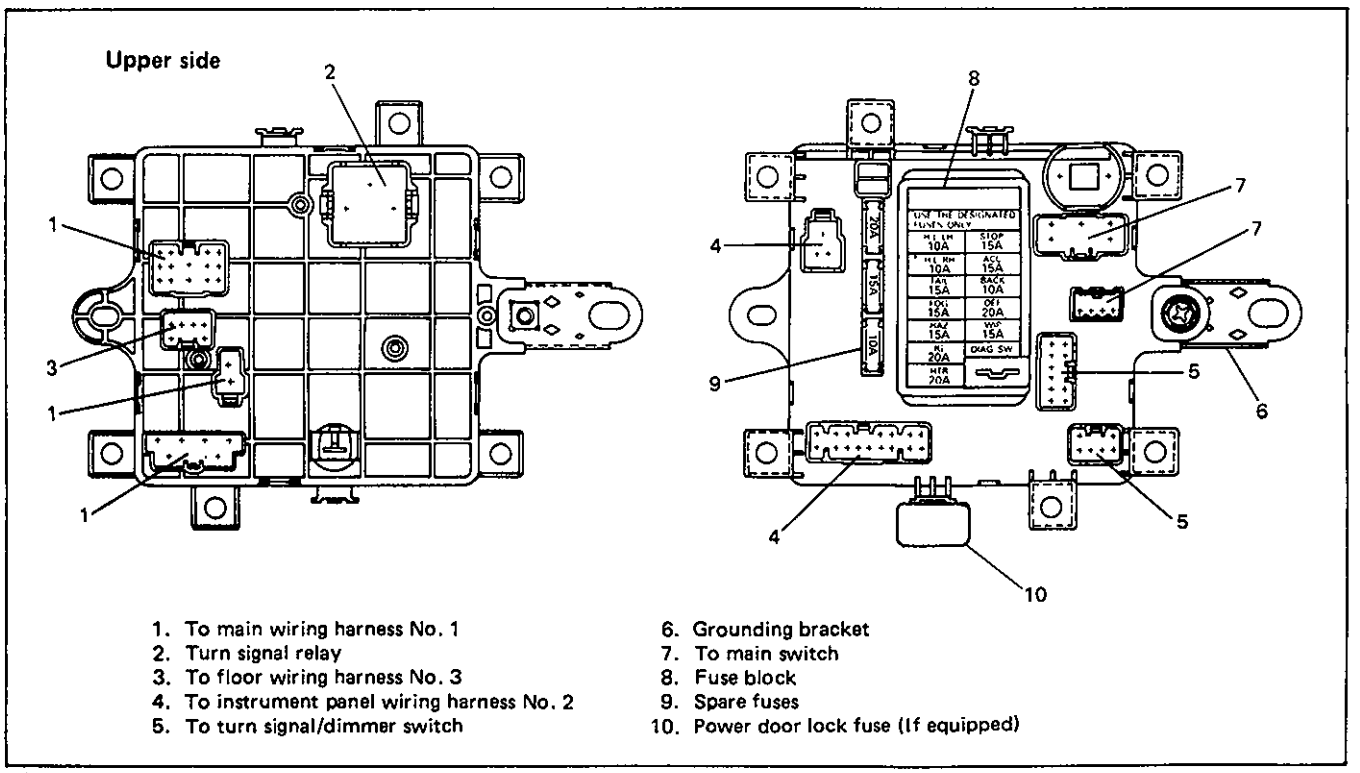


Fig. 8-1 Main Fuse Block Circuit

JUNCTION/FUSE BLOCK CIRCUIT AND FUSE BLOCK DESIGNATIONS



1. To main wiring harness No. 1
2. Turn signal relay
3. To floor wiring harness No. 3
4. To instrument panel wiring harness No. 2
5. To turn signal/dimmer switch
6. Grounding bracket
7. To main switch
8. Fuse block
9. Spare fuses
10. Power door lock fuse (If equipped)

Fig. 8-2-1

NOTE:
For German market fuse box, refer to right figure.

1	2	3	4	5	6	7
10A HEAD R	10A HEAD L	10A STOP	10A DOME	10A SMALL	10A TAIL R	10A TAIL L
8	9	10	11	12	13	14
20A IG.	20A HEATER	20A REAR DEF.	15A WIPER WASHER	10A TURN BACK	15A HAZARD	15A ACC
15						
15A FRONT FOG						

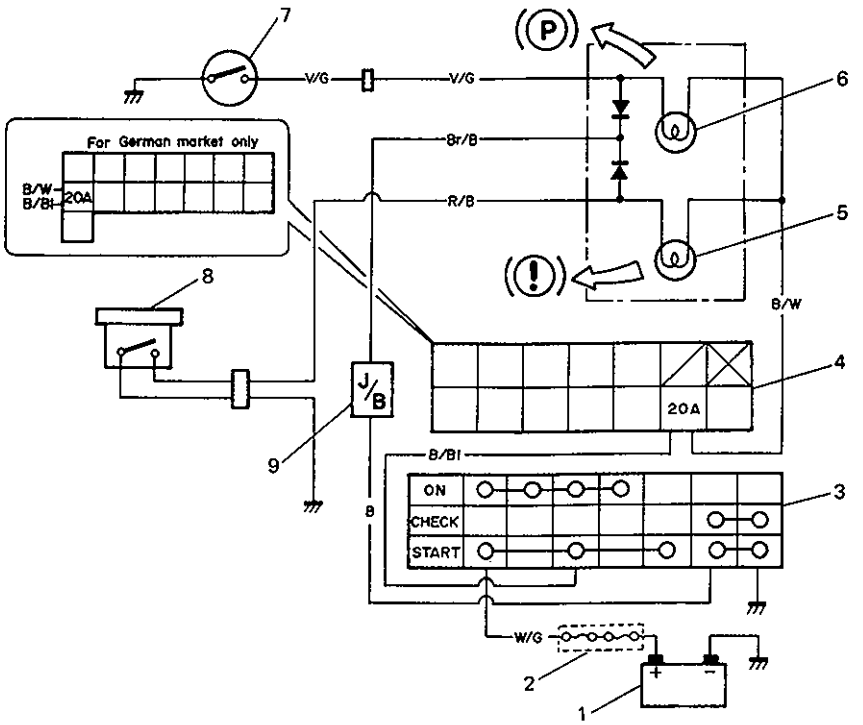
Fig. 8-2-2

BRAKE FLUID LEVEL WARNING LIGHT

DESCRIPTION OF CIRCUIT

The brake fluid level warning light circuit consists of a brake fluid level switch installed in the master cylinder reservoir, and the light (brake fluid level warning light) inside the combination meter. Also, this circuit is additionally provided with the parking brake switch which warns that the parking brake is applied.

For European Markets

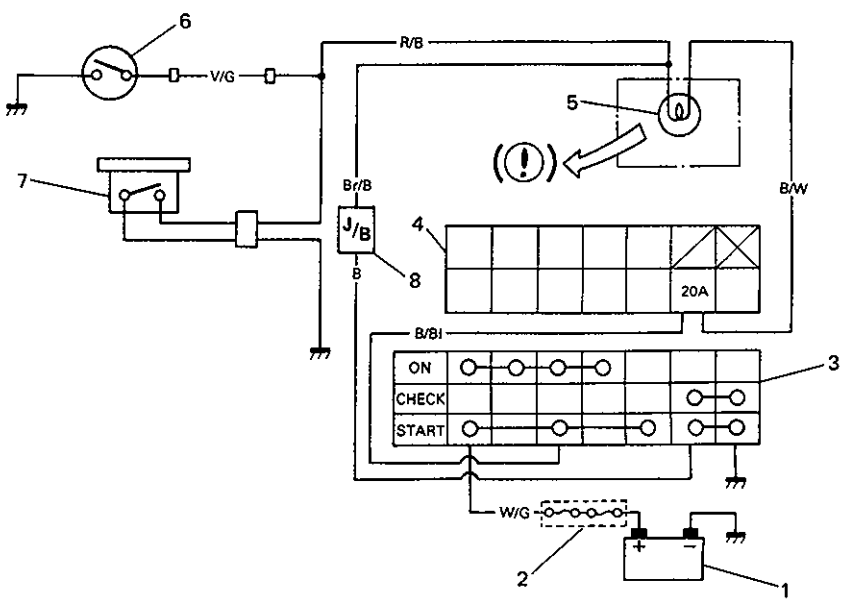


1. Battery
2. Main fuse
3. Ignition switch
4. Fuse block
5. Brake fluid level warning light
6. Parking brake indicator light
7. Parking brake switch
8. Brake fluid level switch
9. Junction block

B: Black
B/Bl: Black/Blue
B/W: Black/White
Br/B: Brown/Black
R/B: Red/Black
V/G: Violet/Green
W/G: White/Green.

Fig. 8-19-1 Brake Warning Circuit

For Other Markets



1. Battery
2. Main fuse
3. Ignition switch
4. Fuse block
5. Brake fluid level warning/ parking brake indicator light
6. Parking brake switch
7. Brake fluid level switch
8. Junction block

B: Black
B/Bl: Black/Blue
B/W: Black/White
Br/B: Brown/Black
R/B: Red/Black
W/G: White/Green

Fig. 8-19-2 Brake Warning Circuit

DIM-DIP SYSTEM (For England only)

Role of this system is to dim out low beam of headlights which light when engine is started and lighting switch is set to small light position.

Should anything go wrong with this system, check controller by measuring D.C. voltage between Red/White lead (headlight low beam side) and ground as shown by broken line in figure below with engine running and lighting switch set to small light position.

If measured voltage is out of specification (about 6V), replace controller.

If controller is in good condition (i.e., measured voltage is about 6V), check wiring, etc. while referring to below circuit diagram.

If headlights remain on even when engine is at a stop and lighting switch is turned OFF, replace controller.

NOTE:

Dim-dip controller is located under instrument panel at the right of steering column.

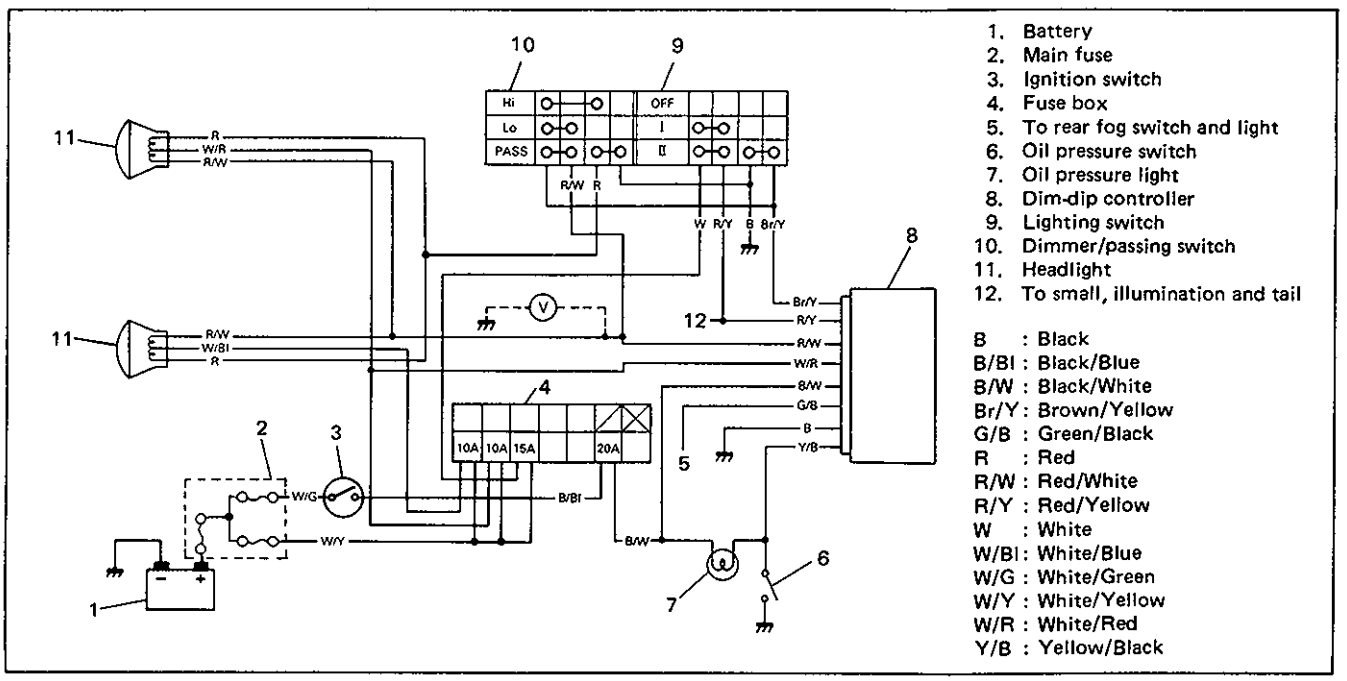


Fig. 8-27 Dim-Dip System Circuit

TROUBLE DIAGNOSIS

Trouble	Possible cause	Correction
Wiper malfunctions or does not return to original position.	Wiper fuse blown	Replace blown fuse to check for short.
	Wiper motor faulty	Check motor.
	Wiper control switch faulty	Check switch.
	Wiring or grounding faulty	Repair.
Washer malfunctions.	Washer hose or nozzle clogged	Repair.
	Washer motor faulty	Check motor.
	Wiper control switch faulty	Check switch
	Wiring faulty	Repair.

INSPECTION

A. WIPER/WASHER SWITCH

Use a circuit tester to check switch for each terminal-to-terminal continuity.

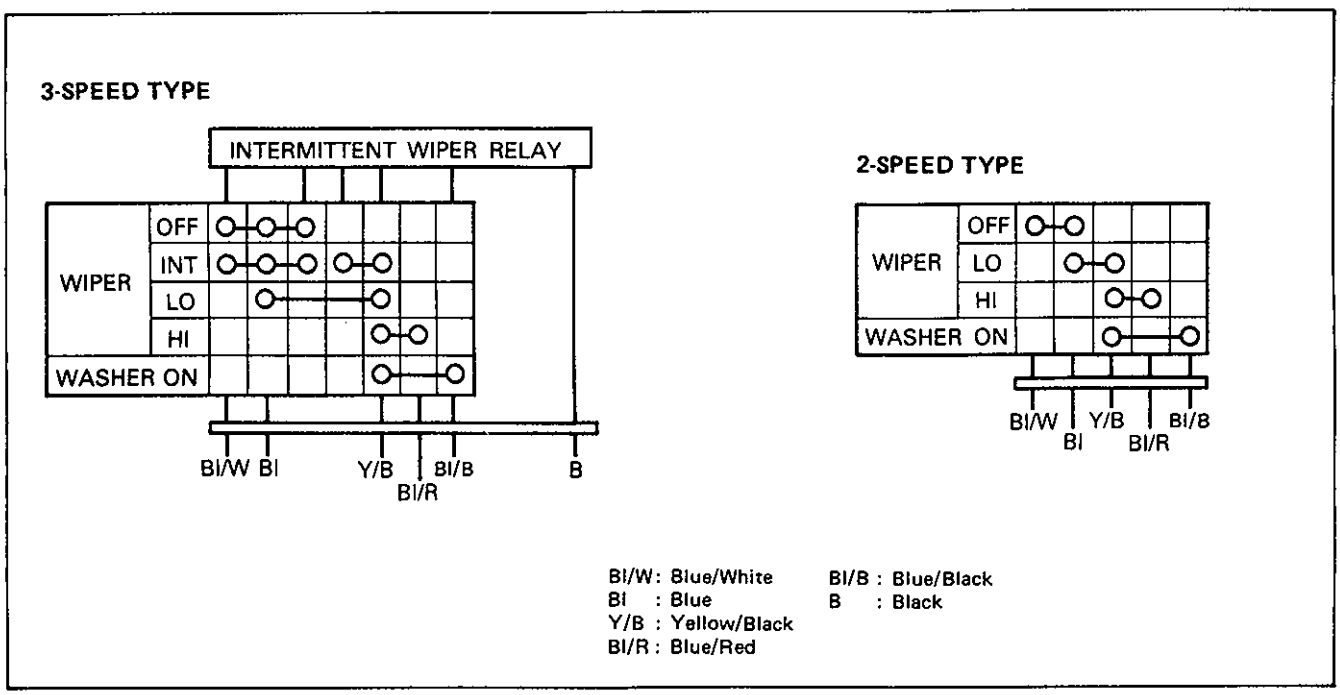


Fig. 8-38

2) D.R.L. system fails to stop.

Trouble	Possible cause	Correction
D.R.L. system remains operating even after engine stop.	D.R.L. controller faulty. W/R circuit faulty.	Replace controller. Repair.
D.R.L. system remains operating even after parking brake applied.	Parking brake switch faulty. V/G circuit faulty.	Replace switch. Repair.
D.R.L system remains operating even after lighting switch turned ON.	Lighting switch faulty. G/B circuit or its ground faulty.	Repair or replace switch. Repair.

ON CAR SERVICE

FRONT DOOR

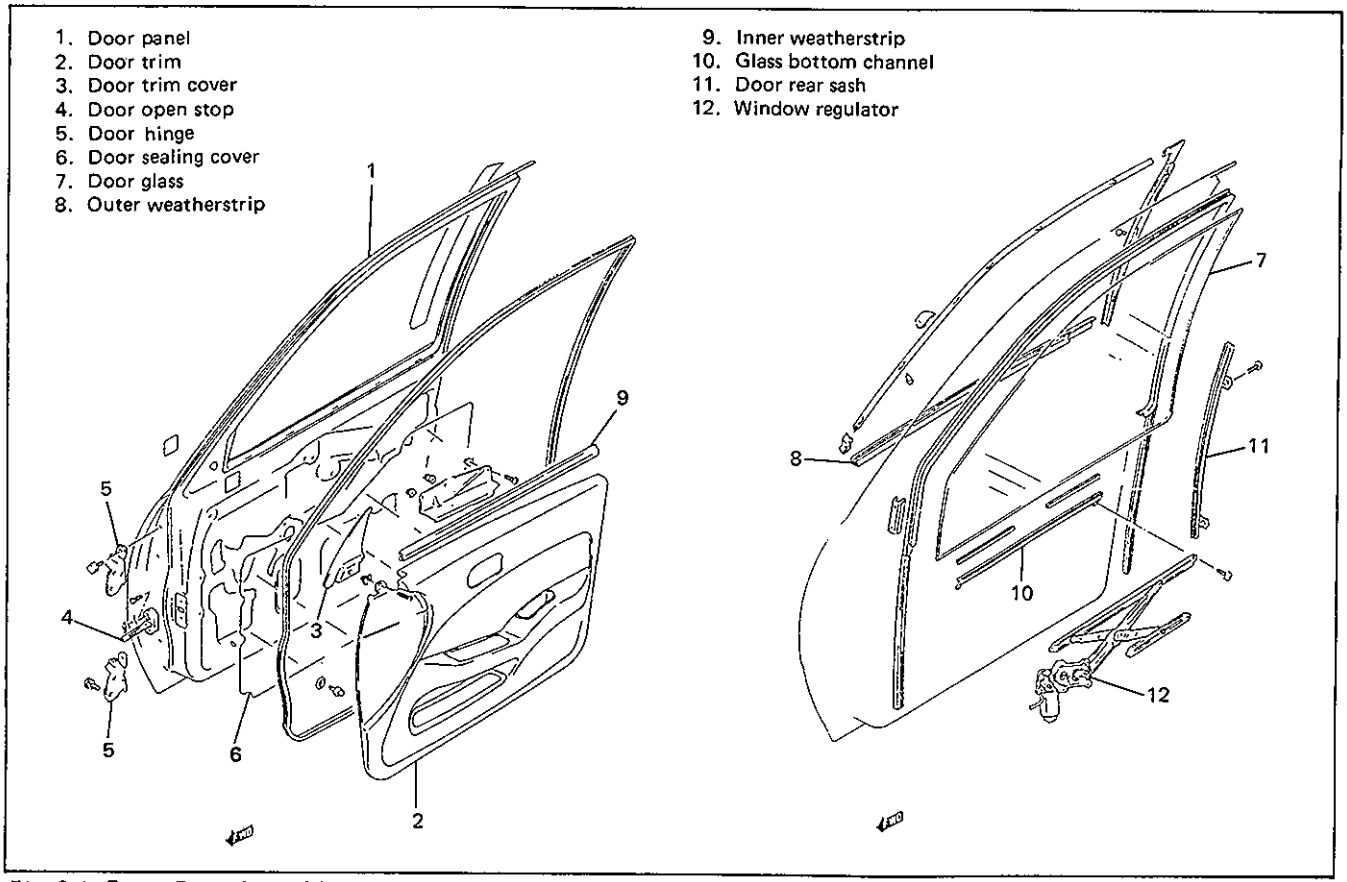


Fig. 9-1 Front Door Assembly

DOOR GLASS

REMOVAL

Remove following parts.

1) Inside handle bezel.
2) Trim mounting screws.
3) Door trim cover.
4) Door trim, and power window switch lead wire at coupler.

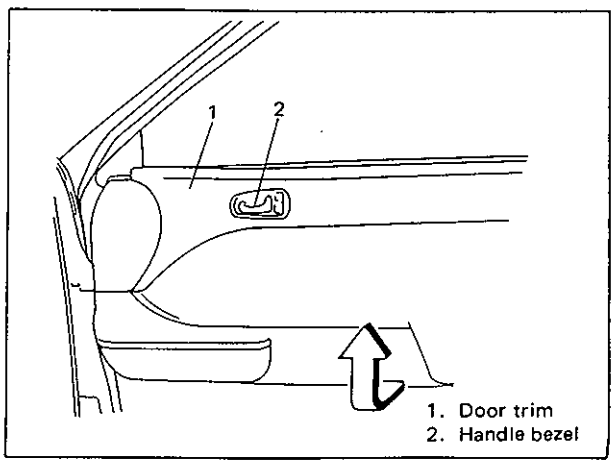


Fig. 9-3 Removing Door Trim

5) Door trim bracket.

REAR DOOR LOCK

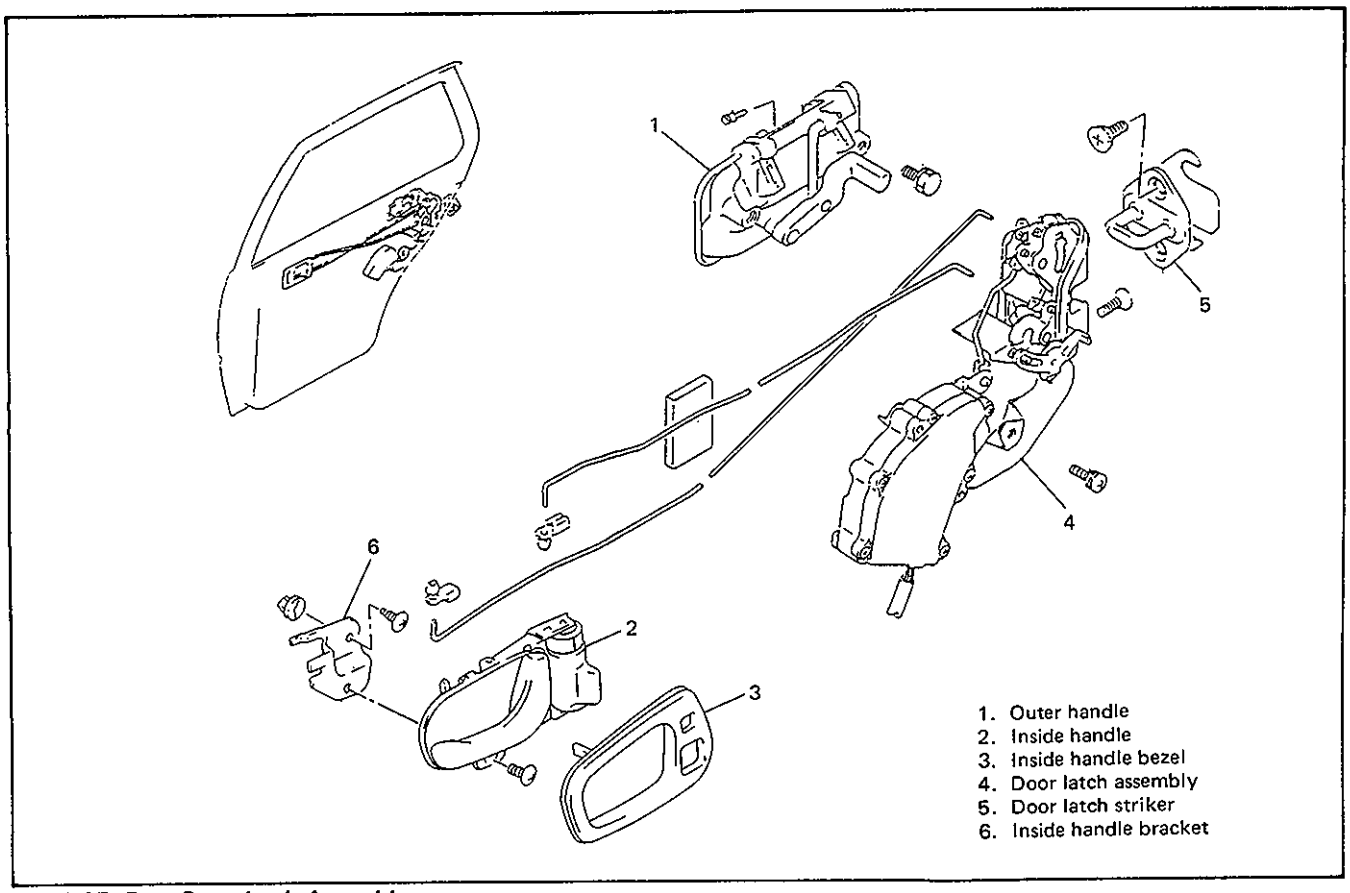


Fig. 9-37 Rear Door Lock Assembly

REMOVAL

Remove following parts.

1) Inside handle bezel.
2) Trim mounting screw.
3) Door trim.
4) Door trim bracket.
5) Door sealing cover.
6) Door latch ass'y with door inside handle.
7) Door latch ass'y.

INSTALLATION

Reverse removal sequence to install rear door lock.

REAR DOOR ASSEMBLY

REMOVAL/INSTALLATION

Follow procedures for Front Door removal/ installation in this section.

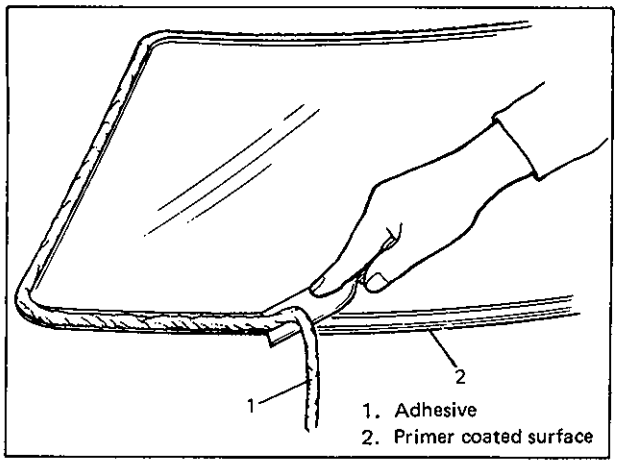


Fig. 9-63

INSTALLATION

1) Using cleaning solvent, clean window edge where window glass is to be adhered. (Let it dry for more than 10 minutes.)
2) Install spacers (2 pcs.) to lower side of back window.
3) Install new back window upper moulding to glass. (Don't peel off paper of moulding at this stage). Warming mouldings for over half an hour at 35°C (95°F) temperature will facilitate work.
4) To determine installing position of glass to body, position glass against body so that clearance between upper end to glass and body is about 4 mm (0.157 in) and clearances between each side end (right & left) of glass and body are even. Then mark matchmarks on glass and body as shown below. Upper clearance can be adjusted by moving spacers position.

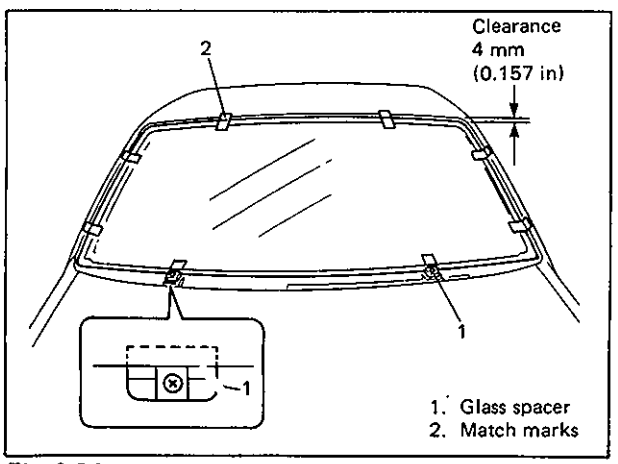


Fig. 9-64

5) Using new brush, apply sufficient amount of primer for body along body surface where window is to be adhered.

NOTE:

Be sure to refer to maker's instruction for proper handling and drying time.

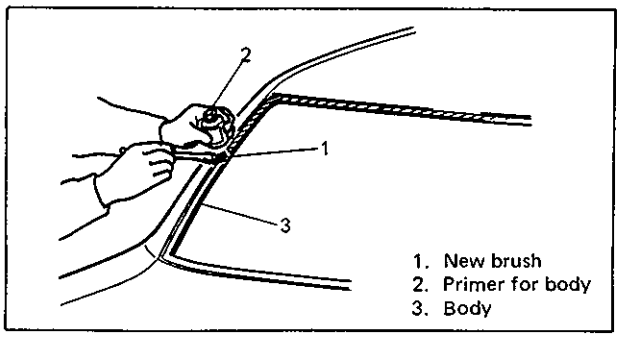


Fig. 9-65

6) Clean glass surface to be adhered to window with clean cloth. If cleaning solvent is used, let it dry for more than 10 minutes.
7) Clean moulding surface "A" with clean cloth. (Refer to figure below.)

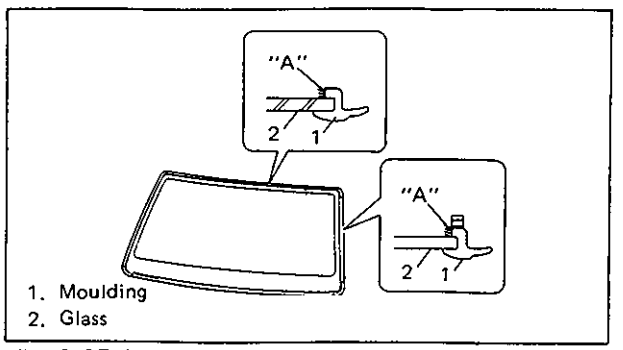


Fig. 9-65-1

8) Using new brush, apply sufficient amount of primer for glass along glass surface to be adhered to window.

NOTE:

- **Be sure to refer to maker's instruction for proper handling and drying time.**
- **Do not touch primer coated surface.**

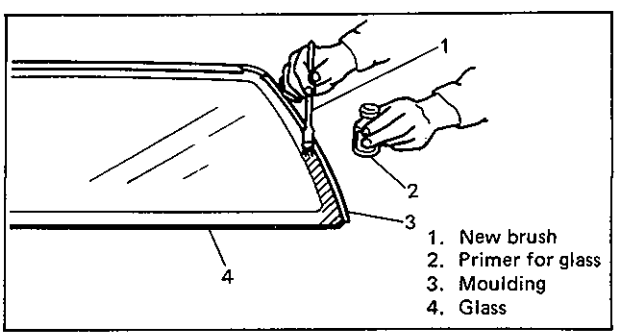


Fig. 9-66

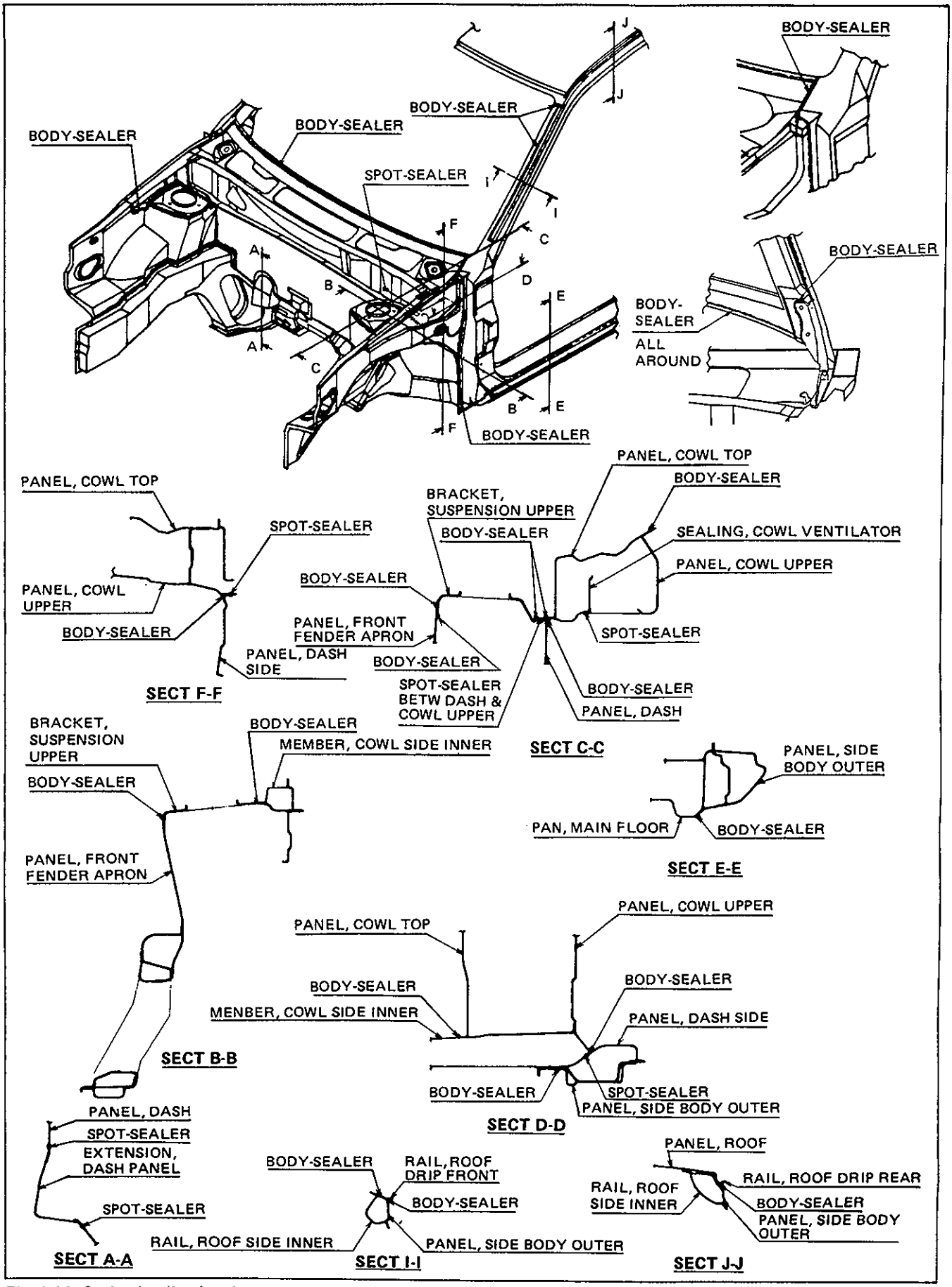
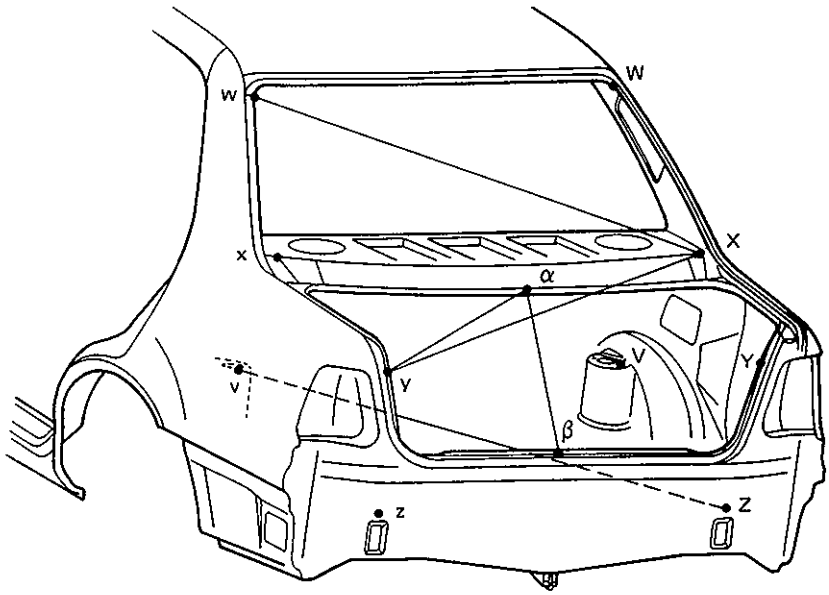
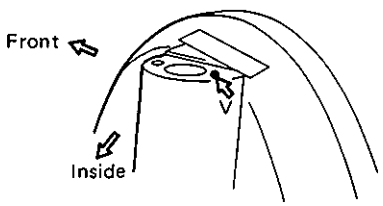


Fig. 9-80 Sealer Application Areas

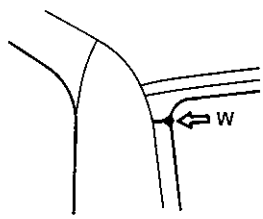


V, v: Center of hole where rear end of absorber is installed.

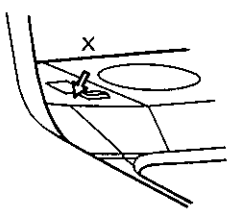


V, v
ϕ 9.3 mm
(ϕ 0.366 in)

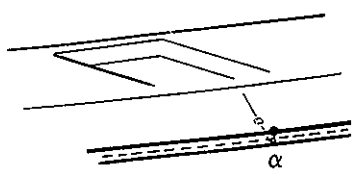
W, w: Stepped part of rear pillar.



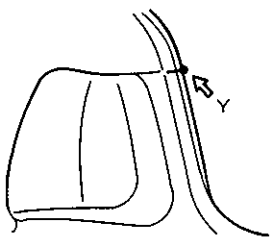
X, x: Rear parcel side stepped hole.



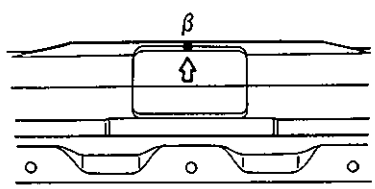
α: Rear waist flange edge (Body center)



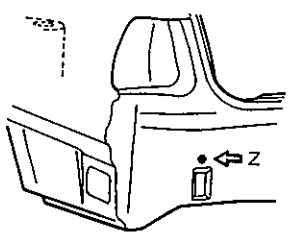
Y, y: Stepped part of corner rear fender.



β: Center of hole in lock striker storage (Body center)



Z, z: Center of hole where rear bumper is installed.



Z, z:
ϕ 14 mm
(ϕ 0.551 in)

MEASUREMENT POSITION	LENGTH mm (in)
v – Z	1 195 (47.05)
w – X	1 165 (45.87)
X – y	1 191 (46.89)
y – α	577 (22.72)
α – β	410 (16.14)

Fig. 9-88 Body Dimensions

4) Remove No. 3 propeller shaft front mount member nuts from right & left mounts.

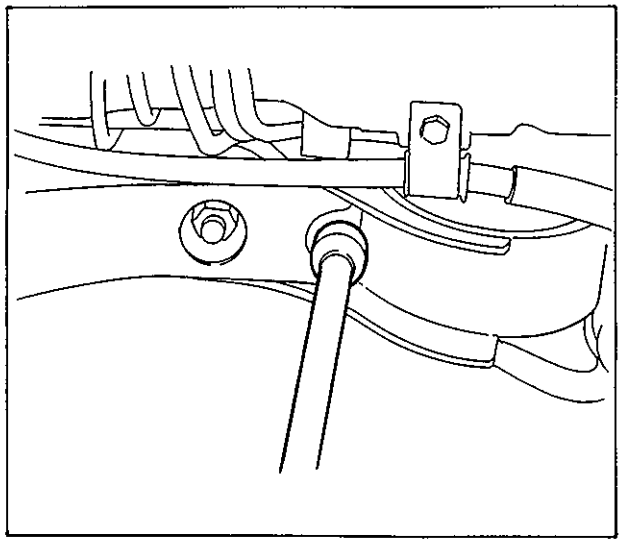


Fig. 4B-6

5) Remove propeller shaft No. 3.

CAUTION:
When removing, use care so that No. 3 propeller shaft front member does not contact fuel pipes.

INSTALLATION

Paying attention to the following, install in the reverse order of REMOVAL.

- For installation of bolts and nuts, refer to "A" and tighten to specified torque.
- Apply sealant to mating surface of No. 3 propeller shaft and viscous coupling.

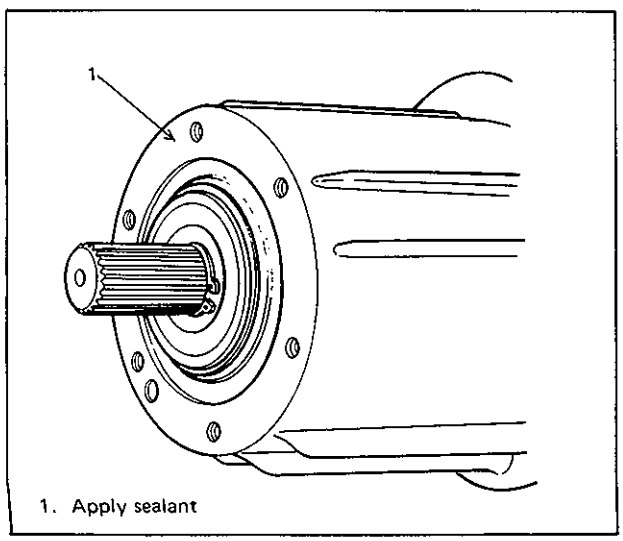


Fig. 4B-7

INSPECTION

1) Check propeller shaft connecting bolts for looseness. If looseness is found, tighten to specified torque.

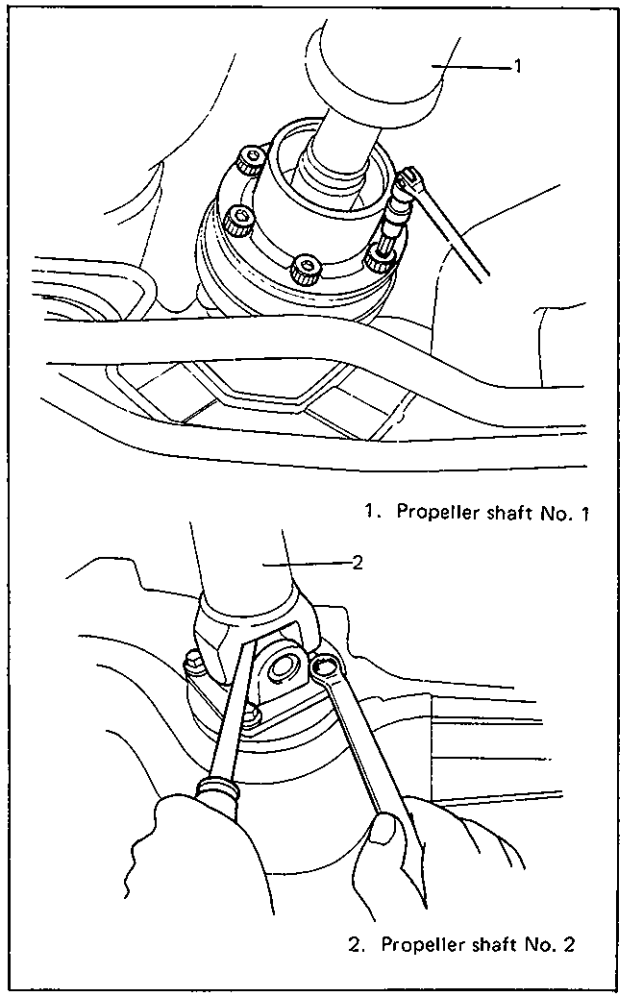


Fig. 4B-8

2) Check propeller shaft joints for wear, play and damage. If any defect is found, replace.
3) Check propeller shaft center support for biting of foreign matter, crack, abnormal noise and damage. If any defect is found, replace.

ON CAR SERVICE

FUEL TANK

REMOVE OR DISCONNECT

1. Relieve fuel pressure in fuel feed line according to procedure described on p. 6-3 in GROUP 1.
2. Negative cable at battery.
3. Rear seat cushion referring to SECTION 9.
4. Fuel level gauge (main & sub), fuel pump and circulation pump lead wire couplers, and detach wire tape.

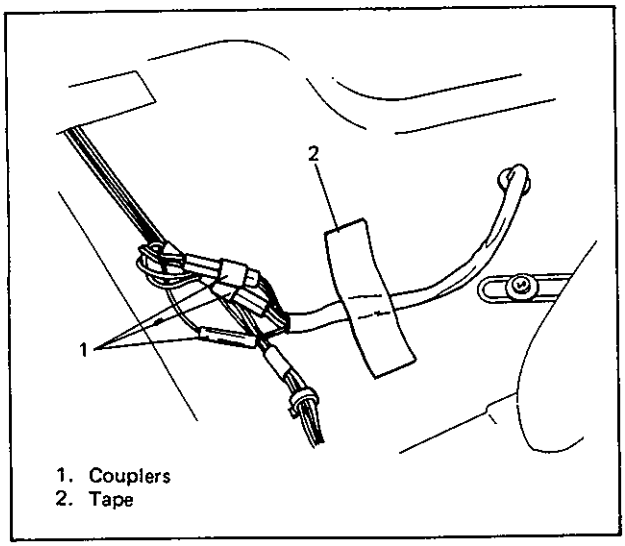


Fig. 6C-4 Disconnecting Couplers

5. Hoist car.
6. Fuel filler hose and breather hose from filler neck.

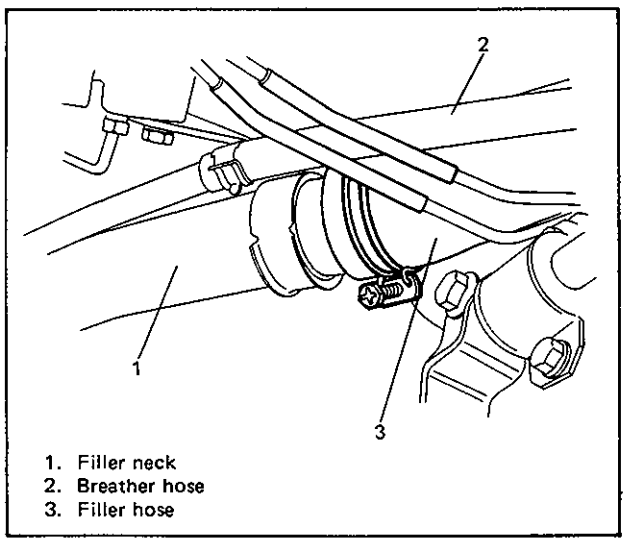


Fig. 6C-5 Breather and Filler Hoses

7. As fuel tank has no drain plug, drain fuel tank by pumping fuel out through fuel tank filler.
   Use hand operated pump device to drain fuel tank.

CAUTION:
Never drain or store fuel in an open container to avoid possibility of fire or explosion.

8. Fuel hoses from filter and pipes.

WARNING:
A small amount of fuel may be released after the fuel hose is disconnected. In order reduce the chance of personal injury, cover the hose and pipe to be disconnected with a shop cloth. Be sure to put that cloth in an approved container when disconnection is completed.

9. Propeller shaft No. 3, refer to Section 4B.
10. After draining rear differential oil, viscous coupling case from rear differential case.
11. Fuel tank heat protector from body.

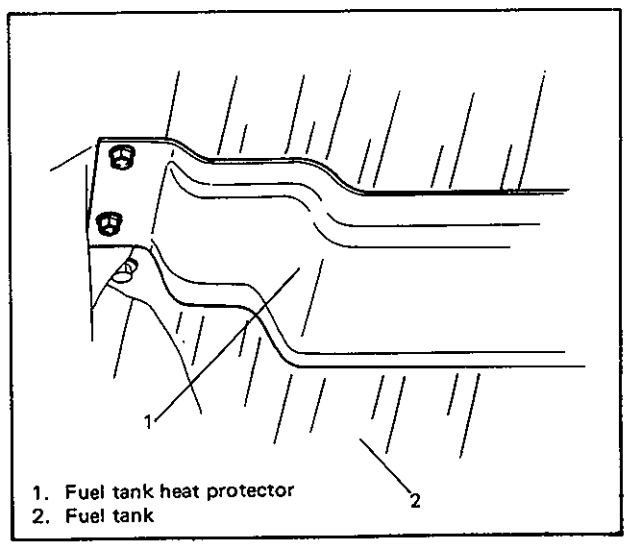


Fig. 6C-6

12. Fuel tank from car.

INSTALLATION

Reverse removal procedure for installation.

GENERAL DESCRIPTION

This transfer uses a full-time 4WD system in which a viscous coupling is installed in front of rear differential so that optimum amount of drive force is distributed to the front and rear wheels according to the driving conditions. Also, a 2WD to 4WD selector lever is installed to the front transfer case to improve serviceability.

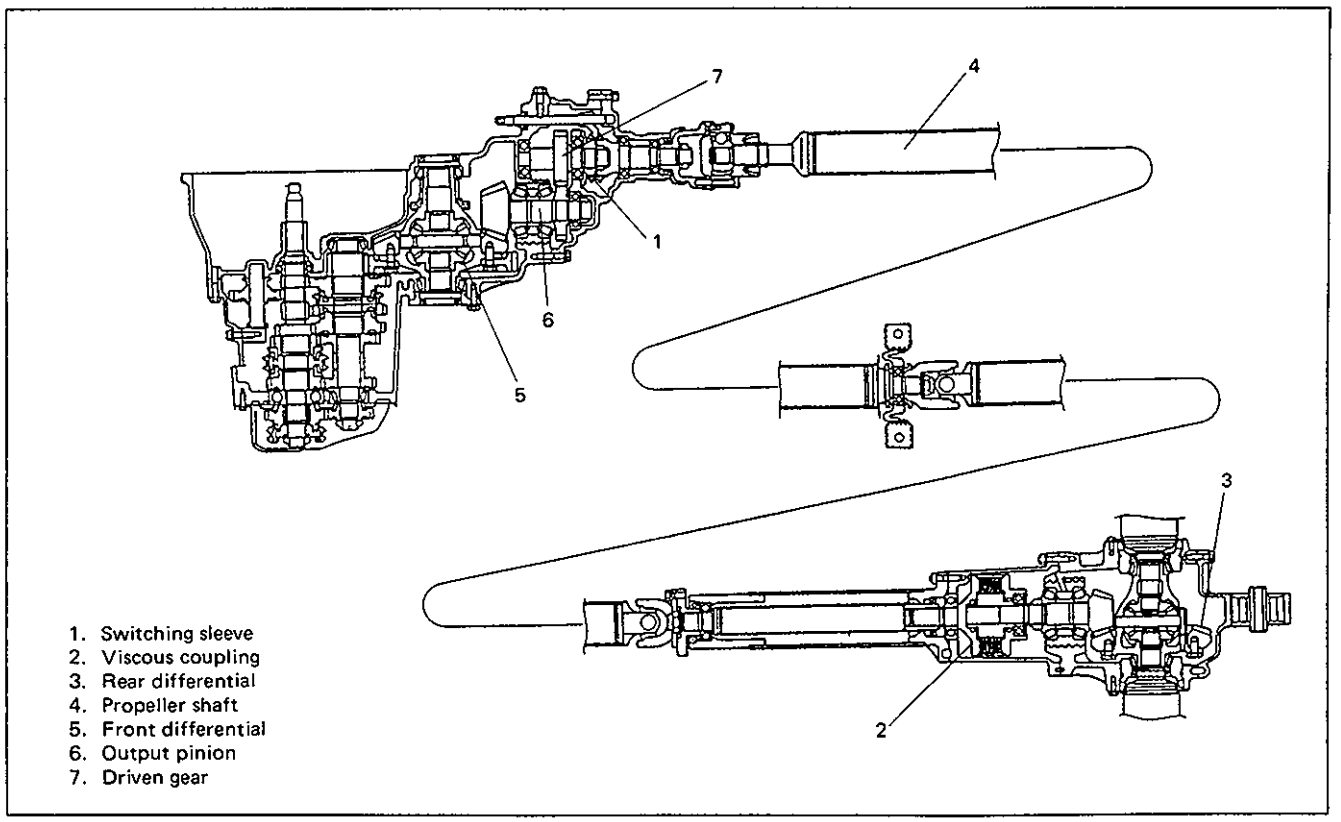
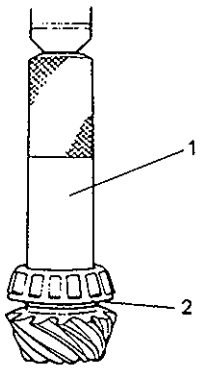


Fig. 7D-1

5. Press-fit bearing into bevel pinion bearing.

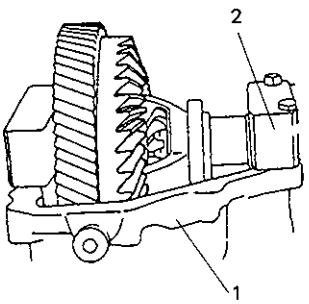


1. Special tool (Bearing installer 09913-84510)
2. Mounting distance adjusting shim

Fig. 7D-27

DRIVE BEVEL GEAR BACKLASH ADJUSTMENT AND SIDE BEARING PRELOAD ADJUSTMENT

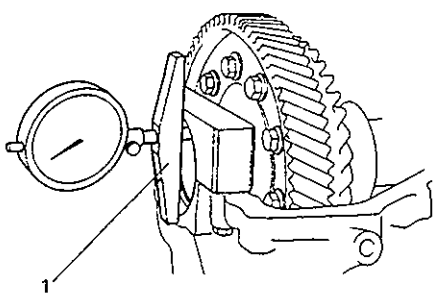
1. Using special tool, install differential assembly into rear case.



1. Rear case
2. Special tool (Gear holder tool 09927-56030)

Fig. 7D-28

2. Using depth gauge, measure depth A down to bearing outer race and obtain difference with dimension B of bearing retainer; A – B = C.



1. Special tool (Dial depth gauge 09922-77240)

Fig. 7D-29

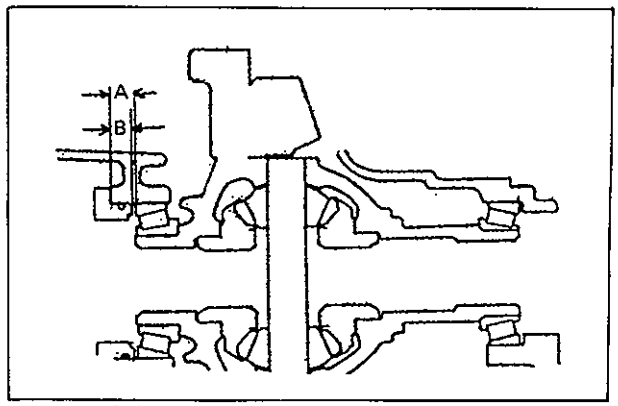


Fig. 7D-29-1

3. Calculate shim thickness to be inserted into differential side bearing.
   Shim thickness = C + (0.1 to 0.5) mm
   (0.004 to 0.019 in.)
4. Select shim(s) to fit within calculated value.
5. Install bevel pinion to case.

Available shims	0.30, 0.87, 0.84, 0.81, 0.78, 0.75, 0.72, 0.69, 0.66, 0.63 and 0.60 mm 0.012, 0.034, 0.033, 0.032, 0.031, 0.029, 0.028, 0.027, 0.026, 0.025 and 0.024 in.

6. Adjust the driving bevel gear backlash by adding or taking off shims in bearing gap of the left and right cases (stopper) so as to obtain the specified value for the backlash.
7. To measure drive bevel gear backlash, set dial gauge at right angle to bevel gear tooth, fix drive bevel pinion and rear dial gauge while moving bevel gear.

Drive gear backlash	0.10 – 0.18 mm (0.004 – 0.007 in.)

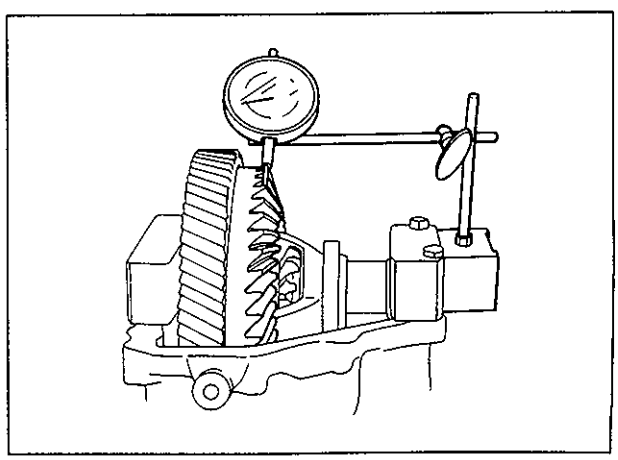
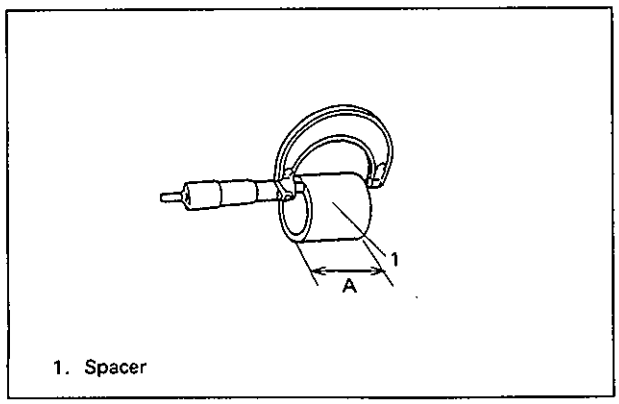


Fig. 7D-30

BEVEL PINION SHIM ADJUSTMENT

(Bevel pinion bearing shim adjustment)

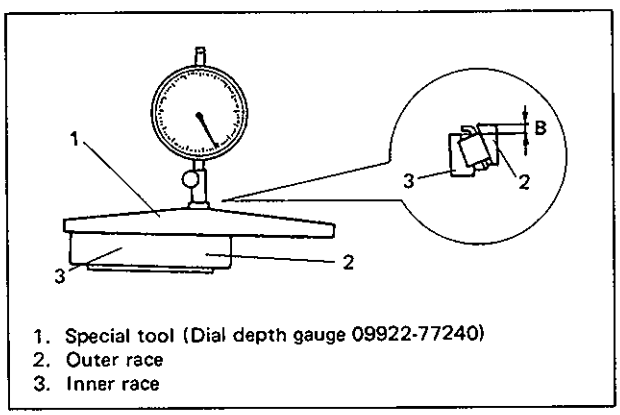
1. Measure drive pinion spacer length A.



1. Spacer

Fig. 7E-22

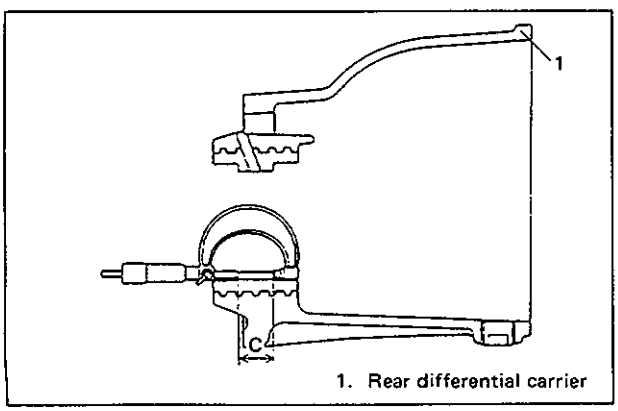
2. Measure level difference B between outer race and inner race of bevel pinion bearing (at both front and rear).
   Level difference at front bearing B + Level diffrence at rear bearing B = B'



1. Special tool (Dial depth gauge 09922-77240)
2. Outer race
3. Inner race

Fig. 7E-23

3. Meaure dimension C of diffrential carrier.
   B' + C = D

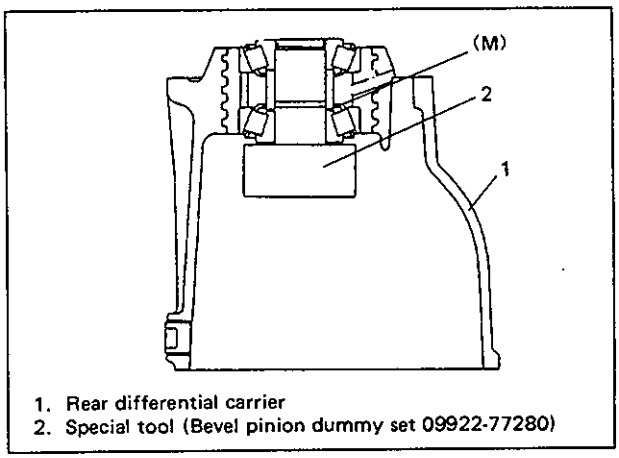


1. Rear differential carrier

Fig. 7E-24

4. Calculate thickness of shim to be inserted into (M) in figure below.
   Shim thickness = (D—A—0.1) ±0.015 (mm)
5. Select necessary shim(s) so that thickness will be within above calculated value.

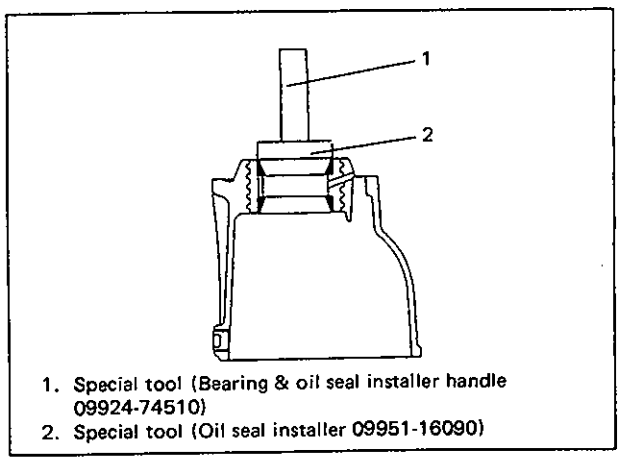
Available shim thickness	0.30, 0.87, 0.84, 0.81, 0.78, 0.75, 0.72, 0.69, 0.66, 0.63 and 0.60 mm 0.012, 0.034, 0.033, 0.032, 0.031, 0.029, 0.028, 0.027, 0.026, 0.025 and 0.024 in.



1. Rear differential carrier
2. Special tool (Bevel pinion dummy set 09922-77280)

Fig. 7E-25

6. Press-fit bevel pinion bearing and outer race into differential carrier.



1. Special tool (Bearing & oil seal installer handle 09924-74510)
2. Special tool (Oil seal installer 09951-16090)

Fig. 7E-26

WIRING DIAGRAM FOR FUEL INJECTION MODEL

1-1 GERMAN SPEC. VEHICLE WITH M/T

NOTE: The part with (*) are provided or not depending on specifications.
REMARQUE: Les pièces marquées d'un (*) sont (seraient) fournies, mais elle ne seraient pas conformées aux spécifications.
NOTA: Die Teile mit einem (*) sind geliefert (mögen geliefert sein), aber sie mögen nicht auf Voranschlägen passen.

WIRE COLOR

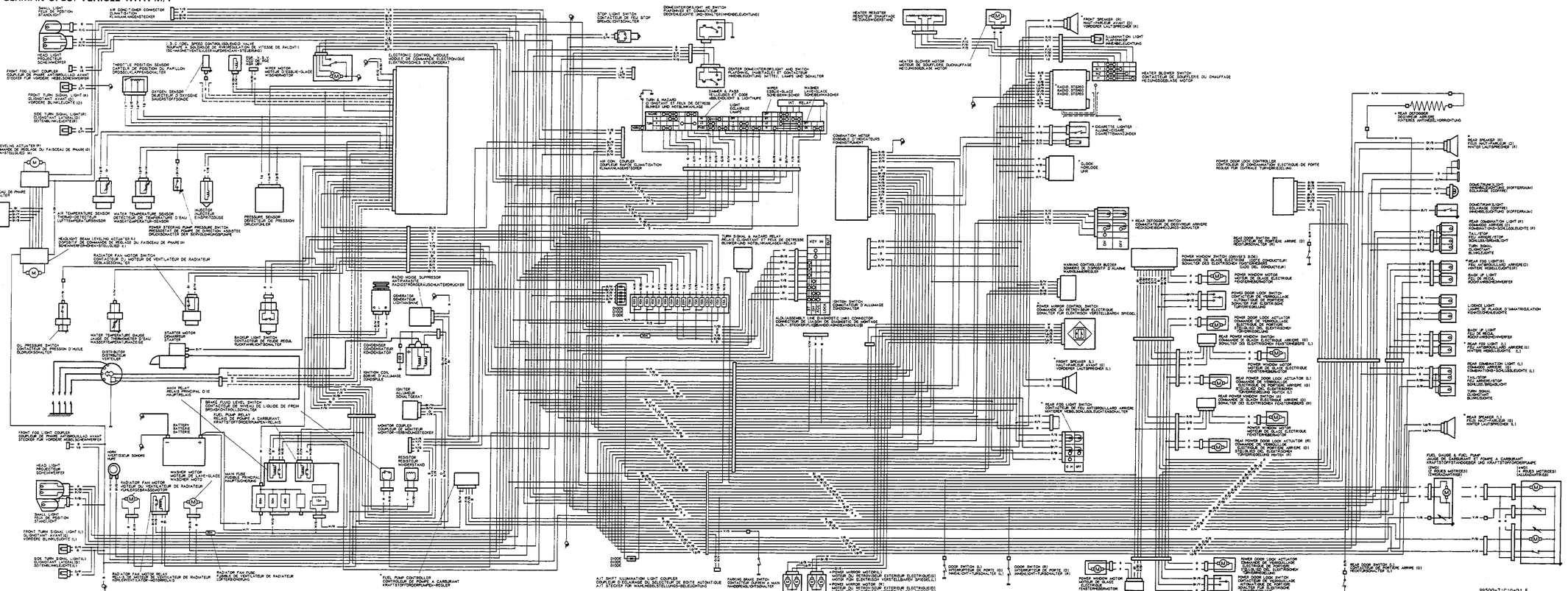
B	: Black	Gr/R	: Gray with Red tracer
Bl	: Blue	Gr/Y	: Gray with Yellow tracer
Br	: Brown	Lg/B	: Light green with Black tracer
G	: Green	Lg/R	: Light green with Red tracer
Gr	: Gray	Lg/W	: Light green with White tracer
Lbl	: Light blue	Lg/Y	: Light green with Yellow tracer
Lg	: Light green	O/B	: Orange with Black tracer
O	: Orange	O/Bl	: Orange with Blue tracer
R	: Red	O/G	: Orange with Green tracer
W	: White	O/R	: Orange with Red tracer
Y	: Yellow	O/W	: Orange with White tracer
P	: Pink	O/Y	: Orange with Yellow tracer
V	: Violet	P/B	: Pink with Black tracer
B/Bl	: Black with Blue tracer	P/Bl	: Pink with Blue tracer
B/G	: Black with Green tracer	P/G	: Pink with Green tracer
B/R	: Black with Red tracer	V/G	: Violet with Green tracer
B/W	: Black with White tracer	V/W	: Violet with White tracer
B/Y	: Black with Yellow tracer	V/Y	: Violet with Yellow tracer
Bl/B	: Blue with Black tracer	R/B	: Red with Black tracer
Bl/G	: Blue with Green tracer	R/Bl	: Red with Blue tracer
Bl/R	: Blue with Red tracer	R/G	: Red with Green tracer
Bl/W	: Blue with White tracer	R/W	: Red with White tracer
Bl/Y	: Blue with Yellow tracer	R/Y	: Red with Yellow tracer
Br/B	: Brown with Black tracer	W/B	: White with Black tracer
Br/R	: Brown with Red tracer	W/Bl	: White with Blue tracer
Br/W	: Brown with White tracer	W/G	: White with Green tracer
Br/Y	: Brown with Yellow tracer	W/R	: White with Red tracer
G/B	: Green with Black tracer	W/Y	: White with Yellow tracer
G/Bl	: Green with Blue tracer	Y/B	: Yellow with Black tracer
G/R	: Green with Red tracer	Y/Bl	: Yellow with Blue tracer
G/W	: Green with White tracer	Y/G	: Yellow with Green tracer
G/Y	: Green with Yellow tracer	Y/R	: Yellow with Red tracer
Gr/B	: Gray with Black tracer	Y/W	: Yellow with White tracer
Gr/W	: Gray with White tracer		

CODE DES COULEURS

B	: Noir	Gr/R	: Gris avec filet rouge
Bl	: Bleu	Gr/Y	: Gris avec filet jaune
Br	: Brun	Lg/B	: Vert clair avec filet noir
G	: Vert	Lg/R	: Vert clair avec filet rouge
Gr	: Gris	Lg/W	: Vert clair avec filet blanc
Lbl	: Bleu clair	Lg/Y	: Vert clair avec filet jaune
Lg	: Vert clair	O/B	: Orange avec filet noir
O	: Orange	O/Bl	: Orange avec filet bleu
R	: Rouge	O/G	: Orange avec filet vert
W	: Blanc	O/R	: Orange avec filet rouge
Y	: Jaune	O/W	: Orange avec filet blanc
P	: Rose	O/Y	: Orange avec filet jaune
V	: Violet	P/B	: Rose avec filet noir
B/Bl	: Noir avec filet bleu	P/Bl	: Rose avec filet bleu
B/G	: Noir avec filet vert	P/G	: Rose avec filet vert
B/R	: Noir avec filet rouge	V/G	: Violet avec filet vert
B/W	: Noir avec filet blanc	V/W	: Violet avec filet blanc
B/Y	: Noir avec filet jaune	V/Y	: Violet avec filet jaune
Bl/B	: Bleu avec filet noir	R/B	: Rouge avec filet noir
Bl/G	: Bleu avec filet vert	R/Bl	: Rouge avec filet bleu
Bl/R	: Bleu avec filet rouge	R/G	: Rouge avec filet vert
Bl/W	: Bleu avec filet blanc	R/W	: Rouge avec filet blanc
Bl/Y	: Bleu avec filet jaune	R/Y	: Rouge avec filet jaune
Br/B	: Brun avec filet noir	W/B	: Blanc avec filet noir
Br/R	: Brun avec filet rouge	W/Bl	: Blanc avec filet bleu
Br/W	: Brun avec filet blanc	W/G	: Blanc avec filet vert
Br/Y	: Brun avec filet jaune	W/R	: Blanc avec filet rouge
G/B	: Vert avec filet noir	W/Y	: Blanc avec filet jaune
G/Bl	: Vert avec filet bleu	Y/B	: Jaune avec filet noir
G/R	: Vert avec filet rouge	Y/Bl	: Jaune avec filet bleu
G/W	: Vert avec filet blanc	Y/G	: Jaune avec filet vert
G/Y	: Vert avec filet jaune	Y/R	: Jaune avec filet rouge
Gr/B	: Gris avec filet noir	Y/W	: Jaune avec filet blanc
Gr/W	: Gris avec filet blanc		

<KABELFARBEN

B	: Schwarz	Gr/R	: Grau mit rotem Streifen
Bl	: Blau	Gr/Y	: Grau mit gelbem Streifen
Br	: Braun	Lg/B	: Hellgrün mit schwarzem Streifen
G	: Grün	Lg/R	: Hellgrün mit rotem Streifen
Gr	: Grau	Lg/W	: Hellgrün mit weißem Streifen
Lbl	: Hellblau	Lg/Y	: Hellgrün mit gelbem Streifen
Lg	: Hellgrün	O/B	: Orange mit schwarzem Streifen
O	: Orange	O/Bl	: Orange mit blauem Streifen
R	: Rot	O/G	: Orange mit grünem Streifen
W	: Weiß	O/R	: Orange mit rotem Streifen
Y	: Gelb	O/W	: Orange mit weißem Streifen
P	: Rosa	O/Y	: Orange mit gelbem Streifen
V	: Lila	P/B	: Rosa mit schwarzem Streifen
B/Bl	: Schwarz mit blauem Streifen	P/Bl	: Rosa mit blauem Streifen
B/G	: Schwarz mit grünem Streifen	P/G	: Rosa mit grünem Streifen
B/R	: Schwarz mit rotem Streifen	V/G	: Lila mit grünem Streifen
B/W	: Schwarz mit weißem Streifen	V/W	: Lila mit weißem Streifen
B/Y	: Schwarz mit gelbem Streifen	V/Y	: Lila mit gelbem Streifen
Bl/B	: Blau mit schwarzem Streifen	R/B	: Rot mit schwarzem Streifen
Bl/G	: Blau mit grünem Streifen	R/Bl	: Rot mit blauem Streifen
Bl/R	: Blau mit rotem Streifen	R/G	: Rot mit grünem Streifen
Bl/W	: Blau mit weißem Streifen	R/W	: Rot mit weißem Streifen
Bl/Y	: Blau mit gelbem Streifen	R/Y	: Rot mit gelbem Streifen
Br/B	: Braun mit schwarzem Streifen	W/B	: Weiß mit schwarzem Streifen
Br/R	: Braun mit rotem Streifen	W/Bl	: Weiß mit blauem Streifen
Br/W	: Braun mit weißem Streifen	W/G	: Weiß mit grünem Streifen
Br/Y	: Braun mit gelbem Streifen	W/R	: Weiß mit rotem Streifen
G/B	: Grün mit schwarzem Streifen	W/Y	: Weiß mit gelbem Streifen
G/Bl	: Grün mit blauem Streifen	Y/B	: Gelb mit schwarzem Streifen
G/R	: Grün mit rotem Streifen	Y/Bl	: Gelb mit blauem Streifen
G/W	: Grün mit weißem Streifen	Y/G	: Gelb mit grünem Streifen
G/Y	: Grün mit gelbem Streifen	Y/R	: Gelb mit rotem Streifen
Gr/B	: Grau mit schwarzem Streifen	Y/W	: Gelb mit weißem Streifen
Gr/W	: Grau mit weißem Streifen		



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ABBREVIATIONS

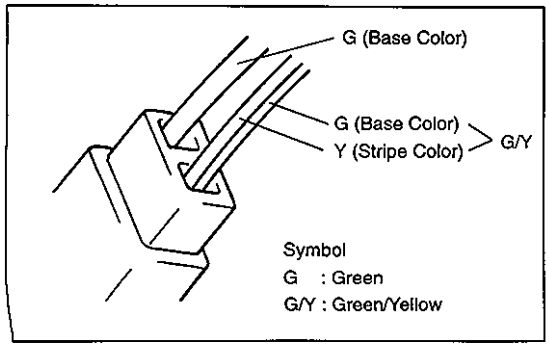
Listed below are the abbreviations as used in this manual and their full terms.

Abbreviation	Full term	Abbreviation	Full term
2WD	2 wheel drive vehicles	LO	Low
4WD	4 wheel drive vehicles	M/T	Manual transmission
A/C	Air conditioning	P/N	Power/Normal
A/T	Automatic transmission	RH	Right hand
ACC	Accessory	ST	Starter
COMB	COMBINATION	VSV	Vacuum switching valve
DRL	Daytime running light (If equipped)		
EGR	Exhaust gas recirculation		
HI	High		
J/B	Junction/Fuse block		
IG	Ignition		
ILL	Illumination		
IND	Indicator		
LH	Left hand		

WIRE COLOR SYMBOLS

The initial alphabet(s) of the color name is used to represent each color as listed at the left.

Symbol	Wire Core	Symbol	Wire Core
B	Black	O	Orange
Bl	Blue	R	Red
Br	Brown	W	White
G	Green	Y	Yellow
Gr	Gray	P	Pink
Lbl	Light Blue	V	Violet
Lg	Light Green		



There are two types of wire color : one-color type and 2-color type(with a stripe). In case of 2-color type, the first alphabet ("G" of the example in the figure at the left) represents the basic color(color of wire insulation) and the next alphabet ("Y" of the example) represents the color of stripe.

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