

# Chassis and Engine Numbers

## Vehicle Identification Number (Fuel-Injected)

JHMB41400C100001

**Manufacturer Code** \_\_\_\_\_  
**Vehicle Type** \_\_\_\_\_  
 M: Passenger Car  
**Prelude** \_\_\_\_\_  
**Door/Transmission Type** \_\_\_\_\_  
 1: 2-door/5-speed manual  
 2: 2-door/4-speed automatic  
**Vehicle grade** \_\_\_\_\_  
 4: 2.0 i-16 with B20A7 engine (KF, KW, KB, KE, KT)  
 2.0 i-16 with B20A5 engine (KS: Sweden)  
 16 i with B20A5 engine (KX)  
 2.0 i-16 with B20A6 engine (KQ)  
 2.0 Si with B20A7 engine (KY)  
 8: 2.0 i-16 with B20A5 engine (KG, KW, KS: Norway/Finland)  
**Fixed Code** \_\_\_\_\_  
**Auxiliary Number** \_\_\_\_\_  
**Factory Code** \_\_\_\_\_  
 C: Saitama Factory Sayama Plant  
**Model Year** \_\_\_\_\_  
 1:1989  
**Serial Number** \_\_\_\_\_

## Engine Serial Number

B20A3-2000001

**Engine Type** \_\_\_\_\_  
 B20A3: 2.0 l SOHC Carbureted engine with catalytic converter for KG, KX, KS, KW models  
 B20A4: 2.0 l SOHC Carbureted engine without catalytic converter for European and General models  
 B20A5: 2.0 l DOHC Fuel-Injected engine with catalytic converter for KG, KX, KS, KW models  
 B20A7: 2.0 l DOHC Fuel-Injected engine without catalytic converter for European and General models  
**Model Year** \_\_\_\_\_  
 2:1989  
**Transmission/Emission Group** \_\_\_\_\_  
 0: 5-speed manual without catalytic converter  
 5: 4-speed automatic without catalytic converter  
 7: 5-speed manual with catalytic converter  
 9: 4-speed automatic with catalytic converter  
**Serial Number** \_\_\_\_\_

## Vehicle Identification Number (Carbureted)

JHMB411300C100001

**Manufacturer Code** \_\_\_\_\_  
**Vehicle Type** \_\_\_\_\_  
 M: Passenger Car  
**Prelude** \_\_\_\_\_  
**Door/Transmission Type** \_\_\_\_\_  
 1: 2-door/5-speed manual  
 2: 2-door/4-speed automatic  
**Vehicle grade** \_\_\_\_\_  
 3: EX with B20A3 engine (KX, KS: Sweden)  
 EX with B20A4 engine (KF, KW, KB, KE, KT, KY)  
 7: EX with B20A3 engine (KG, KW, KS: Norway/Finland)  
**Fixed Code** \_\_\_\_\_  
**Auxiliary Number** \_\_\_\_\_  
**Factory Code** \_\_\_\_\_  
 C: Saitama Factory Sayama Plant  
**Model Year** \_\_\_\_\_  
 1:1989  
**Serial Number** \_\_\_\_\_

## Engine Serial Number (KQ)

B20A6-2000001

**Engine Type** \_\_\_\_\_  
 B20A6: 2.0 l DOHC Fuel-Injected with catalytic converter  
**Model Year** \_\_\_\_\_  
 2:1989  
**Serial Number** \_\_\_\_\_

## Manual Transmission Number

D2J4-2000001

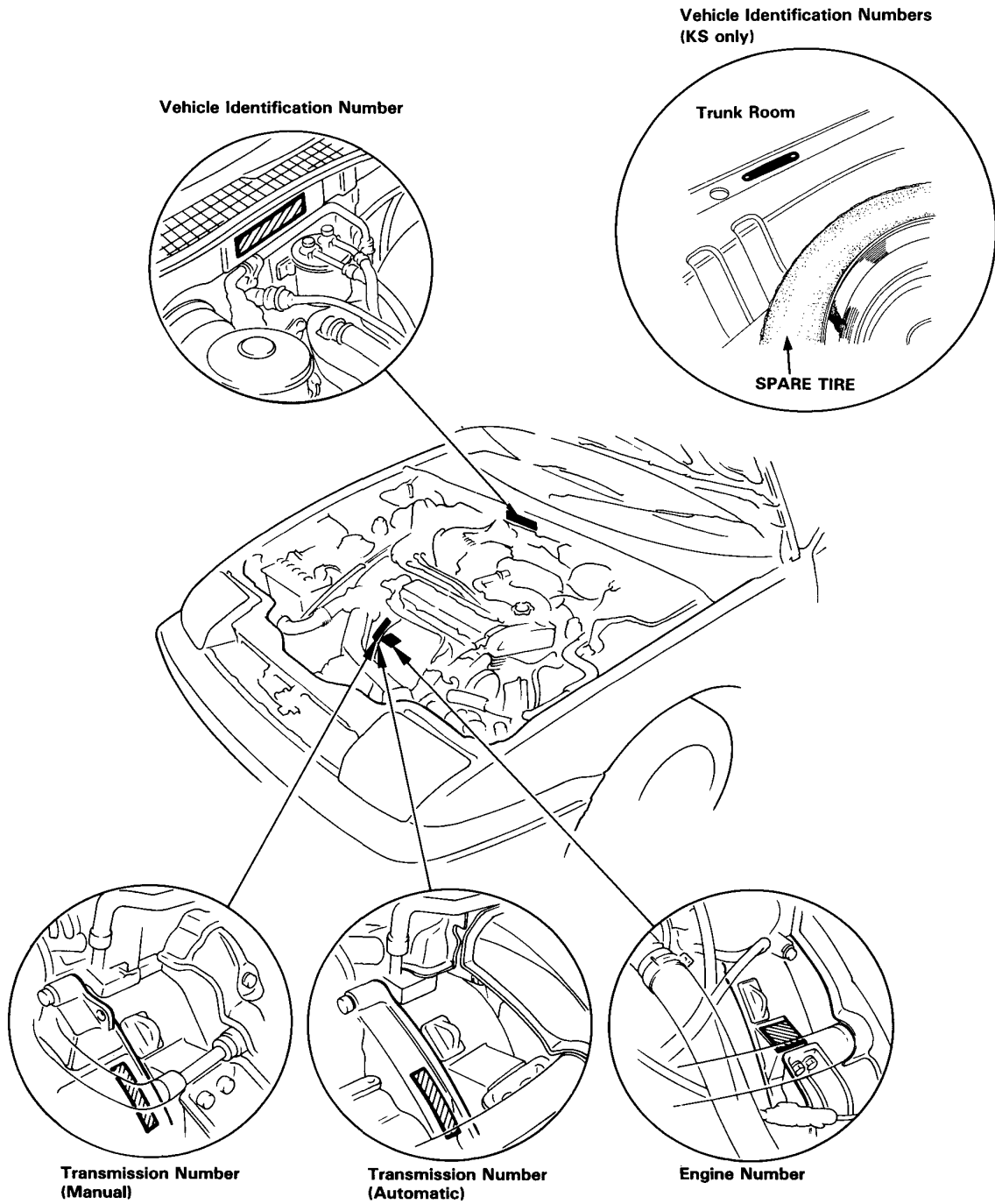
**Transmission Type** \_\_\_\_\_  
 D2J4: for Carbureted engine equipped model (KZ, KS, KT, KY, KW)  
 D2J5: for Carbureted engine equipped model (KF, KG, KX, KB, KE) for Fuel-Injected engine equipped model (KS, KQ, KY, KT, KZ, KW)  
 D2L5: for Fuel-Injected engine equipped model (KF, KG, KX, KW, KB, KE)  
**Serial Number** \_\_\_\_\_

## Automatic Transmission Number

K4-2000001

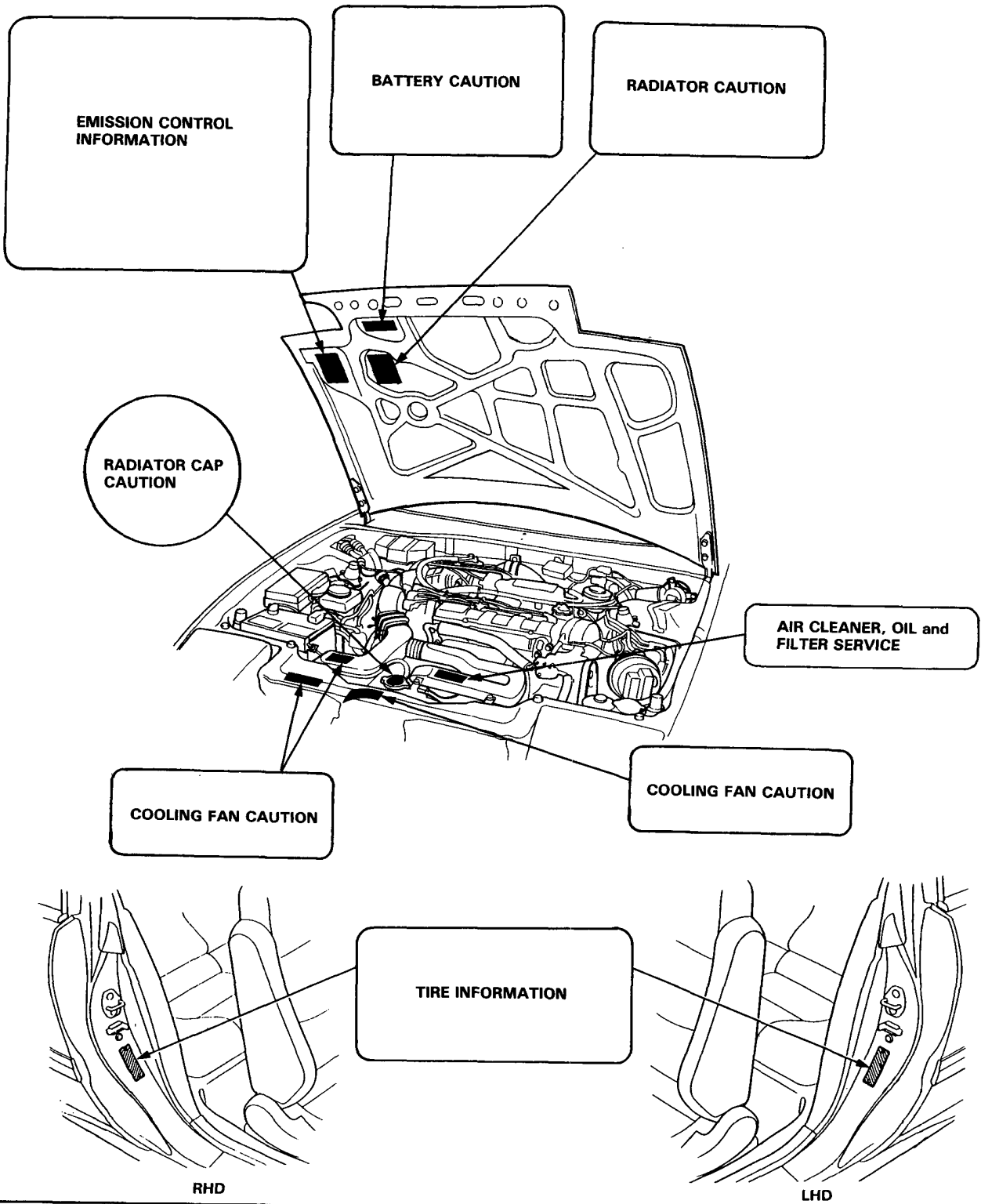
**Transmission Type** \_\_\_\_\_  
**Serial Number** \_\_\_\_\_

# Identification Number Locations



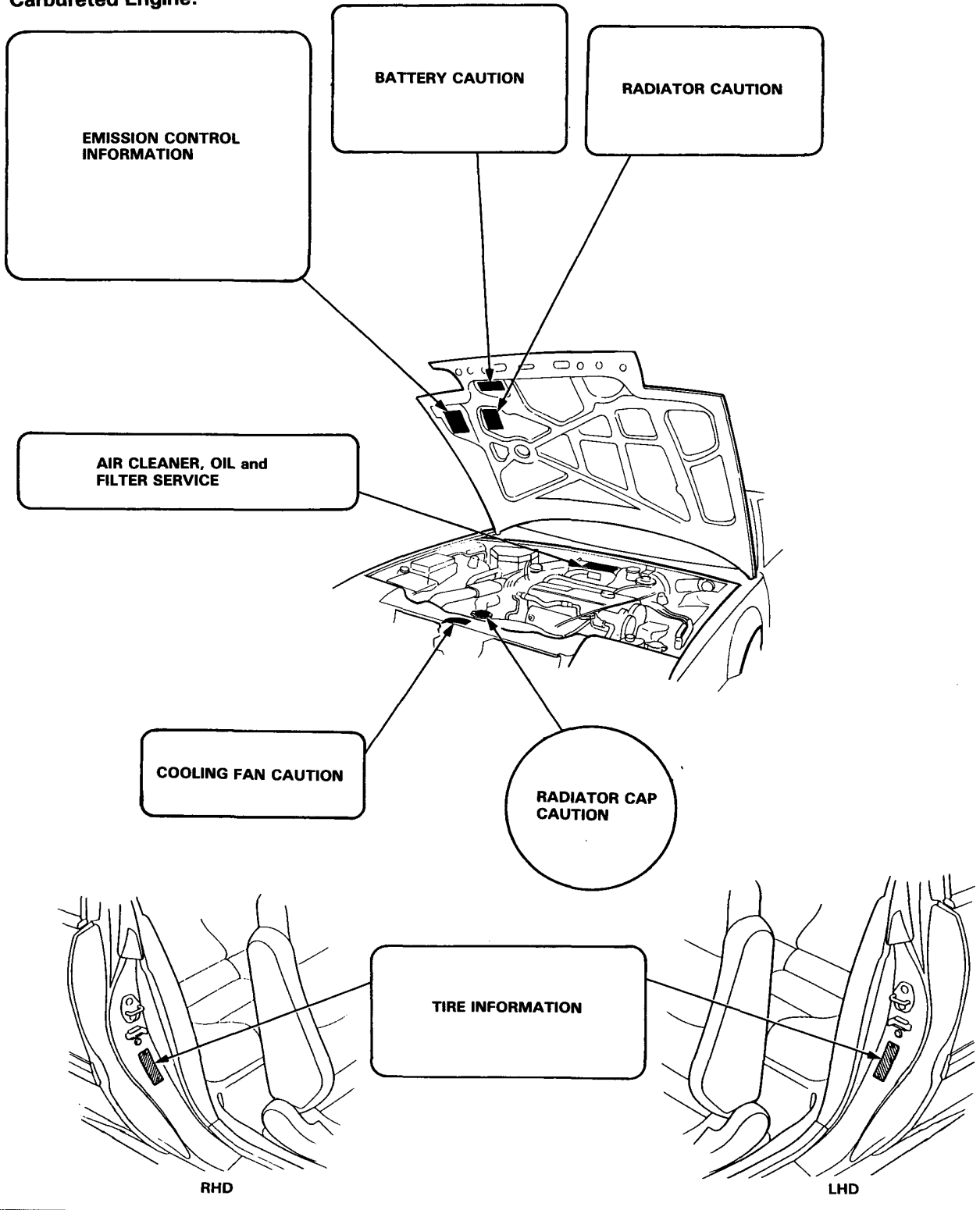
# Label Locations

## Fuel-Injected Engine:





**Carbureted Engine:**



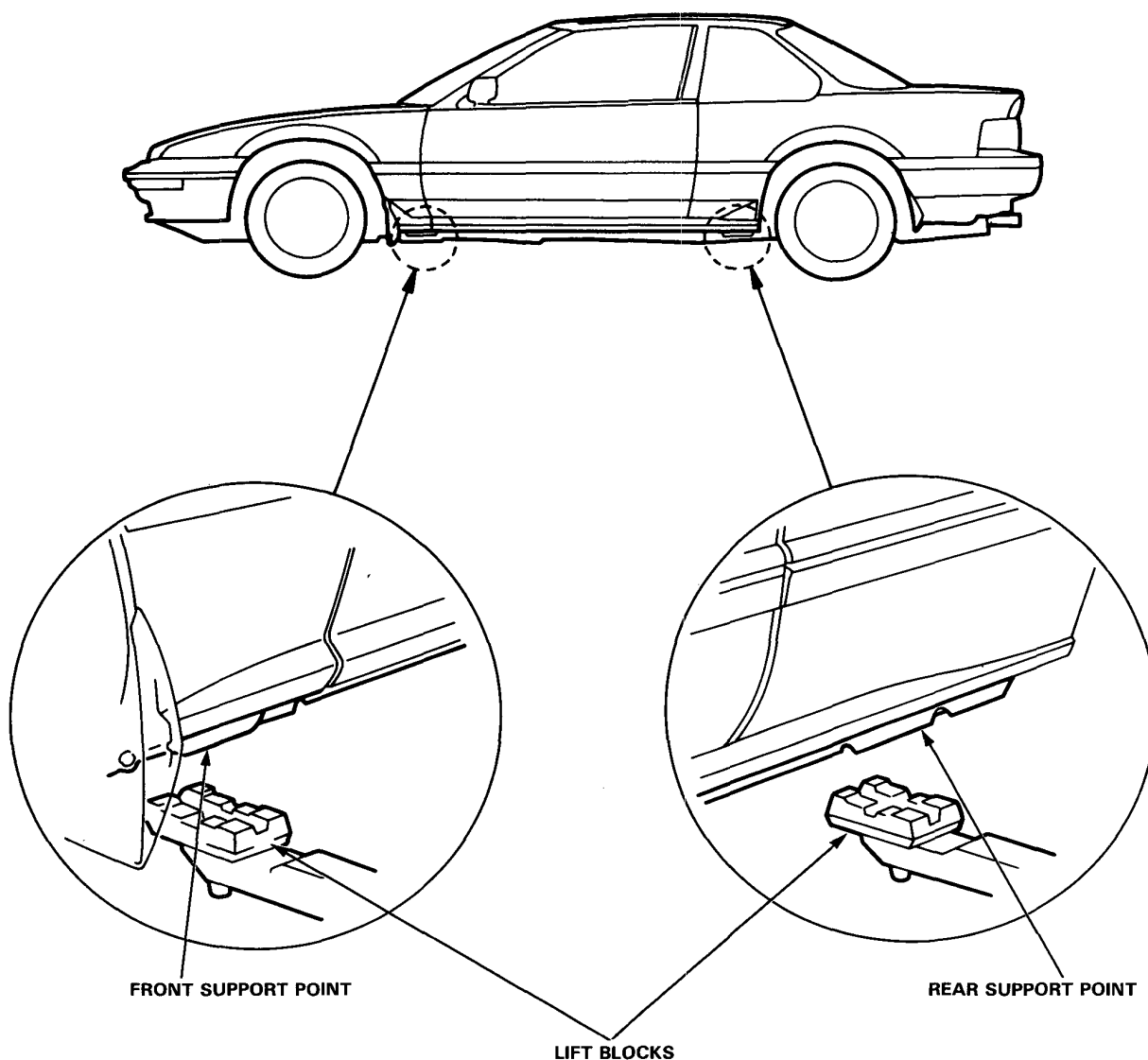
# Lift and Support Points

## Hoist

1. Place the lift blocks as shown.
2. Raise the hoist a few inches and rock the car to be sure it is firmly supported.
3. Raise 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 trunk lid/hatch 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.



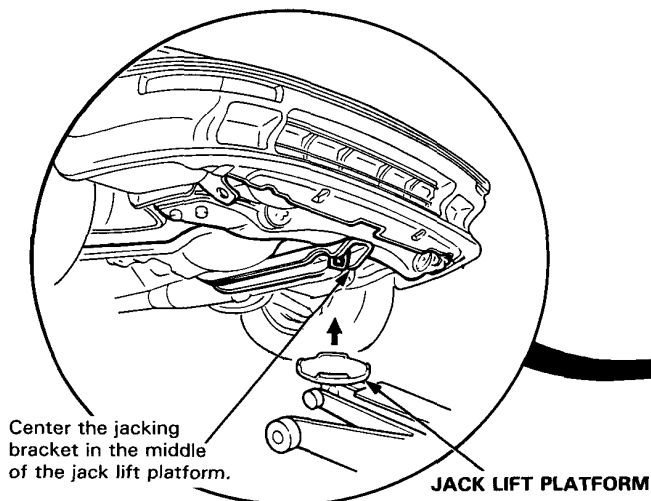
## Floor Jack

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 1-8 so the car will be approximately level, then lower the car onto the stands.

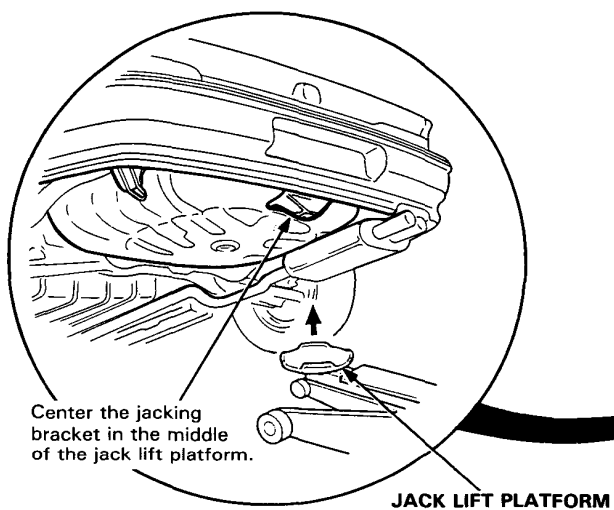
### WARNING

- 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



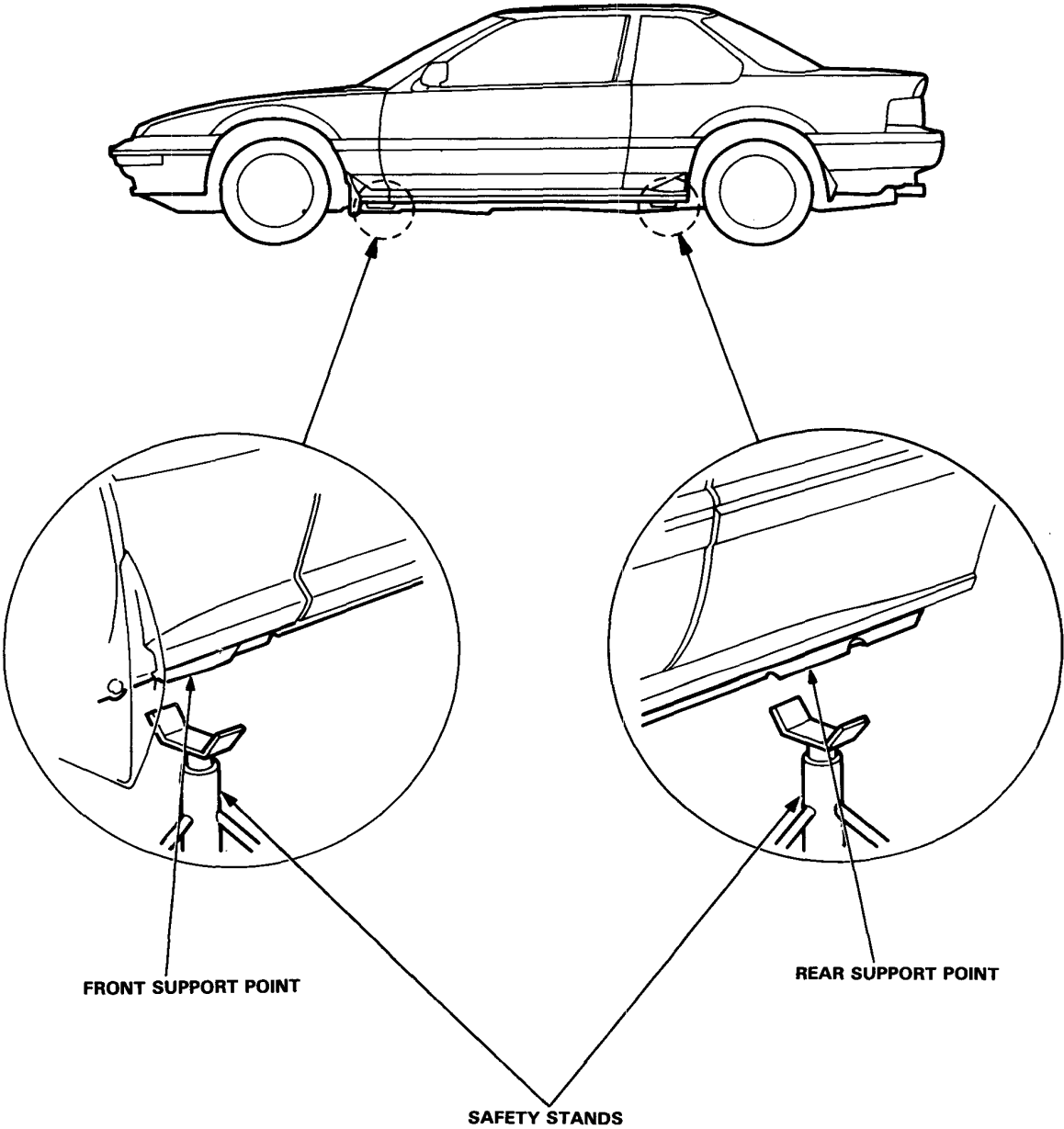
### Rear



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# Lift and Support Points (cont'd)

## Safety Stands



# Towing

If towing is necessary, we recommended the following:

## Flat Bed Equipment:

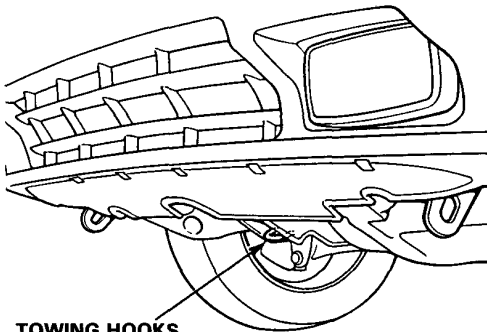
Entire car is winched on a flat bed vehicle. This is the best way of towing the car.

## 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.

When towing the 4WS model even with the front wheels off the ground, center the steering and tie the steering wheel in place.



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 km/h (35 mph) or tow for distances of more than 80 km (55 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.

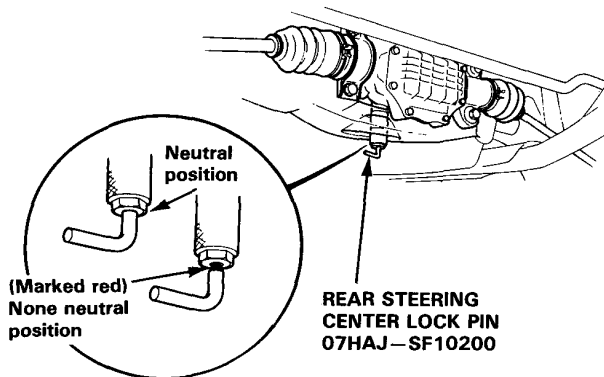
**⚠ WARNING** Never use tow chains or rope to tow a car; your ability to safely control the car may be adversely affected.

# Preparation of Work

## Special Caution Items For This Car

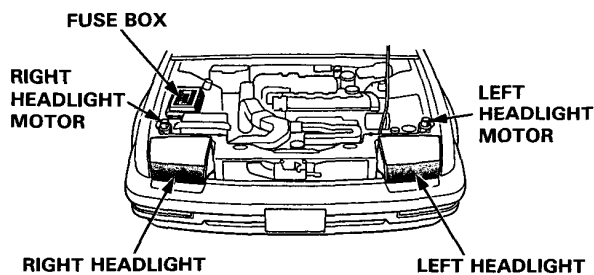
### 1. 4WS system servicing (with 4WS)

- Do not disassemble the rear steering gear box.
- When towing the car even with the front wheels off the ground, center the steering and tie the steering wheel in place.
- When testing or adjusting the wheel alignment, attach the rear steering center lock pin to the rear steering gear box. Make sure that the rear steering gear box is located at the neutral position.



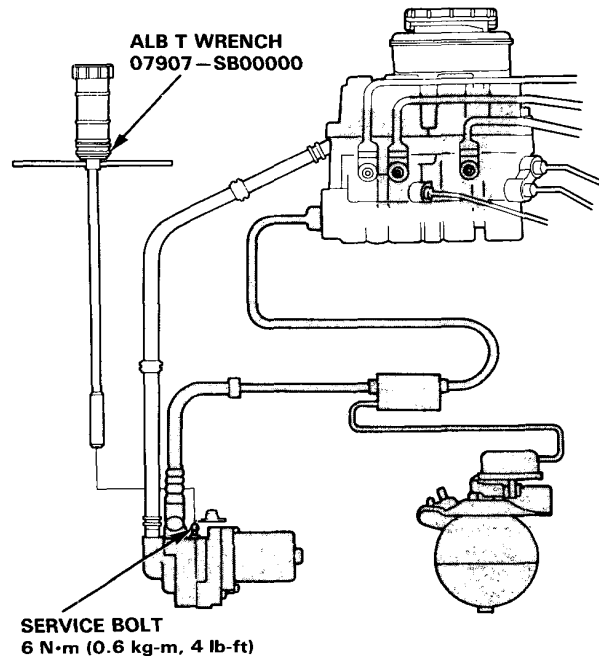
### 2. Retractable headlights are installed.

Before manual raising and lowering, the fuse must be removed. When raising and lowering is executed without removing the fuse, injury may be caused by rapid turning of the manual retracting knob, if the motors accidentally start running.



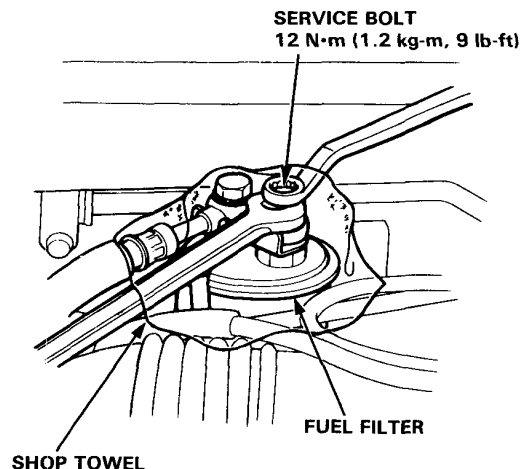
### 3. ALB piping system servicing.

- Disassemble the ALB piping system after relieve the high-pressured brake fluid.
- Otherwise, the high-pressured brake fluid will burst out and it is very dangerous.
- See section 13 of Base Manual (62SF100) how to relieve the high-pressured brake fluid.

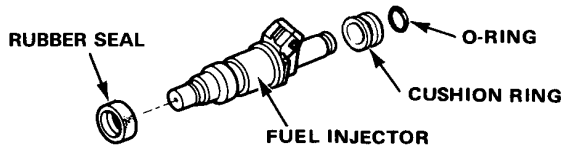


### 4. Fuel Line Servicing

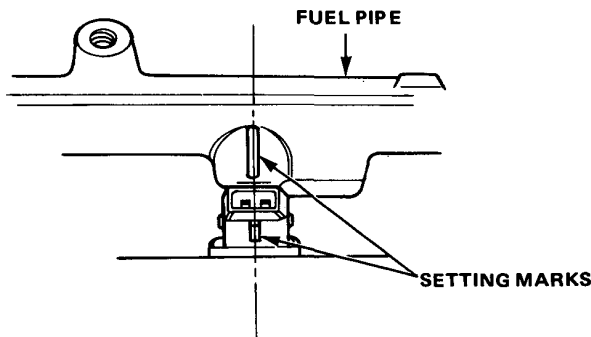
- Relieve fuel pressure by loosening the service bolt provided on the top of the fuel filter before disconnecting a fuel hose or a fuel pipe.



- 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.



#### 5. 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.

#### 6. Installation of an amateur radio.

Care has been taken for the control units of the PGM-FI, PGM-CARB., A/T, Cruise control and ALB and its wiring to prevent erroneous operation from external interference, but erroneous operation of the control units may be caused by extremely strong radio waves. Attention must be paid to the following items to prevent erroneous operation of the control units.

- The antenna and the body of the radio must be at least 200 mm (7.9 in.) away from the control unit.

The control unit locations:

- PGM-FI, PGM-CARB, A/T: Passenger's side front flower panel.
- Cruise control: On the relay bracket, driver's side panel.
- ALB: Under dash center.
- Do not lead the antenna feeder and the coaxial cable over a long distance parallel to the car's wiring. When crossing the wiring is required, execute crossing at a right angle.
- Do not install a radio with a large output (max. 10 W).

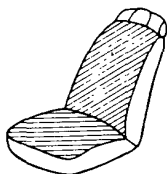
#### 7. Apply liquid gasket to the transmission, oil pump cover, right side cover and water outlet. Use Honda genuine liquid gasket, PART NO. 0Y740-99986.

- 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 install the parts if 20 minutes or more have passed after applying liquid gasket. In that case, reapply liquid gasket after removing old one.
- Wait at least 30 minutes before filling with the appropriate liquid (engine oil, coolant and other similar fluids).

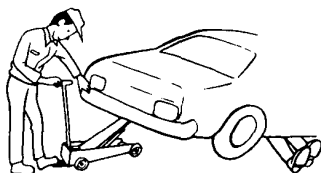
# Preparation of Work

**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.



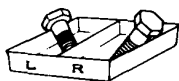
2. Work safely and give your work your undivided attention. When either the front or rear wheels are to be raised, block the remaining wheels securely. Communicate as frequently as possible when a work involves two or more workers. Do not run the engine unless the shop or working area is well ventilated.



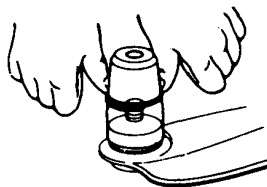
3. Prior to removing or disassembling parts, they must be inspected carefully to isolate the cause for which service is necessary. Observe all safety notes and precautions and follow the proper procedures as described in this manual.



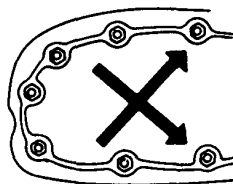
4. Mark or place all removed parts in order in a parts rack so they can be reassembled in their original places.



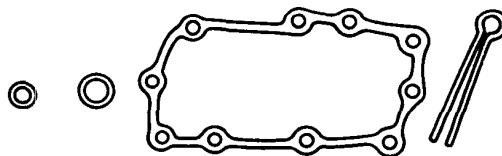
5. Use the special tools when use of such is specified.



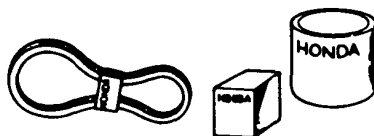
6. Parts must be assembled with the proper torque according to the maintenance standards established.
7. When tightening a series bolts or nuts, begin with the center or larger diameter bolts and tighten them in crisscross pattern in two or more steps.



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

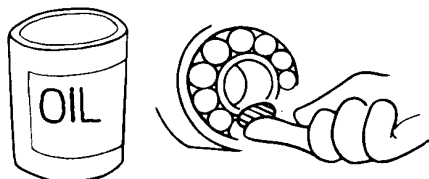


9. Use genuine HONDA parts and lubricants or those equivalent. When parts are to be reused, they must be inspected carefully to make sure they are not damaged or deteriorated and are in good usable condition.





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



11. Brake fluid and hydraulic components

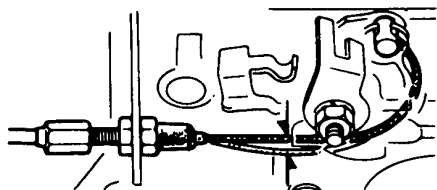
- When replenishing the system, use extreme care to prevent dust and dirt from entering the system.
- Do not mix different brands of fluid as they may not be compatible.
- Do not reuse drained brake fluid.
- Brake fluid can cause damage to the painted surfaces. Wipe up spilled fluid at once.
- After 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.

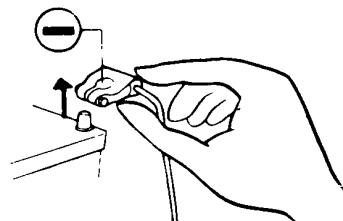
12. Avoid oil or grease getting on rubber parts and tubes, unless specified.

13. Upon assembling, check every part for proper installation and operation.

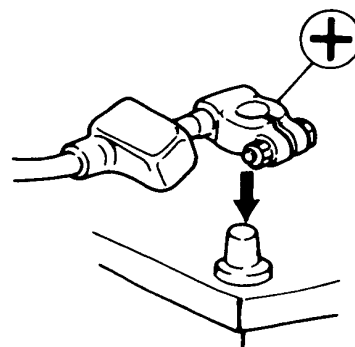


## Electrical

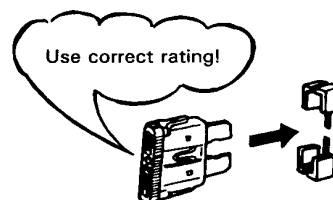
- Before making any repairs on electric wires or parts, disconnect the battery cables from the battery starting with the negative (-) terminal.



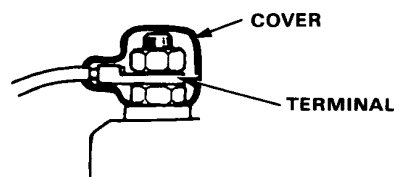
- After making repairs, check each wire or part for proper routing and installation. Also check to see that they are connected properly.
- Always connect the battery positive (+) cable first, then connect the negative (-) cable.



- 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.



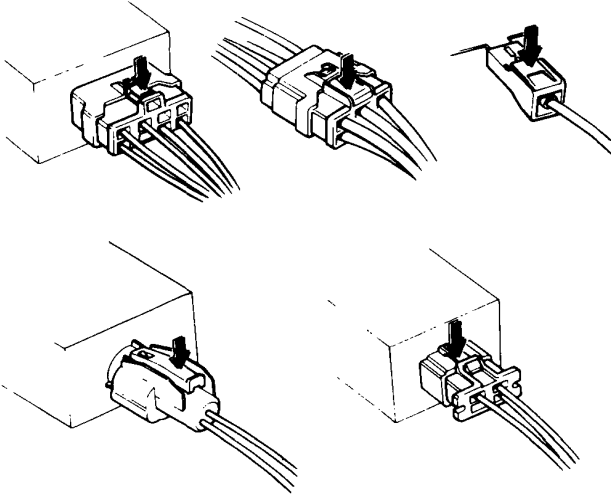
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# Preparation of Work

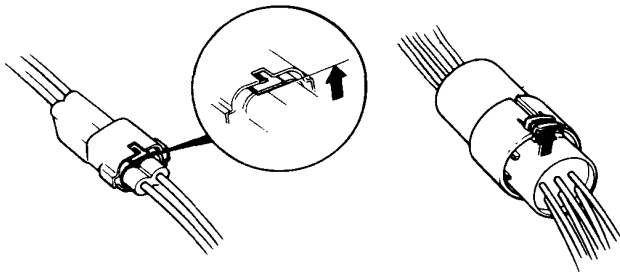
## Electrical (cont'd)

- 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.

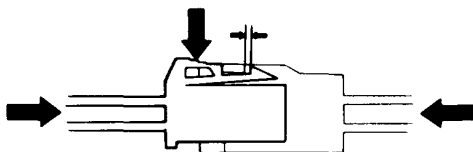
### Press to disengage:



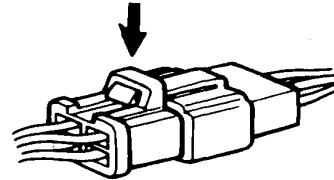
### Pull up to disengage:



- 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.



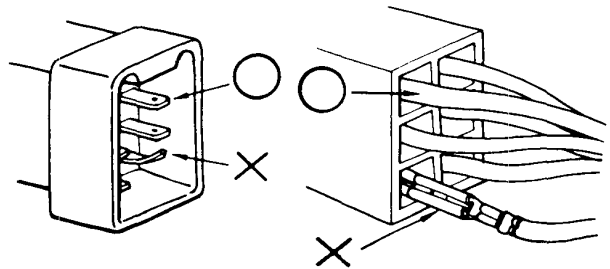
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when re-connecting.



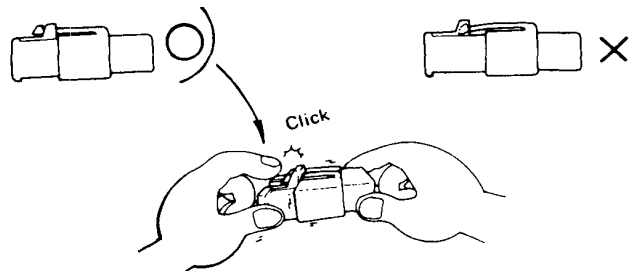
- When disconnecting a coupler, pull it off from the mating coupler by holding on both couplers.
- Never try to disconnect couplers by pulling on their wires.



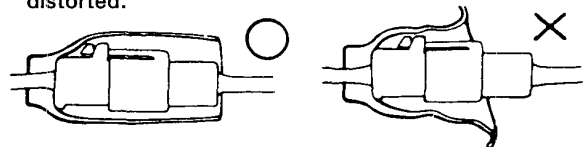
- Before connecting couplers, check to see that the terminals are in place and are not bent or distorted.



- 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.

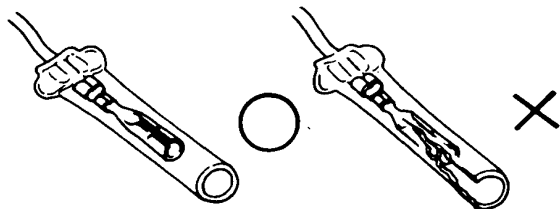


- Place the plastic cover over the mating coupler after reconnecting. Also check that the cover is not distorted.

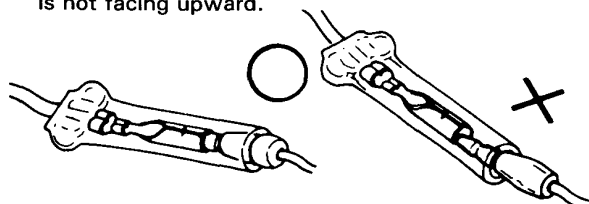




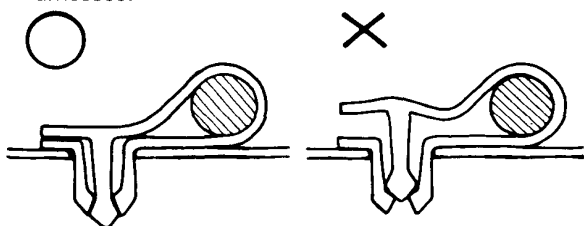
- Before connecting, check each connector cover for damage. Also make sure that the female connector is tight and not loosened from the previous use.



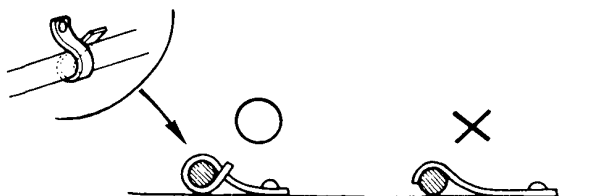
- Insert male connectors into the female connectors fully until they will no longer go.
- Be sure that plastic cover is placed over the connection.
- Position the wires so that the open end of the cover is not facing upward.



- 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.



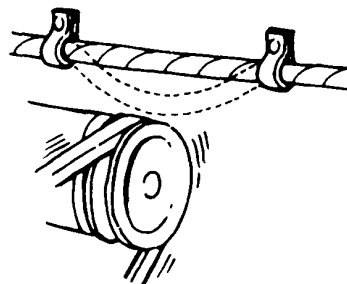
- A loose wire harness or cable can be a hazard to safety. After clamping, check each wire for security in its clamp.



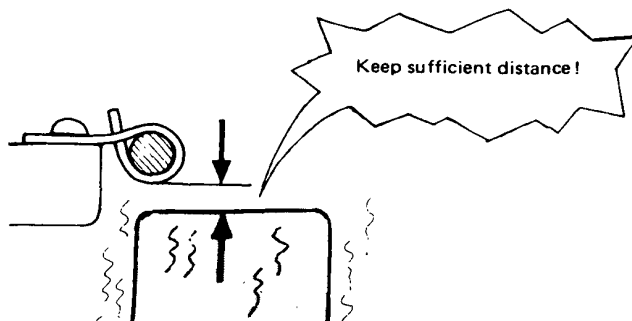
- Do not squeeze wires against the weld when a weld-on clamp is used.



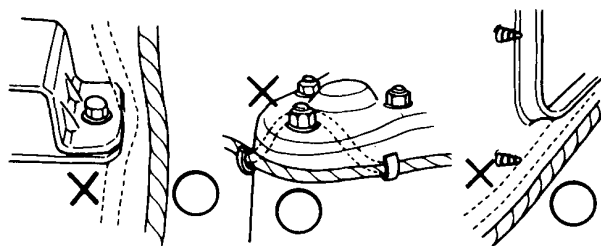
- After clamping, check each harness to be certain that it is not interfering with any moving or sliding parts of the vehicle.
- Keep wire harnesses away from the exhaust pipes and other hot parts.



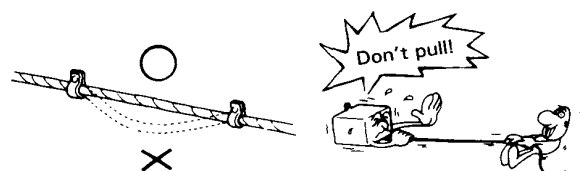
- Always keep a safe distance between wire harnesses and any heated parts.



- 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 excessively slackened.

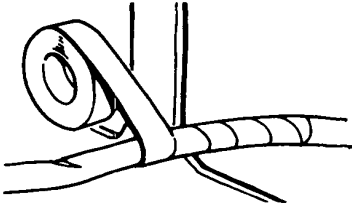


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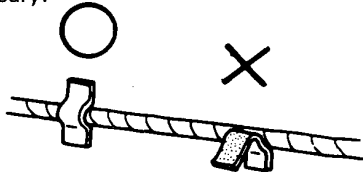
# Preparation of Work

## Electrical (cont'd)

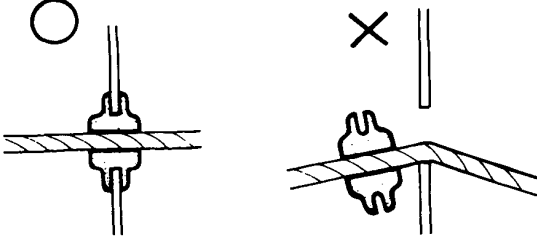
- Protect wires and harnesses with a tape or a tube if they are in contact with a sharp edge or corner.



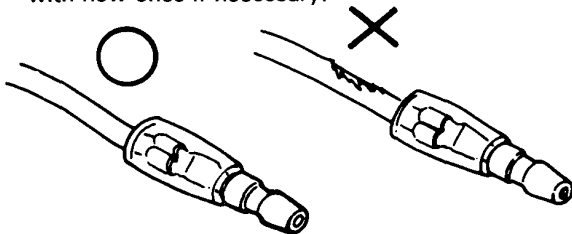
- Clean the attaching surface thoroughly if an adhesive is used. First, wipe with solvent or alcohol if necessary.



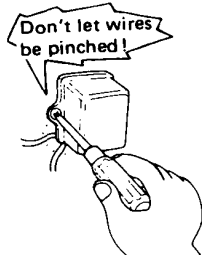
- Seat grommets in their grooves properly.



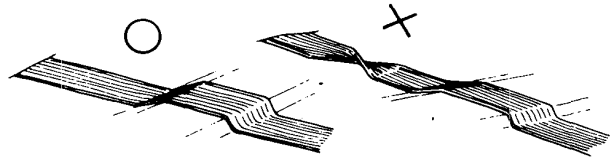
- Do not damage the insulation when connecting a wire.
- Do not use wires or harnesses with a broken insulation. Repair by wrapping with protective tape or replace with new ones if necessary.



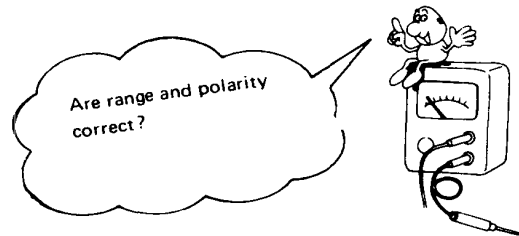
- After installing parts, make sure that wire harnesses are not pinched.



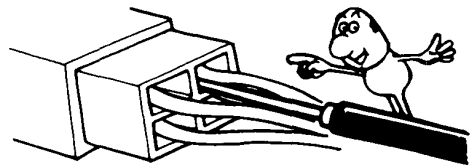
- After routing, check that the wire harnesses are not twisted or kinked.



- 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® or DEXRON® II Automatic Transmission Fluid.



: Apply Power Steering Fluid.



:Apply or check vacuum.

①, ②, ③ ....

①, ②, ③ .... : Sequence for removal or installation

## Abbreviation



2WS	Two Wheel Steering
4WS	For Wheel Sterring
A/C	Air Conditioner
ALB	Anti Lock Brake
Assy	Assembly
A/T	Automatic Transmission
ATF	DEXRON® or DEXRON® II Automatic Transmission Fluid
ATT	Attachment
EACV	Electronic Air Control Valve
ECU	Electronic Control Unit for Fuel-Injection System
EGR	Exhaust Gas Recirculation
GND	Ground
IG	Ignition
INT	Intermittent
L.	Left
LHD	Left Hand Drive
M/T	Manual Transmission
PCV Valve	Positive Crankcase Ventilation Valve
PGM-FI	Programmed Fuel Injection
PGM-CARB	Programmed Carburetor
P/S	Power Steering
R.	Right
RHD	Right Hand Drive
SW	Switch
SOL. V	Solenoid valve
TDC	Top Dead Center
<span>P</span>	Parking
<span>R</span>	Reverse
<span>N</span>	Neutral
<span>D</span>	Drive range
<span>S</span>	Sports range
<span>2</span>	Fixed at 2nd

# Special Tools

NOTE: Some tools may appear in more than one section of this list if they are used for more than one job.

## 5. Engine

●: Carbureted Engine only    ○: Fuel-Injected Engine only

Number	Tool Number	Description	Q'ty	Remarks
①	07GAD—PH70100	● Valve Seal Installer	1	
②	07GAF—PH60100	Piston Base Head	1	
③	07GAF—PH60200	● Pilot Collar	1	
④	07GAF—PH60300	Piston Pin Base Insert	1	
⑤	07GAF—PH70100	○ Pilot Collar	1	
⑥	07JAB—0010000	Crank Pulley Holder Set	1	for crankshaft pulley bolt
⑥-1	07JAA—0010200	Socket Wrench, 19 mm	(1)	— Component tools
⑥-2	07JAB—0010100	Pulley Holder Attachment	(1)	
⑥-3	07JAB—0010200	Handle	(1)	
⑦	07KAK—SJ40100	Engine Tilt Hanger Set	1	
⑧	07406—0030000	Oil Pressure Gauge Adaptor	1	
⑨	07743—0020000	Adjustable Valve Guide Driver	1	
⑩	07746—0010400	Attachment 52 x 55 mm	1	
⑪	07749—0010000	Driver	1	
⑫	07757—PJ10100	Valve Spring Compressor Attachment	1	
⑬	07757—0010000	Valve Spring Compressor	1	
⑭	07912—6110001	Oil Filter Socket	1	Japan-Made type
⑮	—	Oil Filter Wrench	1	France-Made type
⑯	07924—PD20003	Ring Gear Holder	1	
⑰	07942—SA50000	● Valve Guide Driver, 7.0 mm	1	may also be used 07942—8230000
⑱	07942—6570100	Valve Guide Driver, 6.6 mm	1	may also be used 07942—6110000
⑲	07943—6890100	Valve Guide Driver Attachment	1	
⑳	07947—SB00100	Seal Driver	1	
㉑	07948—SB00101	Driver Attachment	1	
㉒	07973—PE00302	Adj. Piston Pin Driver	1	may also be used 07973—PE00301
㉓	07973—6570002	Piston Pin Dis/Assembly Tool Set	1	
㉓-1	07973—6570500	Piston Base	(1)	— Component tools
㉓-2	07973—6570600	Piston Base Spring	(1)	
㉔	07984—SA50000	● Valve Guide Reamer, 7.0 mm	1	may also be used 07984—6890101
㉕	07984—6110000	Valve Guide Reamer, 6.6 mm	1	may also be used 07984—6570101

## 6. Fuel and Emissions

●: Carbureted Engine only    ○: Fuel-Injected Engine only

Number	Tool Number	Description	Q'ty	Remarks
①	07GMJ—ML80100	Inspection Adaptor	1	
②	07HAZ—PJ70000	● ECU Check Adaptor A	1	
③	07HAZ—PJ7010A	● ECU Check Adaptor B	1	
④	07401—0010000	● Float Level Gauge	1	
⑤	07406—0040001	○ Fuel Pressure Gauge	1	
⑥	07411—0020000	Digital Circuit Tester	1	
⑦	07614—0050100	● Fuel Line Clamp	1	
⑧	07999—PD6000A	○ System Checker Harness	1	



## 7. Clutch

Number	Tool Number	Description	Q'ty	Remarks
①	07GAG—PF50100	Clutch Disc Alignment Tool	1	
②	07924—PD20003	Ring Gear Holder	1	may also be used 07924—PD20002

## 8. Manual Transmission

Number	Tool Number	Description	Q'ty	Remarks
①	07GAD—PG40100	Oil Seal Driver	1	may also be used 07947—SD90100
②	07GAJ—PG20101	Preload Inspection Tool	1	
③	07746—0010300	Attachment, 42 x 47 mm	1	
④	07746—0010400	Attachment, 52 x 55 mm	1	
⑤	07746—0010500	Attachment, 62 x 68 mm	1	
⑥	07746—0030100	Driver	1	
⑦	07749—0010000	Driver	1	
⑧	07936—6340000	Bearing Puller Set	1	
⑨	07936—6890101	Bearing Remover Attachment	1	
⑩	07947—6110500	Oil Seal Driver	1	

## 9. Automatic Transmission

Number	Tool Number	Description	Q'ty	Remarks
①	07GAB—PF50100	Mainshaft Holder	1	<div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 20px; margin-right: 5px;"></div> Component tools </div>
②	07GAC—PF40210	Bearing Remover Attachment	1	
③	07GAE—PG40001	Clutch Spring Compressor Set	1	
③-1	07GAE—PG40200	Clutch Spring Compressor Bolt Assembly	(1)	
③-2	07HAE—PL50100	Clutch Spring Compressor Attachment	(1)	
③-3	07960—6120100	Clutch Spring Compressor Attachment	(1)	
④	07GAJ—PG20201	Preload Inspection Tool	1	
⑤	07GMJ—ML80100	Inspection Adaptor Tool	1	
⑥	07HAC—PK40100	Housing Puller	1	
⑦	07HAF—PK40100	Gear Installer	1	
⑧	07406—0020003	Oil Pressure Gauge Set	1	may also be used 07406—0020201
⑨	07746—0010500	Attachment, 62 x 68 mm	1	
⑩	07746—0030100	Driver	1	
⑪	07749—0010000	Driver	1	may also be used 07GAD—PG40100
⑫	07936—6340000	Bearing Puller Set	1	
⑬	07947—SD90100	Oil Seal Driver	1	
⑭	07947—6110500	Oil Seal Driver	1	
⑮	07947—6340201	Driver Attachment E	1	
⑯	07947—6340500	Bearing Driver Attachment E	1	

# Special Tools

## 10. Driveshaft

Number	Tool Number	Description	Q'ty	Remarks
①	07GAD—SE00100	Oil Seal Driver Attachment	1	
②	07746—0010400	Attachment, 52 x 55 mm	1	
③	07746—0010500	Attachment, 62 x 68 mm	1	
④	07746—0040900	Pilot, 40 mm	1	
⑤	07749—0010000	Driver	1	
⑥	07947—SD90200	Oil Seal Driver	1	
⑦	07965—SD90100	Support Base	1	
⑧	07965—SD90200	Support Collar	1	

## 11. Power Steering (2WS/4WS Community)

Number	Tool Number	Description	Q'ty	Remarks
①	07GAG—SD40000	P/S Tool Kit	1	
①-1	07GAG—SD40100	Piston Seal Ring Guide	(1)	Component tools
①-2	07GAG—SD40200	Piston Seal Sizing Tool	(1)	
①-3	07GAG—SD40300	Cylinder End Seal Slider	(1)	
①-4	07GAG—SD40400	End Seal Guide	(1)	
①-5	07GAG—SD40600	Tool Box	(1)	
②	07GAK—SE00100	P/S Pressure Gauge Adaptor Set	1	
②-1	07GAK—SE00110	P/S Joint Adaptor (Pump)	(1)	Component tools
②-2	07GAK—SE00120	P/S Joint Adaptor (Hose)	(1)	
③	07406—0010101	Bypass Tube Joint	1	
④	07406—0010200	P/S Pressure Gauge Set	1	
④-1	07406—0010300	Pressure Control Valve	(1)	Component tools
④-2	07406—0010400	Pressure Gauge	(1)	
⑤	07725—0030000	Pulley Holder	1	
⑥	07746—0010300	Attachment, 42 x 47 mm	1	
⑦	07749—0010000	Driver	1	
⑧	07916—SA50001	40 mm Lock Nut Wrench	1	
⑨	07941—6920003	Ball Joint Remover	1	
⑩	07947—6340300	Driver Attachment	1	
⑪	07953—7190000	Collar Driver	1	
⑫	07974—SA50600	Pinion Seal Guide	1	



## 11. Power Steering (4WS only)

Number	Tool Number	Description	Q'ty	Remarks
①	07HAA—SF10100	Lock Nut Socket 36 x 41 mm	1	Component tools
②	07HAG—SF10000	4WS Tool Kit	1	
②-1	07HAG—SF10100	Piston Seal Ring Guide	(1)	
②-2	07HAG—SF10200	Piston Seal Ring Sizing Tool	(1)	
②-3	07HAG—SF10300	Pinion Seal Ring Guide	(1)	
②-4	07HAG—SF10400	Pinion Seal Sizing Tool	(1)	
②-5	07HAG—SF10500	Driver Seal Ring Guide	(1)	
②-6	07HAG—SF10600	Tool Box	(1)	
③	07HAJ—SF10100	Rack Adjuster Gauge Holder Set	1	
④	07HAJ—SF10201	Rear Adjuster Center Lock Pin	1	
⑤	07HAJ—SF10300	Stroke Rod Holder Set	1	
⑥	07HAJ—SF10400	Inspection Adaptor	1	
⑦	07703—0010101	Torx Driver Bit T40	1	
⑧	07746—0010700	Attachment 24 x 26 mm	1	

## 12. Suspension

Number	Tool Number	Description	Q'ty	Remarks
①	07GAE—SE00101	Spring Compressor	1	may also be used 07GAE—SE00100
②	07GAF—SD40700	Hub Dis/Assembly Base	2	
③	07GAF—SE00100	Hub Assembly Pin	1	
④	07GAF—SE00200	Front Assembly Driver Attachment	1	
⑤	07GAF—SE00401	Front Hub Base	1	
⑥	07GAG—SD40700	Ball Joint Boot Clip Installation Guide	1	
⑦	07GAK—0010100	Wheel Alignment Gauge Attachment	1	
⑧	07HAD—SF10100	Hub Bearing Driver	1	
⑨	07HAF—SF10100	Ball Joint Dis/Assembly Tool Kit	1	
⑨-1	07HAF—SF10110	Ball Joint Remover Base	(1)	Component tools
⑨-2	07HAF—SF10120	Ball Joint Installer Base	(1)	
⑨-3	07HAF—SF10130	Ball Joint Remover/Installer	(1)	
⑩	07HAF—SF10200	Bearing Supporting Attachment	1	
⑪	07HAJ—SF10201	Rear Steering Center Lock Pin	1	
⑫	07HGJ—0010000	Toe Inspection Gauge Set	1	
⑬	07703—0010100	Torx Driver Bit T40	1	
⑭	07746—0010400	Attachment, 52 x 55 mm	1	
⑮	07746—0010500	Attachment, 62 x 68 mm	1	
⑯	07749—0010000	Driver	1	
⑰	07941—6920003	Ball Joint Remover	1	Component tools
⑱	07965—SB00000	Ball Joint Dis/Assembly Tool Set	1	
⑱-1	07965—SB00100	Ball Joint Remover Base	(1)	
⑱-2	07965—SB00200	Ball Joint Installer Base	(1)	
⑱-3	07965—SB00300	Ball Joint Remover/Installer	(1)	
⑲	07965—SD90100	Supporting Base	1	
⑳	07965—6920201	Front Hub Dis/Assembly Tool, B	1	
㉑	07974—SA50700	Ball Joint Boot Clip Installation Guide	1	
㉒	07974—SA50800	Ball Joint Boot Clip Installation Guide	1	



## 11. Power Steering (4WS only)

Number	Tool Number	Description	Q'ty	Remarks
①	07HAA—SF10100	Lock Nut Socket 36 x 41 mm	1	Component tools
②	07HAG—SF10000	4WS Tool Kit	1	
②-1	07HAG—SF10100	Piston Seal Ring Guide	(1)	
②-2	07HAG—SF10200	Piston Seal Ring Sizing Tool	(1)	
②-3	07HAG—SF10300	Pinion Seal Ring Guide	(1)	
②-4	07HAG—SF10400	Pinion Seal Sizing Tool	(1)	
②-5	07HAG—SF10500	Driver Seal Ring Guide	(1)	
②-6	07HAG—SF10600	Tool Box	(1)	
③	07HAJ—SF10100	Rack Adjuster Gauge Holder Set	1	
④	07HAJ—SF10201	Rear Adjuster Center Lock Pin	1	
⑤	07HAJ—SF10300	Stroke Rod Holder Set	1	
⑥	07HAJ—SF10400	Inspection Adaptor	1	
⑦	07703—0010101	Torx Driver Bit T40	1	
⑧	07746—0010700	Attachment 24 x 26 mm	1	

## 12. Suspension

Number	Tool Number	Description	Q'ty	Remarks
①	07GAE—SE00101	Spring Compressor	1	may also be used 07GAE—SE00100
②	07GAF—SD40700	Hub Dis/Assembly Base	2	
③	07GAF—SE00100	Hub Assembly Pin	1	
④	07GAF—SE00200	Front Assembly Driver Attachment	1	
⑤	07GAF—SE00401	Front Hub Base	1	
⑥	07GAG—SD40700	Ball Joint Boot Clip Installation Guide	1	
⑦	07GAK—0010100	Wheel Alignment Gauge Attachment	1	
⑧	07HAD—SF10100	Hub Bearing Driver	1	
⑨	07HAF—SF10100	Ball Joint Dis/Assembly Tool Kit	1	
⑨-1	07HAF—SF10110	Ball Joint Remover Base	(1)	Component tools
⑨-2	07HAF—SF10120	Ball Joint Installer Base	(1)	
⑨-3	07HAF—SF10130	Ball Joint Remover/Installer	(1)	
⑩	07HAF—SF10200	Bearing Supporting Attachment	1	
⑪	07HAJ—SF10201	Rear Steering Center Lock Pin	1	
⑫	07HGJ—0010000	Toe Inspection Gauge Set	1	
⑬	07703—0010100	Torx Driver Bit T40	1	
⑭	07746—0010400	Attachment, 52 x 55 mm	1	
⑮	07746—0010500	Attachment, 62 x 68 mm	1	
⑯	07749—0010000	Driver	1	
⑰	07941—6920003	Ball Joint Remover	1	Component tools
⑱	07965—SB00000	Ball Joint Dis/Assembly Tool Set	1	
⑱-1	07965—SB00100	Ball Joint Remover Base	(1)	
⑱-2	07965—SB00200	Ball Joint Installer Base	(1)	
⑱-3	07965—SB00300	Ball Joint Remover/Installer	(1)	
⑲	07965—SD90100	Supporting Base	1	
⑳	07965—6920201	Front Hub Dis/Assembly Tool, B	1	
㉑	07974—SA50700	Ball Joint Boot Clip Installation Guide	1	
㉒	07974—SA50800	Ball Joint Boot Clip Installation Guide	1	

## Special Tools

### 13. Brakes (Conventional Brakes Community)

Number	Tool Number	Description	Q'ty	Remarks
①	07GAG—SE00100	Rod Bolt Adjustment Gauge	1	
②	07HAE—SG00100	Brake Spring Compressor	1	
③	07404—5790300	Vacuum Gauge	1	
④	07406—5790200	Pressure Gauge	2	
⑤	07410—5790100	Pressure Gauge Attachment	2	
⑥	07510—6340100	Pressure Gauge Joint Pipe	2	
⑦	07510—6340300	Vacuum Joint Tube A	1	
⑧	07749—0010000	Driver	1	
⑨	07914—SA50000	Snap Ring Pliers	1	
⑩	07921—0010001	Flare Nut Wrench	1	
⑪	07947—6890300	Driver Attachment, C	1	

### 13. Brakes (ALB only)

Number	Tool Number	Description	Q'ty	Remarks
①	07HAJ—SG00300	ALB Checker Adaptor	1	
②	07HAK—SG00110	Pressure Gauge Joint Pipe	1	
③	07404—5790300	Vacuum Gauge	1	
④	07406—5790200	Pressure Gauge	2	
⑤	07410—5790100	Pressure Gauge Attachment	2	
⑥	07410—5790500	Tube Joint Adaptor	1	
⑦	07508—SB00000	ALB Checker	1	
⑧	07510—6340100	Pressure Gauge Joint Pipe	1	
⑨	07510—6340300	Vacuum Joint Tube A	1	
⑩	07907—SB00000	ALB-Wrench	1	
⑪	07921—0010001	Flare Nut Wrench	1	
⑫	07965—5790300	Cup Guide	1	

### 14. Boby

Number	Tool Number	Description	Q'ty	Remarks
①	07GAZ—SE30100	Torsion Rod Assembly Tool	1	

### 15. Heater and Air Conditioner

Number	Tool Number	Description	Q'ty	Remarks
①	07HAF—SF10300	Seal Seat Remover	1	
②	07HAF—SF10400	Seal Remover/Installer	1	

### 16. Electrical

Number	Tool Number	Description	Q'ty	Remarks
①	07GAC—SE00200	Fuel Sender Wrench	1	

# Standards and Service Limits

## 5. Engine/Cylinder Head, Valve Train (Fuel-Injected Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min <sup>-1</sup> (rpm) and wide-open throttle		Nominal Minimum Maximum variation	1,226 kpa (12.5 kg/cm <sup>2</sup> , 178 psi) 932 kpa (9.5 kg/cm <sup>2</sup> , 135 psi) 196 kpa (2 kg/cm <sup>2</sup> , 28 psi)
Cylinder head	Warpage Height		— 132 (5.20)	0.05 (0.002) 131.8 (5.19)
Camshaft	End play Oil clearance Runout Cam lobe height		0.05—0.15 (0.002—0.006) 0.050—0.089 (0.002—0.004) 0.015 (0.0006) max. 33.716 (1.3274) 33.932 (1.3359)	0.5 (0.02) 0.15 (0.006) 0.03 (0.001) — —
Valve	Valve clearance	IN	0.08—0.12 (0.003—0.005)	—
		EX	0.16—0.20 (0.006—0.008)	—
	Valve stem O.D.	IN	6.58—6.59 (0.2591—0.2594)	6.55 (0.258)
		EX	6.55—6.56 (0.2579—0.2583)	6.52 (0.257)
	Stem-to-guide clearance	IN	0.02—0.05 (0.001—0.002)	0.08 (0.003)
		EX	0.05—0.08 (0.002—0.003)	0.11 (0.04)
	Stem installed height	IN and EX	42.75 (1.683)	43.54 (1.714)
Valve seat	Width	IN and EX	1.25—1.55 (0.049—0.061)	2.0 (0.08)
Valve spring	Free length	Inner	43.50 (1.713)	42.5 (1.673)
		Outer	47.45 (1.868)	46.45 (1.829)
	Squareness	Inner and Outer	—	1.6 (0.063)
Valve guide	I.D.	IN and EX	6.61—6.63 (0.260—0.261)	6.65 (0.262)

## 5. Engine/Cylinder Head, Valve Train (Carbureted Engine)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min <sup>-1</sup> (rpm) and wide-open throttle		Nominal Minimum Maximum variation	1,177 kpa (12.0 kg/cm <sup>2</sup> , 171 psi) 932 kpa (9.5 kg/cm <sup>2</sup> , 135 psi) 196 kpa (2 kg/cm <sup>2</sup> , 28 psi)
Cylinder head	Warpage Height		— 90 (3.54)	0.05 (0.002) 89.8 (3.54)
Camshaft	End play Oil clearance Runout Cam lobe height	No. 1, 3 and 5 journals No. 2 and 4 journals	0.05—0.15 (0.002—0.006) 0.050—0.089 (0.002—0.004) 0.130—0.169 (0.005—0.007) 0.015 (0.0006) max. 38.604 (1.5198) 38.858 (1.5298) 38.796 (1.5274)	0.5 (0.02) 0.15 (0.006) 0.23 (0.009) 0.03 (0.001) — — —
Valve	Valve clearance	IN A	0.12—0.17 (0.005—0.007)	—
		EX	0.25—0.30 (0.010—0.012)	—
	Valve stem O.D.	IN	6.58—6.59 (0.2591—0.2594)	6.55 (0.258)
		EX	6.94—6.95 (0.2732—0.2736)	6.91 (0.272)
	Stem-to-guide clearance	IN	0.02—0.05 (0.001—0.002)	0.08 (0.003)
		EX	0.06—0.09 (0.002—0.004)	0.12 (0.005)
	Stem installed height	IN	48.59 (1.913)	49.34 (1.943)
		EX	47.66 (1.876)	48.41 (1.906)
Valve seat	Width	IN and EX	1.25—1.55 (0.049—0.061)	2.0 (0.08)
Valve spring	Free length	IN	48.54 (1.91)	47.54 (1.87)
		EX Inner Outer	42.42 (1.67) 49.06 (1.93)	41.42 (1.63) 48.06 (1.89)
	Squareness	Inner and Outer	—	1.75 (0.068)
Valve guide	I.D.	IN	6.61—6.63 (0.260—0.261)	6.65 (0.262)
		EX	7.01—7.03 (0.276—0.277)	7.05 (0.278)
Rocker arm	Arm-to-shaft clearance		0.008—0.054 (0.0003—0.0021)	0.08 (0.003)

**5. Engine/Engine Block (Fuel-Injected Engine)**

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface	0.07 (0.0028) max.	0.10 (0.004)
	Bore diameter A	81.01 – 81.02 (3.1894–3.1898)	81.05 (3.1909)
	Bore diameter B	81.00–81.01 (3.1890–3.1894)	81.04 (3.1905)
	Bore taper	—	0.05 (0.002)
	Reboring limit	—	0.5 (0.02)
Piston	Skirt O.D. ( At 21 mm (0.83 in) ) A	80.98–80.99 (3.1882–3.1886)	80.97 (3.188)
	Skirt O.D. ( At 21 mm (0.83 in) ) B	80.97–80.98 (3.1878–3.1882)	80.96 (3.187)
	Clearance in cylinder	0.02–0.04 (0.0008–0.0016)	0.08 (0.003)
	Piston-to-ring clearance Top	0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
	Piston-to-ring clearance 2nd	0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
Piston ring	Ring end gap Top	0.20–0.35 (0.008–0.014)	0.6 (0.02)
	Ring end gap 2nd	0.40–0.55 (0.016–0.022)	0.7 (0.03)
	Ring end gap Oil	0.20–0.70 (0.008–0.028)	0.8 (0.03)
Connecting rod	Pin-to-rod interference	0.013–0.032 (0.0005–0.0013)	—
	Large end bore diameter	Nominal 51 (2.01)	—
	End play installed on crankshaft	0.15–0.30 (0.006–0.012)	0.40 (0.016)
Crankshaft	Main journal diameter	54.976–55.000 (2.1644–2.1654)	—
	Taper/out-of-round, main journal	0.005 (0.0002) max.	0.010 (0.0004)
	Rod journal diameter	47.976–48.000 (1.8888–1.8900)	—
	Taper/out-of-round, rod journal	0.005 (0.0002) max.	0.010 (0.0004)
	End play	0.10–0.35 (0.004–0.014)	0.45 (0.018)
	Runout	0.010 (0.0004) max.	0.015 (0.0006)
Bearings	Main bearing-to-journal No. 1, 2, 4, and 5	0.024–0.042 (0.0010–0.0017)	0.05 (0.002)
	Oil clearance Journals	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Oil clearance No. 3 Journal	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Rod bearing-to-journal oil clearance	0.026–0.044 (0.0010–0.0017)	0.05 (0.002)

**5. Engine/Engine Block (Carbureted Engine)**

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface	0.07 (0.0028) max.	0.10 (0.004)
	Bore diameter A	81.01–81.02 (3.1894–3.1898)	81.05 (3.1909)
	Bore diameter B	81.00–81.01 (3.1890–3.1894)	81.04 (3.1905)
	Bore taper	—	0.05 (0.002)
	Reboring limit	—	0.5 (0.02)
Piston	Skirt O.D. ( At 21 mm (0.83 in) ) A	80.98–80.99 (3.1882–3.1886)	80.97 (3.1878)
	Skirt O.D. ( At 21 mm (0.83 in) ) B	80.97–80.98 (3.1878–3.1882)	80.96 (3.1874)
	Clearance in cylinder	0.02–0.04 (0.0008–0.0016)	0.08 (0.003)
	Piston-to-ring clearance (top and 2nd)	0.030–0.055 (0.0012–0.0022)	0.13 (0.005)
Piston ring	Ring end gap Top	0.20–0.35 (0.008–0.014)	0.6 (0.02)
	Ring end gap 2nd	0.40–0.55 (0.016–0.022)	0.7 (0.03)
	Ring end gap Oil	0.20–0.70 (0.008–0.020)	0.8 (0.03)
Connecting rod	Pin-to-rod interference	0.013–0.032 (0.0005–0.0013)	—
	Large end bore diameter	Nominal 48 (1.89)	—
	End play installed on crankshaft	0.15–0.30 (0.006–0.012)	0.40 (0.016)
Crankshaft	Main journal diameter	54.976–55.000 (2.1644–2.1654)	—
	Taper/out-of-round, main journal	0.005 (0.0002) max.	0.010 (0.0004)
	Rod journal diameter	44.976–45.000 (1.7707–1.7717)	—
	Taper/out-of-round, rod journal	0.005 (0.0002) max.	0.010 (0.0004)
	End play	0.10–0.35 (0.004–0.014)	0.45 (0.018)
	Runout	0.010 (0.0004) max.	0.015 (0.0006)
Bearings	Main bearing-to-journal No. 1, 2, 4, and 5	0.024–0.042 (0.0010–0.0017)	0.05 (0.002)
	Oil clearance journals	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Oil clearance No. 3 Journal	0.030–0.048 (0.0012–0.0019)	0.05 (0.002)
	Rod bearing-to-journal oil clearance	0.026–0.044 (0.0010–0.0017)	0.05 (0.002)

(cont'd)

# Standards and Service Limits (cont'd)

○ : Fuel-Injected Engine

● : Carbureted Engine

## 5. Engine/Engine Lubrication

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (U.S. qt., Imp. qt.)	4.8 (5.1, 4.2) After engine disassembly 3.9 (4.1, 3.4) After oil change, including oil filter 3.4 (3.6, 3.0) After oil change, without oil filter	
Oil pump	Displacement	○ 54 ℓ (14.3 U.S. gal., 11.9 Imp. gal.) 5,000 min <sup>-1</sup> (rpm) ● 54 ℓ (14.3 U.S. gal., 11.9 Imp. gal.) 5,500 min <sup>-1</sup> (rpm)	
	Inner-to-outer rotor radial clearance	0.04—0.16 (0.002—0.006)	0.2 (0.008)
	Pump body-to-rotor radial clearance	0.10—0.19 (0.004—0.007)	0.21 (0.008)
	Pump body-to-rotor side clearance	0.02—0.07 (0.001—0.003)	0.12 (0.005)
Relief valve	Pressure setting 80°C (176°F)	Idle	147 kPa (1.5 kg/cm <sup>2</sup> , 21 psi) min.
		3,000 min <sup>-1</sup> (rpm)	520—598 kPa (5.3—6.1 kg/cm <sup>2</sup> , 75—87 psi)

## 5. Engine/Cooling

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
○ Radiator	Capacity (includes heater) ℓ (U.S. qt., Imp. qt.) (Includes reservoir tank 0.75 (0.79, 0.66))	7.8 (8.2, 6.9)	
● Radiator	Capacity (Includes heater) ℓ (U.S. qt., Imp. qt.) (Includes reservoir tank 0.75 (0.79, 0.66))	Manual 6.8 (7.2, 6.0) Automatic 7.5 (7.9, 6.6)	
Radiator cap	Pressure cap opening pressure	74—103 kPa (0.75—1.05 kg/cm <sup>2</sup> , 11—15 psi)	
Thermostat	Starts to open	82°C ± 2 (180°F ± 3)	86—90°C (187—194°F)
	Full open	95°C (203°F)	100°C (212°F) OPTIONAL
	Valve lift at full open	8 (0.31) max.	8 (0.31) max.
○ Water pump	Gear ratio (crankshaft)	0.89	
	Capacity: ℓ per min/at min <sup>-1</sup> (rpm)	158 (41.7 U.S. gal., 34.8 Imp. gal.)/6,000	
● Water pump	Gear ratio (crankshaft)	1.00	
	Capacity: ℓ per min/at min <sup>-1</sup> (rpm)	145 (38.3 U.S. gal., 31.9 Imp. gal.)/6,000	
Cooling fan	Fan-to-core clearance	26.0 (1.02)	
	Thermoswitch "ON" temperature	87°—93°C (188°—199°F)	
	Thermoswitch "OFF" temperature	83° (181°F) or more (hysteresis 2°C (35°F) or more).	

## 6. Fuel and Emissions

	MEASUREMENT	STANDARD (NEW)
○ Fuel pump	Delivery pressure	250 kPa (2.55 kg/cm <sup>2</sup> , 36 psi)
	Displacement	230 cm <sup>3</sup> /min in 10 seconds
	Relief valve opening pressure	441—588 kPa (4.5—6.0 kg/cm <sup>2</sup> , 64—85 psi)
● Fuel pump	Delivery pressure	8.8—14.7 kPa (0.09—0.15 kg/cm <sup>2</sup> , 1.3—2.1 psi)
	Displacement	600 cm <sup>3</sup> /min at 12 V (37 cu. in./12 V)
○ Pressure regulator	Pressure	230—270 kPa (2.35—2.75 kg/cm <sup>2</sup> , 33—39 psi)
Fuel Tank	Capacity	60 ℓ (15.9 U.S. gal., 13.2 Imp. gal.)

O : Fuel-Injected Engine

● : Carbureted Engine

Unit: mm (in.)

## 6. Fuel and Emissions

	MEASUREMENT	STANDARD (NEW)
Throttle valve body or carburetor	Fast idle min <sup>-1</sup> (rpm)	Manual ○ 1,000—1,800 ● 1,000—2,000 Automatic ○ 1,000—1,800 ● 1,000—2,000
	Idle speed min <sup>-1</sup> (rpm)	with headlights and cooling fan off
		○ Manual Automatic (in gear)
		750 ± 50 (with catalytic converter) 800 ± 50 (without catalytic converter)
		● Manual Automatic (in gear)
	Idle CO	M/T: 800 ± 50 A/T: 750 ± 50
	Float level (from gasket)	0.1% 15—17 (0.59—0.67)

## 7. Clutch

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	207 (8.1) to floor	—
	Stroke	135—140 (5.3—5.5)	—
	Pedal play	9—15 (0.4—0.6)	—
	Disengagement height	92 (3.6) min. to floor	—
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)
	Thickness	8.5—9.2 (0.33—0.36)	6.1 (0.24)
Clutch release bearing holder	I.D.	35.00—35.059 (1.378—1.380)	35.09 (1.381)
	Holder-to-guide sleeve clearance	0.05—0.15 (0.002—0.006)	0.22 (0.009)
Clutch cover	Unevenness of diaphragm spring	0.6 (0.02) max.	0.8 (0.03)

## 8. Manual Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (U.S. qt., Imp. qt.)	1.9 (2.0, 1.7) at oil change 2.0 (2.1, 1.8) at assembly	
Mainshaft	End play	0.10—0.16 (0.004—0.006)	Adjust with a shim.
	Diameter of needle bearing contact area	27.987—28.000 (1.1018—1.1024)	27.94 (1.100)
	Diameter of third gear contact area	37.984—38.000 (1.4954—1.4961)	37.93 (1.493)
	Diameter of ball bearing contact area	27.977—27.990 (1.1015—1.1020)	27.94 (1.100)
	Runout	0.04 (0.0016) max.	0.10 (0.004)
Mainshaft third and fourth gears	I.D.	43.009—43.025 (1.6933—1.6939)	43.08 (1.696)
	End play	0.06—0.21 (0.0024—0.0083)	0.3 (0.012)
	Thickness	32.42—32.47 (1.2764—1.2783)	32.3 (1.272)
		30.92—30.97 (1.2173—1.2193)	30.8 (1.213)
Mainshaft fifth gear	I.D.	43.009—43.025 (1.6933—1.6939)	43.08 (1.696)
	End play	0.06—0.21 (0.0024—0.0083)	0.3 (0.012)
	Thickness	30.42—30.47 (1.1976—1.1996)	30.3 (1.193)
Countershaft	End play	0.10—0.35 (0.004—0.014)	0.5 (0.02)
	Diameter of needle bearing contact area	33.000—33.015 (1.2992—1.2998)	32.95 (1.297)
	Diameter of ball bearing contact area	24.987—25.000 (0.9837—0.9843)	24.94 (0.982)
	Diameter of low gear contact area	39.984—40.000 (1.5742—1.5748)	33.93 (1.336)
	Runout	0.04 (0.0016)	0.10 (0.004)
Countershaft low gear	I.D.	46.009—46.025 (1.8114—1.8120)	46.08 (1.814)
	End play	0.04—0.06 (0.0016—0.0028)	0.18 (0.007)
Countershaft second gear	I.D.	50.009—50.025 (1.9689—1.9695)	50.08 (1.972)
	End play	0.03—0.07 (0.0012—0.0028)	Adjust with a collar.
	Thickness	32.92—32.97 (1.2961—1.2980)	32.8 (1.291)
Spacer collar (Countershaft second gear)	I.D.	36.48—36.49 (1.4362—1.4366)	36.5 (1.437)
	O.D.	43.989—44.000 (1.7318—1.7323)	43.94 (1.730)
	Length	29.03—29.05 (1.1429—1.1437)	—
	A	29.01—29.03 (1.1421—1.1429)	—
	B	28.99—29.01 (1.1413—1.1421)	—
	C	28.97—28.99 (1.1405—1.1413)	—
	D	28.95—28.97 (1.1398—1.1405)	—
	E		

(cont'd)

# Standards and Service Limits (cont'd)

## 8. Manual Transmission (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Spacer collar (Mainshaft fourth and fifth gears)	I.D.	28.002—28.012 (1.1024—1.1028)	28.06 (1.105)
	O.D.	34.989—35.000 (1.3775—1.3780)	34.94 (1.376)
	Length	A	—
		B	—
Reverse idler gear	I.D. Gear-to-reverse gear shaft clearance	20.016—20.043 (0.7880—0.7891) 0.036—0.084 (0.0014—0.0033)	20.09 (0.791) 0.16 (0.006)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)	0.85—1.10 (0.033—0.043)	0.4 (0.016)
Shift fork	Synchro sleeve gear	1,2,3 and 4th	7.95—8.05 (0.313—0.317)
		5th	5.75—5.85 (0.226—0.230)
	Fork-to-synchro sleeve	1,2,3 and 4th	0.45—0.65 (0.018—0.026)
		5th	0.45—0.50 (0.018—0.020)
Reverse shift fork	End gap	13.0—13.3 (0.512—0.524)	—
	Fork-to-reverse idler gear clearance	0.5—1.1 (0.020—0.043)	1.8 (0.071)
	Groove width	7.05—7.25 (0.278—0.285)	—
	Fork-to-fifth/reverse shift piece pin clearance	0.05—0.35 (0.002—0.014)	0.5 (0.02)
Shift arm	I.D.	15.973—16.000 (0.629—0.630)	—
	Shift shaft clearance	0.005—0.059 (0.000197—0.00232)	—
	Shift fork diameter of contact area	12.9—13.0 (0.508—0.512)	—
	Shift fork clearance	0.2—0.3 (0.0079—0.012)	0.6 (0.024)
Select lever	Pin size of contact area	8.7—8.8 (0.34—0.35)	—
	Shaft outer diameter	15.41—15.68 (0.607—0.617)	—
	Shift arm cover clearance	0.032—0.102 (0.00126—0.00402)	—
Shift arm lever	O.D.	15.41—15.68 (0.607—0.617)	—
	Transmission housing clearance	0.027—0.139 (0.00106—0.0055)	—
Inter lock	Bore diameter	16.0—16.05 (0.630—0.632)	—
	Shift arm lever clearance	0.032—0.19 (0.00126—0.0075)	—

○ : Fuel-Injected Engine

● : Carbureted Engine

## 9. Automatic Transmission

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (U.S. qt., Imp. qt.)	2.8 (3.0, 2.5) at oil change 6.2 (6.6, 5.5) at assembly	
Hydraulic pressure	<b>N</b> or <b>P</b> Line pressure at 2,000 min <sup>-1</sup> (rpm)	○ 834—883 kpa (8.5—9.0 kg/cm <sup>2</sup> , 121—128 psi)	○ 785 kpa (8.0 kg/cm <sup>2</sup> , 114 psi)
		● 785—834 kpa (8.0—8.5 kg/cm <sup>2</sup> , 14—121 psi)	● 736 kpa (7.5 kg/cm <sup>2</sup> , 107 psi)
	<b>S</b> or <b>D</b> 4th, 3rd, 2nd clutch pressure at 2,000 min <sup>-1</sup> (rpm)	○ 569—883 kpa (5.8—9.0 kg/cm <sup>2</sup> , 82.5—128 psi)	○ 785 kpa (8.0 kg/cm <sup>2</sup> , 114 psi)
		● 569—834 kpa (5.8—8.5 kg/cm <sup>2</sup> , 82.5—121 psi)	● 736 kpa (7.5 kg/cm <sup>2</sup> , 107 psi)
	<b>S</b> or <b>D</b> 1st clutch pressure at 2,000 min <sup>-1</sup> (rpm) <b>2</b> 2nd clutch pressure at 2,000 min <sup>-1</sup> (rpm)	○ 834—883 kpa (8.5—9.0 kg/cm <sup>2</sup> , 121—128 psi)	○ 785 kpa (8.0 kg/cm <sup>2</sup> , 114 psi)
		● 785—834 kpa (8.0—8.5 kg/cm <sup>2</sup> , 114—121 psi)	● 736 kpa (7.5 kg/cm <sup>2</sup> , 107 psi)
	<b>S</b> or <b>D</b> Throttle pressure B	Fully closed	0
		Fully open	○ 834—883 kpa (8.5—9.0 kg/cm <sup>2</sup> , 121—128 psi) ● 785—834 kpa (8.0—8.5 kg/cm <sup>2</sup> , 114—121 psi)
Stall speed	Check with car on level ground	○ 2,600—2,900 min <sup>-1</sup> (rpm) ● 2,550—2,850 min <sup>-1</sup> (rpm)	—
Clutch	Clutch initial clearance	1st 0.65—0.85 (0.026—0.033) 2nd, 3rd, 4th 0.40—0.60 (0.016—0.024)	—
	Clutch return spring free length	31.0 (1.22)	29.0 (1.14)
	Clutch disc thickness	1.88—2.00 (0.074—0.079)	Until grooves worn out

## Unit: mm (in.)

9. Automatic Transmission			
	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Clutch plate thickness	1.95—2.05 (0.077—0.079)	<div>Discoloration</div> <div>↑</div> <div>↓</div> <div>Discoloration</div>
	Clutch end plate thickness	2.05—2.10 (0.081—0.083)	
	Mark 1	2.15—2.20 (0.085—0.087)	
	Mark 2	2.25—2.30 (0.089—0.091)	
	Mark 3	2.35—2.40 (0.093—0.094)	
	Mark 4	2.45—2.50 (0.096—0.098)	
	Mark 5	2.55—2.60 (0.100—0.102)	
	Mark 6	2.65—2.70 (0.104—0.106)	
	Mark 7	2.75—2.80 (0.108—0.110)	
	Mark 8	2.85—2.90 (0.112—0.114)	
	Mark 9	2.95—3.00 (0.116—0.118)	
	Mark 10	3.05—3.10 (0.120—0.122)	
	Mark 11	3.15—3.20 (0.124—0.126)	
	Mark 12	3.25—3.30 (0.128—0.130)	
	Mark 13	3.35—3.40 (0.132—0.134)	
Transmission	Diameter of needle bearing contact area on main and stator shaft	22.980—22.993 (0.9047—0.9052)	<div>Wear or damage</div> <div>↑</div> <div>↓</div> <div>Wear or damage</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> 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(cont'd)

# Standards and Service Limits (cont'd)

## 9. Automatic Transmission (cont'd)

○ : Fuel-Injected Engine

● : Carbureted Engine

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT		
Transmission (cont'd)	Thrust washer thickness (mainshaft 1st gear L side)	1.45—1.50 (0.0571—0.0591)	1.40 (0.0551)		
	Mainshaft 1st gear collar length	24.50—24.55 (0.9646—0.9665)	—		
	Mainshaft 1st gear collar flange thickness	2.5—2.6 (0.098—0.102)	Wear or damage		
	Countershaft reverse gear collar length	12.00—12.10 (0.4724—0.4764)	—		
	Countershaft reverse gear collar flange thickness	2.40—2.60 (0.0945—0.1024)	Wear or damage		
	Countershaft 1st gear collar length	12.00—12.10 (0.4724—0.4764)	—		
	Countershaft 1st gear collar flange thickness	2.4—2.6 (0.095—0.102)	Wear or damage		
	Diameter of countershaft one-way clutch contact area	83.339—83.365 (3.2811—3.2821)	Wear or damage		
	Diameter of parking gear one-way clutch contact area	66.685—66.698 (2.6254—2.6259)	Wear or damage		
	Mainshaft feed pipe A O.D.	8.97—8.98 (0.353—0.354)	8.95 (0.3524)		
	Mainshaft feed pipe B O.D.	5.97—5.98 (0.2351—0.2354)	5.95 (0.2343)		
	Countershaft feed pipe C O.D.	7.97—7.98 (0.3138—0.3142)	7.95 (0.3130)		
	Mainshaft sealing ring 35 mm thickness	1.980—1.995 (0.0780—0.0785)	1.800 (0.0709)		
	Mainshaft sealing ring 29 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 (35 mm and 29 mm)	2.025—2.060 (0.0797—0.0811)	2.080 (0.0819)		
Regulator valve body	Sealing ring contact area diameter	35.000—35.025 (1.3780—1.3789)	35.050 (1.3799)		
Stator shaft	Sealing ring contact area diameter	29.000—29.013 (1.1417—1.1422)	29.05 (1.1437)		
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 Parking gear Throttle cam stopper	— — 19.5—19.6 (0.768—0.772)	Wear or other defect Wear or other defect —		
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)		
Valve body	Oil pump gear side clearance	0.03—0.05 (0.0012—0.0020)	0.07 (0.0028)		
	Oil pump gear-to-body clearance	Drive: 0.21—0.265 (0.0083—0.0104)	—		
		Driven: 0.07—0.125 (0.0028—0.0049)	—		
	Stator camshaft needle bearing contact area I.D. (torque converter side)	27.000—27.021 (1.0630—1.0638)	Wear or damage		
	Stator camshaft needle bearing contact area I.D. (oil pump side)	29.000—29.013 (1.1417—1.1422)	—		
	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		
Spring		STANDARD (NEW)			
		Wire Diameter	Outer Diameter	Free Length	Number of Coils
	Low one-way ball spring	0.29 (0.01)	4.0 (0.16)	14 (0.55)	13
	Regulator valve spring A	1.58 x 2.00 (0.06 x 0.08)	14.7 (0.58)	○88.6 (3.49) ●86.5 (3.41)	20.9
	Regulator valve spring B	1.6 (0.06)	9.6 (0.38)	44.0 (1.73)	7.5
	Stator reaction spring	6.0 (0.24)	38.4 (1.51)	30.3 (1.19)	2
	Torque converter check valve spring	1.1 (0.04)	8.4 (0.33)	34.5 (1.36)	12.5
	Relief valve spring	0.8 (0.03)	8.4 (0.33)	47.7 (1.88)	15
	Cooler check valve spring	1.1 (0.04)	8.4 (0.33)	46.8 (1.84)	17
	2nd orifice control spring	0.8 (0.03)	6.6 (0.26)	50.7 (2.00)	35.1
	2nd kick down spring	0.8 (0.03)	6.1 (0.24)	37.7 (1.48)	24.3
	Servo orifice control spring	0.8 (0.03)	6.1 (0.24)	44.8 (1.76)	24.3
	Throttle spring A	0.8 (0.03)	8.6 (0.34)	21.6 (0.85)	6.9
	Throttle adjust spring A (Throttle pressure B)	0.8 (0.03)	6.2 (0.24)	30.0 (1.18)	8
	Throttle spring B	1.4 (0.06)	8.5 (0.33)	41.4 (1.63)	8.4
	1—2 shift spring	1.0 (0.04)	9.6 (0.38)	41.5 (1.63)	14
	1—2 shift ball spring	0.45 (0.02)	4.5 (0.18)	12.7 (0.50)	11
	2—3 shift spring	0.9 (0.04)	9.6 (0.38)	39.6 (1.56)	12
	Low accumulator spring A	2.8 (0.11)	21.5 (0.85)	56.2 (2.21)	8.9
	Low accumulator spring B	2.3 (0.09)	9.8 (0.39)	42 (1.65)	9.2
	4th accumulator spring	3.2 (0.13)	18.6 (0.73)	78 (3.07)	10.8
	2nd accumulator spring	2.7 (0.11)	16.5 (0.65)	87.7 (3.45)	17.5
	3rd accumulator spring	2.8 (0.11)	16.0 (0.63)	78.3 (3.08)	16

○: Fuel-Injected Engine ●: Carbureted Engine Unit: mm (in.)

## 9. Automatic Transmission

Spring (cont'd)	MEASUREMENT	STANDARD (NEW)			
		Wire Diameter	Outer Diameter	Free Length	Number of Coils
	L/C shift spring	0.9 (0.04)	7.6 (0.30)	73.7 (2.90)	32
	L/C timing spring	0.8 (0.03)	6.6 (0.26)	61.7 (2.43)	40
	○ L/C control spring A	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	○ L/C control spring B	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	L/C control spring C	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	● L/C control spring D	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	● L/C control spring E	0.7 (0.03)	6.6 (0.26)	38.0 (1.50)	14.1
	Clutch pressure control valve spring A (Modulator pressure)	1.4 (0.06)	9.4 (0.37)	32.4 (1.26)	10.5
	Clutch pressure control valve spring B (Modulator pressure)	1.4 (0.06)	9.4 (0.37)	32.4 (1.26)	10.5
	Clutch pressure control valve spring A (CPC Pressure)	1.4 (0.06)	9.4 (0.37)	38.5 (1.52)	12.6
	Clutch pressure control valve spring B (CPC pressure)	1.4 (0.06)	9.4 (0.37)	38.5 (1.52)	12.6
	3rd kick down spring	0.8 (0.03)	6.6 (0.26)	51.9 (2.04)	35.7
	Servo return spring	2.6 (0.10)	28.8 (1.13)	40.3 (1.59)	3.3

## 9. Differential

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Ring gear	Backlash	0.087—0.146 (0.0034—0.0057)	0.2 (0.0079)
Differential carrier	Pinion shaft bore diameter	18.000—18.018 (0.7087—0.7094)	18.1 (0.71)
	Carrier-to-pinion shaft clearance	0.017—0.047 (0.0007—0.0019)	0.1 (0.004)
	Driveshaft bore diameter	28.005—28.025 (1.1025—1.1033)	—
	Carrier-to-driveshaft clearance	0.025—0.066 (0.0010—0.0026)	0.12 (0.005)
Differential pinion gear	Backlash	0.05—0.15 (0.002—0.006)	Adjust with a washer.
	Pinion gear bore diameter	18.042—18.066 (0.7103—0.7113)	—
	Pinion gear-to-pinion shaft clearance	0.059—0.095 (0.0023—0.0037)	0.15 (0.006)
Differential taper roller bearing	Preload	2.8—4.0 N·m (28—40 kg-cm, 24—35 lb-in) at new bearing 2.5—3.7 N·m (25—37 kg-cm, 22—32 lb-in) at old bearing	Adjust with a shim.

## 10. Driveshafts

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Driveshaft	Right boot As installed	496 (19.5)	—
	Left boot As installed	496 (19.5)	—

## 11. Power Steering

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Steering wheel	Play	10 (0.39) Max.	—
	Pinion starting torque N·m (kg-m, ft-lb)	1.2 (0.12, 0.86)	—
Power steering	Angle of rack-guide-screw loosened from locked position	25° ± 5° (2WS), 35° ± 5° (4WS)	—
	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)	7845—8826 (80—90, 1138—1280)	—
	Fluid capacity Reservoir At change	0.5 ℓ (0.53 U.S. qt., 0.44 Imp. qt.) approx 1.7 ℓ (1.8 U.S. qt., 1.5 Imp. qt.)	—
Power steering belt	Deflection midway between pulleys/load	11—13 (0.43—0.51)/98N (10 kg/22 lb) for used belt 9—11 (0.35—0.43)/98N (10 kg/22 lb) after replacement of belt	—
Tie-rod end	Moving effort (maximum load measured at the pin hole at the tip of tie-rod end)	Front 14.6 lbs. (6.6 kg)	—
		Rear 14.6 lbs. (6.6 kg)	

# Standards and Service Limits (cont'd)

□: Rear wheel with 4WS

## 12. Suspension

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Wheel alignment	Camber		Front $0^{\circ}00' \pm 1^{\circ}$	Rear $-0^{\circ}20' \pm 1^{\circ}$ (□ $-0^{\circ}20' \pm 30'$ )
	Caster		$2^{\circ}20' \pm 30'$	
	Toe-in		$0 \pm 2$ ( $0 \pm 0.08$ )	$2 \pm 2$ ( $0.08 \pm 0.08$ )
	Side slip		$0 \pm 2$ ( $0 \pm 0.08$ )	IN $2 \pm 2$ (IN $0.08 \pm 0.08$ )
	Turning angle (MAX.)	Inward wheel	$37^{\circ}20' \pm 2^{\circ}$ (□ $5^{\circ}00' \pm 1^{\circ}$ )	
	△ Rear wheel turning angle (when steering wheel angle is at $127^{\circ}$ )	Outward wheel	$30^{\circ}15' \pm 2^{\circ}$ (□ $5^{\circ}20' \pm 1^{\circ}$ )	
Ball joint	Moving effort (Maximum load measured at the pin rock at the tip of tie-rod end)	Front/Upper	10.4 lbs. (4.7 kg)	
		Front/Lower	7.9 lbs. (3.6 kg)	
		Rear/Upper	7.7 lbs. (3.5 kg)	
		Rear/Lower	13.9 lbs. (6.3 kg)	
Wheel	Rim runout	Steel	$0-1.0$ ( $0-0.039$ )	—
		Aluminum	$0-0.3$ ( $0-0.012$ )	—
	Pitch-circle diameter		100 (3.94)	
	Offset		45 (1.77)	
Wheel bearing	End play	Front	0	0.05
		Rear	0	0.05

△: Maximum steering angle at which front and rear wheel in place.

○: Fuel-Injected Engine    ●: Carbureted Engine

## 13. Brake

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Parking brake lever	Play in stroke 200N (20 kg, 44 lbs)		To be locked when pulled 7—11 notches	
Foot brake pedal	Pedal height	M/T	178 (7.0)	—
		H/M	183 (7.2) 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	Front	○ 21.0 (0.83)	19.0 (0.75)
			● 19.0 (0.75)	17.0 (0.67)
		Rear	10.0 (0.39)	8.0 (0.31)
	Disc runout	Front/Rear	—	0.10 (0.004)/0.15 (0.006)
	Disc parallelism		—	0.015 (0.0006)
	Pad thickness	Front	○ 11.5 (0.45)	3.0 (0.12)
Brake booster	Characteristics		● 9.0 (0.35)	3.0 (0.12)
			8.0 (0.31)	2.0 (0.08)
		Vacuum (mm Hg)	Pedal Pressure kg (lbs)	Line Pressure kg/cm <sup>2</sup> (psi)
		0	20 (44)	○ 11.4 (162)    ● 13.1 (186)
		300	20 (44)	○ 47.8 (680)    ● 54.9 (781)
		500	20 (44)	○ 72.3 (1,028)    ● 83.0 (1,180)

**16. Electrical**

O: Fuel-Injected Engine    ●: Carbureted Engine

Unit: mm (in.)

		MEASUREMENT	STANDARD (NEW)
Ignition	Rated voltage		12 Volts
	Primary winding resistance		1.2—1.5 ohms
	Secondary winding resistance		9,040—13,560 ohms
Ignition wire	Resistance		25,000 ohms max.
Spark plug	Type		Fuel-injected engine:
			KX, KQ, KS, KZ
			BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND) *1
			BCPR5EY-N11 (NGK) BCPR5E-11 (NGK) Q16PR-U11 (ND) *2
			BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND) *3
			KG, KE, KB, KF, KT, KW, KY
			BCPR6E-11 (NGK) Q20PR-UL11 (ND) Q20PR-U11 (ND) *1
			BCPR5E-11 (NGK) Q16PR-UL11 (ND) Q16PR-U11 (ND) *2
			BCPR7E-11 (NGK) Q22PR-UL11 (ND) Q22PR-U11 (ND) *3
			Carbureted engine:
			KG, KE, KB, KF, KT, KW, KY
			BCPR6E-11 (NGK) Q20PR-U11 (ND) Q20PR-UL11 (ND) *1
			BCPR5E-11 (NGK) Q16PR-U11 (ND) Q16PR-UL11 (ND) *2
			BCPR7E-11 (NGK) Q22PR-U11 (ND) Q22PR-UL11 (ND) *3
			KS, KZ
			BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND) *1
			BCPR5EY-N11 (NGK) BCPR5E-11 (NGK) Q16PR-U11 (ND) *2
			BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND) *3
			KX
			BCPR6EY-N11 (NGK) BCPR6E-11 (NGK) Q20PR-U11 (ND) *1
			BCPR5E-11 (NGK) Q16PR-U11 (ND) *2
			BCPR7EY-N11 (NGK) BCPR7E-11 (NGK) Q22PR-U11 (ND) *3
	Gap		1.0—1.1 (0.039—0.043)
Ignition timing	At idling	○ Manual ○ Automatic (in neutral)	15 ± 2° BTDC 15 ± 2° BTDC
		● Manual  ● Automatic (in neutral)	15 ± 2° BTDC (KT, KY) 16 ± 2° BTDC (KB, KE, KF, KG, KW) 20 ± 2° BTDC (KS, KX, KZ) 10 ± 2° BTDC (KT, KY) 15 ± 2° BTDC (KS, KX, KZ) 16 ± 2° BTDC (KB, KE, KF, KG, KW)
Battery	Lighting capacity (20-hour ratio)		65 Ampere hours (European Models) 50 Ampere hours (General Models)
	Starting capacity (5-second ratio)		9.2 V minimum at 300 Ampere draw (European Models) 8.5 V minimum at 300 Ampere draw (General Models)
Alternator	Output		13.5 V/70 A
	Coil resistance (rotor)		2.8—3.0 ohms
	Slip ring O.D.		14.4 (0.57)
	Brush length		10.5 (0.41)
	Brush spring tension		300—360 g (10.6—12.7 oz)
Starting motor	MEASUREMENT		1.0 kW (KE, KQ, KT, KY) 1.4 kW (Except KE, KQ, KT, KY)
			STANDARD (NEW)      SERVICE LIMIT
	Mica depth		0.4—0.5 (0.016—0.020)      0.15 (0.006)
	Commutator runout		0—0.02 (0.0008)      0.05 (0.002)
	Commutator O.D.		28.0—28.1 (1.102—1.106)      27.5 (1.08)
	Brush length		14.3—14.7 (0.56—0.58)      9.3 (0.37)
	Spring pressure (new)		18.1—23.0 N (1.85—2.35 kg, 4.08—5.18 lb.)

# Design Specifications

	ITEMS	METRIC	ENGLISH	NOTE
DIMENSIONS	Overall Length	4,460 mm	175.6 in.	
		4,465 mm	175.8 in.	KW
		4,445 mm	175.0 in.	KQ
	Overall Width	1,710 mm	67.3 in.	
	Overall Height	1,295 mm	51.0 in.	
	Wheelbase	2,565 mm	101.0 in.	
	Track F/R	1,480/1,470 mm	58.3/57.9 in.	
	Ground Clearance	145 mm	5.7 in.	
	Seating Capacity			
	Overhang F/R	895/1,000 mm	35.2/39.4 in.	Includes bumper
		900/1,000 mm	35.4/39.4 in.	KW

## European Model

WEIGHT	Curb weight				
	2.0 Carbureted without CATA				
		5M/T	1,100 kg	2,425 lb	KF, KB, KW
			1,105 kg	2,436 lb	KE
		4A/T	1,120 kg	2,469 lb	KF, KB, KW
			1,125 kg	2,480 lb	KE
	2.0 Carbureted with CATA				
		5M/T	1,115 kg	2,458 lb	KX, KW, KS
			1,110 kg	2,447 lb	KG
		4A/T	1,135 kg	2,502 lb	KX, KW, KS
			1,130 kg	2,491 lb	KG
	2.0 Fuel-Injected without CATA				
		5M/T	1,155 kg	2,546 lb	KF
			1,145 kg	2,524 lb	KG, KE
			1,155 kg	2,546 lb	KW
		4A/T	1,175 kg	2,590 lb	KF
			1,165 kg	2,568 lb	KG, KE
			1,176 kg	2,593 lb	KW
	2.0 Fuel-Injected with CATA				
		5M/T	1,165 kg	2,568 lb	KX
			1,150 kg	2,535 lb	KG
			1,150 kg	2,535 lb	KW
			1,165 kg	2,568 lb	KS
		4A/T	1,185 kg	2,612 lb	KX
			1,170 kg	2,579 lb	KG
			1,170 kg	2,579 lb	KW
			1,185 kg	2,612 lb	KS

CATA: Catalytic converter

## General Model (KQ)

WEIGHT	Curb weight				
	2.0 Fuel-Injected				
		5M/T	1,170 kg	2,579 lb	
		4A/T	1,190 kg	2,623 lb	

## General Model (KY)

WEIGHT	Curb weight				
	2.0 Carbureted				
		5M/T	1,167 kg	2,573 lb	
		4A/T	1,187 kg	2,617 lb	
	2.0 Fuel-Injected				
		5M/T	1,206 kg	2,659 lb	
		4A/T	1,226 kg	2,703 lb	
		5M/T	1,220 kg	2,670 lb	with 4WS
		4A/T	1,240 kg	2,734 lb	with 4WS

## General Model (KT)

WEIGHT	Curb weight				
	2.0 Carbureted				
		5M/T	1,100 kg	2,425 lb	
		4A/T	1,120 kg	2,469 lb	
	2.0 Fuel-Injected				
		5M/T	1,145 kg	2,524 lb	
		4A/T	1,165 kg	2,568 lb	

M/T: Manual Transmission, A/T: Automatic Transmission

**European Model**

	ITEMS		METRIC	ENGLISH	NOTE
WEIGHT	Weight distribution (Front/Rear)				
	2.0 Carbureted without CATA				
		5M/T	665/435 kg	1,466/959 lb	KF, KB, KW
			665/435 kg	1,466/959 lb	KE
		4A/T	685/435 kg	1,510/959 lb	KF, KB, KW
			685/440 kg	1,510/970 lb	KE
	2.0 Carbureted with CATA				
		5M/T	675/440 kg	1,488/970lb	KX, KW, KS
			675/435 kg	1,488/959 lb	KG
		4A/T	695/440 kg	1,532/970 lb	KX, KW, KS
			695/435 kg	1,532/959 lb	KG
	2.0 Fuel-Injected without CATA				
		5M/T	705/450 kg	1,554/992 lb	KF
			695/450 kg	1,532/992 lb	KG, KE
			700/455 kg	1,543/1,003 lb	KW
		4A/T	725/450 kg	1,598/992 lb	KF
2.0 Fuel-Injected with CATA			715/450 kg	1,576/992 lb	KG, KE
			720/455 kg	1,587/1,003 lb	KW
		5M/T	715/450 kg	1,576/992 lb	KX
			700/450 kg	1,543/992 lb	KG
			695/455 kg	1,532/1,003 lb	KW
			705/465 kg	1,554/1,025 lb	KS
		4A/T	735/450 kg	1,620/992 lb	KX
			720/450 kg	1,587/992 lb	KG
			715/455 kg	1,576/1,003 lb	KW
			725/460 kg	1,598/1,014 lb	KS

CATA: Catalytic converter

**General Model (KQ)**

WEIGHT	Weight distribution (Front/Rear)				
	2.0 Fuel-Injected	5M/T	705/465 kg	1,554/1,025 lb	
		4A/T	725/465 kg	1,598/1,025 lb	

**General Model (KY)**

WEIGHT	Weight distribution (Front/Rear)				
	2.0 Carbureted	5M/T	707/460 kg	1,559/1,014 lb	
		4A/T	729/458 kg	1,607/1,010 lb	
	2.0 Fuel-Injected	5M/T	733/473 kg	1,616/1,043 lb	
		4A/T	755/471 kg	1,664/1,038 lb	
		5M/T	738/482 kg	1,627/1,063 lb	with 4WS
		4A/T	760/480 kg	1,675/1,058 lb	with 4WS

**General Model (KT)**

WEIGHT	Weight distribution (Front/Rear)				
	2.0 Carbureted	5M/T	660/440 kg	1,455/970 lb	
		4A/T	680/440 kg	1,499/970 lb	
	2.0 Fuel-Injected	5M/T	695/450 kg	1,532/992 lb	
		4A/T	715/450 kg	1,576/992 lb	

M/T: Manual Transmission, A/T: Automatic Transmission

# Design Specifications (cont'd)

	ITEMS		METRIC		ENGLISH		NOTE
ENGINE	Type	Fuel-Injected	Water cooled, 4-cycle D.O.H.C.				except radiator, transmission
		Carbureted	Water cooled, 4-cycle S.O.H.C.				
	Cylinder Arrangement		4-cylinder in line, transverse				
	Bore and Stroke		81 x 95 mm	3.19 x 3.74 in.			
	Displacement		1,958 cm <sup>3</sup> (cc)	119 in.			
	Compression Ratio	Fuel-Injected	9.0 (KS, KX, KZ), 9.4 (KQ), 9.5 (KY), 10.5 (KB, KE, KF, KG, KW, KT)				
		Carbureted	9.1 (KS, KX, KZ), 9.2 (KB, KE, KF, KG, KT, KW, KY)				
	Valve Train	Fuel-Injected	4 Valves Per Cylinder, dual overhead camshafts				
		Carbureted	3 Valves Per Cylinder, single overhead camshaft				
	Lubrication System		Pressure feed				
Fuel Required		Unleaded grade gasoline with 91 research octane number or higher. (KS, KQ, KX, KZ) Leaded grade gasoline with 91 research octane number or higher. (KT, KY) Leaded grade gasoline with 98 research octane number or higher. (KB, KE, KF, KG, KW)					
Engine wet Weight	Fuel-Injected	126 kg	278 lb.				
	Carbureted	123 kg	271 lb.				
STARTER	Type	MITSUBA	Gear reduction				
	Normal output		1.0 kW (KE, KQ, KT, KY)	1.4 kW (except KE, KQ, KT, KY)			
	Normal voltage		12 V				
	Hour rating		30 seconds				
	Direction of rotation		Clockwise as viewed from gear end				
	Weight	MITSUBA	3.7 kg	8.1 lb.			
TRANSMISSION	Clutch	5-M/T	Single plate dry, diaphragm spring.				A: KZ, KS, KW, KB, KX (carbureted) KY, KT, KQ B: KE, KF, KX (fuel- injected) C: KE (fuel- injected), KF (fuel-injected), KX D: except KE (fuel- injected), KF (fuel-injected), KX
		4-A/T	Torque converter				
	Transmission	5-M/T	5 speeds forward, 1 speed reverse, constant mesh.				
		4-A/T	4 speeds forward, 1 speed reverse, constant mesh.				
			5-M/T		4-A/T		
			A	B	C	D	
	Primary Reduction		1.000	1.000	1.000	1.000	
	Gear Ratio	I	3.166	3.166	2.529	2.529	
		II	1.857	1.772	1.392	1.444	
		III	1.259	1.222	1.030	1.030	
		IV	0.935	0.935	0.763	0.763	
		V	0.794	0.794	—	—	
		Reverse	3.000	3.000	1.904	1.904	
	Final Reduction	5-M/T	Fuel-Injected, carbureted (KX): Single helical gear, 4,062				
			Carbureted (except KX): Single helical gear, 4,187				
		4-A/T	Single helical gear, 4,066				
Clutch Facing Area		176 cm <sup>2</sup>		27.3 sq. in.			

M/T: Manual Transmission A/T: Automatic Transmission

	ITEMS		METRIC	ENGLISH	NOTE
AIR CONDITIONER	Cooling Capacity		2,915 Kcal/h	11,566 BTU/h	
	— Conditions:				
	Compressor min <sup>-1</sup> (rpm)			1,800 min <sup>-1</sup> (rpm)	
	Outside air temperature		27.0°C	80.6°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		390 cm <sup>3</sup> /h	13,773 cu. ft/h	
	Compressor	Type No. of cylinders Bean displacement Max. min <sup>-1</sup> (rpm) Lubricant/capacity With dessicant	130 cc/rev. 140 cc	Rotary type 4—3 7,000 min <sup>-1</sup> (rpm) 7.93 cu. in/rev. 4.73 US oz.	
STEERING SYSTEM	Receiver Dryer		Includes fusible safety plug.		
	Condenser		Corrugated fin type		
	Evaporator		Corrugated fin type		
	Blower	Type Motor input Speed control Max. capacity	390 m <sup>3</sup> /h	Sirocco fan 145 W (12 V) 4 position 13,773 cu ft/h	
	Temp. Control		Air-mix type		
	Comp. Clutch	Type Power consumption	Dry, single plate, V-belt 48 W max. 12 V		
	Refrigerant	Type Quantity RHD LHD	0.85 ± 0.05 kg 0.90 ± 0.05 kg	R-12 1.76 ± 0.11 lbs 1.98 ± 0.11 lbs	
	Type		Rack and Pinion		
	Overall Ratio		14.9 : 1		
SUSPENSION SYSTEM	Turns, lock-to-lock		2.84		
	Steering Wheel Dia.		370 mm	14.6 in.	
	Power Steering Oil Capacity		1.7 lit.	1.8 U.S. qt., 1.5 Imp qt.	
	Power Steering Oil		HONDA Genuine Power Steering Fluid P/N 08208—99961		
	Type, Front/Rear		Independent by double wishbones, coil springs		
	Shock Absorber	Front/Rear	Telescopic, hydraulic		
	Wheel alignment				
	Camber	Front Rear	0° -0°20'		
	Caster	Front Rear	2°20'		
WHEEL ALIGNMENT	Toe-in	Front Rear	0 mm 2 mm	0 in. 0.080 in.	
	Kingpin Inclination		9°45'		
	Type, Front/Rear		Power assisted self-adjusting ventilated disc		
	Pad Surface Area:	Front/Rear	○ 43.3/21.0 cm <sup>2</sup> ● 35.8/20.9 cm <sup>2</sup>	6.7/3.3 sq. in. 5.5/3.2 sq. in.	
	Effective Disc Dia.	Front	○ 214 mm ● 194 mm	8.4 in. 7.6 in.	
		Rear	208 mm	8.2 in.	
	Parking Brake Kind and Type		Mechanical actuating, rear two wheel brakes		
	Front/Rear				
	Spare				
BRAKE SYSTEM			○ 195/60VR 14 (except KY) ○ 195/60 R14 85V (KY only) ● 185/70R 13 85H ● 185/70R 13 86H (KF, KS, KW, KE only) T135/70D 15 (KE (all) and with ALB) ○ T105/70D 14 (KS, KW, KB without ALB) ● T105/80D 13 (except KE, KY, KT without ALB)		
TIRES					

○: Fuel-Injected model ●: Carbureted Model

(cont'd)

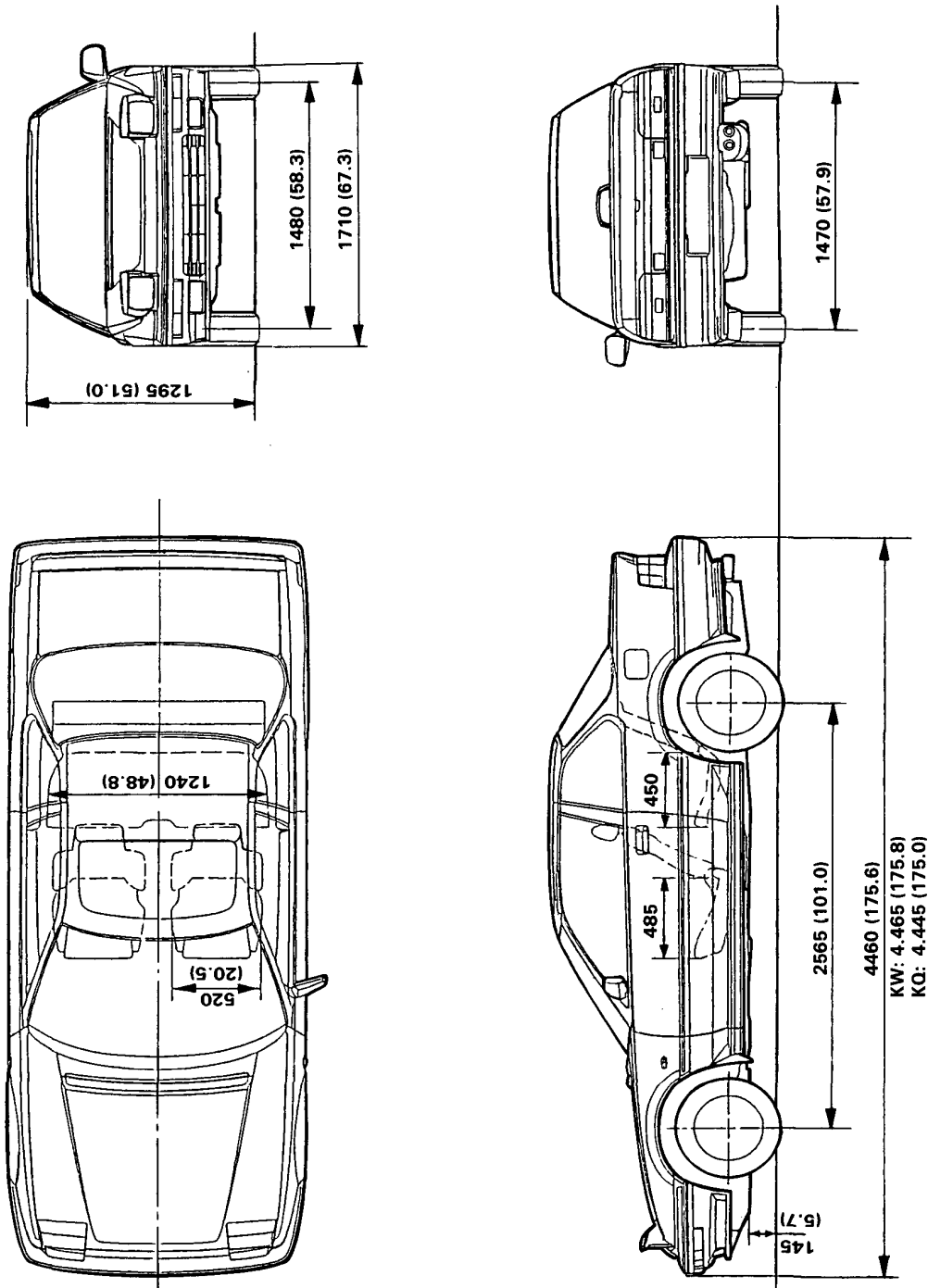
## Design Specifications (cont'd)

	ITEMS	METRIC	ENGLISH	NOTE
ELECTRICAL	Battery	70D: 12 V-65 AH, MF 55B: 12 V-47 AH, MF	55D: 12 V-50 AH, MF	European Models General Models
	Starter	12 V-1.4 kW		
	Alternator	12 V-70 amps		
	Fuses In the fuse box	7.5 A, 10 A, 15 A, 20 A, 30 A		
	In the relay box	10 A, 15 A, 20 A, 30 A, 40 A, 70 A		
	Headlights High/Low	12 V-60/55 W		
	Day Time Running Lights	12 V-21 W		
	Passing Lights	12 V-55 W		KS, KW Austrian Model
	Front Turn Signal Lights	12 V-21 W		
	Rear Turn Signal Lights	12 V-21 W		
	Side Turn Signal Lights	12 V-5 W		
	Stop/Taillights	12 V-21/5 W		
	Side Marker Lights	12 V-5 W		
	Rear Fog Lights	12 V-21 W		
	Back-up Lights	12 V-21 W		
	License Plate Lights	12 V-5 W, 8 W		
	Gauge Lights	12 V-3.4 W, 1.4 W		
	Indicator Lights	12 V-1.2 W, 1.4 W		
	Warning Lights	12 V-1.4 W		
	Glove Box Lights	12 V-3.4 W		
	Dome Light	12 V-8 W		
	Trunk Light	12 V-3.4 W		
	Fuse Box Light	12 V-3.4 W		
	Illumination and Pilot Lights	12 V-1.4 W, 1.2W 0.91 W, 0.56 W, LED		
	Heater Illumination Lights	12 V-1.4 W		

# Body Specifications

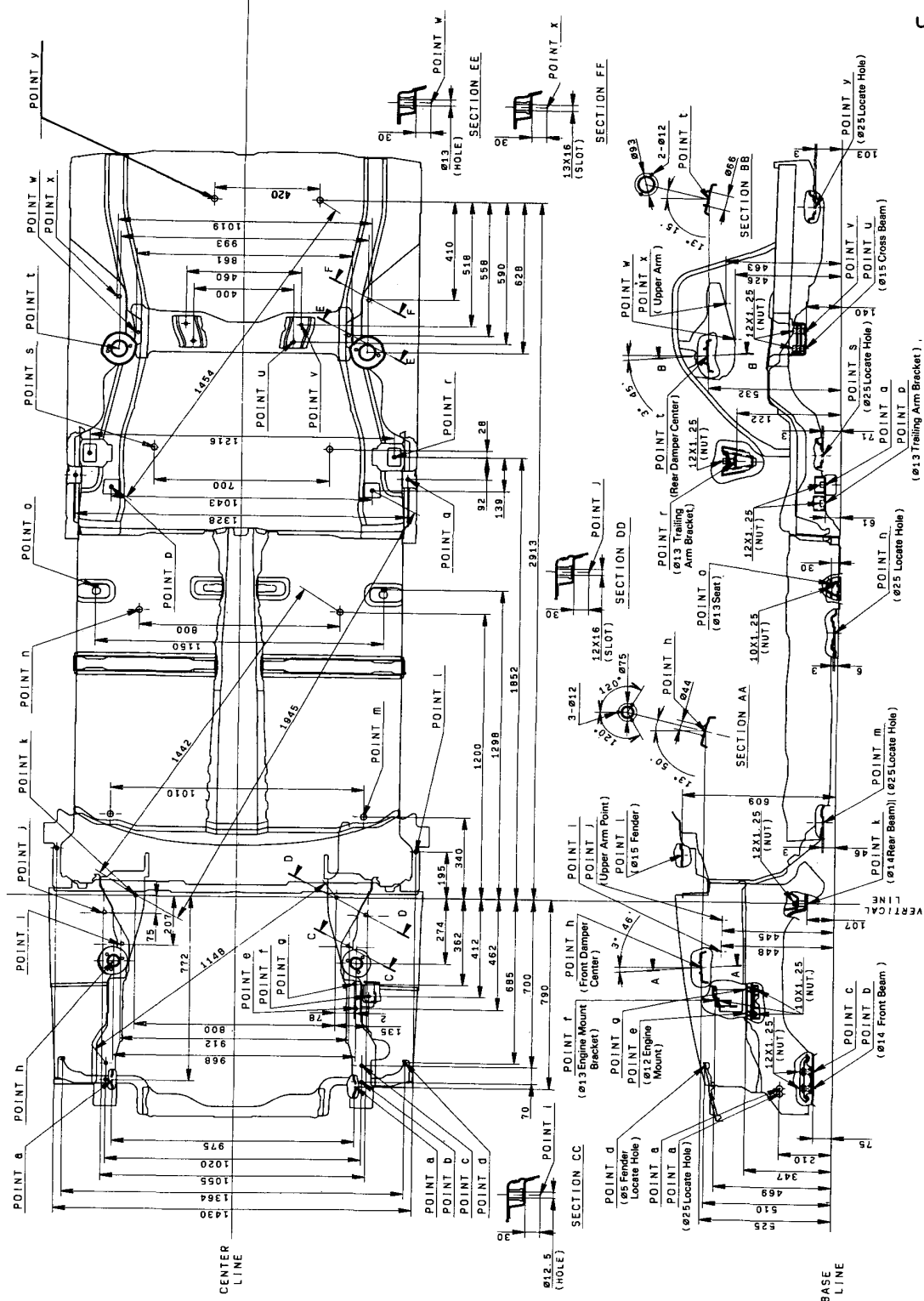
specs

Unit: mm (in.)



# Frame Repair Chart

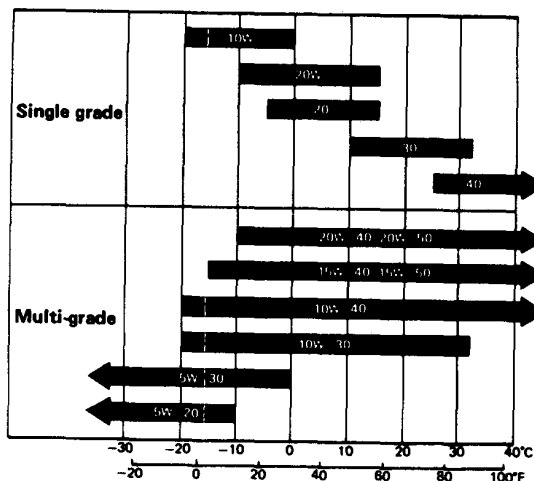
Unit: mm



# Lubrication Points

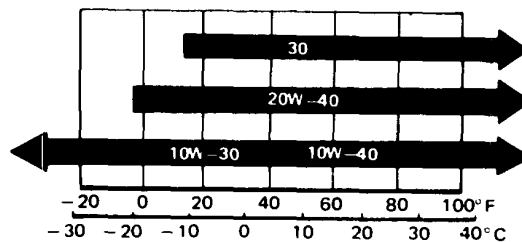
No.	LUBRICATION POINTS	LUBRICANT
1	Engine	API Service Grade: SE or SF SAE Viscosity: See chart below
2	Transmission Manual Automatic	API Service Grade: SE or SF SAE Viscosity: See chart below DEXRON® or DEXRON® II Automatic transmission fluid
3	Brake reservoir	Brake fluid DOT 3
4	Clutch reservoir	
5	Steering gearbox (Power steering)	Honda steering grease P/N 08733—B070E
6	Steering ball joint	Multi-purpose Grease
7	Suspension ball joints	
8	Steering boot	
9	Shift lever pivot (Manual steering)	
10	Steering column bushings	
11	Select lever (Automatic transmission)	
12	Pedal linkage	
13	Brake master cylinder push rod	
14	Trunk hinges	
15	Door hinges upper and lower	
16	Door opening detents	
17	Fuel filler lid	
18	Engine hood hinges	
19	Engine hood latch	
20	Caliper Piston seal Dust seal Caliper pin Piston	Silicone Grease
21	Power steering reservoir	Honda power steering fluid P/N 08208—99961

**Recommended Engine Oil**  
(SE or SF Grade Only)



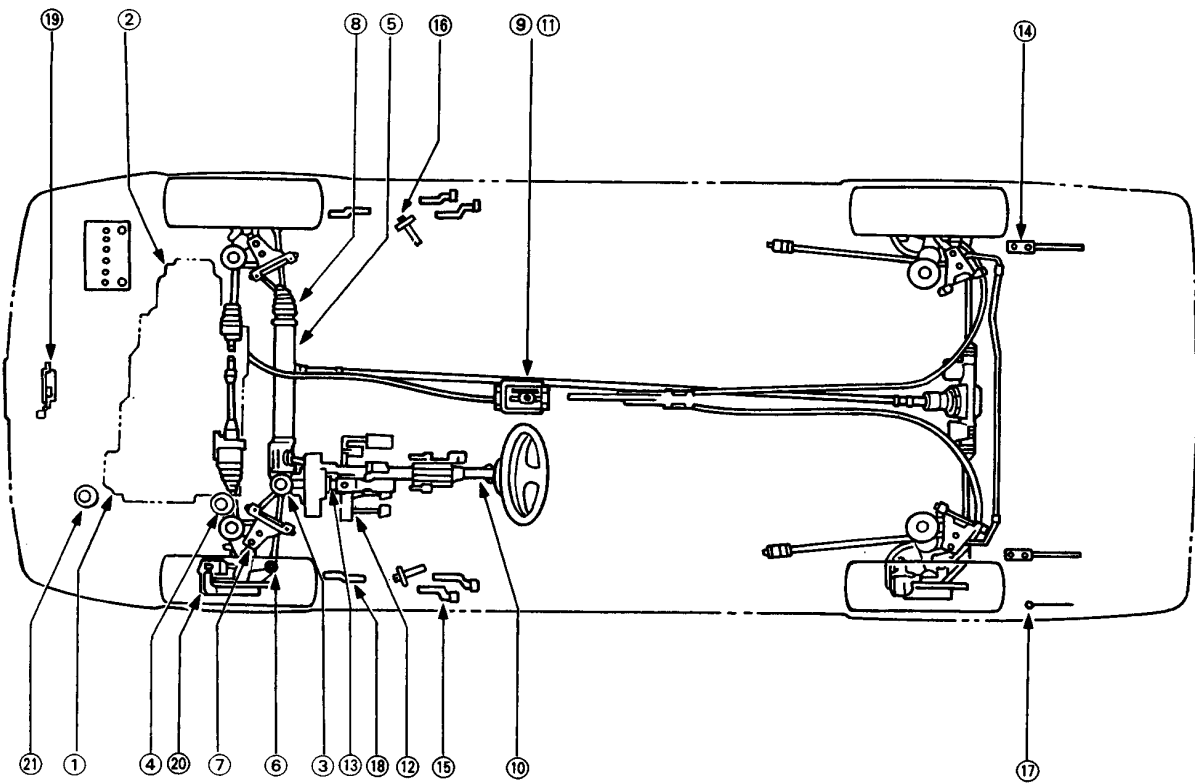
Engine oil viscosity for ambient temperature ranges.

**Recommended Manual Transmission Oil**



Transmission oil viscosity for ambient temperature ranges.

**CAUTION:** Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.



# Maintenance Schedule

Service at the interval of listed x 1,000 km (or miles) or after that number of months, whichever comes first.						
ITEMS	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 (except KS, KX types)		I	I	I	I	I
Idle speed and idle CO (KS, KX types)						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	
■ Radiator coolant					R <sup>*1</sup>	
Cooling system, hoses and connections			I		I	
E.G.R. system (for cars using unleaded gasoline) <sup>*2</sup>						I
Secondary air supply system (for carburetor type) <sup>*3</sup>						I
Air cleaner element (dry type) <sup>*4</sup>		R	R	R	R	R
Air cleaner element (viscous type) <sup>*5</sup>			R		R	
Fuel filter (including aux. filter for carburetor type)			R		R	
Intake air temp. control system (for carburetor type)						I
Tank, fuel line and connection			I		I	
Throttle control system (for carburetor type, except KS, KX types)			I		I	
Throttle control system (for carburetor type, KS, KX types)						I
Choke mechanism (for carburetor type)			I		I	
Choke opener operation (for carburetor type)						I
Evaporative emission control system <sup>*6</sup>						I
Ignition timing and control system (except KS, KX types)			I		I	
Ignition timing and control system (KS, KX types)						I
Spark plug (for cars using unleaded gasoline)			R <sup>*7</sup>		R <sup>*7</sup>	
Spark plug (for cars using leaded gasoline)		R	R	R	R	R
Distributor cap and rotor (except KS, KX types)			I		I	
Distributor cap and rotor (KS, KX types)						I
Ignition wiring (except KS, KX types)			I		I	
Ignition wiring (KS, KX types)						I
Positive crankcase ventilation valve (except KS, KX types)			I		I	
Positive crankcase ventilation valve (KS, KX types)						I
Blow-by filter (for carburetor type)			I		I	
Brake hoses and lines (including ALB hoses and pipes for ALB models)		I	I	I	I	I
Brake fluid (including ALB fluid for ALB models)			R		R	
Front brake discs and calipers		I	I	I	I	I
Front brake pads	Inspect every 10,000 km (6,000 miles) or 6 months					
Rear brake discs, calipers and pads			I		I	
Parking brakes		I	I		I	
Exhaust pipe and muffler		I	I	I	I	I
Suspension mounting bolts		I	I	I	I	I
Front wheel alignment (except 4WS models)		I	I	I	I	I
Front and rear wheel alignment (for 4WS models)		I	I	I	I	I
Steering operation, tie rod ends, steering gear box and boots (including center shaft for 4WS models)	except 4WS models	I	I		I	
	for 4WS models	I	I	I		I
ALB high pressure hose (Standard for some types)					R	
ALB operation (Standard for some types)		I	I		I	
Power steering system		I	I	I	I	I
Power steering pump belt			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.

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

<sup>\*2</sup> Except KQ type.

<sup>\*3</sup> For cars using unleaded gasoline.

<sup>\*4</sup> Except European and KQ types.

<sup>\*5</sup> For European and KQ types.

<sup>\*6</sup> For cars using unleaded gasoline, carburetor type using leaded gasoline and KY type.

<sup>\*7</sup> For KS type, spark plug replacement at the mileage interval meets Swedish A12 regulation. However, service at the monthly interval is still recommended for low mileage vehicles due to keeping better performance.



**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, D, E, F	Rear brake discs, calipers and pads	I	Every 20,000 km (12,000 miles) or 12 months
B, C, E	Power steering system	I	Every 10,000 km (6,000 miles) or 6 months

**CAUTION:** Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged period. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

## Engine Tune-up

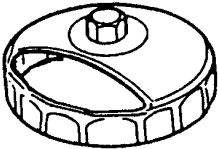


### Outline of Model Change

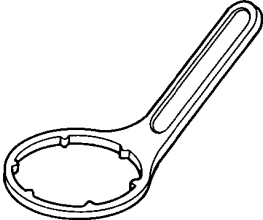
The oil filter has been changed.

# Special Tools

Ref. No.	Tool Number	Description	Q'ty	Remarks
①	07912-6110001	Oil Filter Socket	1	Used for FRANCE- MADE Oil Filter
②		Oil Filter Wrench (Apply from LABINAL S.A.)	1	



①



②



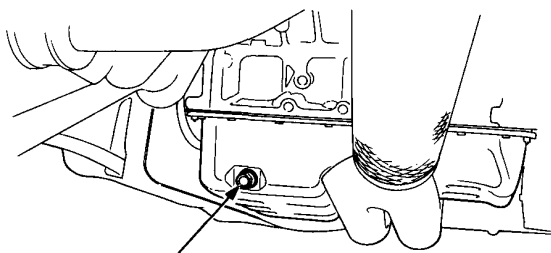
# Engine Tune-up

## Engine Oil Replacement

1. Warm up the engine.
2. Drain the engine oil.

**CAUTION:** Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

**NOTE:** Remove the filler cap to speed draining.



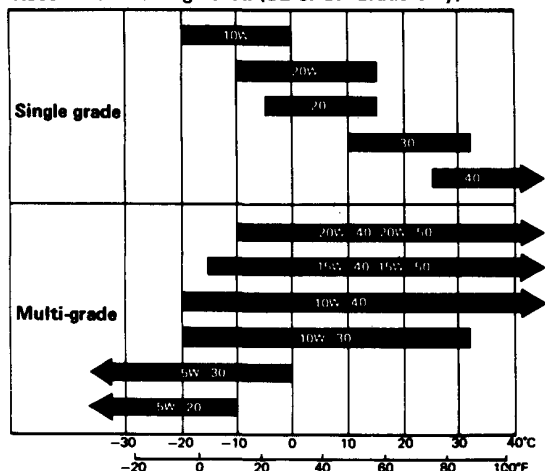
**OIL PAN DRAIN PLUG**  
45 N·m (4.5 kg-m, 33 lb-ft)

3. Reinstall the drain plug with a new washer, and refill with the recommended oil.

<b>Capacity</b>	3.4 lit (3.6 U.S. qt., 3.0 Imp. qt.) Exclude Oil filter 3.9 lit (4.1 U.S. qt., 3.4 Imp. qt.) Adding replaced oil filter 4.8 lit (5.1 U.S. qt., 4.2 Imp. qt.) Means designed value
<b>Change</b>	Every 10,000 km (6,000 mi.) or 6 months.

**NOTE:** Oil filter should be replaced at each oil change.

### Recommended Engine Oil (SE or SF Grade only)



Expected Ambient Temperature before next oil change

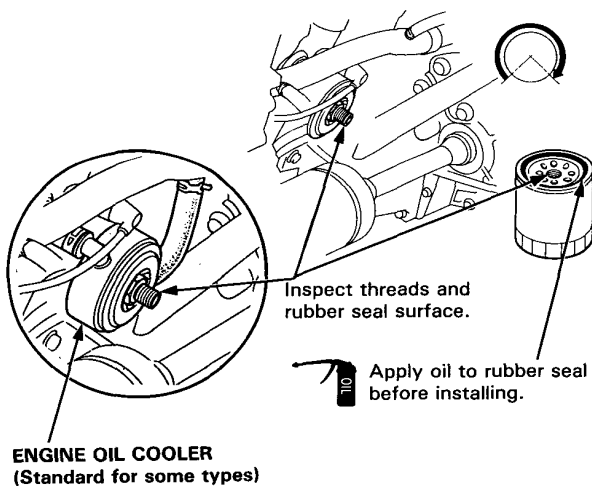
# Engine Tune-up

## Oil Filter Replacement

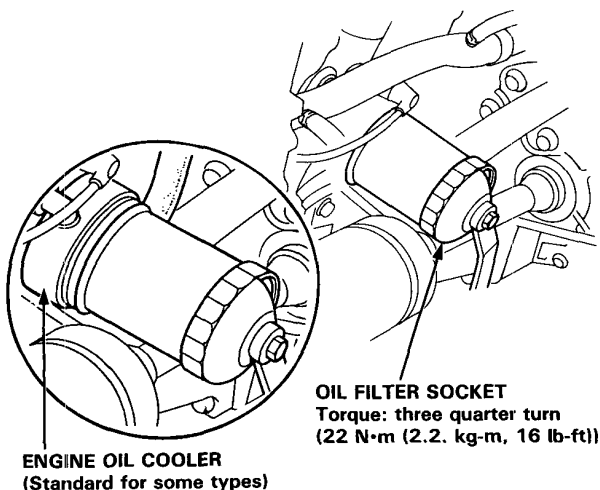
**WARNING** After the engine has been run, the exhaust pipes will be hot; be careful when working around the exhaust manifold.

**CAUTION:** Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

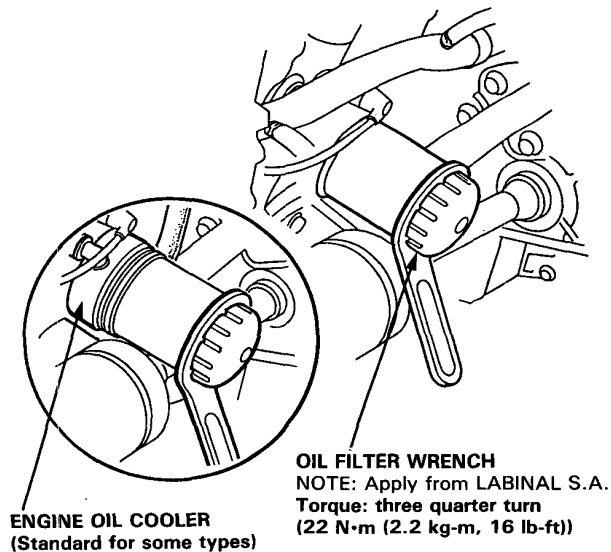
1. Remove the oil filter with the special oil filter socket or wrench.
2. Inspect the threads and rubber seal on the new filter. Wipe off seat on engine block, then apply a light coat of oil to the rubber seal, and install filter.
3. After the rubber seal is seated, tighten the filter by turning approximately three quarter turn.



### JAPAN-MADE TYPE (filter size 80.0 mm)



### FRANCE-MADE TYPE (filter size 76.2 mm)



4. Start the engine and check the filter for oil leakage.

## Timing Belt

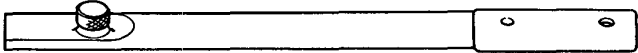
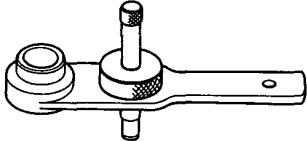



### Outline of Model Change

The crankshaft pulley bolt has been changed.

# Special Tools

Ref. No.	Tool Number	Description	Q'ty	Remarks
①	07JAB—0010000	Crank Pulley Holder Set	1	Crankshaft pulley
①-1	07JAA—0010200	Socket Wrench, 19 mm	1	} Component tools
①-2	07JAB—0010100	Pulley Holder Attachment	1	
①-3	07JAB—0010200	Handle	1	



①-1

①-2

①-3



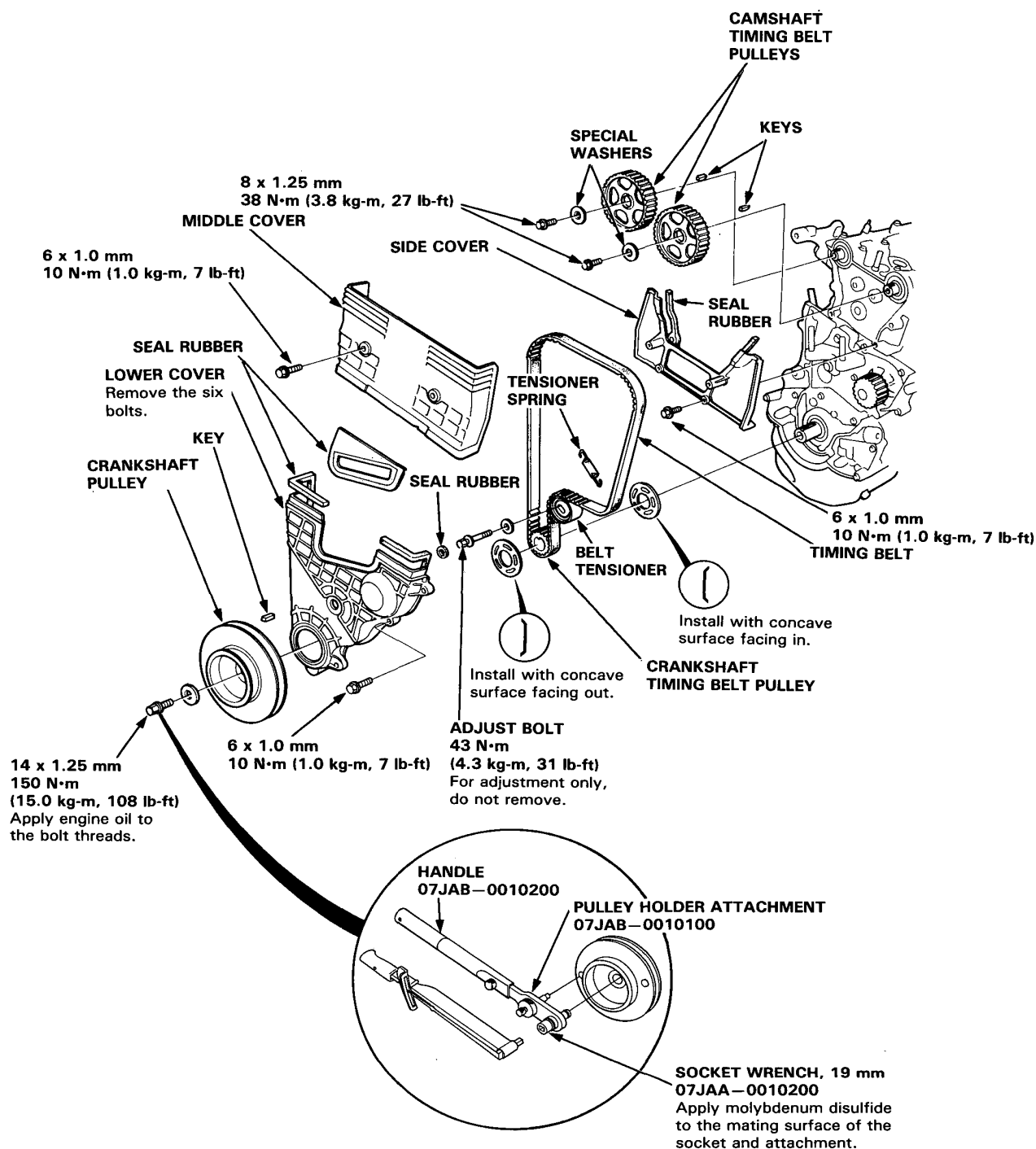
# Timing Belt

## Illustrated Index

### NOTE:

- Before removing, mark direction of rotation.
- Refer to base manual to position the crankshaft and timing belt pulleys before installing timing belt.

### Fuel-Injected Engine:



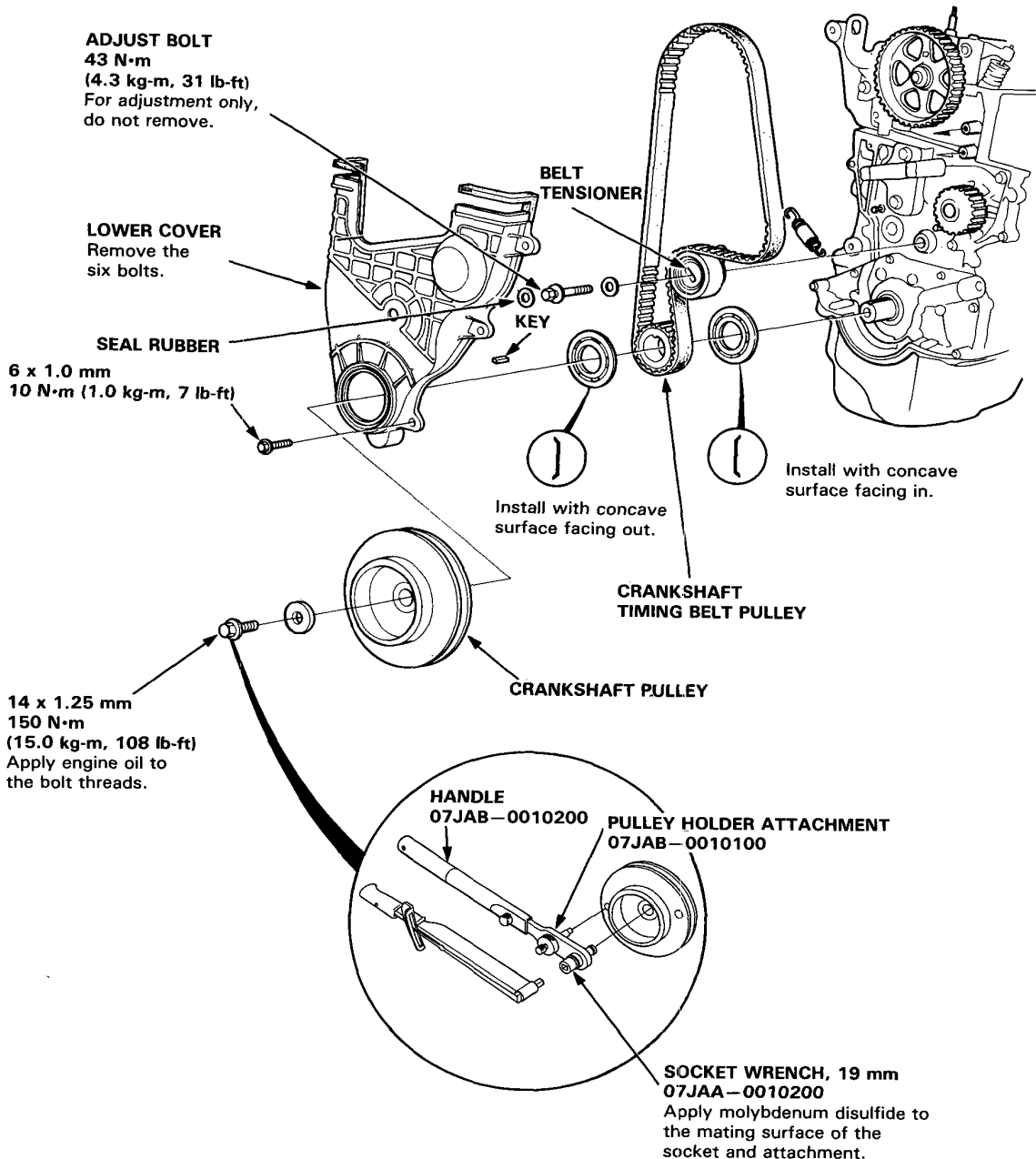
# Timing Belt

## Illustrated Index

### NOTE:

- Before removing, mark direction of rotation.
- Refer to base manual to position the crankshaft and timing belt pulleys before installing timing belt.

### Carbureted Engine:



# Engine Removal/Installation



## Outline of Model Changes

- The air intake hose of the fuel injected engine has been changed.
- The cruise control actuator has been added to the fuel injected engine.
- The torque values of the engine mounting bolts and nuts have been changed.

# Engine Removal/Installation

## WARNING

- Make sure jacks and safety stands are placed properly (pages 1-6 thru 8), and hoist brackets are attached to correct positions on the engine (page 5-16).
- Apply parking brake and block rear wheels, so car will not roll off stands and fall on you while working under it.

**CAUTION:** Use fender covers to avoid damaging painted surfaces.

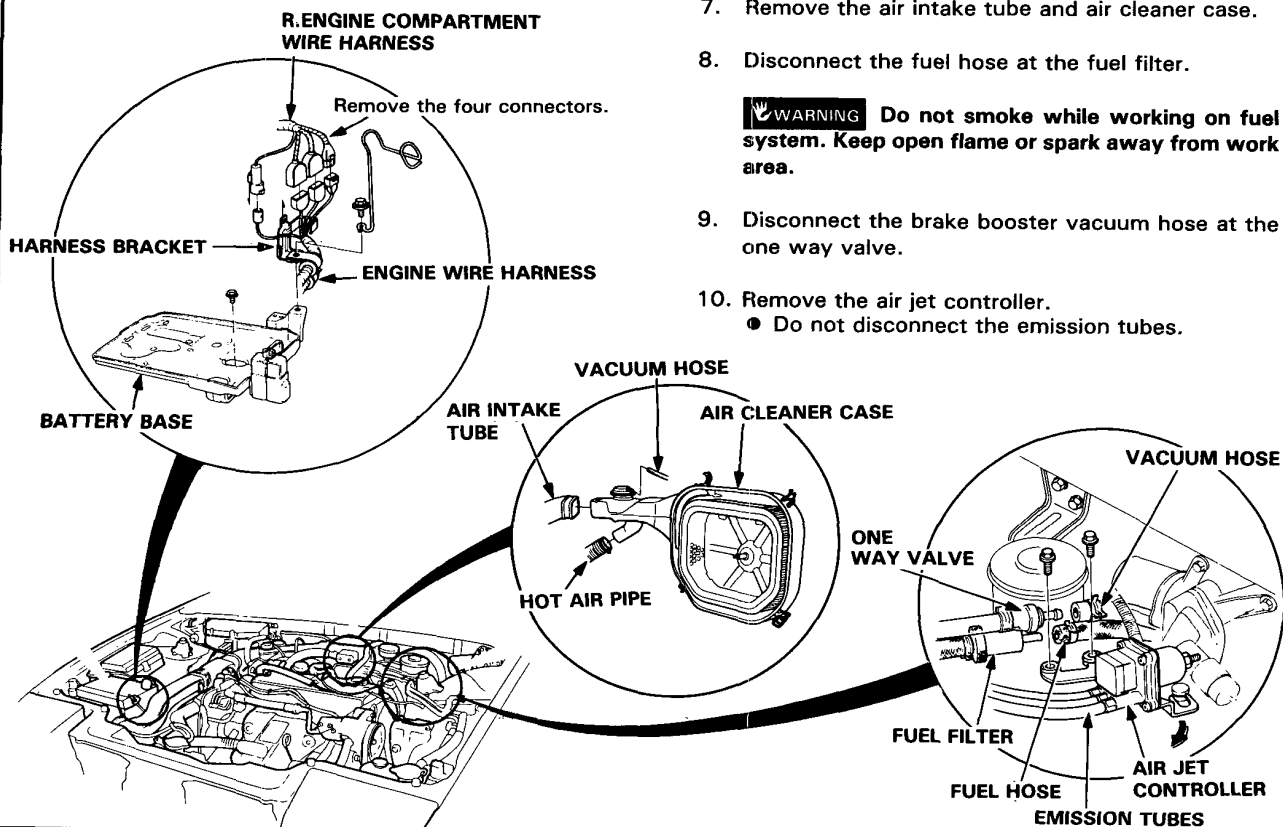
## WARNING

Use care when removing radiator cap and when draining radiator, engine and transmission, to avoid scalding by hot coolant or oil.

1. Disconnect the battery negative terminal first, then the positive terminal.
2. Unbolt the hood brackets and remove the hood after removing the washer hose.

**CAUTION:** Use care when storing the hood to avoid damaging the paint.

## Carbureted Engine:



**CAUTION:** Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

3. Remove the drain plug to drain engine oil.
  - Remove the filler cap to speed draining.

**CAUTION:** After draining the engine oil, always replace drain washers with new ones.

4. Drain transmission oil.
  - Use a 3/8" drive socket wrench to remove the drain plug.
  - Remove the level gauge or filler bolt to speed draining.
5. Loosen the drain plug to drain coolant from the radiator.
  - Remove the radiator cap to speed draining.

## Carbureted Engine (Fuel-Injected Engine, go to step 11.)

6. Remove the battery and battery base.
7. Remove the air intake tube and air cleaner case.
8. Disconnect the fuel hose at the fuel filter.

## WARNING

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

9. Disconnect the brake booster vacuum hose at the one way valve.
10. Remove the air jet controller.
  - Do not disconnect the emission tubes.



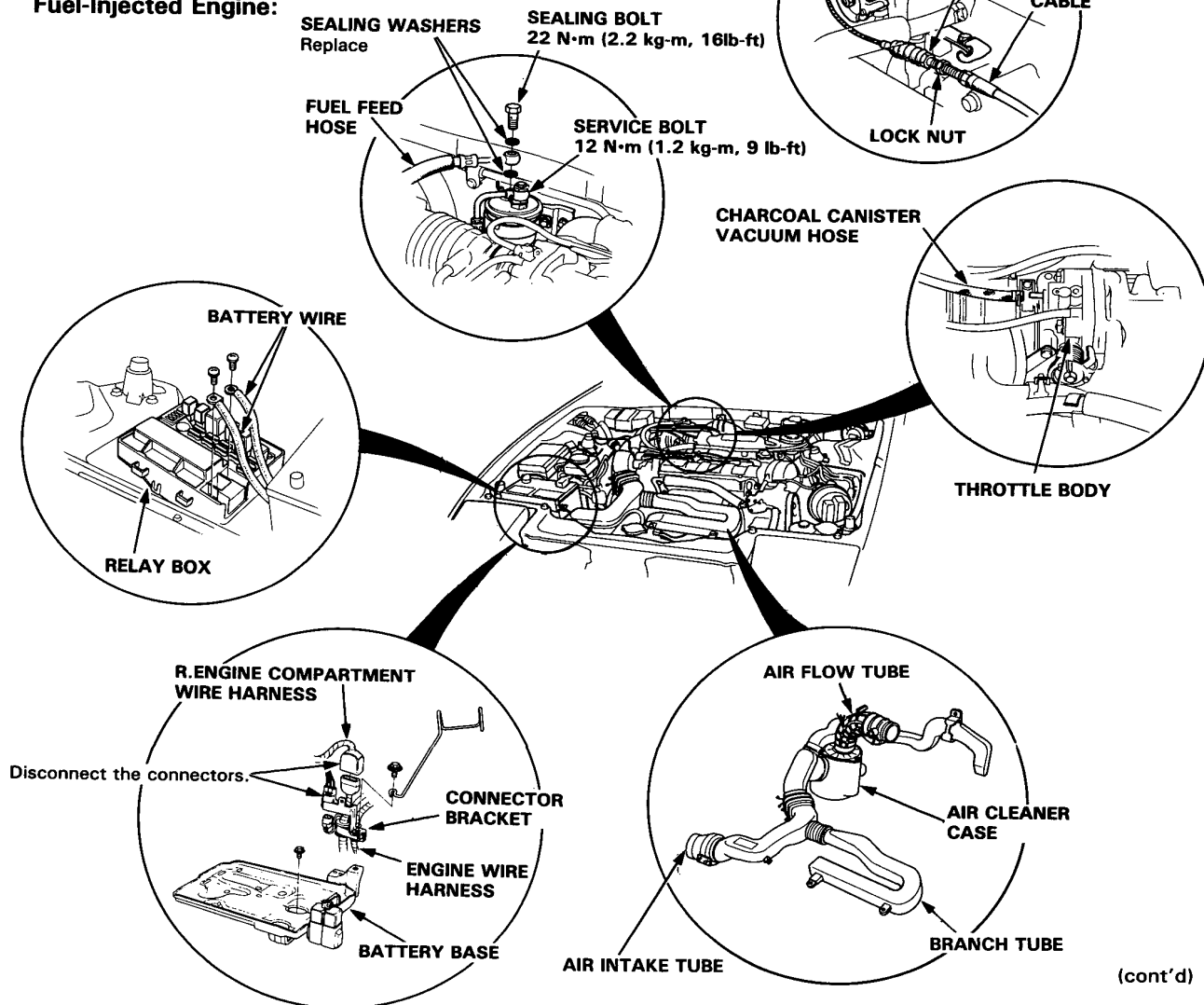
**Fuel-Injected Engine (Carbureted Engine, go to step 16)**

11. Remove the battery and the battery base.
12. Remove the air intake tube air cleaner and branch tube as an assembly.
13. Remove the battery wire from the relay box.
14. Relieve fuel pressure.

**WARNING** Do not smoke while working on fuel system, keep open flame or spark away from work area. Drain fuel only into an approved container.

15. Disconnect the fuel feed hose and fuel return hose.

**Fuel-Injected Engine:**



(cont'd)

# Engine Removal/Installation

(cont'd)

18. Disconnect the ignition coil wire, radio noise condenser ground wire and ignition primary connector (Carbureted Engine only), then remove the distributor.

19. Disconnect the upper and lower radiator hoses.

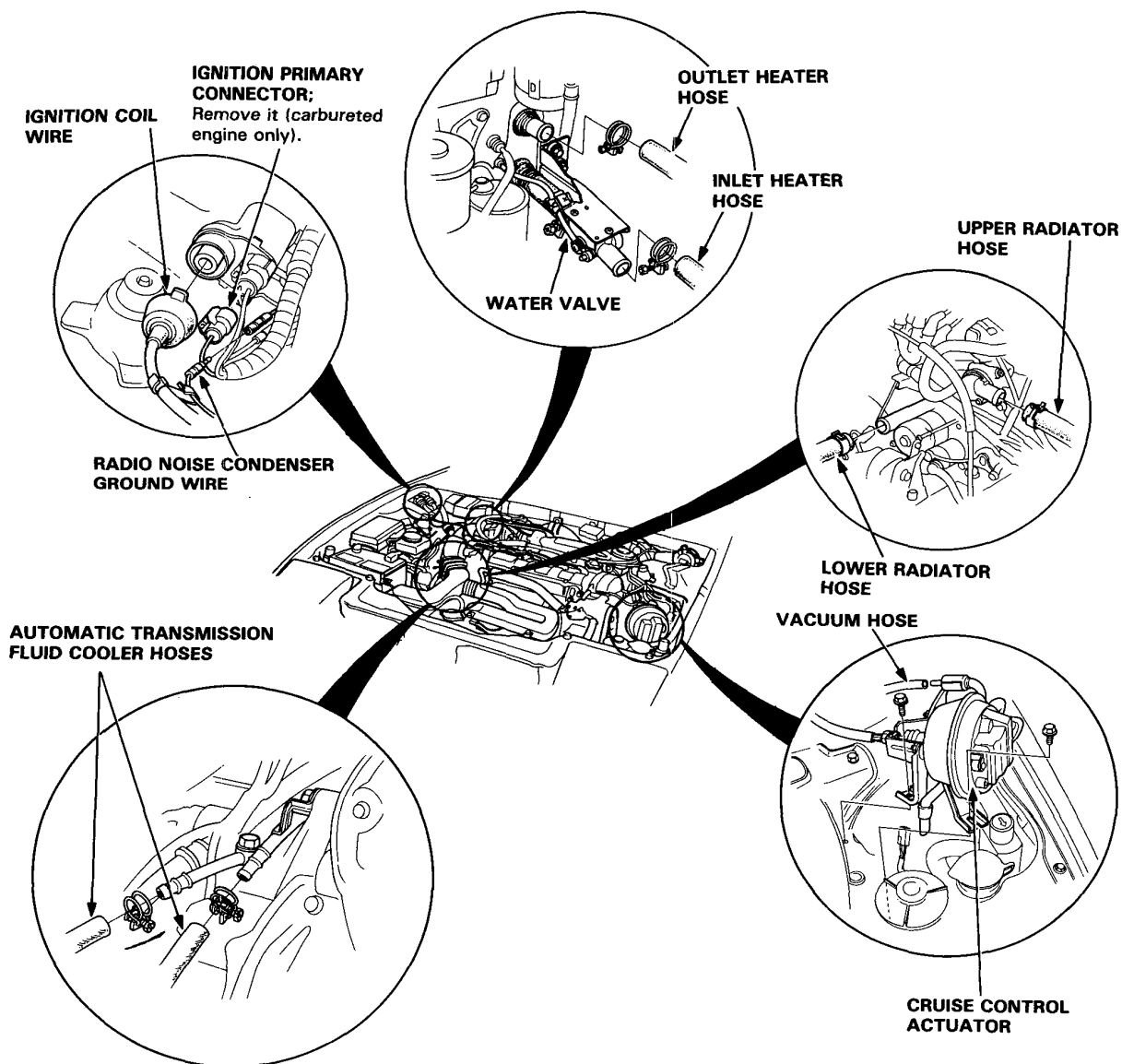
20. Disconnect the inlet and outlet heater hoses.

21. Disconnect the automatic transmission fluid (ATF) cooler hoses (A/T).

● Plug the ATF cooler hoses.

22. Disconnect the vacuum hose, then remove the cruise control actuator (if equipped with cruise control).

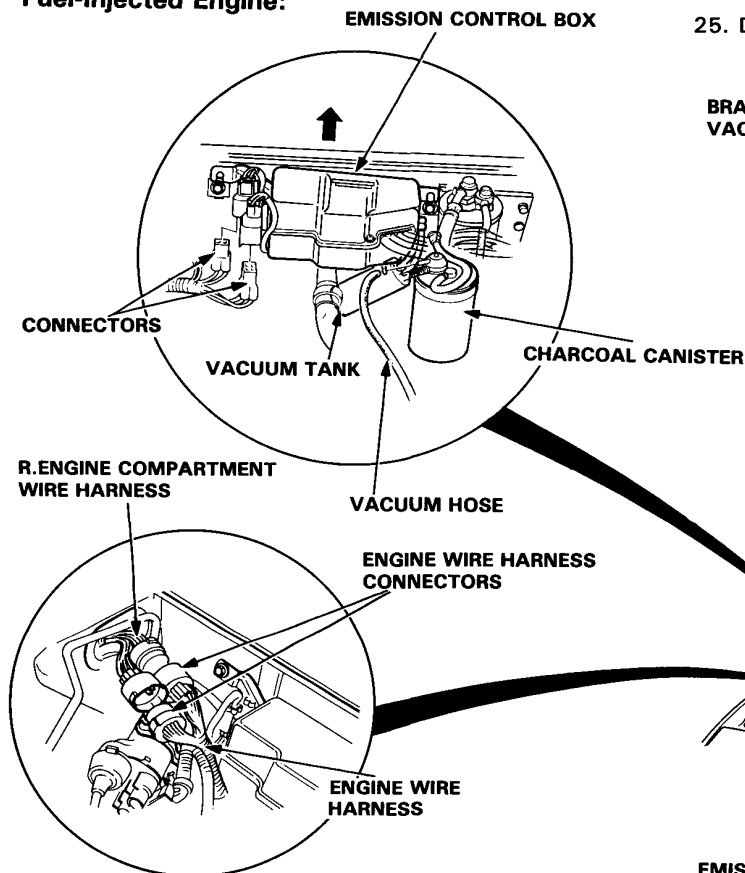
**Fuel-Injected Engine shown; Carbureted Engine similar:**





23. Disconnect the engine wire harness connectors from R. engine compartment wire harness (Fuel-Injected Engine only).

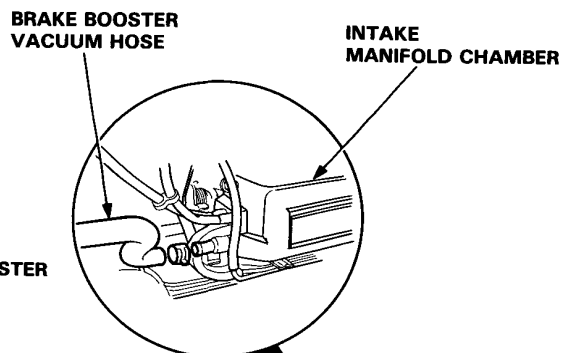
**Fuel-Injected Engine:**



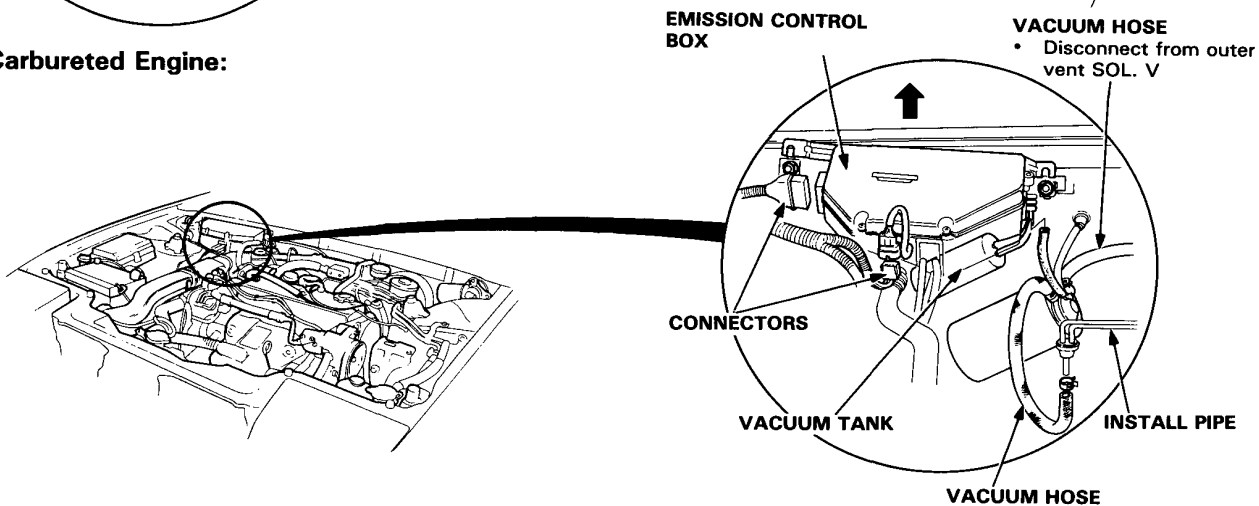
24. Disconnect the two connectors, then remove the emission control box and vacuum tank.

- Don't disconnect the vacuum hoses.

25. Disconnect the brake booster vacuum hose.



**Carbureted Engine:**



(cont'd)

# Engine Removal/Installation

(cont'd)

26. Remove the power steering pump belt and alternator belt.

27. Disconnect the inlet hose and remove the power steering pump.

**CAUTION:** When the hose is disconnected, fluid will flow out; protect the alternator by covering it with a shop towel.

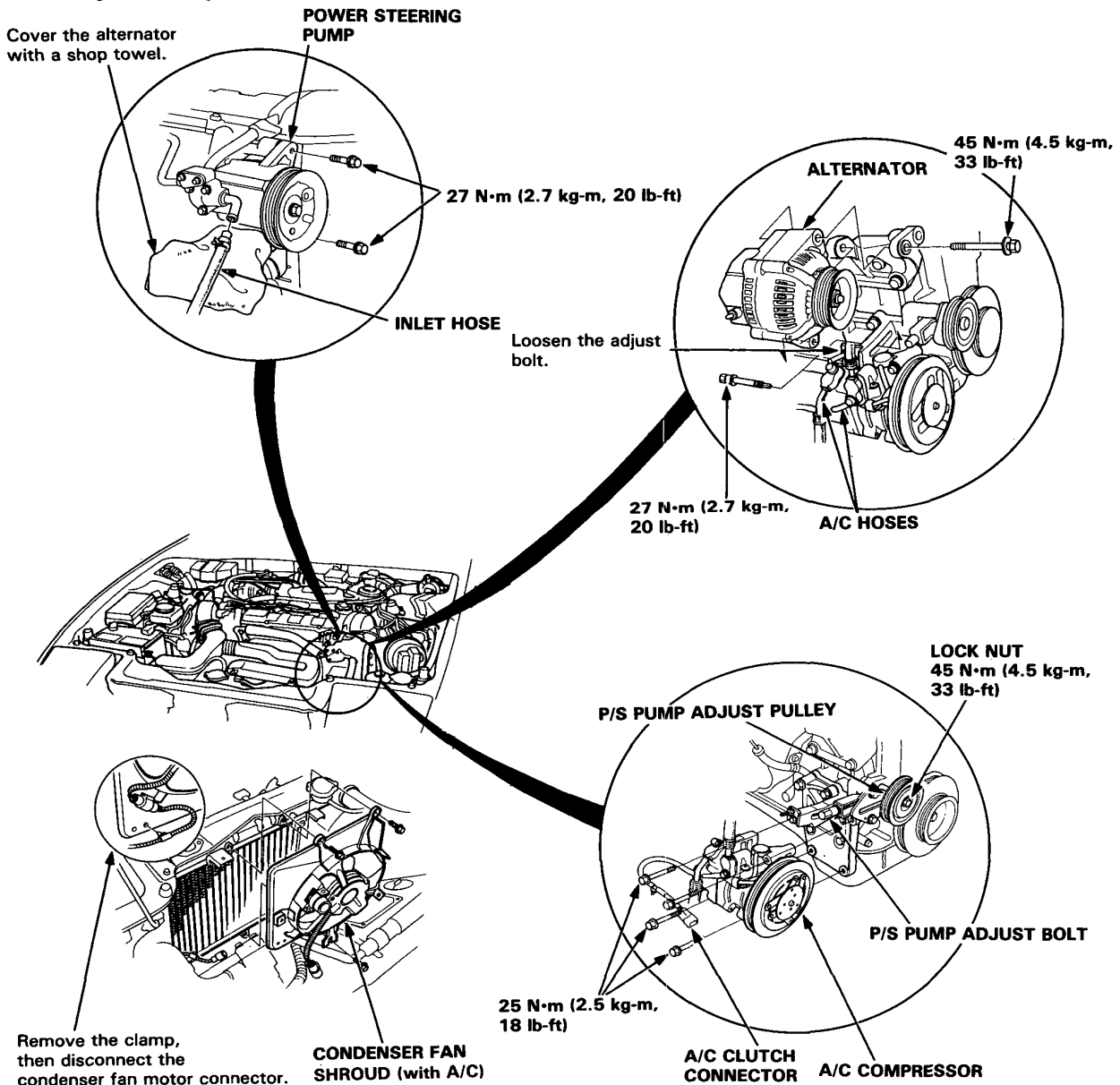
28. Remove the alternator.

29. Remove the condenser fan shroud.

30. Remove the air conditioning (A/C) compressor, then mount compressor on the front beam.

- Do not disconnect the A/C hoses.

Fuel-Injected Engine shown; Carbureted Engine similar:





31. Disconnect the shift cable and select cable from the transmission, then remove the cable bracket (M/T).

32. Remove the automatic transmission shift cable from the transmission (A/T).

NOTE: Take care not to bend the cable when removing it. Do not use pliers to remove the cable from the linkage. Always replace a kinked cable with a new one.

33. Remove the transmission ground wire.

34. Remove left axle and half shaft.

35. Remove clutch slave cylinder.

NOTE: Do not disconnect hose from the slave cylinder.

36. Remove speed sensor and speedometer cable.

NOTE:

- Take care not to bend the cable when removing it. Do not use pliers to remove the cable. Always replace a kinked cable with a new one.
- On reassembly, check the cable adjustment.

### Fuel-Injected Engine shown; Carbureted Engine similar:

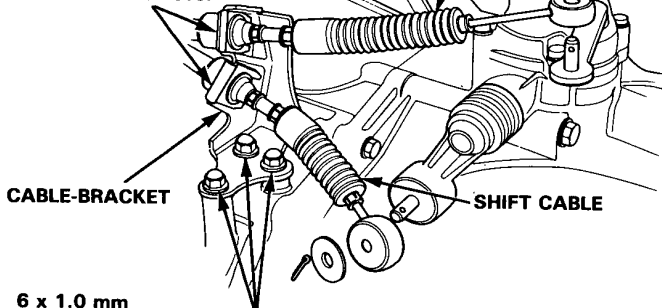
M/T

SELECT CABLE

A/T

COTTER PIN

Do not remove.



6 x 1.0 mm  
12 N·m (1.2 kg-m,  
9 lb-ft)

8 x 1.25 mm  
22 N·m (2.2 kg-m, 16 lb-ft)

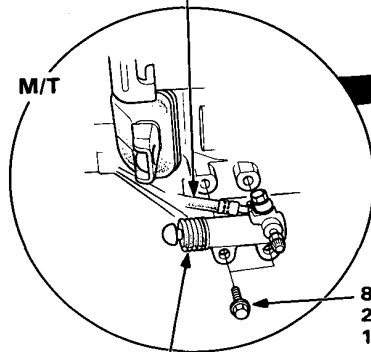
SPEEDOMETER CABLE

SPEED SENSOR

O-RING  
Replace

CLUTCH HOSE  
Do not remove.

M/T



CLUTCH SLAVE  
CYLINDER

8 x 1.25 mm  
22 N·m (2.2 kg-m,  
16 lb-ft)

SELF-LOCKING NUTS  
55 N·m (5.5 kg-m, 40 lb-ft)  
Replace

HEADER PIPE

17 N·m (1.7  
kg-m, 12 lb-ft)

CASTLE NUT  
55 N·m  
(5.5 kg-m, 40 lb-ft)

COTTER PIN  
Replace

NOTE: Coat all precision finished surfaces with clean engine oil or grease. Tie plastic bags over the driveshaft ends.

(cont'd)

6 x 1.0 mm  
12 N·m (1.2 kg-m,  
9 lb-ft)

CABLE HOLDER

SHIFT CABLE

COTTER PIN  
Replace

TORQUE CONVERTER  
COVER

DRIVESHAFT

34 N·m (3.4 kg-m,  
25 lb-ft)

GASKETS  
Replace

# Engine Removal/Installation

(cont'd)

37. Attach a chain hoist to the engine block and raise the hoist just enough to remove slack from chain.
38. Remove the rear engine mount bolt, then remove the mount bracket.
39. Remove the front engine mount bolt.

NOTE: Front and rear engine mount bolts are special bolts. Replace the bolts once they are loosened.

40. Remove the side engine mount bracket bolts.
41. Remove the transmission mount bolt.

42. Check that wires and tubes are completely removed from the engine, and lift the engine slowly with the chain.

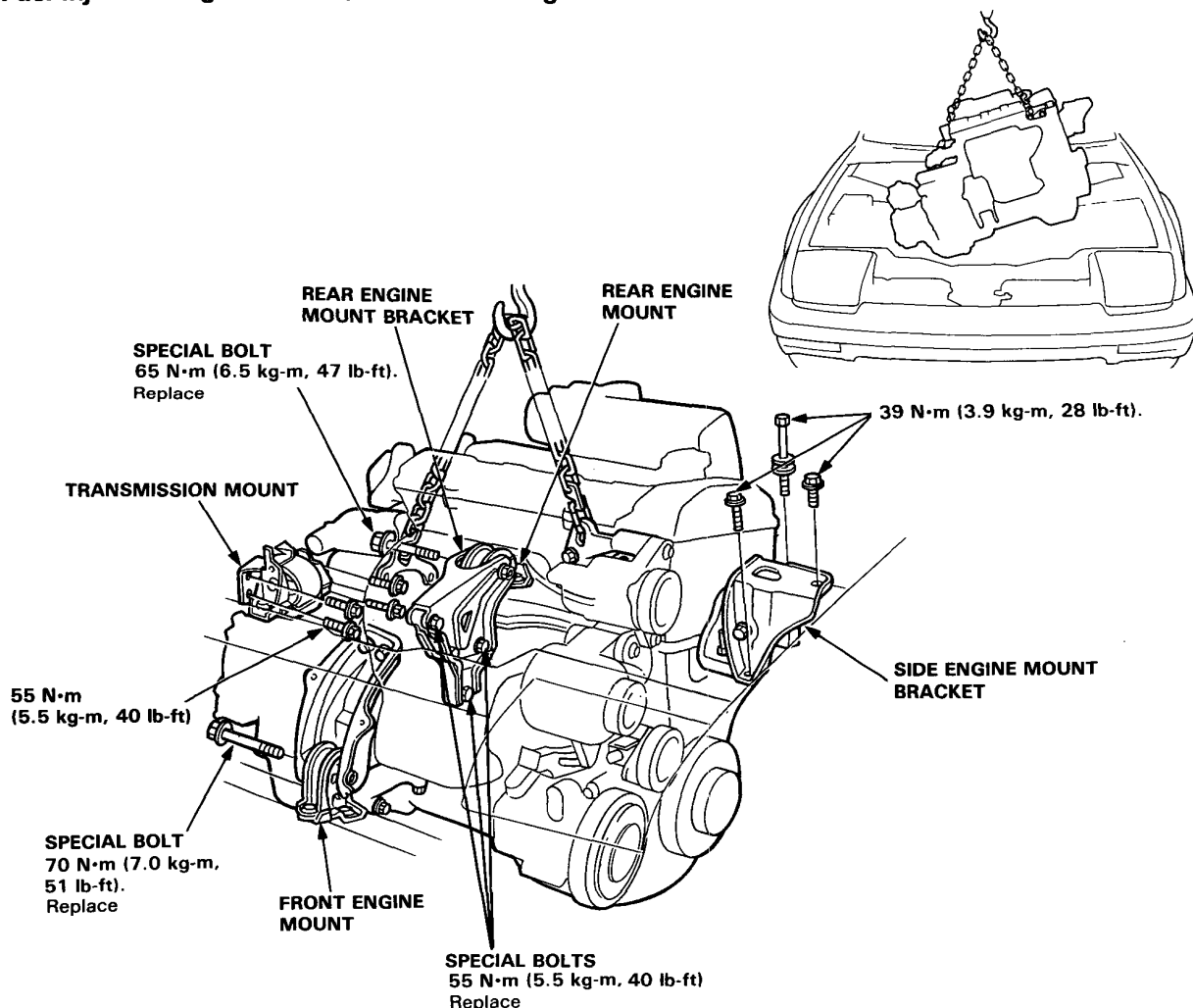
43. Tilt the engine, then hoist it out of the engine compartment.

**CAUTION:** Use care to avoid damaging the body.



**WARNING** Do not crawl under the car when hoisting the engine.

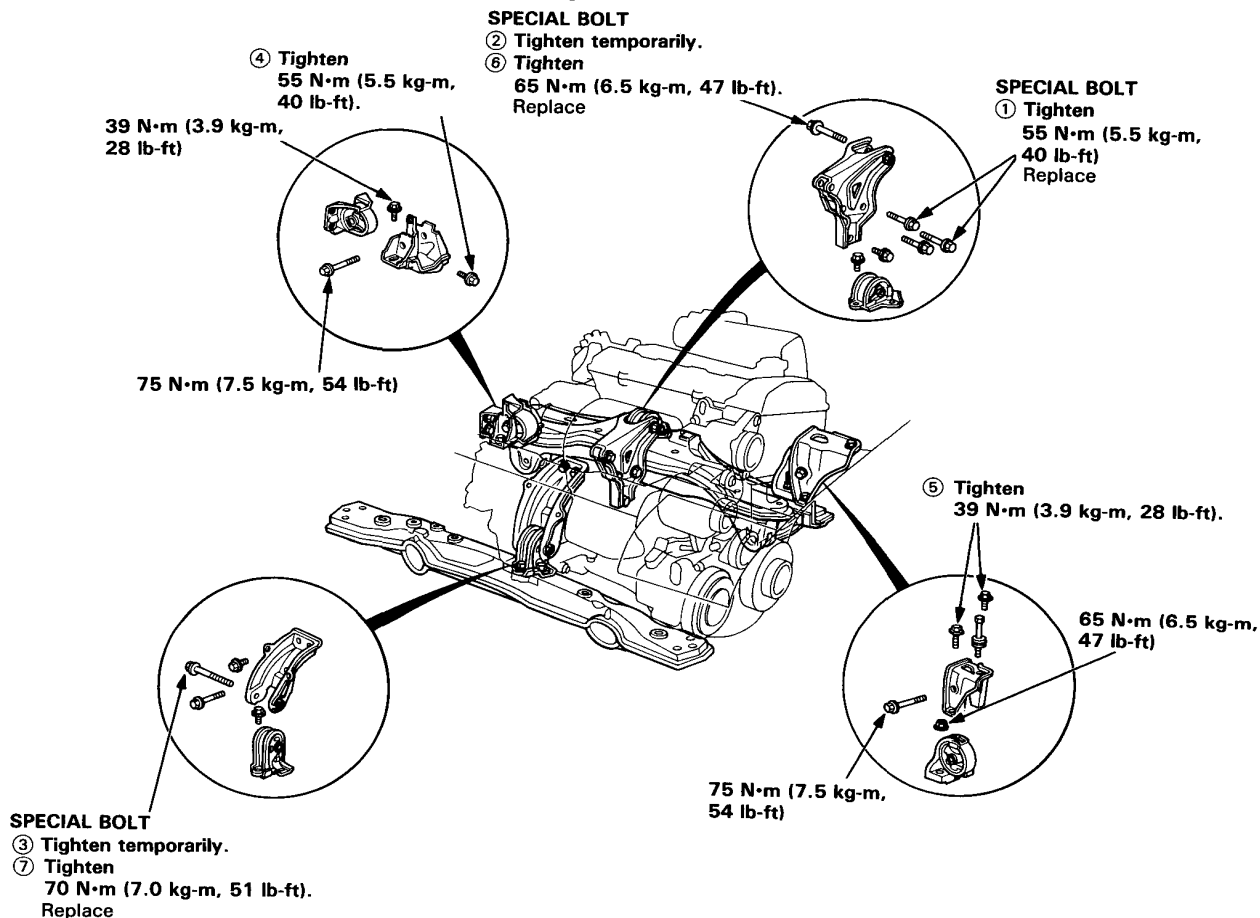
**Fuel-Injected Engine shown; Carbureted Engine similar:**





NOTE: For proper suppression of noise and vibration, and maximum bushing life, tighten the bolts in the sequence shown with the bushings centered in their mounts.

**Fuel-Injected Engine shown; Carbureted Engine similar:**



44. Install the engine in the reverse order of removal.  
After the engine is in place:

- Torque engine mount bolts in sequence shown.

**CAUTION:** Failure to tighten the bolts in the proper sequence can cause excessive noise and vibration, and reduce bushing life; check that the bushings are not twisted or offset.

- Check that the spring clip on the end of each driveshaft clicks into the differential.

**CAUTION:** Use new spring clips on installation.

- Bleed air from the cooling system at the bleed bolt with the heater valve open.

- Adjust the throttle cable tension.
- Adjust the alternator belt and power steering pump belt tension.
- Check the clutch pedal free play.
- Check that the transmission shifts into gear smoothly.
- Install the A/C compressor, connect the wiring and V-belt. (with A/C)
- Clean battery posts and cable terminals with sandpaper, assemble, then apply grease to prevent corrosion.

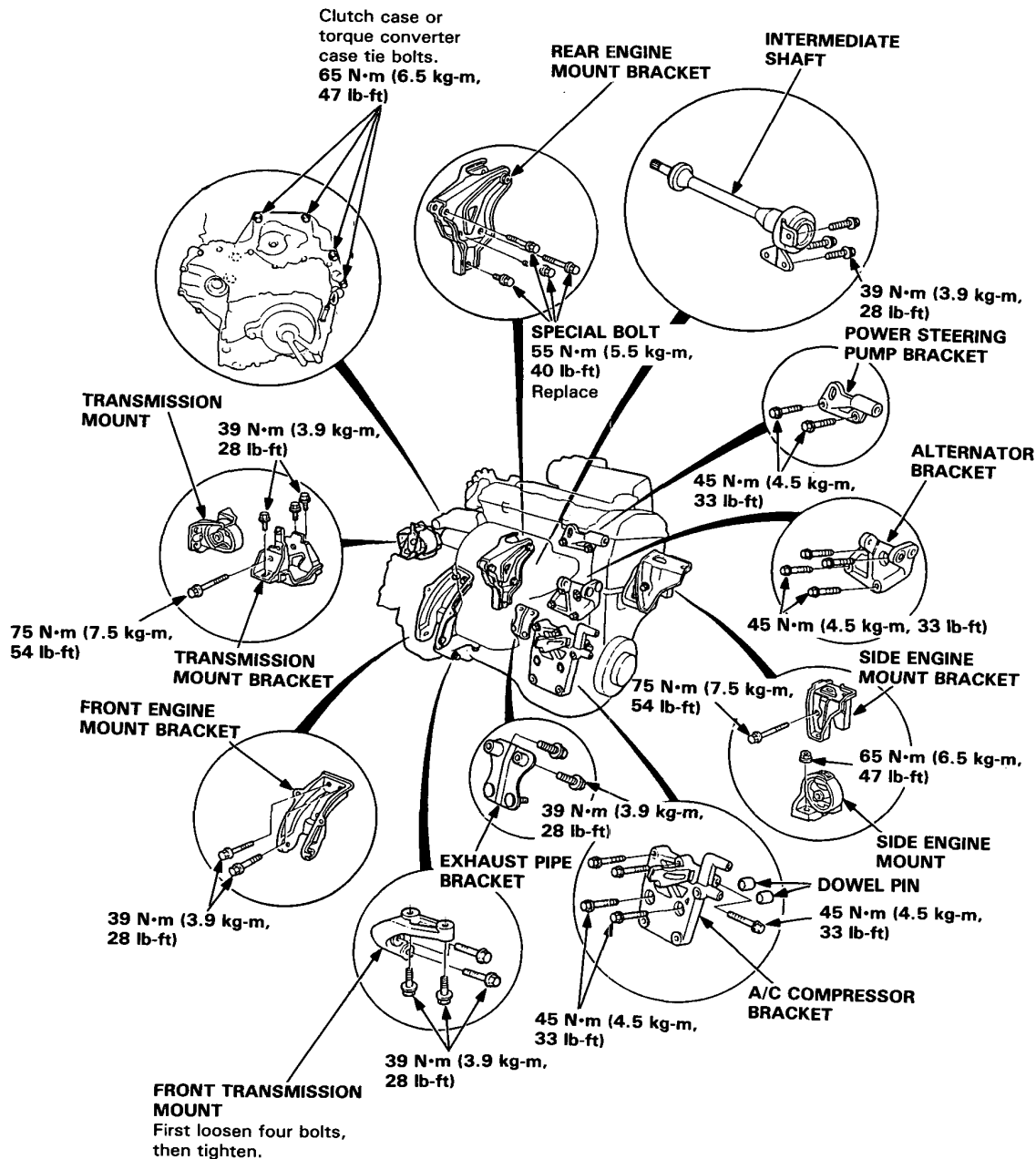
(cont'd)

# Engine Removal/Installation

(cont'd)

NOTE: For proper suppression of noise and vibration, and maximum bushing life, tighten the bolts to the torque mentioned below.

Fuel-Injected Engine Shown; Carbureted Engine similar:



## Exhaust Pipe and Muffler



### Outline of Model Change

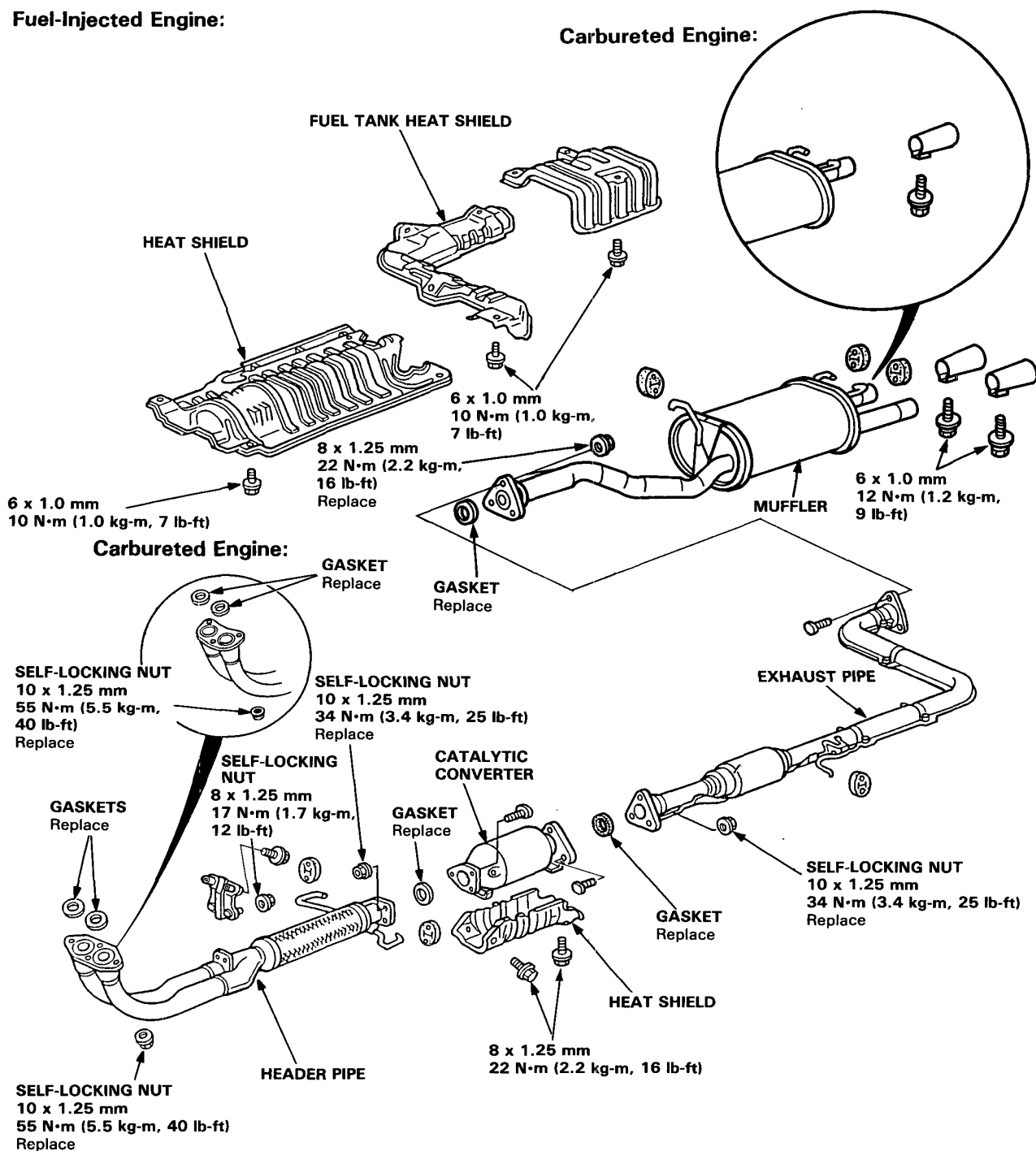
The exhaust muffler finisher has been changed.

# Exhaust Pipe and Muffler

## Replacement

**Fuel-Injected Engine:**

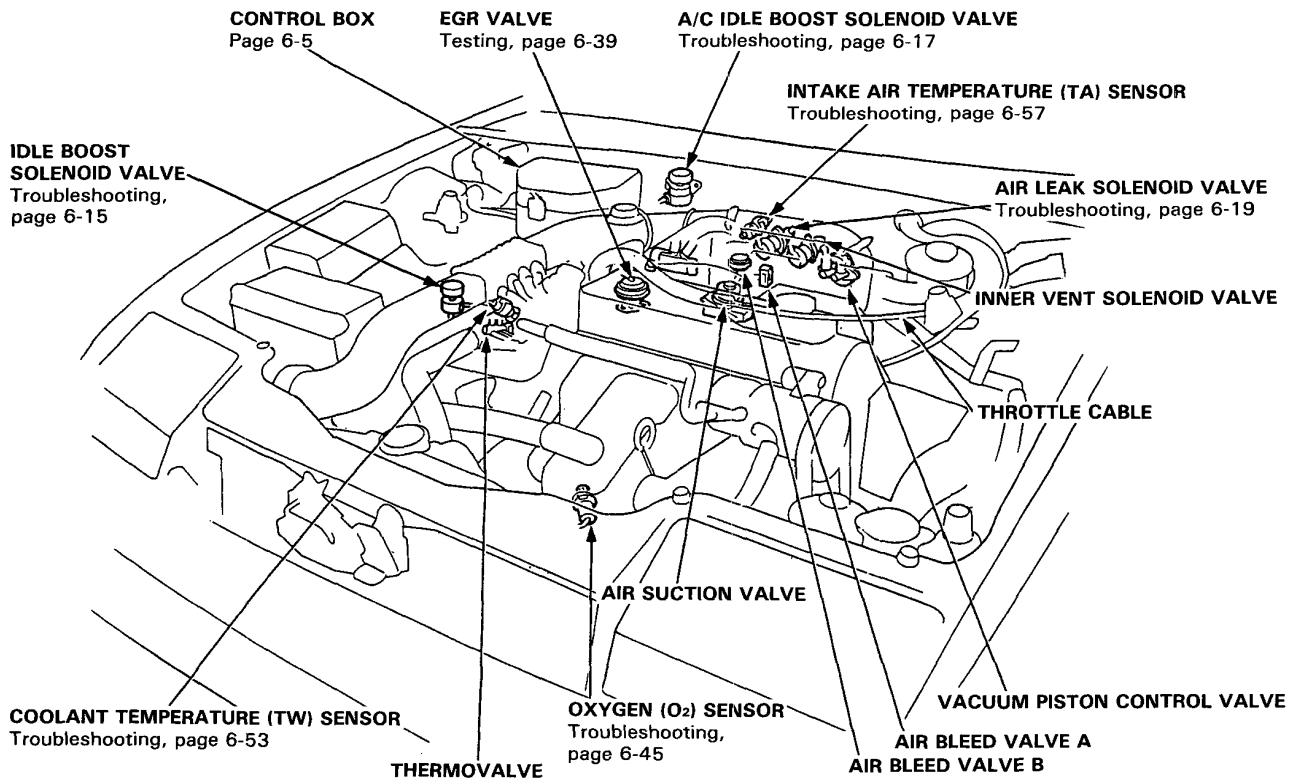
**Carbureted Engine:**



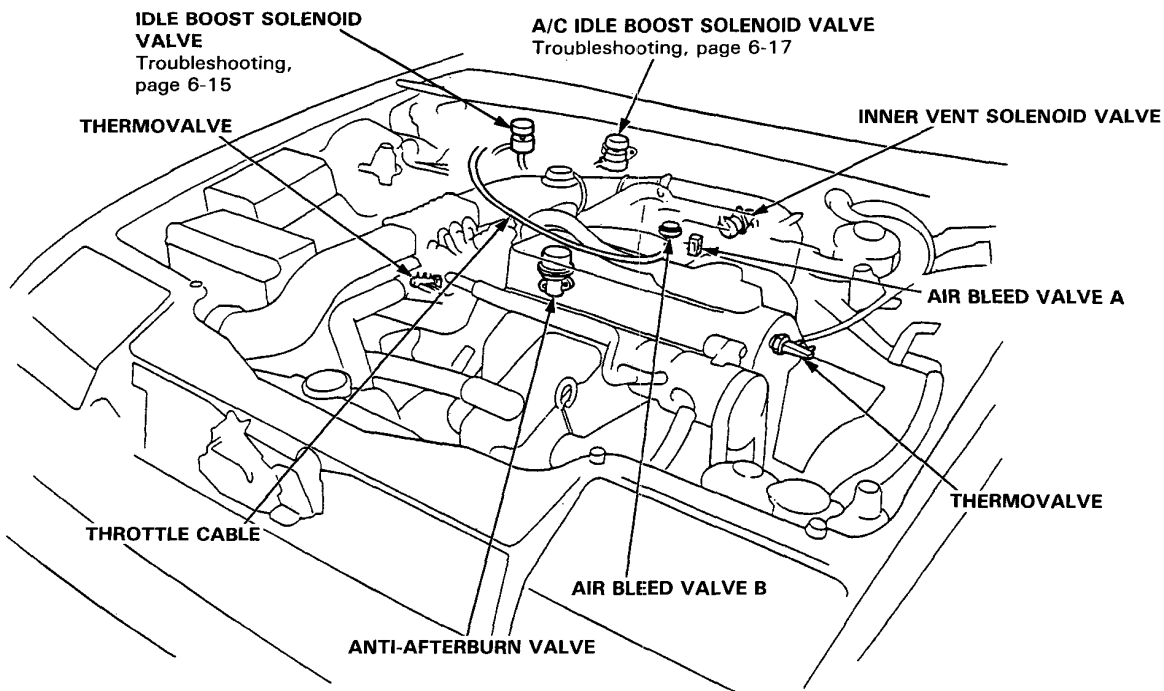
# Component Locations

## Index

### [KX, KS, KZ model (4WS)]

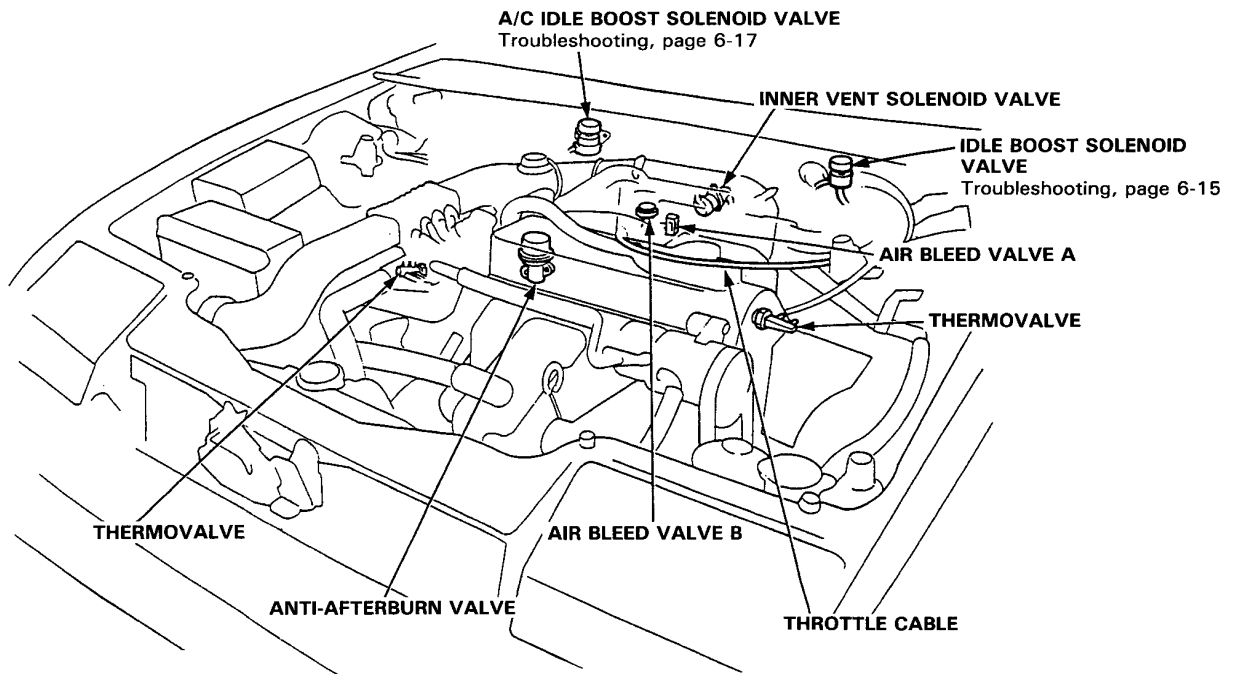


### [KF, KG, KW, KB model (4WS)]





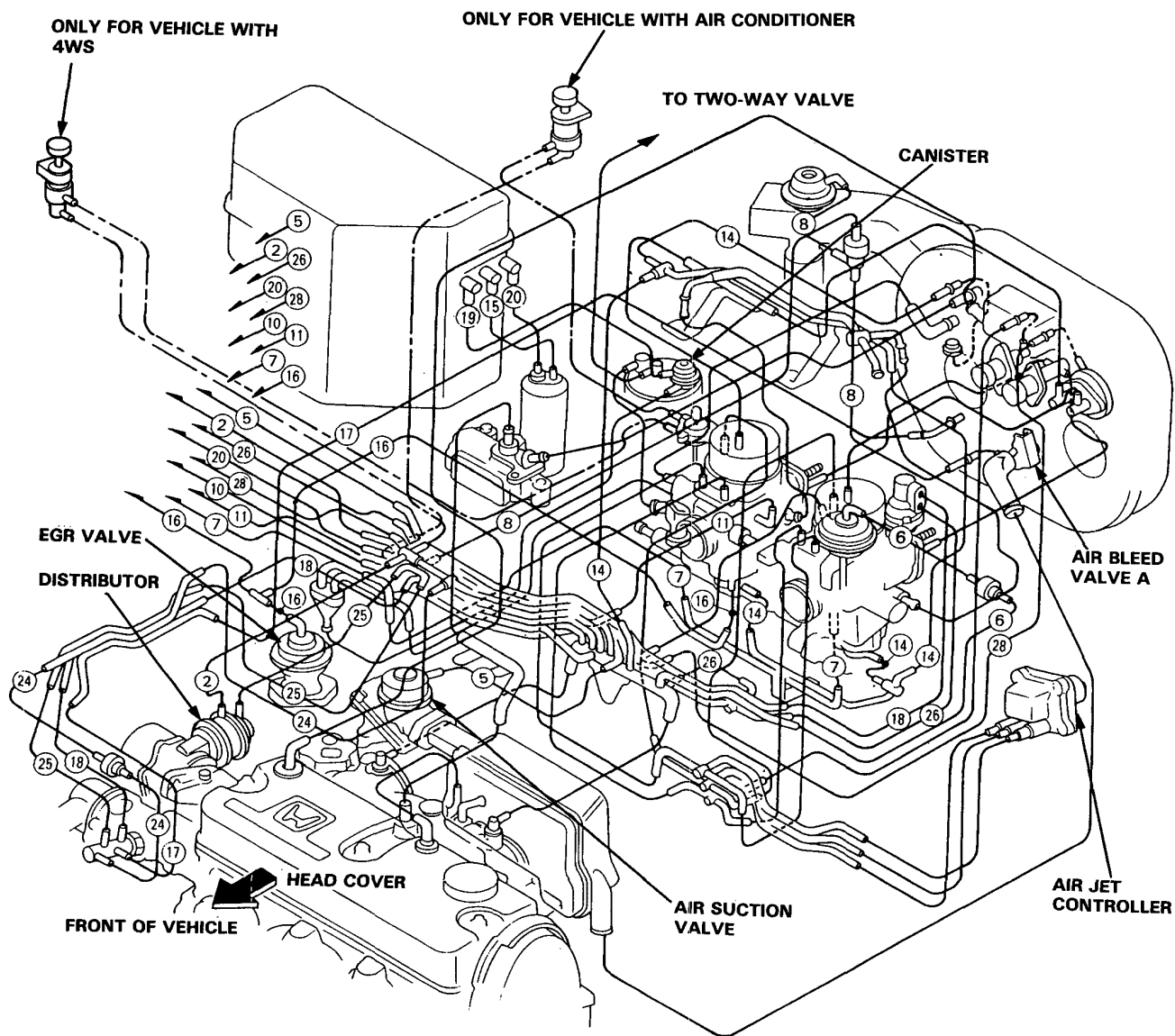
[KE model (4WS)]



# System Description

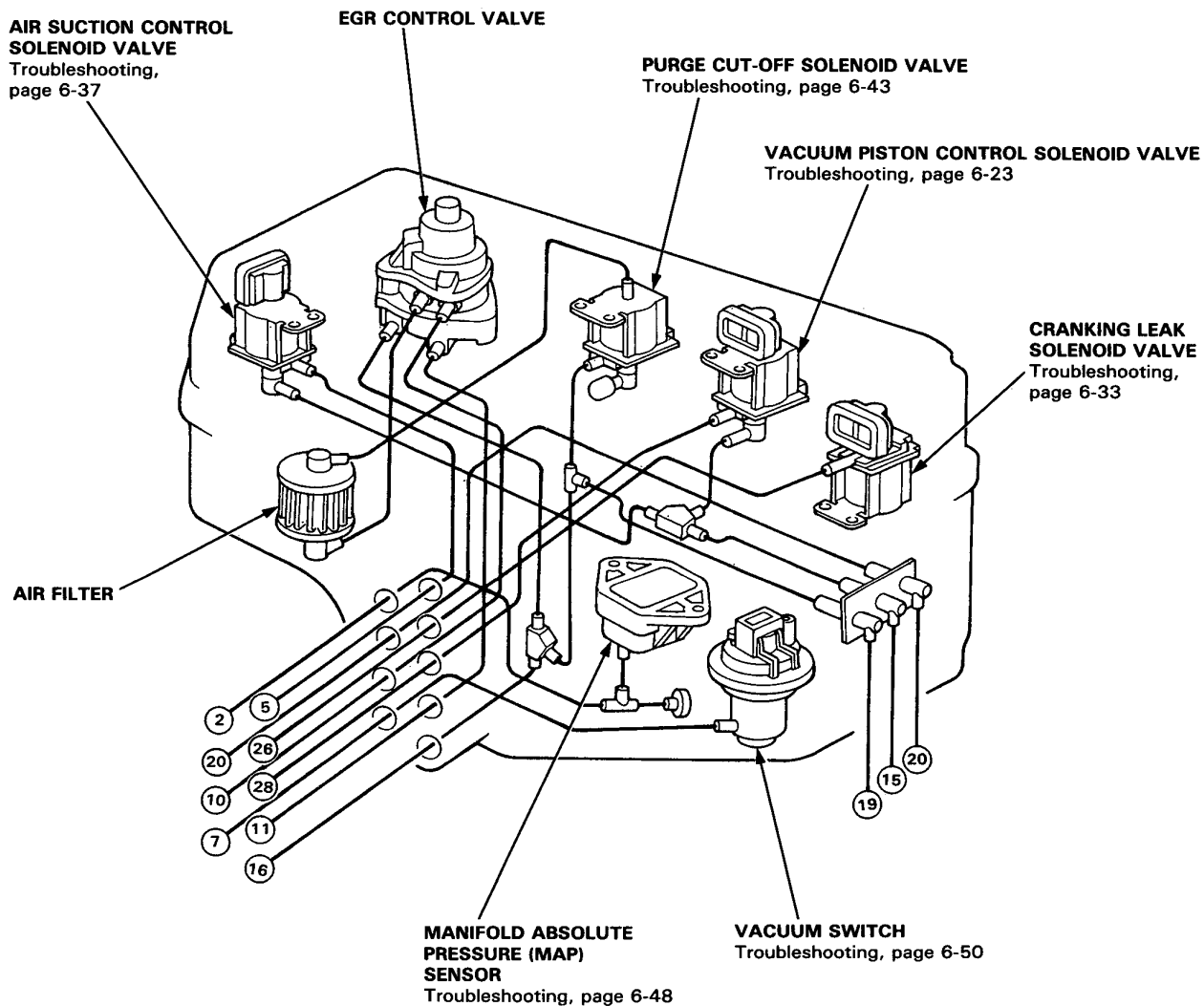
## Vacuum Connections

[KX, KS, KZ model (4WS)]





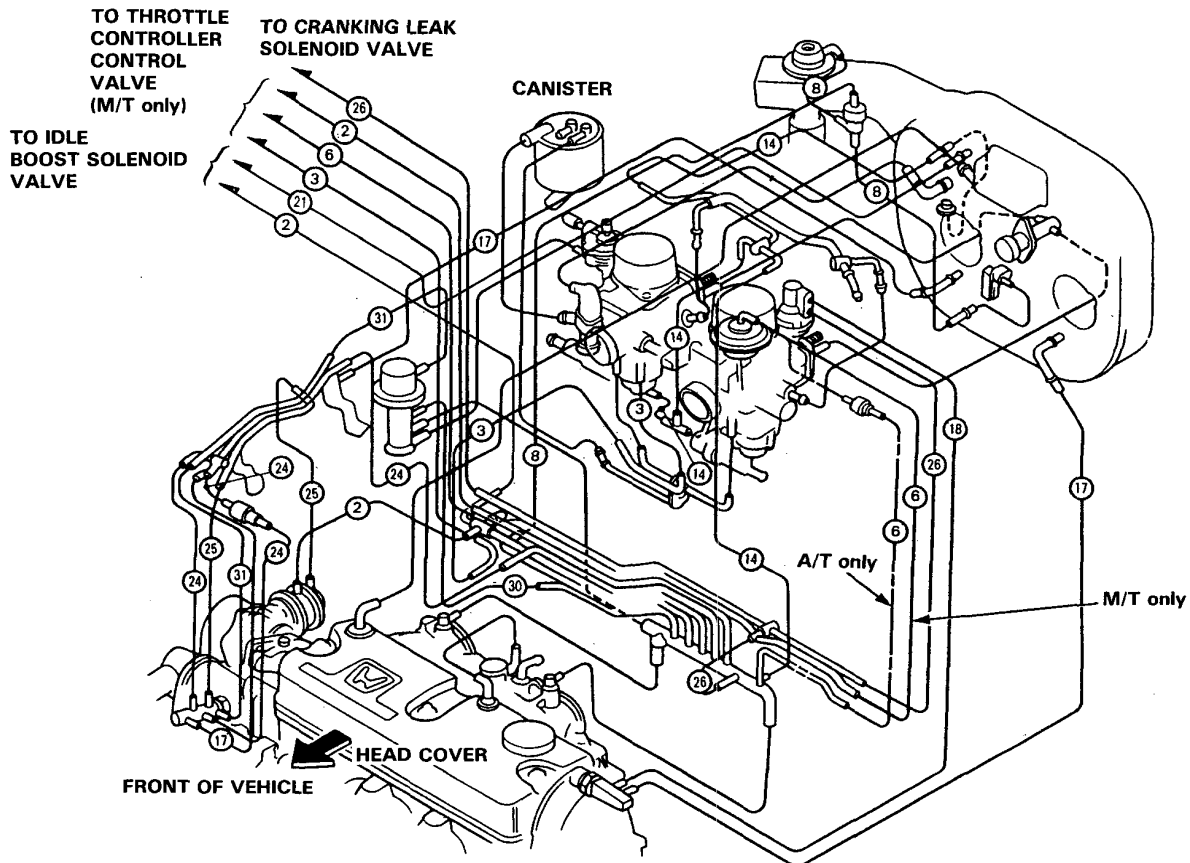
## Control Box



# System Description

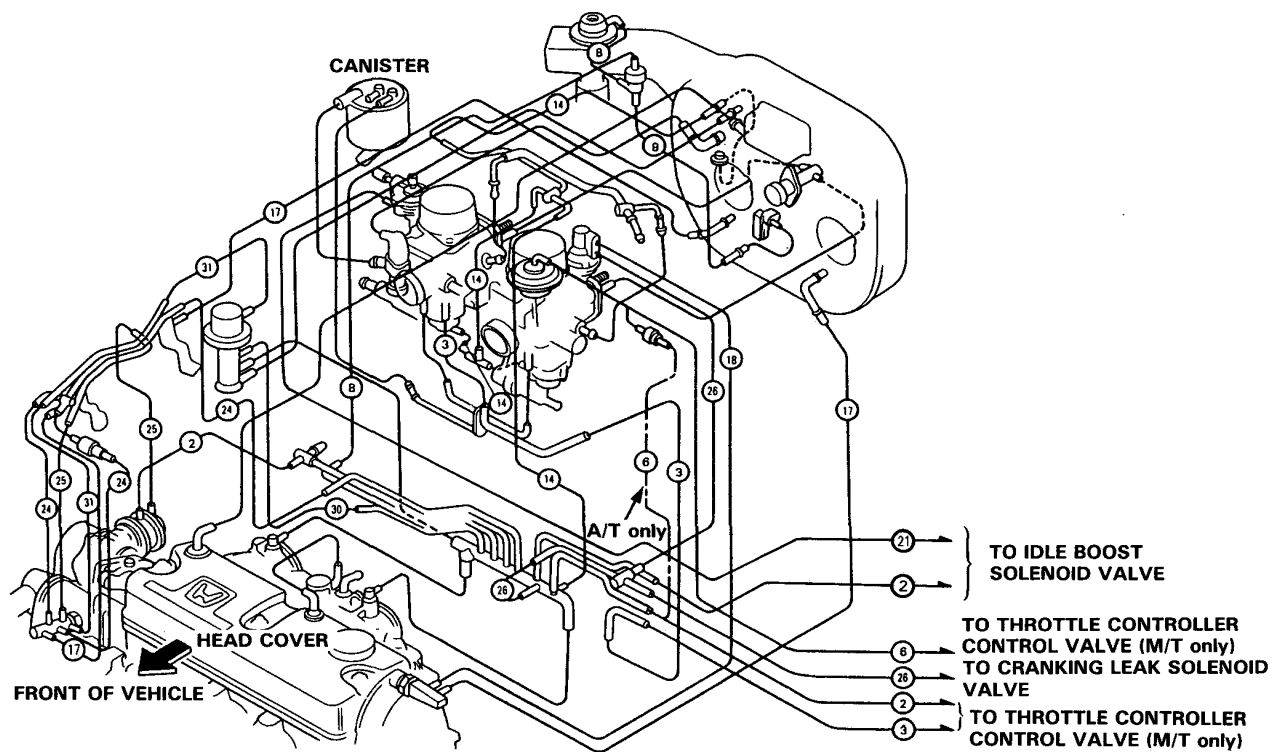
## Vacuum Connections (cont'd)

[KF, KG, KW, KB model (4WS)]





[KE model (4WS)]

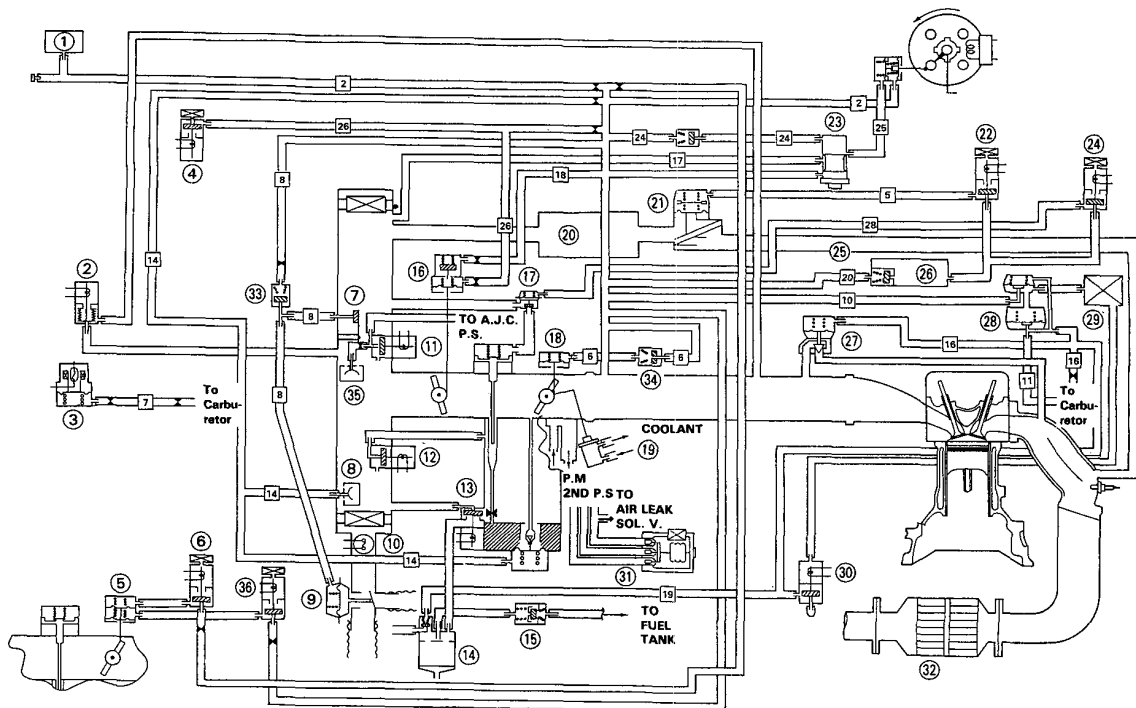


(cont'd)

# System Description

## Vacuum Connections (cont'd)

[KX, KS, KZ model (4WS)]

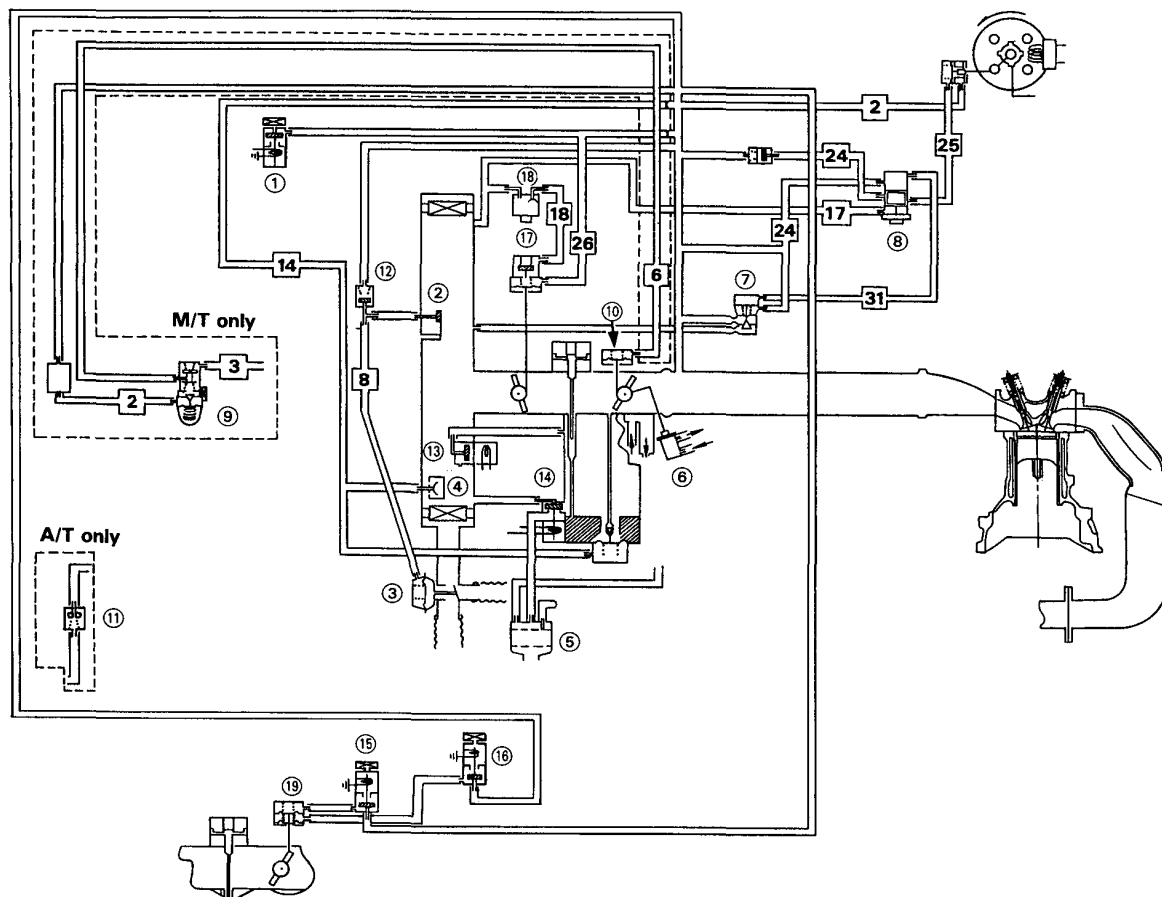


- ① MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
- ② EACV
- ③ VACUUM SWITCH
- ④ CRANKING LEAK SOLENOID VALVE
- ⑤ IDLE BOOST THROTTLE CONTROLLER
- ⑥ A/C IDLE BOOST SOLENOID VALVE
- ⑦ AIR BLEED VALVE A
- ⑧ AIR BLEED VALVE B
- ⑨ AIR CONTROL DIAPHRAGM
- ⑩ INTAKE AIR TEMPERATURE (TA) SENSOR
- ⑪ AIR LEAK SOLENOID VALVE
- ⑫ INNER VENT SOLENOID VALVE
- ⑬ AIR VENT CUT-OFF SOLENOID VALVE
- ⑭ CANISTER
- ⑮ TWO-WAY VALVE
- ⑯ CHOKE OPENER
- ⑰ VACUUM PISTON CONTROL VALVE
- ⑱ THROTTLE CONTROLLER
- ⑲ THERMOWAX VALVE
- ⑳ SILENCER

- ㉑ AIR SUCTION VALVE
- ㉒ AIR SUCTION CONTROL SOLENOID VALVE
- ㉓ THERMOVALVE
- ㉔ VACUUM PISTON CONTROL SOLENOID VALVE
- ㉕ CHECK VALVE C
- ㉖ AIR CHAMBER
- ㉗ EGR VALVE
- ㉘ EGR CONTROL VALVE
- ㉙ AIR FILTER
- ㉚ PURGE CUT-OFF SOLENOID VALVE
- ㉛ AIR JET CONTROLLER
- ㉜ CATALYTIC CONVERTER
- ㉝ CHECK VALVE A
- ㉞ CHECK VALVE C
- ㉟ AIR BLEED VALVE C
- ㊱ IDLE BOOST SOLENOID VALVE



[KF, KG, KW, KB, KE model (4WS)]



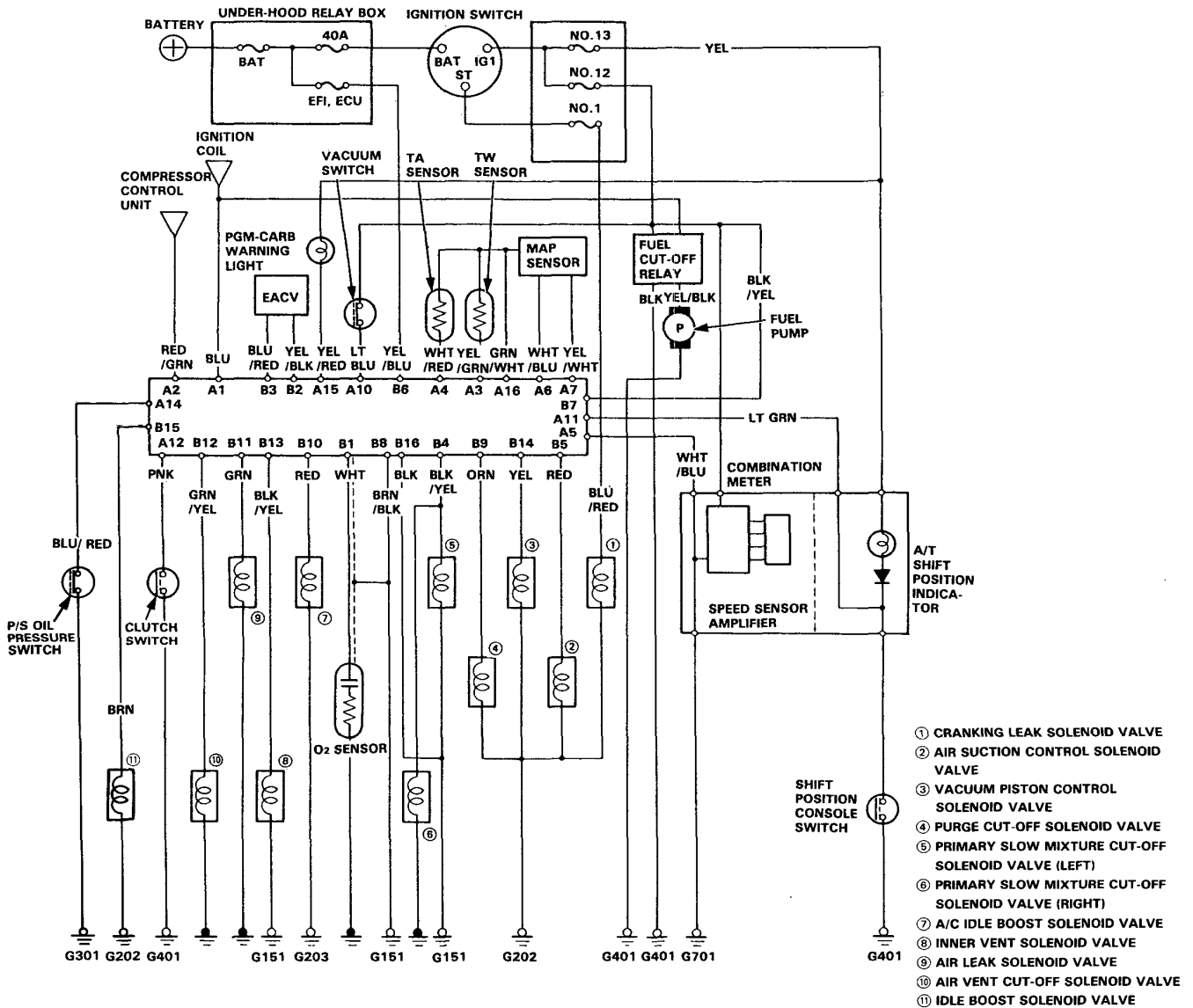
- ① CRANKING LEAK SOLENOID VALVE
- ② AIR BLEED VALVE A
- ③ AIR CONTROL DIAPHRAGM
- ④ AIR BLEED VALVE B
- ⑤ CANISTER
- ⑥ THERMOWAX VALVE
- ⑦ ANTI-AFTERBURN VALVE
- ⑧ THERMOVALVE
- ⑨ THROTTLE CONTROLLER CONTROL VALVE
- ⑩ THROTTLE CONTROLLER

- ⑪ CHECK VALVE C
- ⑫ CHECK VALVE A
- ⑬ INNER VENT SOLENOID VALVE
- ⑭ AIR VENT CUT-OFF SOLENOID VALVE
- ⑮ A/C IDLE BOOST SOLENOID VALVE
- ⑯ IDLE BOOST SOLENOID VALVE
- ⑰ CHOKE OPENER
- ⑱ THERMOVALVE
- ⑲ IDLE BOOST THROTTLE CONTROLLER

# System Description

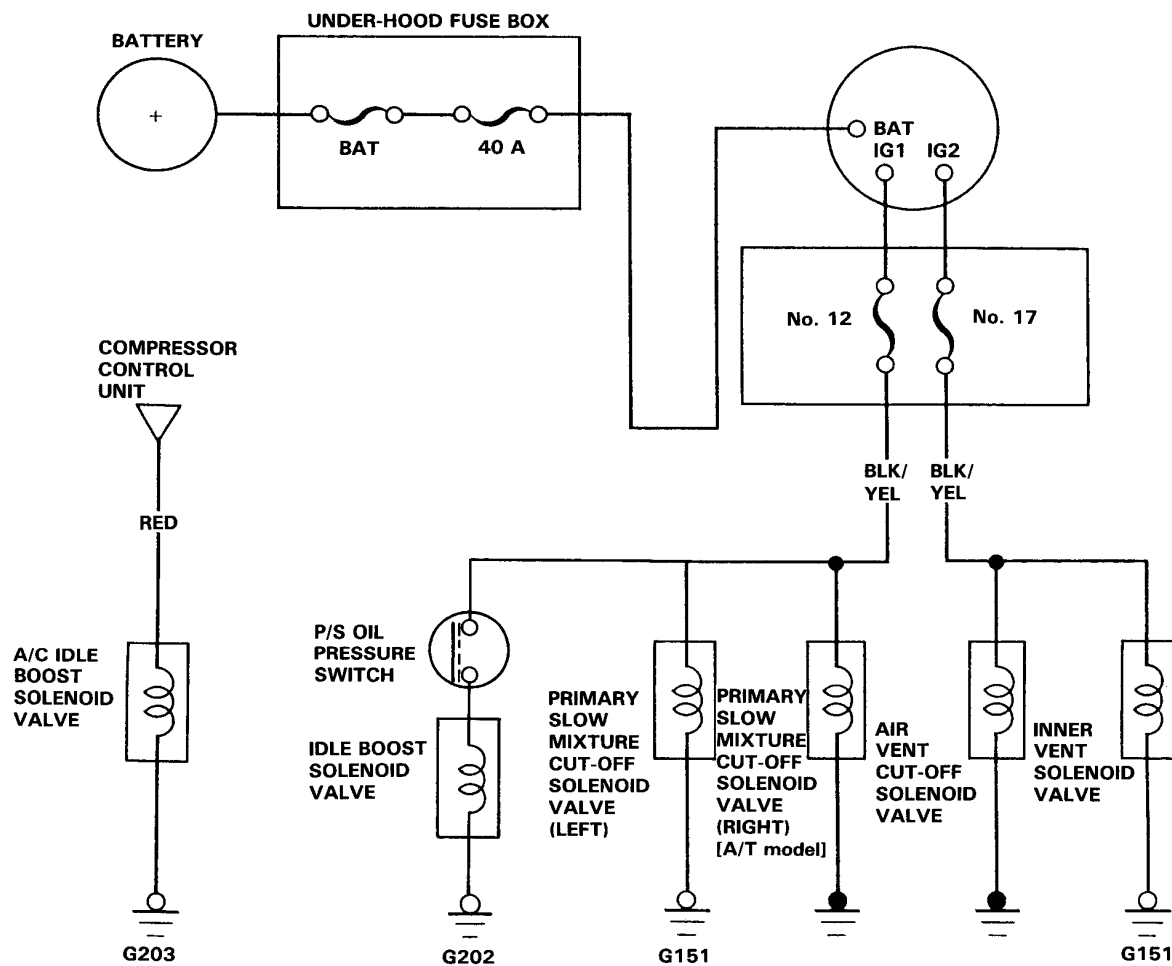
## Electrical Connections

[KX, KS, KZ model (4WS)]





[Except KX, KS, KZ model (4WS)]



# Carburetor

## Idle Control System [4WS]

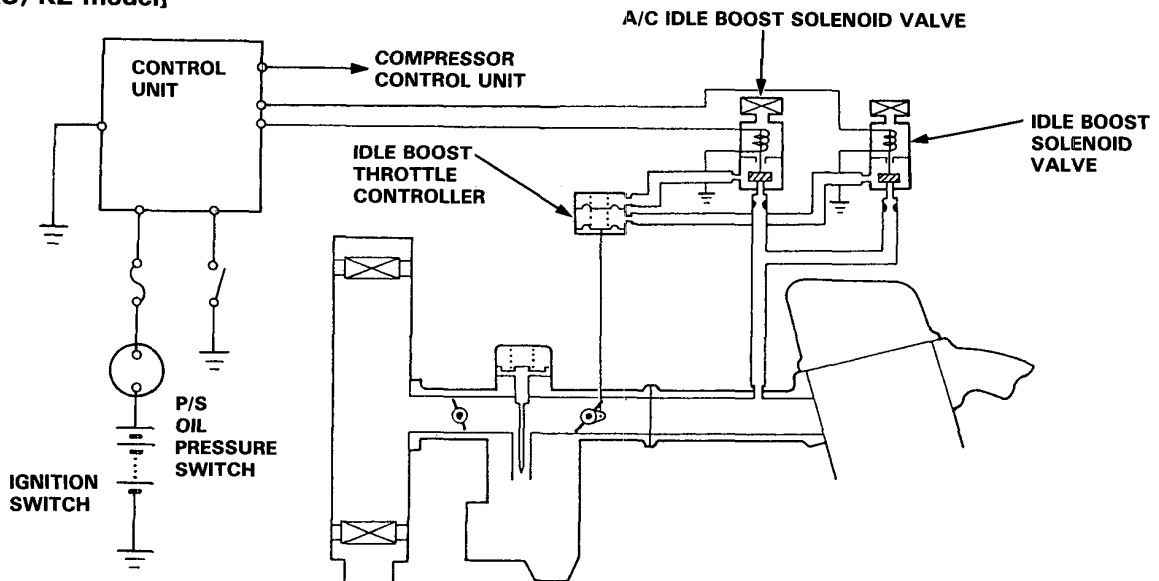
### Description

This system prevents the idle speed from dropping while the steering wheel is turning.

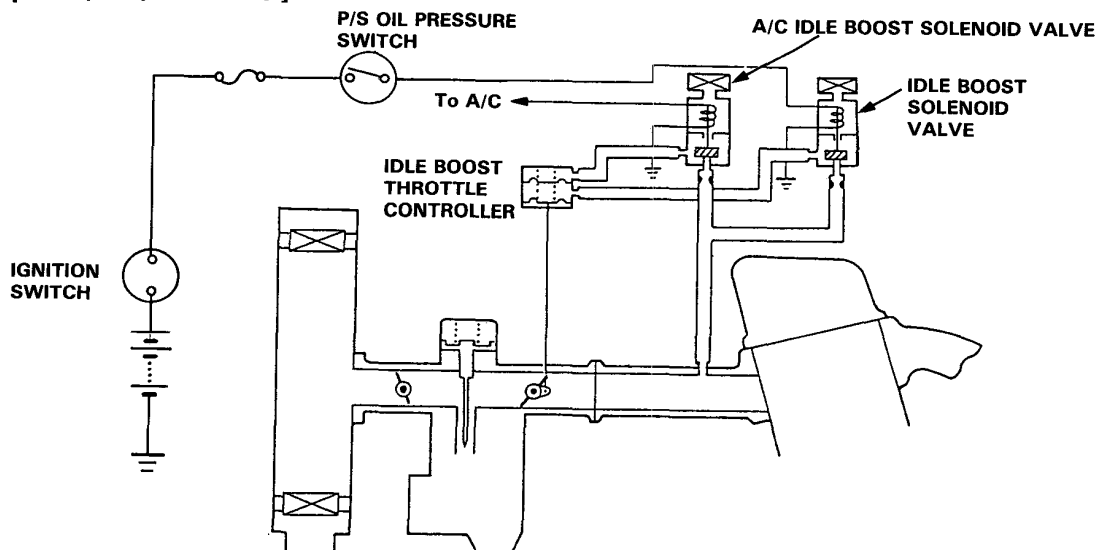
While the steering wheel is turning, manifold vacuum is introduced into the diaphragm chamber of the idle boost controller through the idle boost solenoid valve which is activated by the P/S oil pressure switch. The idle controller's diaphragm rod is retracted to open the throttle valve a certain amount. The amount of this throttle valve opening is adjusted with the idle control screw on the idle controller to maintain the original idle speed.

When the front wheels place in a straight ahead position, the idle boost solenoid valve is deactivated to close the vacuum passage and the vacuum stored in the controller is released through the filter on the solenoid valve.

[KX, KS, KZ model]



[Except KX, KS, KZ model]



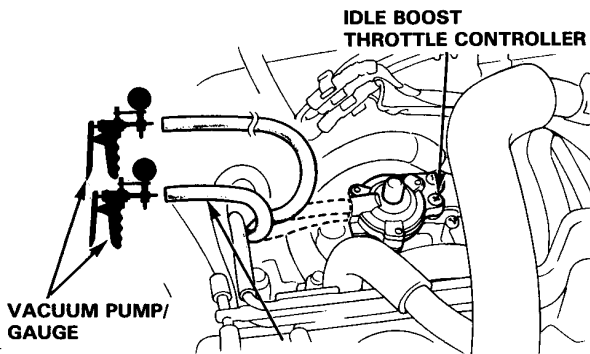


## Testing

### Idle speed too high in no-load conditions

1. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
2. Disconnect the two vacuum hoses from the idle boost throttle controller and check each for vacuum.

There should be no vacuum in both hoses.



- If there is no vacuum, check the throttle valve shaft for binding or sticking, and replace the idle boost throttle controller.
- If there is vacuum at either hose, go to troubleshooting (#21 hose : page 6-15, outside hose: page 6-17).

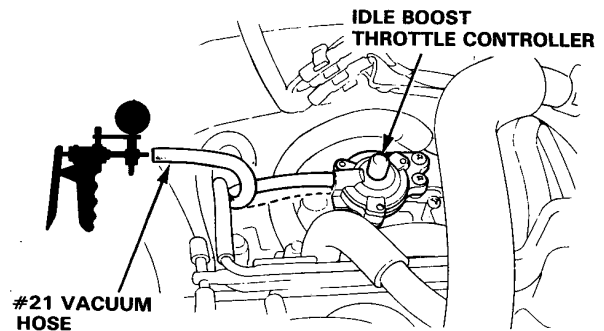
### Idle speed is rough while the steering wheel is turning

1. KX, KS, KZ model: Check the idle speed is above specified in no-load conditions. when the 2P connector on the P/S oil pressure switch is disconnected.

Except KX, KS, KZ model: Disconnect the 2P connector on the P/S oil pressure switch, and connect a jumper wire between the 2 terminals on the wire harness. Then check the idle speed is above specified in no-load conditions.

- If idle speed is as specified in no-load conditions, disconnect the #21 vacuum hose from the idle boost throttle controller and check for vacuum.

There should be vacuum.



- If there is vacuum, check the throttle valve shaft for binding or sticking, and replace the idle boost throttle controller.
- If there is no vacuum, check the vacuum hose for proper connection, cracks, blockage or disconnected hose. If OK, go to troubleshooting (page 6-15).

(cont'd)

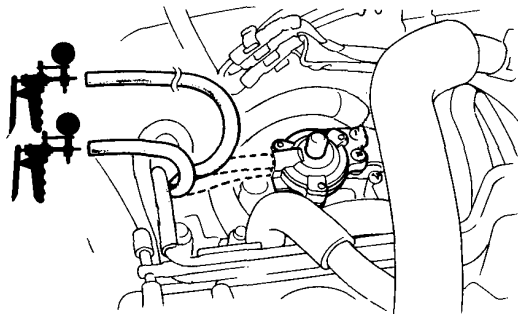
# Carburetor

## Idle Control System [4WS] (cont'd)

Idle speed is low with A/C on

1. Disconnect the two vacuum hoses from the idle boost throttle controller and check each for vacuum with the A/C on.

There should be vacuum in both hoses.



- If there is vacuum, replace the idle boost throttle controller and recheck.
- If there is no vacuum only at the inside hose, go to troubleshooting (page 6-15).
- If there is no vacuum only at the outside hose, go to troubleshooting (page 6-17).



## Idle Control System

### Troubleshooting Flow Chart Idle Boost Solenoid Valve

**Inspection of Idle Boost Solenoid Valve**

Start the engine and warm up to normal operating temperature (the cooling fan comes on).

Disconnect the #21 vacuum hose from the vacuum hose manifold, and connect a vacuum gauge.

Is there vacuum?

YES

Turn the ignition switch OFF.

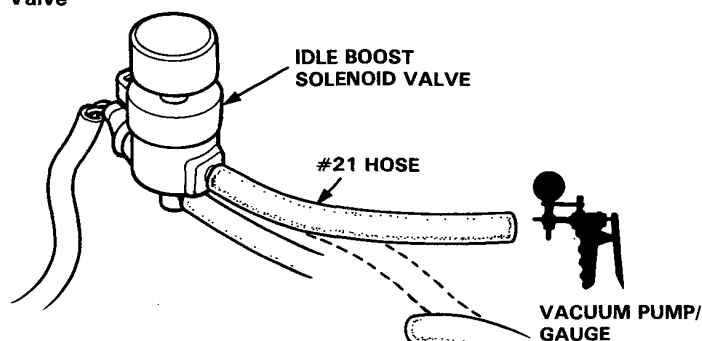
NO

Turn the ignition switch OFF.

KX, KS, KZ model:  
Disconnect the 2P connector on the P/S oil pressure switch.  
Except KX, KS, KZ model:  
Disconnect the 2P connector on the P/S oil pressure switch, and connect a jumper wire between the 2 terminals on the wire harness.

Turn the ignition switch ON.

(To page 6-16)



Except KX, KS, KZ model:

KX, KS, KZ model:  
Disconnect the 2P connector.  
Except KX, KS, KZ model:  
Disconnect the 4P connector.

Start the engine.

Measure voltage between BRN (+) terminal and BLK (-) terminal.

Is there voltage?

NO

Replace the solenoid valve.

YES

KX, KS, KZ model: Check the self-diagnosis indicator. If OK, check the input troubleshooting (page 6-59).  
Except KX, KS, KZ model:  
Replace the P/S oil pressure switch.

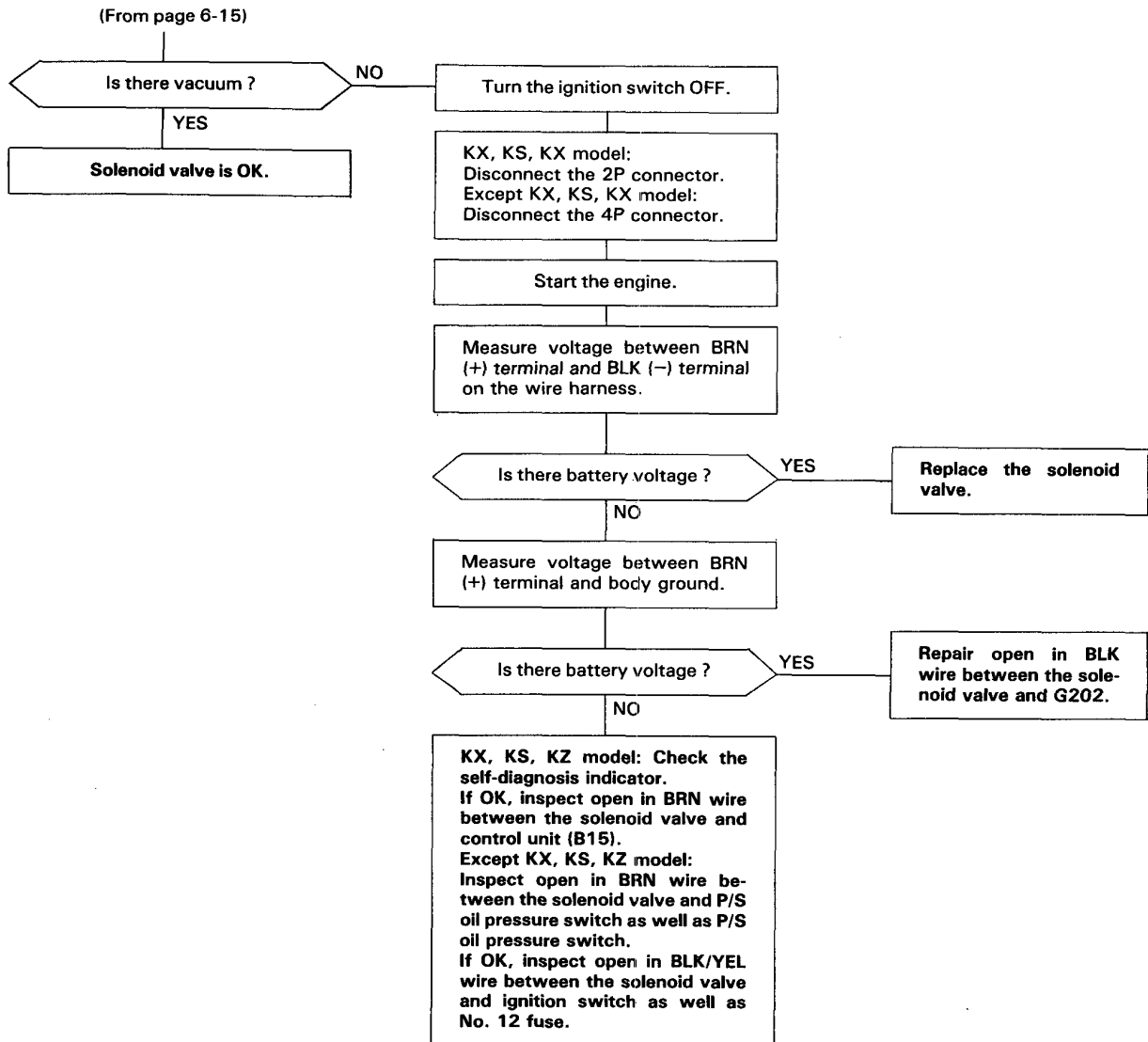
KX, KS, KZ model:

BLK BRN

(cont'd)

# Carburetor

## Idle Control System [4WS] (cont'd)





## Troubleshooting Flow Chart A/C Idle Boost Solenoid Valve

Inspection of A/C Idle Boost System

Disconnect the upper vacuum hose of the solenoid valve from the idle boost throttle controller and connect a vacuum gauge.

Start the engine and warm up to normal operating temperature (the cooling fan comes on).

Is there vacuum ?

YES

Disconnect the 2P connector near the solenoid valve.

NO

Turn the blower switch ON.

Turn the A/C switch ON.

Is there vacuum ?

NO

Inspect the A/C signal.

YES

A/C Idle Boost solenoid valve and A/C signal are OK.

Measure voltage between RED (+) terminal and body ground.

NO

Is there battery voltage ?

YES

Disconnect the lower vacuum hose from the solenoid valve and connect a vacuum gauge to the disconnected hose.

(To page 6-18)

(To page 6-18)

A/C IDLE BOOST SOLENOID VALVE

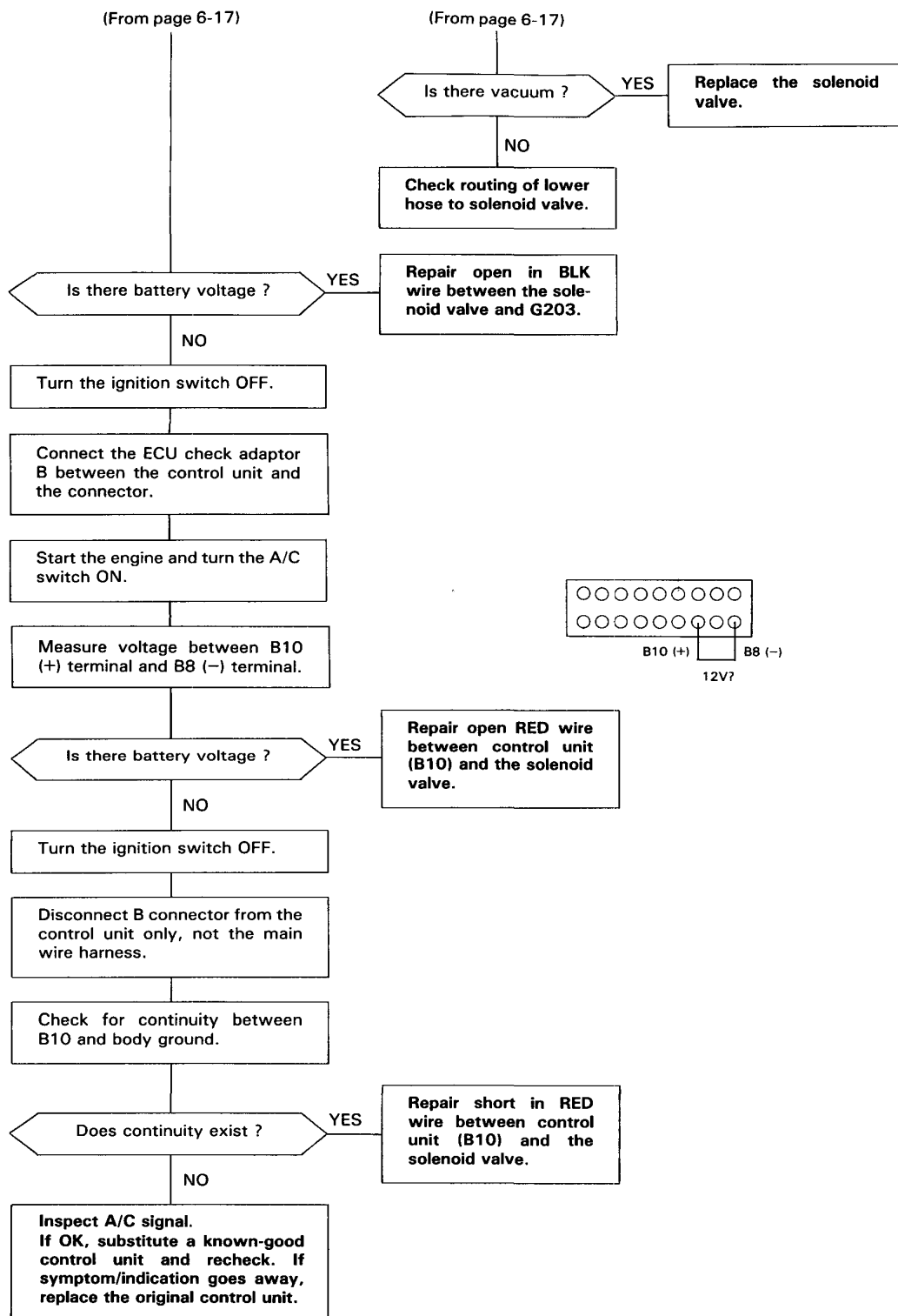
VACUUM PUMP/GAUGE

RED BLK

(cont'd)

# Carburetor

## Idle Control System [4WS] (cont'd)





## Slow Air Jet Control System [KX, KS, KZ]

### Troubleshooting Flow Chart Air Leak Solenoid Valve

#### Inspection of Air Leak Solenoid Valve

Remove the air cleaner cover and filter element.

Disconnect the vacuum hose to the air bleed valve C then cap the solenoid valve.

Disconnect the vacuum hose and connect a vacuum pump.

NOTE: Intake air temperature must be below 70°C (158°).

Start the engine and warm up to normal operating temperature (the cooling fan comes on).

Apply 100 mmHg (4 in.Hg) vacuum to the hose.

Does solenoid valve hold vacuum?

NO

Turn the ignition switch OFF.

Disconnect the GRN connector near the air cleaner.

Start the engine.

Measure voltage between GRN (+) and body ground.

Is there battery voltage?

YES

Replace the solenoid valve.

NOTE: If the intake air temperature is below 70° C (158°F), warm the TA sensor with a dryer.

Warm up the engine.

(To page 6-20)

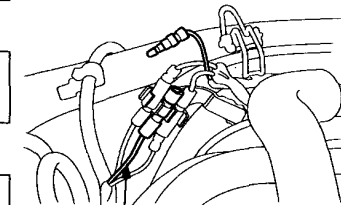
AIR LEAK SOLENOID VALVE

VACUUM PUMP/GAUGE

CAP

GRN

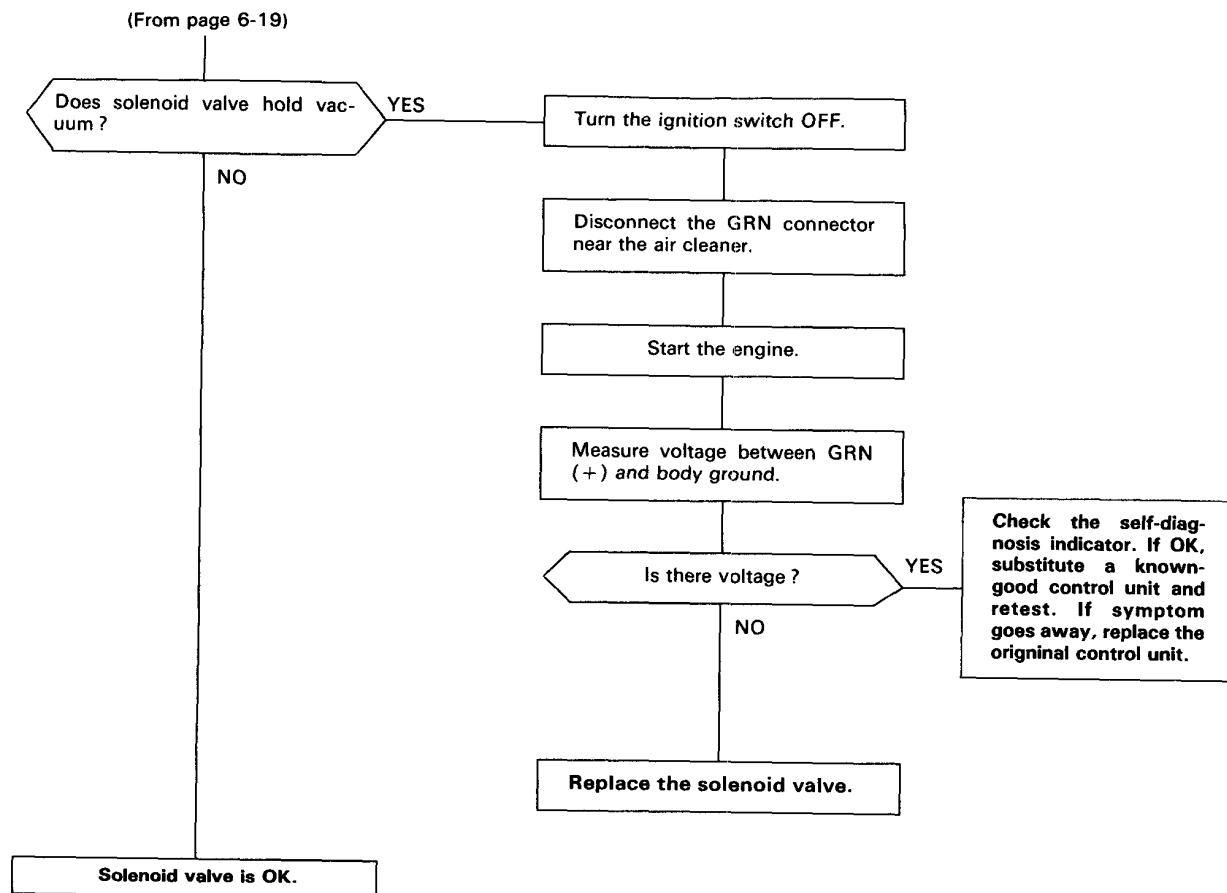
Check the self-diagnosis indicator. If OK, repair open in GRN wire between the solenoid valve and control unit (B11).



(cont'd)

# Carburetor

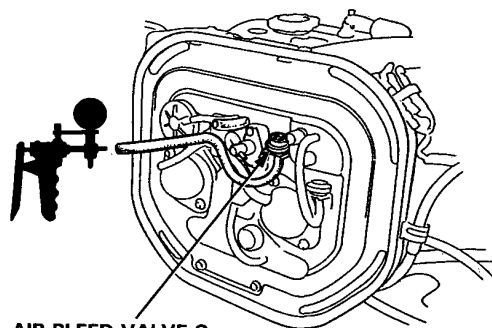
## Slow Air Jet Control System [KX, KS, KX] (cont'd)





### Air Bleed Valve C Testing

1. Remove the air cleaner cover and filter element.
2. Disconnect the vacuum hose from the air leak solenoid valve, and connect a vacuum pump.



AIR BLEED VALVE C

3. Apply vacuum.

NOTE: Temperature must be below 63°C (145.4°F).

It should hold vacuum.

- If it does not hold vacuum, replace the air bleed valve C.

4. Warm the air bleed valve C.

NOTE: Temperature must be above 63°C (145.4°F).

It should not hold vacuum.

- If it holds vacuum, replace the air bleed valve C.

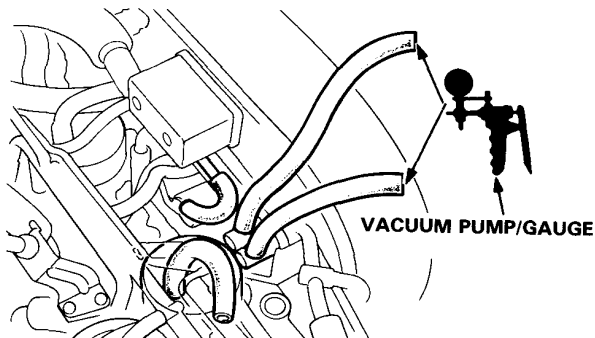
# Carburetor

## Vacuum Piston Control System [KX, KS, KX]

### Testing

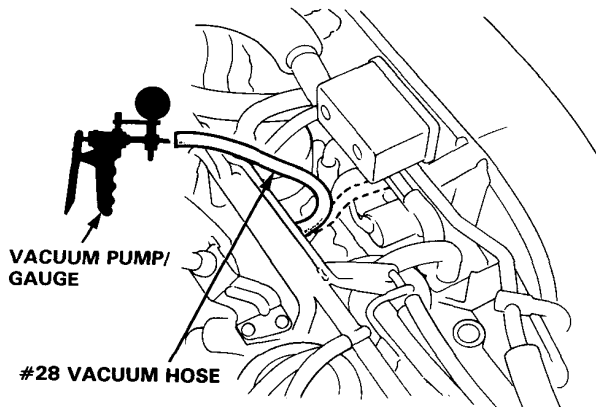
1. Disconnect the vacuum hose from the carburetor and connect a vacuum pump. Apply vacuum.

There should be a restricted vacuum leak.



- If it does not hold vacuum at all, check the vacuum hose for proper connection, cracks, blockage or disconnected hose, then, if necessary, replace the vacuum piston control valve.
2. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
  3. Check for vacuum.
- It should not hold vacuum.
- If it holds vacuum, check the vacuum hose for proper connection or blockage, and go to step 4.
  - If it does not hold vacuum, go to step 5.
4. Disconnect the #28 vacuum hose from the air cleaner and connect a vacuum pump.

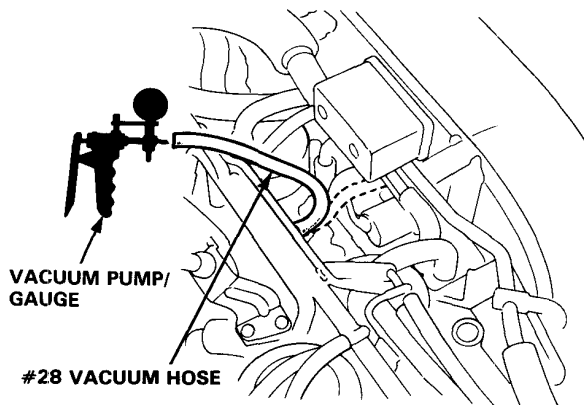
There should be vacuum.



- If there is vacuum, replace the vacuum piston control valve.
- If there is no vacuum, go to troubleshooting (page 6-23).

5. Disconnect the #28 vacuum hose from the air cleaner and connect a vacuum pump. Quickly raise engine speed to 3,000 min<sup>-1</sup> (rpm) and close the throttle suddenly, then check vacuum.

There should be no vacuum for a moment.



- If vacuum did not drop momentarily, go to troubleshooting (page 6-23).



## Troubleshooting Flow Chart Vacuum Piston Control Solenoid Valve

### Inspection of Vacuum Piston Control Solenoid Valve

Remove the control box and open the control box lid.

Disconnect the lower vacuum hose of the solenoid valve from the 3-way joint and connect a vacuum pump.

Disconnect the #28 vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine and warm up to normal operating temperature (the cooling fan comes on).

Apply vacuum.

Is vacuum indicated on the gauge?

NO

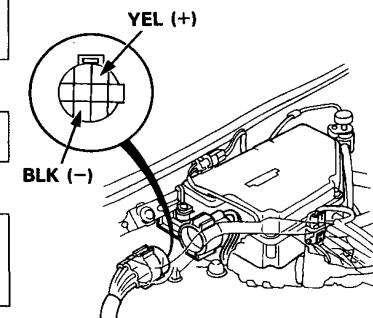
Turn the ignition switch OFF.

Disconnect the 8P connector on the control box.

Start the engine.

Measure voltage between YEL (+) terminal and BLK (-) terminal on the wire harness.

Is there battery voltage?



Replace the solenoid valve.

NO

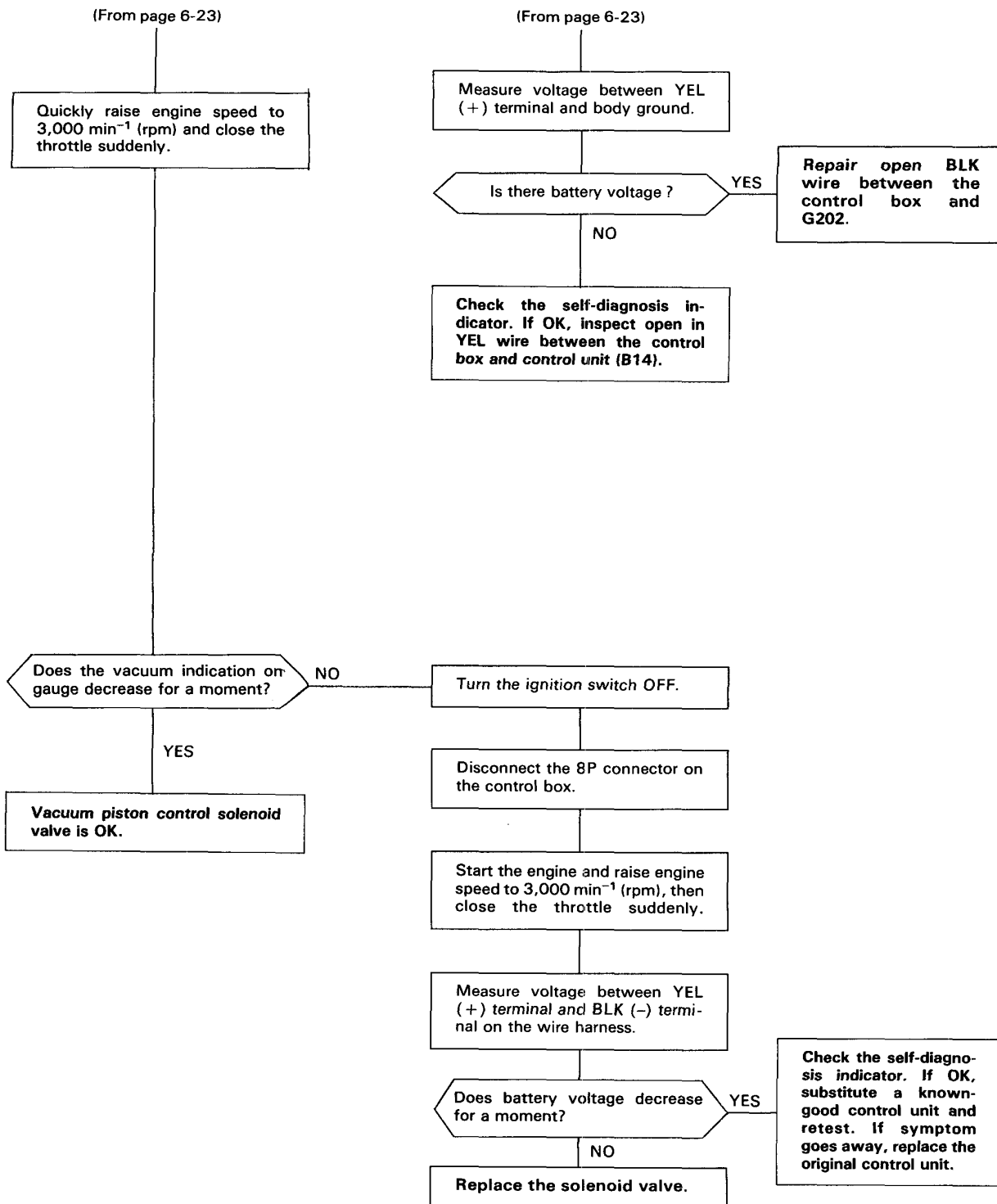
(To page 6-24)

(To page 6-24)

(cont'd)

# Carburetor

## Vacuum Piston Control System [KX, KS, KX] (cont'd)





## Idle Speed/Mixture

[KS model]

### Inspection/Adjustment

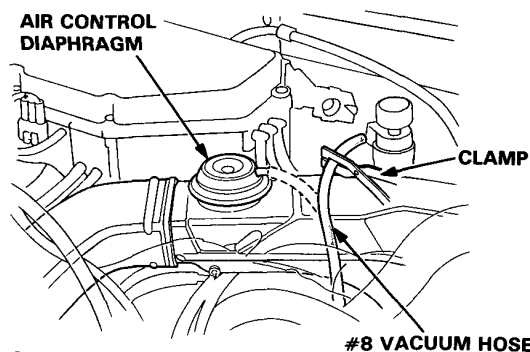
#### Propane Enrichment Method

**WARNING** Do not smoke during this procedure.  
Keep any open flame away from your work area.

#### NOTE:

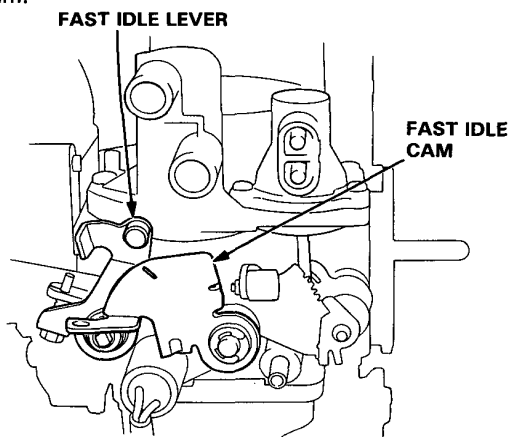
- This procedure requires a propane enrichment kit.
- Check that the carburetors are synchronized properly, self diagnosis indicator before making idle speed and mixture inspections.

1. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
2. Disconnect the #8 vacuum hose from the intake air control diaphragm and clamp the hose end.



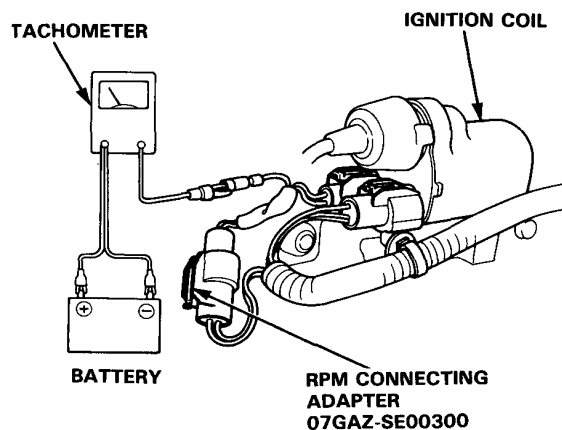
3. Check the fast idle lever.

Fast idle lever should not be seated against fast idle cam.



- If the fast idle lever is against the fast idle cam, replace the left carburetor.

4. Connect a tachometer.



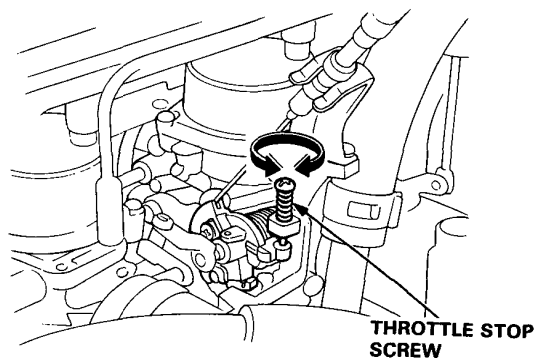
5. Check idle speed with the headlights, heater blower, rear window defogger, cooling fan and air conditioner off.

#### Idle speed should be:

Manual	800 $\pm$ 50 min <sup>-1</sup> (rpm)
Automatic	750 $\pm$ 50 min <sup>-1</sup> (rpm) (except "N" or "P")

Adjust the idle speed, if necessary, by turning the throttle stop screw.

NOTE: If the idle speed is excessively high, check the dashpot system.

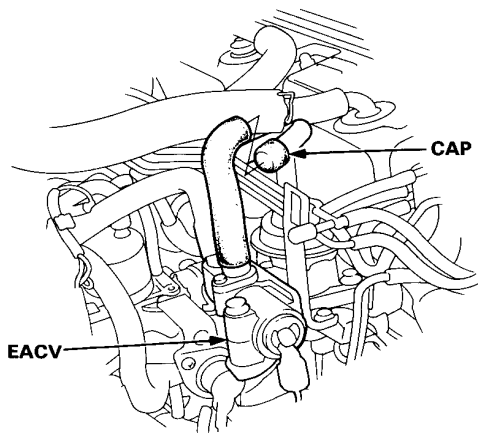


(cont'd)

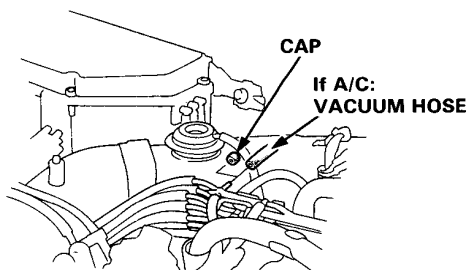
# Carburetor

## Idle Speed/Mixture (cont'd)

6. Disconnect the 2P connector from the EACV and disconnect the hose from vacuum hose manifold, then cap the hose end.

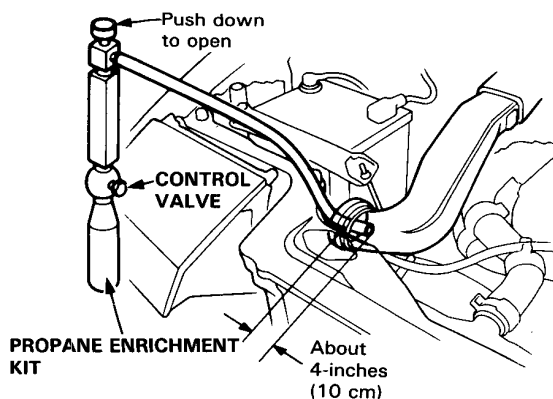


7. Disconnect the cap from vacuum hose manifold. If equipped with air conditioner, disconnect the vacuum hose from vacuum hose manifold. Disconnect air cleaner intake tube from air intake duct. Note the engine speed when starting the engine.



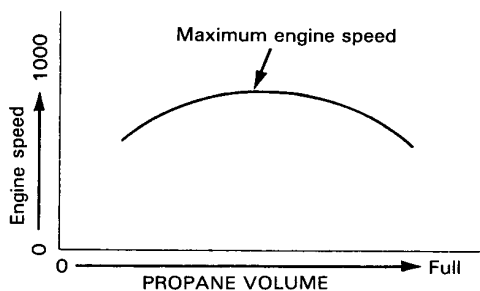
8. Insert the hose of the propane enrichment kit into the intake tube about 4-inches (10 cm).

NOTE: Check that propane bottle has adequate gas before beginning test.



9. With engine idling, depress push button on top of propane device, then slowly open the propane control valve to obtain maximum engine speed. Engine speed should increase as percentage of propane injected goes up.

NOTE: Open the propane control valve slowly; a sudden burst of propane may stall the engine.



Compared to the idle speed noted in step 7.

Engine speed increase should be;

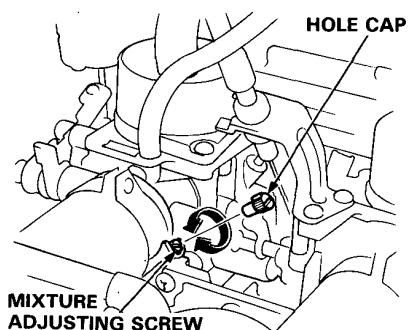
M/T:  $170 \pm 20 \text{ min}^{-1} (\text{rpm})$

A/T:  $50 \pm 10 \text{ min}^{-1} (\text{rpm})$  (in "D")

- If engine speed does not increase per specification, mixture is improperly adjusted. Go to step 10.
- If engine speed increases per specification, go to step 11.



10. Remove the mixture adjusting screw hole caps, and recheck maximum propane enriched engine speed.



- If the propane enriched speed is too low, mixture is too rich: turn both mixture screws 1/4-turn clockwise and recheck.
  - If the propane enriched speed is too high, mixture is too lean: turn both mixture screws 1/4-turn counterclockwise and recheck.
11. Reconnect the connector and cap or hose. Close the propane control valve.
12. Remove EFI•ECU fuse for 10 seconds to reset control unit and recheck idle speed.

**Idle speed should be:**

Manual	$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

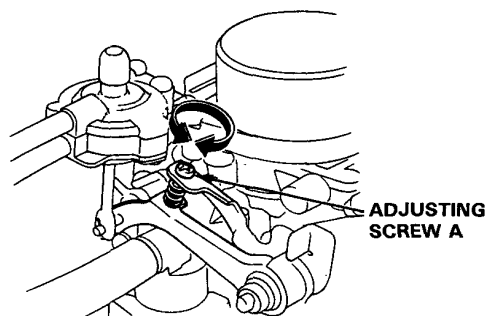
- If idle speed is as specified (step 5), go to step 13.
  - If idle speed is not as specified, adjust by turning throttle stop screw, then repeat step 10.
13. Remove propane enrichment kit and reconnect air cleaner intake tube on the air intake duct.
14. Reinstall the mixture adjusting screw hole cap.

15. If equipped with 4WS, check the idle speed when the 2P connector on the P/S oil pressure switch is disconnected.

**Idle speed should be:**

Manual	$950 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$830 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

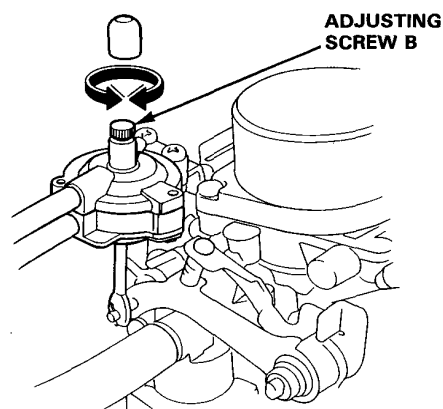
Adjust the idle speed, if necessary, by turning the adjusting screw A.



16. If equipped with 4WS, connect the 2P connector on the P/S oil pressure switch. And check the idle speed while the steering wheel is turning.
- Idle speed should be:**

Manual	$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

17. If equipped with air conditioner, check the idle speed with the A/C on.
- Idle speed should be:  $750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$**



Adjust the idle speed, if necessary, by turning the adjusting screw B.

(cont'd)

# Carburetor

## Idle Speed/Mixture (cont'd)

[Except KS model]

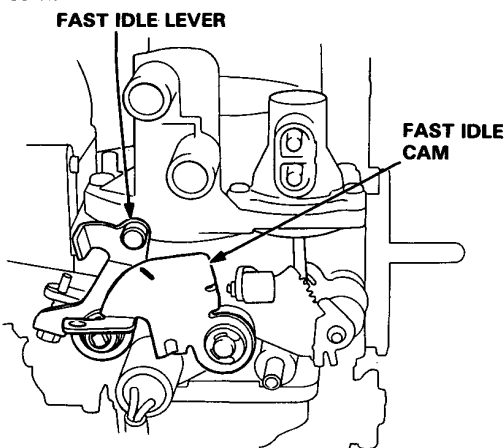
### CO Meter Method

**WARNING** Do not smoke during this procedure. Keep any open flame away from your work area.

NOTE: Check that the carburetors are synchronized properly, self-diagnosis indicator (KX model) before making idle speed and mixture inspections.

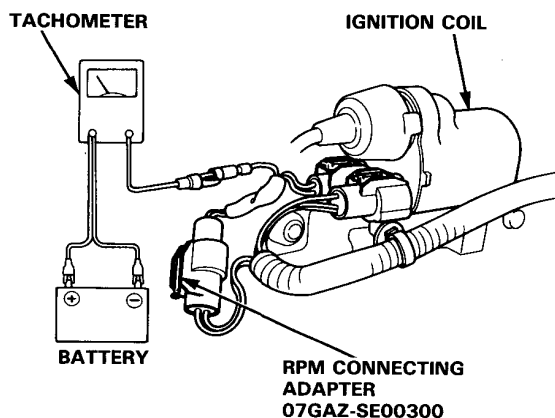
1. Start the engine and warm it up to normal operating temperature (the cooling fan comes on).
2. Check the fast idle lever.

Fast idle lever should not be seated against fast idle cam.



- If not, replace the left carburetor.

3. Connect a tachometer.



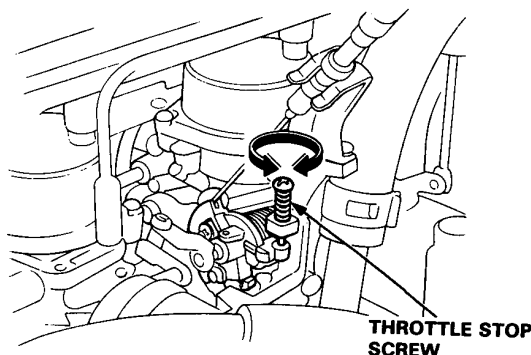
4. Check idle speed with the headlights, heater blower, rear window defogger, cooling fan and air conditioner off.

### Idle Speed should be:

Manual	800 ± 50 min <sup>-1</sup> (rpm)
Automatic	750 ± 50 min <sup>-1</sup> (rpm) (except "N" or "P")

Adjust the idle speed, if necessary, by turning the throttle stop screw.

NOTE: If the idle speed is excessively high, check the dashpot system.



5. Calibrate the NDIR CO Meter in accordance with the manufacturer's recommended procedures. Insert exhaust gas sampling probe into the tailpipe at least 40 cm.
6. Check specification for idle CO with cooling fan, air conditioner OFF and headlights OFF.

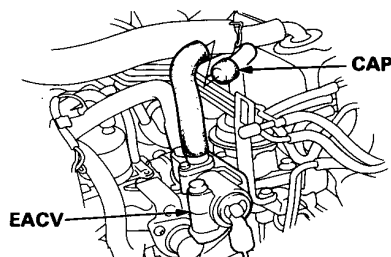
### Specified CO %:

KX, KZ model: 0.1 %

Except KX, KZ model: 1 ± 1 %

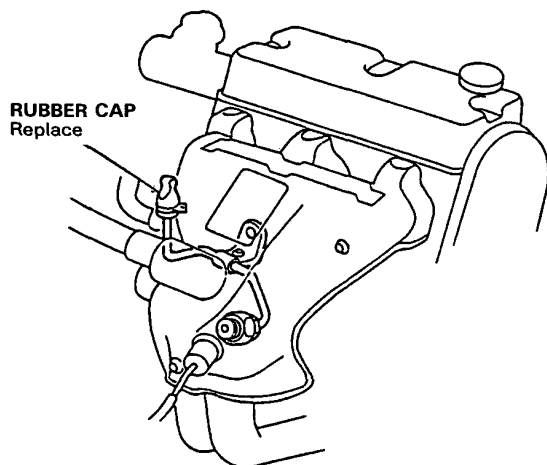
- If idle CO is as specified, go to step 14.
- If not, go to step 7 through 13.

7. KX, KZ model;  
Disconnect the 2P connector from the EACV and disconnect the hose from vacuum hose manifold, then cap the hose end.





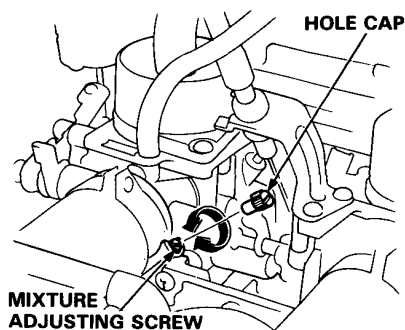
8. Remove the rubber cap from the gas pipe.



9. Check specification for idle CO.

**Specified CO % :  $2.0 \pm 1.0$  %**

- If not within specification, remove mixture adjusting screw hole caps and adjust by turning both mixture adjusting screws to obtain proper CO reading.



- Turning both mixture adjusting screws

clockwise: CO reading decreases  
counterclockwise: CO reading increases

Readjust idle speed if necessary, and recheck idle CO.

10. KX model;  
Reconnect the connector and hose.  
Remove EFI. ECU fuse for 10 seconds to reset control unit.

11. KX, KZ model:  
Recheck idle CO.

**Specified CO % : 0.1 %**

- If idle CO is as specified (step 6), go to step 11.
- If not, check the self-diagnosis indicator. If not, replace the EACV, then repeat step 6.

12. Recheck idle speed.

**Idle speed should be:**

Manual	$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

- If idle speed is as specified (step 4), go to step 13.
- If idle speed is not as specified, adjust by turning throttle stop screw, then repeat step 6.

13. Reinstall the mixture adjusting screw hole cap.

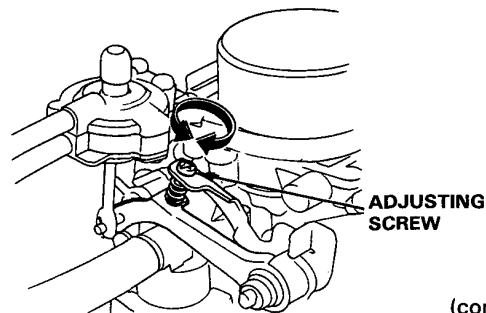
14. KF, KG, KW, KB, KE model: If equipped with 4WS, disconnect the 2P connector on the P/S oil pressure switch, and connect a jumper wire between the 2 terminals on the wire harness. Then check the idle speed.

KX, KZ model: If equipped with 4WS, check the idle speed when the 2P connector on the P/S oil pressure switch is disconnected.

**Idle speed should be:**

Manual	$950 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$830 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

Adjust the idle speed, if necessary, by turning the adjusting screw A.



(cont'd)

# Carburetor

## Idle Speed/Mixture (cont'd)

5. KX, KZ model: If equipped with 4WS, connect the 2P connector on the P/S oil pressure switch. And check the idle speed while the steering wheel is turning.

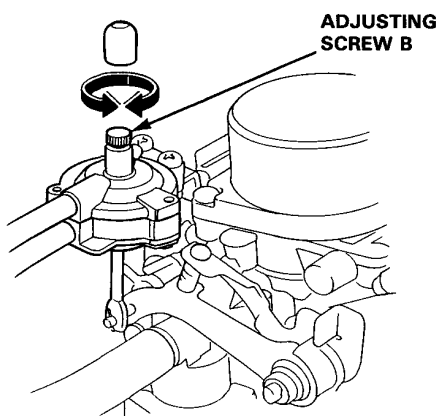
Idle speed should be:

Manual	$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

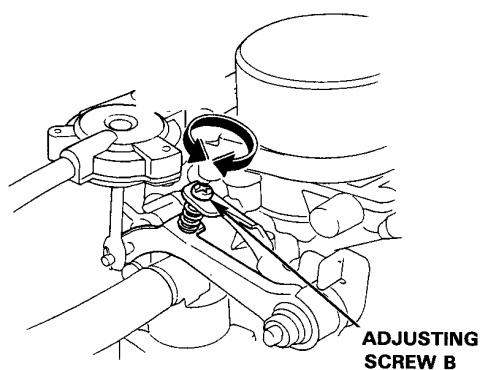
16. If equipped with air conditioner, check the idle speed with the A/C on.

Idle speed should be:  $750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$

4WS:



Except 4WS:



Adjust the idle speed, if necessary, by turning the adjusting screw B.

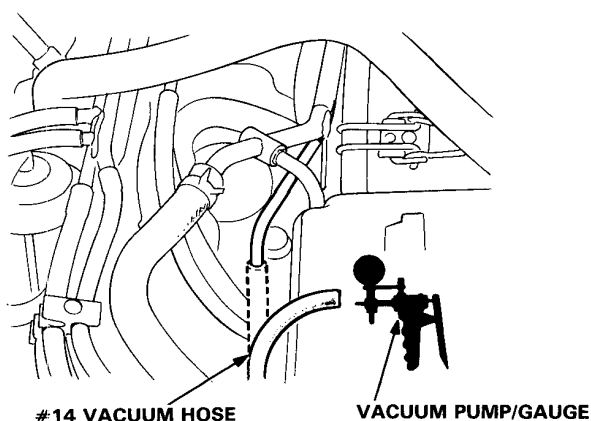
## Power Valve [Except KY, KT]

### Testing (COLD ENGINE)

NOTE: Intake air temperature must be below  $20.5^{\circ}\text{C}$  ( $68.5^{\circ}\text{F}$ )

1. Disconnect the #14 vacuum hose from the vacuum hose manifold and connect a vacuum pump. Apply vacuum.

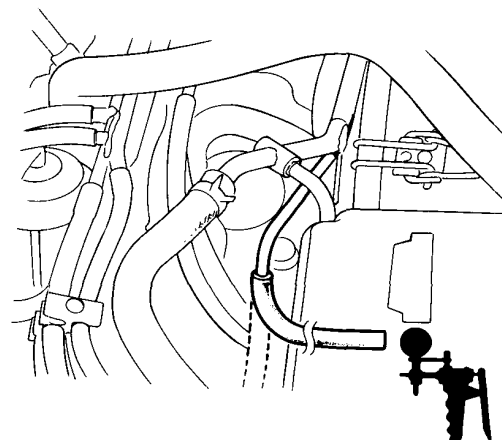
It should hold vacuum.



- If it does not hold vacuum, replace the diaphragm and retest.

2. Start the engine and disconnect the #14 vacuum hose from the vacuum hose manifold, and connect a vacuum pump.

There should be no vacuum.



- If there is vacuum, check the vacuum hose for proper connection, cracks, blockage or disconnected hose, and replace the air bleed valve B.

# Carburetor

## Idle Speed/Mixture (cont'd)

5. KX, KZ model: If equipped with 4WS, connect the 2P connector on the P/S oil pressure switch. And check the idle speed while the steering wheel is turning.

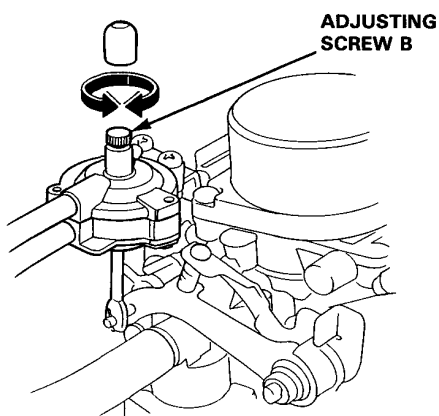
Idle speed should be:

Manual	$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$
Automatic	$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (except "N" or "P")

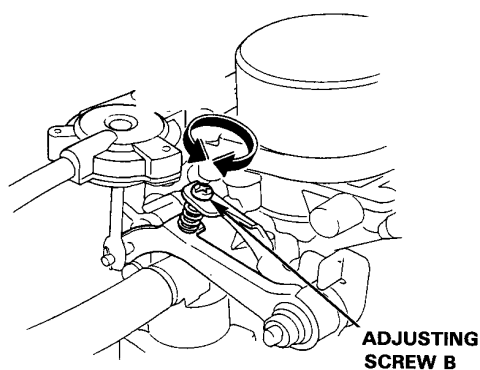
16. If equipped with air conditioner, check the idle speed with the A/C on.

Idle speed should be:  $750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$

4WS:



Except 4WS:



Adjust the idle speed, if necessary, by turning the adjusting screw B.

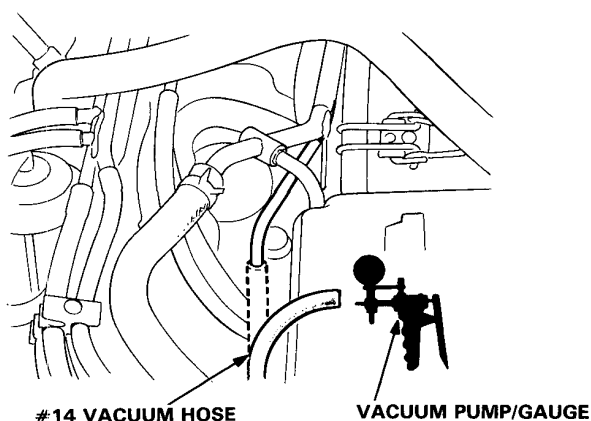
## Power Valve [Except KY, KT]

### Testing (COLD ENGINE)

NOTE: Intake air temperature must be below  $20.5^{\circ}\text{C}$  ( $68.5^{\circ}\text{F}$ )

1. Disconnect the #14 vacuum hose from the vacuum hose manifold and connect a vacuum pump. Apply vacuum.

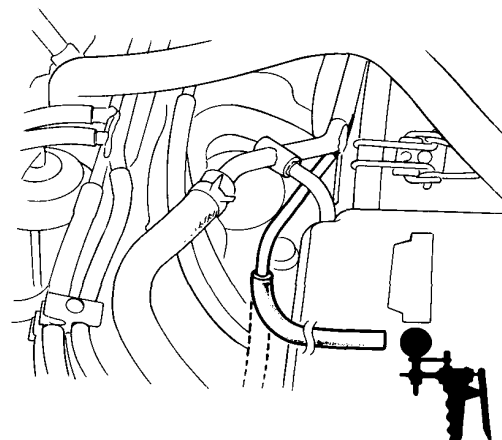
It should hold vacuum.



- If it does not hold vacuum, replace the diaphragm and retest.

2. Start the engine and disconnect the #14 vacuum hose from the vacuum hose manifold, and connect a vacuum pump.

There should be no vacuum.



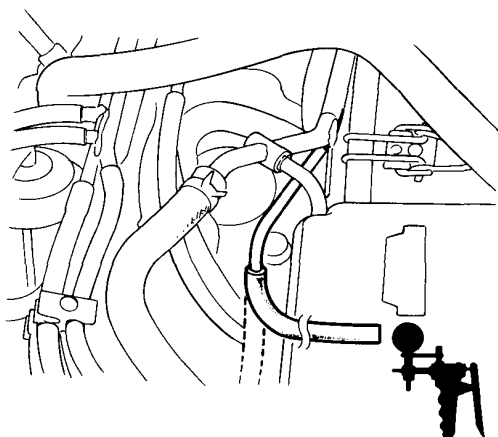
- If there is vacuum, check the vacuum hose for proper connection, cracks, blockage or disconnected hose, and replace the air bleed valve B.



## Testing (HOT ENGINE)

1. Start the engine and warm up to normal operating temperature (cooling fan comes on).
2. Disconnect the #14 vacuum hose from the vacuum hose manifold and connect a vacuum pump.

There should be vacuum.



- If there is no vacuum, check the vacuum hose for proper connection, cracks, blockage or disconnected hose, and replace the air bleed valve B.

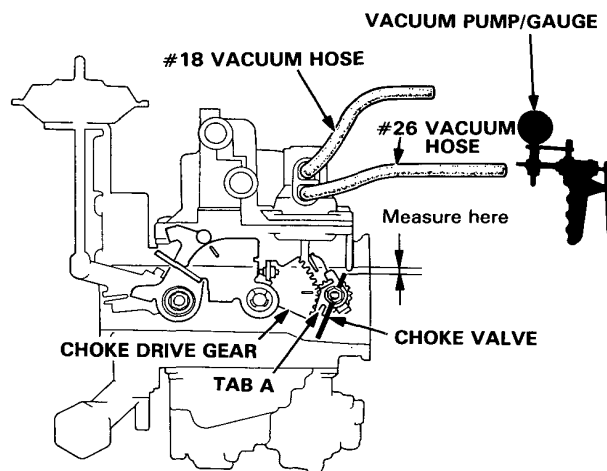
## Choke Linkage

### Adjustment

1. Remove the carburetor.
2. Disconnect the #18 vacuum hose from the choke opener and leave open to atmosphere. Disconnect the #26 vacuum hose and connect a vacuum pump. Apply at least 200 mm Hg (8 in. Hg).

NOTE: If vacuum drops below 200 mm Hg (8 in. Hg), slowly reapply vacuum until you can maintain the highest level without losing vacuum.

3. Turn the choke drive gear clockwise and measure the clearance between the choke valve and the casting.



### 1st Stage Clearance;

$1.89 \pm 0.09$  mm ( $0.074 \pm 0.004$  in.)

Adjust clearance by bending Tab A.

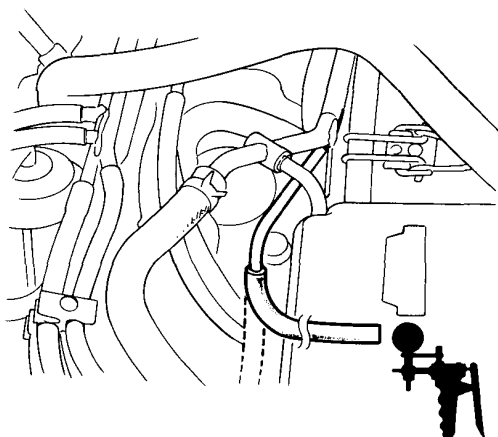
(cont'd)



## Testing (HOT ENGINE)

1. Start the engine and warm up to normal operating temperature (cooling fan comes on).
2. Disconnect the #14 vacuum hose from the vacuum hose manifold and connect a vacuum pump.

There should be vacuum.



- If there is no vacuum, check the vacuum hose for proper connection, cracks, blockage or disconnected hose, and replace the air bleed valve B.

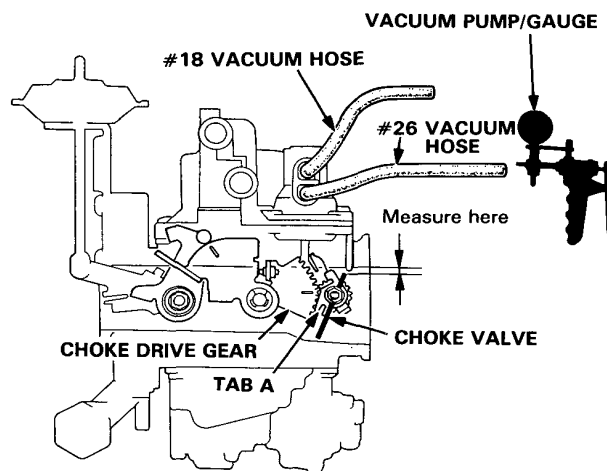
## Choke Linkage

### Adjustment

1. Remove the carburetor.
2. Disconnect the #18 vacuum hose from the choke opener and leave open to atmosphere. Disconnect the #26 vacuum hose and connect a vacuum pump. Apply at least 200 mm Hg (8 in. Hg).

NOTE: If vacuum drops below 200 mm Hg (8 in. Hg), slowly reapply vacuum until you can maintain the highest level without losing vacuum.

3. Turn the choke drive gear clockwise and measure the clearance between the choke valve and the casting.



### 1st Stage Clearance;

$1.89 \pm 0.09$  mm ( $0.074 \pm 0.004$  in.)

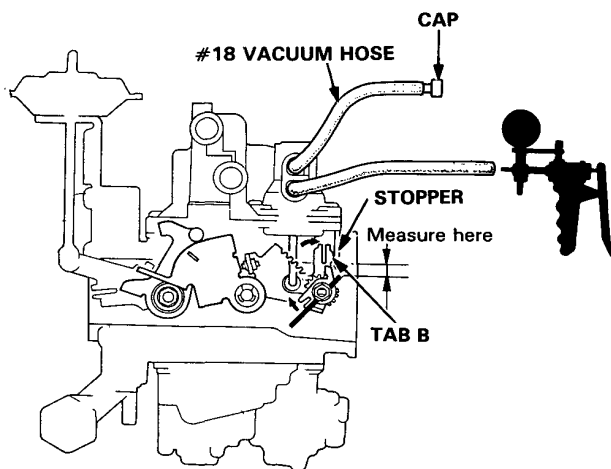
Adjust clearance by bending Tab A.

(cont'd)

# Carburetor

## Choke Linkage (cont'd)

4. Cap the end of the #18 vacuum hose and apply vacuum.
5. Turn the choke drive lever clockwise until Tab B seats against the stopper, and measure clearance between the choke valve and casting.



### 2nd Stage Clearance;

[KS, KX, KZ model]

M/T:  $4.31 \pm 0.09$  mm ( $0.172 \pm 0.004$  in.)

A/T:  $4.74 \pm 0.09$  mm ( $0.190 \pm 0.004$  in.)

[Except KS, KX, KZ model]

$3.56 \pm 0.09$  mm ( $0.140 \pm 0.004$  in.)

Adjust clearance by bending Tab B.

If the clearance can not adjust, replace the left carburetor.



## Choke Opener

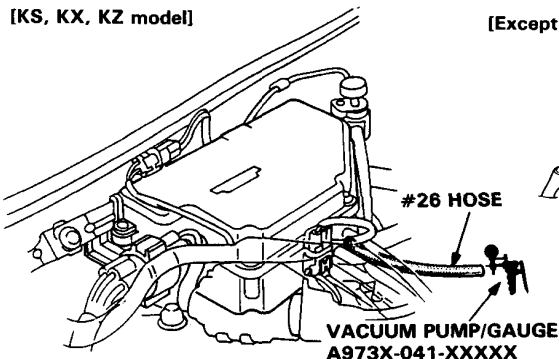
### Troubleshooting Flow Chart Cranking Leak Solenoid Valve

#### Inspection of Cranking Leak Solenoid Valve

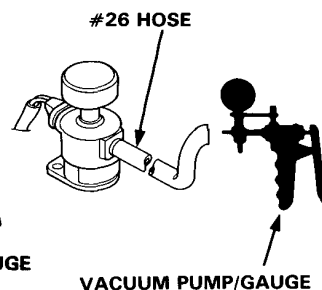
Disconnect #26 vacuum hose from the vacuum hose manifold.

Connect vacuum pump and continually apply vacuum.

[KS, KX, KZ model]



[Except KS, KX, KZ model]



Does the gauge show vacuum?

NO

- Check the vacuum hose for proper connection or leakage.
- Replace the solenoid valve.

YES

Does vacuum leak?

NO

- Repair vacuum hose pinch or blockage.
- Replace the solenoid valve.

YES

Connect a T-fitting vacuum gauge the between #26 hose and the vacuum hose manifold.

Turn the ignition switch to the START position.

Is there less than 250 mm Hg (10 in. Hg) of vacuum in the start position?

NO

Turn the ignition switch OFF.

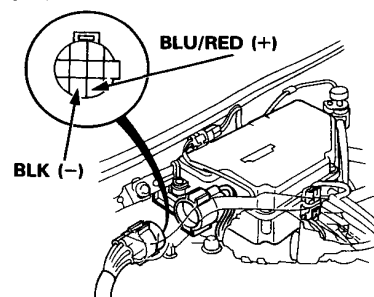
YES

Cranking Lead Solenoid Valve is OK.

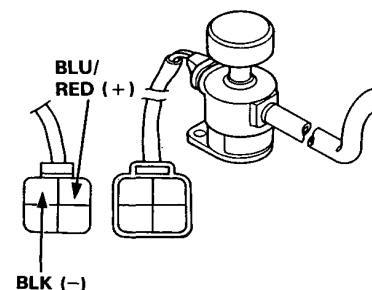
Disconnect the connector.

Measure voltage between BLU/RED (+) terminal and BLK (–) terminal on the wire harness.

[KS, KX, KZ model]



[Except KS, KX, KZ model]

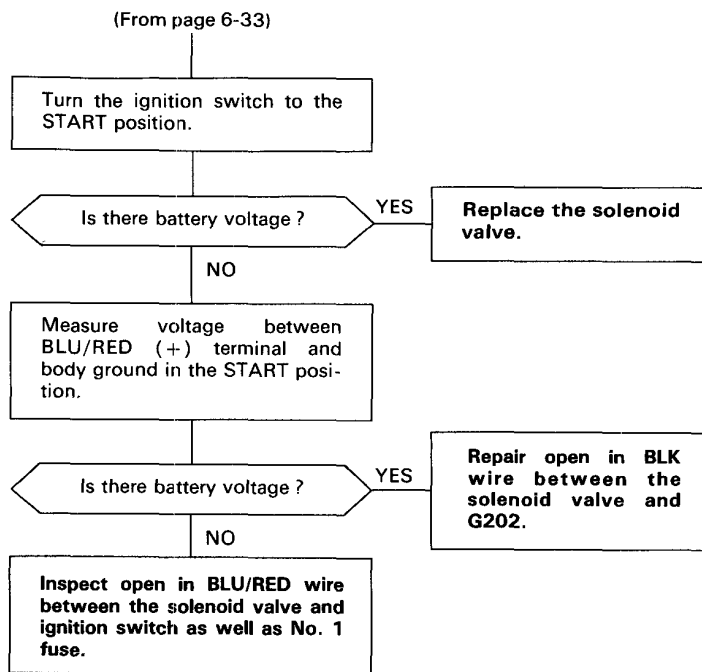


(To page 6-34)

(cont'd)

# Carburetor

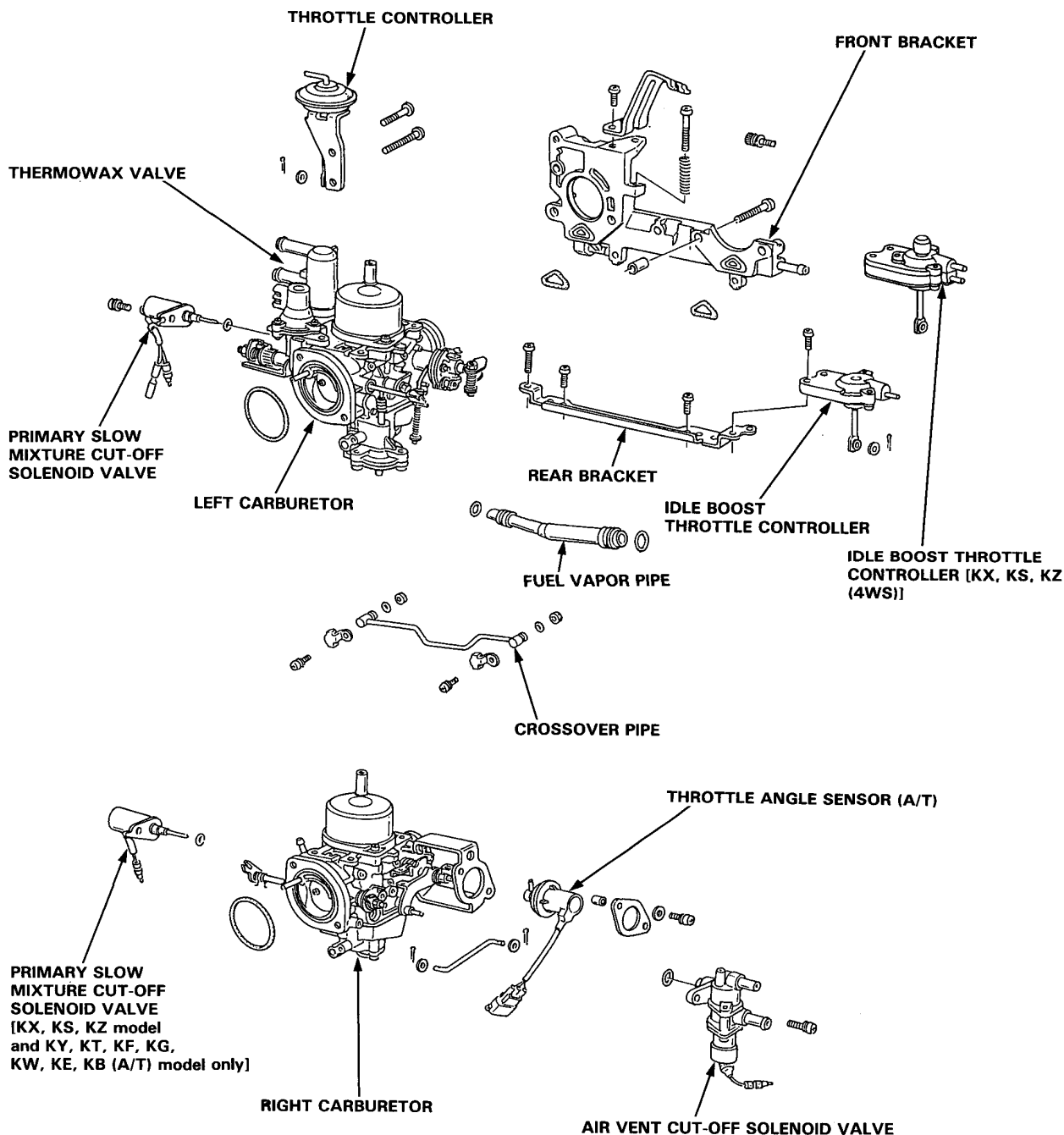
## Choke Opener (cont'd)





## Replacement

**WARNING** Do not smoke while working on fuel system. Keep any open flame away from your work area. Drain fuel in to an approved container.



# Fuel Supply System

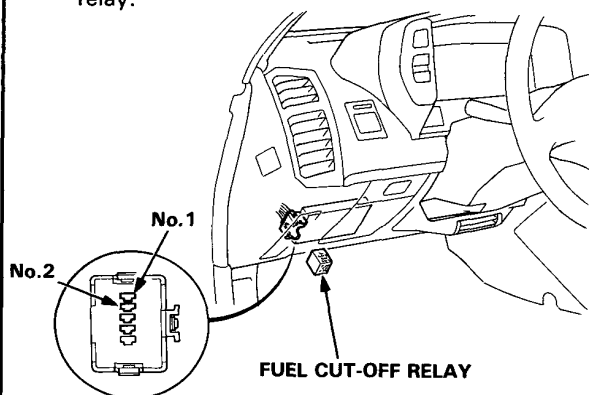
## Fuel Pump

### Testing

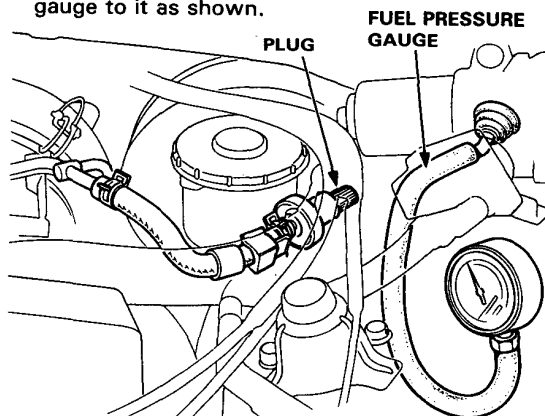
**WARNING** Do not smoke during the test. Keep any open flame away from your work area.

**NOTE:** Check for a clogged fuel filter and or fuel line before checking fuel pump pressure.

1. Remove the dashboard under cover and the fuel cut-off relay from the fuse box.
2. Connect the No.1 terminal to the No.2 terminal located at the fuse box side of the fuel cut-off relay.



3. Disconnect the fuel line at the fuel filter in the engine compartment, and connect a pressure gauge to it as shown.



4. Turn ignition ON until pressure stabilizes, then turn key off.

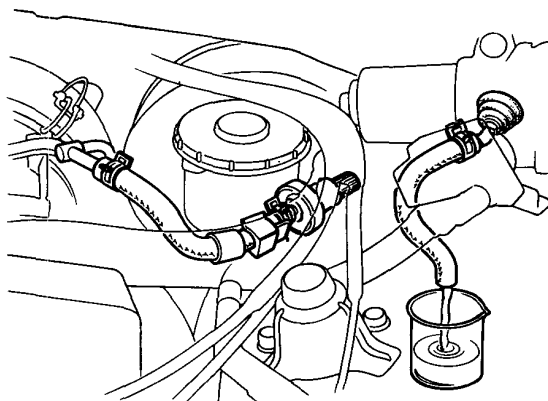
Pressure should be 8.8–14.7 kPa (1.3–2.1 psi).

- If gauge shows at least 8.8 kPa (1.3 psi) go on to step 5.
- If gauge shows less than 8.8 kPa (1.3 psi), replace pump and retest.

5. Remove pressure gauge and hold a graduated container under the hose.
6. Turn ignition ON for 60 seconds, then turn ignition OFF and measure amount of fuel flow.

Fuel flow should be 600 cm<sup>3</sup> (20 oz.) in 60 seconds.

- If fuel flow is within specification, reconnect cut-off relay and fuel hose.
- If fuel flow is less than specified, check the fuel cut-off relay.



# Emission Control System



## Air Injection Control [KX, KS, KZ]

### Troubleshooting Flow Chart Air suction Control System

#### Inspection of Air Suction Control System

Remove the control box and open the control box lid.

Disconnect the lower vacuum hose of the solenoid valve from the 3-way joint and connect a vacuum pump.

Disconnect the #5 vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine and warm up to normal operating temperature (the cooling fan comes on).

Apply vacuum.

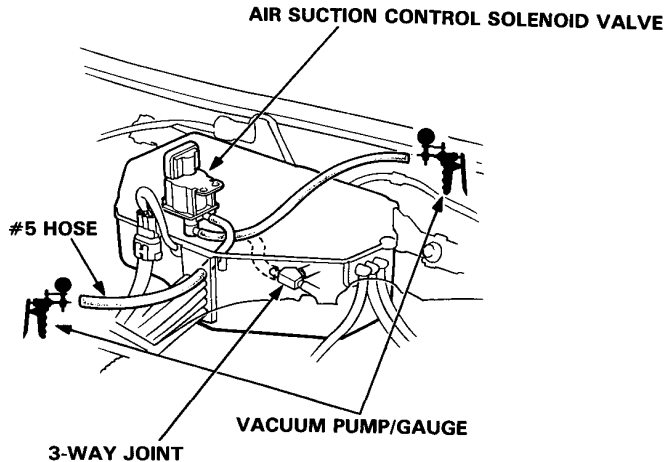
Does solenoid valve hold vacuum?

YES

Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stand.

Place the shift or selector (lever in second or "2" and accelerate above 20 km/h, then release the throttle.

(To page 6-38)



Turn the ignition switch OFF.

Disconnect the 8P connector on the control box.

**WARNING** Block rear wheels before jacking up front of car.

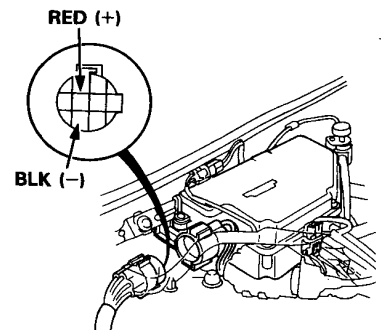
Start the engine.

Measure voltage between RED (+) terminal and BLK (-) terminal on the wire harness.

Is there voltage?

NO

Replace the solenoid valve.

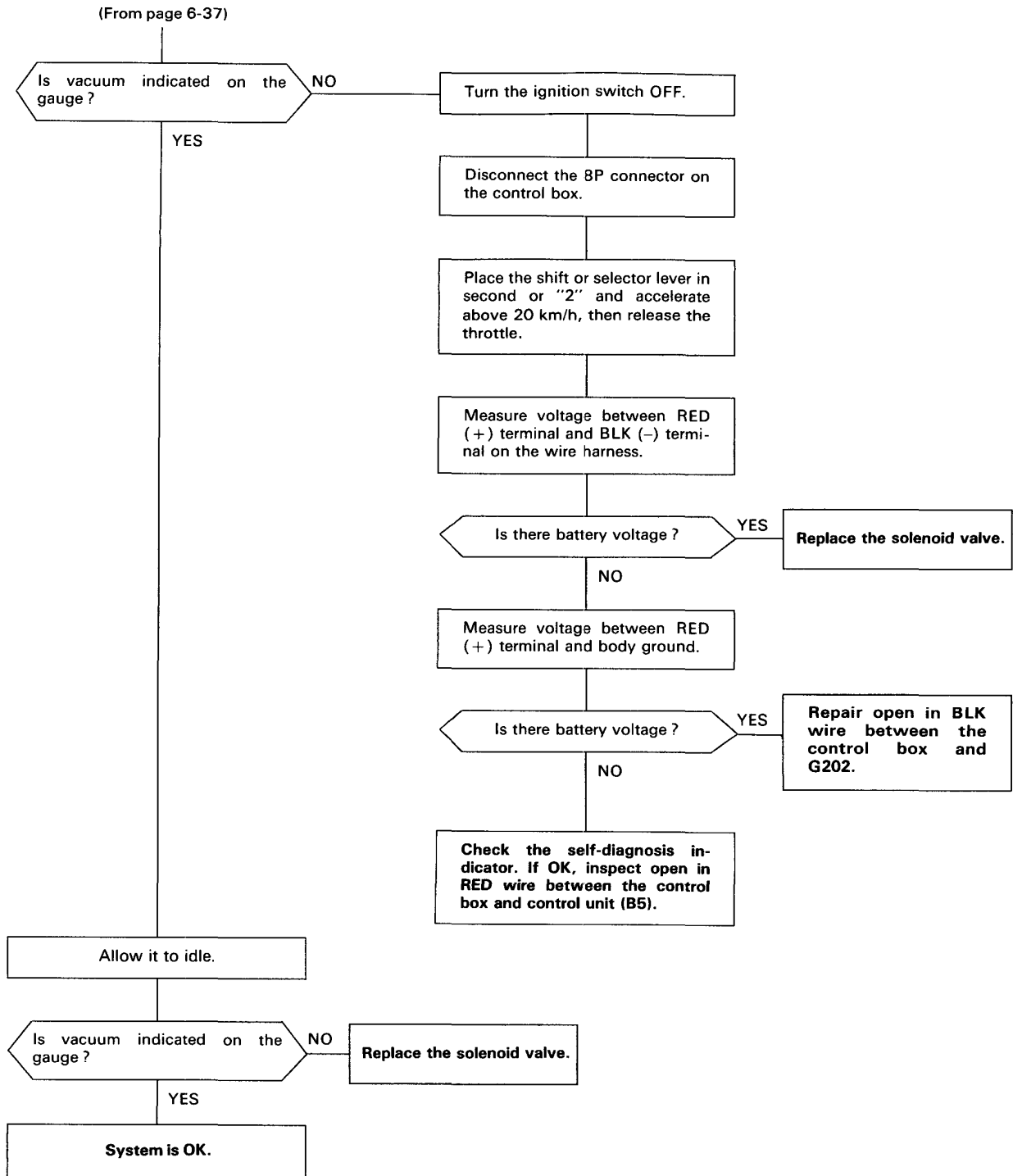


Check the self-diagnosis indicator. If OK, substitute a known-good control unit and retest. If symptom goes away, replace the original control unit.

(cont'd)

# Emission Control System

## Air Injection Control [KX, KS, KZ] (cont'd)



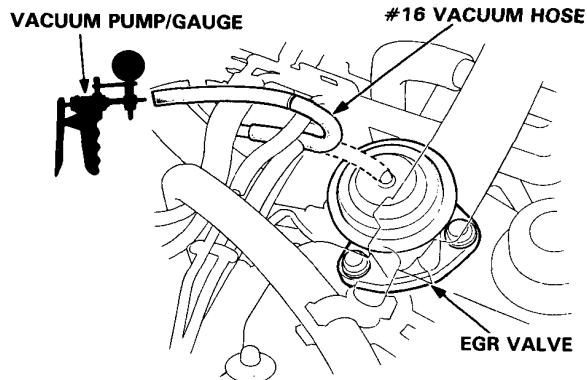


## EGR [KX, KS, KZ]

### Testing (COLD ENGINE)

NOTE: The engine coolant temperature must be below 63°C (145.4 °F)

1. Disconnect the #16 vacuum hose from the EGR valve and connect a vacuum pump to the hose.



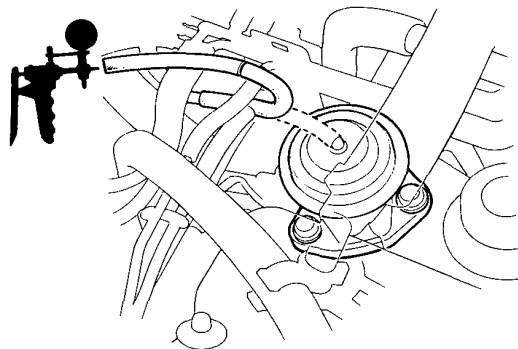
2. Start the engine and raise the engine speed to 3,000 min<sup>-1</sup> (rpm).

There should be no vacuum.

- If there is no vacuum, go on to the hot engine test (next column).
- If there is vacuum, go to troubleshooting (page 6-43).

### Testing (HOT ENGINE)

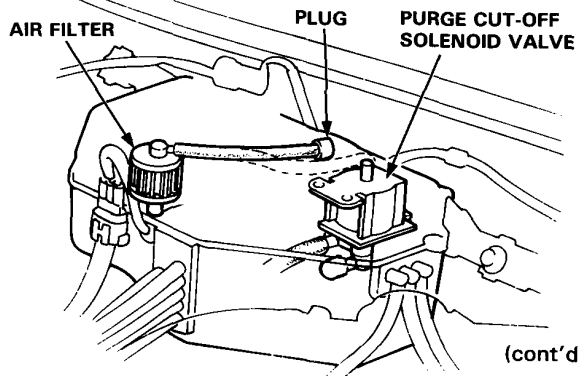
1. Disconnect the #16 vacuum hose from the EGR valve and connect a vacuum pump to the hose.



2. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
3. Remove the control box and open the control box lid.
4. Remove the top hose from the purge cut-off solenoid valve and cap the solenoid valve.

Vacuum should be as shown below:

	Condition	Vacuum at EGR hose
1	Idle	No
2	3,000 min <sup>-1</sup> (rpm)	Yes, 50–150 mmHg
3	3,000 min <sup>-1</sup> (rpm) with blocked vacuum bleed	Yes, Less than 50 mmHg
4	Rapid acceleration	Yes, 50–150 mmHg
5	Deceleration	No



(cont'd)

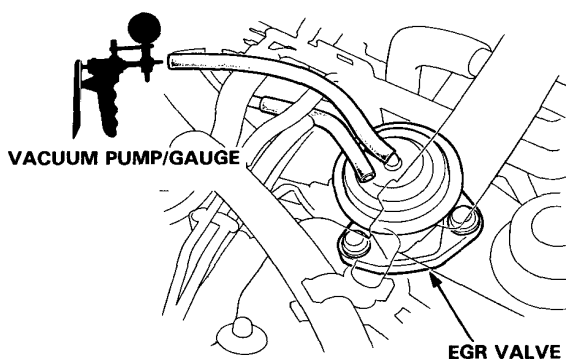
# Emission control System

## EGR [KX, KS, KZ] (cont'd)

- If vacuum is available at idle (condition 1) check the vacuum hoses for proper routing and connections, then check for correct idle speed and idle mixture, and make adjustment as necessary.
- If there is no vacuum in conditions 2 and 4, go to troubleshooting (page 6-43).
- If vacuum is more than 50 mmHg in condition 3, replace the EGR control valve and check the vacuum hoses for proper routing and connections.

### EGR Valve Test

1. Start engine and allow to idle.
2. Disconnect vacuum hose from EGR valve and connect a vacuum pump to EGR valve.



3. Apply 150 mm Hg (6 in. Hg) vacuum to EGR Valve. Vacuum should remain steady and engine should die.
- If vacuum remains steady and engine dies, EGR valve is working properly. Remove the vacuum pump and reconnect EGR vacuum hose; test is complete.
  - If vacuum does not remain steady and engine does not die, replace EGR valve and retest.
  - If vacuum remains steady but engine does not die: Remove EGR valve; check EGR valve and manifold for blockage, clean or replace as necessary and retest.

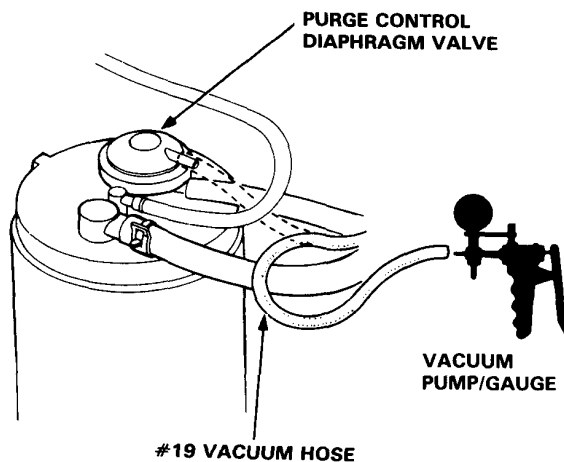


## Evaporative Emission Controls

### Testing (COLD ENGINE)

NOTE: Engine coolant temperature must be below 63°C (145°F)

1. Disconnect the #19 vacuum hose at purge control diaphragm valve and connect vacuum pump/gauge to the hose.



2. Start the engine and allow to idle.

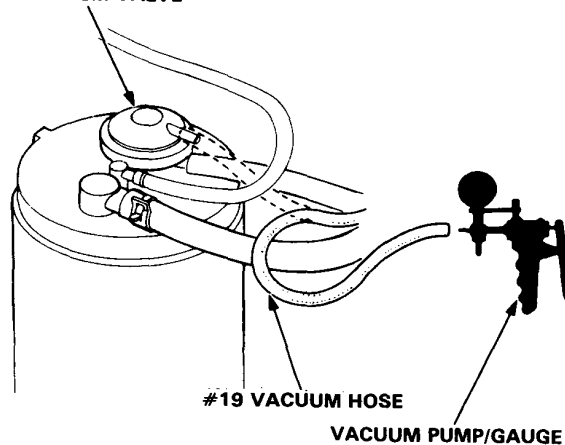
There should be no vacuum.

- If there is no vacuum, go to hot engine test (next column).
- If there is vacuum, go to troubleshooting (page 6-43).

### Testing (HOT ENGINE)

1. Disconnect the #19 vacuum hose at the purge control diaphragm valve and connect a vacuum pump/gauge to the hose.

#### PURGE CONTROL DIAPHRAGM VALVE



2. Start the engine and warm up to normal operating temperature (the cooling fan comes on). Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.



**WARNING** Block rear wheels before jacking up front of car.

Place the shift or selector lever in 2nd gear or "2" range and raise the engine speed to 3,500 min<sup>-1</sup> (rpm).

There should be vacuum.

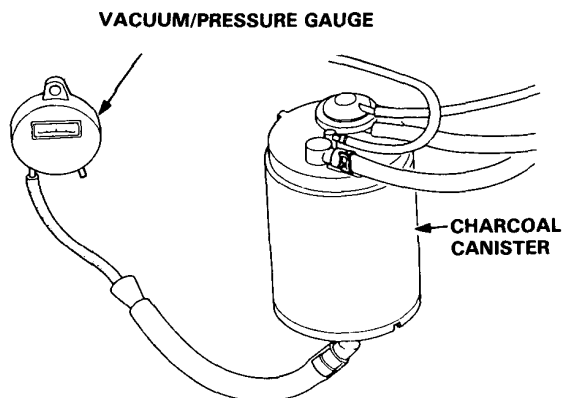
- If there is vacuum, go to step 3.
  - If there is no vacuum, go to troubleshooting (page 6-43).
3. Disconnect a vacuum pump/gauge and reconnect hose.
  4. Remove fuel filler cap.

(cont'd)

# Emission Control System

## Evaporative Emission Control (cont'd)

5. Remove the canister purge air hose from frame and connect hose to a vacuum gauge as shown.



6. Place the shift or selector lever in 2nd gear or "2" range and raise the engine speed to 3,500 min<sup>-1</sup> (rpm). Vacuum should appear on the gauge within 1 minute.

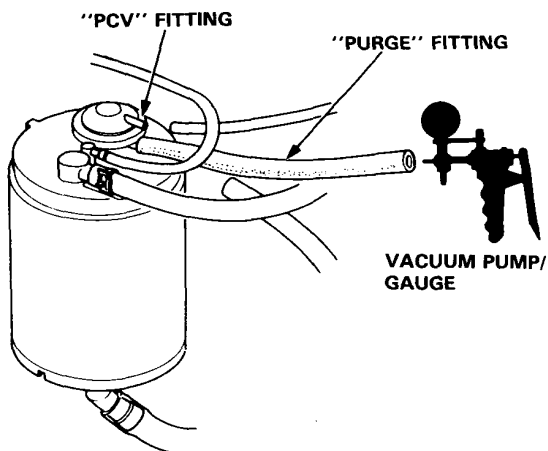
- If vacuum appears on the gauge in 1 minute, remove the gauge and go on to step 8.
- If no vacuum, disconnect the vacuum gauge and reinstall the fuel filler cap.

7. Remove the charcoal canister and check for signs of damage.

- If damaged, replace the canister.
- If OK, go on to step 8.

8. Stop the engine. Disconnect the hose from the canister PCV fitting. Connect a vacuum pump to the canister PURGE fitting as shown, and apply vacuum.

Vacuum should remain steady.



- If vacuum remains steady, go on to step 9.

- If vacuum drops, replace the canister and retest.

9. Restart the engine. Reconnect the hose to the canister PCV fitting.

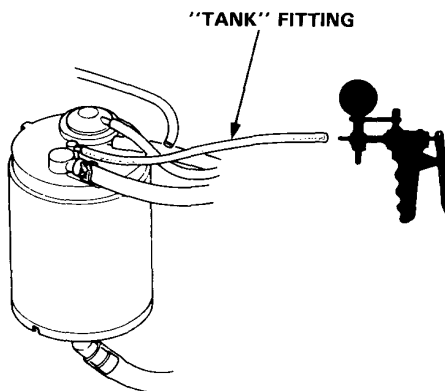
NOTE: Raise engine to 3,500 min<sup>-1</sup> (rpm) (in 2nd or "2" range).

PURGE side vacuum should drop to zero.

- If PURGE side vacuum does not drop to zero, replace the canister and retest.

10. Connect a vacuum pump to TANK fitting as shown, and apply vacuum.

If should not hold vacuum.



- If it does not hold vacuum, reinstall fuel filler cap and canister; test is complete.
- If it holds vacuum, replace canister and retest.



## Troubleshooting Flow Chart Purge Cut-off Solenoid Valve

Inspection of Purge Cut-off Solenoid Valve

Remove the control box and open the control box lid.

Disconnect the upper vacuum hose of the solenoid valve from the 3-way joint, and connect a vacuum pump.

Start the engine.

NOTE: Engine coolant temperature must be below 63° C (145° F)

Apply vacuum.

Does solenoid valve hold vacuum?

YES

Turn the ignition switch OFF.

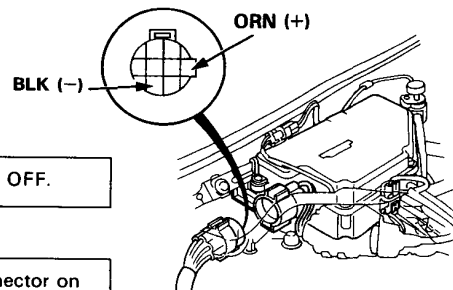
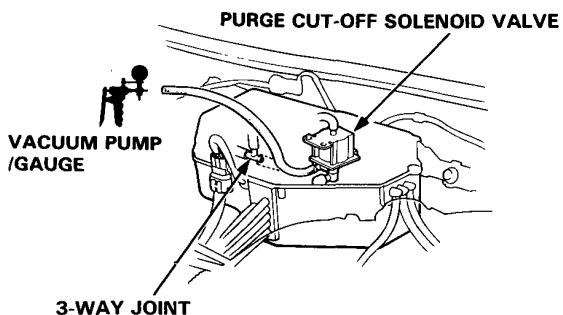
Disconnect the 8P connector on the control box.

Start the engine.

NO

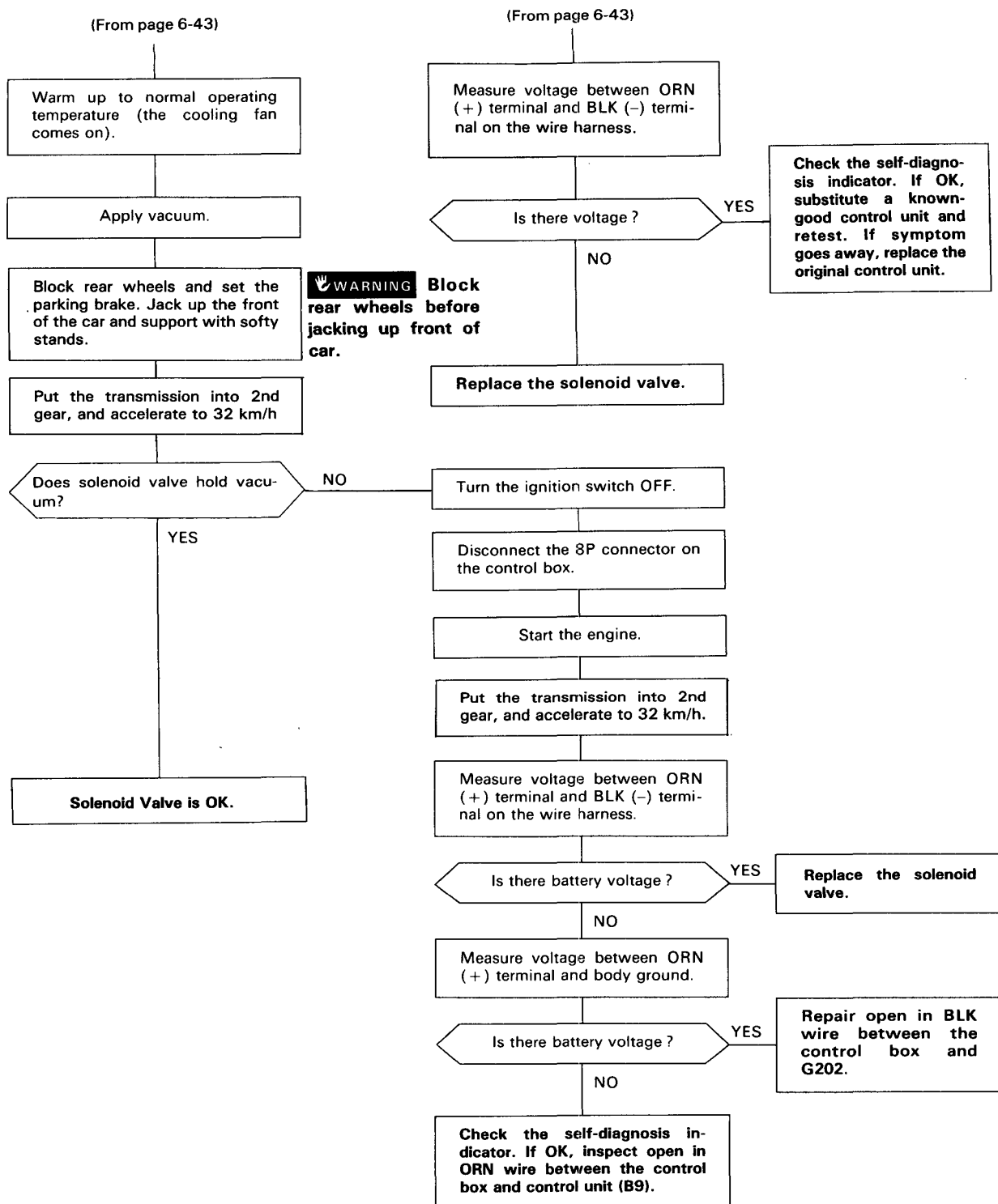
(To page 6-44)

(To page 6-44)



# Emission Control System

## Evaporative Emission Controls (cont'd)





# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — Oxygen Sensor



Self-diagnosis LED blinks once: A problem in the Oxygen ( $O_2$ ) Sensor circuit.

LED indicates CODE 1

Warm up engine to normal operating temperature (the cooling fan comes on).

Turn the ignition switch OFF.

Remove EFI, ECU fuse in the under-hood relay box for 10 seconds to reset control unit.

Start engine and allow to idle for 1 minute.

Raise engine speed to 3,000  $\text{min}^{-1}$  (rpm).

Remove #2 and #7 hoses quickly from the vacuum hose manifold and plugs the vacuum hose manifold.

Hold engine speed steady at 3,000  $\text{min}^{-1}$  (rpm) for 20 seconds.

Does LED indicate CODE 1 ?

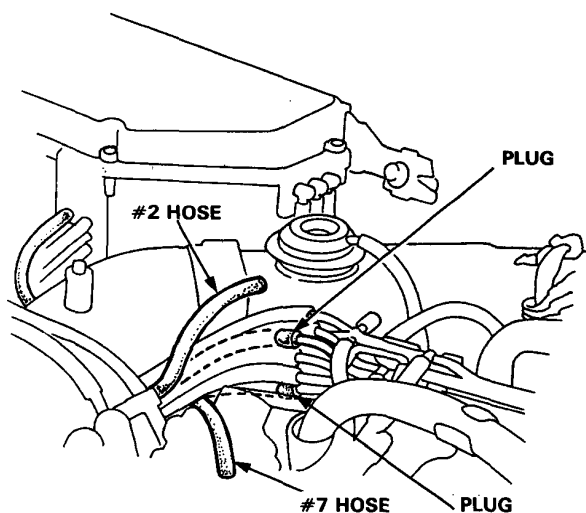
NO

Intermittent failure, check and seat connectors at  $O_2$  sensor, at the battery and at the control unit.

YES

Turn the ignition switch OFF.

(To page 6-46)



(cont'd)

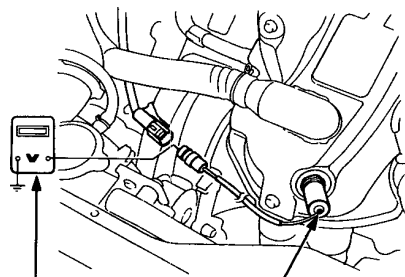
# PGM-CARB Control Unit [KX, KS, KZ]

## Troubleshooting Flow Chart — O<sub>2</sub> Sensor (cont'd)

(From page 6-45)

Disconnect the wire harness from the O<sub>2</sub> sensor and connect a voltmeter between the O<sub>2</sub> sensor connector and engine ground.

Start the engine and measure the voltage between O<sub>2</sub> sensor connector and engine ground.



DIGITAL CIRCUIT TESTER  
07411-0020000

O<sub>2</sub> SENSOR  
45 N·m (4.5 kg-m, 33 lb-ft)

Is voltage above 0.6 V at wide open throttle and below 0.4 V when the throttle is quickly released ?

NO

Replace O<sub>2</sub> sensor.

YES

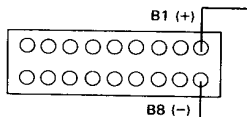
Turn the ignition switch OFF.

Reconnect O<sub>2</sub> sensor.

Connect the ECU check adaptor B between the control unit and connector.

Start the engine.

Measure voltage between B1 (+) terminal and B8 (-) terminal.



Above 0.6 V at full throttle ?  
Below 0.4 V when quickly released ?

Is voltage above 0.6 V at wide open throttle and below 0.4 V when the throttle is quickly released ?

NO

Repair open or short in WHT wire between the control unit (B1) and O<sub>2</sub> sensor.

YES

Substitute a known-good control unit and recheck. If symptom/indication goes away, replace the original control unit.



## Troubleshooting Flow Chart — Vehicle Speed Sensor



Self-diagnosis LED indicator blinks two times: A problem in the Vehicle Speed Sensor circuit.

LED indicates CODE 2.

Connect the ECU check adaptor A and B between the control unit and connector.

Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.

Turn the ignition switch ON.

Slowly rotate left front wheel and measure voltage between A5 (+) terminal and B8 (-) terminal.

Does voltage pulse 0V and 5V?

NO

Turn the ignition switch OFF.

Disconnect A and B connector from the control unit only, not the wire harness.

Turn the ignition switch ON.

Slowly rotate left front wheel and measure voltage between B7 (+) terminal and A5 (-) terminal.

Does voltage pulse 0V and 12V?

NO

YES

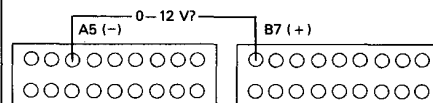
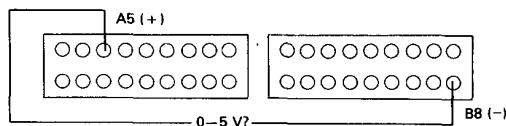
Substitute a known-good control unit and recheck. If prescribed voltage is now available replace the original control unit.

— Repair open or short in WHT/BLU wire between control unit (A5) and the speed sensor.  
— Faulty speed sensor.

— Raise the engine speed to  $3,000 \text{ min}^{-1}$  (rpm) with no load, then check if the LED indicates CODE 2. If LED indicates CODE 2, repair vacuum leak in #7 hose or in vacuum switch.  
— Substitute a known-good control unit and recheck. If prescribed voltage is now available replace the original control unit.

NOTE: Because it is an inter-related system, a leak in the vacuum switch or its hose (page 6-50) may cause a "false" code 2 indication.

**WARNING** Block rear wheels before jacking up front of car.



# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — MAP Sensor (cont'd)



LED indicates CODE 5.

Turn the ignition switch OFF.

Remove EFI/ECU fuse in the under-hood relay box for 10 seconds to reset control unit

Start engine and keep engine speed at idle.

LED indicate CODE 5 ?

NO

Intermittent failure  
(test drive may be necessary.)

YES

Stop engine.

Remove #2 hose from the vacuum hose manifold and connect a T. fitting from a vacuum gauge between the vacuum hose manifold and the MAP sensor.

Start engine.

Is there vacuum ?

NO

Repair as necessary.

YES

Connect a vacuum pump to #2 hose and apply vacuum.

Does it hold vacuum ?

NO

Connect a vacuum pump directly to the MAP sensor and apply vacuum.

YES

Does it hold vacuum?

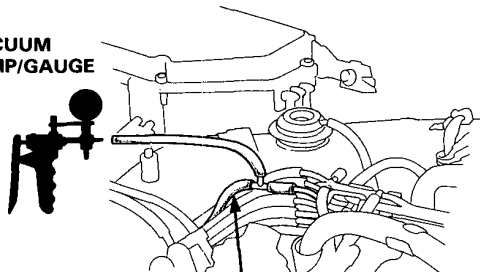
NO

Replace MAP sensor.

YES

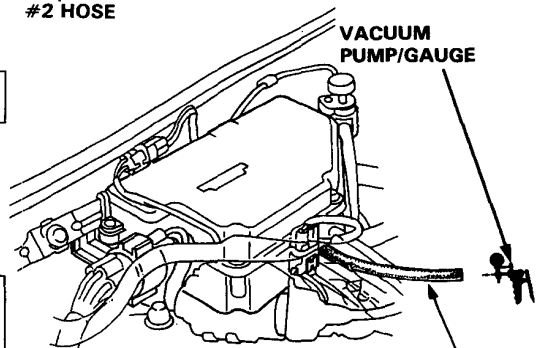
Replace #2 hose.

VACUUM  
PUMP/GAUGE



#2 HOSE

VACUUM  
PUMP/GAUGE



#2 HOSE

(To page 6-49)



(From page 6-48)

Stop engine.

Connect the inspection adaptor between the MAP sensor and wire harness.

Turn the ignition switch ON.

Measure voltage between WHT (+) terminal and GRN (-) terminal.

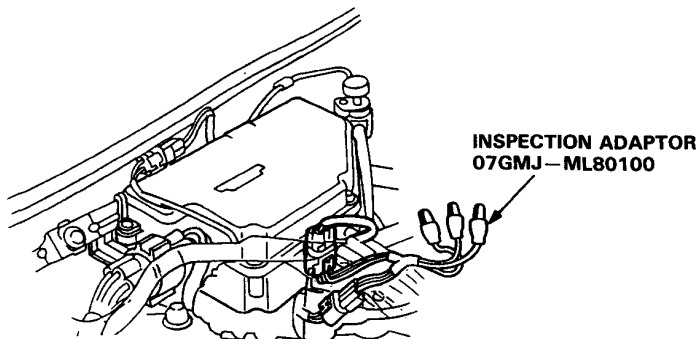
Is there approx. 3V ?

NO

Replace MAP sensor.

YES

Substitute a known-good control unit and recheck. If symptom/indication goes away, replace the original control unit.



# PGM-CARB Control System [KX, KS,KZ]

## Troubleshooting Flow Chart — Vacuum Switch



Self-diagnosis LED indicator blinks four times: A problem in the vacuum switch.

- Engine is warm and running.
- LED indicates CODE 4.

Turn the ignition switch OFF.

Remove EFI/ECU fuse in the under-hood relay box for 10 seconds to reset control unit.

Start the engine and allow to idle for at least 30 seconds.

Does LED indicate CODE 4?

NO

**Intermittent failure.**  
Check connectors at the control box and control unit.

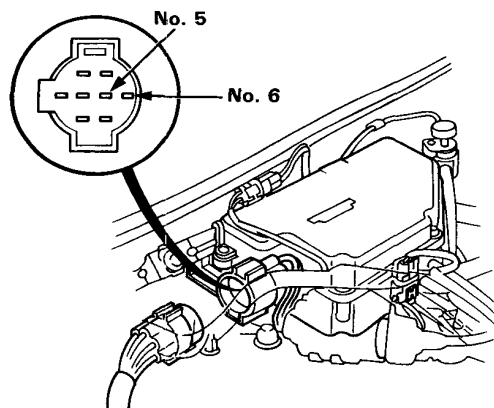
YES

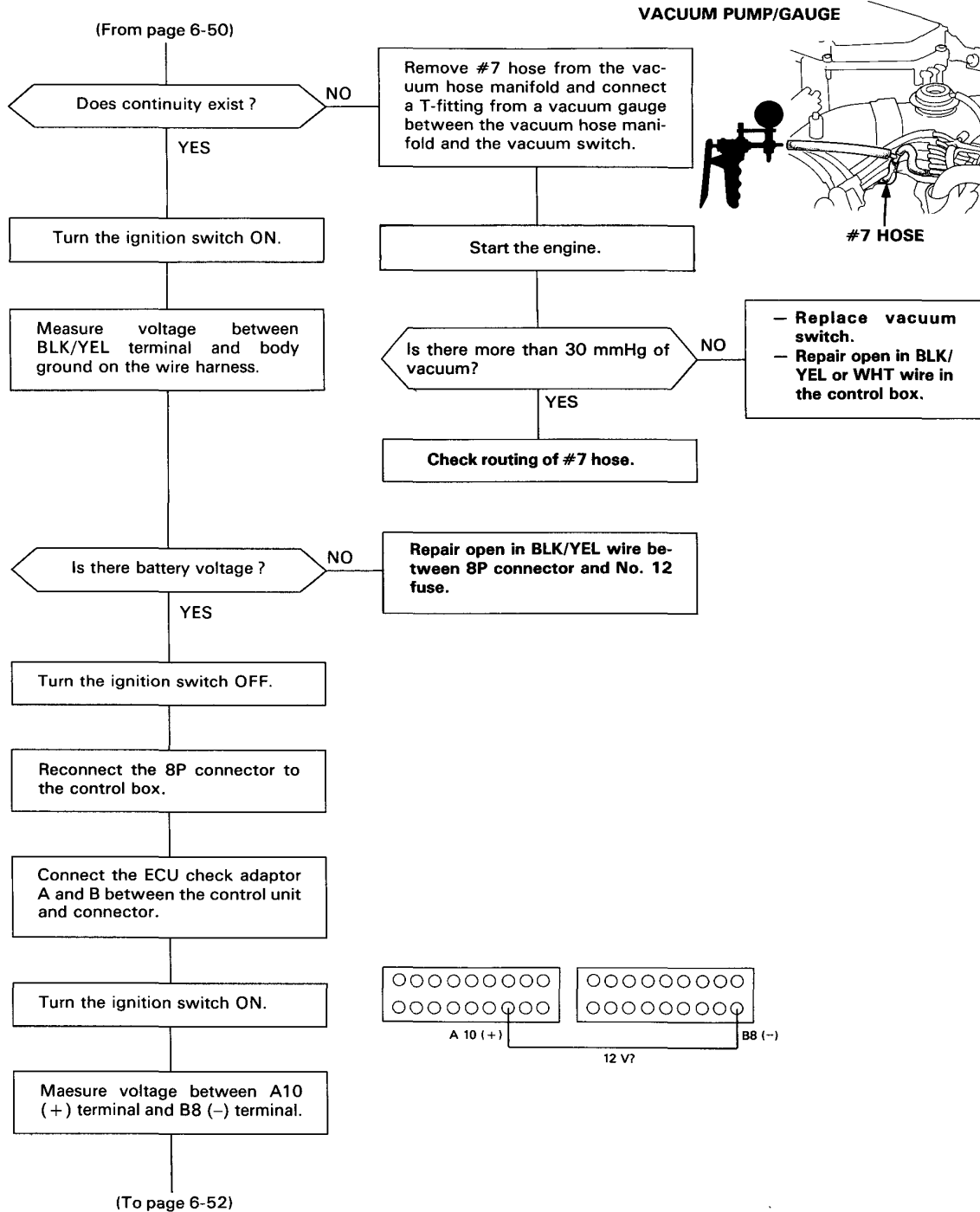
Turn the ignition switch OFF.

Disconnect the 8P connector on the control box.

Measure resistance between No.5 terminal and No.6 terminal on the control box.

(To page 6-51)

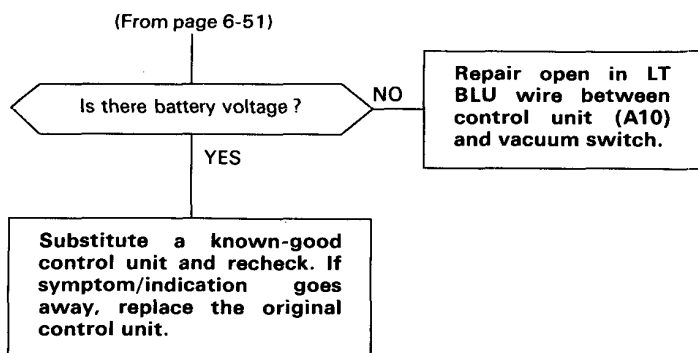




(cont'd)

# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — Vacuum Switch (cont'd)





## Troubleshooting Flow Chart — TW Sensor



Self-diagnosis LED indicator blinks six times: Most likely a problem in the Coolant Temperature (TW) Sensor circuit.

LED indicates CODE 6.

Turn the ignition switch OFF.

Remove EFI, ECU fuse in the under-hood relay box for 10 seconds to reset control unit.

Turn the ignition switch ON.

Does LED indicate CODE 6 ?

NO

Intermittent failure.  
(test drive may be necessary.)

YES

Warm up engine to normal operating temperature (the cooling fan comes on).

Turn the ignition switch OFF.

Disconnect the 2P connector on the TW sensor.

Measure resistance between the 2 terminals on the TW sensor.

Is there 200—400Ω ?

NO

Replace TW sensor.

YES

Turn the ignition switch ON.

Measure voltage between YEL/GRN (+) terminal and body ground.

Is there approx. 5V ?

NO

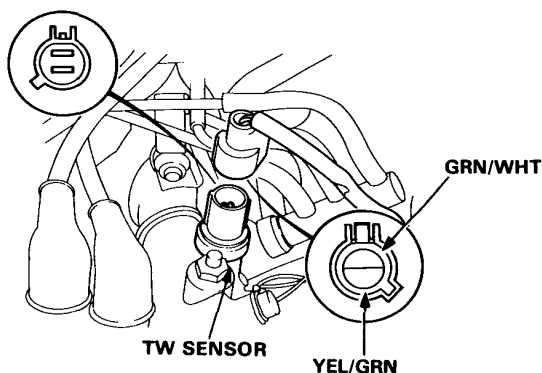
Turn the ignition switch OFF.

YES

(To page 6-54)

Connect the ECU check adaptor A between the control unit and connector.

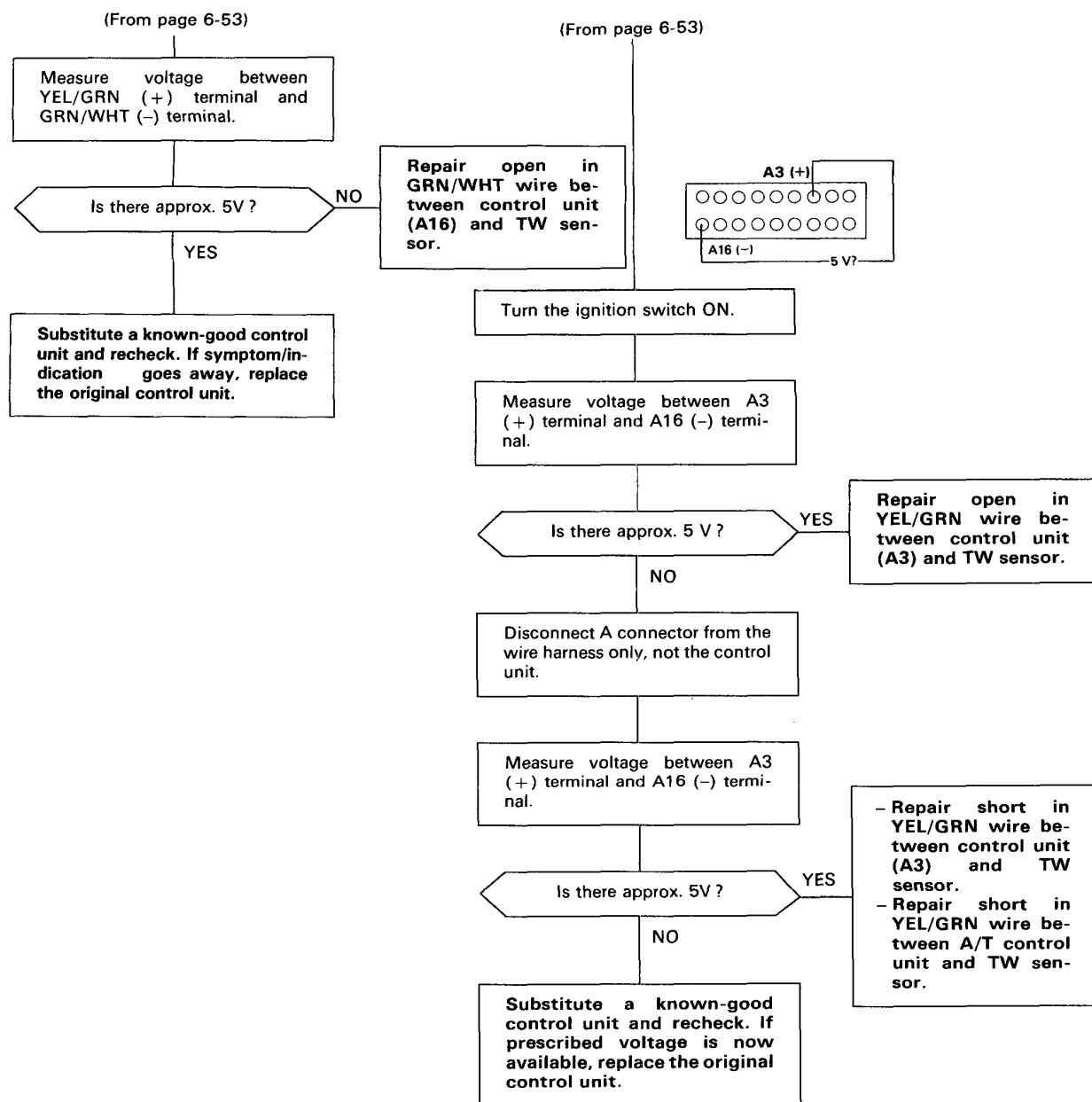
(To page 6-54)



(cont'd)

# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — TW Sensor (cont'd)

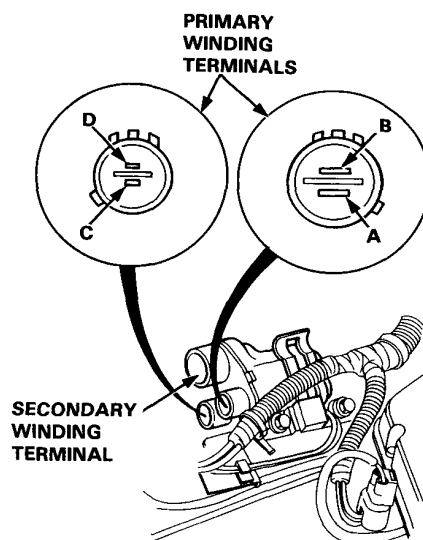
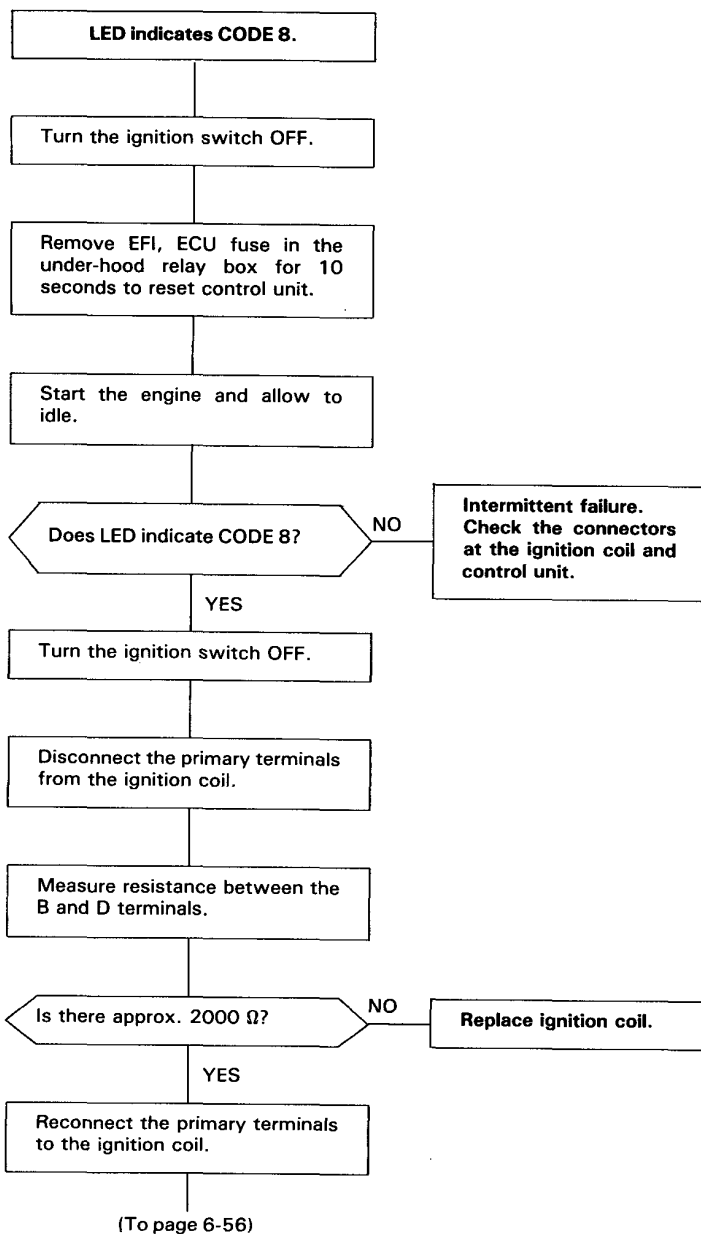




## Troubleshooting Flow Chart — Ignition Coil Signal



Self-diagnosis LED indicator blinks eight times: A problem in the ignition coil signal circuit.



(cont'd)

# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — Ignition Coil Signal (cont'd)

(From page 6-55)

Connect the ECU check adaptor A and B to main wire harness, but not the control unit.

Turn the ignition switch ON.

Measure voltage between A1 (+) terminal and B8 (-) terminal.

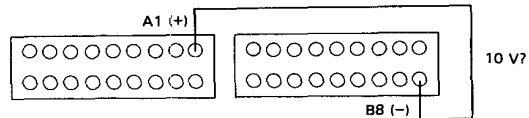
Is there approx. 10 V?

NO

Repair open BLU wire between control unit (A1) and ignition coil.

YES

Substitute a known-good control unit and recheck.  
If symptom/indication goes away, replace the original control unit.





## Troubleshooting Flow Chart — TA Sensor



Self-diagnosis LED indicator blinks ten times: Most likely a problem in the Intake Air Temperature (TA) Sensor circuit.

LED indicates CODE 10

Turn the ignition switch OFF.

Remove EFI, ECU fuse in the under-hood relay box for 10 seconds to reset control unit.

Turn the ignition switch ON.

Does LED indicate CODE 10 ?

NO

Intermittent failure  
(test drive may be necessary.)

YES

Turn the ignition switch OFF.

Disconnect the 2P connector on the TA sensor.

Measure resistance between the 2 terminals on the TA sensor.

Is there 1—4 k $\Omega$  ?

NO

Replace TA sensor.

YES

Turn the ignition switch ON.

Measure voltage between WHT/RED (+) terminal and body ground.

Is there approx. 5V ?

NO

Turn the ignition switch OFF.

YES

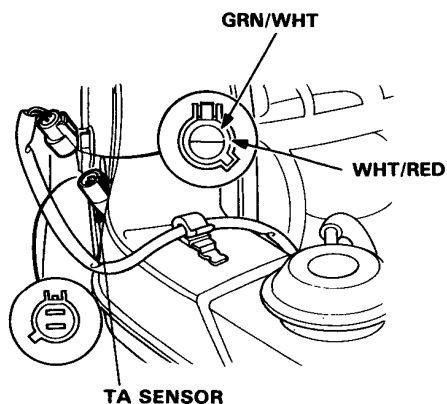
Measure voltage between WHT/RED (+) terminal and GRN/WHT (-) terminal.

(To page 6-58)

Connect the ECU check adaptor A between the control unit and connector.

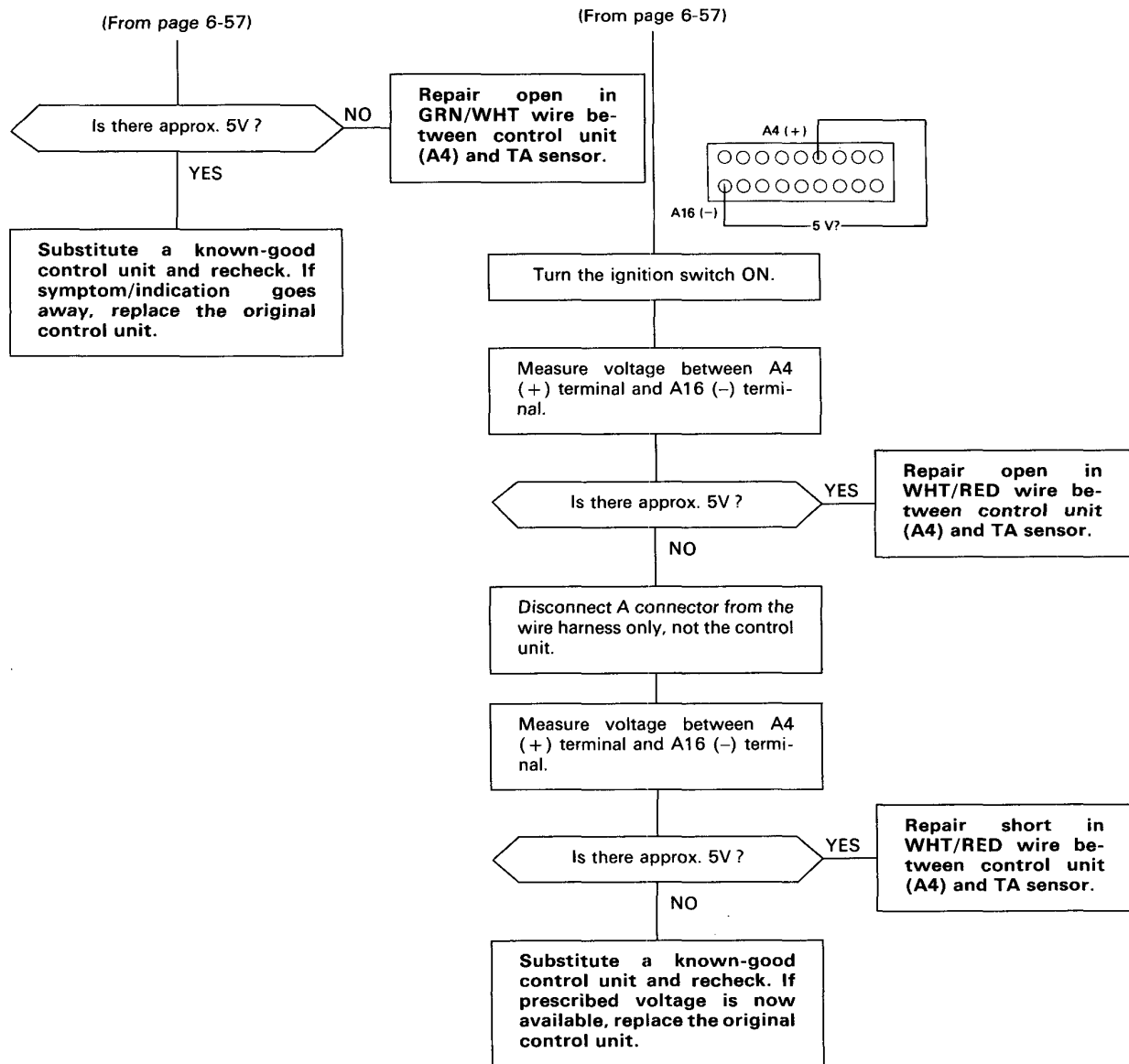
(To page 6-58)

(cont'd)



# PGM-CARB Control System [KX, KS, KZ]

## Troubleshooting Flow Chart — TA Sensor (cont'd)





## Input Troubleshooting

If there is no voltage from the control unit when there should be voltage or if there is voltage from the unit when there shouldn't be voltage, inspect as follows and if no defects can be found, replace the control unit and re-test.

PROBLEMATIC CIRCUIT	REFER TO CHECK:		CHECK
A/C Idle Boost Solenoid Valve	M/T	1, 2, 4	1. Inspect the power source (IG1, Bat) and ground. 2. Inspect the clutch switch signal (page 6-60). 3. Inspect the A/T shift position signal. 4. Inspect the air conditioning signal. 5. Inspect the P/S oil pressure signal (page 6-62).
	A/T	1, 3, 4	
Primary Slow Mixture Cut-off Solenoid Valve	M/T	1, 2	
	A/T	1, 3	
Idle Boost Solenoid Valve	1.5		

# PGM-CARB Control System [KX, KS, KZ]

## Input Troubleshooting Flow Chart — Clutch Switch Signal (M/T only) —

Inspection of clutch switch signal

Connect the ECU check adaptor A and B between the control unit and connector.

Turn the ignition switch ON.

Measure voltage between A12 (+) terminal and B8 (-) terminal.

Is there voltage?

YES

Turn the ignition switch OFF.

Disconnect the 3P connector on the clutch switch.

Check for continuity between the No.1 terminal and No.3 terminal on the clutch switch.

Does continuity exist?

NO

—Adjust the clutch switch (section 7).  
—Replace the clutch switch.

YES

Turn the ignition switch ON.

Measure voltage between ORN (+) terminal and body ground.

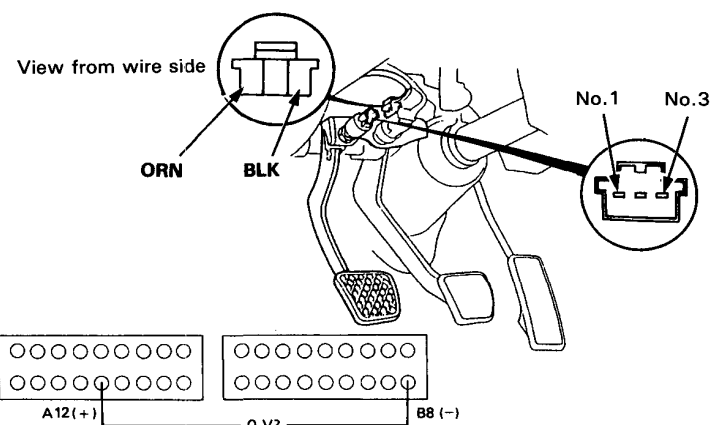
Is there battery voltage?

NO

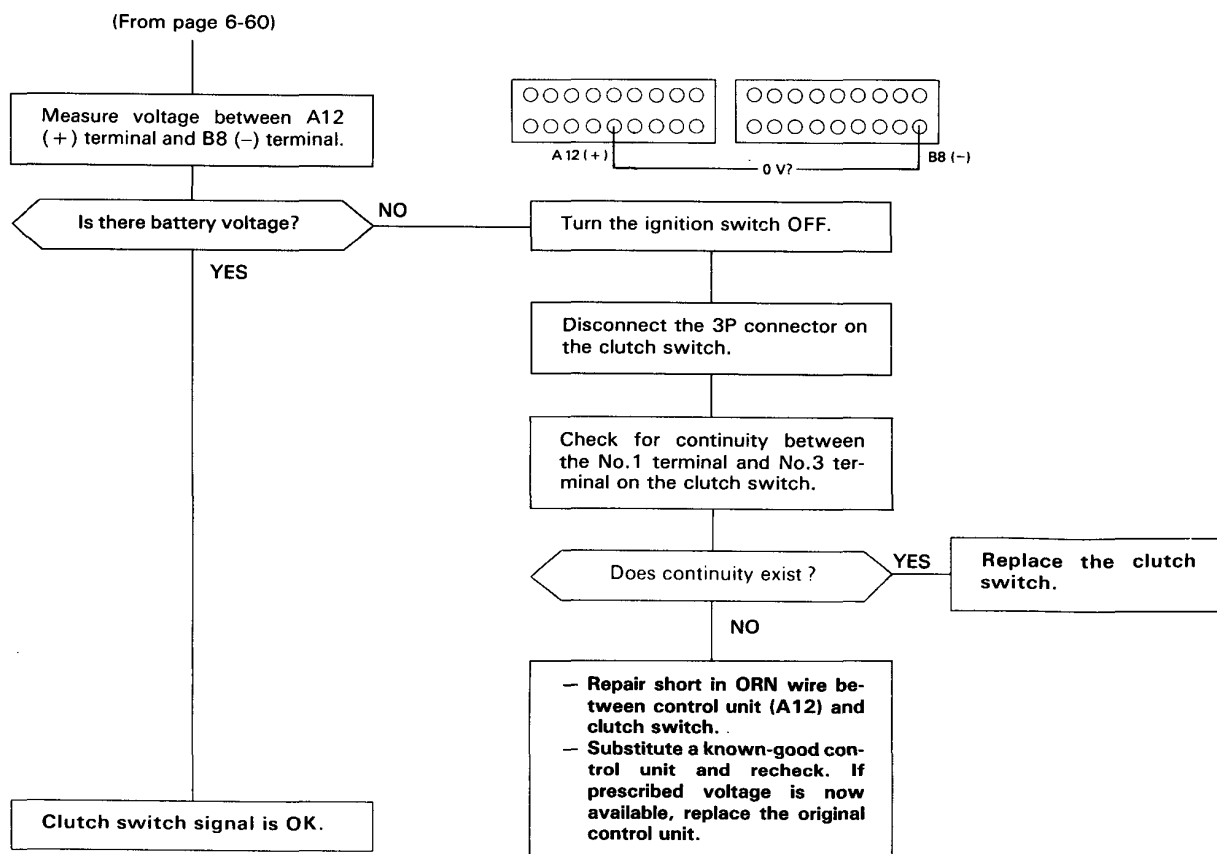
Repair open in ORN wire between control unit (A12) and the clutch switch.

YES

Repair open in BLK wire between the clutch switch and G401.

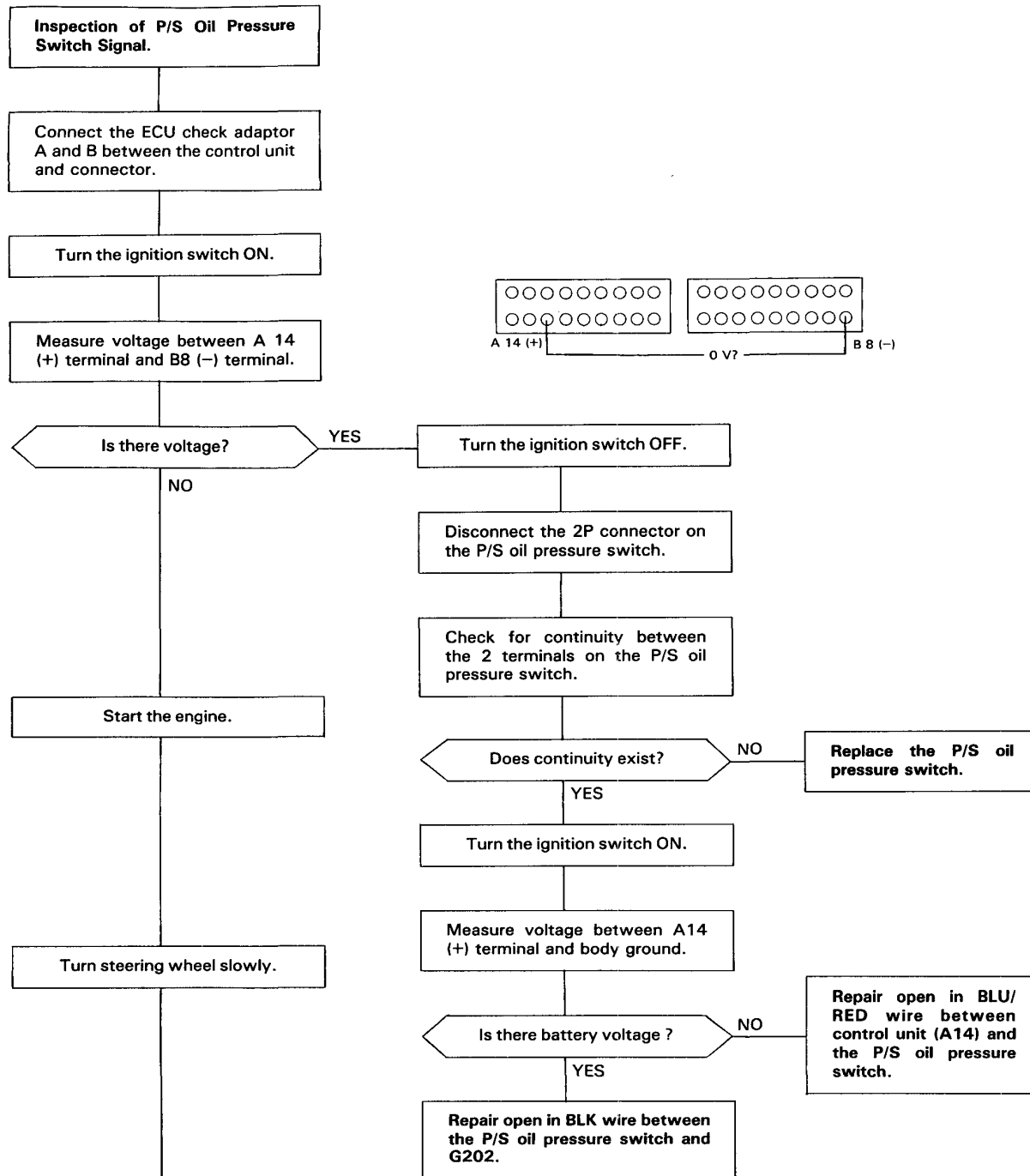


(To page 6-61)

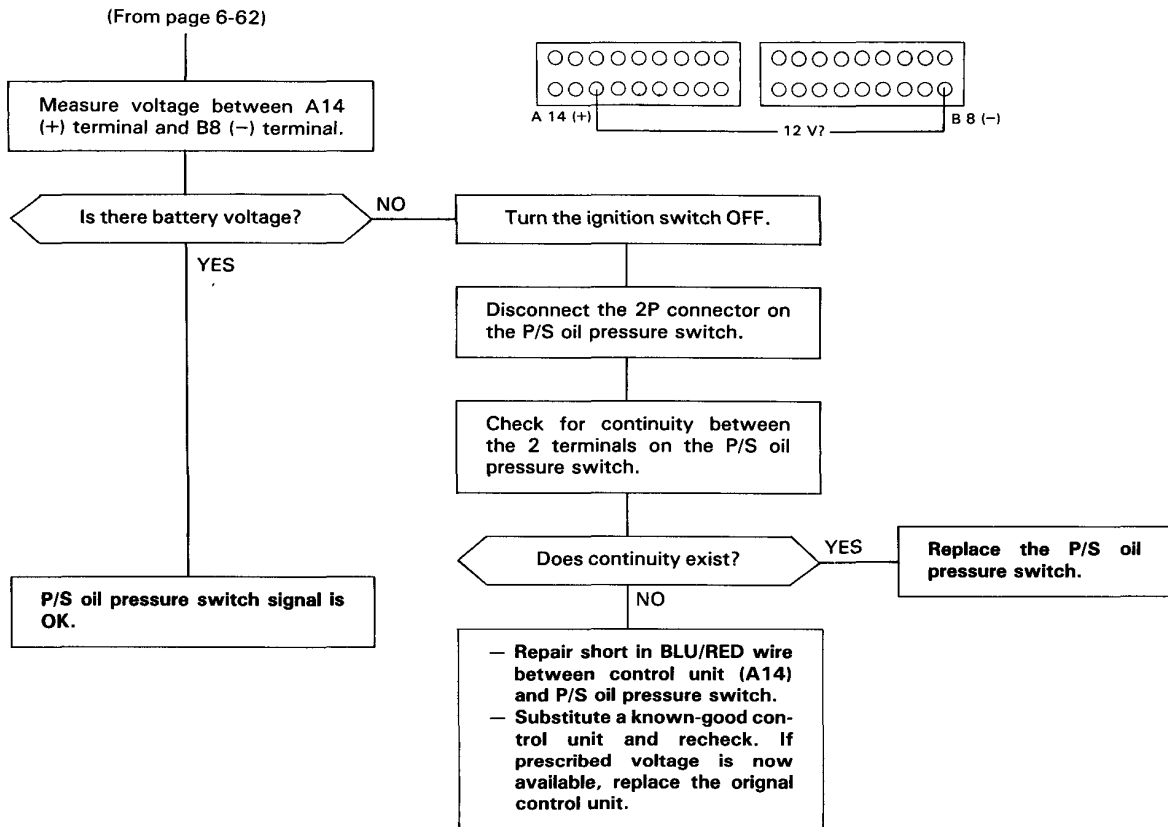


# PGM-CARB Control System [KX, KS, KZ]

## Input Troubleshooting Flow Chart — P/S Oil Pressure Switch Signal —



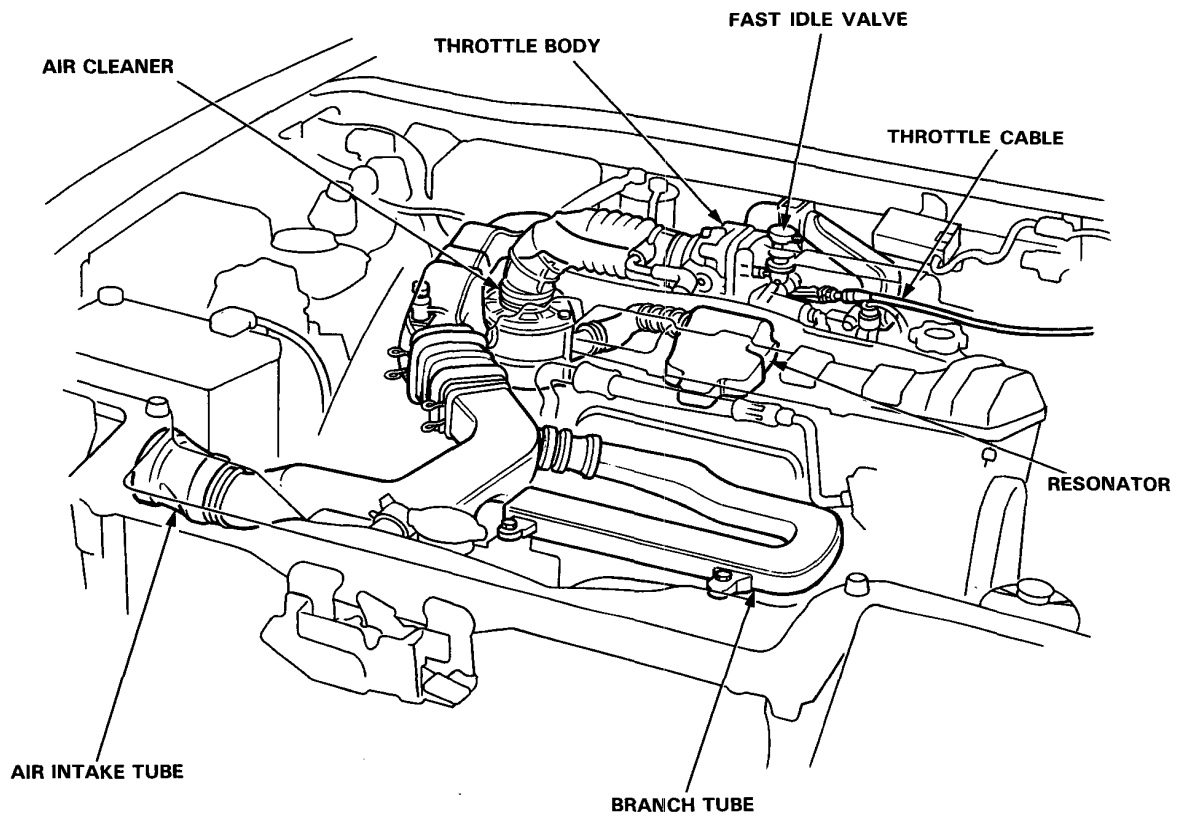
(To page 6-63)



# Component Location

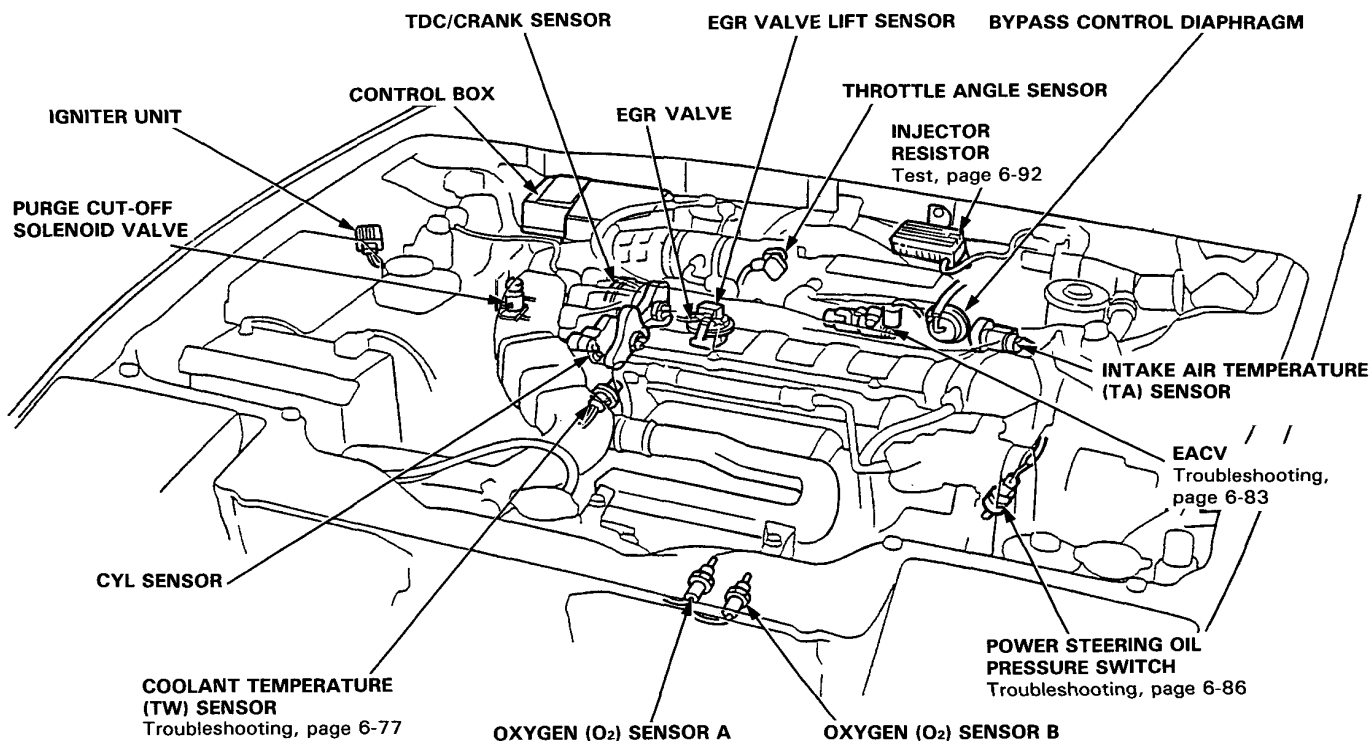
## Index

---

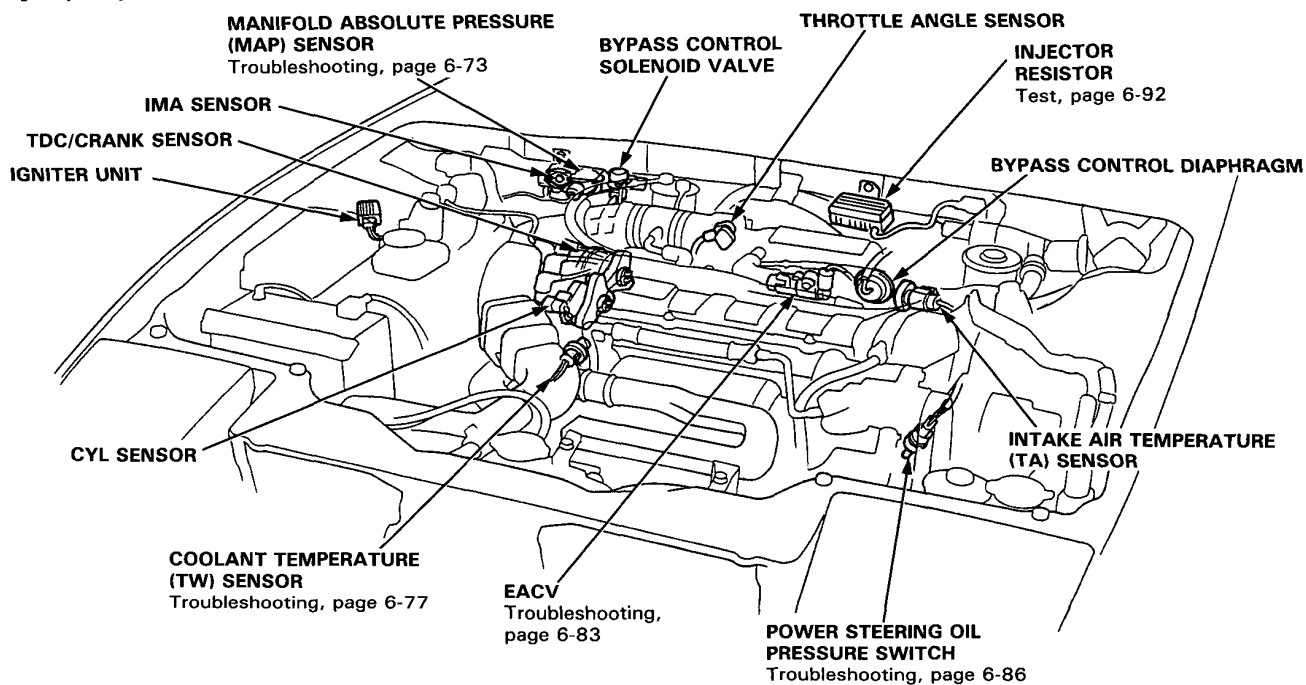




[KX, KS, KZ]



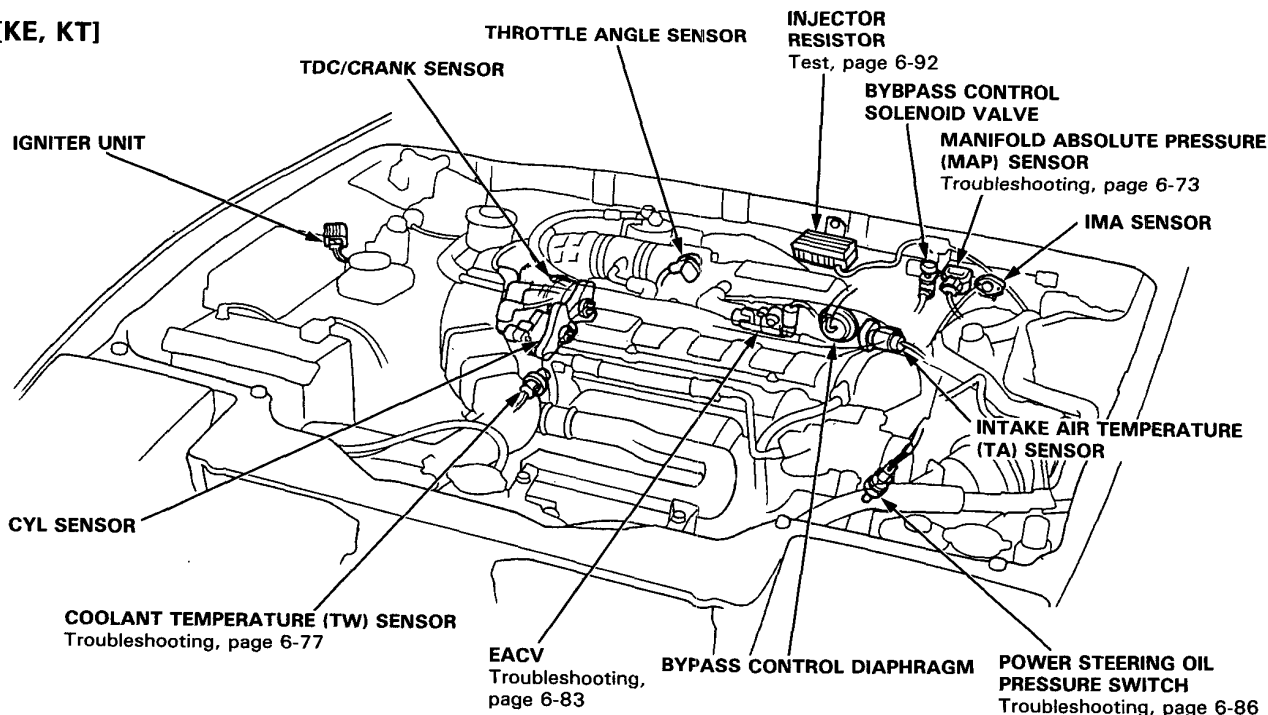
[KY, KF, KG, KW, KB]



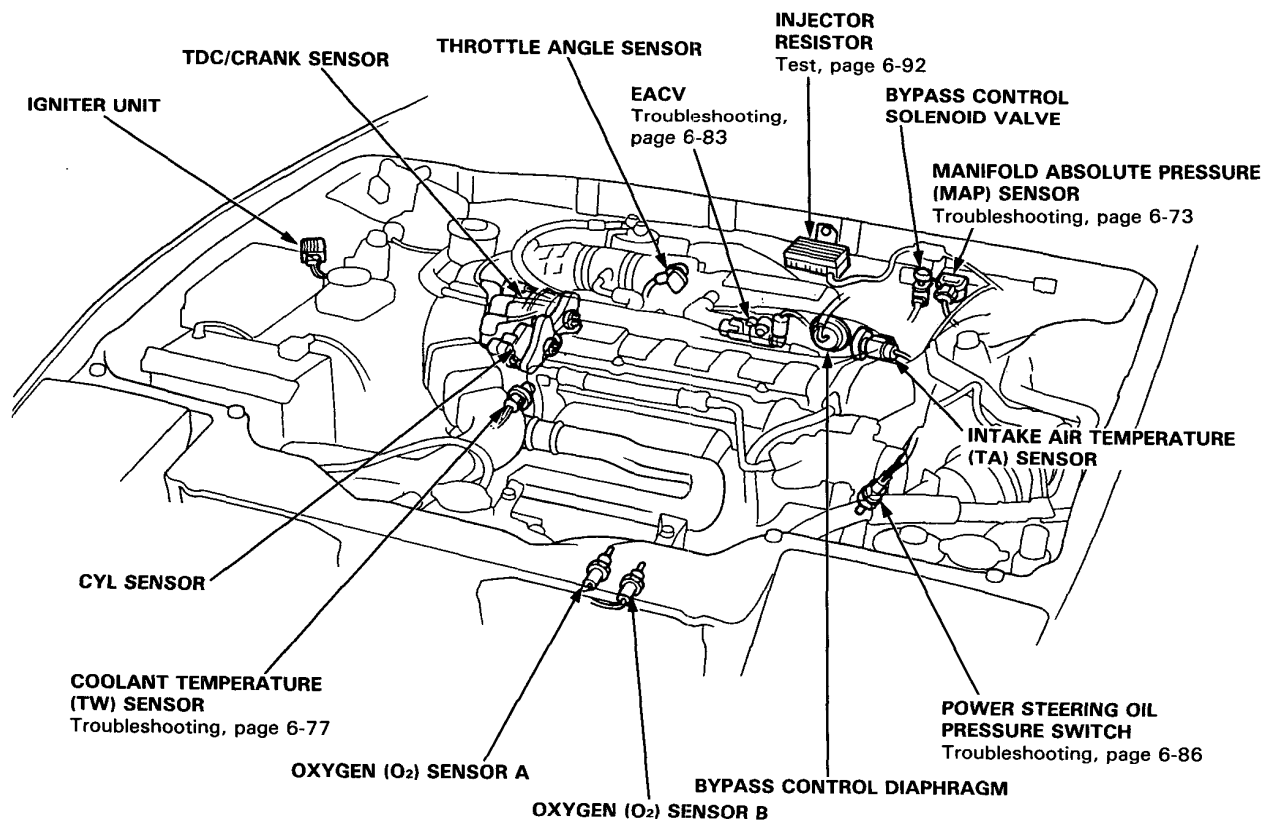
# Component Location

## Index

[KE, KT]



[KQ]

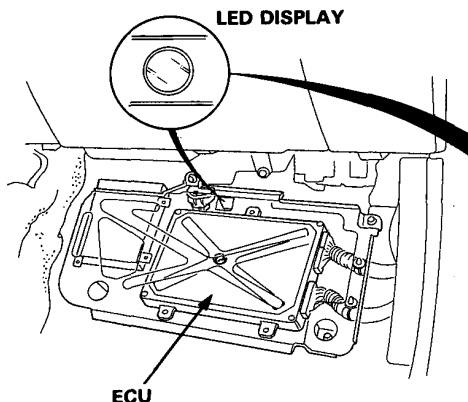


# Troubleshooting Procedures

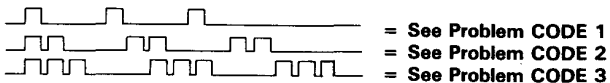


When the PGM-FI warning light has been reported on, turn the ignition on, pull down the passenger's side carpet inspection flap from under the dashboard and observe the LED on the top of the ECU. The LED indicates a system failure code by blinking frequency.

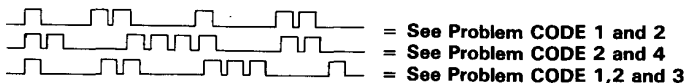
The ECU LED can indicate any number of simultaneous component problems by blinking separate codes, one after another.



## Separate Problems:



## Simultaneous Problems:



SELF-DIAGNOSIS INDICATOR BLINKS	SYSTEM INDICATED	PAGE
0	ECU	6-70
1	OXYGEN CONTENT A	—
2	OXYGEN CONTENT B	—
3	MANIFOLD ABSOLUTE PRESSURE	—
5		6-73, 75
4	CRANK ANGLE	—
6	COOLANT TEMPERATURE	6-77
7	THROTTLE ANGLE	—
8	TDC POSITION	—
9	No.1 CYLINDER POSITION	—
10	INTAKE AIR TEMPERATURE	—
11	IMA	—
12	EXHAUST GAS RECIRCULATION SYSTEM	—
13	ATMOSPHERIC PRESSURE	—
14	ELECTRONIC IDLE CONTROL	6-83
15	IGNITION OUTPUT SIGNAL	—
17	VEHICLE SPEED SENSOR	6-89

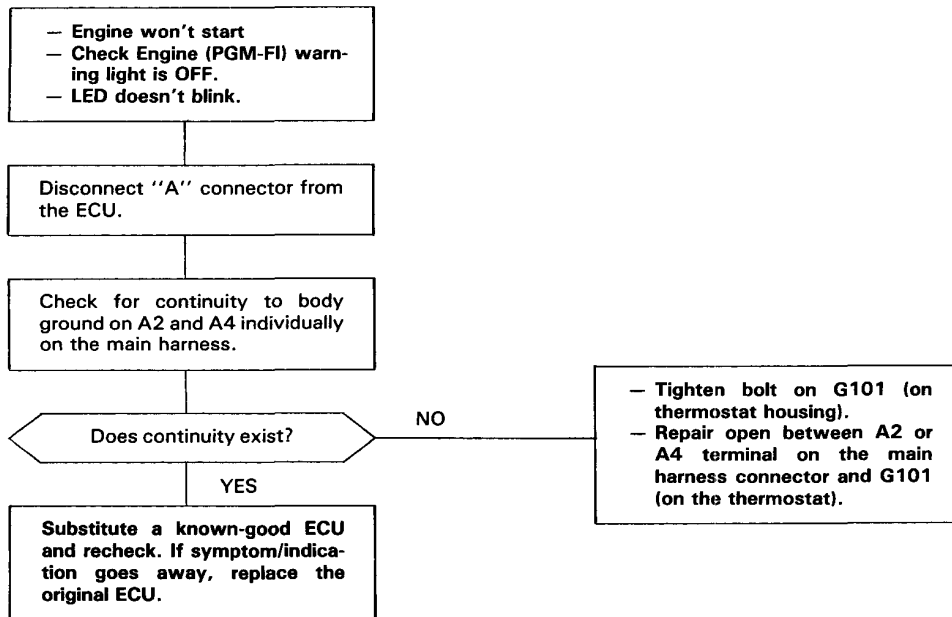
If CODE 16, or more than 17, count the number of blinks again. If the indicator is in fact blinking these codes, substitute a known-good ECU and recheck. If the indication goes away, replace the original ECU.

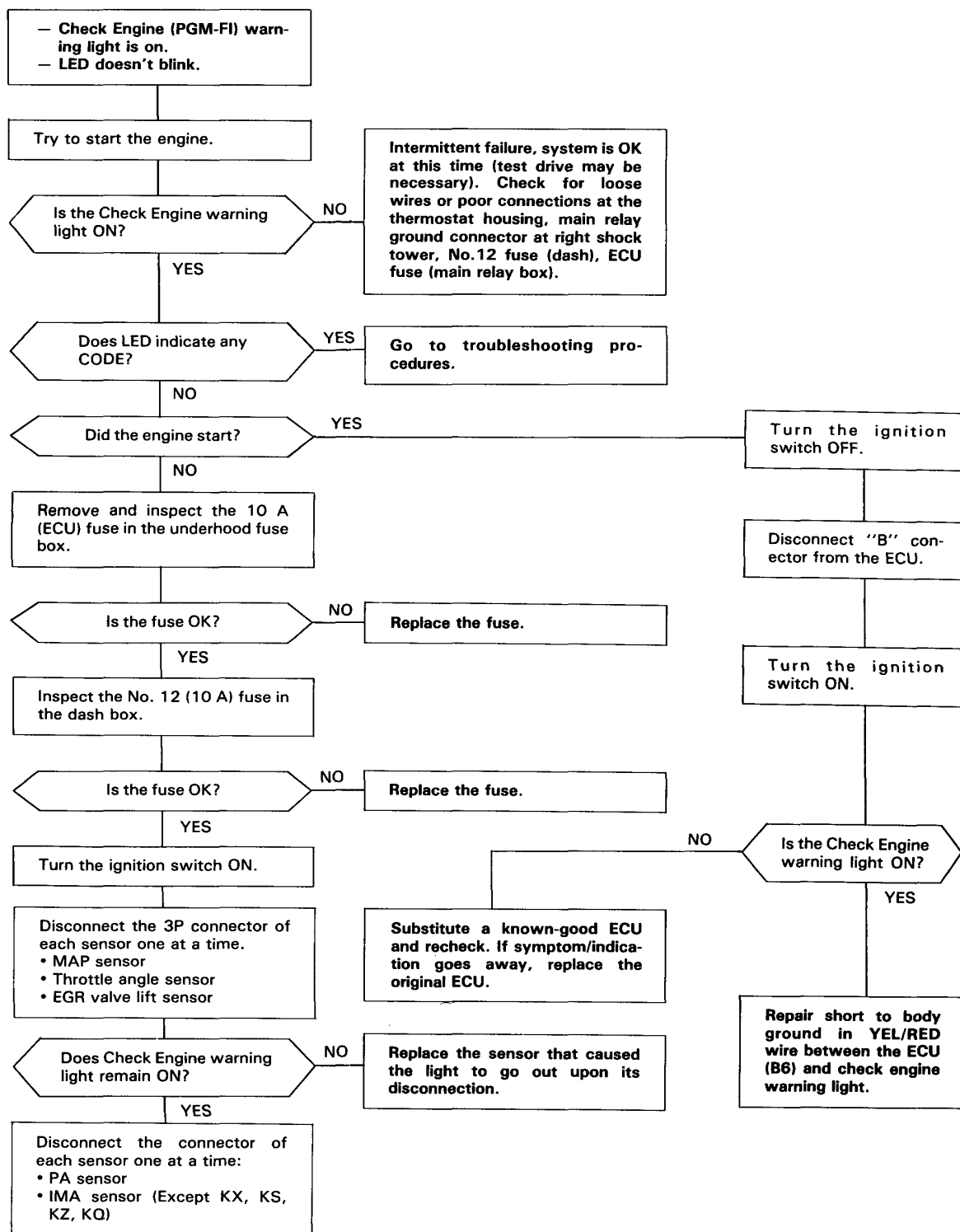
The PGM-FI dash warning light and ECU LED may come on, indicating a system problem, when, in fact, there is a poor or intermittent electrical connection. First, check the electrical connections, clean or repair connections if necessary.

NOTE: Substitute a known-good ECU and check, if the PGM-FI dash warning light is on and does ECU LED stay on.

# PGM-FI Control System

## Troubleshooting Flow Chart — ECU





(To page 11-72)

(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — ECU (cont'd)

(From page 6-71)

Does LED indicate CODE for the sensor disconnected? YES → Replace the PA sensor.

NO

Reconnect the connector.

Turn the ignition switch OFF.

Connect the system checker harness. But disconnect the "C" connector from the ECU only, not the main wire harness.

Check for continuity between body ground and the following terminals: C13 • C15.

Does continuity exist?

YES

Disconnect the connector C116 and C235.

NO

Reconnect the all connectors. Reconnect the "C" connector to the ECU.

Turn the ignition switch ON.

Individually connect the following terminals to body ground: A16 • A18

Is the Check Engine warning light ON?

NO

- Tighten bolt on G101 (thermostat housing).
- Repair open in BLK/RED wire between ECU (A18) and G101.
- Repair open in BRN/BLK wire between ECU (A16) and G101.

YES

Measure voltage between A18 (–) and the following terminals: A13 (+) • A15 (+)

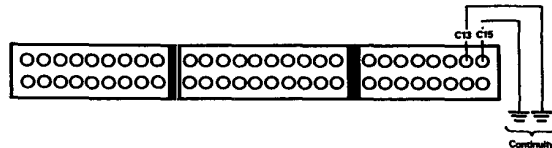
Is there battery voltage?

NO

- Repair open in YEL/BLK wire between ECU (A13, A15) and main relay.
- Check main relay and wiring connectors at main relay.

YES

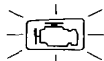
Substitute a known-good ECU and recheck. If symptom/indication goes away, replace the original ECU.



- Repair short to body ground in YEL/WHT<sup>1</sup> wire between C116 and throttle angle sensor.
- Repair short to body ground in YEL/WHT<sup>2</sup> wire between C116 and EGR valve lift sensor.



## Troubleshooting Flow Chart — MAP Sensor [KX, KS, KZ]



- Check Engine (PGM-FI) warning light has been reported on.
- LED indicates CODE 5.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under-hood relay box for 10 seconds to reset ECU.

Start engine and keep engine speed at idle.

Is Check Engine warning light on and does LED indicate CODE 5?

NO

Intermittent failure  
(test drive may be necessary).

YES

Stop engine.

Connect vacuum pump to #21 hose and apply vacuum.

Does it hold vacuum?

NO

Replace #21 vacuum hose and recheck.  
If still no vacuum, replace MAP sensor.

YES

Remove #21 hose from the vacuum hose manifold and connect a T. fitting from a vacuum gauge between the throttle body and the MAP sensor.

Start engine.

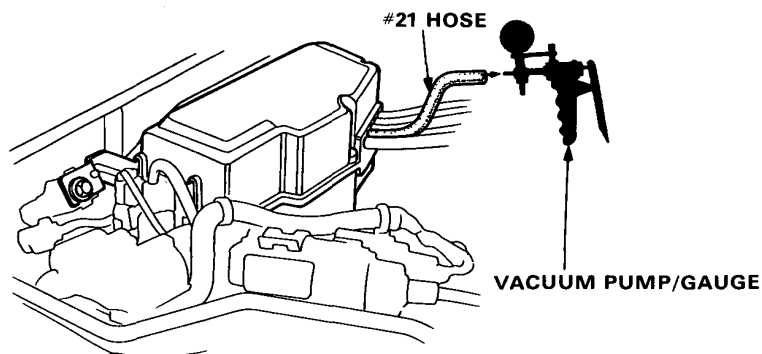
Is there vacuum?

NO

Repair vacuum hose manifold.

YES

(To page 6-74)



(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — MAP Sensor [KX, KS, KZ] (cont'd)

(From page 6-73)

Stop engine.

Connect the inspection adaptor between the MAP sensor and wire harness.

Turn the ignition switch ON.

Measure voltage between WHT (+) terminal and GRN (-) terminal.

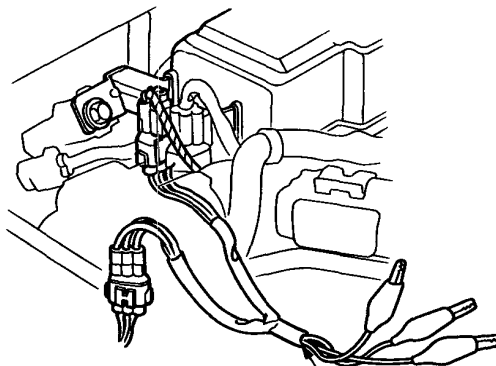
Is there approx. 3V ?

NO

Replace MAP sensor.

YES

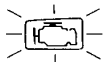
Substitute a known-good ECU and recheck. If symptom/indication goes away, replace the original ECU.



INSPECTION ADAPTOR  
07GMJ-ML80100



## Troubleshooting Flow Chart — MAP Sensor [Except KX, KS, KZ]



- Check Engine (PGM-FI) warning light has been reported on.
- LED indicates CODE 5.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under-hood relay box for 10 seconds to reset ECU.

Start engine and keep engine speed at idle.

Is Check Engine warning light on and does LED indicate CODE 5?

NO

Intermittent failure  
(test drive may be necessary).

YES

Stop engine.

Connect vacuum pump to #21 hose and apply vacuum.

Does it hold vacuum?

NO

Replace #21 vacuum hose and recheck.  
If still no vacuum, replace MAP sensor.

YES

Remove #21 hose from the vacuum hose manifold and connect a T. fitting from a vacuum gauge between the throttle body and the MAP sensor.

Start engine.

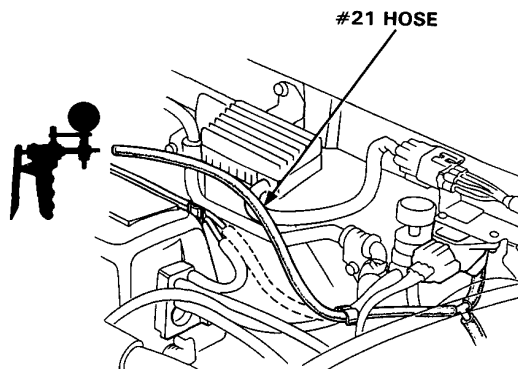
Is there vacuum?

NO

Repair vacuum hose manifold.

YES

(To page 6-76)



(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — MAP Sensor [Except KX, KS, KZ] (cont'd)

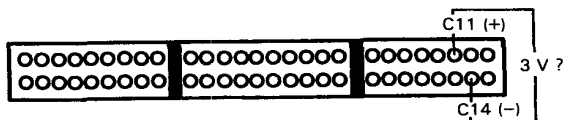
(From page 6-75)

Stop engine.

Connect the system checker harness between the ECU and connector.

Turn the ignition switch ON.

Measure voltage between C11 (+) terminal and C14 (-) terminal.



Is there approx. 3 V ?

NO

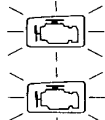
Replace MAP sensor.

YES

Substitute a know-good ECU and recheck. If symptom/indication goes away, replace the original ECU.



## Troubleshooting Flow Chart — TW Sensor



Self-diagnosis LED indicator blinks six times: Most likely a problem in the Coolant Temperature (TW) Sensor circuit.

- Check Engine (PGM-FI) warning light is on.
- LED indicates CODE 6.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under-hood relay box for 10 seconds to reset ECU.

Turn the ignition switch ON.

Is Check Engine warning light on and does LED indicate CODE 6?

NO

Intermittent failure.  
(test drive may be necessary).

YES

Warm up engine to normal operating temperature (cooling fan comes on).

Turn the ignition switch OFF.

Disconnect the 2P connector from the TW sensor.

Measure resistance between the 2 terminals on the TW sensor.

Is there 200—400  $\Omega$  ?

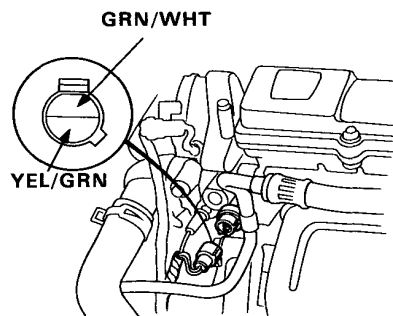
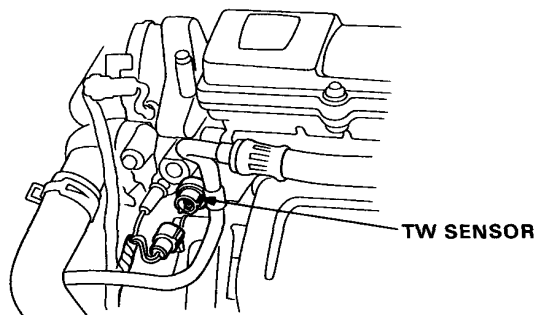
NO

Replace TW sensor.

YES

Turn the ignition switch ON.

Measure voltage between YEL/GRN(+) terminal and body ground.

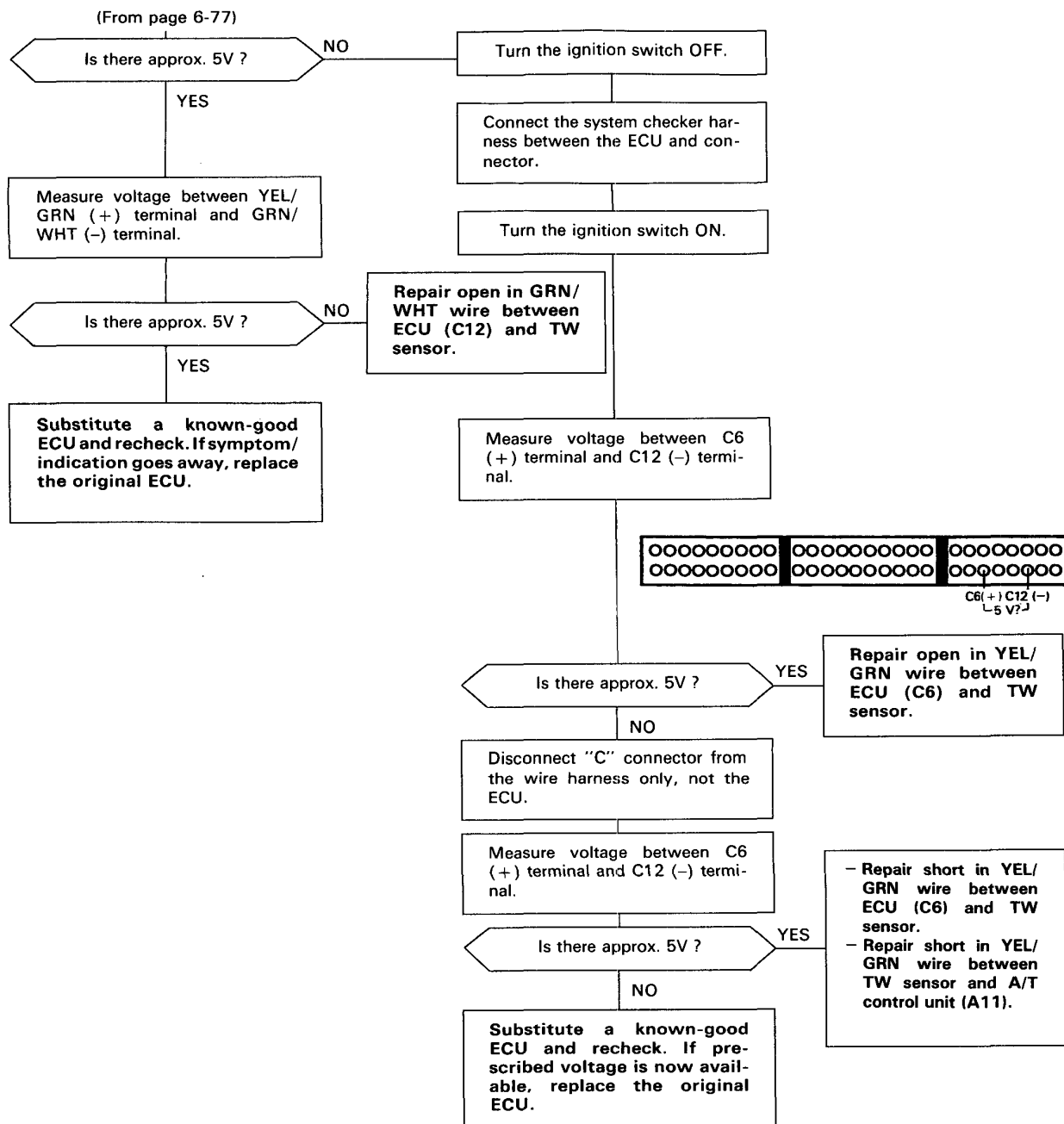


(To page 6-78)

(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — TW Sensor (cont'd)





## Troubleshooting Flow Chart — Ignition Output Signal



Self-diagnosis LED indicator blinks fifteen times: A problem in the Ignition Output Signal circuit.

- Check Engine (PGM-FI) warning light is on.
- LED indicates CODE 15.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under-hood relay box for 10 seconds to reset ECU.

Turn the ignition switch ON.

Is Check Engine warning light on and does LED indicate CODE 15?

NO

Intermittent failure  
(test drive may be necessary).

YES

Turn the ignition switch OFF.

Disconnect the 6P connector on the igniter unit.

Turn the ignition switch ON.

Measure voltage between the BLK/YEL (+) terminal and body ground.

Is there battery voltage?

NO

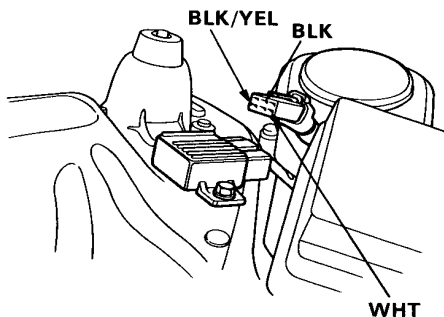
Repair open in the BLK/YEL wire between the igniter unit and ignition switch.

YES

Turn the ignition switch OFF.

Connect the system checker harness between the ECU and connector.

(To page 6-80)



(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — Ignition Output Signal (cont'd)

(From page 6-79)

Reconnect the 6P connector on the igniter unit.

Turn the ignition switch ON.

Measure voltage individually between B15 (+), B17 (+) terminals and A18 (-) terminal.

Is there battery voltage ?

NO

Turn the ignition switch OFF.

YES

Substitute a known-good ECU and recheck. If symptom/indication goes away, replace the original ECU.

Disconnect the 6P connector on the igniter unit and the system checker harness from the ECU.

Check for continuity of WHT wires between the ECU (B15, B17) and the igniter unit.

Does continuity exist ?

NO

Repair open in WHT wires between the ECU (B15, B17) and the igniter unit.

YES

Check for continuity between WHT terminal of 6P connector and body ground.

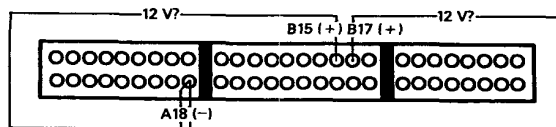
Does continuity exist ?

YES

Repair short in WHT wire.

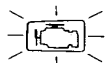
NO

Replace the igniter unit.





## Troubleshooting Flow Chart — Vehicle Speed Sensor



Self-diagnosis LED indicator blinks seventeen times: A problem in the Vehicle Speed Sensor circuit.

- Check Engine (PGM-FI) warning light is on.
- LED indicates CODE 17.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under-hood relay box seconds to reset ECU.

Connect the system checker harness between the ECU and connector.

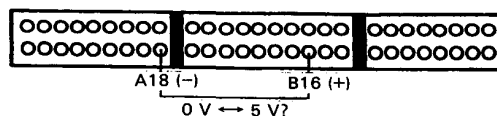
Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.



**WARNING**  
Block rear wheels before jacking up front of car.

Turn the ignition switch ON.

Slowly rotate left front wheel and measure voltage between B16 (+) terminal and A18 (-) terminal.



Does voltage pulse 0V and 5V?

YES

Road test necessary.  
Place the shift or selector lever in 2nd gear (MT) or 2 position (AT), accelerate to 4,000 min<sup>-1</sup> (rpm) and decelerate to 1,200 min<sup>-1</sup> (rpm) with foot off accelerator.

NOTE: The decel from 4,000 min<sup>-1</sup> (rpm) to 1,200 min<sup>-1</sup> (rpm) must be at least 6 seconds with your foot off the accelerator pedal.

NO

Is check engine warning light is on and does LED indicate CODE 17?

NO

Intermittent failure seat connectors C252, C263, C417 and C710.

YES

Substitute a known-good ECU and recheck. If prescribed voltage is now available replace the original ECU.

Is there approx. 5V?

YES

- Repair open or short in WHT/BLU wire between ECU (B16) and the speed sensor.
- Replace the speed sensor.

NO

(To page 6-82)

(cont'd)

# PGM-FI Control System

## Troubleshooting Flow Chart — Vehicle Speed Sensor (cont'd)

(From page 6-81)

Disconnect the "A" connector from the EAT unit.

Is there approx. 5 V?

YES

Replace the EAT unit.

(For AT model only)

NO

If equipped with cruise control, disconnect the connector from cruise control unit.

Is there approx. 5 V?

YES

Replace the cruise control unit.

NO

Disconnect the "B" connector from main wire harness, not the ECU.

Is there approx. 5 V?

YES

- Repair short to body ground in WHT/BLU wire between ECU (B16) and speed sensor, EAT unit, or cruise control unit.
- Replace the speed sensor.

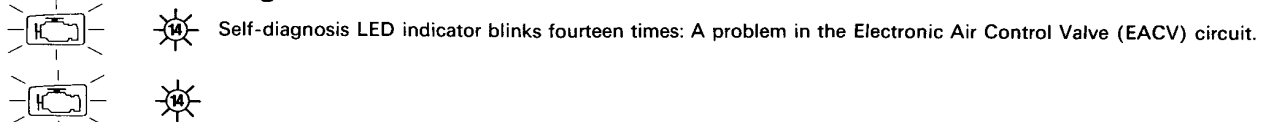
NO

Substitute a known-good ECU and recheck. If prescribed voltage is now available, replace the original ECU.



# Idle Control System

## Troubleshooting Flow Chart — EACV



- Engine is running.
- Check Engine (PGM-FI) warning light is on.
- LED indicates CODE 14.

Turn the ignition switch OFF.

Remove CLOCK fuse in the under hood relay box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 14?

NO

Intermittent failure  
(test driving may be necessary)

YES

Stop engine.

Disconnect the 2P connector from the EACV.

Measure resistance between the 2 terminals on the EACV.

Is there 8—15Ω ?

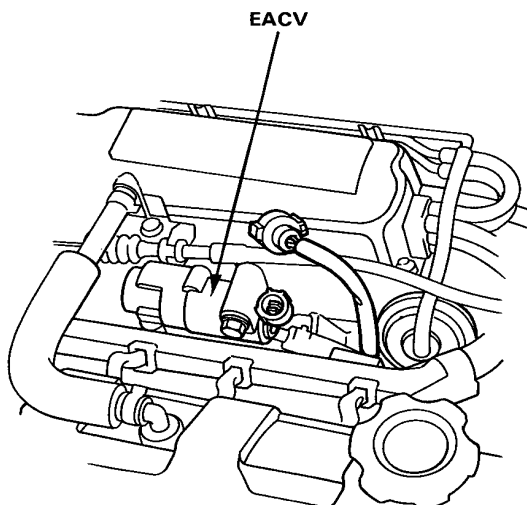
NO

Replace EACV.

YES

Check for continuity to body ground on each terminal on the EACV.

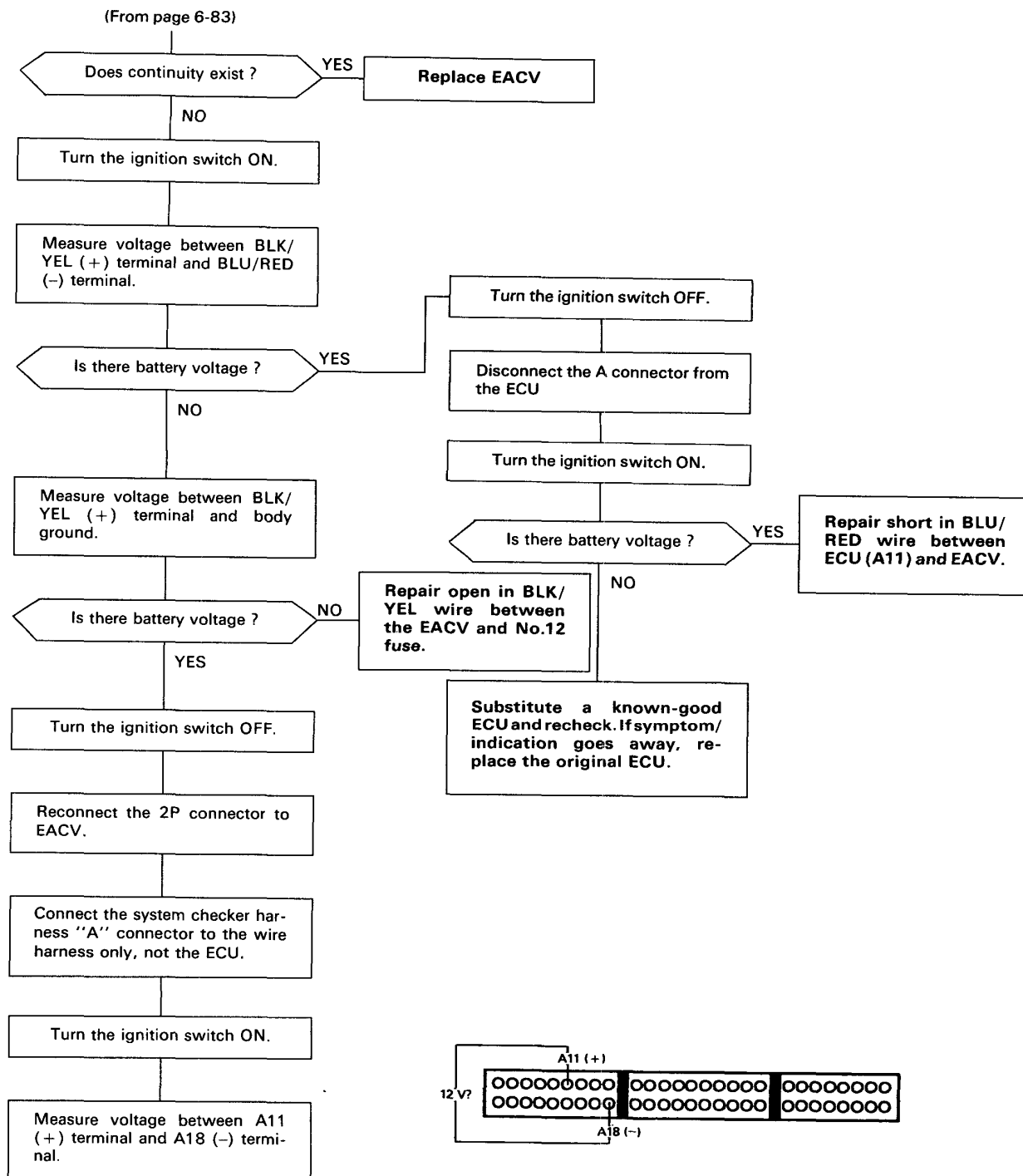
(To page 6-84)

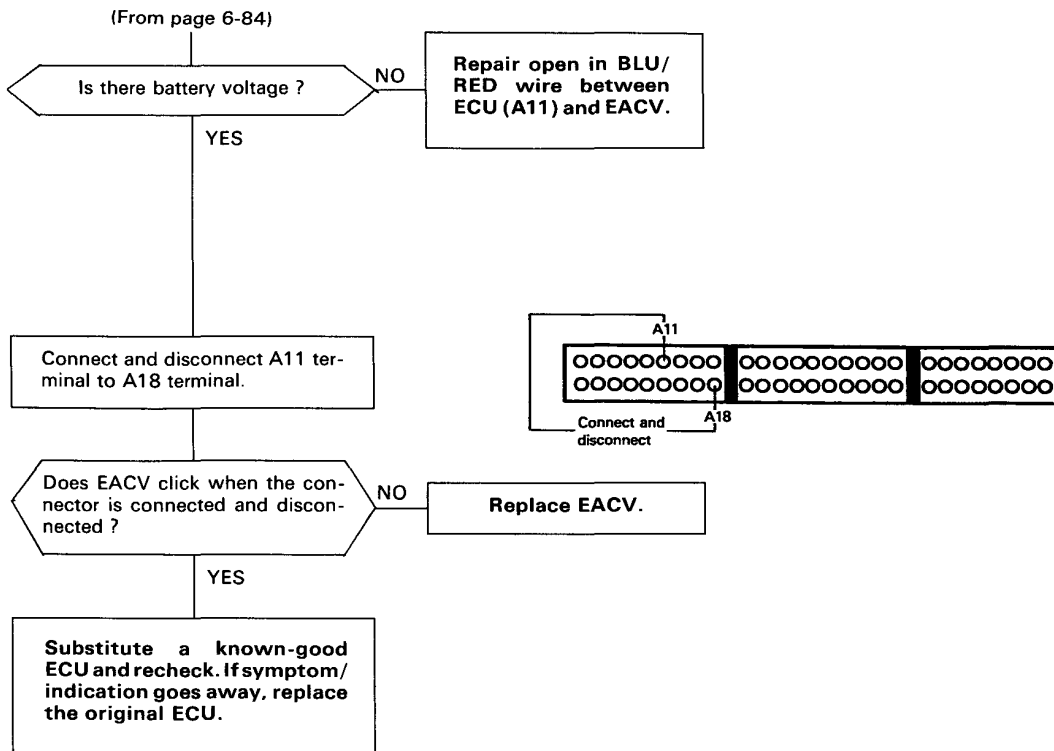


(cont'd)

# Idle Control System

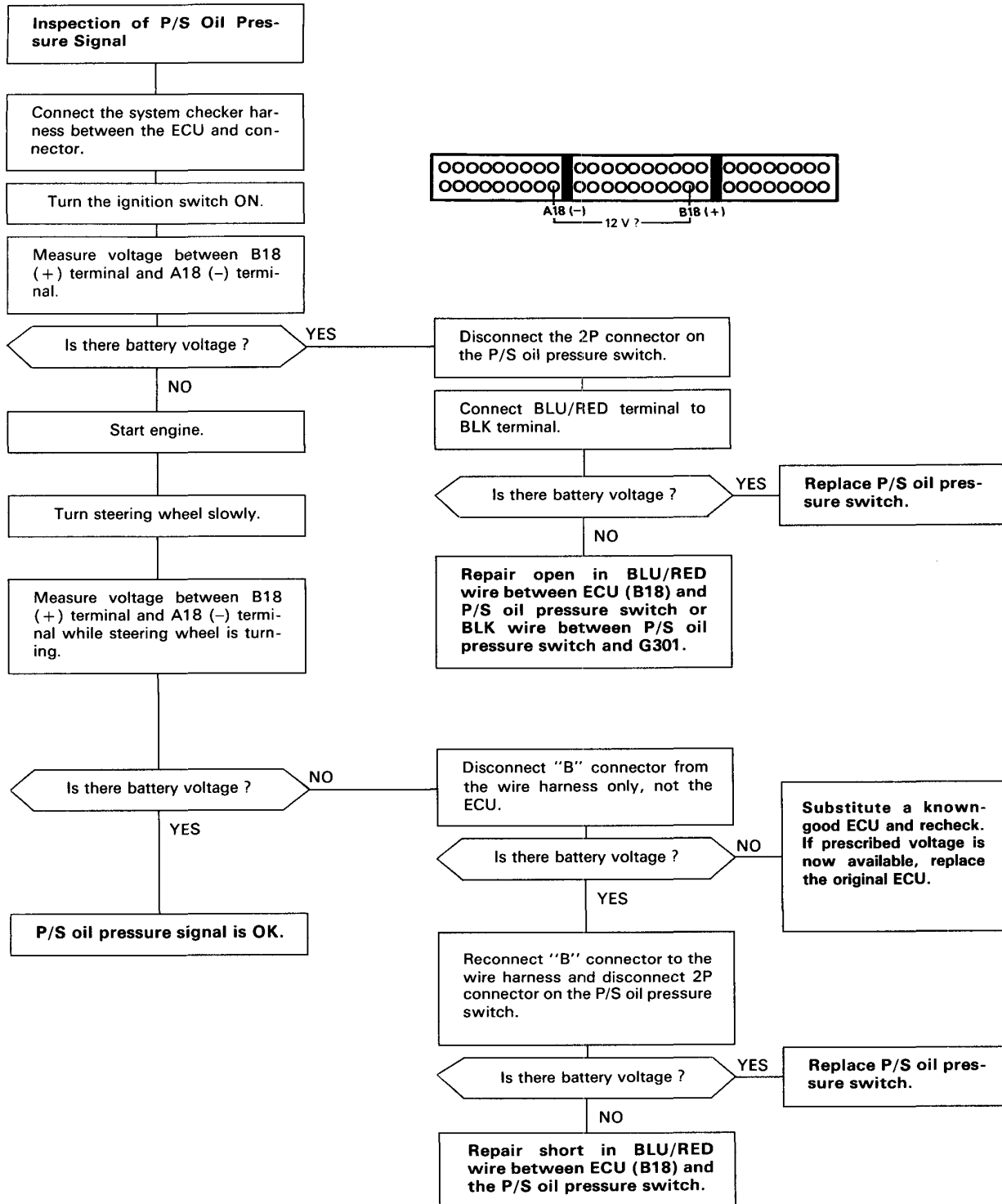
## Troubleshooting Flow Chart — EACV (cont'd)





# Idle Control System

## Troubleshooting Flow Chart — P/S Oil Pressure Signal





## Troubleshooting Flow Chart — A/T Shift Position Signal

### Inspection of A/T Shift Position Signal

Turn the ignition switch ON.

Observe the A/T shift indicator and select each position separately.

Does the indicator light properly?

NO

See A/T shift position Indicator Inspection (section 16).

YES

Turn the ignition switch OFF.

Connect the system checker harness between the ECU and connector. But disconnect "B" connector from the wire harness only, not the ECU.

Turn the ignition switch ON.

Measure voltage between B7 (+) terminal and A18 (-) terminal.

Is there approx. 5 V?

NO

Substitute a known-good ECU and recheck. If prescribed voltage is now available, replace the original ECU.

YES

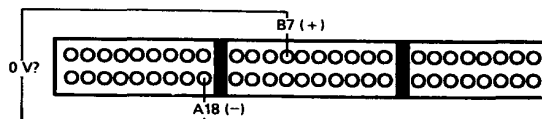
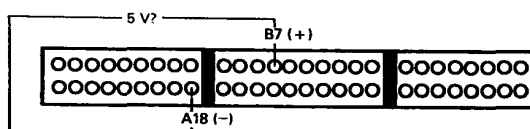
Turn the ignition switch OFF.

Reconnect "B" connector to the wire harness.

Turn the ignition switch ON.

Measure voltage between B7 (+) terminal and A18 (-) terminal in Neutral position.

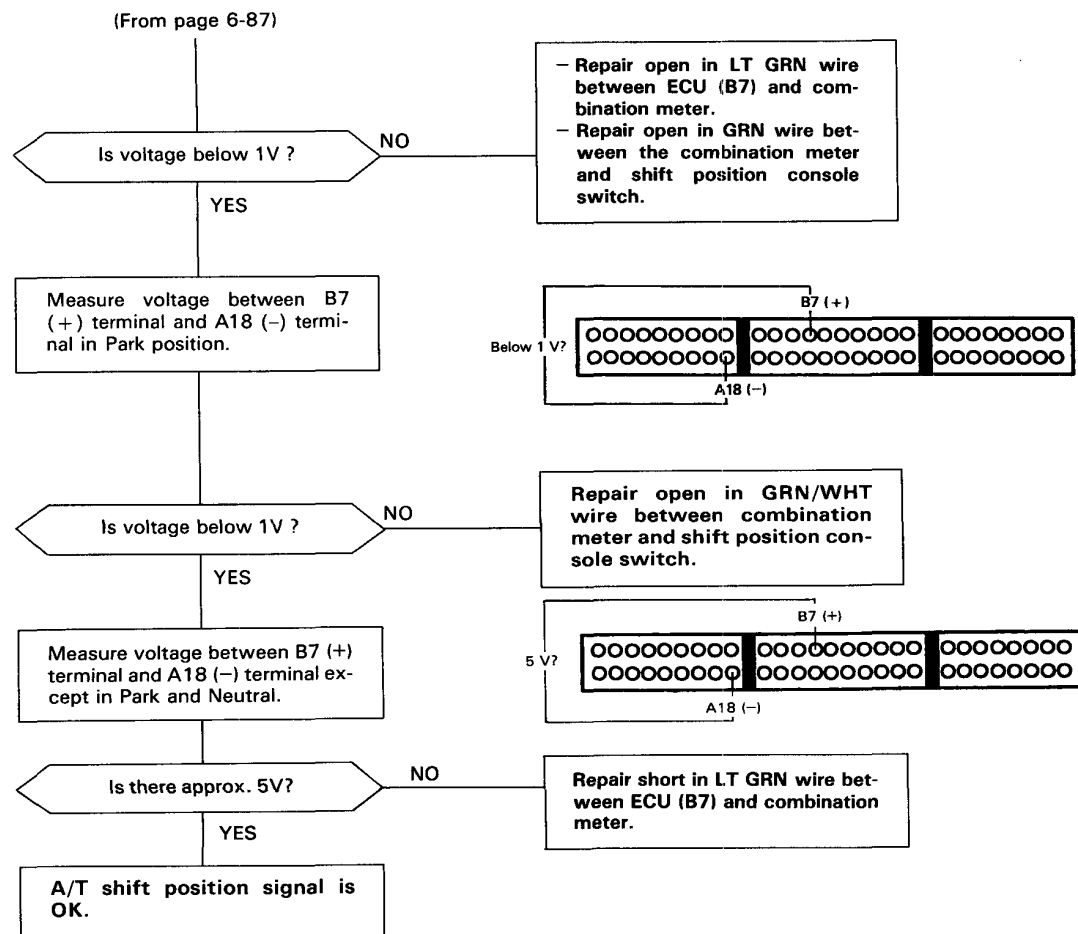
(To page 6-88)



(cont'd)

# Idle Control System

## Troubleshooting Flow Chart — A/T Shift Position Signal (cont'd)





## Troubleshooting Flow Chart — Air Conditioning Signal

### Inspection of Air Conditioning Signal.

Connect the system checker harness between the ECU and connector. But disconnect "B" connector from the wire harness only, not the ECU.

Turn the ignition switch ON.

Measure voltage between B8 (+) terminal and A18 (-) terminal.

Is there approx. 5 V ?

YES

Turn the ignition switch OFF.

Reconnect "B" connector to the wire harness.

Turn the ignition switch ON.

Connect B1 terminal to A18 terminal.

Does A/C compressor clutch engage? (clicking sound)

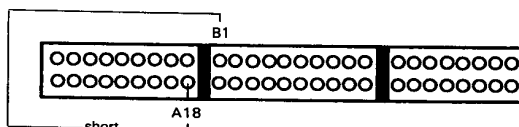
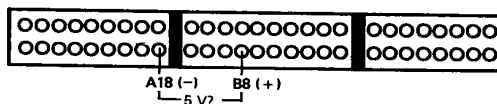
YES

Start engine.

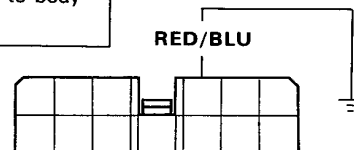
Blower switch ON.

(To page 6-90)

Substitute a known-good ECU and recheck. If prescribed voltage is now available, replace the original ECU.



Connect the RED/BLU terminal of the 13P connector on the compressor control unit to body ground.



Does A/C compressor clutch engage? (clicking sound)

YES

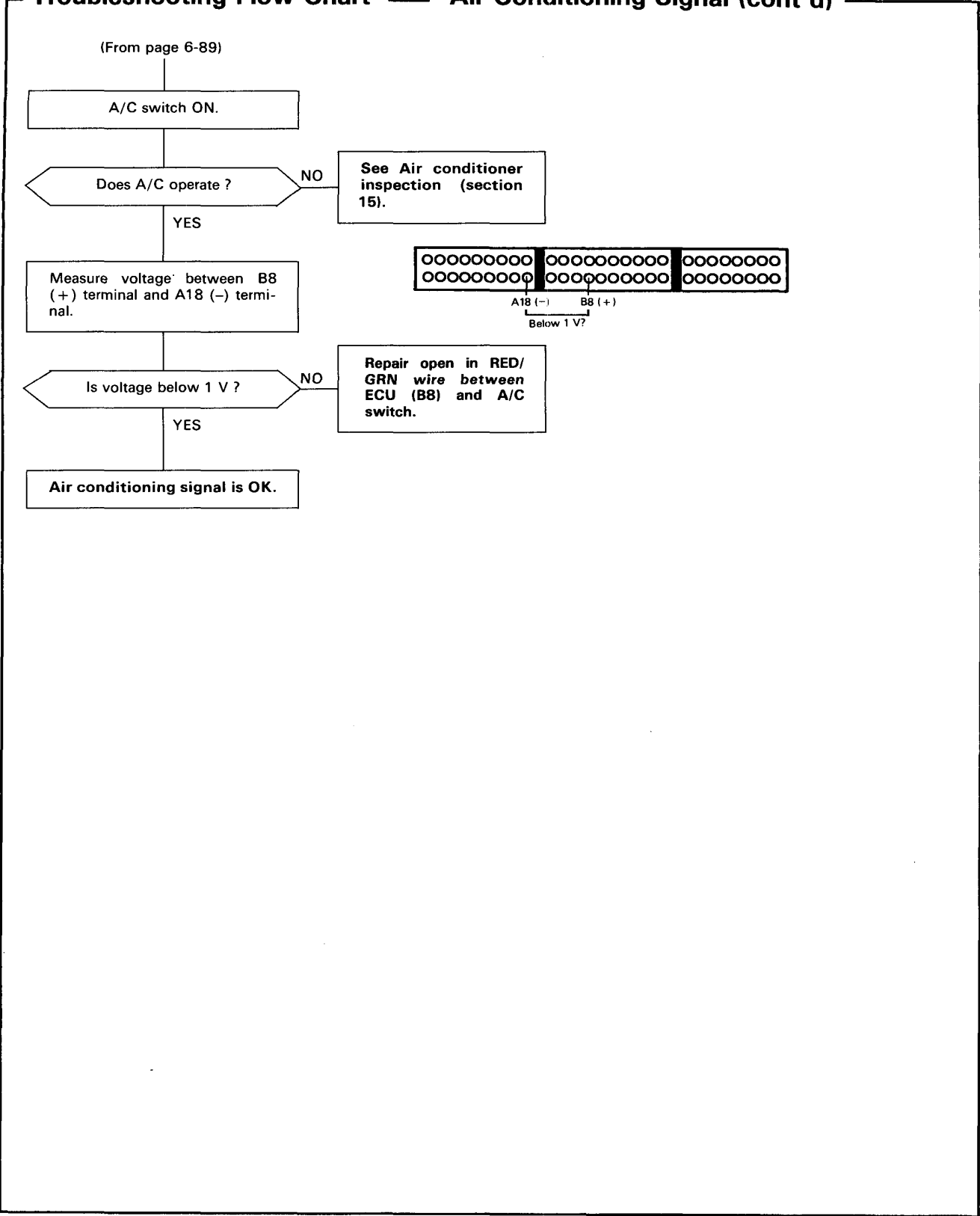
Repair open in RED/BLU wire between ECU (B1) and compressor control unit.

See Air conditioner inspection (section 15).

(cont'd)

# Idle Control System

## Troubleshooting Flow Chart — Air Conditioning Signal (cont'd)



# Fuel Supply System



## Symptom-to-Sub System Chart

NOTE: Across each row in the chart, the sub systems that could be sources of a symptom are ranked in the order they should be inspected, starting with ①. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next system ②, etc.

PAGE	SUB SYSTEM	FUEL INJECTOR	INJECTOR RESISTOR	PRESSURE REGULATOR	FUEL FILTER	FUEL PUMP	MAIN RELAY	FUEL TANK	CONTAMINATED FUEL
	SYMPTOM	—	92	—	—	—	—	—	*
	ENGINE WON'T START		③		③	①	②		
	FREQUENT STALLING				②	①			②
POOR PERFORM-ANS	MISFIRE	①	②						③
	LOSS OF POWER				①				②

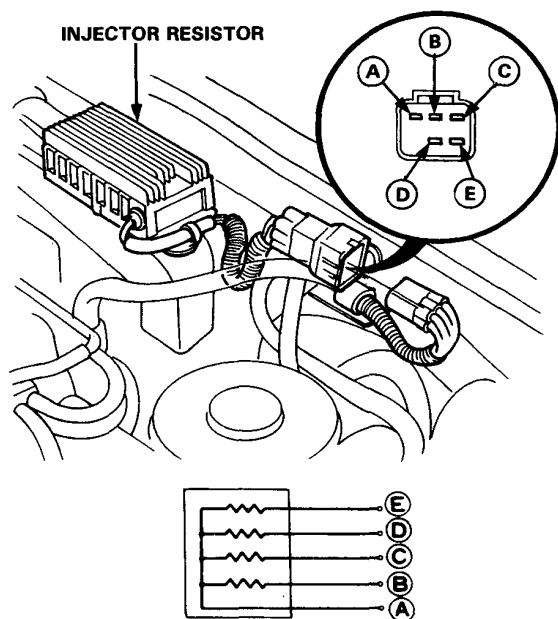
\* Fuel with dirt, water or a high percentage of alcohol is considered contaminated.

# Injector Resistor

## Test

1. Disconnect the resistor connector.
2. Check for resistance between each of the resistor terminals (E, D, C and B) and the Power terminal (A).

Resistance should be: 5–7  $\Omega$



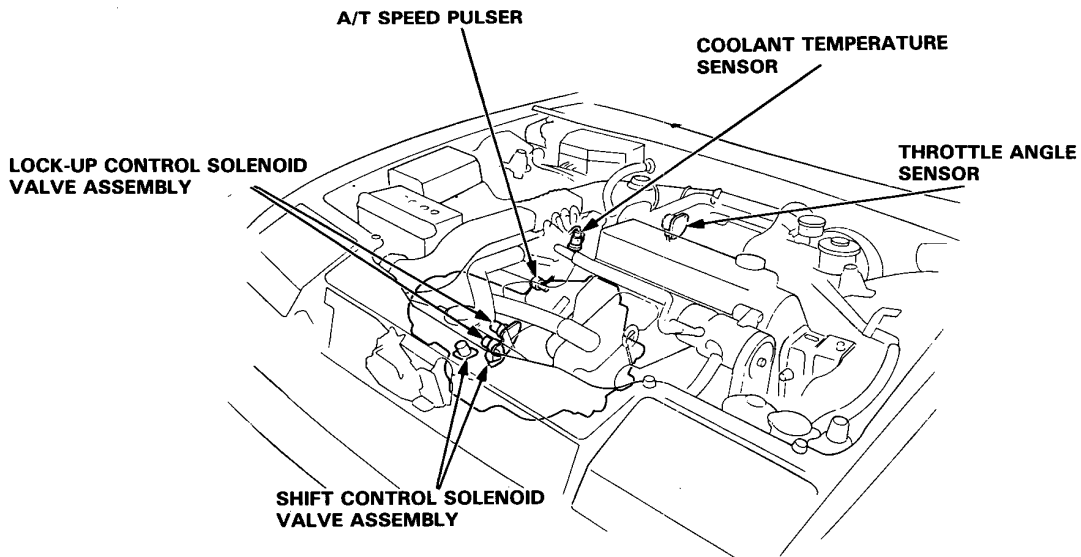
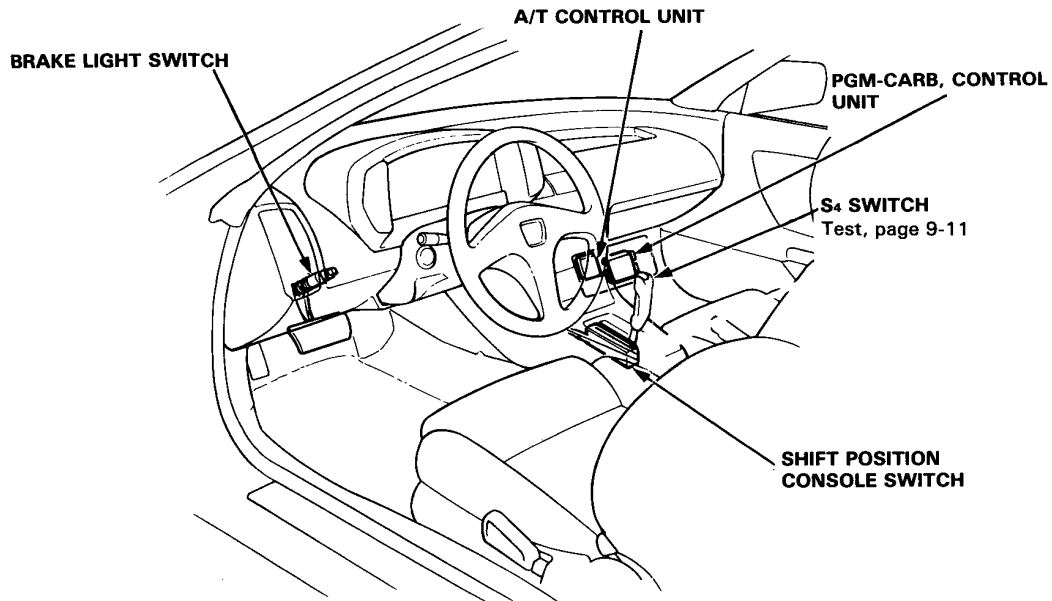
- Replace the resistor with a new one if any of the resistance are outside of the specification.

# Component Locations

---

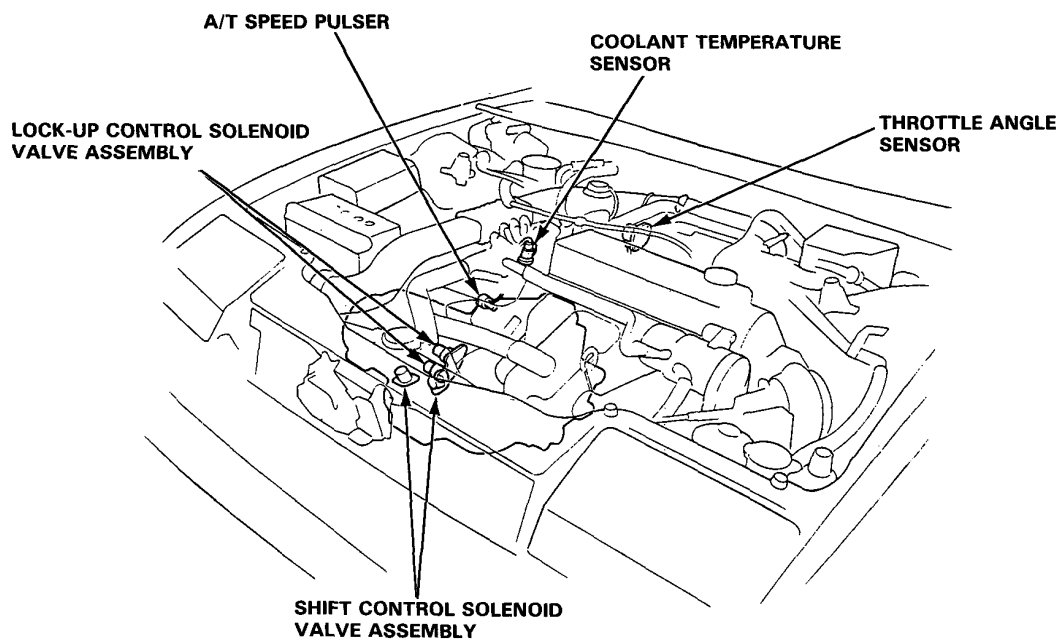
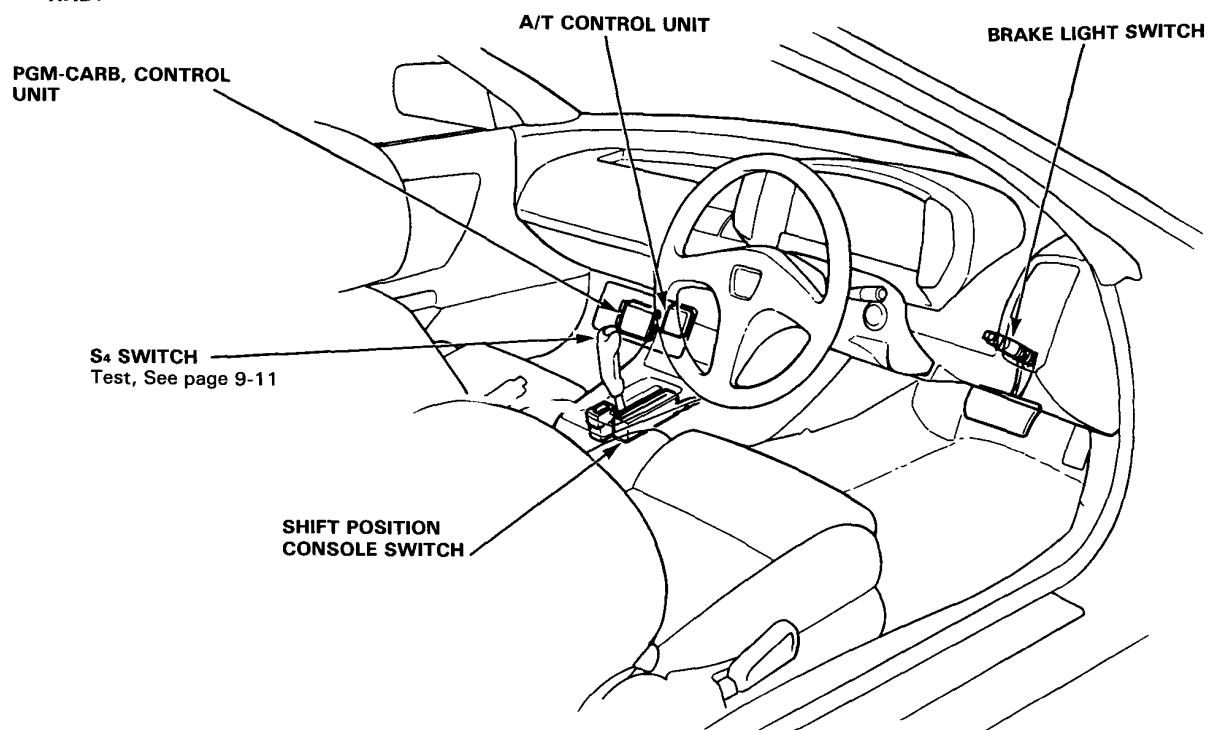
**Carbureted engine:**

**LHD:**





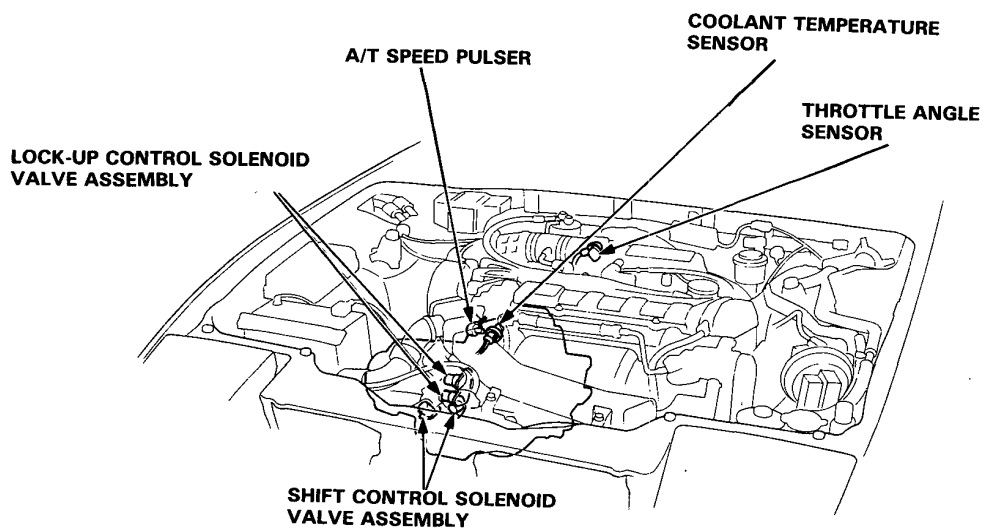
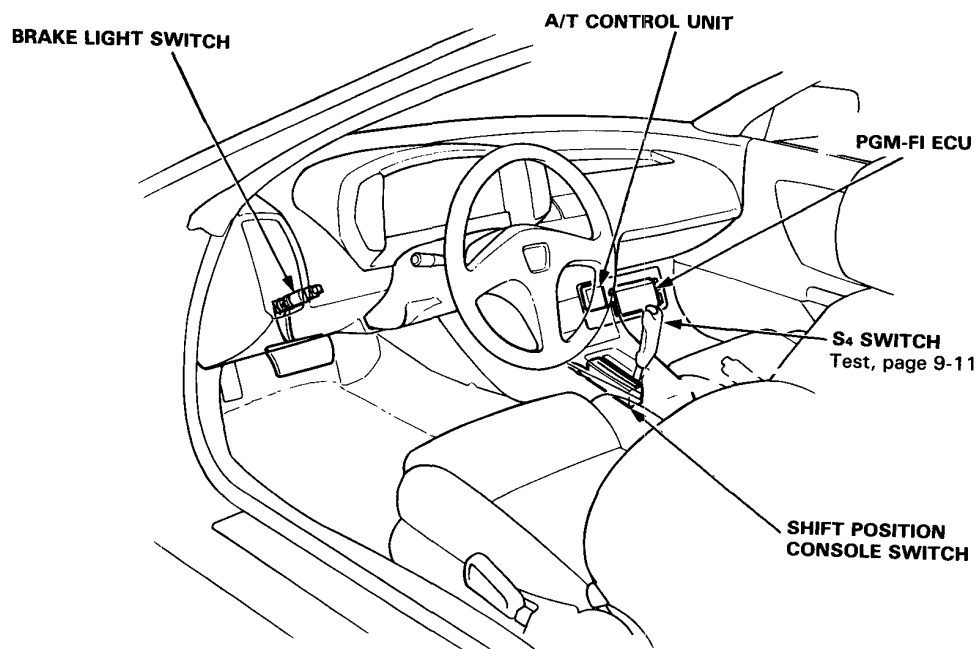
**RHD:**



# Component Locations

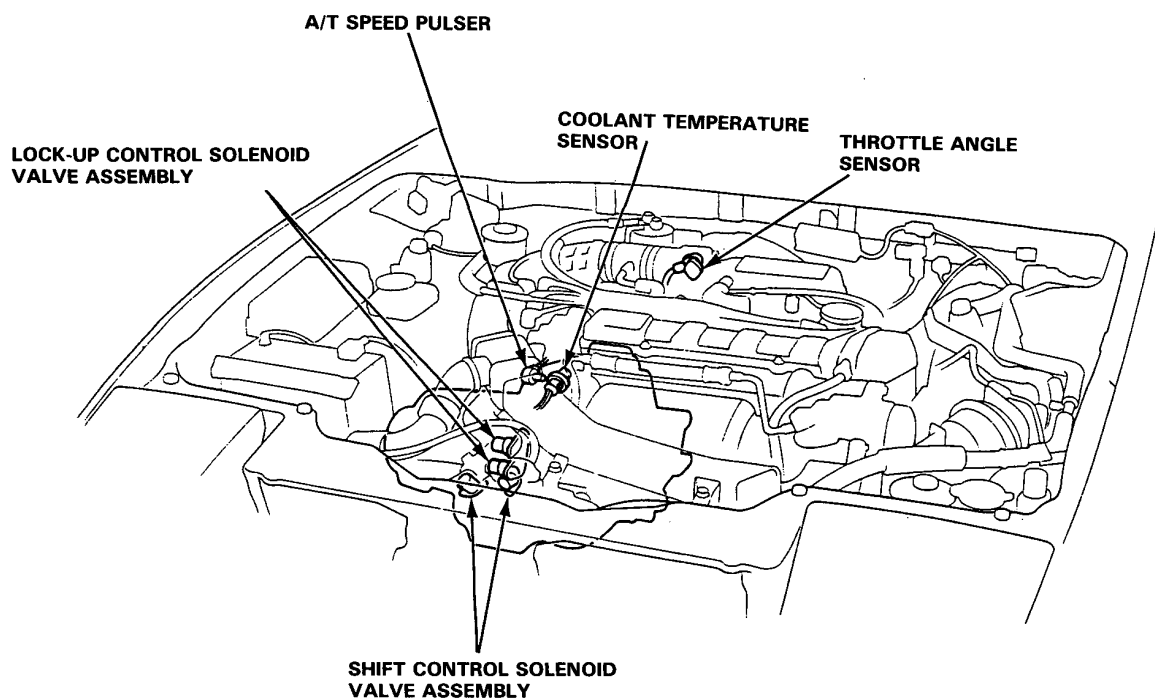
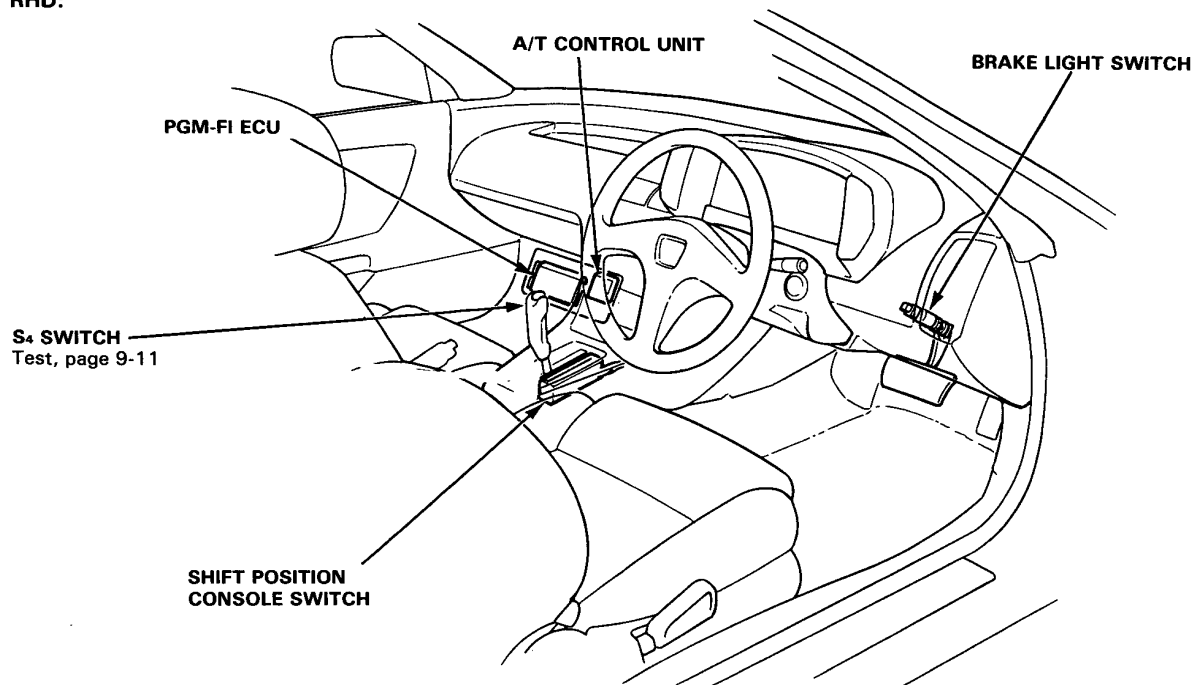
**Fuel-Injected engine:**

**LHD:**



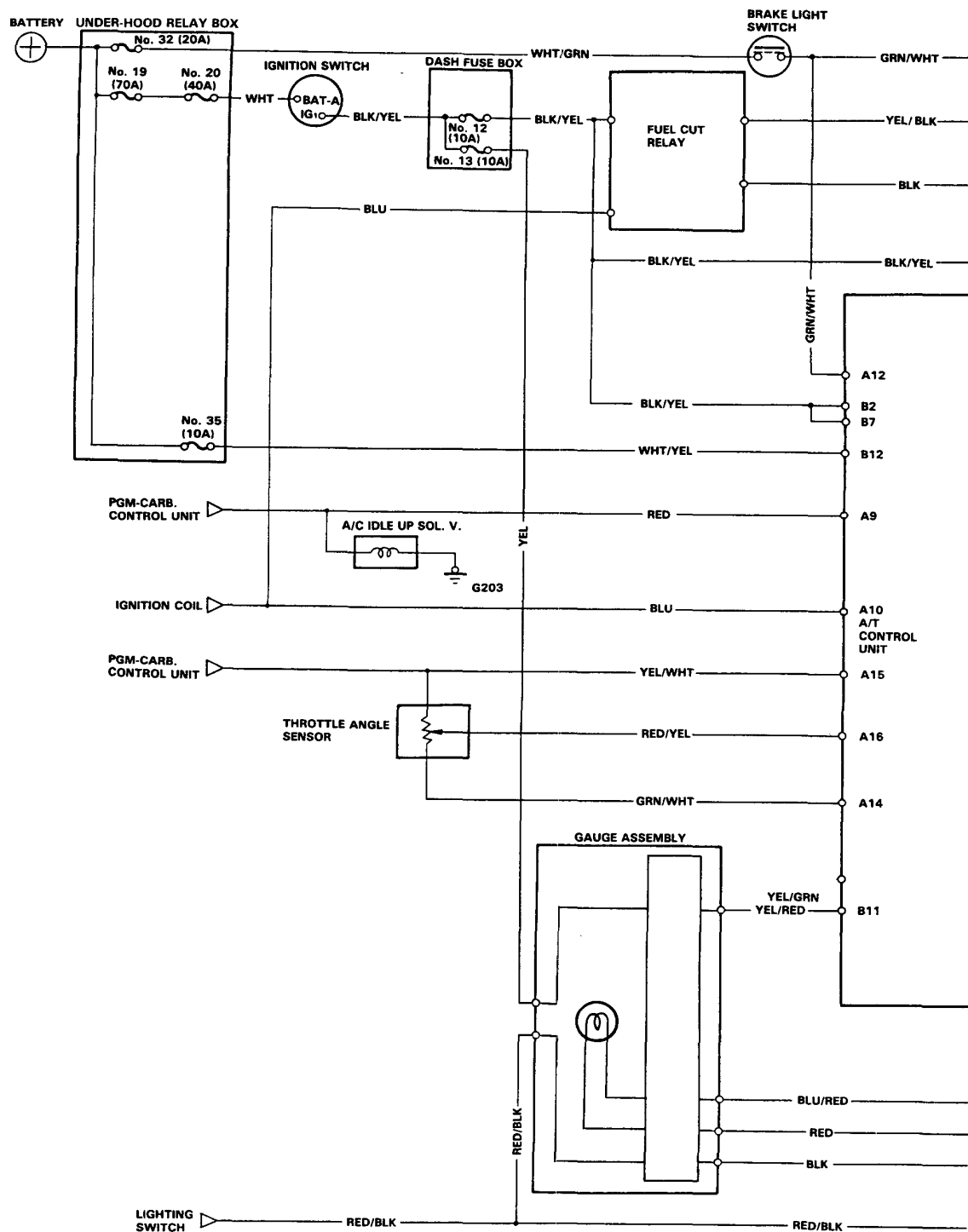


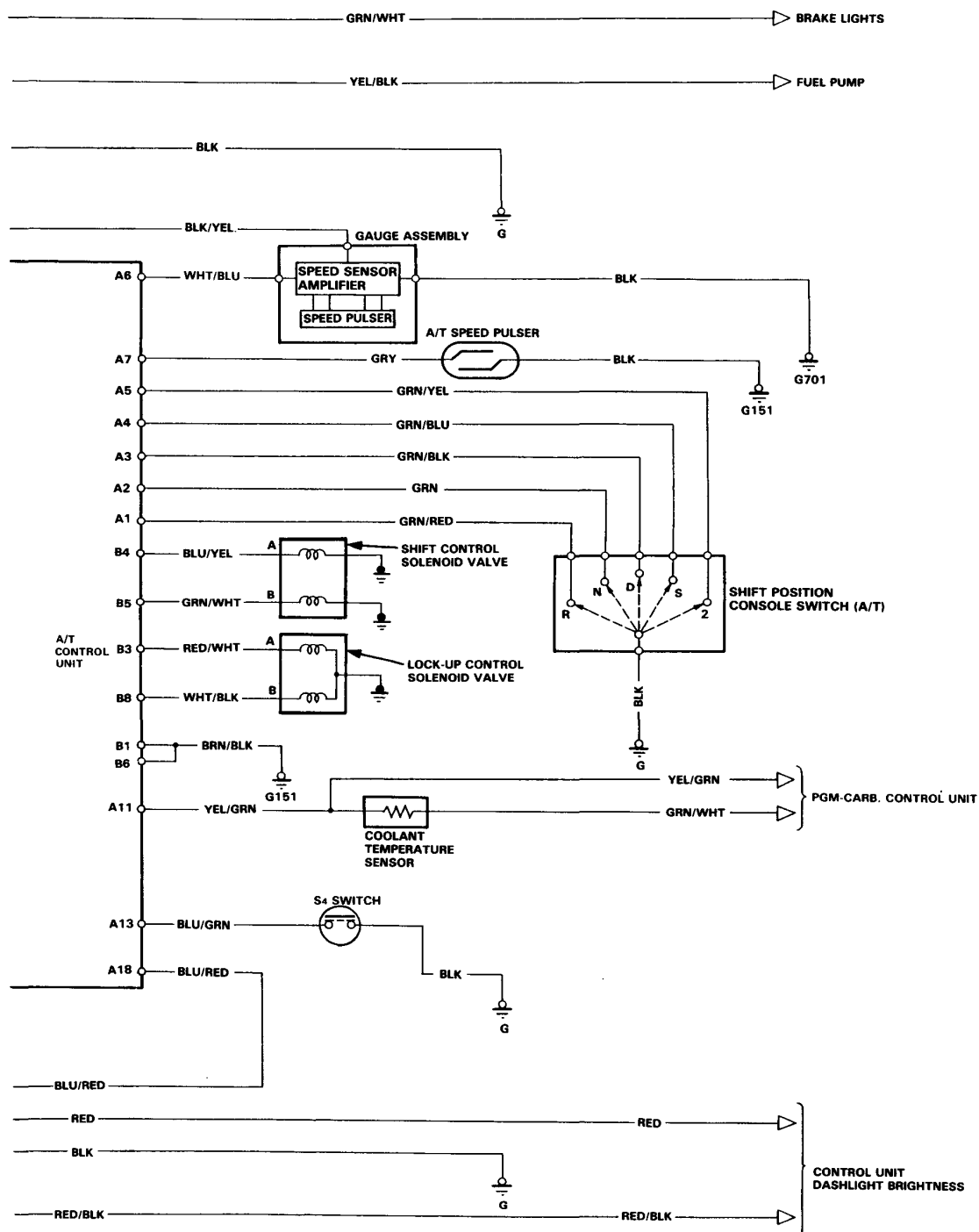
**RHD:**



# Circuit Diagram

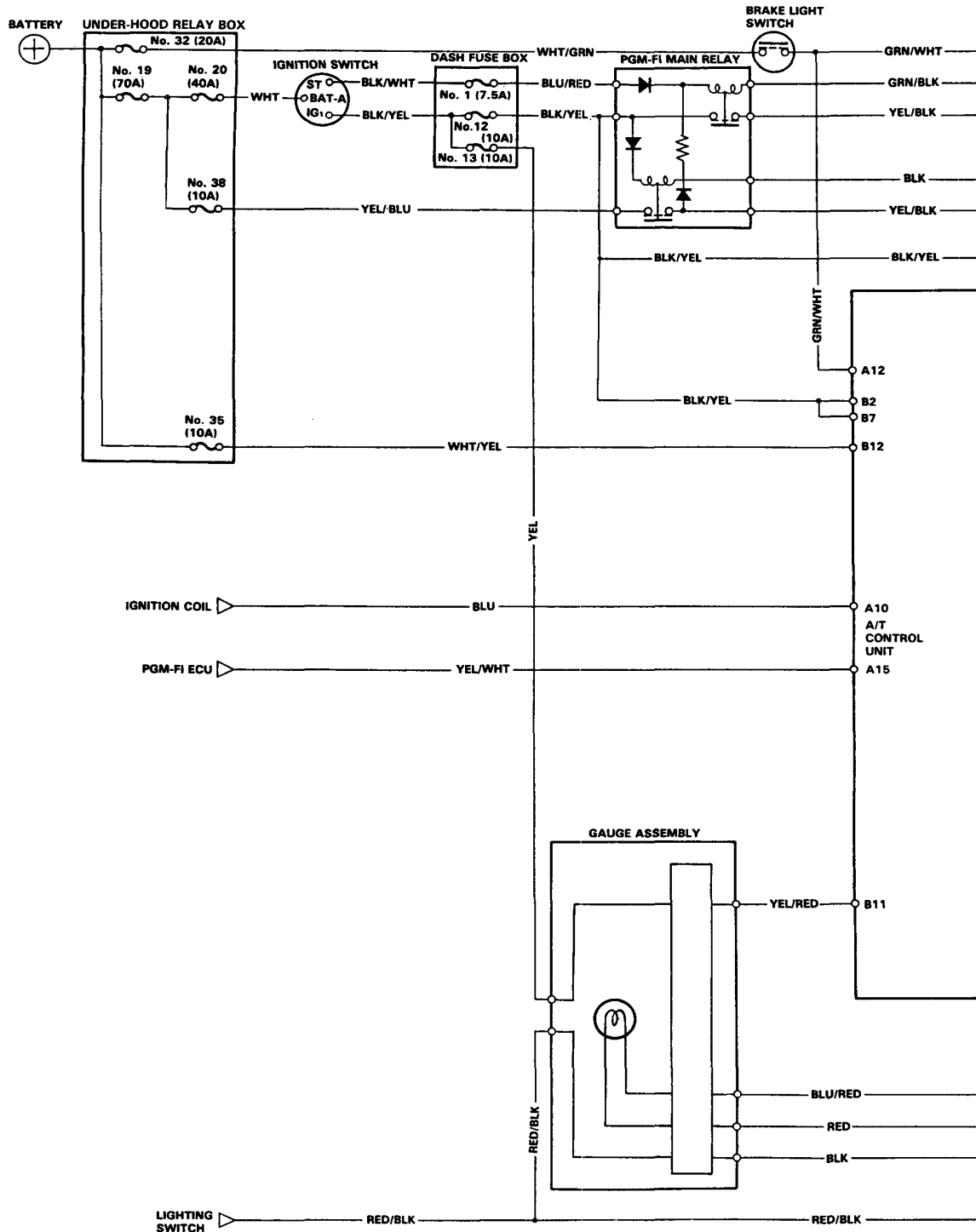
## Carbureted engine:

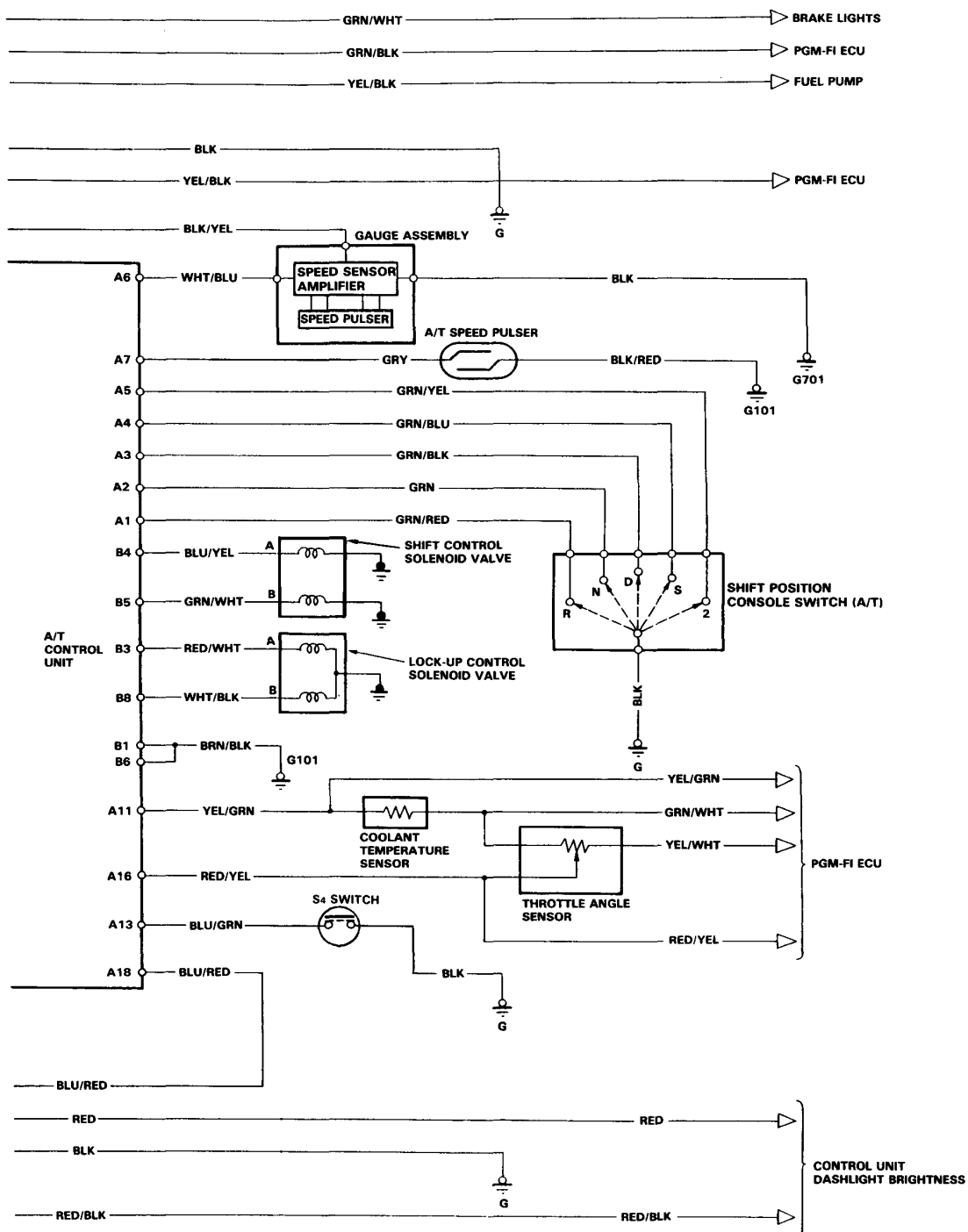




# Circuit Diagram

## Fuel-injected engine:





# Electrical Troubleshooting

## Troubleshooting Flow Chart

Self-diagnosis LED indicator blinks nine times.

Jack up the front of the car.



### WARNING

- Set the parking brake securely and block the rear wheels.
- Jack up the front of the car and support with Jack stands.

Turn the ignition switch ON.

Rotate the front wheels and measure the voltage between the A7 (GRY) and B1 (BRN/BLK) terminals.

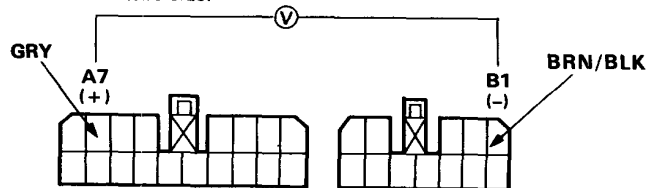
Do 0 and approx. 5 V appear alternately?

NO

YES

Substitute a known-good control unit and recheck.

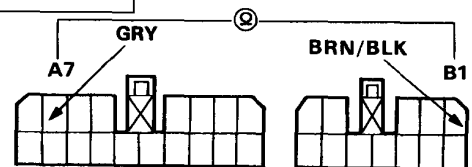
View from wire side.



Turn the ignition switch OFF.

Disconnect the 18P and 12P connectors from the control unit.

Rotate the front wheels and check for continuity between the A7 (GRY) and B1 (BRN/BLK) terminals.



Do continuity and infinity alternately appear?

NO

YES

Check for open or short in GRY wire between the A7 terminal and the A/T speed pulser. If wire is OK, check the A/T Speed Pulser.

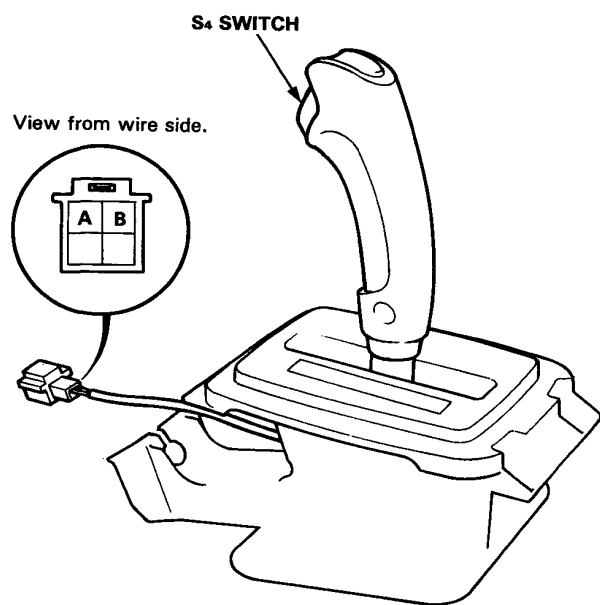
Check for loose control unit connectors. If necessary, substitute a known-good control unit and recheck.



## S<sub>4</sub> Switch

### Test

1. Remove the center console.
2. Disconnect the switch connector.
3. Check for continuity between A and B terminals. There should be continuity when the switch is pressed.



# Road Test

NOTE: After transmission is installed.

- Make sure the floor mat does not interfere with accelerator pedal travel. Fully depress accelerator pedal and check to make sure the throttle lever is fully opened.
- Release the accelerator pedal and check both inner control cables to be sure they have slight play.

Warm up the engine to operating temperature.

## **D** and **S** Range

1. Apply parking brake and block the wheels. Start the engine, then move the selector to **D** while depressing the brake pedal. Depress the accelerator pedal, and release it suddenly. Engine should not stall.
2. Check that shift points occur at approximate speeds shown. Also check for abnormal noise and clutch slippage.
3. Apply parking brake and block the wheels. Start the engine, then move the selector **S** while depressing the brake pedal. Depress the accelerator pedal, and release it suddenly. Engine should not stall.

KG, KW, KB, KY, KT models:

(Carburetor)

### • Upshift

<b>D</b>		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	12—16	27—32	44—50	16—20
	mph	7—10	17—20	27—31	10—12
7/16 throttle Acceleration from a stop	km/h	32—38	56—63	74—84	98—102
	mph	20—24	35—39	46—52	61—63
Full-throttle Acceleration from a stop	km/h	53—60	99—106	147—155	132—136
	mph	33—37	62—66	91—96	82—85

<b>S</b> (with S4 switch in operation)		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	18—22	40—45	46—52	23—27
	mph	11—14	25—28	29—32	14—17
7/16 throttle Acceleration from a stop	km/h	37—43	66—73	104—114	121—125
	mph	23—27	41—45	65—71	75—78
Full-throttle Acceleration from a stop	km/h	53—60	99—106	147—155	132—136
	mph	33—37	62—66	91—96	82—85

### • Downshift

<b>D</b>		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	14—18	28—33	—	10—14
	mph	9—11	17—21	—	6—9
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	87—91	—	—	—
	mph	54—57	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29

<b>S</b> (with S4 switch in operation)		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	21—25	33—38	—	13—17
	mph	13—16	21—24	—	8—11
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	98—102	—	—	—
	mph	61—63	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29



(PGM-FI)

• Upshift

**D**

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	12—16	27—32	44—50	16—20
	mph	7—10	17—20	27—31	10—12
7/16 throttle Acceleration from a stop	km/h	27—33	51—58	72—82	98—102
	mph	17—21	32—36	45—51	61—63
Full-throttle Acceleration from a stop	km/h	59—66	103—110	157—165	135—139
	mph	37—41	64—68	98—103	84—86

**S** (with S4 switch in operation)

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	18—22	28—33	45—51	23—27
	mph	11—14	17—21	28—32	14—17
7/16 throttle Acceleration from a stop	km/h	37—43	71—78	104—114	120—124
	mph	23—27	44—48	65—71	75—77
Full-throttle Acceleration from a stop	km/h	59—66	103—110	157—165	135—139
	mph	37—41	64—68	98—103	84—86

• Downshift

**D**

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	14—18	28—33	—	10—14
	mph	9—11	17—21	—	6—9
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	87—91	—	—	—
	mph	54—57	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	131—135	126—135	82—91	42—50
	mph	81—84	78—84	51—57	26—31

**S** (with S4 switch in operation)

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	21—25	33—38	—	13—17
	mph	13—16	21—24	—	8—11
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	98—102	—	—	—
	mph	61—63	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	131—135	126—135	82—91	42—50
	mph	81—84	78—84	51—57	26—31

(cont'd)

# Road Test

KF, KE models:

(Carburetor)

• Upshift

**D**

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	12—16	27—32	44—50	16—20
	mph	7—10	17—20	27—31	10—12
7/16 throttle Acceleration from a stop	km/h	32—38	56—63	74—84	98—102
	mph	20—24	35—39	46—52	61—63
Full-throttle Acceleration from a stop	km/h	53—60	99—106	147—155	132—136
	mph	33—37	62—66	91—96	82—85

**S** (with S4 switch in operation)

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	18—22	40—45	46—52	23—27
	mph	11—14	25—28	29—32	14—17
7/16 throttle Acceleration from a stop	km/h	37—43	66—73	104—114	121—125
	mph	23—27	41—45	65—71	75—78
Full-throttle Acceleration from a stop	km/h	53—60	99—106	147—155	132—136
	mph	33—37	62—66	91—96	82—85

• Downshift

**D**

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	14—18	28—33	—	10—14
	mph	9—11	17—21	—	6—9
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	87—91	—	—	—
	mph	54—57	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29

**S** (with S4 switch in operation)

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	21—25	33—38	—	13—17
	mph	13—16	21—24	—	8—11
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	98—102	—	—	—
	mph	61—63	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29



(PGM-FI)

• Upshift

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	12—16	27—32	44—50	16—20
	mph	7—10	17—20	27—31	10—12
7/16 throttle Acceleration from a stop	km/h	27—33	51—58	72—82	98—102
	mph	17—21	32—36	45—51	61—63
Full-throttle Acceleration from a stop	km/h	53—60	106—113	152—162	135—139
	mph	33—37	66—70	94—101	84—86

Ⓢ (with S<sub>4</sub> switch in operation)

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	18—22	28—33	45—51	23—27
	mph	11—14	17—21	28—32	14—17
7/16 throttle Acceleration from a stop	km/h	37—43	71—78	104—114	120—124
	mph	23—27	44—48	65—71	75—77
Full-throttle Acceleration from a stop	km/h	53—60	106—113	152—162	135—139
	mph	33—37	66—70	94—101	84—86

• Downshift

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	14—18	28—33	—	10—14
	mph	9—11	17—21	—	6—9
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	88—92	—	—	—
	mph	55—57	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	132—136	126—135	88—97	42—50
	mph	82—85	78—84	55—60	26—31

Ⓢ (with S<sub>4</sub> switch in operation)

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	21—25	33—38	—	13—17
	mph	13—16	21—24	—	8—11
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	99—103	—	—	—
	mph	62—64	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	132—136	126—135	88—97	42—50
	mph	82—85	78—84	55—60	26—31

(cont'd)

# Road Test

KS, KQ, KZ, KX models:

(Carburetor)

• Upshift

**D**

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	17—21	33—38	43—49	22—26
	mph	11—13	21—24	27—30	14—16
7/16 throttle Acceleration from a stop	km/h	28—34	56—63	86—96	96—100
	mph	17—21	35—39	53—60	60—62
Full-throttle Acceleration from a stop	km/h	53—60	99—106	148—156	132—136
	mph	33—37	62—66	92—97	82—85

**S** (with S<sub>4</sub> switch in operation)

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	17—21	35—40	59—65	37—41
	mph	11—13	22—25	37—40	23—25
7/16 throttle Acceleration from a stop	km/h	28—34	65—72	105—115	115—119
	mph	17—21	40—45	65—71	71—74
Full-throttle Acceleration from a stop	km/h	53—60	99—106	148—156	132—136
	mph	33—37	62—66	92—97	82—85

• Downshift

**D**

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	20—24	—	29—34	8—12
	mph	12—15	—	18—21	5—7
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	73—77	—	—	—
	mph	45—48	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29

**S** (with S<sub>4</sub> switch in operation)

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	34—38	—	29—34	8—12
	mph	21—24	—	18—21	5—7
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	84—88	—	—	—
	mph	52—55	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	129—133	124—133	82—91	38—46
	mph	80—83	77—83	51—57	24—29



(PGM-FI)

• Upshift



		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	21—25	37—42	50—56	22—26
	mph	13—16	23—26	31—35	14—16
7/16 throttle Acceleration from a stop	km/h	28—34	56—63	86—96	96—100
	mph	17—21	35—39	53—60	60—62
Full-throttle Acceleration from a stop	km/h	56—63	105—112	152—160	135—139
	mph	35—39	65—70	94—99	84—86



(with S<sub>4</sub> switch in operation)

		1st—2nd	2nd—3rd	3rd—4th	LC.ON
1/12 throttle Coasting down-hill from a stop	km/h	17—21	38—43	59—65	37—41
	mph	11—13	24—27	37—40	23—25
7/16 throttle Acceleration from a stop	km/h	28—34	65—72	105—115	114—118
	mph	17—21	40—45	65—71	71—73
Full-throttle Acceleration from a stop	km/h	56—63	105—112	152—160	135—139
	mph	35—39	65—70	94—99	84—86

• Downshift



		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	20—24	—	29—34	8—12
	mph	12—15	—	18—21	5—7
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	77—81	—	—	—
	mph	48—50	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	132—136	126—135	85—94	40—48
	mph	82—85	78—84	53—58	25—30



(with S<sub>4</sub> switch in operation)

		LC.OFF	4th—3rd	3rd—2nd	2nd—1st
1/12 throttle Coasting or braking to a stop	km/h	34—38	—	29—34	8—12
	mph	21—24	—	18—21	5—7
7/16 throttle When car is slowed by increased grade, wind, etc.	km/h	85—89	—	—	—
	mph	53—55	—	—	—
Full-throttle When car is slowed by increased grade, wind, etc.	km/h	132—136	126—135	85—94	40—48
	mph	82—85	78—84	53—58	25—30

**CAUTION:** Do not shift from **D** or **S** to **2** at speeds over 100 km/h (62.5 mph; you may damage the transmission.



(2nd Gear)

1. Accelerate from a stop at full throttle. Check that there is no abnormal noise or clutch slippage.
2. Upshifts and downshifts should not occur with the selector in this range.



(Reverse)

Accelerate from a stop at full throttle, and check for abnormal noise and clutch slippage.



(Park)

Park car on a slope (approx. 16°), apply the parking brake, and shift into Park. Release the brake; the car should not move.

# Stall Speed

## Test

### CAUTION:

- To prevent transmission damage, do not test stall speed for more than 10 seconds at a time.
- Do not shift the lever while rising the engine speed.
- Be sure to remove the pressure gauge before testing stall speed.

1. Engage parking brake and block the front wheels.
2. Connect safety chains to both front two hooks and attach, with minimum slack, to some strong stationary object.
3. Connect tachometer, and start the engine.
4. After the engine has warmed up to normal operating temperature, shift into **[2]**.
5. Fully depress the brake pedal and accelerator for 6 to 8 seconds, and note engine speed.
6. Allow 2 minutes for cooling, then repeat same test in **[D]**, **[S]**, and **[R]**.

Stall speed in **[D]**, **[S]**, **[2]** and **[R]** must be the same, and must also be within limits:

### NOTE:

Stall speed test must be made only for checking the cause of trouble.

#### Stall Speed RPM:

(Carbureted Engine)

Standard: 2,700 min<sup>-1</sup> (rpm)

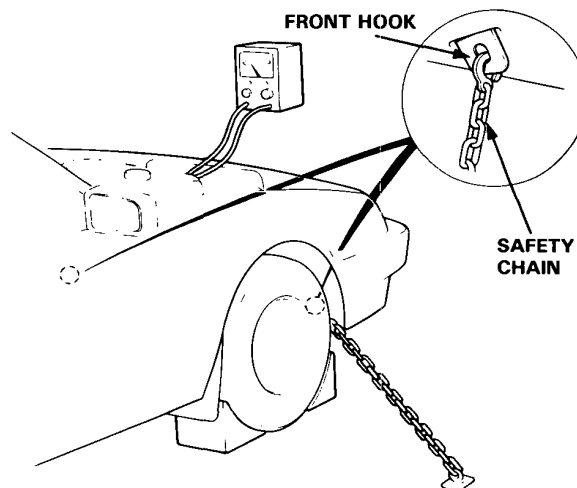
Service Limit: 2,550–2,850 min<sup>-1</sup> (rpm)

(Fuel Injected Engine)

Standard: 2,750 min<sup>-1</sup> (rpm)

Service Limit: 2,600–2,900 min<sup>-1</sup> (rpm)

TROUBLE	PROBABLE CAUSE
Stall rpm high in <b>[D]</b> , <b>[S]</b> , <b>[2]</b> & <b>[R]</b>	<ul style="list-style-type: none"> <li>• Low fluid level or oil pump output.</li> <li>• Clogged oil strainer.</li> <li>• Pressure regulator valve stuck closed.</li> <li>• Slipping clutch.</li> </ul>
Stall rpm high in <b>[R]</b>	<ul style="list-style-type: none"> <li>• Slippage of 4th clutch</li> </ul>
Stall rpm high in <b>[2]</b>	<ul style="list-style-type: none"> <li>• Slippage of 2nd clutch</li> </ul>
Stall rpm high in <b>[D]</b> & <b>[S]</b>	<ul style="list-style-type: none"> <li>• Slippage of 1st clutch or 1st gear one-way clutch</li> </ul>
Stall rpm low in <b>[D]</b> , <b>[S]</b> , <b>[2]</b> & <b>[R]</b>	<ul style="list-style-type: none"> <li>• Engine output low</li> <li>• Torque converter one-way clutch slipping</li> </ul>

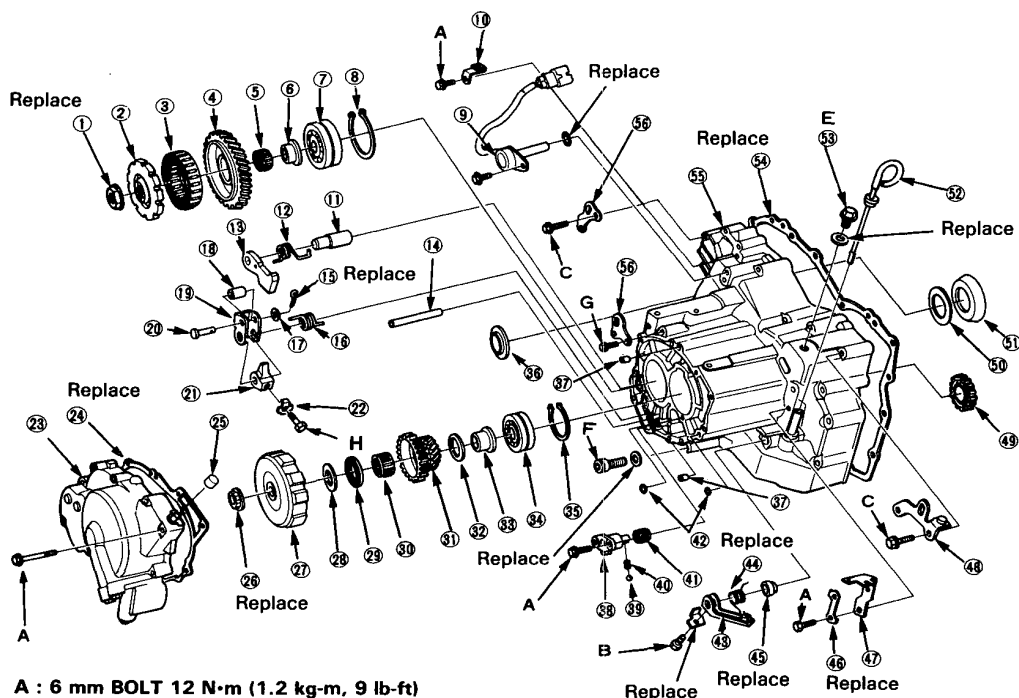




# Illustrated Index

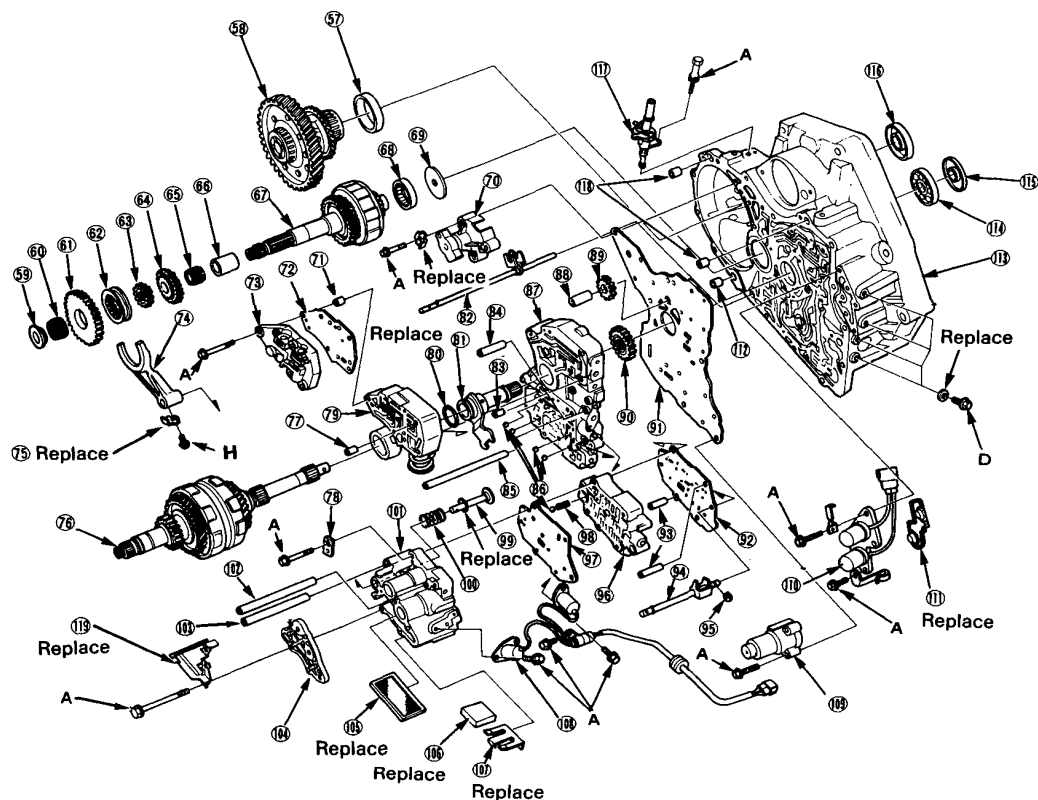
## NOTE:

- Clean all parts thoroughly in solvent or carburetor cleaner, and dry with compressed air. Blow out all passages.
- Coat all parts with ATF before reassembly.



- A : 6 mm BOLT 12 N·m (1.2 kg-m, 9 lb-ft)  
 B : 5 mm BOLT 8 N·m (0.8 kg-m, 6 lb-ft)  
 C : 10 mm BOLT 55 N·m (5.5 kg-m, 40 lb-ft)  
 D : 8 mm SEALING BOLT 18 N·m (1.8 kg-m, 13 lb-ft)  
 E : 20 mm FILLER BOLT 45 N·m (4.5 kg-m, 33 lb-ft)  
 F : 14 mm DRAIN PLUG 40 N·m (4.0 kg-m, 29 lb-ft)  
 G : 8 mm BOLT 22 N·m (2.2 kg-m, 16 lb-ft)  
 H : 6 mm BOLT 14 N·m (1.4 kg-m, 11 lb-ft)

- |                                                                                         |                                                                 |                              |                                     |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------|-------------------------------------|
| ① LOCK NUT 23 mm<br>140 → 0 → 140 N·m<br>(14.0 → 0 → 14.0 kg-m,<br>102 → 0 → 102 lb-ft) | ⑭ STOP PIN                                                      | ②⑧ THRUST WASHER 26 mm       | ④④ THROTTLE CONTROL<br>SHAFT SPRING |
| ② PARKING GEAR                                                                          | ⑮ COTTER PIN 1.6 mm                                             | ②⑨ THRUST NEEDLE<br>BEARING  | ④⑤ OIL SEAL                         |
| ③ ONE-WAY CLUTCH                                                                        | ⑯ PARKING PAWL SPRING                                           | ③① NEEDLE BEARING            | ④⑥ LOCK PLATE                       |
| ④ 1st GEAR                                                                              | ⑰ WASHER 6 mm                                                   | ③② NEEDLE BEARING            | ④⑦ THROTTLE CABLE STAY              |
| ⑤ NEEDLE BEARING                                                                        | ⑱ PARKING BRAKE ROLLER                                          | ③③ 31 x 36 x 18.5 mm         | ④⑧ TRANSMISSION<br>HANGER           |
| ⑥ 32 x 38 x 14 mm                                                                       | ⑲ PARKING SHIFT ARM                                             | ③④ 1st GEAR                  | ④⑨ REVERSE IDLER GEAR               |
| ⑦ 1st GEAR COLLAR                                                                       | ⑲ ROLLER PIN                                                    | ③⑤ THRUST WASHER             | ⑤① DIFFERENTIAL THRUST<br>SHIM      |
| ⑧ BALL BEARING                                                                          | ⑲ PARKING BRAKE<br>STOPPER                                      | ③⑥ 31 x 42 x 1.5 mm          | ⑤② BEARING OUTER RACE               |
| ⑨ 26 x 68 x 18 mm                                                                       | ⑲ LOCK WASHER                                                   | ③⑦ COLLAR 26 mm              | ⑤③ DIPSTICK                         |
| ⑩ SNAP RING 68 mm                                                                       | ⑲ END COVER                                                     | ③⑧ BALL BEARING              | ⑤④ FILLER BOLT                      |
| ⑪ SPEED PULSER                                                                          | ⑲ GASKET                                                        | ③⑨ 26 x 75 x 19 mm           | ⑤⑤ GASKET                           |
| ⑫ SPEED PULSER COUPLER                                                                  | ⑲ BREATHER CAP                                                  | ③⑩ SNAP RING 75 mm           | ⑤⑥ TRANSMISSION<br>HOUSING          |
| ⑬ STAY                                                                                  | ⑲ LOCK NUT 19 mm                                                | ③⑪ OIL SEAL                  | ⑤⑦ TRANSMISSION<br>HANGER           |
| ⑭ PARKING PAWL SHAFT                                                                    | ⑲ 95 → 0 → 95 N·m (9.5<br>→ 0 → 9.5 kg-m, 69 → 0<br>→ 69 lb-ft) | ③⑫ DOWEL PIN 8 x 14 mm       |                                     |
| ⑮ PARKING PAWL SPRING                                                                   | ⑲ 1st CLUTCH ASSEMBLY                                           | ③⑬ REVERSE IDLER GEAR        |                                     |
| ⑯ PARKING PAWL                                                                          |                                                                 | ③⑭ HOLDER                    |                                     |
|                                                                                         |                                                                 | ③⑮ STEEL BALL                |                                     |
|                                                                                         |                                                                 | ③⑯ IDLER SPRING              |                                     |
|                                                                                         |                                                                 | ③⑰ NEEDLE BEARING            |                                     |
|                                                                                         |                                                                 | ③⑱ 14 x 18 x 15 mm           |                                     |
|                                                                                         |                                                                 | ③⑲ O-RING 7.7 x 2.3 mm       |                                     |
|                                                                                         |                                                                 | ③⑳ THROTTLE CONTROL<br>LEVER |                                     |



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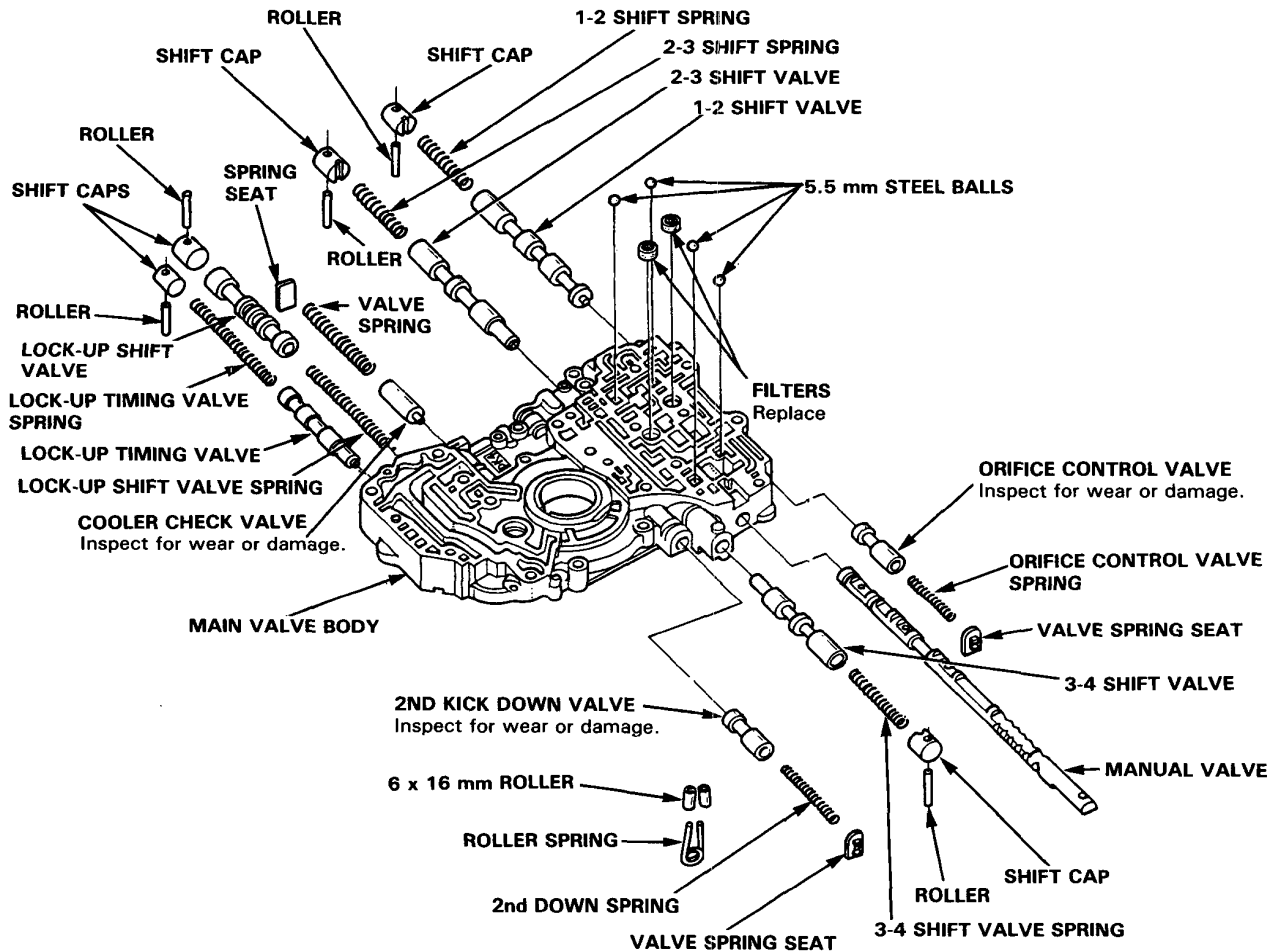
108 SHIFT CONTROL SOLENOID  
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 40 x 68 x 9 mm  
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 117 SPEED SENSOR  
 ASSEMBLY  
 118 DOWEL PIN 14 x 20 mm  
 119 BAFFLE PLATE

# Main Valve Body

## Disassembly/Inspection/Reassembly

### NOTE:

- Clean all parts thoroughly in solvent or carburetor cleaner, and dry with compressed air. Blow out all passages.
- Replace valve body as an assembly if any parts are worn or damaged.
- Check all valves for free movement. If any fail to slide freely, see Valve Body Repair.
- Coat all parts with ATF before reassembly.



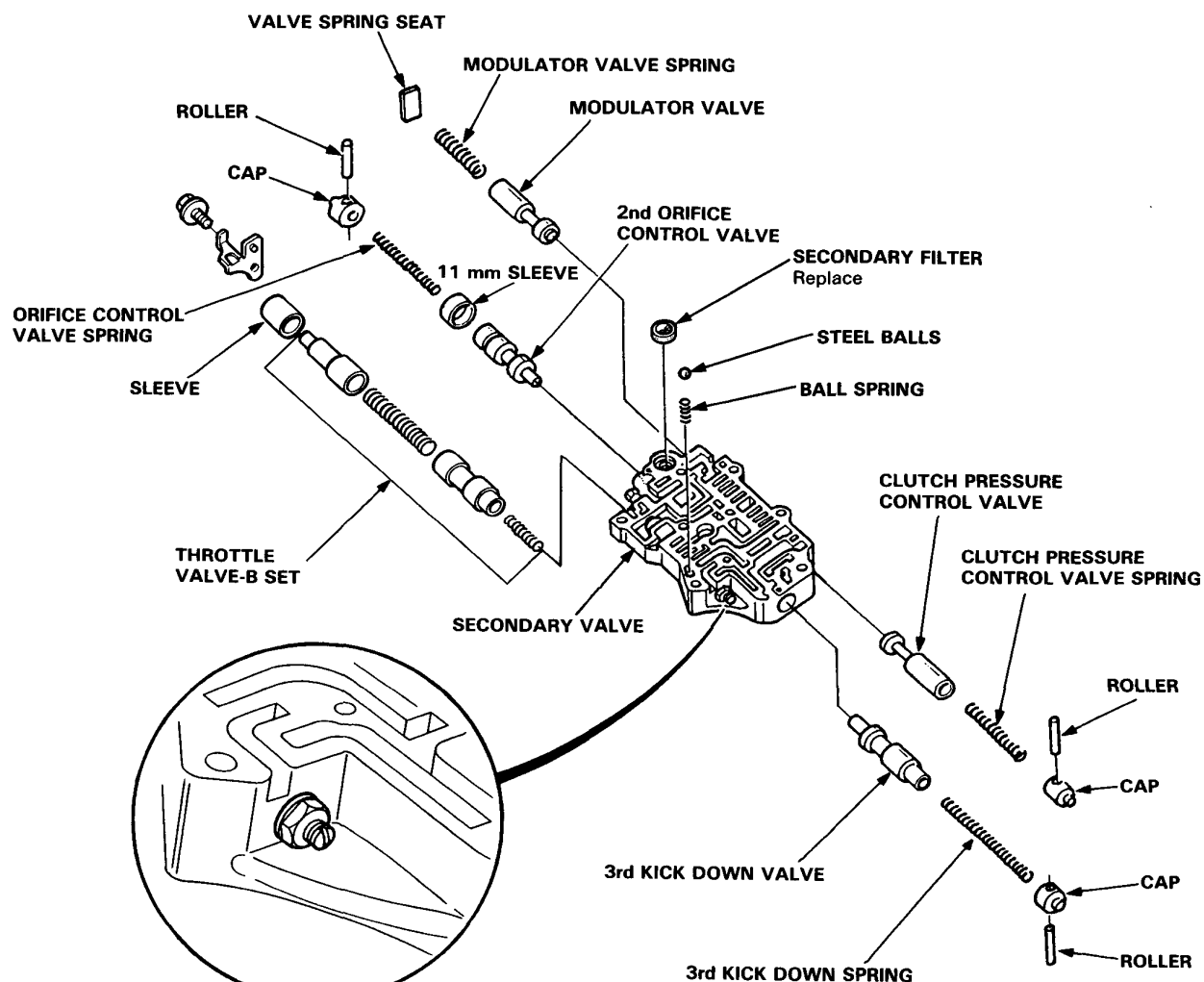


# Secondary Valve Body

## Disassembly/Inspection/Reassembly

### NOTE:

- Clean all parts thoroughly in solvent or carburetor cleaner, and dry with compressed air. Blow out all passages.
- Check all valves for free movement. If any fail to slide freely, see Valve Body Repair.
- Replace as assembly if any parts are worn or damaged.



### THROTTLE PRESSURE BOLT B

NOTE: Do not adjust or remove this bolt; it is adjusted at the factory for proper shift point.

# Servo Valve Body

## Disassembly/Inspection/Reassembly

### NOTE:

- Clean all parts thoroughly in solvent or carburetor cleaner, and dry with compressed air. Blow out all passages.
- Check all valves for free movement. If any fail to slide freely, see Valve Body Repair.
- Replace valve body as assembly if any parts are worn or damaged.

### SERVO VALVE RETURN SPRING FREE LENGTH

Standard : 40.3 mm (1.59 in)

Service Limit: 36.7 mm (1.44 in)

Accumulator Spring O.D.

2nd Accumulator Spring: 16.5 mm (0.65 in)

3rd Accumulator Spring: 16.0 mm (0.63 in)

4th Accumulator Spring: 18.6 mm (0.73 in)

### Accumulator Spring Free Length

2nd Accumulator Spring

Standard 87.7 mm (3.45 in)

Service Limit: 86.4 mm (3.40 in)

3rd Accumulator Spring

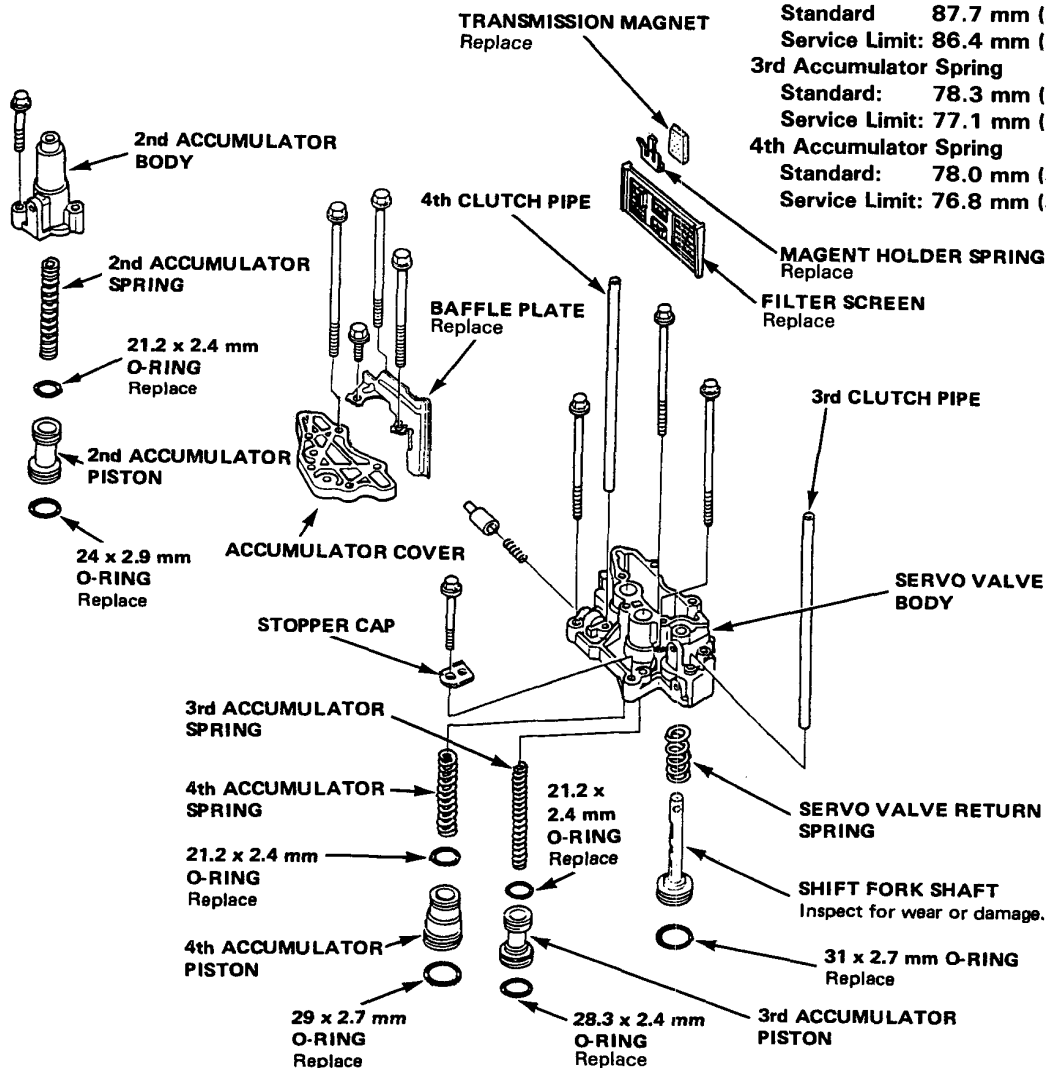
Standard: 78.3 mm (3.08 in)

Service Limit: 77.1 mm (3.04 in)

4th Accumulator Spring

Standard: 78.0 mm (3.07 in)

Service Limit: 76.8 mm (3.02 in)

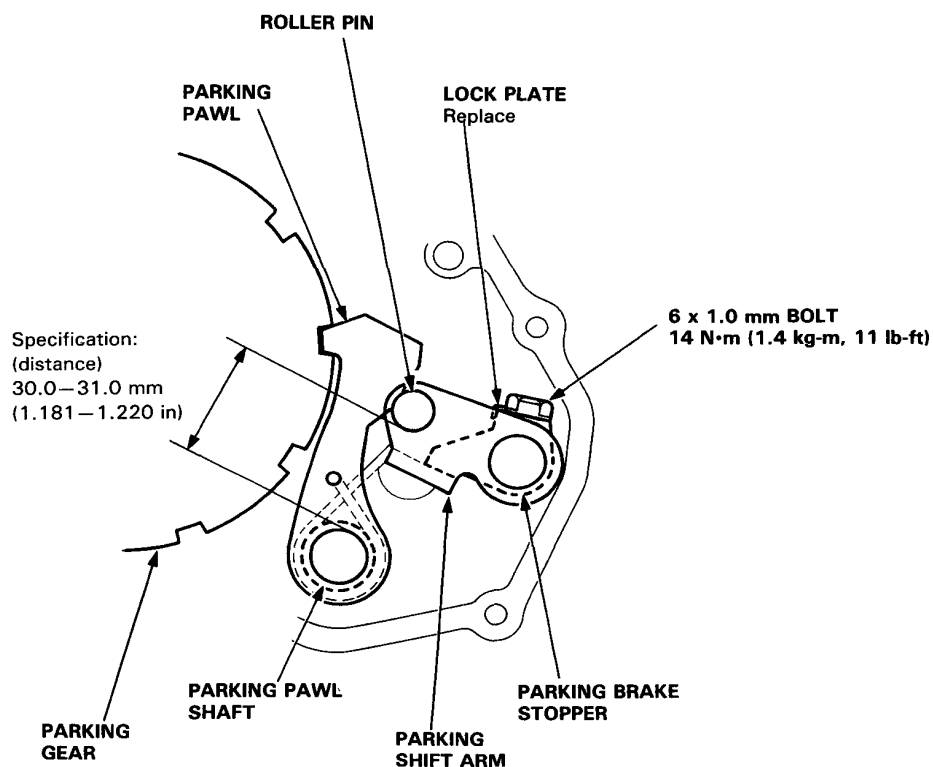




# Parking Brake Stopper

## Inspection/Adjustment

1. Set the parking shift arm in the PARK position.
2. Measure the distance between the outer face of the parking pawl shaft and outer face of the parking shift arm roller pin.

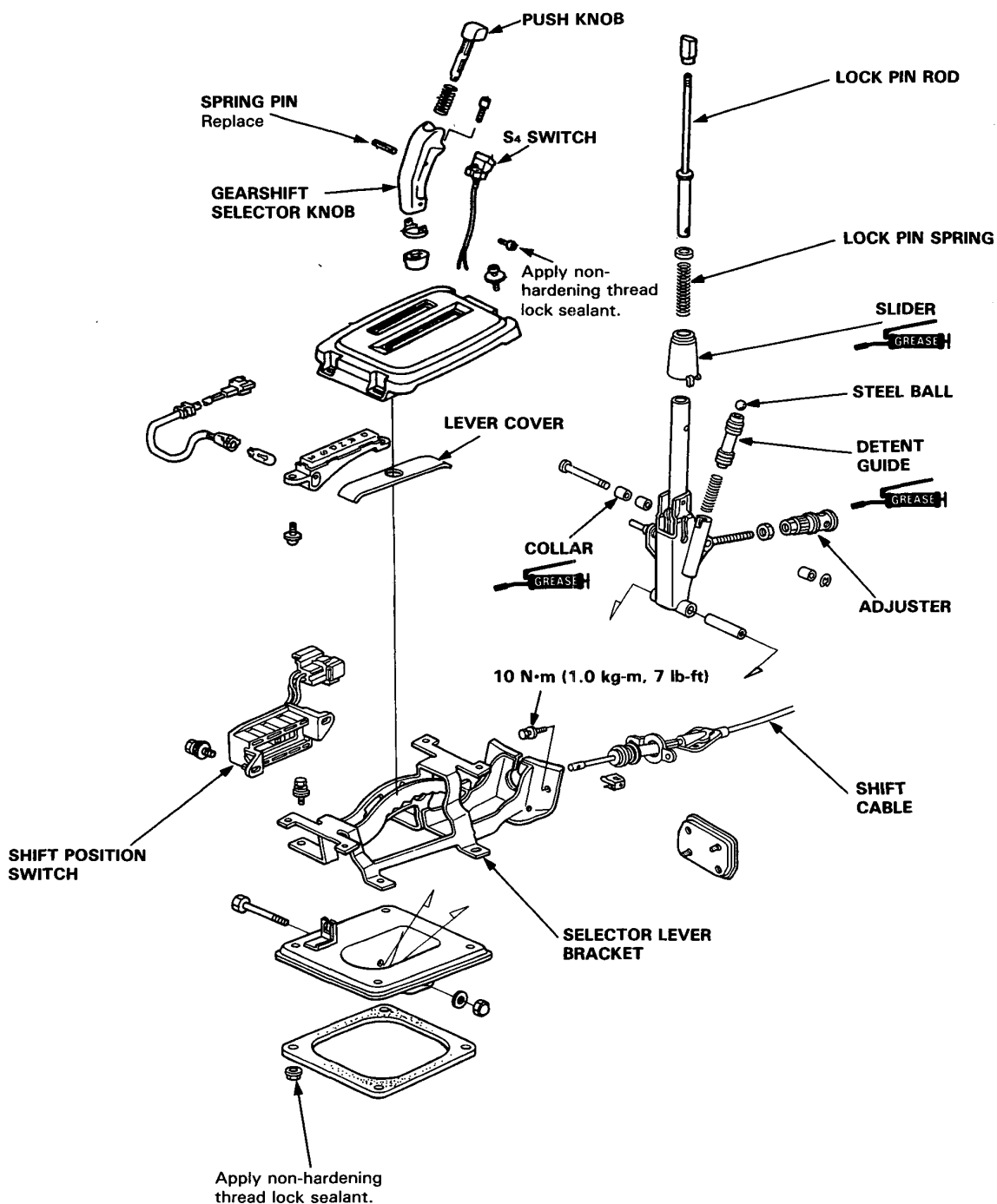


3. If the measurement is out of specification (distance), select the appropriate parking brake stopper using the table below, and install it on the parking shift arm.

No.	PART NUMBER
1	24537-PA9-003
2	24538-PA9-003
3	24539-PA9-003

# Gearshift Selector

## Disassembly/Reassembly



# Shift Cable

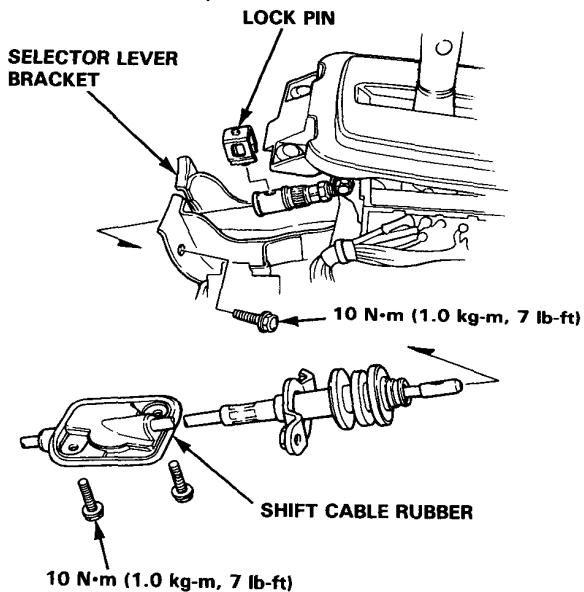


## Removal

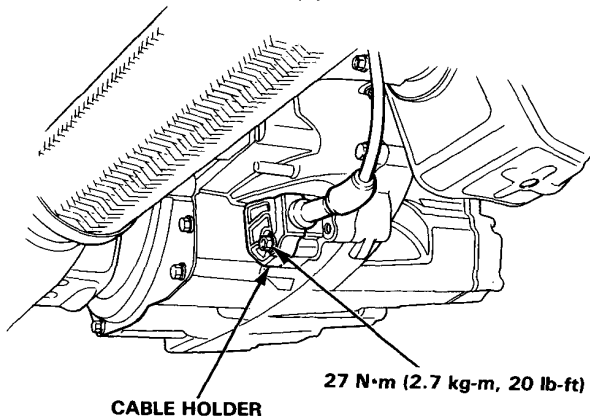
NOTE: Shift to **2** position before removal.

1. Remove the consol and disconnect shift cable by removing the lock pin.
2. Remove the selector lever bracket bolts from inside the car.
3. Remove the shift cable bracket bolt from outside of the car.  
[6 x 1.0 mm Bolt torque 10 N·m (1.0 kg-m, 7 lb-ft)]
4. Remove the bolts for the shift cable rebber from outside of the car.

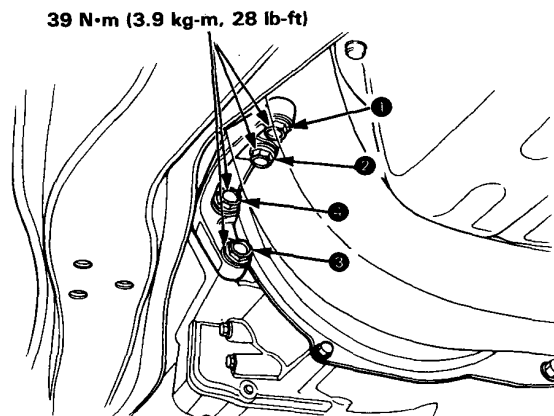
NOTE: Slide the rear steering cover by removing bolts. (4WS only)



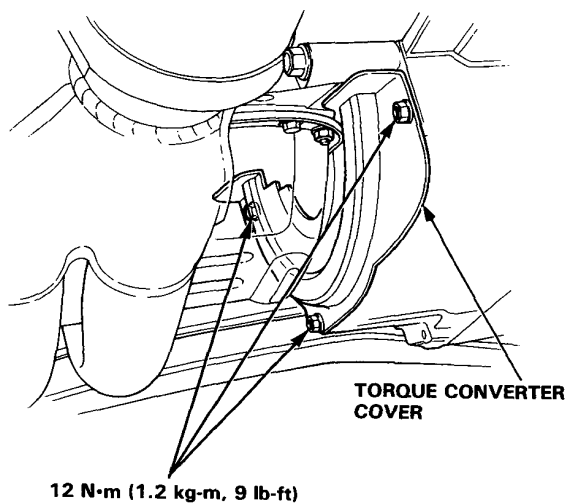
5. Remove the cable holder.



6. Remove the engine stiffener.



7. Remove the torque converter cover.

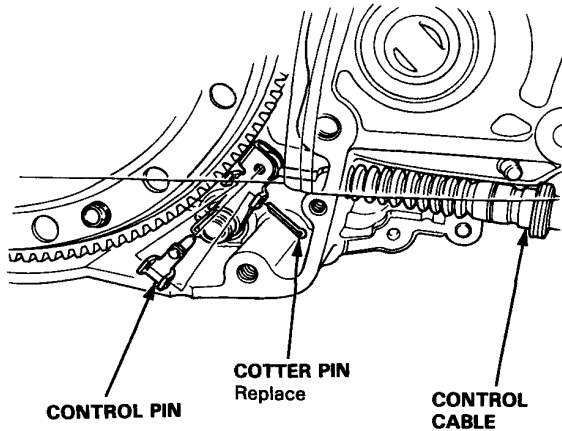


(cont'd)

# Shift Cable

## Removal (cont'd)

8. Remove the shift cable by removing the control pin.



9. Pull the shift cable out of the by setting slot.

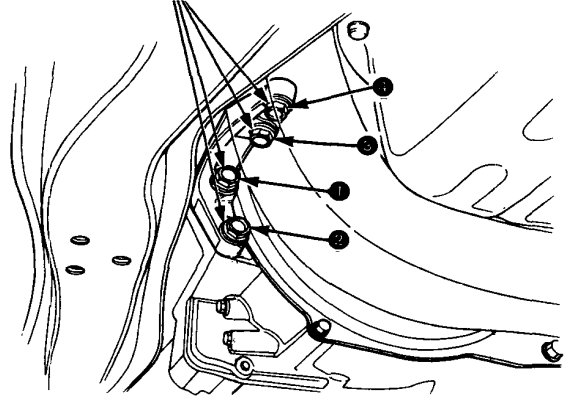
**CAUTION:** Do not bend the shift cable excessively.

## Installation

1. Installation is in the reverse order of removal.

**NOTE:** When installing the engine stiffener, loosely install the bolts then, torque them in the order shown.

**39 N·m (3.9 kg-m, 28 lb-ft)**

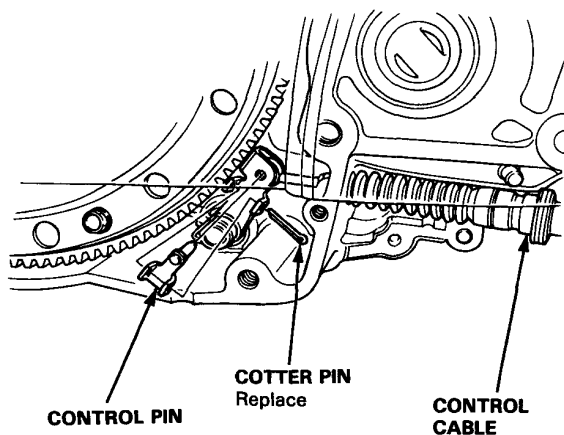


- Shift cable adjustment Page 9-29.

# Shift Cable

## Removal (cont'd)

8. Remove the shift cable by removing the control pin.



9. Pull the shift cable out of the by setting slot.

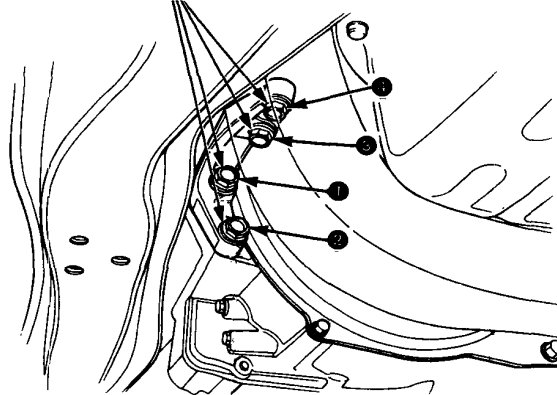
**CAUTION:** Do not bend the shift cable excessively.

## Installation

1. Installation is in the reverse order of removal.

**NOTE:** When installing the engine stiffener, loosely install the bolts then, torque them in the order shown.

**39 N·m (3.9 kg-m, 28 lb-ft)**



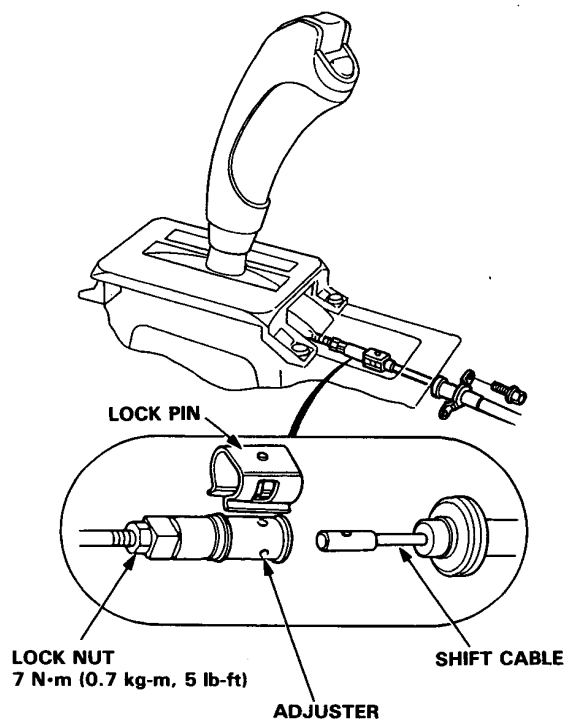
- Shift cable adjustment Page 9-29.



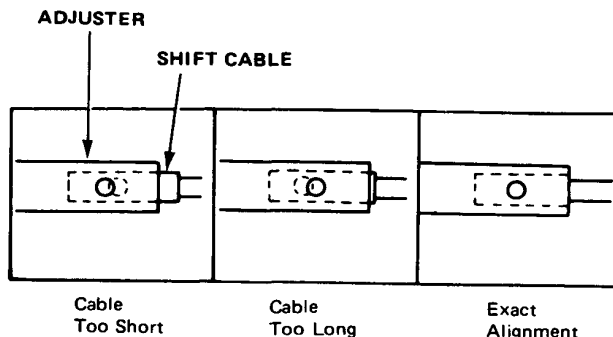
# Shift Cable

## Adjustment

1. Start the engine. Shift to reverse to see if the reverse gear engages. If not, refer to Troubleshooting.
2. With the engine off, remove the console.
3. Shift to **N** or **R** position, then remove the lock pin from the cable adjuster.



4. Check that the hole in the adjuster is perfectly aligned with the hole in the shift cable.



**NOTE:** There are two holes in the end of the shift cable. They are positioned 90° apart to allow cable adjustments in 1/4 turn increments.

5. If not perfectly aligned, loosen the lock nut on shift cable and adjust as required.
6. Tighten the lock nut.
7. Install the lock pin on the adjuster.

**NOTE:** If you feel the lock pin binding as you reinstall it, the cable is still out of adjustment and must be readjusted.

8. Start the engine and check the shift lever in all gears. If any gear does not work properly, refer to troubleshooting.

# Throttle Control Cable

## Adjustment/Inspection

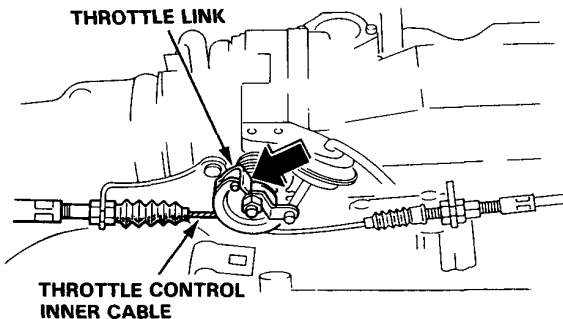
NOTE: Before adjusting the throttle control cable, make sure:

- The throttle cable free play is correct.
- The engine is at normal operating temperature (cooling fan comes on).
- The idle speed is correct.
- On carbureted cars the distance between the throttle control lever and the throttle control bracket is correct (See "Throttle Control Cable Bracket Adjustment.")

Inspection:

NOTE: On carbureted cars you will need an assistant to depress the accelerator pedal, on fuel-injected cars you can work the throttle linkage body with your hand.

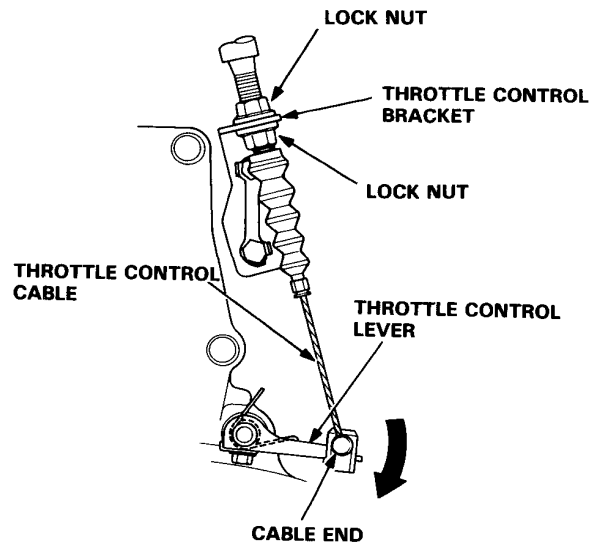
1. Remove the throttle cable free play.
2. Apply light thumb pressure to the throttle control lever, then work the accelerator or throttle linkage. The lever should move just as the engine speed increases above idle. If not, proceed to Adjustment.



Adjustment:

1. Loosen the nuts on the control cable at the transmission end and synchronize the control lever to the throttle.

NOTE: To tailor the shift/lock-up characteristics to a particular customers driving expectations, you can adjust the control cable up to 3 mm shorter than the "synchronized" point.





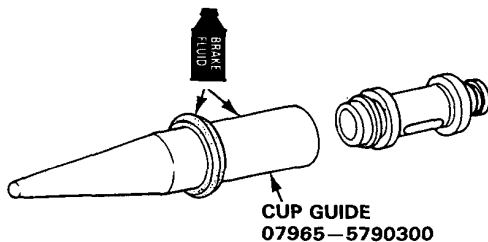
# Master Cylinder

## Reassembly

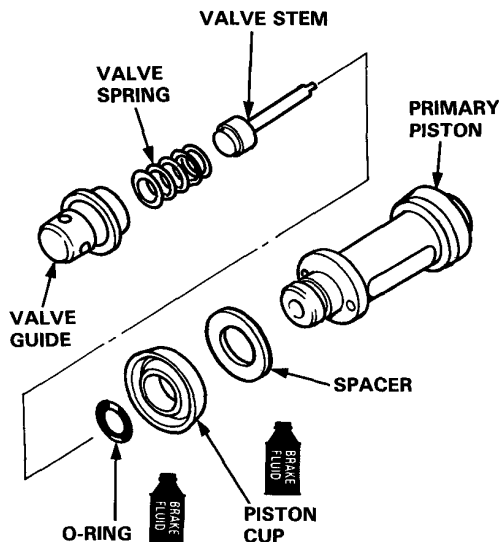
### CAUTION:

- 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.
- To prevent spills, cover the hose joints with rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Use only new clean brake fluid.
- Before reassembling, check that all parts are free of dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- 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 reuse the drained fluid.

1. Coat the Cup Guide (special tool) with brake fluid, install the cup over the Cup Guide, then slide the cup onto the primary piston.

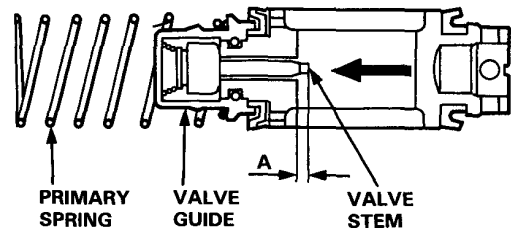


2. Install the spacer, piston cup, O-ring, valve stem and valve spring onto the primary piston.



3. Install the valve guide and primary spring to the primary piston.

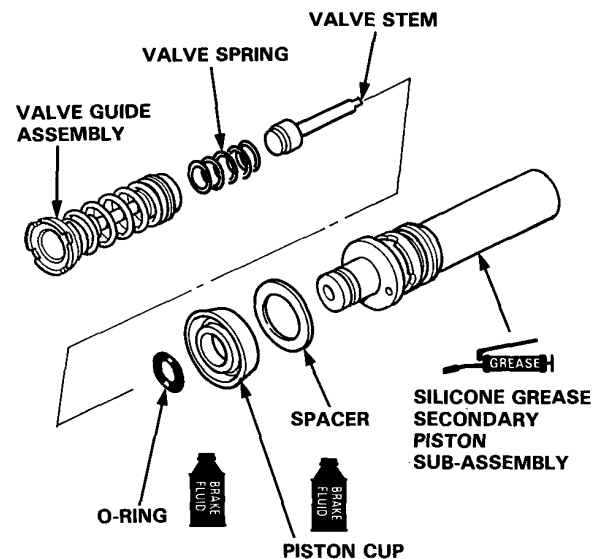
### PRIMARY PISTON ASSEMBLY



### NOTE:

- Reaching through the primary piston stop bolt hole, lightly press on the valve stem to see if it moves smoothly.
- Make sure that the dimension A is 1.85–2.45 mm.

4. Install the spacer, piston cup, O-ring, valve stem and valve spring onto the secondary piston sub-assembly.



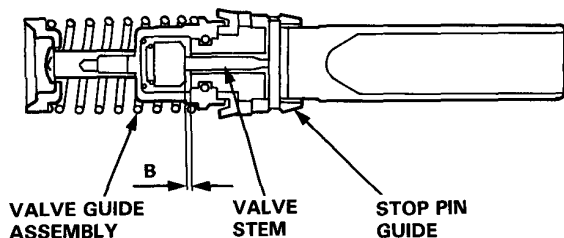
(cont'd)

# Master Cylinder

## Reassembly (cont'd)

5. Install the valve guide assembly to the secondary piston sub-assembly.

### SECONDARY PISTON ASSEMBLY



#### NOTE:

- Install the valve guide assembly after confirming that the dimension B is 0.9–1.5 mm.
- Lightly press the stop pin guide to see if the valve stem moves smoothly.

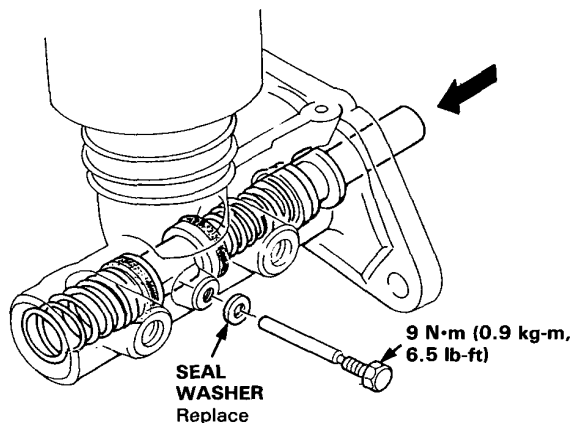
6. Assemble the primary piston assembly, secondary piston assembly and piston guide assembly in the master cylinder body.

NOTE: Install the primary piston with the slot on the cylinder facing the stop bolt hole side.

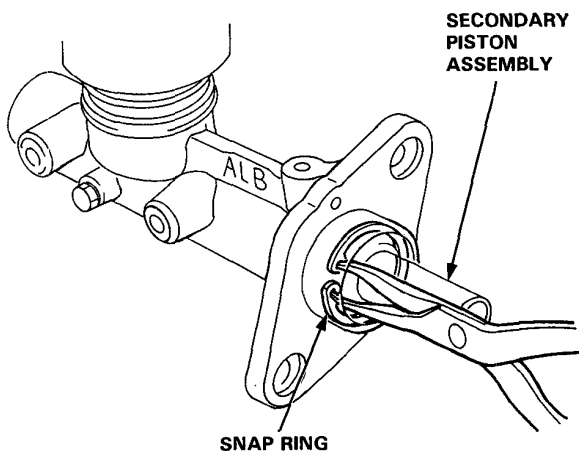
7. Push the secondary piston in until the slot aligns with the stop bolt hole, then install and tighten the stop bolt.

#### CAUTION:

- Replace the stop bolt seal washer with a new one whenever disassembled.
- Apply brake fluid to the inner wall of the cylinder and piston cups, being careful that they are not turned inside out during installation.

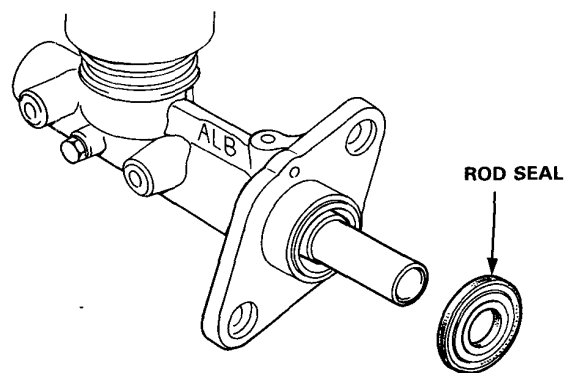


8. Press the secondary piston in and install the snap ring.



**CAUTION:** Avoid damaging the sliding surface of the secondary piston when installing the snap ring.

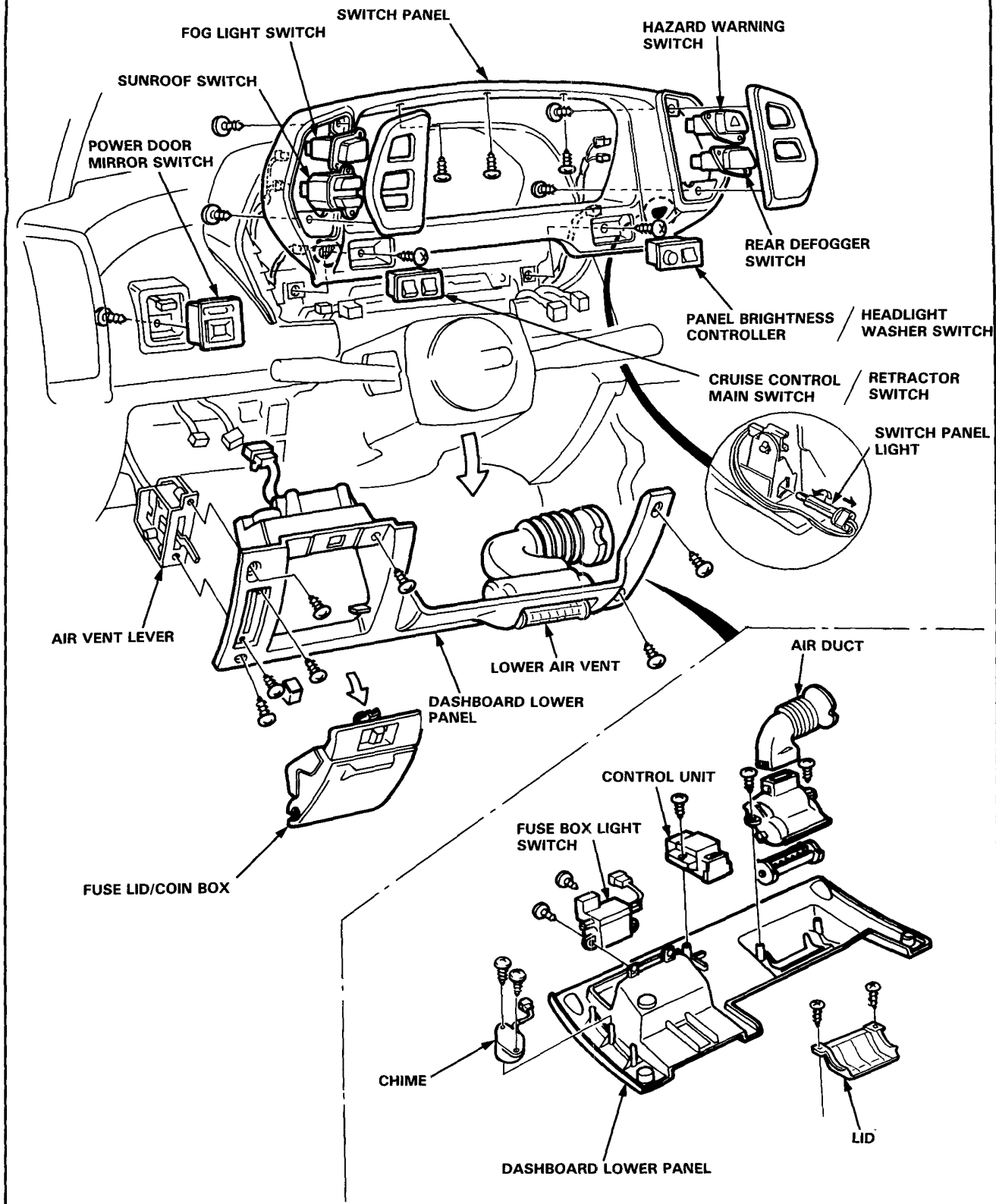
9. Install the rod seal.



**CAUTION:** Make sure that there is no interference between the brake pipes and other parts when installing.

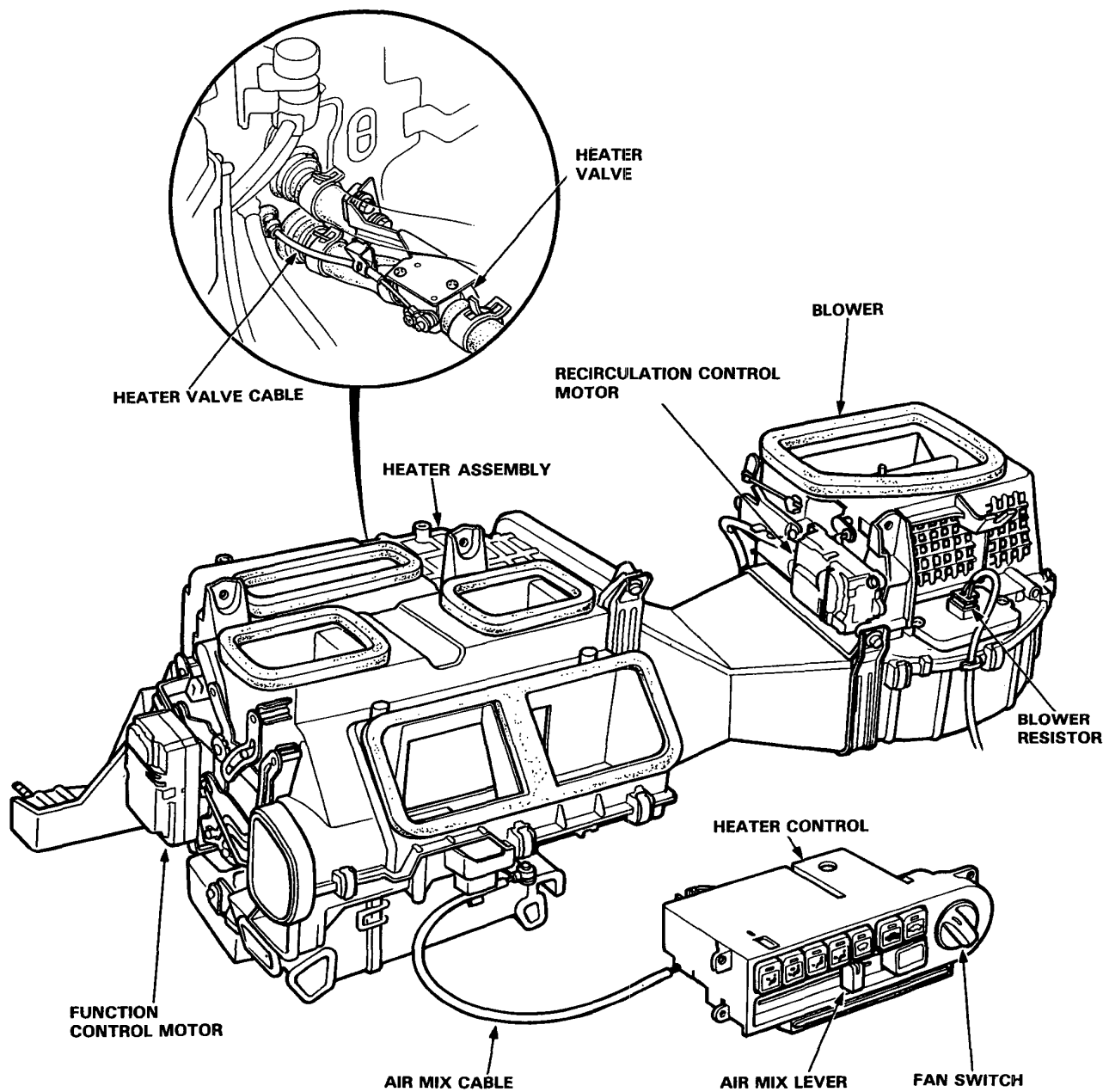
# Dashboard

## Component Removal/Installation



# Heater

## Construction



NOTE: LH Drive shown, RH Drive is similar.

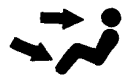
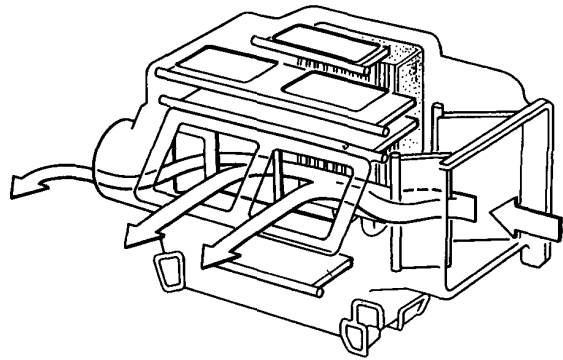
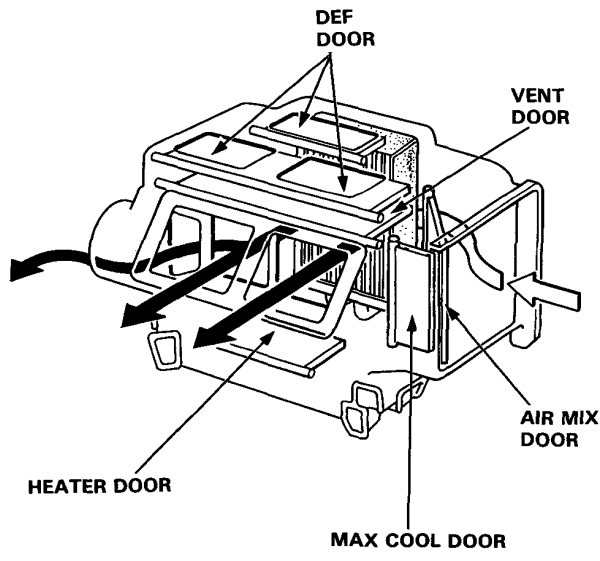


Heater Door Position

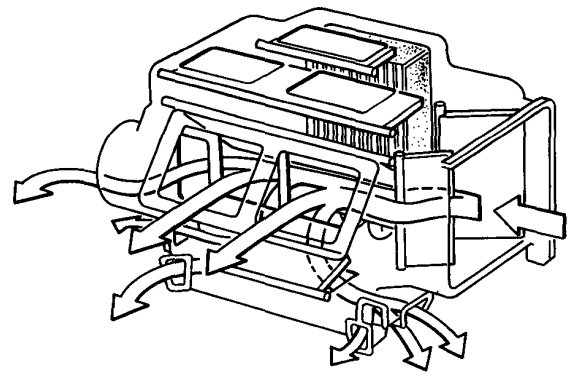
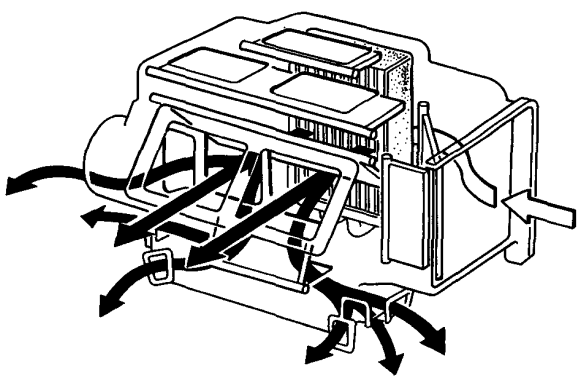


(VENT)

→ HOT AIR  
→ COOL AIR



(HEAT/VENT)



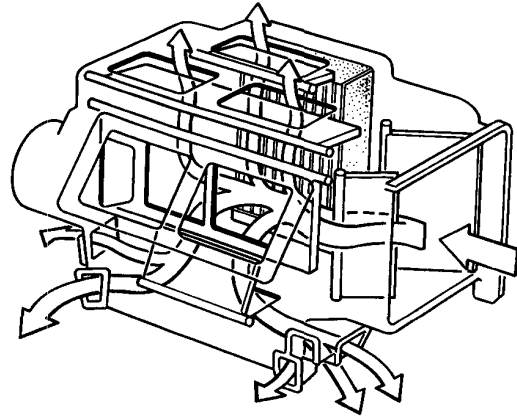
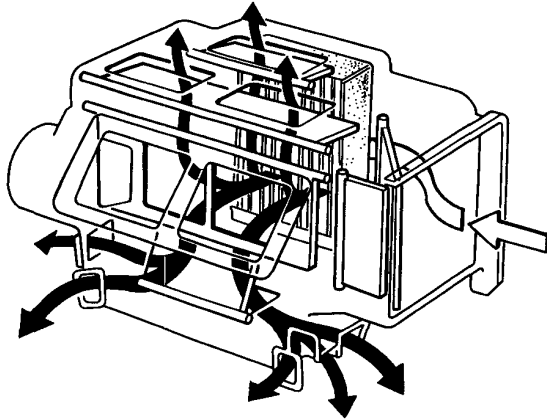
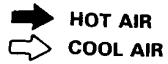
(cont'd)

# Heater

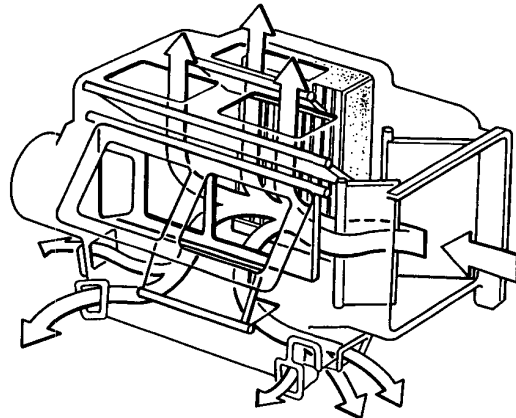
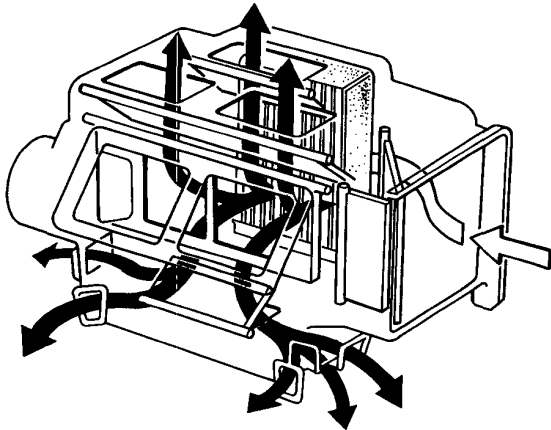
## Heater Door Position (cont'd)

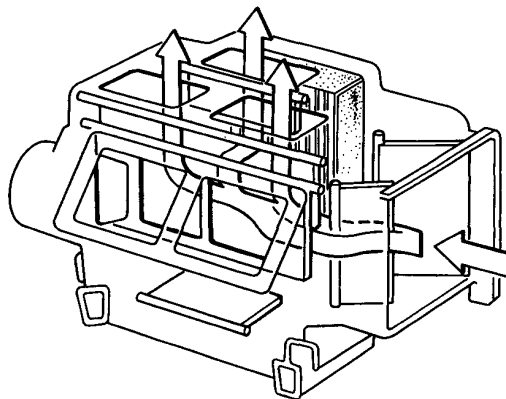
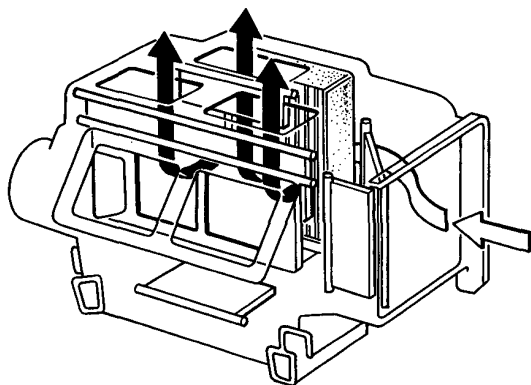


(HEAT)



(HEAT/DEF)





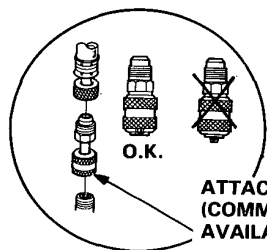
# Air Conditioner

## Construction

<LHD>

### A/C HIGH SIDE ATTACHMENT

The A/C high side charging fitting's O.D. size is reduced from 7/16" to 3/8" to prevent you from accidentally connecting the low side hose to the high side fitting. Consequently, you'll need an attachment for the existing hose on your charging station.



### EVAPORATOR

As refrigerant circulates, heat is absorbed from the surrounding passenger compartment air.

### COMPRESSOR CONTROL UNIT

### DUAL PRESSURE SWITCH

When the refrigerant pressure is below 215 kPa (33 psi) due to refrigerant leakage or above 2350 kPa (340 psi) due to the coolant blockage the dual pressure switch opens the circuit to the A/C control unit and stops the air conditioner to protect the compressor.

### CONDENSER

Dissipates the heat which was absorbed by the refrigerant.

### COMPRESSOR

Compresses the refrigerant and then forces it through the condenser.

### RECEIVER AND FILTER/DRYER

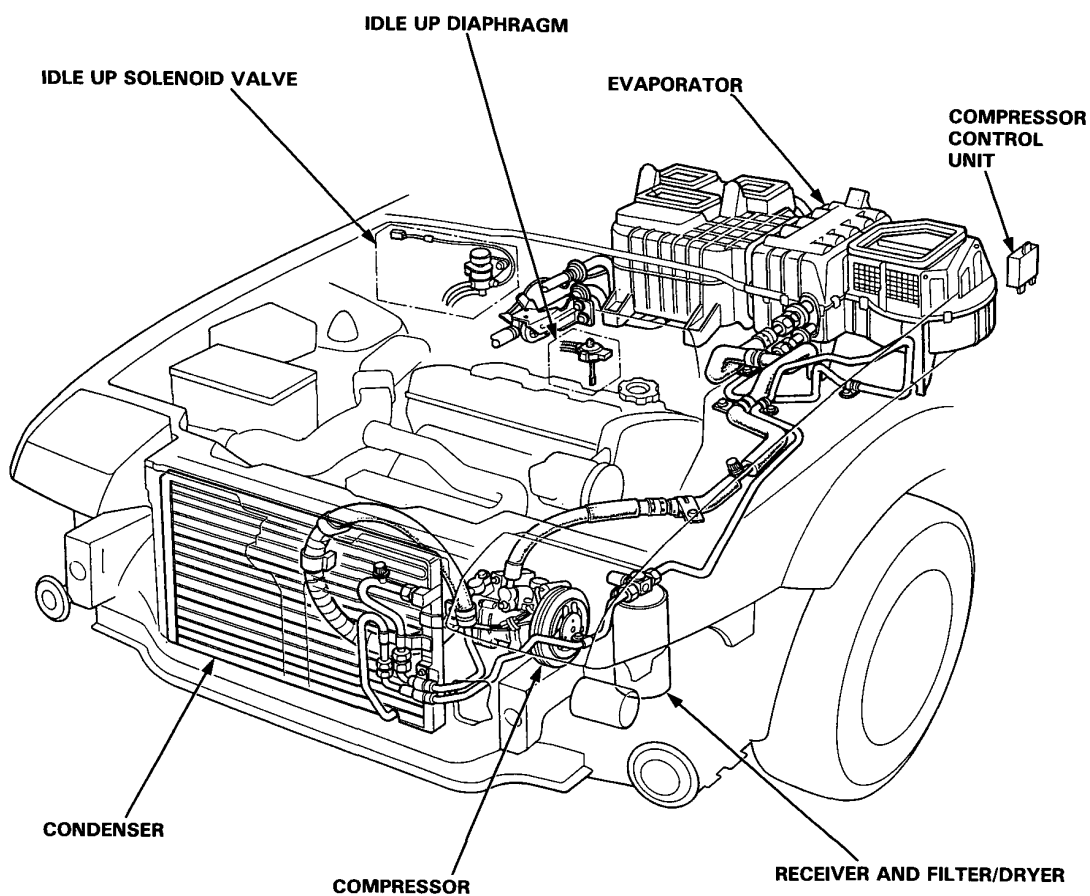
Serves as a reservoir which filters and removes moisture from the refrigerant.

### SIGHT GLASS

\* Charge the system with  $900 \pm 50$  g ( $32 \pm 2$  oz.) of refrigerant.

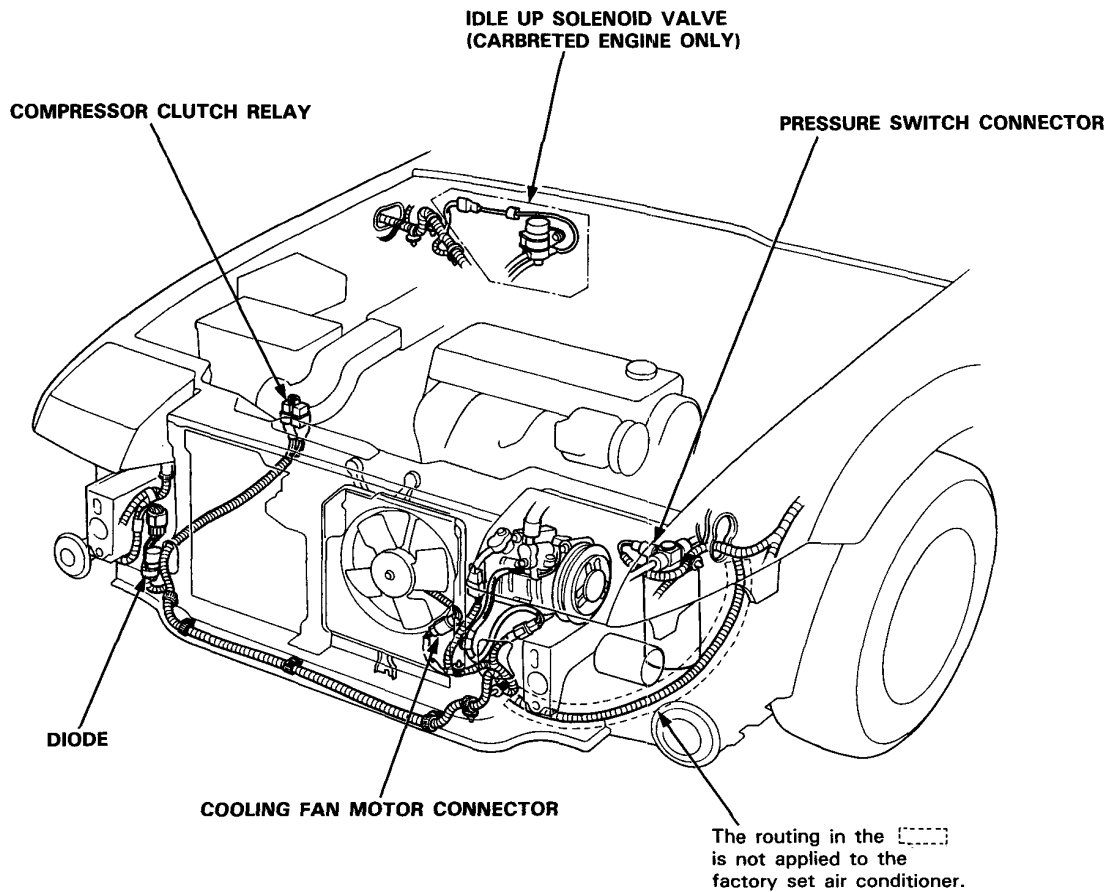


<RHD>



\* Charge the system with  $850 \pm 50$  g ( $30 \pm 2$  oz.) of refrigerant.

# Wire Harness Routing



# Idle Adjustment



- **PGM-FI Engine**

Idle the engine for one minute with heater fan switch at HI (right end) and air conditioner on, then check the idle speed.

**Idle should remain stable at:**

- **KX, KS, KZ, KQ**  
 **$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$**
- **Other models**  
 **$800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$**

**NOTE:** If the idle speed is not within specifications, see fuel and emissions section 6.

- **Carbureted Engine**

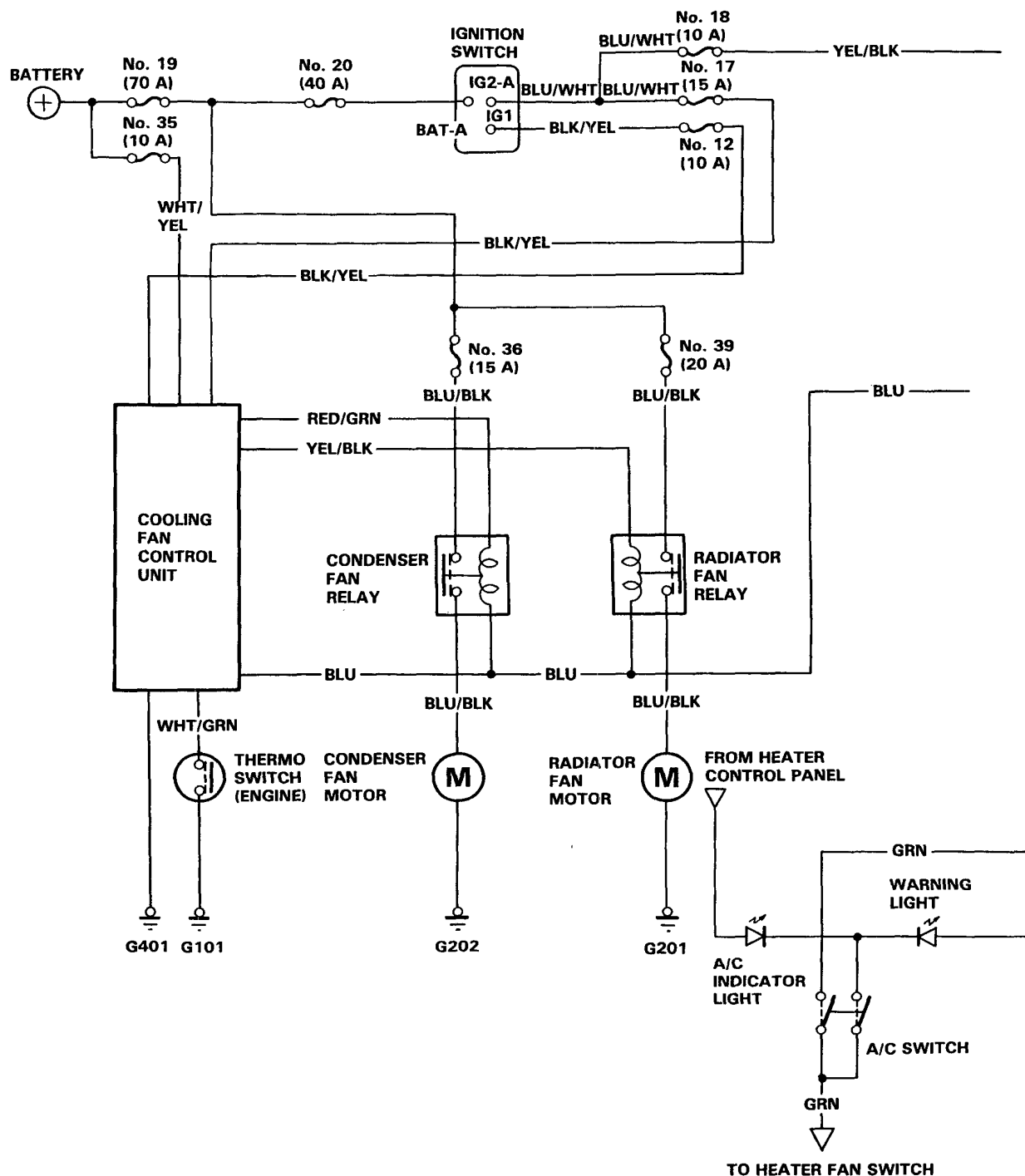
Idle the engine for one minute with heater fan switch at HI (right end) and air conditioner on, then check the idle speed.

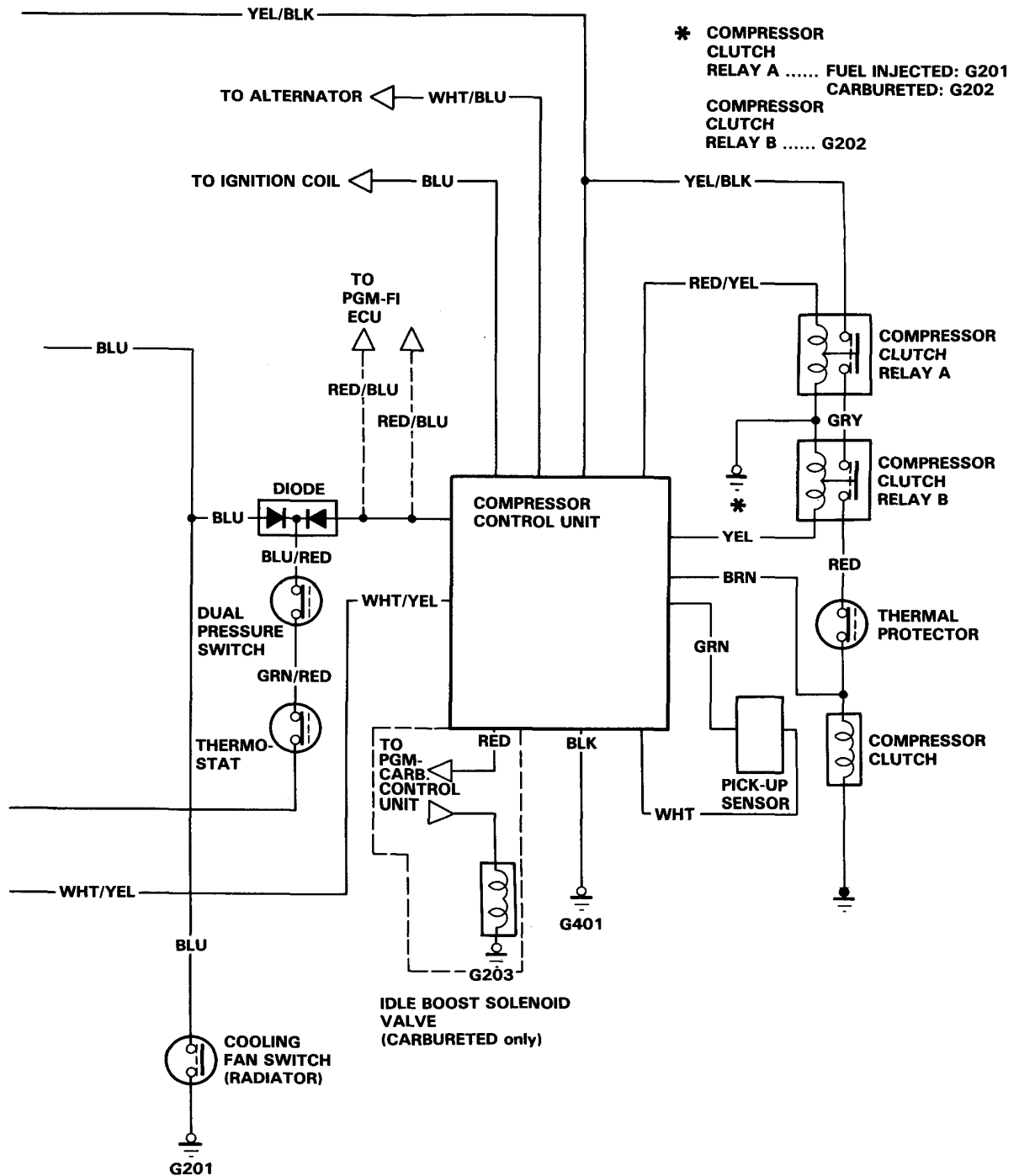
**Idle speed should be:**  
 **$750 \pm 50 \text{ min}^{-1} \text{ (rpm)}$**

**NOTE:** If idle speed is not within specification, see fuel and emissions section 6.

# Air Conditioner

## Wiring Diagram





# Compressor Control System

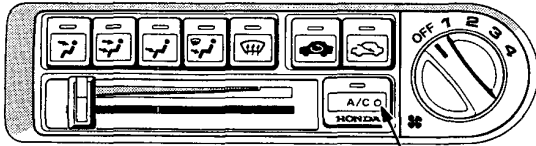
## Description

The compressor control unit has a system designed to protect the compressor belt in the event of a seizure, thereby allowing the alternator to continue operating.

This is done by comparing the engine rpm and the compressor pulley rpm. When there is a difference in rpm that continues for more than 3 seconds, the compressor relays are turned off and the warning light comes on.

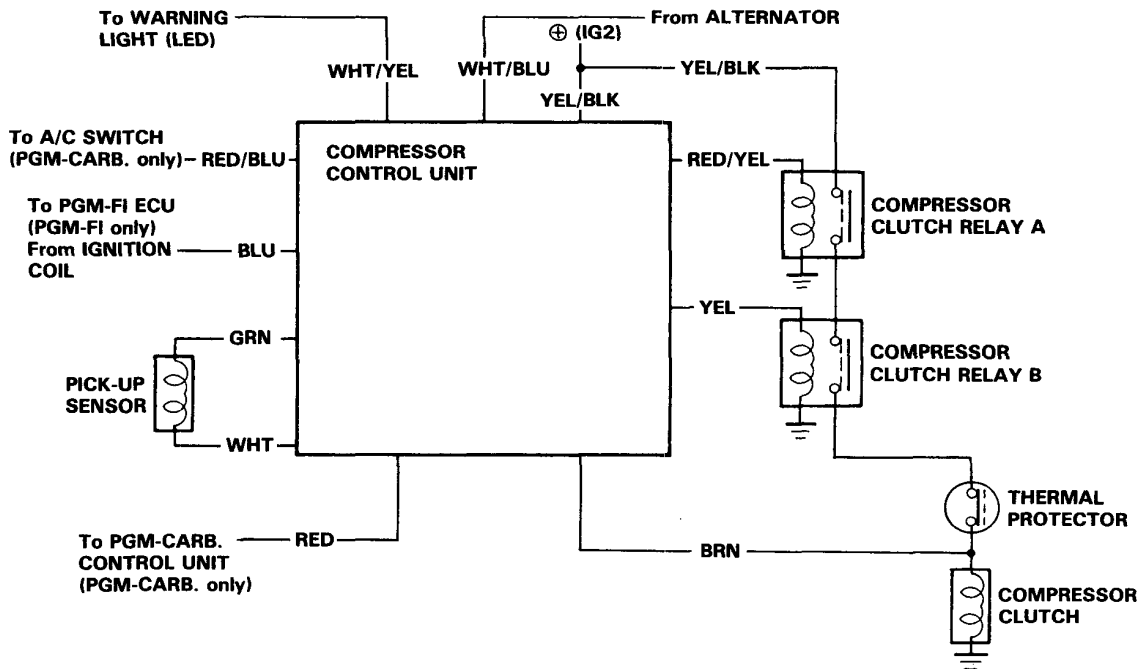
To reset, push the A/C switch off, then push it on again.

NOTE: If the switch is pushed off and on more than twice, it will be necessary to turn off the ignition to reset.



### WARNING LIGHT

NOTE: This doesn't show on late model Prelude unless illuminated.

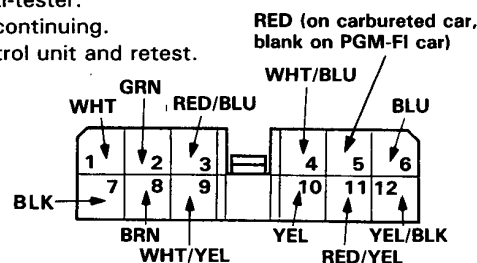




## Input Tests

### NOTE:

- Make sure all connectors are clean and tight.
- Make all tests from the wire side of the connector with a digital multi-tester.
- Any abnormality found during these tests must be corrected before continuing.
- If all tests produce the desired results, substitute a known-good control unit and retest.



View from wire side.

Perform the following tests with the A/C control unit's 12P connector disconnected, and the ignition switch, blower switch, and A/C switch ON.

WIRE POSITION	CIRCUIT	TEST CONDITION	DESIRED RESULTS	CORRECTIVE ACTION IF DESIRED RESULTS AREN'T OBTAINED
BLK (7)	Ground	Check for continuity to body ground.	Should have continuity.	Repair open to body ground.
YEL/BLK (12)	Power	Check for battery voltage.	Should have battery voltage.	Check #18 fuse; if OK, repair open in YEL/BLK wire.
RED/YEL (11) and YEL (10)	Compressor relay A Compressor relay B	Connect both the RED/YEL (11) and YEL (10) wires to the YEL/BLK (12) wire with jumper wires.	The A/C compressor clutch should click.	Check for an open or short in the RED/YEL or YEL wires.
BLU (6)	Engine speed	Check for battery voltage.	Should have battery voltage.	Check for an open or short in the BLU wire or a faulty coil.
GRN (2) and WHT (1)	Compressor sensor	Check resistance between the GRN and WHT wires (use 20 K scale).	Should be approximately 0.45 to 0.60 ohms on the 20 K scale (450–600 ohms).	Check for open in GRN or WHT wires between the A/C control unit and the compressor pick-up sensor or a faulty pick-up sensor.
BRN (8)	Compressor clutch	Check resistance to body ground.	Should be approximately 4 ohms.	Check for an open in the BRN wire between the A/C control unit and the compressor clutch coil or a faulty compressor clutch.

Perform the following tests with A/C control unit connected, engine running and the A/C system turned ON.

RED/YEL (11)	Compressor relay A	Check for battery voltage.	Should have battery voltage.	Check the connection to the A/C control unit; if OK, substitute a known-good control unit and retest.
YEL (10)	Compressor relay B	Check for battery voltage.	Should have battery voltage.	Check the connection to the A/C control unit; if OK, substitute a known-good control unit and retest.
BRN (8)	Thermal protector	Check for system voltage.	Should have system voltage.	Test thermal protector.

# Troubleshooting

- Any abnormality must be corrected before continuing to the next test.
- Because of the precise measurements needed, use a digital voltmeter and ohmmeter when testing.

Before performing any troubleshooting procedures check:

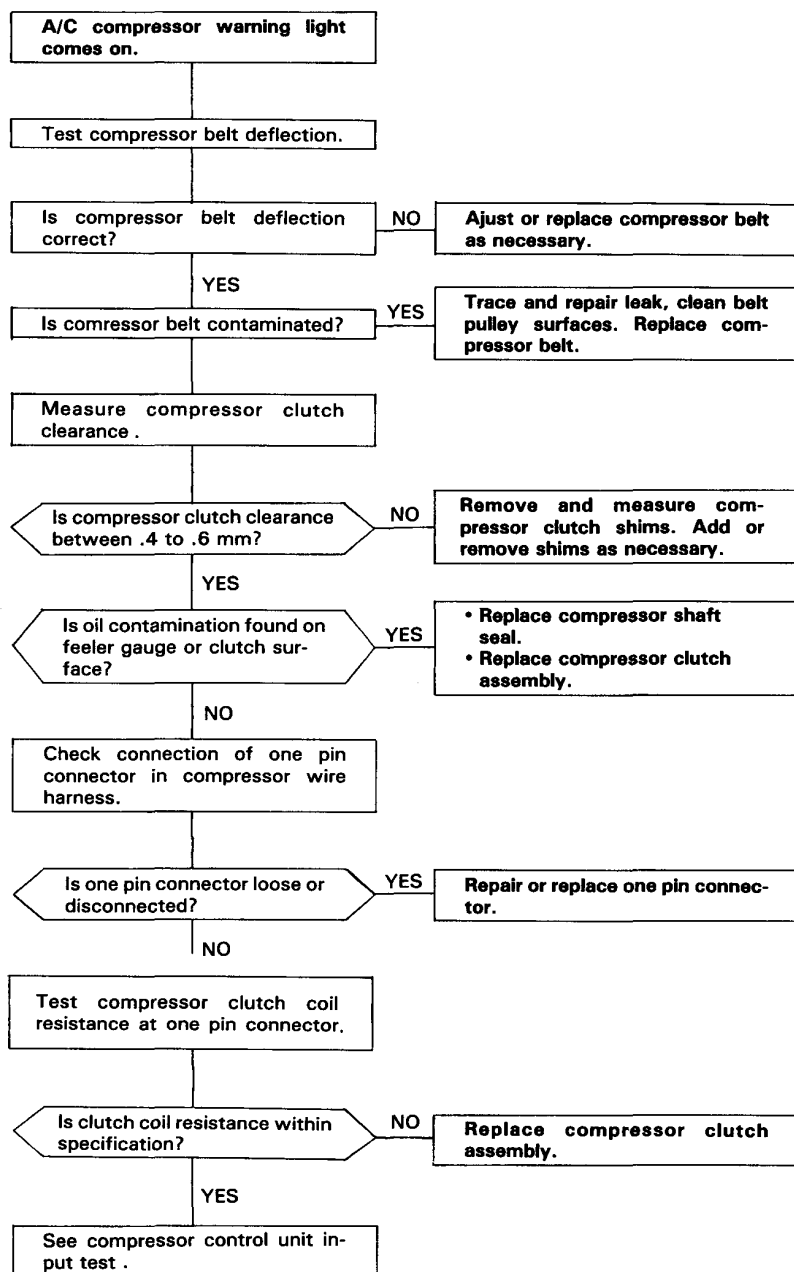
- Fuses No. 18, 36, 39, 17, 12, 35, 20
- Grounds No. G201, G401, G202, G203
- All electrical connections are clean and tight.

FLOW CHART NO.	SYMPTOM	PAGE
1	A/C compressor warning light comes ON.	15-17
2	Compressor, warning light and cooling fans do not come on.	15-18
3	A/C compressor does not come on and cooling fans come on.	15-20
4	Both fans (condenser and compressor fans) do not run. Compressor operates normally.	15-22
5	One fan (condenser or compressor fan) does not run. Compressor operates normally.	15-24

NOTE: To improve acceleration and engine response, the ECU temporarily stops A/C operation when it receives signals that the vehicle is accelerating. (PGM-FI CAR ONLY)



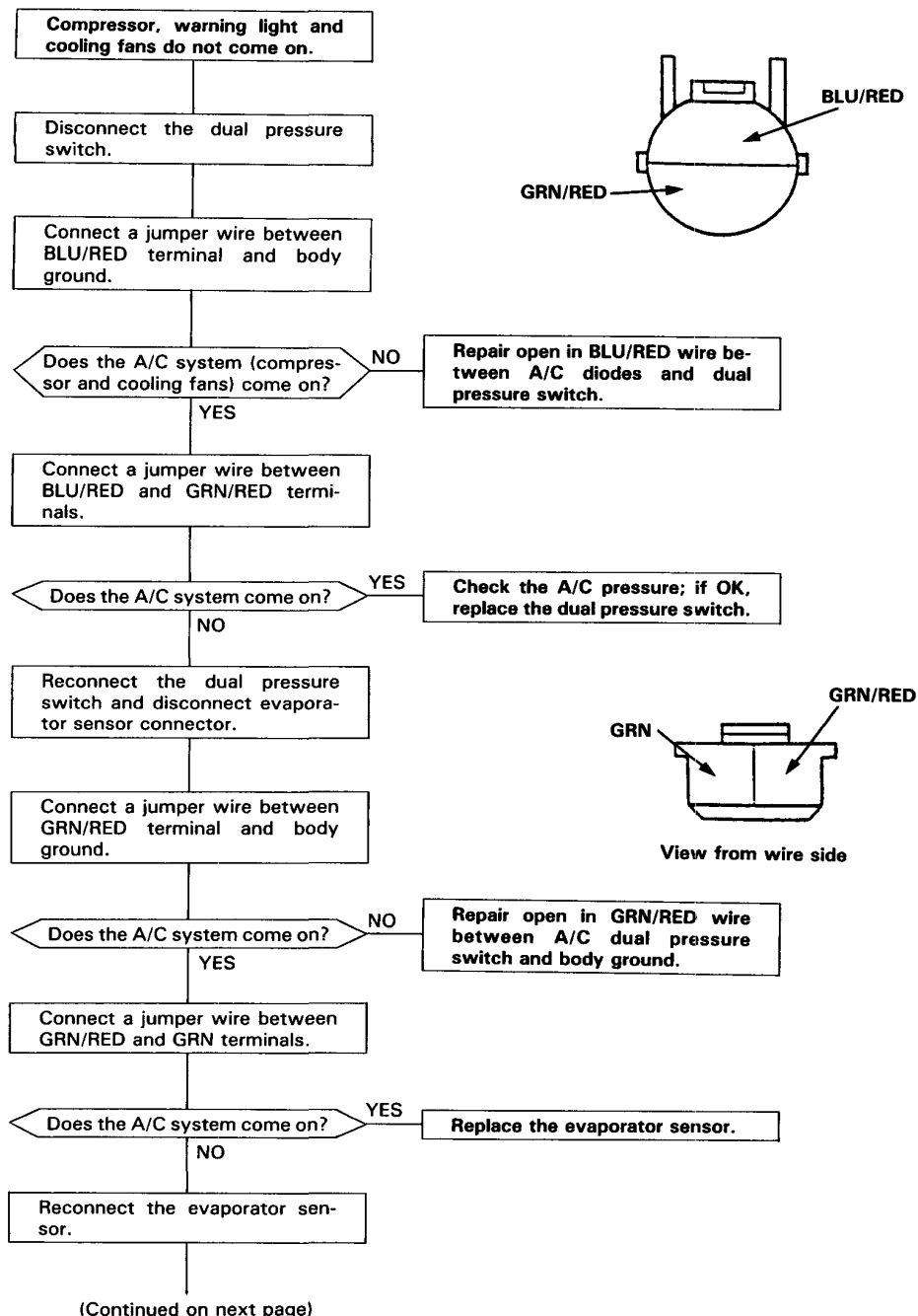
## Flow Chart 1



# Troubleshooting

## Flow Chart 2

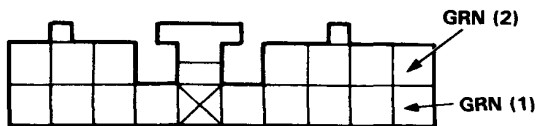
NOTE: Perform all checks with the engine running.





(Continued from previous page)

Disconnect the heater control panel and connect a jumper wire between GRN (1) terminal and body ground.



View from wire side

Does the A/C system come on?

NO

Repair open in GRN (1) wire between the evaporator sensor and the heater control panel.

YES

Connect a jumper wire between GRN (1) and BLK terminals.

Does the A/C system come on?

NO

Repair open in BLK wire between the heater control panel and body ground.

YES

Reconnect the control panel.

Remove A/C switch and connector.

With switch connected, ground the BLU wire.



view from wire side

Does A/C system come on?

NO

Replace the heater control panel.

YES

Turn on A/C switch and ground the ORN wire.

Does A/C system come on?

NO

Replace the A/C switch.

YES

Ground GRN (2) at heater control connector.

Does A/C system come on?

NO

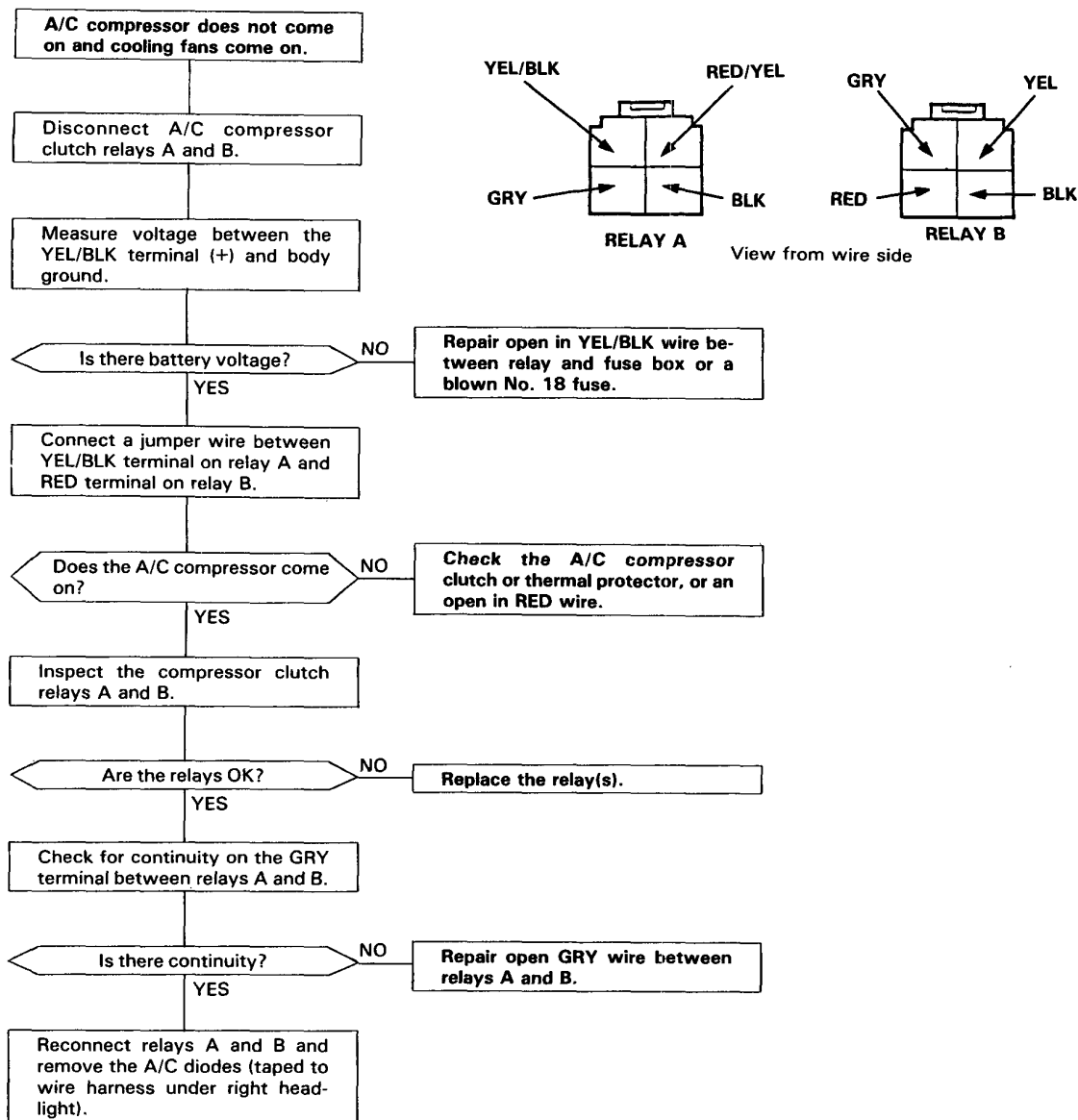
Replace the heater control panel.

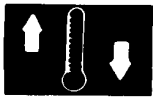
YES

- Check connection of GRN wire to blower switch.
- Test blower switch.

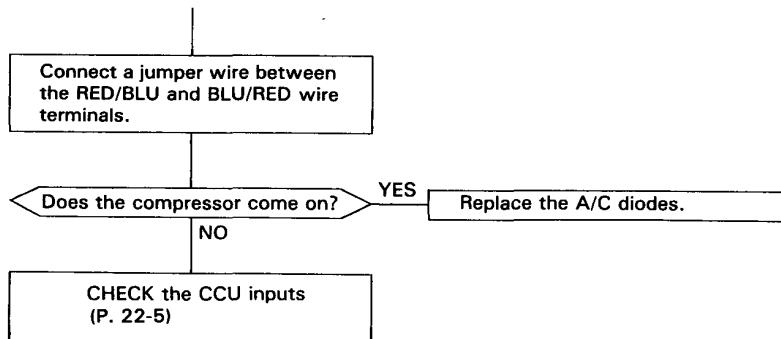
# Troubleshooting

## Flow Chart 3





(Continued from previous page)

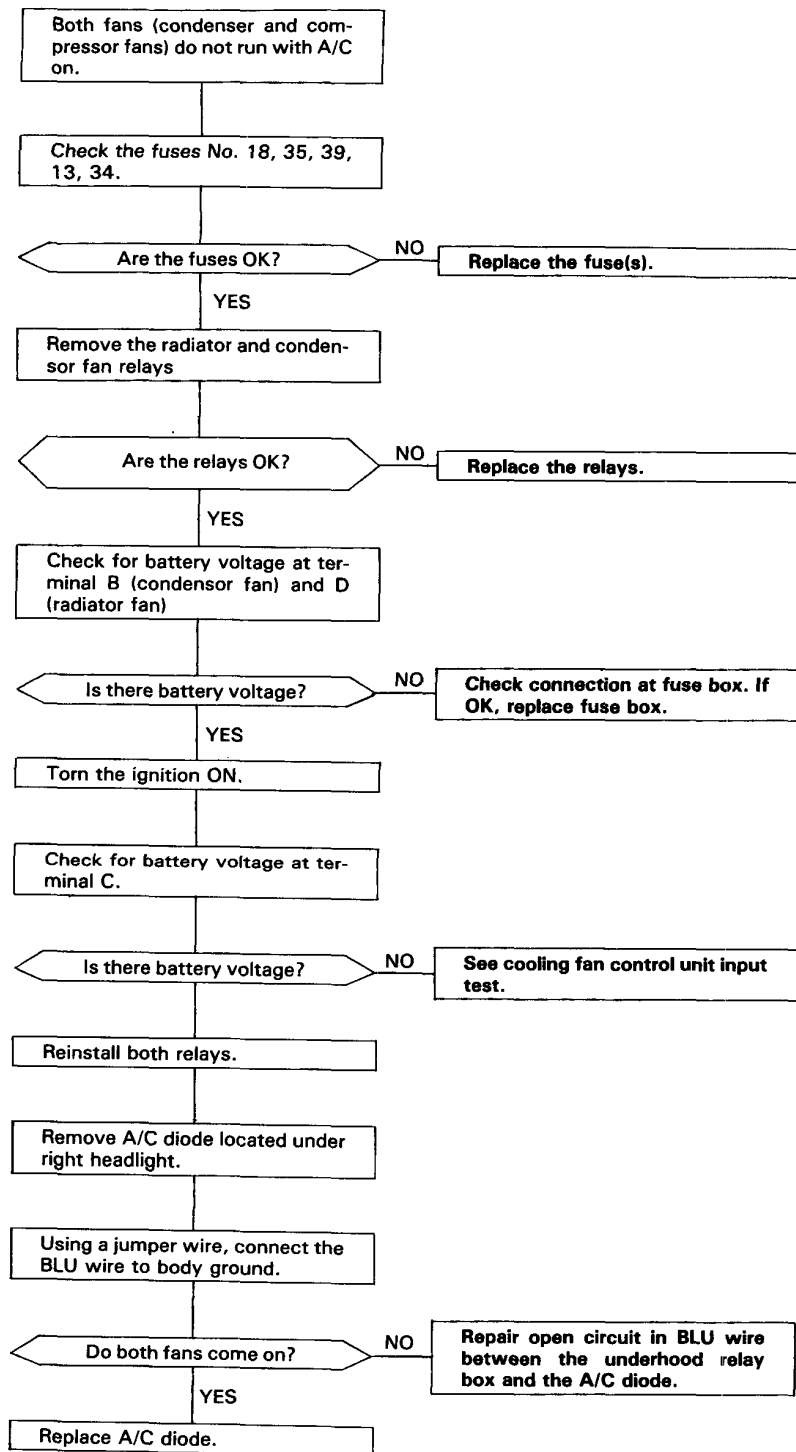


NOTE: Check the A/C signal (A/C CCU ↔ PGM-FI ECU,  
PGM-FI ECU ↔ A/C DIODES) (PGM-FI CAR ONLY)  
(See electrical section)

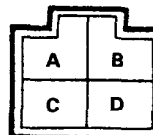
CCU: Compressor Control Unit

# Troubleshooting

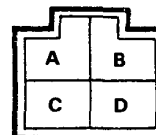
## Flow Chart 4

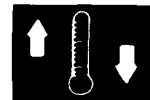


CONDENSER  
FAN RELAY  
SOCKET



RADIATOR  
FAN RELAY  
SOCKET





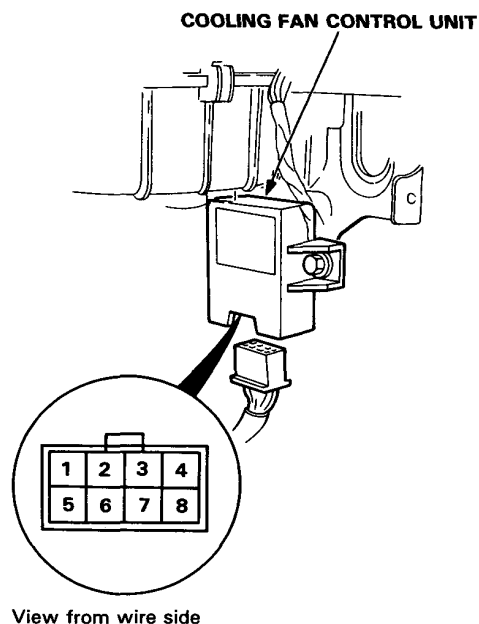
## Cooling Fan Control Unit Input Test

- All test should be performed with the key "ON" (unless specified otherwise) and the cooling fan control unit unplugged (unless specified otherwise).
- All test are made from the wire side of the connector.
- Any abnormality must be corrected before continuing to the next test.

Before performing any troubleshooting procedures check:

- Fuses No. 17, 12, 36, 39, 35.
- All electrical connections are clean and tight.

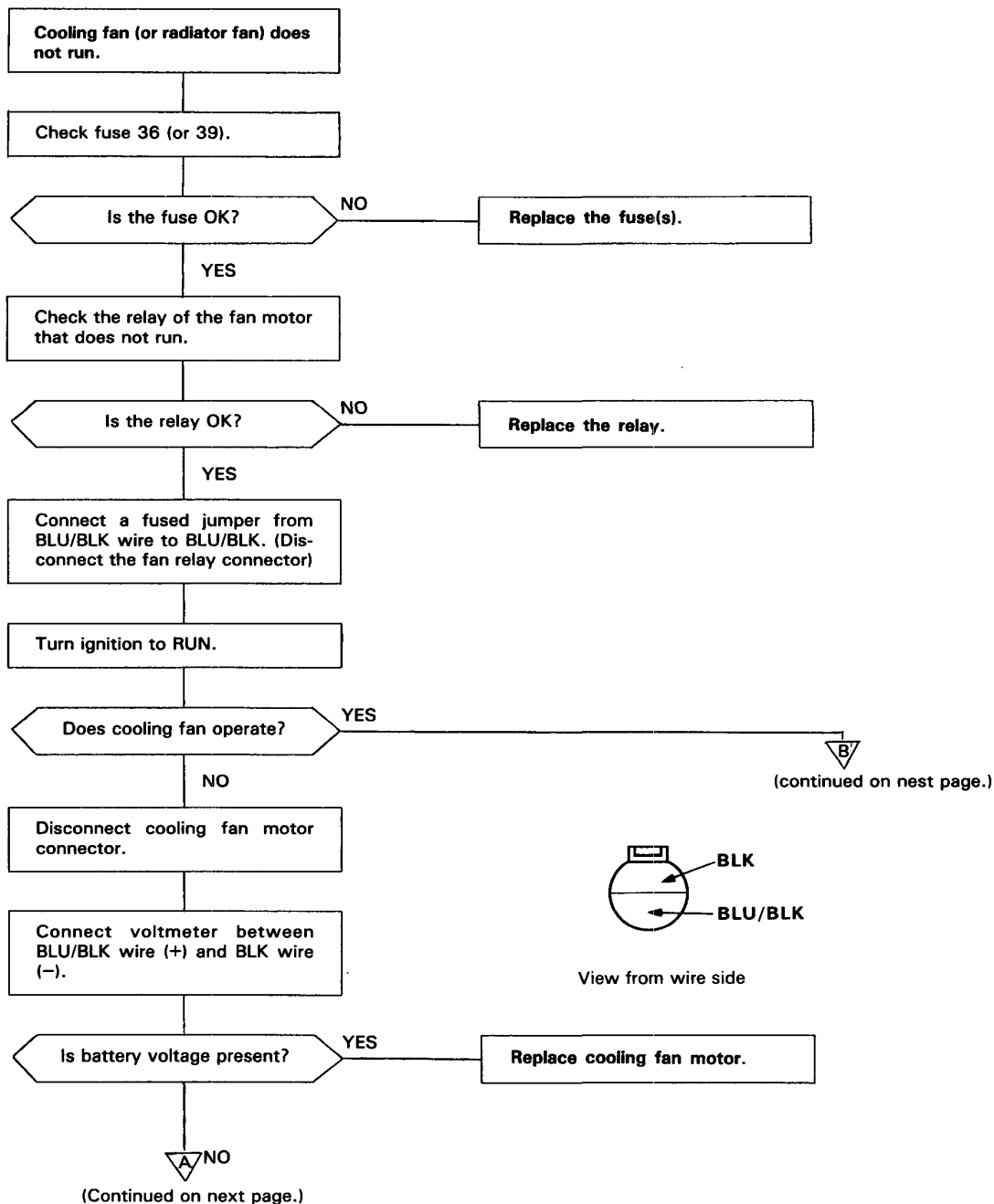
NOTE: If all tests check OK, replace with known-good cooling fan control unit.



WIRE COLOR	TEST CONDITION	IF DESIRED RESULTS ARE NOT OBTAINED:
YEL/BLK	Connect to WHT/YEL using a jumper wire. Condenser fan should come on.	Repair open in YEL/BLK between cooling fan control unit and underhood relay box.
BLK/YEL <sup>2</sup>	Check for battery voltage.	Repair open in BLK/YEL <sup>2</sup> between fuse No. 17 and cooling fan control unit.
RED/GRN	Connect to WHT/YEL using a jumper wire. Radiator fan should come on.	Repair open in RED/GRN between cooling fan control unit and underhood relay box.
BLK	Check for continuity to ground.	Repair open circuit to body ground.
WHT/YEL	Check for battery voltage.	Repair open between fuse No. 35 and cooling fan control unit.
BLK/YEL <sup>1</sup>	Check for battery voltage.	Repair open in BLK/YEL <sup>1</sup> between fuse No. 12 and cooling fan control unit.

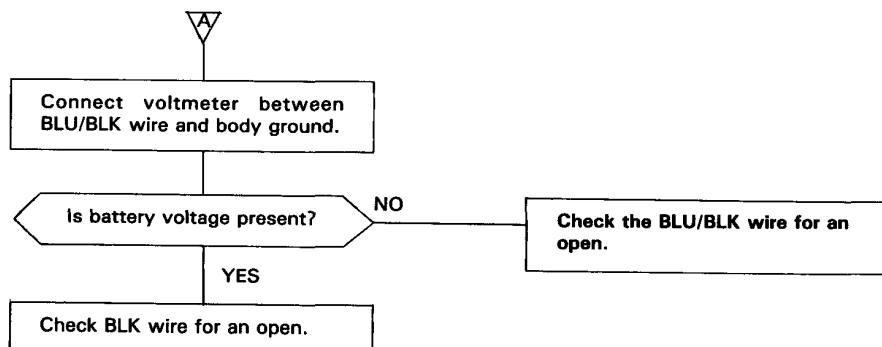
# Troubleshooting

## Flow Chart 5

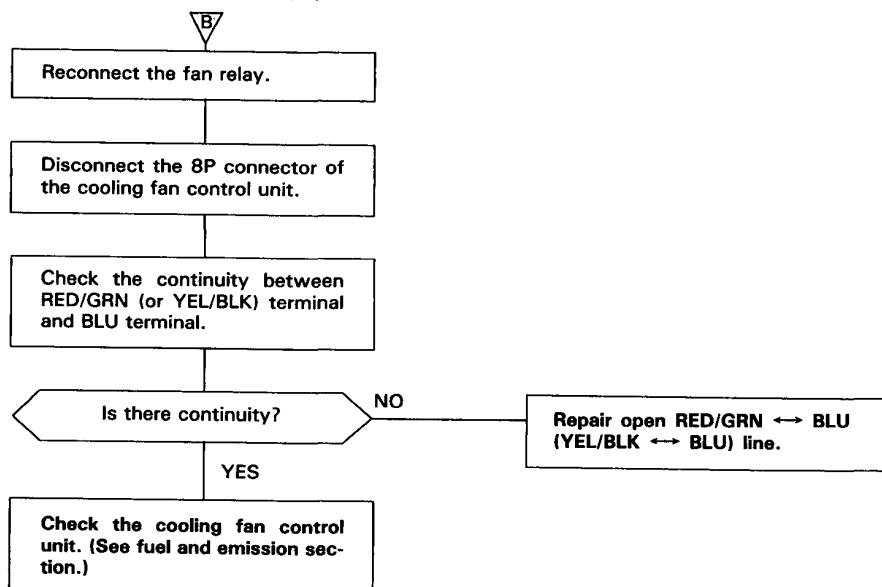




(Continued from previous page.)

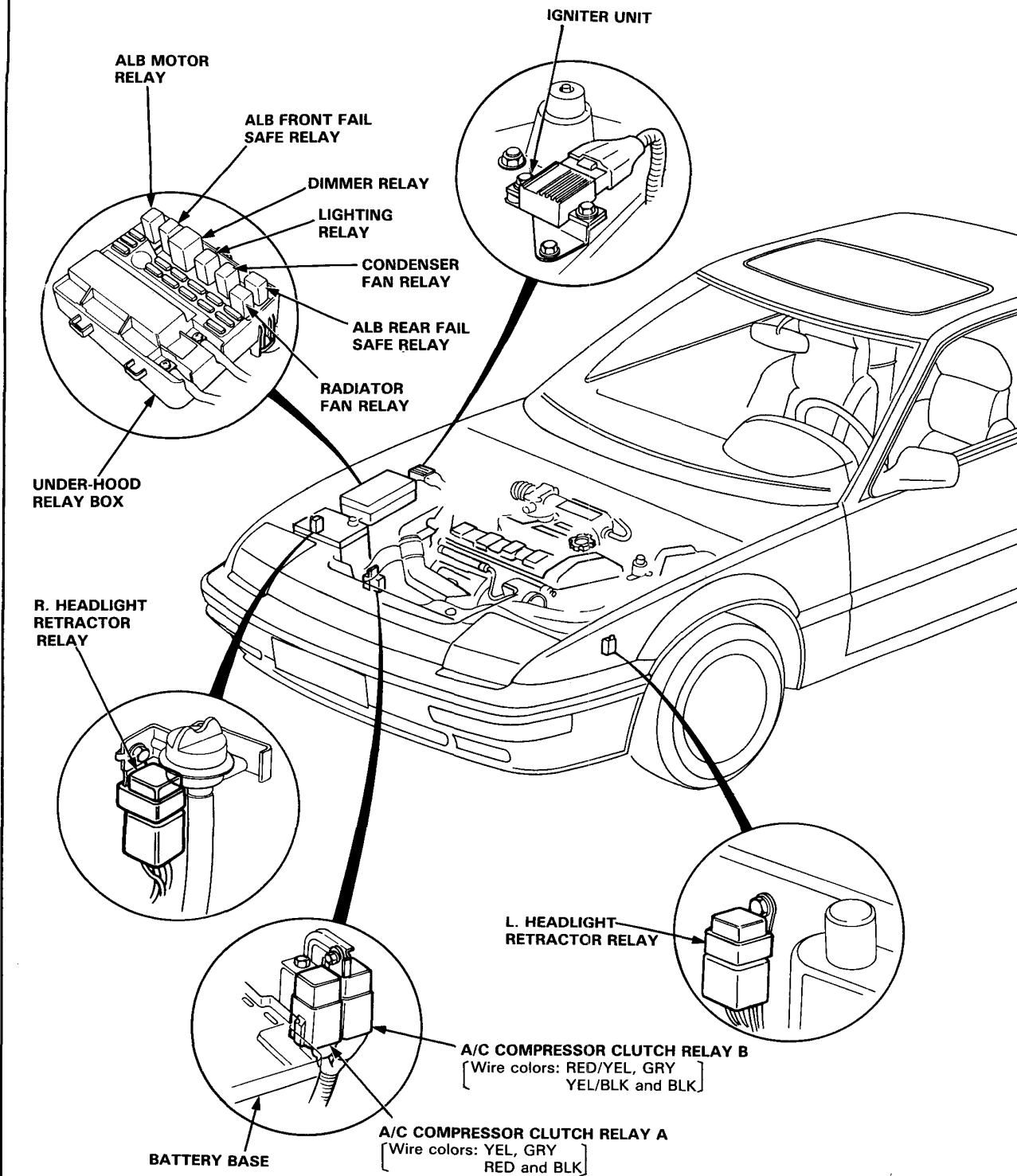


(Continued from previous page.)



# Relays and Control Unit Locations

## Engine Compartment

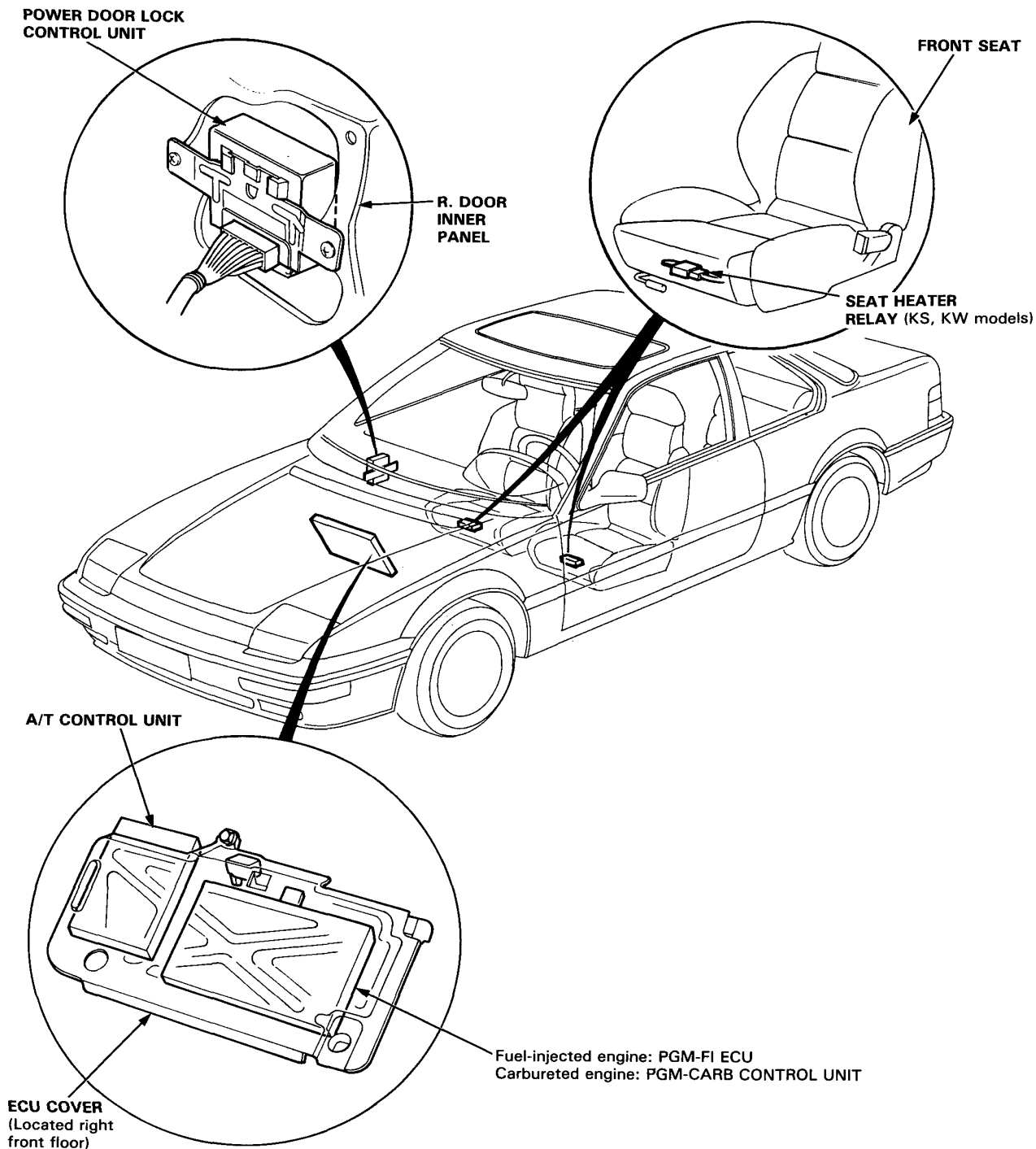




## Door and Floor

### NOTE:

- The illustration is L.H. drive type.
- R.H. drive type is symmetrical to L.H. drive type.

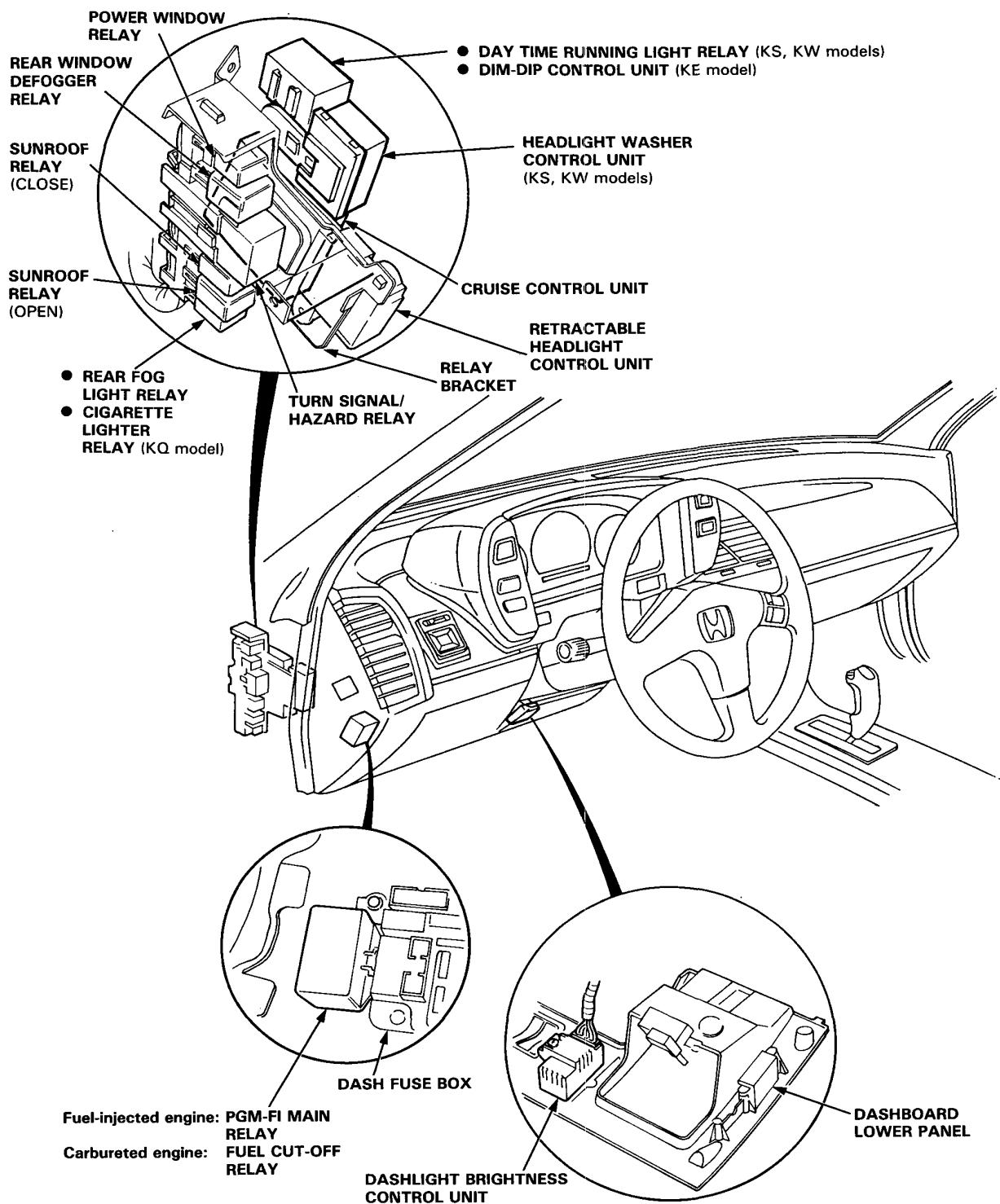


# Relays and Control Unit Locations

## Dashboard

### NOTE:

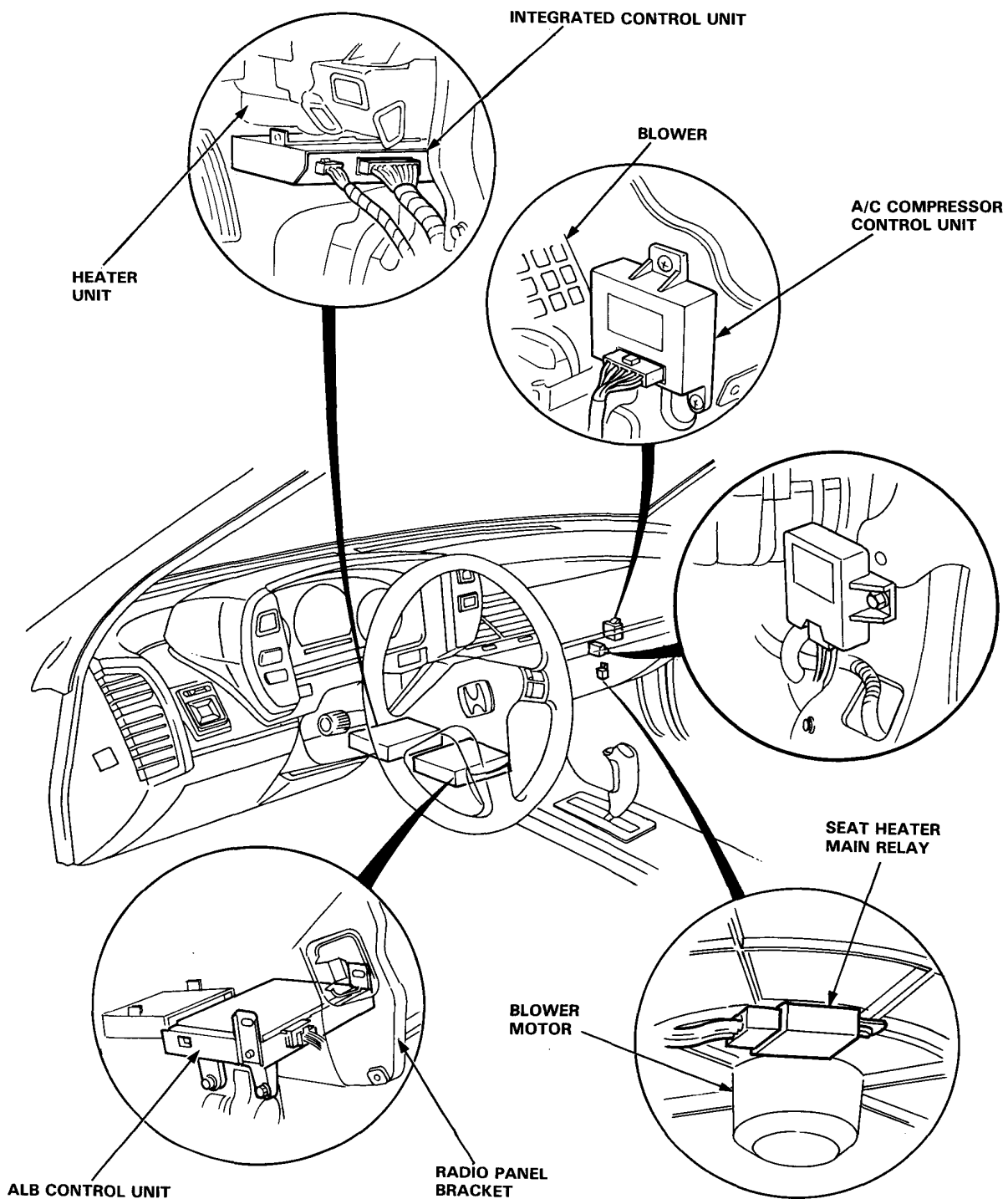
- The illustration is L.H. drive type.
- R.H. drive type is symmetrical to L.H. type.



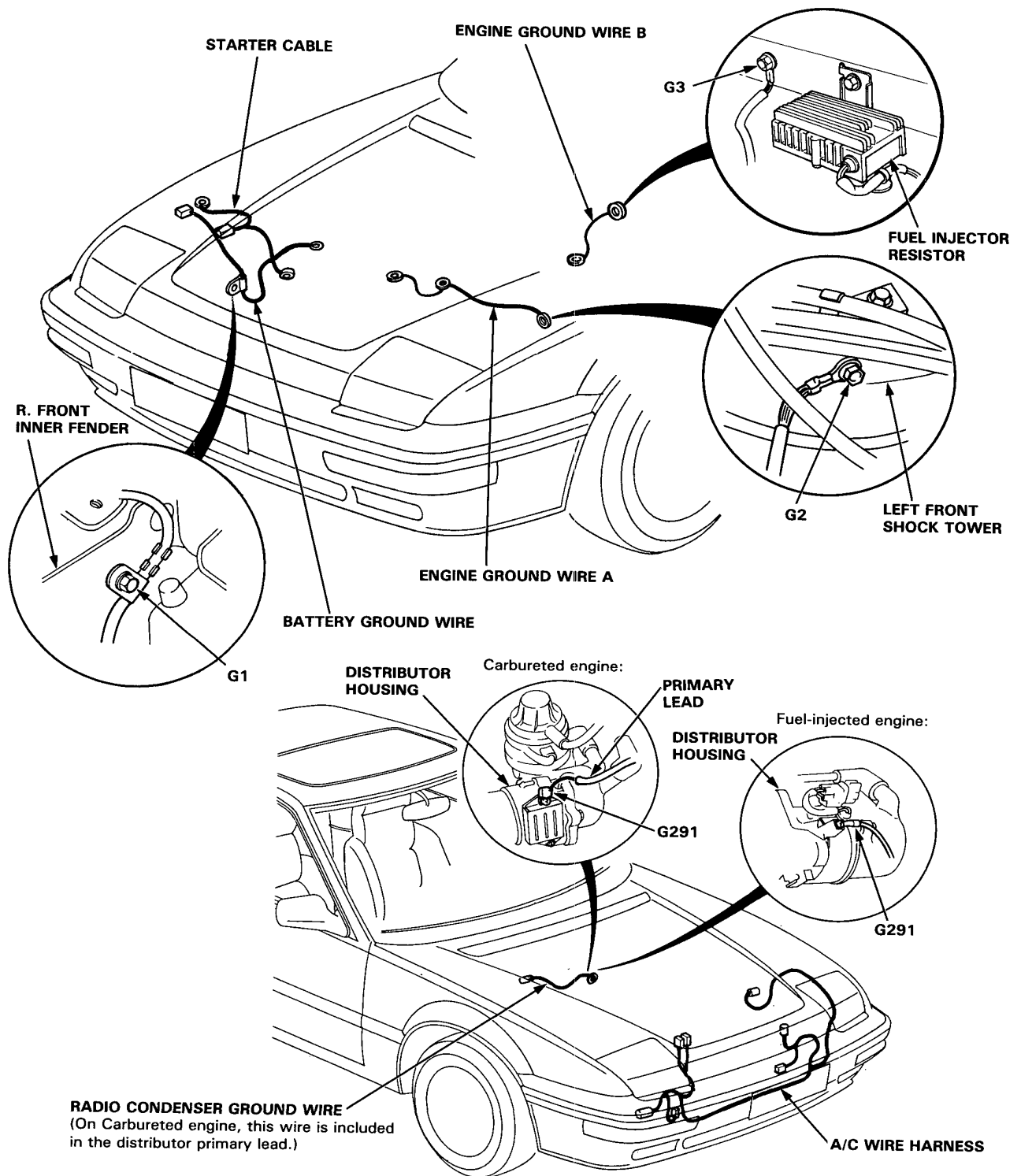


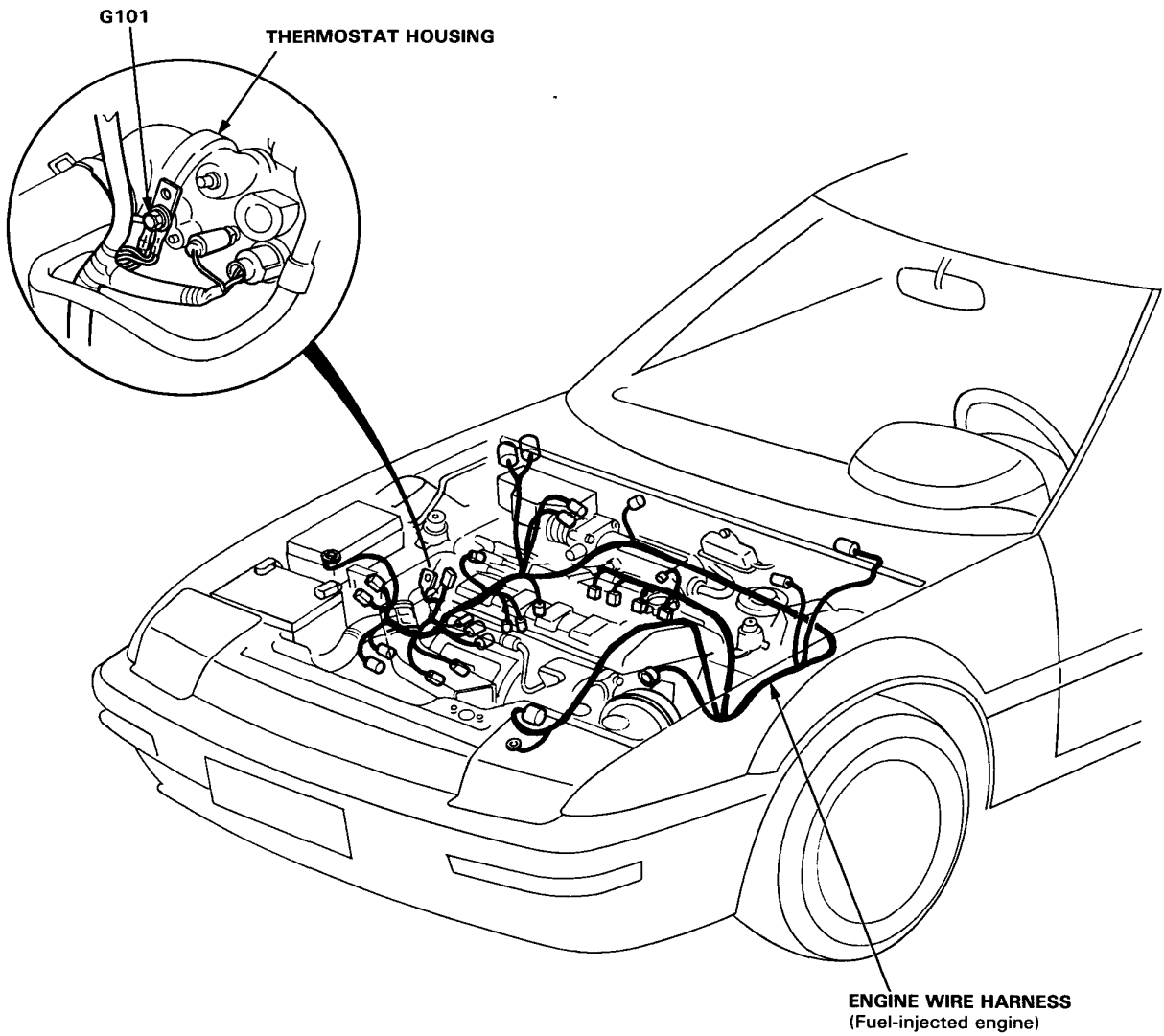
**NOTE:**

- The illustration is L.H. drive type.
- R.H. drive type is symmetrical to L.H. drive type.



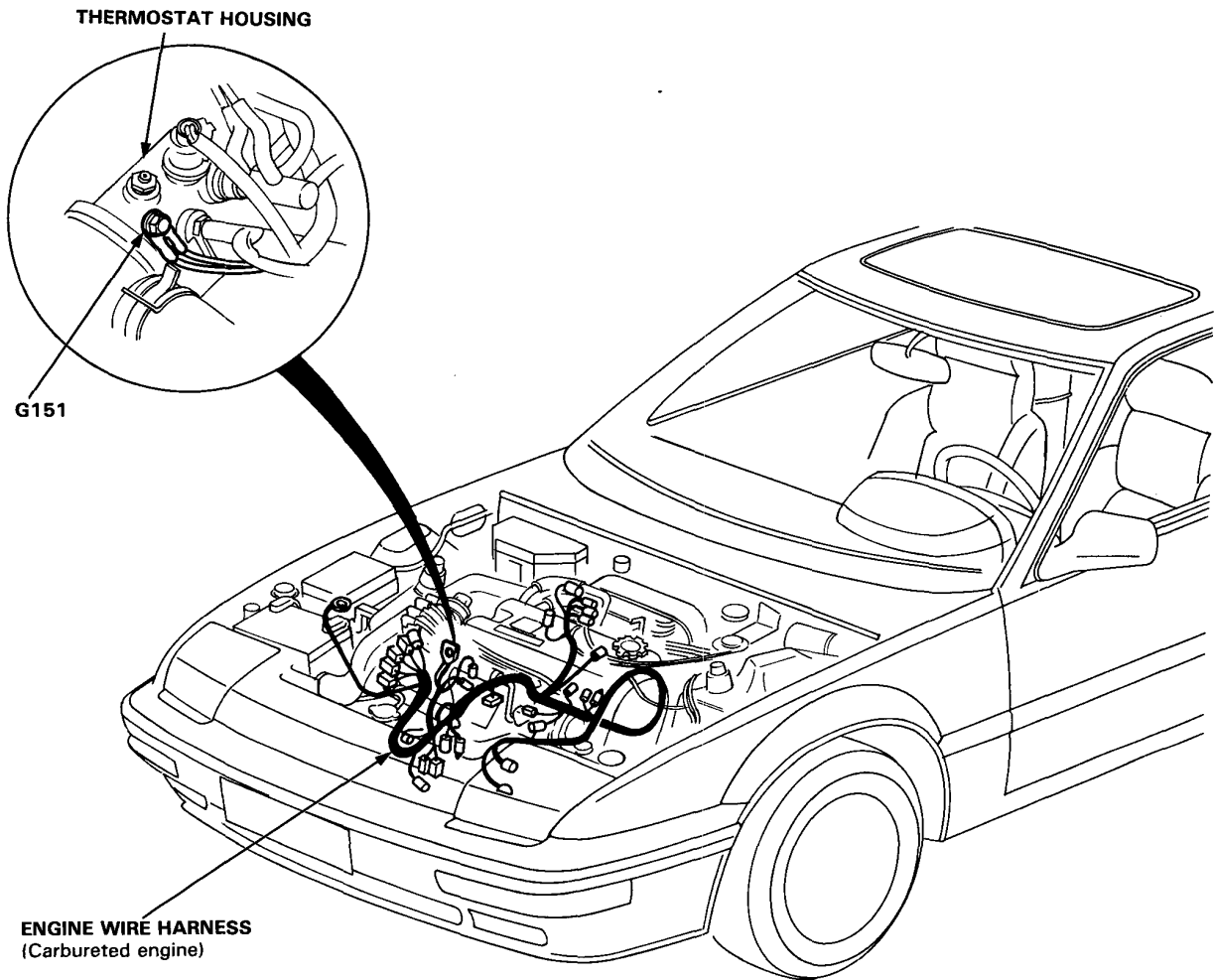
# Ground and Wire Harness Routing





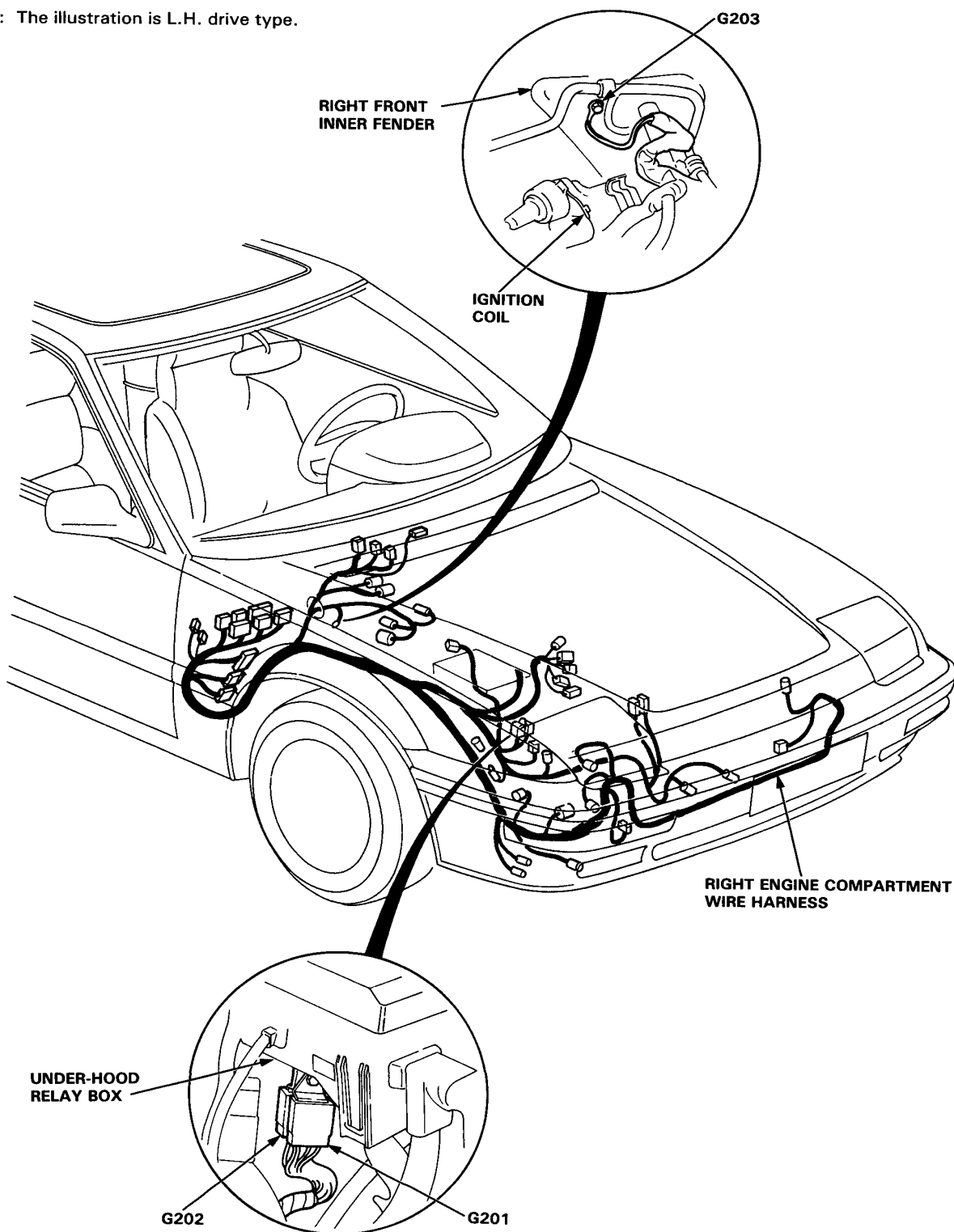
# Ground and Wire Harness Routing

---





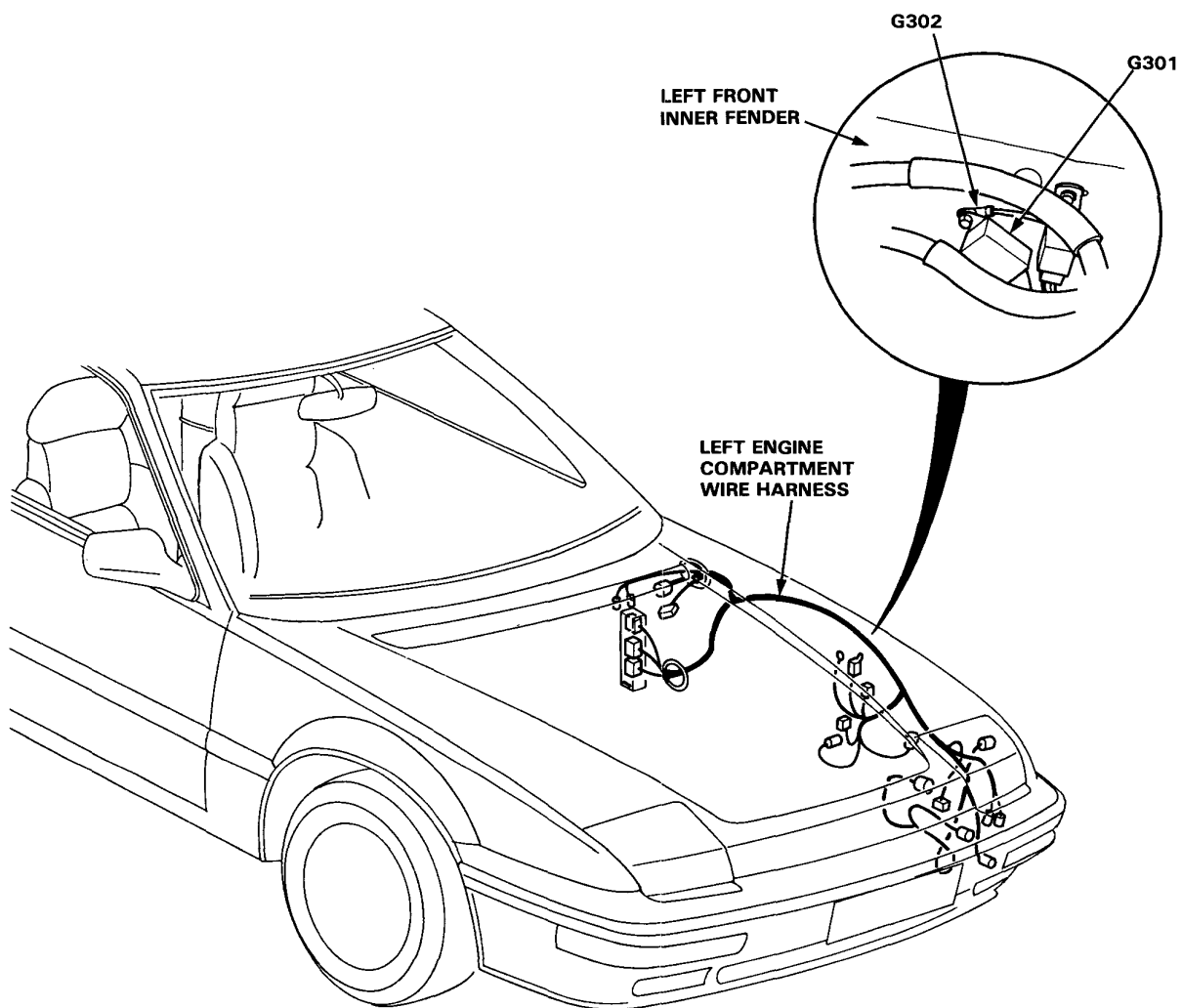
NOTE: The illustration is L.H. drive type.



# Ground and Wire Harness Routing

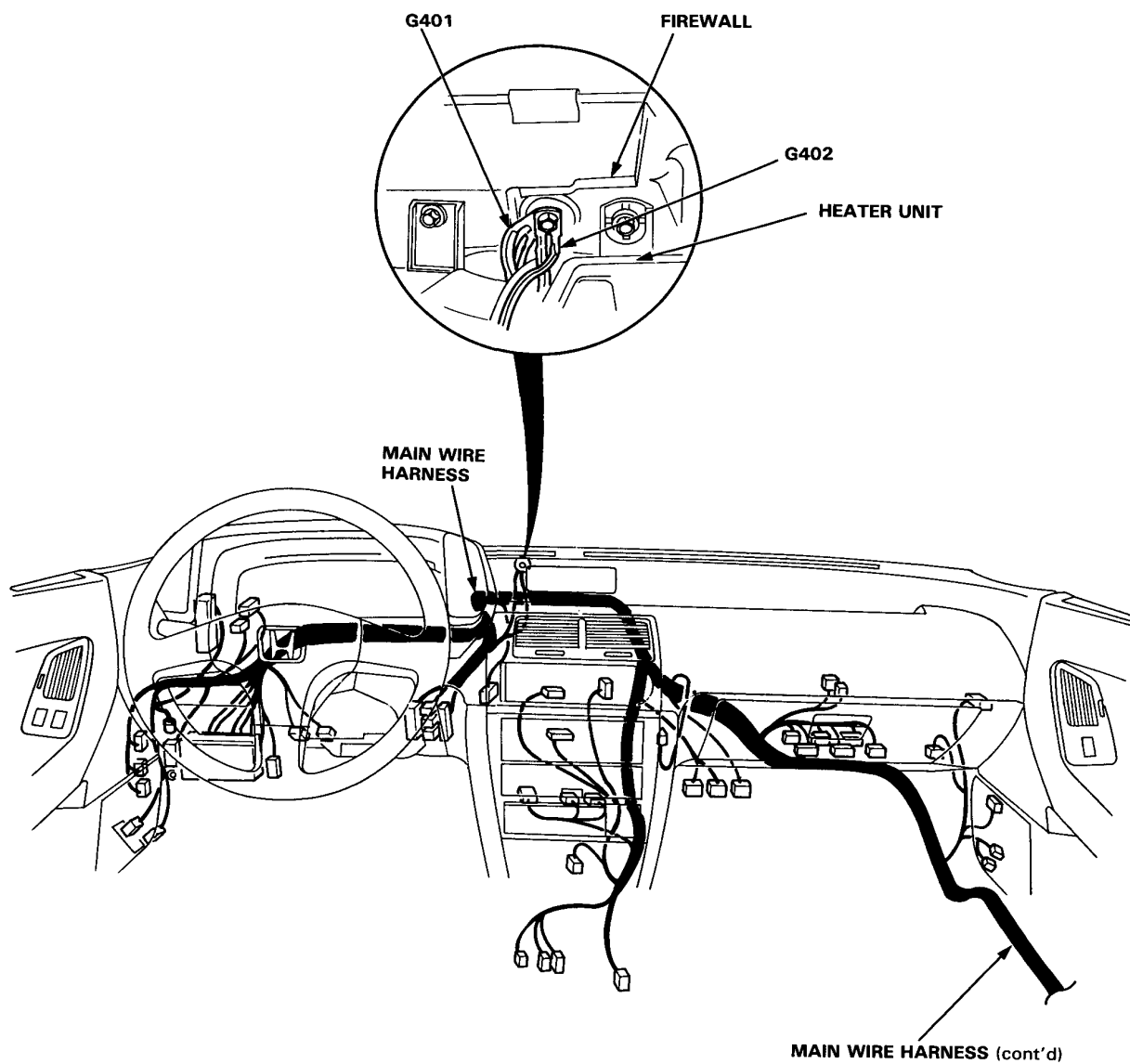
---

NOTE: The illustration is L.H. drive type.

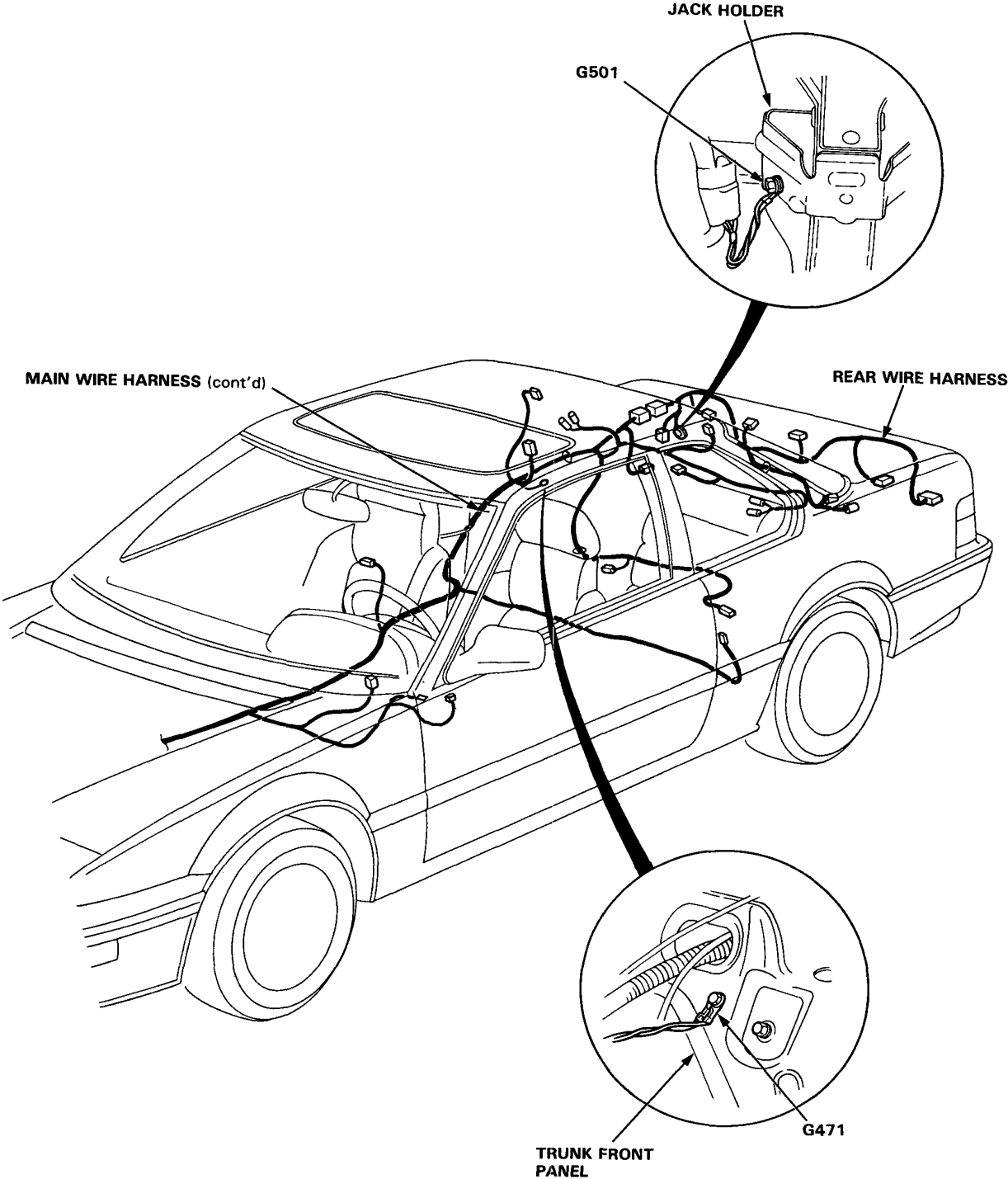




NOTE: The illustration is L.H. drive type.

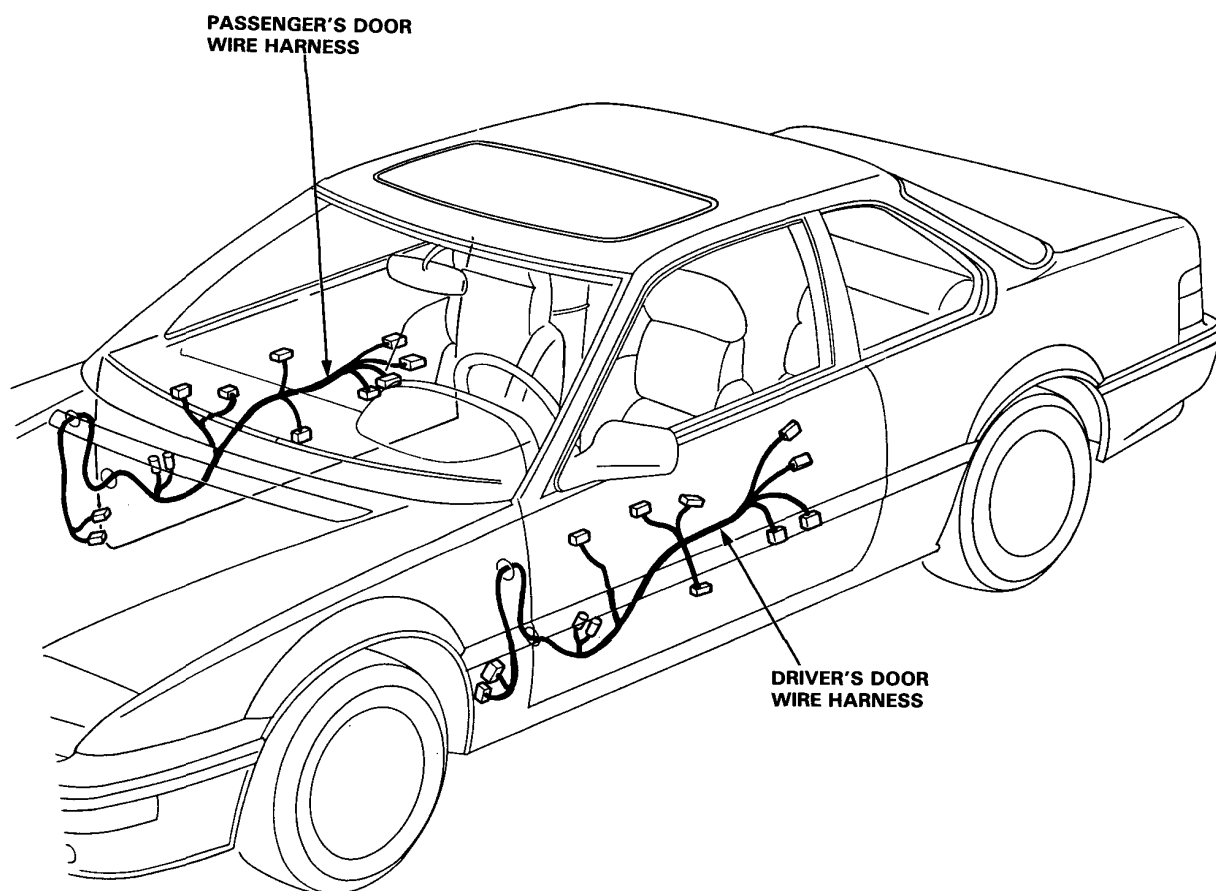


# Ground and Wire Harness Routing



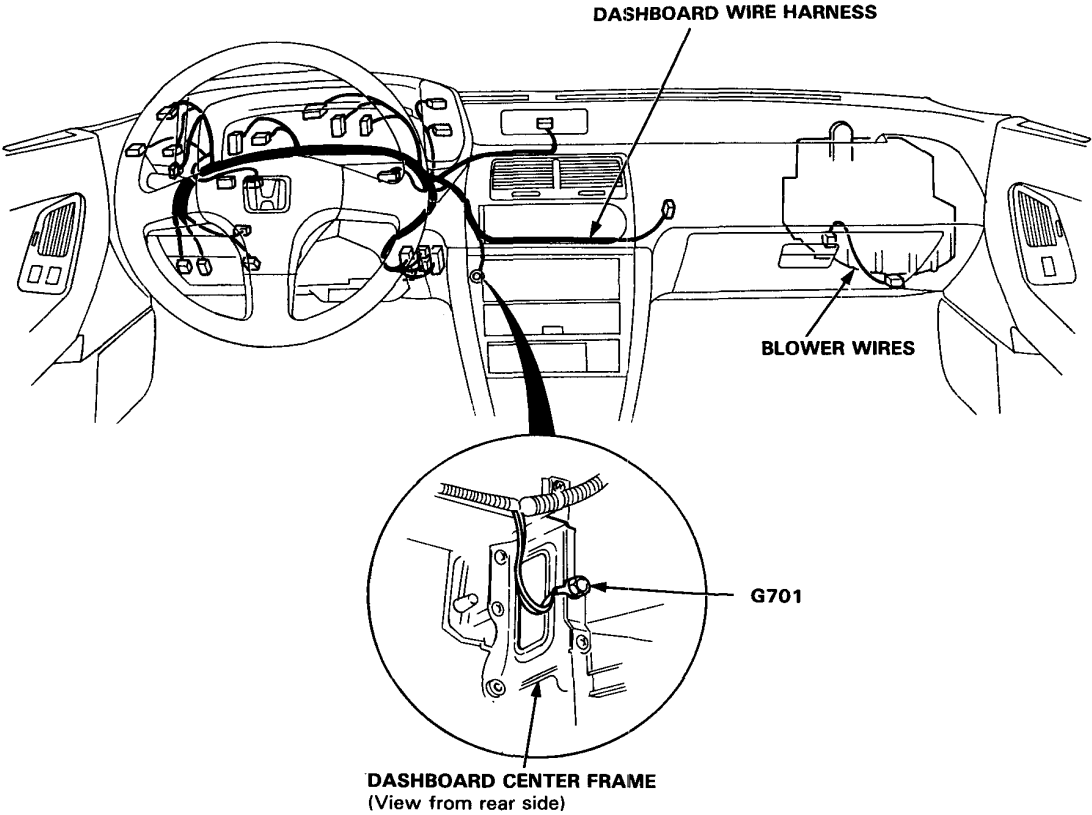


NOTE: The illustration is L.H. drive type.



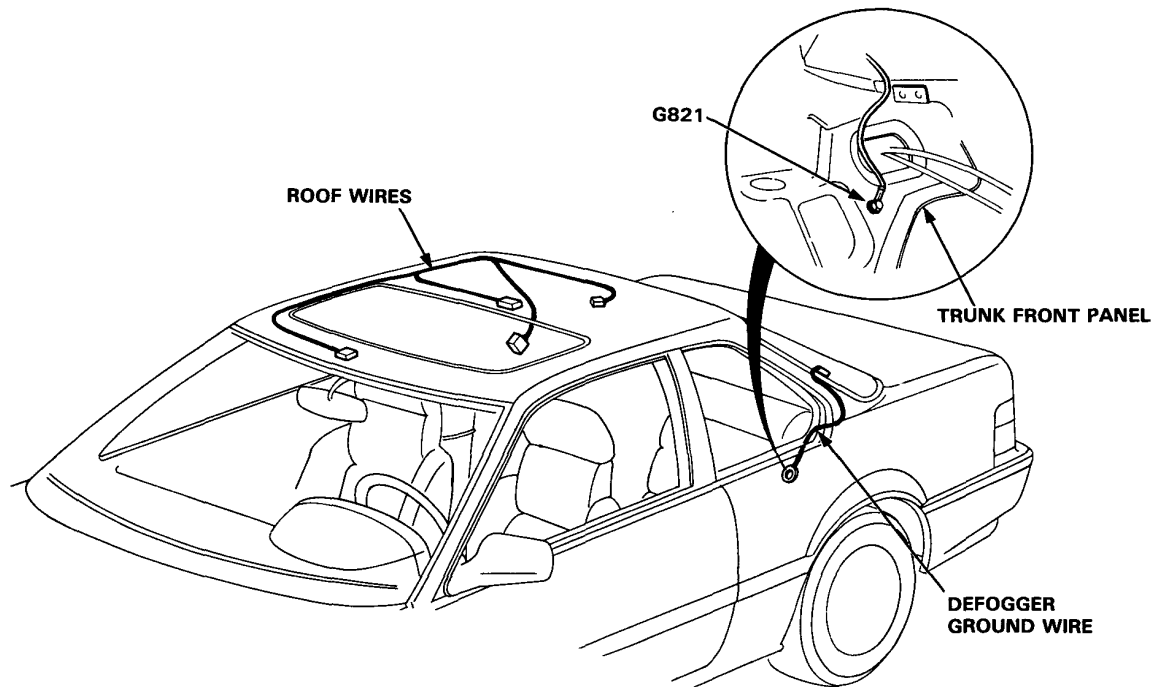
# Ground and Wire Harness Routing

---



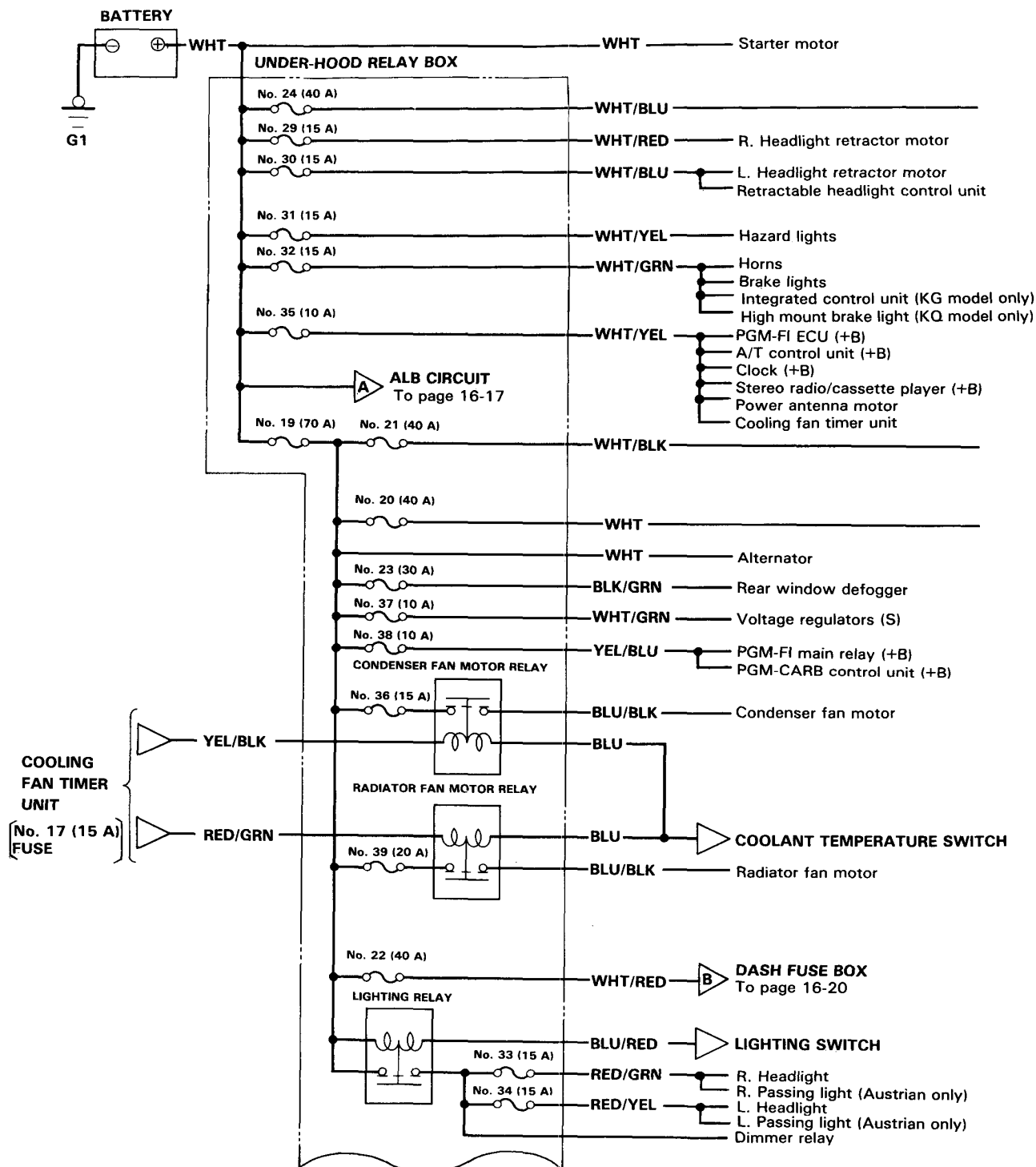


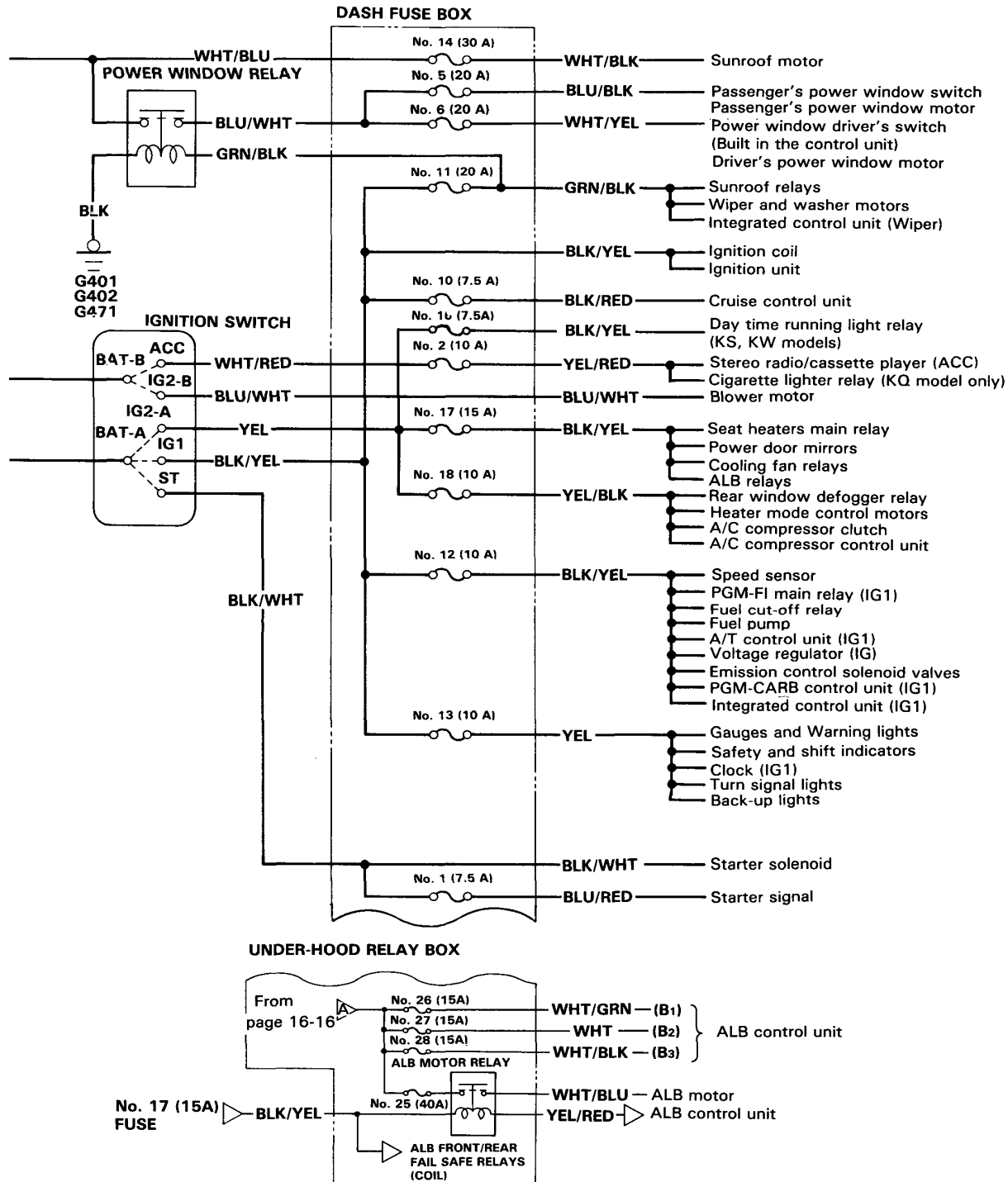
NOTE: The illustration is L.H. drive type.



# Power Distribution

## Circuit Identification



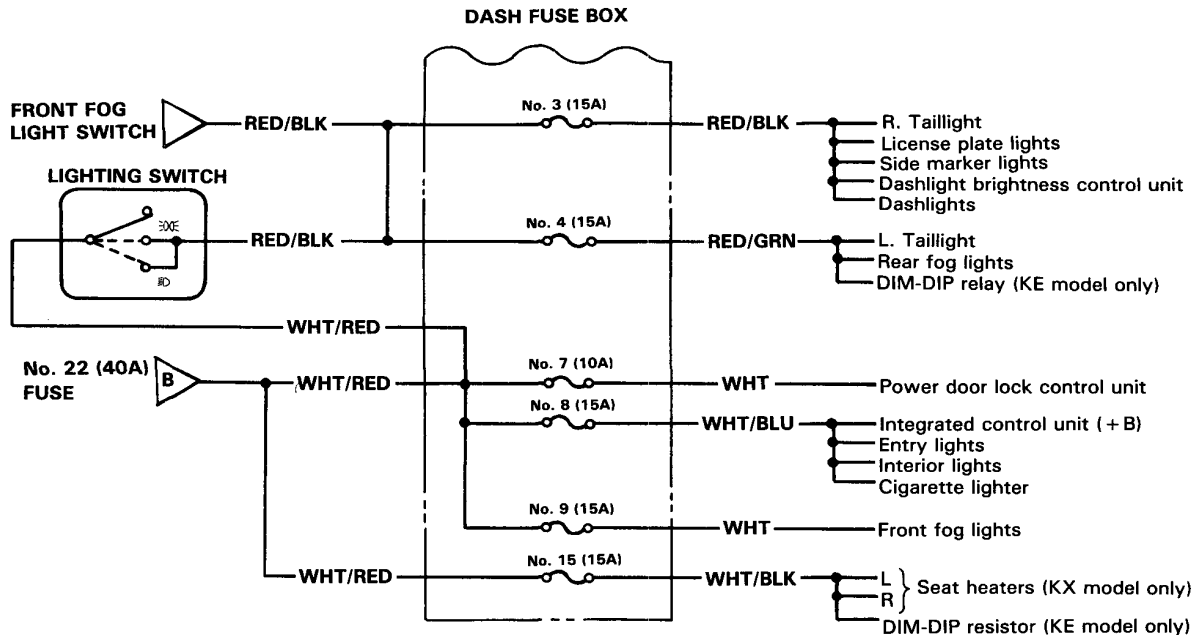


(cont'd)

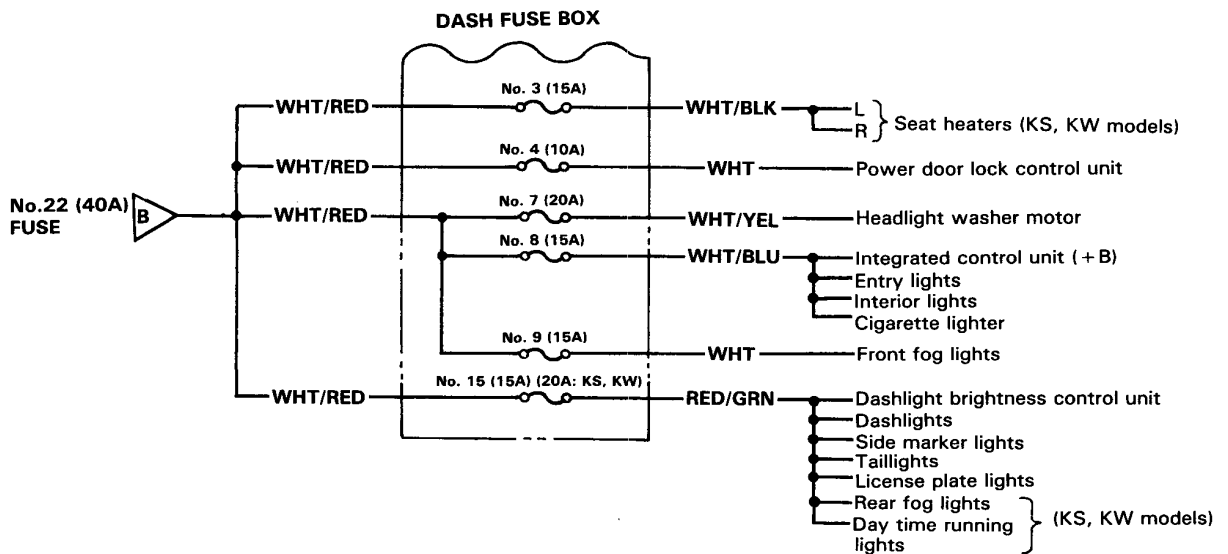
# Power Distribution

## Circuit Identification (cont'd)

<KG, KB, KX, KF, KE>



<KS, KW, KQ, KT, KY>

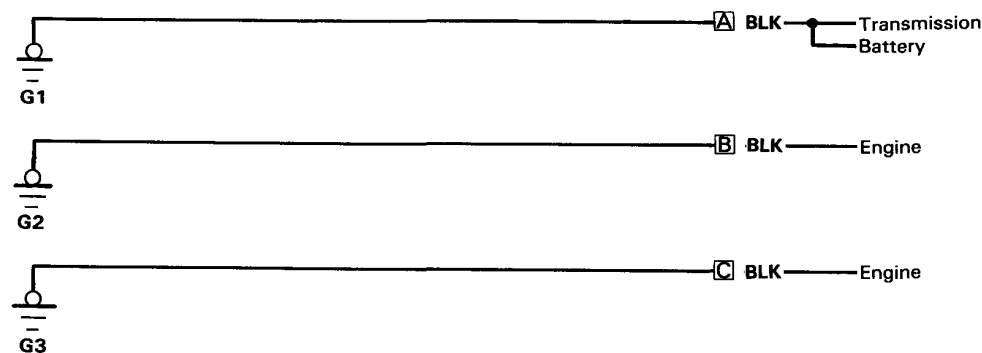




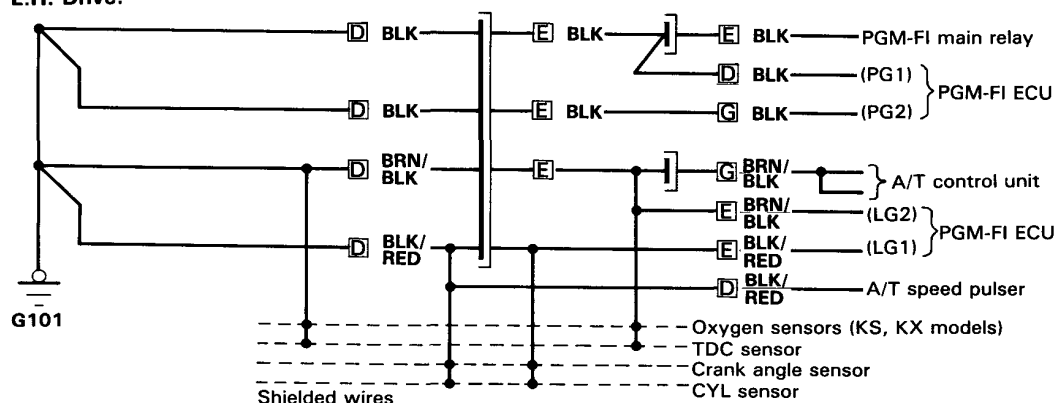
# Ground Distribution

## Circuit Identification

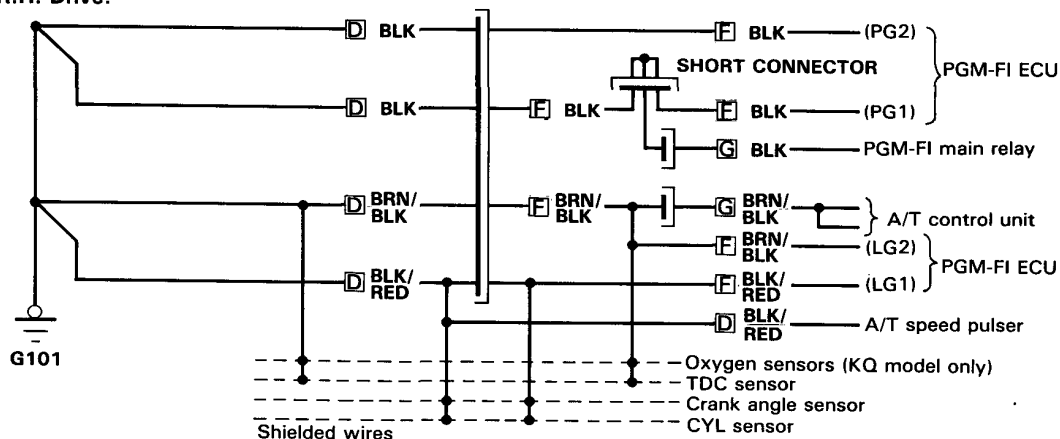
NOTE: See pages 16-6 and 7 for illustrated ground locations.



### L.H. Drive:



### R.H. Drive:



A: Battery ground wire  
B: Engine ground wire A  
C: Engine ground wire B

D: Engine wire harness  
E: Right engine compartment wire harness  
F: Left engine compartment wire harness

G: Main wire harness

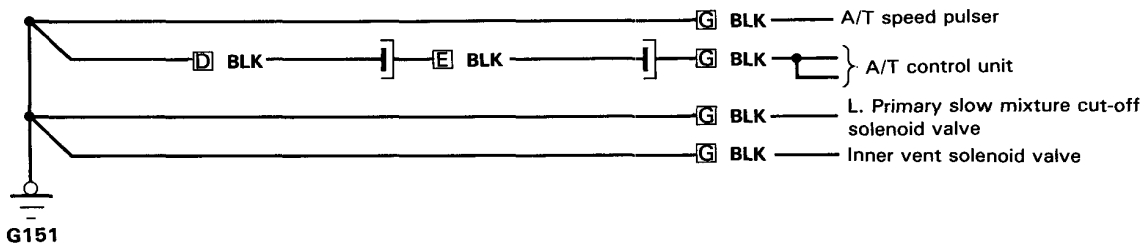
(cont'd)

# Ground Distribution

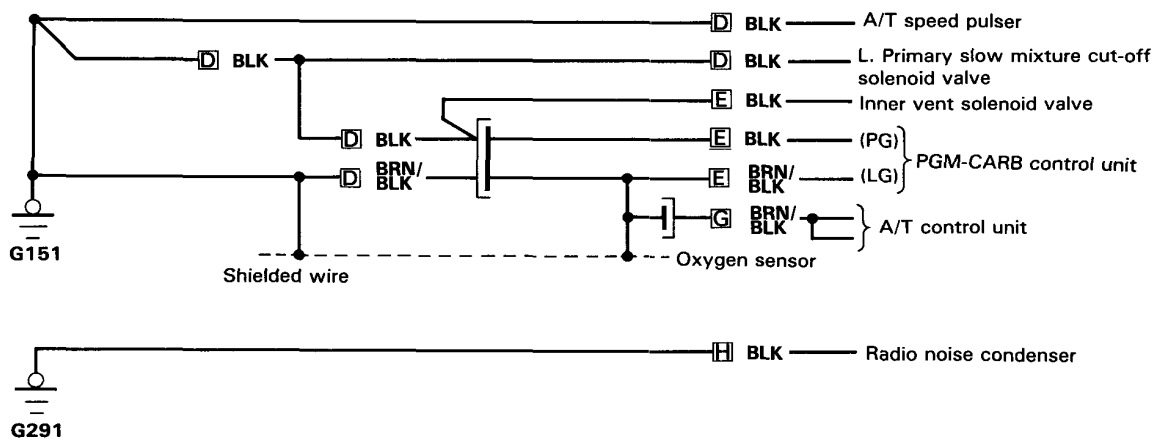
## Circuit Identification

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

Except KX, KS, KY models:



KX, KS, KY models:

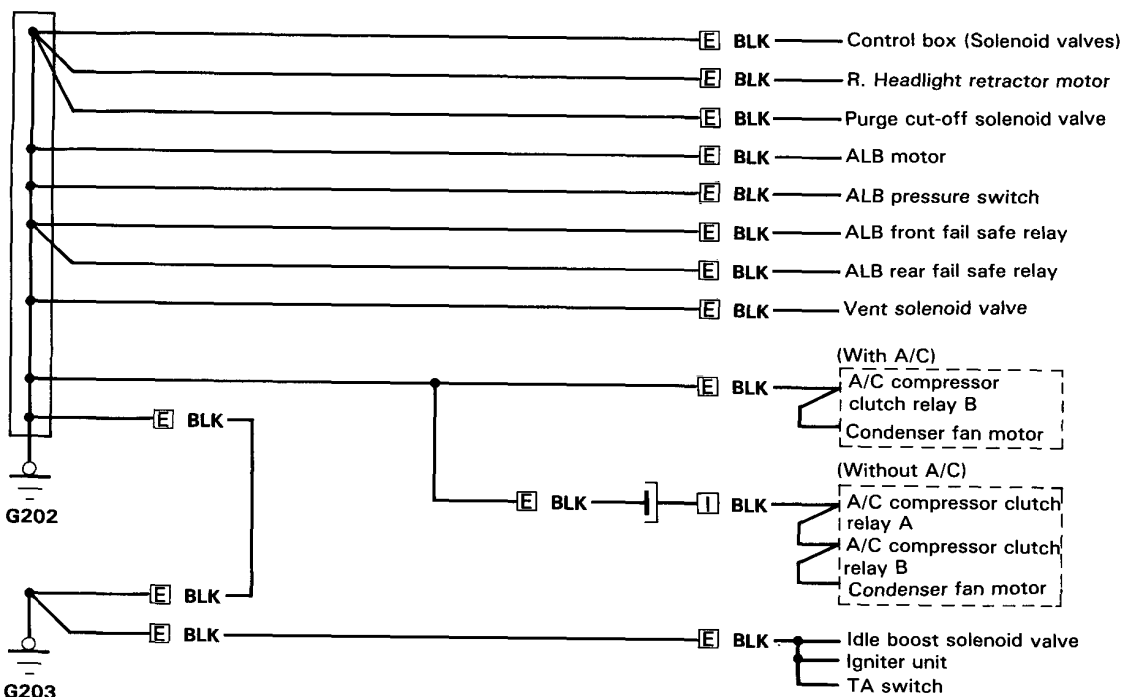
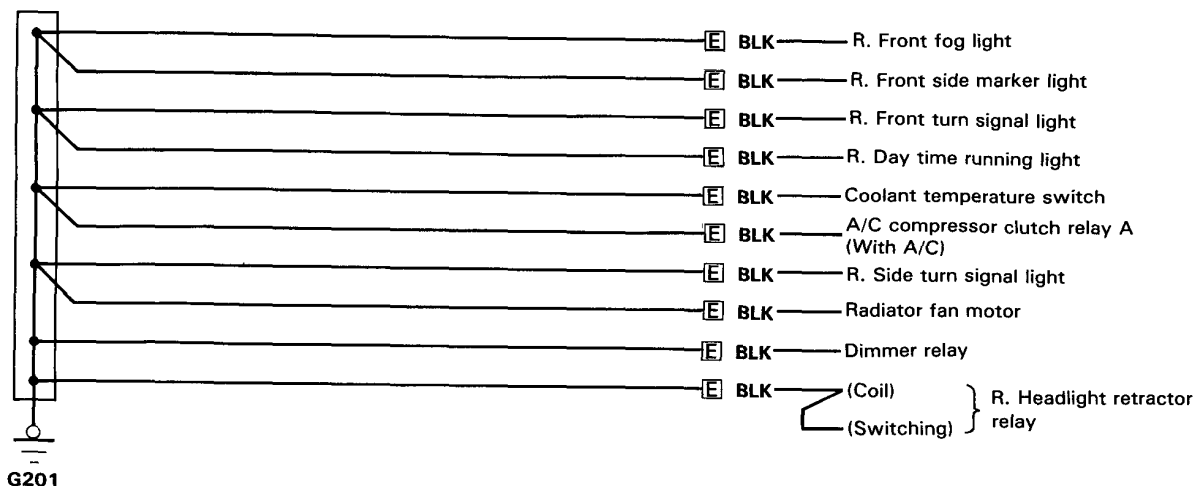


- D: Engine wire harness
- E: Right engine compartment wire harness
- G: Main wire harness
- H: Radio condenser ground wire (On Carbureted engine, this wire is included in the distributor primary lead)



# **L.H. Drive:**

**NOTE:** See page 16-9 for illustrated ground locations.



[E]: Right engine compartment wire harness  
[I]: A/C wire harness

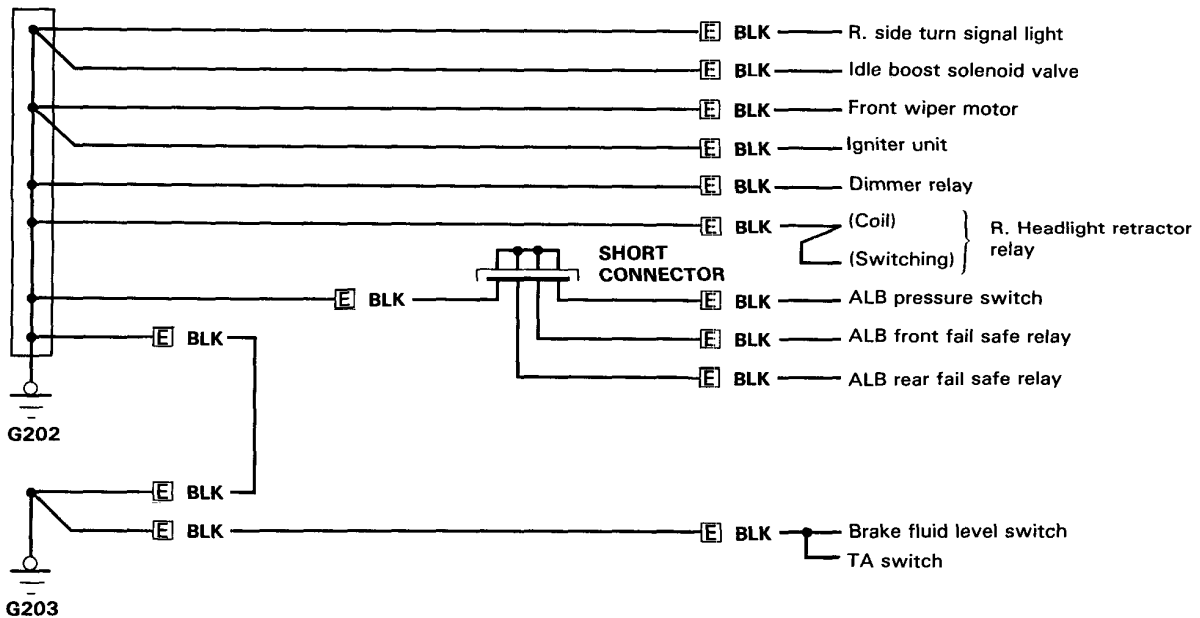
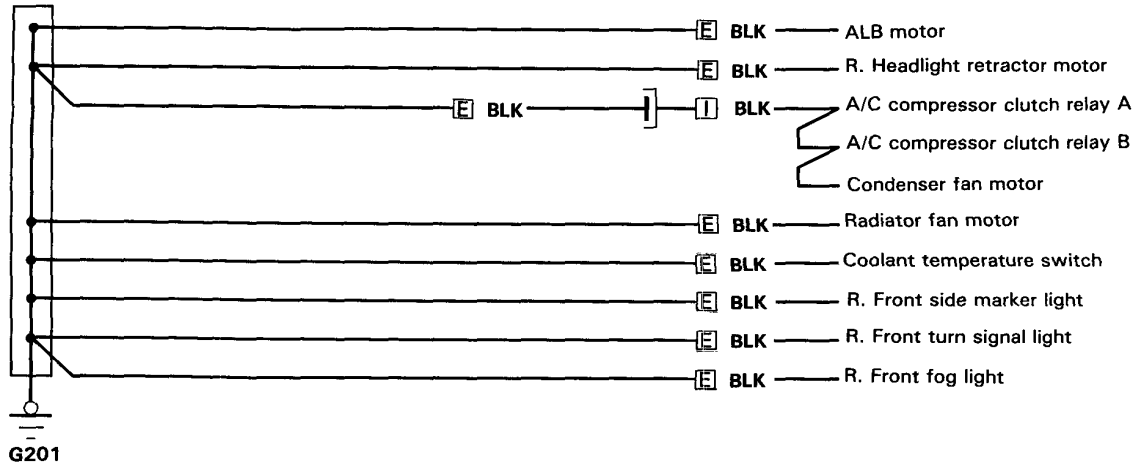
(cont'd)

# Ground Distribution

## Circuit Identification (cont'd)

R.H. Drive:

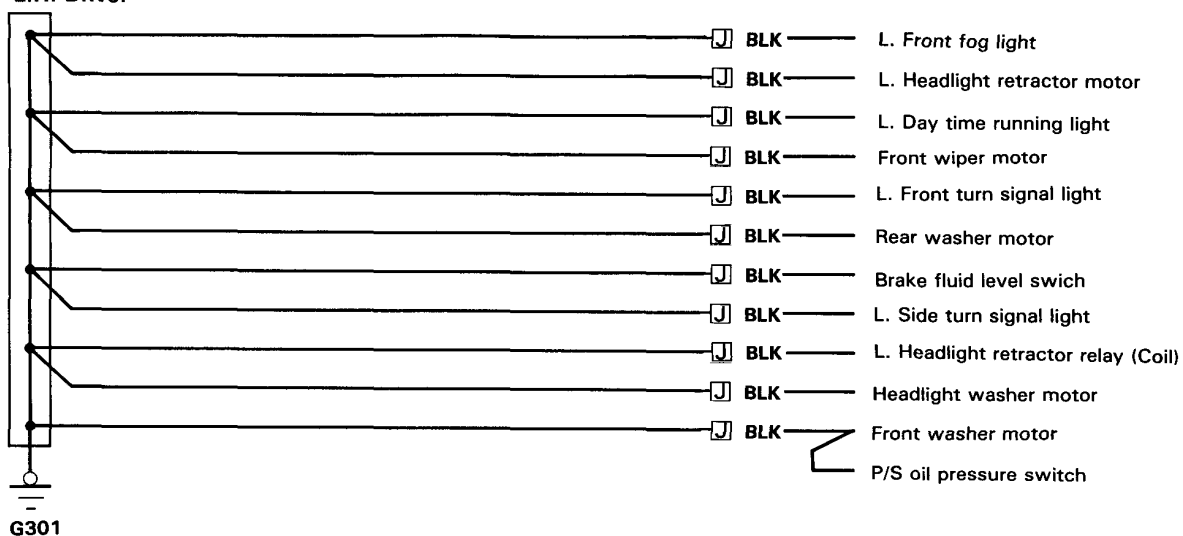
NOTE: See page 16-9 for illustrated ground locations.



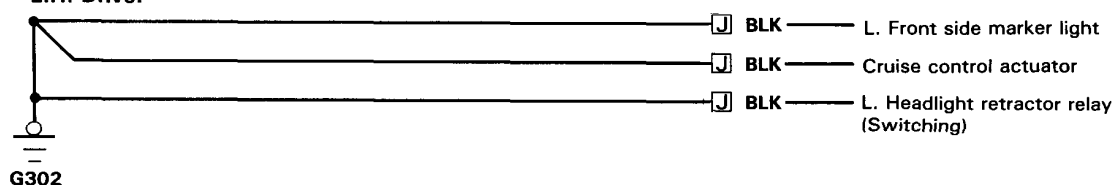


NOTE: See page 16-10 for illustrated ground locations.

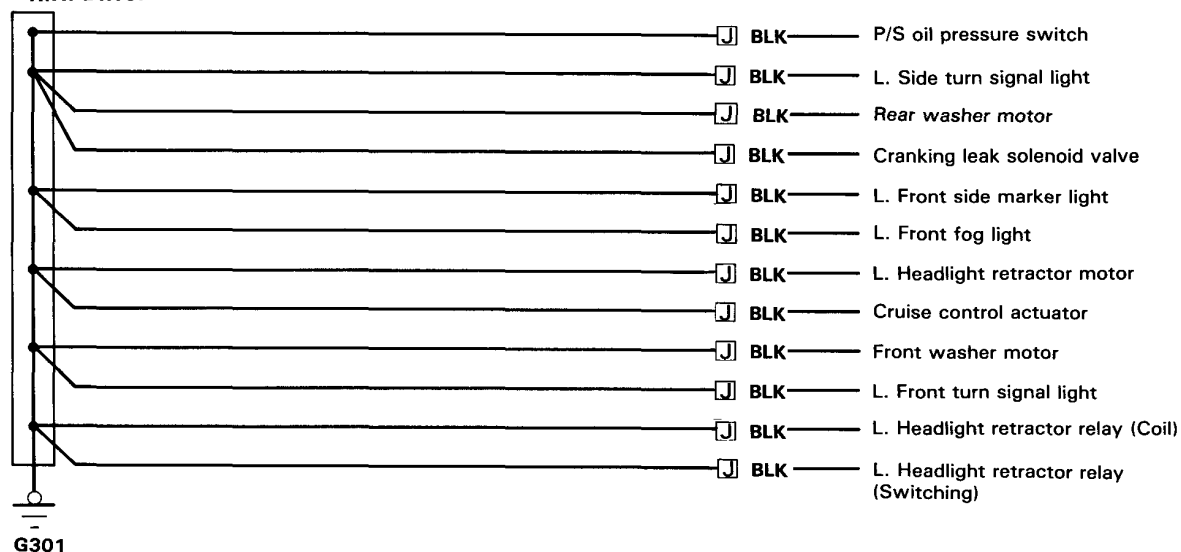
**L.H. Drive:**



**L.H. Drive:**



**R.H. Drive:**



[J]: Left engine compartment wire harness

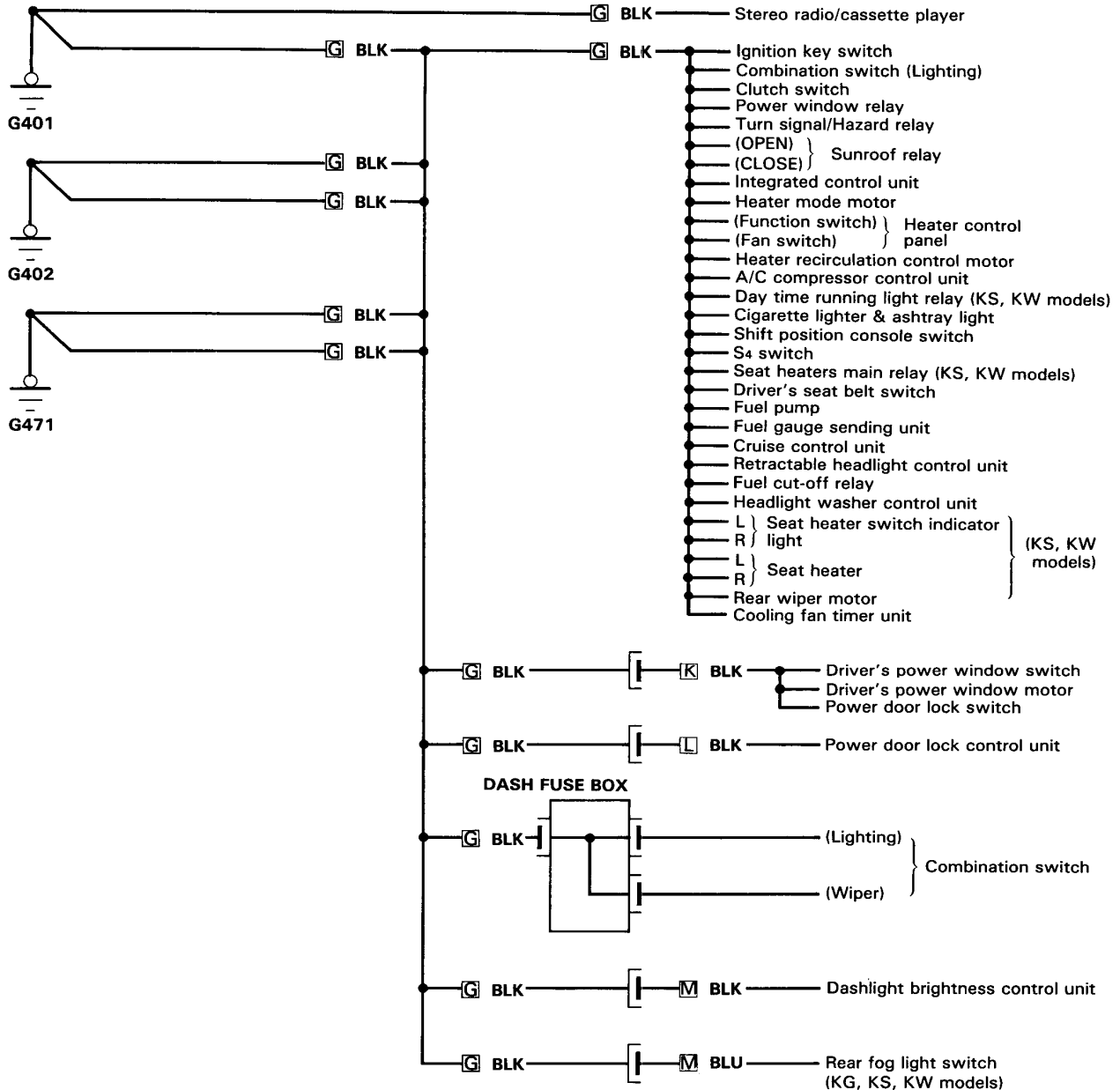
(cont'd)

# Ground Distribution

## Circuit Identification (cont'd)

L.H. Drive:

NOTE: See pages 16-11 and 12 for illustrated ground locations.

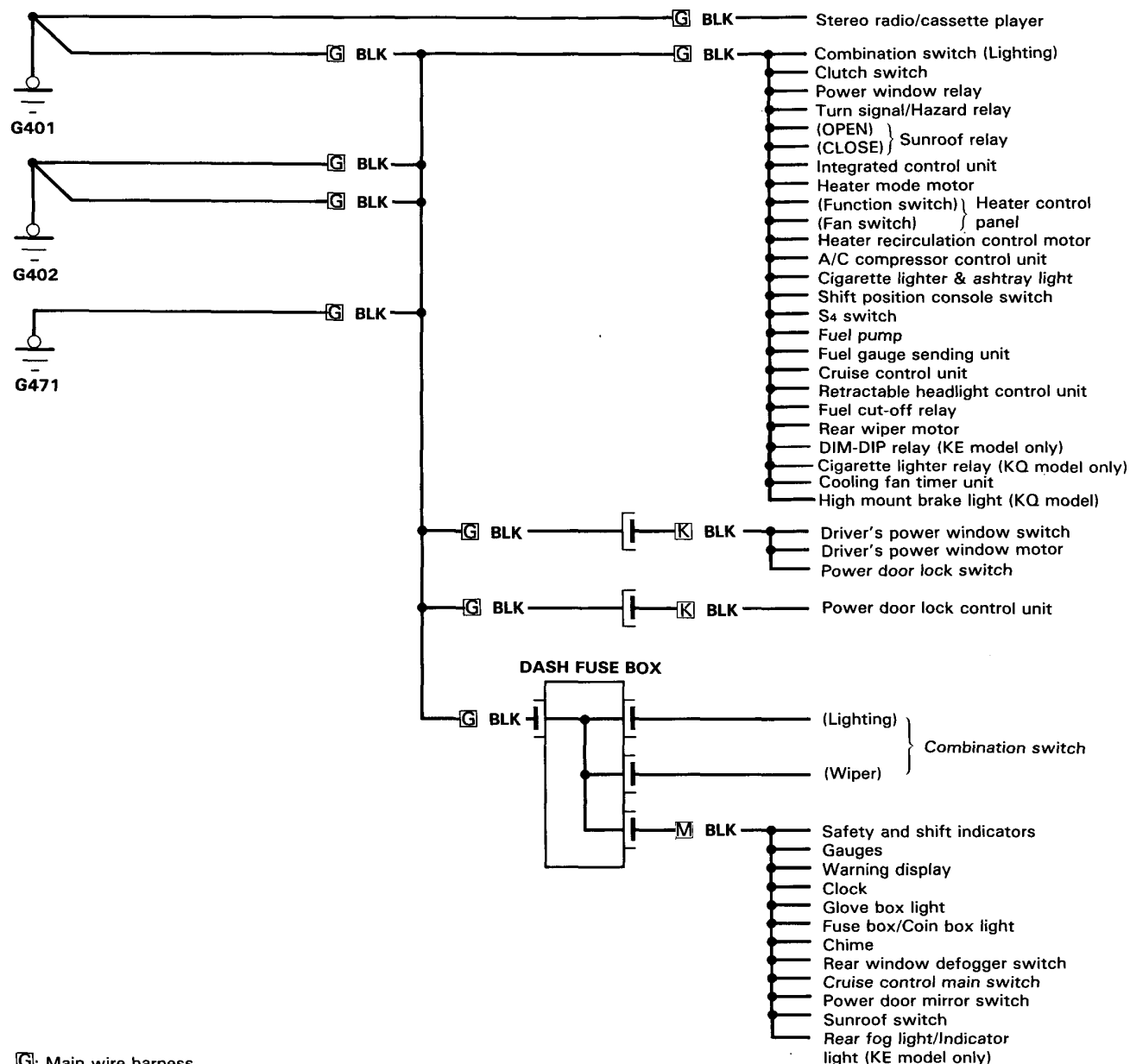


**G:** Main wire harness  
**K:** Driver's door wire harness  
**L:** Passenger's door wire harness  
**M:** Dashboard wire harness



# R.H. Drive:

NOTE: See pages 16-11 and 12 for illustrated ground locations.

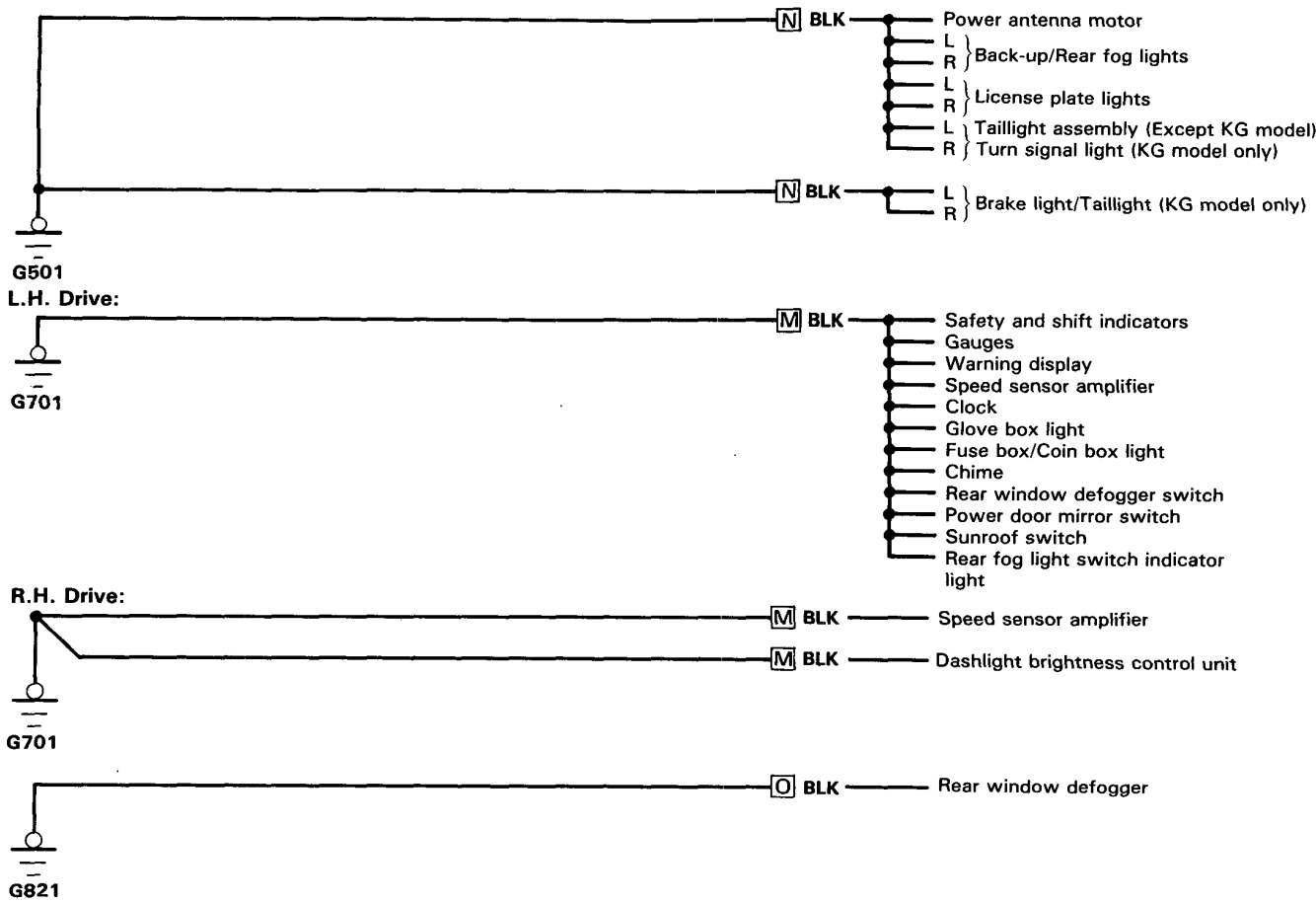


(cont'd)

# Ground Distribution

## Circuit Identification (cont'd)

NOTE: See pages 16-12 and 15 for illustrated ground locations.



**M:** Dashboard wire harness  
**N:** Rear wire harness  
**O:** Defogger ground wire

# Battery



## Test

**NOTE:** To get accurate results, the temperature of the electrolyte must be between 15 and 38°C (59 and 100°F) before testing.

### Test Equipment Required:

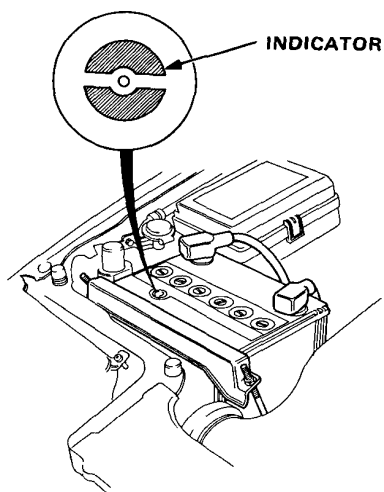
- Battery tester with:  
Voltmeter with 0–18 V scale, Ammeter with 0–100 A and 0–500 A scales, and a carbon pile with 0–300 W.
- 12 V Battery Charger:  
Fast charge capability of 50 A and slow charge capability of 5 A.

### Test Procedure:

**WARNING** Keep sparks, flames and cigarettes away while charging battery.

**CAUTION:** Battery electrolyte is a sulfuric acid solution.

- If it spills on painted surfaces, clothing, or skin, rinse it off with water immediately to minimize the damage.
  - Always wear safety goggles or a face shield when servicing a battery.
1. Check for damage: If the case is cracked or the posts are loose, replace the battery.
  2. Check indicator (for basic charge condition): Blue or Green is OK. If the indicator is red, peel the tape off, remove the caps, and add distilled water; then reinstall the caps and tape. If the indicator is clear, go to step 3.



3. Test battery load capacity by connecting a battery tester, and applying a load of 3 times the battery ampere hour rating.

When the load has been applied for exactly 15 seconds, the battery voltage reading should stay above 9.6 V.

- If the reading stays above 9.6 V, the battery is OK; clean its terminals and case, and reinstall it.
- If the reading is between 6.5 and 9.6 V, fast charge the battery by connecting a battery charger, for 3 minutes at an initial rate of 40 amps.

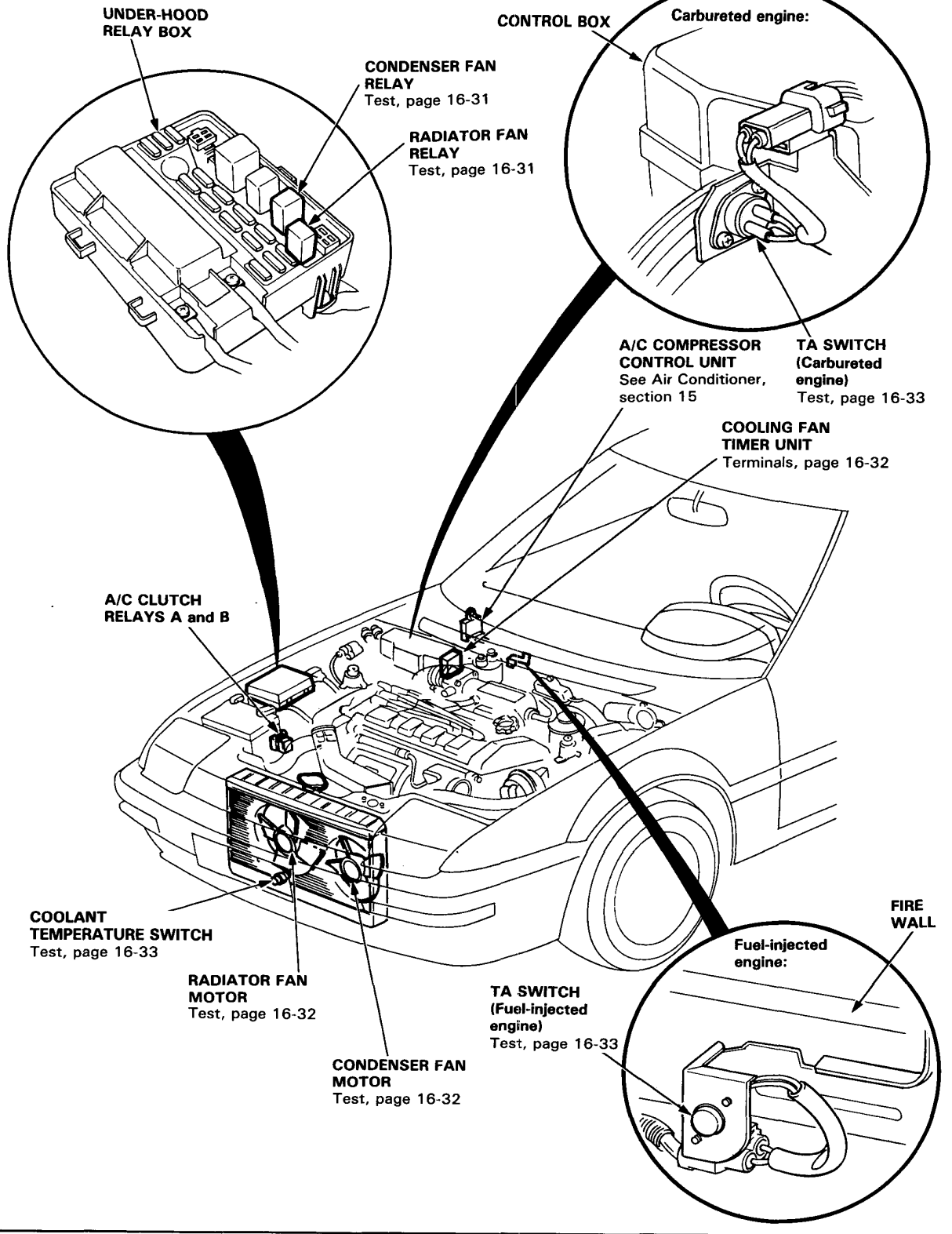
**CAUTION:** Amperage will drop as voltage increases; do not increase the amperage to compensate or you may damage the battery.

Watch the battery voltage during the entire 3 minutes; the highest reading should stay below 15.5 V.

- If the reading stays below 15.5 V, the battery is OK; clean its terminals and case, and reinstall it.
  - If the reading exceeds 15.5 V any time during the 3 minutes of fast charge, the battery is no good; replace it.
- If the reading drops below 6.5 V, slow charge the battery by connecting a battery to charger, at 5 amps for no more than 24 hours, (or until the indicator shows full charge, or the specific gravity of the electrolyte is at least 1.250). Then test load capacity again.
  - If the voltage stays above 9.6 V, the battery is OK; clean its terminals and case, and reinstall it.
  - If the voltage still drops below 6.5 V, the battery is no good; replace it.

# Cooling Fan Control

## Component Location Index





## Description

### Fan Timer System:

When the air temperature of engine room is above approx. 60°C (140°F) after the engine is stopped, the condenser fan goes into operation to cool the engine for a maximum of 10 minutes.

When the temperature falls below 42°C (108°F), the fan is stopped.

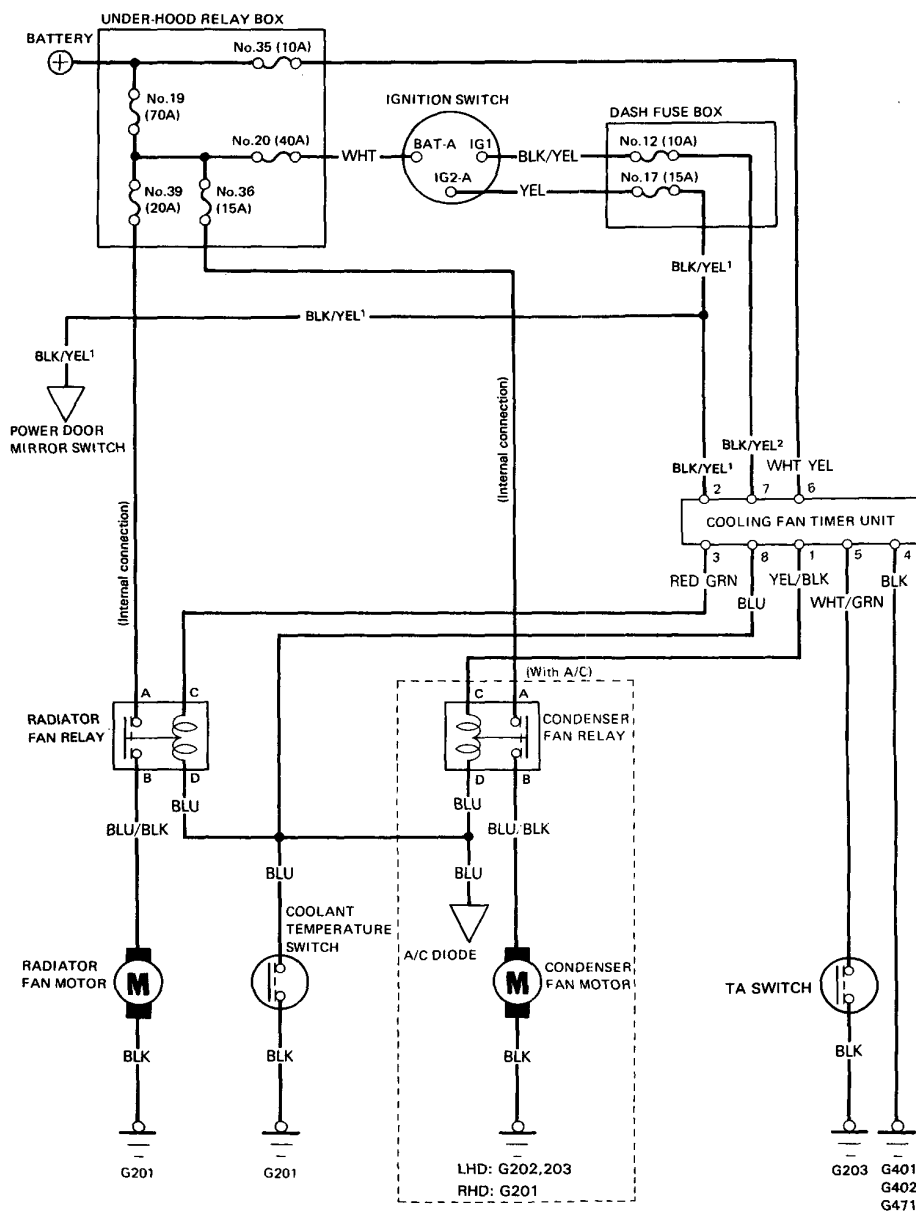
The TA switch is located on the control box bracket (carbureted engine) or firewall (fuel-injected engine) and the fan timer unit is located right side under dash.

	Ignition Switch					
	ON		ON → OFF		ON	
	Coolant Temp. Switch A		Air Temp. (TA) switch		A/C System	
	Above 90°C (194°F)	Below 83°C (181°F)	Above 60°C (140°F)	Below 42°C (108°F)	ON	OFF
Radiator Fan	ON	OFF	ON (10 min)	OFF	ON	OFF
Condenser Fan	ON	OFF	OFF	OFF	ON	OFF

# Cooling Fan Control

## Circuit Diagram

NOTE: Several different wires have the same color. They have been given a number suffix to distinguish them (for example BLK/YEL<sup>1</sup> and BLK/YEL<sup>2</sup> are not the same).





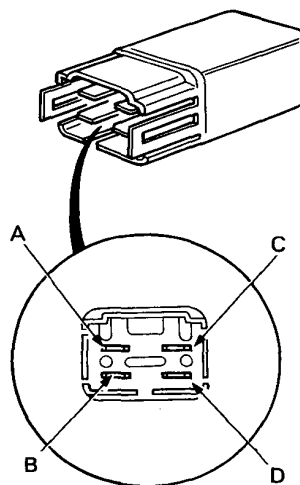
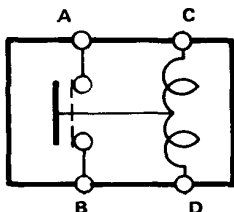
## Troubleshooting

NOTE: The numbers in the table show the troubleshooting sequence.

Item to be inspected		Symptom										
		Blown No. 39 (20 A) No. 36 (15A) or No. 35 (10 A) fuse (in the under-hood relay box)	Radiator fan or condenser fan relay	Blown No. 17 (15 A) fuse (in the dash fuse box)	Blown No. 12 (10 A) fuse (in the dash fuse box)	Coolant temperature switch	TA switch	Radiator fan or condenser fan motor	Faulty fan timer unit	A/C system	Poor ground	Open circuit in wires or loose or disconnected terminals
Only one fan operates (with engine and A/C ON).		1	2					3			G201 G202 G203	BLU/BLK <sup>1</sup> , BLU/BLK <sup>2</sup> or BLU
Fans do not rotate	Under all conditions.			1		3	2		4		G203	BLK/YEL <sup>1</sup> . BLK/YEL <sup>2</sup>
	A/C ON									1		BLU
Fan timer unit falls to function properly.		1							2	3	G401 G402 G471	WHT/GRN, BLU WHT/YEL

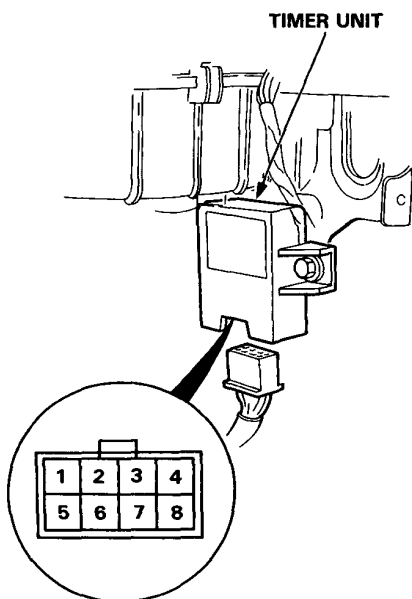
## Relay Test

1. Remove the radiator or condenser relay in the under-hood relay box.
2. There should be continuity between the A and B terminals when the battery is connected to the C and D terminals. There should be no continuity when the battery is disconnected.



# Cooling Fan Control

## Timer Unit Terminals

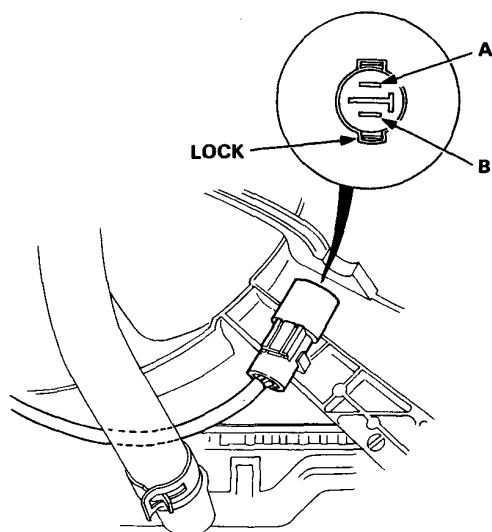


Terminal	Wire	Destination
1	YEL/ BLK	Condenser fan relay ⊕
2	BLK/ YEL <sup>1</sup>	Power supply (for condenser and radiator fan relay by way of timer unit with ignition switch ON)
3	RED/ GRN	Cooling fan relay ⊕
4	BLK	Ground
5	WHT/ GRN	TA switch
6	WHT/ YEL	Constant power (For condenser fan motor relay by way of timer unit)
7	BLK/ YEL <sup>2</sup>	IG1 (Timer reset signal)
8	BLU	Condenser and radiator fan relay ⊖

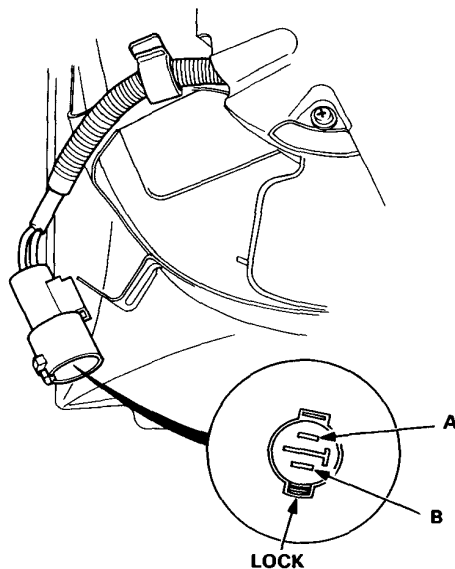
## Fan Motor Test

1. Disconnect the 2-P connector from the fan motor.
2. Test motor operation by connecting battery positive to the A terminal, and negative to the B terminal.
3. If the motor fails to run smoothly, replace it.

### Radiator Fan Motor:



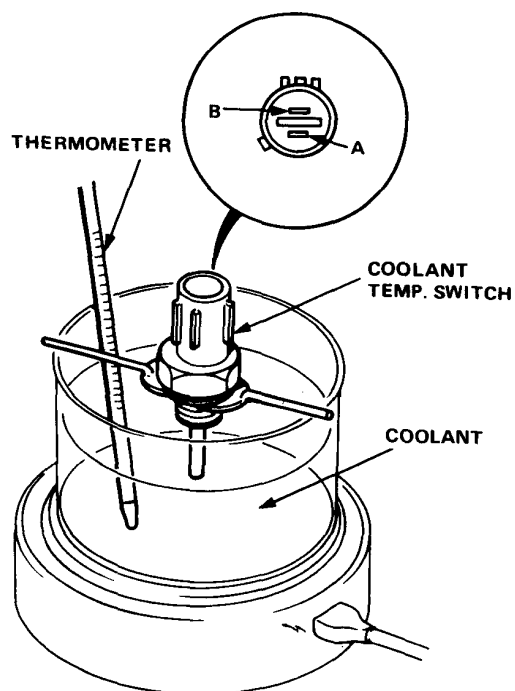
### Condenser Fan Motor:





## Coolant Temperature Switch Test

1. Remove the coolant temperature switch from the radiator.
2. Suspend the coolant temperature switch in a container of coolant as shown.

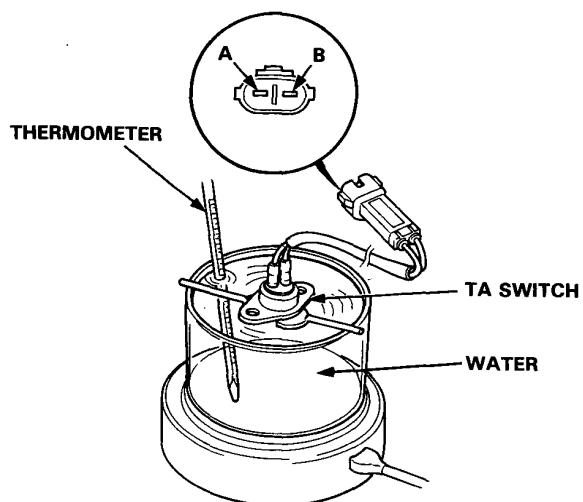


3. Heat the coolant and check coolant temperature with a thermometer.
4. Measure the resistance between the A and B terminals according to the table.

Terminal		A	B
Temperature			
Above	87–93°C (189–199°F)	○	○
Below	80–91°C (176–196°F)		

## TA Switch Test

1. Remove the TA switch.
2. Suspend the TA switch in a container of water as shown.



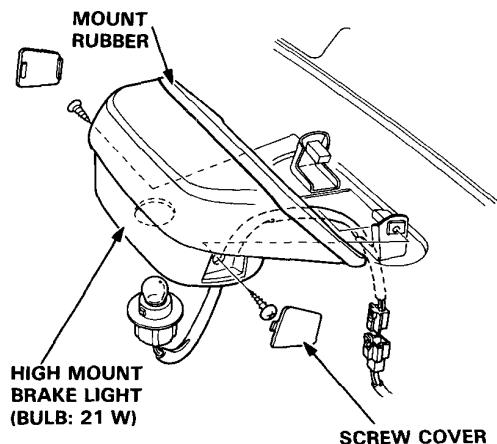
3. Heat the water and check water temperature with a thermometer.
4. Check for continuity between the A and B terminals according to the table.

Terminal		A	B
Temperature			
Below	37–47°C (99–116°F)	○	○
Above	57–63°C (135–145°F)		

# High Mount Brake Light

## Replacement

1. Remove the 2 screw covers and screws, then remove the high mount brake light on the rear shelf.
2. Disconnect the 2-P connector from the light assembly.



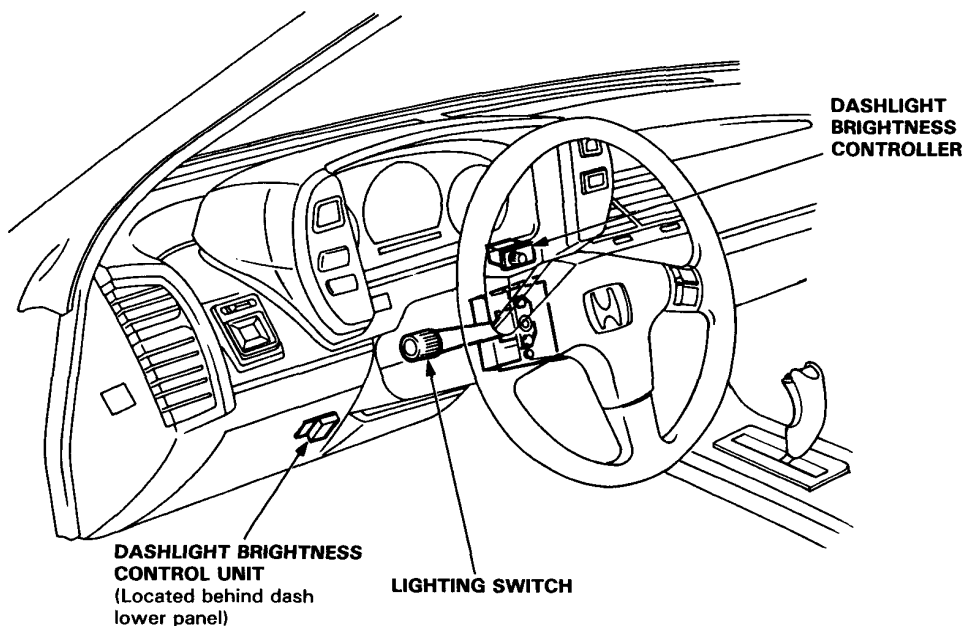
3. Turn the socket 45° counterclockwise to remove the bulb.
4. Install the high mount brake light in the reverse order of removal, and clean the rear window glass before installing.

**CAUTION:** When installing the high mount brake light, make sure the mount rubber is sealed evenly to the rear window glass.

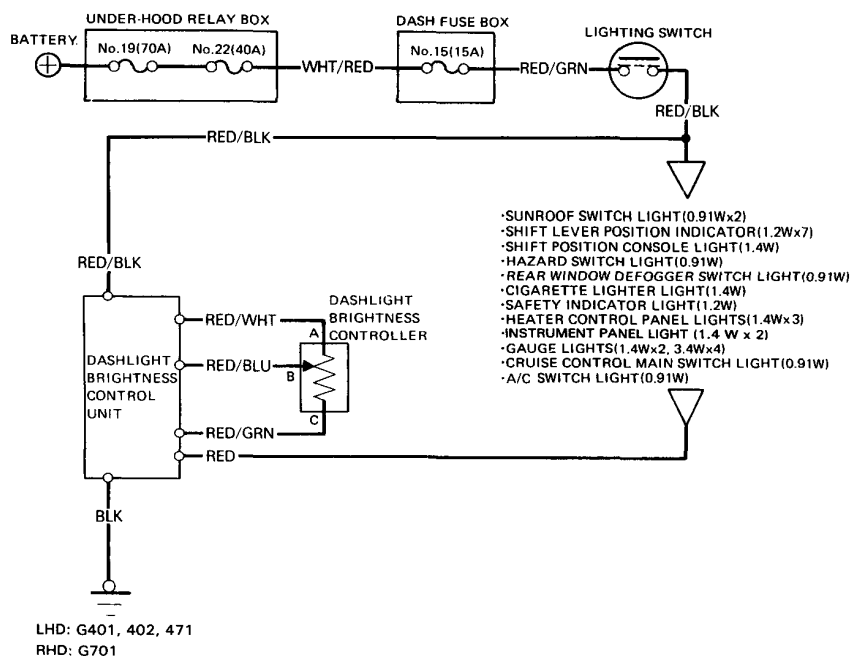


# Dashlight Brightness Control

## Component Location Index

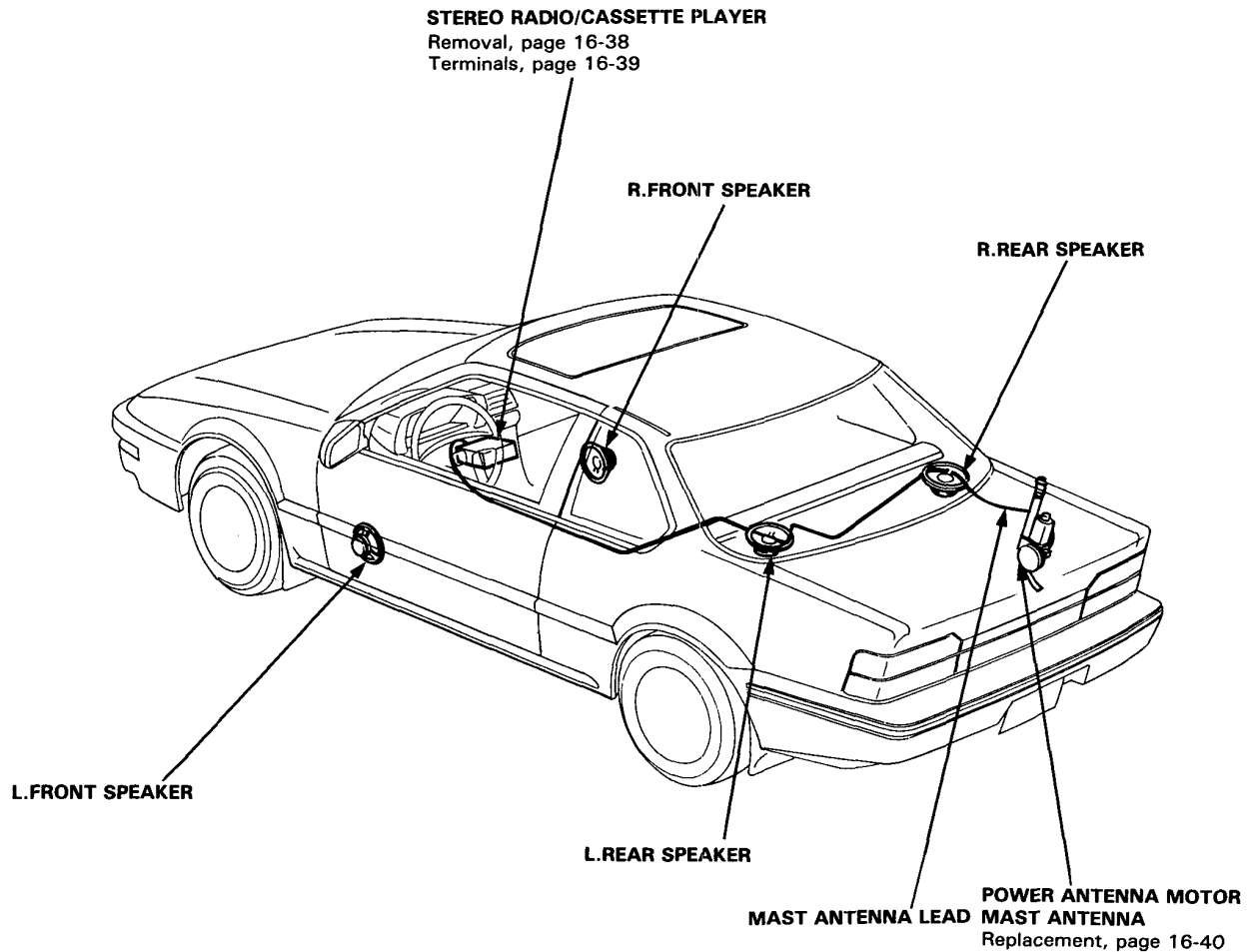


## Circuit Diagram



# Stereo Sound System

## Component Location Index

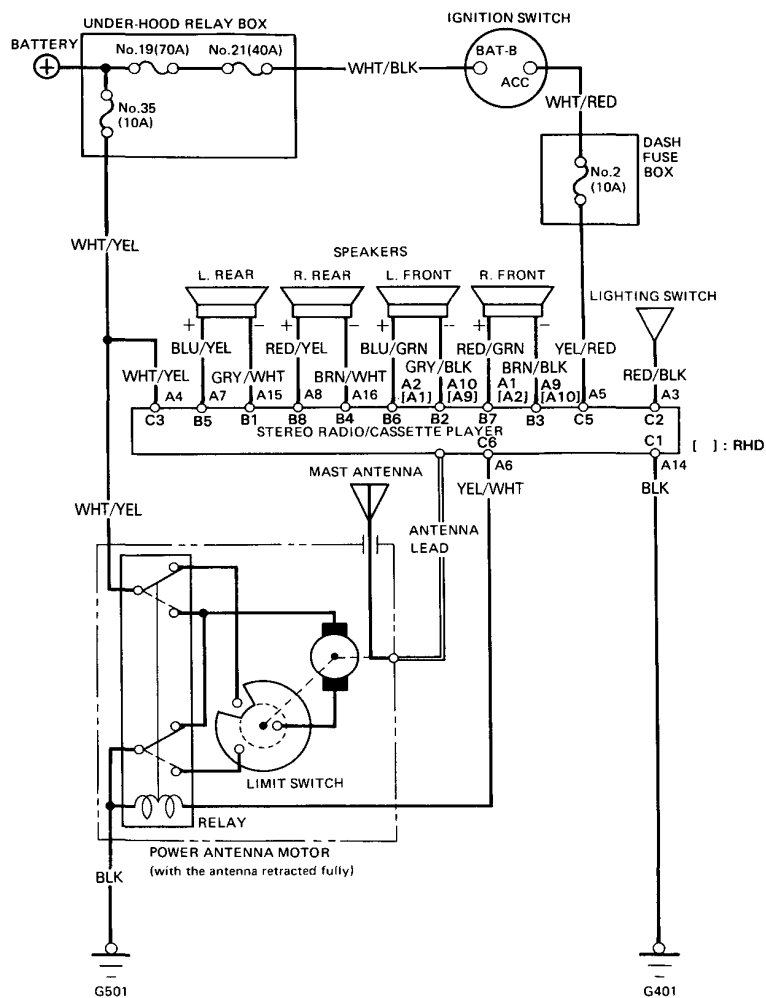


## Description

For the stereo radio/cassette player description, please see the owner's manual.

The automatic antenna mast is controlled entirely by the radio ON/OFF switch. It will extend fully any time the radio switch is on and the ignition switch is on. When the radio is shut off, it retracts fully. The power antenna motor has a built-in relay together with a limit switch for this function.

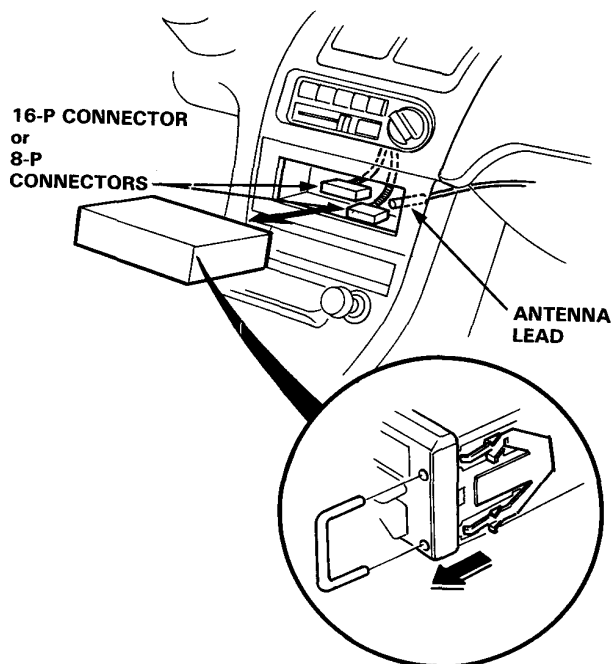
### Circuit Diagram



# Stereo Sound System

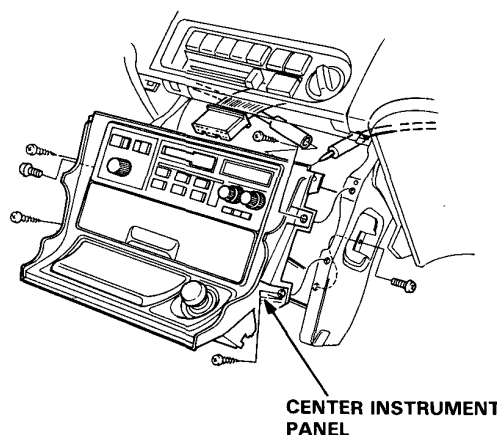
## Unit Removal

### A-Type:

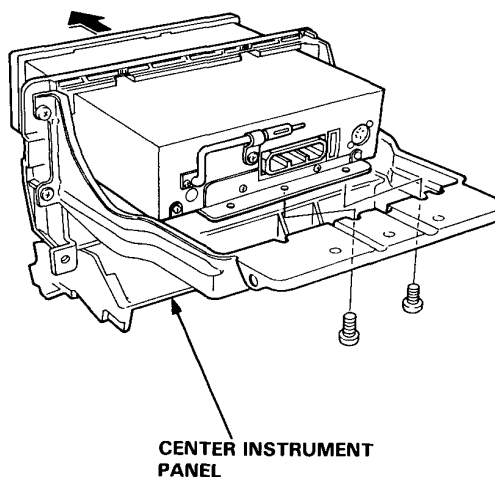


### B-Type:

1. Remove the front console.
2. Remove the 6 screws and the center instrument panel with the stereo radio/cassette player, then disconnect the 16-P connector, the mast antenna lead, and the 4-P connector from the cigarette lighter.



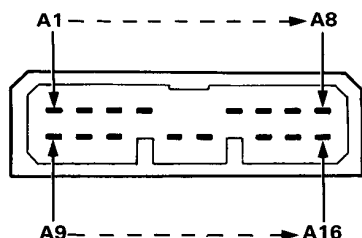
3. Remove the 2 screws, then pull the stereo radio/cassette player out of the center instrument panel.





## Unit Terminals

Except PHILIPS:

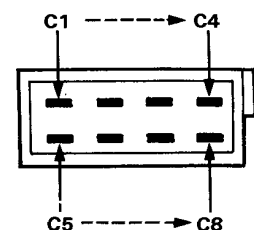
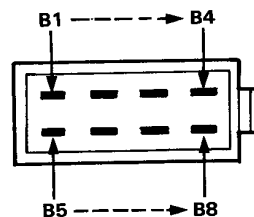


View from terminal side of unit

Terminal	Wire	Destination
A1[A2]	RED/GRN	Right front speaker ⊕
A2[A1]	BLU/GRN	Left front speaker ⊕
A3	RED/BLK	Light-on signal
A4	WHT/YEL	Constant power (Tuning memory)
A5	YEL/RED	ACC (Main stereo power supply)
A6	YEL/WHT	Radio switched power (To antenna)
A7	BLU/YEL	Left rear speaker ⊕
A8	RED/YEL	Right rear speaker ⊕
A9[A10]	BRN/BLK	Right front speaker ⊖
A10[A9]	GRY/BLK	Left front speaker ⊖
A11		(Not used)
A12		(Not used)
A13		(Not used)
A14	BLK	Ground
A15	GRY/WHT	Left rear speaker ⊖
A16	BRN/WHT	Right rear speaker ⊖

[ ] : RHD

PHILIPS only:



View from terminal side of unit

Terminal	Wire	Destination
B1	GRY/WHT	Left rear speaker ⊖
B2	GRY/BLK	Left front speaker ⊖
B3	BRN/BLK	Right front speaker ⊖
B4	BRN/WHT	Right rear speaker ⊖
B5	BLU/YEL	Left rear speaker ⊕
B6	BLU/GRN	Left front speaker ⊕
B7	RED/GRN	Right front speaker ⊕
B8	RED/YEL	Right rear speaker ⊕

C1	BLK	Ground
C2	RED/BLK	Light-on signal
C3	WHT/YEL	Constant power (Tuning memory)
C4		(Not used)
C5	YEL/RED	ACC (Main stereo power supply)
C6	YEL/WHT	Radio switched power (To antenna)
C7		(Not used)
C8		(Not used)

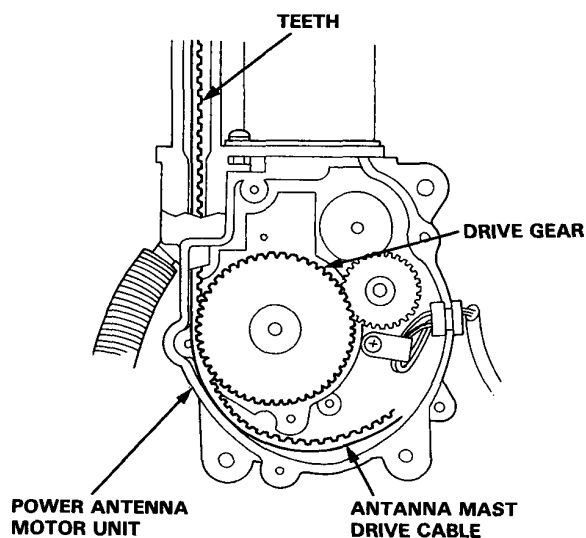
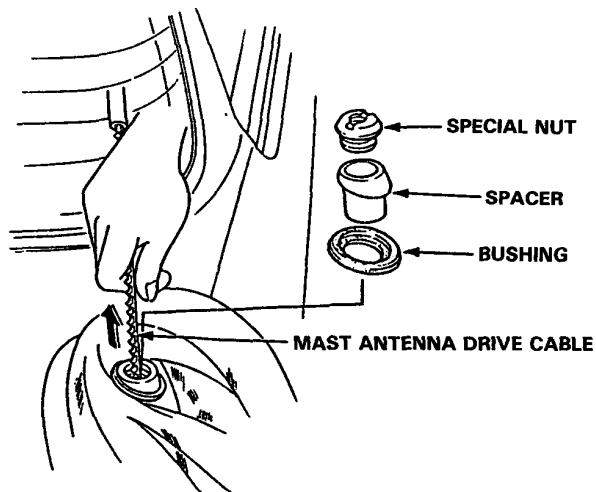
# Stereo Sound System

## Mast Antenna Replacement

### Removal

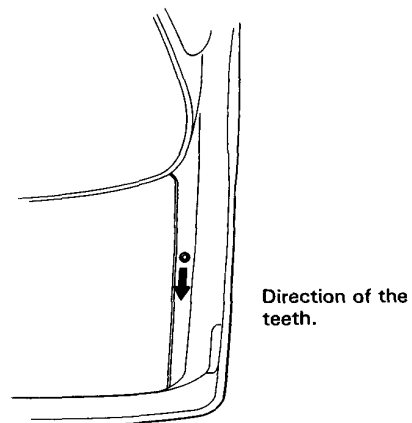
NOTE: The antenna mast alone can be replaced without having to remove the power antenna motor unit.

1. Remove the special nut, spacer and bushing.
2. Carefully withdraw the antenna mast while extending it by turning the radio switch "ON".



### Installation

1. Carefully direct the teeth of antenna mast drive cable as shown, and insert the drive cable into the antenna housing.

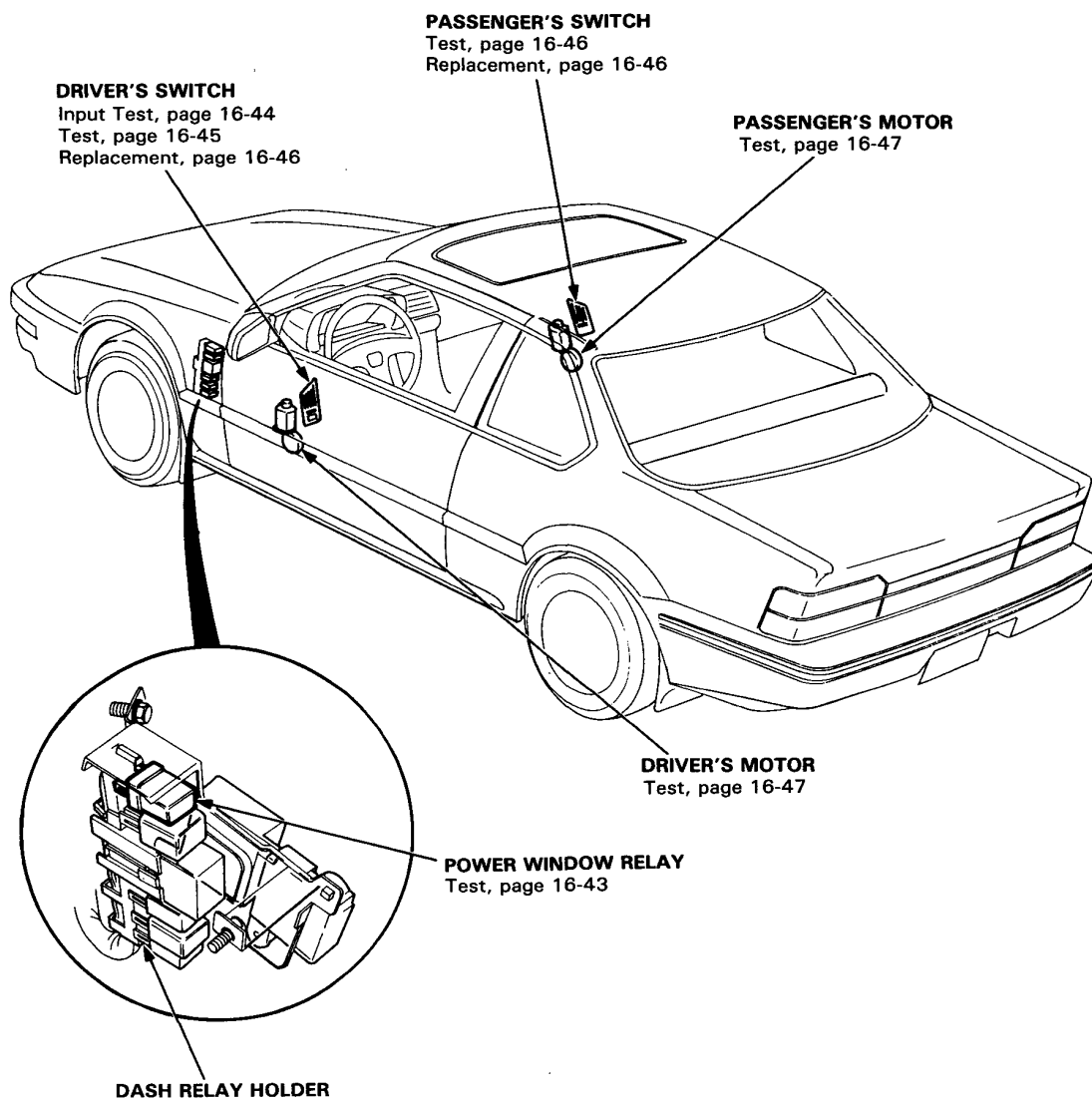


2. Check for engagement of the cable teeth to the drive gear; by carefully moving the cable up and down.
3. Turn the radio switch "OFF", and let the motor pull the drive cable inside the antenna housing.
4. Insert the antenna mast into the antenna housing, and install the bushing and spacer, tighten the special nut.
5. Check that the mast antenna retracts and extends fully when the radio switch is turned ON and OFF repeatedly.



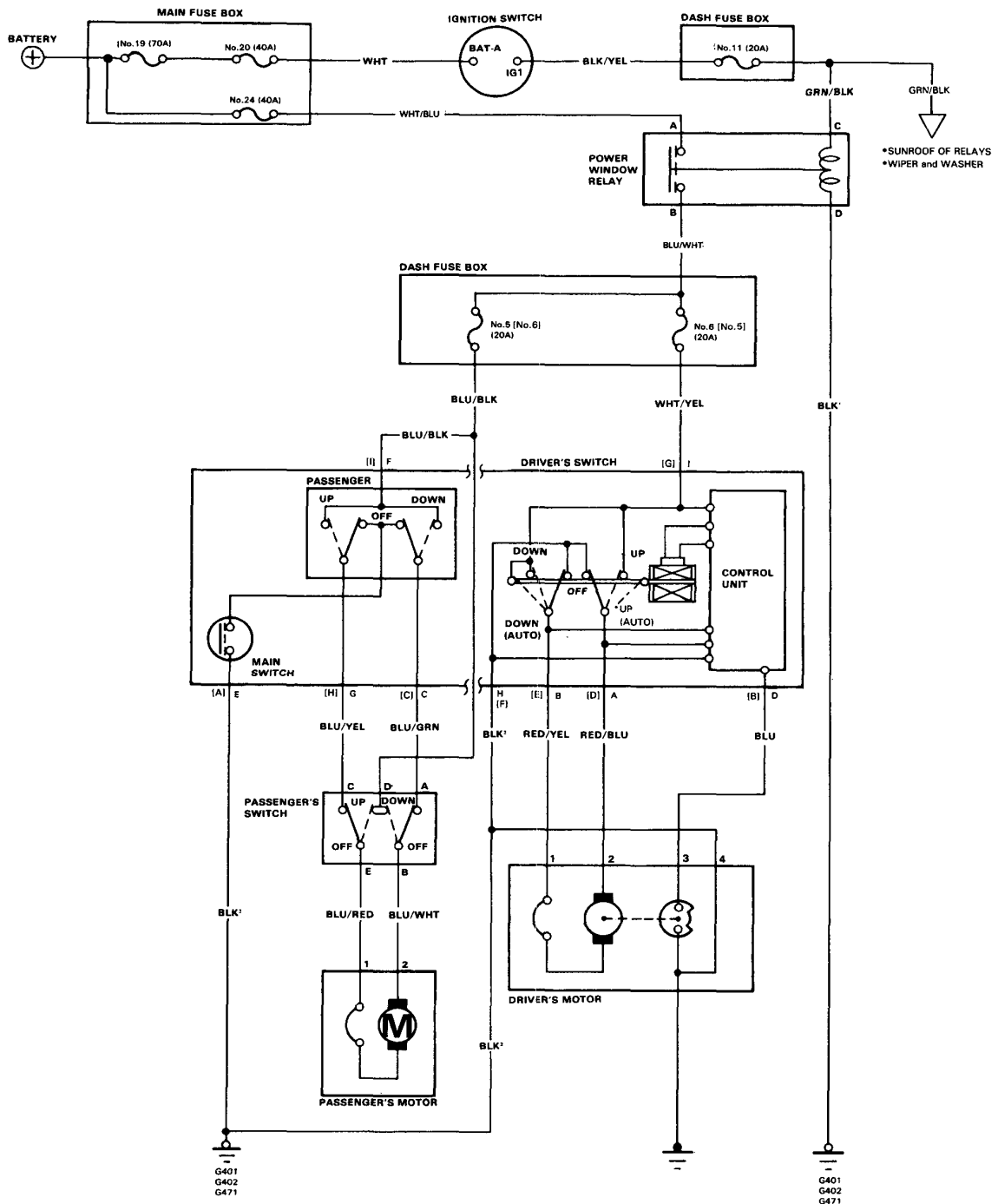
# Power Windows

## Component Location Index



# Power Window

## Circuit Diagram



\*UP(AUTO)...Standard for some types  
[ ]...RHD



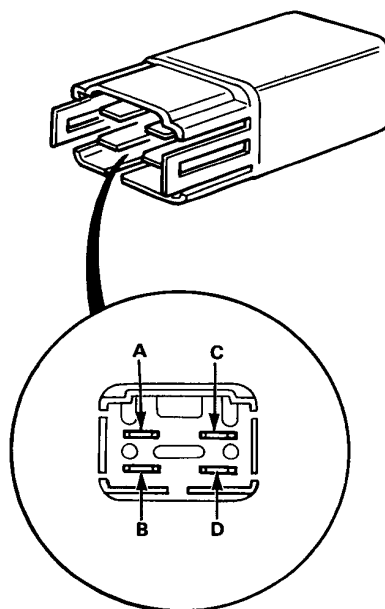
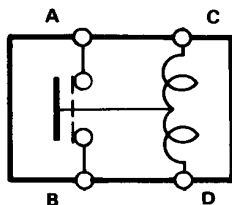
## Troubleshooting

NOTE: The numbers in the table show the troubleshooting sequence.

Symptom	State of charge and clean and tight connections of battery	Power window relay	in the dash fuse box			Drivers door switch input	Driver's switch	Passenger's switch	Driver's motor	Pulser (in driver's motor)	Passenger's motor	Window regulator	Poor ground	Open circuit in wires or loose or disconnected terminals
			No. 5 20 (A)	No. 6 20 (A)	No. 11 20 (A)									
All windows do not operate.	1	3			2								G401, 402, 471	GRN/BLK, WHT/BLU, BLU/WHT <sup>1</sup> or BLK
Driver's window does not operate in any position.				1		4	2		3			5		WHT/YEL
Driver's window does not operate in AUTO.						3	1			2				BLU
Passenger's window does not operate.			1				2	3			4	5		BLU/BLK

## Relay Test

1. Remove the power window relay from the dash relay holder.
2. There should be continuity between the A and B terminals when the battery is connected to the C and D terminals. There should be no continuity when the battery is disconnected.



# Power Window

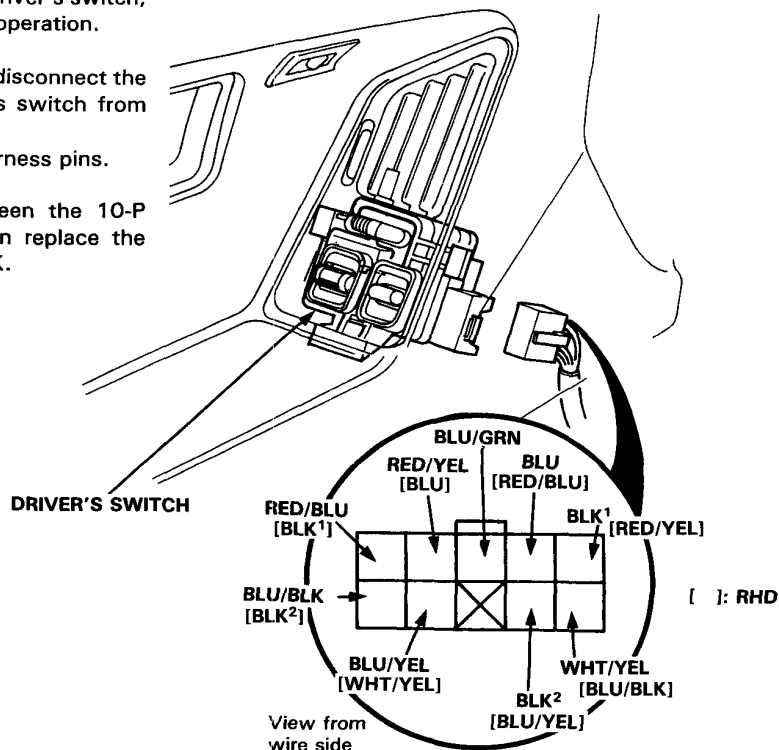
## Driver's Switch Input Test

NOTE: The control unit is built into the driver's switch, and only controls driver's door window operation.

Remove the driver's door trim panel and disconnect the 10-P connector and remove the driver's switch from the door trim panel.

Make the following input tests at the harness pins.

NOTE: Recheck the connections between the 10-P connector and the driver's switch, then replace the driver's switch if all input tests prove OK.

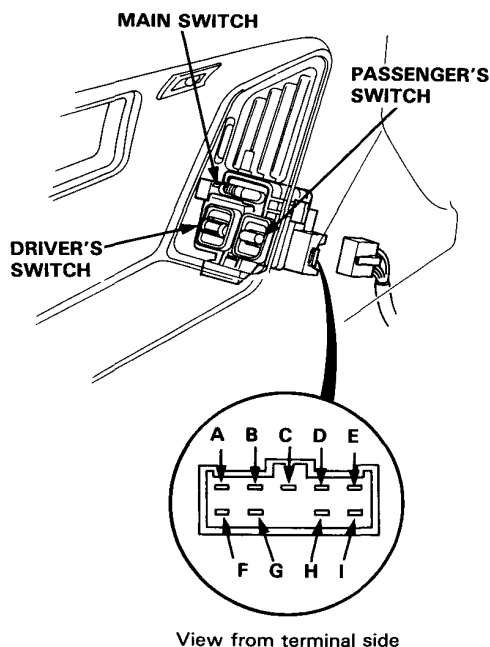


No.	Terminal	Test condition	Test: desired result	Possible cause (if result is not obtained)
1	BLK <sup>1</sup>	Under all conditions.	Check for continuity to ground: should be continuity.	<ul style="list-style-type: none"> <li>• Poor ground (G401, 402, 471).</li> <li>• An open in the wire.</li> </ul>
2	WHT/YEL BLU/BLK	Ignition switch ON.	Check for voltage to ground: should be battery voltage.	<ul style="list-style-type: none"> <li>• Blown No. 5 or 6 (20 A) fuse.</li> <li>• Faulty power window relay.</li> <li>• An open in the wire.</li> </ul>
3	RED/BLU and RED/YEL	Connect the WHT/YEL terminal to the RED/BLU terminal, and the RED/YEL terminal to the BLK terminal, then ignition switch ON.	Check the driver's motor operation: should run.	<ul style="list-style-type: none"> <li>• Faulty driver's motor.</li> <li>• An open in the wire.</li> </ul>
4	BLU/YEL and BLU/GRN	Connect the BLU/BLK terminal to the BLU/YEL terminal, and the BLU/GRN terminal to the BLK terminal, then ignition switch ON.	Check the passenger's motor operation: should run.	<ul style="list-style-type: none"> <li>• Faulty passenger's motor</li> <li>• Faulty passenger's switch</li> <li>• An open in the wire.</li> </ul>
5	BLU and BLK <sup>2</sup>	Connect the WHT/YEL terminal to the RED/YEL terminal, and the BLK <sup>1</sup> terminal to the RED/BLU terminal, then ignition Switch ON.	Check for resistance between the BLU and BLK <sup>2</sup> terminals: should indicate between 20—50 ohms as the driver's motor runs.	<ul style="list-style-type: none"> <li>• Faulty pulser.</li> <li>• Faulty driver's motor.</li> <li>• An open in the wire.</li> </ul>



## Driver's Switch Test

1. Remove the door trim panel.
2. Check for continuity between the terminals in each switch position according to the tables.



### LHD:

#### Driver's Switch

Position	Terminal	A	B	H	I
UP (AUTO)*		○			○
UP		○			○
OFF		○	○	○	
DOWN			○		○
DOWN (AUTO)			○		○

#### Passenger's Switch

Position	Terminal	C	E	F	G
UP	ON		○	○	○
	OFF			○	○
OFF	ON	○	○		○
	OFF	○			○
DOWN	ON	○	○	○	
	OFF	○		○	

### RHD:

#### Driver's Switch

Position	Terminal	D	E	F	G
UP (AUTO)*		○			○
UP		○			○
OFF		○	○	○	
DOWN			○		○
DOWN (AUTO)			○		○

#### Passenger's Switch

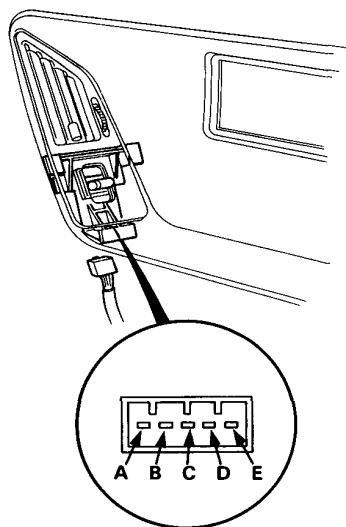
Position	Terminal	A	C	H	I
UP	ON	○		○	○
	OFF			○	○
OFF	ON	○	○	○	
	OFF		○	○	
DOWN	ON	○	○		○
	OFF		○		○

\*UP (AUTO)...Standard for some types

# Power Windows

## Passenger's Switch Test

1. Remove the door trim panel.
2. Check for continuity between the terminals in each switch position according to the table.



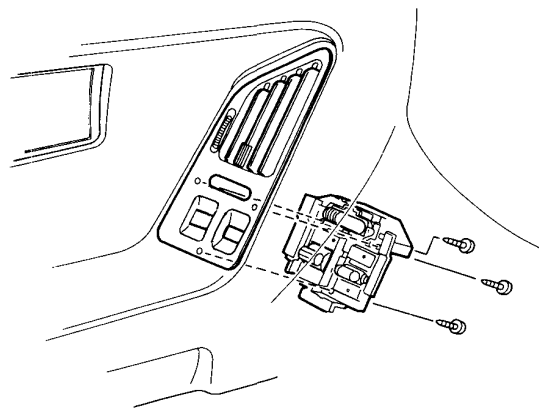
View from  
wire side

Terminal Position	A	B	C	D	E
UP				○	○
OFF	○	○	○	○	○
DOWN		○		○	

## Switch Replacement

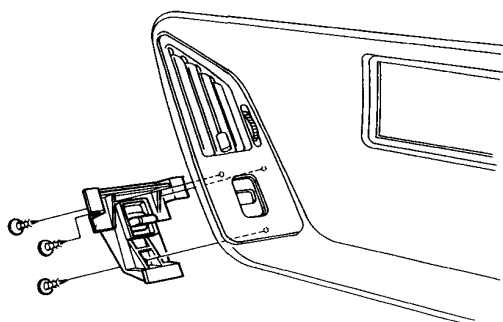
### Driver's Switch:

1. Remove the door trim panel.
2. Remove the switch from the door trim panel by releasing the 3 mounting screws.



### Passenger's Switch:

1. Remove the door trim panel.
2. Remove the switch from the door trim panel by releasing the 3 mounting screws.

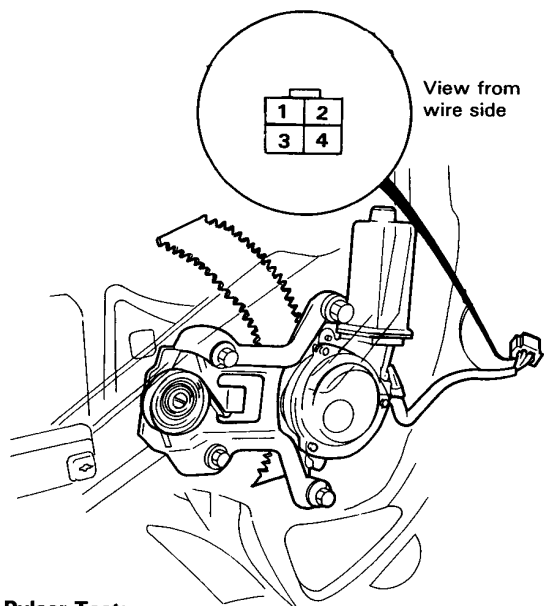




## Driver's Motor Test

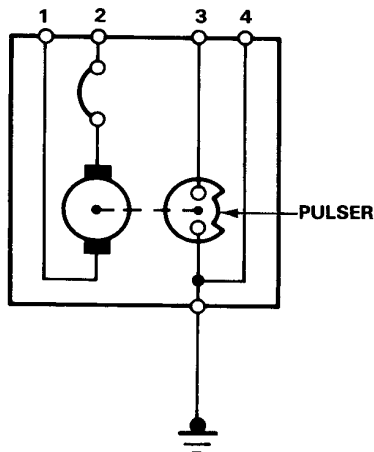
### Motor Test:

1. Remove the door trim panel.
2. Disconnect the 4-P connector from the power window control unit.
3. Test motor operation by connecting battery voltage to the No. 1 and No. 2 terminals. Test the motor in each direction, by switching the leads from the battery.
4. If the motor does not run, replace it.



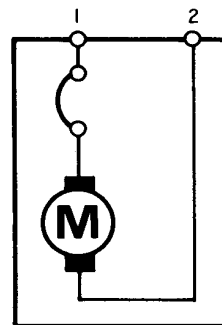
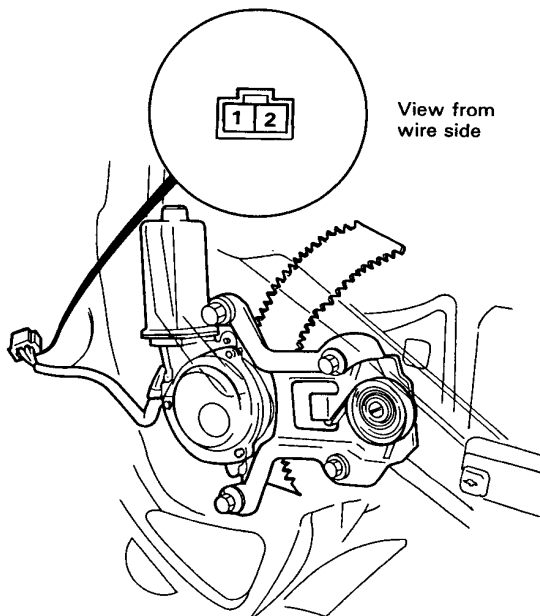
### Pulser Test:

Measure resistance between the No. 3 and No. 4 terminals when running the motor by connecting battery voltage to the No. 1 and No. 2 terminals. Ohmmeter should indicate between 20–50 ohms as the motor runs.



## Passenger's Motor Test

1. Remove the door trim panel.
2. Disconnect the 2-P connector from the motor.
3. Test motor operation by connecting battery voltage to the No. 1 and No. 2 terminals. Test the motor in each direction, by switching the leads from the battery.
4. If the motor does not run, replace it.

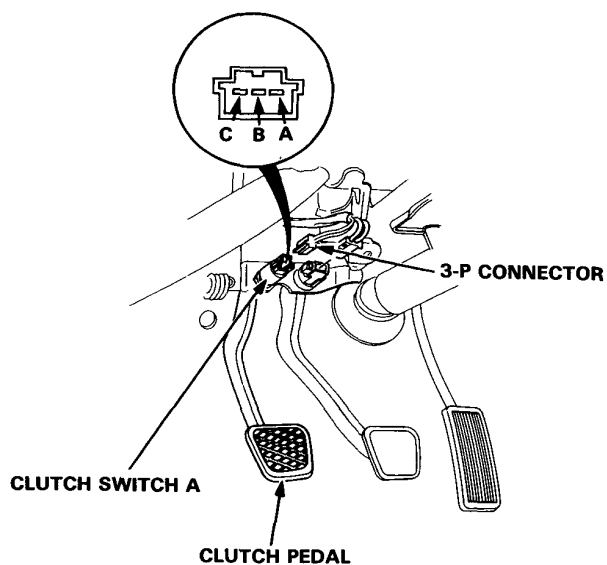


# Cruise Control

## Clutch Switch Test

1. Disconnect the 3-P connector from the switch.
2. Check for continuity between the terminals according to the table.

Terminal	A	B	C
Clutch Pedal			
RELEASED	○	○	○
PUSHED			



3. If necessary, adjust the switch position or replace the switch.



# Wiring Diagrams

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