INTRODUCTION

How to Use This Manual

This supplement contains information specifically applicable to the 1988 CIVIC SHUTTLE, CIVIC SHUTTLE 4WD (CIVIC WAGON 4WD). Refer to following Shop Manuals for service procedures applicable to this model.

Description	Code No.
CIVIC CHASSIS Maintenance and Repair 88	62SH300
D12B/D13B/D14A/D15B/D16A ENGINE Maintenance and Repair	62PM100
L3 MANUAL TRANSMISSION Maintenance and Repair	62PL300
L4 AUTOMATIC TRANSMISSION Maintenance and Repair	62PL400

The first page of each section is marked with a black tab that lines up with one of the thumb index tabs on this page. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

Special Information

WARNING Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE: Gives helpful information.

CAUTION: Detailed descriptions of *standard* workshops procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause PERSONAL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by Honda motor might be done, or of the possible hazardous consequences of each conceivable way, nor could Honda motor inverstigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda motor, *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized.

*(Asterisk) marked sections are not included in this manual.

First Edition 2/88 280 pages
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HONDA MOTOR CO.,LTD.
Service Publication Office

General Information

Chassis and Engine Numbers

Vehicle Identification Number

JHM EE1 7200S000001

Manufacturer, Make and Type of vehicle
- JHM: HONDA MOTOR CO., LTD., JAPAN HONDA, Passenger car

Line/Body and Engine type
- EE1 : CIVIC 1400 4 door Hatchback
- EE2 : CIVIC 1500 4 door Hatchback
- EE3 : CIVIC 1500 4WD 4 door Hatchback
- EE4 : CIVIC 1600 4WD 4 door Hatchback

Transmission and Body type
- 7: 5 speed Manual/4 door Hatchback 5 speed+SL* Manual/ 4 door Hatchback
- 8: 4 speed Automatic/4 door Hatchback

Vehicle Grade
- 2: GL RTX
- 5: GL (European models)
- 6: 1.6 i-4WD

Fixed code

Model Year
- 0: 1988

Factory
- S: SUZUKA Factory

Serial Number

SL* : Super Low Gear

Engine Serial Number

D14A1-1000001

Engine Type
- D14A1: 1.4 ℓ 2-Carbureted Engine
- D15B2: 1.5 ℓ PGM-FI Engine with Catalytic converter
- D15B3: 1.5 ℓ 1-Carbureted Engine
- D15B4: 1.5 ℓ 2-Carbureted Engine with Catalytic converter
- D16A6: 1.6 ℓ PGM-FI Engine with Catalytic converter
- D16A7: 1.6 ℓ PGM-FI Engine

Model Year
- 1: 1988

Emission Group
- 0: Except PGM-FI Engine with Catalytic converter
- 7: PGM-FI Engine with Catalytic converter

Serial Number

Transmission Number

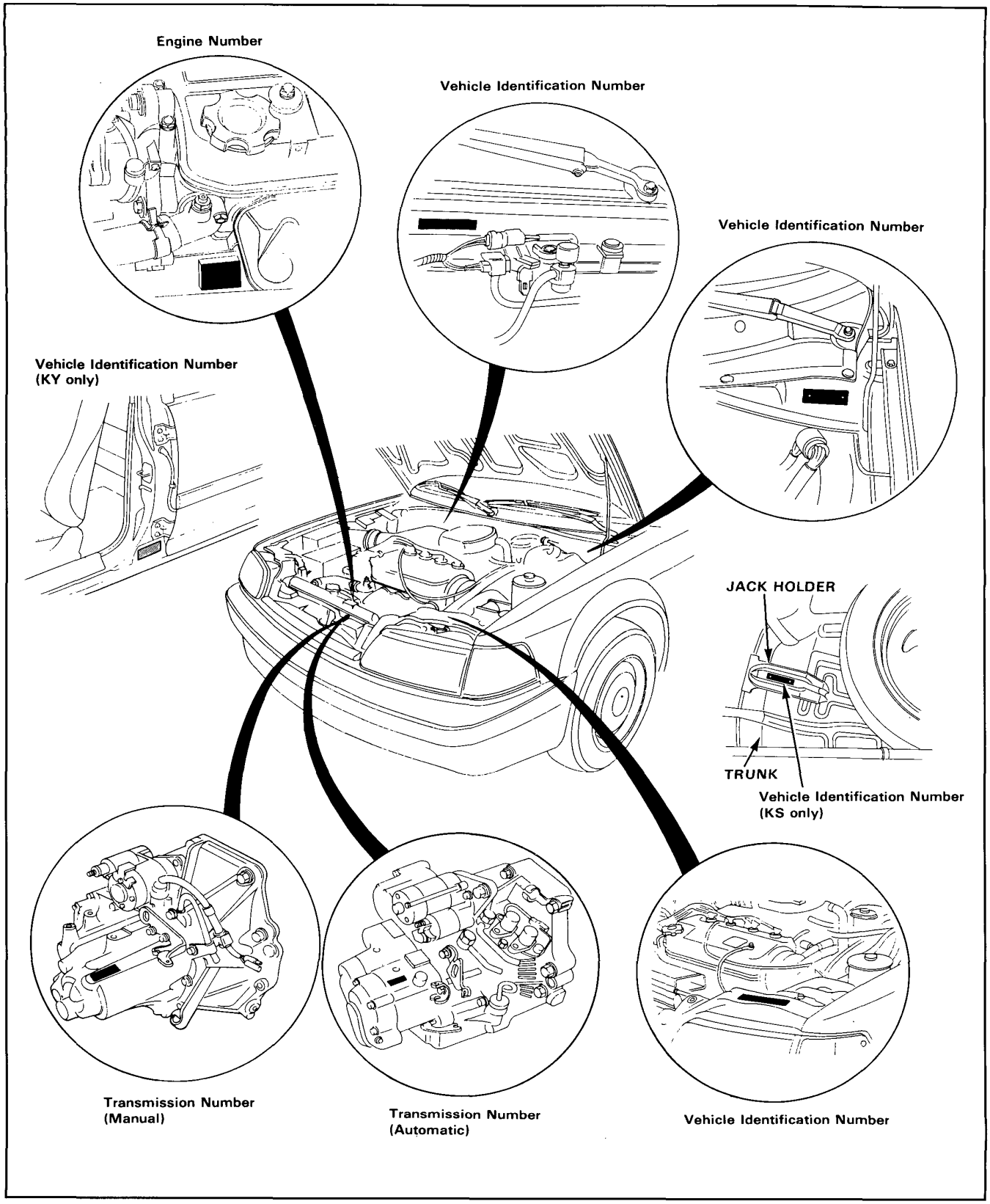
L3-1000001

Transmission Type
- L3: Manual Transmission
- L4: Automatic Transmission

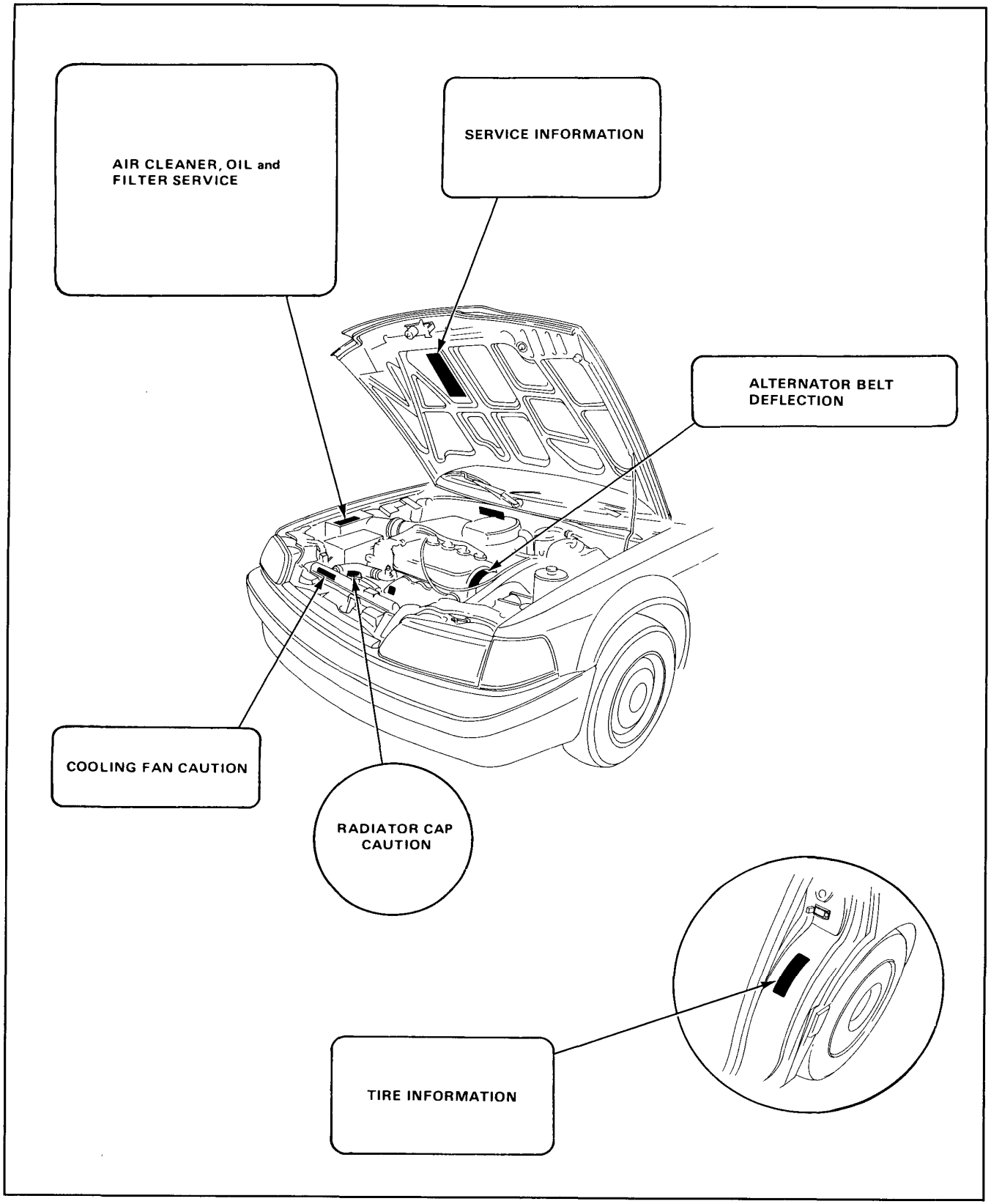
Serial Number

- 5 speed + SL* transmission: Starting from NO.9000001.

Identification Number Locations



Label Locations



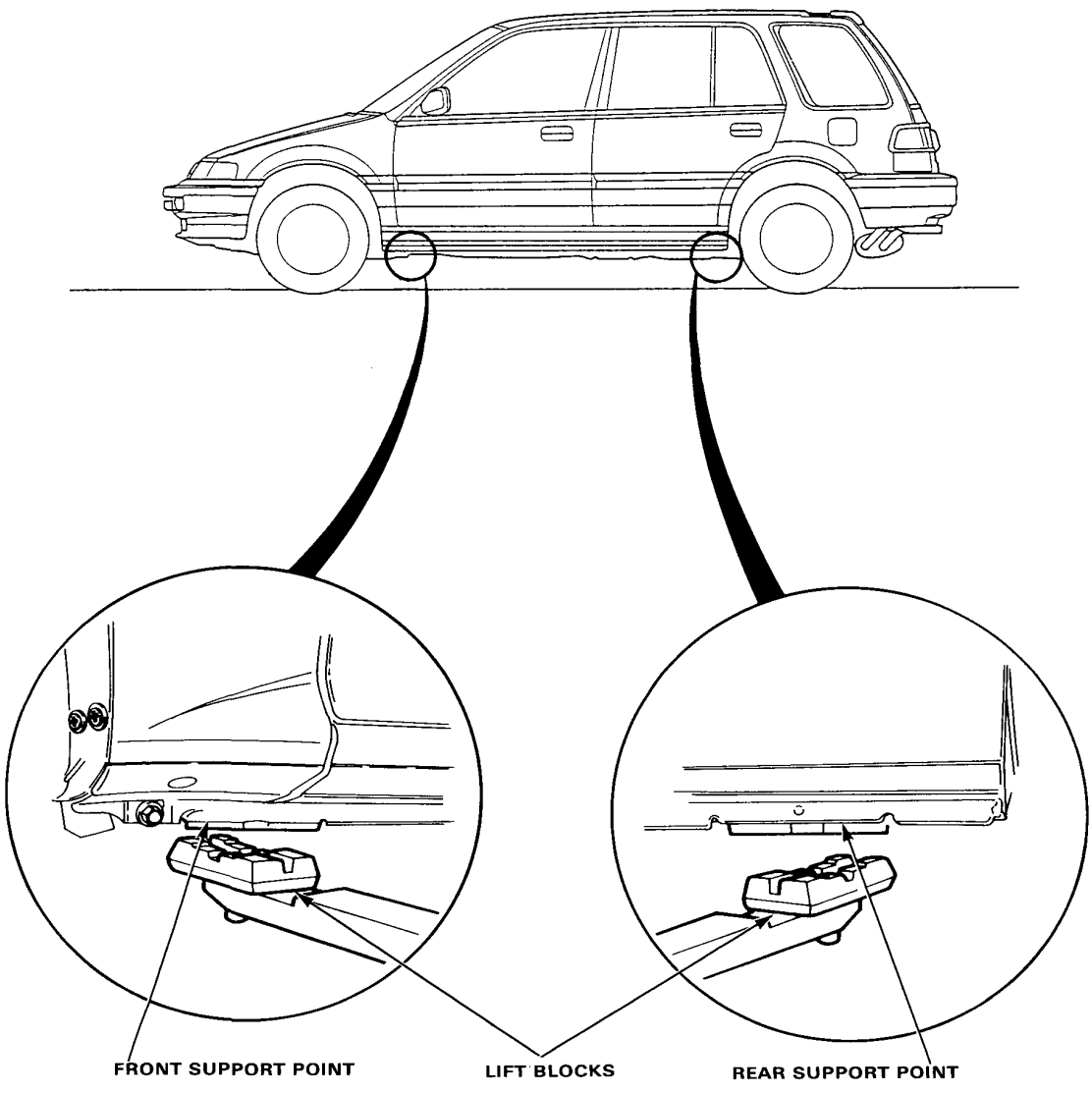
Lift and Support Points

Hoist

1. Place the lift blocks as shown.
2. Raise the hoist afew inches and rock the car to be sure it is firmly supported.
3. Raise the the hoist to full height and inspect lift points for solid support.

WARNING When heavy rear components such as suspension, fuel tank, spare tire and tailgate are to be removed, place additional weight in the trunk before hoisting. When substantial weight is removed from the rear of the car, the center of gravity may change and can cause the car to tip forward on the hoist.

NOTE: Since each tire/wheel assembly weighs approximately 14 kg (30 lbs), placing the front wheels in the trunk will assist with the weight transfer.



(cont'd)

Lift and Support Points (cont'd)

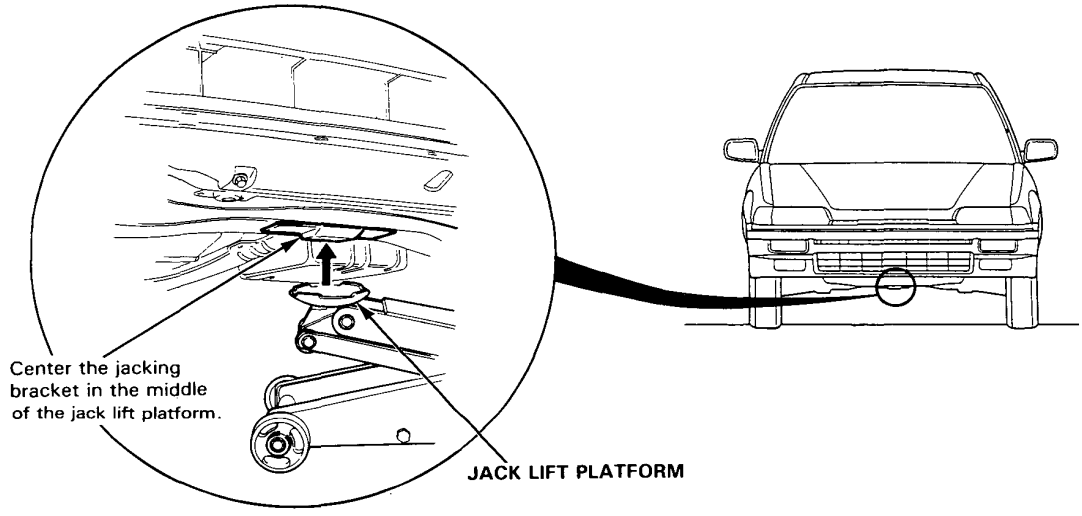
Floor Jack

1. Set the parking brake and block the wheels that are not being lifted.
2. When lifting the rear of the car, put the gearshift lever in reverse (Automatic in PARK).
3. Raise the car high enough to insert the safety stands.
4. Adjust and place the safety stands as shown on page 1-7 so the car will be approximately level, then lower the car onto the stands.

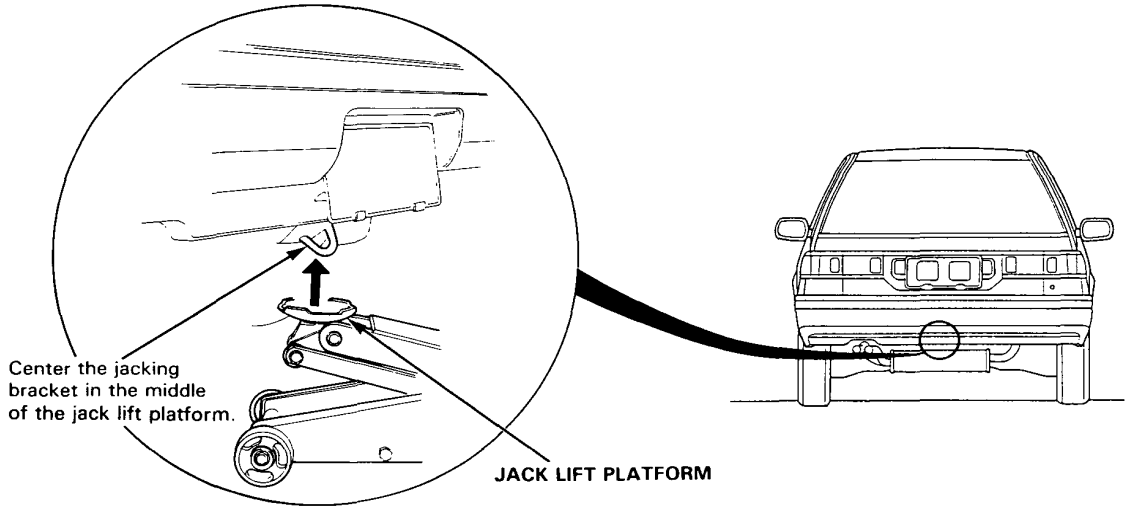
WARNING

- **Always use safety stands when working on or under any vehicle that is supported by only a jack.**
- **Never attempt to use a bumper jack for lifting or supporting the car.**

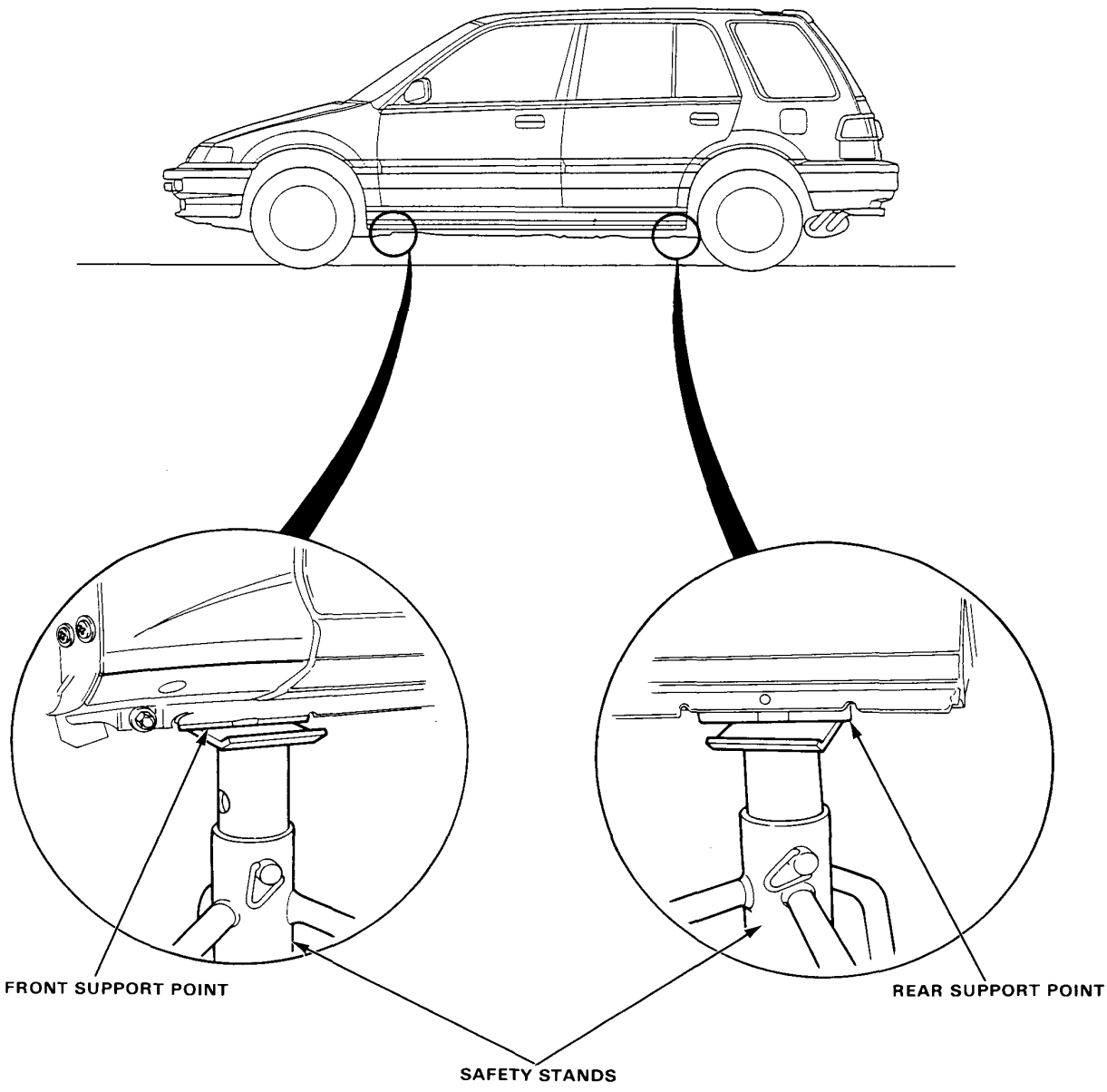
Front



Rear



Safety Stands



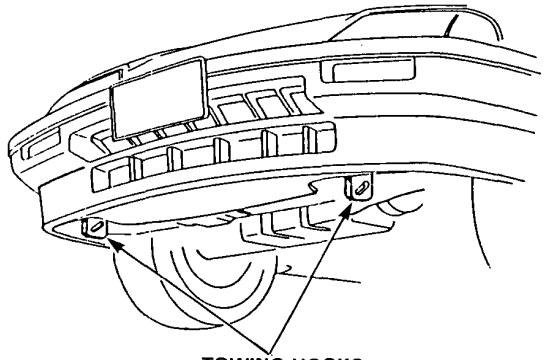
Service Precautions

Towing

For 4WD see also "4WD Disengagement,"
If towing is necessary, we recommended the following:
Flat Bed Equipment: Entire car is winched on a flat bed vehicle. This is the best way of towing the car.

Wheel Lift Type: Front or rear of the car is lifted at the wheels and is suitable for the car.

CAUTION: If a sling type tow is used, the tow truck driver should position wood spacer blocks between the car's frame and the chains and lift straps to avoid damaging the bumper and the body. Do not use the bumpers to lift the car or to support the car's weight while towing. Check local regulations for towing.



TOWING HOOKS

Emergency towing with all four wheels on the ground: Under certain emergency conditions, the car may need to be towed with all four wheels on the ground. If the car is towed with all four wheels on the ground, check local regulations and observe the following precautions:

- Shift the transmission to neutral.
- Release the parking brake.
- Turn the ignition to the **"I"** position to unlock the steering.
- Do not exceed 55 kph (35 mph) or tow for distances of more than 80 km (50 miles).

If a frame mount tow bar is used with a four wheel tow:

- Do not attach it to the bumper.
- Follow the tow bar manufacturer's instructions.

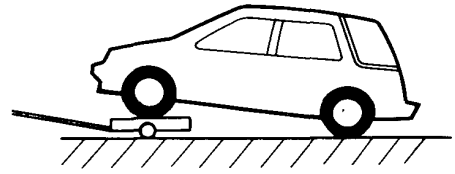
WARNING Never use tow chains or rope to tow a car; your ability to safely control the car may be adversely affected.

4WD Disengagement

The 4WD System shifts instantaneously and automatically from front wheel drive to four wheel drive when greater traction is needed.

WARNING The 4WD system must be manually disengaged before performing service that requires only the front wheels or only the rear wheels to be turning.
Disengaging the system will prevent sudden movement of the car, which may result in personal injury.

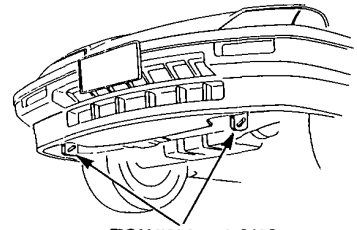
TOWING:
CAUTION: Before towing the car with either the front or rear wheels raised off the ground, place the transmission in neutral and manually disengage the 4WD system to prevent the raised wheels from turning.



If possible, always tow the car with the front wheels off the ground, and 4WD disengaged. Do not use the bumpers to lift the car or to support the car's weight while towing. Check local regulations for towing with a chain or frame-mounted tow bar. A chain may be attached to the hooks shown in the illustration. Do not attach a tow bar to either bumper.

If the car is to be towed with front wheels on the ground, observe the following precautions;

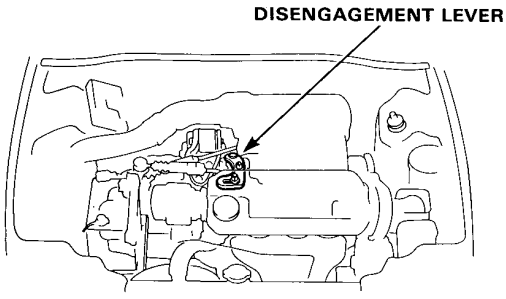
1. Wheels and axle must not be touching the body or frame.
2. Turn the ignition key to the "I" position and make sure the steering wheel turns freely.
3. Shift the transmission to NEUTRAL, and disengage the 4WD.
4. Release the parking brake.
5. Do not exceed 55 kph (35 mph) or tow for distances of more than 80 km (50 miles).



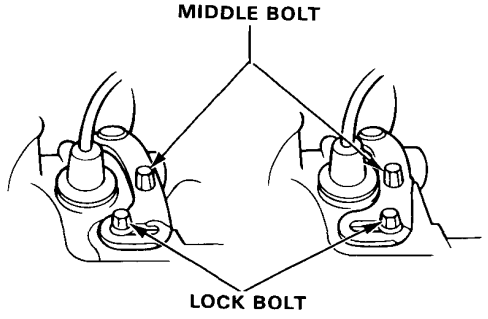
TOWING HOOKS

4WD Disengagement:

1. With the car on the ground, locate the orange disengagement lever on the transmission.



2. Loosen the 10 mm lock bolt at the slotted end of the lever.



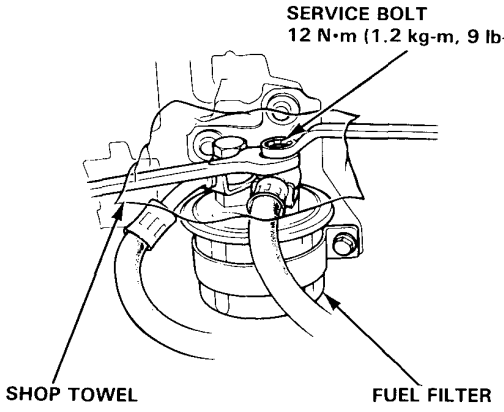
3. Move the lever by turning the 10 mm middle bolt counterclockwise.

4. Confirm that the lever is in the fully disengaged position by rocking the car back and forth while placing slight counterclockwise pressure on the middle bolt. Tighten lock bolt to 12 N·m (1.2 kg-m, 9 lb-ft).

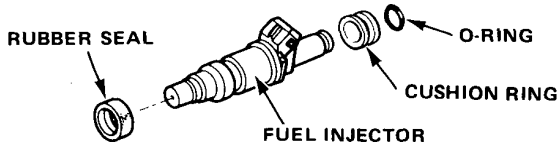
5. After service or towing is complete, return the lever to the nomal engaged position.

Special Caution Items For This Car

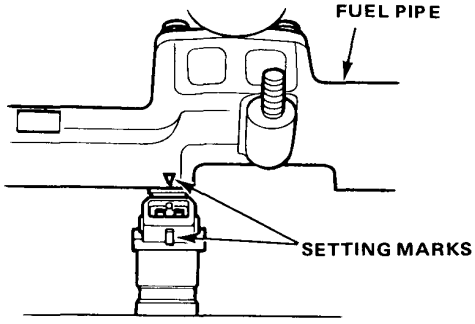
1. Fuel Line Servicing
   - Relieve fuel pressure by loosening the service bolt provided on the top of the fuel filter before disconnecting a fuel hose or a fuel pipe.



   - Be sure to replace washers, O-rings, and rubber seals with new ones when servicing fuel line parts.
   - Always apply oil to the surfaces of O-rings and seal rings before installation. Never use brake fluid, radiator fluid, vegetable oils or alcohol-based oils.



   - When assembling the flare joint of the high-pressure fuel line, clean the joint and coat with new engine oil.
   - When installing an injector, check the angle of the coupler. The center line of the coupler should align with the setting mark on the injector holder.



2. Inspection for fuel leakage
   - After assembling fuel line parts, turn ON the ignition switch (do not operate the starter) so that the fuel pump is operated for approximately two seconds and the fuel is pressurized. Repeat this operation two or three times and check whether any fuel leakage has occurred in any of the various points in the fuel line.

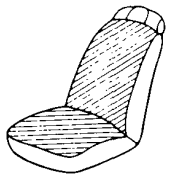
3. Installation of an amateur radio for cars equipped with PGM-FI and PGM-CARB.
   Care has been taken for the PGM-FI and PGM-CARB. control units (computer) and its wiring to prevent erroneous operation from external interference, but erroneous operation of the computer may be caused by extremely strong radio waves. Attention must be paid to the following items to prevent erroneous operation of the computer.
   - The antenna and the body of the radio must be at least 200 mm (7.9 in.) away from the computer.

   The computer locations:
   - PGM-FI and PGM-CARB.: Passenger's side front lower panel.
   - Do not lead the antenna feeder and the coaxial cable over a long distance parallel to the car's wiring. When crossing with the wiring is required, execute crossing at a right angle.
   - Do not install a radio with a large output (max. 10 W).

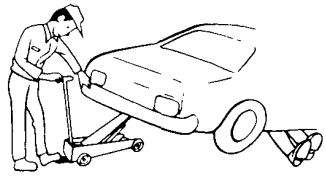
4. Apply liquid gasket (Three Bond 1216) to the transmission, oil pump cover, right side cover and water outlet.
   - Check that the mating surfaces are clean and dry before applying liquid gasket. Degrease the mating surfaces if necessary.
   - Apply liquid gasket evenly, being careful to cover all the mating surface.
   - To prevent leakage of oil, apply liquid gasket to the inner threads of the bolt holes.
   - Do not allow liquid gasket to stand for more than 20 minutes before assembly.
   - Wait at least 30 minutes before filling with the appropriate liquid (engine oil, coolant etc).

CAUTION: Observe all safety precautions and notes while working.

1. Protect all painted surfaces and seats against dirt and scratches with a clean cloth or vinyl cover.

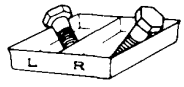


2. Work safely and give your work your undivided attention. When either the front or rear wheels are to be raised, block the remaining wheels securely. Communicate signals as frequently as possible when work involves two or more workers. Do not run the engine unless the shop or working area is well ventilated.

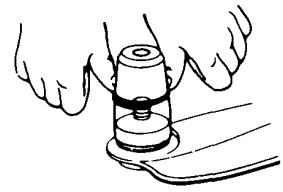


3. Prior to removing or disassembling parts, they must be inspected carefully to isolate the cause for which service is necessary. Observe all safety notes and precautions and follow the proper procedures as described in this manual.

Mark or place all removed parts in order in a parts rack so they can be reassembled in their original places.

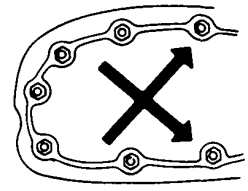


4. Use special tools when use of such is specified.

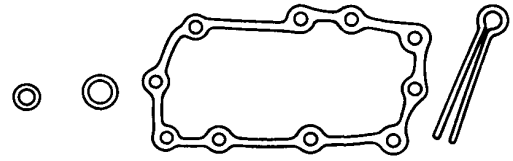


5. Parts must be assembled with the proper torgue according to the maintenance standards established.

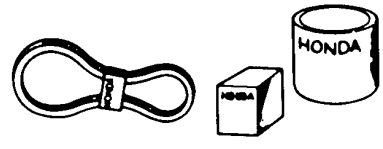
6. When tightening a series bolts or nuts, begin with the center or larger diameter bolts and tighten them in crisscross pattern in two or more steps.



7. Use new packings, gaskets, O-rings and cotter pins whenever reassembling.



8. Use genuine HONDA parts and lubricants or those equivalent. When parts are to be reused, they must be inspected carefully to make sure they are not damaged or deteriorated and are in good usable condition.



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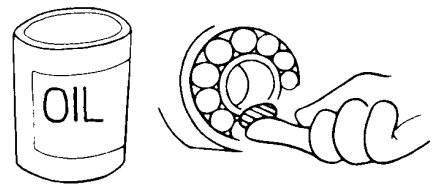
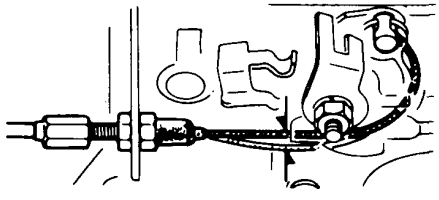
9. Coat or fill parts with specified grease as specified (Page 4-2). Clean all removed parts with solvent upon disassembly.



10. Brake fluid and hydraulic components
    - When replenishing the system, use extreme care to prevent dust and dirt from entering the system.
    - Do not mix different brands of fluid as they may not be compatible.
    - Do not reuse drained brake fluid.
    - Brake fluid can cause damage to painted surfaces. Wipe up spilled fluid at once.
    - After disconnecting brake hoses or pipes, be sure to plug the openings to prevent loss of brake fluid.
    - Clean all disassembled parts only in clean BRAKE FLUID. Blow open all holes and passages with compressed air.

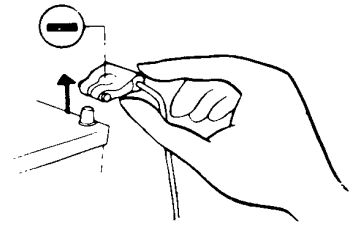
    - Keep disassembled parts from air-borne dust and abrasives.
    - Check that parts are clean before assembly.

11. Avoid oil or grease getting on rubber parts and tubes, unless, specified.
12. Upon assembling, check every part for proper installation and operation.

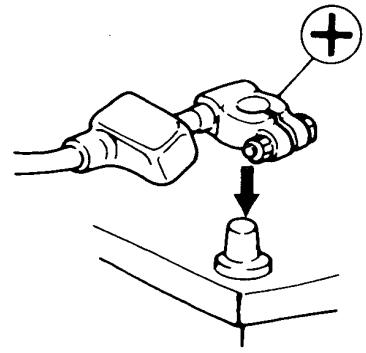


Electrical

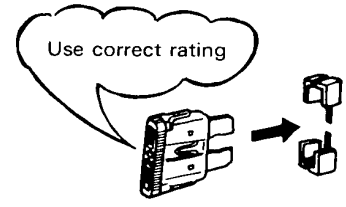
- Before making any repairs on electric wires or parts, disconnect the battery cables from the battery starting with the negative (−) terminal.



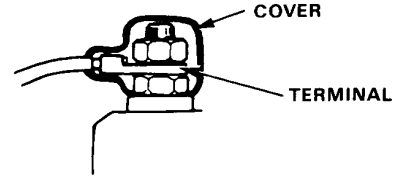
- After making repairs, check each wire or part for proper routing and installation. Also check to see that they are connected properly.
- Always connect the battery positive (+) cable first, then connect the negative (−) cable.



- Coat the terminals with clean grease after connecting the battery cables.
- Don't forget to install the terminal cover over the positive battery terminal after connecting.
- Before installing a new fuse, isolate the cause and take corrective measures, particularly when frequent fuse failure occurs.

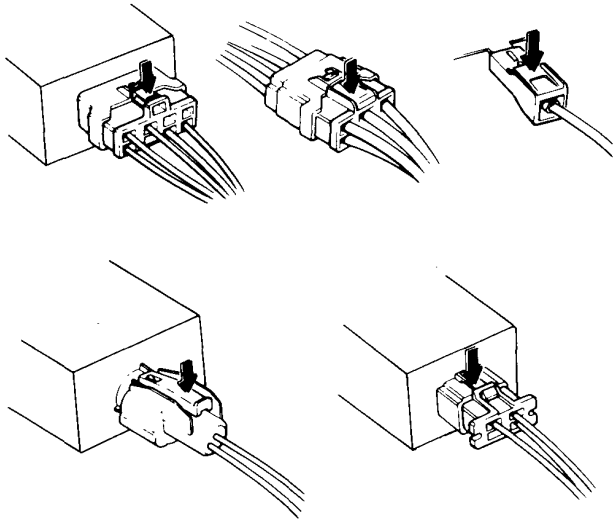


- Be sure to install the terminal cover over the connections after a wire or wire harness has been connected.

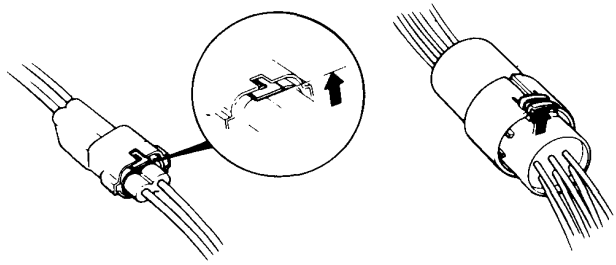


- When removing locking couplers, be sure to disengage the lock before disconnecting.
- Couplers may be of two types, those in which the lock is pressed to remove, and those in which the lock is pulled up to remove. Be sure to ascertain the type of locking device before beginning work. The following is a depiction of the means of disconnecting various typical couplers.

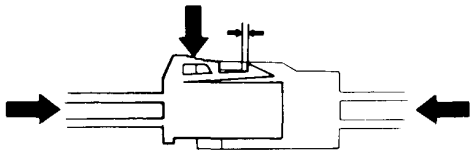
Press to disengage:



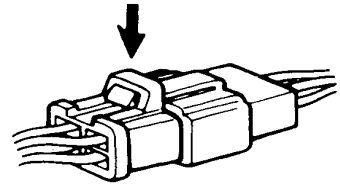
Pull up to disengage:



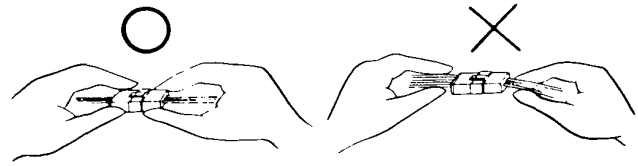
- When disconnecting locks, first press in the coupler tightly (to provide clearance to the locking device), then operate the tab fully and remove the coupler in the designated manner.



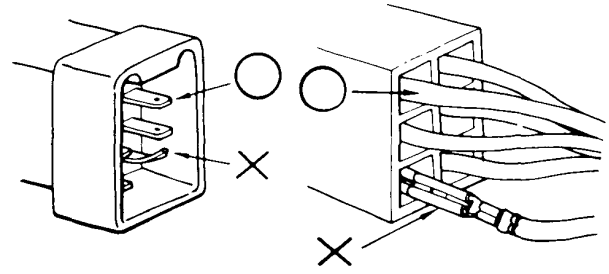
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.



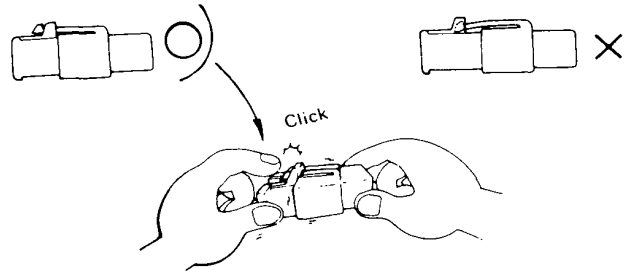
- When disconnecting a coupler, pull it off from the mating coupler by holding on both couplers.
- Never try to disconnect couplers by pulling on their wires.



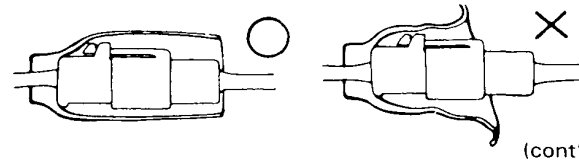
- Before connecting couplers, check to see that the terminals are in place and are not bent or distorted.



- Insert couplers fully until they will no longer go.
- Some couplers have locking tabs that must be aligned and engaged securely.
- Don't use wire harnesses with a loose wire or coupler.



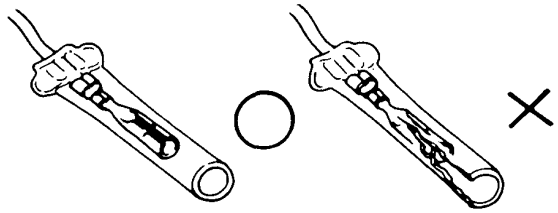
- Place the plastic cover over the mating coupler after reconnecting. Also check that the cover is not distorted.



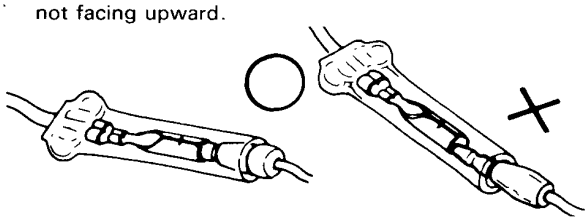
(cont'd)

Electrical (cont'd)

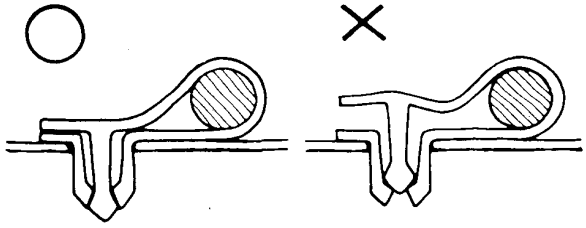
- Before connecting, check each connector cover for damage. Also make sure that the female connector is tight and not loosened from the previous use.



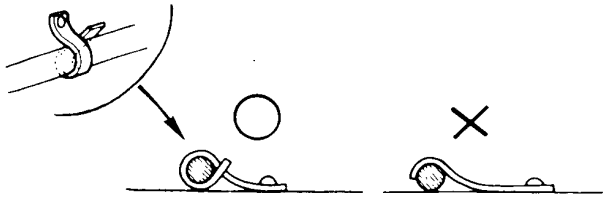
- Insert male connectors into the female connectors fully until they will no longer go.
- Be sure that plastic cover is placed over the connection.
- Position the wires so that the open end of the cover is not facing upward.



- Secure wires and wire harnesses to the frame with their respective wire bands at the designated locations. Position the wiring in the bands so that only the insulated surfaces contact the wires or wire harnesses.

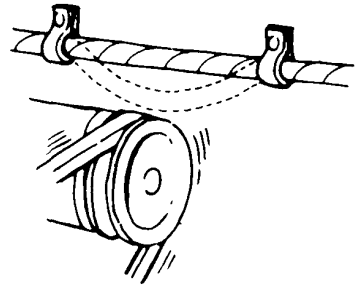


- A loose wire harness or cable can be a hazard to safety. After clamping, check each wire for security in its clamp.

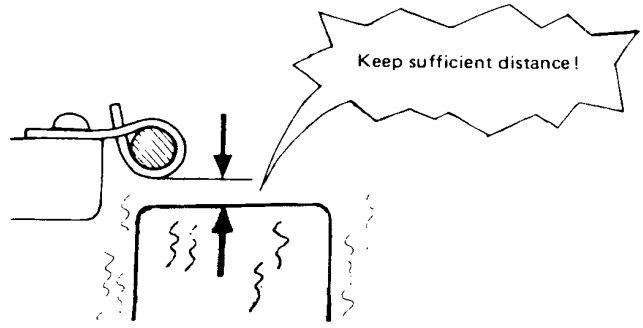


- Do not squeeze wires against the weld when a weld-on clamp is used.

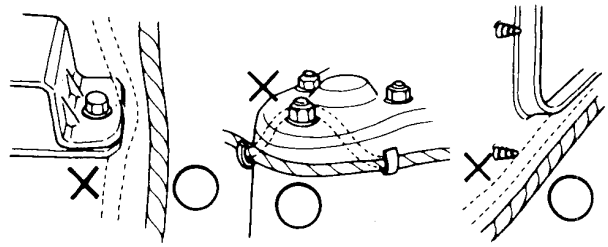
- After calmping, check each harness to be certain that it is not interferring with any moving or sliding parts of the vehicle.
- Keep wire harnesses away from the exhaust pipes and other hot parts.



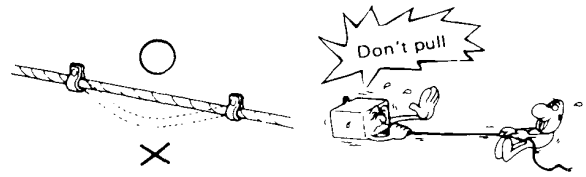
- Always keep a safe distance between wire harnesses and any heated parts.



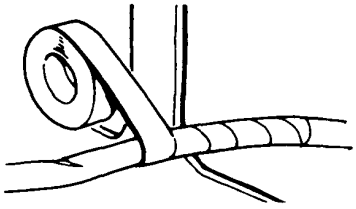
- Do not bring wire harnesses in direct contact with sharp edges or corners.
- Also avoid contact with the projected ends of bolts, screws and other fasteners.



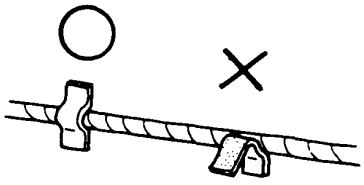
- Route harnesses so they are not pulled taut or slackened excessively.



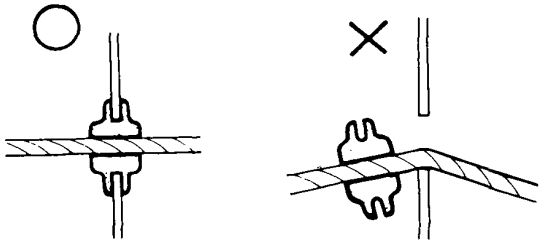
- Protect wires and harnesses with a tape or a tube if they are in contact with a sharp edge or corner.



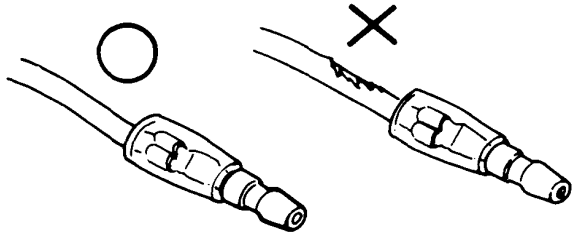
- Clean the attaching surface thoroughly if an addhesive is used. First, wipe with solvent or alcohol in necessary.



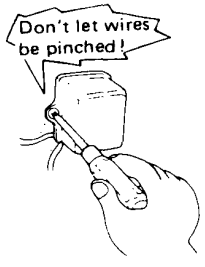
- Seat grommets in their grooves properly.



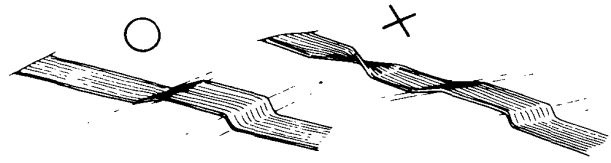
- Do not damage the insulation when connecting a wire.
- Do not use wires or harnesses with a broken insulation. Repair by wrapping with a protective tape or replace with new ones if necessary.



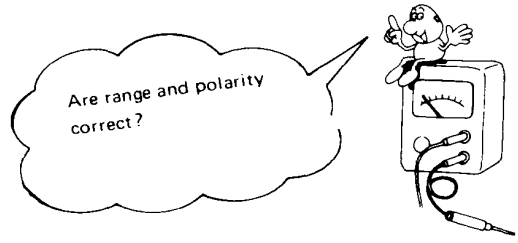
- After installing parts, make sure that wire harnesses are not pinched.



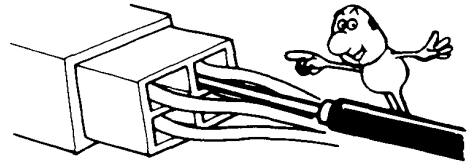
- After routing, check that the wire harnesses are not twisted or kinked.



- Wire harnesses should be routed so that they are not pulled taut, slackened excessively, pinched, or interfering with adjacent or surrounding parts in all steering positions.



- When using the Service Tester, follow the manufacturer's instructions and those described in the Shop Manual.



- Do not drop parts.

- Rust is the enemy of all finished surfaces. Before connecting connectors and couplers, check the terminals and remove, if any, rust using a fine sand paper or emery cloth.

Symbol Marks

The following symbols stand for:

:Apply engine oil.

:Apply brake fluid.

:Apply grease.

:Apply DEXRON® II Automatic Transmission Fluid.

: Apply Power Steering Fluid.

:Apply or check vacuum.

①, ②, ③, ...
❶, ❷, ❸, ... : Sequence for removal.

Abbreviation

4D H/B	4-door Hatchback
2WD	2 Wheel Drive
4WD	4 Wheel Drive
A/C	Air Conditioner
A/T	Automatic Transmission
ATF	DEXRON® II Automatic Transmission Fluid
BAT	Battery
CATA	Catalytic Converter
EACV	Electronic Air Control Valve
ECU	Electronic Control Unit
EGR	Exhaust Gas Recirculation
EX	Exhaust
GND	Ground
IG	Ignition
IN	Intake
INT	Intermittent
L.	Left
LHD	Left Hand Drive
M/T	Manual Transmission
PCV	Positive Crankcase Ventilation
PGM-CARB.	Programmed Carburetor
PGM-FI	Programmed Fuel-Injection
P/S	Power Steering
R.	Right
RHD	Right Hand Drive
SW	Switch
SOL. V	Solenoid Valve
TDC	Top Dead Center
P	Parking
R	Reverse
N	Neutral
D_4	Drive Range (1st~4th)
D_3	Drive Range (1st~3rd)
2	Fixed at 2nd range

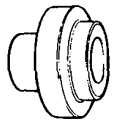
Special Tools

Special Tools

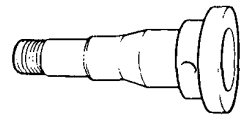
New Tools

Only new tools are listed below. As to other tools, refer to each section.

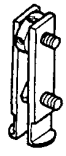
No.	Tool Number	Description	Q'ty	Remarks	Section
①	07JAJ-PH80100	Drive Gear Gauge	1		—
②	07JAJ-PH80200	Driven Gear Dummy Shaft	1		—
③	07JAC-PH80000	Adjustable Bearing Remover Set	1		—
③-1	07JAC-PH80100	Bearing Remover Attachment	(1)	Component Tools	—
③-2	07JAC-PH80200	Remover Handle Assy	(1)	Component Tools	—
③-3	07741-0010201	Remover Weight	(1)	Component Tools	—
④	07JAD-PH80100	Oil Seal Driver Attachment	1		—



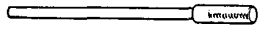
①



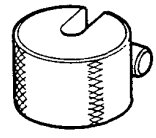
②



③-1

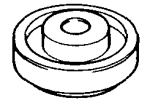


③-2



③-3

③



④

Existing Tools (Common with Other Models)

5. Engine

No.	Tool Number	Description	Q'ty	Remarks
①	07966—6340011	Engine Hanger Set	1	
②	07757—0010000	Valve Spring Compressor	1	07957—3290001 may also be used.
③	07HAD—PJ70200	Valve Guide Seal Installer	1	
④	07742—0010100	Valve Guide Driver 5.5 mm	1	
⑤	07743—0020000	Adjustable Valve Guide Driver	1	
⑥	07HAH—PJ70100	Valve Guide Reamer, 5.5 mm	1	
⑦	07947—SB00100	Oil Seal Driver	1	For camshaft seal
⑧	07973—6570002	Piston Pin Dis/Assembly Tool Set	1	
⑨	07973—6570500	Piston Base	1	
⑩	07973—6570600	Piston Base Spring	1	
⑪	07973—SB00100	Piston Base Head	1	
⑫	07973—PE00200	Pilot Collar	1	
⑬	07973—PE00400	Piston Pin Base Insert	1	
⑭	07973—PE00302	Adjustable Piston Pin Driver	1	
⑮	07948—SB00101	Driver Attachment	1	Crankshaft (Clutch side) Ex. 1.6 ℓ
⑯	07948—0080000	Driver Attachment	1	Crankshaft (Clutch side) 1.6 ℓ
⑰	07HAD—PJ70100	Oil Seal Driver	1	Crankshaft (Pulley side)
⑱	07749—0010000	Driver	1	Crankshaft (Clutch side)
⑲	07912—6110001	Oil Filter Socket Wrench	1	
⑳	07406—0030000	Oil Pressure Gauge Adaptor	1	For pressure measurement

6. Fuel and Emissions

No.	Tool Number	Description	Q'ty	Remarks
①	07JAZ—SH20100	RPM Connecting Adaptor	1	
②	07999—PD6000A	PGM-FI Test Harness	1	
③	07614—0050100	Fuel Line Clip	1	
④	07406—0040001	Fuel Pressure Gauge	1	
⑤	07HAZ—PJ70000	ECU Test Harness A	1	
⑥	07HAZ—PJ70100	ECU Test Harness B	1	
⑦	07GMJ—ML80100	Test Harness	1	
⑧	07401—0010000	Float Level Gauge	1	

7. Clutch

No.	Tool Number	Description	Q'ty	Remarks
①	07924—PD20003	Ring Gear Holder	1	07924—PD20002 may also be used.
②	07JAF—PM70100	Clutch Disc Alignment Tool	1	
③	07746—0010100	Attachment, 32 x 35 mm	1	
④	07749—0010000	Driver	1	

(cont'd)

Existing Tools (Common with Other Models)

8. Manual Transmission (2WD)

No.	Tool Number	Description	Q'ty	Remarks
①	07744—0010400	Pin Driver, 5 mm	1	07944—6110100 may also be used.
②	07936—6340000	Bearing Remover Set	1	
③	07746—0010300	Attachment, 42 x 47 mm	1	07974—6110100 may also be used.
④	07749—0010000	Driver	1	07949—6110000 may also be used.
⑤	07746—0010400	Attachment, 52 x 55 mm	1	07947—6340200 may also be used.
⑥	07979—PJ40000	Magnet Stand Base	1	
⑦	07GAJ—PG20101	Mainshaft Clearance Inspection Tool	1	
⑧	07746—0030100	Driver	1	
⑨	07746—0030400	Attachment, 35 mm	1	
⑩	07944—SA00000	Pin Driver 4.0 mm	1	
⑪	07947—6110500	Oil Seal Driver	1	
⑫	07948—SC20200	Oil Seal Driver	1	
⑬	07947—6340500	Oil Seal Driver Attachment E	1	

8. Manual Transmission (4WD)

No.	Tool Number	Description	Q'ty	Remarks
①	07746—0010500	Attachment, 62 x 68 mm	1	
②	07749—0010000	Driver	1	07949—6110000 may also be used
③	07926—SD90000	Companion Flange Holder	1	
④	07907—6010300	Socket Wrench Handle	1	
⑤	07746—0010400	Attachment, 52 x 55 mm	1	
*⑥	07JAJ—PH80100	Drive Gear Gauge	1	
*⑦	07JAJ—PH80200	Driven Gear Dummy Shaft	1	
⑧	07746—0030100	Driver C	1	
⑨	07746—0030400	Attachment, 35 mm	1	
⑩	07948—SC20200	Oil Seal Driver	1	
⑪	07960—1870100	Spring Compressor Attachment	1	
⑫	07746—0010200	Attachment, 37 x 40 mm	1	
⑬	07746—0010600	Attachment, 72 x 75 mm	1	
⑭	07936—8890101	Bearing Remover Set	1	
⑮	07746—0010300	Attachment, 42 x 47 mm	1	
⑯	07947—6110500	Oil Seal Driver Attachment	1	
⑰	07947—SD90100	Oil Seal Driver Attachment	1	
⑱	07979—PJ40000	Base Stand	1	
⑲	07GAJ—PG20101	Mainshaft Clearance Inspection Tool	1	
*⑳	07JAC—PH80000	Adjustable Bearing Remover Set	1	
*⑳-1	07JAC—PH80100	Bearing Remover Attachment	(1)	Component Tools
*⑳-2	07JAC—PH80200	Remover Handle Assy	(1)	Component Tools
*⑳-3	07741—0010201	Remover Weight	(1)	Component Tools
㉑	07966—SD90000	Differential Carrier Stand	1	
㉒	07973—SD90300	Differential Pinion Center Pin	1	
㉓	07944—SA00000	Pin Driver, 4.0 mm	1	
㉔	07965—SB00200	Dis/Assembly Tool B	1	
㉕	07973—SD90100	Pinion Dummy Shaft	1	
㉖	07973—SD90200	Pinion Height Block	1	
㉗	07946—MB00000	Bearing Driver	1	
*㉘	07JAD—PH80100	Oil Seal Driver Attachment	1	
㉙	07947—6340500	Driver Attachment E	1	

*New Tools

9. Automatic Transmission

No.	Tool Number	Description	Q'ty	Remarks
①	07923—6890202	Mainshaft Holder	1	
②	07HAC—PK40100	Transmission Housing Puller	1	
③	07GAE—PG40001	Clutch Spring Compressor Set	1	
③-1	07HAE—PL50100	Compressor Attachment	(1)	Component Tools
③-2	07GAE—PG40200	Compressor Bolt Assembly	(1)	
③-3	07960—6120100	Compressor Attachment	(1)	
④	07936—6340000	Bearing Remover Set	1	
⑤	07GAC—PF40210	Bearing Remover Attachment	1	07936—6340000 may also be used.
⑥	07749—0010000	Driver	1	07949—6110000 may also be used.
⑦	07746—0010500	Attachment, 62 x 68 mm	1	07947—6340400 may also be used.
⑧	07947—6340500	Driver Attachment E	1	
⑨	07947—6340201	Oil Seal Driver	1	
⑩	07746—0030100	Driver C	1	
⑪	07944—SA00000	Pin Driver, 4.0 mm	1	
⑫	07947—6110500	Driver Attachment E	1	
⑬	07948—SC20200	Oil Seal Driver	1	
⑭	07406—0020003	Oil Pressure Gauge Set	1	
⑭-1	07406—0020201	Oil Pressure Gauge Hose Attachment	(1)	Component Tool
⑮	07406—0070000	Low Pressure Gauge	1	

10. Driveshaft

No.	Tool Number	Description	Q'ty	Remarks
①	07HAB—SD90100	Companion Flange Holder	1	
②	07746—0010400	Attachment, 52 x 55 mm	1	
③	07746—0010500	Attachment, 62 x 68 mm	1	
④	07746—0040900	Driver Pilot, 40 mm	1	
⑤	07749—0010000	Driver	1	
⑥	07926—SD90000	Companion Flange Holder	1	
⑦	07947—SD90200	Driver Attachment	1	
⑧	07947—6340201	Driver Attachment	1	
⑨	07965—SD90100	Support Base	1	
⑩	07965—SD90200	Support Collar	1	

11. Manual Steering

No.	Tool Number	Description	Q'ty	Remarks
①	07916—SA50001	Steering Gearbox Lock Nut Wrench	1	07916—6920100 may also be used.
②	07941—6920003	Ball Joint Remover	1	
③	07974—SA50800	Ball Joint Boot Clip Guide B	1	

Existing Tools (Common with Other Models)

11. Power Steering

No.	Tool Number	Description	Q'ty	Remarks
①	07406—0010101	Bypass Tube Joint	1	
②	07916—SA50001	Steering Gearbox Lock Nut Wrench	1	
③	07406—0010200	P/S Pressure Gauge Set	1	
③- 1	07406—0010300	Pressure Control Valve	(1)	Component Tools
③- 2	07406—0010400	Pressure Gauge	(1)	
④	07GAK—SE00100	P/S Pressure Gauge Adaptor Set	1	
④- 1 *	07GAK—SE00110	P/S Joint Adaptor (Pump)	(1)	07406—0011100 may also be used.
④- 2 *	07GAK—SE00120	P/S Joint Adaptor (Hose)	(1)	07406—0011200 may also be used.
⑤	07941—6920003	Ball Joint Remover	1	
⑥	07749—0010000	Driver	1	07949—6110000 may also be used.
⑦	07746—0010300	Attachment, 42 x 47 mm	1	
⑧	07947—6340300	Driver Attachment	1	
⑨	07GAG—SD40000	P/S Tool Kit	1	
⑨- 1	07GAG—SD40100	Piston Seal Ring Guide	(1)	Component Tools
⑨- 2	07GAG—SD40200	Piston Seal Ring Sizing Tool	(1)	
⑨- 3	07GAG—SD40300	Cylinder End Seal Slider	(1)	
⑨- 4	07GAG—SD40400	Cylinder End Seal Guide	(1)	
⑨- 5	07GAG—SD40600	Tool Box	(1)	
⑩	07974—SA50600	Pinion Seal Guide	1	
⑪	07725—0030000	Universal Holder	1	07725—0010101 may also be used.

④— 1 * and ④— 2 * : Component Tools

12. Suspension

No.	Tool Number	Description	Q'ty	Remarks
①	07HGK—0010100	Wheel Alignment Gauge Attachment	1	
②	07941—6920003	Ball Joint Remover	1	
③	07965—6340301	Hub Dis/Assembly Base	1	
④	07JAF—SH20110	Hub Dis/Assembly Pilot, 38 mm	1	
⑤	07JAF—SH20120	Hub Dis/Assembly Shaft, 22.4 x 25.4 mm	1	
⑥	07749—0010000	Driver	1	
⑦	07746—0010400	Attachment, 52 x 55 mm	1	
⑧	07GAF—SE00401	Hub Dis/Assembly Base	1	
⑨	07965—6920201	Hub Dis/Assembly Base	1	
⑩	07746—0010600	Attachment, 72 x 75 mm	1	
⑪	07GAF—SE00200	Hub Assembly Guide Attachment	1	
⑫	07965—SB00100	Ball Joint Remover/Installer	1	
⑬	07JAF—SH20200	Ball Joint Remover Base	1	
⑭	07965—SB00200	Ball Joint Installer Base	1	
⑮	07974—SA50700	Ball Joint Boot Clip Guide A	1	
⑯	07974—SA50800	Ball Joint Boot Clip Guide B	1	
⑰	07GAE—SE00100	Spring Compressor	1	
⑱	07965—SA70100	Hub Dis/Assembly Tool A	1	
⑲	07947—6340400	Attachment	1	
⑳	07965—6920500	Dis/Assembly Tool E	1	

13. Brakes

No.	Tool Number	Description	Q'ty	Remarks
①	07921—0010001	Flare Nut Wrench	1	
②	07510—6340300	Vacuum Joint Tube A	1	
③	07404—5790300	Vacuum Gauge	1	
④	07410—5790500	Tube Joint Adaptor	1	
⑤	07406—5790200	Oil Pressure Gauge	2	
⑥	07410—5790100	Pressure Gauge Attachment C	2	
⑦	07510—6340100	Pressure Gauge Joint Pipe	2	
⑧	07749—0010000	Driver	1	07949—6110000 may also be used.
⑨	07747—6890300	Bearing Driver Attachment	1	
⑩	07GAG—SE00100	Pushrod Adjustment Gauge	1	
⑪	07HAE—SG00100	Brake Spring Compressor	1	
⑫	07914—SA50001	Snap Ring Pliers	1	

15. Heater and Air Conditioner

No.	Tool Number	Description	Q'ty	Remarks
①	07HAF—SF10300	Seal Seat Remover	1	Cover plate removal
②	07HAF—SF10400	Seal Remover/Installer	1	Shaft seal removal/installation

16. Electrical

No.	Tool Number	Description	Q'ty	Remarks
①	07920—SB20000	Fuel Sender Wrench	1	

Specifications

specs

Standards and Service Limits

5. Engine/Cylinder Head, Valve Train

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide-open throttle		Normal Minimum Maximum variation	1,275 kPa (13.0 kg/cm^2, 185 psi) 932 kPa (9.5 kg/cm^2, 135 psi) 196 kPa (2 kg/cm^2, 28 psi)
Cylinder head	Warpage Height		— 94.95—95.05	0.05 (0.002) —
Camshaft	End play Oil clearance Runout Cam lobe height IN 1.4ℓ, 1.5ℓ (2-Carbureted Engine) 1.5ℓ (PGM-FI) 1.6ℓ (Ex. KB, KW) 1.5ℓ (1-Carbureted Engine) 1.6ℓ (KB, KW) EX 1.4ℓ (M/T) 1.5ℓ (PGM-FI A/T) 1.4ℓ (A/T) 1.5ℓ (2-Carburetor) 1.5ℓ (PGM-FI M/T) 1.6ℓ (Ex. KB, KW) 1.5ℓ (1-Carbureted Engine) 1.6ℓ (KB, KW)		0.05—0.15 (0.002—0.006) 0.050—0.089 (0.002—0.004) 0—0.03 (0—0.001) max. 36.603 (1.4411) 36.057 (1.4196) 36.957 (1.4515) 36.750 (1.4468) 36.747 (1.4467) 36.198 (1.4251) 36.996 (1.4565)	0.5 (0.02) 0.15 (0.006) 0.06 (0.002) — — — — — — —
Valve	Valve clearance Valve stem O.D. Stem-to-guide clearance Stem installed height	IN EX IN EX IN EX IN EX	0.17—0.22 (0.007—0.009) 0.22—0.27 (0.009—0.011) 5.48—5.49 (0.2157—0.2161) 5.45—5.46 (0.2147—0.2150) 0.02—0.05 (0.001—0.002) 0.05—0.08 (0.002—0.003) 46.985—47.455 (1.8498—1.8683) 48.965—49.435 (1.9278—1.9263)	— — 5.45 (0.2147) 5.42 (0.2134) 0.08 (0.003) 0.12 (0.005) 47.705 (1.8781) 49.685 (1.9561)
Valve seat	Width	IN EX	0.85—1.15 (0.033—0.045) 1.25—1.55 (0.049—0.061)	1.6 (0.06) 2.0 (0.08)
Valve spring	Free length IN 1.4ℓ, 1.5ℓ, 1.6ℓ EX 1.5ℓ, 1.6ℓ 1.4ℓ Squareness IN 1.4ℓ, 1.5ℓ, 1.6ℓ EX 1.5ℓ, 1.6ℓ 1.4ℓ		48.58 (1.9126) 49.19 (1.9366) 48.49 (1.9091) — — —	47.64 (1.8756) 48.32 (1.9024) 47.68 (1.8772) 1.70 (0.0669) 1.72 (0.0677) 1.69 (0.0665)
Valve guide	I.D.	IN and EX	5.51—5.53 (0.2169—0.2177)	5.55 (0.2185)
Rocker arm	Arm-to-shaft clearance	IN EX	0.017—0.05 (0.0007—0.0020) 0.018—0.054 (0.0007—0.0021)	0.08 (0.003) 0.08 (0.003)

5. Engine/Engine Block

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface Bore diameter Bore taper Reboring limit		0.07 (0.0028) max. 75.00—75.02 (2.9526—2.9535) — —	0.10 (0.004) 75.07 (2.9555) 0.05 (0.002) 0.5 (0.02)
Piston	Skirt O.D. At 16 mm (0.63 in) from bottom of skirt Clearance in cylinder Piston-to-ring clearance	 Top 2nd	74.98—74.99 (2.9520—2.9524) 0.01—0.04 (0.0004—0.0016) 0.03—0.06 (0.0012—0.0024) 0.030—0.055 (0.0012—0.0022)	74.97 (2.9517) 0.05 (0.002) 0.13 (0.005) 0.13 (0.005)
Piston ring	Ring end gap	Top 2nd Oil	0.15—0.35 (0.006—0.014) 0.15—0.35 (0.006—0.014) 0.20—0.60 (0.008—0.024)	0.6 (0.02) 0.6 (0.02) 0.7 (0.03)
Connecting rod	Pin-to-rod interference Large end bore diameter End play installed on crankshaft		0.014—0.040 (0.0006—0.0016) Nominal 45.0 (1.77) 0.15—0.30 (0.006—0.012)	— — 0.40 (0.016)
Crankshaft	Main journal diameter Taper/out-of-round, main journal Rod journal diameter 1.4ℓ 1.5ℓ 1.6ℓ Taper/out-of-round, rod journal End play Runout		44.976—45.000 (1.7707—1.7718) 0.005 (0.0002) max. 39.976—40.000 (1.5739—1.5748) 41.976—42.000 (1.6526—1.6535) 44.976—45.000 (1.7707—1.7765) 0.0025 (0.0001) max. 0.10—0.35 (0.004—0.014) 0.015 (0.0006) max.	— 0.010 (0.004) — — — 0.010 (0.004) 0.45 (0.018) 0.03 (0.002)
Bearings	Main bearing-to-journal oil clearance Ex. 1.6ℓ 1.6 ℓ No. 1,2,4 and 5 jornals 1.6 ℓ No.3 journal Rod bearing-to-journal oil clearance		 0.024—0.042 (0.0010—0.0017) 0.024—0.042 (0.0010—0.0017) 0.030—0.048 (0.0012—0.0019) 0.020—0.038 (0.0008—0.0015)	 0.5 (0.002) 0.5 (0.002) 0.5 (0.002) 0.05 (0.002)

Unit: mm (in.)

5. Engine/Engine Lubrication

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (U.S.qt., Imp. qt)		4.0 (4.2, 3.5) After engine disassembly 3.5 (3.7, 3.1) After oil change, including oil filter 3.0 (3.2, 2.6) After oil change, without oil filter	
Oil pump	Displacement		44 ℓ (11.6 U.S. gal., 9.7 Imp. gal.) 6,250 min^{-1} (rpm)	
	Inner-to-outer rotor radial clearance Pump body-to-rotor radial clearance Pump body-to rotor side clearance		0.14 (0.006) 0.10—0.175 (0.004—0.007) 0.03—0.08 (0.001—0.003)	0.2 (0.008) 0.2 (0.008) 0.15 (0.006)
Relief valve	Pressure setting 80°C (176°F)	Idle	167 kPa (1.7 kg/cm^2, 24 psi) min.	
		3,000 min^{-1} (rpm)	451 kPa (4.6 kg/cm^2, 65 psi)	

5. Engine/cooling

	MEASUREMENT	STANDARD (NEW)
Radiator	Capacity (incl.heater) ℓ (U.S.qt.,Imp.qt.) (Includes resvoir tank 0.4 (0.42, 0.35))	1.6ℓ M/T 5.4 (5.7, 4.8) 1.4ℓ M/T 5.4 (5.7, 4.8) A/T 5.3 (5.6, 4.7) 1.5ℓ PGM-FI M/T 5.5 (5.8, 4.8) A/T 5.4 (5.7, 4.8) 1-Carbureted Engine M/T 5.4 (5.7, 4.8) A/T 5.4 (5.7, 4.8) 2-Carbureted Engine M/T 5.5 (5.8, 4.8) A/T 5.4 (5.7, 4.8)
Radiator cap	Pressure cap opening pressure	74—103 kPa (0.75—1.05 kg/cm^2,11—15 psi)
Thermostat	Starts to open Full open Valve lift at full open	78°C± 2 (172°F±3) 90°C (194°F) 8 (0.31) min.
Water pump	Pulley ratio (crankshaft) Capacity: ℓ per min/at min^{-1} (rpm)	1 : 1 108 (27 U.S. gal., 23 Imp. gal.)/5,000 min^{-1}(rpm)
Cooling fan	Fan-to-core clearance Thermoswitch "ON" temperature Thermoswitch "OFF" temperature	ND* : 36.0 (1.4), TR* : 24.5 (1.0) 88.5°—91.5°C (191°—197°F) 83.5°—86.5°C (182°—188°F)

ND* : Nippon Denso, TR* : Toyo Radiator

6. Fuel and Emission (PGM-FI)

	MEASUREMENT		STANDARD (NEW)
Fuel pump	Delivery pressure Displacement Relief valve opening pressure		250 kPa (2.55 kg/cm^2, 36psi) 236 cc /minutes in 10 seconds min. 441—588 kPa (4.5—6.0 kg/cm^2, 64—85 psi)
Pressure regulator	Pressure		230—270 kPa (2.35—2.75 kg/cm^2, 33—39 psi)
Fuel Tank	Capacity		45 ℓ (11.9 U.S. gal., 9.9 Imp. U.S.gal.)
Fast idle			MT 1,000—2,000 min^{-1} (rpm) AT 1,000—2,000 min^{-1} (rpm)
Idle spped	with headlights and cooling fan off	1.5ℓ 1.6ℓ, with CATA 1.6ℓ, without CATA	780 ± 50 min^{-1} (rpm) 750 ± 50 min^{-1} (rpm) 780 ± 50 min^{-1} (rpm)
Idle CO	With CATA Without CATA		0.1% Max. 1.0 ±1.0%

Standards and Service Limits (cont'd)

6. Fuel and Emissions (Carbureted Engine)

	MEASUREMENT		STANDARD (NEW)
Fuel pump	Delivery pressure Displacement		6.8—22.6 kPa (0.07—0.23 kg/cm², 1.0—3.2 psi) 833.3 cc/minutes in 10 seconds min.
Fuel Tank	Capacity		45 ℓ (11.9 U.S. gal., 9.9 Imp. U.S. gal.)
Fast idle		EX. KQ KQ	1,500—2,500 min^{-1} (rpm) 1,350—2,000 min^{-1} (rpm)
Idle spped	with headlights and cooling fan off		MT 750 ± 50 min^{-1} (rpm) AT (except "N" or "P") 700 ± 50 min^{-1} (rpm)
Idle CO			KQ 0.5% max. EX. KQ 1.0% max.

7. Clutch

	MEASUREMENT		STANDARD (NEW)		SERVICE LIMIT
Clutch pedal			LHD	RHD	
	Pedal height	from floor	210 (8.27)	205 (8.07)	—
		from carpet	196 (7.72)	191 (7.52)	—
	Stroke		140—150 (5.51—5.91)	135—145 (5.31—5.71)	—
	Disengagement height	from floor	61 (2.40) min	52 (2.05) min	—
		from carpet	37 (1.46) min	35 (1.38) min	—
	Pedal play		15—20 (0.59—0.79)		—
Clutch release arm	Free play at arm		3.0—4.0 (0.1181—0.1575)		—
Flywheel	Clutch surface runout		0.05 (0.002) max.		0.15 (0.006)
Clutch disc	Rivet head depth		1.3 (0.05) min.		0.2 (0.008)
	Surface runout		0.8 (0.03) max.		1.0 (0.04)
	Radial play in spline	2WD	0.036—0.112 (0.001—0.004)		0.5 (0.02)
	Radial play in spline at circumference (200ϕ)	4WD	0.7—2.1 (0.028—0.083)		4.0 (0.157)
	Thickness		8.1—8.8 (0.32—0.35)		5.7 (0.224)
Clutch release bearing holder	I.D.	2WD	31.00—31.15 (1.220—1.226)		31.2 (1.228)
		4WD	35.040—35.079 (1.3795—1.3811)		35.11 (1.382)
	Holder-to-guide sleeve clearance	2WD	0.050—0.239 (0.002—0.009)		0.3 (0.012)
		4WD	0.090—0.168 (0.0035—0.0066)		0.24 (0.009)
Clutch cover	Uneveness of diaphragm spring		0.8 (0.03) max.		1.0 (0.04)

8. Manual Transmission

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (US.qt., Imp.qt.)		1.8 (1.9, 1.6) at oil change 2.4 (2.5, 2.1) at assembly	
Mainshaft	End play		0.13—0.20 (0.005—0.008)	Adjustable
	Diameter of needle bearing contact area		25.977—25.990 (1.0227—1.0232)	25.92 (1.020)
	Diameter of third gear contact area		33.984—34.000 (1.3380—1.3386)	33.93 (1.336)
	Diameter of 4th, 5th gear contact area		26.980—26.993 (1.0622—1.0627)	26.93 (1.060)
	Diameter of ball bearing contact area		21.987—22.000 (0.8656—0.8661)	21.93 (0.863)
	Runout		0.02 (0.0008) max.	0.05 (0.002)
Mainshaft third and fourth gears	I.D.		39.009—39.025 (1.5358—1.5364)	39.07 (1.538)
	End play	3rd	0.06—0.21 (0.0024—0.008)	0.33 (0.013)
		4th	0.06—0.19 (0.0024—0.0075)	0.31 (0.012)
	Thickness	3rd	30.22—30.27 (1.1898—1.1917)	30.15 (1.187)
		4th	30.12—30.17 (1.1858—1.1878)	30.05 (1.183)
Mainshaft fifth gears	I.D.		37.009—37.025 (1.4570—1.4577)	37.07 (1.459)
	End play		0.06—0.19 (0.0024—0.0075)	0.31 (0.012)
	Thickness		28.42—28.47 (1.1189—1.1209)	28.35 (1.116)
Countershaft	End play		0.17—0.38 (0.0067—0.0150)	0.53 (0.021)
	Diameter of needle bearing contact area		30.000—30.015 (1.1811—1.817)	29.95 (1.179)
	Diameter of ball bearing contact area		24.980—24.993 (0.9835—0.9840)	24.93 (0.981)
	Diameter of low gear contact area		35.984—36.000 (1.4167—1.4173)	35.93 (1.415)
	Runout		0.02 (0.0008) max.	0.05 (0.002)
Countershaft low gear	I.D.		41.009—41.025 (1.6145—1.6152)	41.07 (1.617)
	End play		0.03—0.10 (0.0012—0.0039)	0.22 (0.009)
	Thickness		29.41—29.44 (1.1579—1.1591)	29.36 (1.156)
Countershaft Second gear	I.D.		44.009—44.025 (1.7326—1.7333)	44.07 (1.735)
	End play		0.03—0.11 (0.0012—0.0043)	0.23 (0.009)
	Thickness		29.92—29.97, (1.1780—1.1799)	29.85 (1.175)

Unit: mm (in.)

8. Manual Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Spacer collar (Countershaft second gear)	I.D. O.D. Length	32.975—32.985 (1.2982—1.2986) 38.989—39.000 (1.5350—1.5354) 30.03—30.06 (1.1823—1.1835)	33.03 (1.300) 38.93 (1.533) 30.01 (1.181)
Spacer collar (Mainshaft fourth and fifth gears)	I.D. O.D. 4th 5th Length 4th 5th	27.002—27.012 (1.0631—1.0635) 33.989—34.000 (1.3381—1.3386) 31.989—32.000 (1.2594—1.2598) 27.43—27.46 (1.0799—1.0811) 23.53—23.56 (0.9264—0.9276)	27.06 (1.065) 33.93 (1.336) 31.93 (1.257) 27.41 (1.079) 23.51 (0.926)
Reverse Idler gear	I.D. Gear-to-reverse gear shaft clearance	15.016—15.043 (0.5911—0.5922) 0.032—0.077 (0.0013—0.0030)	15.08 (0.594) 0.14 (0.006)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)	0.73—1.18 (0.029—0.046)	0.4 (0.016)
Shift fork	Shift fork finger thickness Fork-to-synchro sleeve clearance	6.4—6.5 (0.252—0.255) 0.25—0.45 (0.0098—0.0177)	— 0.8 (0.03)
Reverse shift fork	Shift fork paul groove width Fork-to-reverse idler gear clearance Groove width Fork-to-fifth/reverse shift piece pin clearance	12.7—13.0 (0.500—0.512) 0.5—1.1 (0.020—0.043) 7.05—7.25 (0.278—0.285) 0.05—0.35 (0.002—0.014)	— 1.8 (0.071) — 0.5 (0.02)
Shift arm A	Diameter of shift rod contact area Shift arm A-to-shift rod clearance	13.005—13.130 (0.5120—0.5169) 0.005—0.230 (0.0002—0.0091)	— 0.35 (0.0138)
Shift arm B	Diameter of shift arm shaft contact area Shift arm B-to-shift arm shaft clearance Shift arm B-to-shift piece clearance Shift piece diameter of shift fork shaft contact area	13.973—14.000 (0.5501—0.5512) 0.013—0.070 (0.0005—0.0028) 0.2—0.5 (0.0079—0.0197) 12.9—13.0 (0.5079—0.5118)	— 0.16 (0.0063) 0.62 (0.0244) 12.78 (0.5031)
Ring gear	*Backlash*	0.072—0.130 (0.0028—0.0051)	0.18 (0.007)
Differential carrier	Pinionshaft bore diamater Carrier-to-pinionshaft clearance Driveshaft bore diameter Carrier-to-driveshaft clearance Carrier-to-intermediate shaft clearance Side clearance	18.000—18.018 (0.7087—0.7094) 0.017—0.047 (0.0007—0.0019) 26.025—26.045 (1.0246—1.0254) 0.045—0.086 (0.0017—0.0034) 0.075—0.111 (0.0030—0.0044) 0.15 max.	— 0.095 (0.004) — 0.14 (0.006) 0.16 (0.006)
Differential pinion gear	Backlash Pinion gear bore diameter Pinion gear to pinionshaft clearance	0.05—0.15 (0.002—0.006) 18.042—18.066 (0.7103—0.7113) 0.059—0.095 (0.0023—0.0037)	Selection with 7 type of washers — 0.15 (0.006)

Standards and Service Limits (cont'd)

8. Manual Transmission (4WD)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (US. qt., Imp. qt.)	2.4 (2.5, 2.1) at assembly 2.3 (2.4, 2.0) at oil change	
Mainshaft	End play Diameter of needle bearing contact area Diameter of 3rd gear contact area Diameter of 63/28C ball bearing contact area Diameter of 6306/25 ball bearing contact area Runout	0.08–0.15 (0.0031–0.0059) 27.987–28.000 (1.1018–1.1024) 34.984–35.000 (1.3773–1.3780) 27.977–27.990 (1.100–1.102) 24.987–25.000 (0.9837–0.9843) 0.02 (0.0008) max.	Selection with shim. 27.93 (1.100) 34.93 (1.375) 27.92 (1.099) 24.93 (0.981) 0.05 (0.002)
Main 3rd gear	I.D. End play Thickness	40.009–40.025 (1.5752–1.5758) 0.06–0.21 (0.002–0.008) 32.42–32.47 (1.276–1.278)	40.07 (1.578) 0.3 (0.01) 32.3 (1.27)
Main 4th gear	I.D. End play Thickness	40.009–40.025 (1.5752–1.5758) 0.06–0.21 (0.002–0.008) 30.92–30.97 (1.217–1.219)	40.07 (1.578) 0.3 (0.01) 30.8 (1.21)
Main 5th gear	I.D. End play Thickness	40.009–40.025 (1.5752–1.5758) 0.06–0.21 (0.002–0.008) 30.42–30.47 (1.198–1.200)	40.07 (1.578) 0.3 (0.01) 30.3 (1.19)
Countershaft	End play Diameter of needle bearing contact area Diameter of ball bearing contact area Diameter of SL3 gear contact area Runout	0.05–0.30 (0.002–0.012) 29.000–29.015 (1.1417–1.1423) 24.987–25.000 (0.9837–0.9843) 30.464–30.480 (1.1994–1.2000) 0.02 (0.0008) max.	0.5 (0.02) 28.94 (1.139) 24.93 (0.981) 30.41 (1.197) 0.05 (0.002)
Counter 1st gear	I.D. End play Thickness	50.009–50.025 (1.9689–1.9695) 0.03–0.08 (0.001–0.003) 32.95–33.00 (1.297–1.299)	50.07 (1.971) 0.18 (0.007) 32.83 (1.293)
Counter 2nd gear	I.D. End play Thickness	50.009–50.025 (1.9689–1.9695) 0.03–0.08 (0.001–0.003) 32.92–32.97 (1.296–1.298)	50.07 (1.971) 0.18 (0.007) 32.8 (1.29)
Main 4th gear & 5th gear distance collar	I.D. O.D. Width	28.002–28.012 (1.1024–1.1028) 34.989–35.000 (1.3775–1.3780) 26.03–26.08 (1.025–1.027)	28.06 (1.105) 34.93 (1.375) 26.01 (1.024)
Countershaft 2nd gear distance collar	I.D. O.D. Width	36.48–36.49 (1.436–1.437) 43.989–44.000 (1.7318–1.7323) 28.96–29.4 (1.140–1.157)	36.54 (1.439) 43.93 (1.730) Adjust
Reverse idle gear	I.D. Gear-to-shaft clearance	20.016–20.043 (0.7880–0.7890) 0.036–0.084 (0.0014–0.0033)	20.08 (0.791) 0.14 (0.006)
SL1 shaft	Clearance of needle bearing contact area	23.984–23.993 (0.9443–0.9446)	23.93 (0.942)
SL1 gear	I.D. Thickness	30.000–30.013 (1.1811–1.1816) 62.95–63.00 (2.478–2.480)	29.94 (1.179) 62.83 (2.474)
SL2 shaft	End play Diameter of needle bearing contact area Diameter of ball bearing contact area 62/28 (Clutch Housing Side) 6204U (Transmission housing side) Runout	0.07–0.20 (0.0028–0.0079) 22.987–23.000 (0.9050–0.9055) 27.987–28.000 (1.1018–1.1024) 19.987–20.000 (0.7869–0.7874) 0.02 (0.0008) max.	Selection with shims 22.93 (0.903) 27.93 (1.100) 19.93 (0.785) 0.05 (0.002)
SL2 gear	I.D. End play Thickness	37.009–37.025 (1.4570–1.4577) 0.03–0.16 (0.001–0.006) 34.42–34.47 (1.355–1.357)	37.07 (1.459) 0.24 (0.009) 34.3 (1.35)
SL3 gear	Diameter of needle bearing contact area Width of needle bearing contact area	43.984–44.000 (1.7318–1.7323) 31.03–31.08 (1.222–1.224)	43.93 (1.730) 31.01 (1.221)
SL2 gear distance collar	I.D. O.D. Width	23.000–23.013 (0.9055–0.9060) 31.989–32.000 (1.2594–1.2598) 31.00–31.03 (1.220–1.222)	23.060 (0.9079) 31.93 (1.257) 30.98 (1.220)
Transfer shaft	Diameter of needle bearing contact area Diameter of taper bearing contact area Width of transfer driven gear contact area Width of transfer drive bevel gear contact area Runout	27.987–28.000 (1.1018–1.1024) 16.989–17.000 (0.6689–0.6693) 45.01–45.05 (1.772–1.774) 35.002–35.018 (1.3780–1.3787) 0.02 (0.0008) max.	27.93 (1.100) 16.93 (0.6665) 45.17 (1.778) 34.95 (1.376) 0.05 (0.002)
Transfer driven gear	I.D. Diameter of needle bearing contact area End play Thickness	34.009–34.025 (1.3389–1.3396) 54.000–54.015 (2.1260–2.1266) 0.04–0.13 (0.002–0.005) 44.92–44.97 (1.769–1.770)	34.07 (1.341) 53.94 (2.124) 0.21 (0.008) 44.8 (1.76)
Transfer drive bevel gear	I.D. Diameter of taper bearing contact area	25.000–25.021 (0.9843–0.9851) 35.002–35.018 (1.3780–1.3787)	25.06 (0.987) 34.95 (1.376)

8. Manual Transmission (4WD) (cont'd)

Unit: mm (in.)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transfer driven bevel gear	Backlash	0.10–0.15 (0.004–0.006)	Adjust
	Diameter of taper bearing contact area		
	Inner driven gear bearing race	35.002–35.018 (1.3780–1.3787)	34.95 (1.376)
	Outer driven gear bearing race	27.987–28.000 (1.1018–1.1024)	27.93 (1.100)
Blocking ring	Ring-to-gear clearance	0.85–1.1 (0.033–0.043)	0.4 (0.02)
1–2 shift fork & 3–4 shift fork	Synchronizer sleeve groove width	7.95–8.05 (0.313–0.317)	—
	Shift fork-to-synchro sleeve clearance Thrust	0.45–0.65 (0.018–0.026)	1.0 (0.04)
	Radial	0.05–0.45 (0.002–0.018)	0.8 (0.03)
	Forkshaft-to-shift fork clearance	0.040–0.138 (0.0016–0.0054)	—
5th shift fork	Synchro sleeve width	5.75–5.85 (0.226–0.230)	—
	Shift fork-to-synchro sleeve clearance Thrust	0.25–0.45 (0.010–0.018)	0.8 (0.03)
	Radial	0.05–0.45 (0.002–0.018)	0.8 (0.03)
	Fork shaft-to-shift fork clearance		
	5–R shift fork shaft	0.005–0.070 (0.0002–0.0028)	—
	1–2 shift fork shaft	0.440–0.670 (0.0173–0.0264)	—
Reverse shift fork	Nail width	13.0–13.3 (0.51–0.52)	—
	Shift fork-to-reverse idle gear clearance	0.5–1.1 (0.02–0.04)	1.8 (0.07)
	L-groove width	7.05–7.25 (0.278–0.285)	—
	Shift fork-to-5-R shift piece clearance	0.05–0.35 (0.002–0.014)	0.5 (0.02)
Shift arm A	Diameter of shift piece contact area	12.9–13.0 (0.508–0.512)	—
	Shift arm-to-shift piece clearance	0.2–0.5 (0.01–0.02)	0.7 (0.03)
	Shift arm-to-interlock clearance I.D.	16.000–16.068 (0.6299–0.6326)	—
	Shift arm-to-shaft clearance	0.011–0.092 (0.0004–0.0036)	—
Shift arm	Diameter of shift arm A contact area	11.9–12.0 (0.469–0.472)	—
	Shift arm-to-shift arm A clearance	0.05–0.25 (0.002–0.010)	0.5 (0.02)
Select arm	Diameter of shift arm A contact area	7.95–8.00 (0.313–0.315)	—
	Select arm-to-shift arm A clearance	0.10–0.25 (0.004–0.010)	0.5 (0.02)
SL shift fork	Synchro sleeve groove width	5.75–5.85 (0.226–0.230)	—
	Shift fork-to-synchro sleeve clearance Thrust	0.25–0.45 (0.010–0.018)	0.8 (0.03)
	Radial	0.05–0.45 (0.002–0.018)	0.8 (0.03)
SL shift piece A	Shift piece-to-fork shaft clearance	0.040–0.138 (0.0016–0.0054)	—
	Diameter of SL shift lever contact area	10.1–10.2 (0.398–0.402)	—
	Shift piece-to-SL shift lever clearance	0.1–0.3 (0.004–0.012)	—
SL shift piece B	Diameter of SL shift lever contact area	7.9–8.0 (0.311–0.315)	—
	Shift piece-to-SL shift lever clearance	0.05–0.25 (0.002–0.010)	0.5 (0.02)
Selector fork	Sleeve groove width	8.45–8.55 (0.333–0.337)	—
	Fork-to-sleeve clearance Thrust	0.45–0.65 (0.018–0.026)	1.0 (0.04)
	Radial	0.2–1.1 (0.01–0.04)	1.5 (0.06)
Ring gear	Backlash	0.071–0.129(0.0028–0.0051)	—
Differential carrier (Front)	Pinion shaft bore diameter	18.000–18.018 (0.7087–0.7094)	—
	Carrier-to-pinion shaft clearance	0.016–0.052 (0.0006–0.0020)	0.12 (0.005)
	Driveshaft bore diameter	28.005–28.025(1.1026–1.1033)	—
	Carrier-to-driveshaft clearance	0.025–0.066 (0.0010–0.0026)	0.12 (0.005)
	Ball bearing bore diameter	40.002–40.018 (1.5749–1.5755)	—
Differential pinion gear (Front)	Backlash	0.05–0.15 (0.002–0.006)	Selection with 7 sizes of washers
	Pinion gear bore diameter	18.042–18.061(0.710–0.7111)	0.15 (0.006)
	Pinion gear-to-pinion shaft clearance	0.059–0.095(0.0023–0.0037)	
Diff. carrier assy. (Rear)	Oil capacity Replace	0.65 ℓ (0.69US. qt.,0.57Imp. qt)	—
	Disassemble	0.70 ℓ (0.74US. qt.,0.62Imp. qt)	—
Diff. carrier (Rear)	Diameter of taper bearing contact area		
	Front drive pinion bearing	57.979–58.009 (2.2826–2.2838)	58.06 (2.286)
	Rear drive pinion bearing	71.979–72.009 (2.8338–2.8350)	72.06 (2.837)
	Side bearing	68.000–68.030 (2.6772–2.6783)	68.08 (2.680)
Diff. case (Rear)	Diameter of diff. pinion shaft contact area	18.000–18.018 (0.7087–0.7094)	—
	Case-to-diff. pinion shaft	0.016–0.052 (0.0006–0.0020)	0.1 (0.004)
	Diameter of drive shaft contact area	26.005–26.025 (1.0236–1.0246)	—
	Case-to-drive shaft clearance	0.025–0.066 (0.0010–0.0026)	0.12 (0.005)
	Diameter of taper bearing contact area	40.002–40.018 (1.5749–1.5755)	39.95 (1.573)
Diff. pinion gear (Rear)	Backlash	0.05–0.15 (0.002–0.006)	Selection with 7sizes of washers
	I.D.	18.042–18.066(0.7103–0.7113)	0.15 (0.006)
	Gear-to-pinion shaft clearance	0.059–0.095(0.0022–0.0037)	
Hypoid drive pinion gear	Backlash	0.11–0.16(0.004–0.006)	Adjust
	Diameter of taper bearing contact area		
	Front pinion bearing	27.987–28.000 (1.1018–1.1024)	27.93 (1.100)
	Rear pinion bearing	30.002–30.018 (1.1812–1.1818)	29.95 (1.179)

Standards and Service Limits (cont'd)

9. Automatic Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (U.S. qt., Imp. qt.)	2.4 (2.5, 2.1) at oil change 5.4 (5.7, 4.8) at assembly	
Hydraulic pressure	Line pressure at 2,000 min⁻¹ (rpm)	785—834 kPa (8.0—8.5 kg/cm², 114—121 psi)	736 kPa (7.5 kg/cm², 107 psi)
	2nd, 3rd, 4th clutch pressure at 2,000 min⁻¹ (rpm) in [D]	412 kPa (4.2 kg/cm², 60 psi) Throttle control lever full closed 785—834 kPa (8.0—8.5kg/cm², 114—121 psi) Throttle control lever opened 2/8 or more	363 kPa (3.7 kg/cm², 53 psi) 736 kPa (7.5 kg/cm² 107 psi)
	2nd clutch pressure at 2,000 min⁻¹ (rpm) in [2]	785—834 kPa (8.0—8.5 kg/cm², 114—121 psi)	736 kPa (7.5 kg/cm² 107 psi)
	1st clutch pressure at 2,000 min⁻¹ (rpm)		
	Governor pressure at 60 km/h (37.5 mph)	206—216 kPa (2.10—2.20 kg/cm², 30—31 psi)	201kPa (2.05 kg/cm² 29 psi)
	Throttle pressure B — Full closed	0	—
	Throttle pressure B — Full opened	785—834 kPa (8.0—8.5 kg/cm², 114—121 psi)	736 kPa (7.5 kg/cm², 107 psi)
	Throttle pressure A — Full closed	0—4.9 kPa (0—0.05 kg/cm², 0—0.7 psi)	—
	Throttle pressure A — Full opened	505—520 kPa (5.15—5.30 kg/cm², 73—75 psi)	500 kPa (5.1 kg/cm², 73 psi)
Stall speed		2,300—2,900 min⁻¹ (rpm)	—
Clutch	Clutch inital clearance — 1st	0.65—0.85 (0.026—0.033)	—
	Clutch inital clearance — 2nd	0.65—0.85 (0.026—0.033)	—
	Clutch inital clearance — 3rd, 4th	0.40—0.60 (0.016—0.024)	—
	Clutch return spring free length — 1st	31.0 (1.22)	29.0 (1.14)
	Clutch return spring free length — Except 1st	30.5 (1.20)	28.5 (1.12)
	Clutch disc thickness	1.88—2.0 (0.074—0.079)	Until grooves worn out
	Clutch plate thickness — 1st	1.55—1.65 (0.061—0.065)	Discoloration
	Clutch plate thickness — Except 1st	1.95—2.05 (0.077—0.081)	
	Clutch end plate thickness (1.5 ℓ PGM-FI Engine) — Mark 1	2.3—2.4 (0.091—0.094)	
	Mark 2	2.4—2.5 (0.094—0.098)	
	Mark 3	2.5—2.6 (0.098—0.102)	
	Mark 4	2.6—2.7 (0.102—0.106)	
	Mark 5	2.7—2.8 (0.106—0.110)	
	Mark 6	2.8—2.9 (0.110—0.114)	
	Mark 7	2.9—3.0 (0.114—0.118)	
	Mark 8	3.0—3.1 (0.118—0.122)	
	Mark 9	3.1—3.2 (0.122—0.126)	
	Mark 10	3.2—3.3 (0.126—0.130)	
	Clutch end plate thickness (1.4 ℓ 2-Carbureted and 1.5 ℓ 1-Carbureted engine) — Mark 1	2.2—2.3 (0.087—0.091)	
	Mark 2	2.5—2.6 (0.098—0.102)	
	Mark 3	2.8—2.9 (0.110—0.114)	
	Mark 4	3.1—3.2 (0.122—0.126)	
	Mark 5	3.4—3.5 (0.134—0.138)	
	Mark 11	2.05—2.15 (0.081—0.085)	
	Mark 12	2.35—2.45 (0.093—0.096)	
	Mark 13	2.65—2.75 (0.104—0.108)	
	Mark 14	2.95—3.05 (0.116—0.120)	
	Mark 15	3.25—3.35 (0.128—0.132)	
	Mark 16	3.55—3.65 (0.140—0.144)	Discoloration
Transmission	Diameter of needle bearing contact area on main and stator shaft	19.980—19.993 (0.7866—0.7871)	Wear or damage
	Diameter of needle bearing contact area on mainshaft 2nd gear	35.975—35.991 (1.4163—1.4169)	
	Diameter of needle bearing contact area on mainshaft 4th gear collar	31.975—31.991 (1.2589—1.2595)	
	Diameter of needle bearing contact area on mainshaft 1st gear coller	27.975—27.995 (1.1014—1.1022)	
	Diameter of needle bearing contact area on countershaft (L side)	36.004—36.017 (1.4175—1.4180)	
	Diameter of needle bearing contact area on countershaft 3rd gear	31.975—31.991 (1.2589—1.2595)	
	Diameter of needle bearing contact area on countershaft 4th gear	27.980—27.993 (1.1016—1.1021)	
	Diameter of needle bearing contact area on countershaft reverse gear collar	29.980—29.993 (1.1803—1.1808)	
	Diameter of needle bearing contact area on countershaft 1st gear collar	29.980—29.993 (1.1803—1.1808)	
	Diameter of needle bearing contact area on reverse idle gear	13.990—14.000 (0.5508—0.5512)	
	Mainshaft 2nd gear I.D.	41.000—41.016 (1.6142—1.6148)	
	Mainshaft 1st gear I.D.	33.000—33.016 (1.2992—1.2998)	
	Mainshaft 4th gear I.D.	38.000—38.016 (1.4961—1.4967)	
	Countershaft 4th gear I.D.	33.000—33.016 (1.2992—1.2998)	
	Countershaft 3rd gear I.D.	38.000—38.016 (1.4961—1.4967)	
	Countershaft 1st gear I.D.	35.000—35.016 (1.3780—1.3786)	
	Countershaft reverse gear I.D.	36.000—36.016 (1.4173—1.4179)	
	Reverse idle gear I.D.	18.007—18.020 (0.7089—0.7094)	
	Reverse idler shaft holder I.D.	14.416—14.434 (0.5676—0.5683)	Wear or damage

Unit: mm (in)

9. Automatic Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Mainshaft 4th gear end play	0.10—0.22 (0.0039—0.0087)	—
	Mainshaft 2nd gear end play	0.07—0.15 (0.0028—0.0059)	—
	Mainshaft 1st gear end play	0.08—0.24 (0.0031—0.0094)	—
	Countershaft 4th gear end play	0.07—0.15 (0.0028—0.0059)	—
	Countershaft 3rd gear end play	0.07—0.15 (0.0028—0.0059)	—
	Countershaft 1st gear end play	0.10—0.45 (0.0039—0.0177)	—
	Reverse idler gear end play	0.05—0.18 (0.0020—0.0071)	—
	Countershaft reverse gear play	0.10—0.45 (0.0039—0.0177)	—
	Selector hub O.D.	51.87—51.90 (2.0421—2.0433)	Wear or damage
	Thrust washer thickness		
	Mainshaft 2nd gear A	3.47—3.50 (0.1366—0.1378)	Wear or damage
	B	3.52—3.55 (0.1386—0.1398)	
	C	3.57—3.60 (0.1406—0.1417)	
	D	3.62—3.65 (0.1425—0.1437)	
	E	3.67—3.70 (0.1445—0.1457)	
	F	3.72—3.75 (0.1465—0.1476)	
	G	3.77—3.80 (0.1484—0.1496)	
	H	3.82—3.85 (0.1504—0.1516)	
	I	3.87—3.90 (0.1524—0.1535)	
	Mainshaft L side bearing	2.95—3.05 (0.1161—0.1201)	
	Mainshaft 4th gear	4.45—4.55 (0.1752—0.1791)	
	Mainshaft R side 1st gear	2.43—2.50 (0.0957—0.0984)	
	Mainshaft L side 1 st gear	1.45—1.50 (0.0571—0.0591)	
	Countershaft 3rd gear A	2.97—3.00 (0.1169—0.1181)	
	B	3.02—3.05 (0.1189—0.1201)	
	C	3.07—3.10 (0.1209—0.1220)	
	D	3.12—3.15 (0.1228—0.1240)	
	E	3.17—3.20 (0.1248—0.1260)	
	F	3.22—3.25 (0.1268—0.1280)	
	G	3.27—3.30 (0.1287—0.1299)	
	H	3.32—3.35 (0.1307—0.1319)	
	I	3.37—3.40 (0.1327—0.1339)	Wear or damage
	Countershaft distance collar length	38.97—39.00 (1.5342—1.5354)	—
		39.02—39.05 (1.5362—1.5374)	—
		39.07—39.10 (1.5382—1.5394)	—
		39.12—39.15 (1.5402—1.5413)	—
		39.17—39.20 (1.5421—1.5433)	—
		39.22—39.25 (1.5441—1.5453)	—
		39.27—39.30 (1.5461—1.5472)	—
	Mainshaft 4th gear collar length	40.00—40.05 (1.5748—1.5768)	—
	Mainshaft 1st gear collar length	25.00—25.15 (0.9843—0.9902)	—
	Mainshaft 1st gear collar flange thickness	2.5—2.6 (0.098—0.102)	Wear or damage
	Countershaft reverse gear collar length	14.50—14.55 (0.5709—0.5728)	—
	Countershaft reverse gear collar flange thickness	2.45—2.55 (0.0965—0.1004)	Wear or damage
	Countershaft 1st gear collar length	14.50—14.55 (0.5709—0.5728)	—
	Countershaft 1st gear collar flange thickness	2.45—2.55 (0.0965—0.1004)	Wear or damage
	Diameter of countershaft one-way clutch contact area	74.414—74.440 (2.9297—2.9307)	Wear or damage
	Diameter of parking gear one-way clutch contact area	57.755—57.768 (2.2738—2.2743)	Wear or damage
	Mainshaft feed pipe A O.D. (at 15 mm from end)	8.97—8.98 (0.353—0.354)	8.95 (0.3524)
	Mainshaft feed pipe B O.D. (at 12 mm from end)	5.97—5.98 (0.2350—0.2354)	5.95 (0.2343)
	Countershaft feed pipe O.D. (at 20 mm from end)	7.97—7.98 (0.3138—0.3142)	7.95 (0.3130)
	Mainshaft sealing ring 32 mm thickness	1.980—1.995 (0.0780—0.0785)	1.800 (0.0709)
	Mainshaft bushing I.D.	6.018—6.030 (0.2369—0.2374)	6.045 (0.2380)
	Mainshaft bushing I.D.	9.000—9.015 (0.3543—0.3549)	9.030 (0.3555)
	Countershaft bushing I.D.	8.000—8.015 (0.3150—0.3156)	8.030 (0.3161)
	Mainshaft sealing ring groove width	2.025—2.060 (0.0797—0.0811)	2.080 (0.0819)
	Statorshaft distance collar 20 mm I.D.	26.000—26.013 (1.0236—1.0241)	26.030 (1.0248)
Regulator valve body	Sealing ring contact area diameter	32.000—32.025 (1.2598—1.2608)	32.050 (1.2618)
Shifting device and parking brake control	Reverse shift fork thickness	5.90—6.00 (0.2323—0.2362)	5.40 (0.2126)
	Parking brake ratchet pawl	—	Wear or other defect
	Parking gear	—	Wear or other defect
	Throttle cam stopper	18.5—18.6 (0.728—0.732)	—
Servo body	Shift fork shaft bore. I.D. A	14.000—14.005 (0.5512—0.5514)	—
	B	14.006—14.010 (0.5514—0.5516)	—
	C	14.011—14.015 (0.5516—0.5518)	—
	Shift fork shaft valve bore I.D.	37.000—37.039 (1.4567—1.4582)	37.045 (1.4585)
Oil pump	Oil pump gear side clearance	0.03—0.05 (0.0012—0.0020)	0.07 (0.0028)
	Oil pump gear-to-body clearance	Drive: 0.240—0.266 (0.0094—0.0105)	—
		Driven: 0.063—0.088 (0.0025—0.0035)	—
	Oil pump driven gear I.D.	14.016—14.034 (0.5518—0.5525)	Wear or damage
	Oil pump shaft O.D.	13.980—13.990 (0.5504—0.5508)	Wear or damage

Standards and Service Limits (cont'd)

9. Automatic Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Ring gear	Backlash	0.086—0.143 (0.0034—0.0056)	0.25 (0.01)
Differential carrier	Pinionshaft bore diamater	18.000—18.018 (0.7087—0.7094)	—
	Carrier-to-pinionshaft clearance	0.017—0.047 (0.0007—0.0019)	0.095 (0.004)
	Driveshaft bore diameter	26.005—26.025 (1.0238—1.0246)	—
	Carrier-to-driveshaft clearance	0.045—0.086 (0.0017—0.0034)	0.14 (0.006)
	Carrier-to-intermediate shaft clearance	0.075—0.111 (0.0030—0.0044)	0.16 (0.006)
	Side clearance	0.15 max.	
Differential pinion gear	Backlash	0.05—0.15 (0.002—0.006)	Selection with 7 type of washers
	Pinion gear bore diameter	18.042—18.066 (0.7103—0.7113)	—
	Pinion gear to pinionshaft clearance	0.059—0.095 (0.0023—0.0037)	0.15 (0.006)

10. Driveshaft

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Front driveshaft	Right boot as installed	481.5—486.5 (19.0—19.2)	—
	Left boot as installed 2WD:	774.5—779.5 (30.5—30.7)	—
	4WD:	485—490 (19.1—19.3)	—
Rear Driveshaft	Right boot as installed	595.6—600.6 (23.45—23.65)	—
	Left boot as installed	641.6—646.6 (25.26—25.46)	—
Propeller Shafts	Runout No.1, No.3	—	1.5 (0.06)

11. Steering

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Steering wheel	Play	10 (0.39) max.	—
Gear box	Pinion starting torque N·m (kg-m, lb-ft)	0.49—1.67 (0.05—0.17, 0.36—1.23)	
	with variable gear ratio (for LHD. European model)	0.4—1.4 (0.04—0.14, 0.29—1.01)	
	with P/S	0.098 (0.01, 0.072)	
	The angle of rack-guide-nut loosened		
	locked position		
	LHD. European model	15° max	
	others	40°—60°	
	with P/S	25°—30°	
Power steering	Pump pressure with valve closed (Oil temp./ speed: 40°C (104°F) min/idle. Do not run for more than 5 seconds) kPa (kg/cm², psi)	7,845—8,826 (80—90, 1,138—1,280)	
Power steering fluide	Fluid capacity Reservoir	0.4 ℓ (0.42 U.S.qt., 0.35 Imp. qt.)	
	At change	approx 1.2 ℓ (1.3 U.S. qt., 1.1 Imp.qt.)	
Power steering belt	Deflection midway between pulleys/load	9—12 (0.35—0.47)/98N (10 kg, 22 lb) for used belt 7—10 (0.28—0.39)/98N (10 kg, 22 lb) after replacement of belt	
Rack end	Floating torque N·m (kg-m, lb-ft)	0.49—2.94 (0.05—0.3, 0.36—1.27)	

Unit: mm (in.)

12. Suspension

MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Wheel alignment	Toe-in	Front: 0±3 (0±0.12) / Rear: 2±2 (0.08±0.08)	
	Camber 2WD	0°19′±1°	
	Camber 4WD	0°35′±1°	
	Caster 2WD	2°58′±1°	
	Caster 4WD	2°56′±1°	
	Side slip	0±3 (0±0.12)	
	Turning angle (MAX)		
	Inward wheel 2WD	41°40′±2°	
	Inward wheel 4WD	42°00′±2°	
	Outward wheel 2WD	33°40′±2°	
	Outward wheel 4WD	33°50′±2°	
Wheel	Rim runout Steel	0—1.0 (0—0.039)	2.0 (0.08)
	Rim runout Aluminum	0—0.7 (0—0.028)	1.5 (0.06)
Wheel bearing	End play Front	0	0.05
	End play Rear	0	0.05

13. Brake

MEASUREMENT			STANDARD (NEW)	SERVICE LIMIT	
Parking brake lever	Play in stroke 200N (20 kg, 44 lbs)		To be locked when pulled 6—10 notches		
Foot brake pedal	Pedal height	LHD.	153 (6.0) from floor	—	
	Pedal height	RHD.	161 (6.3) from floor	—	
	Free play		1—5 (0.04—0.20)	5 (0.20)	
Master cylinder	Piston-to-push rod clearance		0—0.4 (0—0.016)	—	
Disc brake	Disc thickness	2WD EC	19.0 (0.748)	17.0 (0.669)	
	Disc thickness	2WD Except EC	17.0 (0.669)	15.0 (0.591)	
	Disc thickness	4WD	19.0 (0.748)	17.0 (0.669)	
	Disc runout		0—0.1 (0—0.004)	0.15 (0.006)	
	Disc parallelism		0.007 (0.0003)	0.015 (0.0006)	
	Pad thickness	2WD EC	10.0 (0.39)	1.6 (0.06)	
	Pad thickness	2WD Except EC	9.5 (0.37)	1.6 (0.06)	
	Pad thickness	4WD	9.0 (0.35)	3.0 (0.12)	
Brake Drum	I.D.		200 (7.87)	201 (7.91)	
	Lining thickness		4.5 (0.18)	2.0 (0.08)	

Brake booster	Characteristics	Vacuum (mm Hg)	Pedal Pressure kg (lbs)	Line Pressure kg/cm²(psi) 2WD	Line Pressure kg/cm²(psi) 4WD
		0	20 (44)	16.1 (229)	13.9 (198)
		300	20 (44)	53.0 (754)	46.0 (654)
		500	20 (44)	77.5 (1,102)	67.4 (958)

Standards and Service Limits (cont'd)

16. Electrical

	MEASUREMENT	STANDARD (NEW)
Ignition coil	Rated voltage	12 Volts
	Primary winding resistance	0.3—0.5 ohms
	Secondary winding resistance	9,440—14,160 ohms
Ignition wire	Resistance	25,000 ohms max.
Spark plug	Type	See Shop Manual "CIVIC CHASSIS Maintenance and Repair 88" (No.62SH300)
	Gap	1.0—1.1 (0.039—0.043)
Ignition timing	At idling PGM-FI	18° ± 2° (Red) BTDC
	1-Carbureted Engine	
	KY (1.5 ℓ A/T)	12° ± 2° (Red) BTDC
	Others (1.5 ℓ)	18° ± 2° (Red) BTDC
	2-Carbureted Engine	
	KQ	20° ± 2° (Red) BTDC
	KG (A/T)	2° ± 2° (Red) BTDC
	KG (M/T)	12° ± 2° (Red) BTDC
	Others	18° ± 2° (Red) BTDC
Battery	Lighting capacity (20-hour ratio)	40, 45, 47 Ampere Hours
	Starting capacity (5-second ratio)	8.6 V min. at 300 Ampere draw

Alternator		ND		MITSUBISHI	
	Output	13.5V / 60A			
	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT
	Coil resistance (rotor)	2.8—3.0 ohm	±0.1 ohm	3.4—3.8 ohm	±0.2 ohm
	Slip ring O.D.	32.5 (1.28)	32.1 (1.26)	22.7 (0.89)	22.2 (0.87)
	Brush length	15.5 (0.61)	5.3 (0.21)	22 (0.87)	8 (0.31)
	Brush Spring tension	300—500g (10.6—17.6 oz)	—	300—450g (10.6—15.9 oz)	—

Starting motor		HITACHI 0.8 kw		ND 0.8 kw		ND 1.0 kw, 1.2 kw		MITSUBA 1.0 kw, 1.4 kw	
	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT	STANDARD (NEW)	SERVICE LIMIT
	Mica depth	0.5—0.8 ($^{0.020}_{-0.031}$)	0.2 (0.008)	0.5—0.8 ($^{0.020}_{-0.031}$)	0.2 (0.008)	0.5—0.8 ($^{0.020}_{-0.031}$)	0.2 (0.008)	0.4—0.5 ($^{0.016}_{-0.020}$)	0.15 (0.006)
	Commutator	0—0.1 (0.004)	0.4 (0.016)	0.05 (0.002)	0.4 (0.016)	0—0.02 (0.008)	0.05 (0.002)	0—0.02 (0.0008)	0.05 (0.002)
	Commutator O.D.	40.0 (1.57)	39.0 (1.54)	28.0 (1.10)	27.0 (1.06)	29.9—30.0 (1.18)	29.0 (1.14)	28.0—28.1 (1.10—1.11)	27.5 (1.08)
	Brush length	14.5—15.5 (0.57—0.61)	11.0 (0.43)	15.5—16.5 (0.61—0.65)	10.0 (0.39)	12.5—13.5 (0.49—0.53)	8.5 (0.33)	14.3—14.7 (0.56—0.58)	9.3 (0.37)
	Spring Pressure (new)	15.7 N (1.6 kg, 3.5 lb)	—	15.7 N (1.6 kg, 3.5 lb)	—	18.1—2.89 N (1.85—2.4 kg, 4.1—5.4 lb)	—	20.1—26.5 N (2.05—2.7 kg, 4.5—6.0 lb)	—

Design Specifications

specs

4D H/B

	ITEMS	METRIC	ENGLISH	NOTES
DIMENSIONS				
	Overall Length	4,105 mm	161.6 in.	
	Overall Width	1,690 mm	66.5 in.	
	Overall Height	1,470 mm	57.9 in.	
		1,490 mm	58.6 in.	4WD
	Wheelbase	2,500 mm	98.4 in.	
	Track, Front/Rear	1,445/1,454 mm	56.9/57.2 in.	
		1,440/1,450 mm	56.7/57.0 in.	4WD
	Ground Clearance KX,KS	155 mm	6.1 in.	1.5 ℓ PGM-FI
	KF,KW,KB,KE	165 mm	6.5 in.	1.4 ℓ
	KG,KX,KS,KW	175 mm	6.9 in.	1.6 ℓ with CATA.
	KF,KW,KB,KE	185 mm	7.3 in.	1.6 ℓ without CATA.
	KO	190 mm	7.5 in.	
	Seating Capacity	5		
	Overhang, Front/Rear	770/835 mm	30.3/32.9 in.	Includes bumper
	With bumper guard	800/835 mm	31.5/32.9 in.	Includes bumper
WEIGHTS	Engine Weight (Wet)			
	1.4 ℓ	98 kg	216 lb.	
	1.5 ℓ 1-Carbureted	94 kg	207 lb.	
	1.5 ℓ 2-Carbureted	101 kg	222 lb.	
	1.5 ℓ PGM-FI	100 kg	220 lb.	
	1.6 ℓ	107 kg	236 lb.	
	Curb Weight 1.4 ℓ M/T	955 kg	2,105 lb.	KF,KB,KE
		960 kg	2,116 lb.	KW
	1.4 ℓ A/T	975 kg	2,150 lb.	KF,KB,KE
		980 kg	2,161 lb.	KW
	1.5 ℓ M/T	970 kg	2,138 lb.	KS,KX
		981 kg	2,163 lb.	KY
		1,104 kg	2,434 lb.	KQ
	1.5 ℓ A/T	990 kg	2,183 lb.	KS,KX
		1,007 kg	2,220 lb.	KY
	1.6 ℓ	1,080 kg	2,381 lb.	KF,KG,KW,KB,KE
		1,085 kg	2,392 lb.	KW,KS
		1,090 kg	2,403 lb.	KX
	Weight Distribution (Front/Rear)			
	1.4 ℓ M/T	555/400 kg	1,224/882 lb.	KF,KB,KE
		560/400 kg	1,235/882 lb.	KW
	1.4 ℓ A/T	575/400 kg	1,268/882 lb.	KF,KB,KE
		580/400 kg	1,279/882 lb.	KW
	1.5 ℓ M/T	565/405 kg	1,246/893 lb.	KS,KX
		571/418 kg	1,259/922 lb.	KY
		620/484 kg	1,367/1,067 lb.	KQ
	1.5 ℓ A/T	585/405 kg	1,290/893 lb.	KS,KX
		590/417 kg	1,301/919 lb.	KY
	1.6 ℓ	615/465 kg	1,356/1,025 lb.	KF,KG,KW,KB,KE
		620/465 kg	1,367/1,025 lb.	KW,KS
		625/465 kg	1,378/1,025 lb.	KX
	Max. Permissible Weight (EC)			
	1.4 ℓ, 1.5 ℓ	1,440 kg	3,175 lb.	KF,KG,KX,KW,KB,KE
	1.5 ℓ (M/T)	1,370 kg	3,020 lb.	KS
	1.5 ℓ (A/T)	1,390 kg	3,064 lb.	KS
	1.6 ℓ	1,540 kg	3,395 lb.	KF,KG,KX,KW,KB,KE
	1.6 ℓ	1,485 kg	3,274 lb.	KS
	Max. Vehicle Weight	1,440 kg	3,175 lb.	KY
	Gross Vehicle Mass (ADR)	1,540 kg	3,395 lb.	KQ
	Carrying (cargo) Weight Capacity	45 kg	100 lb.	KF,KB,KE,KW,KS,KX,KQ,KG
ENGINE	Type	Water cooled 4-cycle S.O.H.C.		
	Cylinder arrangement	4-cylinder in-line, transverse		
	Bore and Stroke 1.4 ℓ	75×79 mm	2.95×3.11 in.	
	1.5 ℓ	75×84.5 mm	2.95×3.33 in.	
	1.6 ℓ	75×90 mm	2.95×3.54 in.	
	Displacement 1.4 ℓ	1,396 cm³ (cc)	86 cu. in.	
	1.5 ℓ	1,493 cm³ (cc)	91 cu. in.	
	1.6 ℓ	1,590 cm³ (cc)	98 cu. in.	
	Compression Ratio			
	1.4 ℓ	9.3		
	1.5 ℓ	9.2		
	1.6 ℓ	9.1		
	Valve Train	4-valves per cylinder, single overhead camshaft		
	Lubrication System	Pressure fed		
	Fuel Required			
	Engine with cata.	Unleaded gasoline with 91 research octane number or higher		＊Both leaded and
	Carbureted engines without cata.	*Gasoline with 91 research octane number or higer*		*unleaded gasoline*
	PGM-FI without cata.	Leaded gasoline with 97 research octane number or higher		can be used.

Design Specifications

4D H/B

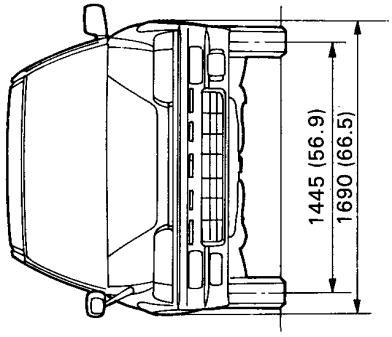
	ITEMS	METRIC	ENGLISH	NOTES
STARTER	Type 0.8 kW 1.0 kW, 1.2 kW, 1.4kW	Direct Gear reduction		
	Normal Output	0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW		
	Normal Voltage	12V		
	Hour Rating	30 seconds		
	Direction of Rotation	Clockwise as viewed from gear end		
	Weight 0.8 kW HITACHI/ND	4.4 kg	9.7 lb.	
	1.0 kW MITSUBA ND	3.4 kg	7.5 lb.	
	1.2 kW ND	3.85 kg	8.5 lb.	
	1.4 kW MITSUBA	3.85 kg	8.5 lb.	
		3.7 kg	8.2 lb.	
TRANSMISSION	Clutch M/T	Single plate dry, diaphragm spring		
	A/T	Torque converter		
	Transmission Type M/T	5 speeds forward, synchromesh, 1 speed reverse,		
	M/T+Super Low Gear	6 speeds forward, synchromesh, 1 speed reverse		
	A/T	4 speeds forward, with lock-up clutch, 1 speed reverse		
	Primary Reduction	1.000		
		5-M/T	4-A/T	4WD
	Primary Reduction	1.000	1.000	1.000
	Gear Super low	—	—	4.512
	I	3.250	2.705	3.384
	II	1.894	1.560	1.950
	III	1.259	1.027	1.275
	IV	0.937	0.780	0.941
	V	0.771	—	0.783
	Reverse	3.153	1.954	3.000
	Final Reduction M/T 1.4 ℓ	Single helical gear, 4.250		
	1.5 ℓ	Single helical gear, 4.058		KX, KS
	4WD	Single helical gear, 4.428		
	A/T	Single helical gear, 3.933		
	Clutch Facing Area	148 cm²	22.7 sq. in.	
	1.6 ℓ	160 cm²	24.8 sq. in.	
AIR CONDITIONER	Compressor	MASTUSHITA		
	Cooling Capacity	3,850 Kcal/h		
	—Conditions:			
	Compression min⁻¹ (rpm)	1,800 min⁻¹ (rpm)		
	Outside Air Temperature	27.0°C	81°F	
	Outside Air Humidity	50%		
	Condenser Air Temperature	35°C	95°F	
	Condenser Air Velocity	4.5 m/sec.	14.8 ft/sec.	
	Blower Capacity	440 m³/h	15,118 cu. ft/h	
	Compressor Type	Vane rotary type		
	Number of Vane	3		
	Displacement	130cc/rev.	7.93 cu. in. /rev	
	Max. min⁻¹ (rpm)	7,500 min⁻¹ (rpm)		
	Lubricant Capacity	130 cc	7.93 cu. in.	
	Receiver Dryer With Desiccant	Includes fusible safety plug.		
	Condenser	Corrugated fin type		
	Evaporator	Corrugated fin type		
	Blower Type	sirocco fan		
	Motor input	170 W (12V)		
	Speed control	4 speeds		
	Max. capacity	390 m³/h	13,773 cu ft/h	
	Temp. Control	Air-mix type		
	Comp. Clutch Type	Dry, single plate, V-belt		
	Power consumption	32 W max. 12V		
	Refrigerant Type	R-12		
	Quantity	0.90±0.05 kg	1.98±0.11 lbs	
STEERING SYSTEM	Type	Rack and Pinion		
	Overall Ratio Manual/Power	18.6 : 1 /17.7 : 1		
	Turn, lock-to-lock Manual /Power	3.87/3.65		
	Steering Wheel Dia Manual /Power	377/370 mm	14.8/14.6 in	
	Power Steering Oil Capacity	1.2 lit.	13 U.S. qt., 1.1 Imp. qt.	
	Power Steering Oil	HONDA Genuine Power Steering Fluid P/N 08208—99961		
SUSPENSION SYSTEM	Type, Front/Rear	Independent by double wishbones coil springs		
	Shock Absorber Front and Rear	Telescopic, Nitrogen gas-filled		

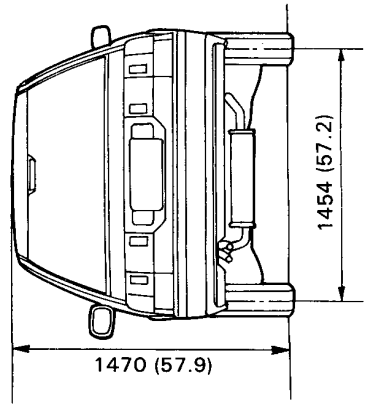
	ITEMS	METRIC	ENGLISH	NOTES
WHEEL ALIGNMENT	Wheel alignment			
	Camber Front 2WD	0°19' ± 1°		
	4WD	0°35' ± 1°		
	Rear 2WD	−0°23' ± 1°		
	4WD	0° ± 1°		
	Caster 2WD	2°58' ± 1°		
	4WD	2°56' ± 1°		
	Toe-in Front	0 ± 3 mm	0 ± 0.12 in	
	Rear	2 ± 2 mm	0.08 ± 0.08 in.	
	Kingpin Inclination 2WD	7°14'		
	4WD	6°58'		
BRAKE SYSTEM	Type Front	Power assisted self-adjusting ventilated disc		
	Rear	drum		
	Lining Surface Area			
	Front 1.4 ℓ, 1.5 ℓ	36.8 mm²	5.70 sq. in.	Carbureted engine
	1.5 ℓ, 1.6 ℓ	44.1 mm²	6.84 sq. in.	PGM-FI
	Rear	50.2 mm²	7.78 sq. in.	
	Effective Disc Diameter			
	1.4 ℓ, 1.5 ℓ	190 mm	7.48 in.	Carbureted engine
	1.5 ℓ, 1.6 ℓ	194 mm	7.64 in.	PGM-FI
	Brake Drum I.D.	200 mm	7.87 in.	
	Parking Brake Kind and Type	*Mechanically actuating, rear two wheel brakes*		
TIRES	Size KY and 4WD	165 SR 13		
	Others	165/70 SR 13		
	Spare (EC) 2WD	T105/80 D13		
	4WD	T135/70 D15		
ELECTRICAL	Battery	12V-47AH		
	Starter	12V-0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW		
	Alternator	12V-60 amps		
	Fuses In the dash fuse box	10A, 15A, 20A, 30A		
	In the main fuse box	40A, 50A, 60A		
	Headlights High/Low	12V-60/55W		
	Front Turn Signal Lights	12V-21W		
	Rear Turn Signal Lights	12V-21W		
	Side Turn Signal Lights	12V-5W		
	Stop/Taillights	12V-21/5W		
	Side Marker Lights	12V-5W		
	Back-up Lights	12V-21W		
	License Plate Lights	12V-5W		
	Gauge Lights	12V-3.4W, 3.0W, 1.4W		
	Indicator Lights	12V-1.4W		
	Warning Lights	12V-3.4W		
	Dome Light	12V-5W, 8W		
	Laggage Area Light	12V-3.4W		
	Illumination and Pilot Lights	12V-1.4W		
		0.91W, 0.84W, LED		
	Heater Illumination Lights	12V-1.4W		
	Rear Fog Lights	12V-21W		

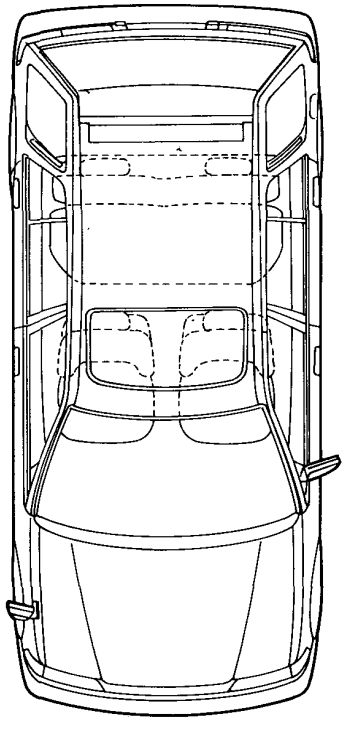
Body Specifications

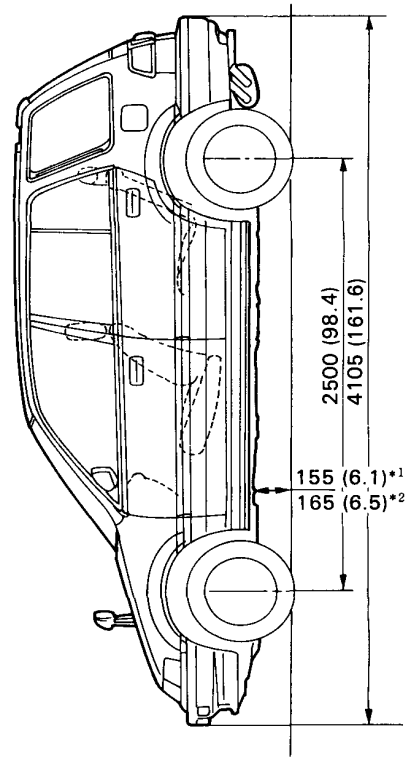
2WD

Unit: mm (in)





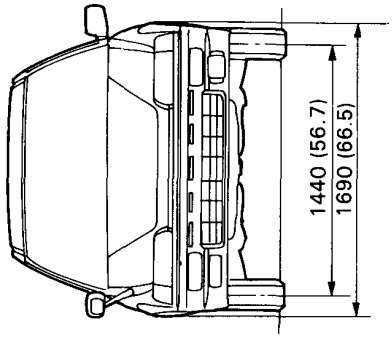


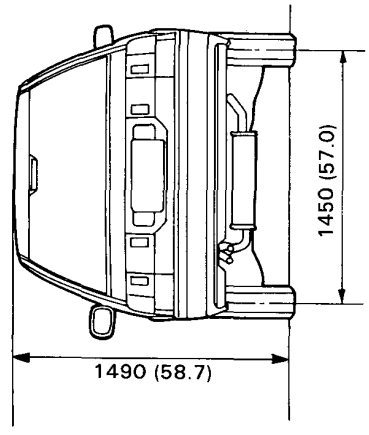


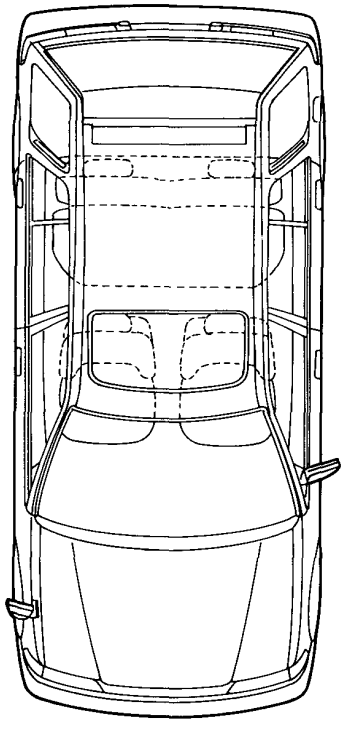
*1 : KX, KS Model *2 : KF, KW, KB, KE Model

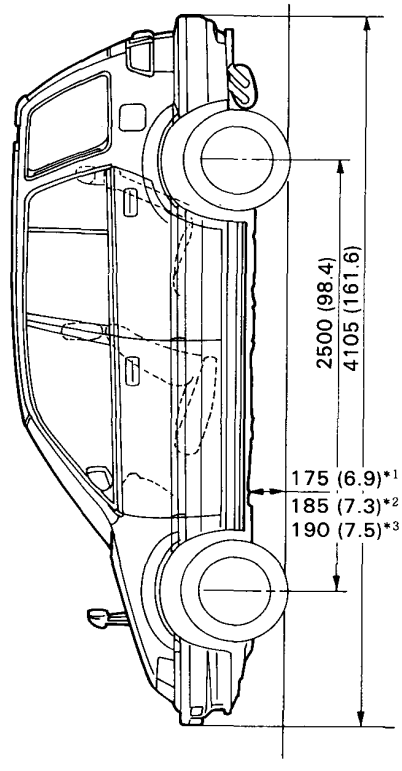
4WD

Unit: mm (in.)









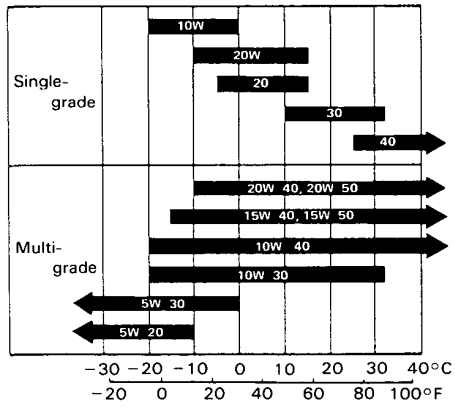
*1 : KG, KX, KS, KW Model *2 : KF, KW, KB, KE Model *3 : KQ Model

Maintenance

Lubrication Points

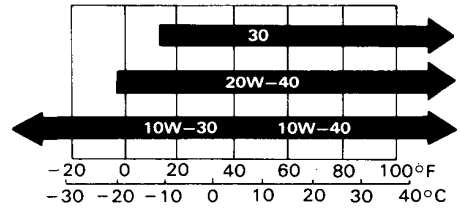
No.	LUBRICATION POINTS		LUBRICANT
1	Engine		API Service Grade: SE or SF SAE Viscosity: See chart below
2	Transmission	Manual Automatic	API Service Grade: SE or SF SAE30, 10W—30, 10W—40 or 20W—40 grade oil DEXRON® or DEXRON®II Automatic transmission fluid
3	Brake reservoir		Brake fluid DOT 3
4	Power steering reservoir		Honda power steering fluid P/N 08208—99961
5	Steering gearbox (Power)		Honda steering grease P/N 08740—99969
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Steering gearbox(Manual) Tilt steering Steering ball joints Suspension ball joints Steering boots Shift lever pivot (Manual) Steering column bushings Select lever (Automatic) Pedal linkage Brake master cylinder push rod Tailgate hinges Door hinges upper and lower Door opening detents Fuel filler lid Engine hood hinges Engine hood latch Rear brake shoe linkage		Multi- purpose Grease
23	Caliper	Piston seal Dust seal Caliper pin Piston	Silicone Grease
24	Rear differential (4WD only)		Hypoid Gear oil (API GL5) above 5°C (41°F) SAE90, below 5°C (41°F) SAE80

Recommended Engine Oil
(SE or SF Grade oil)

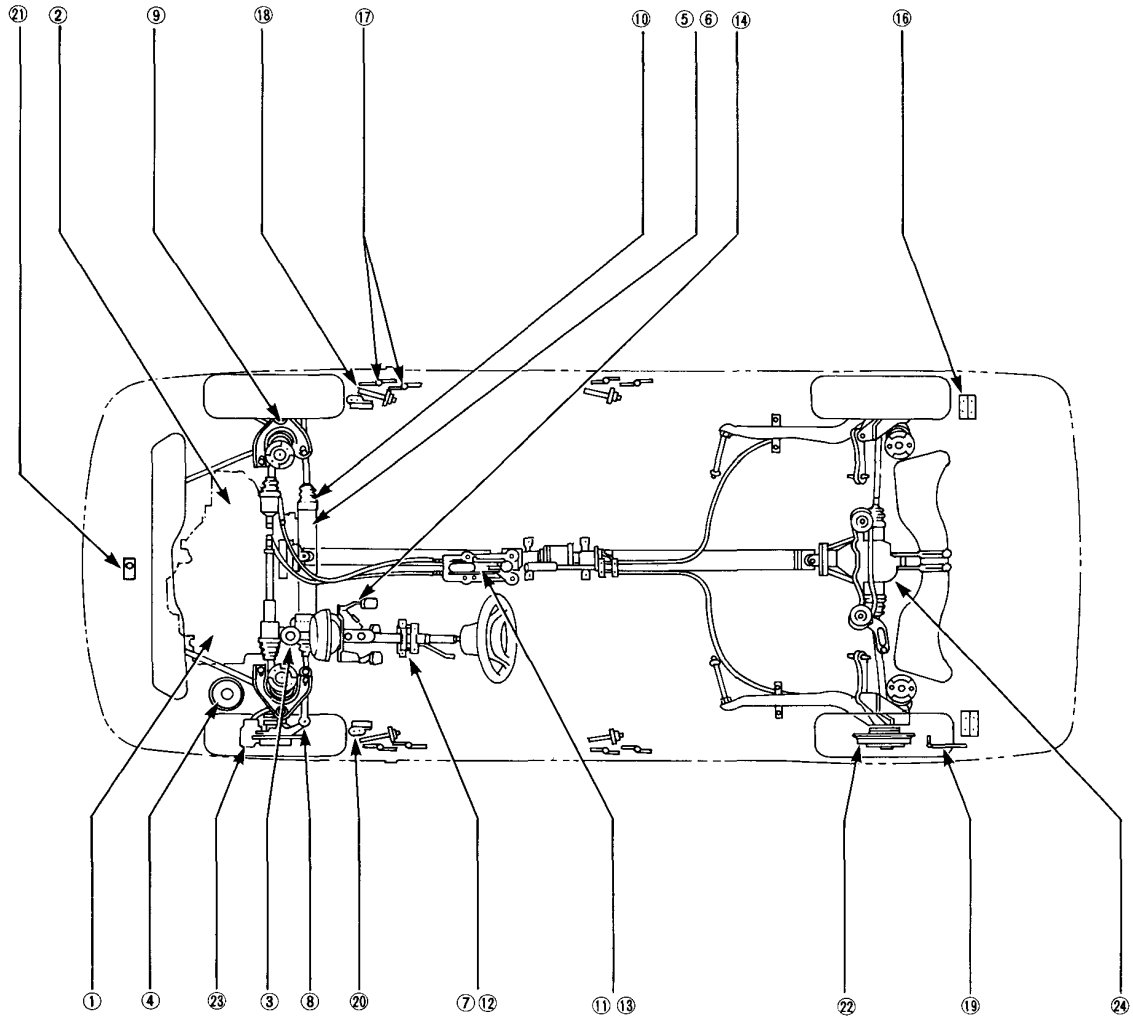


Engine oil viscosity for
ambient temperature ranges.

Recommended Manual Transmission Oil



Transmission oil viscosity for
ambient temperature ranges.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① ④ ㉓ ③ ⑧ ⑳ ⑦ ⑫ ⑪ ⑬ ㉒ ⑲ ㉔

Maintenance Schedule

	ITEMS	SERVICE AT THE INTERVAL OF LISTED KM (MILES) OR MONTHS, WHICHEVER OCCURS FIRST.				
		x 1,000 km	20	40	60	80	100
		x 1,000 miles	12	24	36	48	60
		months	12	24	36	48	60
	IDLE SPEED AND IDLE CO		I	I	I	I	I
	VALVE CLEARANCE		I	I	I	I	I
	ALTERNATOR DRIVE BELT			I		I	
■	ENGINE OIL AND OIL FILTER		Replace every 10,000 km (6,000 miles) or 6 months				
■	TRANSMISSION OIL			R		R	
	REAR DIFFERENTIAL OIL (4WD only)			R		R	
■	RADIATOR COOLANT					R*1	
	COOLING SYSTEM, HOSES AND CONNECTIONS			I		I	
	AIR CLEANER ELEMENT (Dry type)*3		R	R	R	R	R
	AIR CLEANER ELEMENT (Viscous type)*2			R		R	
	FUEL FILTER			R		R	
	INTAKE AIR TEMP. CONTROL SYSTEM (Only for carbureted type)						I
	TANK, FUEL LINE AND CONNECTIONS			I		I	
	THROTTLE CONTROL SYSTEM (Only for carbureted type)*5			I		I	
	CHOKE MECHANISM (Only for carbureted type)			I		I	
	EVAPORATIVE EMISSION CONTROL SYSTEM*4						I
	IGNITION TIMING AND CONTROL SYSTEM			I		I	
	SPARK PLUGS (For cars using leaded gasoline)		R	R	R	R	R
	SPARK PLUGS (For cars using unleaded gasoline)			R		R	
	DISTRIBUTOR CAP AND ROTOR			I		I	
	IGNITION WIRING			I		I	
	CRANKCASE EMISSION CONTROL SYSTEM			I		I	
	BRAKE FLUID			R		R	
	BRAKE HOSES AND LINES		I	I	I	I	I
	FRONT BRAKE PADS		Inspect every 10,000 km (6,000 miles) or 6 months				
	FRONT BRAKE DISCS AND CALIPERS		I	I	I	I	I
	REAR BRAKE DRUMS, WHEEL CYLINDERS AND LININGS			I		I	
	PARKING BRAKES		I	I		I	
	CLUTCH RELEASE ARM TRAVEL		I	I	I	I	I
	EXHAUST PIPE AND MUFFLER		I	I	I	I	I
	SUSPENSION MOUNTING BOLTS		I	I	I	I	I
	FRONT WHEEL ALIGNMENT		I	I	I	I	I
	STEERING OPERATION, TIE ROD ENDS, STEERING GEAR BOX BOOTS		I	I		I	
	POWER STEERING SYSTEM *6		I	I	I	I	I
	POWER STEERING PUMP BELT *6			I		I	
	CATALYTIC CONVERTER HEAT SHIELD (Car equipped with catalytic converter)						I

R—Replace I—Inspect. After inspection, clean, adjust, repair or replace if necessary.

■REMARK: These service intervals assume routine checking and replenishment has been done, as needed, by the customer.

*1 Thereafter, replace every 2 years or 40,000 km (24,000 miles), whichever comes first.

*2 For European and KQ types.

*3 Except for European and KQ types.

*4 For cars using unleaded gasoline and KY type.

*5 Inspection function of dash-pot. Inspection function of idl-up (KG CATE C M/T type only).

*6 For cars equipped with Power steering system.

CAUTION : The following items must be serviced more frequently on cars normally used under severe driving conditions. Refer to the chart below for the appropriate maintenance intervals.

"Severe driving conditions" include:

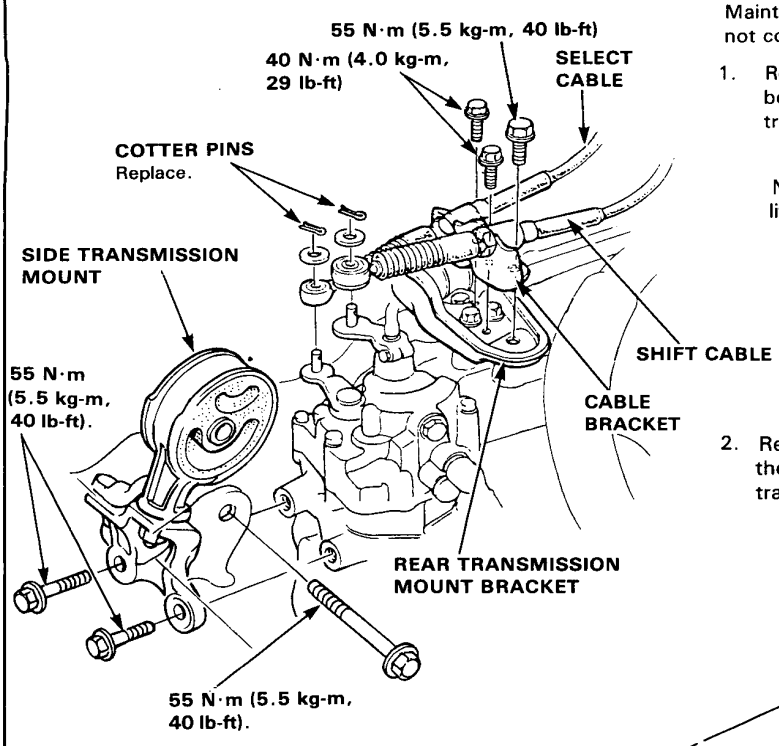
A : Repeated short distance driving
B : Driving in dusty conditions
C : Driving in severe cold weather
D : Driving in areas using road salt or other corrosive materials
E : Driving on rough and/or muddy roads
F : Towing a trailer
R—Replace.
I— Inspect. After inspection, clean, adjust, repair or replace if necessary.

Condition	Maintenance item	Maintenance operation	Interval
A B • • • F	Engine oil and oil filter	R	Every 5,000 km (3,000 miles) or 3 months
• • • • • F	Transmission oil	R	Every 20,000 km (12,000 miles) or 12 months
A B • D E F	Front brake discs and calipers	I	Every 10,000 km (6,000 miles) or 6 months
A B C • E F	Clutch release arm travel	I	Every 10,000 km (6,000 miles) or 6 months
• • B C E •	Power steering system *6	I	Every 10,000 km (6,000 miles) or 6 months

Engine

Engine Removal/Installation

4WD only:

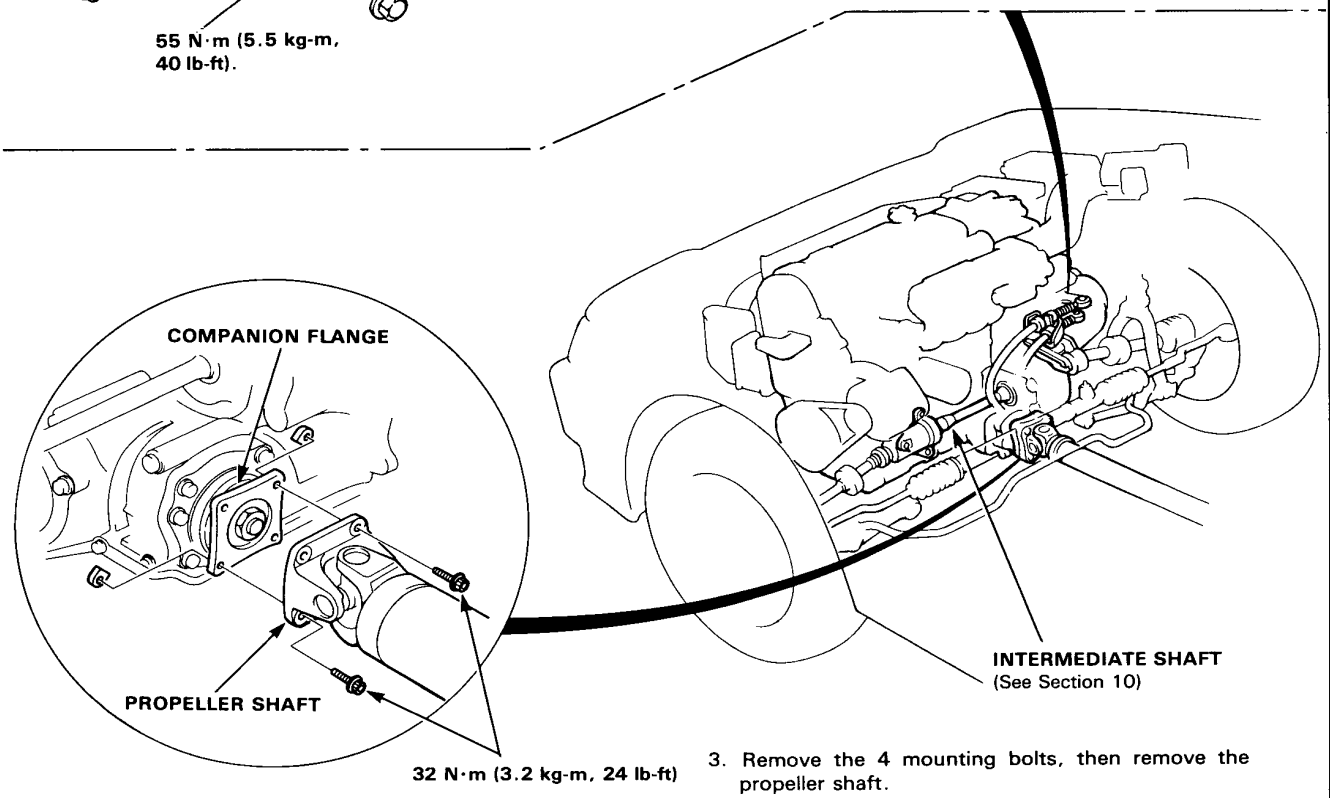


NOTE: Differences between the 2WD and 4WD are covered in this page. Refer to Shop Manual CIVIC CHASSIS Maintenance and Repair 88 (62SH300) for the information not covered in this page.

1. Remove the cotter pins and 3 cable bracket mounting bolts, then remove the cable bracket from the rear transmission mount bracket.

NOTE: Take care not to bend the cables when lifting it. Lift the cables and wire them to the body.

2. Remove the side transmission 3 mounting bolts, then remove the side transmission mount from the transmission housing and body.



3. Remove the 4 mounting bolts, then remove the propeller shaft.

Oil Pan

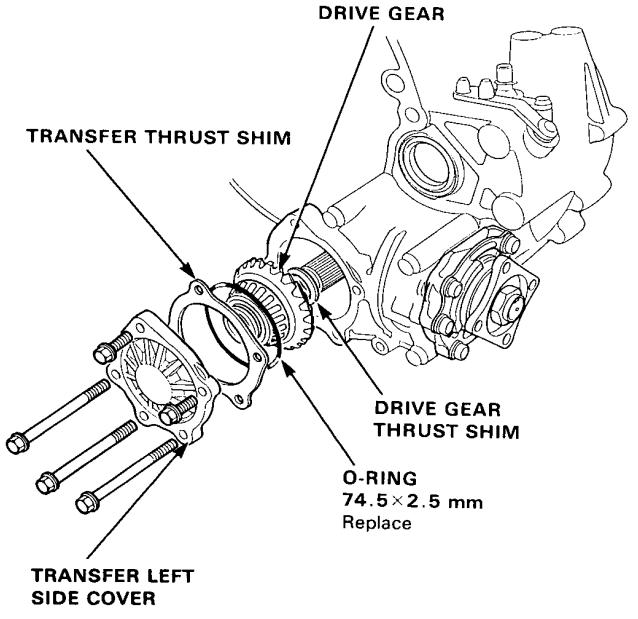
Replacement (4WD)

WARNING

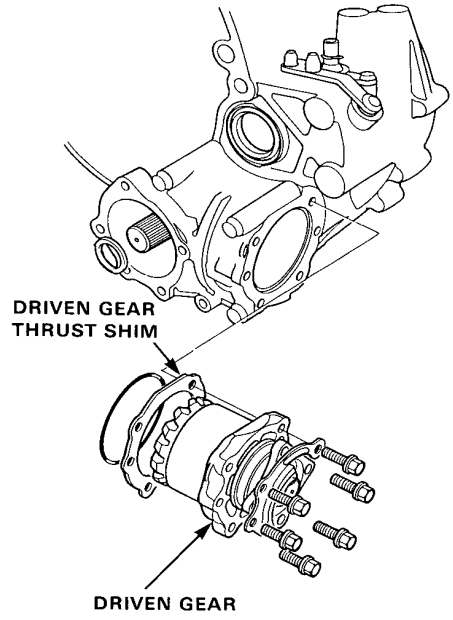
- **Make sure jacks and safety stands are placed properly (page 1-5 thru 7).**
- **Apply parking brake and block rear wheels, so car will not roll off stands and fall on you while working under it.**

Removal:

1. Remove the engine splash shield.
2. Drain the engine oil.
3. Drain the transmission oil.
4. Remove the exhaust header pipe.
5. Disconnect the propeller shaft at the transmission.
6. Remove the transmission splash shield.
7. Remove the transfer left side cover from the transfer case.



8. Remove the driven gear from the transfer case.



9. Remove the transfer case from the clutch housing.
10. Remove the clutch case cover.
11. Remove the oil pan by removing the bolts and nuts.

(cont'd)

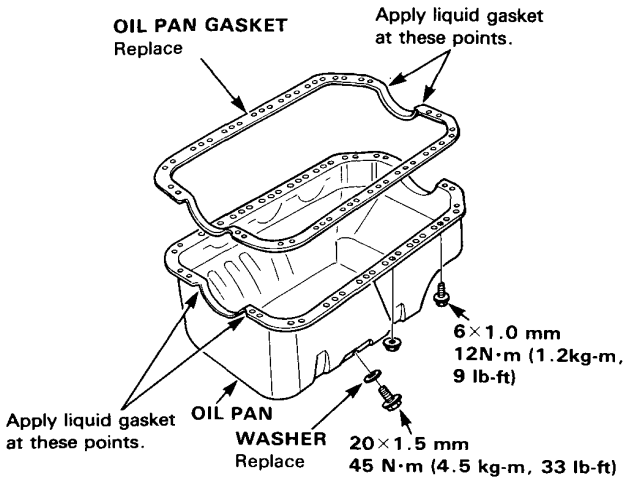
Oil Pan

Replacement (4WD) (cont'd)

Installation:

Installation in the reverse order of removal.

1. Thoroughly clean the mating surfaces of the oil pan and engine case. Apply liquid gasket (Three Bond 1216) to both surfaces of the gasket.



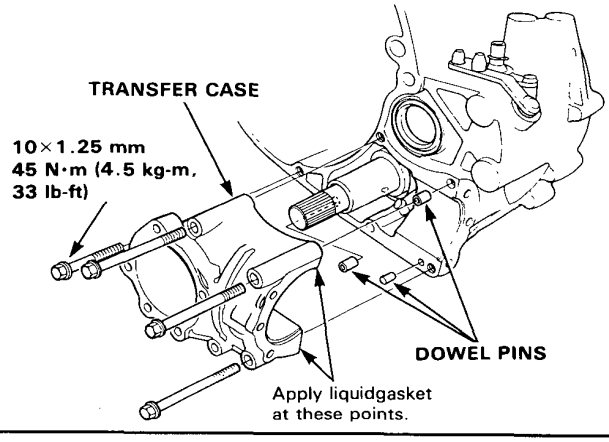
NOTE: Tighten bolts and nuts in two steps and torque the bolts in a criss-cross pattern.

2. Apply liquid gasket to the clutch housing mating surface of the transfer case.

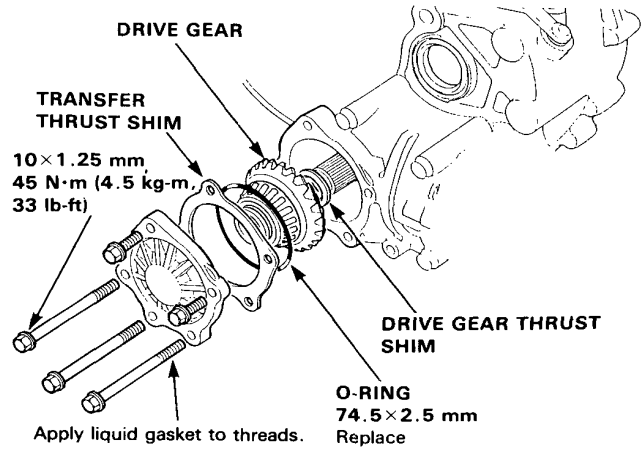
NOTE:

- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Apply liquid gasket evenly, in a narrow bead centered on the mating surface.
- To prevent leakage of oil, apply liquid gasket to the inner threads of oil, apply liquid gasket to the inner threads of the bolt holes.
- Do not allow the liquid gasket to dry before assembly.
- Fill the case with clean engine oil 30 minutes after assembly.

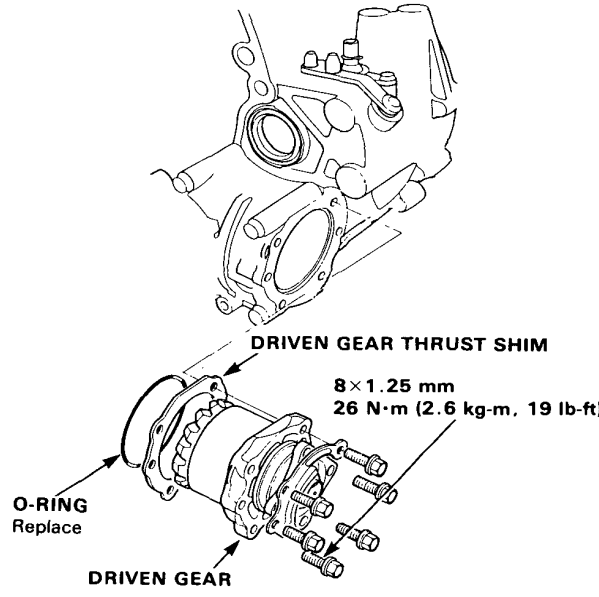
3. Install the transfer case on the clutch housing.



4. Install the following parts on and in the transfer shaft and transfer case.
   - Drive gear thrust shim
   - Drive gear (lubricate with oil)
   - Transfer thrust shim
   - Transfer left side cover



5. Install the following parts in the transfer case.
   - Driven gear thrust shim
   - Driven gear

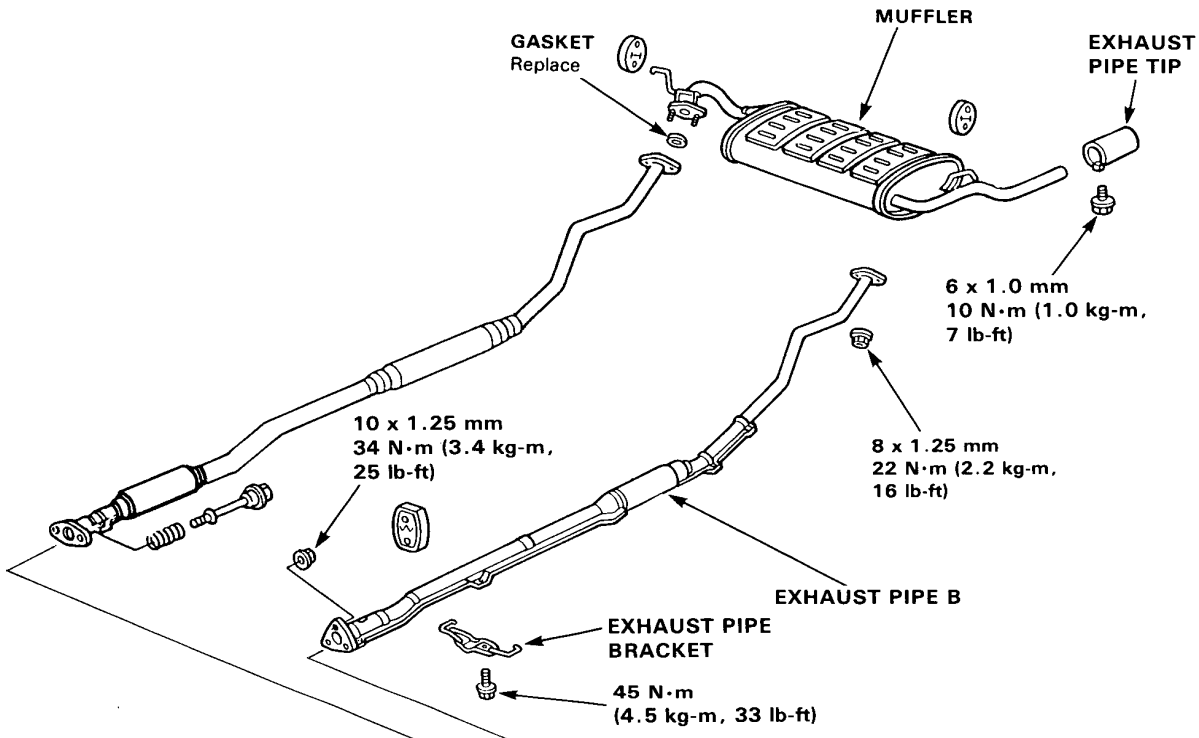


6. If necessary, perform the following inspections (Refer to L3 (4WD) Shop Manual HONDA L3 (4WD) MANUAL TRANSMISSION Maintenance and Repair No. 62PH 800)
   - Tooth contact between the transfer driven and drive gears.
   - The backlash at the companion flange.
   - The transfer driven gear preload.
   - The total preload.

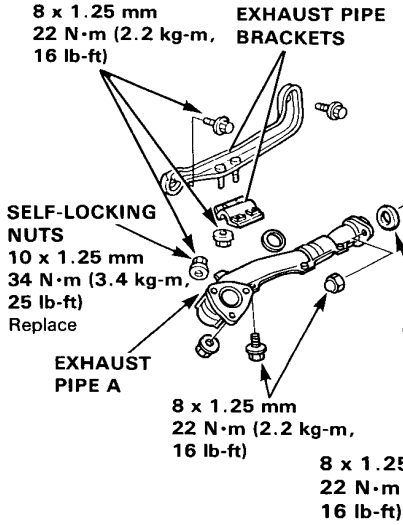
Exhaust Pipe and Muffler

Replacement

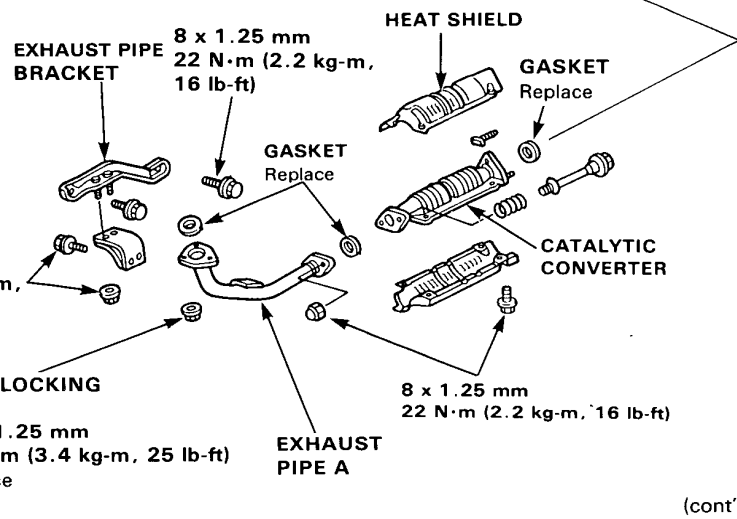
4D Hatchback 2WD:



1.4 ℓ and 1.5 ℓ 1 Carbreted Engine:



1.5 ℓ PGM-FI Engine with CATA:

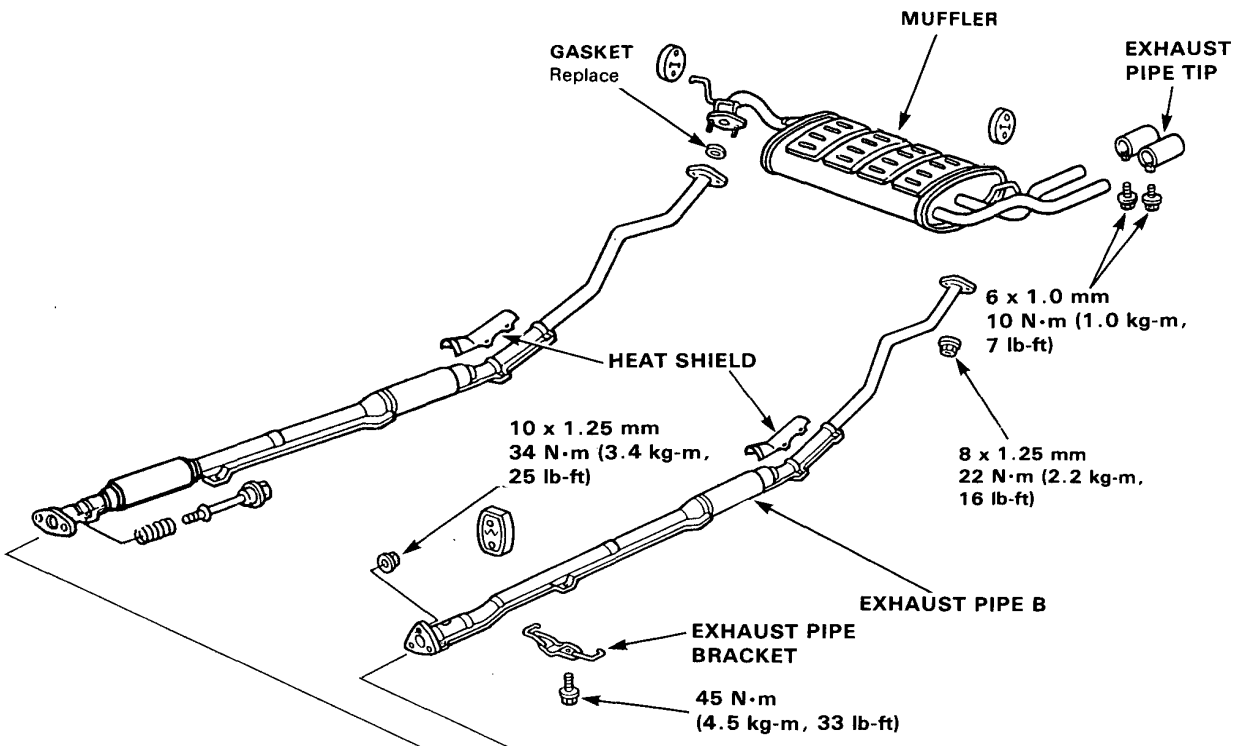


(cont'd)

Exhaust Pipe and Muffler

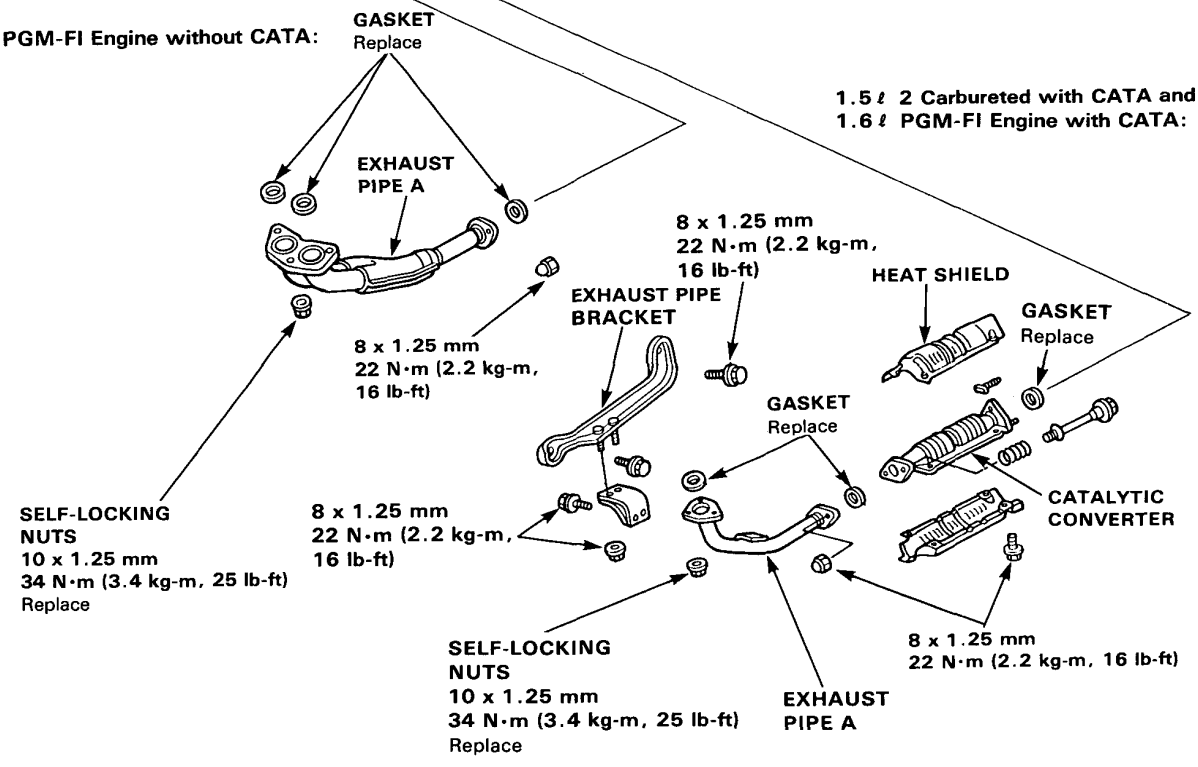
Replacement (cont'd)

4D Hatchback 4WD:



1.6 ℓ PGM-FI Engine without CATA:

1.5 ℓ 2 Carbureted with CATA and
1.6 ℓ PGM-FI Engine with CATA:



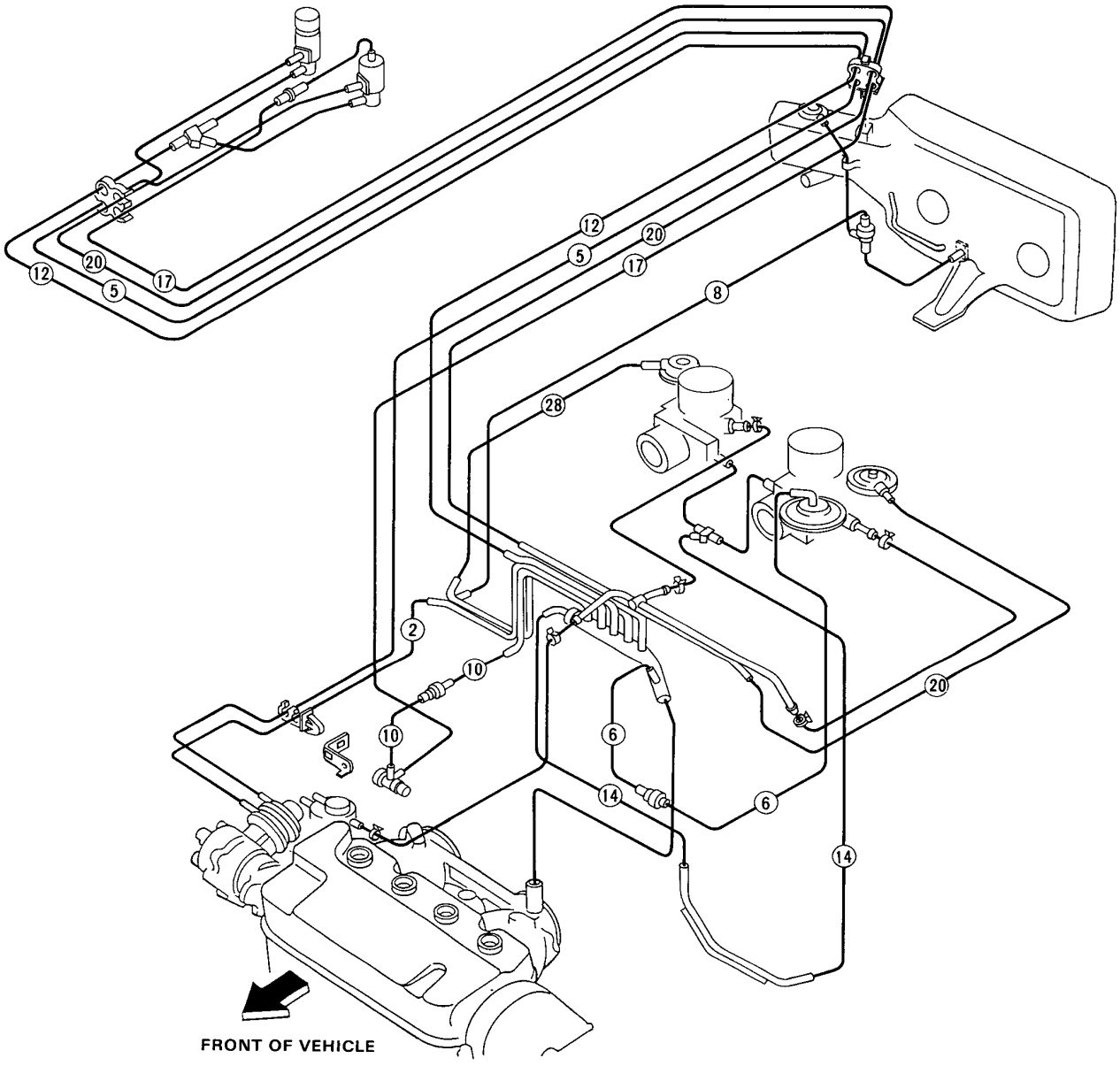
Fuel and Emissions

Fuel and Emissions (Carbured Engine)

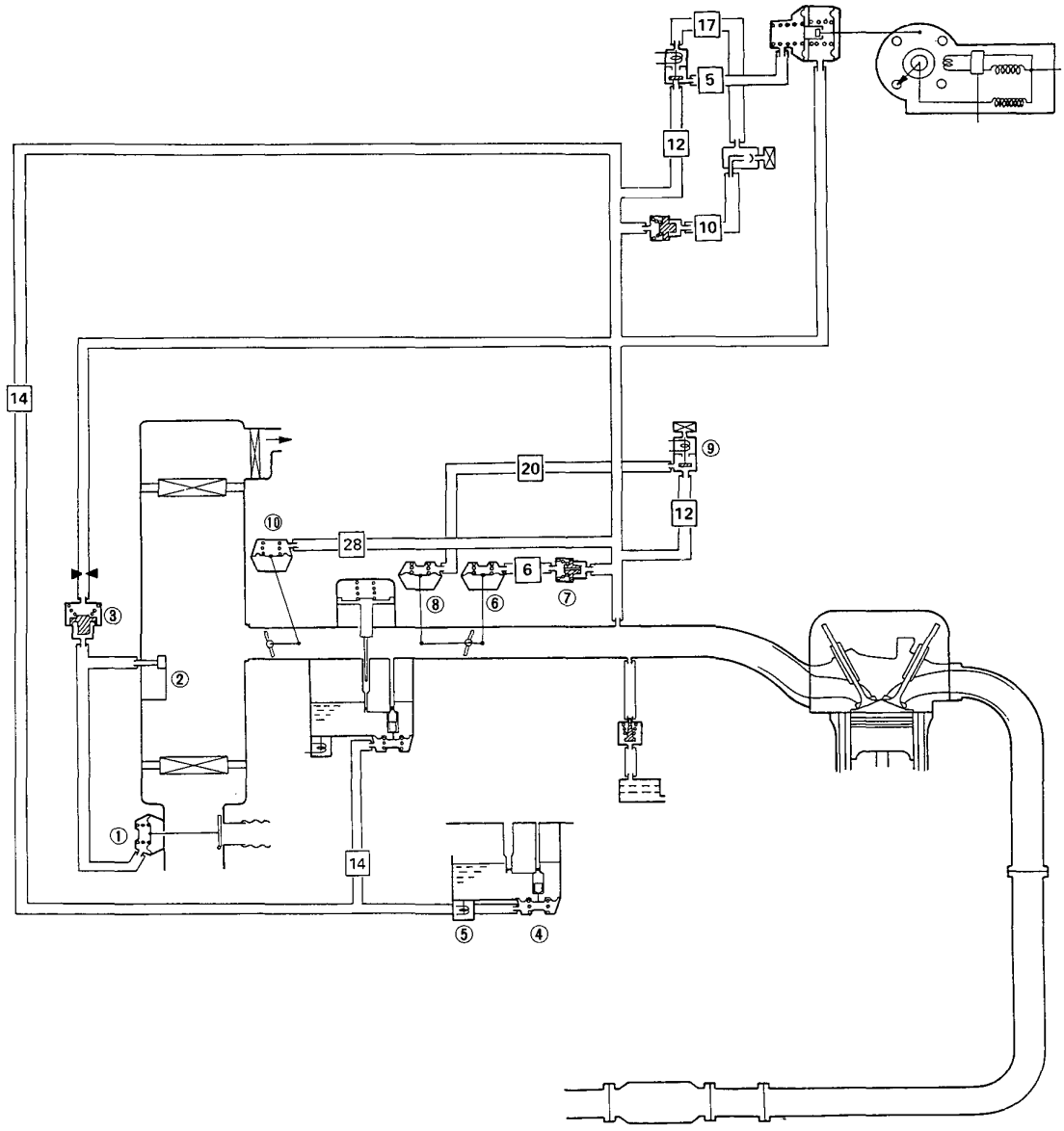
System Description

Vacuum Connections

[KG M/T]



[KG M/T]

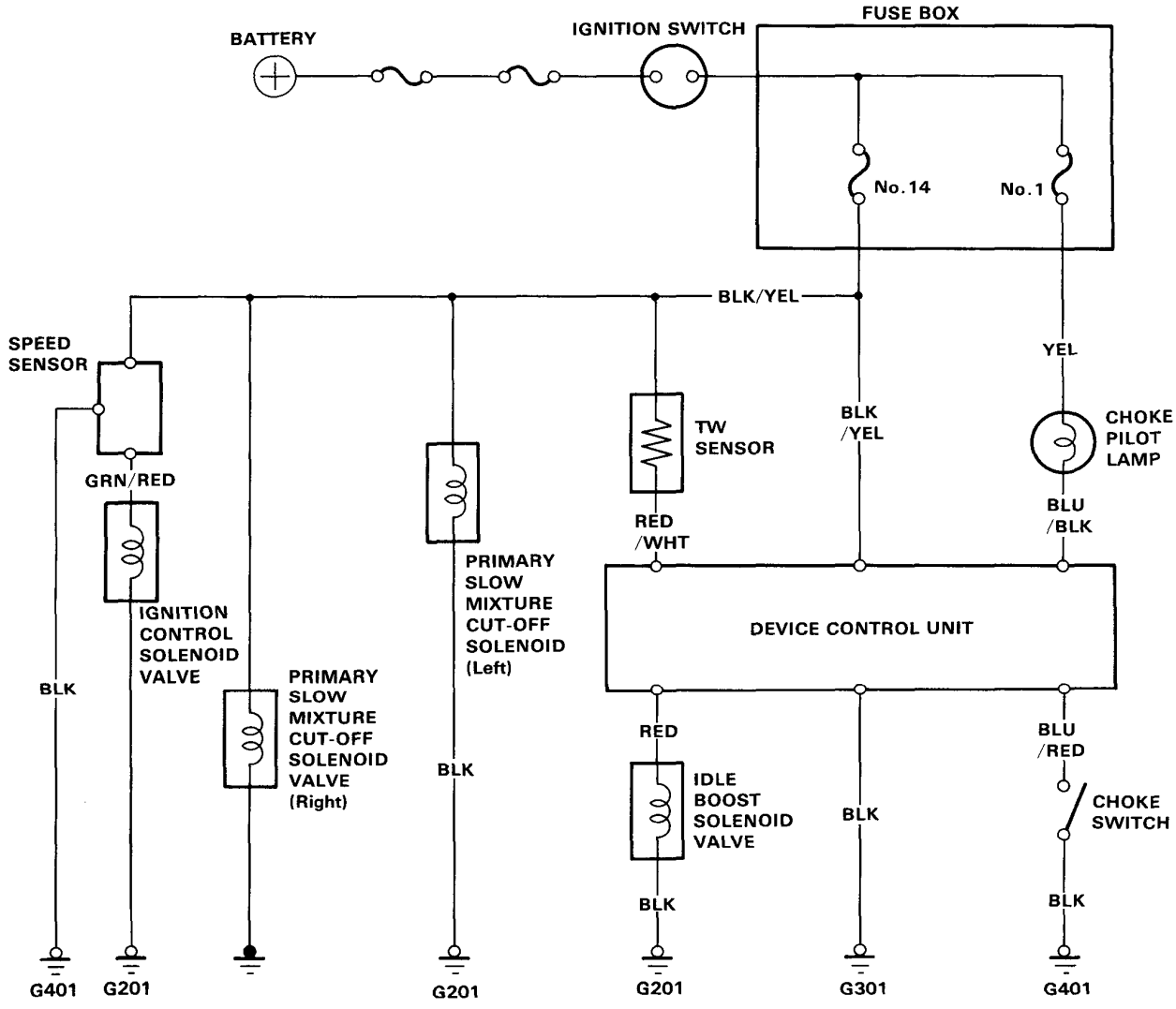


① AIR CONTROL DIAPHRAGM
② AIR BLEED VALVE
③ CHECK VALVE
④ POWER VALVE
⑤ PRIMARY SLOW MIXTURE CUT-OFF SOLENOID VALVE
⑥ THROTTLE CONTROLLER
⑦ CHECK VALVE
⑧ IDLE BOOST THROTTLE CONTROLLER
⑨ IDLE BOOST SOLENOID VALVE
⑩ CHOKE OPENER

System Description

Electrical Connections

[KG M/T]



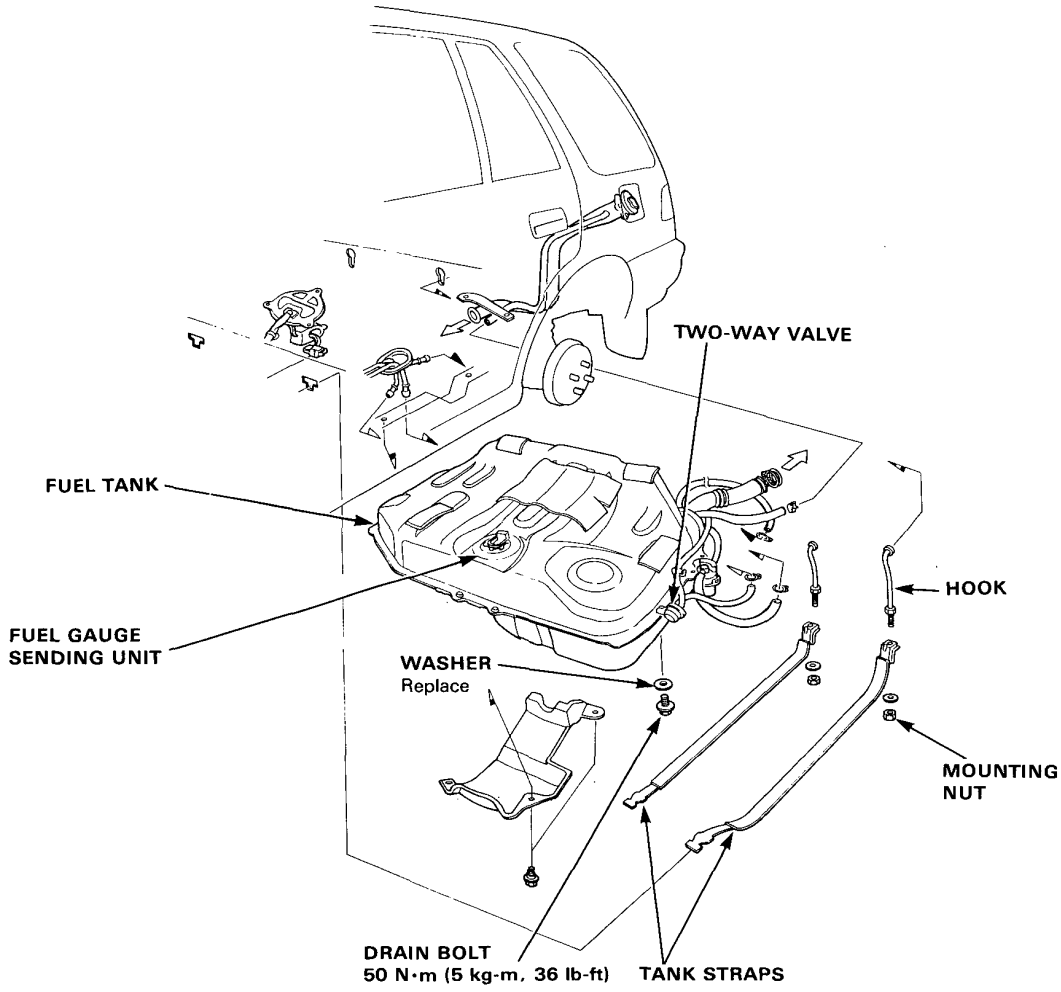
Fuel Tank [4WD]

[KQ]

Replacement

WARNING **Do not smoke while working on fuel system. Keep open flame away from work area.**

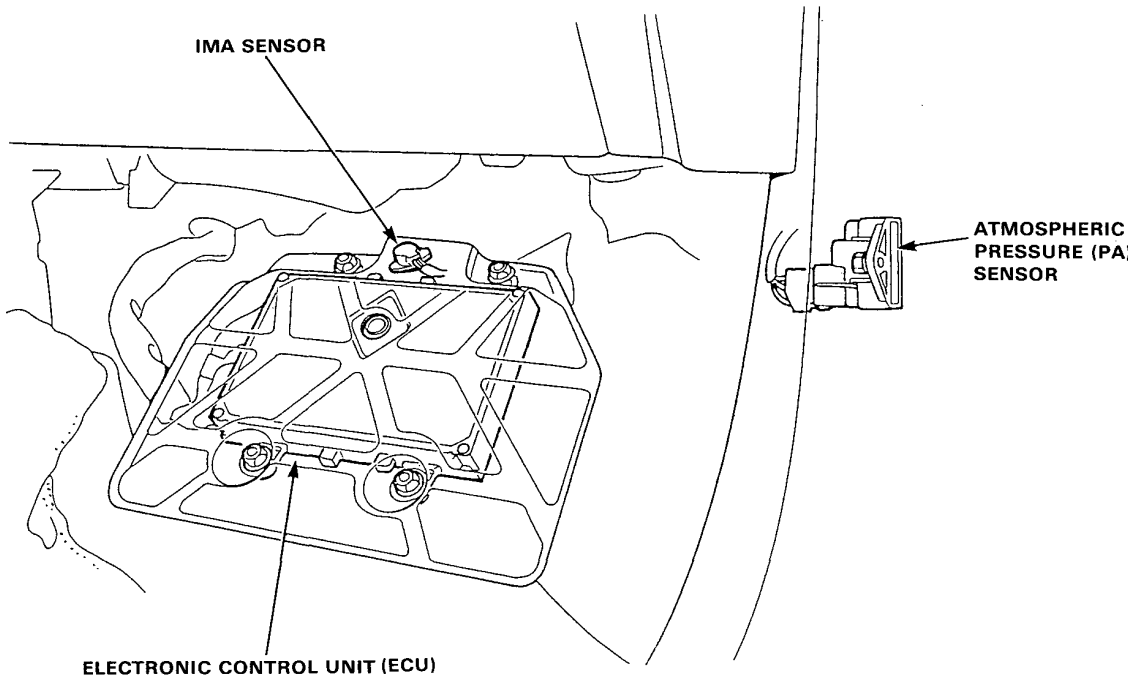
1. Block front wheels. Jack up the rear of the car and support with jackstands.
2. Remove the drain bolt and drain the fuel into an approved container.
3. Remove the exhaust pipe B and muffler (section 5).
4. Remove the No.3 propeller shaft from the rear differential (section 10).
5. Remove the rear seat and disconnect the fuel gauge sending unit connector.
6. Remove the two-way valve cover and fuel hose protector.
7. Disconnect the hoses.
   CAUTION:
   - **When disconnecting the hoses, slide back the clamps, then twist hoses as you pull, to avoid damaging them.**
   - **Clean the flared joint of high pressure hoses thoroughly before reconnecting them.**
8. Place a jack, or other support, under the tank.
9. Remove the strap nuts and let the straps fall free.
10. Remove the fuel tank.
    NOTE: The tank may have stuck on the undercoat applied to its mount. To remove, carefully pry it off the mount.
11. Install a new washer on the drain bolt, then install parts in the reverse order of removal.

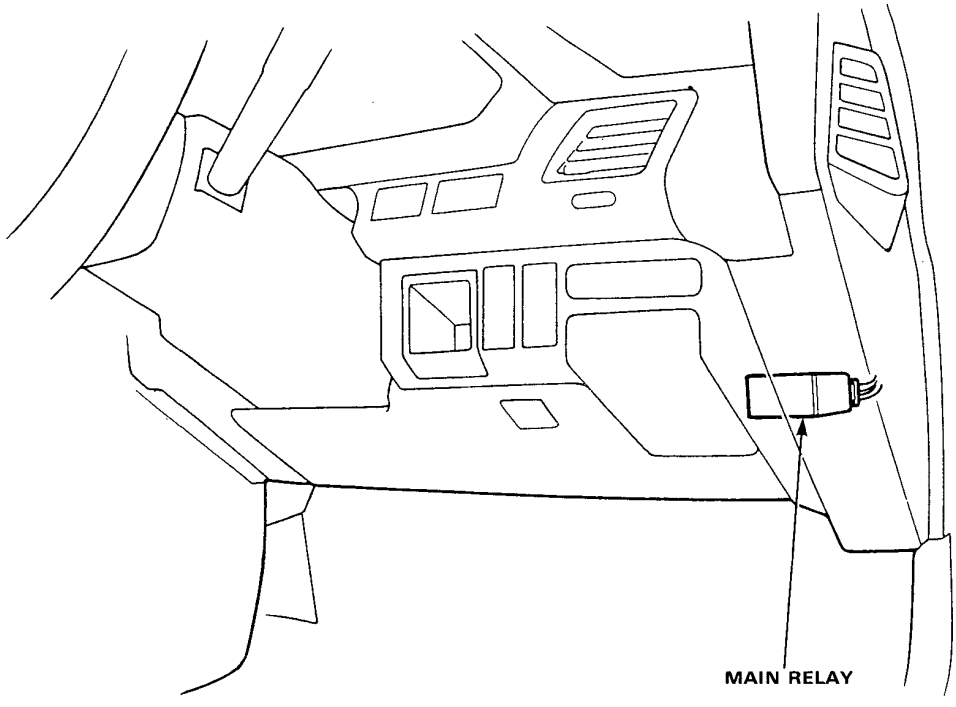


Fuel and Emissions (Fuel-Injected Engine)

Component Locations

Index [KE]



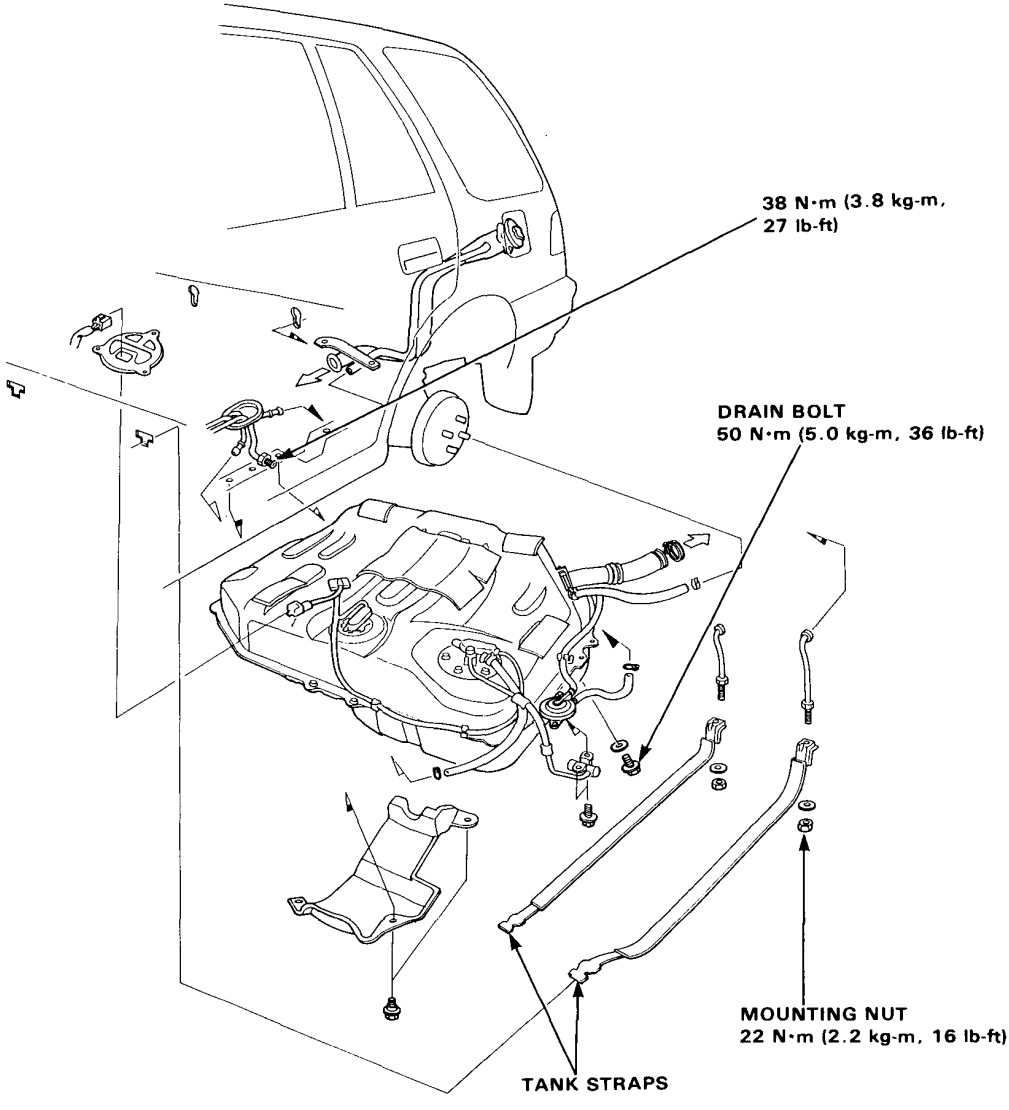


Fuel Tank [4WD]

Replacement

WARNING **Do not smoke while working on fuel system. Keep open flame away from work area.**

1. Block front wheels. Jack up the rear of the car and support with jackstands.
2. Remove the drain bolt and drain the fuel into an approved container.
3. Remove the exhaust pipe B and muffler (section 5).
4. Remove the No.3 propeller shaft from the rear differential (section 10).
5. Remove the rear seat and disconnect the 3P connector.
6. Remove the two-way valve cover and fuel hose protector.
7. Disconnect the hoses.
   CAUTION:
   - **When disconnecting the hoses, slide back the clamps, then twist hoses as you pull, to avoid damaging them.**
   - **Clean the flared joint of high pressure hoses thoroughly before reconnecting them.**
8. Place a jack, or other support, under the tank.
9. Remove the strap nuts and let the straps fall free.
10. Remove the fuel tank.
    NOTE: The tank may have stuck on the undercoat applied to its mount. To remove, carefully pry it off the mount.
11. Install a new washer on the drain bolt, then install parts in the reverse order of removal.



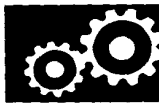
Transaxle

Manual Transmission

Drive Shaft

Manual Transmission

4WD Manual Transmission



NOTE:
This section contains serrice information for 4WD Manual Transmission that it is installed on the vehicle. Refer to the L3 (4WD) Manual Transmission (No.62PH800) for the transmission maintenance and repair after removal.

Precaution

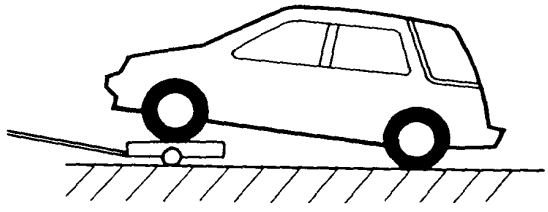
4WD Disengagement

The 4WD System shifts instantaneously and automatically from front wheel drive to four wheel drive when greater traction is needed.

WARNING **The 4WD system must be manually disengaged before performing service that requires only the front wheels or only the rear wheels to be turning. Disengaging the system will prevent sudden movement of the car, which may result in personal injury.**

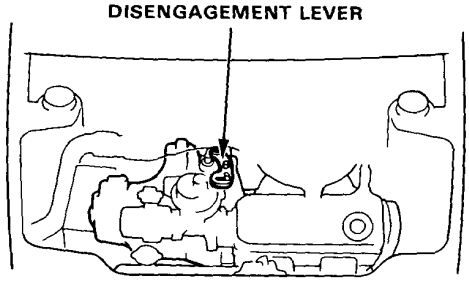
Towing:

CAUTION: Before towing the car with either the front or rear wheels raised off the ground, place the transmission in neutral and manually disengage the 4WD system to prevent the raised wheels from turning.

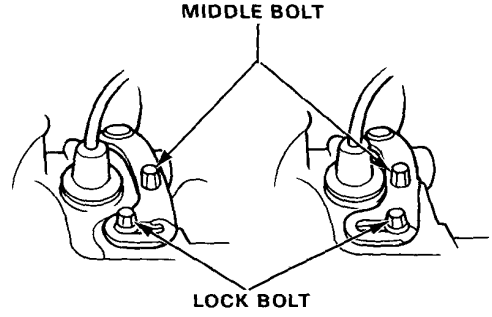


4WD Disengagement:

1. With the car on the ground, locate the orange disengagement lever on the transmission.



2. Loosen the lock bolt at the slotted end of the lever.



4WD DISENGAGED 4WD ENGAGED

3. Move the lever by turning the middle bolt counterclockwise.
4. Confirm that the lever is in the fully disengaged position by rocking the car back and forth while placing slight counterclockwise pressure on the middle bolt. Tighten lock bolt to 12N·m(1.2kg-m, 9lb-ft).
5. After service or towing is complete, return the lever to the normal engaged position.

Manual Transmission

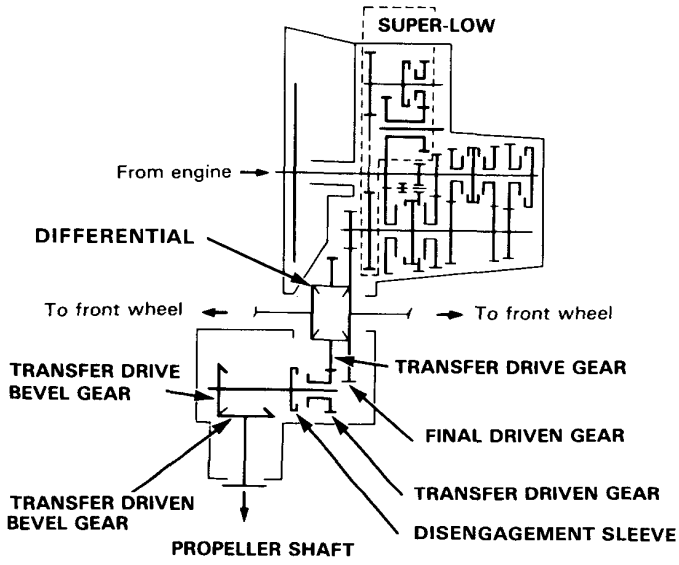
General Information

In 4WD, the power from the front differential is transmitted 90 degrees through the transfer to provide additional power to the rear wheels.
Since the transfer drive gear has more teeth than the driven gear, a speed increase is effected in the transfer. From here, the power is further conveyed through the propeller shaft to the rear differential where a gear reduction takes place to match the speed of the front and rear wheels.

Type	Constant mesh	
Gear rations	SL (Super low)	4.512
	1st	3.384
	2nd	1.950
	3rd	1.275
	4th	0.941
	5th	0.783
	Reverse	3.000
Reduction ratio		4.428
Oil capacity	After overhaul	2.4 ℓ
	After draining	2.3 ℓ

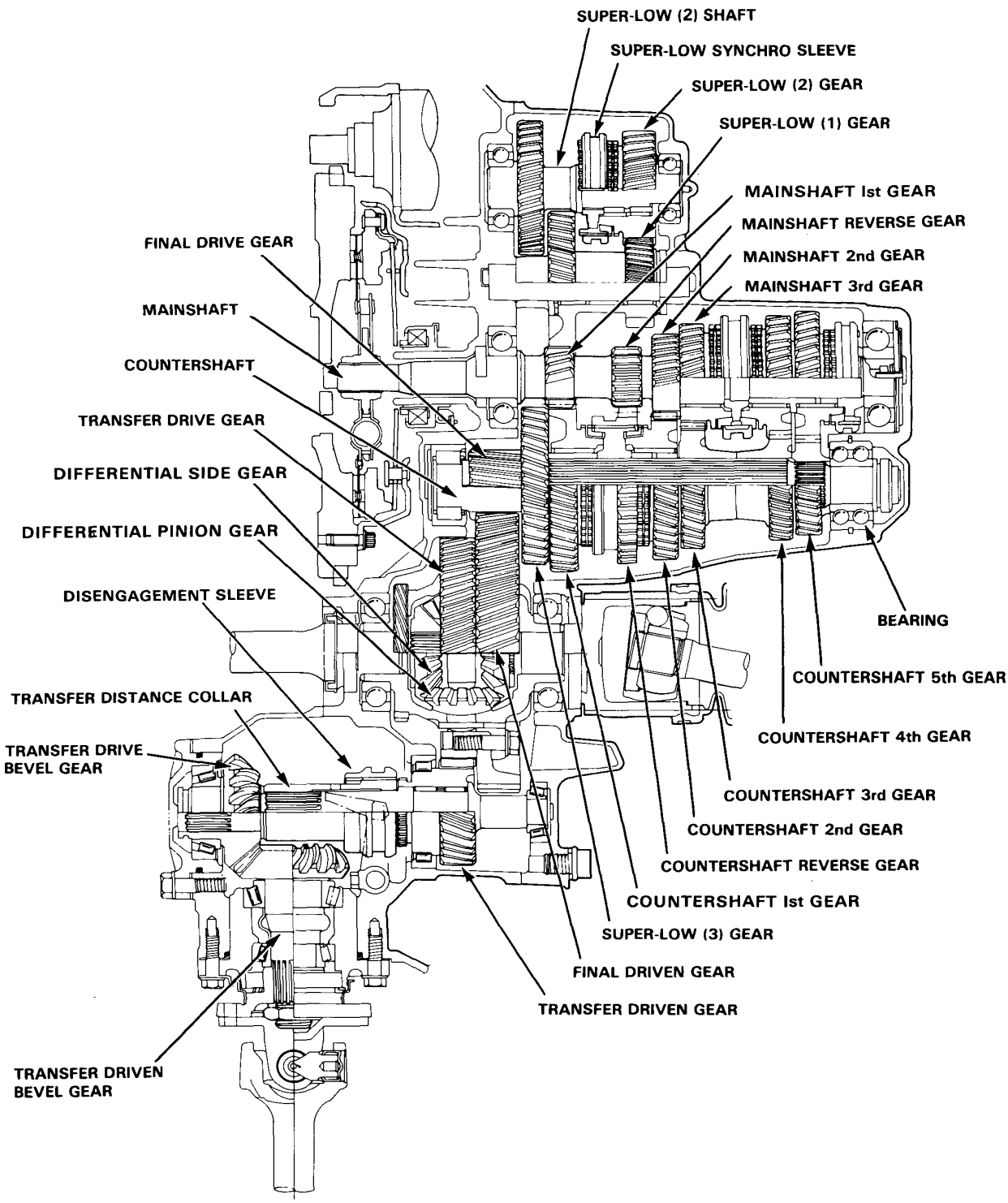
The transmission, clutch and transfer cases are sealed with a liquid sealant. Shims are used to position the mainshaft in its axial direction.

Constant Mesh: 5 speeds forward with Super Low; 1 speed reverse



Construction

Components

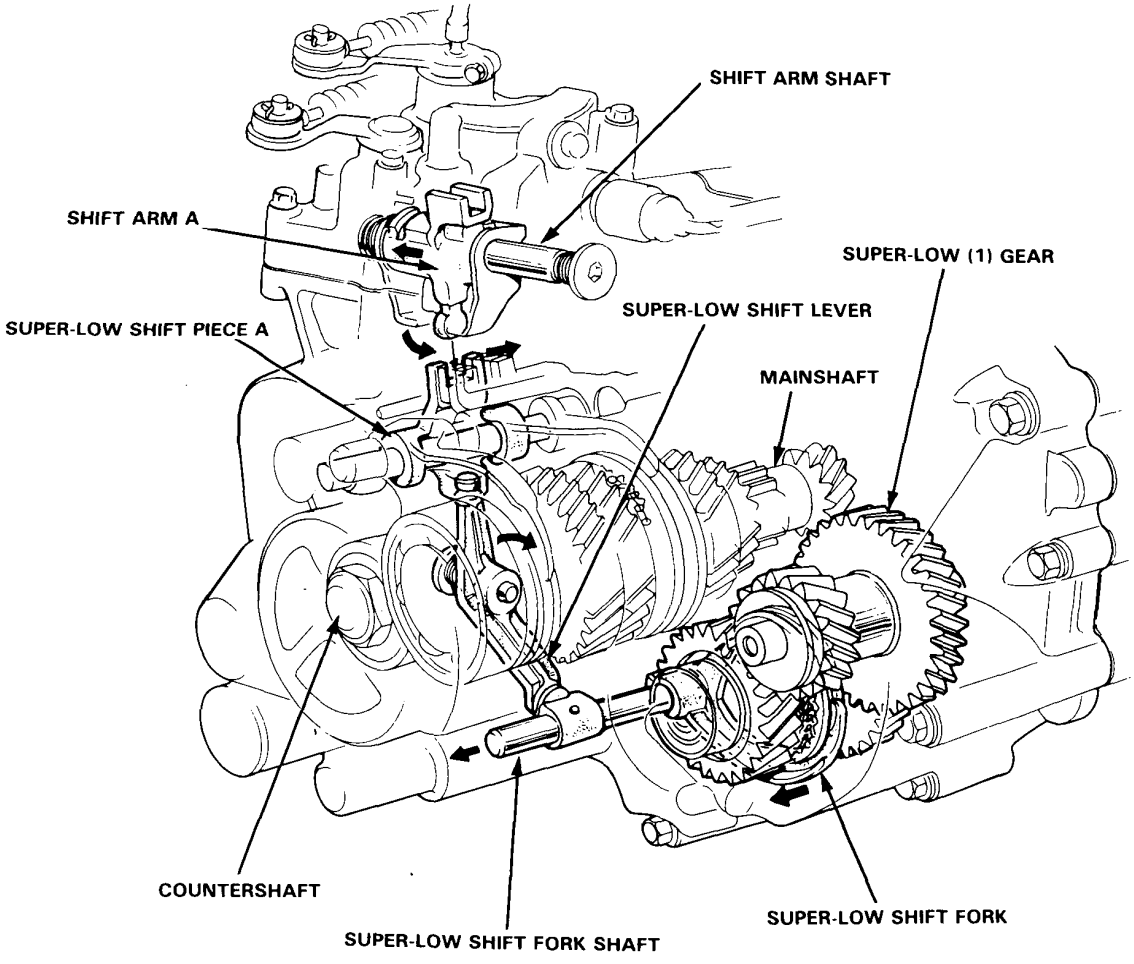


SL (Super-Low) Mechanism

The transmission includes a "Super-low" gear in addition to the normal five forward ratios.
With super-low gearing and synchronizer on a separate shaft the overall width of the transmission remains similar to that of a normal 5-speed.

Operation

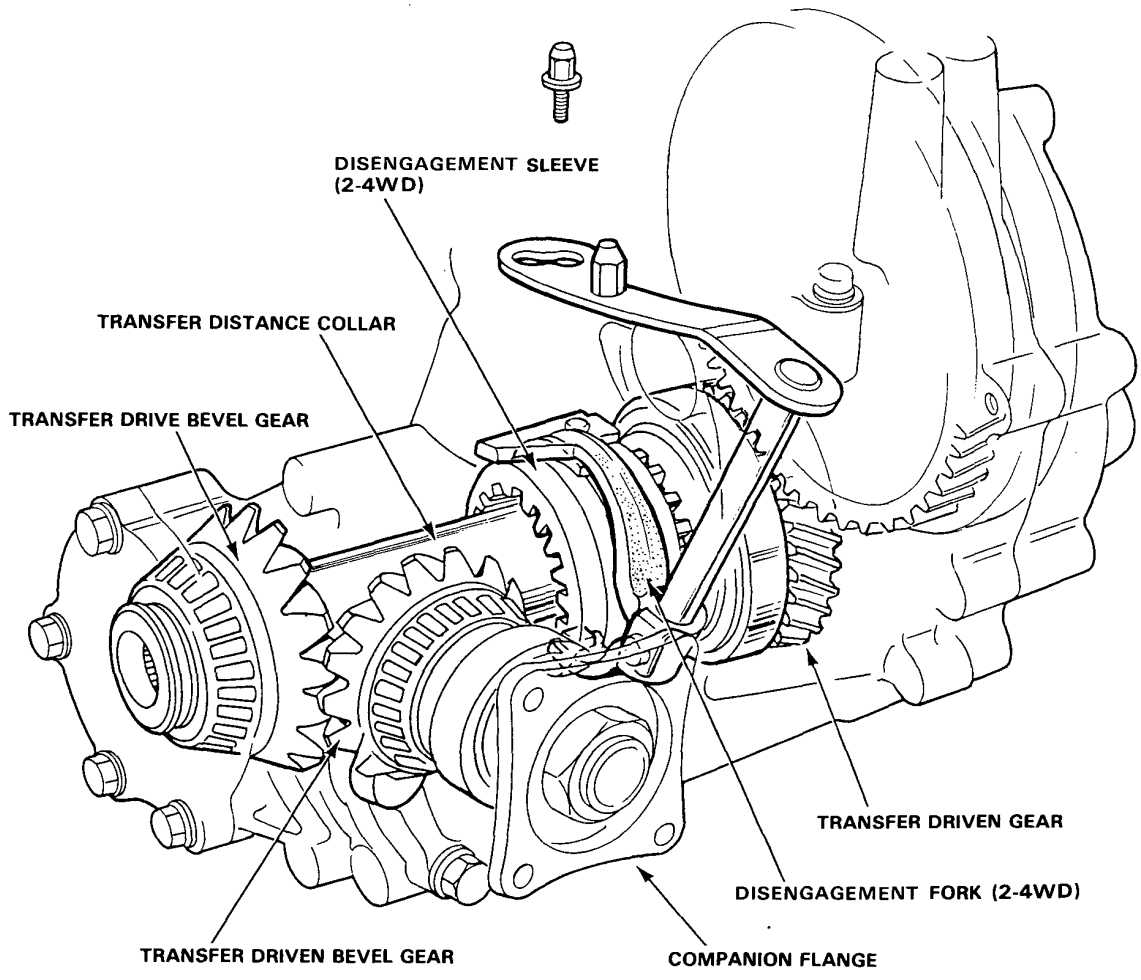
When the transmission is shifted into SL, shift arm A is moved in the direction shown, causing the SL shift piece A to move. The movement is then transmitted through the SL shift lever and SL shift fork shaft to the SL shift fork, which engages super low gear.



Construction

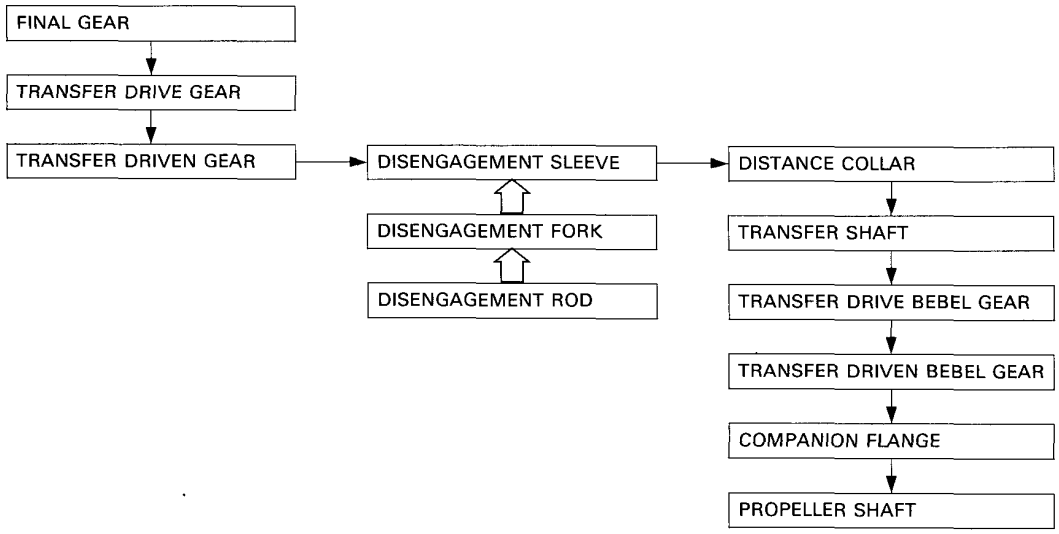
Transfer

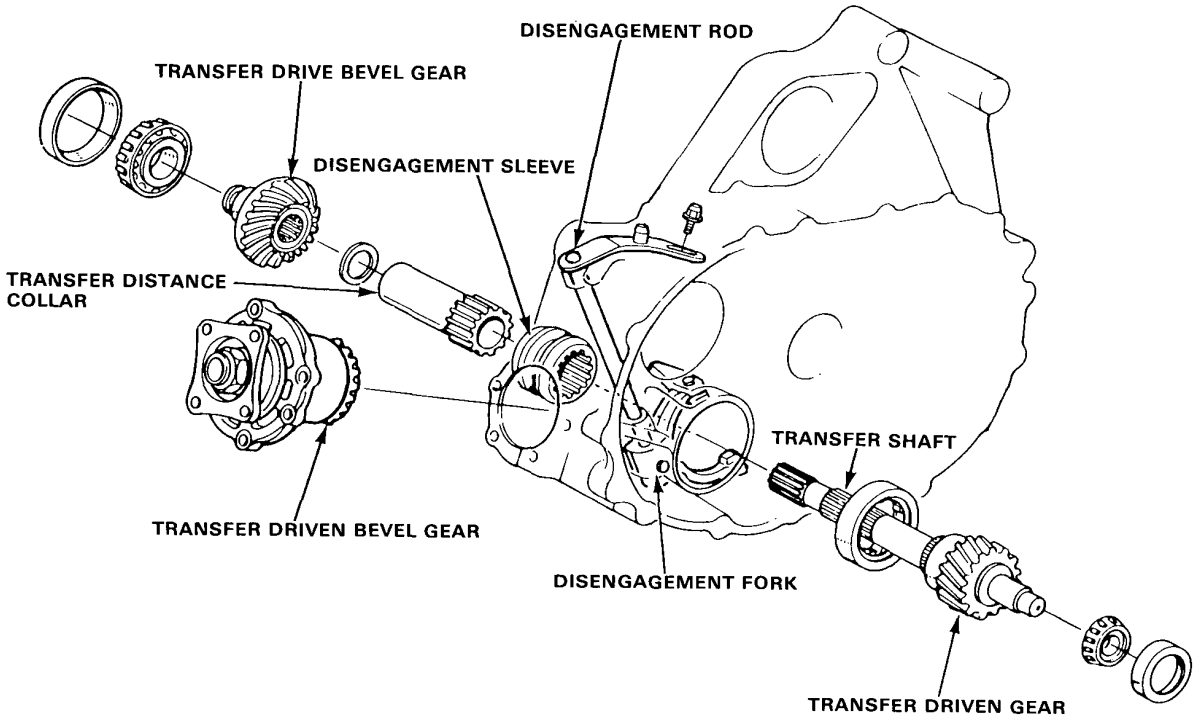
The transfer transmits the power from the front differential through the propeller shaft to the rear differential. Since the transfer drive gear has more teeth than the driven gear, a speed increase is effected in this unit. The bevel gears are of a spiral design and run on taper roller bearings.



4WD Disengagement Mechanism

Power Flow

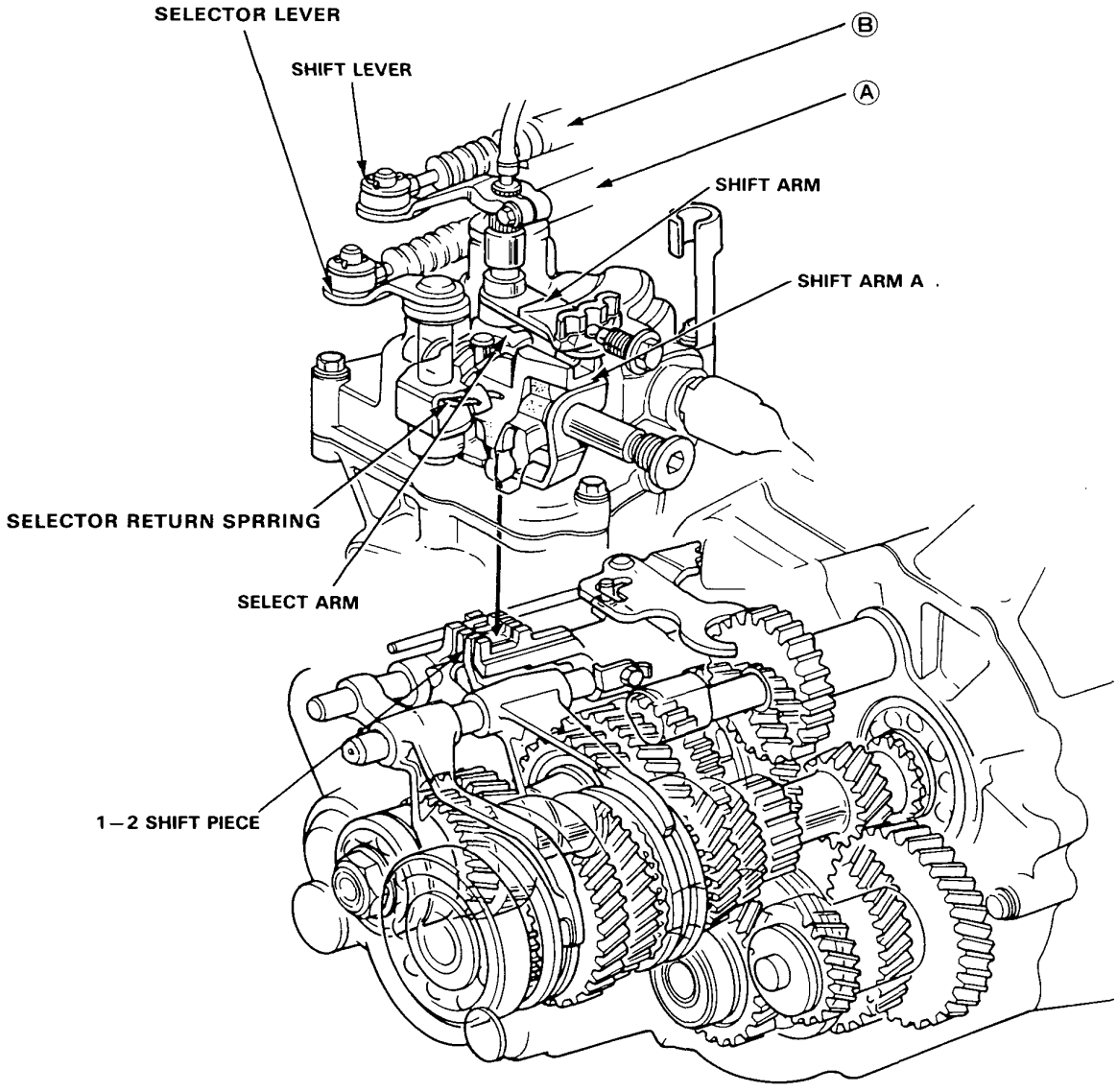




Construction

Gearshifting Mechanism

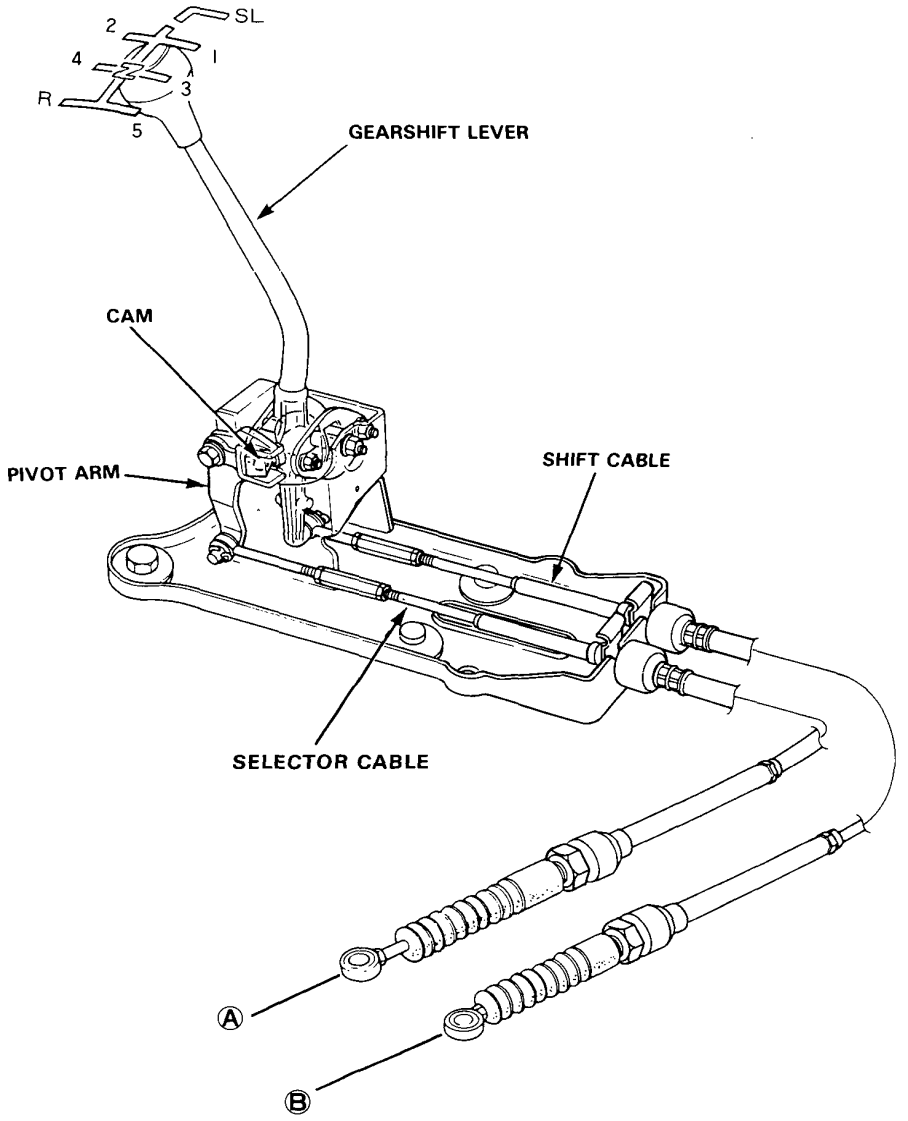
The transmission is shifted by means of a pair of push-pull cables: shift and select. Right and left movements of the shift lever are transmitted to the transmission shift forks by the selector cable (Ⓐ).
Fore-aft movements are taken care of by the shift cable (Ⓑ). They offer positive shift feel and absorb vibrations transmitted from the engine. The reverse lock cam in the shift arm cover prevents shifting from 5th into reverse (page 8–10).



Operation

Selector cable:
When the gearshift lever is moved right or left, the cam causes the pivot arm to pivot clockwise or counterclockwise. The selector cable is then moved toward the appropriate shift piece. For example, if the gearshift lever is moved left, toward first/second gear, the cam would cause the pivot arm to move counterclockwise. The corresponding movememt of the selector cable causes the 1-2 shift piece to be selected.

Shift Cable:
When the gearshift lever is moved forward or back, for example further into 1st or 2nd, the lower end of the gearshift lever pushes or pulls the shift cable.
The 1-2 shift piece then shifts the transmission into first or second gear.

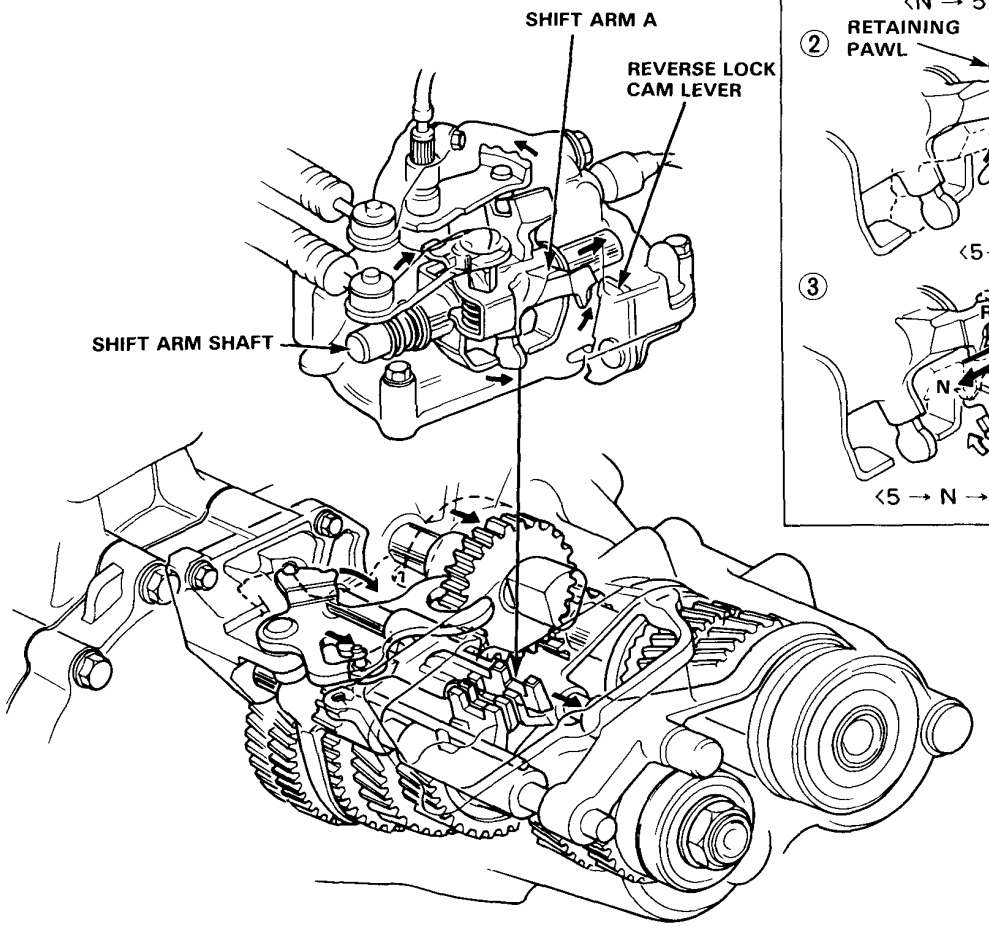


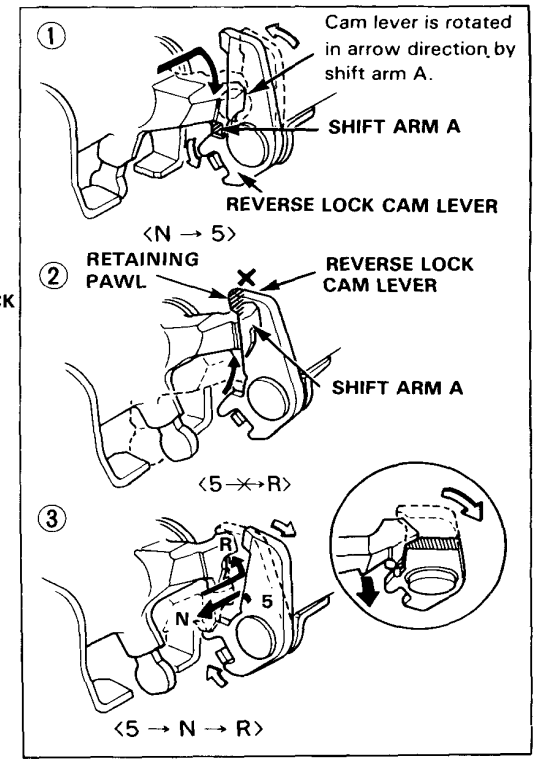
Construction

Reverse Lock-out Device

Shift arm A, the shift arm shaft, and the reverse lock cam lever work as follows to prevent shifting from 5 th into reverse:

1. As the transmission is placed in 5th gear, shift arm A is moved down, rotating the cam lever counterclockwise.
2. Once the cam lever is rotated in this direction, the retaining pawl holds the shift arm A in its applied position.
3. Returning the gearshift lever back into neutral rotates the cam lever, freeing the shift arm A to return into neutral.





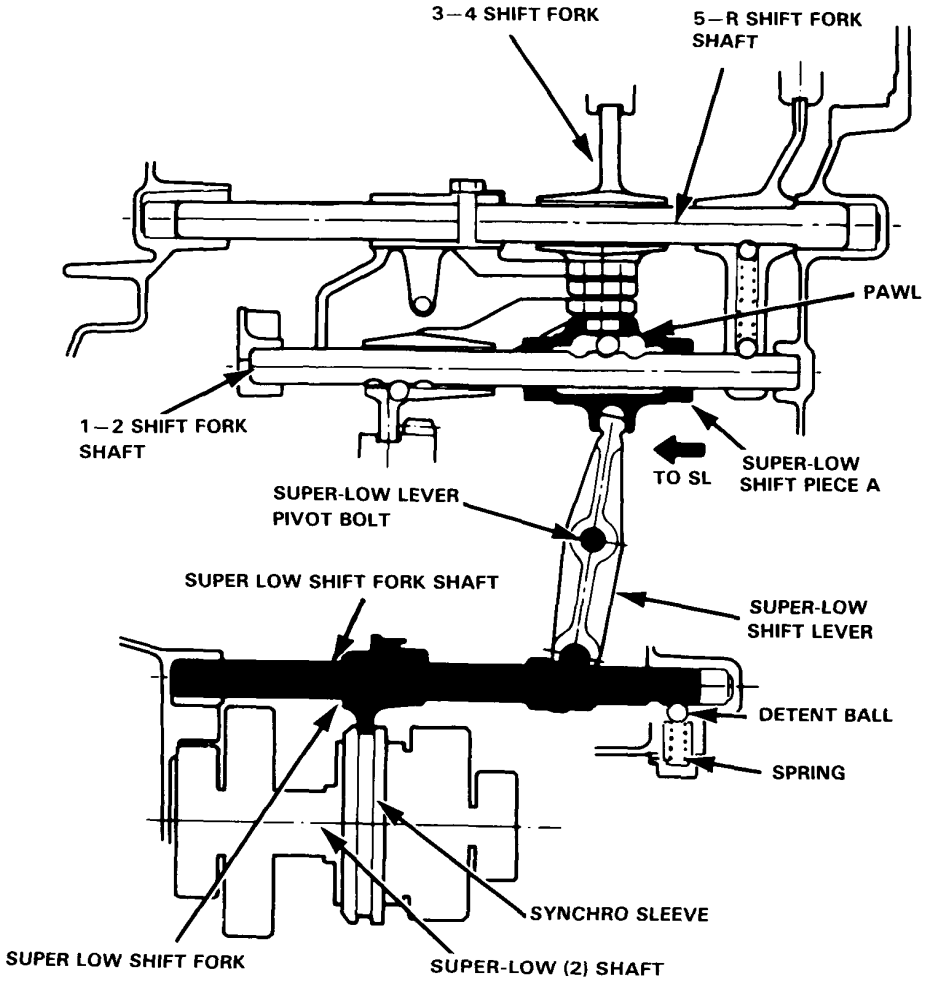
Gearshift Mechanism

Three shift fork shafts are used: 1-2, 5-R and SL. The 1-2 shift fork shaft is fixed in position; both the 5-R and SL shift fork shafts are moveable. The 3-4 shift fork moves along the 5-R shift fork shaft.

SL (Super Low)

A spring loaded steel ball engages a detent in the end of the shaft to hold the fork in position.
When SL is selected, super low shift piece A, located on the 1-2 shift fork shaft, shifts the super low shift lever, causing the super low shift fork to engage super low gear.

Super-Low

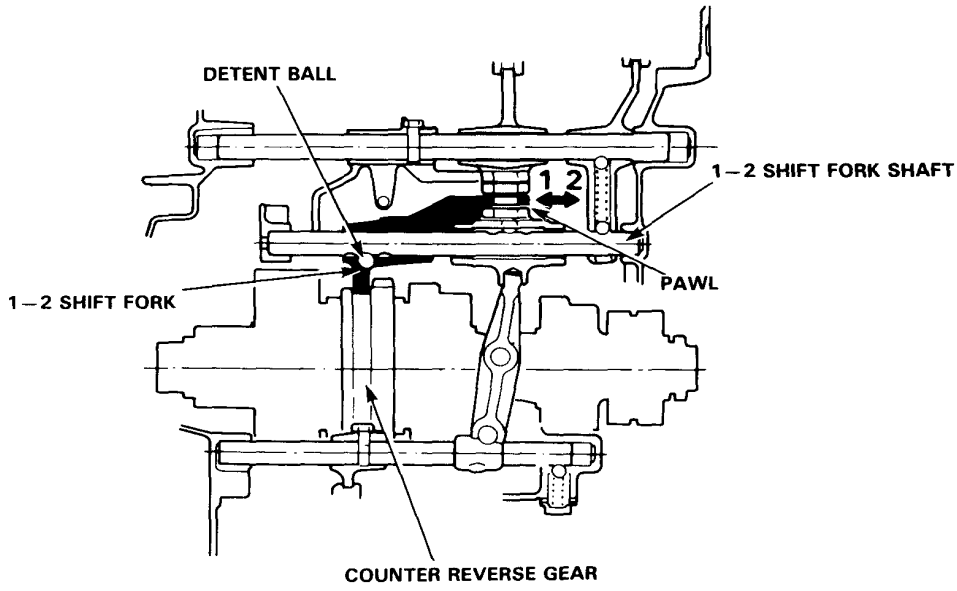


(cont'd)

Gearshift Mechanism (cont'd)

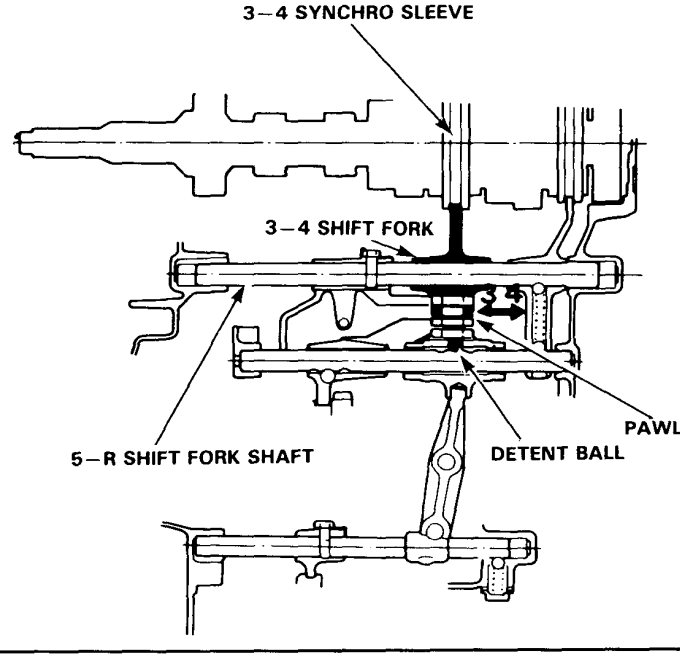
(1st-2nd)
When 1st or 2nd is selected, the 1-2 shift fork is moved along the 1-2 shift fork shaft, which causes the counter reverse gear to engage the gear selected.
A spring loaded steel ball on the 1-2 shift fork engages a detent in the fork in shaft to hold the shift fork in position.

1st-2nd



(3rd-4th)
When the transmission is placed in 3rd or 4th, the 3-4 shift fork is moved along the 5-R shift fork shaft so as to move the 3-4 synchro sleeve into the appropriate gear.
A spring loaded steel ball in the 3-4 shift fork and detent formed in the 1-2 shift fork shaft hold the 3-4 shift fork in position.

3rd-4th



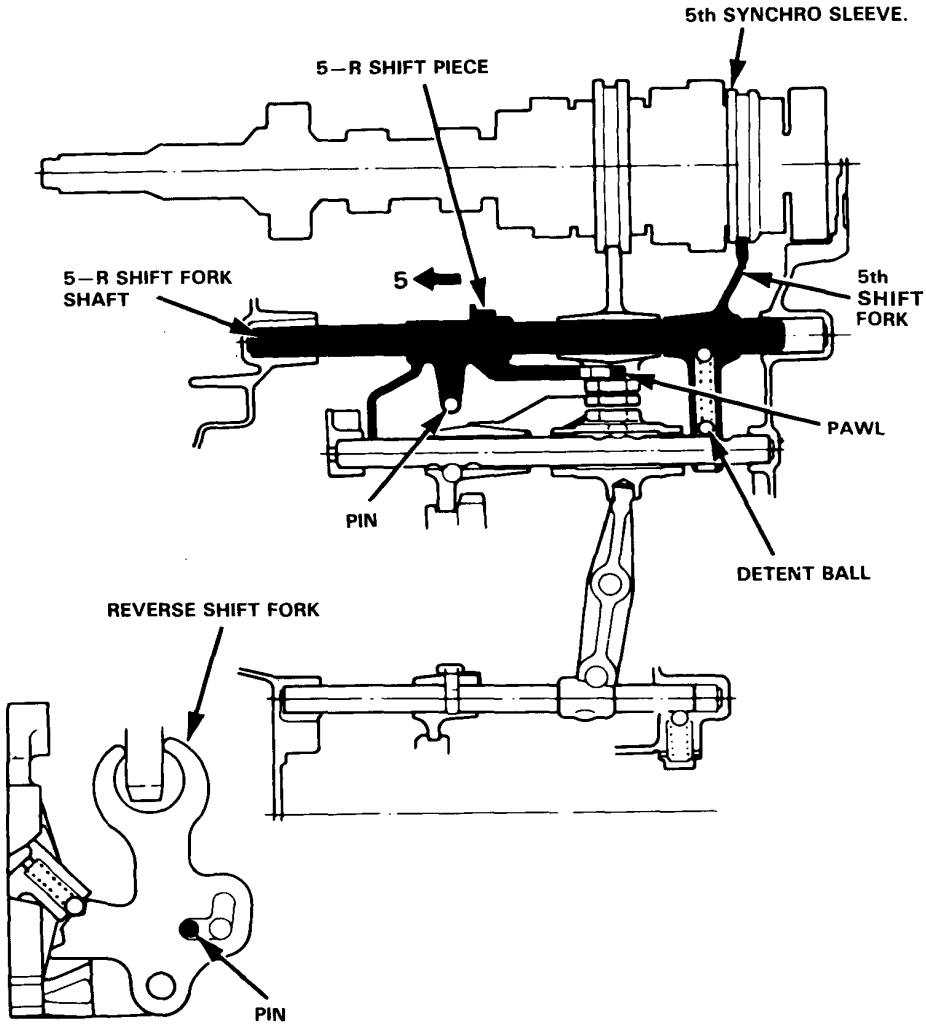
(5th)

As the transmission is shifted into 5th, the 5-R shift piece is moved together with the 5-R shift fork shaft. The end of the 5-R shift fork shaft also pushes on the 5th shift fork.

Since the 5th shift fork engages the 5th synchro sleeve, the movement causes the transmission to shift into 5th gear.

The pin on the 5-R shift piece just moves in the reverse shift fork groove; that is, the reverse gear remains stationary.

5th

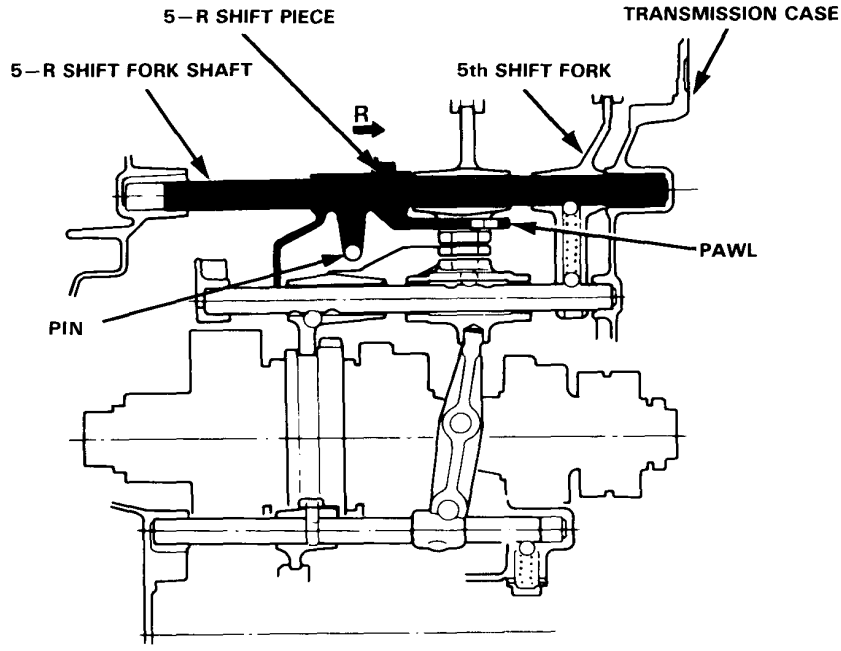


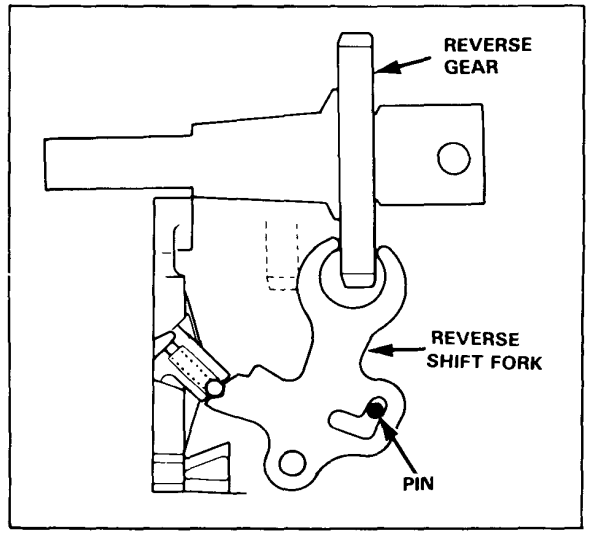
(cont'd)

Gearshift Mechanism (cont'd)

(Reverse)
When reverse is selected, the 5-R shift fork shaft is moved, independent of the 5th shift fork, causing the reverse selector pin to move the reverse shift fork to engage reverse gear.

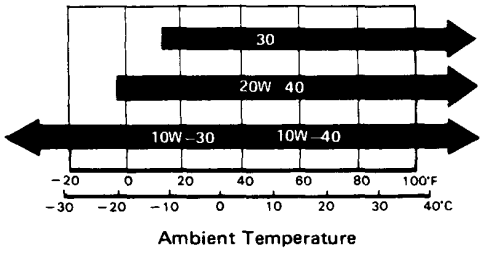
Reverse





Oil Change

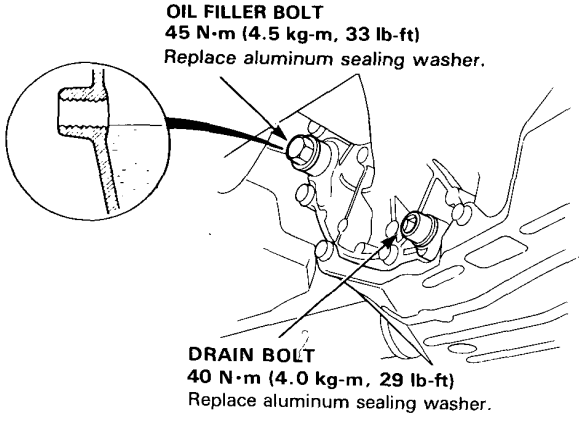
Change oil every 48,000 km (30,000 miles).
Use only SE or SF grade oil.
Use the proper viscosity oil for the climate.



Capacity:
2.3 ℓ (2.4 US qt) after draining
2.4 ℓ (2.5 US qt) after overhaul

Oil Level Check

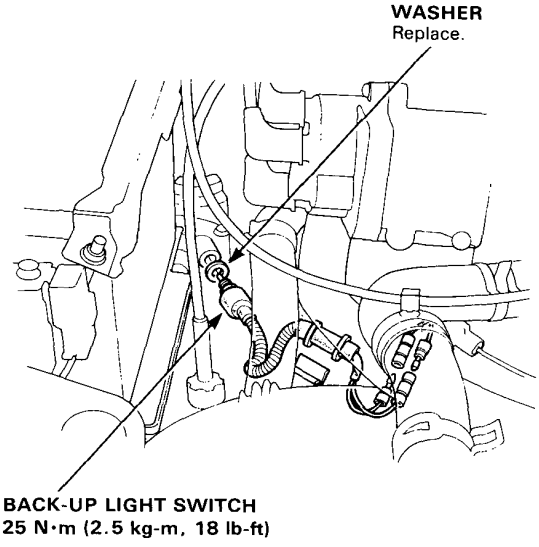
1. Check with oil at operating temperature, engine OFF, and car on level ground.
2. Remove oil filler bolt and check level with finger.
3. Oil level must be to fill hole. If it is below hole, add oil until it runs out, then reinstall bolt.



Back-up Light Switch

Replacement

1. Disconnect the back-up light switch wire connectors.
2. Remove the back-up light switch.



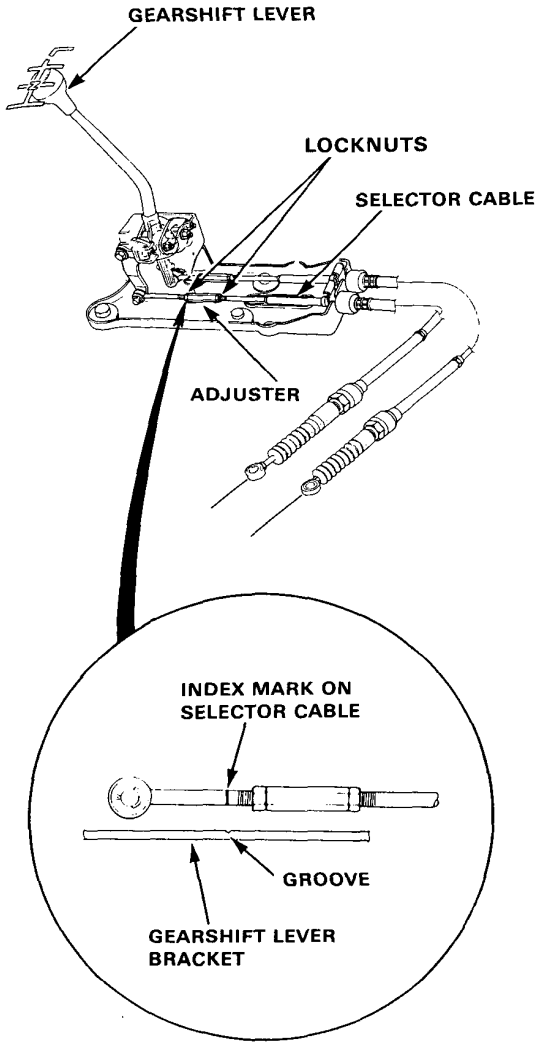
3. Install the new washer and back-up light switch.

Gearshift Mechanism

Cable Adjustment

Selector Cable

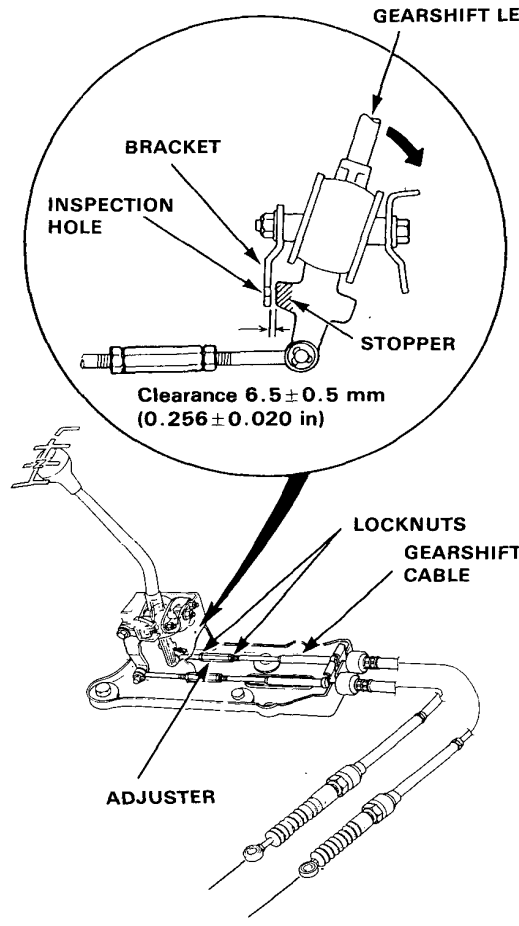
1. Remove the console.
2. With the transmission in neutral, check that the groove in the lever bracket is aligned with the index mark on the selector cable.



3. If the index mark is not aligned with the groove in the cable, loosen the lock nuts and turn the adjuster as necessary.

Gearshift Cable

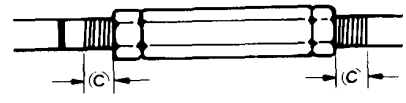
1. Remove the console.
2. Place the transmission in 4th gear.
3. Measure the clearance between the gearshift lever bracket and stopper while pulling the lever backward.



4. If the clearance is outside specifications, loosen the lock nuts and turn the adjuster in or out until the correct clearance is obtained.

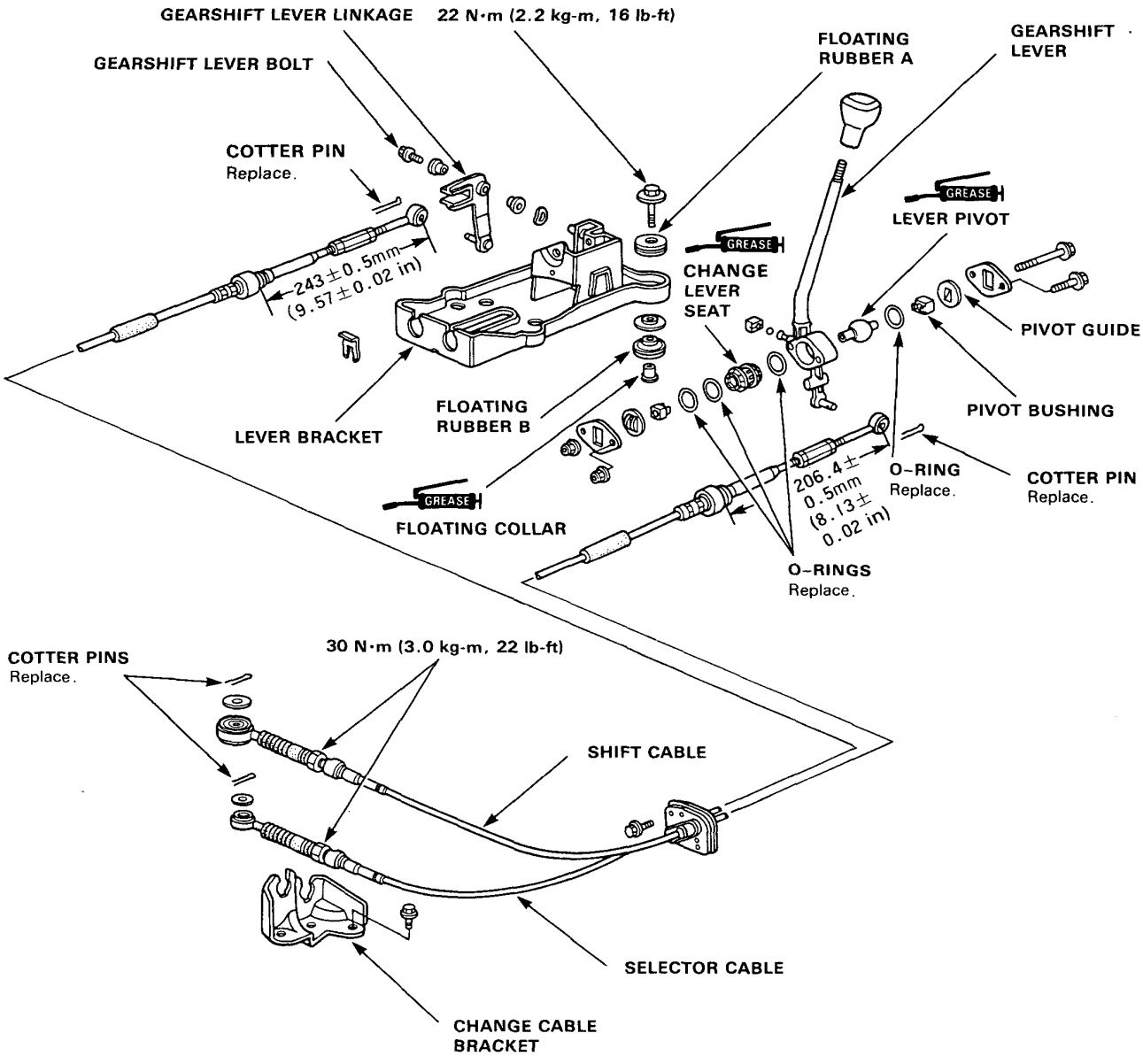
NOTE:

- After adjustment, check operation of the gearshift lever.
- Also check that the threads Ⓒ of the cables do not extend out of the cable adjuster by more than 10 mm (0.4 in).



Overhaul

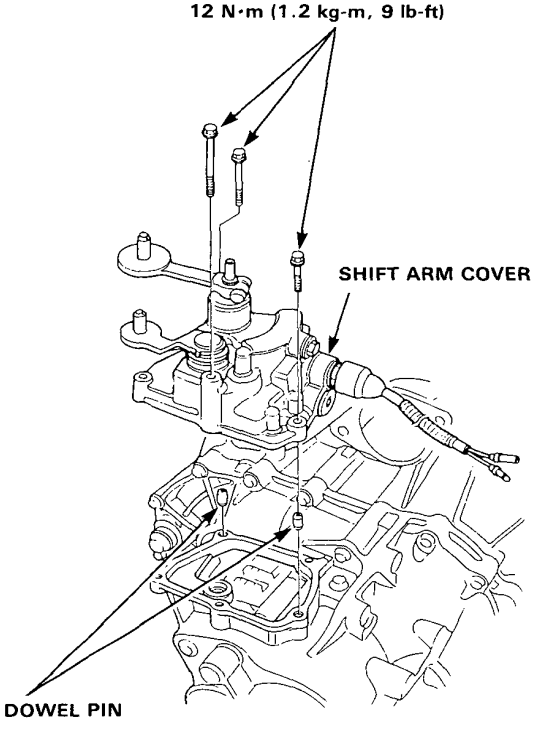
NOTE:
- Do not bend the shift cable and selector cable while dis/reassembling the gearshift mechanism.
- Replace the cables whenever they are damage.



Shift Arm Cover

Replacement

1. Remove the mounting bolts and shift arm cover.

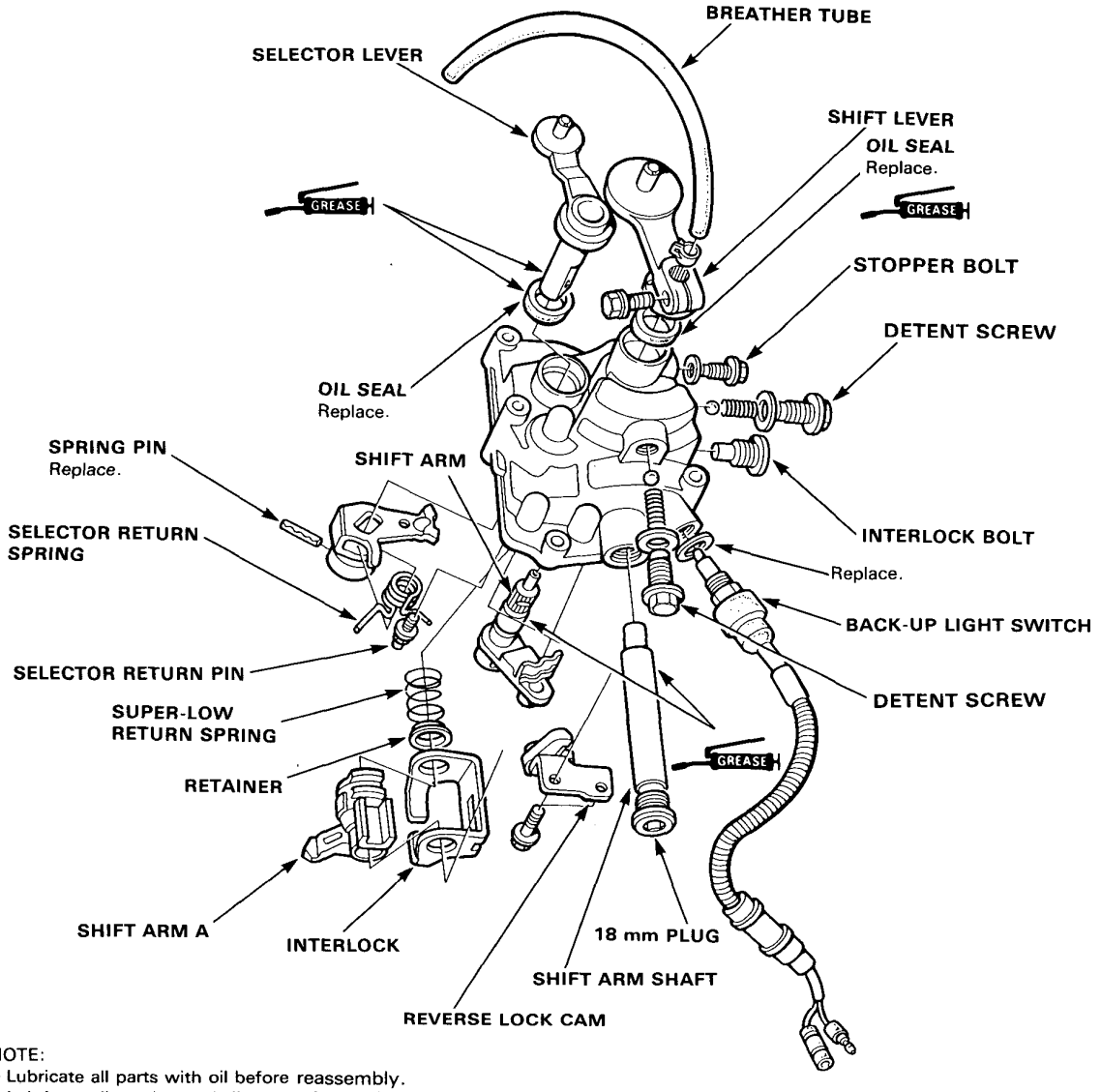


2. Installation is reverse order of removal.

NOTE: This transmission uses no gaskets between the major housings: use Honda Genuine Liquid Sealant (Three Bond® 1216). Assemble the housing with in 20 minutes after applying the sealant and allow it to cure for at least 30 minutes after assembly before filling it with oil.

Disassembly

1. Remove the breather tube and back-up light switch.
2. Remove the reverse lock cam, detent screws, washers, springs and detent ball from the shift arm cover.
3. Remove the interlock bolt.
4. Remove the 18 mm plug, shift arm shaft, interlock, shift arm A, retainer and super-low return spring.
5. Remove the spring pin, selector arm, selector return spring and selector lever.
6. Remove the shift lever bolt and shift lever.
7. Remove the stopper bolt, washer and shift arm.
8. Remove the oil seals.
9. Remove the selector return pin.

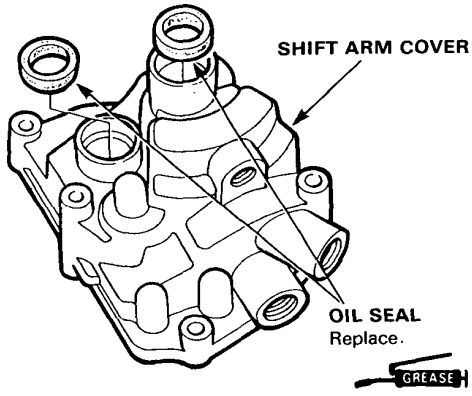


NOTE:
- Lubricate all parts with oil before reassembly.
- Lubricate all moving and sliding surfaces with grease.

Shift Arm Cover

Reassembly

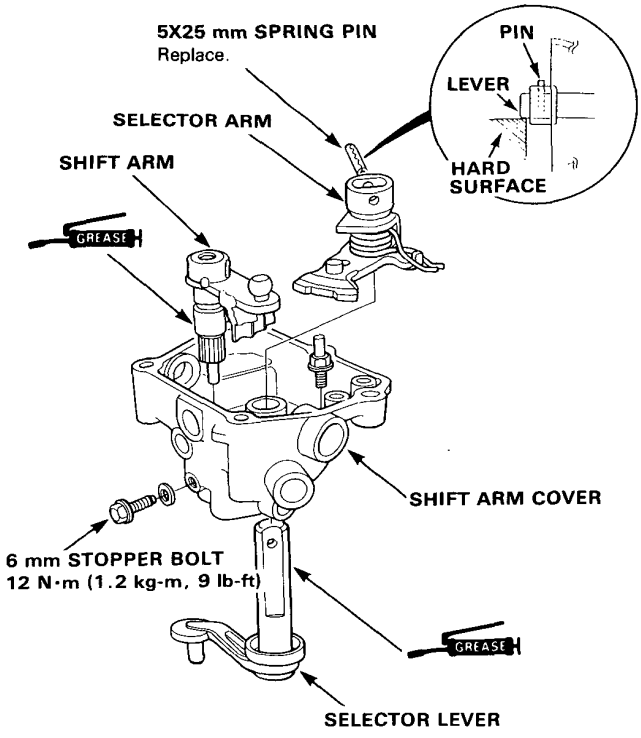
1. Install the oil seals in the shift arm cover.



2. Fit the select lever through the shift arm cover then install the select arm and the 5 x 25 mm spring pin.

   NOTE: Rest the end of the lever on a hard surface as shown when driving in the spring pin.

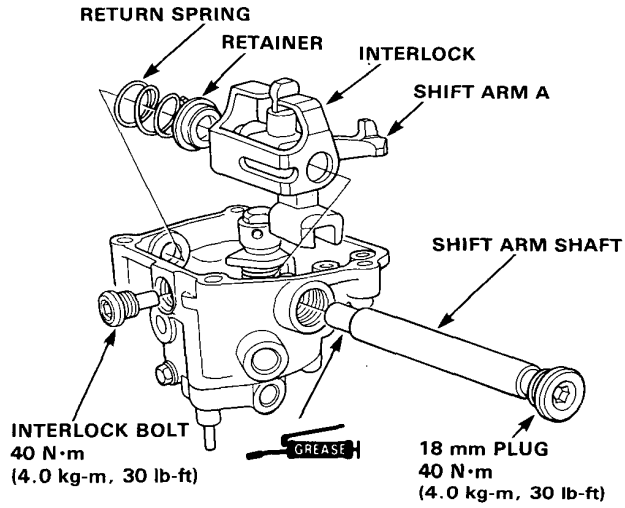
3. Install the shift arm with the 6 X 16 mm stopper bolt.



4. Assemble the interlock unit with the shift arm A, retainer and spring, then install them in the shift arm cover.

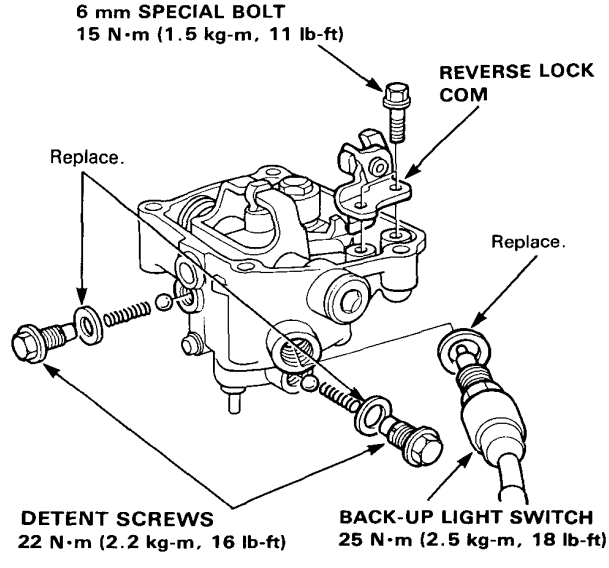
5. Install the shift arm shaft through the cover into shift arm A.

6. Fit the interlock bolt through the shift arm cover; align the bolt with the groove in the interlock unit, then install the 18 mm plug.
   NOTE: Seal the threads of the interlock bolt and 18 mm plug with Honda Genuine Liquid Sealant (Three Bond®1216).

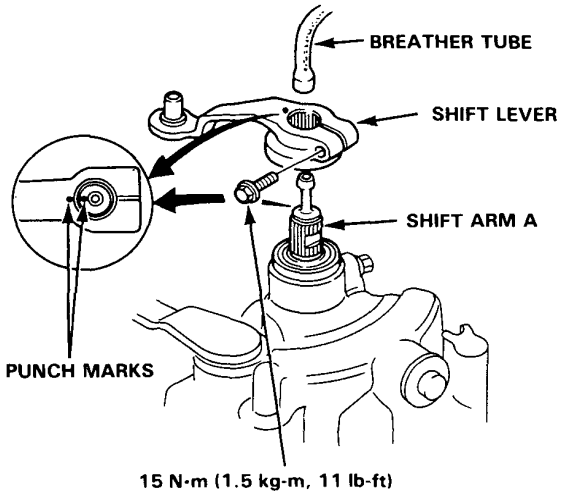


7. Install the reverse lock cam on the shift arm cover.

8. Install the detent screws and back-up light switch in the shift arm cover.



9. Install the shift lever onto the shift arm A.
NOTE: Align the punch mark on the shift lever, with the one on shift arm A.



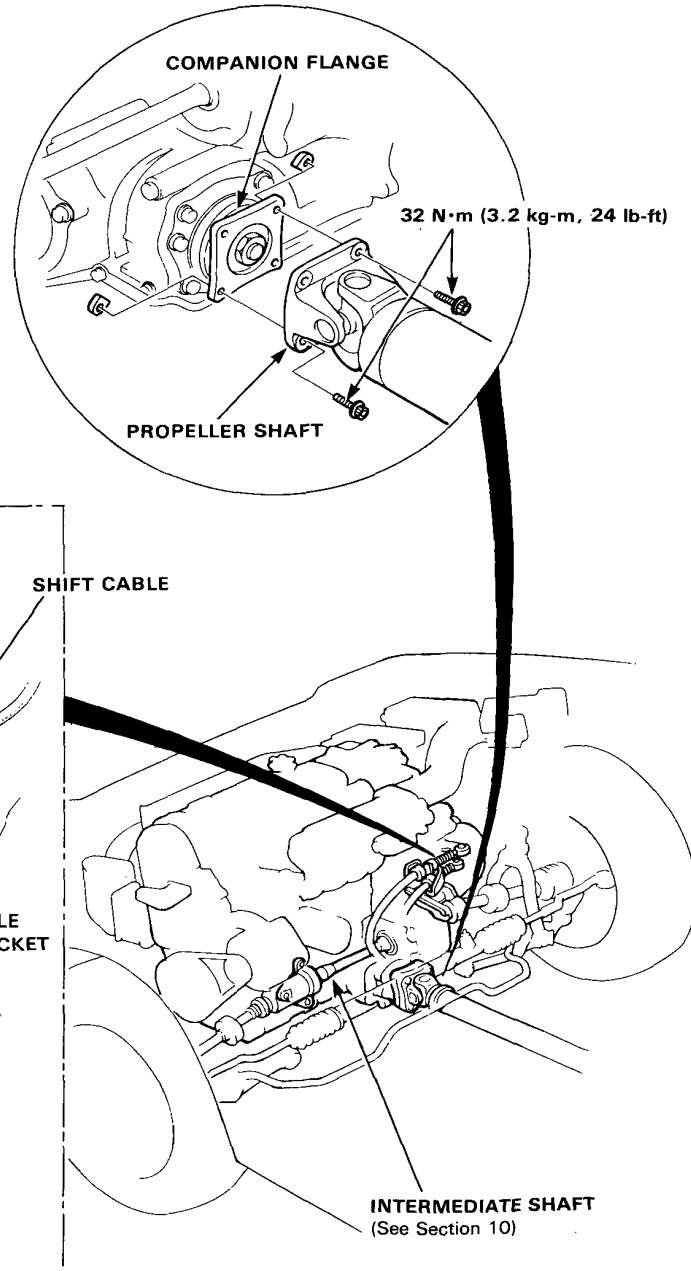
10. Install the breather tube on shift arm A.

Removal

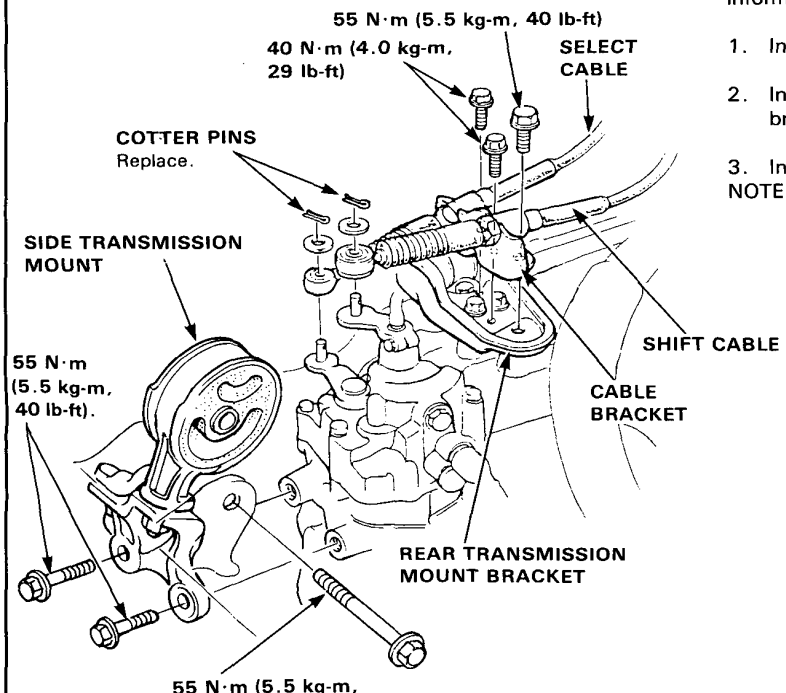
NOTE: Differences between the 2WD and 4WD are covered in this page. Refer base manual (62SH300) for the information not covered in this page.

1. Remove the 4 mounting bolts, then remove the propeller shaft.
2. Remove the intermediate shaft (See Section 10).
3. Remove the cotter pins and cable bracket 3 mounting bolts, then remove the cable bracket from the rear transmission mount bracket.

   NOTE: Take care not to bend the cables when removing it and lift the cables hanging by wire it up to the body.
4. Remove the side transmission 3 mounting bolts, then remove the side transmission mount from the transmission housing and body.



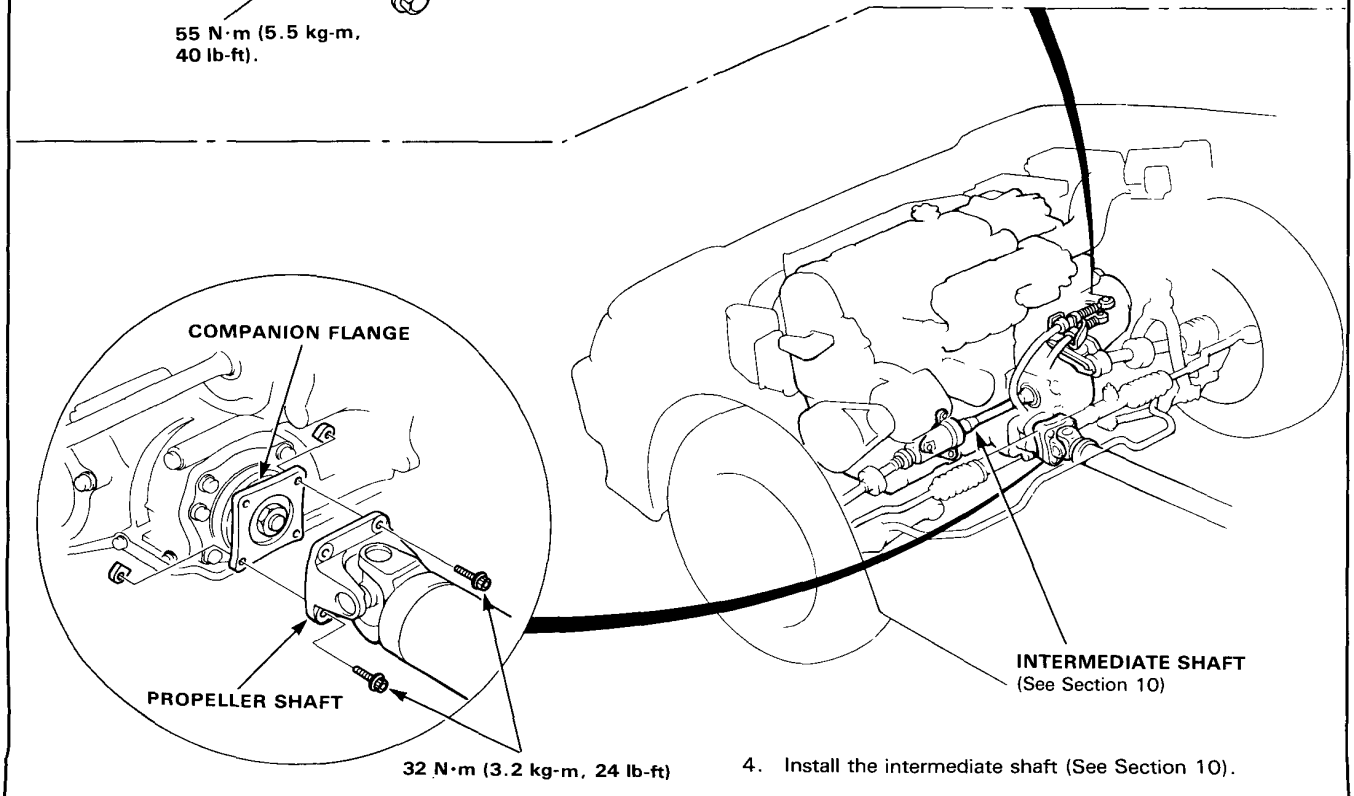
Installation



NOTE: Differences between the 2WD and 4WD are covered in this page. Refer to base manual (62SH300) for the information not covered in this page.

1. Install the transmission to the side transmission mount.
2. Install the cable bracket to the rear transmission mount bracket.
3. Install the select and shift cables.

NOTE: Take care not to bend the cables.

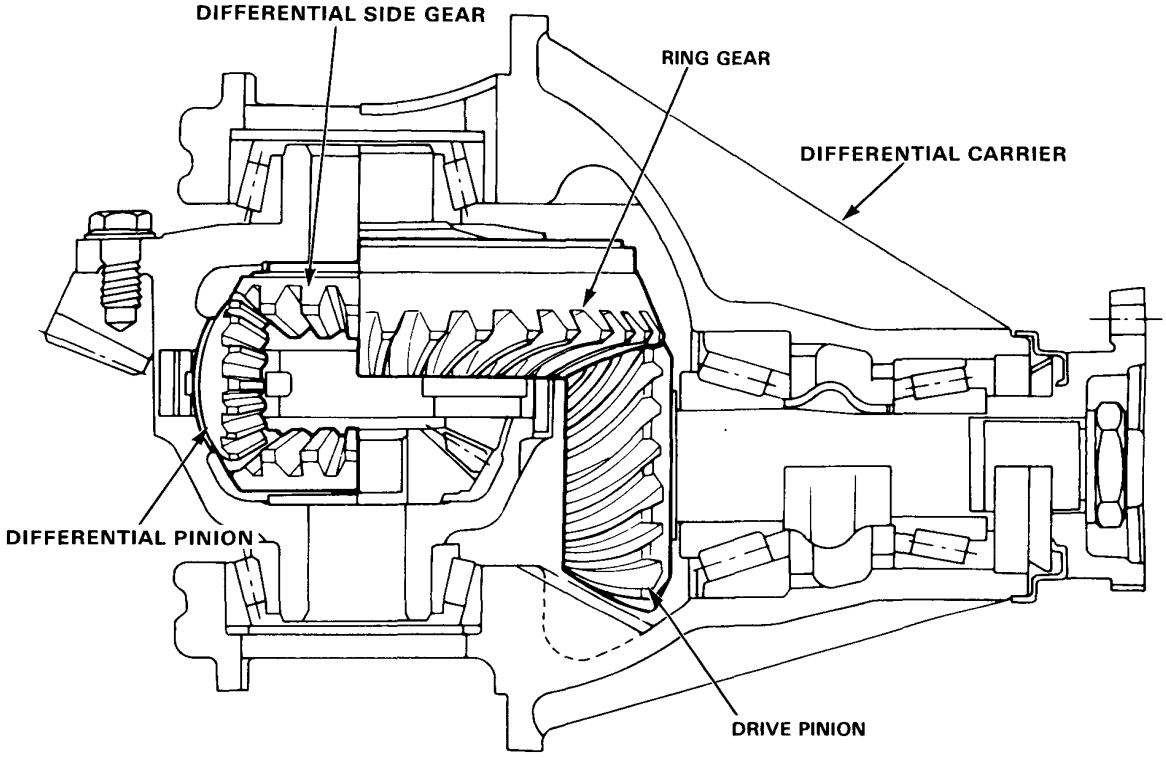


4. Install the intermediate shaft (See Section 10).
5. Install the propeller shaft to the companion flange.

4WD Rear Differential

Construction

The rear differential gearing provides additional gear reduction between the transfer and the rear wheels. The ring gear and drive pinion are of a hypoid bevel gear type. The differential pinion and side gears are spur bevel gears. A liquid sealant is used to seal the mating surfaces of the housing and differential carrier. A breather with a one-way check valve relieves pressure built up in the housing during operation. The drive pinion runs on two tapered bearings. A collapsible spacer between the bearings facilitates preload adjustment.



Reduction gear ratio		2.529
Ring gear		43T
Drive pinion		17T
Side gear		16T
Pinion		10T
Oil	Above 5°C (41°F)	Hypoid gear oil SAE#90
	Below 5°C (41°F)	Hypoid gear oil SAE#80

NOTE: *Most problems in the unit are to be diagnosed by identifying noises from the gears or bearings.* Care should be taken during diagnoisis not to confuse rear differential noises with those from other drive train components.

[Noise symptoms will be most prominent when 4WD is engaged.]

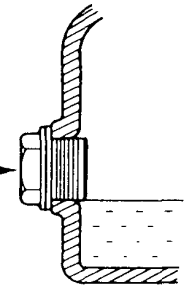
Symptom	Probable Cause	Remedy
Consistent noise during cruising	● Lack of oil ● Foreign matter stuck in gears, etc. ● Improper tooth contact between ring gear and drive pinion ● Worn or damaged side bearing ● Deformed ring gear or carrier	● Replenish oil ● Clean and inspect ● Replace any damaged or faulty parts ● Adjust or replace
Gear noises while accelerating	● Lack of oil ● Foreign matter stuck in gears, etc. ● Improper drive pinion preload ● Chipped or damaged gears	● Replenish oil ● Clean and inspect ● Replace
Gear noises while coasting of accelerating	● Improper drive pinion preload ● Damaged or chipped gears	● Adjust or replace
Bearing noises while accelerating or coasting/ deceleration	● Cracked or damaged drive pinion bearing or side bearing	● Replace
Abnormal noises when rounding a curve	● Worn (excessive play) or damaged side bearing ● Damaged side gear, pinion, or pinion shaft	● Replace
Abnormal noises during acceleration or when first driving away from a stop.	● Excessive backlash between ring gear and drive pinion ● Improper ring gear or drive pinion preload ● Excessive pinion backlash ● Worn differential splines ● Loose companion flange nuts and other fasteners	● Adjust ● Adjust or replace ● Recheck torque or replace
Oil leak	● Oil level too high ● Clogged breather hole ● Loose carrier or inadequate sealing ● Worn or damaged oil seal	● Lower to proper level ● Clean or replace ● Recheck torque or apply sealant ● Replace
Overheating	● Lack of oil ● Insufficient ring gear-to-pinion backlash ● Excessive ring gear or drive pinion preload	● Replenish ● Adjust ● Adjust or replace

Rear Differential

Maintenance

Oil Level Check

Check with the oil at the operating temperature, engine OFF, and the car on level ground. Remove the oil filler bolt and check the level. The oil should be level with the bottom edge of the hole., add oil until it begins to run out, then reinstall the bolt.



If oil level is low, check for oil leaks past the companion flange and differential carrier.

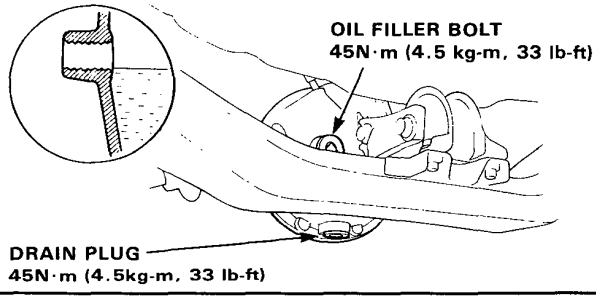
Oil Change

1. Change with the engine OFF, and the car on level ground.
2. Remove the oil filler bolt.
3. Remove the oil drain bolt using a 9.5 mm (0.37 in) drive socket wrench.
4. Drain oil into a pan.
5. Reinstall the drain bolt using a new aluminum washer.
6. Pour fresh oil through the filler hole until it runs out, then reinstall the filler bolt.

Torque: 45 N·m (4.5 kg-m, 33 lb-ft)

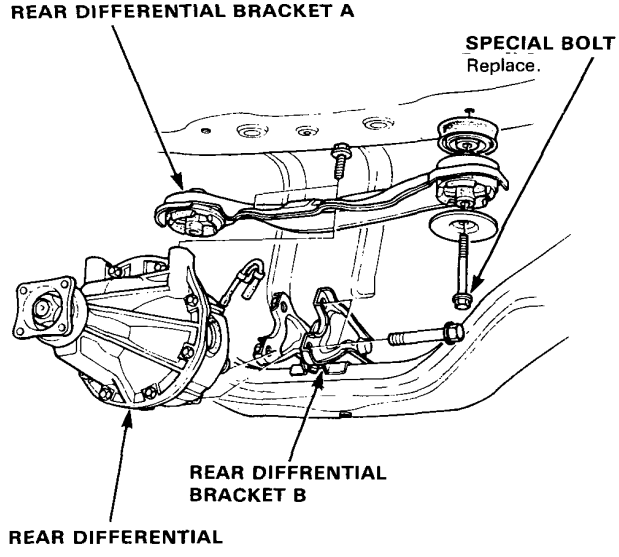
Capacity:
0.70 liters after overhaul
0.65 liter after draining

Recommended oil:
Hypoid gear oil
API Classification GL5 or equivalent
Viscosity SAE #90 above 5°C (41°F)
SAE #80 below 5°C (41°F)



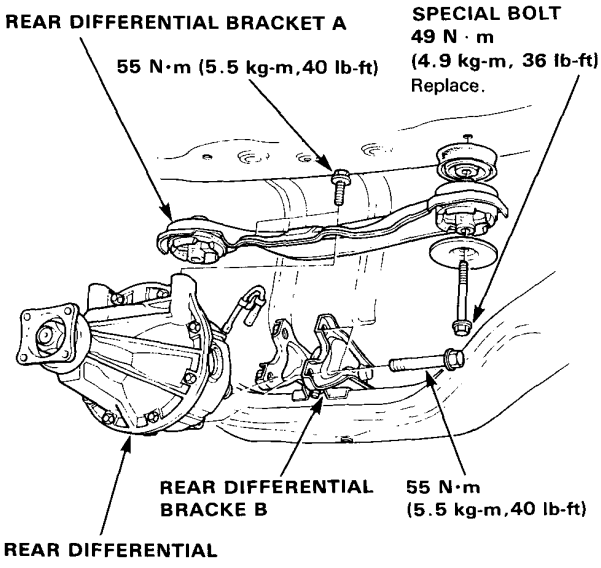
Removal

1. Drain oil from the differential.
2. Remove the propeller shaft (see section 10).
3. Remove the right and left rear drive shafts (see section 10).
4. Remove the mounting bolts from the bracket B.
5. Remove the rear differential bracket A.
6. Remove the differential from the rear differential bracket A.



Installation

1. Install the differential assembly on the rear differential bracket A.
2. Install the rear differential bracket A.
3. Tighten the mounting on the rear differential bracket B.
4. Install the right and left rear drive shafts. (see section 10).
5. Install the propeller shaft (see section 10).
6. Rifill the rear differential with oil.

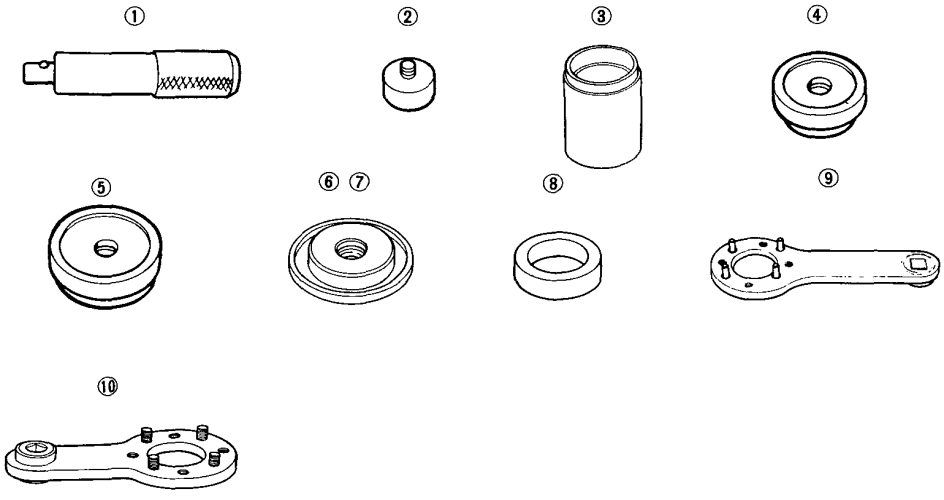


Driveshafts

Special Tools

Special Tools

Ref. No.	Tool Number	Description	Q'ty	Remarks
①	07749–0010000	Driver	1	
②	07746–0040900	Driver Pilot, 40 mm	1	
③	07965–SD90100	Support Base	1	
④	07746–0010400	Attachment, 52 x 55 mm	1	
⑤	07746–0010500	Attachment, 62 x 68 mm	1	
⑥	07947–6340201	Driver Attachment	1	
⑦	07947–*SD90200*	Driver Attachment	1	
⑧	07965–SD90200	Support Collar	1	
⑨	07HAB–SD90100	Companion Flange Holder	1	
⑩	07926–SD90000	Companion Flange Holder	1	

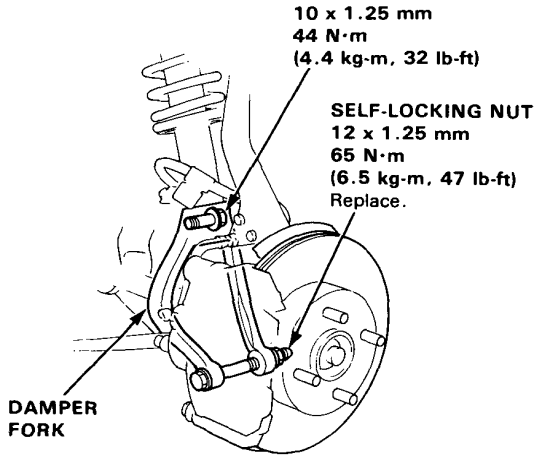


Front Driveshafts

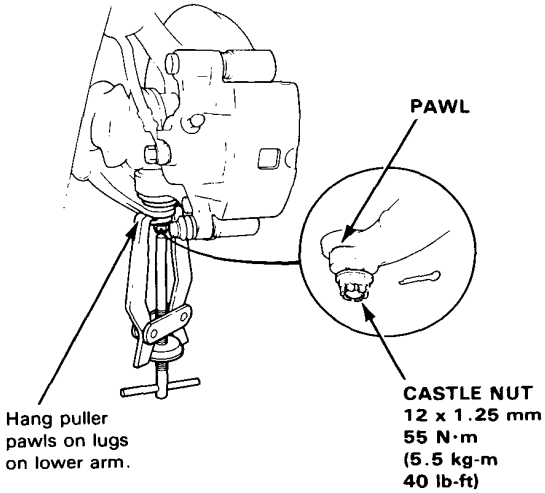
Removal

1. Loosen the front wheel lug nuts.
2. Raise the front end of the car and place safety stands in the proper locations. Remove the front wheels.
3. Drain the transmission oil.

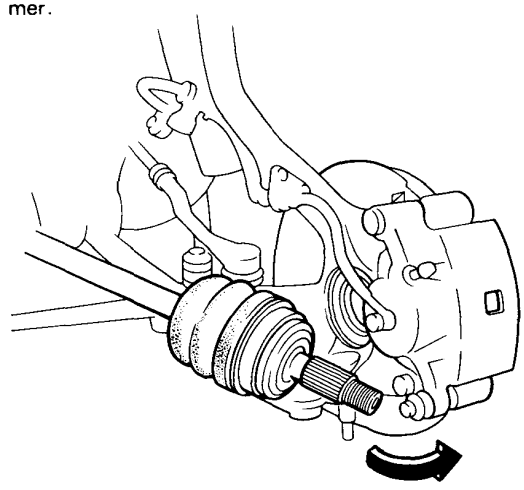
   NOTE: It is not necessary to drain the transmission oil when only the left driveshaft is removed.
4. Raise the locking tab on the spindle nut and remove it with a 36 mm (1-7/16 in.) socket wrench.
5. Remove the damper fork nut and damper pinch bolt. Remove the damper fork.



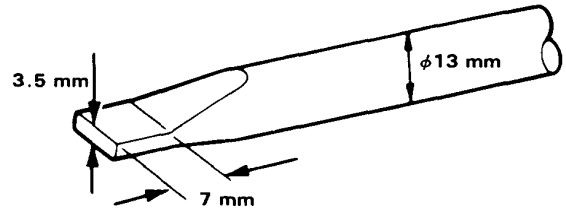
6. Remove the knuckle-to-lower arm castle nut, and separate the lower arm from the knuckle using a puller with the pawls applied to the lower arm.

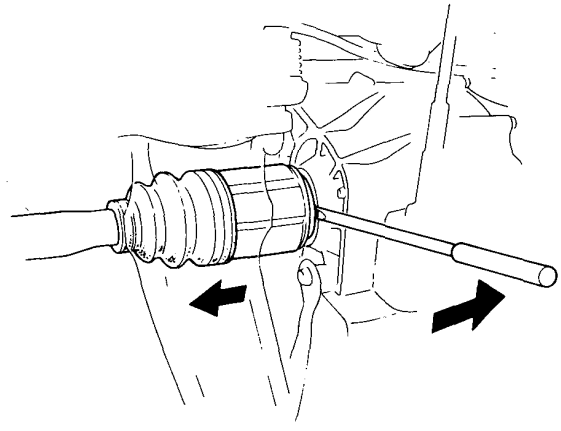


7. Pull the knuckle outward and remove the driveshaft outboard joint from the knuckle using a plastic hammer.



8. Pry the driveshaft assembly with a screwdriver as shown to force the set ring at the driveshaft end past the groove.
9. Pull the inboard joint and remove the driveshaft and CV joint out of the differential case or intermediate shaft (4WD) as an assembly.





CAUTION:

- **Do not pull on the driveshaft, as the CV joint may come apart.**
- **Use care when prying out the assembly and pull it straight to avoid damaging the differential oil seal or intermediate shaft dust seal.**

Front Driveshafts

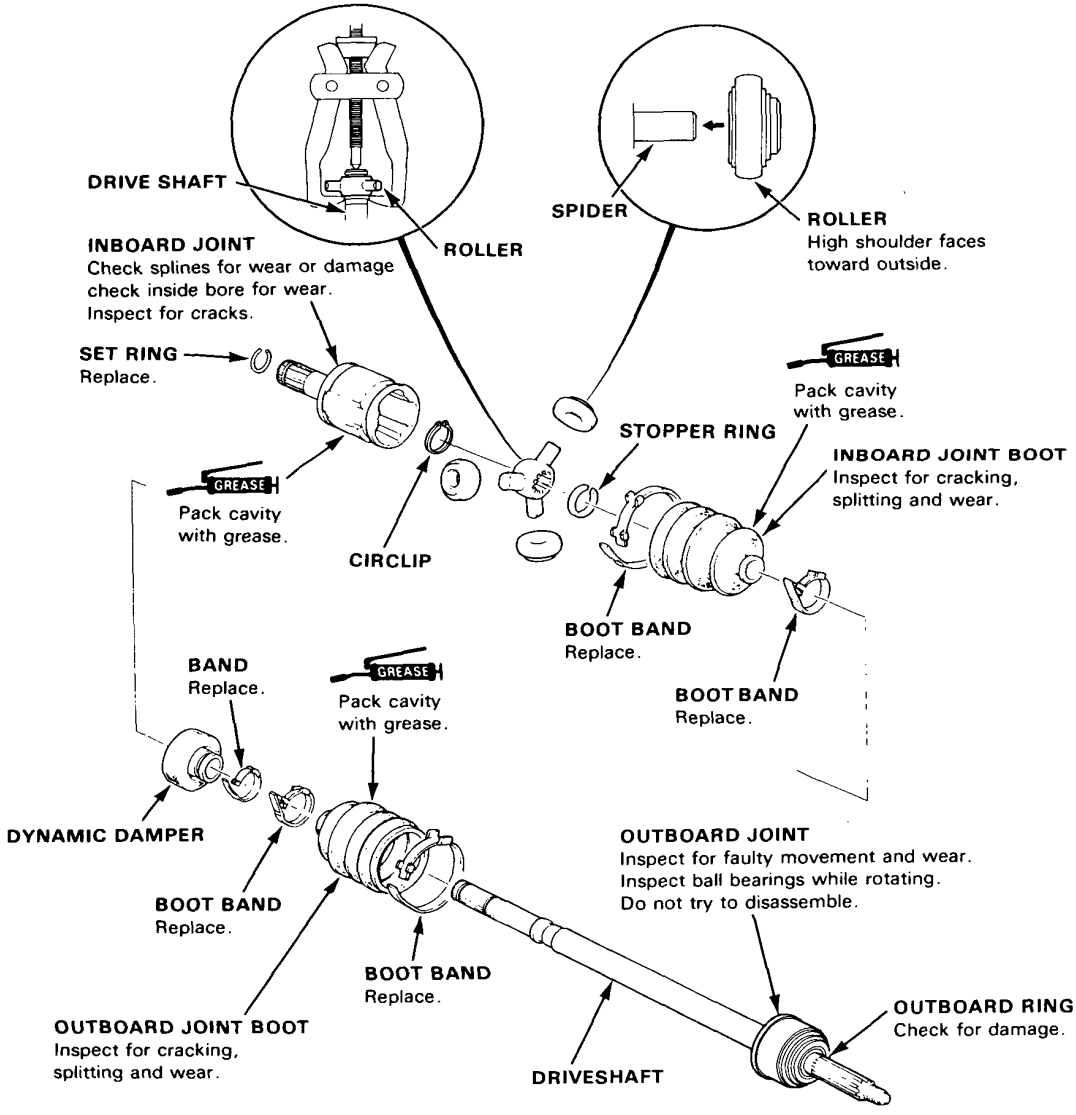
Disassembly/Inspection

NOTE:
- Mark the rollers and roller grooves during disassembly to ensure proper positioning during reassembly.
- Before disassembly, mark the spider and driveshaft so they can be reinstalled in their original positions.
- The inboard joint must be removed to replace the boots.

GREASE Thoroughly pack the inboard joint and both joint boots with molybdenum disulfide grease when reassembling.

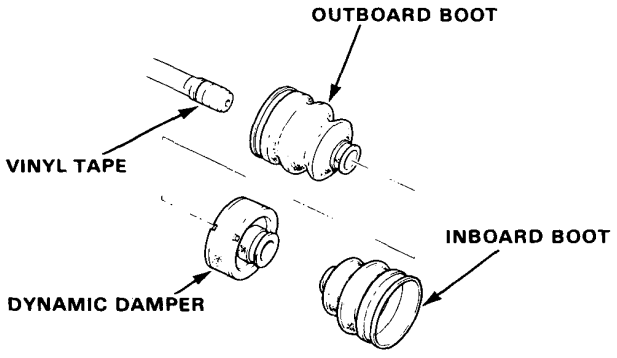
Grease Quantity:

	2WD and 4WD (Left Shaft)
Inboard Joint	120~130 g
Outboard Joint	90~100 g

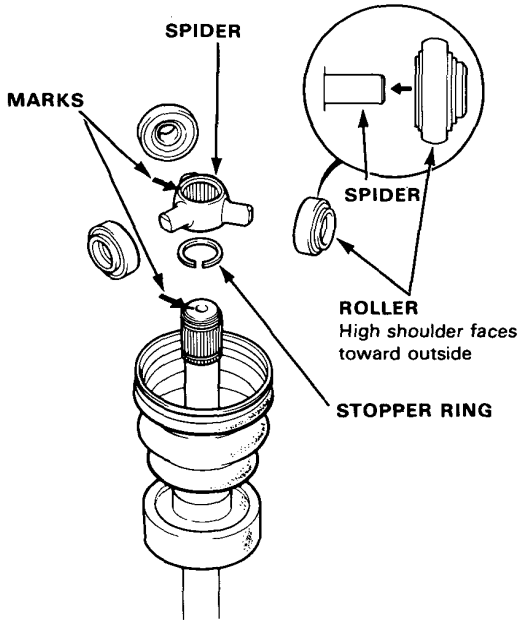


Reassembly

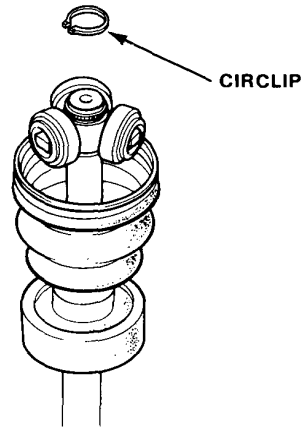
1. Wrap the splines with vinyl tape to prevent damage to the boots and dynamic damper.
2. Install the outboard boot, dynamic damper and inboard boot to the driveshaft, then remove the vinyl tape.



3. Install the stopper ring onto the driveshaft groove.
4. Install the spider on the driveshaft by aligning the marks on the spider and end of the driveshaft.
5. Fit the rollers to the spider with their high shoulders facing outward.
   CAUTION:
   - **Reinstall the rollers to their original positions on the spider.**
   - **Hold the driveshaft assembly so the spider and roller points up, to prevent it from falling off.**

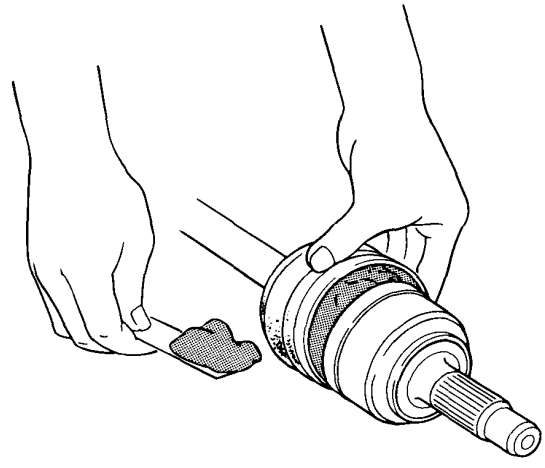


6. Fit the circlip onto the driveshaft groove.



7. Pack the outboard joint boot with molybdenum disulfide grease.

   Grease Quantity: 90~100 g



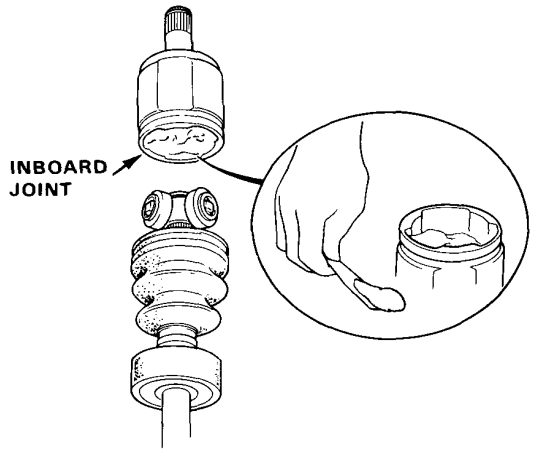
(cont'd)

Reassembly (cont'd)

8. Pack the inboard joint with molybdenum disulfide grease.
   Grease Quantity: 120~130g

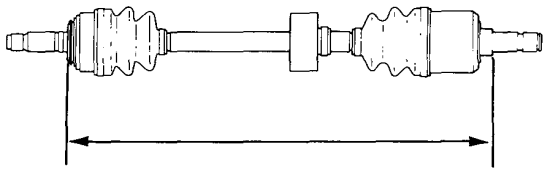
9. Fit the inboard joint onto the driveshaft.

   CAUTION: Hold the driveshaft assembly so the inboard joint points up, to prevent it from falling off.



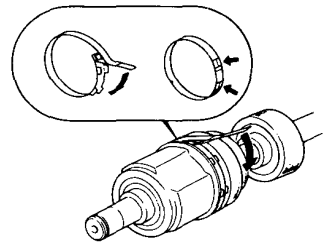
10. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full entension.

    NOTE: The ends of the boots seat in the groove of the driveshaft and joint.

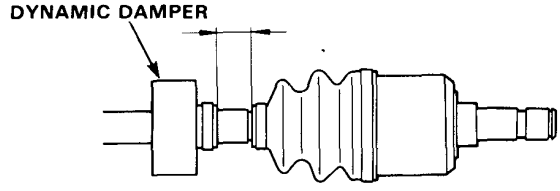


	Left	Right
2WD	774.5-779.5 mm (30.50-30.69 in)	481.5-486.5 mm (18.96-19.15 in)
4WD Left Shaft	485~490 mm (19.09-19.29 in)	—

11. Install new boot bands on the boot and bend both sets of locking tabs.
12. Lightly tap on the doubled-over portions to reduce their height.

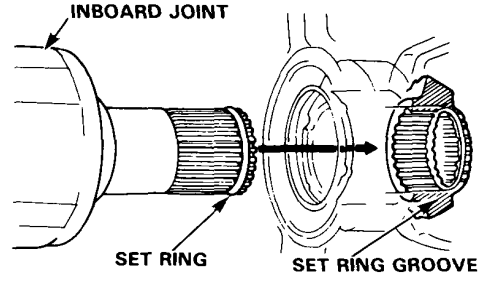


13. Position dynamic damper
    - Position the dynamic damper as shown below.
    - Lighly tap on the doubled-over portion to reduce its height.
    - Install a new dynamic damper band and bend down both sets of locking tabs.



		Left	Right
2WD	KY,KP,KT,KU	53.7±2mm (2.1±0.08 in)	—
	Others	53.7±2 mm (2.1±0.08 in)	20±2 mm (0.78±0.08 in)
4WD Left Shaft		30±2 mm (1.2±0.08 in)	—

14. Install a new set ring in the driveshaft groove.
15. Install the inboard end of the driveshaft into the differential.
    CAUTION:
    - **Always use a new set ring whenever the driveshaft is being installed.**
    - **Make sure the driveshaft locks in the differential side gear groove, and the CV joint subaxle bottoms in the differential or intermediate shaft.**



16. Refill the transmission.

Disassembly/Inspection (4WD Right Shaft)

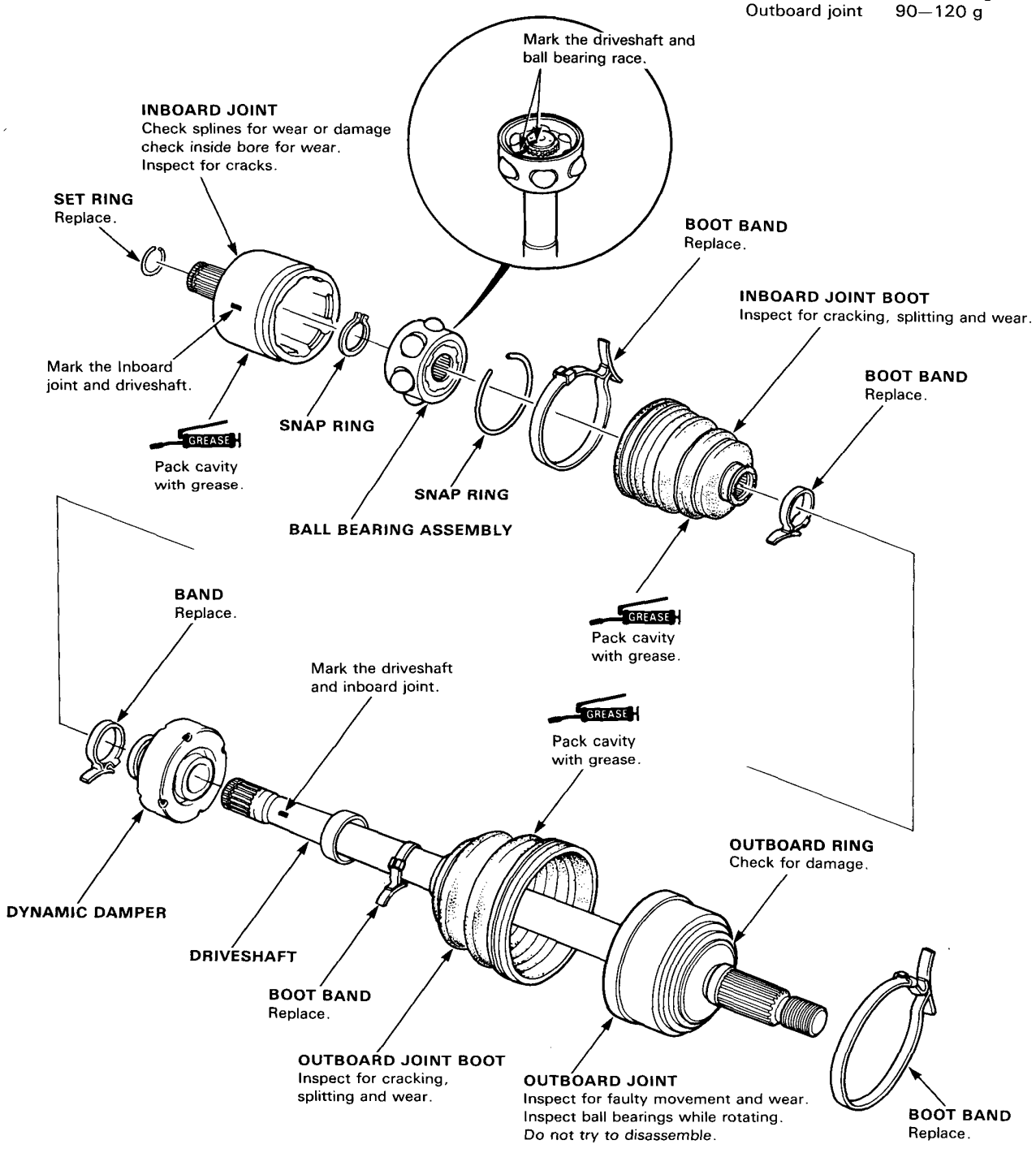
NOTE :

- Before disassembly, mark the Inboard joint, ball bearing race and driveshaft so they can be reinstalled in their originol positions.
- The Inboard joint must be removed to replace the boots.

GREASE Thoroughly pack the inboard joint and both joint boots with molybdenum disulfide grease when reassembling.

Grease Quantity :

Inboard joint	110—140 g
Outboard joint	90—120 g

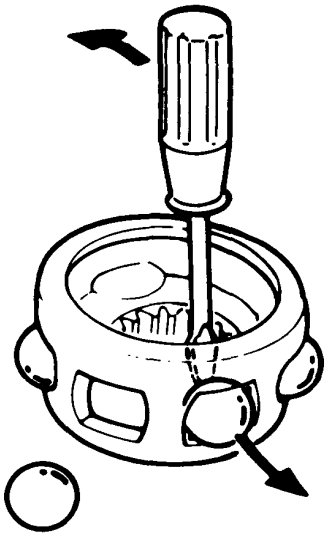


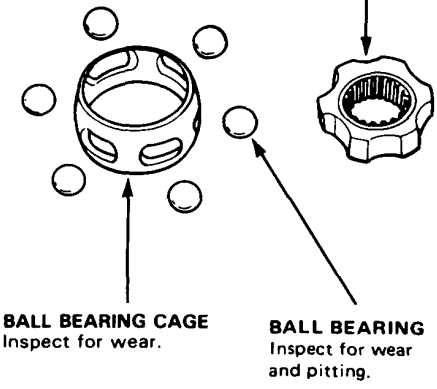
Front Driveshafts

Bearing Disassembly

1. To inspect the inboard CV joint bearing, put it on a bench and disassemble it by gently prying each ball out of the cage with a dull screwdriver.

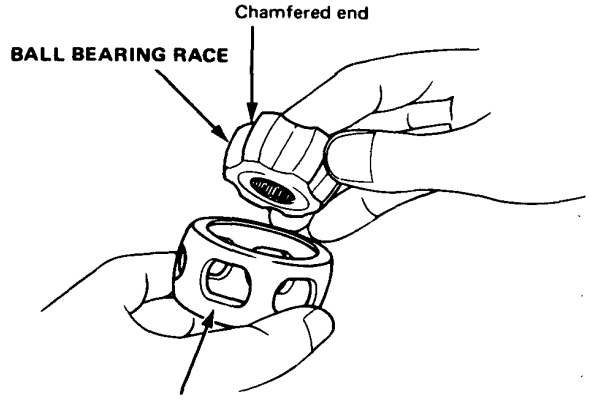
   NOTE: Individual parts for CV joints are not available. The inboard joint is available as a complete assembly; the outboard joint is available only as part of the complete axle assembly.



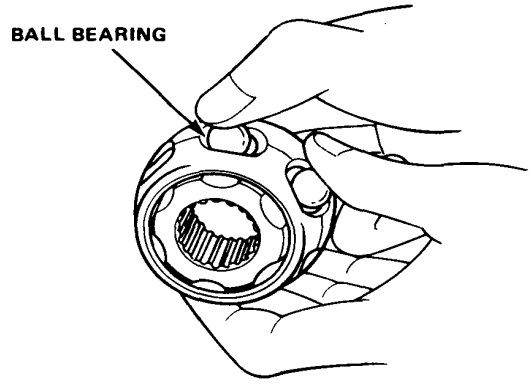


Bearing Reassembly

1. Install the ball bearing race with chamfered end towards small end of cage.

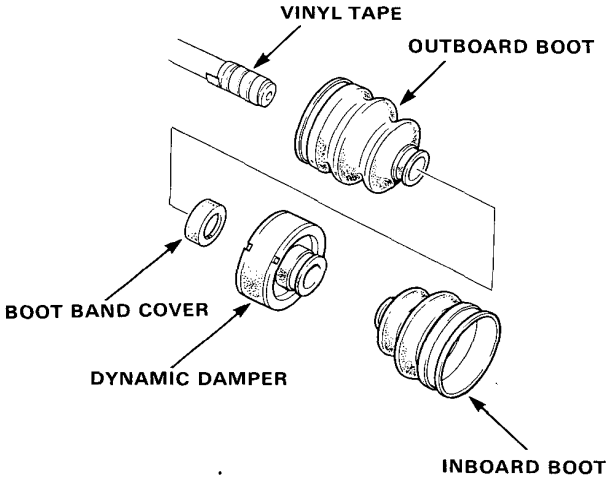


2. Press the balls in untill firmly seated.

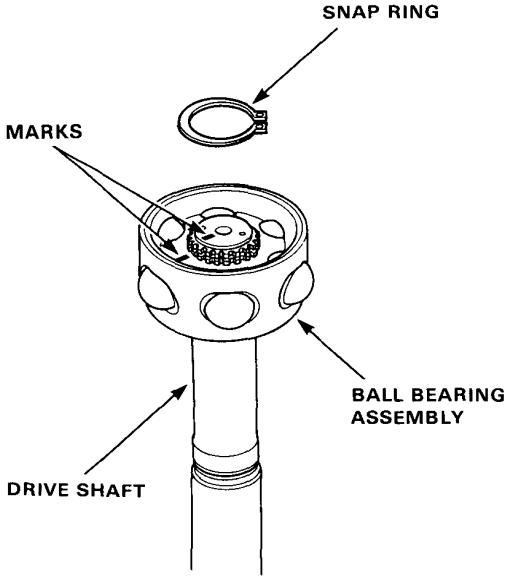


Reassembly

1. Wrap the splines with vinyl tape to prevent damage to the boots, boot band cover and dynamic damper.
2. Install the outboard boot, boot band cover, dynamic damper and Inboard boot to the driveshaft, then remove the vinyl tape.

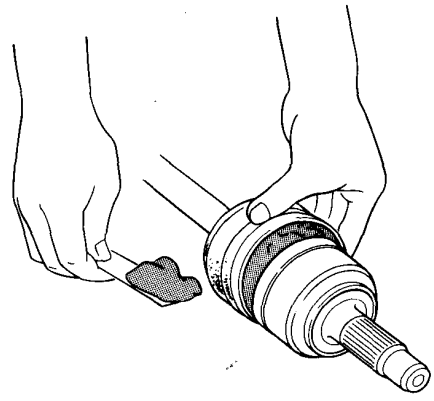


3. Install the ball bearing assembly on the driveshaft by aligning the marks on the bearing race and end of the driveshaft.
4. Fit the snapring onto the driveshaft groove.



5. Pack the outboard joint boot with molybdenum disulfide grease.

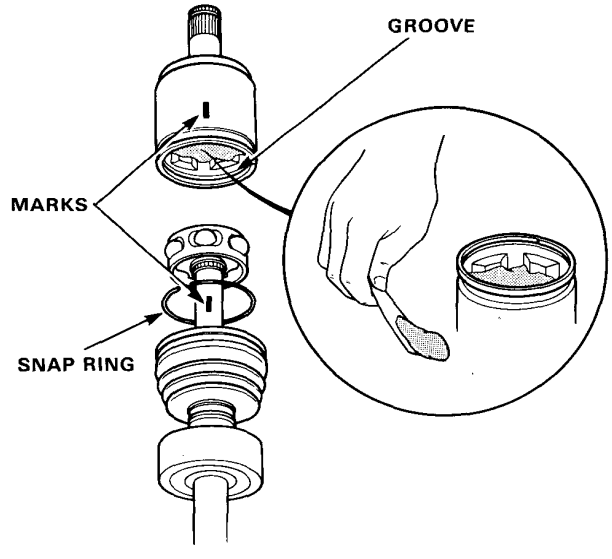
   Grease Quantity : 90~120 g



6. Pack the inboard joint with molybdenum disulfide grease.

   Grease Quantity : 110~140 g

7. Fit the inboard joint onto the driveshaft by aligning the marks on the inboard joint and driveshaft.
8. Install the snap ring onto the inboard joint groove.

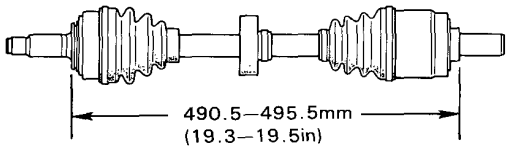


(cont'd)

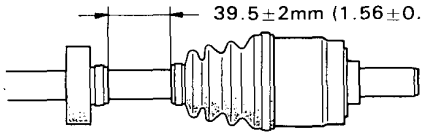
Reassembly (cont'd)

9. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full entension.

   NOTE : The ends of boots seat in the groove of the driveshaft and joint.

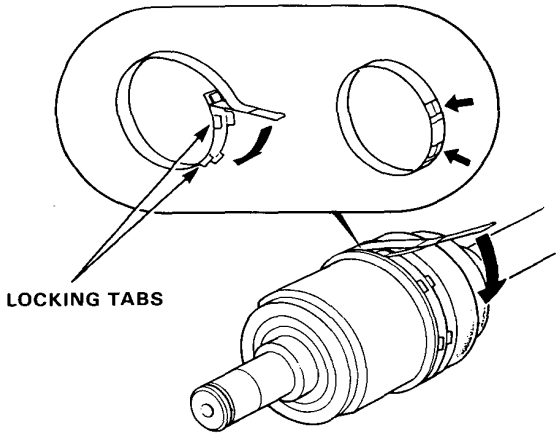


10. Position the dynamic damper as shown.
    - Lightly tap on the doubled-over portion to reduce its height.
    - Install a new dynamic damper band and bend down both sets of locking tabs.

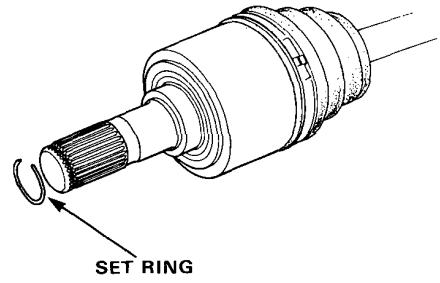


11. Install new boot bands on the boot and bend both sets of locking tabs.

12. Lightly tap on the doubled-over portions to reduce their height.

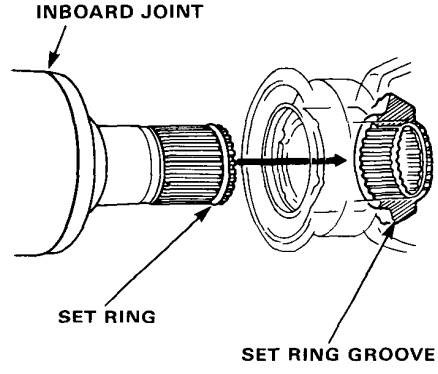


13. Install a new set ring in the driveshaft groove.



14. Install the inboard end of the driveshaft into the differential.

    CAUTION :
    - **Always use a new set ring whenever the driveshaft is being installed.**
    - **Make sure the driveshaft locks in the differential side gear groove, and the CV joint subaxle bottoms in the differential.**

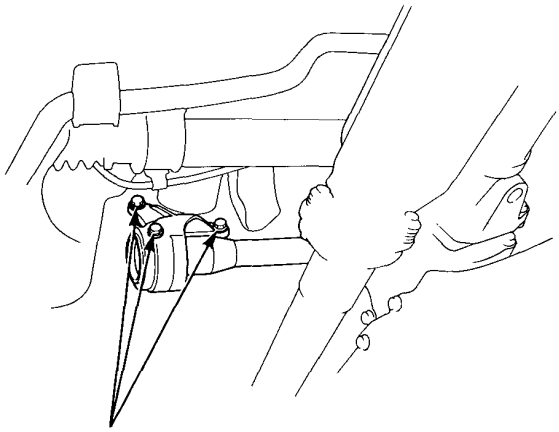


15. Refill the transmission.

Intermediate Shaft

Replacement

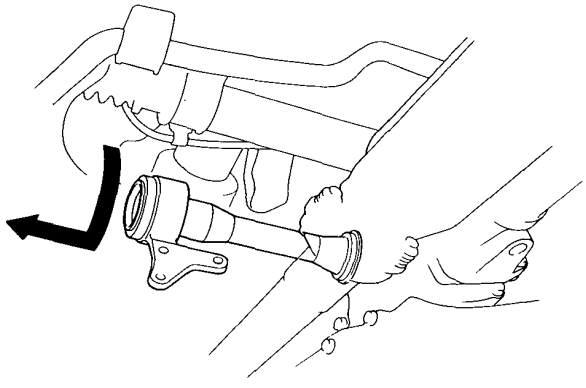
1. Drain oil from the transmission.
2. Remove the three 10 mm bolts.



10 x 1.25 mm
40 N·m (4.0 kg-m, 29 lb-ft)

3. Lower the bearing support close to the steering gearbox and remove the intermediate shaft from the differential.

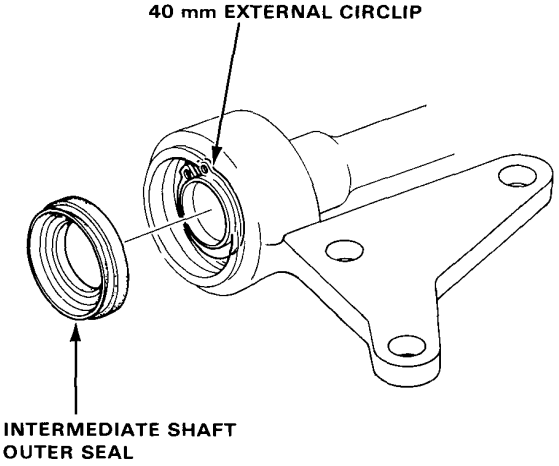
   CAUTION: To prevent damage to the differential oil seal, hold the intermediate shaft horizontal until it is clear of the differential.



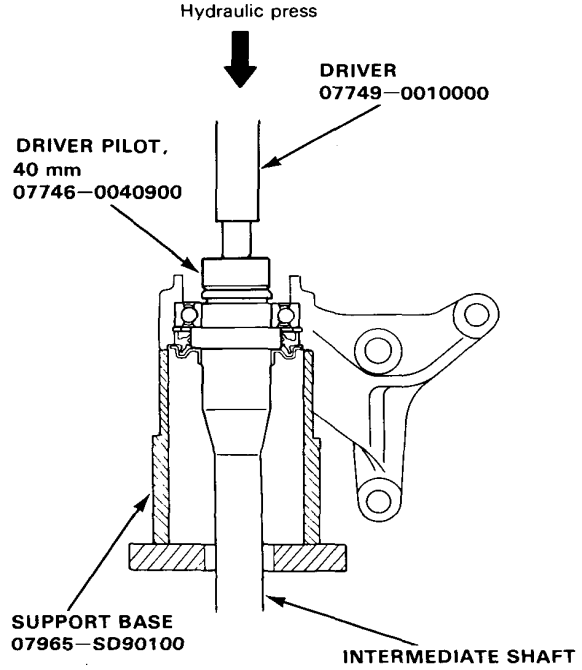
Installation is the reverse order of removal.

Disassembly

1. Remove the intermediate shaft outer seal.
2. Remove the 40 mm external circlip.



3. Press the intermediate shaft out of the shaft bearing.

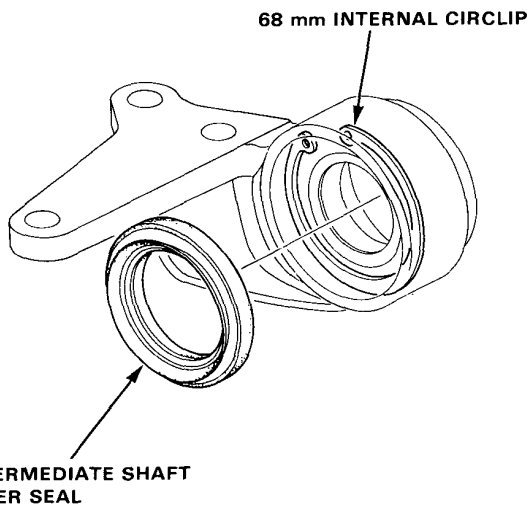


(cont'd)

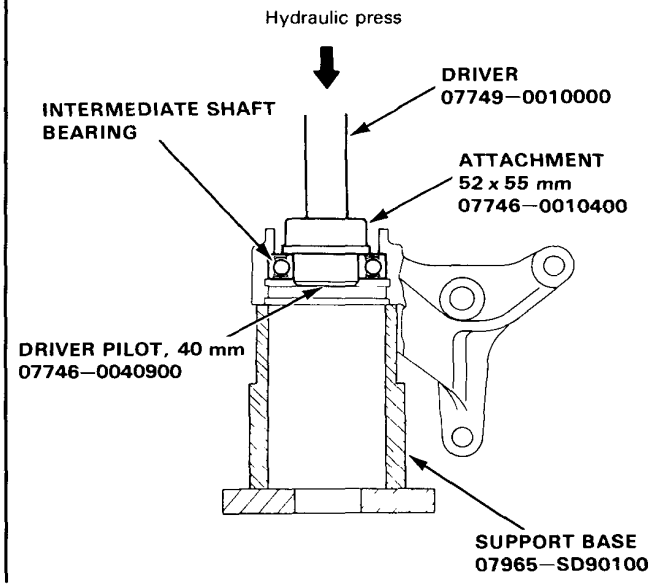
Infenmediate Shaft

Disassembly (cont'd)

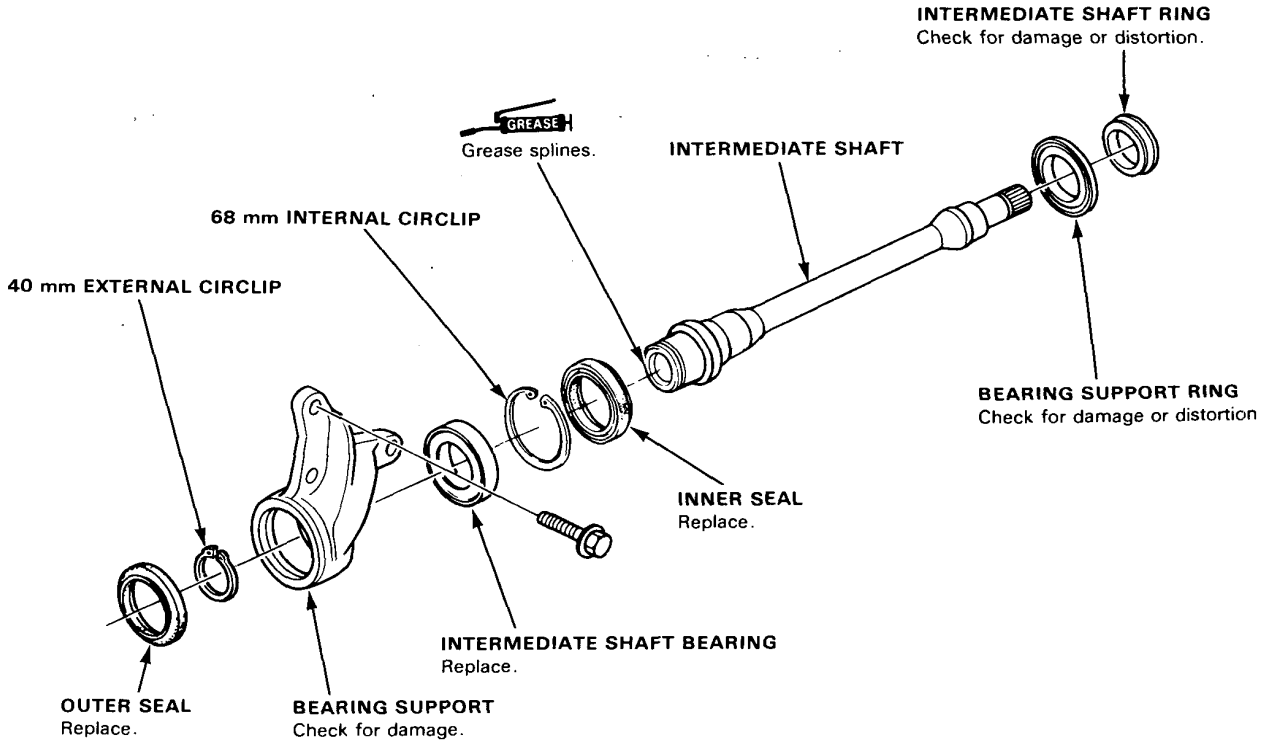
4. Remove the intermediate shaft inner seal.
5. Remove the 68 mm internal circlip.



6. Press the intermediate shaft bearing out of the bearing support.

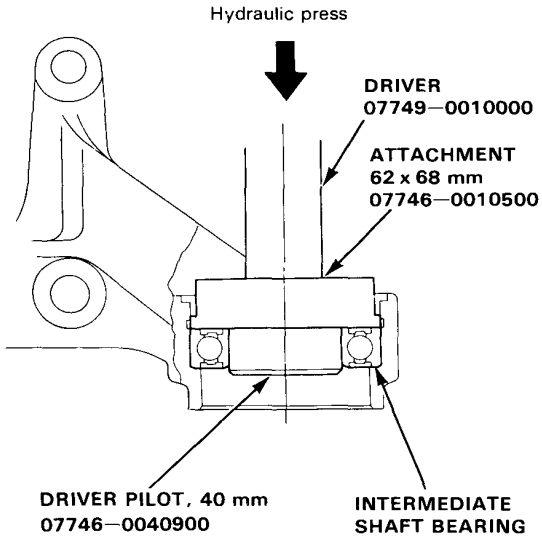


Index/Inspection



Reassembly

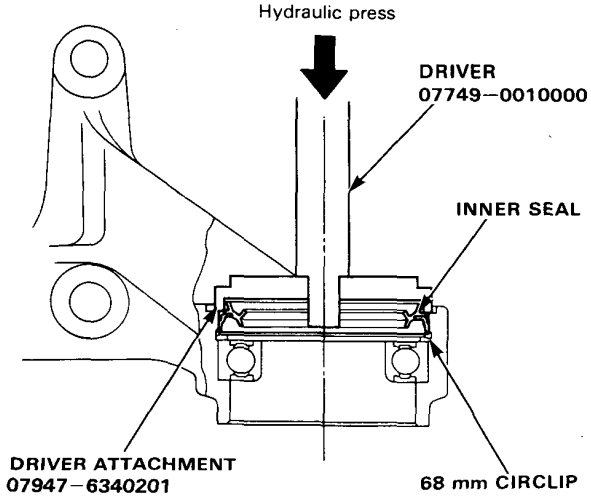
1. Press the intermediate shaft bearing into the bearing support.



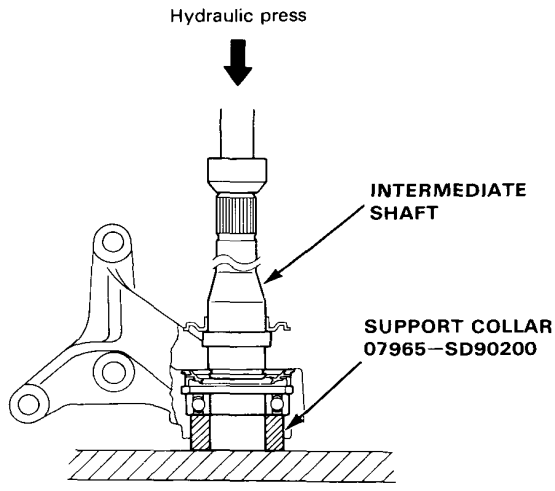
2. Seat the 68 mm circlip in the groove of the bearing support.

   CAUTION: Install the circlip with the tapered end facing out.

3. Press the intermediate shaft inner seal into the bearing support.



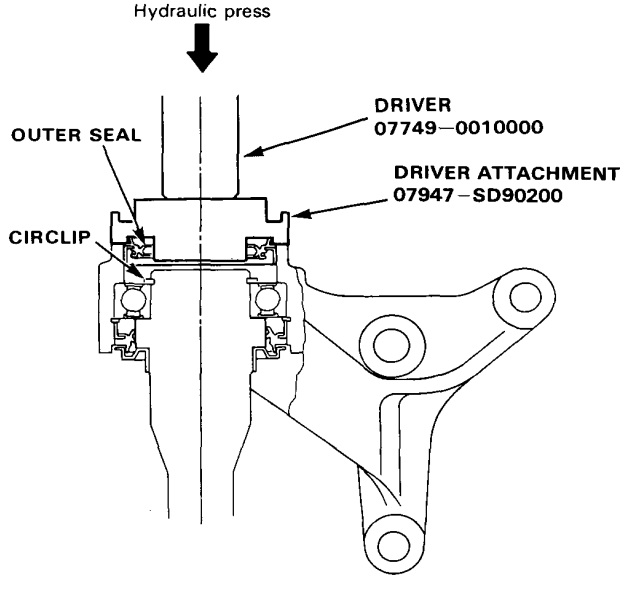
4. Press the intermediate shaft into the shaft bearing.



5. Seat the 40 mm external circlip in the groove of the intermediate shaft.

   CAUTION: Install the circlip with the tapered end facing out.

6. Press the outer seal into the bearing support.

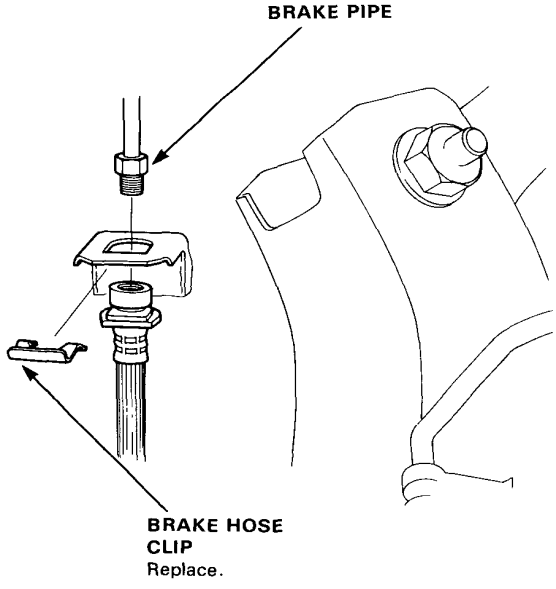


Rear Driveshafts

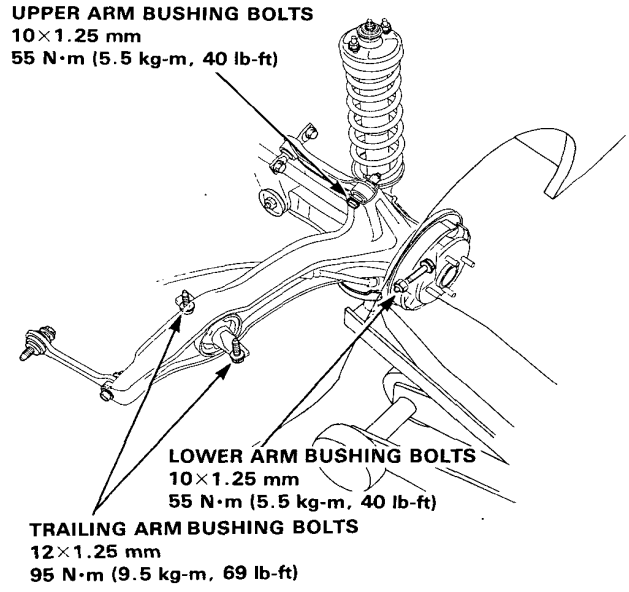
Removal

1. Pry the spindle nut stake away from the spindle, then loosen the nut using a 32 mm socket.
2. Loosen the wheel nuts slightly.
3. Raise the rear of car and support on safety stands in proper locations.
4. Remove the wheel nuts, wheels, and spindle nut.
5. Disconnect the brake hose from the brake pipe using a 10 mm flare nut wrench.

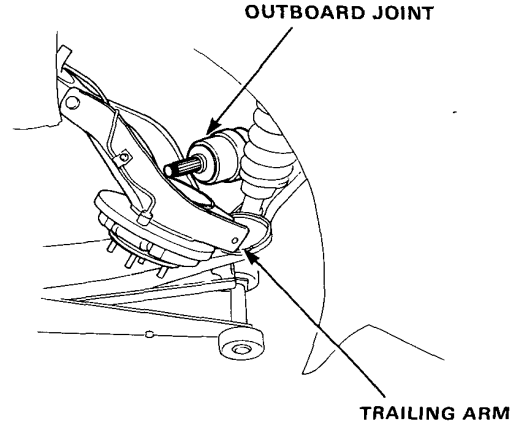
CAUTION:
- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Replace parts with new ones whenever specified to do so.**
- **Use only clean brake fluid.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not spill brake fluid on the car, it may damage the paint ; if brake fluid does contact the paint, wash it off immediately with water.**



6. Raise the rear suspension with a floor jack until the weight of the lower arm is relieved.
7. Remove the trailing arm bushing bolts.
8. Disconnect the upper arm and lower arm from the trailing arm.

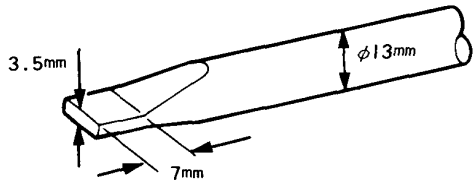


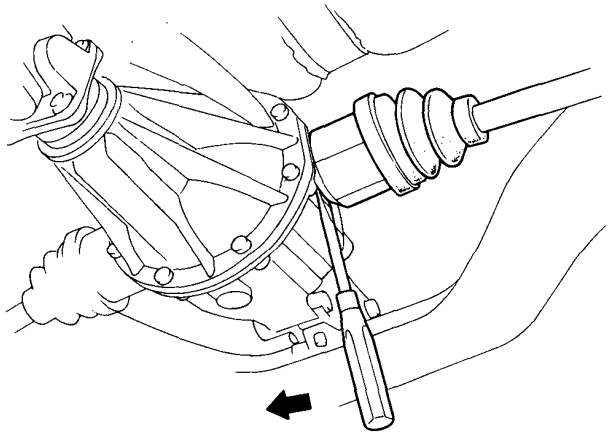
9. Pull the trailing arm outward and remove the rear driveshaft outboard joint from the trailing arm using a plastic hammemr.



10. Pry the driveshaft assembly with a screwdriver as shown to force the set ring at the driveshaft end past the groove.

    Pull the inboard joint and remove the driveshaft and CV joint out of the differential case as an assembly.





CAUTION:

- **Do not pull on the driveshaft, as the CV joint may come apart.**
- **Use care when prying out the assembly and pull it straight to avoid damaging the differential oil seal.**

Rear Driveshafts

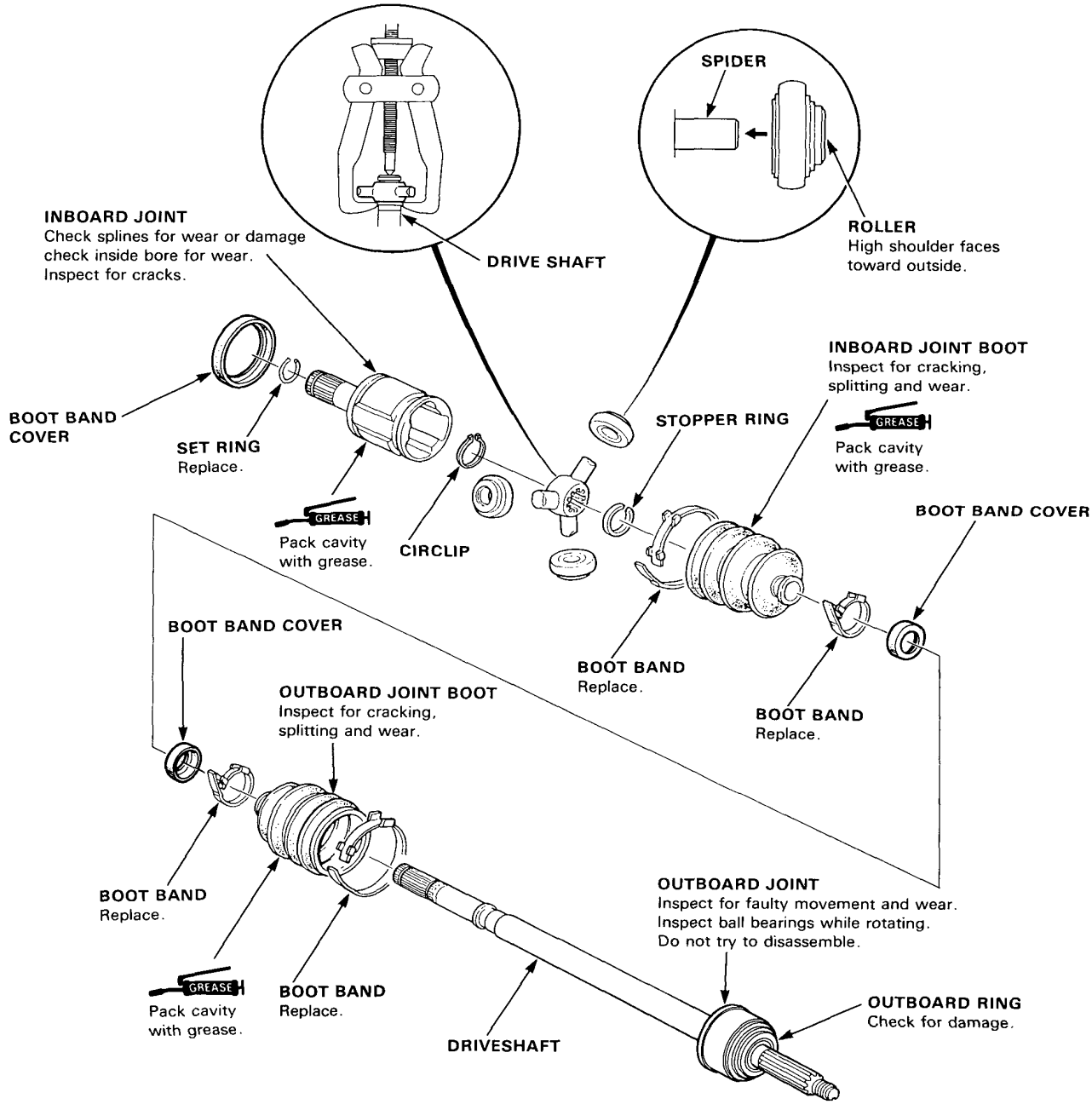
Disassembly/Inspection

NOTE:
- Mark the rollers and roller grooves during disassembly to ensure proper positioning during reassembly.
- Before disassembly, mark the spider and driveshaft so they can be reinstalled in their original positions.
- The inboard joint must be removed to replace the boots.

GREASE Thoroughly pack the inboard joint and both joint boots with molybdenum disulfide grease when ressembling.

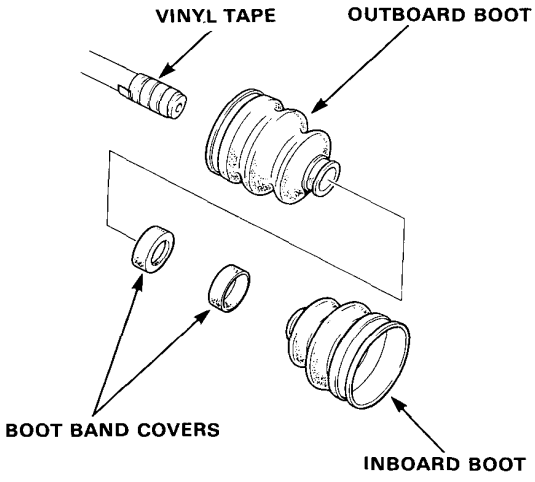
Grease Quantity :

Inboard joint	**100—110g**
Outboard joint	**70—80g**

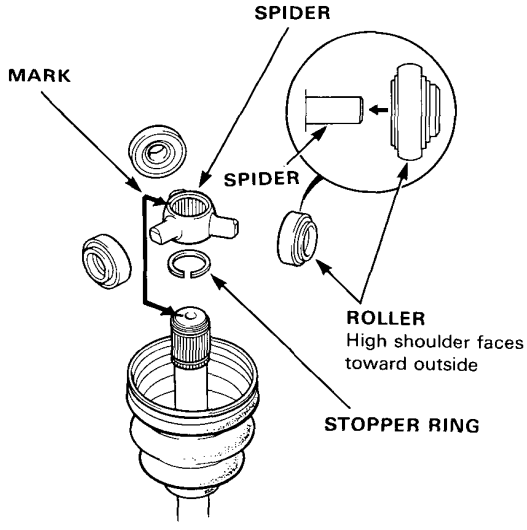


Reassembly

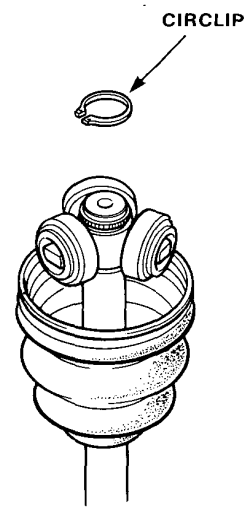
1. Wrap the splines with vinyl tape to prevent damage to the boots and covers.
2. Install the outboard boot, boot band covers and Inboard boot to the driveshaft, then remove the vinyl tape.



3. Install the stopper ring onto the driveshaft groove.
4. Install the spider on the driveshaft by aligning the marks on the spider end of the driveshaft.
5. Fit the rollers to the spider with their high shoulders facing outward.
   CAUTION:
   - ***Reinstall the rollers to their original positions on the spider.***
   - **Hold the driveshaft assembly so the spider and roller points up, to prevent it from falling off.**

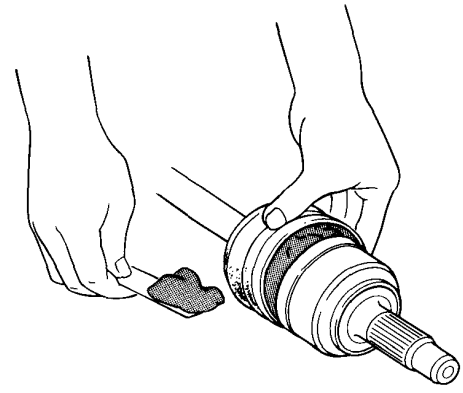


6. Fit the circlip onto the driveshaft groove.



7. Pack the outboard joint boot with molybdenum disulfide grease.

   Grease Quantity: 70~80 g



(cont'd)

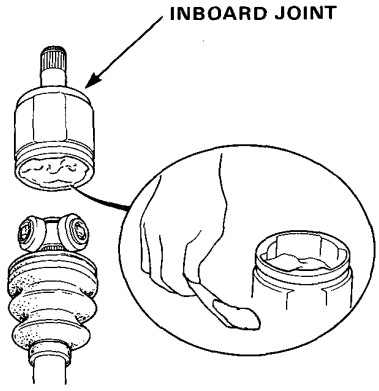
Reassembly (cont'd)

8. Pack the inboard joint with molybdenum disulfide grease.

   Grease Quantity: 100~110 g

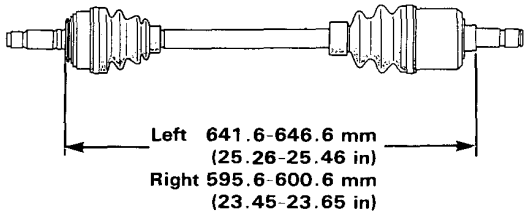
9. Fit the inboard joint onto the driveshaft.

   CAUTION: Hold the driveshaft assembly so the inboard joint points up, to prevent it from falling off.



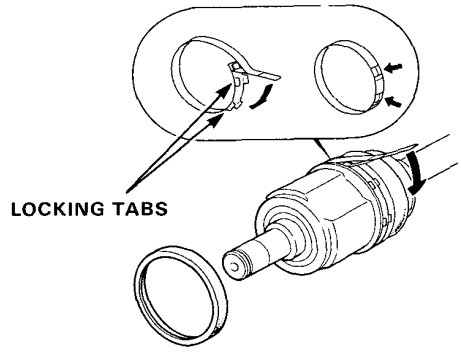
10. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full entension.

    NOTE: The ends of boots seat in the groove of the driveshaft and joint.



11. Install new boot bonds on the boot and bend both sets of locking tabs.

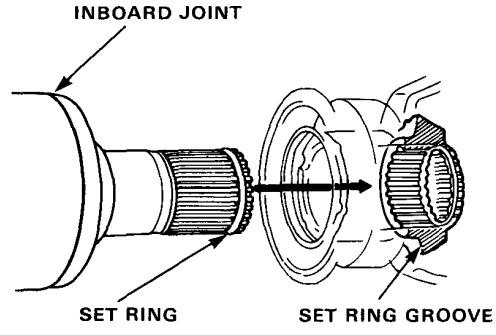
12. Lightly tap on the doubled-over portions to reduce their height.



13. Install a new set ring in the driveshaft groove.

14. Install the inboard end of the driveshaft into the differential.

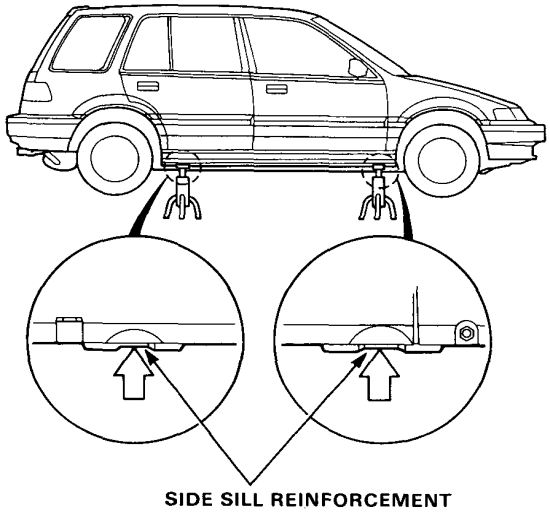
    CAUTION:
    - **Always use a new set ring whenever the driveshaft is being installed.**
    - **Make sure the driveshaft locks in the differential side gear groove, and the CV joint subaxle bottoms in the differential.**



Propeller Shafts

Viscous Coupling Stall Test

1. Raise the car off the ground and place safety stands under the side sill reinforcement sections.
2. Start the engine.
3. Keep the engine speed at idle.
4. Shift into low gear and gradually release the clutch.
5. Apply the parking brake firmly.
   - Viscous coupling is OK if the engine stalls.
   - Viscous coupling is faulty if the engine continues running.

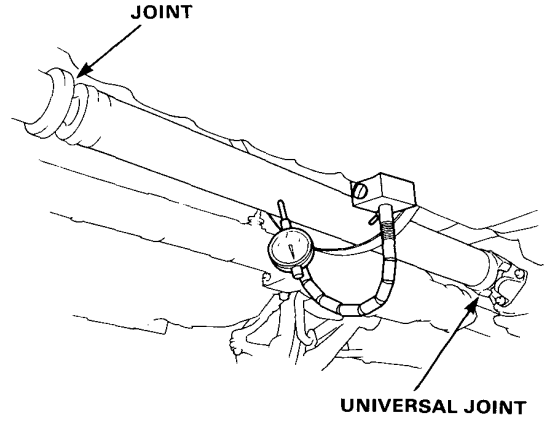


SIDE SILL REINFORCEMENT SECTIONS

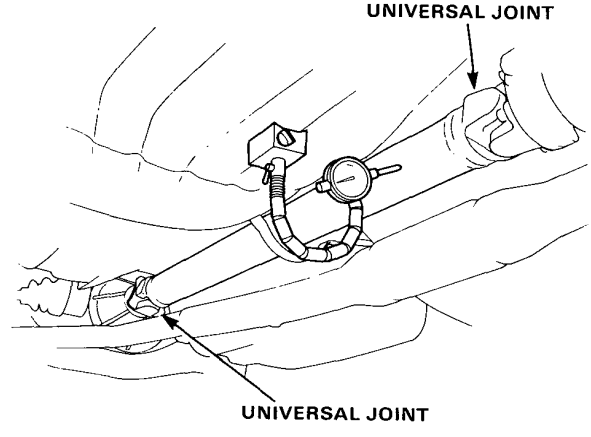
Shaft Runout/Joints/ Boot Inspection

1. Raise the car off the ground and support with safety stands in proper positions.
2. Install a dial indicator with the indicator contacting the center of the No.1 propeller shaft.
3. With someone holding either rear wheel, rotate the other wheel and check the runout.
4. Repeat this procedure for the No.3 propeller shaft.

No.1 Propeller Shaft
Runout:
Service Limit: 1.5 mm (0.06 in.)



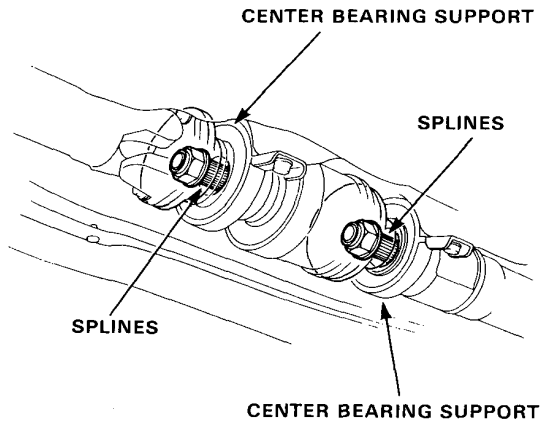
No.3 Propeller Shaft
Runout:
Service Limit: 1.5 mm (0.06 in.)



5. Check each universal joint for excessive play or rattle.
6. Check for loose joints or connections.
7. Check the boot for cracking, splitting or other faults.

Splines/Center Bearing Support Check

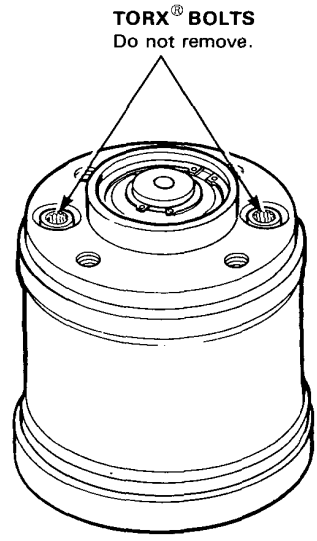
1. Raise the car off the ground and support with safety stands in proper positions.
2. Inspect the shaft splines for excessive play or rattle.
3. Inspect the center bearing support for play.



Viscous Coupling Precaution

The viscous coupling unit contains no serviceable or replaceable parts. If it is found to be faulty (fails the stall test or shows signs of leakage), it must be replaced as a unit.

Do not remove the TORX® bolts from the viscous coupling.

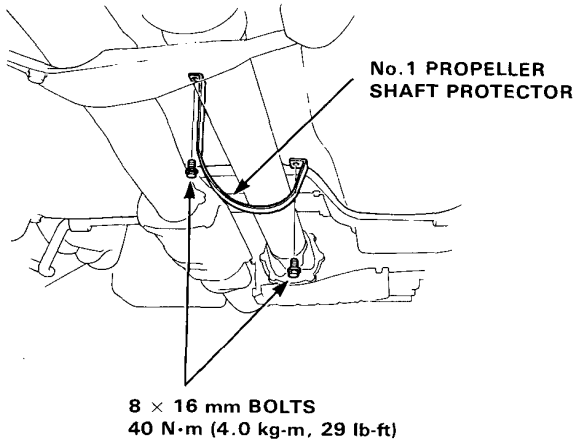


Removal

- No.1 Propeller Shaft

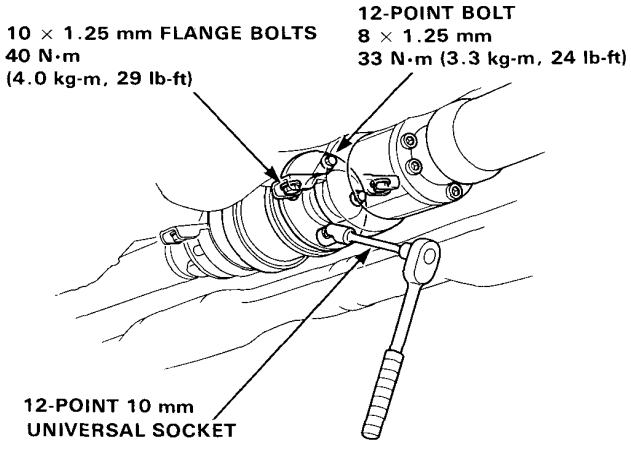
NOTE: Mark the shafts and joints for reassembly.

1. Remove the No.1 propeller shaft protector.



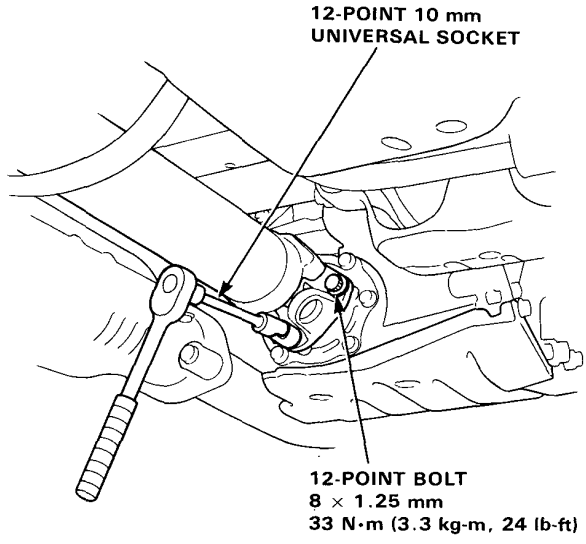
2. Disconnect the No.1 propeller shaft and viscous coupling (No.2 propeller shaft).

3. Remove the front center bearing support from the body.



NOTE: Use 12 Point Box Wrench for other portions.

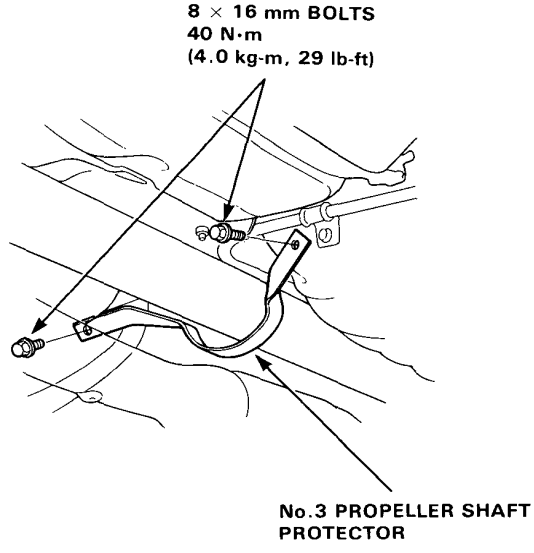
4. Remove the No.1 propeller shaft by disconnecting the U-joint.



NOTE: Use 12 Point Box Wrench for other portions.

- Viscous Coupling (No.2 Propeller Shaft) and No.3 Propeller Shaft.

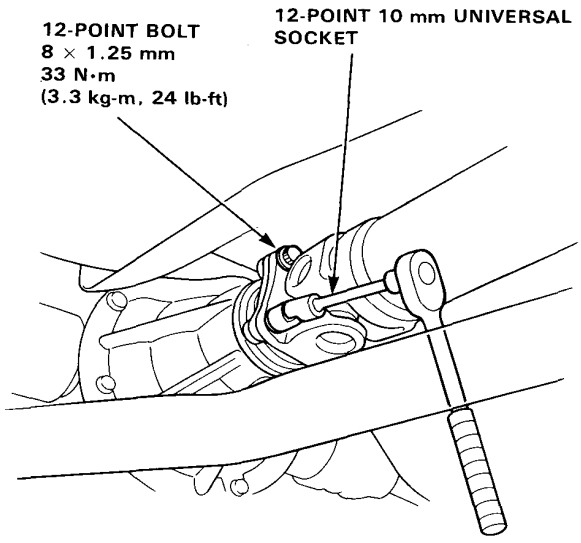
5. Remove the No.3 propeller shaft protector.



(cont'd)

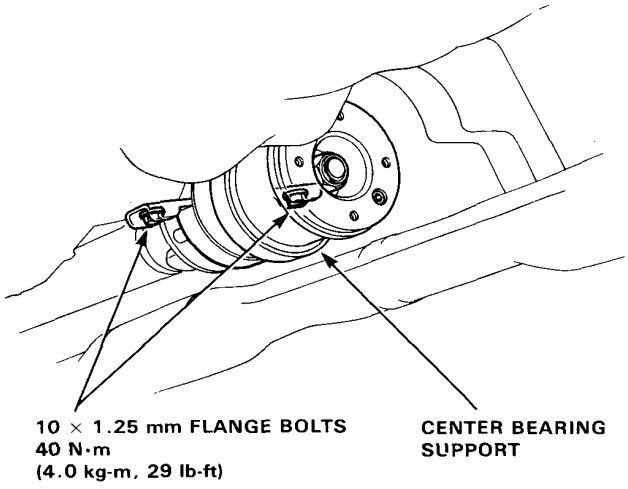
Removal (cont'd)

6. Disconnect the No.3 propeller Shaft and rear differential.



NOTE: Use 12 Point Box Wrench for other portions.

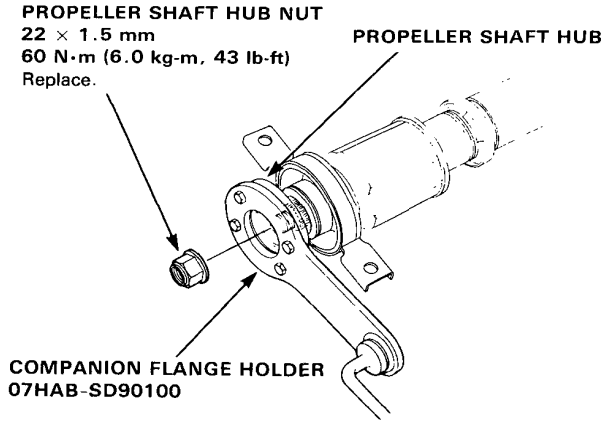
7. Remove the rear center bearing support from the body, then remove the viscous coupling (No.2 Propeller shaft) and No.3 propeller shaft.



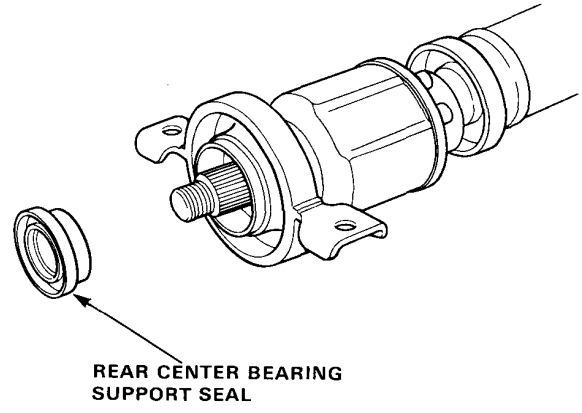
No.1 Propeller Shaft Disassembly

NOTE: Mark the shaft and hub before disassembly.

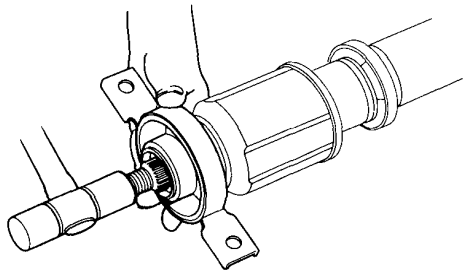
1. Remove the hub nut from the No.1 propeller shaft using the special tool to prevent the shaft from turning.
2. Remove the propeller shaft hub.



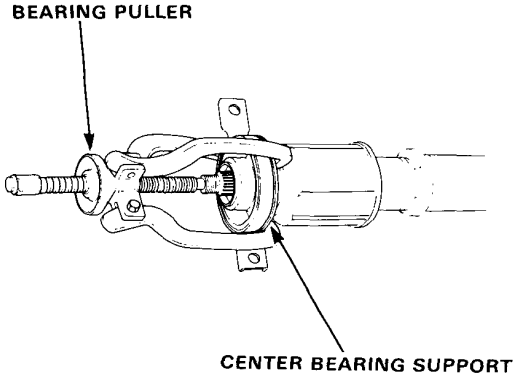
3. Remove the rear center bearing support seal.



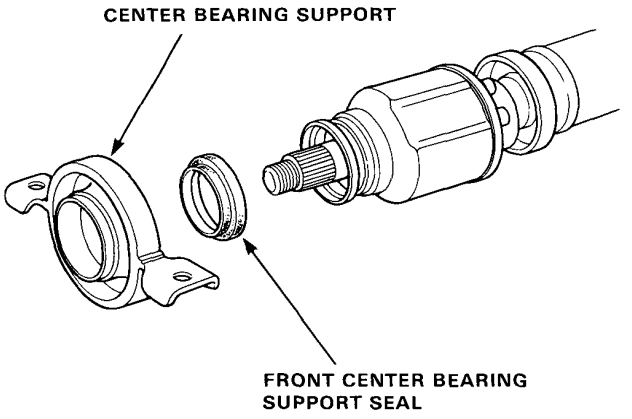
4. Holding the center bearing support with one hand, lightly tap on the shaft end with a soft hammer until the shaft is clear of the bearing support.



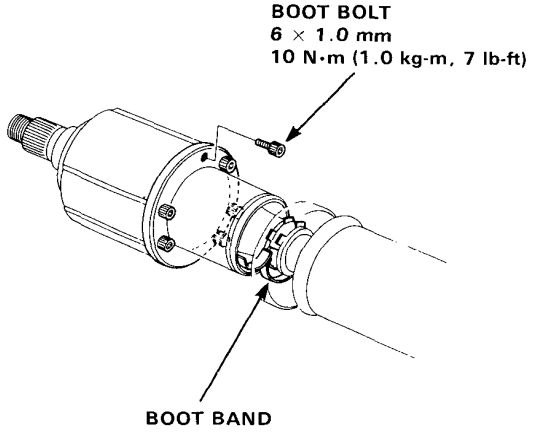
NOTE: If difficulty is encountered in removing the shaft ,use a puller. Replace the bearing support with a new one when a puller is used to remove it.



5. Remove the front center bearing support seal.



6. Unscrew the boot bolts from the joint housing of the No.1 propeller shaft.

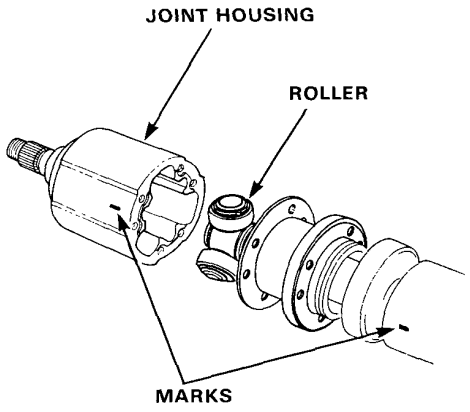


(cont'd)

No. 1 Propeller Shaft Disassembly (cont'd)

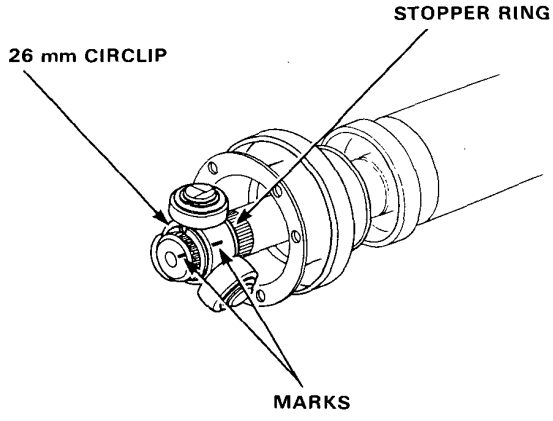
7. Pull the joint housing off propeller shaft.

   NOTE:
   - Mark the housing and shaft before separating them.
   - Be careful not to let the rollers fall off the spider during disassembly.



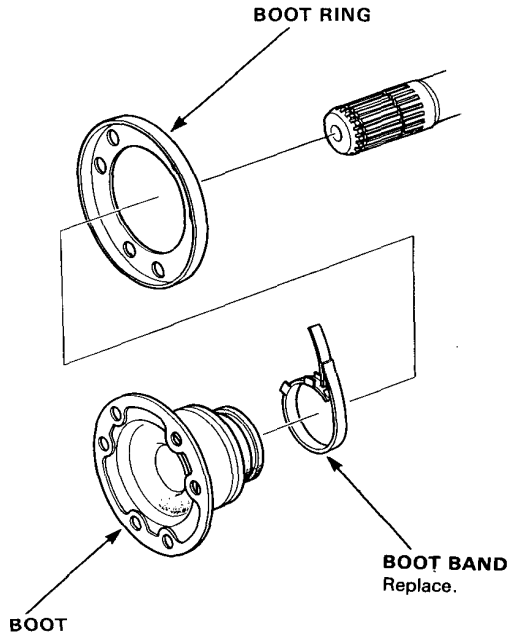
8. Pry off the 26 mm circlip and separate the spider from the propeller shaft.
   NOTE: Mark the spider and shaft before separating them.

9. Remove the stopper ring.



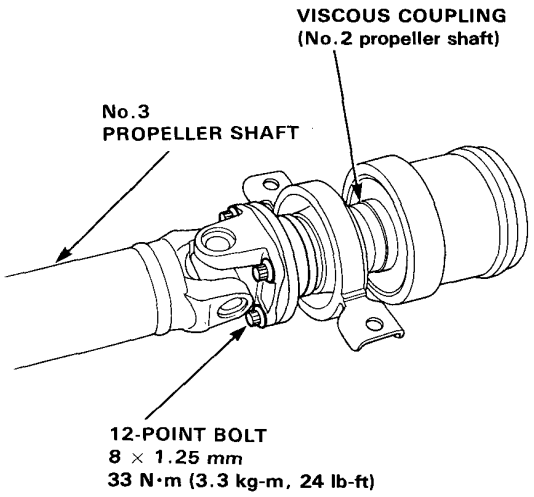
10. Raise the boot band locking tabs.

11. Remove the boot, boot band and boot ring from the propeller shaft.



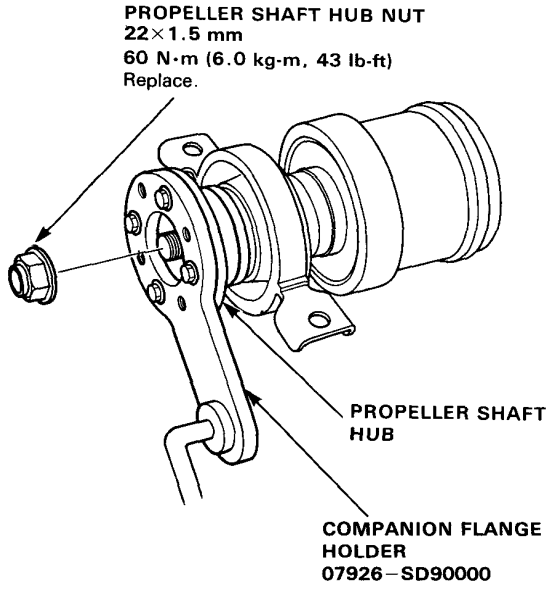
Viscous Coupler (No.2 Propeller Shaft), No.3 Propeller Shaft Disassembly

1. Remove the viscous coupling (No.2 propeller shaft) from the No.3 propeller shaft.

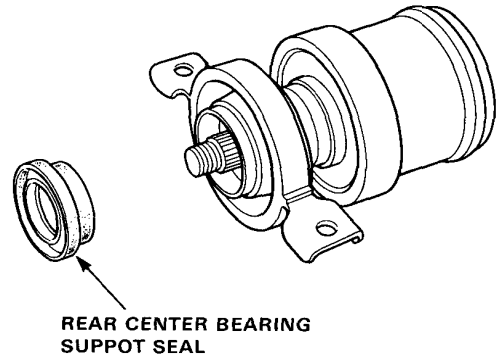


2. Remove the hub nut from the viscous coupling (No.2 propeller shaft) using the special tool to prevent the shaft turning.
NOTE: Mark the shaft and hub before disassembly.

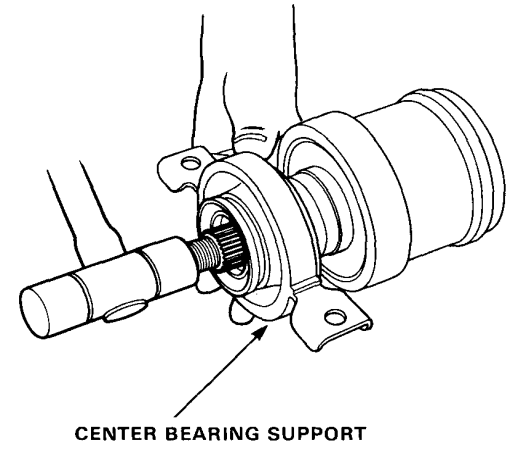
3. Remove the propeller shaft hub.



4. Remove the rear center bearing support seal.



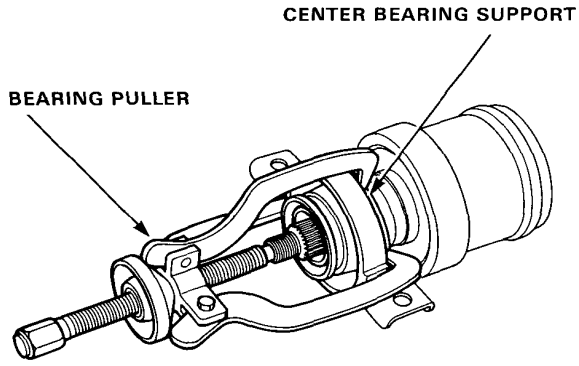
5. Holding the center bearing support with one hand, lightly tap on the shaft end with a soft hammer until the shaft is clear of the bearing support.



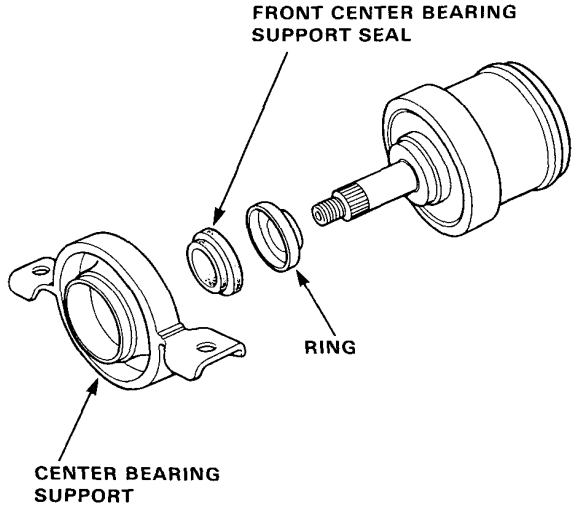
(cont'd)

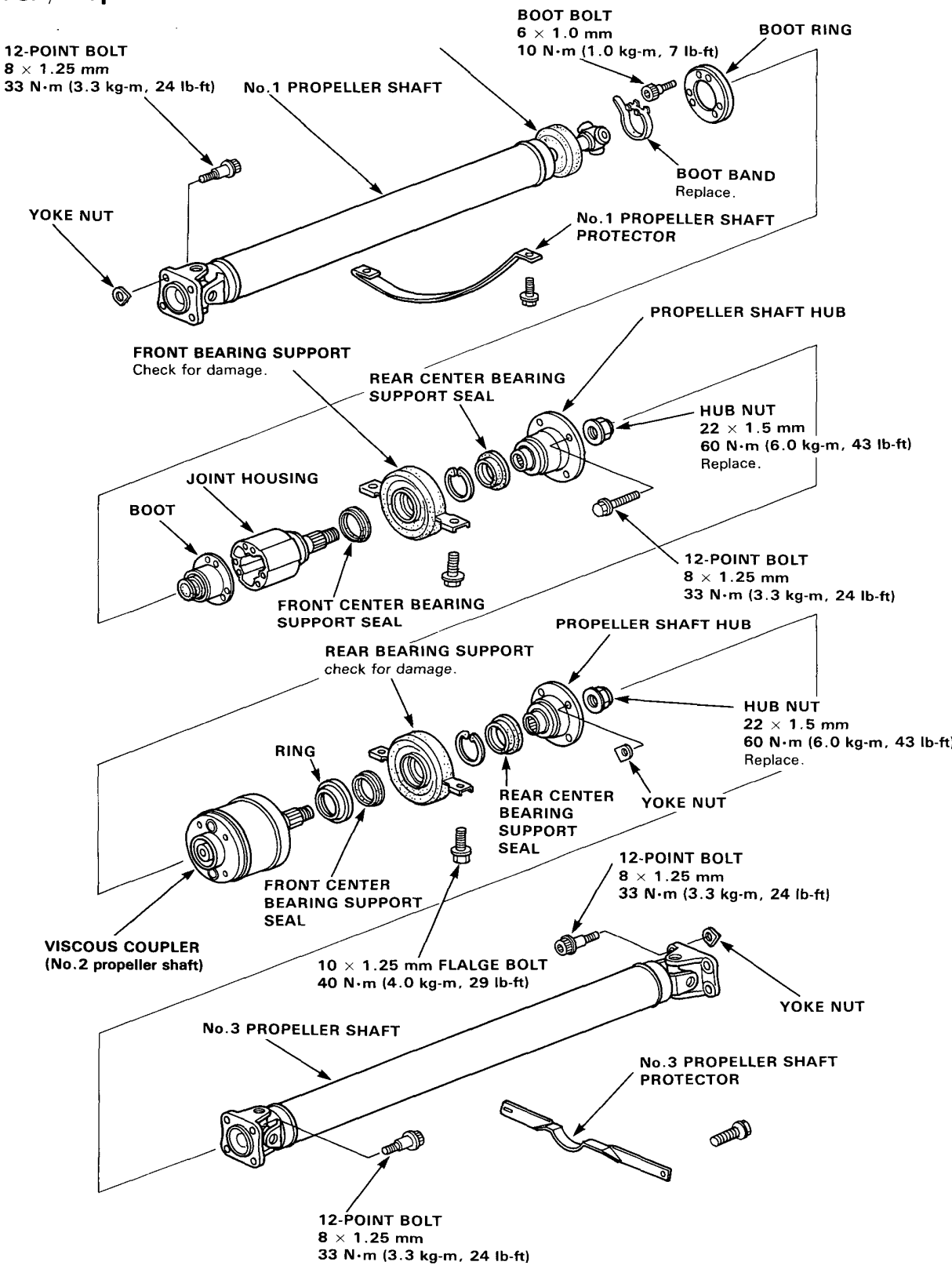
Viscous Coupler (No.2 Propeller Shaft), Disassembly (cont'd)

NOTE: If difficulty is encountered in removing the shaft, use a puller. Replace the bearing support with a new one when a puller is used to remove it.



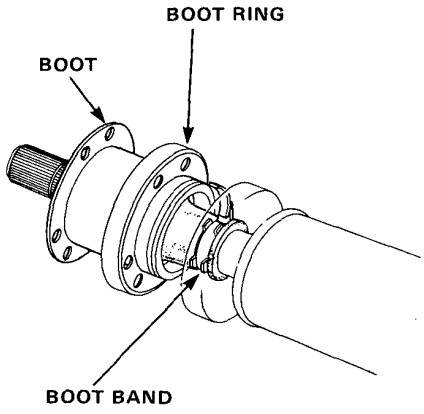
6. Remove the front center bearing support seal from the bearing support.
7. Remove the ring from the viscous coupling (No.2 propeller shaft).




BOOT BOLT
6 × 1.0 mm
10 N·m (1.0 kg-m, 7 lb-ft)
BOOT RING
12-POINT BOLT
8 × 1.25 mm
33 N·m (3.3 kg-m, 24 lb-ft)
No.1 PROPELLER SHAFT
BOOT BAND
Replace.
YOKE NUT
No.1 PROPELLER SHAFT
PROTECTOR
PROPELLER SHAFT HUB
FRONT BEARING SUPPORT
Check for damage.
REAR CENTER BEARING
SUPPORT SEAL
HUB NUT
22 × 1.5 mm
60 N·m (6.0 kg-m, 43 lb-ft)
Replace.
JOINT HOUSING
BOOT
12-POINT BOLT
8 × 1.25 mm
33 N·m (3.3 kg-m, 24 lb-ft)
FRONT CENTER BEARING
SUPPORT SEAL
PROPELLER SHAFT HUB
REAR BEARING SUPPORT
check for damage.
HUB NUT
22 × 1.5 mm
60 N·m (6.0 kg-m, 43 lb-ft)
Replace.
RING
REAR CENTER
BEARING
SUPPORT
SEAL
YOKE NUT
12-POINT BOLT
8 × 1.25 mm
33 N·m (3.3 kg-m, 24 lb-ft)
FRONT CENTER
BEARING SUPPORT
SEAL
VISCOUS COUPLER
(No.2 propeller shaft)
10 × 1.25 mm FLALGE BOLT
40 N·m (4.0 kg-m, 29 lb-ft)
YOKE NUT
No.3 PROPELLER SHAFT
No.3 PROPELLER SHAFT
PROTECTOR
12-POINT BOLT
8 × 1.25 mm
33 N·m (3.3 kg-m, 24 lb-ft)

No. 1 Propeller Shaft Reassembly

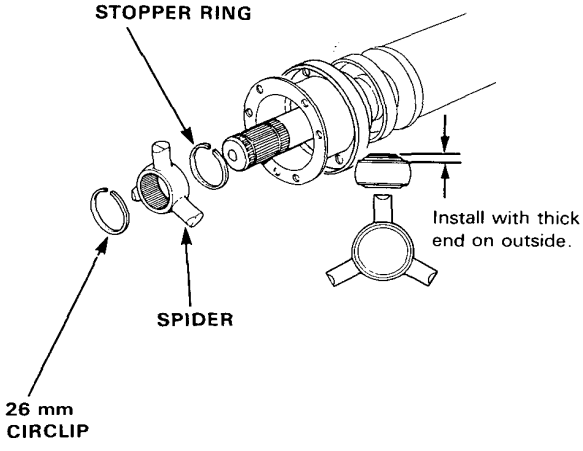
1. Slide the boot band, boot ring and boot onto the No. 1 propeller shaft.
2. Position the boot on the shaft so the raised area of the boot is aligned with the shaft groove.



3. Seat the stopper ring in the shaft groove.
4. Install the spider on the propeller shaft making sure the marks made during disassembly are aligned.

   NOTE: Do not interchange the rollers between the roller shafts on the spider.

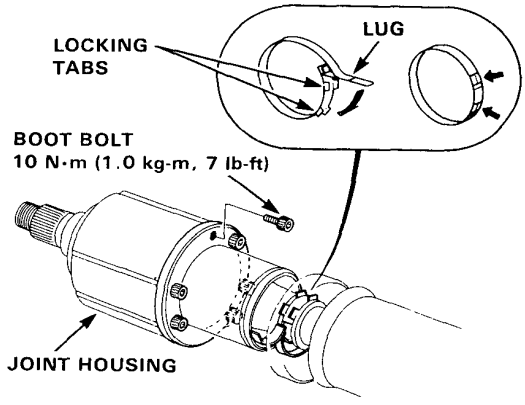
5. Install the 26 mm circlip in the shaft groove.



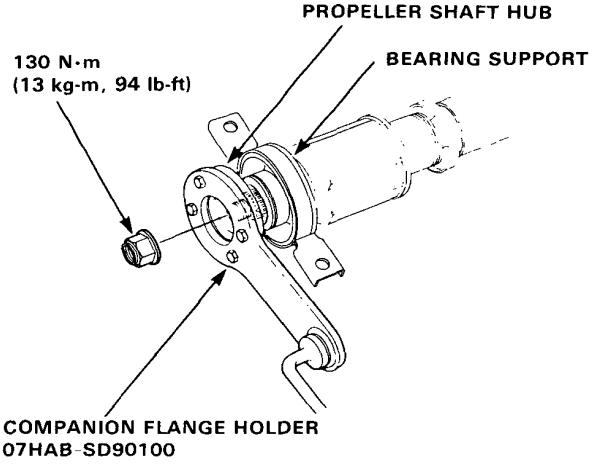
6. Pack the rollers and joint housing with molybdenum disulfide grease.

   Amount: 70-90 g

7. Slide the spider and rollers into the joint housing making sure that the marks are aligned.
8. Attach the boot ring to the joint housing with the boot bolts.
9. Install the new boot band and bend the lug of the boot band toward the locking tabs.
10. Secure the lug with the locking tabs on the boot.

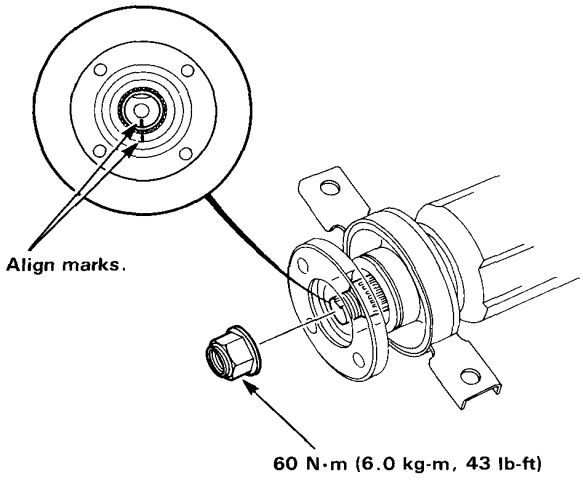


11. Temporarily install the bearing support, hub, and hub nut on the propeller shaft.
12. Hold the hub with the special tool, and torque the hub nut to force the bearing support into position.

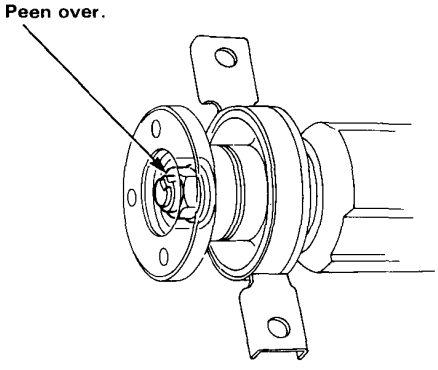


13. Remove the hub nut and hub.

14. Position the hub on the propeller shaft with the marks aligned, and install with the hub nut.

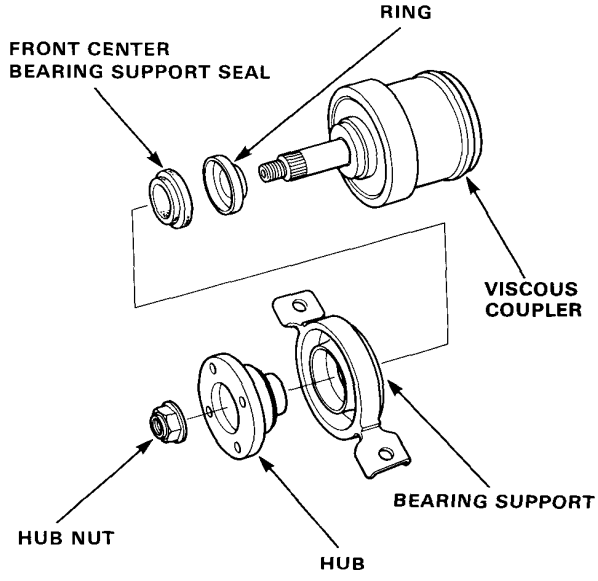


15. Peen the nut over the shaft end to lock in place.

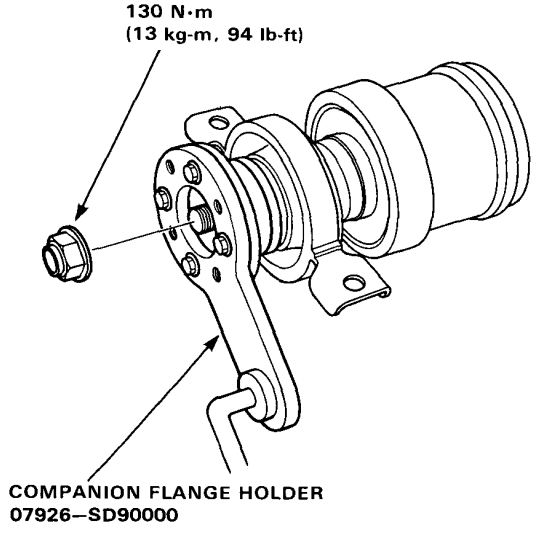


Viscous Coupler (No.2 Propeller Shaft), No.3 Propeller Shaft Reassembly

1. Temporarily install the ring, front center bearing support seal, bearing support, hub and hub nut on the viscous coupler.



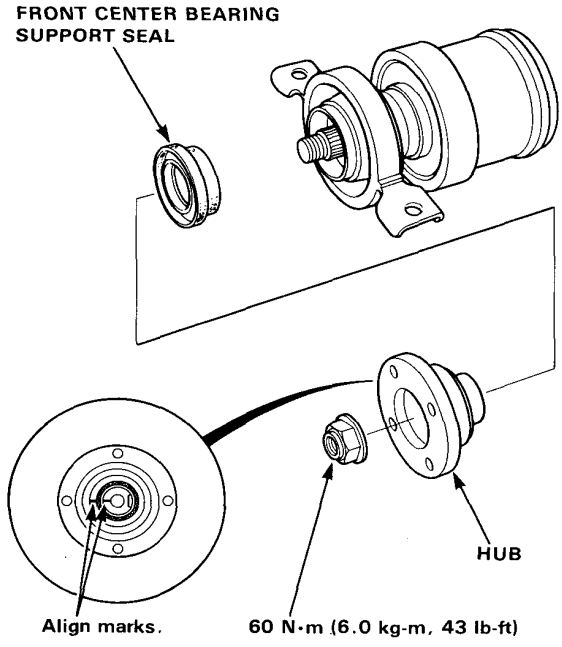
2. Hold the hub with the special tool, and torque the hub nut to force the bearing support into position.



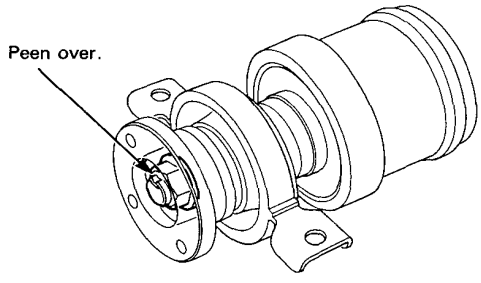
(cont'd)

Viscous Coupler (No.2 Propeller Shaft), No.3 Propeller Shaft Reassembly (cont'd)

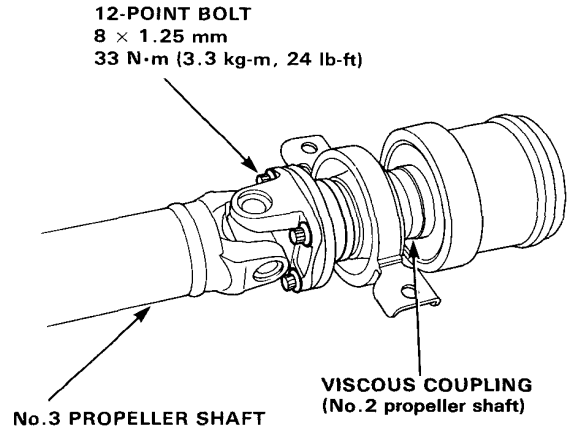
3. Remove the hub nut and hub.
4. Install the front center bearing support seal on the bearing support.
5. Position the hub on the propeller shaft with the marks aligned, and install with the hub nut.



6. Peen the nut over the shaft end to lock in place.



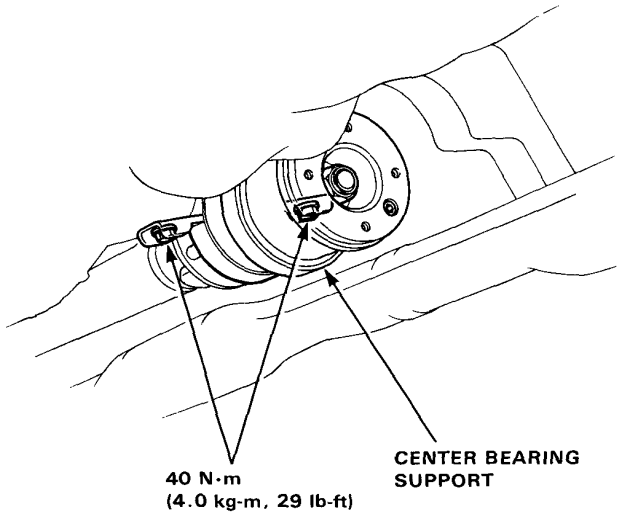
7. Temporarily connect the viscous coupling (No.2 propeller shaft) and No.3 propeller shaft with the 12-point bolts and yoke nuts.
8. Torque the all bolts nuts.



Installation

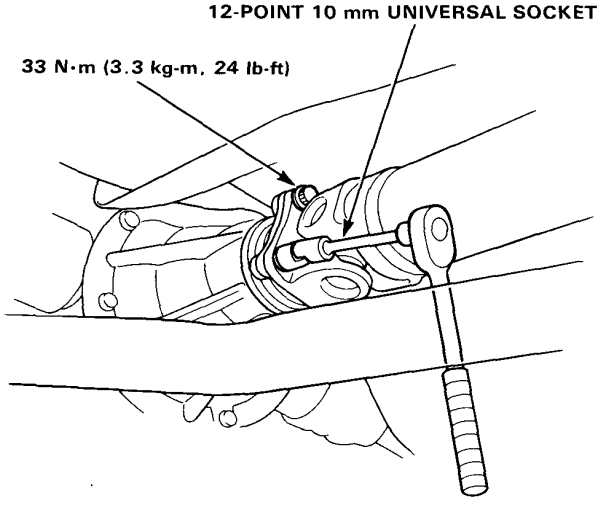
- Viscous Coupling (No.2 Propeller Shaft) and No.3 Propeller Shaft.

1. Install the rear center bearing support on the frame.



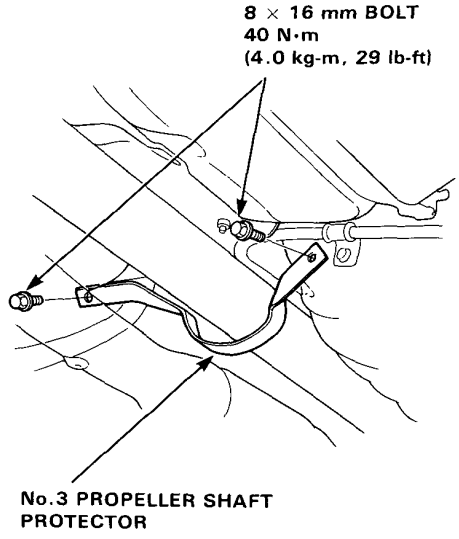
2. Temporarily connect the propeller shaft and rear differential using the 12-point bolts and yoke nuts.

3. Torque all bolts and nuts.



NOTE: Use 12 Point Box Wrench for other portions.

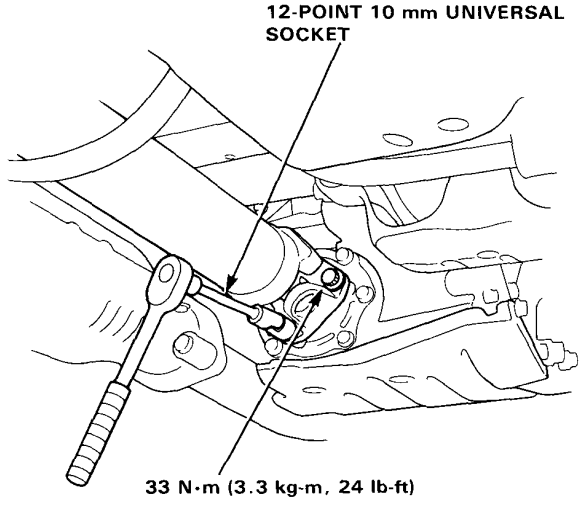
4. Install the No.3 propeller shaft protector.



- No.1 Propeller Shaft

5. Temporarily connect the propeller shaft and front differentialusi
rential using the 12-point bolts and yoke nuts.

6. Toque all bolts and nuts.

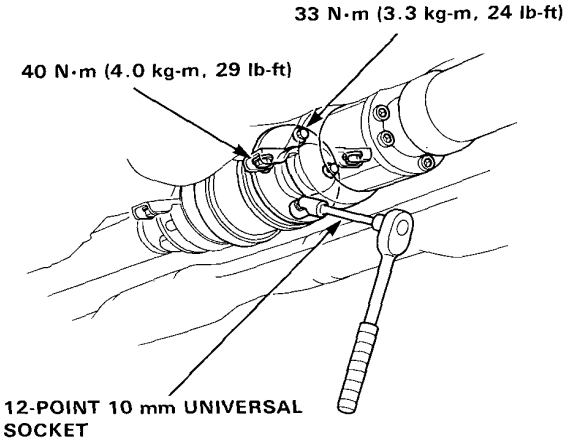


NOTE: Use 12 Point Box Wrench for other portions.

(cont'd)

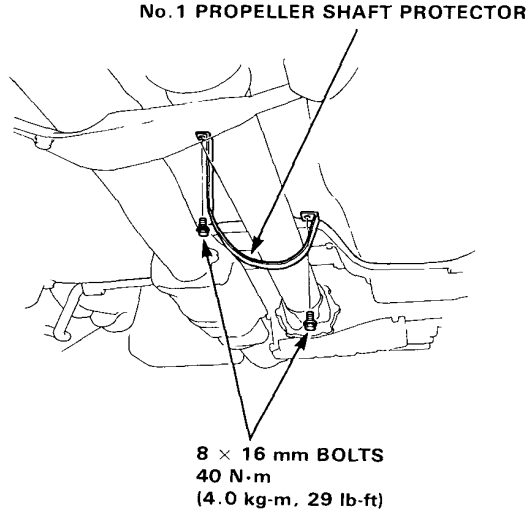
Installation (cont'd)

7. Install the front center bearing support on the frame. Temporarily connect the No.1 propeller shaft and viscous coupling (No.2 propeller shaft) using 12-point bolts.

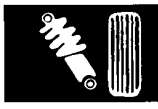


NOTE: Use 12 Point Box Wrench for other portions.

8. Torque all bolts.
9. Install the No.1 propeller shaft protector.



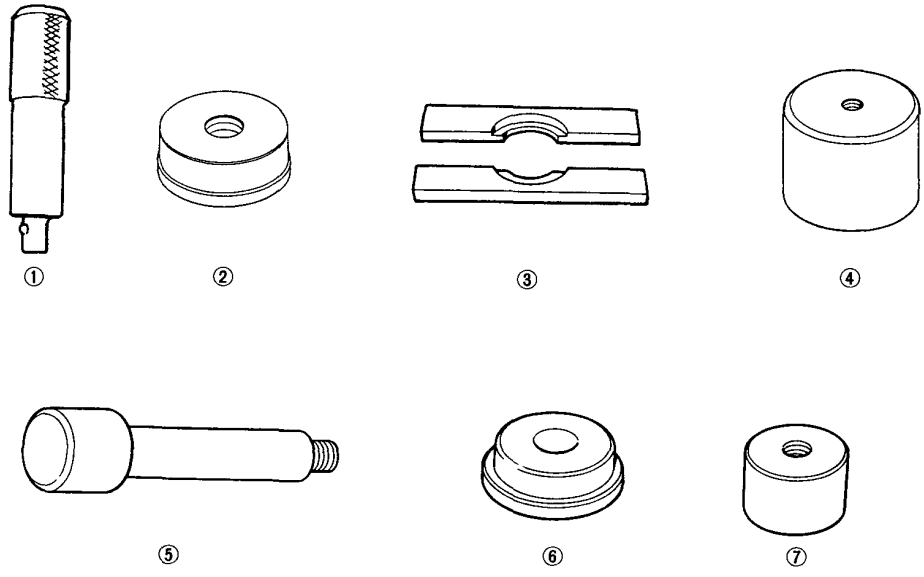
Suspension



Special Tools

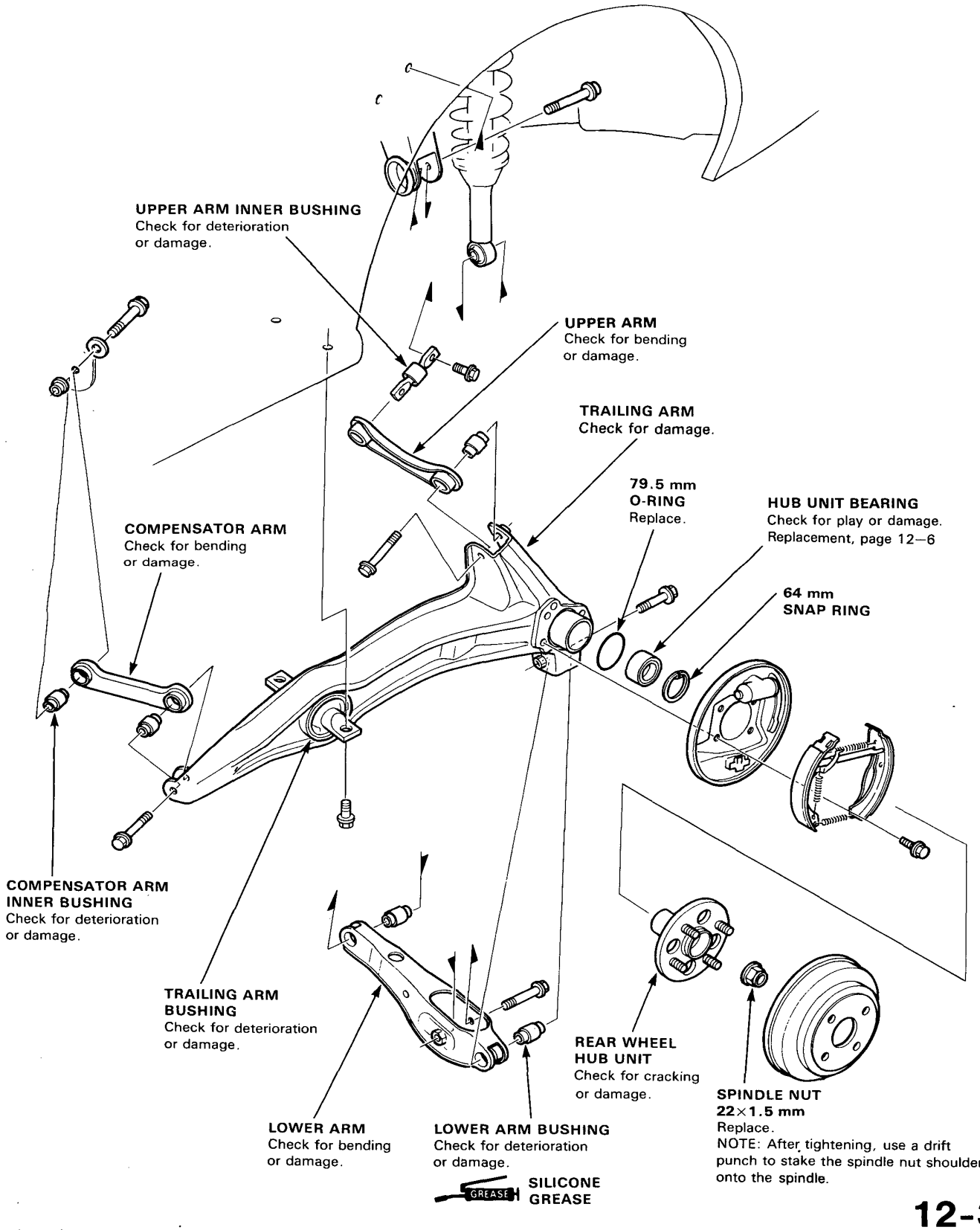
Special Tools

Ref. No.	Tool Number	Discription	Q'ty	Remarks
①	07749–0010000	Driver	1	
②	07746–0010400	Attachment 52 x 55 mm	1	
③	07965–6340301	Hub Dis/Assembly Base	1	
④	07965–6920201	Hub Dis/Assembly Base	1	
⑤	07965–SA70100	Hub Dis/Assembly Tool A	1	
⑥	07947–6340400	Attachment	1	
⑦	07965–6920500	Dis/Assembly Tool E	1	



Rear Suspension

Illustrated Index



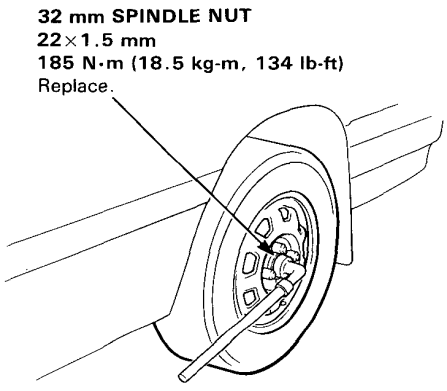
Trailing Arm Removal/Installation

1. 2WD

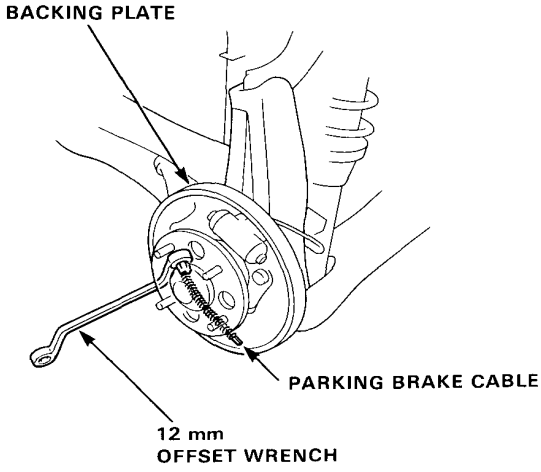
- Jack up the rear of car and support on safety stands in proper location.
- Remove the rear wheel and brake drum.

2. 4WD

- Pry the spindle nut stake away from the spindle, then loosen the nut using a 32 mm socket.
- Loosen the wheel lug nuts slightly.
- Raise the rear of car and support on safety stands in proper locations.
- Remove the wheel lug nuts, wheels, brake drum and spindle nut.



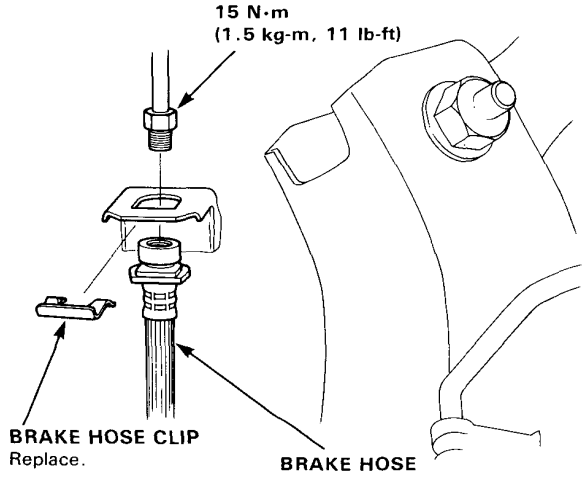
3. Remove the parking brake cable from the backing plate using 12 mm offset wrench as shown.



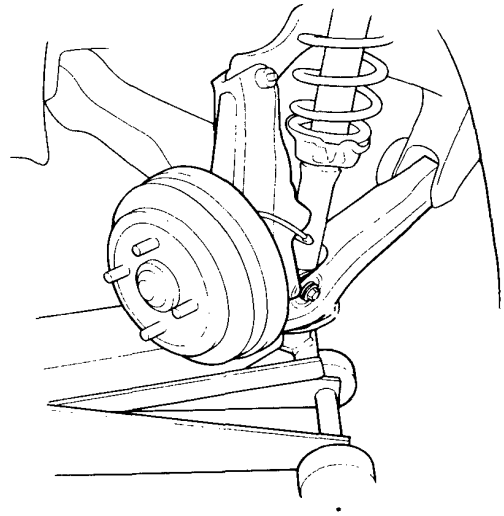
CAUTION:

- **Before reassembling, check that all parts are free of dust and other foreign particles.**
- **Replace parts with new ones whenever specified to do so.**
- **Use only clean brake fluid.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**
- **Do not mix different brands of brake fluid as they may not be compatible.**
- **Do not spill brake fluid on the car, it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.**

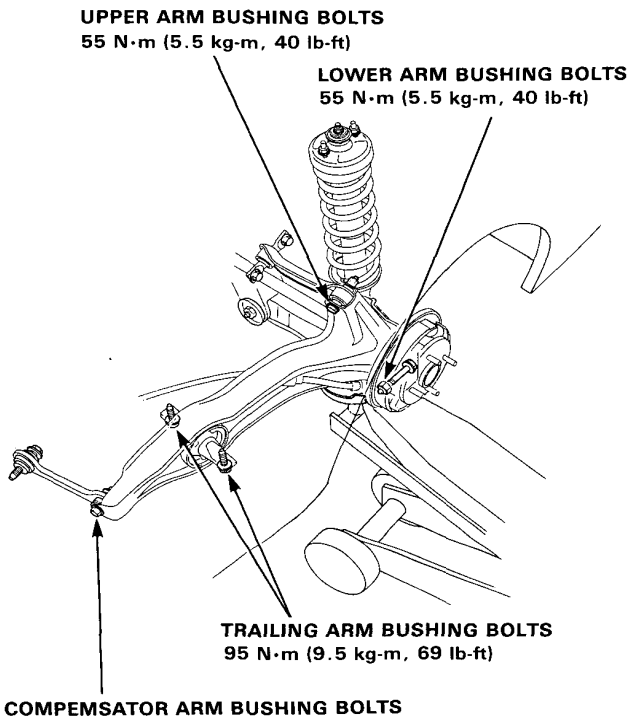
4. Disconnect the brake hose from the brake pipe using a 10 mm flare nut wrench.



5. Use a floor jack to support the lower arm.



6. Remove the trailing arm bushing mounting bolts
7. Remove the upper arm and compensator arm from the trailing arm.
8. 4WD
   - Pull the trailing arm and remove the rear driveshaft outboard joint from the trailing arm using a two-jaw puller.
9. Remove the trailing arm assembly.



10. *Installation is the reverse order of removal.*
    NOTE: The bolts and nuts should be tightened with the vehicle on the ground.

11. Fill the brake reservoir up and bleed the brake system.

12. After installing the brake hose, check the hose and line joints for leaks, and tighten as necessary.

13. Operate the brake pedal several times, then adjust the parking brake lever.

14. Adjust the rear toe.

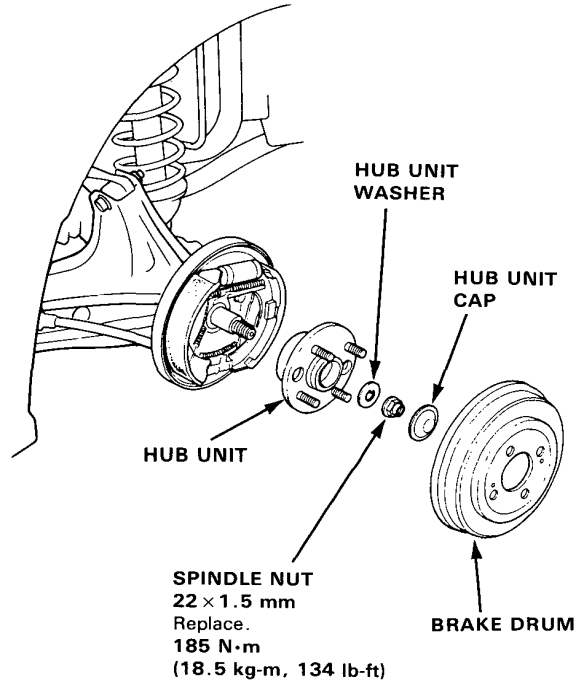
Hub Unit Bearing Replacement (2WD)

1. Jack up the rear of car and support on safety stands in proper location.

2. Remove the rear wheel and brake drum.

3. Remove the hub unit cap unstake the spindle nut, then loosen the spindle nut.

4. Remove the hub unit and hub unit bearing.

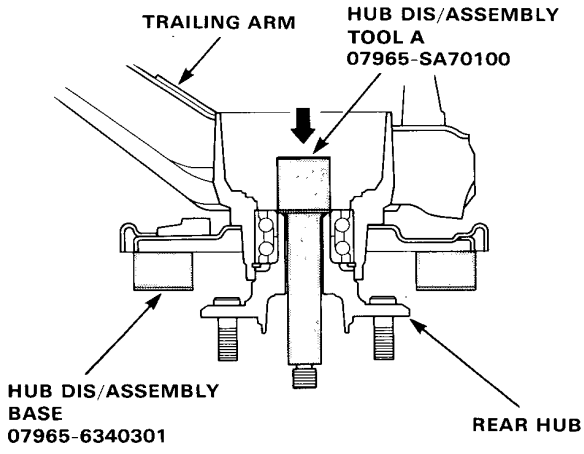


Hub Unit Bearing Replacement (4WD)

NOTE: Replace the bearing with a new one after removal.

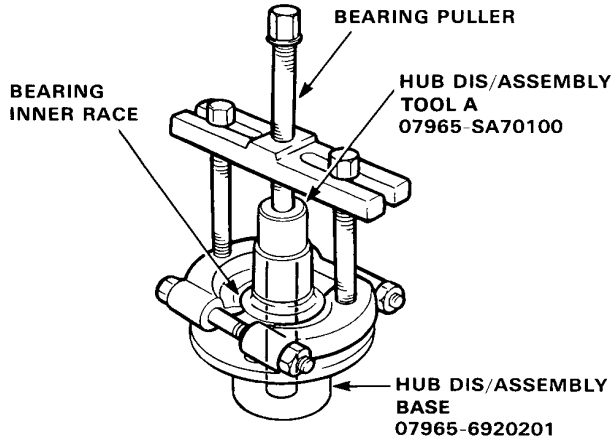
1. Separate the hub from the trailing arm using the special tools and a hydraulic press.

CAUTION:
- **Take care not to distort the backing plate.**
- **Hold onto the rear hub and trailing arm to keep it from falling when pressed clear.**



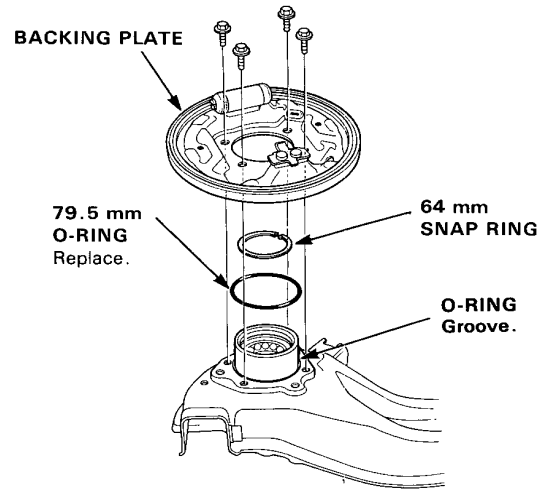
2. Remove the outboard bearing inner race from the hub using the special tools shown and a bearing puller.

CAUTION: To prevent damage to the tool make sure the threads are fully engaged before pressing.



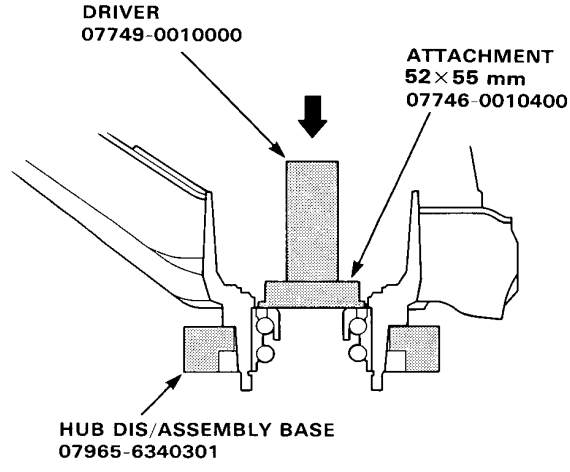
NOTE: Wash the trailing arm and hub thoroughly in high flash point solvent before reassembly.

3. Remove the 64 mm snap ring.
4. Remove the bolts and backing plate.
5. Remove the 79.5 mm O-ring from the groove of bearing holder plate.

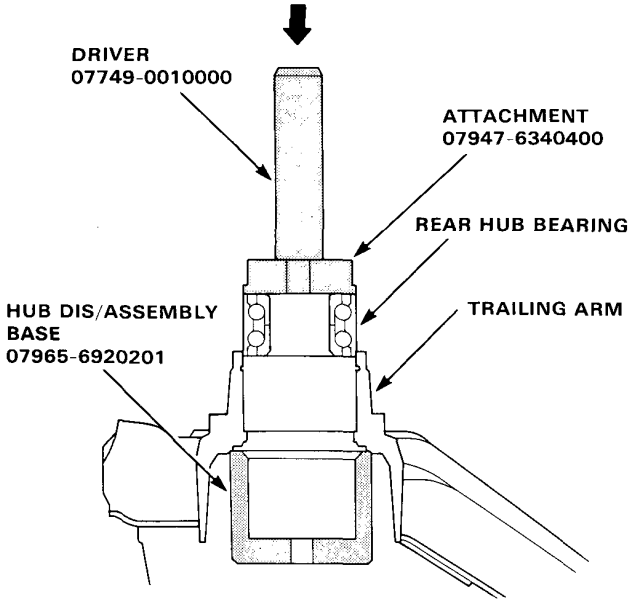


6. Press the wheel bearing out of the trailing arm using the special tools shown and a hydraulic press.

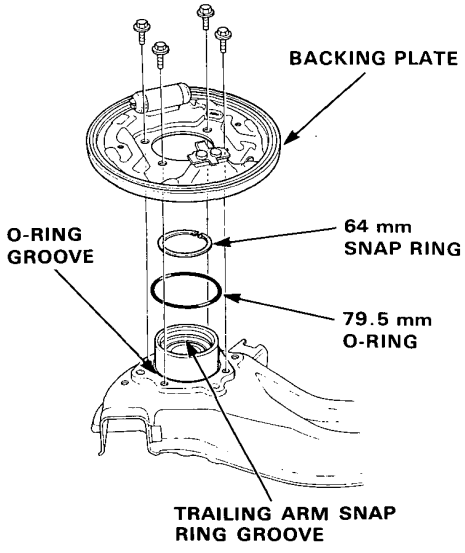
CAUTION: Hold onto the trailing arm to keep it from falling when bearing is pressed clear of trailing arm.



7. Press a new wheel bearing into the trailing arm using the special tools shown and a hydraulic press.

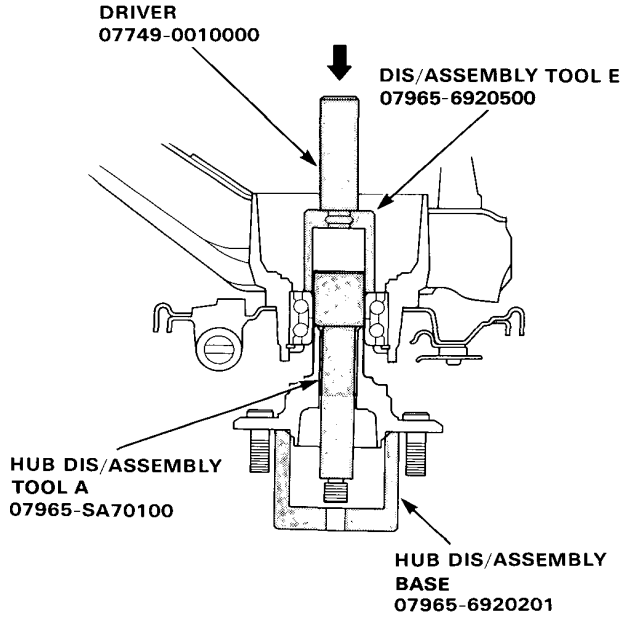


8. Install the 79.5 mm O-ring on the groove of the bearing holder plate.
9. Install the backing plate and tighten the belts.
10. Install the 64 mm snap ring securely in the trailing arm groove.



11. Install the pin into the hub.
12. Place the hub onto the special tool.
13. Set the trailing arm in position and install using the special tools and a hydraulic press.

CAUTION: Maximum press load: 2 tons.



Body

Bumpers

Doors

Seats

Seat Belts

Side Sill Panel

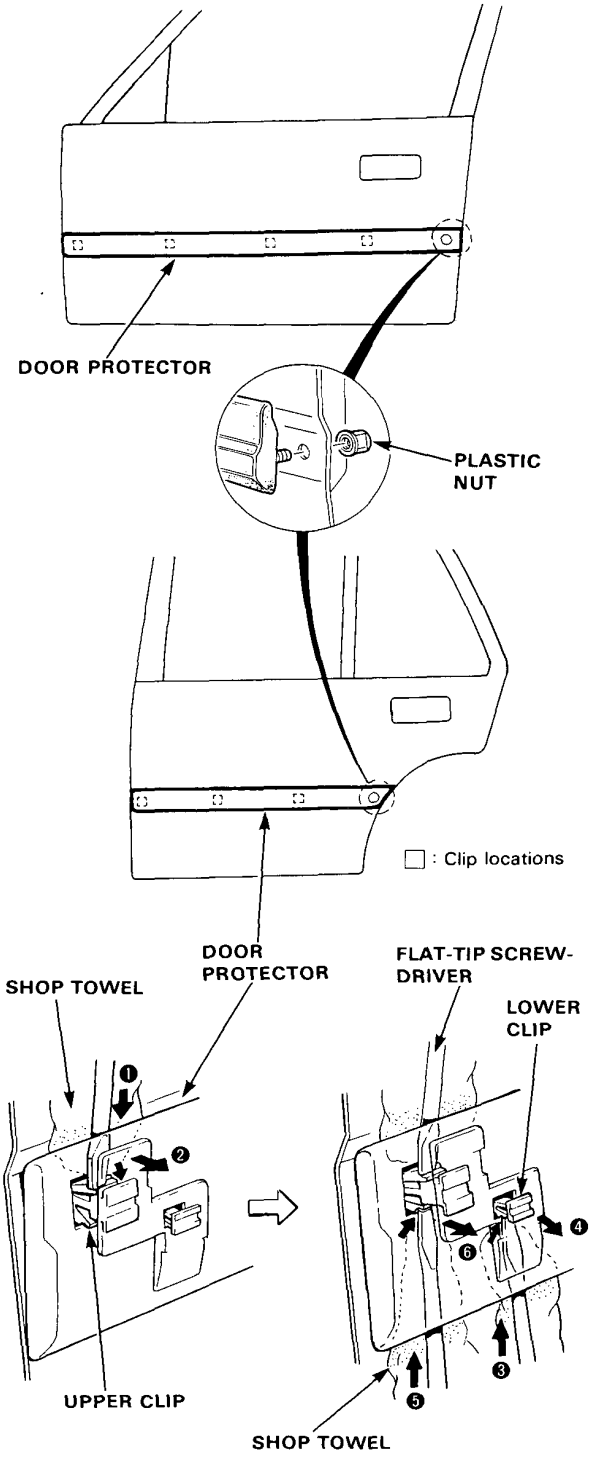
Tailgate

Windshield, Rear Window Glass, Quarter Glass

Doors

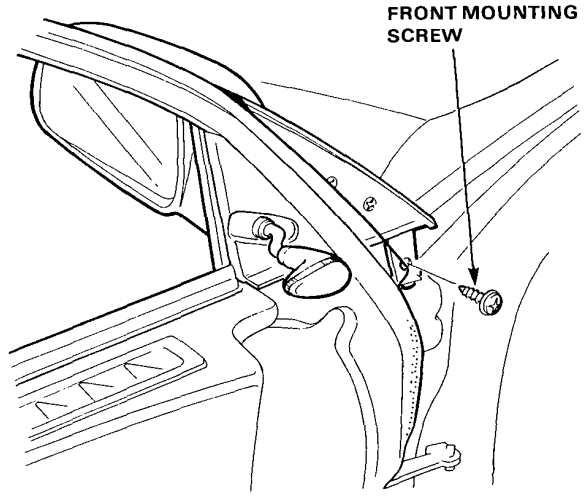
Molding Removal

- Remove the door protector by removing the nut and detach the clips from the inside, or outside.

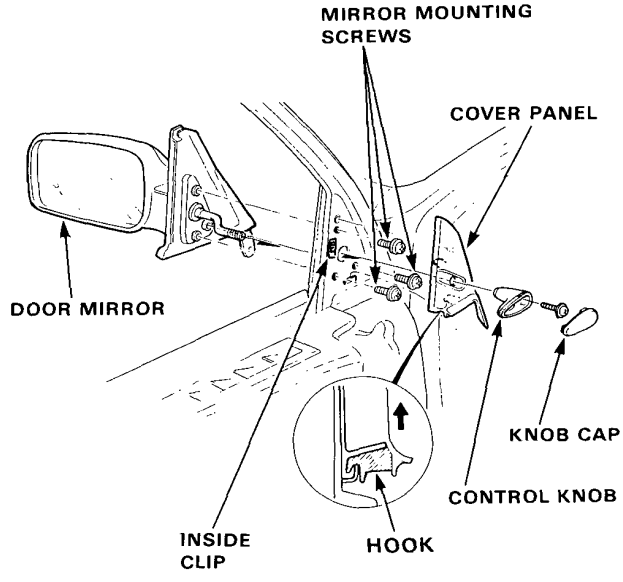


Door Mirror Removal

1. Remove the door mirror front mounting screw from the front door edge.



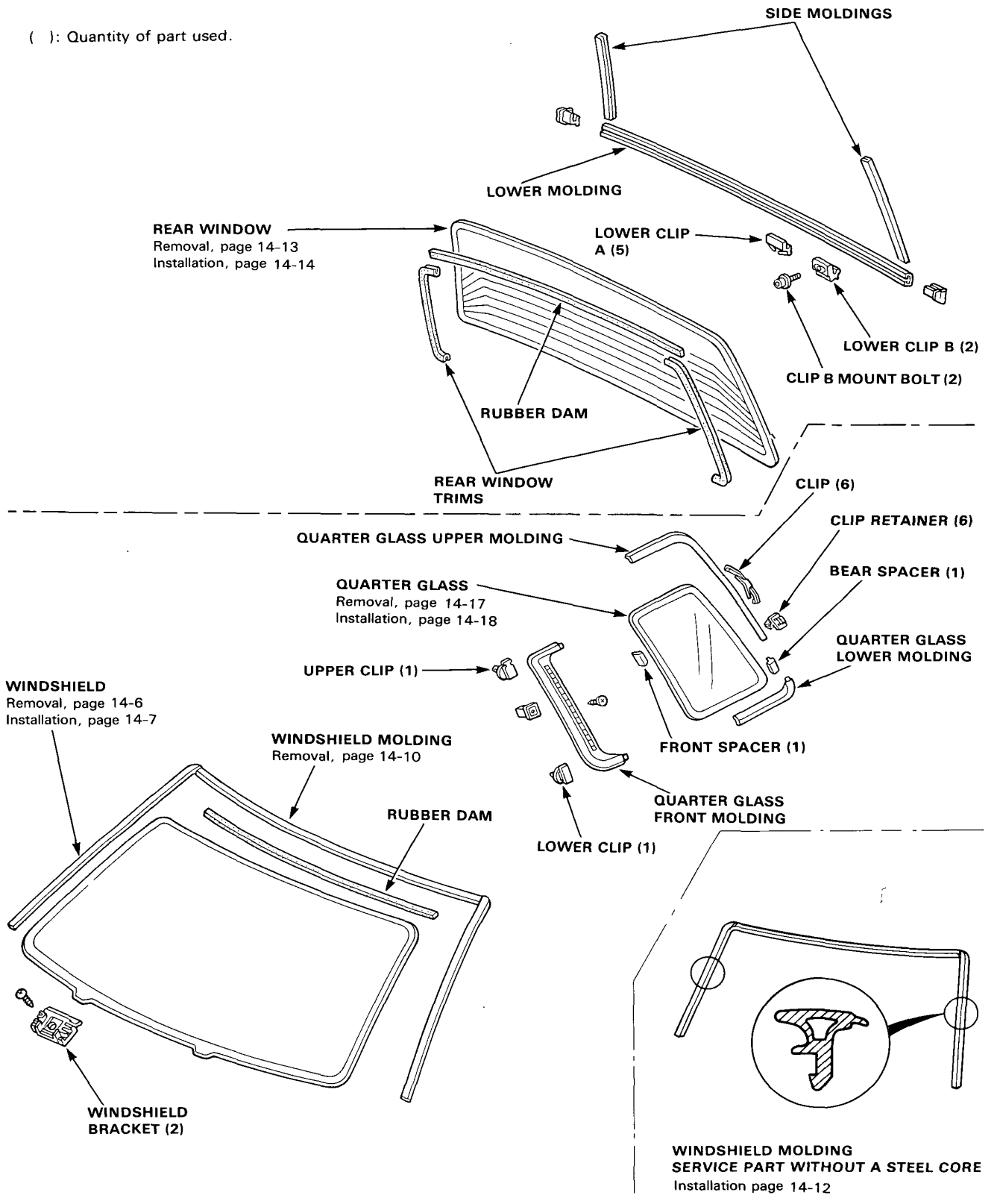
2. Remove the knob cap and screw, then remove the control knob.
3. Pry out the cover panel with a flat-tip screwdriver, then remove the cover panel.
4. Remove the mirror mounting screws while holding the mirror.



Windshield, Rear Window Glass, Quarter Glass

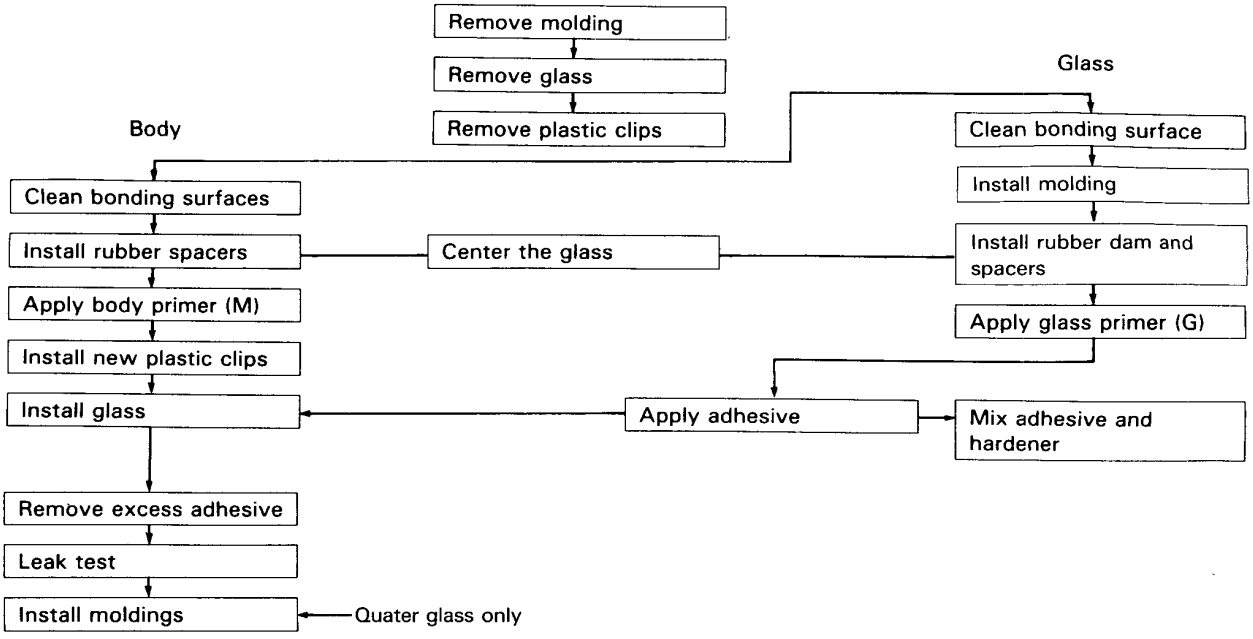
Index

( ): Quantity of part used.



Windshield, Rear Window Glass, Quarter Glass

Installation



Parts

Part Number	Contents	Comment
Adhesive kit — Low temperature 08718—99960 High temperature 08718—99961	Adhesive sealant (500 g) Hardener (75 g) Glass primer G (20 g) Body primer M (20 g) Piano wire (0.6ϕ x 1 m (3f)) Gauze Cartridge Sponge	 For glass primer (G) For applying primers

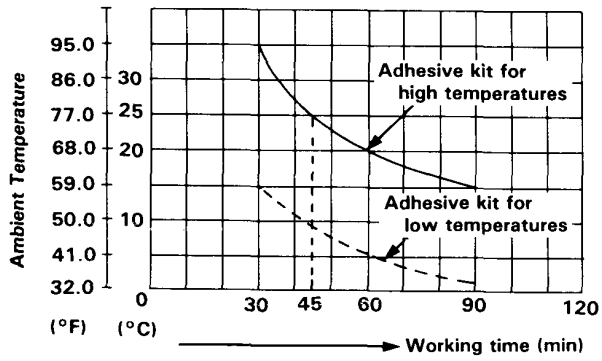
Tools

Tool/Material	Remarks
Glass or steel plate	To mix adhesive and hardener on
Putty knife	To mix adhesive and remove excess
Caulking gun	To apply bead of adhesive to windshield
Suction cups	To install windshield
Knife	To scrape bonding surface around window opening
Awl	To make hole through existing adhesive for piano wire
Two wood sticks	To hold piano wire
Toluene or alcohol	To clean bonding surfaces

Workable Time

Adhesive workable time varies widely according to temperature, so choose the correct adhesive kit for the temperature range you will be working in.
After mixing and applying adhesive, you should install the windshield within the time shown on the chart.

For example, when the ambient temperature is 25°C (77°F), the glass should be installed within 45 minutes using the high temperature type adhesive.
Kit part numbers and contents are listed on the page before.



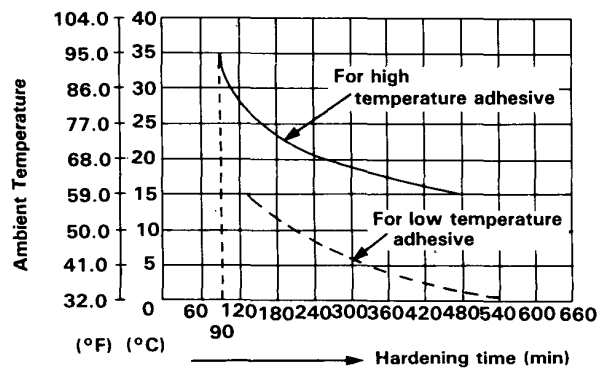
Notes

- Both kits have two types of adhesive primer: one for the body (metal), and one for glass.
- Always use new genuine Honda adhesive, or equivalent.
- Do not use the adhesive if 6 months have elapsed since date of manufacture.
- Store adhesive in a cool, dry place.
- Open only immediately before you are going to use it.

Hardening Time

Hardening time can be shortened by heating with infrared light.

For example, the adhesive will start to harden within 270 minutes mixing at 20°C (63°F). If however, it is heated to 35°C (95°F), it will start to harden within 90 minutes.



Broken Glass Removal

Remove as much broken glass as possible with a vacuum cleaner.
Blow out the glass in the heater and behind the dashboard with low pressure compressed air:

WARNING Wear eye protection while using the air gun.

1. Set the temperature control knob to COLD.
2. Set the mode lever to HEAT/DEF.
3. Set the FRESH/REC lever to REC.
4. Blow compressed air through the defroster center vent outlet.
5. Remove the blower duct, and remove any glass from the air mix chamber.
6. Remove the any glass from the top of the vent/defrost door.
7. Remove any glass from top and bottom of carpet and seats with a vacuum cleaner.

NOTE: It is recommended to remove the seats to shake off any glass.

Windshield

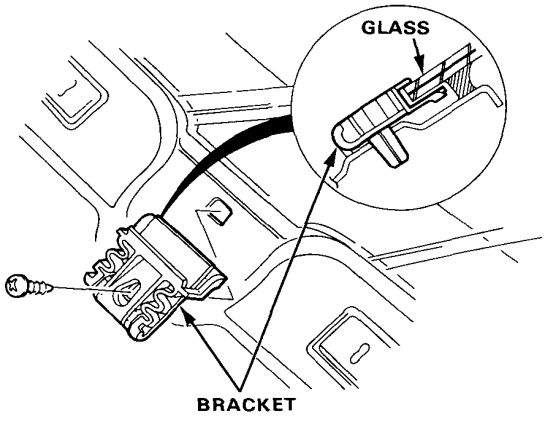
Removal

CAUTION: Use covers to avoid damaging interior.

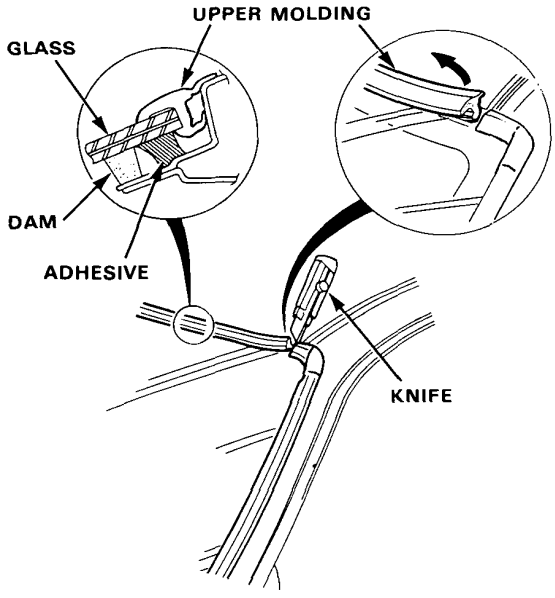
1. To remove the windshield, first remove the:
   - Rearview mirror.
   - Sun visors and holders.
   - Front pillar trim (page 14-21)
   - Front wiper and air scoop.
   - Lower molding.
   - Front of weatherstrip.

NOTE: Do not damage the painted surface.

2. Remove the screws, then remove the right and left glass brackets.

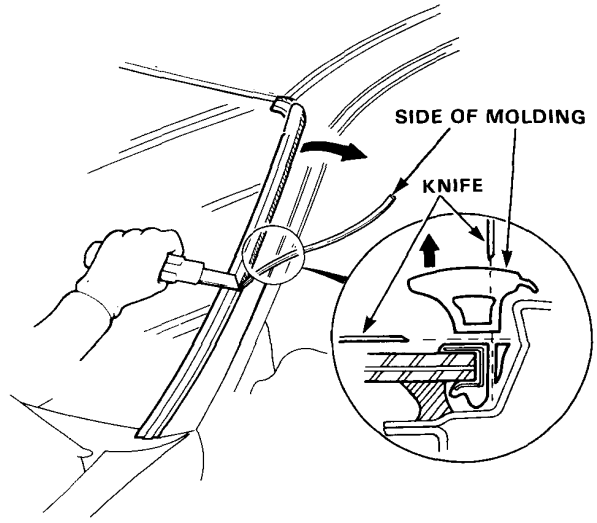


3. Cut the end of the upper molding as shown.



4. Pull away the upper molding.

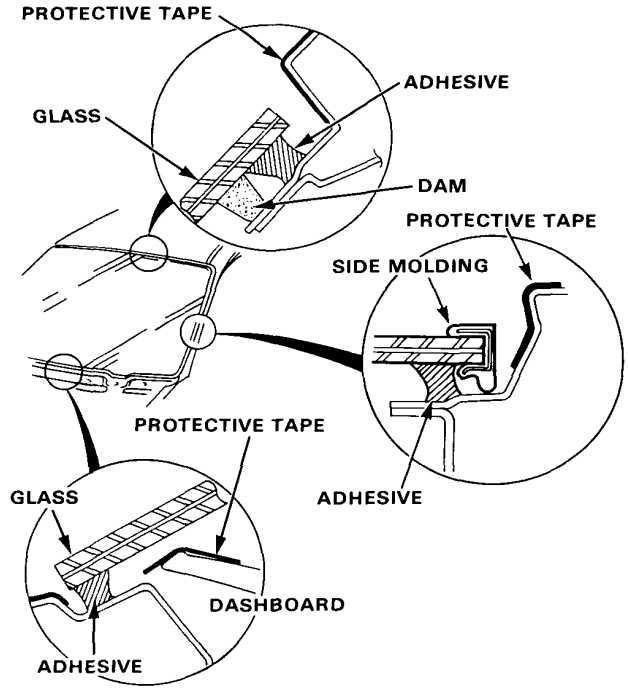
5. Cut the side rubber portion off the molding as shown (page 14-10)



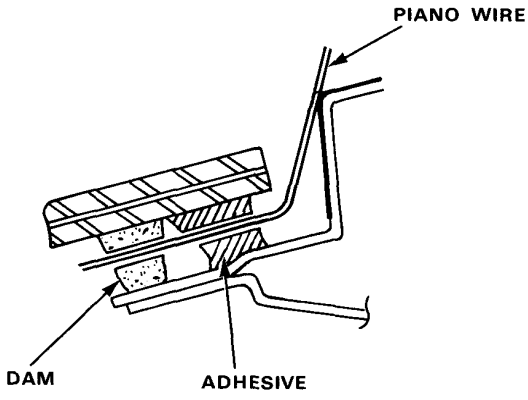
6. Lower the front of the headliner.

   NOTE: Take care not to bend the headliner excessively.

7. Apply protective tape along the edge of the dashboard and body next to the glass as shown.

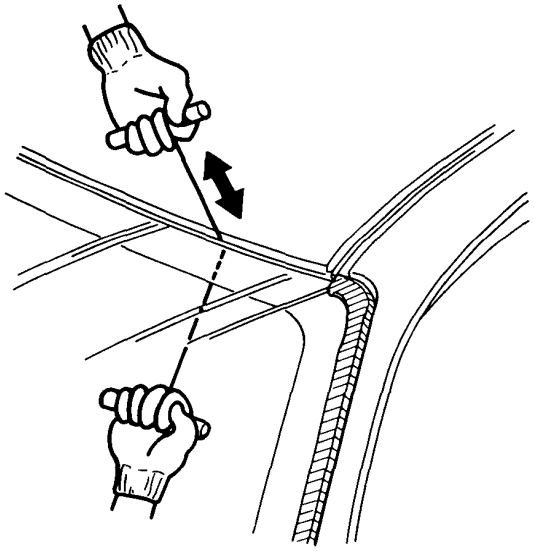


8. Using an awl, make a hole through the adhesive from inside the car. Push piano wire through the hole and wrap each end around a piece of wood.



9. With a helper on the outside, pull the wire back and forth in a sawing motion and carefully cut though the adhesive around the entire glass.

CAUTION: Hold the piano wire as close to the glass as possible to prevent damage to the body and dashboard.



10. Remove the side molding from the glass.

Installation

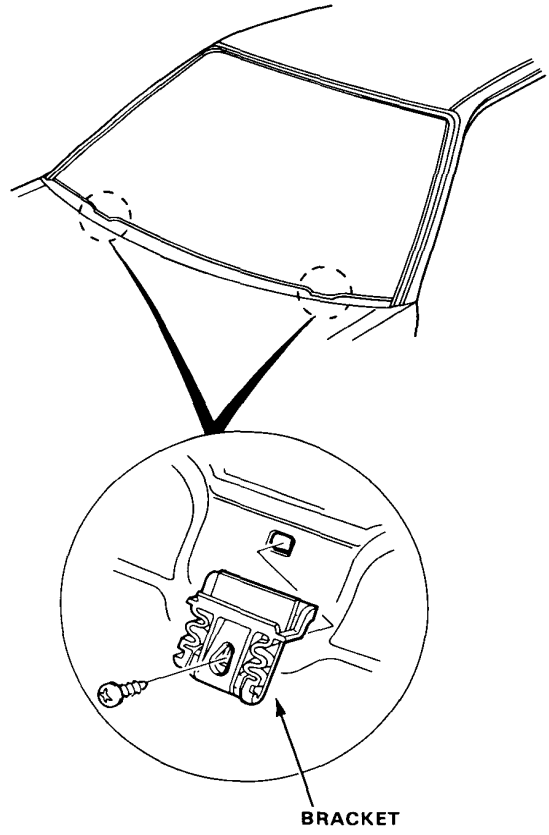
1. Scrape the old adhesive smooth with a knife, to a thickness of about 2 mm (0.08 in.) on the bonding surface around the entire glass flange.

   NOTE:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove all traces of the rubber spacer material from the body.
   - Mask off surrounding surfaces before applying primer.

2. Clean the body bonding surface with a sponge dampened in alcohol.

   NOTE: After cleaning, keep oil, grease or water from getting on the surface.

3. Install the glass brackets as shown.



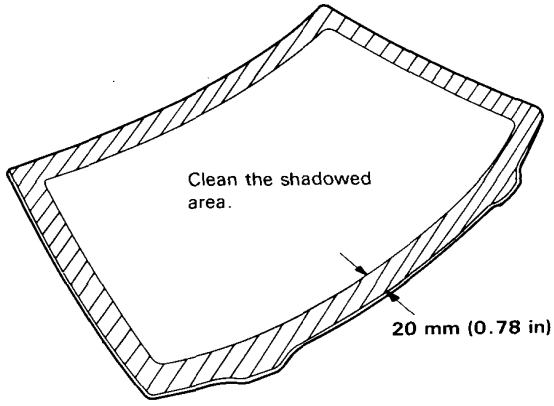
(cont'd)

Installation (cont'd)

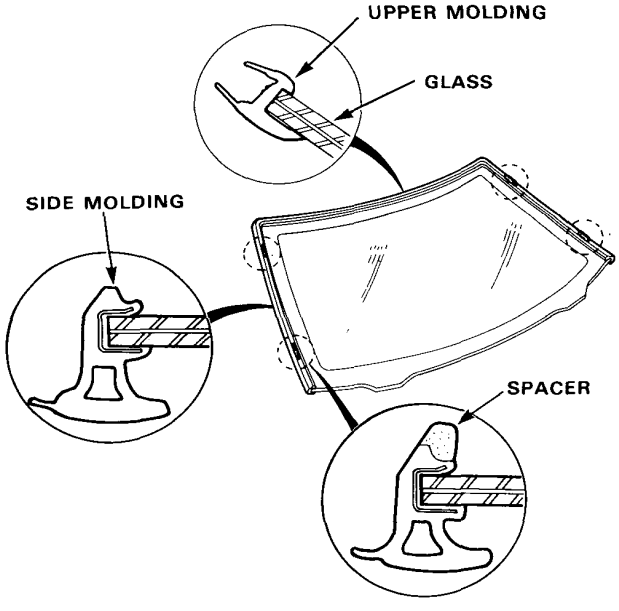
4. If the glass is to be reinstalled, use a putty knife to scrape off all traces of old adhesive, then clean the glass surface with alcohol where new adhesive is to be applied.

   NOTE: Make sure the bonding surface is kept free of water, oil and grease.

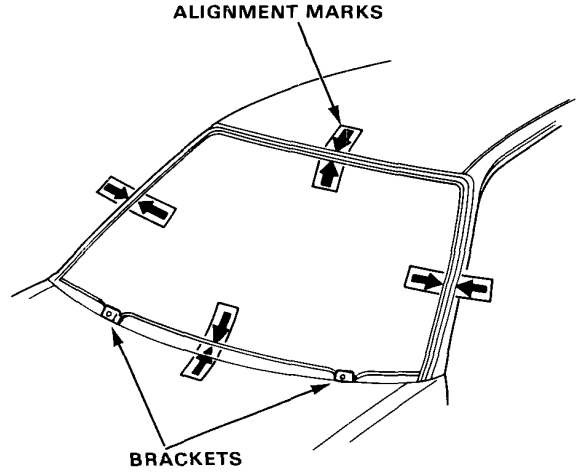
   CAUTION: Avoid setting the glass on its edges; small chips may later develop into cracks.



5. Apply the windshield moldings to the glass as shown.

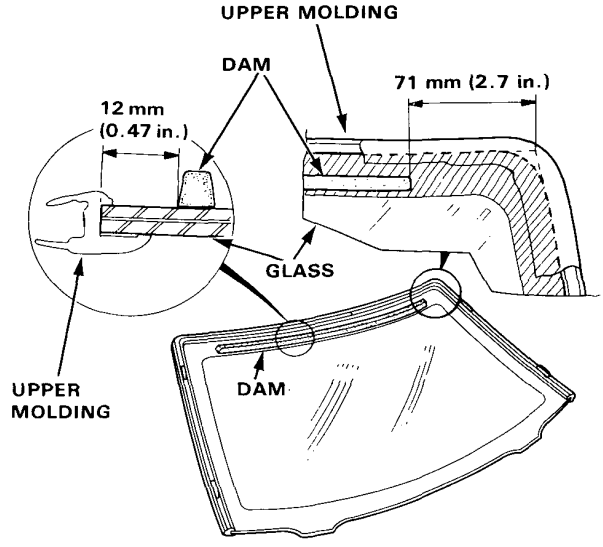


6. Set the glass upright on the spacers, and center it in the opening. Mark the location by marking lines across the glass and body with a grease pencil at the four points shown.



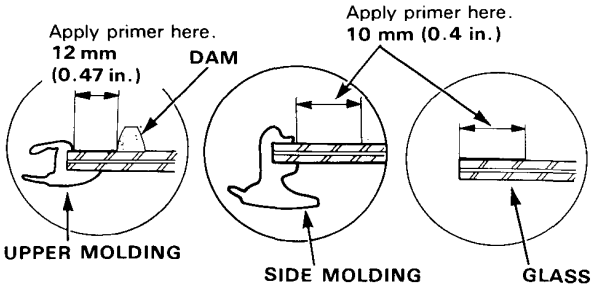
7. Center and glue the rubber dam to the inside face of the glass as shown, to contain the adhesive during installation.

   NOTE:
   - Be careful not to touch the glass where adhesive will be applied.
   - Mask off surrounding surfaces before applying primer.



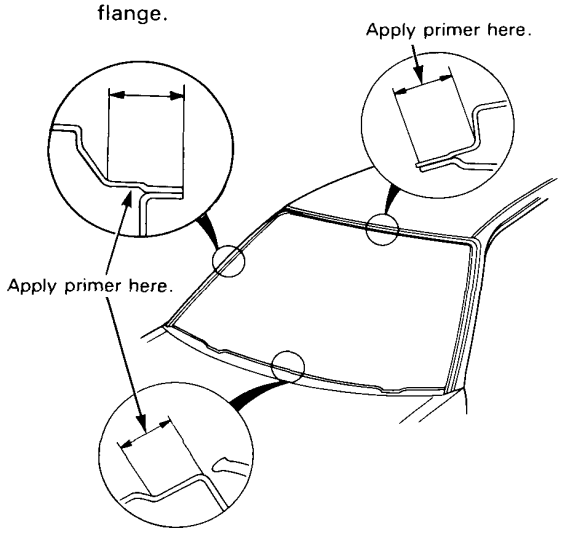
8. With a sponge, apply a light coat of glass primer around the edge of the glass, then lightly wipe it off with gauze or cheesecloth.

NOTE:
- Do not apply body primer to the glass, and do not get body and glass primer sponges mixed up.
- Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the glass properly, causing a leak after the glass is installed.
- Keep water, dust, and abrasive materials away from the primed surface.



9. With a sponge, apply a light coat of body primer to the original adhesive remaining around the window opening flange.

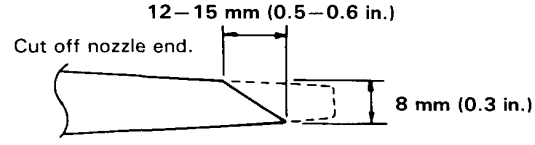
NOTE:
- Do not apply glass primer to the body, and be careful not to mix up glass and body primer sponges.
- Never touch the primed surfaces with your hands.
- Mask off the dashboard before painting the flange.



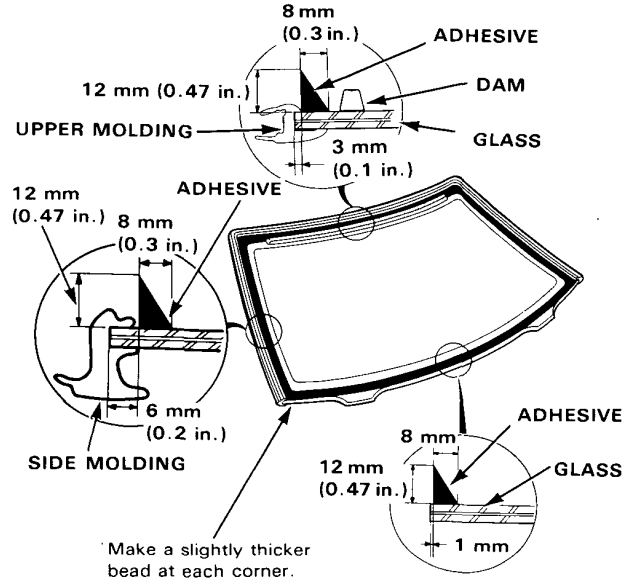
10. Thoroughly mix the adhesive and hardener together on a glass or metal plate.

NOTE:
- Clean the plate with a sponge and alcohol before mixing.
- Follow the instructions that came with the adhesive.

11. Before filling a cartridge, cut off the end of the nozzle at the angle shown.



12. Pack adhesive into the cartridge without air pockets, to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive around the edge of the glass as shown.



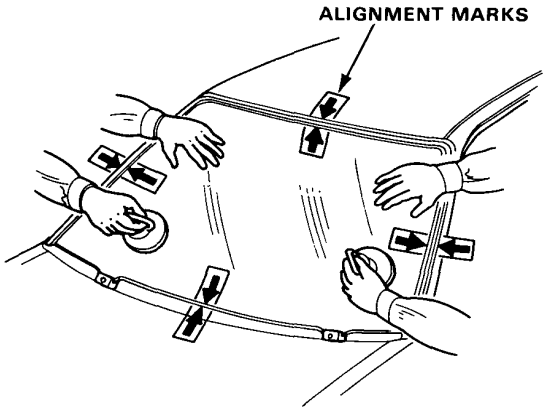
(cont'd)

Windshield

Installation (cont'd)

13. Use suction cups to hold the glass over the opening, align it with the marks made in step 6 and set it down on the adhesive. Lightly push on the glass until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open or close the doors until the adhesive is dry.



14. Scrape or wipe the excess adhesive off with a putty knife or gauze.

    NOTE: Use a soft rag or towel dampened with alcohol or unleaded gasoline to remove adhesive from a painted surface or glass.

15. After the adhesive is dry, spray water over the glass and check for leaks. Mark leaking areas and let the glass dry, then seal with sealant.

    NOTE: Let the car stand for at least 4 hours after glass installation. If the car has to be used within the first 4 hours, it must be driven slowly.

16. Reinstall all remaining removed parts.

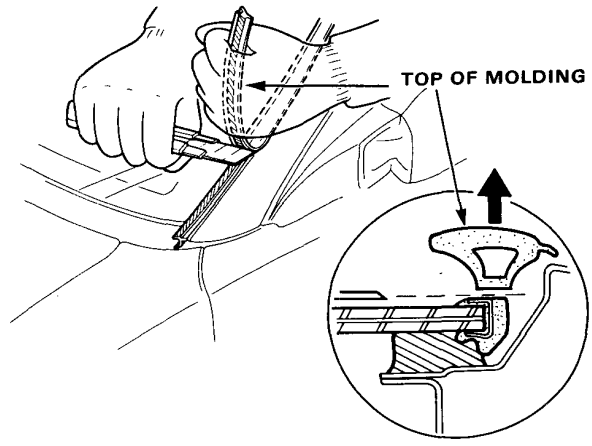
Windshield Molding

Removal

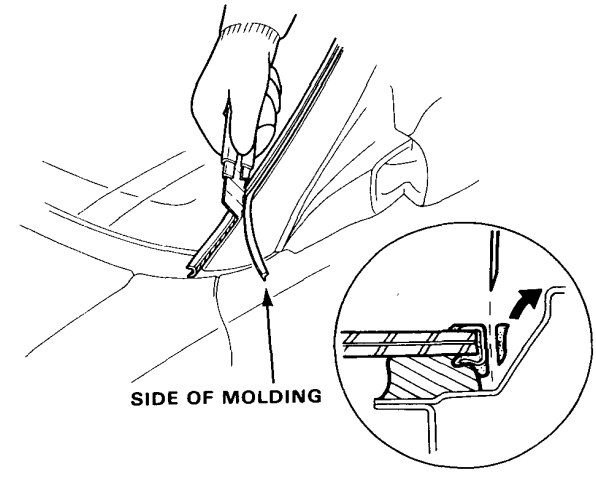
1. To remove the front windshield molding, first remove the:
   - Front wiper and air scoop
   - Lower molding.

   NOTE: Do not damage the painted surface during removal procedure.

2. Cut the top rubber portion off the side of molding as shown.



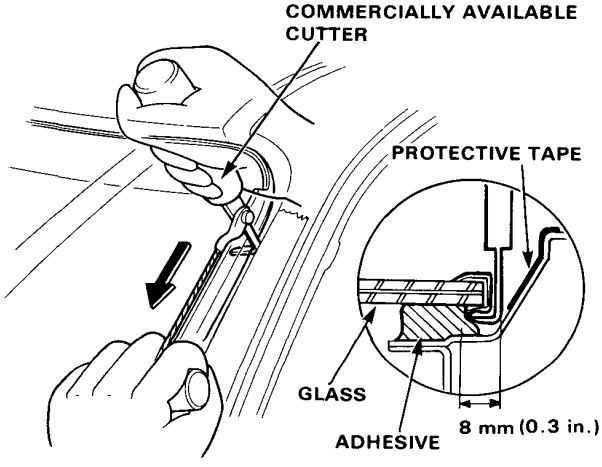
3. Cut the side rubber portion off the molding as shown.



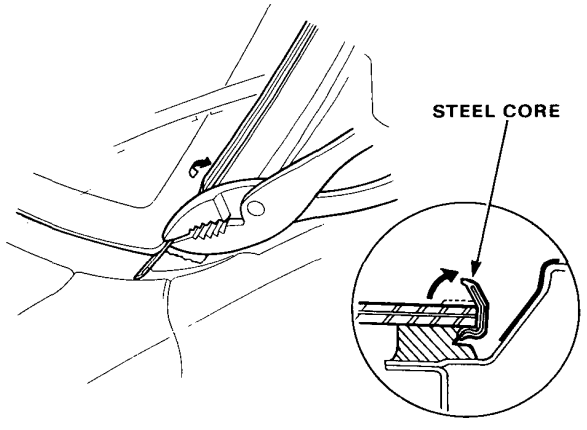
4. Apply protective tape along the edge of the body next to the glass as shown.
Cut the bottom of the side molding as shown. Cut through the adhesive holding the underside of the side moldings.

NOTE:
- You will need a commercially available cutter with an L-angled blade having 8 mm of cutting surface, in order to cut only the molding adhesive without cutting the glass adhesive. The blade supplied with some cutters may need to be ground down to 8 mm.

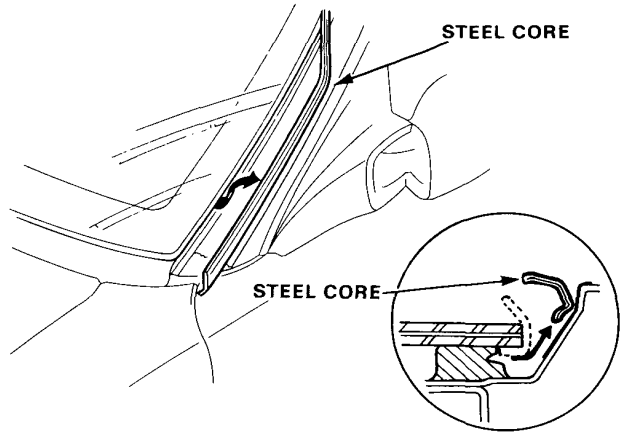
- Windshield moldings can be cut easily with a hot-tip type L-angle bladed cutter.



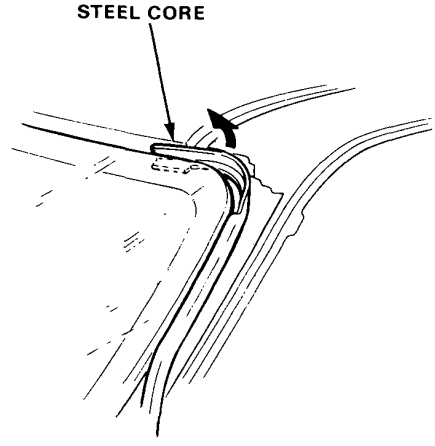
5. Carefully bend up the top side of the steel core as shown.



6. Pull the molding steel core away from the glass.
NOTE: The upper molding can be removed by simply pulling it up.



CAUTION: Remove the steel core without damaging the glass.

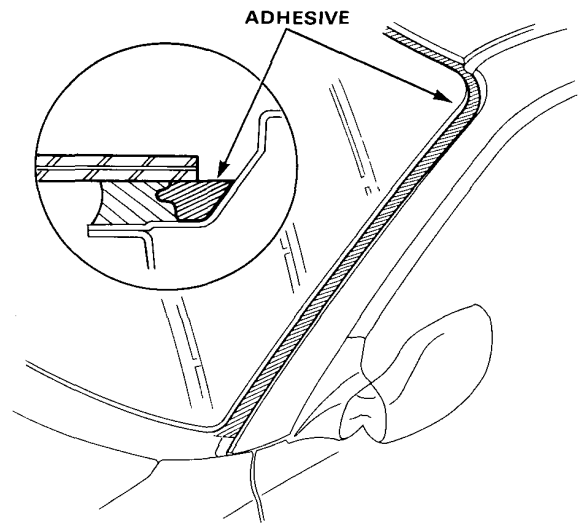


Windshield Molding

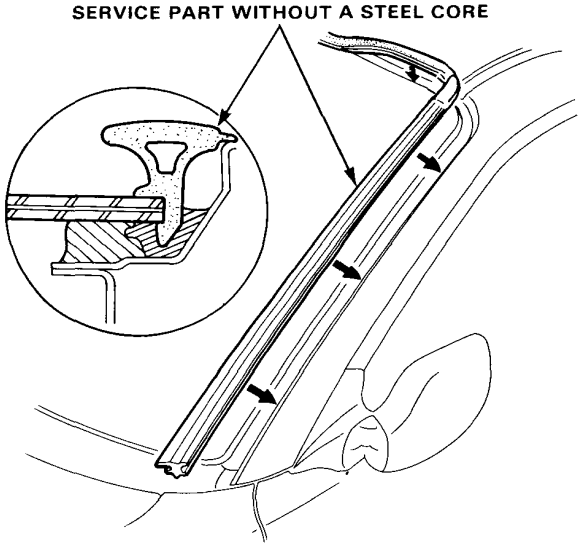
Installation

NOTE: When only replacing the molding (with the windshield remaining in place) use the replacement molding that has no steel core.

1. Apply adhesive around the glass as shown.



2. Install the coreless molding, starting at the upper corners then smoothly pushing the top and side portions into place.



Rear Window

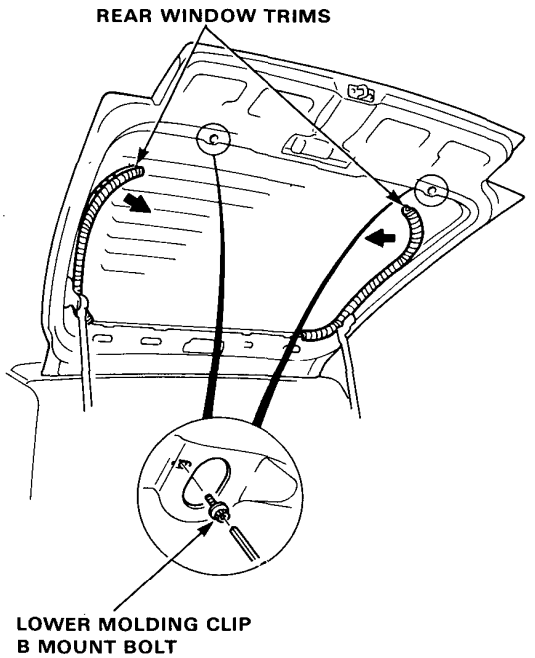
Removal

CAUTION:
- **Wear gloves to remove and install the glass.**
- **Do not damage the defroster grid lines.**

1. To remove the rear window glass, first remove the:
   - *Tailgate trim panel (page 14-29).*
   - Rear wiper
   - Tailgate spoiler. (page 14-31).

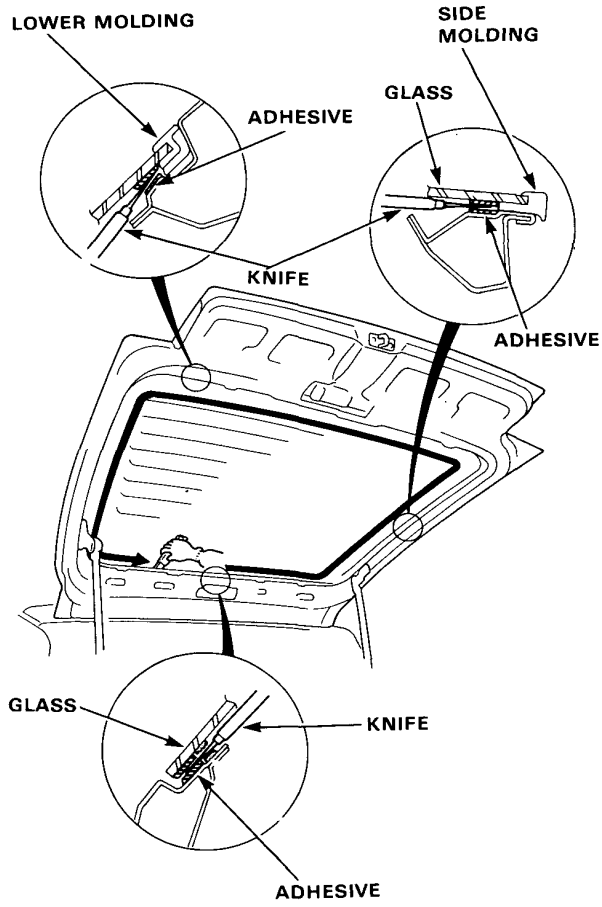
2. Remove the rear window trims, and remove the rear window lower molding clip B mount bolts.

   NOTE: Take care not to scratch or score the glass.



   NOTE: Take care not to scratch or score the glass.

3. Use a knife to cut through the glass adhesive from inside car, all the way around the glass area.



4. Remove the rear window molding when the glass is to be reused.

Rear Window

Installation

1. Scrape the old adhesive smooth with a knife, to a thickness of about 2 mm (0.08 in.) on the bonding surface around the entire window glass flange.

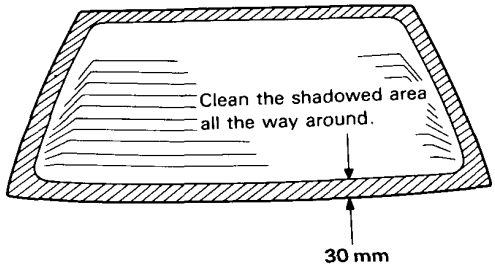
   NOTE:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove all traces of the rubber spacer material from the body.
   - Mask off surrounding surfaces before applying primer.

2. Clean the body bonding surface with a sponge dampened in alcohol.

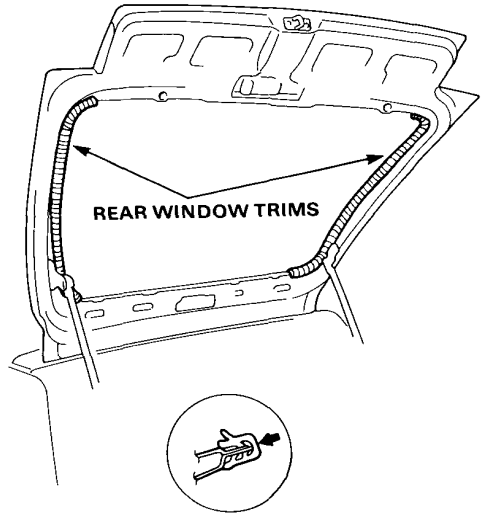
   NOTE: After cleaning, keep oil, grease or water from getting on the surface.

3. If the glass is to be reinstalled, use a putty knife to scrape off all traces of old adhesive, then clean the glass surface with alcohol where new adhesive is to be applied.

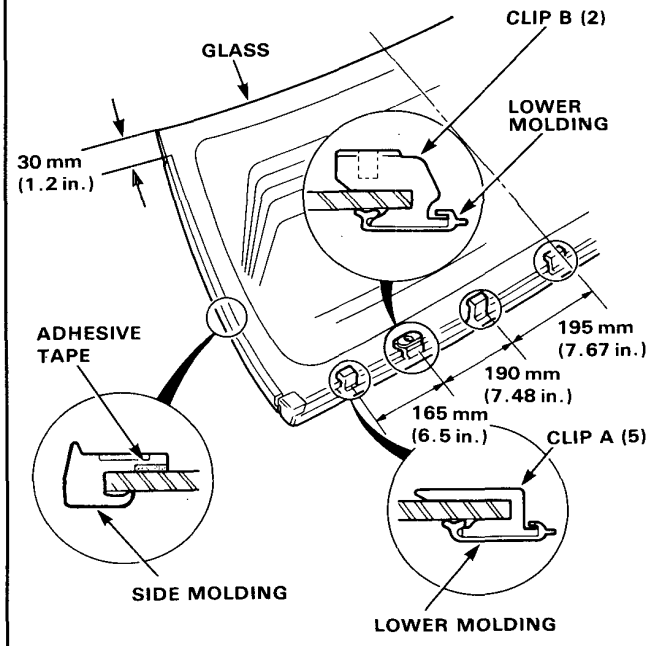
   NOTE: Make sure the bonding surface is kept free of water, oil and grease.



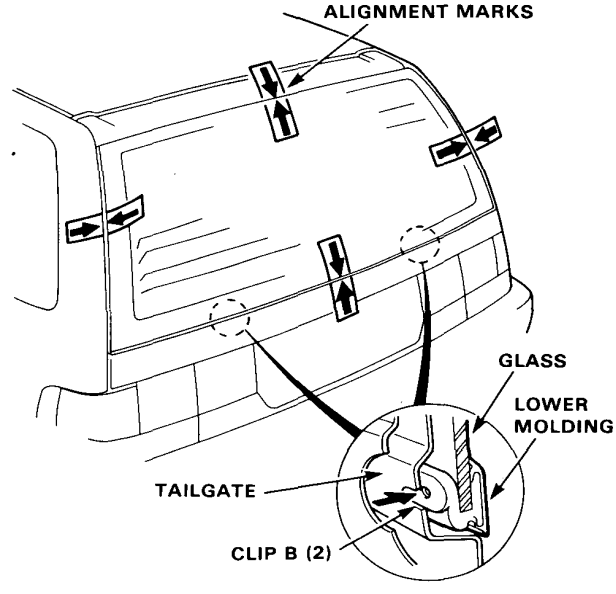
4. Install the rear window trims in the tailgate.



5. Adhere the side moldings, lower molding clips and lower molding to the side and lower edge of the glass as shown.

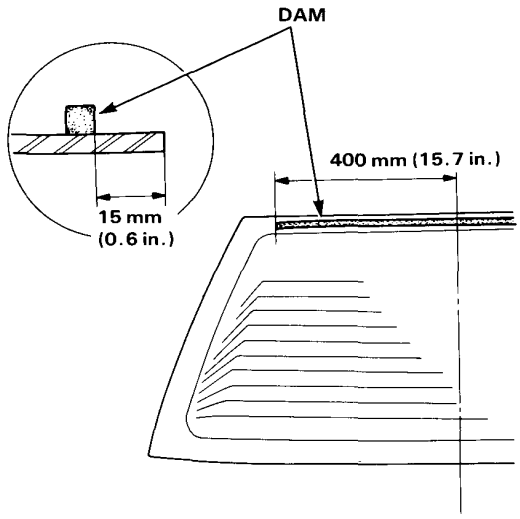


6. Set the glass upright on the tailgate, and center it in the opening. Mark the location by marking lines across the glass and body with a grease pencil at the four points shown.
   NOTE: Check that the lower molding clip B mount holes and tailgate holes aligning with each other as shown.

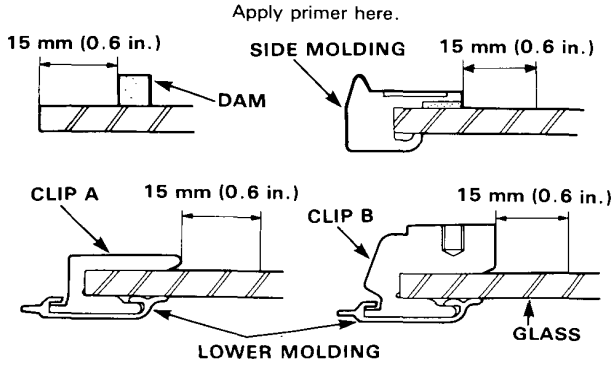


7. Center and glue the rubber dam to the inside face of the glass as shown, to contain the adhesive during installation.

NOTE:
- Be careful not to touch the glass where adhesive will be applied.
- Mask off surrounding surfaces before applying primer.

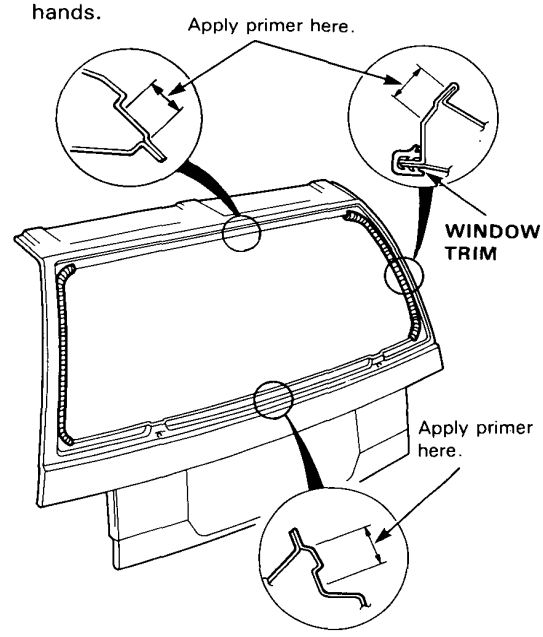


8. With a sponge, apply a light coat of glass primer around the edge of glass as shown, then lightly wipe it off with gauze or cheesecloth.
NOTE:
- Do not apply body primer to the glass, and do not get body and glass primer sponges mixed up.
- Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the glass properly, causing a leak after the glass is installed.
- Keep water, dust, and abrasive materials away from the primed surface.



9. With a sponge, apply a light coat of body primer to the original adhesive remaining around the window opening flange.

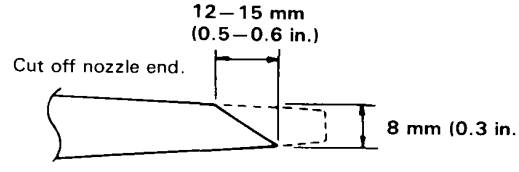
NOTE:
- Do not apply glass primer to the body, and be careful not to mix up glass and body primer sponges.
- Never touch the primed surfaces with your hands.



10. Thoroughly mix all the adhesive and hardener together on a glass or metal plate with a putty knife.

NOTE:
- Clean the plate with a sponge and alcohol before mixing.
- Follow the instructions that come with the adhesive.

11. Before filling a cartridge, cut off the end of the nozzle at the angle shown.

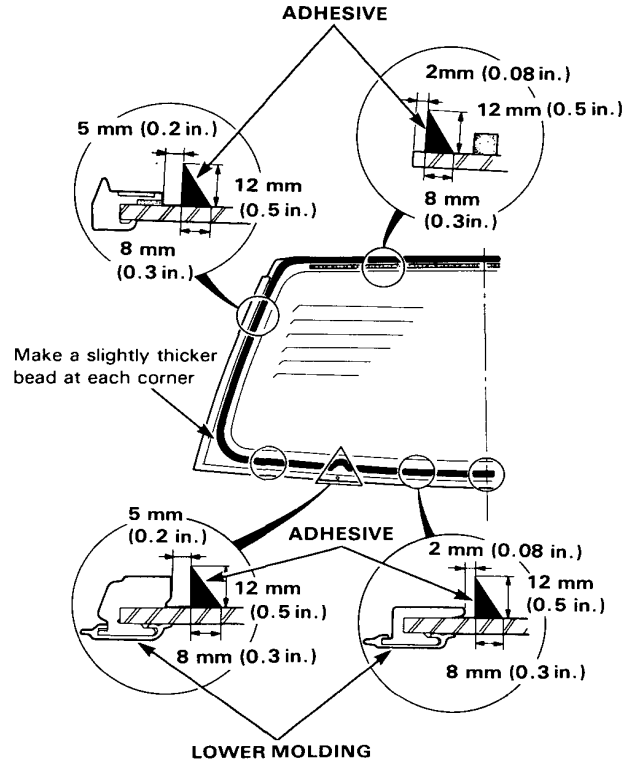


(cont'd)

Rear Window

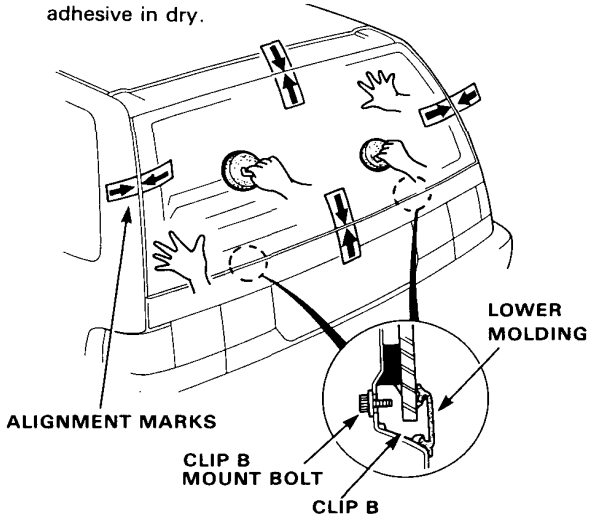
Installation (cont'd)

12. Pack adhesive into the cartridge without air pockets, to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive around the edge of the glass as shown.



13. Use suction cups to hold the glass over the opening, then set it down on the adhesive. Lightly push on the glass until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open and close the doors until the adhesive in dry.



14. Scrape or wipe the excess adhesive off with a putty knife or gauze.

    NOTE: Use a soft rag or towel dampened with alcohol or unleaded gasoline to remove adhesive from a painted surface or glass.

15. After the adhesive is dry, spray water over the glass and check for leaks. Mark leaking areas and let the glass dry, then seal with sealant.

    NOTE: Let the car stand for at least 4 hours after glass installation. If the car has to be used within the first 4 hours, it must be driven slowly.

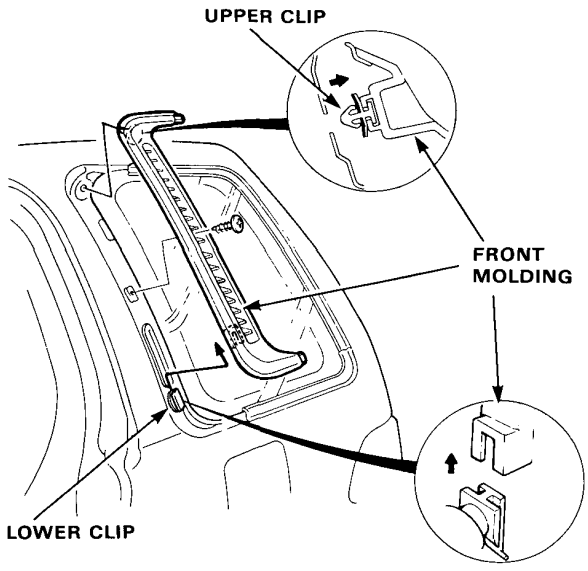
16. Reinstall all remaining removed parts.

Quarter Glass

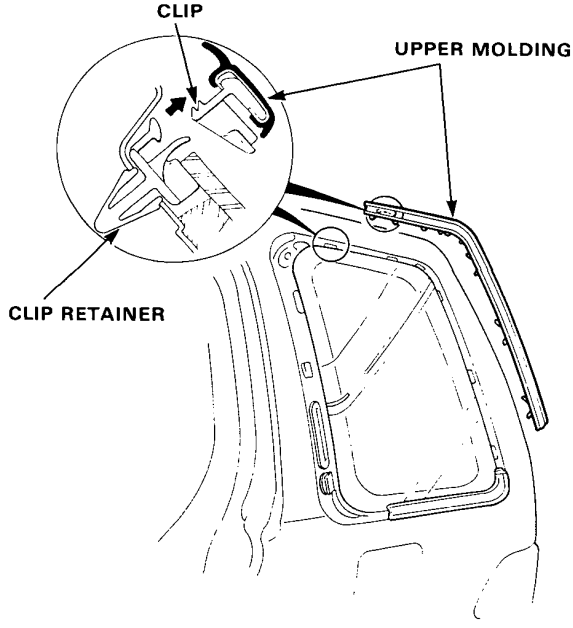
Removal

NOTE: To remove the quarter glass, first remove the quarter window trim panel and quarter trim panel (page 14-21).

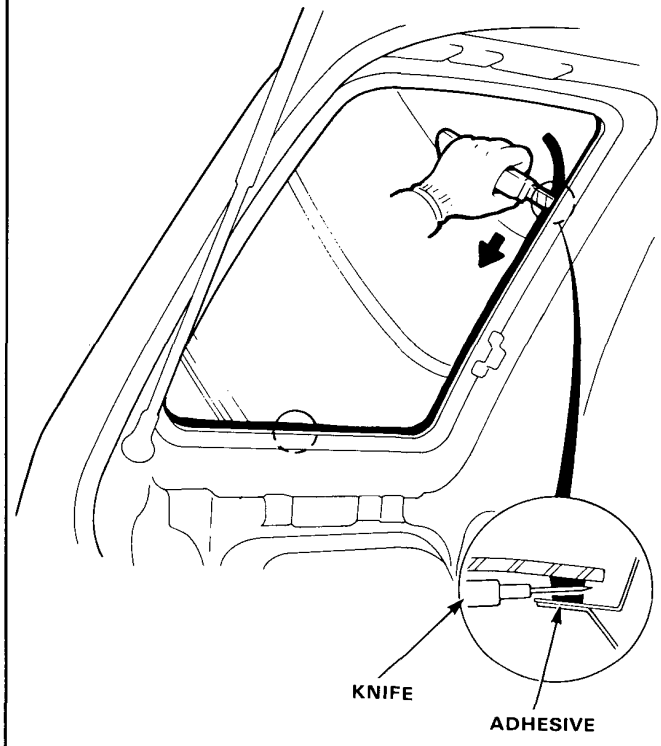
1. Remove the screw and detach the upper clip.
2. Remove the front molding by pulling it upward.



3. Detach the 6 clips, then remove the upper molding.



4. From inside the car, use a knife to cut through the glass adhesive all the way around.



5. Remove the clip retainers, being careful not to let them fall into the body.
6. Remove the quarter glass molding if the glass is to be reused.

Quarter Glass

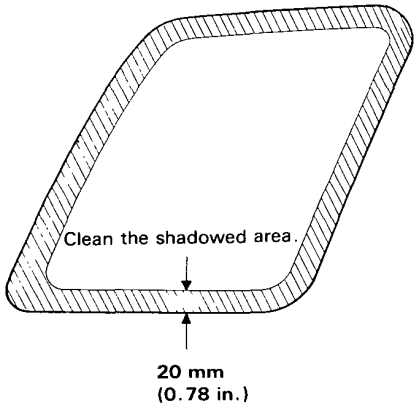
Installation

1. Scrape the old adhesive smooth with a knife, to a thickness of about 2 mm (0.08 in.) on the bonding surface around the entire glass flange.

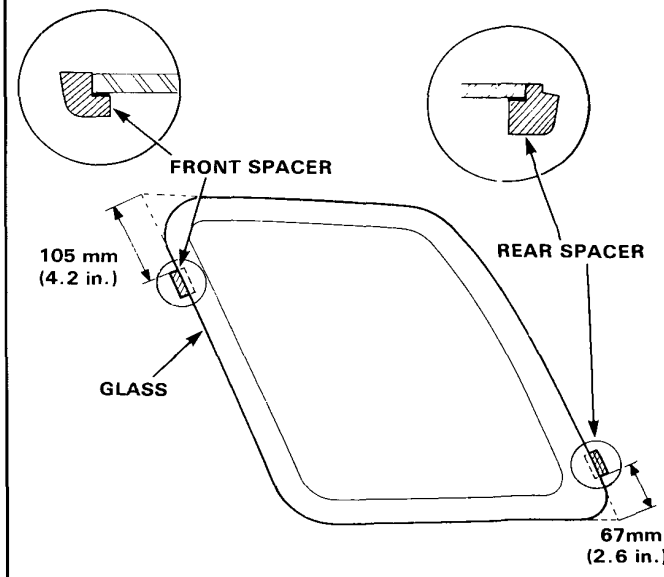
   NOTE:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove all traces of the rubber spacer material from the body.
   - Mask off surrounding surfaces before applying primer.
2. Clean the body bonding surface with a sponge dampened in alcohol.

   NOTE: After cleaning, keep oil, grease or water from getting on the surface.
3. If the glass is to be reinstalled, use a putty knife to scrape off all traces of old adhesive, then clean the glass surface with alcohol where new adhesive is to be applied.

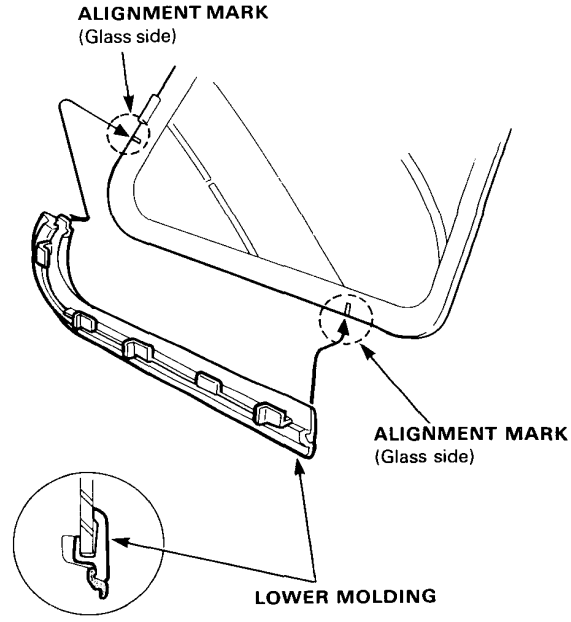
   NOTE: Make sure the bonding surface is kept free of water, oil and grease.



4. Glue the front and rear spacers to the front and rear edge of the glass as shown.

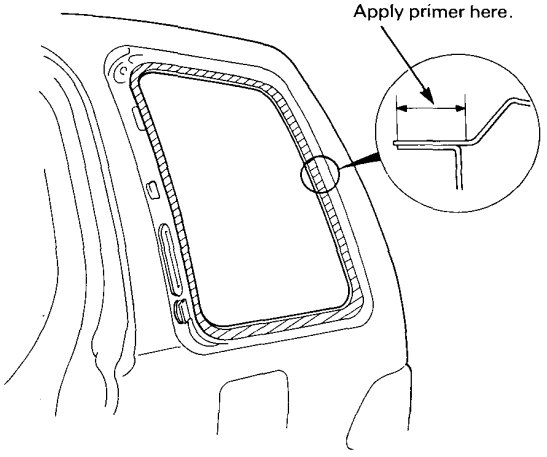


5. Install the lower molding on the glass as shown.



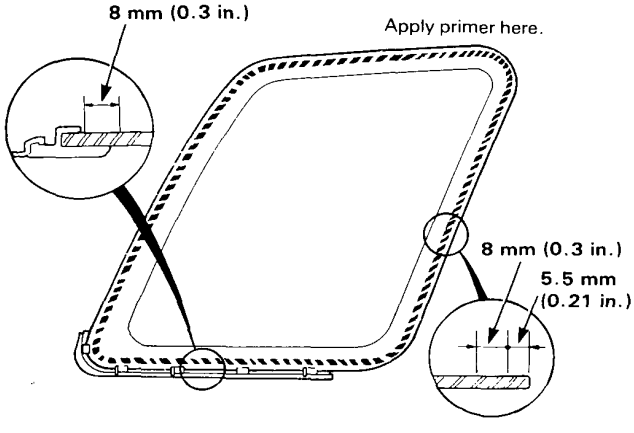
6. With a sponge, apply a light coat of body primer to the original adhesive remaining around the window opening flange.

NOTE:
- Do not apply glass primer to the body, and be careful not to mix up glass and body primer sponges.
- Never touch the primed surfaces with your hands.

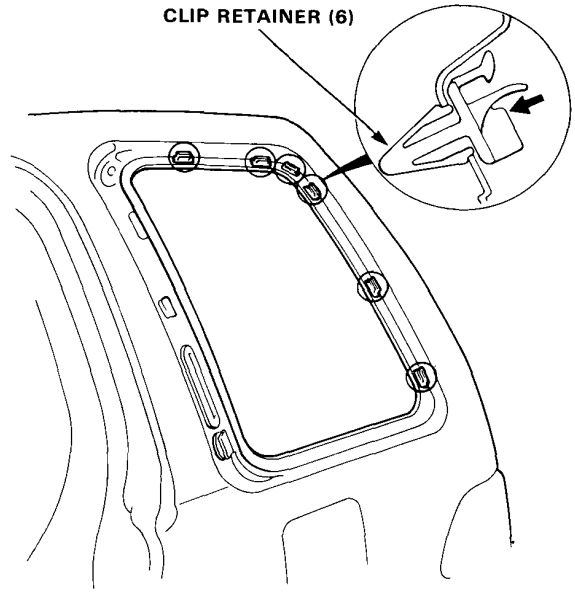


7. With a sponge, apply a light coat of glass primer around the edge of the glass as shown, then lightly wipe it off with gauze or cheesecloth.

NOTE:
- Do not apply body primer to the glass, and do not get body and glass primer sponges mixed up.
- Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the glass properly, causing a leak after the glass is installed.
- Keep water, dust, and abrasive materials away from the primed surface.



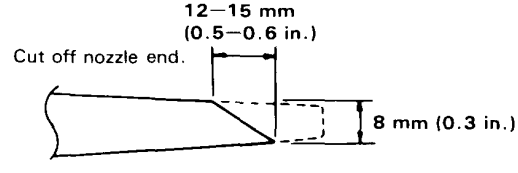
8. Install the clip retainers as shown.



9. Thoroughly mix the adhesive and hardener together on a glass or metal plate with a putty knife.

NOTE:
- Clean the plate with a sponge and alcohol before mixing.
- Follow the instructions that come with the adhesive.

10. Before filling a cartridge, cut off the end of the nozzle at the angle shown.



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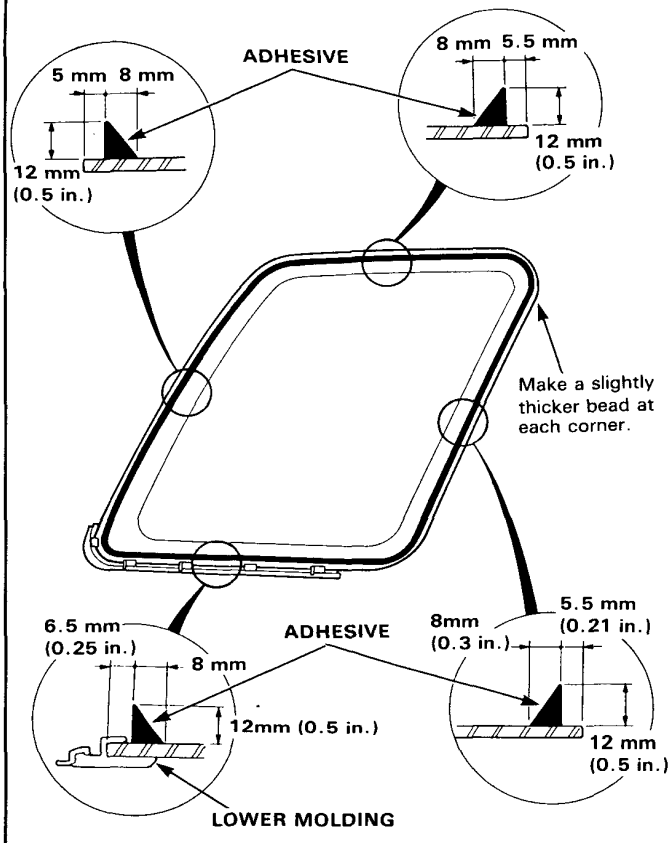
Quarter Glass

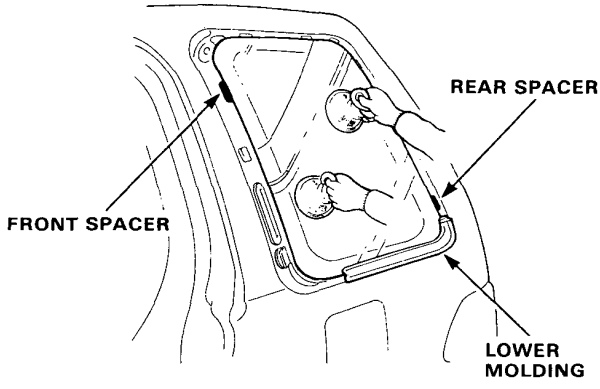
Installation (cont'd)

11. Pack adhesive into the cartridge without air pockets, to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive around the edge of the glass as shown.



12. Use suction cups to hold the glass, then set it on the adhesive. Lightly push on the glass until its edges are fully seated on the adhesive all the way around.

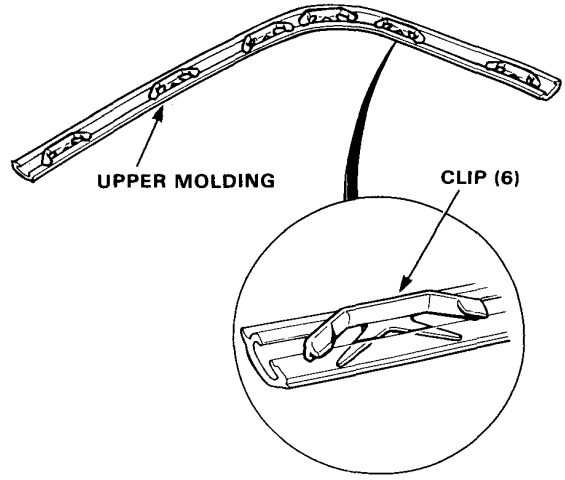
    NOTE: Do not open or close the doors and tailgate until the adhesive is dry.



13. Scrape or wipe the excess adhesive off with a putty knife or gauze.

    NOTE: Use a shop towel dampened with alcohol or unleaded gasoline to remove adhesive from a painted surface or glass.

14. Attach the clips to the upper molding as shown.



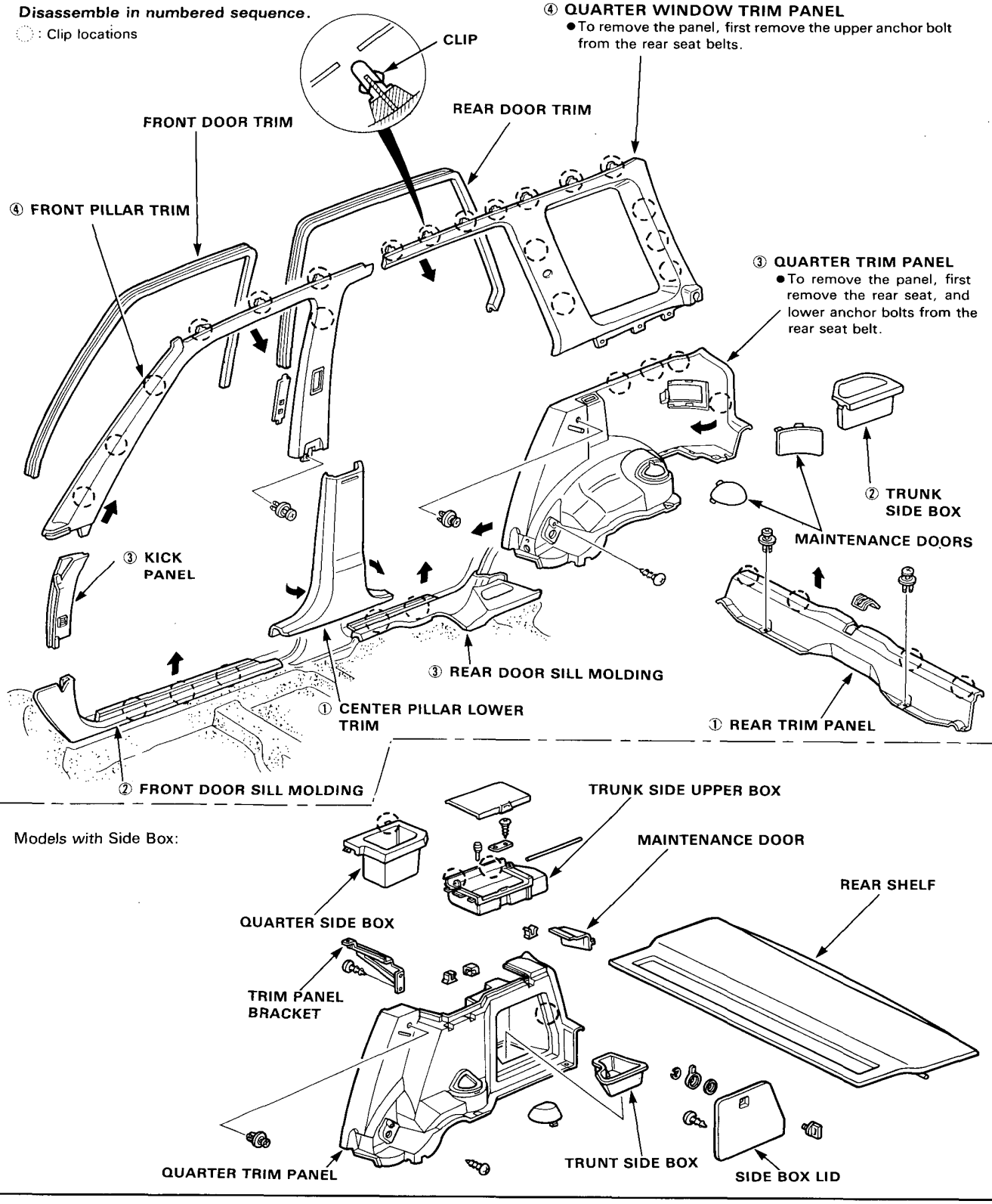
15. Install the upper molding and front molding.

16. After the adhesive is dry, spray water over the glass and check for leaks. Mark leaking areas and let the glass dry, then seal with sealant.

    NOTE: Let the car stand for at least 4 hours after glass installation. If the car has to be used within the first 4 hours, it must be driven slowly.

17. Reinstall all remaining removed parts.

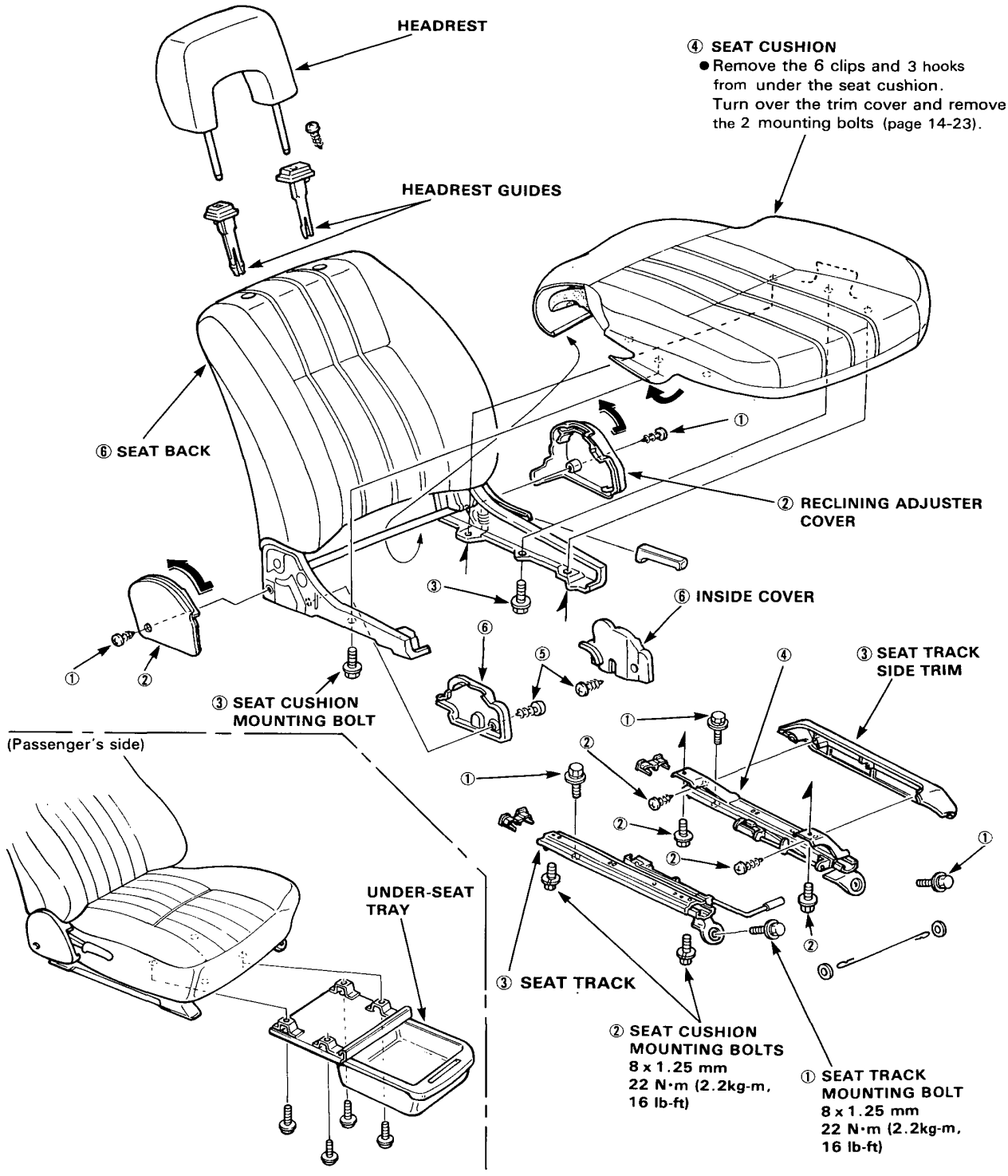
Replacement



Front Seats

Disassembly

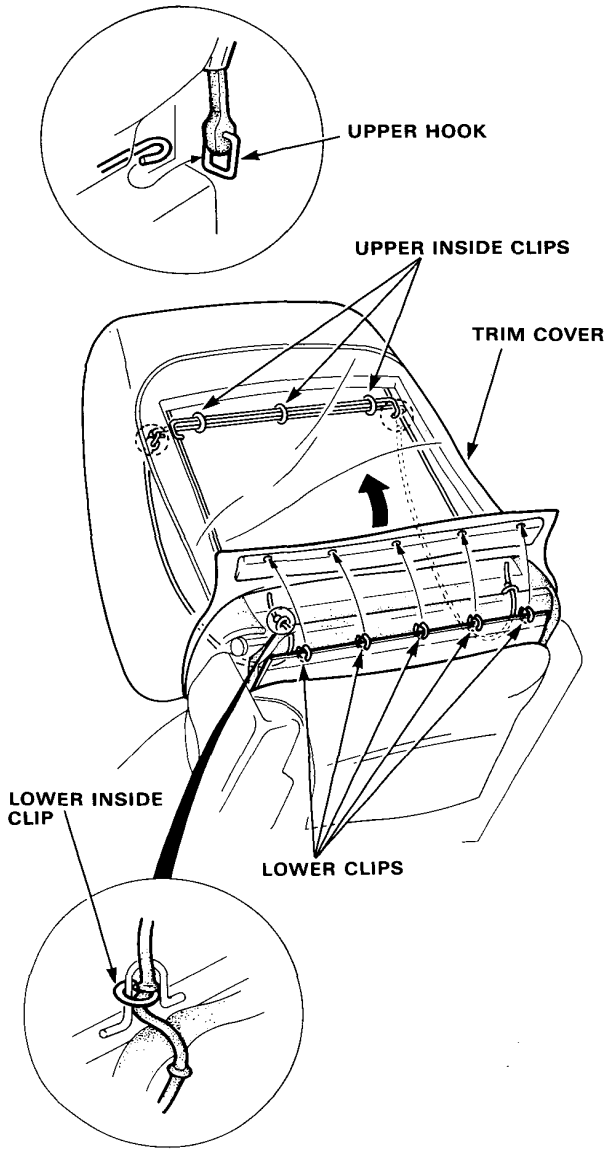
(Driver's side)
Disassemble in numbered sequence.



Cover Replacement

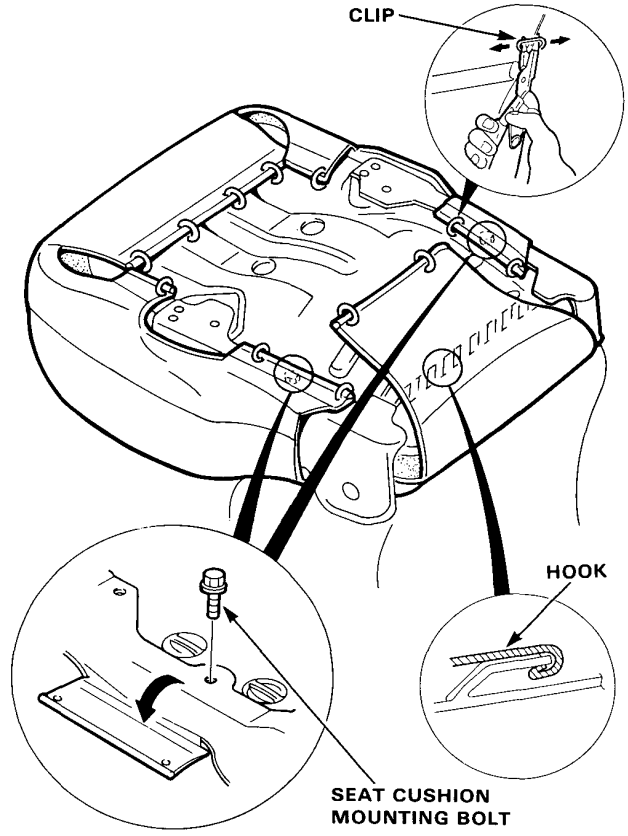
Front Seat Back:

1. Remove the seat tracks. (page 14-22).
2. Remove the headrest and headrest guide (page 14-22)
3. Remove the lower clips and turn over the trim cover.
4. Remove the inside clips and inside upper hooks, then remove the trim cover.

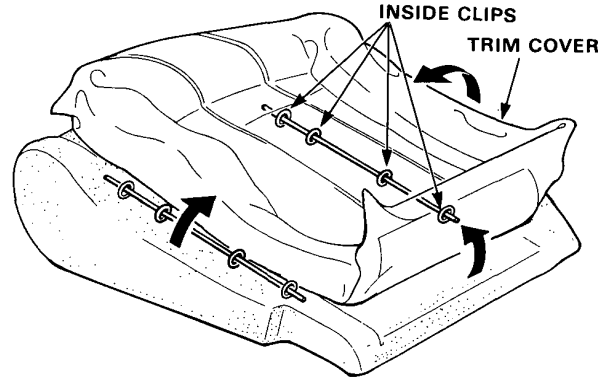


Front seat cushion:

5. Remove the 12 clips and the 3 hooks, then turn over the trim cover.
6. If necessary, remove the seat cushion mounting bolts, then separate the seat cushion and back.



7. Remove the inside clips, then remove the trim cover.

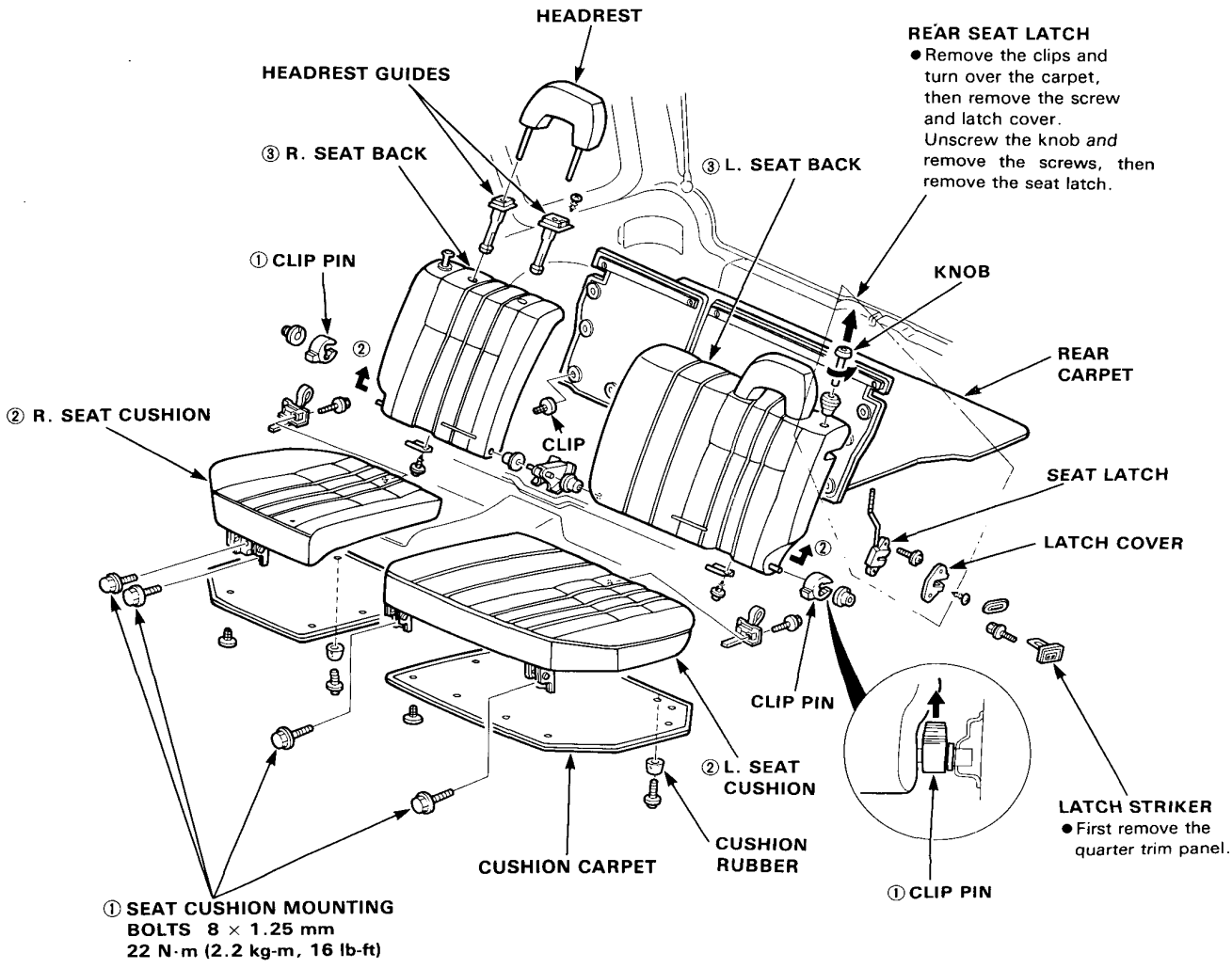


NOTE: To prevent wrinkles when installing a seat cover, make sure the material is stretched evenly over the frame before securing all the clips.

Rear Seats

Replacement

Disassemble in numbered sequence.

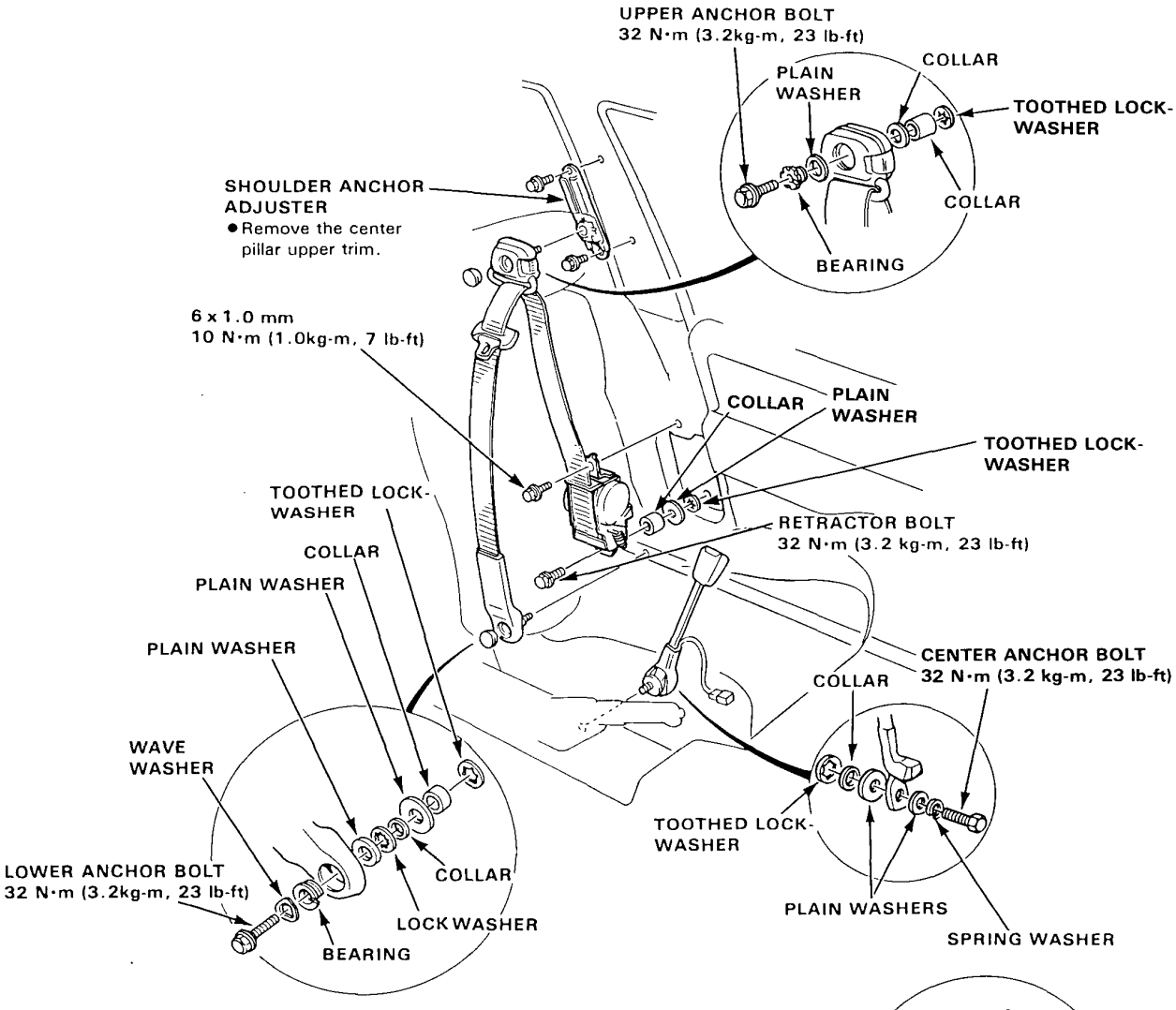


Front Seat Belts

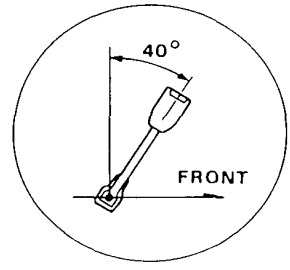
Replacement

CAUTION: Check the seat belts fordamage, and replace them if necessary. Be careful not to damage them during removal and installation.

1. Remove the center pillar lower trim (page 14-21).
2. Remove the upper anchor bolt, lower anchor bolt and retractor bolt with a 17 mm socket or box-end wrench.
3. Slide the front seat forward until the seat belt center anchor bolt is accessible, then remove the bolt and the center anchor.



4. Install the front seat belts in the reverse order of removal.
   NOTE:
   - Make sure you assemble the washers and collars on the upper and lower anchor bolts as shown.
   - Install the center anchor bolt at 40° forward from vertical.
   - Before attaching the center pillar lower trim, make sure there are no twists or kinks in the belts.

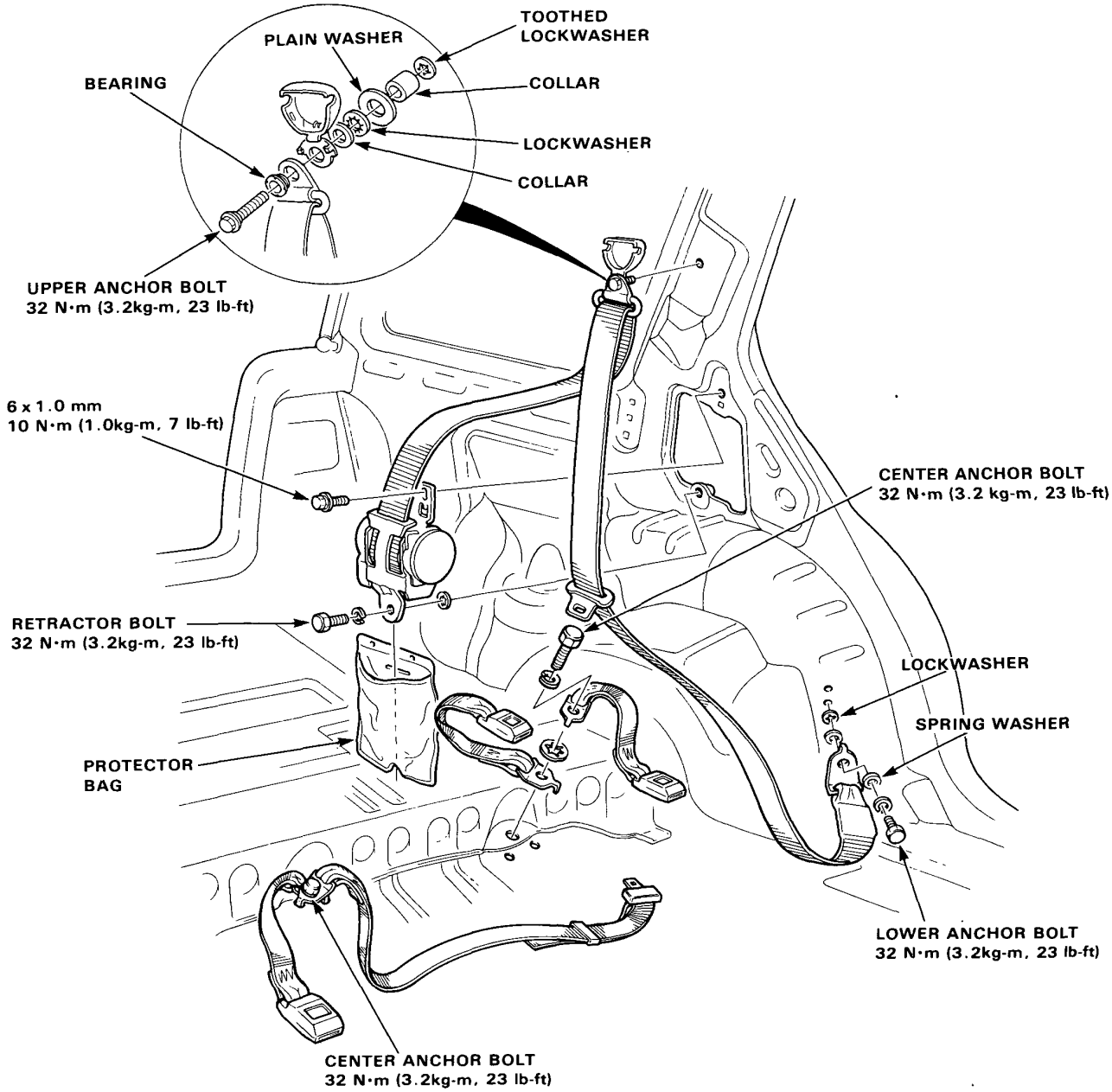


Rear Seat Belts

Replacement

CAUTION: Check the seat belts for damage and replace them if necessary. Be careful not to damage them during removal and installation.

1. Remove the rear seat (page 14-24).
2. Remove the quarter trim panel (page 14-21).
3. Remove the upper anchor bolt, the lower anchor bolt and retractor bolt with a 17 mm socket or box-end wrench.



4. Install the seat belt in the reverse order of removal.

NOTE: Before attaching the quarter trim panel and rear seat, make sure there are no twists in the belt.

Front Bumper

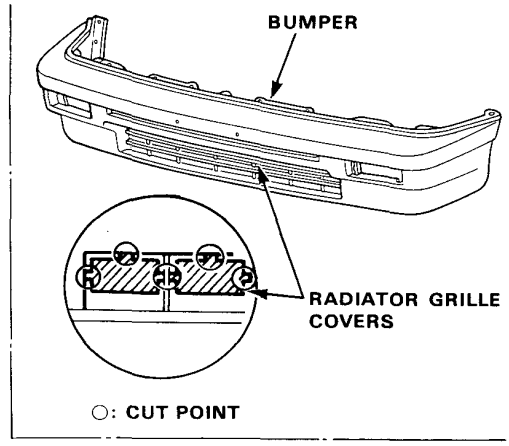
Replacement

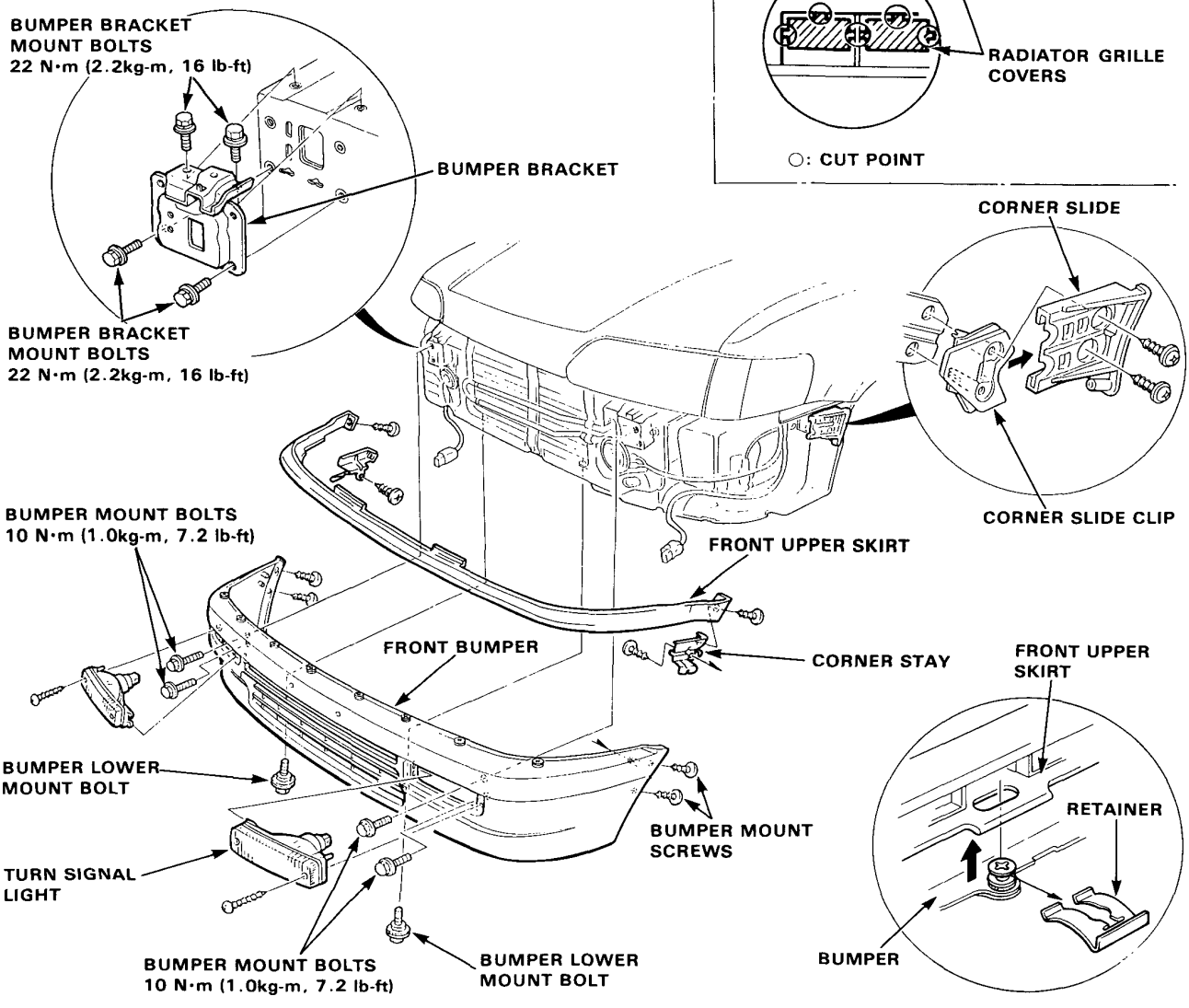
1. Remove the right and left front turn signal lights.
2. Remove the 2 bumper mount screws on each side at the corner edge of the bumper.
3. Remove the 2 bumper lower mount bolts and the 4 bumper mount bolts.
4. Remove the bumper by sliding it forward.

If necessary:

5. Remove the bumper brackets by removing the bracket mount bolts.
6. Remove the screws, then remove the corner slide and slide clip.
7. Remove the screws and retainers, then remove the front upper skirt.
8. Installation sequence is essentially the reverse order of removal.

NOTE: When installing a new bumper on a car with A/C, cut off and discard the 5 radiator grille covers.





Rear Bumper

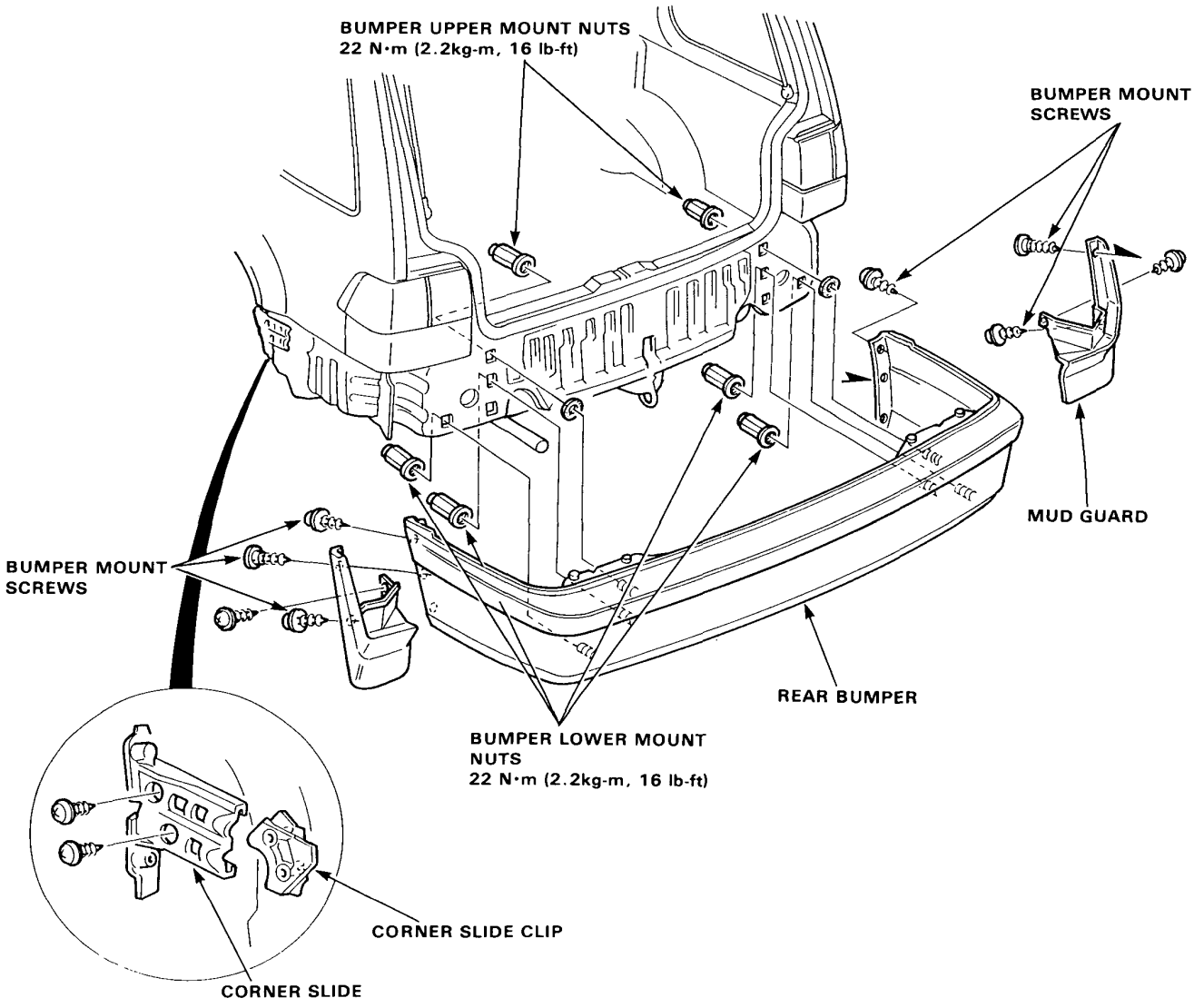
Replacement

1. Remove the 3 bumper mount screws on each side at the corner edge of the bumper.
2. Remove the 4 bumper lower mount nuts from under the trunk floor.
3. Remove the 2 bumper upper mount nuts from the trunk area.
4. Remove the bumper by sliding it to the rear.

   NOTE: Do not damage the threads of the bumper bolts.

If necessary:

5. Remove the screws, then remove the corner slide and slide clip.



7. Installation sequence is essentially the reverse order of removal.

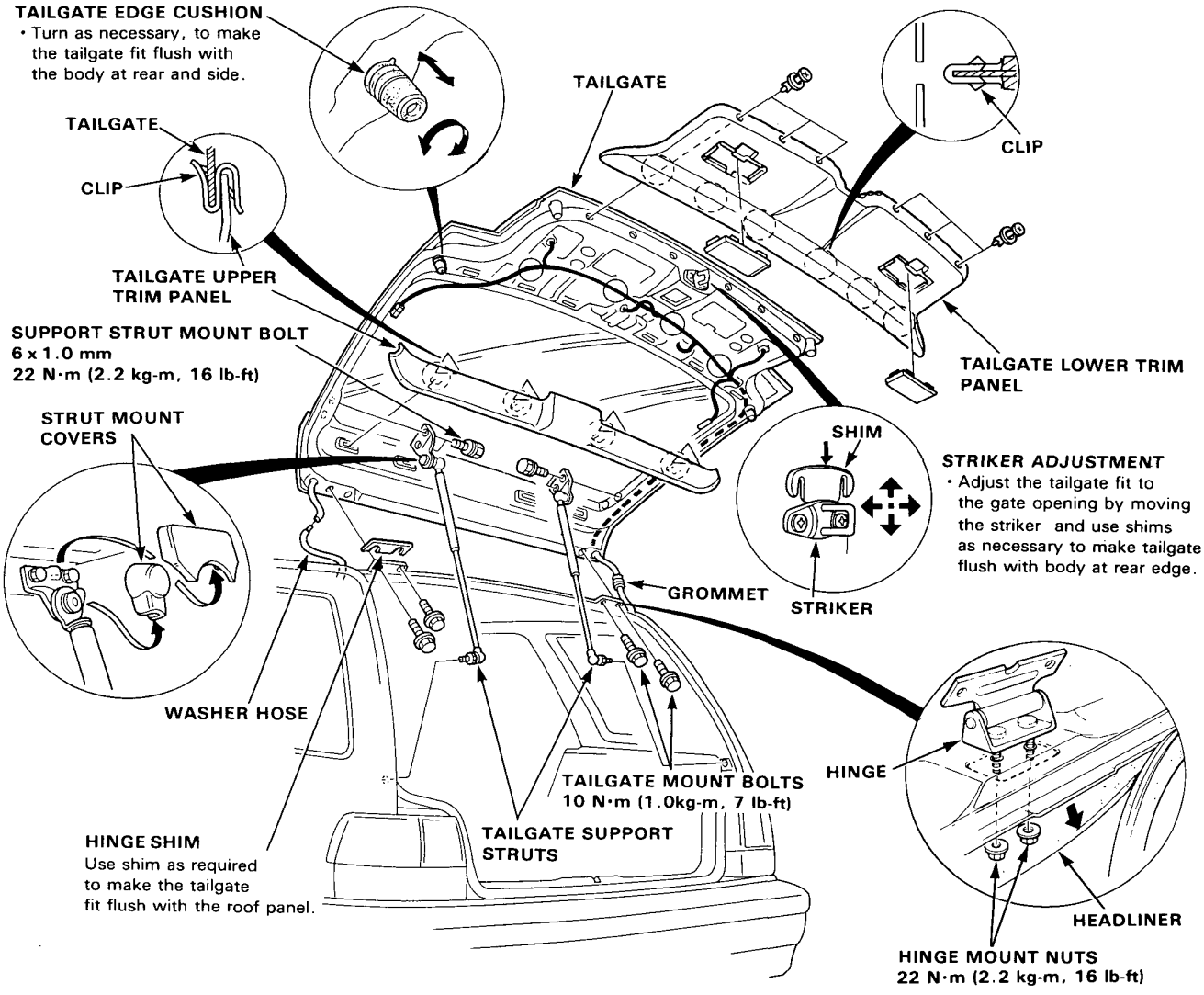
Tailgate

Replacement/Adjustment

1. Remove the screws and detach the clips, then remove the tailgate upper and lower trim panel.
2. Pull the wire harness out of the tailgate and disconnect the washer hose.
   NOTE: Before pulling out the wire harnesses, tie a string to the end of it so you can pull it back in when the tailgate is reinstalled.
3. Remove the tailgate support struts.
   NOTE: Let an assistant hold the tailgate when removing the struts.
4. Remove the tailgate by removing the tailgate mount bolts.
   NOTE: Take care not to damage the roof panel.

If necessary:

- Lower the rear of the headliner just enough to gain access to the hinge mount nuts, then remove the hinge by removing the hinge mount nuts.

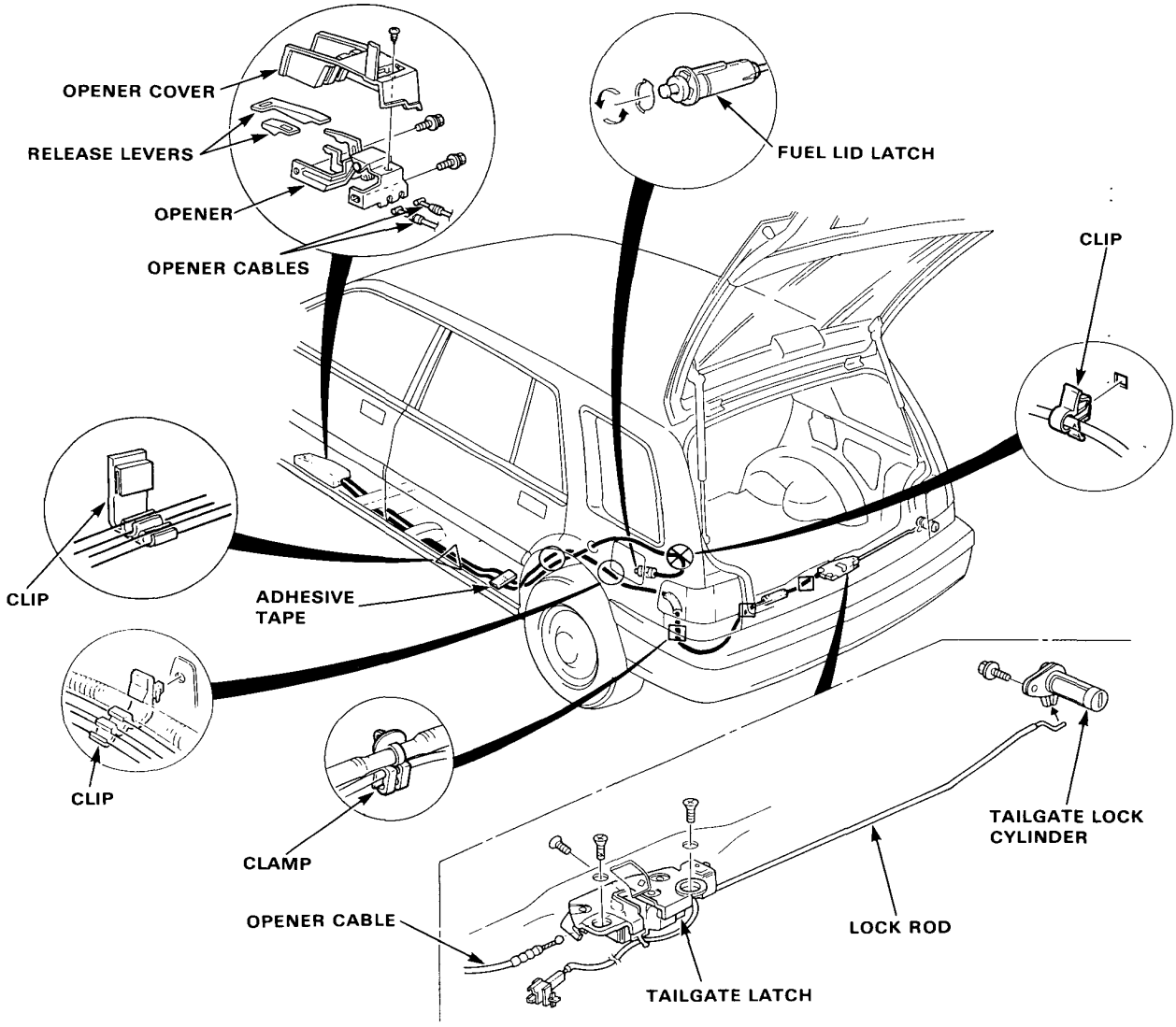


5. Installation sequence is essentially the reverse order of removal. However, observe the following:
   - Before tightening the hinge nuts, adjust the tailgate fit and striker.
   - Use care when pulling the wire harness back in to avoid damaging the body.
   - Coat the inside and outside of the grommet with sealer.

Fuel Filler/Tailgate Opener

Replacement

1. To remove the opener cables, remove the following parts:
   - Left side door sill molding, left half of carpet.
   - Left quarter trim panel, and rear trim panel.
2. Remove the screw and the release levers, then remove the opener cover. Remove the opener by removing the 2 bolts.
3. Remove the fuel lid latch by turning it 90°
4. Remove the bolt, then remove the tailgate lock cylinder.
5. Remove the 3 screws, then remove the tailgate latch.
6. Disconnect the opener cable, connector and lock rod.

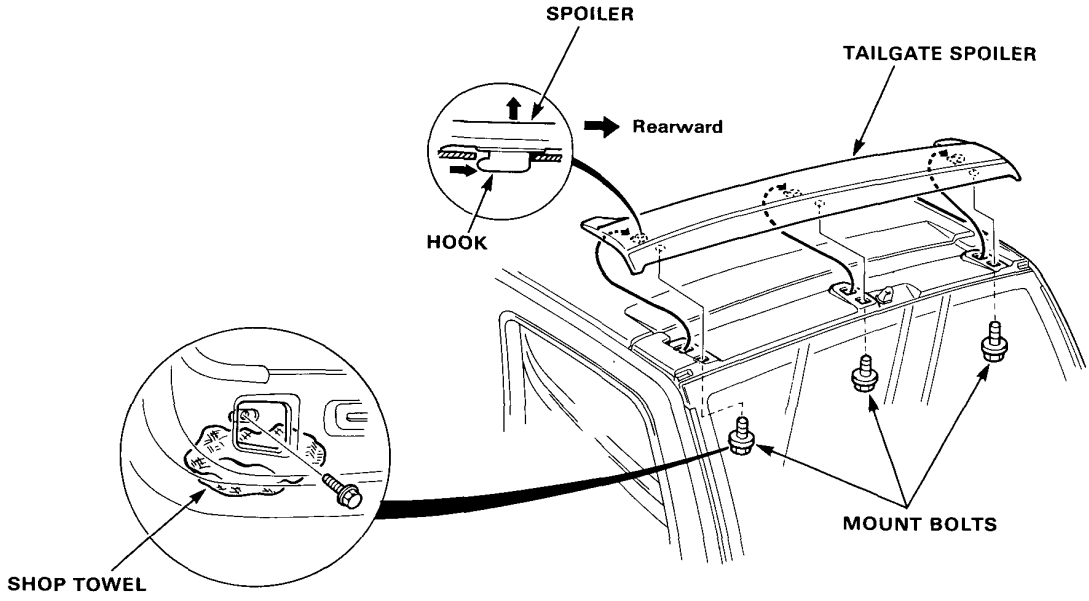


7. To install, reverse the removal procedure.
   Check that the tailgate and fuel lid opener cables are routed and connected properly.

Tailgate Spoiler/Side Sill Panel

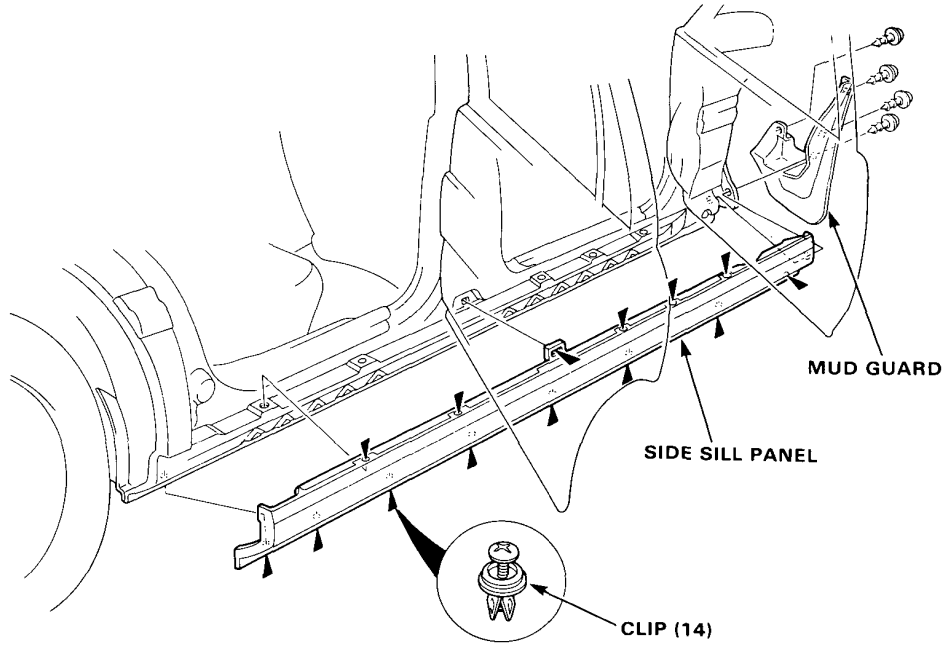
Tailgate Spoiler Replacement

1. Remove the 3 mount bolts, then remove the tailgate spoiler, by sliding rearward to free the 3 hooks.
   NOTE: Be careful not to drop the bolts inside the tailgage panel.
2. Install the spoiler in the reverse order of removal.



Side Sill Panel Replacement

1. Remove the mud guard and clips, then remove the side sill panel

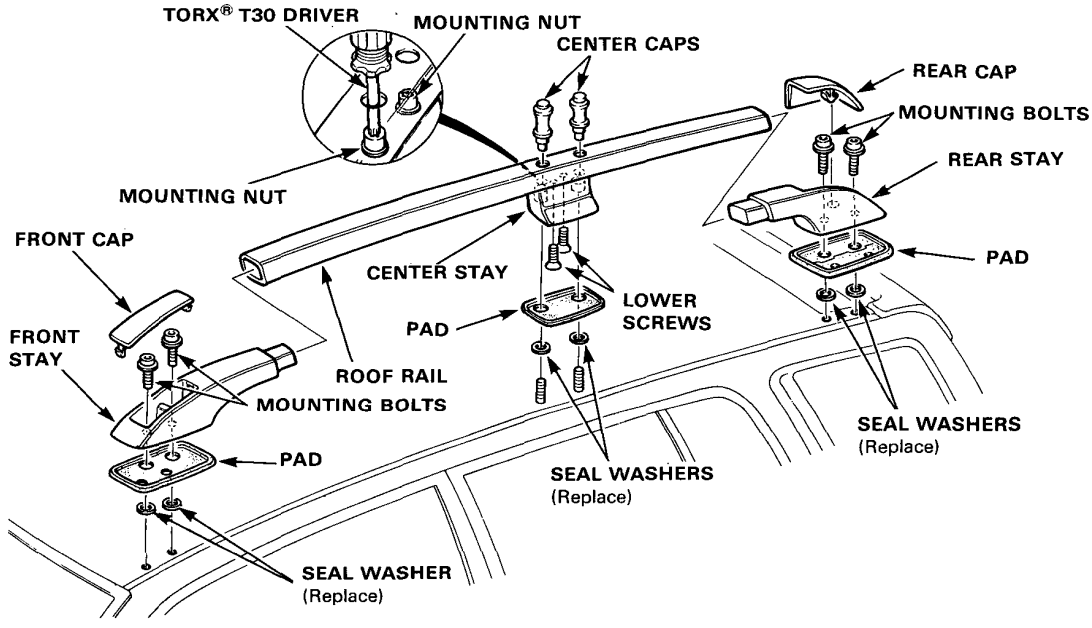


2. Install the side sill panel in the reverse order removal.

Roof Rail

Replacement

1. Remove the front, center and rear caps by pulling them upward.
2. Remove the front mounting bolts, rear mounting bolts and center mounting nuts with a Torx® T30 driver.
3. Remove the roof rail assembly from the roof panel.
4. Remove the front and rear stays from the roof rail.
   NOTE: Remove the stays slowly and carefully; they are glued to the roof rail.
5. Remove the lower screws, then remove the center stay.

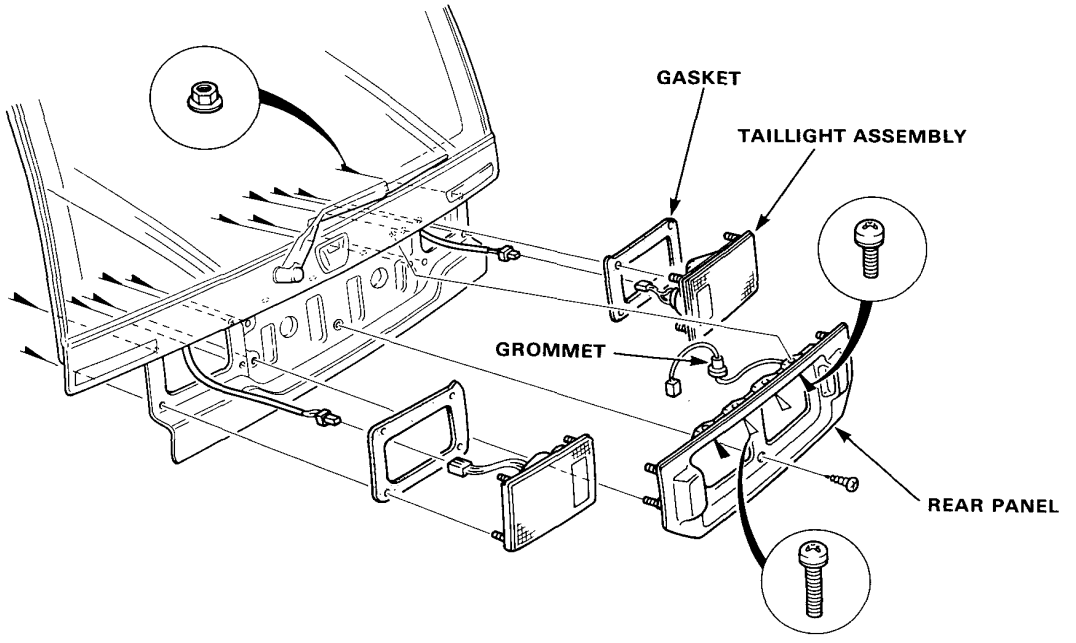


6. Install the roof rail in the reverse order of removal.
   NOTE:
   - Apply adhesive before installing front and rear stays.
   - Be careful not to scratch the roof panel.

Rear Panel Area

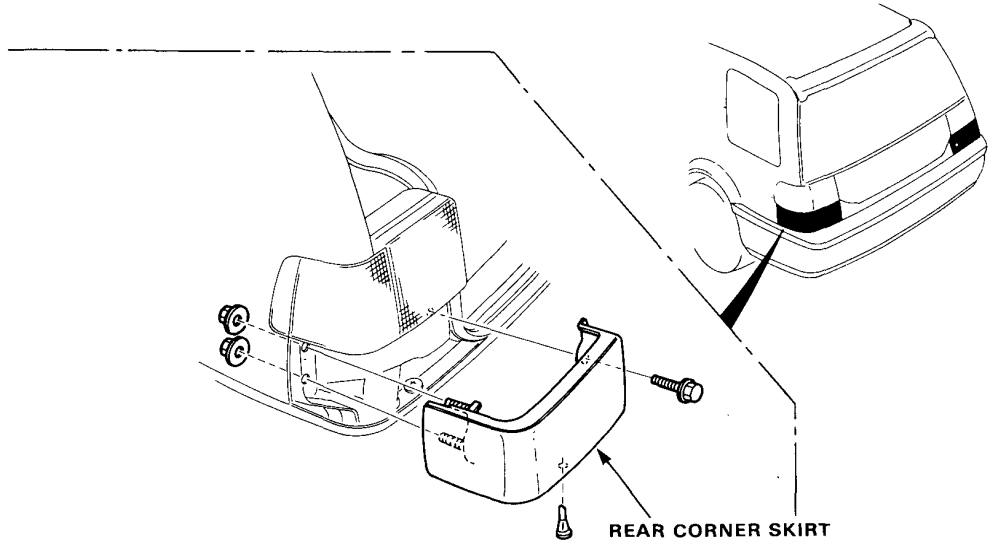
Rear Panel

1. Remove the tailgate lower trim panel (page 14-29).
2. Disconnect the license light wire connector from the tailgate panel inside.
3. Remove the 4 mount nuts and 5 screws, then remove the rear panel.
4. Disconnect the wire connectors and remove the mount nuts, then remove each taillight assembly.



Rear Corner Skirt Replacement

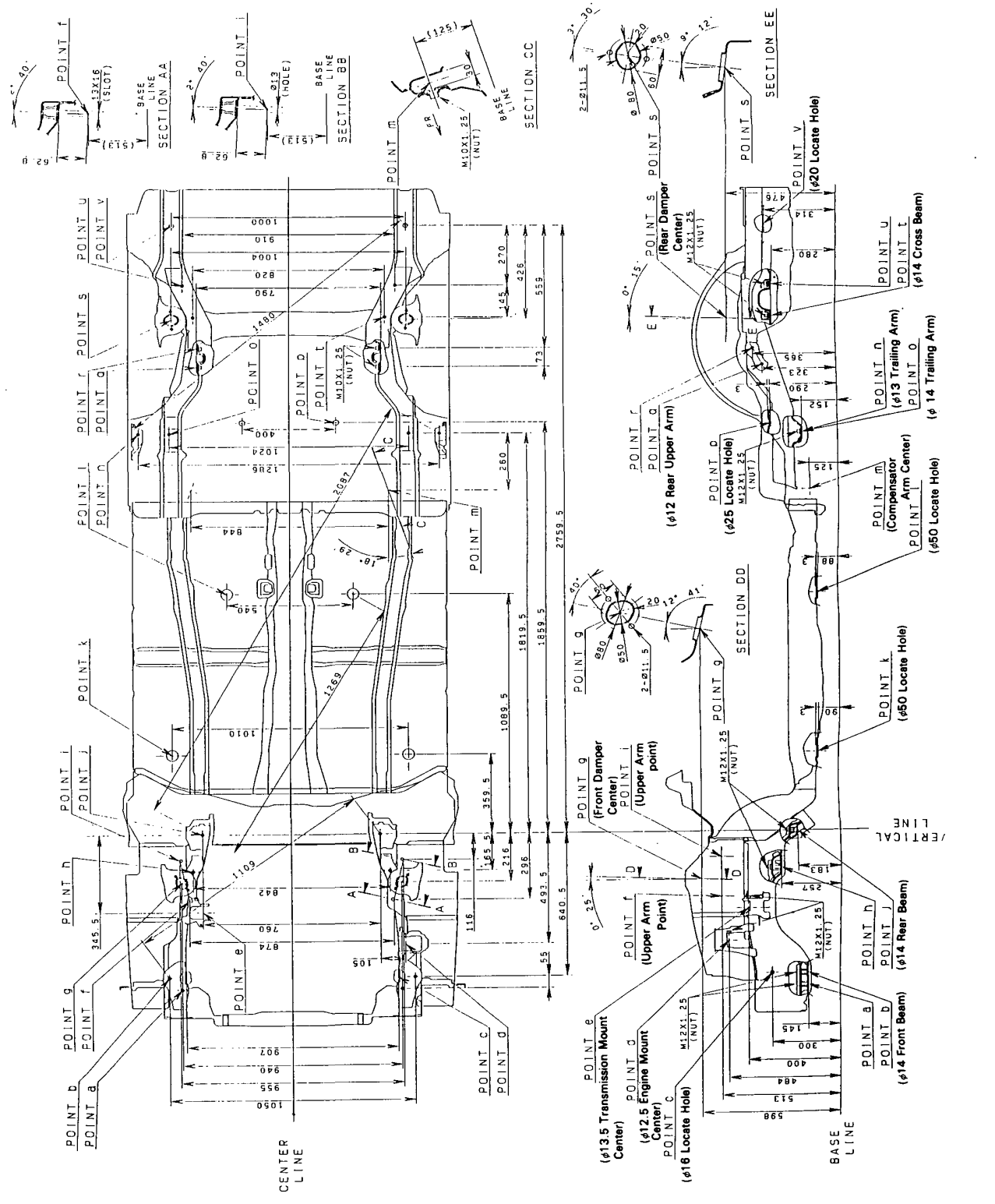
1. Remove the quarter trim panel (page 14-21).
2. Remove the bolts and nut, then remove the rear corner skirt.



Frame Repair Chart

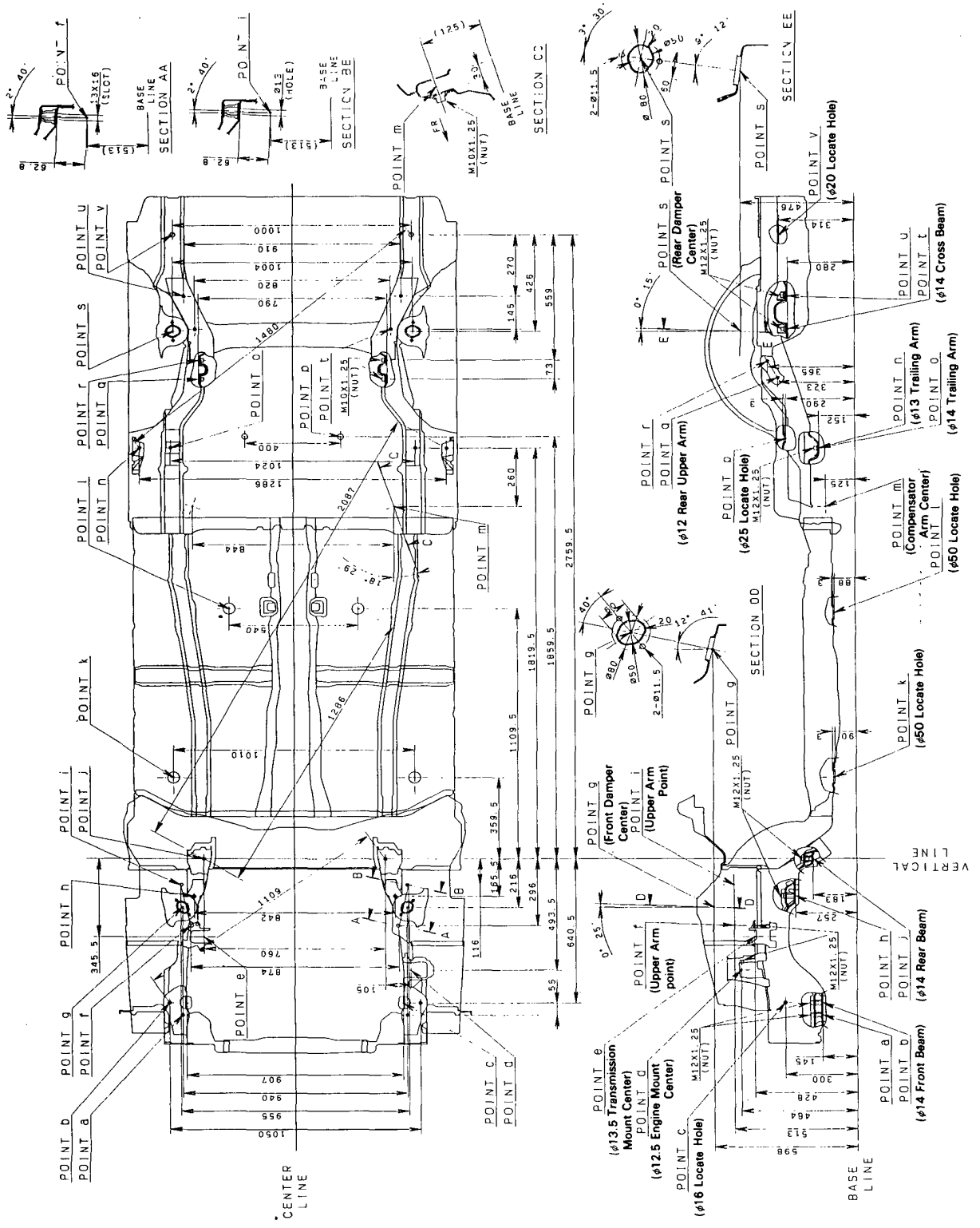
2WD:

Unit : mm



4WD:

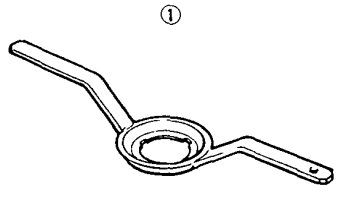
Unit : mm


SECTION AA
SECTION BB
SECTION CC
SECTION DD
SECTION EE
POINT m
POINT S
POINT V
POINT u
POINT t
POINT r
POINT q
POINT n
POINT o
POINT p
POINT l
POINT k
POINT g
POINT i
POINT j
POINT h
POINT f
POINT e
POINT d
POINT c
POINT b
POINT a
(ø12 Rear Upper Arm)
(ø25 Locate Hole)
(ø20 Locate Hole)
(ø14 Cross Beam)
(ø13 Trailing Arm)
(ø14 Trailing Arm)
(ø50 Locate Hole)
(ø14 Rear Beam)
(ø14 Front Beam)
(ø16 Locate Hole)
(ø12.5 Engine Mount Center)
(ø13.5 Transmission Mount Center)
(Upper Arm point)
(Front Damper Center)
(Upper Arm Point)
(Compensator Arm Center)
(Rear Damper Center)
CENTER LINE
BASE LINE
VERTICAL LINE

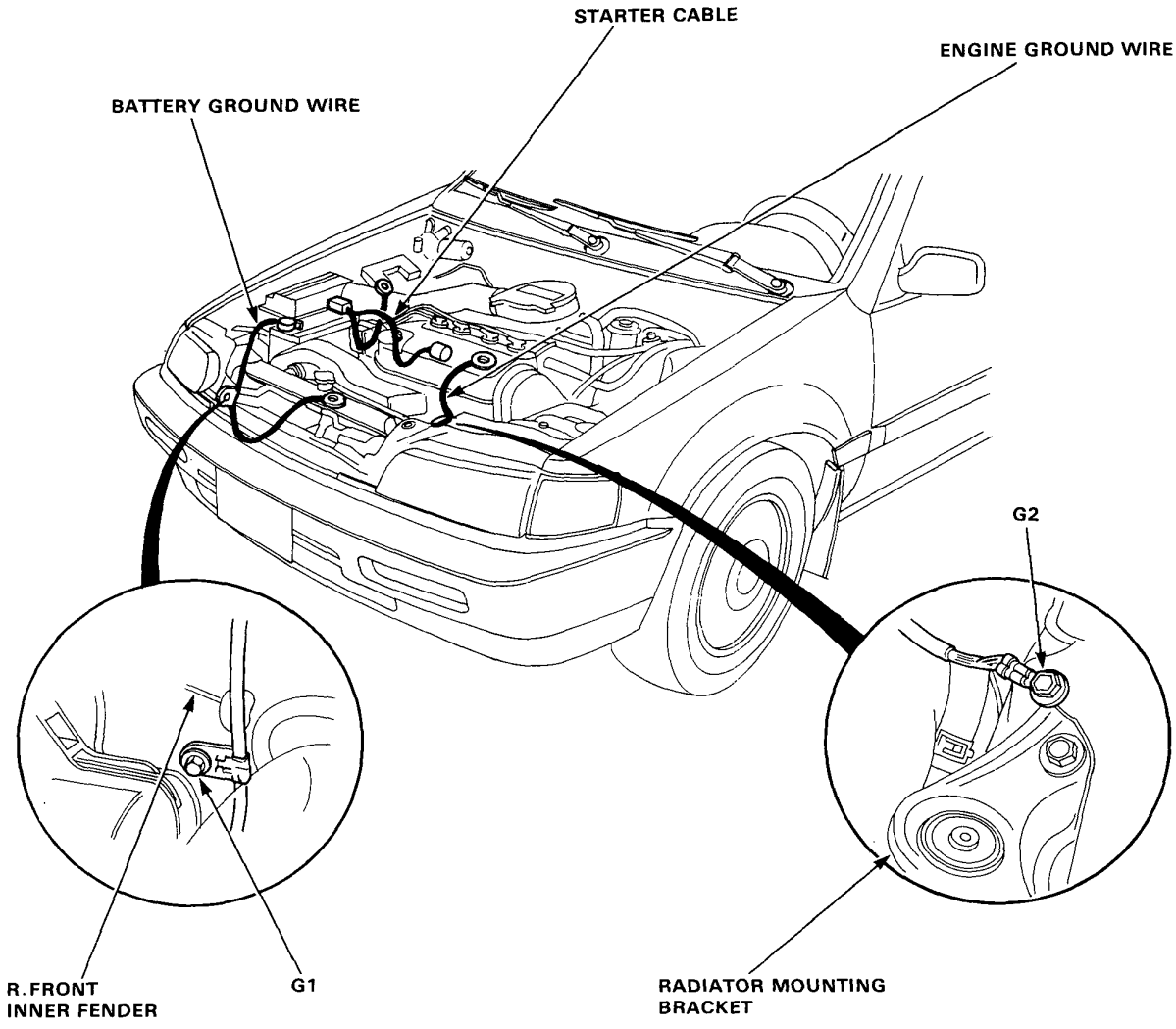
Electrical

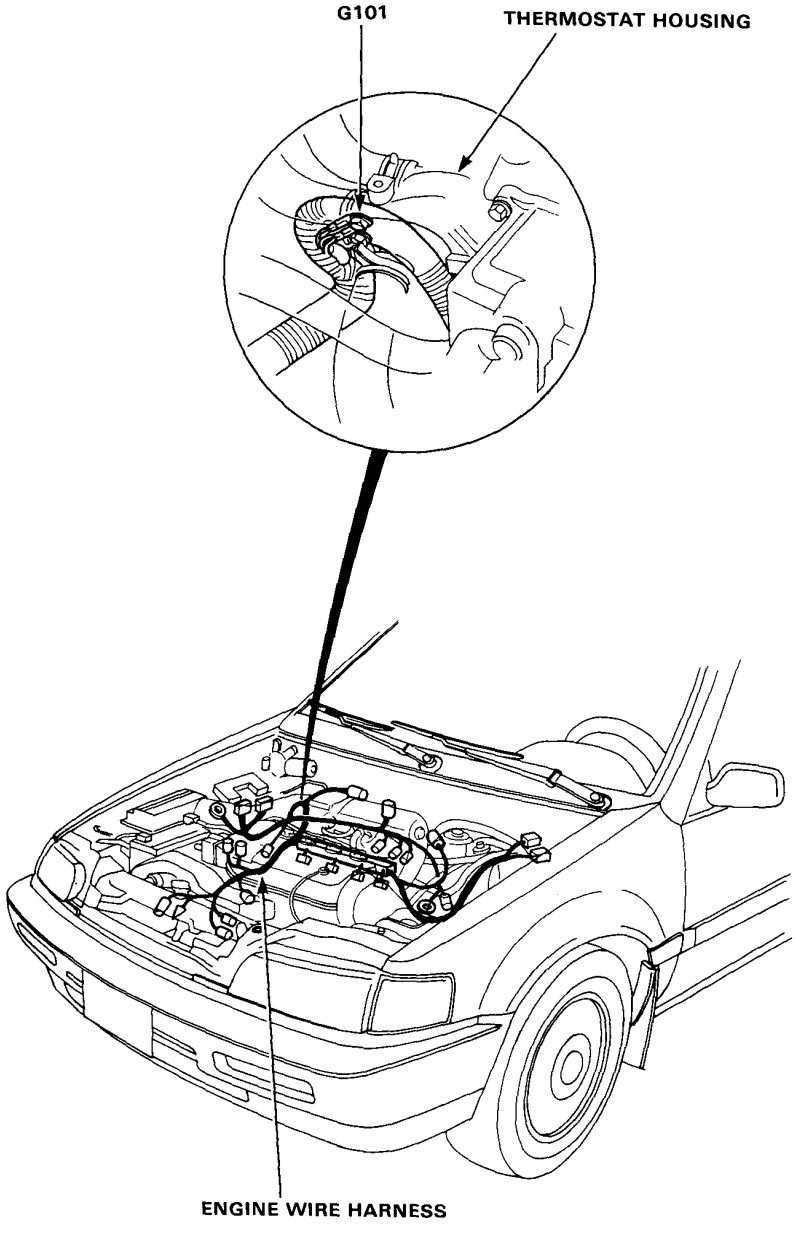
Special Tool

Ref. No.	Tool Number	Description	Q'ty	Remarks
①	07920—SB20000	Fuel Sender Wrench	1	

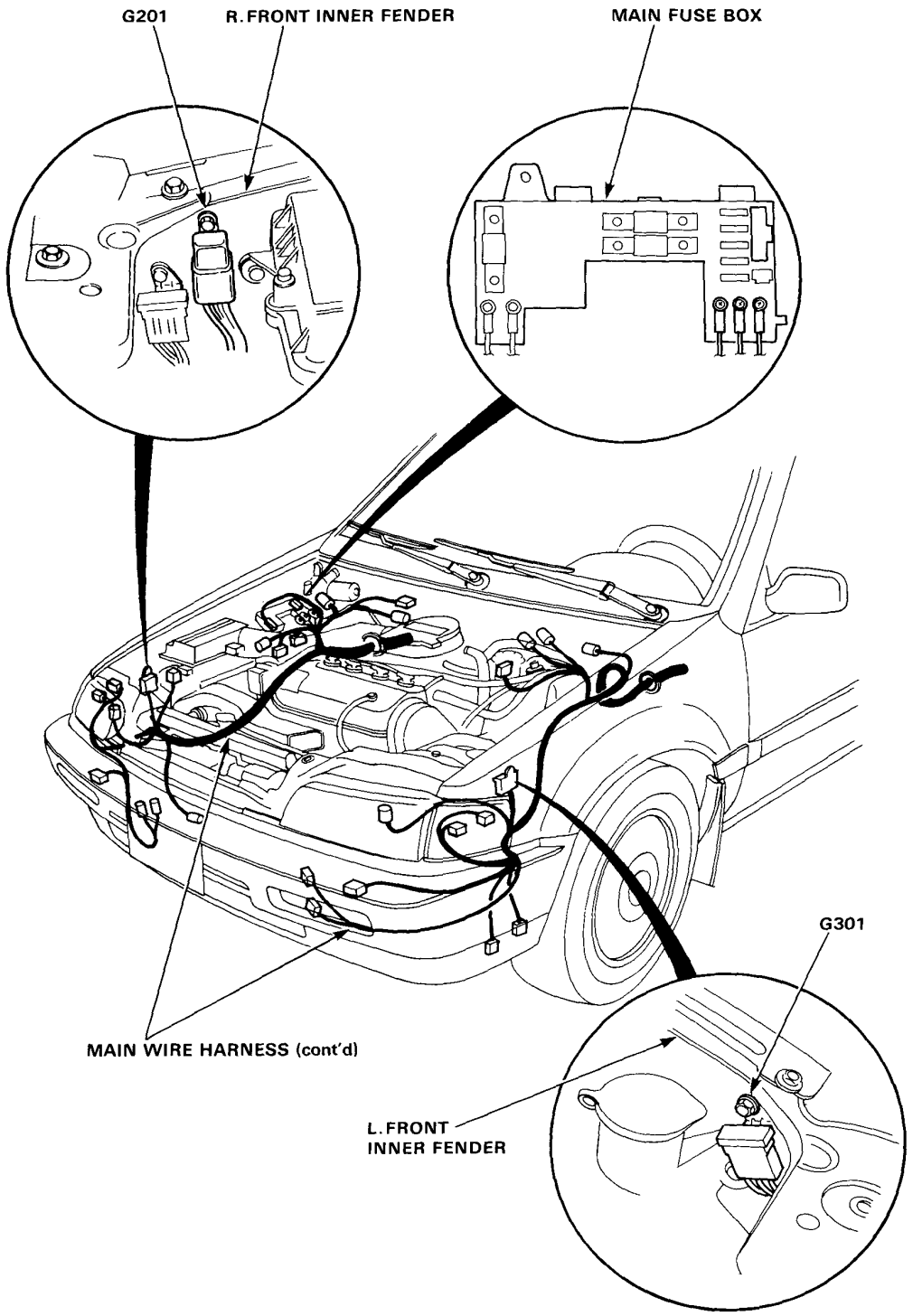


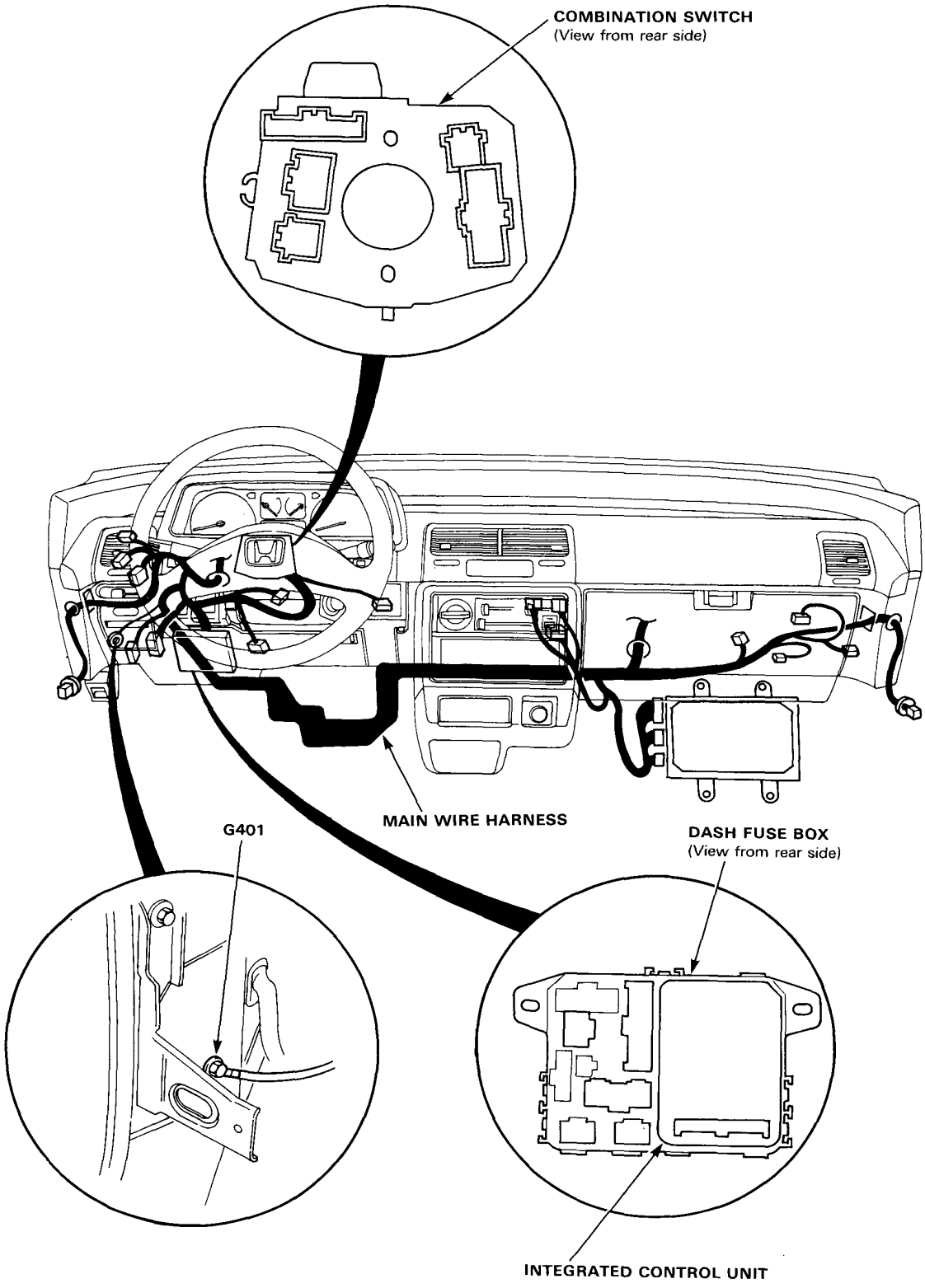
Ground and Wire Harness Routing



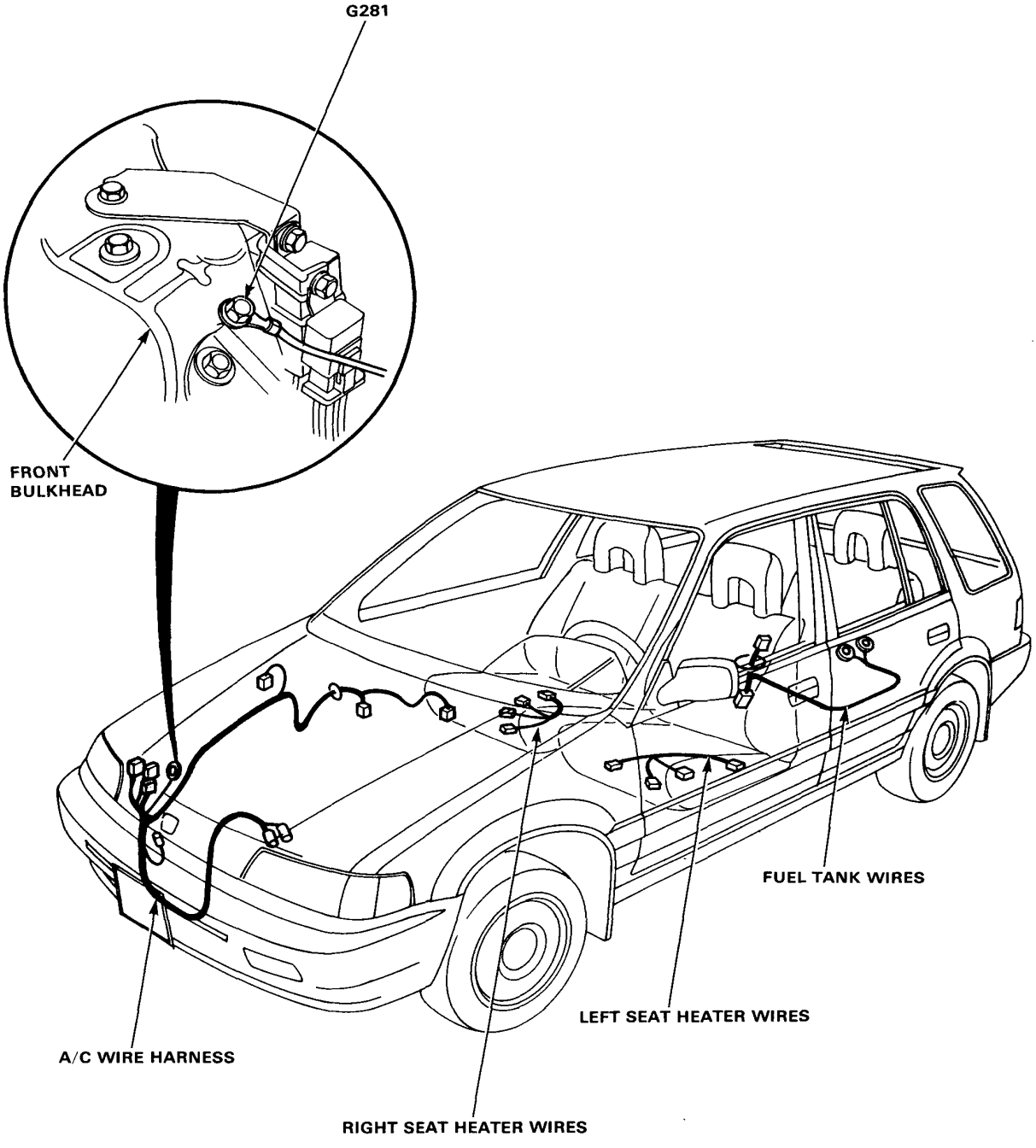

G101
THERMOSTAT HOUSING
ENGINE WIRE HARNESS

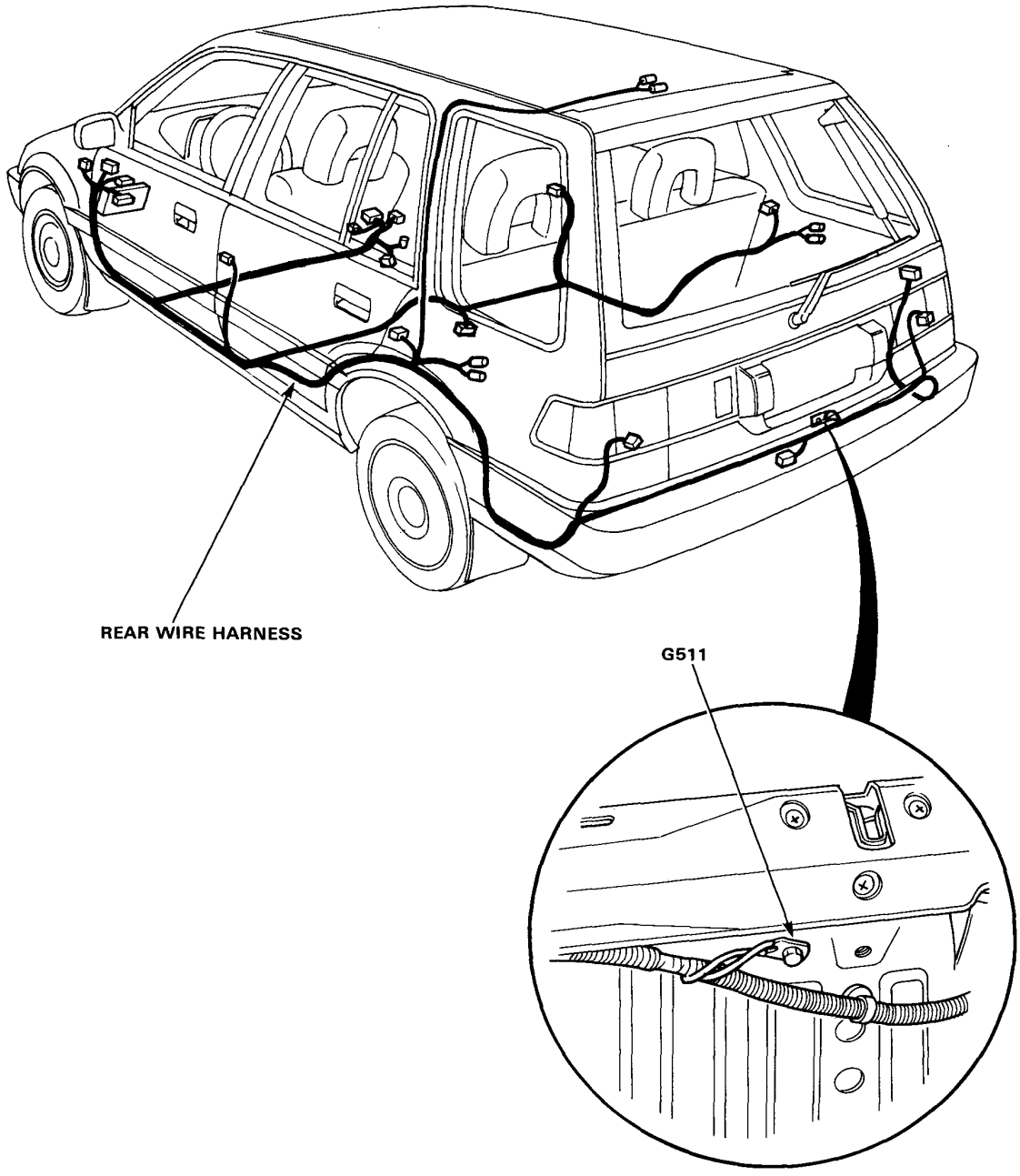
Ground and Wire Harness Routing



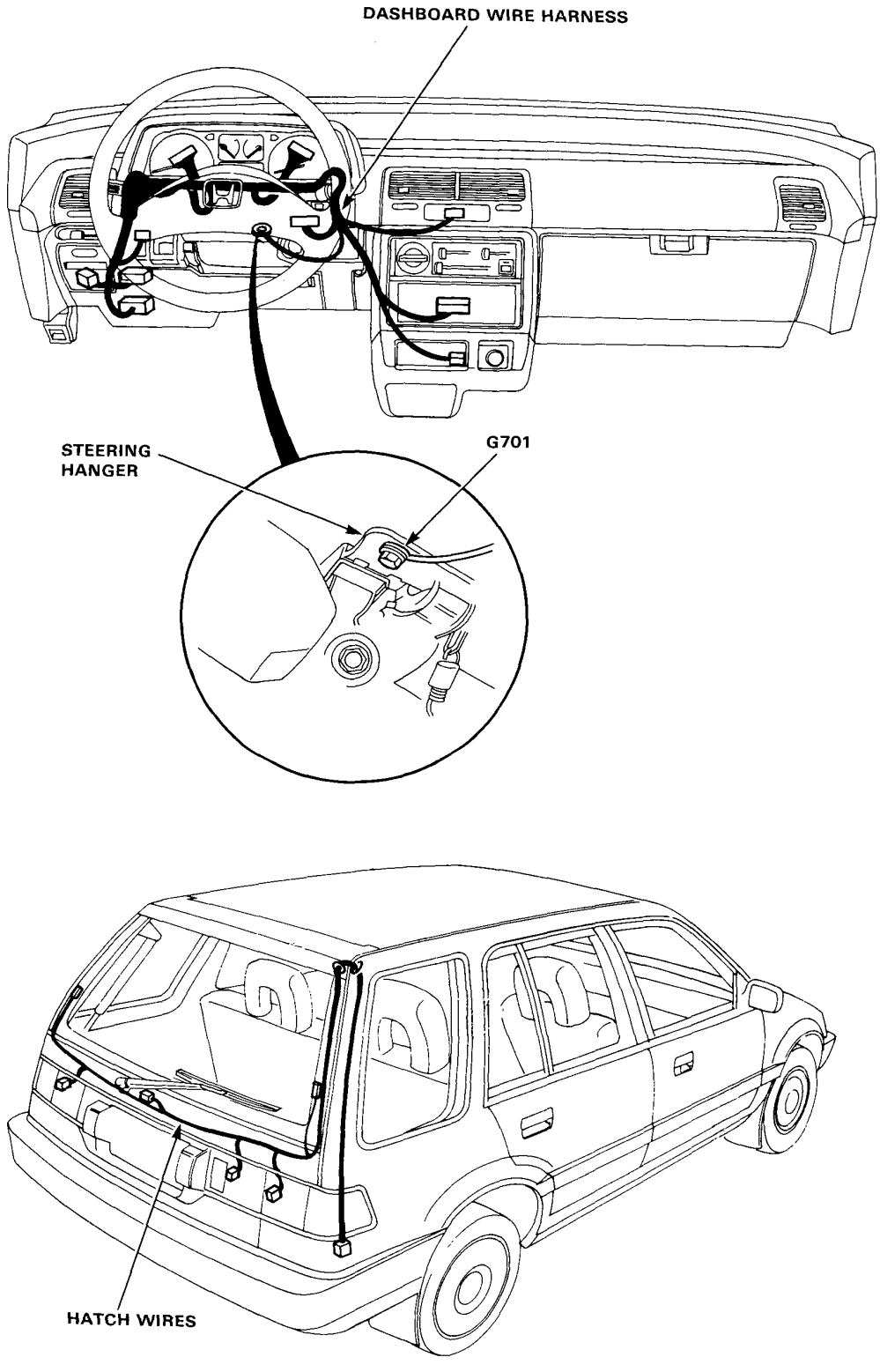

COMBINATION SWITCH
(View from rear side)
MAIN WIRE HARNESS
G401
DASH FUSE BOX
(View from rear side)
INTEGRATED CONTROL UNIT

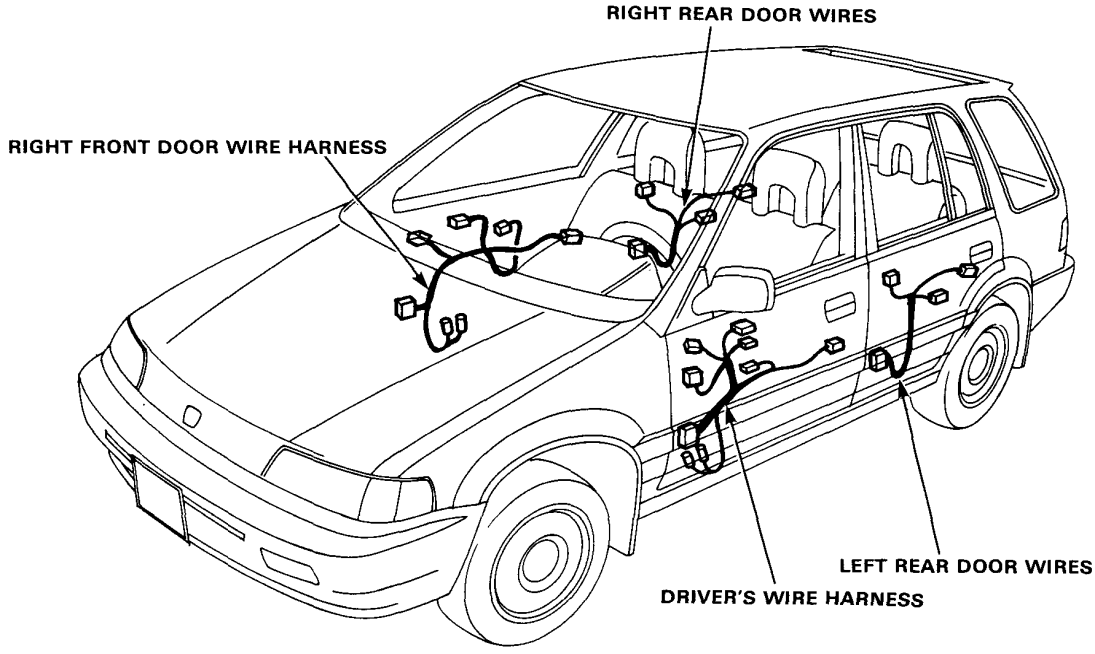
Ground and Wire Harness Routing

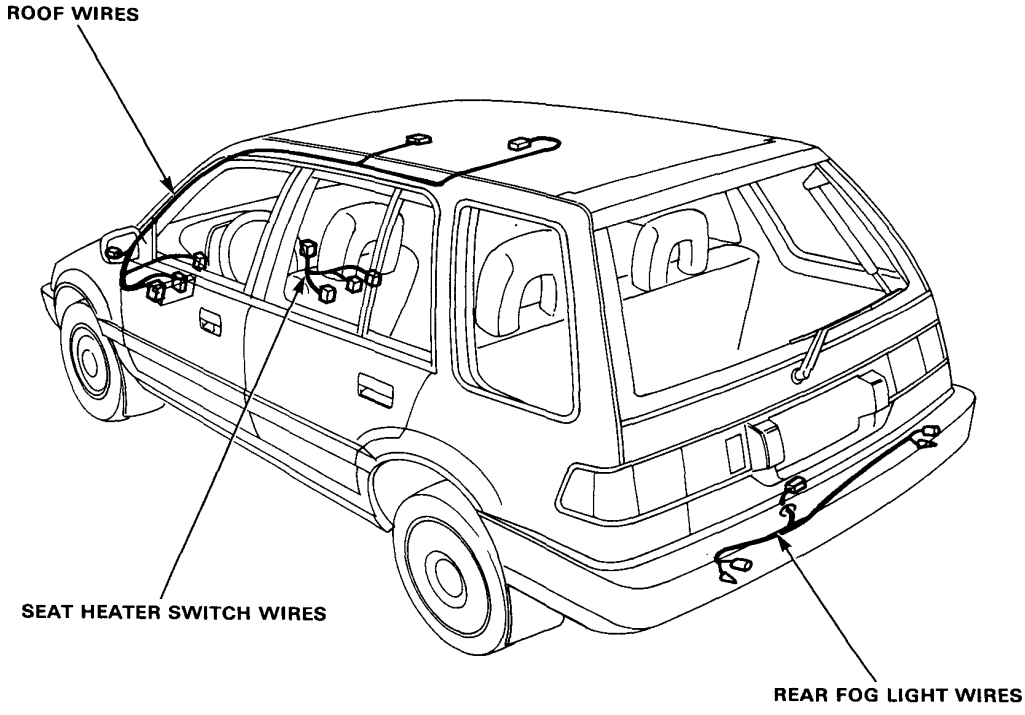



REAR WIRE HARNESS
G511

Ground and Wire Harness Routing



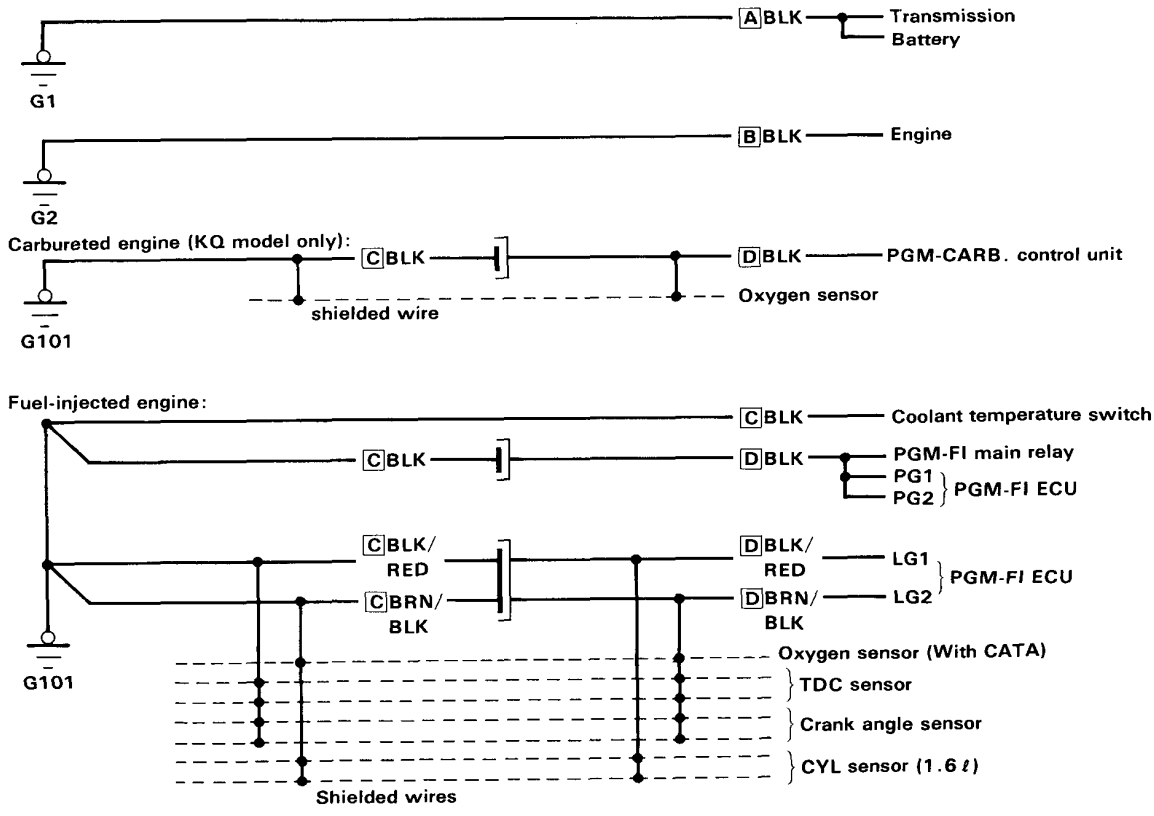

RIGHT REAR DOOR WIRES
RIGHT FRONT DOOR WIRE HARNESS
LEFT REAR DOOR WIRES
DRIVER'S WIRE HARNESS


ROOF WIRES
SEAT HEATER SWITCH WIRES
REAR FOG LIGHT WIRES

Ground Distribution

Circuit Indentification

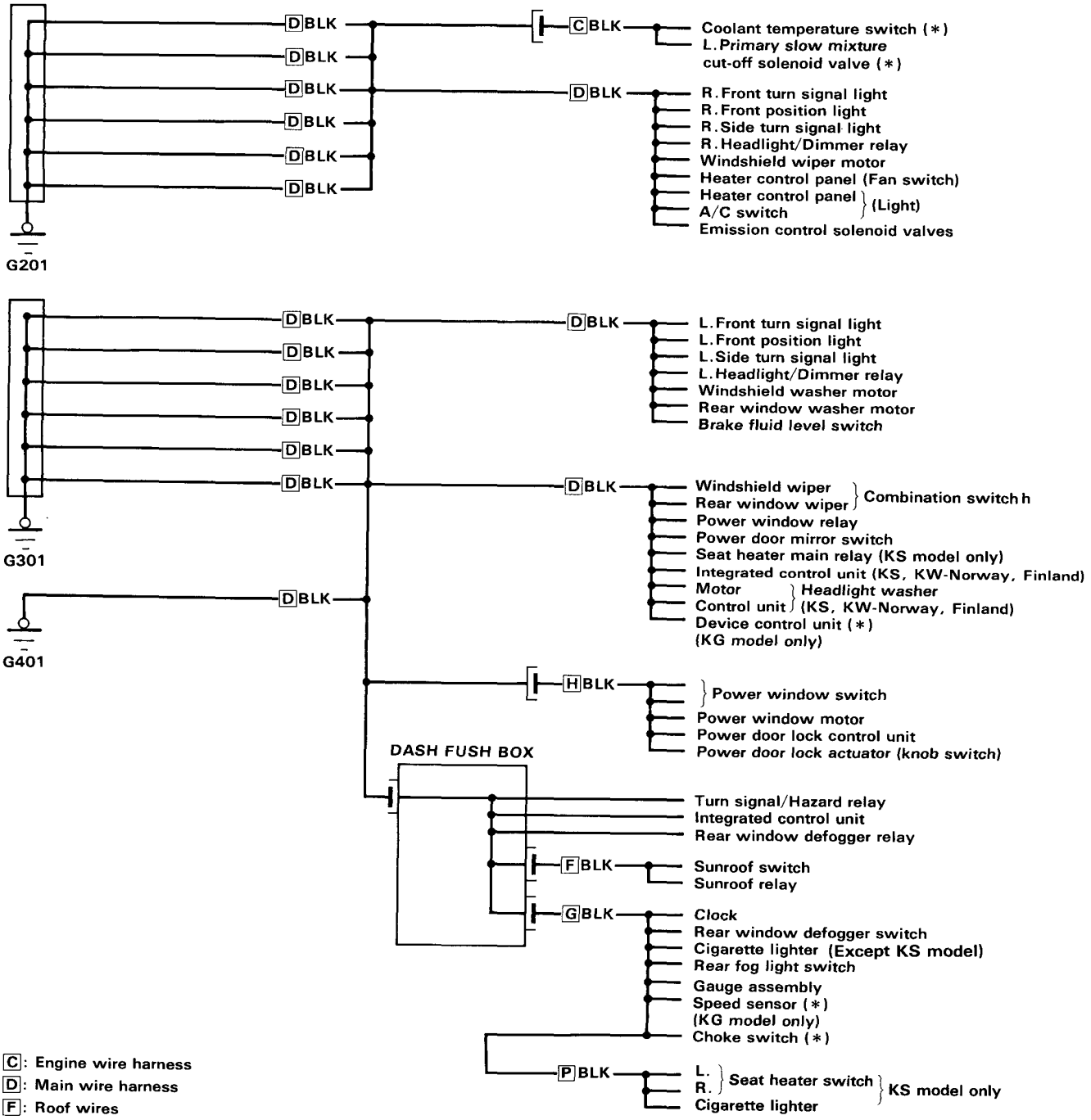
NOTE: See page 16-2 and 3 for illustrated ground locations.



A: Battery ground wire
B: Engine ground wire
C: Engine wire harness
D: Main wire harness

LHD:

NOTE: See pages 16-4 and 5 for illustrated ground locations.



C: Engine wire harness
D: Main wire harness
F: Roof wires
G: Dashboard wire harness
H: Driver's door wire harness
P: Seat heater switch wires
* : Carbureted engine

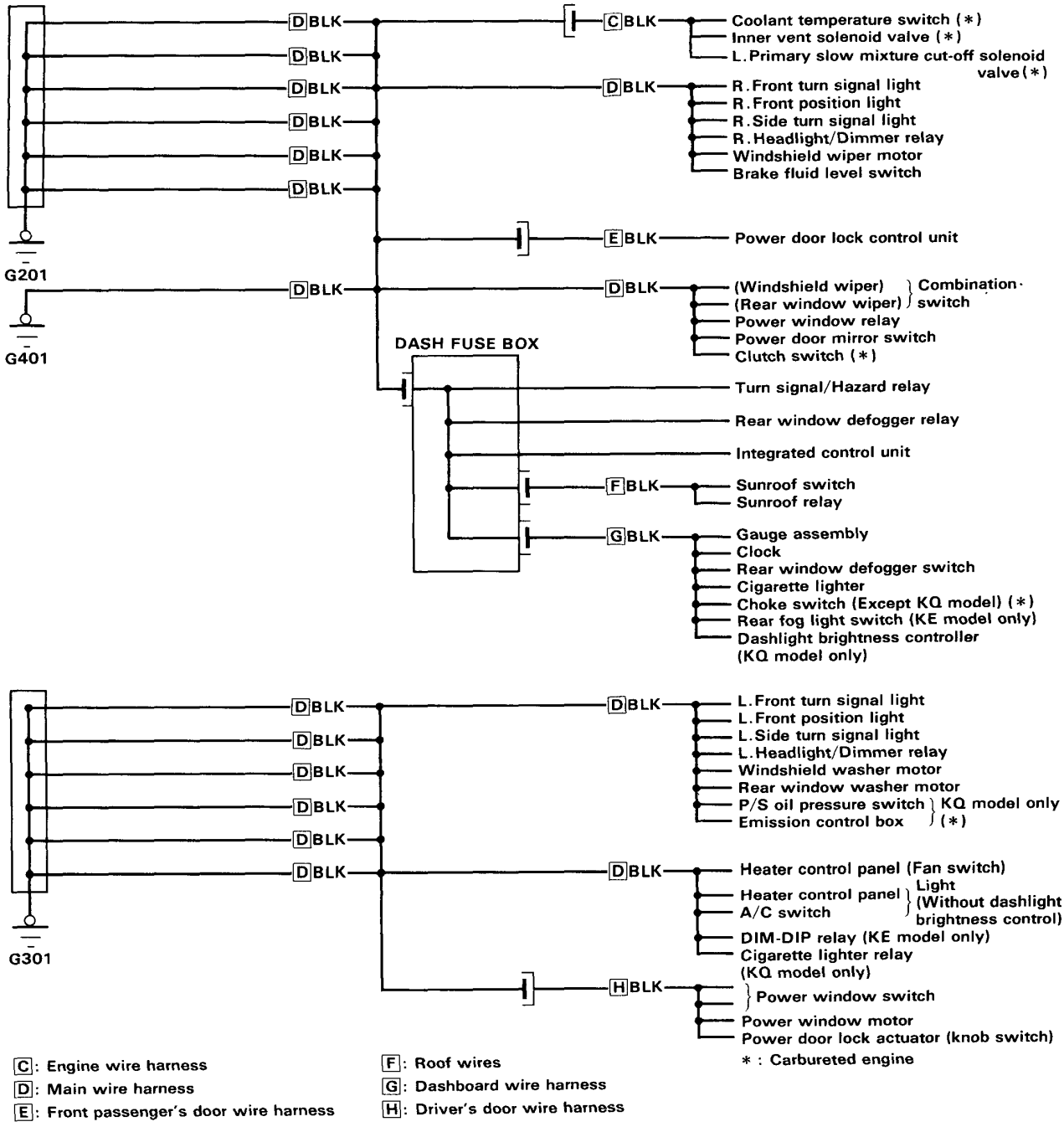
(cont'd)

Ground Distribution

Circuit Identification (cont'd)

RHD:

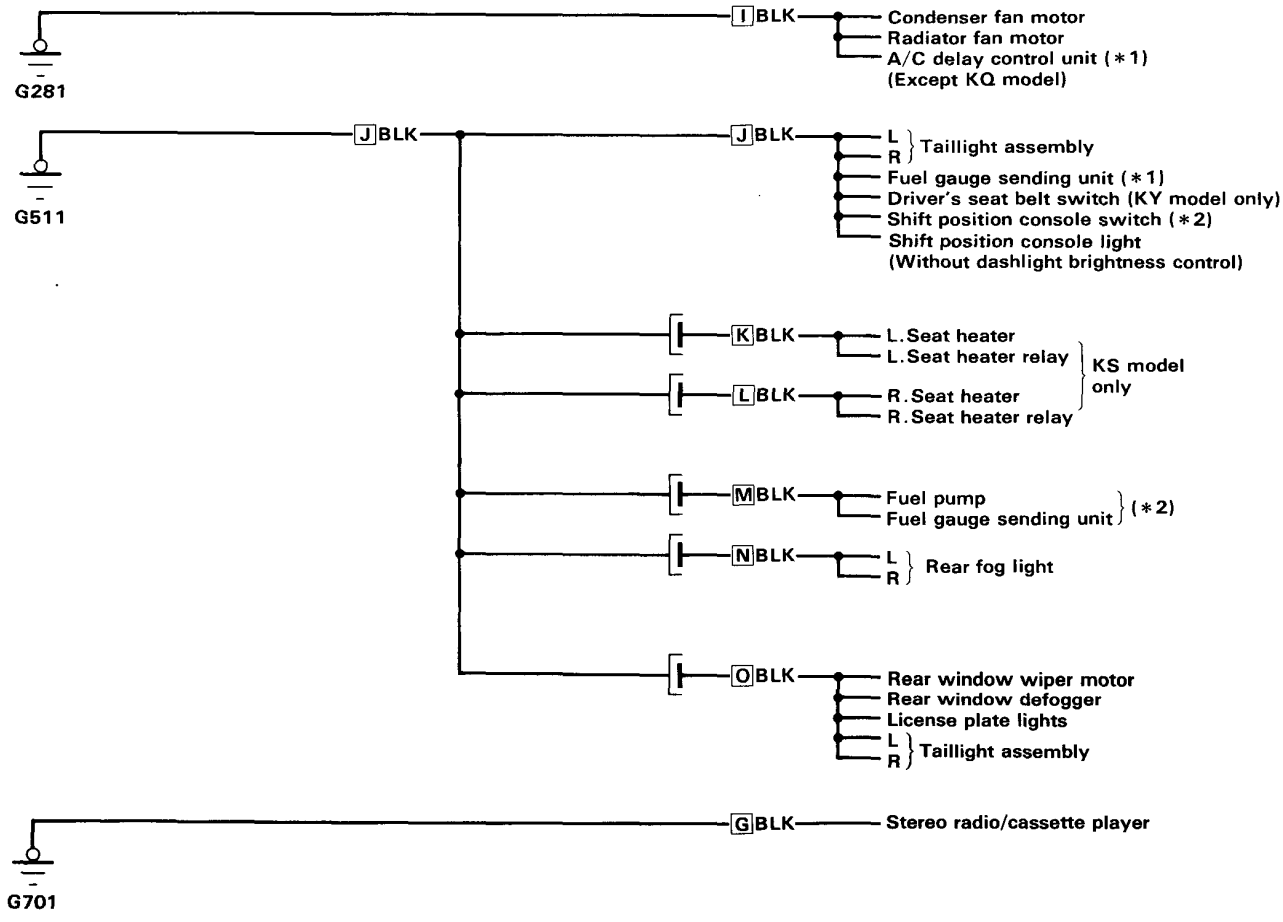
NOTE: See pages 16-4 and 5 for illustrated ground locations.



C: Engine wire harness
D: Main wire harness
E: Front passenger's door wire harness
F: Roof wires
G: Dashboard wire harness
H: Driver's door wire harness

* : Carbureted engine

NOTE: See pages 16-6 thru 8 for illustrated ground locations.



[G]: Dashboard wire harness
[I]: A/C wire harness
[J]: Rear wire harness
[K]: Left seat heater wires
[L]: Right seat heater wires
[M]: Fuel tank wires
[N]: Rear fog light wires
[O]: Hatch wires
*1: Carbureted engine
*2: Fuel-injected engine

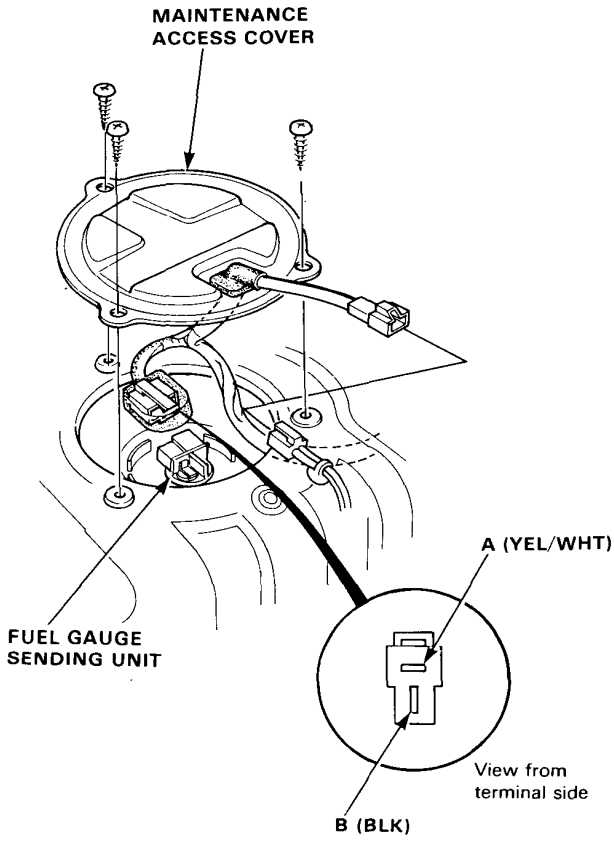
Fuel Gauge

Gauge Test

NOTE: Refer to base shop manual for wiring description of the fuel gauge circuit.

1. Remove the rear seat ,then remove the maintenance access cover.

2. Disconnect the 2-P connector from the fuel gauge sending unit.



3. Connect the voltmeter positive probe to the A (YEL/WHT) terminal and the negative probe to the B (BLK) terminal, then turn the ignition switch ON.. There should be battery voltage.

   - If battery voltage, go to step 4.

   - If the voltage is not specified, check for:
     - Blown No. 1 (10A) fuse in the dash fuse box.
     - An open in the YEL, YEL/WHT or BLK wire.
     - Poor ground (G511).

4. Turn the ignition switch OFF. Attach a jumper wire between the A (YEL/WHT) and B (BLK) terminals.

   Turn the ignition switch ON.
   Check that the pointer of the fuel gauge starts moving toward"F"mark.

   CAUTION: Turn the ignition switch OFF before the pointer reaches "F"mark on the gauge dial. Failure to turn the ignition switch OFF before the pointer reaches the "F"mark may cause damage to the fuel gauge.

   NOTE: The fuel gauge is a bobbin (cross coil) type, hence the fuel level is continuously indicated even when the ignition switch is OFF, and the pointer moves more slowly than that of a bimetal type.

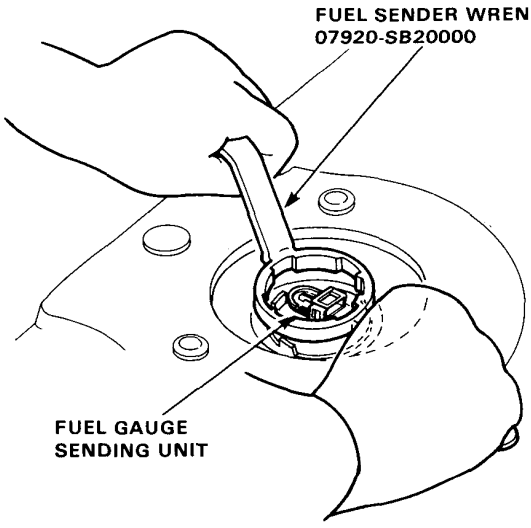
   - If the pointer of the fuel gauge does not swing at all, replace the gauge.

   - Inspect the fuel gauge sending unit if the gauge is OK.

Sending Unit Test/Replacement

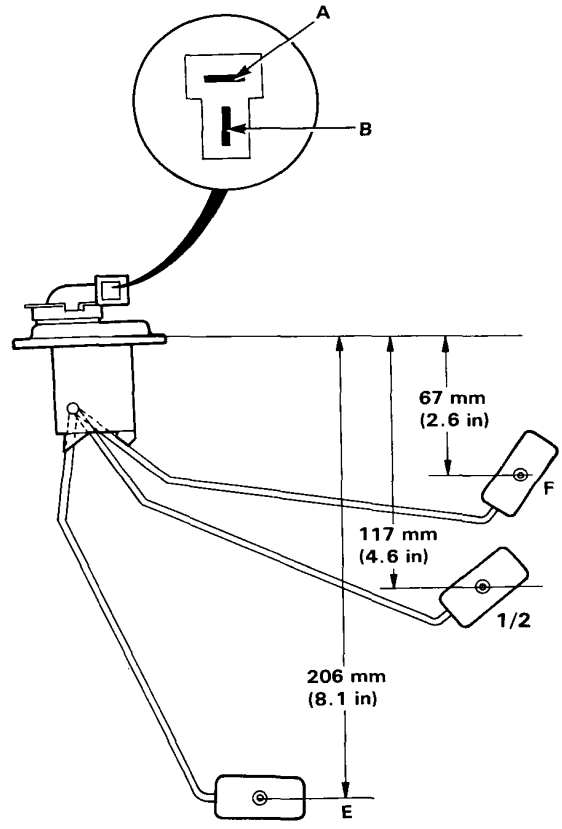
WARNING Do not smoke while working on fuel system. Keep open flame away from work area.

1. Remove the rear seat, then remove the maintenance access cover.
2. Check that the ignition switch OFF, then disconnect the 2-P connector from the fuel gauge sending unit.
3. Remove the fuel gauge sending unit.



4. Measure the resistance between the A and B terminals at E (EMPTY), 1/2 (HALF FULL) and F (FULL) by moving the float.

Float Position	E	1/2	F
Resistance (Ω)	105—110	25.5—39.5	2—5

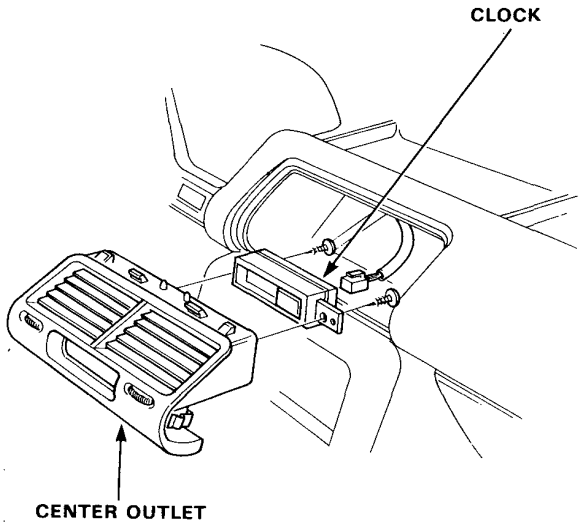


5. If unable to obtain the above readings, replace the fuel gauge sending unit.

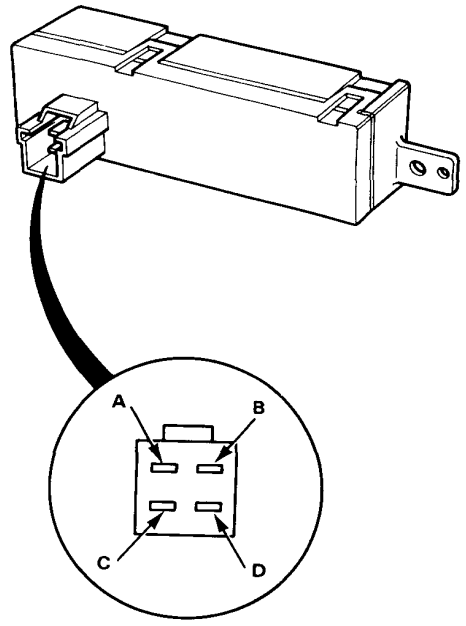
Clock

Removal

1. Remove the center outlet from the dashboard, then disconnect the 4-P connector from the clock.
2. Remove the 2 screws and clock from the center outlet.



Terminals



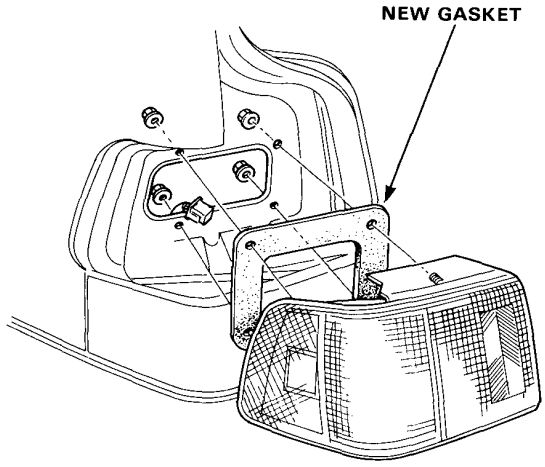
Terminal	Wire	Destination
A	WHT/BLU	Constant power (Time memory)
B	YEL	IG1 (Main clock power supply)
C	RED/BLK	Light-on signal
D	BLK	Ground

Taillight Assembly

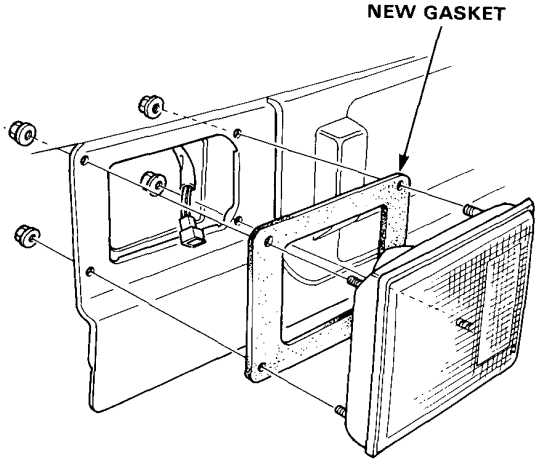
Replacement

1. Open the hatch and the maintenance cover of the taillight.
2. Disconnect the 4-P connector from behind the taillight.
3. Remove the 4 mount nuts and the taillight assembly.

Turn signal/Taillight:



Back-up/Taillight:



4. Inspect the gasket; replace if it is distorted or overly compressed.