

INTRODUCTION

How to Use This Manual

This supplement contains information for the 1989 CIVIC.
Refer to following shop manuals for service procedures.

| Description | Code No. |
|---|----------|
| CIVIC CHASSIS Maintenance and Repair | 62SH300 |
| CIVIC SHUTTLE/WAGON Supplement | 62SH520 |
| D12B/D13B/D14A/D15B/D16A ENGINE Maintenance and Repair | 62PM100 |
| L3 MANUAL TRANSMISSION Maintenance and Repair | 62PL300 |
| L3 (4WD) MANUAL TRANSMISSION Maintenance and Repair | 62PH800 |
| L4 AUTOMATIC TRANSMISSION Maintenance and Repair | 62PL400 |

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

Special information

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

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

NOTE: Gives helpful information.

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

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures and tables.

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

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Service Publication Office

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General Info



Special Tools



Specifications

specs

Maintenance



Engine



Fuel and Emissions



Transaxle



Steering *



Suspension



Brakes *



Body *



Heater and Air Conditioner



Electrical



Outline of Model Changes

| ITEMS | DESCRIPTION | REFERENCE SECTION |
|------------------------|---|-------------------|
| Engine | Modified · Oil Filter · Crankshaft pulley bolt · Engine mounting bolts · Exhaust pipe | 5 |
| Carburetion | Vacuum connections modified | 6 |
| PGM-FI | Fast idle control solenoid valve adopted Throttle body modified | 6 6 |
| Automatic Transmission | Modified · Servo valve body · Parking brake stoppers | 9 |
| Rear Suspension | Modified | 12 |
| Air Conditioner | Pipe routing modified | 15 |
| Lighting System | Modified | 16 |
| High Mount Brake Light | Adopted for some types | 16 |



General Information

| | |
|---------------------------------------|--------|
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Chassis and Engine Numbers

Vehicle Identification Number (2-door Hatchback)

JHM EC7 3200S100001

Manufacturer, Make and
Type of vehicle

JHM:HONDA MOTOR CO., LTD.,
JAPAN
HONDA, Passenger car

Line/Body and Engine type

EC7: CIVIC 1200 Hatchback
EC8: CIVIC 1300 Hatchback
EC9: CIVIC 1400 Hatchback
ED6: CIVIC 1500 Hatchback
ED7: CIVIC 1600 Hatchback

Transmission and Body type

3: 5-speed manual/2-door
Hatchback
4: 4-speed automatic/2-door
Hatchback

Vehicle Grade

2: DX (EC7, EC8, ED6: KQ)
GL (EC9, ED6: KY)
3: GL (ED6: KQ)
4: DX (ED6: KX, KS, KW)
5: GL (ED6: KX, KS, KW)
6: 1.6i (ED7: SOHC)
7: 1.6i-16 (ED7: DOHC)

Fixed Code

Auxiliary Number

Factory

S: Suzuka Factory

Model Year

1: 1989

Serial Number

Vehicle Identification Number (4-door Sedan)

JHM ED1 5200S100001

Manufacturer, Make and
Type of vehicle

JHM:HONDA MOTOR CO., LTD.,
JAPAN
HONDA, Passenger car

Line/Body and Engine type

ED1: CIVIC 1200 Sedan
ED2: CIVIC 1400 Sedan
ED3: CIVIC 1500 Sedan
ED4: CIVIC 1600 Sedan
ED5: CIVIC 1300 Sedan
EE5: CIVIC 1600 4WD Sedan

Transmission and Body type

5: 5-speed manual/4-door Sedan
5-speed + SL* manual/4-door Sedan
6: 4-speed automatic/4-door Sedan

Vehicle Grade

2: DX (ED1, ED5, ED3: KQ)
GL (ED2, ED3: KP, KT, KY)
3: EX (ED3: KY)
GL (ED3: KQ)
4: DX (ED3: KS, KW)
5: GL (ED3: KX, KS, KW)
6: 1.6i (ED4)
1.6i 4WD (EE5)

Fixed Code

Auxiliary Number

Factory

S: Suzuka Factory

Model Year

1: 1989

Serial Number

SL*: Super Low Gear



Vehicle Identification Number (4-door Hatchback)

JHM EE1 7200S100001

Manufacturer, Make and

Type of vehicle

JHM:HONDA MOTOR CO., LTD.,
JAPAN

HONDA, Passenger car

Line/Body and Engine type

EE1: CIVIC 1400 4-door Hatchback

EE2: CIVIC 1500 4-door Hatchback

EE3: CIVIC 1500 4WD 4-door
Hatchback

EE4: CIVIC 1600 4WD 4-door
Hatchback

Transmission and Body type

7: 5-speed manual/4-door Hatchback
5-speed+SL* manual/
4-door Hatchback

8: 4-speed automatic/4-door
Hatchback

Vehicle Grade

2: GL (except KX, KS)
RTX

5: GL (KX, KS)

6: 1.6i-4WD

Fixed Code

Auxiliary Number

Factory

S: Suzuka Factory

Model Year

1: 1989

Serial Number

SL*: Super Low Gear

Engine Serial Number (except KQ model)

D12B1-12 00001

Engine Type

D12B1: 1.2 l SOHC 1-Carbureted Engine

D13B1: 1.3 l SOHC 1-Carbureted Engine

D14A1: 1.4 l SOHC 2-Carbureted Engine

D15B1: 1.5 l SOHC PGM-FI Engine for
KS-DX, KW-DX models

D15B2: 1.5 l SOHC PGM-FI Engine for
KX, KS-GL, KW-GL models

D15B3: 1.5 l SOHC 1-Carbureted Engine

D16A6: 1.6 l SOHC PGM-FI Engine with
out catalytic converter

D16A7: 1.6 l SOHC PGM-FI Engine with-
out catalytic converter

D16A9: 1.6 l DOHC PGM-FI Engine

Emission Group

12: without catalytic converter
except D16A7 Engine

20: D16A7 Engine without catalytic
converter

27: with catalytic converter except
KW-GL model

28: with catalytic converter for KW-GL model

Serial Number

Engine Serial Number (KQ model)

D15B4-1200001

Engine Type

D15B4: 1.5 l SOHC 2-Carbureted Engine
with catalytic converter

Serial Number

Transmission Number

L3-1000001

Transmission Type

L3: Manual Transmission

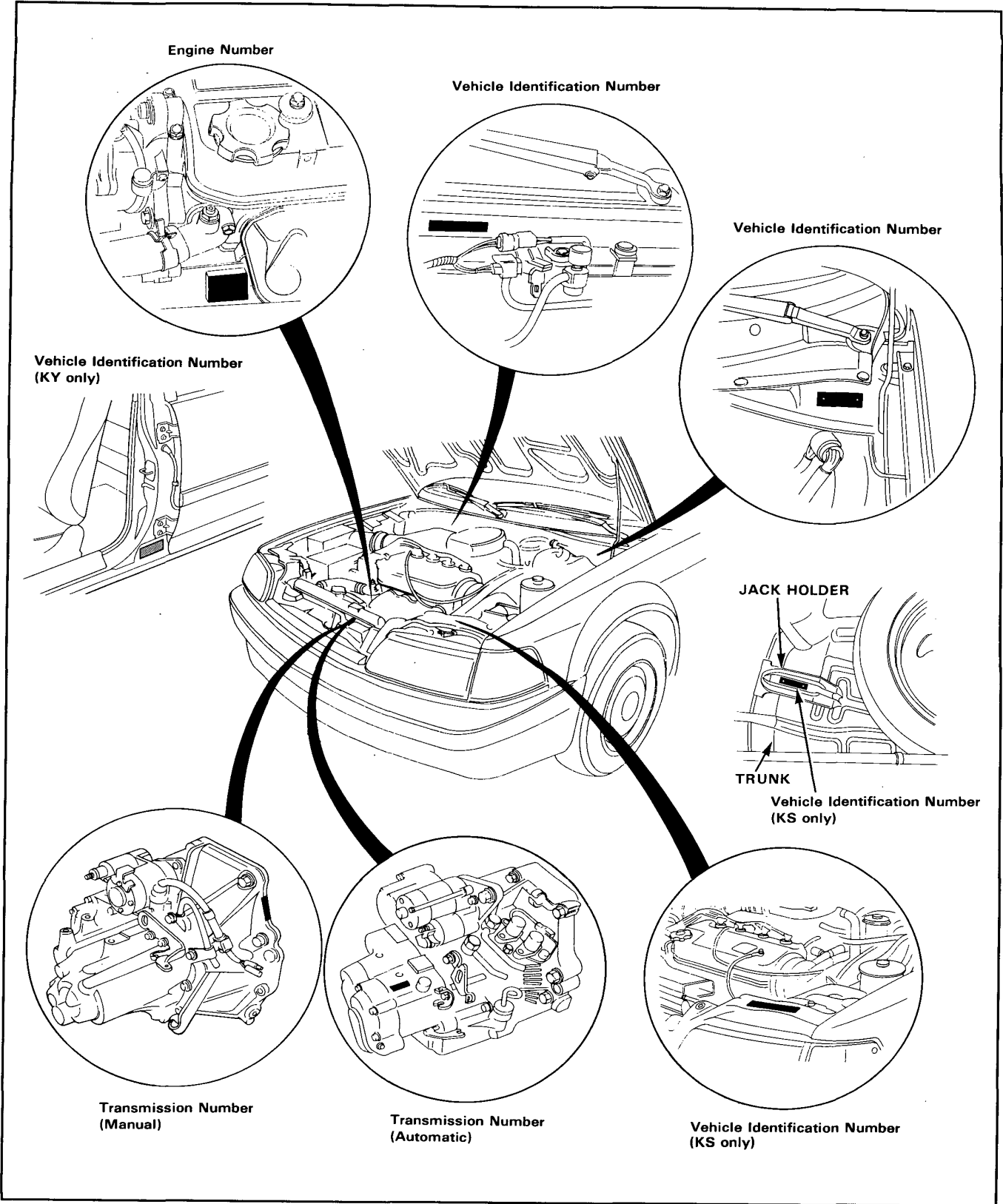
L4: Automatic Transmission

Serial Number

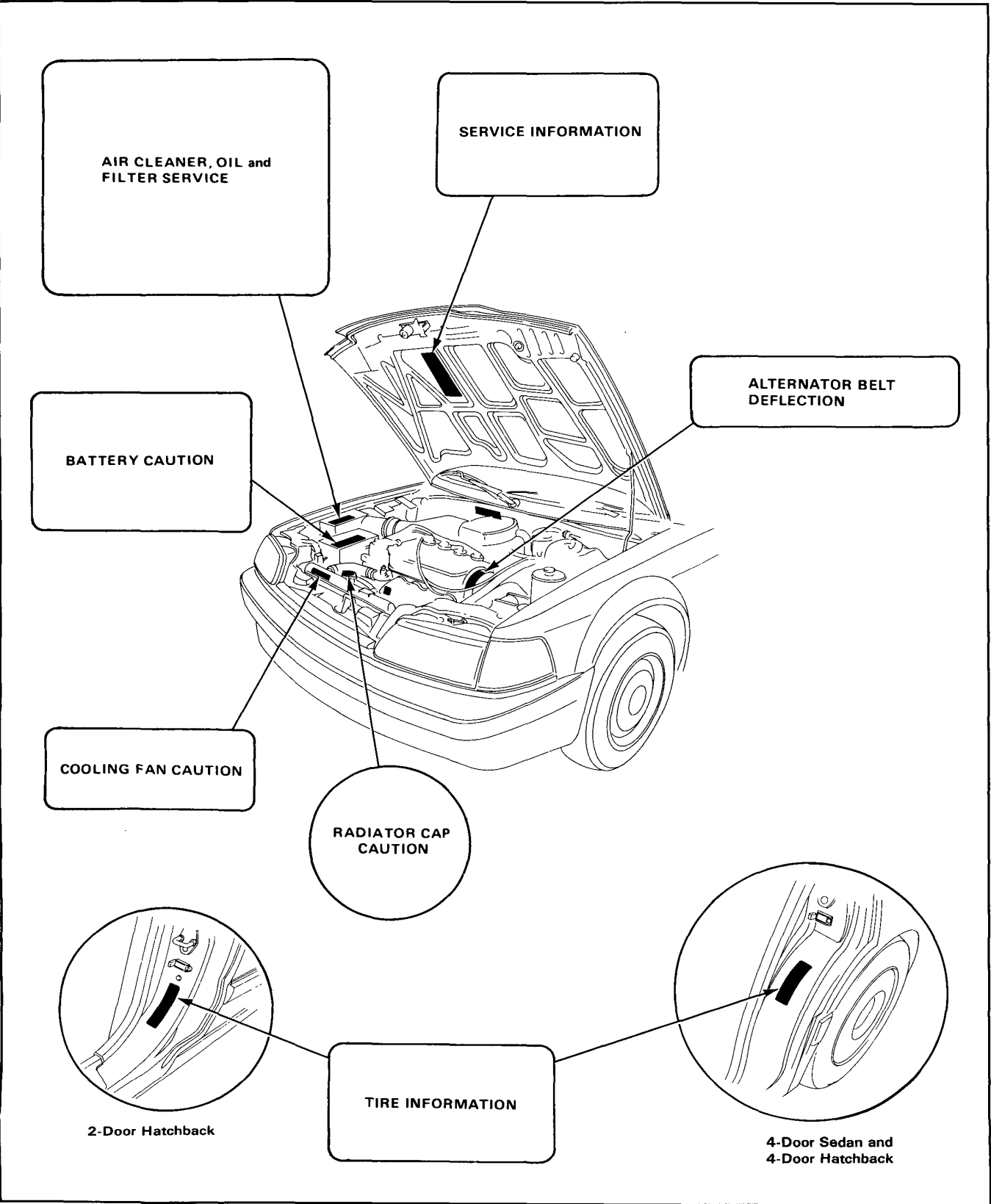
5-speed + SL* transmission: Starting from
NO. 9000001.

SL*: Super Low Gear

Identification Number Locations



Label Locations



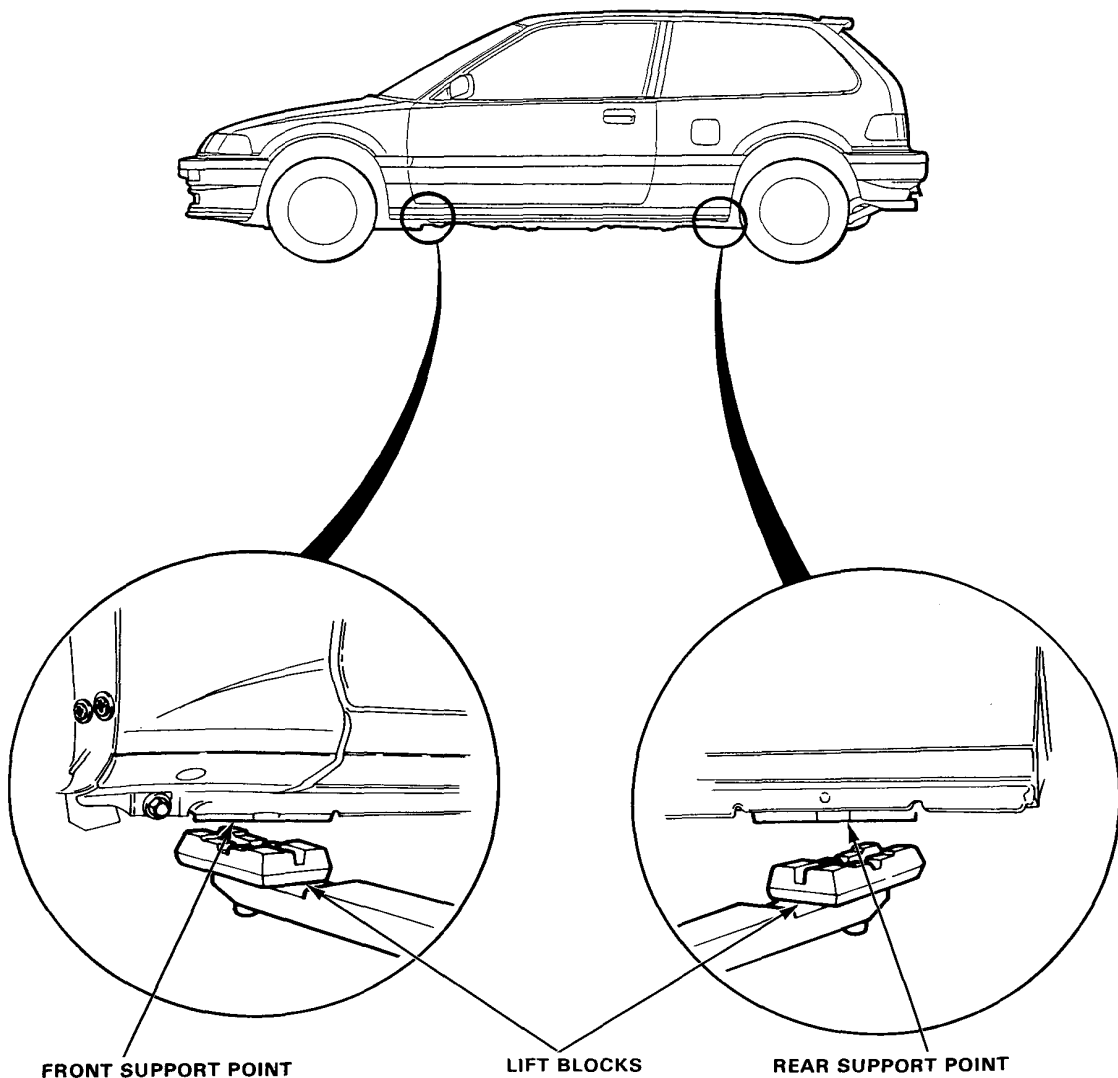
Lift and Support Points

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.





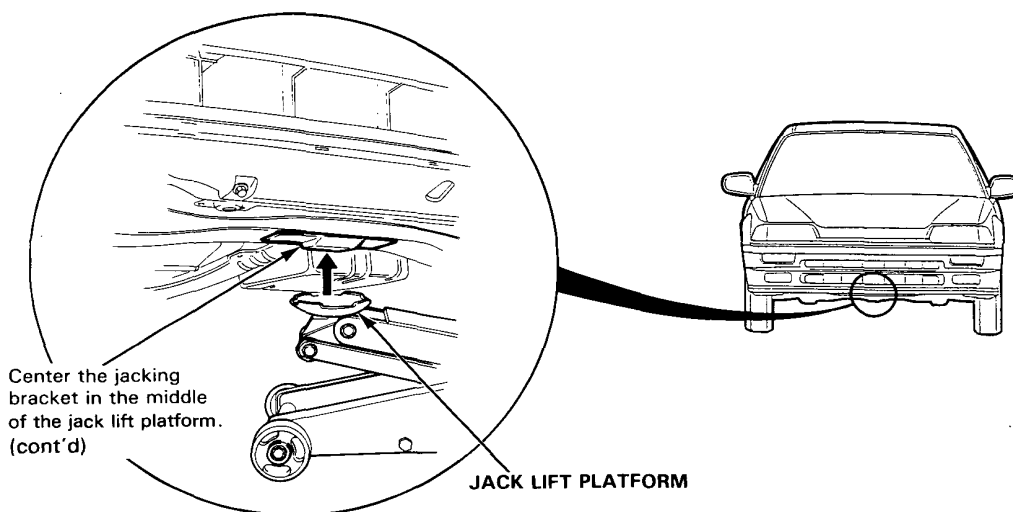
Floor Jack

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 1-7 so the car will be approximately level, then lower the car onto the stands.

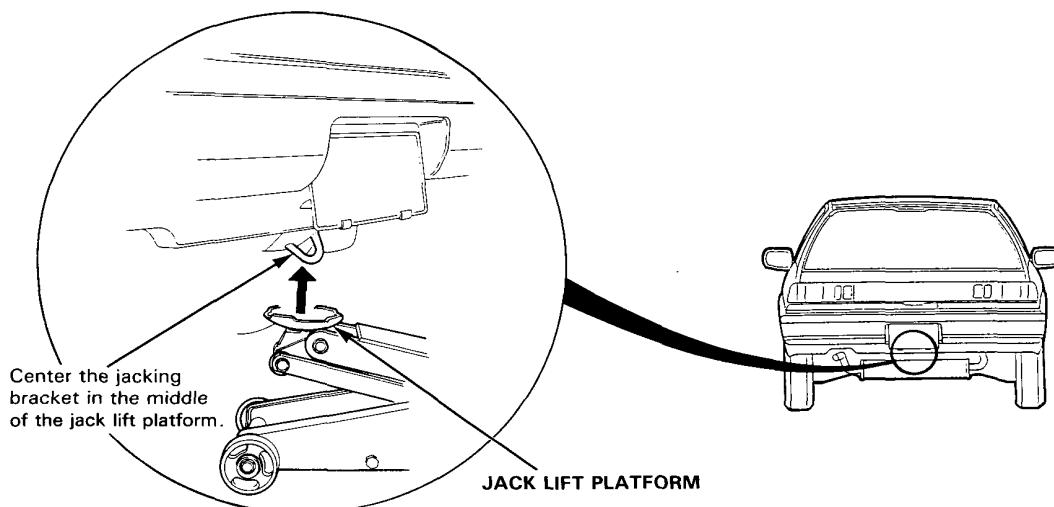
WARNING

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

Front



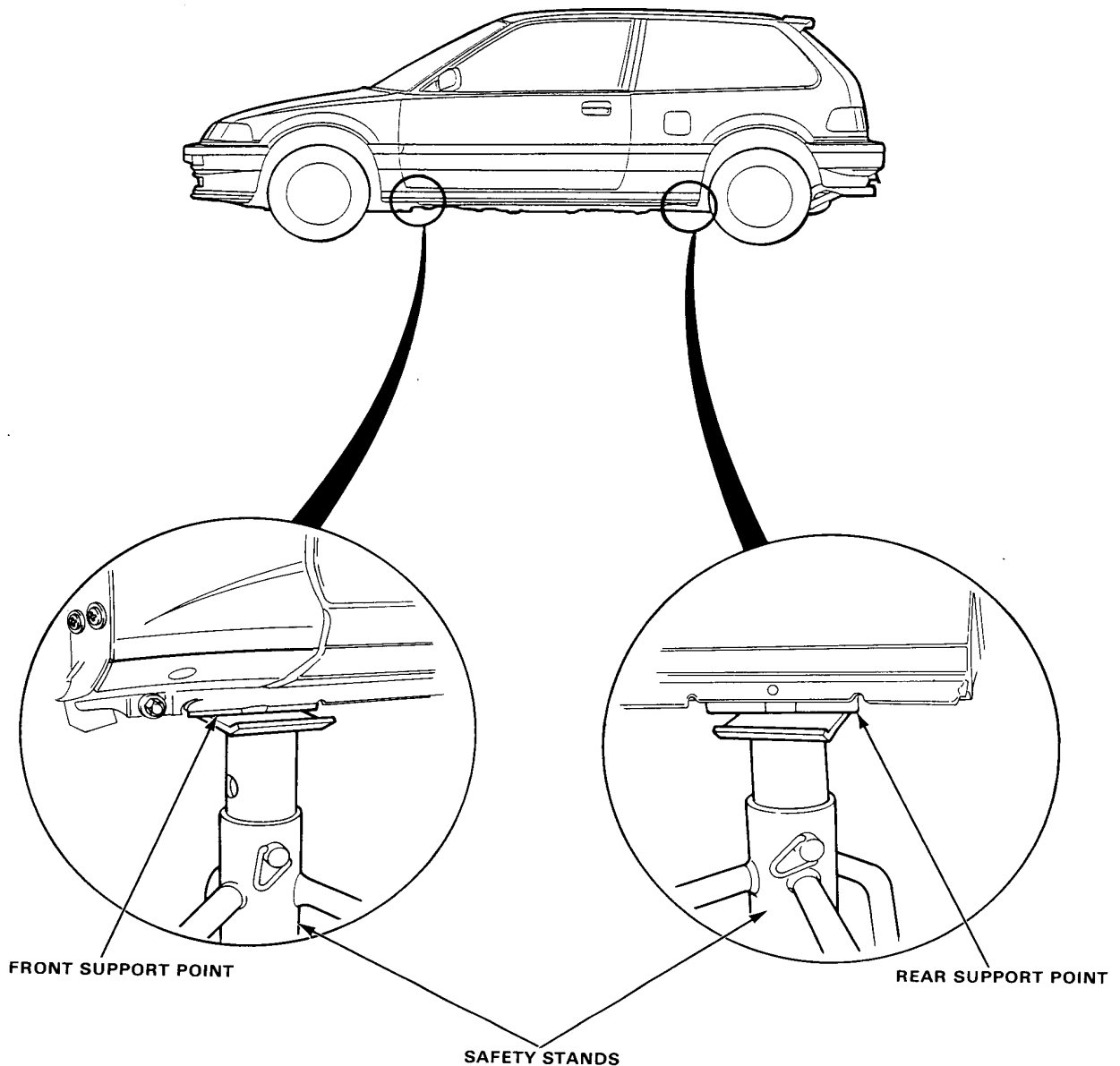
Rear



(cont'd)

Lift and Support Points (cont'd)

Safety Stands



Service Precautions



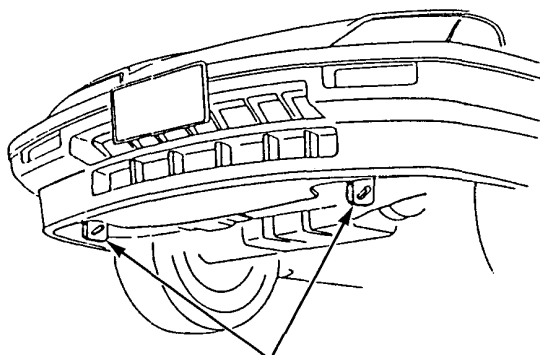
Towing

For 4WD see also "4WD Disengagement,"

If towing is necessary, we recommended the following:
Flat Bed Equipment: Entire car is winched on a flat bed vehicle. This is the best way of towing the car.

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

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



TOWING HOOKS

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

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

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

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

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

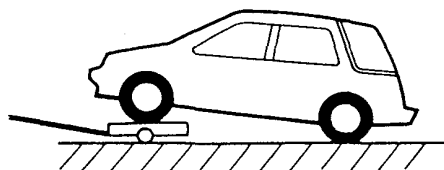
4WD Disengagement

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

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

TOWING:

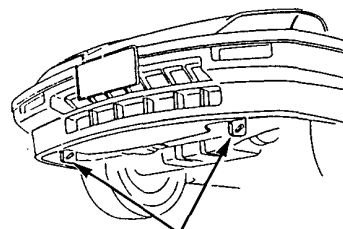
CAUTION: Before towing the car with either the front or rear wheels raised off the ground, place the transmission in neutral and manually disengage the 4WD system to prevent the raised wheels from turning.



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

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

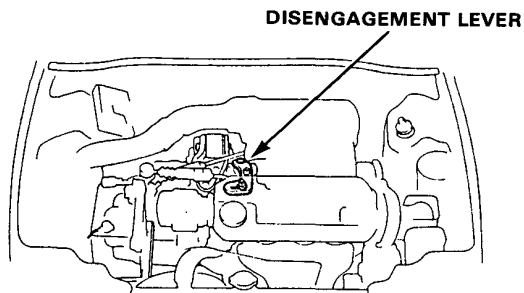
1. Wheels and axle must not be touching the body or frame.
2. Turn the ignition key to the "I" position and make sure the steering wheel turns freely.
3. Shift the transmission to NEUTRAL, and disengage the 4WD.
4. Release the parking brake.
5. Do not exceed 55 kph (35 mph) or tow for distances of more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



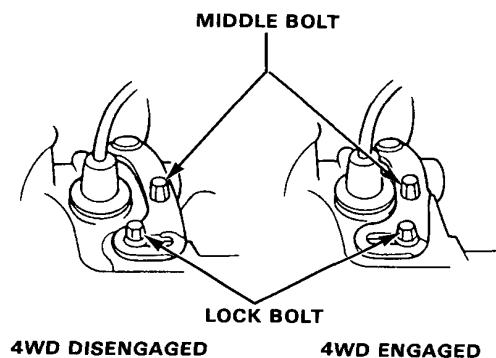
TOWING HOOKS

4WD Disengagement:

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



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



3. Move the lever by turning the 10 mm middle bolt counterclockwise.
4. Confirm that the lever is in the fully disengaged position by rocking the car back and forth while placing slight counterclockwise pressure on the middle bolt. Tighten lock bolt to 12 N·m (1.2 kg-m, 9 lb-ft).
5. After service or towing is complete, return the lever to the normal engaged position.

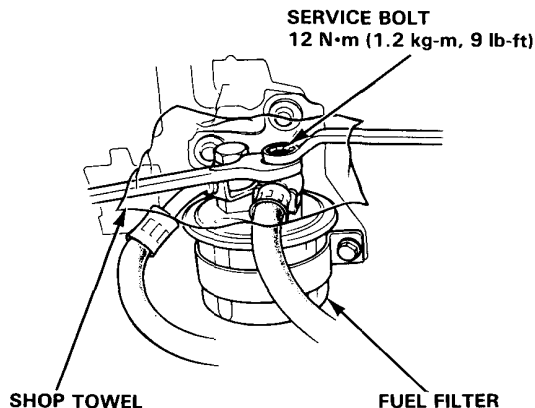
Preparation of Work



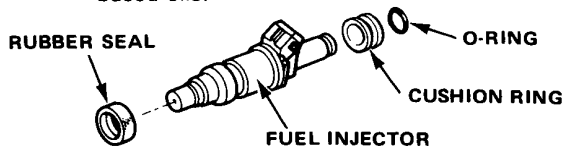
Special Caution Items For This Car

1. Fuel Line Servicing

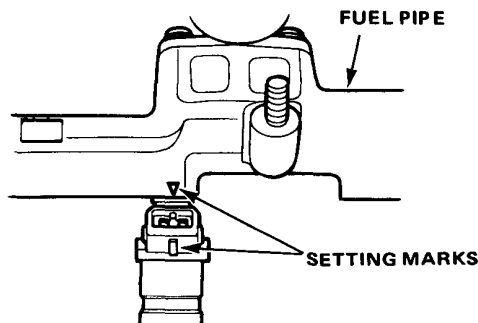
- Relieve fuel pressure by loosening the service bolt provided on the top of the fuel filter before disconnecting a fuel hose or a fuel pipe.



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



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



2. Inspection for fuel leakage

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

3. Installation of an amateur radio for cars equipped with PGM-FI.

Care has been taken for the control units of the Fuel-Injection, Carburetor, and its wiring to prevent erroneous operation from external interference, but erroneous operation of the control unit 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 PGM-FI at least 200 mm (7.9 in.) away from the control units.

The control unit locations:

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

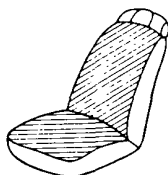
4. Apply liquid gasket to the transmission, oil pump cover, right side cover and water outlet. Use Honda genuine liquid gasket, PART NO. OY740—99986.

- 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.
- After assembly, wait at least 30 minutes before filling the appropriate liquid (engine oil, coolant and other similar fluid).

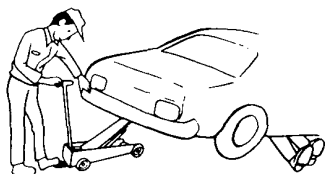
Preparation of Work

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.



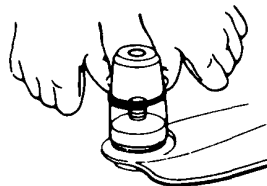
3. Prior to removing or disassembling parts, they must be inspected carefully to isolate the cause for which service is necessary. Observe all safety notes and precautions and follow the proper procedures as described in this manual.



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

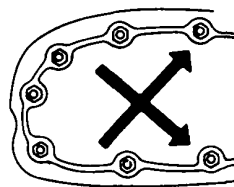


5. Use the special tools when use of such a tool is specified.

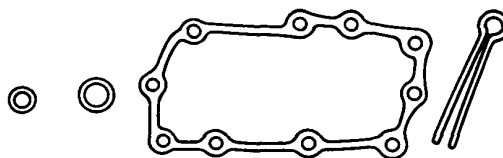


6. Parts must be assembled with the proper torque according to the maintenance standards established.

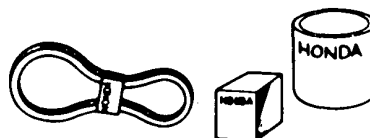
7. When tightening a series bolts or nuts, begin with the center or larger diameter bolts and tighten them in crisscross pattern in two or more steps.



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

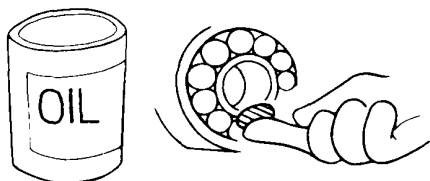


9. Use genuine HONDA parts and lubricants or those equivalent. When parts are to be reused, they must be inspected carefully to make sure they are not damaged or deteriorated and are in good usable condition.





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



11. Brake fluid and hydraulic components

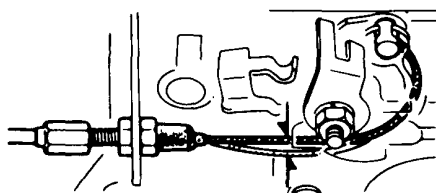
- When replenishing the system, use extreme care prevent dust and dirt from entering the system.
- Do not mix different brands of fluid as they may not be compatible.
- Do not reuse drained brake fluid.
- Brake fluid can cause damage to painted surfaces. Wipe up spilled fluid at once.
- After disconnecting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



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

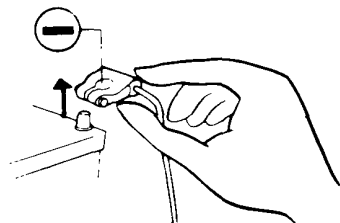
12. Avoid oil or grease getting on rubber parts and tubes, unless, specified.

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

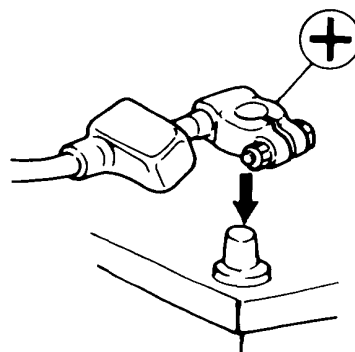


Electrical

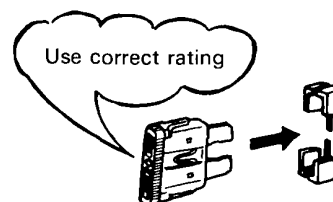
- Before making any repairs on electric wires or parts, disconnect the battery cables from the battery starting with the negative (–) terminal.



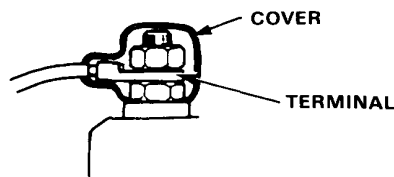
- After making repairs, check each wire or part for proper routing and installation. Also check to see that they are connected properly.
- Always connect the battery positive (+) cable first, then connect the negative (–) cable.



- 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.



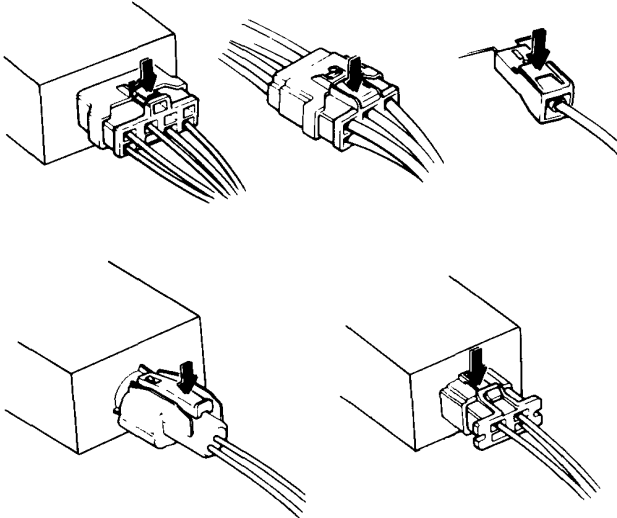
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Preparation of Work

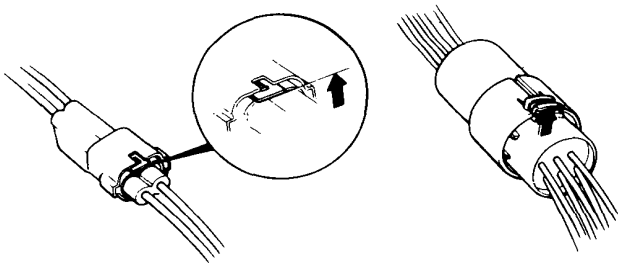
Electrical (cont'd)

- 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.

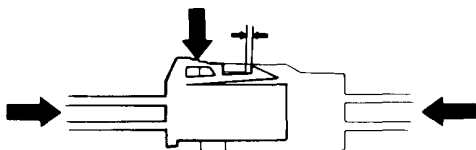
Press to disengage:



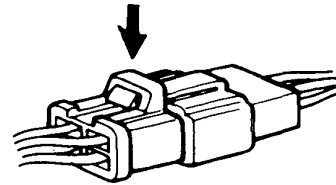
Pull up to disengage:



- 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.



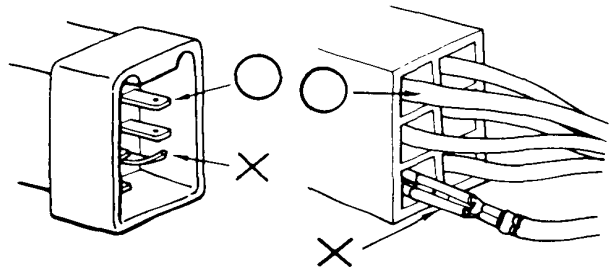
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when re-connecting.



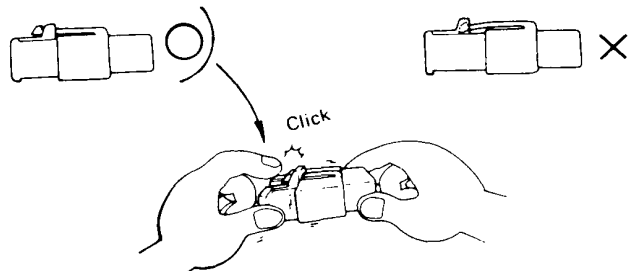
- When disconnecting a coupler, pull it off from the mating coupler by holding on both couplers.
- Never try to disconnect couplers by pulling on their wires.



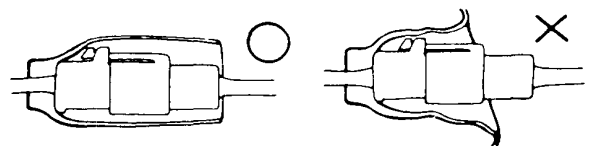
- Before connecting couplers, check to see that the terminals are in place and are not bent or distorted.



- 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.

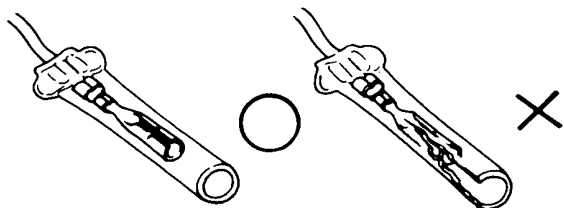


- Place the plastic cover over the mating coupler after reconnecting. Also check that the cover is not distorted.

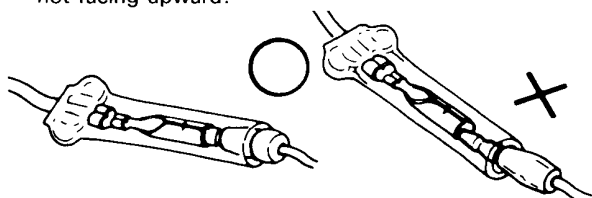




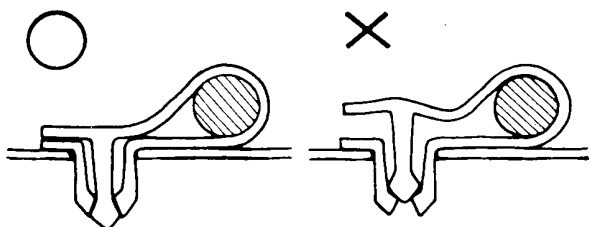
- Before connecting, check each connector cover for damage. Also make sure that the female connector is tight and not loosened from the previous use.



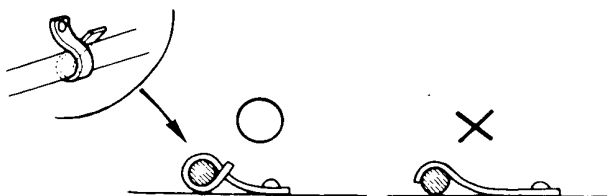
- Insert male connectors into the female connectors fully until they will no longer go.
- Be sure that plastic cover is placed over the connection.
- Position the wires so that the open end of the cover is not facing upward.



- 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.



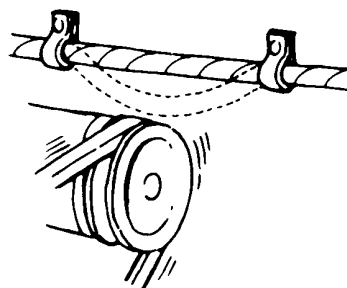
- A loose wire harness or cable can be a hazard to safety. After clamping, check each wire for security in its clamp.



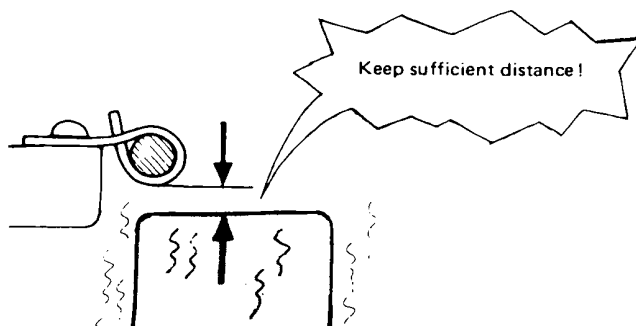
- Do not squeeze wires against the weld when a weld-on clamp is used.



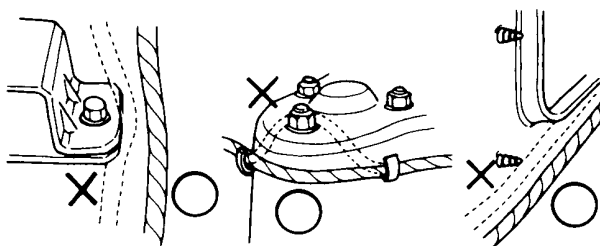
- After clamping, check each harness to be certain that it is not interfering with any moving or sliding parts of the vehicle.
- Keep wire harnesses away from the exhaust pipes and other hot parts.



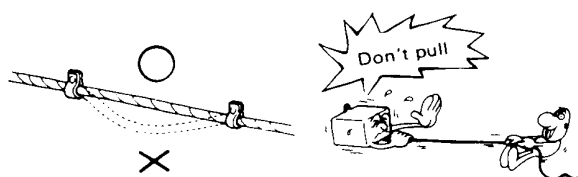
- Always keep a safe distance between wire harnesses and any heated parts.



- 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 slackened excessively.

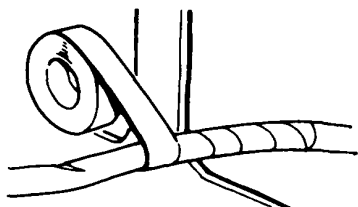


(cont'd)

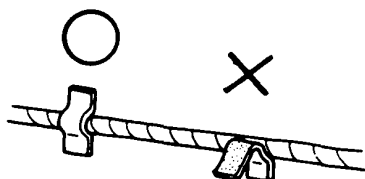
Preparation of Work

Electrical (cont'd)

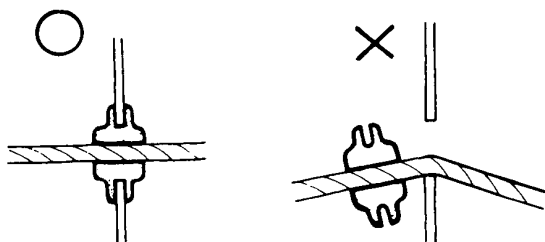
- Protect wires and harnesses with a tape or a tube if they are in contact with a sharp edge or corner.



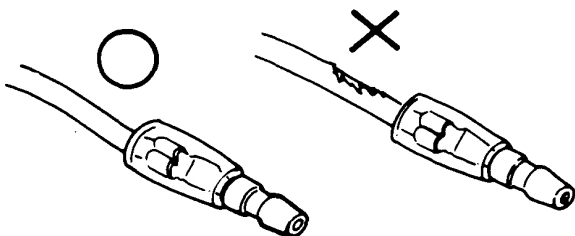
- Clean the attaching surface thoroughly if an adhesive is used. First, wipe with solvent or alcohol in necessary.



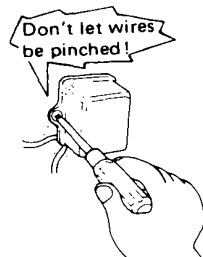
- Seat grommets in their grooves properly.



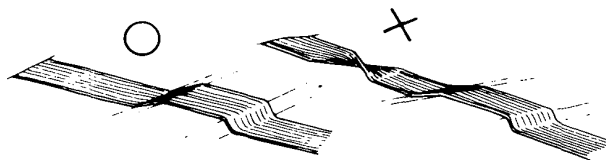
- Do not damage the insulation when connecting a wire.
- Do not use wires or harnesses with a broken insulation. Repair by wrapping with a protective tape or replace with new ones if necessary.



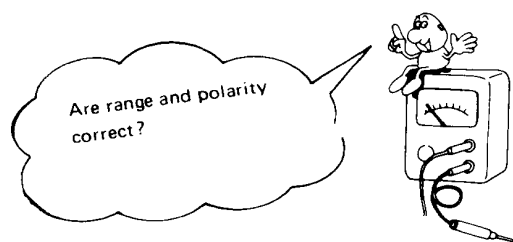
- After installing parts, make sure that wire harnesses are not pinched.



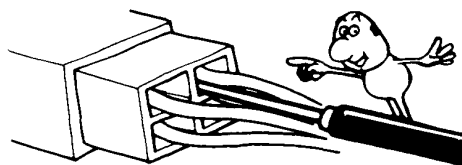
- After routing, check that the wire harnesses are not twisted or kinked.



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



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



- Do not drop parts.



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



Symbol Marks

Abbreviation



The following symbols stand for:



:Apply engine oil.



:Apply brake fluid.



:Apply grease.



:Apply Automatic Transmission Fluid



: Apply Power Steering Fluid.



:Apply or check vacuum.

①, ②, ③,

①, ②, ③,

: Sequence for removal or installation.

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



Special Tools

| | |
|----------------------------------|-----|
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Special Tools

5. Engine

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|----------------------------------|------|--|
| ① | 07GAD-PH70200 | Valve Guide Seal Installer | 1 | For SOHC engine |
| ② | 07HAD-PH70200 | Valve Guide Seal Installer | 1 | |
| ③ | 07HAD-PJ70100 | Oil Seal Driver | 1 | Crankshaft (Clutch side) |
| ④ | 07HAH-PJ70100 | Valve Guide Reamer, 5.5 mm | 1 | |
| ⑤ | 07JAB-0010000 | Crank Pulley Holder Set | 1 | |
| ⑤-1 | 07JAA-0010100 | Socket Wrench 17 mm | (1) | } Component tools |
| ⑤-2 | 07JAB-0010100 | Pulley Holder Attachment | (1) | |
| ⑤-3 | 07JAB-0010200 | Handle | (1) | |
| ⑥ | 07JAZ-SH20100 | PRM Connecting Adaptor | 1 | |
| ⑦ | 07KAK-SJ40100 | Engine Tilt Hanger Set | 1 | |
| ⑧ | 07406-0030000 | Oil Pressure Gauge Adaptor | 1 | For pressure measurement |
| ⑨ | 07742-0010100 | Valve Guide Driver, 5.5 mm | 1 | |
| ⑩ | 07742-0010200 | Valve Guide Driver, 6.6 mm | 1 | For DOHC engine |
| ⑪ | 07743-0020000 | Adj. Valve Guide Driver | 1 | |
| ⑫ | 07749-0010000 | Driver | 1 | 07949-6110000 may also be used |
| ⑬ | 07757-0010001 | Valve Spring Compressor | 1 | 07957-3290001 may also be used. |
| ⑭ | 07912-6110001 | Oil Filter Socket | 1 | Used for Japan-made oil filter |
| ⑮ | — | Oil Filter Wrench | 1 | Used for France-made oil filter |
| | | (Apply from LABINAL S.A.) | | |
| ⑯ | 07924-PD20003 | Ring Gear Holder | 1 | 07924-PD200002 may also be used |
| ⑰ | 07944-6110100 | Pin Driver, 5 mm | 2 | Used to set the camshaft at TDC |
| ⑱ | 07944-6110200 | Pin Driver, 8 mm | 1 | |
| ⑲ | 07947-SB00100 | Oil Seal Driver | 1 | |
| ⑳ | 07948-SB00101 | Driver Attachment | 1 | except 1.6 l crankshaft oil seal (Clutch side) |
| ㉑ | 07948-SB00800 | Driver Attachment | 1 | 1.6 l crankshaft oil seal (Clutch side) |
| ㉒ | 07973-PE00200 | Pilot Collar | 1 | |
| ㉓ | 07973-PE00302 | Adj. Piston Pin Driver | 1 | 07973-PE00301 may also be used |
| ㉔ | 07973-PE00400 | Piston Pin Base Insert | 1 | |
| ㉕ | 07973-SB00100 | Piston Base Head | 1 | |
| ㉖ | 07973-6570002 | Piston Pin Dis/Assembly Tool Set | 1 | |
| ㉖-1 | 07973-6570500 | Piston Base | (1) | } Component tools |
| ㉖-2 | 07973-6570600 | Piston Base Spring | (1) | |
| ㉗ | 07984-6570101 | Valve Guide Reamer, 6.6 mm | 1 | For DOHC engine |

6. Fuel and Emissions

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|-------------------------|------|-------------------|
| ① | 07GMJ-ML80100 | Test Harness | 1 | |
| ② | 07HAZ-PJ70000 | ECU Test Harness A | 1 | |
| ③ | 07HAZ-PJ70100 | ECU Test Harness B | 1 | |
| ④ | 07JAZ-SH20100 | RPM Connecting adaptor | 1 | |
| ⑤ | 07401-0010000 | Float Level Gauge | 1 | |
| ⑥ | 07406-0040001 | Fuel Pressure Gauge Set | 1 | |
| ⑥-1 | 07406-0040100 | Pressure Gauge | (1) | } Component tools |
| ⑥-2 | 07406-0040201 | Hose Assy | (1) | |
| ⑦ | 07614-0050100 | Fuel Line Clip | 1 | |
| ⑧ | 07999-PD6000A | PGM-FI Test Harness | 1 | |

7. Clutch

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|----------------------------|------|--------------------------------|
| ① | 07JAF-PM70100 | Clutch Disc Alignment Tool | 1 | |
| ② | 07746-0010100 | Attachment, 32 x 35 mm | 1 | |
| ③ | 07749-0010000 | Driver | 1 | |
| ④ | 07924-PD20003 | Ring Gear Holder | 1 | 07924-PD20002 may also be used |



8. Manual Transmission (2WD)

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|-------------------------------------|------|---------------------------------|
| ① | 07GAJ-PG20101 | Mainshaft Clearance Inspection Tool | 1 | |
| ② | 07744-0010400 | Pin Driver, 5 mm | 1 | 07944-6110100 may also be used. |
| ③ | 07746-0010300 | Attachment, 42 x 47 mm | 1 | 07974-6110100 may also be used. |
| ④ | 07746-0010400 | Attachment, 52 x 55 mm | 1 | 07947-6340200 may also be used. |
| ⑤ | 07746-0030100 | Driver | 1 | |
| ⑥ | 07746-0030400 | Driver, 35 mm | 1 | |
| ⑦ | 07749-0010000 | Driver | 1 | 07949-6110000 may also be used. |
| ⑧ | 07936-6340000 | Bearing Remover Set | 1 | |
| ⑨ | 07944-SA00000 | Pin Driver 4.0 mm | 1 | |
| ⑩ | 07947-6110500 | Oil Seal Driver | 1 | |
| ⑪ | 07947-6340500 | Oil Seal Driver Attachment E | 1 | |
| ⑫ | 07948-SC20200 | Oil Seal Driver | 1 | |
| ⑬ | 07979-PJ40000 | Magnet Stand Base | 1 | |

8. Manual Transmission (4WD)

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|-------------------------------------|------|--------------------------------|
| ① | 07GAJ-PG20101 | Mainshaft Clearance Inspection Tool | 1 | |
| ② | 07JAC-PH80000 | Adjustable Bearing Remover Set | 1 | |
| ②-1 | 07JAC-PH80100 | Bearing Remover Attachment | (1) | } Component tools |
| ②-2 | 07JAC-PH80200 | Remover Handle Assy | (1) | |
| ②-3 | 07741-0010201 | Remover Weight | (1) | |
| ③ | 07JAD-PH80100 | Oil Seal Driver Attachment | 1 | |
| ④ | 07JAJ-PH80100 | Drive Gear Gauge | 1 | |
| ⑤ | 07JAJ-PH80200 | Driven Gear Dummy Shaft | 1 | |
| ⑥ | 07746-0010200 | Attachment, 37 x 40 mm | 1 | |
| ⑦ | 07746-0010300 | Attachment, 42 x 47 mm | 1 | |
| ⑧ | 07746-0010400 | Attachment, 52 x 55 mm | 1 | |
| ⑨ | 07746-0010500 | Attachment, 62 x 68 mm | 1 | |
| ⑩ | 07746-0010600 | Attachment, 72 x 75 mm | 1 | |
| ⑪ | 07746-0030100 | Driver C | 1 | |
| ⑫ | 07746-0030400 | Driver, 35 mm | 1 | |
| ⑬ | 07749-0010000 | Driver | 1 | 07949-6110000 may also be used |
| ⑭ | 07907-6010300 | Socket Wrench Handle | 1 | |
| ⑮ | 07926-SD90000 | Companion Flange Holder | 1 | |
| ⑯ | 07936-8890101 | Bearing Remover Set | 1 | |
| ⑰ | 07944-SA00000 | Pin Driver, 4.0 mm | 1 | |
| ⑱ | 07946-MB00000 | Bearing Driver | 1 | |
| ⑲ | 07947-SD90100 | Oil Seal Driver Attachment | 1 | |
| ⑳ | 07947-6110500 | Oil Seal Driver Attachment | 1 | |
| ㉑ | 07947-6340500 | Driver Attachment E | 1 | |
| ㉒ | 07948-SC20200 | Oil Seal Driver | 1 | |
| ㉓ | 07960-1870100 | Spring Compressor Attachment | 1 | |
| ㉔ | 07965-SB00200 | Dis/Assembly Tool B | 1 | |
| ㉕ | 07966-SD90000 | Differential Carrier Stand | 1 | |
| ㉖ | 07973-SD90100 | Pinion Dummy Shaft | 1 | |
| ㉗ | 07973-SD90200 | Pinion Height Block | 1 | |
| ㉘ | 07973-SD90300 | Differential Pinion Center Pin | 1 | |
| ㉙ | 07979-PJ40000 | Base Stand | 1 | |

Special Tools

9. Automatic Transmission

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|------------------------------------|------|---|
| ① | 07GAC-PF40210 | Bearing Remover Attachment | 1 | Use in place of 07936-634000 attachment |
| ② | 07GAE-PG40001 | Clutch Spring Compressor Set | 1 | |
| ②-1 | 07GAE-PG40200 | Compressor Bolt Assembly | (1) | |
| ②-2 | 07HAE-PG40200 | Compressor Attachment | (1) | |
| ②-3 | 07960-6120100 | Compressor Attachment | (1) |] Component tools |
| ③ | 07HAC-PK40100 | Transmission Housing Puller | 1 | |
| ④ | 07406-0020003 | Oil Pressure Gauge Set | 1 | |
| ④-1 | 07406-0020201 | Oil Pressure Gauge Hose Attachment | (1) | Component tool |
| ⑤ | 07406-0070000 | Low Pressure Gauge | 1 | |
| ⑥ | 07746-0010500 | Attachment, 62 x 68 mm | 1 | 07947-6340400 may also be used. |
| ⑦ | 07746-0030100 | Inner Handle C | 1 | |
| ⑧ | 07749-0010000 | Driver | 1 | 07949-6110000 may also be used. |
| ⑨ | 07923-6890202 | Mainshaft Holder | 1 | |
| ⑩ | 07936-6340000 | Bearing Remover Set | 1 | |
| ⑪ | 07944-SA00000 | Pin Driver, 4.0 mm | 1 | |
| ⑫ | 07947-6110500 | Driver Attachment E | 1 | |
| ⑬ | 07947-6340201 | Oil Seal Driver | 1 | |
| ⑭ | 07947-6340500 | Driver Attachment E | 1 | |
| ⑮ | 07948-SC20200 | Oil Seal Driver | 1 | |

10. Driveshafts

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|----------------------------|------|---------|
| ① | 07GAD-SE00100 | Oil Seal Driver Attachment | 1 | |
| ② | 07HAB-SD90101 | Companion Flange Holder | 1 | |
| ③ | 07JAD-SH30100 | Oil Seal Driver Attachment | 1 | |
| ④ | 07JAF-SH20400 | Support Base Attachment | 1 | |
| ⑤ | 07746-0010300 | Attachment, 42 x 47 mm | 1 | |
| ⑥ | 07746-0010400 | Attachment, 52 x 55 mm | 1 | |
| ⑦ | 07746-0010500 | Attachment, 62 x 68 mm | 1 | |
| ⑧ | 07746-0030100 | Inner Handle C | 1 | |
| ⑨ | 07746-0040800 | 35 mm Pilot | 1 | |
| ⑩ | 07746-0040900 | 40 mm Pilot | 1 | |
| ⑪ | 07749-0010000 | Driver | 1 | |
| ⑫ | 07926-SD90000 | Companion Flange Holder | 1 | |
| ⑬ | 07947-6340201 | Driver Attachment | 1 | |
| ⑭ | 07947-SD90100 | Oil Seal Driver Attachment | 1 | |
| ⑮ | 07947-SD90200 | Oil Seal Driver Attachment | 1 | |
| ⑯ | 07965-SD90100 | Support Base | 1 | |
| ⑰ | 07965-SD90200 | Support Collar | 1 | |



10. Rear Differential (4WD)

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|-----------------------------|------|---------------------------------|
| ① | 07JAD-PH80100 | Oil Seal Driver Attachment | 1 | 07949-6110000 may also be used. |
| ② | 07746-0010600 | Attachment, 72 x 75 mm | 1 | |
| ③ | 07746-0030100 | Inner Handle C | 1 | |
| ④ | 07749-0010000 | Driver | 1 | |
| ⑤ | 07907-6010300 | Socket Wrench Handle | 1 | |
| ⑥ | 07926-SD90000 | Companion Flange Holder | 1 | |
| ⑦ | 07944-SA00000 | Pin Driver, 4 mm | 1 | |
| ⑧ | 07946-MB00000 | Driver | 1 | |
| ⑨ | 07947-SD90100 | Oil Seal Driver Attachment | 1 | |
| ⑩ | 07947-6110500 | Driver Attachment E | 1 | |
| ⑪ | 07947-6340500 | Bearing Driver Attachment E | 1 | |
| ⑫ | 07948-SC20200 | Oil Seal Driver | 1 | |
| ⑬ | 07965-SB00200 | Dis/Assembly Tool B | 1 | |
| ⑭ | 07973-SD90100 | Dummy Pinion Shaft | 1 | |
| ⑮ | 07973-SD90200 | Pinion Height Block | 1 | |
| ⑯ | 07973-SD90300 | Pinion Center Pin | 1 | |

11. Manual Steering

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|----------------------------------|------|---------------------------------|
| ① | 07916-SA50001 | Steering Gearbox Lock Nut Wrench | 1 | 07916-6920100 may also be used. |
| ② | 07941-6920003 | Ball Joint Remover | 1 | |
| ③ | 07974-SA50800 | Ball Joint Boot Clip Guide B | 1 | |

11. Power Steering

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|----------------------------------|------|---------------------------------|
| ① | 07GAG-SD40000 | P/S Tool Kit | 1 | } Component tools |
| ①-1 | 07GAG-SD40100 | Piston Seal Ring Guide | (1) | |
| ①-2 | 07GAG-SD40200 | Piston Seal Ring Sizing Tool | (1) | |
| ①-3 | 07GAG-SD40300 | Cylinder End Seal Slider | (1) | |
| ①-4 | 07GAG-SD40400 | Sylinder End Seal Guide | (1) | |
| ①-5 | 07GAG-SD40600 | Tool Box | (1) | } Component tools |
| ② | 07GAK-SE00100 | P/S Pressure Adaptor Set | 1 | |
| ②-1* | 07GAK-SE00110 | P/S Joint Adaptor (Pump) | (1) | |
| ②-2* | 07GAK-SE00120 | P/S Joint Adaptor (Hose) | (1) | |
| ③ | 07406-0010200 | P/S Pressure Gauge Set | 1 | |
| ③-1 | 07406-0010300 | Pressure Control Valve | (1) | } Component tools |
| ③-2 | 07406-0010400 | Pressure Gauge | (1) | |
| ④ | 07725-0030000 | Universal Holder | 1 | |
| ⑤ | 07746-0010300 | Attachment, 42 x 47 mm | 1 | |
| ⑥ | 07749-0010000 | Driver | 1 | |
| ⑦ | 07916-SA50001 | Steering Gearbox Lock Nut Wrench | 1 | 07949-6110000 may also be used. |
| ⑧ | 07941-6920003 | Ball Joint Remover | 1 | |
| ⑨ | 07947-6340300 | Driver Attachment | 1 | |
| ⑩ | 07974-SA50600 | Pinion Seal Guide | 1 | |

②-1* and ②-2*: Component tools

Special Tools

12. Suspension

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|---------------------------------------|------|---------------------------------|
| ① | 07GAE-SE00101 | Shock Absorber Spring Compressor | 1 | 07GAE-SE00100 may also be used. |
| ② | 07GAF-SE00200 | Hub Assembly Driver Attachment | 1 | |
| ③ | 07GAF-SE00401 | Front Hub Driver Base | 1 | |
| ④ | 07HGK-0010100 | Wheel Alignment Gauge Attachment | 1 | |
| ⑤ | 07JAF-SH20110 | Hub Dis/Assembly Pilot, 38 mm | 1 | |
| ⑥ | 07JAF-SH20120 | Hub Dis/Assembly Shaft 22.4 x 25.4 mm | 1 | |
| ⑦ | 07JAF-SH20200 | Ball Joint Remover Base | 1 | |
| ⑧ | 07746-0010400 | Attachment, 52 x 55 mm | 1 | |
| ⑨ | 07746-0010600 | Attachment, 72 x 75 mm | 1 | |
| ⑩ | 07749-0010000 | Driver | 1 | |
| ⑪ | 07941-6902223 | Ball Joint Remover | 1 | |
| ⑫ | 07947-6340000 | Driver | 1 | |
| ⑬ | 07965-SA70100 | Hub Dis/Assembly Tool A | 1 | |
| ⑭ | 07965-SB00100 | Ball Joint Remover/Installer | 1 | |
| ⑮ | 07965-SB00200 | Ball Joint Installer Base | 1 | |
| ⑯ | 07965-6340301 | Hub Dis/Assembly Base | 1 | |
| ⑰ | 07965-6920201 | Hub Dis/Assembly Base | 1 | |
| ⑱ | 07965-6920500 | Dis/Assembly Tool E | 1 | |
| ⑲ | 07974-SA50700 | Ball Joint Boot Clip Guide A | 1 | |
| ⑳ | 07974-SA50800 | Ball Joint Boot Clip Guide B | 1 | |

13. Brakes

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|-----------------------------|------|---------------------------------|
| ① | 07GAG-SE00100 | Pushrod Adjustment Gauge | 1 | 07949-6110000 may also be used. |
| ② | 07HAE-SG00100 | Brake Spring Compressor | 1 | |
| ③ | 07404-5790300 | Vacuum Gauge | 1 | |
| ④ | 07406-5790200 | Oil Pressure Gauge | 2 | |
| ⑤ | 07410-5790100 | Pressure Gauge Attachment C | 2 | |
| ⑥ | 07410-5790500 | Tube Joint Adaptor | 1 | |
| ⑦ | 07510-6340101 | Pressure Gauge Joint Pipe | 2 | |
| ⑧ | 07510-6340300 | Vacuum Joint Tube A | 1 | |
| ⑨ | 07747-6890300 | Driver Attachment C | 1 | |
| ⑩ | 07749-0010000 | Driver | 1 | |
| ⑪ | 07914-SA50000 | Snap Ring Pliers | 1 | |
| ⑫ | 07921-0010001 | Flare Nut Wrench | 1 | |



14. Body

| 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 | 07746-0030100 | Inner Handle C | 1 | Pulley installation |
| ② | 07HAF-SF10300 | Seal Seat Remover | 1 | Cover plate removal |
| ③ | 07HAF-SF10400 | Seal Remover/Installer | 1 | Shaft seal removal/installation |

16. Electrical

| Number | Tool Number | Description | Q'ty | Remarks |
|--------|---------------|--------------------|------|---------|
| ① | 07920-SB20000 | Fuel Sender Wrench | 1 | |

Specifications

| | |
|------------------------------------|------|
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| Body Specifications | 3-28 |
| Frame Repair Chart | 3-32 |

specs

Standards and Service Limits

5. Engine/Cylinder Head, Valve Train (SOHC Engine)

Unit: mm (in.)

[illegible]

5. Engine/Cylinder Head, Valve Train (DOHC Engine)

| | MEASUREMENT | | STANDARD (NEW) | SERVICE LIMIT |
|---------------|--|----------------------------------|--|--|
| Compression | 250 min ⁻¹ (rpm) and wide-open throttle | | Nominal Minimum Maximum variation | 1,324 kPa (13.5 kg/cm ² , 192 psi) 932 kPa (9.5 kg/cm ² , 135 psi) 196 kPa (2 kg/cm ² , 28 psi) |
| Cylinder head | Warpage Height | | 131.95—132.05 (5.1949—5.1988) | 0.05 (0.002) |
| Camshaft | End play Oil clearance Runout Cam lobe height | IN EX | 0.05—0.15 (0.002—0.006) 0.050—0.089 (0.002—0.004) 0—0.03 (0—0.001) max. 33.021 (1.3000) 32.382 (1.2749) | 0.5 (0.02) 0.15 (0.006) 0.06 (0.002) — |
| Valve | Valve clearance Valve stem O.D. Stem-to-guide clearance Stem installed height | IN EX IN EX IN EX | 0.12—0.17 (0.005—0.007) 0.14—0.19 (0.006—0.008) 6.58—6.59 (0.2591—0.2595) 6.55—6.56 (0.2579—0.2583) 0.02—0.05 (0.001—0.002) 0.05—0.08 (0.002—0.003) 45.545—46.015 (1.7931—1.8116) 44.735—45.205 (1.7612—1.7797) | — — 6.55 (0.2579) 6.52 (0.2567) 0.08 (0.003) 0.11 (0.005) 46.265 (1.8215) 45.455 (1.7896) |
| Valve seat | Width | IN and EX | 1.25—1.55 (0.049—0.061) | 2.0 (0.08) |
| Valve spring | Free length Squareness | IN EX IN/EX | 47.49 (1.8697) 46.89 (1.8461) — | 46.46 (1.8291) 45.93 (1.8083) 1.66/1.64 (0.065/0.065) |
| Valve guide | I.D. | IN and EX | 6.61—6.63 (0.2602—0.2610) | 6.55 (0.2579) |

5. Engine/Engine Block

| | MEASUREMENT | | STANDARD (NEW) | SERVICE LIMIT |
|----------------|--|-------------------|--|--|
| Cylinder block | Warpage of deck surface Bore diameter Bore taper Reboring limit | | — 75.00—75.02 (2.9528—2.9535) — — | 0.10 (0.004) 75.07 (2.9555) 0.05 (0.002) 0.5 (0.02) |
| Piston | Skirt O.D. At 16 mm (0.63 in) from bottom of skirt Clearance in cylinder Piston-to-ring clearance | Top 2nd | 74.98—74.99 (2.9520—2.9524) 0.01—0.04 (0.0004—0.0016) 0.03—0.06 (0.0012—0.0024) 0.030—0.055 (0.0012—0.0022) | 74.97 (2.9516) 0.05 (0.002) 0.13 (0.005) 0.13 (0.005) |
| Piston ring | Ring end gap | Top 2nd Oil | 0.15—0.30 (0.006—0.012) 0.30—0.45 (0.012—0.018) 0.20—0.80 (0.008—0.031) | 0.6 (0.02) 0.6 (0.02) 0.9 (0.04) |
| Connecting rod | Pin-to-rod interference Large end bore diameter 1.2ℓ, 1.3ℓ, 1.4ℓ 1.5ℓ 1.6ℓ End play installed on crankshaft | | 0.014—0.040 (0.0006—0.0016) Nominal 43.0 (1.69) Nominal 45.0 (1.77) Nominal 48.0 (1.89) 0.15—0.30 (0.006—0.012) | — — — — 0.40 (0.016) |
| Crankshaft | Main journal diameter Taper/out-of-round, main journal Rod journal diameter 1.2ℓ, 1.3ℓ, 1.4ℓ 1.5ℓ 1.6ℓ Taper/out-of-round, rod journal End play Runout | | 44.976—45.000 (1.7707—1.7718) 0.0025 (0.0001) max. 39.976—40.000 (1.5739—1.5748) 41.976—42.000 (1.6526—1.6535) 44.976—45.000 (1.7707—1.7765) 0.0025 (0.0001) max. 0.10—0.35 (0.004—0.014) 0.015 (0.0006) max. | — 0.010 (0.004) — — — 0.010 (0.004) 0.45 (0.018) 0.03 (0.002) |
| Bearings | Main bearing-to-journal oil clearance except 1.6ℓ (No. 1, 5 journals) (No. 2, 3, 4 journals) 1.6ℓ (No. 1, 5 journals) (No. 2, 4 journals) (No. 3 journal) Rod bearing-to-journal oil clearance | | 0.018—0.036 (0.0007—0.0014) 0.024—0.042 (0.0010—0.0017) 0.018—0.036 (0.0007—0.0014) 0.024—0.042 (0.0010—0.0017) 0.030—0.048 (0.0012—0.0019) 0.020—0.038 (0.0008—0.0015) | 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) 0.05 (0.002) |

Standards and Service Limits

5. Engine/Engine Lubrication

Unit: mm (in.)

| | MEASUREMENT | | STANDARD (NEW) | SERVICE LIMIT |
|--------------|---|-------------------------------|---|--|
| Engine oil | Capacity ℓ (U.S.qt., Imp. qt) | SOHC | 4.0 (4.2, 3.5) After engine disassembly 3.5 (3.7, 3.1) After oil change, including oil filter 3.0 (3.2, 2.6) After oil change, without oil filter | |
| | | DOHC | 4.3 (4.5, 3.8) After engine disassembly 3.8 (4.0, 3.3) After oil change, including oil filter 3.3 (3.5, 2.9) After oil change, without oil filter | |
| Oil pump | Displacement | SOHC DOHC | 44 ℓ (11.6 U.S. gal., 9.7 Imp. gal.) 6,250 min ⁻¹ (rpm) 62 ℓ (16.3 U.S. gal., 13.6 Imp. gal.) 6,750 min ⁻¹ (rpm) | |
| | Inner-to-outer rotor radial clearance Pump body-to-rotor radial clearance Pump body-to rotor side clearance | | 0.14 (0.006) 0.10—0.175 (0.004—0.007) 0.03—0.08 (0.001—0.003) | 0.2 (0.008) 0.2 (0.008) 0.15 (0.006) |
| Relief valve | Pressure setting 80°C (176°F) | Idle | 157 kPa (1.6 kg/cm ² , 23 psi) min. | |
| | | 3,000 min ⁻¹ (rpm) | 510 kPa (5.2 kg/cm ² , 74 psi) min. | |

5. Engine/Cooling

| | MEASUREMENT | STANDARD (NEW) |
|--------------|---|---|
| Radiator | Capacity (incl.heater) ℓ (U.S.qt., Imp.qt.) (Includes reservoir tank 0.4 (0.42, 0.35)) | 1.6ℓ DOHC M/T 5.5 (5.8, 4.8) A/T 5.4 (5.7, 4.8) SOHC M/T 5.4 (5.7, 4.8) A/T 5.3 (5.6, 4.7) 1.2ℓ, 1.3ℓ, 1.4ℓ M/T 5.4 (5.7, 4.8) A/T 5.3 (5.6, 4.7) 1.5ℓ PGM-FI (KX, KW-DX) M/T 5.4 (5.7, 4.8) A/T 5.3 (5.6, 4.7) PGM-FI (Others) M/T 5.5 (5.8, 4.8) A/T 5.4 (5.7, 4.8) 1-Carbureted Engine M/T 5.4 (5.7, 4.8) A/T 5.4 (5.7, 4.8) 2-Carbureted Engine M/T 5.5 (5.8, 4.8) A/T 5.4 (5.7, 4.8) |
| Radiator cap | Pressure cap opening pressure | 74—103 kPa (0.75—1.05 kg/cm ² , 11—15 psi) |
| Thermostat | Starts to open Full open Valve lift at full open | 76—80°C (169—176°F) 90°C (194°F) 8 (0.31) min. |
| Water pump | Pulley ratio (crankshaft) Capacity: ℓ per min/at min ⁻¹ (rpm) | SOHC DOHC 1 : 1 85 (22.4 U.S. gal., 18.7 Imp. gal.) 4,000 min ⁻¹ (rpm) 76 (20.0 U.S. gal., 16.7 Imp. gal.) 4,000 min ⁻¹ (rpm) |
| Cooling fan | Fan-to-core clearance Thermoswitch "ON" temperature Thermoswitch "OFF" temperature | 28.0 (1.10) 88.5—91.5°C (191—197°F) Subtract 5±1.5°C (9±2.7°F) from actual "ON" temperature. |

6. Fuel and Emission (PGM-FI)

| | MEASUREMENT | STANDARD (NEW) |
|--------------------|--|--|
| Fuel pump | Delivery pressure Displacement Relief valve opening pressure | 250 kPa (2.55 kg/cm ² , 36psi) 236 cc /minutes in 10 seconds min. 441—588 kPa (4.5—6.0 kg/cm ² , 64—85 psi) |
| Pressure regulator | Pressure | 245—255 kPa (2.5—2.6 kg/cm ² , 36—37 psi) |
| Fuel Tank | Capacity | 45 ℓ (11.9 U.S. gal., 9.9 Imp. U.S.gal.) |
| Fast idle | | M/T 1,000—2,000 min ⁻¹ (rpm) A/T 1,000—2,000 min ⁻¹ (rpm) |
| Idle speed | with headlights and cooling fan off 1.5ℓ 1.6ℓ, with CATA 1.6 SOHC without CATA 1.6ℓ DOHC | 780 ± 50 min ⁻¹ (rpm) 750 ± 50 min ⁻¹ (rpm) 780 ± 50 min ⁻¹ (rpm) 800 ± 50 min ⁻¹ (rpm) |
| Idle CO | With CATA Without CATA | 0.1% Max. 1.0 ± 1.0% |

6. Fuel and Emissions (Carbureted Engine)

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

7. Clutch

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|------------------------------------|---|--|-------------------------------|
| Clutch pedal | Pedal height | | —* |
| | 2D H/B, 4D LHD | 213 (8.39) to floor | — |
| | RHD | 208 (8.19) to floor | — |
| | 4D H/B LHD | 210 (8.27) to floor | — |
| | RHD | 205 (8.07) to floor | — |
| | Stroke | LHD 140—150 (5.5—5.9) RHD 135—145 (5.3—5.7) | — |
| Pedal play Disengagement height | | 15—20 (0.59—0.79) | — |
| | 2D H/B, 4D LHD | 70 (2.76) min. to floor | — |
| | RHD | 62 (2.44) min. to floor | — |
| | 4D H/B LHD | 61 (2.40) min. to floor | — |
| | RHD | 52 (2.05) min. to floor | — |
| Clutch release arm | Free play at arm | 3.0—4.0 (0.12—0.16) | — |
| Flywheel | Clutch surface runout | 0.05 (0.002) max. | 0.15 (0.006) |
| Clutch disc | Rivet head depth | 1.3 (0.05) min. | 0.2 (0.008) |
| | Surface runout | 0.8 (0.03) max. | 1.0 (0.04) |
| | Radial play in spline at circumference (200φ) | 0.1—0.5 (0.004—0.020) | 3.4 (0.134) |
| | Thickness | 8.1—8.8 (0.32—0.35) | 5.7 (0.224) |
| Clutch release bearing holder | I.D. | 2WD 31.00—31.15 (1.220—1.226) 4WD 35.040—35.079 (1.3795—1.3811) | 31.2 (1.228) 35.11 (1.382) |
| | Holder-to-guide sleeve clearance | 2WD 0.050—0.239 (0.002—0.009) 4WD 0.090—0.168 (0.0035—0.0066) | 0.28 (0.011) 0.24 (0.009) |
| | | | |
| | | | |
| Clutch cover | Unevenness of diaphragm spring | 0.8 (0.03) max. | 1.0 (0.04) |

8. Manual Transmission (2WD)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|----------------------------------|---|--|--------------------------------|
| Transmission oil | Capacity ℓ (US.qt., Imp.qt.) | 1.8 (1.9, 1.6) at oil change 1.9 (2.0, 1.7) at assembly | |
| Mainshaft | End play | 0.11—0.18 (0.004—0.007) | Adjust with a shim |
| | Diameter of ball bearing contact area | 25.977—25.990 (1.0227—1.0232) | 25.92 (1.020) |
| | Diameter of third gear contact area | 33.984—34.000 (1.3380—1.3386) | 33.93 (1.336) |
| | Diameter of 4th, 5th gear contact area | 26.980—26.993 (1.0622—1.0627) | 26.93 (1.060) |
| | Diameter of ball bearing contact area | 21.987—22.000 (0.8656—0.8661) | 21.93 (0.863) |
| | Runout | 0.02 (0.0008) max. | 0.05 (0.002) |
| Mainshaft third and fourth gears | I.D. | 39.009—39.025 (1.5358—1.5364) | 39.07 (1.538) |
| | End play | 0.06—0.21 (0.0024—0.0083) | 0.33 (0.013) |
| | Thickness | 0.06—0.19 (0.0024—0.0075) | 0.31 (0.012) |
| | | 3rd 30.22—30.27 (1.1898—1.1917) 4th 30.12—30.17 (1.1858—1.1878) | 30.15 (1.187) 30.05 (1.183) |
| Mainshaft fifth gear | I.D. | 37.009—37.025 (1.4570—1.4577) | 37.07 (1.459) |
| | End play | 0.06—0.19 (0.0024—0.0075) | 0.31 (0.012) |
| | Thickness | 28.42—28.47 (1.1189—1.1209) | 28.35 (1.116) |
| Countershaft | End play | 0.17—0.38 (0.0067—0.0150) | 0.53 (0.021) |
| | Diameter of needle bearing contact area | 30.000—30.015 (1.1811—1.1817) | 29.95 (1.179) |
| | Diameter of ball bearing contact area | 24.980—24.993 (0.9835—0.9840) | 24.93 (0.981) |
| | Diameter of low gear contact area | 35.984—36.000 (1.4167—1.4173) | 35.93 (1.415) |
| | Runout | 0.02 (0.0008) max. | 0.05 (0.002) |
| Countershaft low gear | I.D. | 41.009—41.025 (1.6145—1.6152) | 41.07 (1.617) |
| | End play | 0.03—0.10 (0.0012—0.0039) | 0.22 (0.009) |
| | Thickness | 29.41—29.44 (1.1579—1.1591) | 29.36 (1.156) |

(cont'd)

Standard and Service Limits

8. Manual Transmission (2WD) (cont'd)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|--|---|--|---|
| Countershaft second gear | I.D. End play Thickness | 44.009—44.025 (1.7326—1.7333) 0.03—0.11 (0.0012—0.0043) 29.92—29.97 (1.1780—1.1799) | 44.07 (1.735) 0.23 (0.009) 29.85 (1.175) |
| Spacer collar (Countershaft second gear) | I.D. O.D. Length | 32.975—32.985 (1.2982—1.2986) 38.989—39.000 (1.5350—1.5354) 30.03—30.06 (1.1823—1.1835) | 33.03 (1.300) 38.93 (1.533) 30.01 (1.181) |
| Spacer collar (Mainshaft fourth and fifth gears) | I.D. O.D. Length | 27.002—27.012 (1.0631—1.0635) 33.989—34.000 (1.3381—1.3386) 31.989—32.000 (1.2594—1.2598) 27.43—27.46 (1.0799—1.0811) 23.53—23.56 (0.9264—0.9276) | 27.06 (1.065) 33.93 (1.336) 31.93 (1.257) 27.41 (1.079) 23.51 (0.926) |
| Reverse Idler gear | I.D. Gear-to-reverse gear shaft clearance | 15.016—15.043 (0.5911—0.5922) 0.032—0.077 (0.0013—0.0030) | 15.08 (0.594) 0.14 (0.006) |
| Synchro ring | Ring-to-gear clearance (ring pushed against gear) | 0.73—1.18 (0.029—0.046) | 0.4 (0.016) |
| Shift fork | Shift fork finger thickness Fork-to-synchro sleeve clearance | 6.4—6.5 (0.252—0.255) 0.25—0.45 (0.0098—0.0177) | — 0.8 (0.03) |
| Reverse shift fork | Shift fork paul groove width Fork-to-reverse idler gear clearance Groove width Fork-to-fifth/reverse shift piece pin clearance | 12.7—13.0 (0.500—0.512) 0.5—1.1 (0.020—0.043) 7.05—7.25 (0.278—0.285) 0.05—0.35 (0.002—0.014) | — 1.8 (0.071) — 0.5 (0.02) |
| Shift arm A | Diameter of shift rod contact area Shift arm A-to-shift rod clearance | 13.005—13.130 (0.5120—0.5169) 0.005—0.230 (0.0002—0.0091) | — 0.35 (0.0138) |
| Shift arm B | Diameter of shift arm shaft contact area Shift arm B-to-shift arm shaft clearance Shift arm B-to-shift piece clearance Shift piece diameter of shift fork shaft contact area | 13.973—14.000 (0.5501—0.5512) 0.013—0.070 (0.0005—0.0028) 0.2—0.5 (0.0079—0.0197) 12.9—13.0 (0.5079—0.5118) | — 0.16 (0.0063) 0.62 (0.0244) 12.78 (0.5031) |
| Ring gear | Backlash | 0.070—0.130 (0.0028—0.0051) | 0.18 (0.007) |
| Differential carrier | Pinionshaft bore diameter Carrier-to-pinionshaft clearance Driveshaft bore diameter Carrier-to-driveshaft clearance Carrier-to-intermediate shaft clearance Side clearance | 18.000—18.018 (0.7087—0.7094) 0.017—0.047 (0.0007—0.0019) 26.025—26.045 (1.0246—1.0254) 0.045—0.086 (0.0017—0.0034) 0.075—0.111 (0.0030—0.0044) 0.15 max. | — 0.095 (0.004) — 0.14 (0.006) 0.16 (0.006) |
| Differential pinion gear | Backlash Pinion gear bore diameter Pinion gear-to-pinionshaft clearance | 0.05—0.15 (0.002—0.006) 18.042—18.066 (0.7103—0.7113) 0.059—0.095 (0.0023—0.0037) | Adjust with a washer — 0.15 (0.006) |

8. Manual Transmission (4WD)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|------------------|---|---|--|
| Transmission oil | Capacity ℓ (US. qt., Imp. qt.) | 2.4 (2.5, 2.1) at assembly 2.3 (2.4, 2.0) at oil change | |
| Mainshaft | End play Diameter of needle bearing contact area Diameter of 3rd gear contact area Diameter of 63/28C ball bearing contact area Diameter of 6306/25 ball bearing contact area Runout | 0.08—0.15 (0.0031—0.0059) 27.987—28.000 (1.1018—1.1024) 34.984—35.000 (1.3773—1.3780) 27.977—27.990 (1.100—1.102) 24.987—25.000 (0.9837—0.9843) 0.02 (0.0008) max. | Adjust with a shim 27.93 (1.100) 34.93 (1.375) 27.92 (1.099) 24.93 (0.981) 0.05 (0.002) |
| Main 3rd gear | I.D. End play Thickness | 40.009—40.025 (1.5752—1.5758) 0.06—0.21 (0.002—0.008) 32.42—32.47 (1.276—1.278) | 40.07 (1.578) 0.3 (0.01) 32.3 (1.27) |
| Main 4th gear | I.D. End play Thickness | 40.009—40.025 (1.5752—1.5758) 0.06—0.21 (0.002—0.008) 30.92—30.97 (1.217—1.219) | 40.07 (1.578) 0.3 (0.01) 30.8 (1.21) |
| Main 5th gear | I.D. End play Thickness | 40.009—40.025 (1.5752—1.5758) 0.06—0.21 (0.002—0.008) 30.42—30.47 (1.198—1.200) | 40.07 (1.578) 0.3 (0.01) 30.3 (1.19) |
| Countershaft | End play Diameter of needle bearing contact area Diameter of ball bearing contact area Diameter of SL3 gear contact area Runout | 0.05—0.30 (0.002—0.012) 29.000—29.015 (1.1417—1.1423) 24.987—25.000 (0.9837—0.9843) 30.464—30.480 (1.1994—1.2000) 0.02 (0.0008) max. | 0.5 (0.02) 28.94 (1.139) 24.93 (0.981) 30.41 (1.197) 0.05 (0.002) |
| Counter 1st gear | I.D. End play Thickness | 50.009—50.025 (1.9689—1.9695) 0.03—0.08 (0.001—0.003) 32.95—33.00 (1.297—1.299) | 50.07 (1.971) 0.18 (0.007) 32.83 (1.293) |

8. Manual Transmission (4WD)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|--|--|--|---|
| Counter 2nd gear | I.D. End play Thickness | 50.009–50.025 (1.9689–1.9695) 0.03–0.08 (0.001–0.003) 32.92–32.97 (1.296–1.298) | 50.07 (1.971) 0.18 (0.007) 32.8 (1.29) |
| Main 4th gear & 5th gear distance collar | I.D. O.D. Width | 28.002–28.012 (1.1024–1.1028) 34.989–35.000 (1.3775–1.3780) 26.03–26.08 (1.025–1.027) | 28.06 (1.105) 34.93 (1.375) 26.01 (1.024) |
| Countershaft 2nd gear distance collar | I.D. O.D. Width | 36.48–36.49 (1.436–1.437) 43.989–44.000 (1.7318–1.7323) 28.98–29.05 (1.140–1.144) | 36.54 (1.439) 43.93 (1.730) Adjust with a collar |
| Reverse idle gear | I.D. Gear-to-shaft clearance | 20.016–20.043 (0.7880–0.7890) 0.036–0.084 (0.0014–0.0033) | 20.08 (0.791) 0.14 (0.006) |
| SL 1 shaft | Clearance of needle bearing contact area | 23.984–23.993 (0.9443–0.9446) | 23.93 (0.942) |
| SL 1 gear | I.D. Thickness | 30.000–30.013 (1.1811–1.1816) 62.95–63.00 (2.478–2.480) | 29.94 (1.179) 62.83 (2.474) |
| SL2 shaft | End play Diameter of needle bearing contact area Diameter of ball bearing contact area 62/28 (Clutch housing side) 6204U (Transmission housing side) Runout | 0.07–0.20 (0.0028–0.0079) 22.987–23.000 (0.9050–0.9055) 27.987–28.000 (1.1018–1.1024) 19.987–20.000 (0.7869–0.7874) 0.02 (0.0008) max. | Adjust with a shim 22.93 (0.903) 27.93 (1.100) 19.93 (0.785) 0.05 (0.002) |
| SL2 gear | I.D. End play Thickness | 37.009–37.025 (1.4570–1.4577) 0.03–0.16 (0.001–0.006) 34.42–34.47 (1.355–1.357) | 37.07 (1.459) 0.24 (0.009) 34.3 (1.35) |
| SL3 gear | Diameter of needle bearing contact area Width of needle bearing contact area | 43.984–44.000 (1.7318–1.7323) 31.03–31.08 (1.222–1.224) | 43.93 (1.730) 31.01 (1.221) |
| SL2 gear distance collar | I.D. O.D. Width | 23.000–23.013 (0.9055–0.9060) 31.989–32.000 (1.2594–1.2598) 31.00–31.03 (1.220–1.222) | 23.060 (0.9079) 31.93 (1.257) 30.98 (1.220) |
| Transfer shaft | Diameter of needle bearing contact area Diameter of taper bearing contact area Width of transfer driven gear contact area Width of transfer drive bevel gear contact area Runout | 27.987–28.000 (1.1018–1.1024) 16.989–17.000 (0.6689–0.6693) 45.01–45.05 (1.772–1.774) 35.002–35.018 (1.3780–1.3787) 0.02 (0.0008) max. | 27.93 (1.100) 16.93 (0.6665) 45.17 (1.778) 34.95 (1.376) 0.05 (0.002) |
| Transfer driven gear | I.D. Diameter of needle bearing contact area End play Thickness | 34.009–34.025 (1.3389–1.3396) 54.000–54.015 (2.1260–2.1266) 0.04–0.13 (0.002–0.005) 44.92–44.97 (1.769–1.770) | 34.07 (1.341) 53.94 (2.124) 0.21 (0.008) 44.8 (1.76) |
| Transfer drive bevel gear | I.D. Diameter of taper bearing contact area | 25.000–25.021 (0.9843–0.9851) 35.002–35.018 (1.3780–1.3787) | 25.06 (0.987) 34.95 (1.376) |
| Transfer driven bevel gear | Backlash Diameter of taper bearing contact area Inner driven gear bearing race Outer driven gear bearing race | 0.10–0.15 (0.004–0.006) 35.002–35.018 (1.3780–1.3787) 27.987–28.000 (1.1018–1.1024) | Adjust with a shim 34.95 (1.376) 27.93 (1.100) |
| Blocking ring | Ring-to-gear clearance | 0.85–1.1 (0.033–0.043) | 0.4 (0.02) |
| 1–2 shift fork & 3–4 shift fork | Synchro sleeve groove width Shift fork-to-synchro sleeve clearance Thrust Radial Forkshaft-to-shift fork clearance | 7.95–8.05 (0.313–0.317) 0.45–0.65 (0.018–0.026) 0.05–0.45 (0.002–0.018) 0.040–0.138 (0.0016–0.0054) | — 1.0 (0.04) 0.8 (0.03) — |
| 5th shift fork | Synchro sleeve groove width Shift fork-to-synchro sleeve clearance Thrust Radial Fork shaft-to-shift fork clearance 5–R shift fork shaft 1–2 shift fork shaft | 5.75–5.85 (0.226–0.230) 0.25–0.45 (0.010–0.018) 0.05–0.45 (0.002–0.018) 0.005–0.070 (0.0002–0.0028) 0.440–0.670 (0.0173–0.0264) | — 0.8 (0.03) 0.8 (0.03) — — |
| Reverse shift fork | Nail width Shift fork-to-reverse idle gear clearance L-groove width Shift fork-to-5-R shift piece clearance | 13.0–13.3 (0.51–0.52) 0.5–1.1 (0.02–0.04) 7.05–7.25 (0.278–0.285) 0.05–0.35 (0.002–0.014) | — 1.8 (0.07) — 0.5 (0.02) |

(cont'd)

Standard and Service Limits

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

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|--------------------------|--|---|---|
| Shift arm A | Diameter of shift piece contact area Shift arm-to-shift piece clearance Shift arm-to-interlock clearance I.D. Shift arm-to-shaft clearance | 12.9—13.0 (0.508—0.512) 0.2—0.5 (0.01—0.02) 16.000—16.068 (0.6299—0.6326) 0.011—0.092 (0.0004—0.0036) | — 0.7 (0.03) — — |
| Shift arm | Diameter of shift arm A contact area Shift arm-to-shift arm A clearance | 11.9—12.0 (0.469—0.472) 0.05—0.25 (0.002—0.010) | — 0.5 (0.02) |
| Select arm | Diameter of shift arm A contact area Select arm-to-shift arm A clearance | 7.95—8.00 (0.313—0.315) 0.10—0.25 (0.004—0.010) | — 0.5 (0.02) |
| SL shift fork | Synchro sleeve groove width Shift fork-to-synchro sleeve clearance Thrust Radial | 5.75—5.85 (0.226—0.230) 0.25—0.45 (0.010—0.018) 0.05—0.45 (0.002—0.018) | — 0.8 (0.03) 0.8 (0.03) |
| SL shift piece A | Shift piece-to-fork shaft clearance Diameter of SL shift lever contact area Shift piece-to-SL shift lever clearance | 0.040—0.138 (0.0016—0.0054) 10.1—10.2 (0.398—0.402) 0.1—0.3 (0.004—0.012) | — — — |
| SL shift piece B | Diameter of SL shift lever contact area Shift piece-to-SL shift lever clearance | 7.9—8.0 (0.311—0.315) 0.05—0.25 (0.002—0.010) | — 0.5 (0.02) |
| Selector fork | Sleeve groove width Fork-to-sleeve clearance Thrust Radial | 8.45—8.55 (0.333—0.337) 0.45—0.65 (0.018—0.026) 0.2—1.1 (0.01—0.04) | — 1.0 (0.04) 1.5 (0.06) |
| Ring gear | Backlash | 0.071—0.129 (0.0028—0.0051) | — |
| Differential carrier | Pinion shaft bore diameter Carrier-to-pinion shaft clearance Driveshaft bore diameter Carrier-to-driveshaft clearance Ball bearing bore diameter | 18.000—18.018 (0.7087—0.7094) 0.016—0.052 (0.0006—0.0020) 28.005—28.025 (1.1026—1.1033) 0.025—0.066 (0.0010—0.0026) 40.002—40.018 (1.5749—1.5755) | — 0.12 (0.005) — 0.12 (0.005) — |
| Differential pinion gear | Backlash Pinion gear bore diameter Pinion gear-to-pinion shaft clearance | 0.05—0.15 (0.002—0.006) 18.042—18.066 (0.710—0.713) 0.057—0.095 (0.0022—0.0037) | Adjust with a washer — 0.15 (0.006) |

Rear Differential (4WD)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|-------------------------------|--|---|--|
| Differential carrier assembly | Oil capacity Replace Disassemble | 0.65 ℓ (0.69US. qt., 0.57Imp. qt) 0.70 ℓ (0.74US. qt., 0.62Imp. qt) | — — |
| Differential carrier | Diameter of taper bearing contact area Front drive pinion bearing Rear drive pinion bearing Side bearing | 57.979—58.009 (2.2826—2.2838) 71.979—72.009 (2.8338—2.8350) 68.000—68.030 (2.6772—2.6783) | 58.06 (2.286) 72.06 (2.837) 68.08 (2.680) |
| Differential case | Diameter of diff. pinion shaft contact area Case-to-diff. pinion shaft Diameter of drive shaft contact area Case-to-drive shaft clearance Diameter of taper bearing contact area | 18.000—18.018 (0.7087—0.7094) 0.016—0.052 (0.0006—0.0020) 26.005—26.025 (1.0236—1.0246) 0.025—0.066 (0.0010—0.0026) 40.002—40.018 (1.5749—1.5755) | — 0.1 (0.004) — 0.12 (0.005) 39.95 (1.573) |
| Differential pinion gear | Backlash I.D. Gear-to-pinion shaft clearance | 0.05—0.15 (0.002—0.006) 18.042—18.066 (0.7103—0.7113) 0.059—0.095 (0.0022—0.0037) | Adjust with a washer — 0.15 (0.006) |
| Hypoid drive pinion gear | Backlash Diameter of taper bearing contact area Front pinion bearing Rear pinion bearing | 0.11—0.16 (0.004—0.006) 27.987—28.000 (1.1018—1.1024) 30.002—30.018 (1.1812—1.1818) | Adjust with a shim 27.93 (1.100) 29.95 (1.179) |

Automatic Transmission

| | MEASUREMENT | | STANDARD (NEW) | SERVICE LIMIT |
|--------------------|--|--|---|---|
| Transmission oil | Capacity ℓ (U.S. qt., Imp. qt.) | | 2.4 (2.5, 2.1) at oil change 5.4 (5.7, 4.8) at assembly | |
| Hydraulic pressure | Line pressure at 2,000 min ⁻¹ (rpm) | 1.2 ℓ others | 735—785 kPa (7.5—8.0 kg/cm ² , 107—114 psi) 785—834 kPa (8.0—8.5 kg/cm ² , 114—121 psi) | 686 kPa (7.0 kg/cm ² , 100 psi) 736 kPa (7.5 kg/cm ² , 107 psi) |
| | 2nd, 3rd, 4th clutch pressure at 2,000 rpm in ② and ③ | | 412 kPa (4.2 kg/cm ² , 60 psi) Throttle control lever full closed 785—834 kPa (8.0—8.5 kg/cm ² , 114—121 psi) Throttle control lever opened 2/8 or more | 363 kPa (3.7 kg/cm ² , 53 psi) (closed) 736 kPa (7.5 kg/cm ² , 107 psi) (2/8 opened) |
| | 2nd clutch pressure at 2,000 min ⁻¹ (rpm) in ② | 1.2 ℓ | 735—785 kPa (7.5—8.0 kg/cm ² , 107—114 psi) | 686 kPa (7.0 kg/cm ² , 100 psi) |
| | 1st clutch pressure at 2,000 min ⁻¹ (rpm) | others | 785—834 kPa (8.0—8.5 kg/cm ² , 114—121 psi) | 736 kPa (7.5 kg/cm ² , 107 psi) |
| | Governor pressure at 60 km/h (37.5 mph) | 1.5 ℓ PGM-FI others | 206—216 kPa (2.10—2.20 kg/cm ² , 30—31 psi) 151—162 kPa (1.54—1.64 kg/cm ² , 22—23 psi) | 201 kPa (2.05 kg/cm ² , 29 psi) 146 kPa (1.49 kg/cm ² , 21 psi) |
| | Throttle pressure B | Full closed Full opened 1.2 ℓ others | 0 735—785 kPa (7.5—8.0 kg/cm ² , 107—114 psi) 785—834 kPa (8.0—8.5 kg/cm ² , 114—121 psi) | — 686 kPa (7.0 kg/cm ² , 100 psi) 736 kPa (7.5 kg/cm ² , 107 psi) |
| | Throttle pressure A | Full closed Full opened 1.4 ℓ KG (4D, 4D H/B) others | 0—4.9 kPa (0—0.05 kg/cm ² , 0—0.7 psi) 456—471 (4.65—4.8 kg/cm ² , 66—68 psi) 505—520 kPa (5.15—5.30 kg/cm ² , 73—75 psi) | — 451 kPa (4.6 kg/cm ² , 65 psi) 500 kPa (5.1 kg/cm ² , 73 psi) |

(cont'd)

Standard and Service Limits

9. Automatic Transmission (cont'd)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|--------------|---|---|----------------------------|
| Stall speed | | 2,300–2,900 min ⁻¹ (rpm) | — |
| Clutch | Clutch initial clearance | 1st 0.65–0.85 (0.026–0.033) 2nd 0.65–0.85 (0.026–0.033) 3rd, 4th 0.40–0.60 (0.016–0.024) | — — — |
| | Clutch return spring free length | 1st 31.0 (1.22) Except 1st 30.5 (1.20) | 29.0 (1.14) 28.5 (1.12) |
| | Clutch disc thickness | 1.88–2.00 (0.074–0.079) | Until grooves worn out |
| | Clutch plate thickness | 1st 1.55–1.65 (0.061–0.065) | Discoloration |
| | Clutch plate thickness | Except 1st 1.95–2.05 (0.077–0.079) | |
| | Clutch end plate thickness | Mark 1 2.3–2.4 (0.091–0.094) | |
| | (1.6ℓ, 1.5ℓ PGM-FI and | Mark 2 2.4–2.5 (0.094–0.098) | |
| | 1.5ℓ 2-Carbureted engine) | Mark 3 2.5–2.6 (0.098–0.102) | |
| | | Mark 4 2.6–2.7 (0.102–0.106) | |
| | | Mark 5 2.7–2.8 (0.106–0.110) | |
| | | Mark 6 2.8–2.9 (0.110–0.114) | |
| | | Mark 7 2.9–3.0 (0.114–0.118) | |
| | | Mark 8 3.0–3.1 (0.118–0.122) | |
| | | Mark 9 3.1–3.2 (0.122–0.126) | |
| | | Mark 10 3.2–3.3 (0.126–0.130) | |
| | | Mark 11 2.0–2.1 (0.079–0.083) | |
| | | Mark 12 2.1–2.2 (0.083–0.087) | |
| | | Mark 13 2.2–2.3 (0.087–0.091) | |
| | Clutch end plate thickness | Mark 1 2.2–2.3 (0.087–0.091) | |
| | (1.2ℓ, 1.3ℓ, 1.4ℓ | Mark 2 2.5–2.6 (0.098–0.102) | |
| | and 1.5ℓ 1-Carbureted | Mark 3 2.8–2.9 (0.110–0.114) | |
| | engine) | Mark 4 3.1–3.2 (0.122–0.126) | |
| | | Mark 5 3.4–3.5 (0.134–0.138) | |
| | | Mark 11 2.05–2.15 (0.081–0.085) | |
| | | Mark 12 2.35–2.45 (0.093–0.096) | |
| | | Mark 13 2.65–2.75 (0.104–0.108) | |
| | | Mark 14 2.95–3.05 (0.116–0.120) | |
| | | Mark 15 3.25–3.35 (0.128–0.132) | Discoloration |
| Transmission | Diameter of needle bearing contact area on main and stator shaft | 19.980–19.993 (0.7866–0.7871) | Wear or damage |
| | Diameter of needle bearing contact area on mainshaft 2nd gear | 35.975–35.991 (1.4163–1.4169) | |
| | Diameter of needle bearing contact area on mainshaft 4th gear collar | 31.975–31.991 (1.2588–1.2594) | |
| | Diameter of needle bearing contact area on mainshaft 1st gear collar | 27.975–27.995 (1.1014–1.1022) | |
| | Diameter of needle bearing contact area on countershaft (L side) | 36.004–36.017 (1.4175–1.4180) | |
| | Diameter of needle bearing contact area on countershaft 3rd gear | 31.975–31.991 (1.2589–1.2595) | |
| | Diameter of needle bearing contact area on countershaft 4th gear | 27.980–27.993 (1.1016–1.1021) | |
| | Diameter of needle bearing contact area on countershaft reverse gear collar | 29.980–29.993 (1.1803–1.1808) | |
| | Diameter of needle bearing contact area on countershaft 1st gear collar | 29.980–29.993 (1.1803–1.1808) | |
| | Diameter of needle bearing contact area on reverse idle gear | 13.990–14.000 (0.5508–0.5512) | |
| | Mainshaft 2nd gear I.D. | 41.000–41.016 (1.6142–1.6148) | Wear or damage |
| | Mainshaft 1st gear I.D. | 33.000–33.016 (1.2992–1.2998) | |
| | Mainshaft 4th gear I.D. | 38.000–38.016 (1.4961–1.4967) | |
| | Countershaft 4th gear I.D. | 33.000–33.016 (1.2992–1.2998) | |
| | Countershaft 3rd gear I.D. | 38.000–38.016 (1.4961–1.4967) | |
| | Countershaft 1st gear I.D. | 35.000–35.016 (1.3780–1.3786) | |
| | Countershaft reverse gear I.D. | 36.000–36.016 (1.4173–1.4179) | |
| | Reverse idle gear I.D. | 18.007–18.020 (0.7089–0.7094) | |
| | Reverse idler shaft holder I.D. | 14.416–14.434 (0.5676–0.5683) | |
| | Mainshaft 4th gear end play | 0.10–0.22 (0.0039–0.0087) | |
| | Mainshaft 2nd gear end play | 0.07–0.15 (0.0028–0.0059) | Wear or damage |
| | Mainshaft 1st gear end play | 0.08–0.24 (0.0031–0.0094) | |
| | Countershaft 4th gear end play | 0.07–0.15 (0.0028–0.0059) | |
| | Countershaft 3rd gear end play | 0.07–0.15 (0.0028–0.0059) | |
| | Countershaft 1st gear end play | 0.10–0.45 (0.0039–0.0177) | |
| | Reverse idler gear end play | 0.05–0.18 (0.0020–0.0071) | |
| | Countershaft reverse gear play | 0.10–0.45 (0.0039–0.0177) | |
| | Selector hub O.D. | 51.87–51.90 (2.0421–2.0433) | |

(cont'd)

9. Automatic Transmission (cont'd)

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|---|---|--|----------------------|
| Transmission | Thrust washer thickness | | |
| | Mainshaft 2nd gear A | 3.47—3.50 (0.1366—0.1378) | Wear or damage |
| | B | 3.52—3.55 (0.1386—0.1398) | |
| | C | 3.57—3.60 (0.1406—0.1417) | |
| | D | 3.62—3.65 (0.1425—0.1437) | |
| | E | 3.67—3.70 (0.1445—0.1457) | |
| | F | 3.72—3.75 (0.1465—0.1476) | |
| | G | 3.77—3.80 (0.1484—0.1496) | |
| | H | 3.82—3.85 (0.1504—0.1516) | |
| | I | 3.87—3.90 (0.1524—0.1535) | |
| | Mainshaft L side bearing | 2.95—3.05 (0.1161—0.1201) | |
| | Mainshaft 4th gear | 4.45—4.55 (0.1752—0.1791) | Wear or damage |
| | Mainshaft R side 1st gear | 2.43—2.50 (0.0957—0.0984) | |
| | Mainshaft L side 1st gear | 1.45—1.50 (0.0571—0.0591) | |
| | Countershaft 3rd gear A | 2.97—3.00 (0.1169—0.1181) | |
| | B | 3.02—3.05 (0.1189—0.1201) | |
| | C | 3.07—3.10 (0.1209—0.1220) | |
| | D | 3.12—3.15 (0.1228—0.1240) | |
| | E | 3.17—3.20 (0.1248—0.1260) | |
| | F | 3.22—3.25 (0.1268—0.1280) | |
| | G | 3.27—3.30 (0.1287—0.1299) | |
| | H | 3.32—3.35 (0.1307—0.1319) | |
| | I | 3.37—3.40 (0.1327—0.1339) | |
| | Countershaft distance collar length | 38.97—39.00 (1.5342—1.5354) | Wear or damage |
| | | 39.02—39.05 (1.5362—1.5374) | |
| | | 39.07—39.10 (1.5382—1.5394) | |
| | | 39.12—39.15 (1.5402—1.5413) | |
| | | 39.17—39.20 (1.5421—1.5433) | |
| | | 39.22—39.25 (1.5441—1.5453) | |
| | | 39.27—39.30 (1.5461—1.5472) | |
| | | 40.00—40.05 (1.5748—1.5768) | |
| | | 25.00—25.15 (0.9843—0.9902) | |
| | Mainshaft 4th gear collar length | 2.5—2.6 (0.098—0.102) | |
| | Mainshaft 1st gear collar length | 14.50—14.55 (0.5709—0.5728) | Wear or damage |
| | Countershaft reverse gear collar thickness | 2.45—2.55 (0.0965—0.1004) | Wear or damage |
| | Countershaft 1st gear collar length | 14.50—14.55 (0.5709—0.5728) | Wear or damage |
| | Countershaft 1st gear collar flange thickness | 2.45—2.55 (0.0965—0.1004) | |
| | Diameter of countershaft one-way clutch contact area | 74.414—74.440 (2.9297—2.9307) | Wear or damage |
| | Diameter of parking gear one-way clutch contact area | 57.755—57.768 (2.2738—2.2743) | Wear or damage |
| | Mainshaft feed pipe A O.D. (at 15 mm from end) | 8.97—8.98 (0.353—0.354) | 8.95 (0.3524) |
| | Mainshaft feed pipe B O.D. (at 12 mm from end) | 5.97—5.98 (0.2351—0.2354) | 5.95 (0.2343) |
| | Countershaft feed pipe O.D. (at 20 mm from end) | 7.97—7.98 (0.3138—0.3142) | 7.95 (0.3130) |
| | Mainshaft sealing ring 32 mm thickness | 1.980—1.995 (0.0780—0.0785) | 1.800 (0.0709) |
| | Mainshaft bushing I.D. | 6.018—6.030 (0.2369—0.2374) | 6.045 (0.2380) |
| | Mainshaft bushing I.D. | 9.000—9.015 (0.3543—0.3549) | 9.030 (0.3555) |
| | Countershaft bushing I.D. | 8.000—8.015 (0.3150—0.3156) | 8.030 (0.3161) |
| | Mainshaft sealing ring groove width | 2.025—2.060 (0.0797—0.0811) | 2.080 (0.0819) |
| | Statorshaft distance collar 20 mm I.D. | 26.000—26.013 (1.0236—1.0241) | 26.030 (1.0248) |
| Regulator valve body | Sealing ring contact area diameter | 32.000—32.025 (1.2598—1.2608) | 32.050 (1.2618) |
| Shifting device and parking brake control | Reverse shift fork thickness | 5.90—6.00 (0.2323—0.2362) | 5.40 (0.2126) |
| | Parking brake ratchet pawl | — | Wear or other defect |
| | Throttle cam stopper | 18.5—18.6 (0.728—0.732) | 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: 0.240—0.266 (0.0094—0.0105) | — |
| | | Driven: 0.063—0.088 (0.0025—0.0035) | — |
| | Stator camshaft needle bearing bore I.D. (R side) | 26.000—26.013 (1.0236—1.0241) | Wear or damage |
| | Stator camshaft needle bearing contact and I.D. (Stator side) | 24.000—24.021 (0.9449—0.9457) | Wear or damage |
| | Oil pump driven gear I.D. | 14.016—14.034 (0.5518—0.5525) | Wear or damage |
| | Oil pump shaft O.D. | 13.980—13.990 (0.5504—0.5508) | Wear or damage |

Standards and Service Limits

Automatic Transmission (cont'd)

| Springs | MEASUREMENT | | STANDARD (NEW) | | | |
|--|-------------|--|------------------------------|-------------|--------------------------------|--------------|
| | | | Wire Diameter | O. D. | Free Length | No. of Coils |
| Regulator valve spring A | 1.2 ℓ | | 1.8 (0.07) | 14.7 (0.58) | 83.8 (3.30) | 17 |
| | others | | 1.58 x 2.00 (0.06 x 0.08) | 14.7 (0.58) | 86.5 (3.41) | 20.9 |
| | | | | | | |
| Regulator valve spring B | 1.2 ℓ | | 1.8 (0.07) | 9.6 (0.38) | 44 (1.73) | 9 |
| | others | | 1.8 (0.07) | 9.6 (0.38) | 44 (1.73) | 7.5 |
| Stator reaction spring | | | 6 (0.24) | 38.4 (1.51) | 30.3 (1.20) | 2 |
| Throttle modulator spring | * 1 | | 1.2 (0.05) | 9.4 (0.37) | { 27.2 (1.07) 26.3 (1.04) } | 8 |
| | * 2 | | 1.2 (0.05) | 9.4 (0.37) | { 26.3 (1.04) 26.4 (1.04) } | 8 |
| Torque converter check valve spring | | | 1.1 (0.04) | 8.4 (0.33) | 36.4 (1.43) | 12 |
| Cooler releaf valve spring | | | 1.1 (0.04) | 8.4 (0.33) | 36.4 (1.43) | 12 |
| Releaf valve spring | | | 1.0 (0.04) | 8.4 (0.33) | 52 (2.05) | 23 |
| Governor spring A | * 3 | | 1.0 (0.04) | 18.8 (0.74) | 38.1 (1.50) | 4 |
| | * 4 | | 1.0 (0.04) | 18.8 (0.74) | 20.4 (0.80) | 4 |
| Governor spring B | * 3 | | 0.9 (0.04) | 11.8 (0.46) | 27.8 (1.09) | 6 |
| | * 4 | | 0.9 (0.04) | 11.8 (0.46) | 26.7 (1.05) | 6 |
| 2nd orifice control spring | | | 0.8 (0.03) | 6.6 (0.26) | 43.8 (1.72) | 27.6 |
| Servo orifice control spring | | | 0.9 (0.04) | 6.1 (0.24) | 35.9 (1.41) | 20 |
| Throttle spring A | | | 1.0 (0.04) | 8.5 (0.33) | 22.2 (0.87) 22.1 (0.87) | 6 5.5 |
| Throttle adjust spring A (throttle B pressure) | | | 0.8 (0.03) | 6.2 (0.24) | 30 (1.18) | 8 |
| Throttle adjust spring A | | | 0.8 (0.03) | 6.2 (0.24) | 27 (1.06) | 8.5 |
| Throttle spring B | | | 1.6 (0.06) | 8.5 (0.33) | 41.3 (1.63) | 13.9 |
| 1—2 shift spring | | | 1.4 (0.06) | 8.5 (0.33) | 41.4 (1.63) | 8.4 |
| | * 3 | | 0.5 (0.02) | 4.4 (0.17) | 47.2 (1.86) | 38 |
| | * 2 | | 0.5 (0.02) | 4.5 (0.18) | 42.5 (1.67) | 21.1 |
| 1—2 shift ball spring | * 5 | | 0.5 (0.02) | 4.5 (0.18) | 44.5 (1.75) | 35.1 |
| | Main * 3 | | 0.45 (0.02) | 4.5 (0.18) | 12.7 (0.50) | 11 |
| | * 2 | | 0.4 (0.02) | 4.5 (0.18) | 14.4 (0.57) | 8.2 |
| 2—3 shift spring | * 5 | | 0.4 (0.02) | 4.5 (0.18) | 11.3 (0.44) | 8 |
| | 2nd * 3 | | 0.45 (0.02) | 4.5 (0.18) | 12.7 (0.50) | 11 |
| | * 2 | | 0.9 (0.04) | 7.6 (0.23) | 44.6 (1.76) | 20.7 |
| 2—3 shift ball spring | * 5 | | 0.7 (0.03) | 7.6 (0.23) | 48 (1.89) | 12.7 |
| | * 2 | | 0.7 (0.03) | 7.6 (0.23) | 43 (1.69) | 12.7 |
| | * 3 | | 0.4 (0.02) | 4.5 (0.18) | 14.4 (0.57) | 8.2 |
| 3—4 shift spring | * 5 | | 0.4 (0.02) | 4.5 (0.18) | 14.7 (0.58) | 7.3 |
| | * 2 | | 0.45 (0.02) | 4.5 (0.18) | 17.1 (0.67) | 11.1 |
| | * 3 | | 0.9 (0.04) | 9.6 (0.38) | 32.5 (1.28) | 10 |
| 3—4 shift ball spring | * 2 | | 0.9 (0.04) | 9.6 (0.38) | 27 (1.06) | 10 |
| | * 5 | | 0.7 (0.03) | 9.6 (0.38) | 32.9 (1.30) | 6.4 |
| | * 3 | | 0.5 (0.02) | 4.5 (0.18) | 11.3 (0.44) | 7 |
| Low accumulator spring A | * 2 | | 0.5 (0.02) | 4.5 (0.18) | 10.8 (0.43) | 7.4 |
| | * 5 | | 0.45 (0.02) | 4.5 (0.18) | 12.0 (0.47) | 6.7 |
| | | | 2.34 x 2.9 (0.09 x 0.1) | 21.5 (0.85) | 66.7 (2.63) | 10.2 |
| Low accumulator spring B | | | 2.8 (0.11) | 13.1 (0.52) | 40 (1.57) | 8.8 |
| Top accumulator spring | | | 3.2 (0.13) | 18.6 (0.73) | 78.3 (3.08) | 10 |
| 2nd accumulator spring | | | 3.5 (0.14) | 20.2 (0.80) | 76.7 (3.02) | 9.6 |
| 3rd accumulator spring | | | 2.7 (0.10) | 15.5 (0.61) | 80.0 (3.15) | 14.8 |
| L/C shift spring | * 6 | | 1.1 (0.04) | 8.1 (0.32) | 51.8 (2.04) | 22.3 |
| L/C shift spring | * 4 | | 0.7 (0.03) | 8.1 (0.32) | 39.0 (1.54) | 15.4 |
| L/C timing spring B | * 8 | | 0.9 (0.04) | 8.1 (0.32) | 44.5 (1.75) | 18.3 |
| | * 3 | | 1.0 (0.04) | 6.6 (0.26) | 55.6 (2.19) | 30 |
| L/C control valve spring | * 4 | | 1.0 (0.04) | 6.6 (0.26) | 52.3 (2.06) | 30.1 |
| | * 6 | | 0.7 (0.03) | 6.6 (0.26) | 35.3 (1.39) | 15.8 |
| CPC valve spring | * 7 | | 0.7 (0.03) | 6.6 (0.26) | 32.5 (1.28) | 14 |
| | | | 1.4 (0.06) | 9.4 (0.37) | 31.6 (1.24) | 10.9 |

* 1: except KG 1.4 ℓ (4D, 4D H/B) * 2: KG 1.4 ℓ (4D, 4D H/B) * 3: KX, KS, KZ, KQ * 4: except KX, KS, KZ, KQ

* 5: except KX, KS, KZ, KG 1.4 ℓ (4D, 4D H/B) * 6: KX, KS, KZ * 7: except KX, KS, KZ * 8: KQ

9. Automatic Transmission (cont'd)

| | MEASUREMENT | STANDARD (NEW) | | SERVICE LIMIT | |
|--------------------------|---|-------------------------------|-------------|----------------------|--------------|
| | | Wire Diameter | O. D. | Free Length | No. of Coils |
| Springs | Shift timing valve spring | 0.9 (0.04) | 8.6 (0.34) | 42.9 (1.69) | 21.4 |
| | Kick down valve spring | 0.9 (0.04) | 10.1 (0.40) | 40.8 (1.61) | 14.5 |
| | Reverse control spring | 0.7 (0.03) | 7.6 (0.30) | 37.2 (1.46) | 15.3 |
| | L/C cut spring | 0.7 (0.03) | 7.6 (0.30) | 29 (1.14) | 18 |
| | 3-2 timing valve spring | 1.2 (0.05) | 7.7 (0.30) | 45.1 (1.78) | 19.8 |
| | Low oneway ball spring | 0.29 (0.01) | 4.0 (0.16) | 14 (0.55) | 13 |
| | 4th exhaust spring | 0.9 (0.04) | 6.1 (0.24) | 43.7 (1.72) | 20.3 |
| | Servo control valve spring | 1.1 (0.04) | 6.6 (0.26) | 44 (1.73) | 20 |
| | Reverse timing spring | 0.7 (0.03) | 5.6 (0.22) | 43.8 (1.72) | 21.7 |
| Ring gear | Backlash | 0.086—0.143 (0.0034—0.0056) | | 0.25 (0.01) | |
| Differential carrier | Pinionshaft bore diameter | 18.000—18.018 (0.7087—0.7094) | | — | |
| | Carrier-to-pinionshaft clearance | 0.017—0.047 (0.0007—0.0019) | | 0.095 (0.004) | |
| | Driveshaft bore diameter | 26.005—26.025 (1.0238—1.0246) | | — | |
| | Carrier-to-driveshaft clearance | 0.045—0.086 (0.0017—0.0034) | | 0.14 (0.006) | |
| | Carrier-to-intermediate shaft clearance | 0.075—0.111 (0.0030—0.0044) | | 0.16 (0.006) | |
| Differential pinion gear | Side clearance | 0.15 max. | | | |
| | 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 pinionshaft clearance | 0.059—0.095 (0.0023—0.0037) | | 0.15 (0.006) | |

10. Driveshaft

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|------------------|-----------------------------|---------------------------|---------------|
| Driveshaft | Right: boot as installed | 485—490 (19.09—19.29) | — |
| | with intermediate shaft | 490.5—495.5 (19.31—19.51) | — |
| | with intermediate shaft 4WD | 481.5—486.5 (18.96—19.15) | — |
| | Left: boot as installed | 485—490 (19.09—19.29) | — |
| | with intermediate shaft* | 774.5—779.5 (30.49—30.69) | — |
| Rear driveshaft | Right boot as installed | 595.6—600.6 (23.45—23.65) | — |
| | Left boot as installed | 641.6—646.6 (25.26—25.46) | — |
| Propeller shafts | Runout No. 1, No. 3 | — | 1.5 (0.06) |

* includes 4WD

11. Steering

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|----------------------|--|--|---------------|
| Steering wheel | Play | 10 (0.39) max. | — |
| Gear box | Pinion starting torque N·m (kg·m, lb·ft) | ○ 0.49—1.67 (0.05—0.17, 0.36—1.27) ● 0.39—1.37 (0.04—0.14, 0.29—1.01) | — |
| | with P/S | 0.98 (0.1, 0.72) max. | — |
| | Angle of rack-guide-screw loosened from locked position | ○ 40°—60° ● 15°—20° | — |
| | with P/S | 20°—25° | — |
| Pump | Pump pressure with valve closed (Oil temp./speed: 40°C (104°F) min/idle. Do not run for more than 5 seconds) kPa (kg/cm², psi) | 7,845—8,826 (80—90, 1,138—1,280) | |
| Power steering fluid | Fluid capacity | Reservoir 0.4 ℓ (0.42 U.S. qt., 0.35 Imp. qt.) At change approx. 1.2 ℓ (1.3 U.S. qt., 1.1 Imp. qt.) | |
| Power steering belt | Deflection midway between pulleys/load | 9—12 (0.35—0.47)/98N (10 kg, 22 lb) for used belt 7—10 (0.28—0.39)/98N (10 kg, 22 lb) after replacement of belt | |
| Rack end | Pivoting resistance N·m (kg·m, lb·ft) | 0.49—1.96 (0.05—0.2, 0.36—1.45) | — |

○ : Normal ratio, ● : Variable ratio (Si)

Standards and Service Limits

Suspension — Section 18

| | MEASUREMENT | | STANDARD (NEW) | | SERVICE LIMIT | |
|-----------------|----------------------|-------------------|-----------------|-----------------|---------------|---|
| Wheel alignment | Toe-in | | Front | Rear | | |
| | | | 0±2 (0±0.08) | 2±2 (0.08±0.08) | — | — |
| | Camber | 2D H/B, 4D | 0°00'±1° | -0°26'±1° | — | — |
| | | 4D 4WD, 4WD H/B | 0°19'±1° | -0°23'±1° | — | — |
| | | 4D H/B 4WD | 0°35'±1° | 0°00'±1° | — | — |
| | Caster | 2D H/B | 2°59'±1° | | — | — |
| | | 4D H/B | 2°58'±1° | | — | — |
| | | 4D H/B 4WD | 2°56'±1° | | — | — |
| | Side slip | | 0±3 (0±0.12) | | — | — |
| | Turning angle (max.) | | | | — | — |
| Inward wheel | except 4D H/B 4WD | | 41°30'±2° | | — | — |
| | | 4D H/B 4WD | 42°00'±2° | | — | — |
| | Outward wheel | except 4D H/B 4WD | 33°30'±2° | | — | — |
| | | 4D H/B 4WD | 33°50'±2° | | — | — |
| Wheel | Rim runout | Steel | 0—1.0 (0—0.039) | | 2.0 (0.08) | |
| | | Aluminum | 0—0.7 (0—0.028) | | 1.5 (0.06) | |
| Wheel bearing | End play | Front | 0 | | 0.05 | |
| | | Rear | 0 | | 0.05 | |

13. Brake

| | | MEASUREMENT | | STANDARD (NEW) | | SERVICE LIMIT | |
|---------------------|------------------------------|---|----------------|---|--------------------------|--|--|
| Parking brake lever | | Play in stroke 200N (20 kg, 44 lbs) | | To be locked when pulled 6—10 notches | | | |
| Foot brake pedal | Pedal height | RHD | | 161 (6.3) from floor | — | | |
| | Free play | LHD | | 153 (6.0) from floor 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 | *1 | 12.0 (0.47) | 10.0 (0.39) | | |
| | | | *2 | 17.0 (0.67) | 15.0 (0.59) | | |
| | | | *3 | 19.0 (0.75) | 17.0 (0.67) | | |
| | Disc runout | Rear | | 10.0 (0.39) | 8.0 (0.32) | | |
| | | | Front/Rear | — | 0.1 (0.004)/0.15 (0.006) | | |
| | Disc parallelism | Front | | — | 0.015 (0.006) | | |
| | Pad thickness | | *4 | 9.5 (0.37) | 3.0 (0.12) | | |
| | | | *5 | 9.5 (0.37) | 1.6 (0.06) | | |
| | | | *6 | 10.5 (0.41) | 1.6 (0.06) | | |
| | | | *7 | 9.0 (0.35) | 3.0 (0.12) | | |
| | | | *8 | 10.0 (0.39) | 1.6 (0.06) | | |
| | | | Rear | 8.0 (0.32) | 1.6 (0.06) | | |
| Brake Drum | I.D. | except 4D H/B | 180 (7.09) | 181 (7.13) | | | |
| | | 4D H/B | 200 (7.87) | 201 (7.91) | | | |
| | Lining thickness | | 4.5 (0.18) | 2.0 (0.08) | | | |
| Brake booster | Characteristics | | Vacuum (mm Hg) | Pedal Pressure kg (lbs) | | Line Pressure kPa (kg/cm ² , psi) | |
| | 7" | 1.2 ℓ, 1.3 ℓ DX GL (KP, KT except 4D H/B) | 0 | 20 (44) | 1.577 (16.1, 229) | | |
| | | | 300 | 20 (44) | 4.292 (43.8, 623) | | |
| | | | 500 | 20 (44) | 6.096 (62.2, 885) | | |
| | 8" | GL (EC except KS, KQ, KY), 4D H/B General models | 0 | 20 (44) | 1.577 (16.1, 229) | | |
| | | | 300 | 20 (44) | 5.194 (53.0, 754) | | |
| | | | 500 | 20 (44) | 7.595 (77.5, 1102) | | |
| | | Others | 0 | 20 (44) | 1.362 (13.9, 198) | | |
| 300 | | | 20 (44) | 4.508 (46.0, 654) | | | |
| 500 | | | 20 (44) | 6.605 (67.4, 960) | | | |

*1: 1.2 ℓ, 1.3 ℓ

*2: 2D H/B (1.4 ℓ), 4D (1.4 ℓ, 1.5 ℓ 1-carb. except KY), 4D H/B (KP, KT)

*3: 2D H/B (1.5 ℓ, 1.6 ℓ), 4D (KY, 1.5 ℓ 2-carb., 1.5 ℓ PGM-FI, 1.6 ℓ), 4D H/B (except KP, KT)

*4: 2D H/B, 4D EC model (1.2 ℓ DX, 1.3 ℓ DX and GL except KX, KS)

*5: 2D H/B, 4D General Model (except KQ, KY)

*6: 2D H/B, 4D GL-KX and 4D H/B EC model (except KG, KS)

*7: 2D H/B, 4D GL-KS, 1.6 ℓ, 4D H/B KG, KS model and 4WD model

*8: KQ, KY model

16. Electrical

| | | MEASUREMENT | | STANDARD (NEW) | | | | | | |
|-----------------|---|-------------|---|----------------|---------------------------|---|-------------------------------|--|------------------------|--|
| Ignition coil | Rated voltage | | 12 Volts | | | | | | | |
| | Primary winding resistance | | 0.3—0.5 ohms | | | | | | | |
| | Secondary winding resistance | | 9,440—14,160 ohms | | | | | | | |
| Ignition wire | Resistance | | 25,000 ohms max. | | | | | | | |
| Spark plug | Type | | Unleaded gasoline | NGK | BCPR6E-11 | BCPR6EY-N11 BCPR7E-11 BCPR7EY-N11 | | | | |
| | | | | ND | Q20PR-U11 | Q22PR-U11 | | | | |
| | | | Leaded gasoline | NGK | BCPR6E-11 | BCPR7E-11 | | | | |
| | | | | ND | 20PR-U11 20PR-UL11 (*) | 20PR-U11 (*) 22PR-U11 22PR-UL11 (*) | | | | |
| | | | (*) : 1.6 l DOHC only | | | | | | | |
| | Gap | | 1.0—1.1 (0.039—0.043) | | | | | | | |
| Ignition timing | At idling PGM-FI SOHC DOHC 1-Carbureted Engine KT (1.2 l) KG (1.3 l M/T), KY (1.5 l A/T) KG (1.3 l A/T) Others (1.2 l) Others (1.3 l, 1.5 l) 2-Carbureted Engine KQ KG (A/T) KG (M/T) Others | | 18° ± 2° (Red) BTDC 16° ± 2° (Red) BTDC 16° ± 2° (Red) BTDC 12° ± 2° (Red) BTDC 2° ± 2° (Red) BTDC 20° ± 2° (Red) BTDC 18° ± 2° (Red) BTDC 20° ± 2° (Red) BTDC 2° ± 2° (Red) BTDC 12° ± 2° (Red) BTDC 18° ± 2° (Red) BTDC | | | | | | | |
| | Lighting capacity (20-hour ratio) Starting capacity (5-second ratio) | | 40, 45, 47 Ampere Hours 8.6 V min. at 300 Ampere draw | | | | | | | |
| Alternator | | | ND | | MITSUBISHI | | | | | |
| | Output | | 13.5V / 60A | | | | | | | |
| | MEASUREMENT | | STANDARD (NEW) | | SERVICE LIMIT | | STANDARD (NEW) | | SERVICE LIMIT | |
| | Coil resistance (rotor) | | 2.8—3.0 ohm | | ±0.1 ohm | | 3.4—3.8 ohm | | ±0.2 ohm | |
| | Slip ring O.D. | | 32.5 (1.28) | | 32.1 (1.26) | | 22.7 (0.89) | | 22.2 (0.87) | |
| | Brush length | | 13.5 (0.53) | | 4.5 (0.18) | | 22 (0.87) | | 8 (0.31) | |
| | Brush Spring tension | | 300—500g (10.6—17.6 oz) | | — | | 300—450g (10.6—15.9 oz) | | — | |
| | | | | | | | | | | |
| Starting motor | | | HITACHI 0.8 kw | | ND 0.8 kw | | ND 1.0 kw, 1.2 kw | | MITSUBA 1.0 kw, 1.4 kw | |
| | MEASUREMENT | | STANDARD (NEW) | | SERVICE LIMIT | | STANDARD (NEW) | | SERVICE LIMIT | |
| | Mica depth | | 0.5—0.8 (0.020 —0.031) | | 0.2 (0.008) | | 0.5—0.8 (0.020 —0.031) | | 0.2 (0.008) | |
| | Commutator | | 0—0.1 (0.004) | | 0.4 (0.016) | | 0—0.02 (0.0008) | | 0.05 (0.002) | |
| | Commutator O.D. | | 40.0 (1.57) | | 39.0 (1.54) | | 28.0 (1.10) | | 27.0 (1.06) | |
| | Brush length | | 14.5—15.5 (0.57—0.61) | | 11.0 (0.43) | | 15.5—16.5 (0.61—0.65) | | 10.0 (0.39) | |
| | Spring Pressure (new) | | 15.7 N (1.6 kg, 3.5 lb) | | — | | 15.7 N (1.6 kg, 3.5 lb) | | — | |
| | | | | | | | | | | |

Design Specifications

2D H/B

| | ITEMS | METRIC | ENGLISH | NOTES |
|-------------------|----------------------------------|----------------|---------------|-------------------|
| DIMENSIONS | Overall Length | 3,965 mm | 156.1 in. | |
| | Overall Width | 3,990 mm | 157.1 in. | with bumper guard |
| | Overall Height | 1,680 mm | 66.1 in. | 1.2 t, 1.3 t |
| | Wheelbase | 1,670 mm | 65.7 in. | |
| | Track, Front/Rear | 1,330 mm | 52.4 in. | KY |
| | Ground Clearance | 1,360 mm | 53.5 in. | |
| | Seating Capacity | 2,500 mm | 98.4 in. | |
| | Overhang, Front/Rear | 1,450/1,455 mm | 57.1/57.3 in. | KY |
| WEIGHTS | Engine Weight (Wet) | 1,445/1,450 mm | 56.9/57.1 in. | |
| | | 160 mm | 6.3 in. | |
| | | 150 mm | 5.9 in. | cars with CATA |
| | | 770/695 mm | 30.3/27.4 in. | |
| | | 795/695 mm | 31.3/27.4 in. | with bumper guard |
| | | | | |
| | | | | |
| | | | | |
| WEIGHTS | Engine Weight (Wet) | 93 kg | 205 lb. | |
| | 1.2 t | 95 kg | 209 lb. | |
| | 1.3 t | 98 kg | 216 lb. | |
| | 1.4 t | 94 kg | 207 lb. | |
| | 1.5 t 1-Carbureted | 101 kg | 222 lb. | |
| | 1.5 t 2-Carbureted | 100 kg | 220 lb. | |
| | 1.5 t PGM-FI | 107 kg | 236 lb. | |
| | 1.6 t SOHC | 113 kg | 249 lb. | |
| | 1.6 t DOHC | 835 kg | 1,841 lb. | KP, KT, KU |
| | Curb Weight | 825 kg | 1,819 lb. | KB |
| | 1.2 t A/T | 855 kg | 1,885 lb. | KP, KT, KU |
| | 1.3 t M/T | 840 kg | 1,852 lb. | KP, KT, KU |
| | | 835 kg | 1,841 lb. | KB, KF, KE, KW |
| | | 840 kg | 1,852 lb. | KW (SF, N) |
| | 1.3 t A/T | 860 kg | 1,896 lb. | KP, KT, KU |
| | | 855 kg | 1,885 lb. | KB, KE, KF, KW |
| | | 860 kg | 1,900 lb. | KW (SF, N) |
| | 1.4 t M/T | 850 kg | 1,874 lb. | KB, KF, KG, KW |
| | | 855 kg | 1,885 lb. | KW (SF, N) |
| | | 865 kg | 1,907 lb. | KE |
| | 1.4 t A/T | 870 kg | 1,918 lb. | KB, KF, KG, KW |
| | | 875 kg | 1,929 lb. | KW (SF, N) |
| | | 885 kg | 1,951 lb. | KE |
| | 1.5 t M/T (DX) | 859 kg | 1,894 lb. | KQ |
| | | 865 kg | 1,907 lb. | KW, KX |
| | 1.5 t M/T (GL) | 897 kg | 1,978 lb. | KQ |
| | | 915 kg | 2,017 lb. | KY |
| | | 870 kg | 1,918 lb. | KS |
| | | 880 kg | 1,940 lb. | KX |
| | 1.5 t A/T (DX) | 885 kg | 1,951 lb. | KX, KW |
| | 1.5 t A/T (GL) | 918 kg | 2,024 lb. | KQ |
| | | 935 kg | 2,061 lb. | KY |
| | | 890 kg | 1,962 lb. | KS |
| | 1.6 t SOHC | 900 kg | 1,984 lb. | KX |
| | | 900 kg | 1,984 lb. | KG, KX |
| | | 905 kg | 1,995 lb. | KW, KS |
| | 1.6 t DOHC | 915 kg | 2,017 lb. | KB, KF, KW |
| | | 920 kg | 2,028 lb. | KW (SF, N) |
| | Weight Distribution (Front/Rear) | | | |
| | 1.2 t M/T | 510/325 kg | 1,124/716 lb. | KP, KT, KU |
| | | 505/320 kg | 1,113/705 lb. | KB |
| | 1.2 t A/T | 530/325 kg | 1,168/716 lb. | KP, KT, KU |
| | 1.3 t M/T | 515/325 kg | 1,135/716 lb. | KP, KT, KU |
| | | 510/325 kg | 1,124/716 lb. | KB, KF, KE, KW |
| | | 515/325 kg | 1,135/716 lb. | KW (SF, N) |

| | ITEMS | METRIC | ENGLISH | NOTES |
|---------------------------------|------------------------------|--|--|--------------------|
| WEIGHTS | 1.3 l A/T | 535/325 kg | 1,179/716 lb. | KP, KT, KU |
| | | 530/325 kg | 1,168/716 lb. | KB, KE, KF, KW |
| | 1.4 l M/T | 535/325 kg | 1,179/716 lb. | KW (SF, N) |
| | | 525/325 kg | 1,157/716 lb. | KB, KF, KG, KW |
| | | 530/325 kg | 1,168/716 lb. | KW (SF, N) |
| | 1.4 l A/T | 540/325 kg | 1,190/716 lb. | KE |
| | | 545/325 kg | 1,202/716 lb. | KB, KF, KG, KW |
| | | 550/325 kg | 1,213/716 lb. | KW (SF, N) |
| | 1.5 l M/T (DX) | 560/325 kg | 1,235/716 lb. | KE |
| | | 526/333 kg | 1,160/734 lb. | KQ |
| | 1.5 l M/T (GL) | 535/330 kg | 1,179/728 lb. | KW, KX |
| | | 554/343 kg | 1,221/756 lb. | KQ |
| | | 556/359 kg | 1,226/791 lb. | KY |
| | | 540/330 kg | 1,190/728 lb. | KS |
| | | 550/330 kg | 1,213/728 lb. | KX |
| | 1.5 l A/T (DX) | 555/330 kg | 1,224/728 lb. | KX, KW |
| | 1.5 l A/T (GL) | 575/343 kg | 1,268/756 lb. | KQ |
| | | 576/359 kg | 1,270/791 lb. | KY |
| | | 560/330 kg | 1,235/728 lb. | KS |
| | | 570/330 kg | 1,257/728 lb. | KX |
| | 1.6 l SOHC | 550/350 kg | 1,213/772 lb. | KG, KX |
| | | 555/350 kg | 1,224/772 lb. | KW, KS |
| | 1.6 l DOHC | 565/350 kg | 1,246/772 lb. | KB, KF, KW |
| | | 570/350 kg | 1,257/772 lb. | KW (SF, N) |
| | Max. Permissible Weight (EC) | | | |
| | 1.3 l | 1,310 kg | 2,888 lb. | |
| | 1.4 l | 1,340 kg | 2,954 lb. | |
| | 1.5 l | 1,280 kg | 2,822 lb. | KS |
| | | 1,370 kg | 3,020 lb. | KX, KW |
| | 1.6 l | 1,290 kg | 2,844 lb. | KS |
| | | 1,370 kg | 3,020 lb. | KB, KF, KG, KX, KW |
| Maximum Loaded Vehicle Weight | | 1,390 kg | 3,064 lb. | KY |
| ENGINE | Type | Water cooled 4-cycle S.O.H.C. | | |
| | | Water cooled 4-cycle D.O.H.C. | | |
| | Cylinder arrangement | 4-cylinder in-line, transverse | | |
| | Bore and Stroke | 1.2 l | 75×67.5 mm | 2.95×2.66 in. |
| | | 1.3 l | 75×76 mm | 2.95×2.99 in. |
| | | 1.4 l | 75×79 mm | 2.95×3.11 in. |
| | | 1.5 l | 75×84.5 mm | 2.95×3.33 in. |
| | | 1.6 l | 75×90 mm | 2.95×3.54 in. |
| | Displacement | 1.2 l | 1,193 cm ³ (cc) | 74 cu. in. |
| | | 1.3 l | 1,343 cm ³ (cc) | 83 cu. in. |
| | | 1.4 l | 1,396 cm ³ (cc) | 86 cu. in. |
| | | 1.5 l | 1,493 cm ³ (cc) | 91 cu. in. |
| | | 1.6 l | 1,590 cm ³ (cc) | 98 cu. in. |
| | Compression Ratio | | | |
| | | 1.2 l | 8.6 | |
| | | 1.3 l | 9.0 | |
| | | 1.4 l | 9.3 | |
| | | 1.5 l | 9.2 | |
| | | 1.6 l with CATA | 9.1 | |
| | | 1.6 l without CATA | 9.5 | |
| | Valve Train | 1.6 l without CATA | 4-valves per cylinder, double overhead camshafts | |
| | | Others | 4-valves per cylinder, single overhead camshaft | |
| | Lubrication System | | Pressure feed | |
| | Fuel Required | | | |
| | Engine with CATA | | Unleaded gasoline with 91 research octane number or higher | |
| Carbureted engines without CATA | | *Gasoline with 91 research octane number or higher | | |
| PGM-FI DOHC without CATA | | Leaded gasoline with 97 research octane number or higher | | |
| | | | * Both leaded and unleaded gasoline can be used. | |

(cont'd)

Design Specifications

2D H/B (cont'd)

| | ITEMS | METRIC | ENGLISH | NOTES |
|----------------------|---|--|--|---|
| STARTER | Type | 0.8 kW 1.0 kW, 1.2 kW, 1.4 kW | Direct Gear reduction 0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW 12V 30 seconds Clockwise as viewed from gear end | |
| | Normal Output Normal Voltage Hour Rating Direction of Rotation Weight | 0.8 kW HITACHI/ND 1.0 kW MITSUBA ND 1.2 kW ND 1.4 kW MITSUBA | 4.4 kg 3.4 kg 3.85 kg 3.85 kg 3.7 kg | 9.7 lb. 7.5 lb. 8.5 lb. 8.5 lb. 8.2 lb. |
| TRANSMISSION | Clutch | M/T A/T | Single plate dry, diaphragm spring Torque converter | |
| | Transmission Type | M/T | 5 speeds forward, synchromesh, 1 speed reverse, constant mesh | |
| | Primary Reduction | A/T | 4 speeds forward, with lock-up clutch, 1 speed reverse 1.000 | |
| | Gear Ratio | | M/T | 1.6 DOHC M/T |
| | | | A/T | |
| | | 1st | 3.250 | 3.250 |
| | | 2nd | 1.894 | 1.944 |
| | | 3rd | 1.259 | 1.346 |
| | | 4th | 0.937 | 1.033 |
| | | 5th | 0.771 | 0.878 |
| AIR CONDI- TIONER | Reverse | | 3.153 | 1.954 |
| | Final Reduction | M/T 1.2 t | | |
| | | 1.3 t | | |
| | | 1.4 t | | |
| | | 1.5 t | | |
| | | 1.6 t SOHC | | |
| | | 1.6 t DOHC | | |
| | Clutch Facing Area | A/T | 160 cm ² | 24.8 sq. in. |
| | | | | |
| | | | | |
| AIR CONDI- TIONER | Compressor | | MASTUSHITA | |
| | Cooling Capacity | | 3,850 Kcal/h | |
| | —Conditions: | | | |
| | Compression min ⁻¹ (rpm) | | 1,800 min ⁻¹ (rpm) | |
| | Outside Air Temperature | 27.0°C | | 81°F |
| | Outside Air Humidity | | 50% | |
| | Condenser Air Temperature | 35°C | | 95°F |
| | Condenser Air Velocity | 4.5 m/sec. | | 14.8 ft/sec. |
| | Blower Capacity | 440 m ³ /h | | 15,118 cu. ft/h |
| | Compressor | Type | Vane rotary type | |
| AIR CONDI- TIONER | | Number of Vane | 3 | |
| | | Displacement | 130cc/rev. | 7.93 cu. in. /rev |
| | | Max. min ⁻¹ (rpm) | 7,500 min ⁻¹ (rpm) | |
| | | Lubricant Capacity | 130 cc | 7.93 cu. in. |
| | Receiver Dryer With Desiccant | | Includes fusible safety plug. | |
| | Condenser | | Corrugated fin type | |
| | Evaporator | | Corrugated fin type | |
| | | | | |
| | | | | |
| | | | | |

| | ITEMS | | METRIC | ENGLISH | NOTES |
|--------------------------|-------------------------------|--|--|--|--|
| AIR CONDI-TIONER | Blower | Type Motor Input Speed Control Max. Capacity | Sirocco fan 170 W (12 V) 4 speeds 390 m ³ /h | | 13,773 cu. ft/h |
| | Temp. Control Comp. Clutch | Type Power Consumption | Air-mix type Dry, single plate, V-belt 32 W max. 12 V | | |
| | Refrigerant | Type Quantity | R-12 0.9±0.05 kg | 1.98±0.11 lb | |
| STEERING SYSTEM | Type Overall Ratio | Manual Variable ratio Power | Rack and pinion 18.6: 1 19.8 (18—20.4): 1 17.7: 1 | | 1.6 ℓ only |
| | Turns, Lock-to-lock | Manual Variable ratio Power | 3.8 4.1 3.6 | | 1.6 ℓ only |
| | Steering Wheel Diameter | Dx Others | 337 mm 370 mm | 14.8 in. 14.6 in. | |
| SUSPENSION SYSTEM | Type Shock Absorber | Front/Rear Front Rear | Independent by double wishbones, coil springs Telescopic, nitrogen gas-filled Telescopic, nitrogen gas-filled | | |
| WHEEL ALIGNMENT | Wheel Alignment Camber | Front Rear | 0°00'±1° -0°30'±1° 2°59'±1° | | |
| | Caster Toe-in | Front Front Rear | 0±2 mm 2 $\frac{1}{2}$ mm | 0±0.08 in. 0.08 $\frac{+0.08}{-0.08}$ in. | |
| | Kingpin Inclination | | 7°34' | | |
| BRAKE SYSTEM | Type | Front 1.2 ℓ, 1.3 ℓ 1.4 ℓ, 1.5 ℓ, 1.6 ℓ Rear 1.6 ℓ Others Lining Surface Area Front 1.2 ℓ, 1.3 ℓ, 1.4 ℓ, 1.5 ℓ 1.5 ℓ, 1.6 ℓ Rear Effective Disc Diameter Front 1.2 ℓ, 1.3 ℓ, 1.4 ℓ, 1.5 ℓ 1.5 ℓ, 1.6 ℓ Rear Brake Drum I.D. Rear Parking Brake Kind and Type | Power assisted self-adjusting disc Power assisted self-adjusting ventilated disc Power assisted self-adjusting disc drum 36.8 mm ² 44.1 mm ² 50.2 mm ² 21.0 mm ² 190 mm 194 mm 208 mm 180 mm Mechanically actuating, rear two wheel brakes | | 5.70 sq. in. 6.84 sq. in. 7.78 sq. in. 3.25 sq. in. 7.48 in. 7.64 in. 8.19 in. 7.09 in. |
| | | | | | Carbureted engine PGM-FI Drum Disc (1.6 ℓ) |
| | | | | | Carbureted engine PGM-FI |
| TIRES | Front/Rear | 1.2 ℓ, 1.3 ℓ 1.4 ℓ, 1.5 ℓ | 155SR13, 155R13 78S 155SR13, 165SR13 (rough road type only) 165/80R13 82S 165/70R13 79S 165/70R13 79S or 175/70R13 82H | | KB, KG KF, KE, KW KP, KT, KU KY KQ KB, KG, KX, KW, KS KF, KE, KW (1.4 ℓ) |
| | | | 185/60R14 82H T105/80D 13 | | Standard for some types. |
| | Spare | 1.6 ℓ | | | |

(cont'd)

Design Specifications

2D H/B (cont'd)

| | ITEMS | METRIC | ENGLISH | NOTES |
|------------|-------------------------------|--|--|----------------------------|
| ELECTRICAL | Battery | | 12V-47AH | |
| | Starter | 12V-0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW | | |
| | Alternator | | 12V-60 amps | |
| | Fuses | In the dash fuse box In the main fuse box | 10A, 15A, 20A*, 30A 10A, 15A, 20A, 50A, 60A | 20A*: Norway, Finland only |
| | Headlights High/Low | | 12V-60/55W | |
| | Front Turn Signal Lights | | 12V-21W | |
| | Rear Turn Signal Lights | | 12V-21W | |
| | Side Turn Signal Lights | | 12V-5W | |
| | Stop/Taillights | | 12V-21/5W | |
| | Side Marker Lights | | 12V-5W | |
| | Back-up Lights | | 12V-21W | |
| | License Plate Lights | | 12V-5W | |
| | Gauge Lights | | 12V-3.4W, 3.0W, 1.4W | |
| | Indicator Lights | | 12V-1.4W | |
| | Warning Lights | | 12V-5W | |
| | Dome Light | | 12V-3.4W | |
| | Trunk Light | | 12V-1.4W | |
| | Illumination and Pilot Lights | | 12V-1.4W | |
| | Heater Illumination Lights | | 0.91W, 0.84W, LED 12V-1.4W | |

4D

| | ITEMS | METRIC | ENGLISH | NOTES |
|------------|----------------------------------|----------------|---------------|--|
| DIMENSIONS | Overall Length | 4,230 mm | 166.5 in. | KQ KW (SF, N) |
| | Overall Width with bumper guard | 4,235 mm | 166.7 in. | |
| | | 4,255 mm | 167.5 in. | |
| | Overall Height | 1,690 mm | 66.5 in. | KY 4WD |
| | Wheelbase | 1,360 mm | 53.5 in. | |
| | | 1,385 mm | 54.5 in. | |
| | Track, Front/Rear | 1,380 mm | 54.3 in. | KY |
| | Ground Clearance | 2,500 mm | 98.4 in. | |
| | | 1,450/1,455 mm | 57.1/57.3 in. | |
| | Seating Capacity | 1,445/1,450 mm | 56.9/57.1 in. | cars with CATA |
| WEIGHTS | Overhang, Front/Rear | 160 mm | 6.3 in. | |
| | with bumper guard | 150 mm | 5.9 in. | |
| | | 770/960 mm | 30.3/37.8 in. | includes bumper |
| | | 795/960 mm | 31.3/37.8 in. | |
| | | | | |
| | Engine Weight (Wet) | | | KW |
| | 1.2 ℓ | 93 kg | 205 lb. | |
| | 1.3 ℓ | 95 kg | 209 lb. | |
| | 1.4 ℓ | 98 kg | 216 lb. | KB, KP, KT, KU KP, KT, KU KP, KT, KU |
| | 1.5 ℓ 1-Carbureted | 94 kg | 207 lb. | |
| | 1.5 ℓ 2-Carbureted | 101 kg | 222 lb. | |
| | 1.5 ℓ PGM-FI | 100 kg | 220 lb. | Singapore KP, KT, KU Singapore |
| | 1.6 ℓ SOHC | 107 kg | 236 lb. | |
| | Curb Weight | | | |
| | 1.2 ℓ M/T | 870 kg | 1,918 lb. | KB, KF, KE, KW KW (SF, N) KG |
| | 1.2 ℓ A/T | 865 kg | 1,907 lb. | |
| | 1.3 ℓ M/T | 885 kg | 1,951 lb. | |
| | 1.3 ℓ A/T | 870 kg | 1,918 lb. | KW, KS, KX KP, KT, KU Singapore |
| | 1.4 ℓ M/T | 875 kg | 1,929 lb. | |
| | 1.4 ℓ A/T | 890 kg | 1,962 lb. | |
| | 1.5 ℓ M/T (DX) | 895 kg | 1,973 lb. | KY KQ KW |
| | 1.5 ℓ M/T (GL) | 885 kg | 1,951 lb. | |
| | | 890 kg | 1,962 lb. | |
| | | 900 kg | 1,984 lb. | KW, KS, KX KP, KT, KU Singapore |
| | | 905 kg | 1,995 lb. | |
| | | 910 kg | 2,006 lb. | |
| | | 920 kg | 2,028 lb. | KW, KS, KX KP, KT, KU Singapore |
| | | 890 kg | 1,962 lb. | |
| | | 907 kg | 2,000 lb. | |
| | | 950 kg | 2,094 lb. | KY KQ KW |
| | | 935 kg | 2,061 lb. | |
| | | 900 kg | 1,984 lb. | |
| | | 875 kg | 1,929 lb. | KB, KF, KE, KW KW (SF, N), KS KX KS KW |
| | | 925 kg | 2,039 lb. | |
| | | 975 kg | 2,149 lb. | |
| | 1.5 ℓ M/T (EX) | 970 kg | 2,138 lb. | KW, KS, KX KP, KT, KU Singapore |
| | 1.5 ℓ A/T (GL) | 958 kg | 2,112 lb. | |
| | | 920 kg | 2,028 lb. | |
| | | 895 kg | 1,973 lb. | KY KQ KW |
| | | 945 kg | 2,083 lb. | |
| | | 995 kg | 2,194 lb. | |
| | | 940 kg | 2,072 lb. | KB, KG, KW, KX KW (SF, N), KS KX KS KW |
| | | 945 kg | 2,083 lb. | |
| | 1.6 ℓ 4WD | 1,065 kg | 2,348 lb. | |
| | | 1,070 kg | 2,359 lb. | KW |
| | | 1,060 kg | 2,337 lb. | |
| | Weight Distribution (Front/Rear) | | | |
| | 1.2 ℓ M/T | 525/345 kg | 1,157/761 lb. | KW KB KP, KT, KU |
| | | 520/345 kg | 1,146/761 lb. | |
| | | 505/360 kg | 1,114/794 lb. | |
| | 1.2 ℓ A/T | 525/360 kg | 1,157/794 lb. | KP, KT, KU KP, KT, KU Singapore |
| | 1.3 ℓ M/T | 510/360 kg | 1,124/794 lb. | |
| | | 515/360 kg | 1,135/794 lb. | |
| | 1.3 ℓ A/T | 530/360 kg | 1,168/794 lb. | KP, KT, KU Singapore Singapore |
| | | 535/360 kg | 1,179/794 lb. | |
| | 1.4 ℓ M/T | 525/360 kg | 1,157/794 lb. | |
| | | 530/360 kg | 1,168/794 lb. | KB, KF, KE, KW KW (SF, N) KG |
| | | 535/365 kg | 1,179/805 lb. | |
| | 1.4 ℓ A/T | 545/360 kg | 1,202/794 lb. | |
| | | 550/360 kg | 1,213/794 lb. | KW (SF, N) KG KW |
| | | 555/365 kg | 1,224/805 lb. | |
| | 1.5 ℓ M/T (DX) | 530/360 kg | 1,168/794 lb. | |
| | 1.5 ℓ M/T (GL) | 537/370 kg | 1,184/816 lb. | KQ KY KQ |
| | | 561/389 kg | 1,237/858 lb. | |
| | | 558/377 kg | 1,230/831 lb. | |
| | | 540/360 kg | 1,190/794 lb. | KW, KS, KX KP, KT, KU Singapore |
| | | 515/360 kg | 1,135/794 lb. | |
| | | 565/360 kg | 1,246/794 lb. | |
| | 1.5 ℓ M/T (EX) | 576/399 kg | 1,270/880 lb. | KY KQ KW, KS, KX |
| | 1.5 ℓ A/T (GL) | 581/389 kg | 1,281/858 lb. | |
| | | 583/375 kg | 1,285/827 lb. | |
| | | 560/360 kg | 1,235/794 lb. | KP, KT, KU Singapore |
| | | 535/360 kg | 1,179/794 lb. | |
| | | 585/360 kg | 1,290/794 lb. | |

(cont'd)

Design Specifications

4D (cont'd)

| | ITEMS | METRIC | ENGLISH | NOTES | |
|----------------------------------|--|---|---|--|-------|
| WEIGHTS | 1.5 t A/T (EX) | 596/399 kg | 1,314/880 lb. | KY | |
| | 1.6 t | 565/375 kg | 1,246/827 lb. | KB, KG, KW, KX | |
| | 1.6 t 4WD | 570/375 kg | 1,257/827 lb. | KW (SF, N), KS | |
| | | 625/440 kg | 1,378/970 lb. | KX | |
| | | 630/440 kg | 1,389/970 lb. | KS | |
| | | 620/440 kg | 1,367/970 lb. | KW | |
| | Max. Permissible Weight (EC) | | | | |
| | 1.2 t | 1,340 kg | 2,954 lb. | KB, KW | |
| | 1.4 t | 1,370 kg | 3,020 lb. | KB, KF, KG, KE, KW | |
| | 1.5 t, 1.6 t | 1,400 kg | 3,086 lb. | | |
| Maximum Loaded Vehicle Weight | 1,440 kg | 3,175 lb. | KY | | |
| ENGINE | Type | Water cooled 4-cycle S.O.H.C. | | | |
| | Cylinder arrangement | 4-cylinder in-line, transverse | | | |
| | Bore and stroke | 1.2 t | 75×67.5 mm | 2.95×2.66 in. | |
| | | 1.3 t | 75×76 mm | 2.95×2.99 in. | |
| | | 1.4 t | 75×79 mm | 2.95×3.11 in. | |
| | | 1.5 t | 75×84.5 mm | 2.95×3.33 in. | |
| | | 1.6 t | 75×90 mm | 2.95×3.54 in. | |
| | Displacement | 1.2 t | 1,193 cm³ (cc) | 74 cu. in. | |
| | | 1.3 t | 1,343 cm³ (cc) | 83 cu. in. | |
| | | 1.4 t | 1,396 cm³ (cc) | 86 cu. in. | |
| | | 1.5 t | 1,493 cm³ (cc) | 91 cu. in. | |
| | | 1.6 t | 1,590 cm³ (cc) | 98 cu. in. | |
| | Compression Ratio | | | | |
| | | 1.2 t | 8.6 | | |
| | | 1.3 t | 9.0 | | |
| | | 1.4 t | 9.3 | | |
| | | 1.5 t | 9.2 | | |
| | | 1.6 t | 9.1 | | |
| | Valve Train | 4-valves per cylinder, single overhead camshaft | | | |
| | Lubrication System | Pressure feed | | | |
| Fuel Required | | | | | |
| Engines with cata. | Unleaded gasoline with 91 research octane number or higher | | | * Both leaded and unleaded gasoline can be used. | |
| Carbureted engines without cata. | *Gasoline with 91 research octane number or higher | | | | |
| PGM-FI without cata. | Leaded gasoline with 97 research octane number or higher | | | | |
| STARTER | Type | 0.8 kW | Direct | | |
| | | 1.0 kW, 1.2 kW, 1.4kW | Gear reduction | | |
| | Normal Output | | 0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW | | |
| | Normal Voltage | | 12V | | |
| | Hour Rating | | 30 seconds | | |
| | Direction of Rotation | | Clockwise as viewed from gear end | | |
| | Weight | 0.8 kW HITACHI/ND | 4.4 kg | 9.7 lb. | |
| | | 1.0 kW MITSUBA | 3.4 kg | 7.5 lb. | |
| | | ND | 3.85 kg | 8.5 lb. | |
| | | 1.2 kW ND | 3.85 kg | 8.5 lb. | |
| | 1.4 kW MITSUBA | 3.7 kg | 8.2 lb. | | |
| TRANSMISSION | Clutch | M/T | Single plate dry, diaphragm spring | | |
| | | A/T | Torque converter | | |
| | Transmission Type | M/T | 5-speed forward, synchromesh, 1-speed reverse | | |
| | | M/T+Super Low Gear | 6-speed forward, synchromesh, 1-speed reverse | | |
| | | A/T | 4-speed forward, with lock-up clutch, 1 speed reverse | | |
| | Primary Reduction | | 1.000 | | |
| | | | 5-M/T | 4-A/T | 4WD |
| | Gear Ratio | Super low | — | — | 4.512 |
| | | I | 3.250 | 2.705 | 3.384 |
| | | II | 1.894 | 1.560 | 1.950 |
| | | III | 1.259 | 1.027 | 1.275 |
| | | IV | 0.937 | 0.780 | 0.941 |
| | | V | 0.771 | — | 0.783 |
| | | Reverse | 3.153 | 1.954 | 3.000 |

| | ITEMS | | METRIC | ENGLISH | NOTES |
|----------------------|---|--|--|----------------------|--|
| TRANSMISSION | Final Reduction | M/T 1.2 ℓ | Single helical gear, 4.058 | 4.058 | KB, KW KP, KT, KU KP, KT, KU KB, KF, KG, KE, KW KX, KS, KP, KT, KU, KY KQ, KW KB, KG, KW, KS, KX |
| | | 1.3 ℓ | Single helical gear, 4.250 | 4.250 | |
| | | 1.4 ℓ | Single helical gear, 4.058 | 4.058 | |
| | | 1.5 ℓ | Single helical gear, 4.250 | 4.250 | |
| | 1.6 ℓ | Single helical gear, 4.058 | 4.058 | | |
| | 1.6 ℓ 4WD | Single helical gear, 4.250 | 4.250 | | |
| | A/T | Single helical gear, 4.428 | 4.428 | | |
| | | Single helical gear, 3.933 | 3.933 | | |
| | Clutch Facing Area | | 160 cm ² | 24.8 sq. in. | |
| AIR CONDI- TIONER | Compressor | | MATSUSHITA | | |
| | Cooling Capacity | | 3,850 Kcal/h | | |
| | — Conditions: | | 1,800 min ⁻¹ (rpm) | | |
| | Compression min ⁻¹ (rpm) | | 27.0°C | 81°F | |
| | Outside Air Temperature | | | 50% | |
| | Outside Air Humidity | | 35°C | 95°F | |
| | Condenser Air Temperature | | 4.5 m/sec. | 14.8 ft/sec. | |
| | Condenser Air Velocity | | 440 m ³ /h | 15,118 cu. ft/h | |
| | Blower Capacity | | | | |
| | Compressor | Type Number of Vane Displacement Max. min ⁻¹ (rpm) Lubricant Capacity | Vane rotary type 3 130cc/rev. 7.93 cu. in. /rev 7,500 min ⁻¹ (rpm) 130 cc 7.93 cu. in. Includes fusible safety plug. | | |
| | Receiver Dryer With Desiccant | | | | |
| | Condenser | | Corrugated fin type | | |
| | Evaporator | | Corrugated fin type | | |
| Blower | Type Motor Input Speed Control Max. Capacity | Sirocco fan 170 W (12 V) 4 speeds 390 m ³ /h 13,773 cu. ft/h | | | |
| Temp. Control | | Air-mix type | | | |
| Comp. Clutch | Type Power Consumption | Dry, single plate, V-belt 32 W max. 12 V | | | |
| Refrigerant | Type Quantity | 0.9±0.05 kg | R-12 1.98±0.11 lb | | |
| STEERING SYSTEM | Type | | Rack and pinion | | |
| | Overall Ratio | Manual Power | 18.6: 1 17.7: 1 | | |
| | Turns, Lock-to-lock | Manual Power | 3.8 3.6 | | |
| | Steering Wheel Diameter | except 1.6 ℓ 1.6 ℓ | 337 mm 370 mm | 14.8 in. 14.6 in. | |
| SUSPENSION SYSTEM | Type | | Independent by double wishbones, coil springs | | |
| | Shock Absorber | Front/Rear Front Rear | Telescopic, hydraulic Telescopic, nitrogen gas-filled | | |

(cont'd)

Design Specifications

4D (cont'd)

| | ITEMS | METRIC | ENGLISH | NOTES |
|------------------------|---|---|--|--|
| WHEEL ALIGNMENT | Wheel Alignment | | | |
| | Camber Front Rear Caster Front Front Toe-in Front Rear Kingpin Inclination | 0°00'±1° -0°30'±1° 2°59'±1° 7°34' | 0±0.08 in. 0.08±0.00 in. | |
| BRAKE SYSTEM | Type Front 1.2ℓ, 1.3ℓ 1.4ℓ, 1.5ℓ, 1.6ℓ Rear 1.6ℓ Others Lining Surface Area Front 1.2ℓ, 1.3ℓ, 1.4ℓ 1.5ℓ, 1.6ℓ Rear Effective Disc Diameter Front 1.2ℓ, 1.3ℓ, 1.4ℓ, 1.5ℓ 1.5ℓ, 1.6ℓ Rear Brake Drum I.D. Rear Parking Brake Kind and Type | Power assisted self-adjusting disc Power assisted self-adjusting ventilated disc Power assisted self-adjusting disc drum 36.8 mm² 44.1 mm² 50.2 mm² 21.0 mm² 190 mm 194 mm 208 mm 180 mm Mechanically actuating, rear two wheel brakes | 5.70 sq. in. 6.84 sq. in. 7.78 sq. in. 3.25 sq. in. 7.48 in. 7.64 in. 8.19 in. 7.09 in. | Drum Disc (1.6ℓ) Carbureted engine PGM-FI |
| TIRES | Front/Rear 1.2ℓ, 1.3ℓ 1.4ℓ, 1.5ℓ Spare 1.6ℓ except 4WD 4WD | 155SR13, 155R13 78S 155SR13, 165SR13 (rough road type only) 165/80R13 82S 165/70R13 79S 165/70R13 79S or 175/70R13 82H 175/70R13 82H or 175/65R14 82H T105/80D 13 T135/70D15 | KB, KW KP, KT, KU KY KQ KB, KG, KX, KW, KS KF, KE, KW (1.4ℓ) Standard for some types | |
| ELECTRICAL | Battery Starter Alternator Fuses In the dash fuse box In the main fuse box Headlights High/Low Front Turn Signal Lights Rear Turn Signal Lights Side Turn Signal Lights Stop/Tailights Side Marker Lights Back-up Lights License Plate Lights Gauge Lights Indicator Lights Warning Lights Dome Light Trunk Light Illumination and Pilot Lights Heater Illumination Lights | 12V-47AH 12V-0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW 12V-60 amps 10A, 15A, 20A, 30A 10A, 15A, 20A, 50A, 60A 12V-60/55W 12V-21W 12V-21W 12V-5W 12V-21/5W 12V-5W 12V-21W 12V-5W 12V-3.4W, 3.0W, 1.4W 12V-1.4W 12V-5W 12V-3.4W 12V-1.4W 12V-1.4W 0.91W, 0.84W, LED 12V-1.4W | | |

Design Specifications

4D H/B

specs

| | ITEMS | METRIC | ENGLISH | NOTES |
|---------------------------------|--|---|--|------------------------|
| DIMENSIONS | Overall Length | 4,105 mm | 161.6 in. | |
| | Overall Width | 4,135 mm | 162.8 in. | with bumper guard |
| | Overall Height | 1,690 mm | 66.5 in. | |
| | | 1,470 mm | 57.9 in. | 2WD except KY |
| | | 1,495 mm | 58.9 in. | 2WD with roof rail |
| | | 1,490 mm | 58.6 in. | 4WD |
| | | 1,515 mm | 59.6 in. | 4WD with roof rail |
| | Wheelbase | 2,500 mm | 98.4 in. | |
| | Track, Front/Rear | 1,445/1,455 mm | 56.9/57.3 in. | |
| | | 1,440/1,450 mm | 56.7/57.1 in. | 4WD, KY 2WD |
| | Ground Clearance | KX, KS | 155 mm | 1.5 ℓ PGM-FI |
| | | KF, KW, KB, KE | 165 mm | 1.4 ℓ |
| | | KG, KS, KW | 175 mm | 1.6 ℓ with CATA |
| | | KF, KW, KB, KE | 185 mm | 1.6 ℓ without CATA |
| | | KQ | 190 mm | |
| | KX | 160 mm | | |
| Seating Capacity | | | 5 | |
| Overhang, Front/Rear | | 770/835 mm | 30.3/32.9 in. | Includes bumper |
| | with bumper guard | 800/835 mm | 31.5/32.9 in. | Includes bumper |
| WEIGHTS | Engine Weight (Wet) | | | |
| | 1.4 ℓ | 98 kg | 216 lb. | |
| | 1.5 ℓ 1-Carbureted | 94 kg | 207 lb. | |
| | 1.5 ℓ 2-Carbureted | 101 kg | 222 lb. | |
| | 1.5 ℓ PGM-FI | 100 kg | 220 lb. | |
| | 1.6 ℓ | 107 kg | 236 lb. | |
| | Curb Weight | | | |
| | 1.4 ℓ M/T | 955 kg | 2,105 lb. | KF, KB, KE |
| | | 960 kg | 2,116 lb. | KW |
| | 1.4 ℓ A/T | 975 kg | 2,150 lb. | KF, KB, KE |
| | | 980 kg | 2,161 lb. | KW |
| | 1.5 ℓ M/T | 970 kg | 2,138 lb. | KS, KX |
| | | 996 kg | 2,196 lb. | KY |
| | | 1,104 kg | 2,434 lb. | KQ |
| | 1.5 ℓ A/T | 990 kg | 2,183 lb. | KS, KX |
| | | 1,014 kg | 2,235 lb. | KY |
| | 1.6 ℓ | 1,080 kg | 2,381 lb. | KF, KG, KW, KB, KE |
| | | 1,085 kg | 2,392 lb. | KW, KS |
| | | 1,090 kg | 2,403 lb. | KX |
| | Weight Distribution (Front/Rear) | | | |
| | 1.4 ℓ M/T | 555/400 kg | 1,224/882 lb. | KF, KB, KE |
| | | 560/400 kg | 1,235/882 lb. | KW |
| | 1.4 ℓ A/T | 575/400 kg | 1,268/882 lb. | KF, KB, KE |
| | | 580/400 kg | 1,279/882 lb. | KW |
| | 1.5 ℓ M/T | 565/405 kg | 1,246/893 lb. | KS, KX |
| | | 572/424 kg | 1,261/935 lb. | KY |
| | | 620/484 kg | 1,367/1,067 lb. | KQ |
| | 1.5 ℓ A/T | 585/405 kg | 1,290/893 lb. | KS, KX |
| | | 591/423 kg | 1,302/933 lb. | KY |
| | 1.6 ℓ | 615/465 kg | 1,356/1,025 lb. | KF, KG, KW, KB, KE |
| | | 620/465 kg | 1,367/1,025 lb. | KW, KS |
| | | 625/465 kg | 1,378/1,025 lb. | KX |
| | Max. Permissible Weight (EC) | | | |
| | 1.4 ℓ, 1.5 ℓ | 1,440 kg | 3,175 lb. | KF, KG, KX, KW, KB, KE |
| | 1.5 ℓ (M/T) | 1,370 kg | 3,020 lb. | KS |
| | 1.5 ℓ (A/T) | 1,390 kg | 3,064 lb. | KS |
| | 1.6 ℓ | 1,540 kg | 3,395 lb. | PF, KG, KX, KW, KB, KE |
| | 1.6 ℓ | 1,485 kg | 3,274 lb. | KS |
| | Max. Vehicle Weight | 1,470 kg | 3,241 lb. | KY |
| | Gross Vehicle Mass (ADR) | 1,540 kg | 3,395 lb. | KQ |
| ENGINE | Type | Water cooled 4-cycle S.O.H.C. | | |
| | Cylinder arrangement | 4-cylinder in-line, transverse | | |
| | Bore and Stroke | 75 x 79 mm | 2.95 x 3.11 in. | |
| | | 75 x 84.5 mm | 7.95 x 3.33 in. | |
| | | 75 x 90 mm | 2.95 x 3.54 in. | |
| | Displacement | 1,396 cm³ (cc) | 86 cu. in. | |
| | | 1,493 cm³ (cc) | 91 cu. in. | |
| | | 2,590 cm³ (cc) | 98 cu. in. | |
| | Compression Ratio | | | |
| | 1.4 ℓ | | 9.3 | |
| | 1.5 ℓ | | 9.2 | |
| | 1.6 ℓ | | 9.1 | |
| | Valve Train | 4-valves per cylinder, single overhead camshaft | | |
| | Lubrication System | Pressure feed | | |
| | Fuel Required | | | |
| Engine with CATA | Unleaded gasoline with 91 research octane number or higher | | * Both leaded and unleaded gasoline can be used. | |
| Carbureted engines without CATA | *Gasoline with 91 research octane number or higher | | | |
| PGM-FI without CATA | Leaded gasoline with 97 research octane number or higher | | | |

(cont'd)

Design Specifications

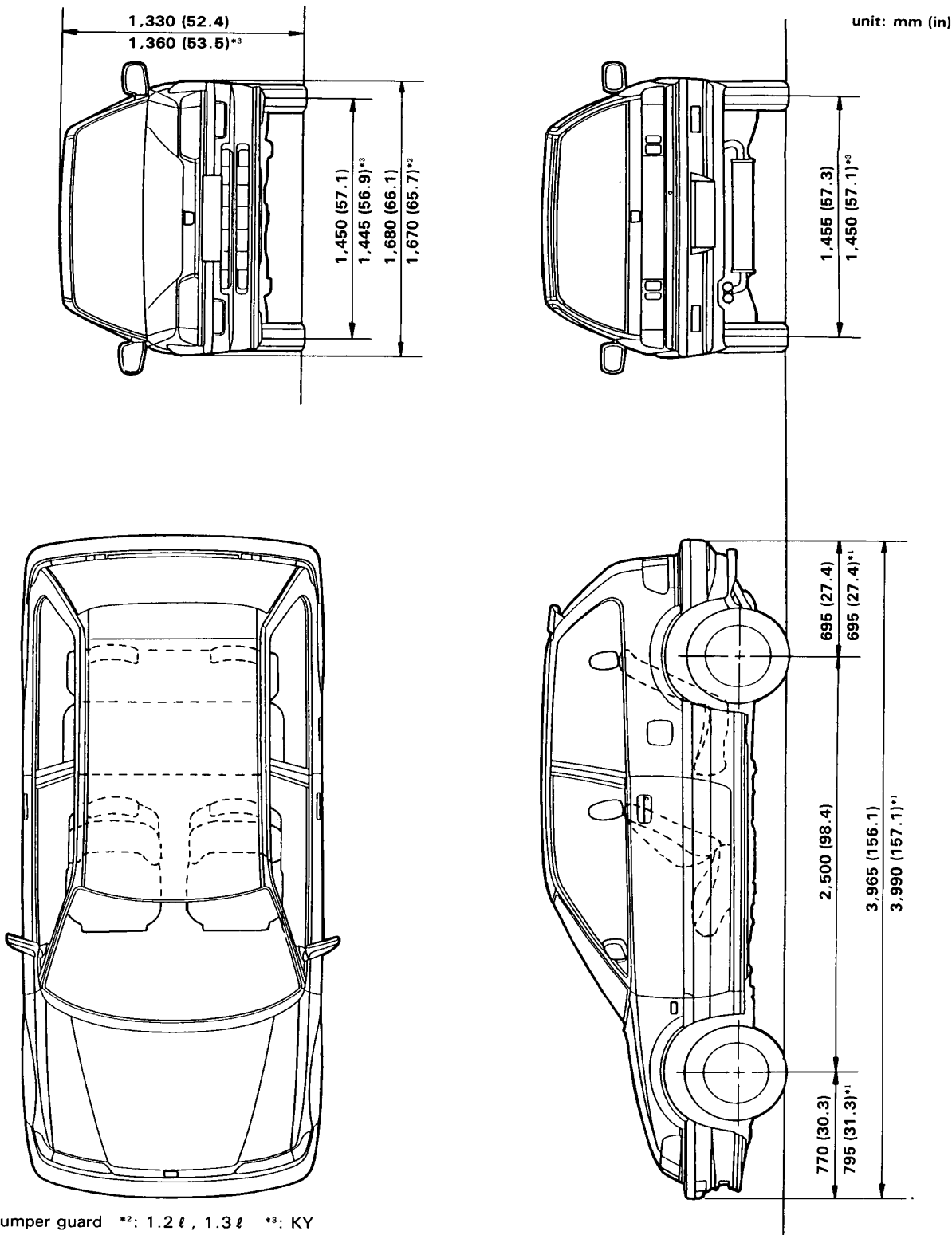
4D H/B (cont'd)

| | ITEMS | METRIC | ENGLISH | NOTES |
|--------------------|---|--|--|--------|
| STARTER | Type | 0.8 kW 1.0 kW, 1.2 kW, 1.4 kW | Direct Gear reduction 0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW 12V 30 seconds Clockwise as viewed from gear end | |
| | Normal Output Normal Voltage Hour Rating Direction of Rotation Weight | 0.8 kW HITACHI/ND 1.0 kW MITSUBA ND 1.2 kW ND 1.4 kW MITSUBA | 4.4 kg 3.4 kg 3.85 kg 3.85 kg 3.7 kg | |
| TRANSMISSION | Clutch | M/T A/T | Single plate dry, diaphragm spring Torque converter | KX, KS |
| | Transmission Type | M/T M/T + Super Low Gear A/T | 5 speeds forward, synchromesh, 1 speed reverse, 6 speeds forward, synchromesh, 1 speed reverse 4 speeds forward, with lock-up clutch, 1 speed reverse 1.000 | |
| | Primary Reduction | | 5-M/T 4-A/T 4WD | |
| | Gear Ratio | Super low I II III IV V Reverse | 3.250 1.894 1.259 0.937 0.771 3.153 2.705 1.560 1.027 0.780 1.954 4.512 3.384 1.950 1.275 0.941 0.783 3.000 | |
| | Final Reduction | M/T 1.4 t 1.5 t 4WD A/T | Single helical gear, 4.250 Single helical gear, 4.058 Single helical gear, 4.428 Single helical gear, 3.933 | |
| AIR CONDITIONER | Clutch Facing Area | | 160 cm ² 24.8 sq. in. | |
| | Compressor | | MASTUSHITA | |
| | Cooling Capacity | | 3,850 Kcal/h | |
| | — Conditions: | | | |
| | Compression min ⁻¹ (rpm) | | 1,800 min ⁻¹ (rpm) | |
| | Outside Air Temperature | | 27.0°C 81°F | |
| | Outside Air Humidity | | 50% | |
| | Condenser Air Temperature | | 35°C 95°F | |
| | Condenser Air Velocity | | 4.5 m/sec. 14.8 ft/sec. | |
| | Blower Capacity | | 440 m ³ /h 15,118 cu. ft/h | |
| | Compressor | Type Number of Vane Displacement Max. min ⁻¹ (rpm) Lubricant Capacity | Vane rotary type 3 130cc/rev. 7,500 min ⁻¹ (rpm) 130 cc Includes fusible safety plug. | |
| | Receiver Dryer With Desiccant | | | |
| | Condenser | | Corrugated fin type | |
| | Evaporator | | Corrugated fin type | |
| | Blower | Type Motor input Speed control Max. capacity | Sirocco fan 170 W (12V) 4 speeds 390 m ³ /h 13,773 cu ft/h | |
| | Temp. Control | | Air-mix type | |
| | Comp. Clutch | Type Power consumption | Dry, single plate, V-belt 32 W max. 12V | |
| | Refrigerant | Type Quantity | R-12 0.90 ± 0.05 kg 1.98 ± 0.11 lbs | |
| | STEERING SYSTEM | Type Overall Ratio Turn, lock-to-lock Steering Wheel Dia Power Steering Oil Capacity Power Steering Oil | Rack and Pinion 18.6 : 1/19.8 (18—20.4) : 1/17.7 : 1 3.8/4.1/3.6 377/370 mm 1.2 lit. HONDA Genuine Power Steering Fluid P/N 08208—99961 | |
| | SUSPENSION SYSTEM | Type, Front/Rear Shock Absorber | Independent by double wishbones coil springs Telescopic, Nitrogen gas-filled | |

| | ITEMS | | | METRIC | ENGLISH | NOTES |
|------------------------|-------------------------------|----------------------|-----|---|---------------|-------------------------|
| WHEEL ALIGNMENT | Wheel alignment | | | | | |
| | Camber | Front | 2WD | | 0°19'±1° | |
| | | | 4WD | | 0°35'±1° | |
| | | Rear | 2WD | | -0°23'±1° | |
| | | | 4WD | | 0°±1° | |
| | Caster | Front | 2WD | | 2°58'±1° | |
| BRAKE SYSTEM | | | 4WD | | 2°56'±1° | |
| | Toe-in | Front | | 0±2 mm | 0±0.08 in. | |
| | | Rear | | 2±1 mm | 0.08±0.08 in. | |
| | Kingpin Inclination | | 2WD | | 7°14' | |
| | | | 4WD | | 6°58' | |
| | | | | | | |
| TIRES | Type | Front | | Power assisted self-adjusting disc drum | | |
| | | Rear | | | | |
| | Lining Surface Area | | | | | |
| | Front | 1.4 ℓ, 1.5 ℓ | | 36.8 mm² | 5.70 sq. in. | Carbureted engine |
| | | 1.5 ℓ, 1.6 ℓ | | 44.1 mm² | 6.84 sq. in. | PGM-FI |
| | Rear | | | 50.2 mm² | 7.78 sq. in. | |
| | Effective Disc Diameter | | | 190 mm | 7.48 in. | Carbureted engine |
| | | 1.4 ℓ, 1.5 ℓ | | 194 mm | 7.64 in. | PGM-FI |
| | | 1.5 ℓ, 1.6 ℓ | | 200 mm | 7.87 in. | |
| | Brake Drum I.D. | | | Mechanically actuating, rear two wheel brakes | | |
| ELECTRICAL | Parking Brake Kind and Type | | | | | |
| | Size | KY | | 165/80R13 82S | | |
| | | 4WD | | 175/65R14 82H or 165SR13 | | |
| | | Others | | 165/70R13 79S or 175/70R13 82H | | |
| | Spare | 2WD | | T105/80 D13 | | |
| ELECTRICAL | | 4WD | | T135/70 D15 | | Standard for some types |
| | Battery | | | 12V-47AH | | |
| | Starter | | | 12V-0.8 kW, 1.0 kW, 1.2 kW, 1.4 kW | | |
| | Alternator | | | 12V-60 amps | | |
| | Fuses | In the dash fuse box | | 10A, 15A, 20A, 30A | | |
| | | In the main fuse box | | 10A, 15A, 20A, 50A, 60A | | |
| | Headlights High/Low | | | 12V-60/55W | | |
| | Front Turn Signal Lights | | | 12V-21W | | |
| | Rear Turn Signal Lights | | | 12V-21W | | |
| | Side Turn Signal Lights | | | 12V-5W | | |
| | Stop/Taillights | | | 12V-21/5W | | |
| | Side Marker Lights | | | 12V-5W | | |
| | Back-up Lights | | | 12V-21W | | |
| | License Plate Lights | | | 12V-5W | | |
| | Gauge Lights | | | 12V-3.4W, 3.0W, 1.4W | | |
| | Indicator Lights | | | 12V-1.4W | | |
| | Warning Lights | | | 12V-3.4W | | |
| | Dome Light | | | 12V-3.4W | | |
| | Luggage Area Light | | | 12V-21W | | |
| | Illumination and Pilot Lights | | | 12V-1.4W | | |
| | Heater Illumination Lights | | | 0.91W, 0.84W, LED | | |
| | Rear Fog Lights | | | 12V-1.4W | | |
| | | | | 12V-21W | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |

Body Specifications

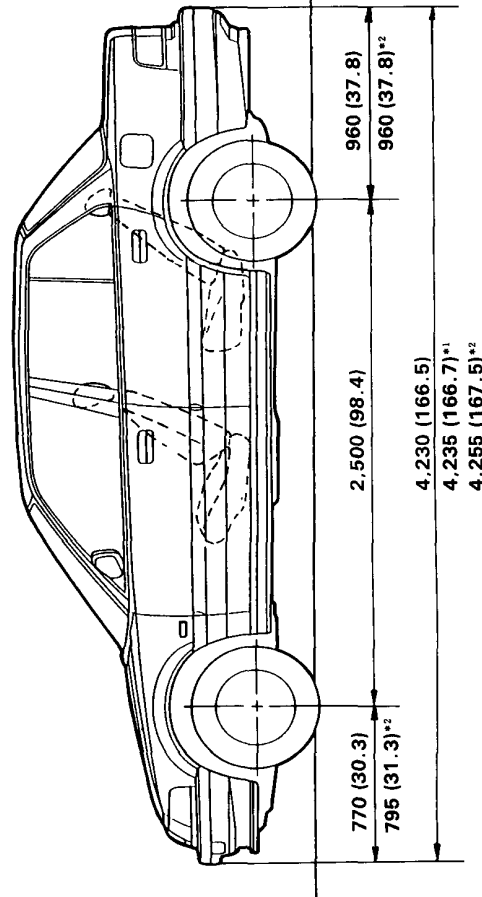
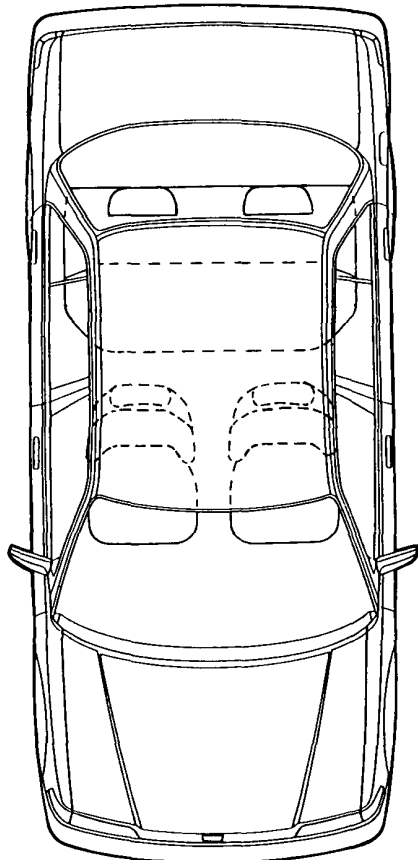
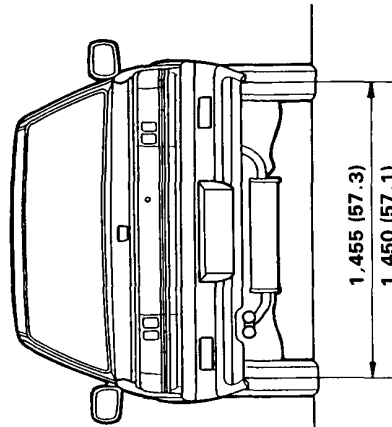
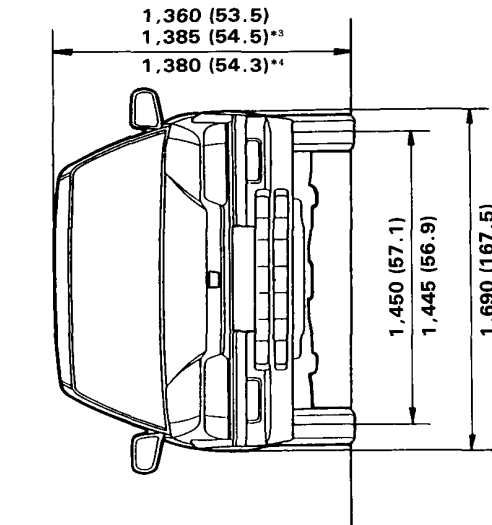
2D H/B



*1: with bumper guard *2: 1.2 ℓ , 1.3 ℓ *3: KY

4D, 4D 4WD

unit: mm (in)

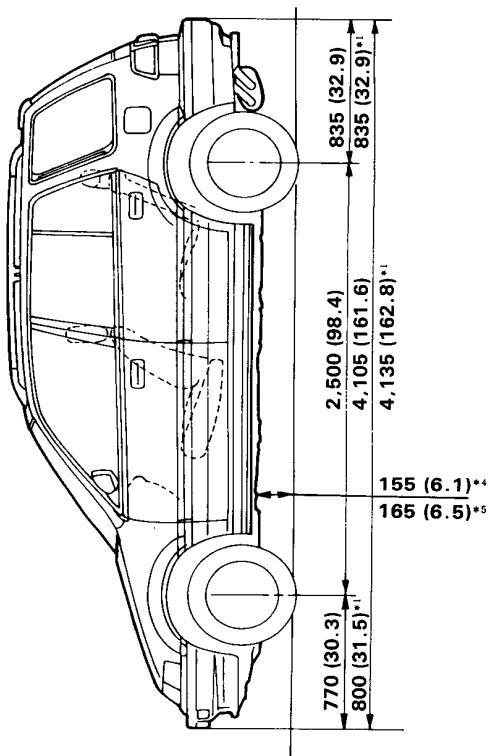
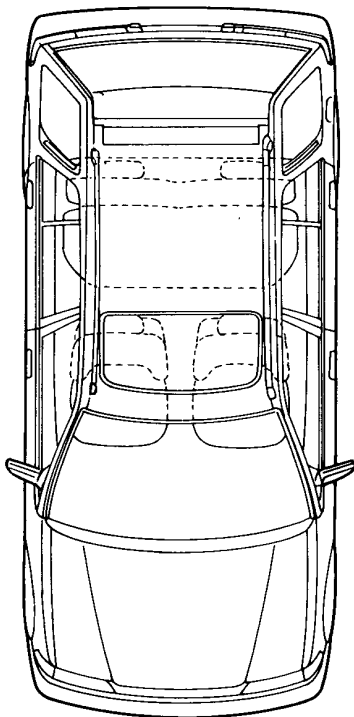
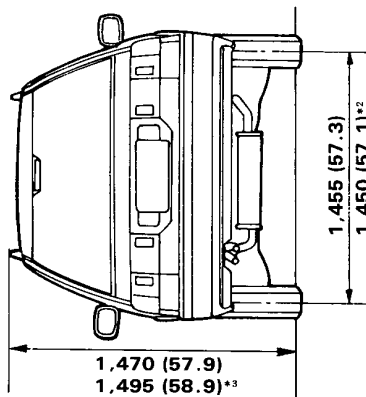
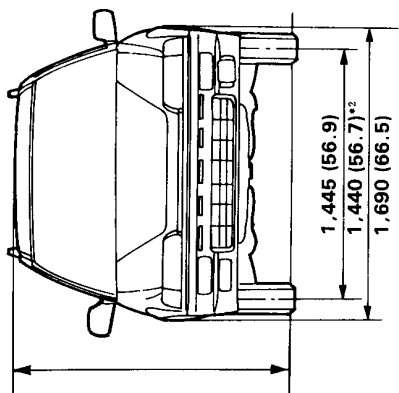


*¹: KQ *²: with bumper guard *³: KY *⁴: 4WD

Body Specifications

4D H/B

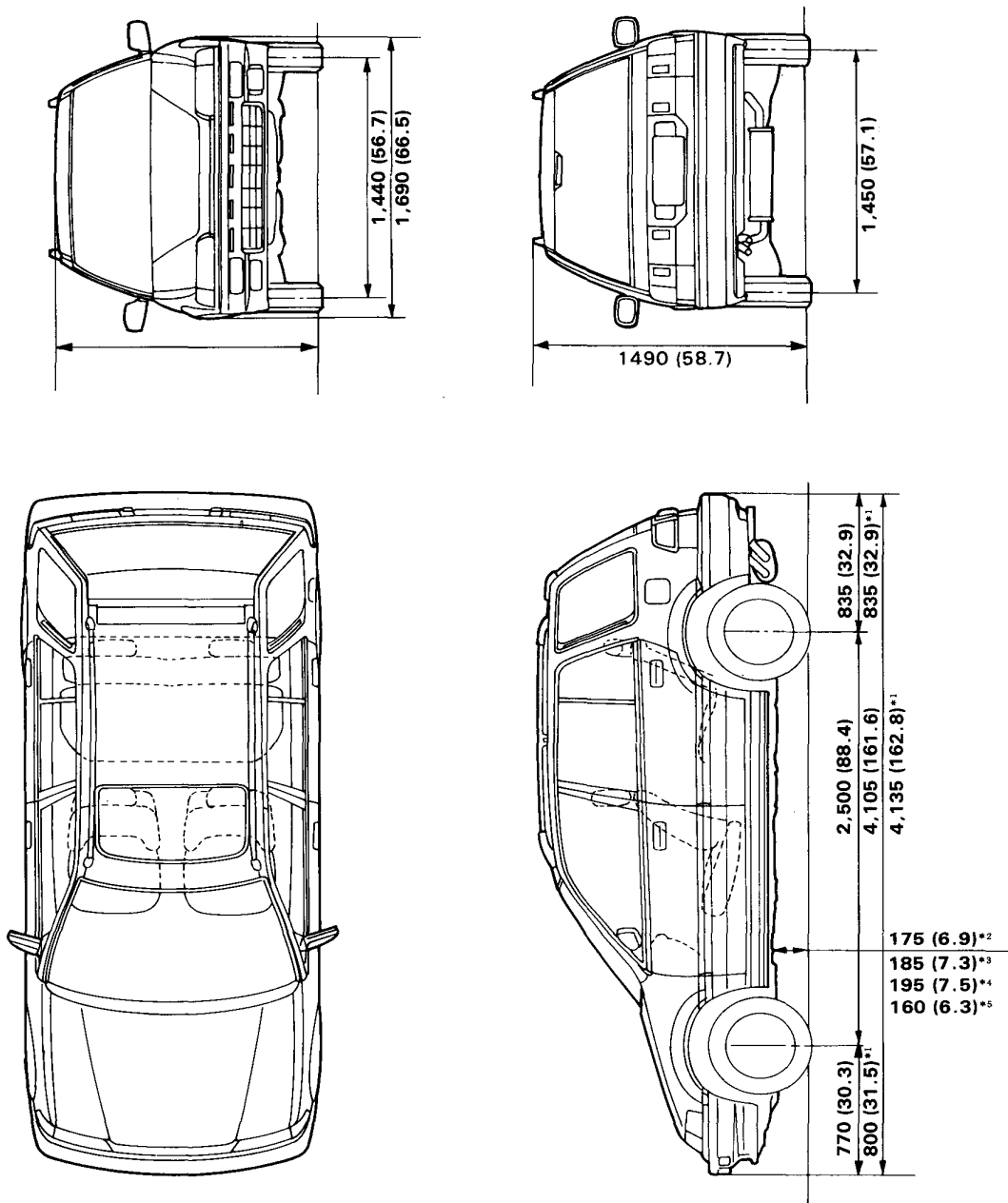
Unit: mm (in.)



*¹: with bumper guard *²: KY *³: with roof rail *⁴: KX, KS *⁵: KF, KW KB, KE

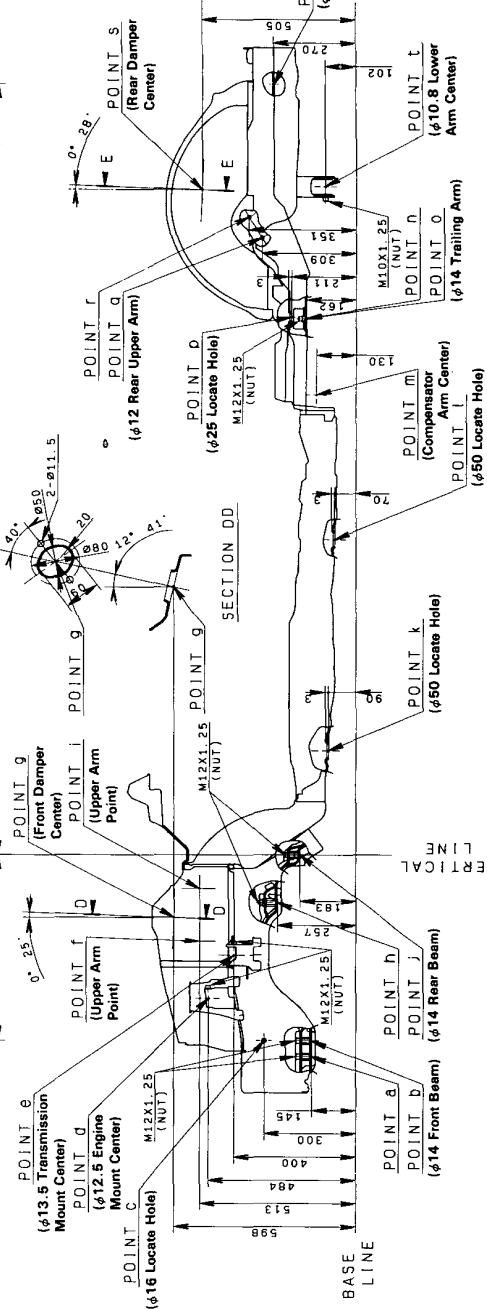
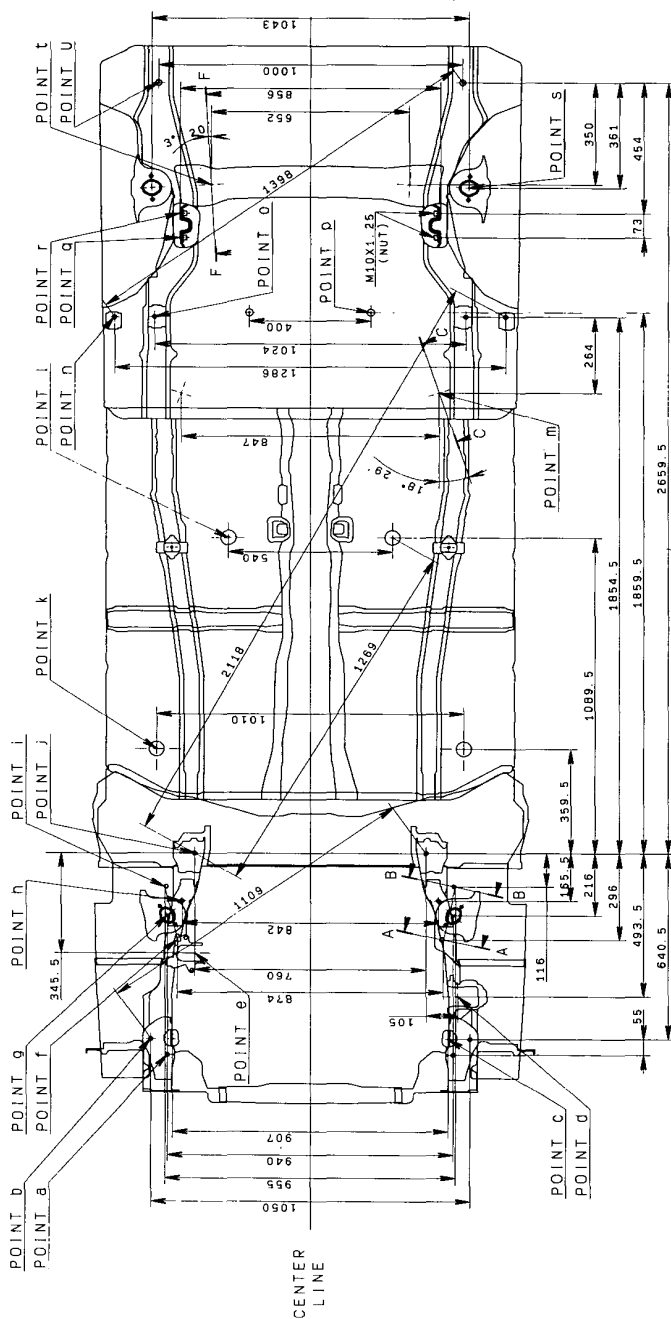
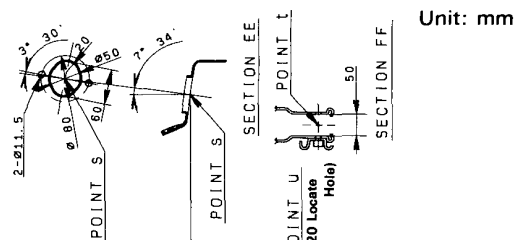
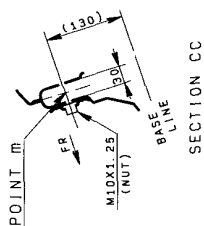
4D H/B 4WD

Unit: mm (in.)



*¹: with bumper guard *²: with CATA *³: without CATA *⁴: KQ *⁵: KX

2D H/B



Unit: mm

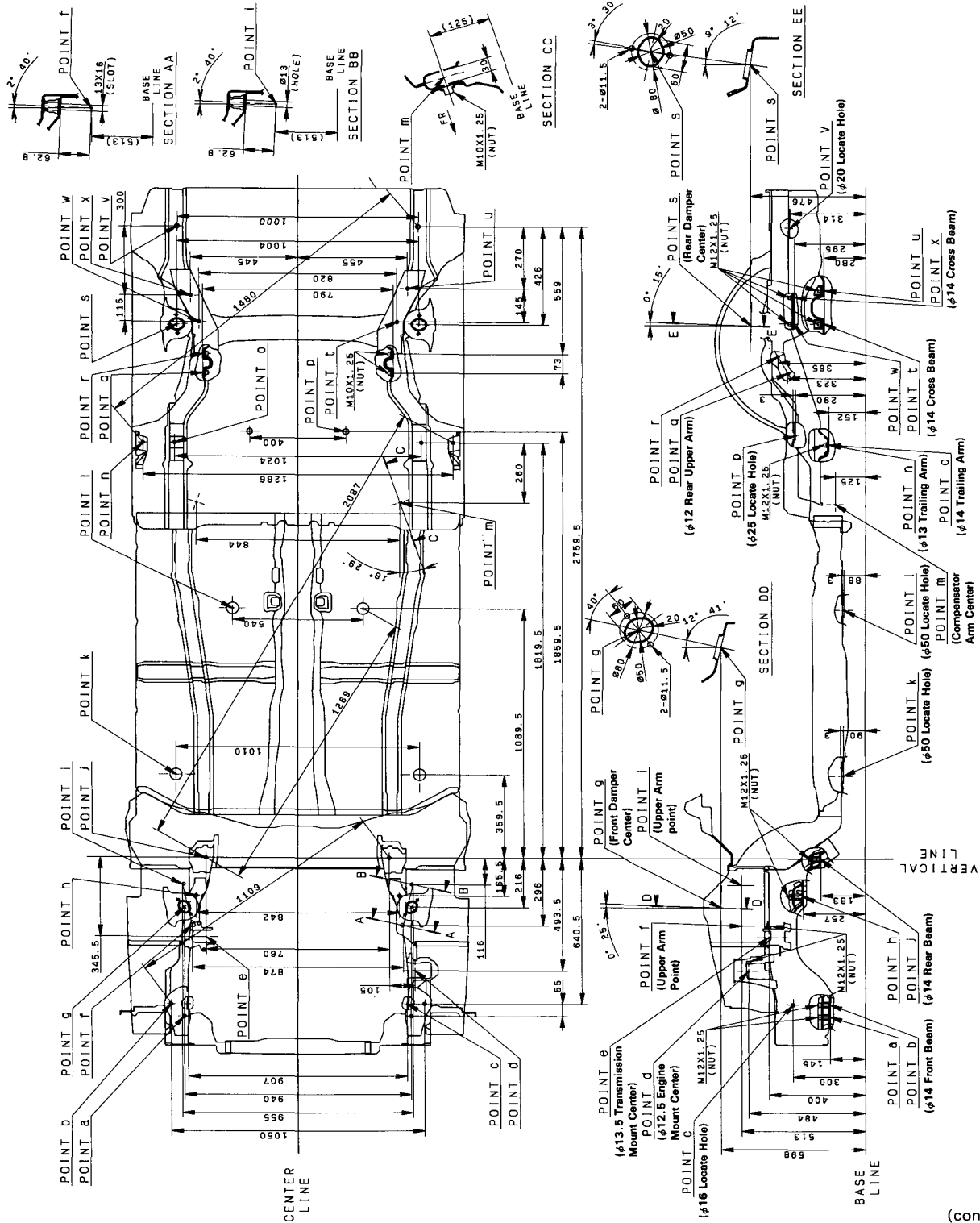


4D 4WD

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4D H/B

Unit: mm



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4D H/B 4WD

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Maintenance

Lubrication Points.....4-2

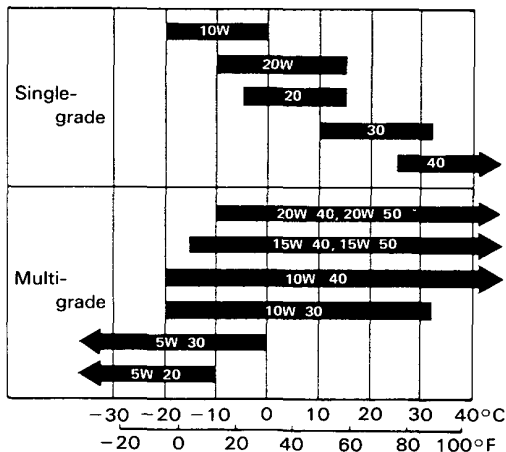
Maintenance Schedule4-4



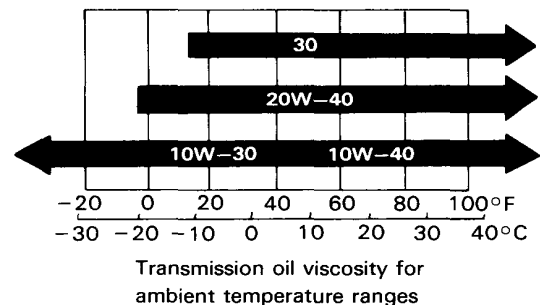
Lubrication Points

| No. | LUBRICATION POINTS | LUBRICANT |
|-----|--|--|
| 1 | Engine | API Service Grade: SE or SF SAE Viscosity: See chart below |
| 2 | Transmission Manual Automatic | API Service: SE or SF SAE Viscosity: See chart below DEXRON® or DEXRON®II Automatic transmission fluid |
| 3 | Brake reservoir | Brake fluid DOT 3 |
| 4 | Power steering reservoir | Honda power steering fluid P/N 08208—99961 |
| 5 | Steering gearbox (Power steering) | Honda steering grease P/N 08733—B070E |
| 6 | Steering gearbox(Manual steering) | Multi-purpose Grease |
| 7 | Tilt steering | |
| 8 | Steering ball joints | |
| 9 | Suspension ball joints | |
| 10 | Steering boots | |
| 11 | Shift lever pivot (Manual transmission) | |
| 12 | Steering column bushings | |
| 13 | Select lever (Automatic transmission) | |
| 14 | Pedal linkage | |
| 15 | Brake master cylinder push rod | |
| 16 | Tailgate hinges and Trunk hinges | |
| 17 | Door hinges upper and lower | |
| 18 | Door opening detents | |
| 19 | Fuel filler lid | |
| 20 | Engine hood hinges | |
| 21 | Engine hood latch | |
| 22 | Rear brake shoe linkage | |
| 23 | Caliper Piston seal Dust seal Caliper pin Piston | Silicone Grease |
| 24 | Rear Differential (4WD only) | Hypoid Gear oil (API GL4 or GL5) above 5°C (41°F) SAE90, below 5°C (41°F) SAE 80 |

Recommended Engine Oil
(SE or SF Grade oil)



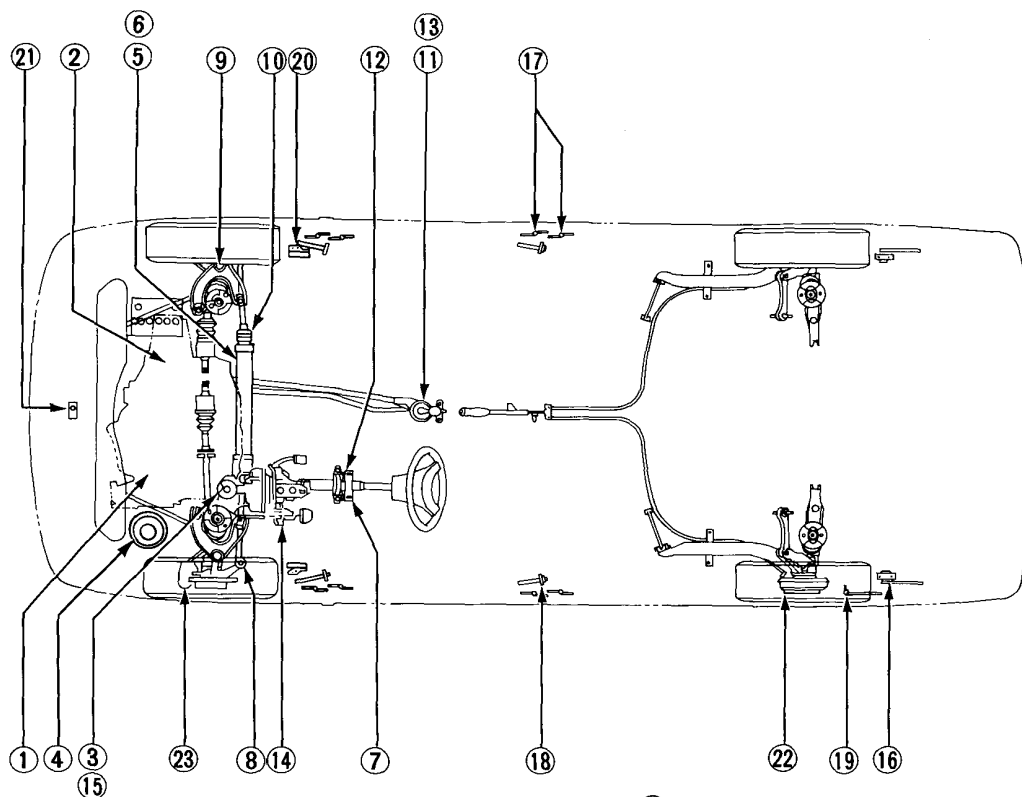
Recommended Manual Transmission Oil



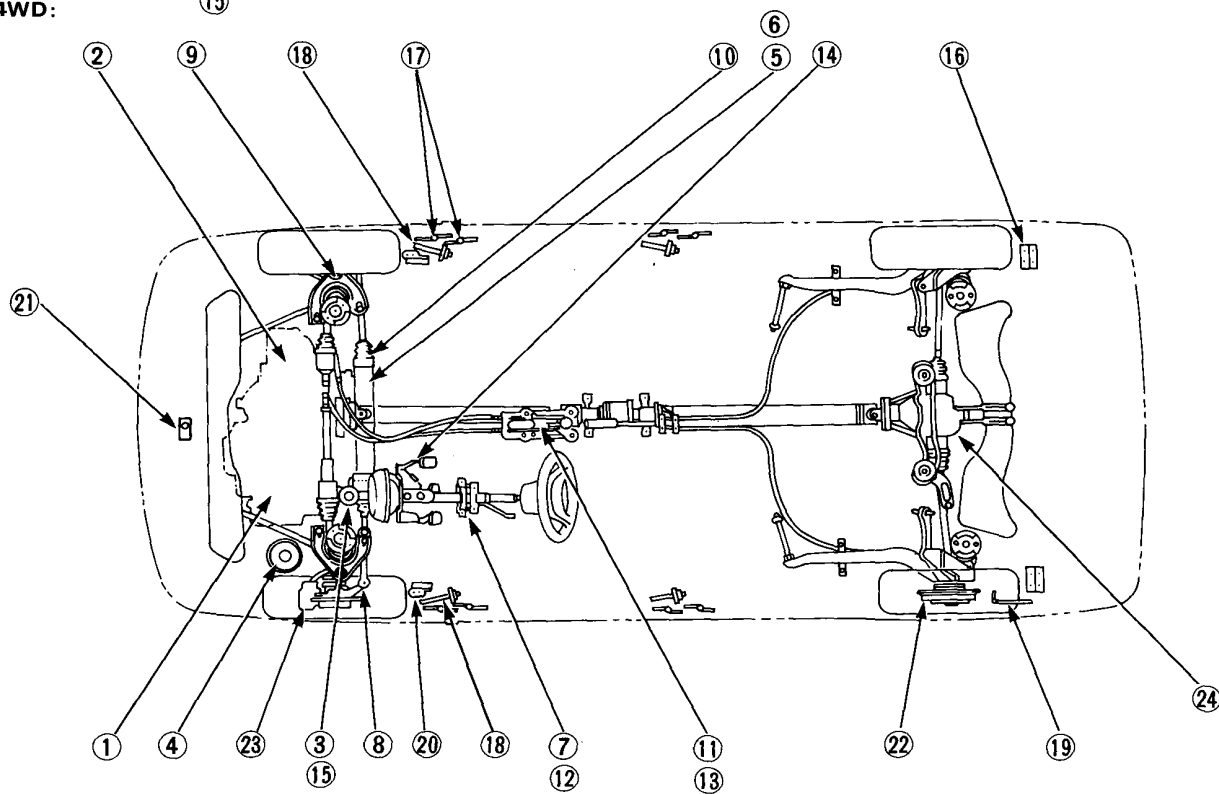
CAUTION: Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.



2WD:



4WD:



Maintenance Schedule

| Service at the interval listed x 1,000 km (or miles) or after that number of months, whichever comes first. | R—Replace | | I—Inspect. After inspection, clean, adjust, repair or replace if necessary. | | | | |
|---|---------------------------------------|---|---|----------------|-----------------|-----------------|---|
| | x 1,000 km x 1,000 miles months | 20 12 12 | 40 24 24 | 60 36 36 | 80 48 48 | 100 60 60 | |
| ITEM | | | | | | | |
| Idle speed and idle CO* ³ | | I | I | I | I | I | |
| Idle speed and idle CO* ⁴ | | | | | | | I |
| Valve clearance | | I | I | I | I | I | |
| Alternator drive belt | | | I | | I | | |
| ■Engine oil and oil filter | | Replace every 10,000 km (6,000 miles) or 6 months | | | | | |
| ■Transmission oil | | | R | | R | | |
| Rear differential oil (4WD only) | | | R | | R | | |
| ■Radiator coolant | | | | | R* ¹ | | |
| Cooling system hoses and connections | | | I | | I | | |
| Air cleaner element (Viscous type for European and KQ models) | | | R | | R | | |
| Air cleaner element (Dry type except European and KQ models) | | R | R | R | R | R | |
| Fuel filter | | | R | | R | | |
| Tank, fuel line and connections | | | I | | I | | |
| Intake air temp. control system* ⁵ | | | | | | | I |
| Throttle control system* ⁵ | | | I | | I | | |
| Choke mechanism* ⁵ | | | I | | I | | |
| Choke opener operation (only for carburetor automatic choke type, KQ model) | | | | | | | I |
| Evaporative emission control system (for cars using unleaded gasoline and KY model) | | | | | | | I |
| Ignition timing and control system* ³ | | | I | | I | | |
| Ignition timing and control system* ⁴ | | | | | | | I |
| Spark plugs (for cars using unleaded gasoline) | | | R* ² | | R* ² | | |
| Spark plugs (for cars using leaded gasoline) | | R | R | R | R | R | |
| Distributor cap and rotor* ³ | | | I | | I | | |
| Distributor cap and rotor* ⁴ | | | | | | | I |
| Ignition wiring* ³ | | | I | | I | | |
| Ignition wiring* ⁴ | | | | | | | I |
| Positive crankcase ventilation valve* ³ | | | I | | I | | |
| Positive crankcase ventilation valve* ⁴ | | | | | | | I |
| Blow-by filter* ⁵ | | | I | | I | | |

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

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

*2 For KS type, replace every 2 years or 40,000 km (24,000 miles) whichever comes first after 30,000 km (18,000 miles).

*3 Except KS, KX models

*4 KS, KX models

*5 Only for carbureted type



| Service at the interval listed x 1,000 km (or miles) or after that number of months, whichever comes first. | R—Replace | | I—Inspect. After inspection, clean, adjust, repair or replace if necessary. | | | |
|---|---------------------------------------|---|---|----------------|----------------|-----------------|
| ITEM | x 1,000 km x 1,000 miles months | 20 12 12 | 40 24 24 | 60 36 36 | 80 48 48 | 100 60 60 |
| Brake hoses and lines | | I | I | I | I | I |
| Brake fluid | | | 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 (for disk brake type) | | | I | | I | |
| Rear brake drums, wheel cylinders and linings (for drum brake type) | | | I | | I | |
| Parking brake | | I | I | | I | |
| Clutch release arm travel | | I | I | I | I | I |
| Exhaust pipe and muffler | | I | I | I | I | I |
| Suspension mounting bolts | | I | I | I | I | I |
| Front wheel alignment | | I | I | I | I | I |
| Steering operation, tie rod ends, steering gear box and boots | | I | I | | I | |
| Power steering system (Standard for some types) | | I | I | I | I | I |
| Power steering pump belt (Standard for some types) | | | I | | I | |
| Catalytic converter heat shield (Standard for some types) | | | | | I | |

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 |
| A B C . E F | Clutch release arm travel | I | Every 10,000 km (6,000 miles) or 6 months |
| . B C . E . | Power steering system | 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 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.

Engine

This section contains only on-frame servicing and removal/installation. For detail refer to the D12B/D13B/D14A/D15B/D16A Engine Maintenance and Repair (62PM100).

| | |
|-----------------------------------|--------|
| Engine Tune-up | 5 – 1 |
| Timing Belt | 5 – 5 |
| Engine Removal/Installation | 5 – 9 |
| Exhaust Pipe and Muffler | 5 – 11 |



Engine Tune-up

Special Tools5 – 2

Engine Oil Replacement5 – 3

Oil Filter Replacement.....5 – 4

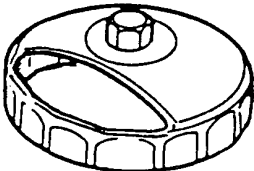


Outline of Model Change

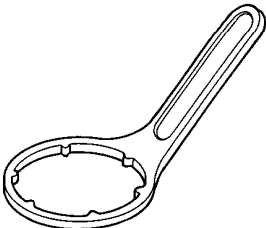
The oil filter has been changed.

Special Tools

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



①



②

Engine Tune-up

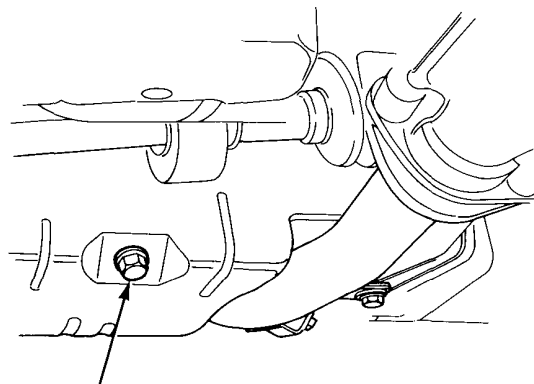


Engine Oil Replacement

- 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.

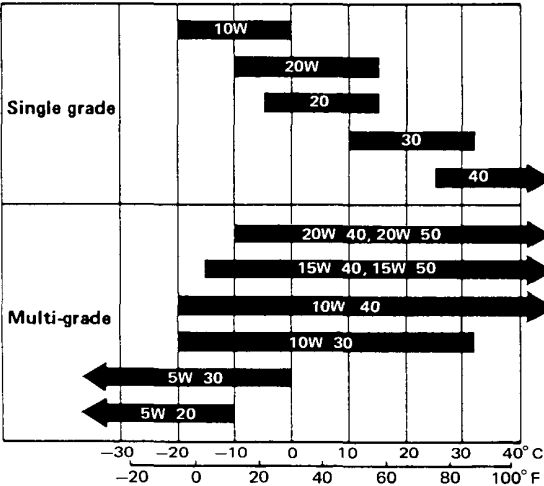


OIL PAN DRAIN PLUG
45 N·m (4.5 kg·m, 33 lb·ft)

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

| | |
|----------|---|
| Capacity | SOHC: 3.0 lit (3.2 US qt, 2.7 Imp. qt) DOHC 3.3 lit (3.5 US qt, 2.9 Imp. qt) <i>excluding oil filter</i> SOHC: 3.5 lit (3.7 US qt, 3.1 Imp. qt) DOHC 3.8 lit (4.0 US qt, 3.4 Imp. qt) at change, including filter SOHC: 4.0 lit (4.2 US qt, 3.5 Imp. qt) DOHC 4.3 lit (4.6 US qt, 3.8 Imp. qt) |
| Change | Every 10,000 km (6,000 miles) or 6 months |

Recommended Engine Oil (SE or SF Grade only)



Expected Ambient Temperature before next oil change

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

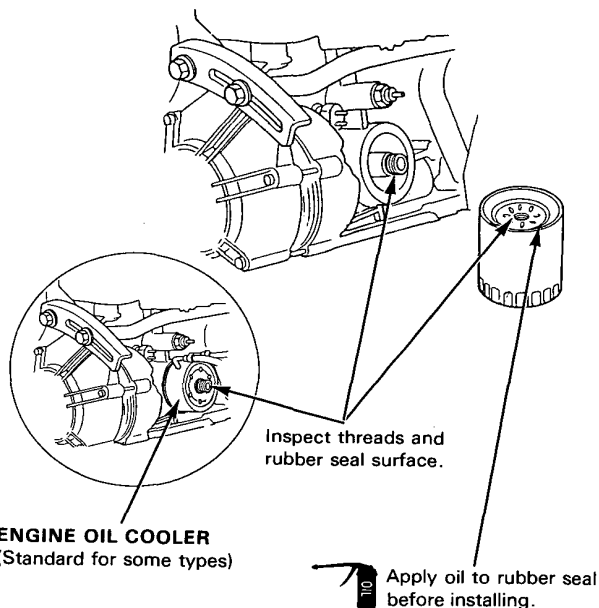
Engine Tune-up

Oil Filter Replacement

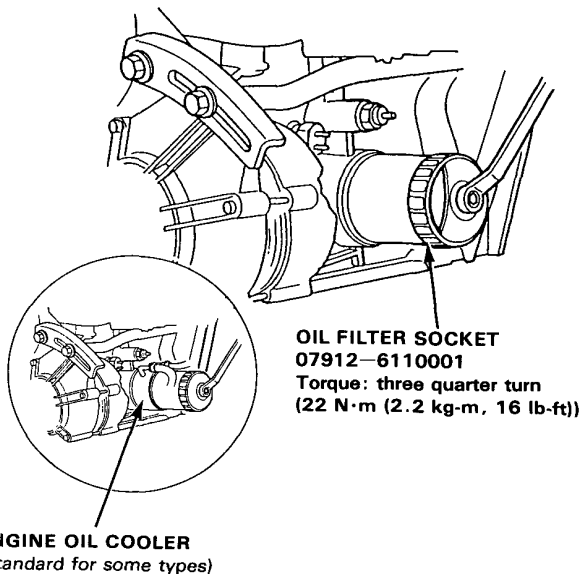
WARNING : After the engine has been run, the exhaust pipes will be hot, be careful when working around the exhaust manifold.

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.

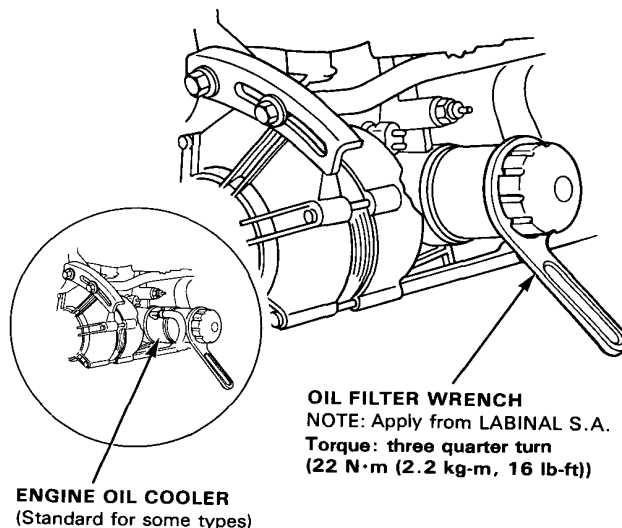
1. Remove the oil filter with the special oil filter socket or wrench.
2. Inspect the threads and rubber seal on the new filter. Wipe off seat on engine block, then apply a light coat of oil to the rubber seal, and install filter.
3. After the rubber seal is seated, tighten the filter by turning approximately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

| | |
|------------------------------|-----|
| Special Tools | 5–6 |
| Crankshaft Pulley Bolt | 5–7 |




Outline of Model Change

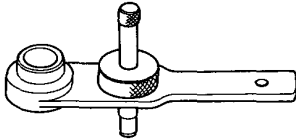
The crankshaft pulley bolt has been changed.

Special Tools

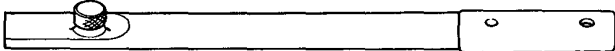
| No. | Tool Number | Description | Q'ty | Remarks |
|-----|---------------|--------------------------|------|---|
| ① | 07JAB-0010000 | Crank Pulley Holder Set | 1 | for crankshaft pulley bolt [Component tools |
| ①-1 | 07JAA-0010100 | Socket Wrench, 17 mm | (1) | |
| ①-2 | 07JAB-0010100 | Pulley Holder Attachment | (1) | |
| ①-3 | 07JAB-0010200 | Handle | (1) | |



①-1



①-2



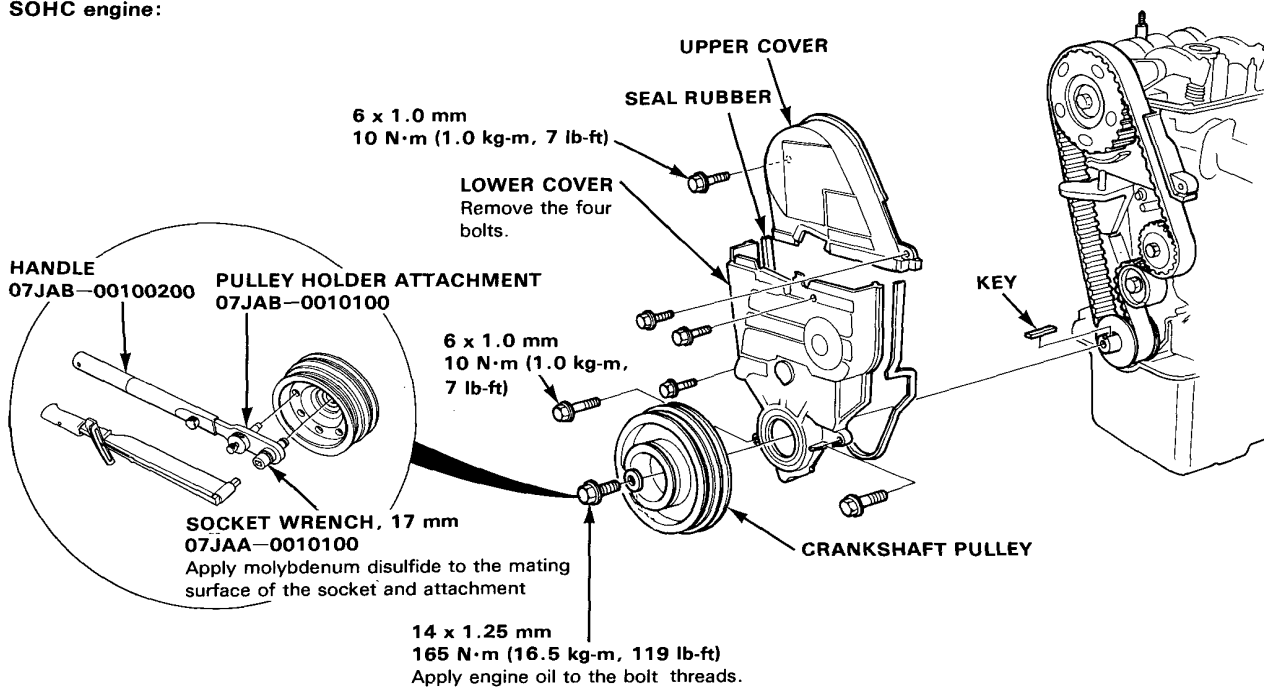
①-3

Crankshaft Pulley Bolt

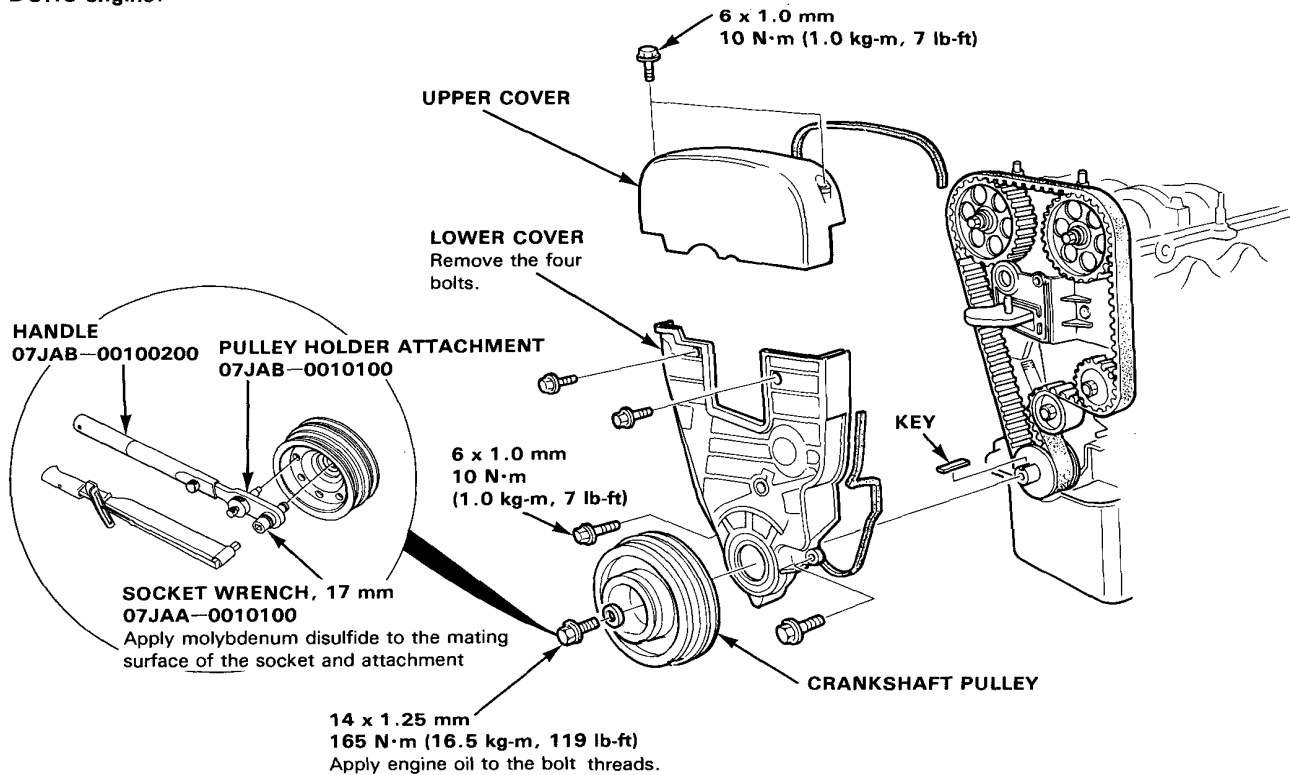


Replacement

SOHC engine:



DOHC engine:



Engine Removal/Installation

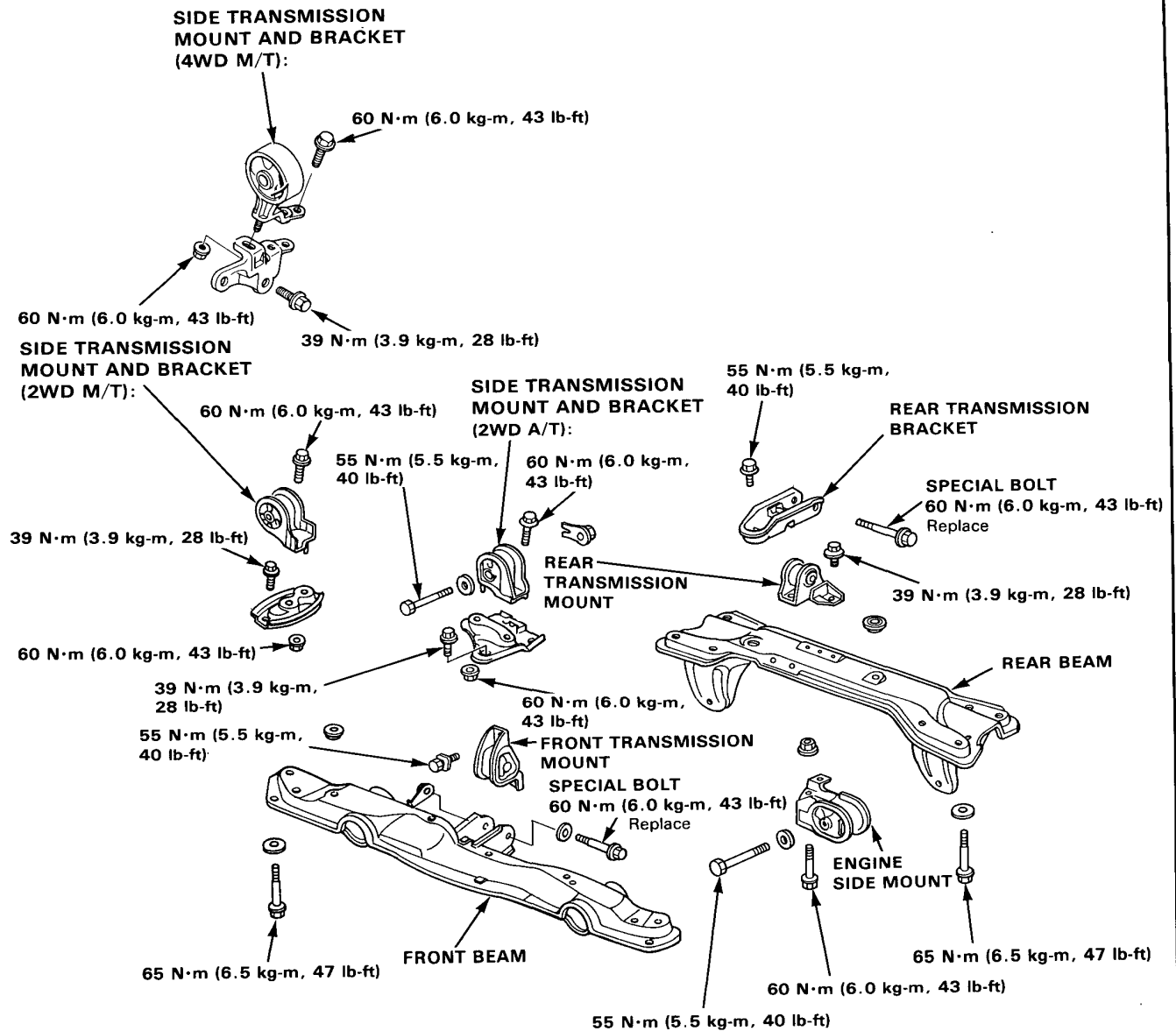


Outline of Model Change

The torque values of the engine mounting bolts and nuts have been changed.

Engine Removal/Installation

Additional Torque Specifications



Exhaust Pipe and Muffler



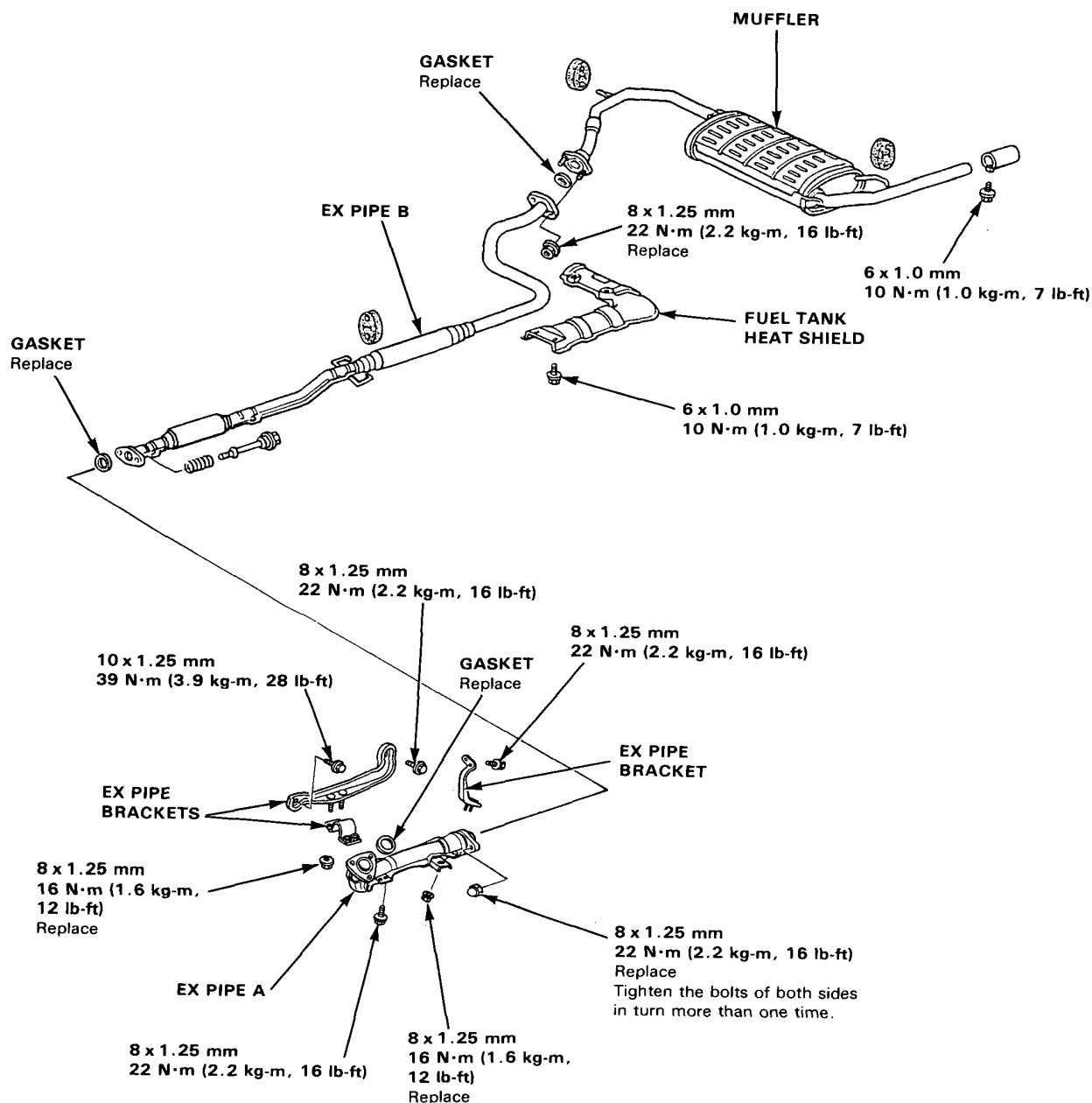
Outline of Model Change

The exhaust pipe has been changed.

Exhaust Pipe and Muffler

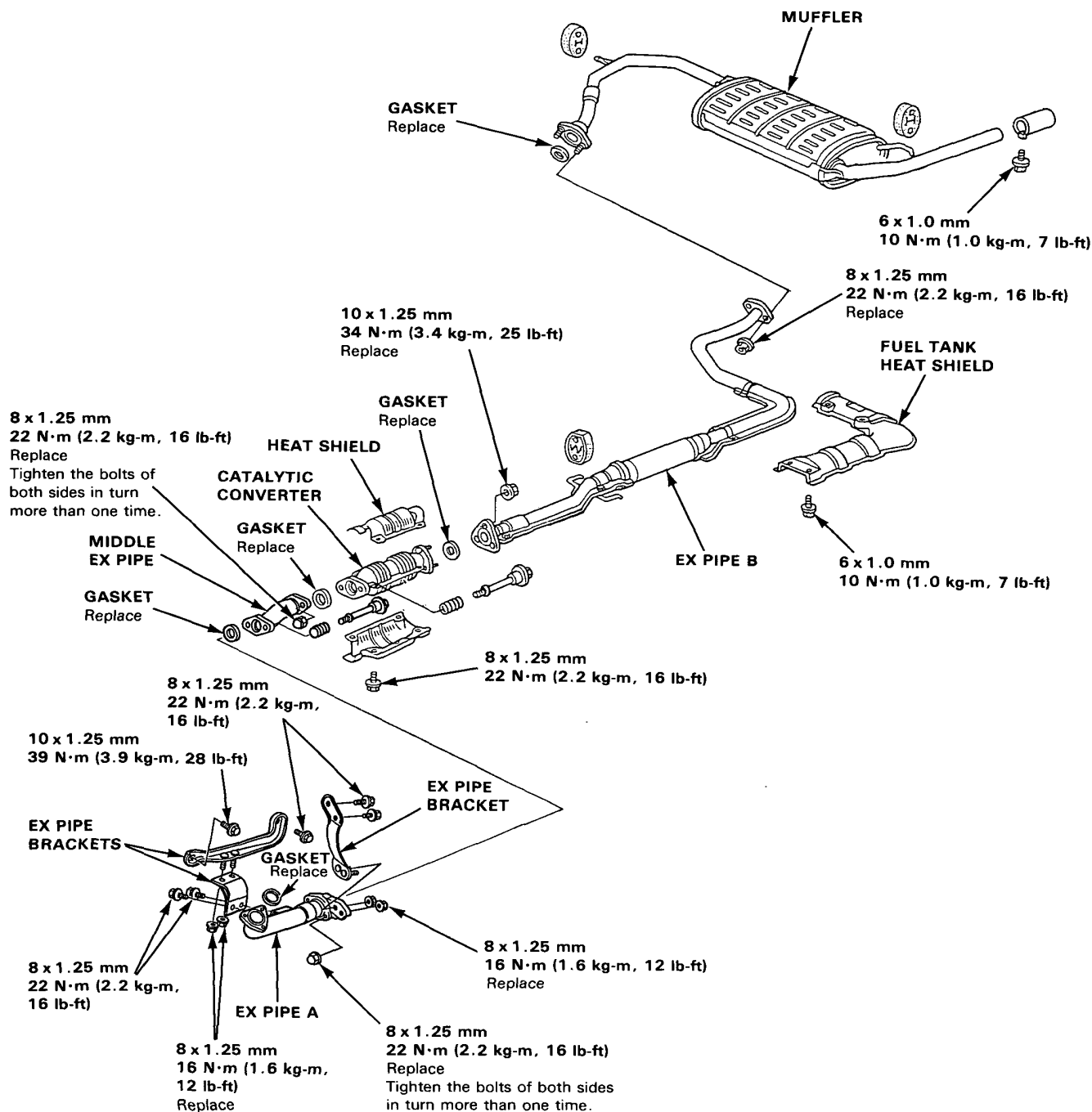
Replacement (2WD except 4-door hatchback)

Carbureted engine without CATA:





1.5 L Dual-point fuel injected engine:

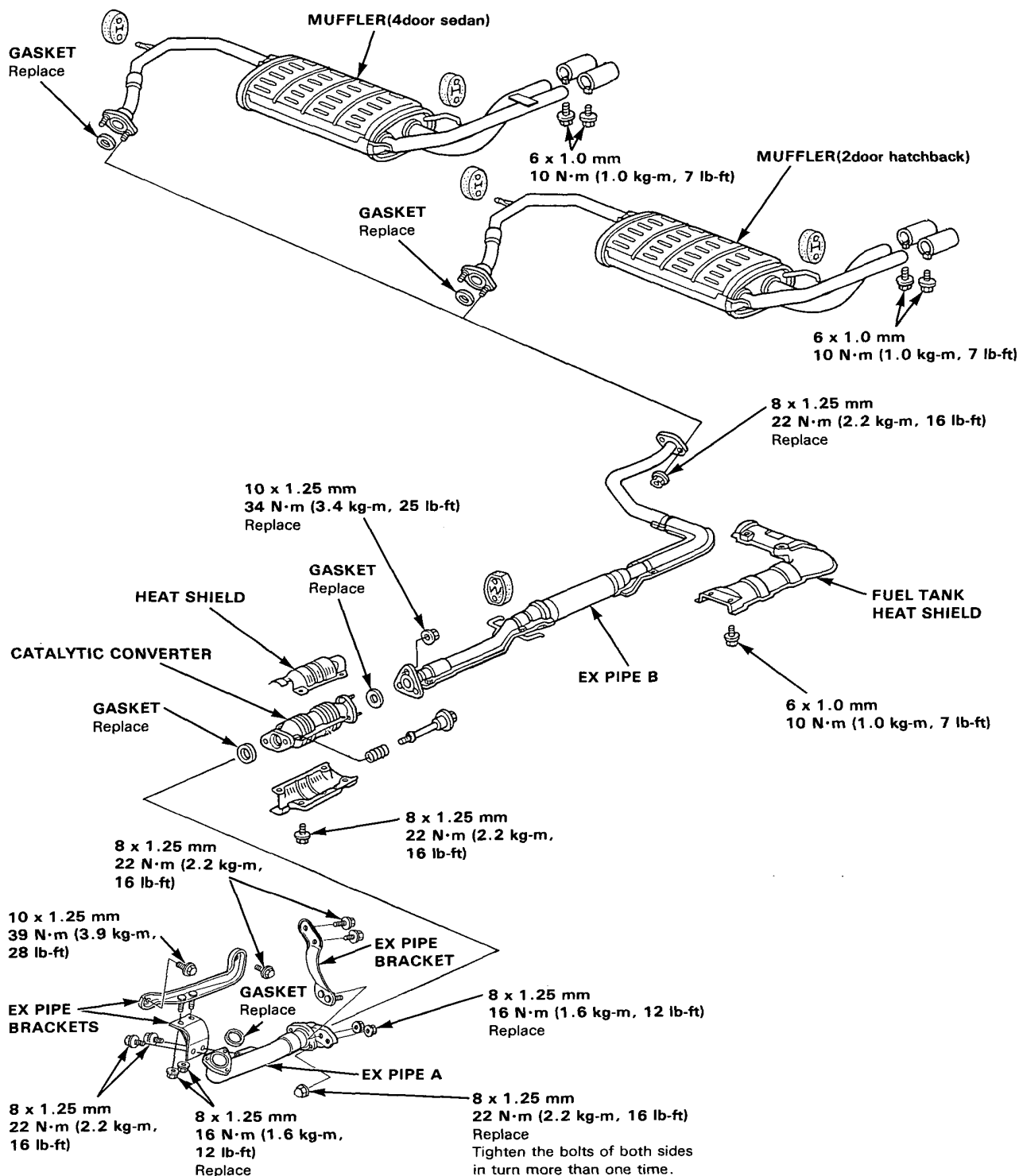


(cont'd)

Exhaust Pipe and Muffler

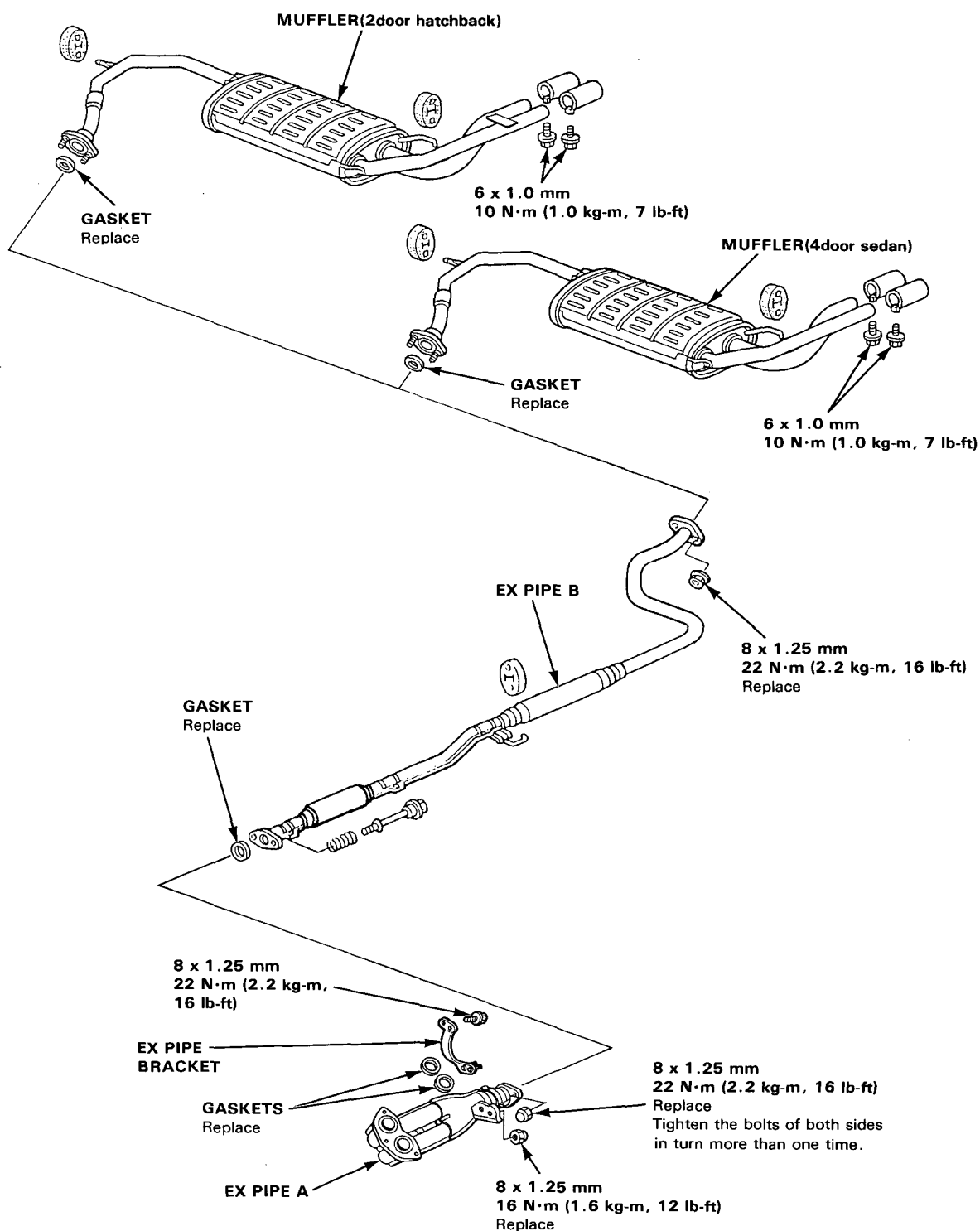
Replacement (2WD except 4-door hatchback) (cont'd)

1.5 l, 1.6 l with CATA:





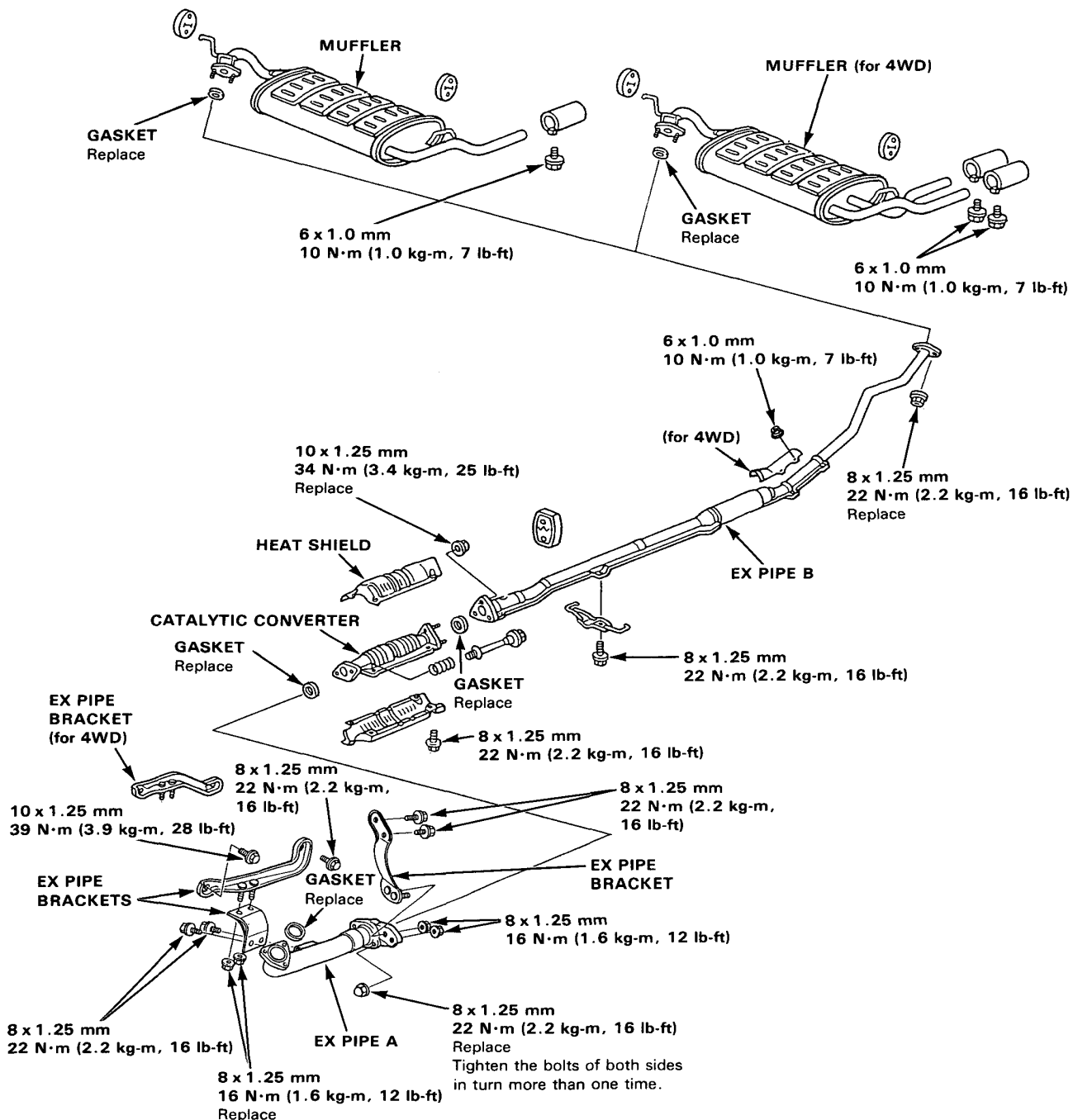
1.6 l without CATA:



Exhaust Pipe and Muffler

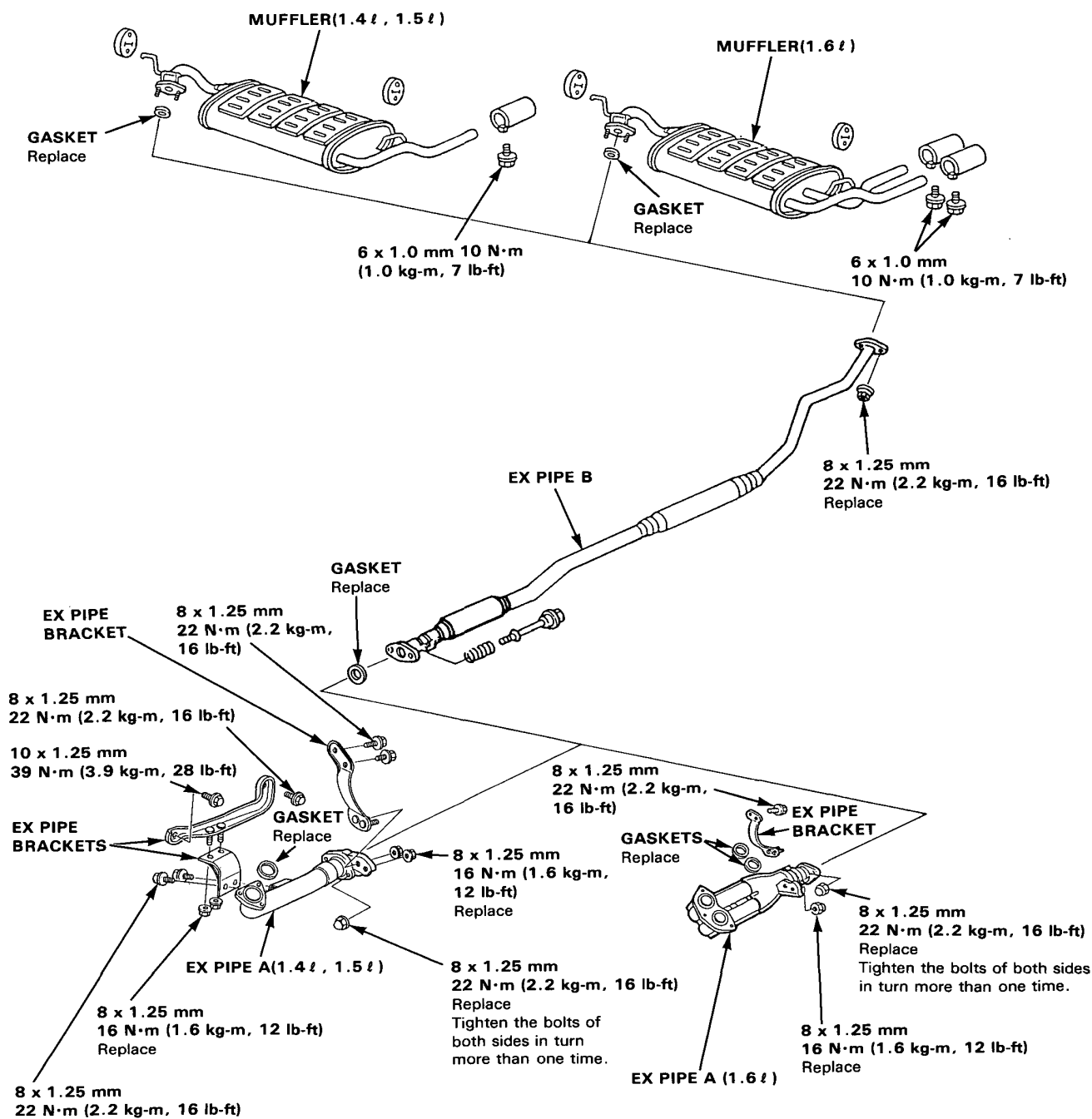
Replacement (2WD 4-door hatchback and 4WD)

with CATA:





without CATA:



Fuel and Emission

| | |
|----------------------------|-----|
| Carbureted Engine | 6—1 |
| Fuel Injected Engine | 6—7 |



Fuel and Emission (Carbureted Engine)

System Description

Vacuum Connections6-2



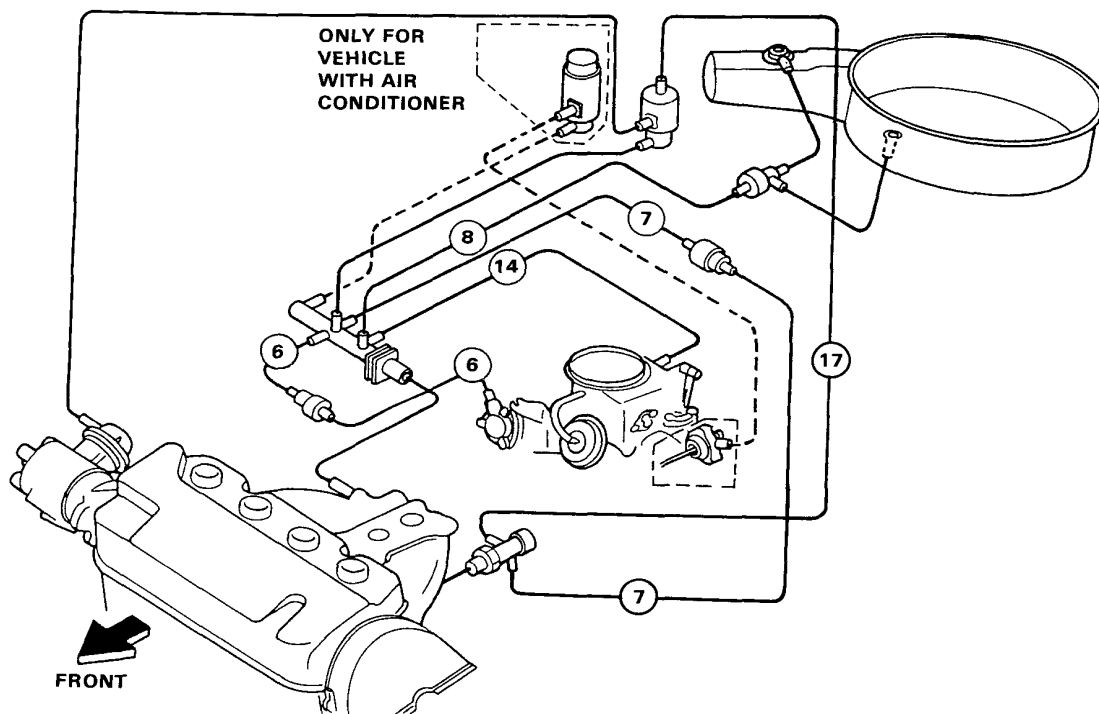
Outline of Model Change

The vacuum connections has been modified.

System Description

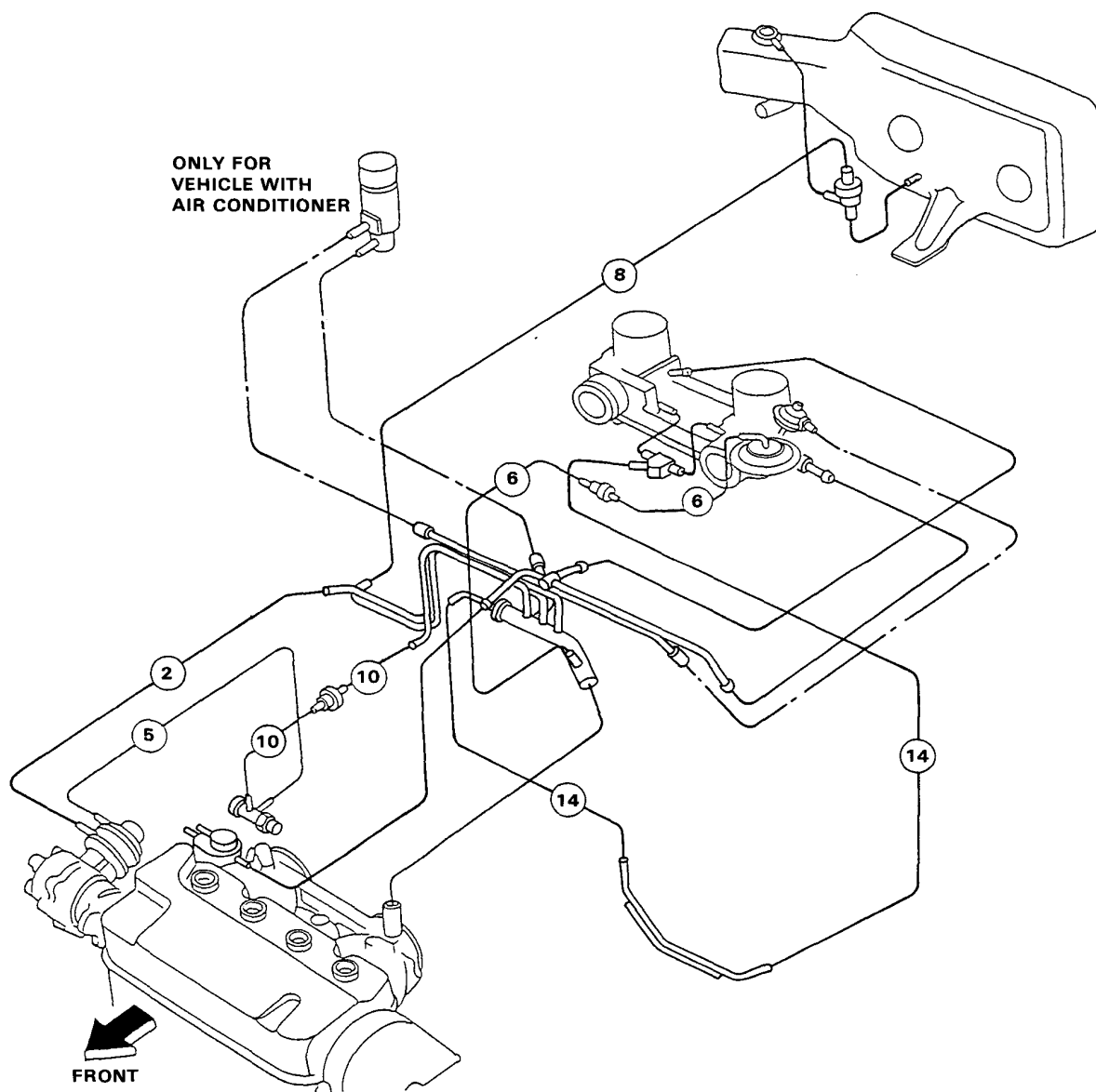
Vacuum Connections

[1-Carbureted Engine, KG A/T]





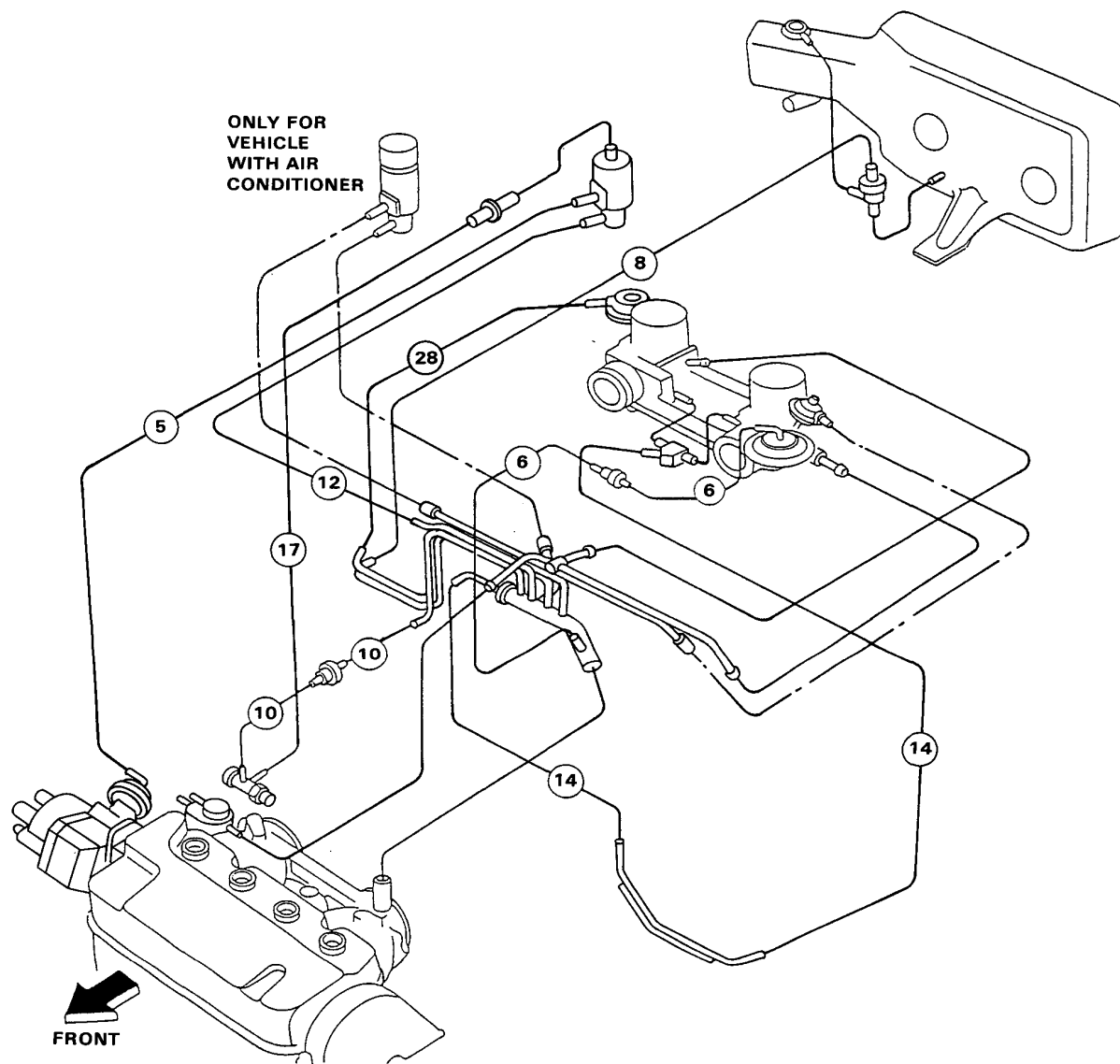
[2-Carbureted Engine, KB, KF, KW, KE]



System Description

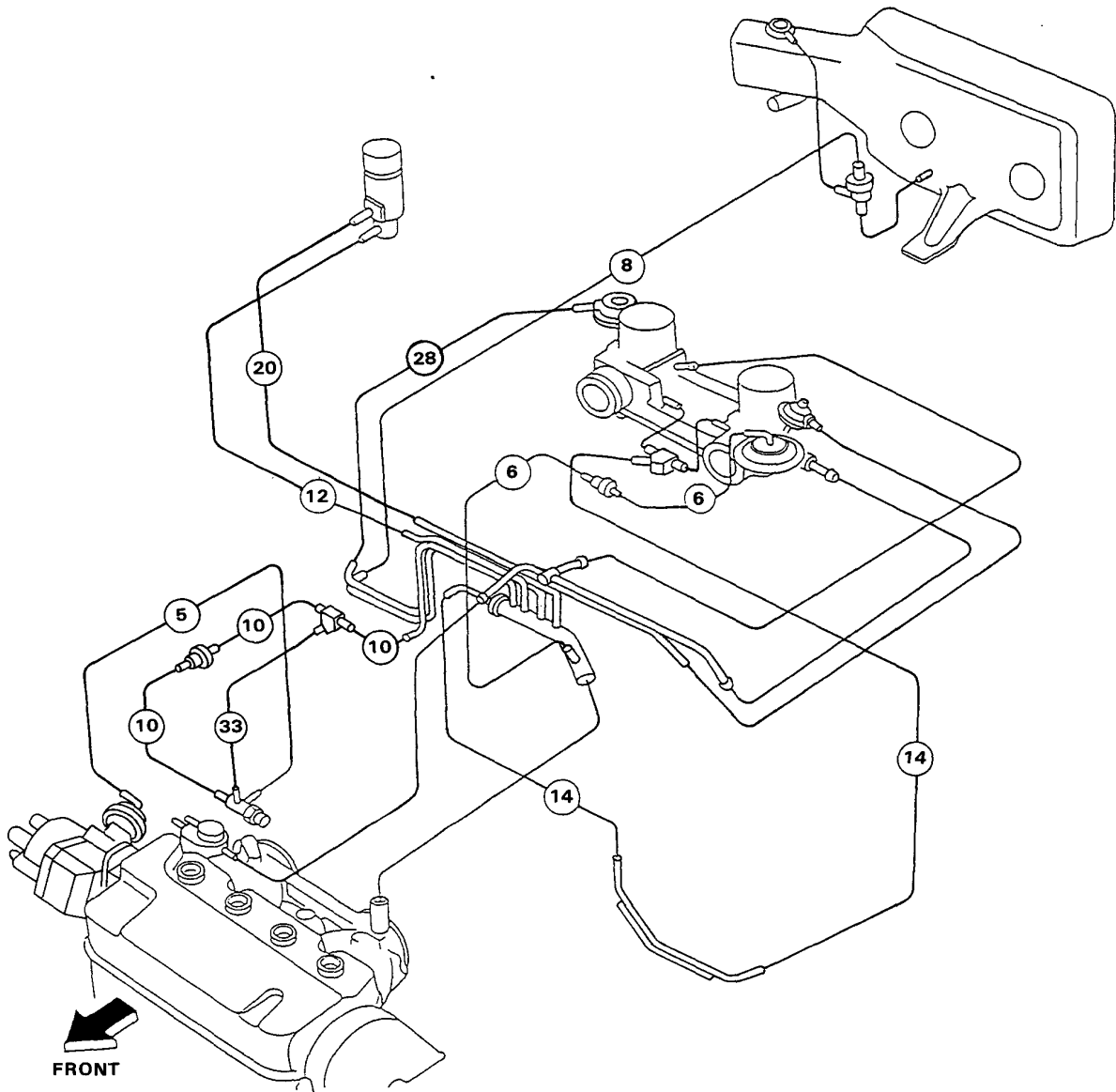
Vacuum Connections

[2-Carbureted Engine, KG A/T]





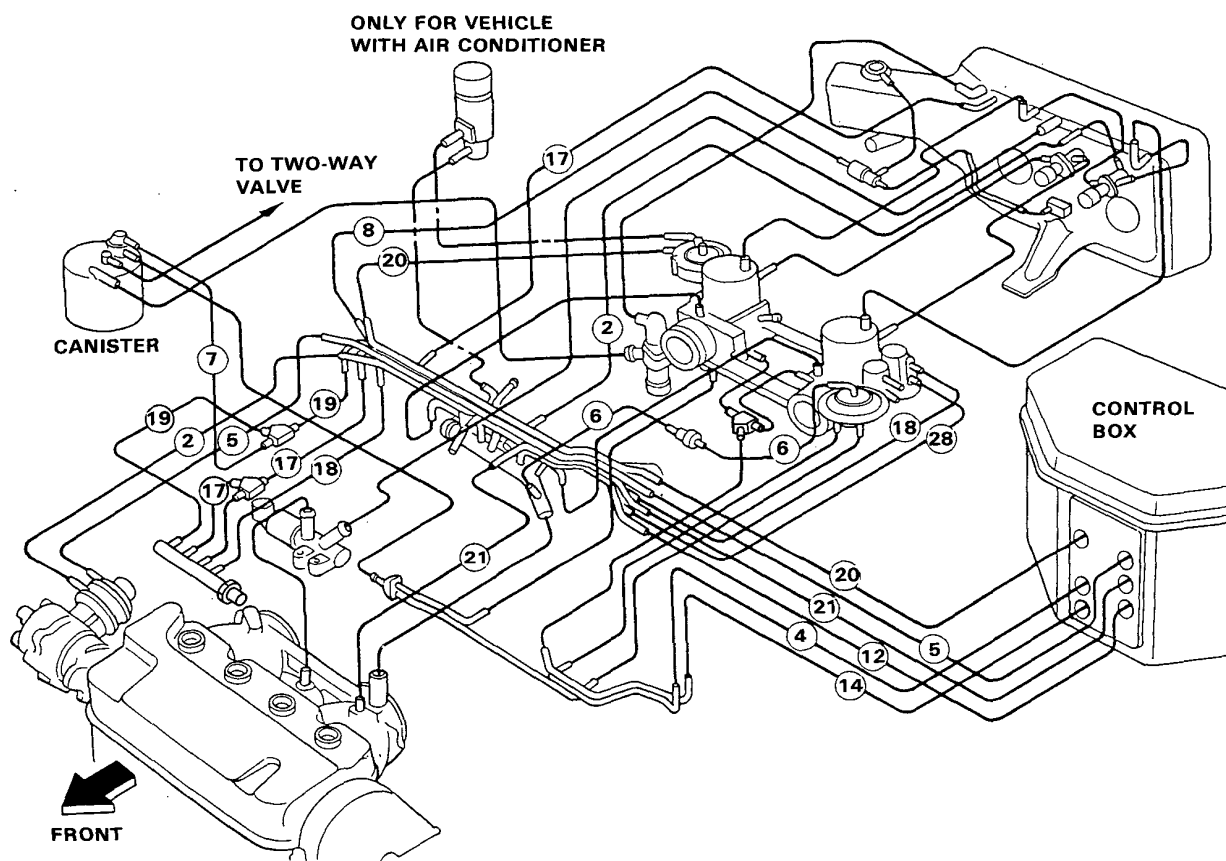
[2-Carbureted Engine, KG M/T]



System Description

Vacuum Connections

[2-Carbureted Engine, KQ]



Fuel and Emissions (Fuel Injected Engine)

Component Locations

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Troubleshooting Flowcharts

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CYL Sensor6-50

Atmospheric Pressure Sensor ...6-52

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Signal (A/T only)6-58

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Throttle Control System6-84

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Catalytic Converter6-86

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Evaporative Emission Controls6-88



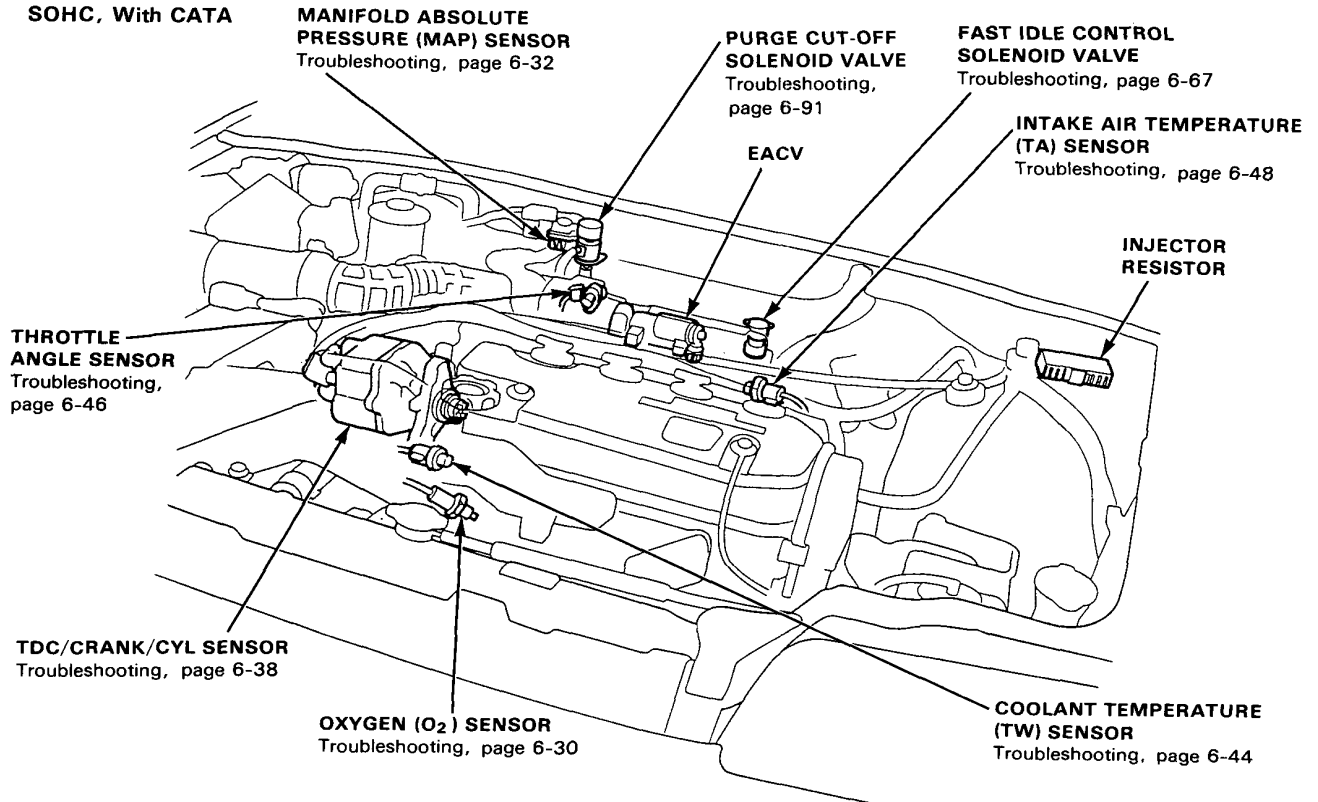
Outline of Model Changes

- The fast idle control solenoid valve has been adopted. [1.6 l]
- The troubleshooting guide has been modified.
- The inspection of ECU, O₂ sensor, MAP sensor, TDC/CRANK sensor (1.5 l and DOHC), TDC/CRANK/CYL sensor (1.6 l SOHC), CYL sensor (DOHC) TW sensor, throttle angle sensor, TA sensor, PA sensor, ignition output signal, vehicle speed sensor, lock up control solenoid valve, A/C switch signal and alternator FR signal has been modified.
- The inspection/adjustment of idle speed has been modified.
- The inspection of fuel injectors has been modified.
- The inspection of fuel pump has been modified.
- The throttle body has been changed. [1.6 l]
- The inspection of catalytic converter has been modified.
- The inspection of PCV valve has been modified. [1.5 l]
- The inspection of evaporative emission control has been modified. [1.6 l]

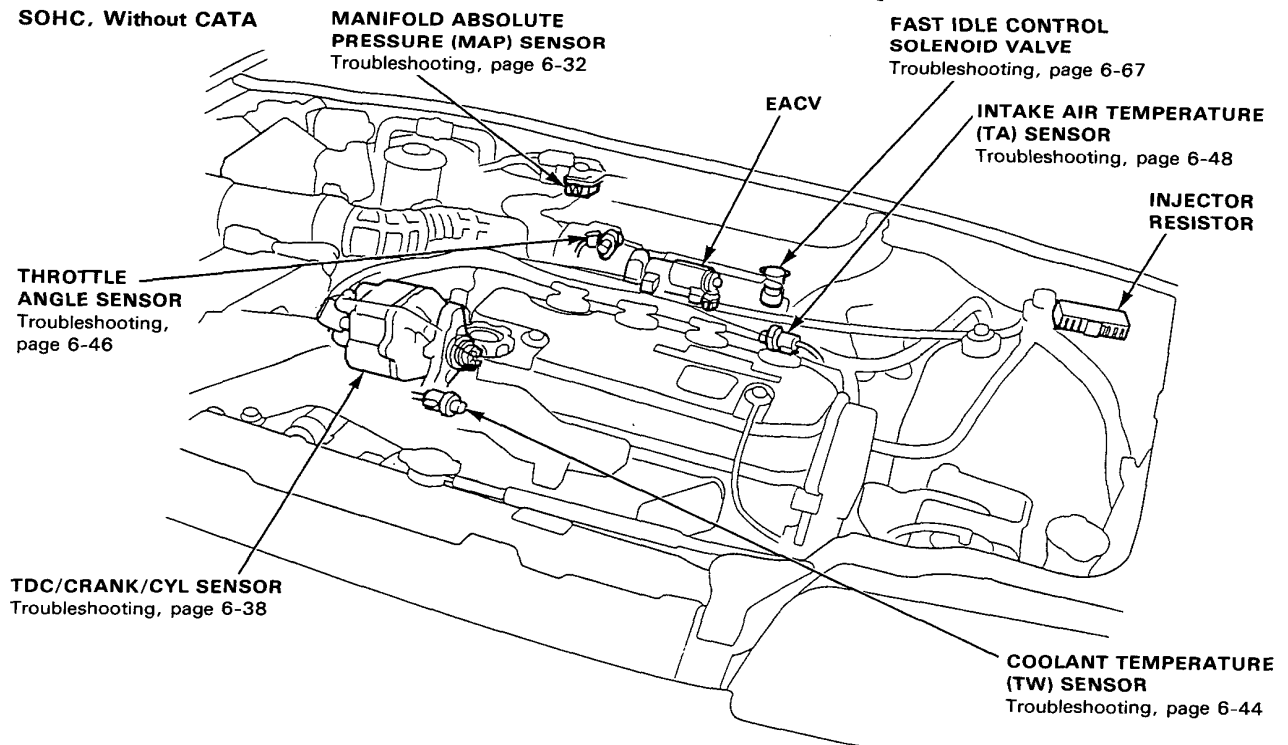
Component Locations

Index [1.6 l]

SOHC, With CATA

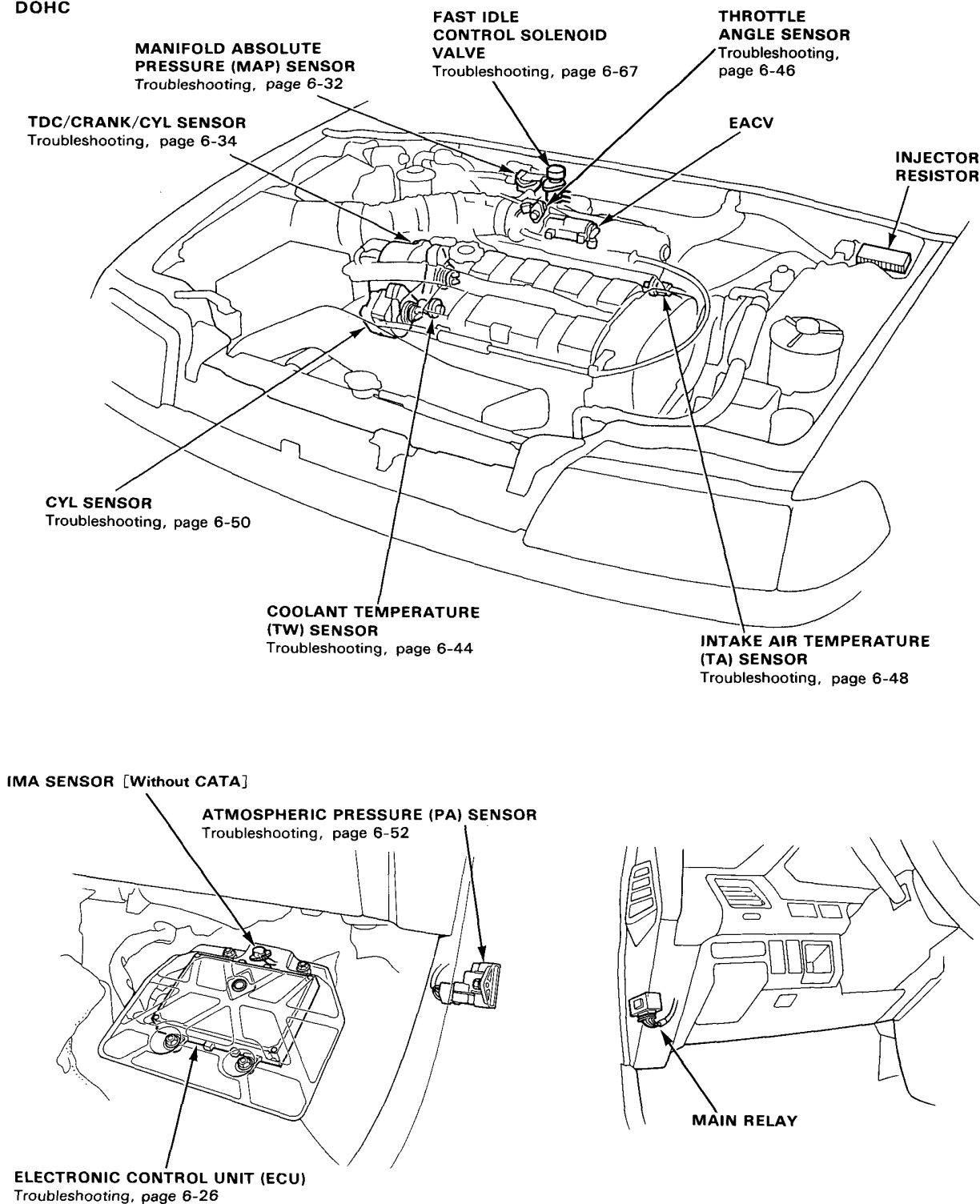


SOHC, Without CATA





DOHC



Component Locations

Index [1.6 l]

AIR CLEANER ELEMENT

- EC: Replace every 2 years or 40,000 km (24,000 miles) whichever comes first.
- Others: Replace every 1 year or 20,000 km (12,000 miles) whichever comes first.

THROTTLE BODY

- Inspection, page 6-81
- Disassembly, page 6-83

DASHPOT DIAPHRAGM

- Troubleshooting, page 6-85

THROTTLE CABLE

- Inspection/Adjustment, page 6-80
- Installation, page 6-80

RESONATOR

CHARCOAL CANISTER [With CATA]

- Troubleshooting, page 6-67

AIR INTAKE TUBE

FUEL FEED PIPE

FUEL PUMP

- Testing, page 6-78

FUEL FILLER CAP

FUEL VAPOR PIPE

FUEL FILTER

FUEL INJECTORS

- Troubleshooting, page 6-75

PRESSURE REGULATOR

FUEL RETURN PIPE

FUEL GAUGE SENDING UNIT

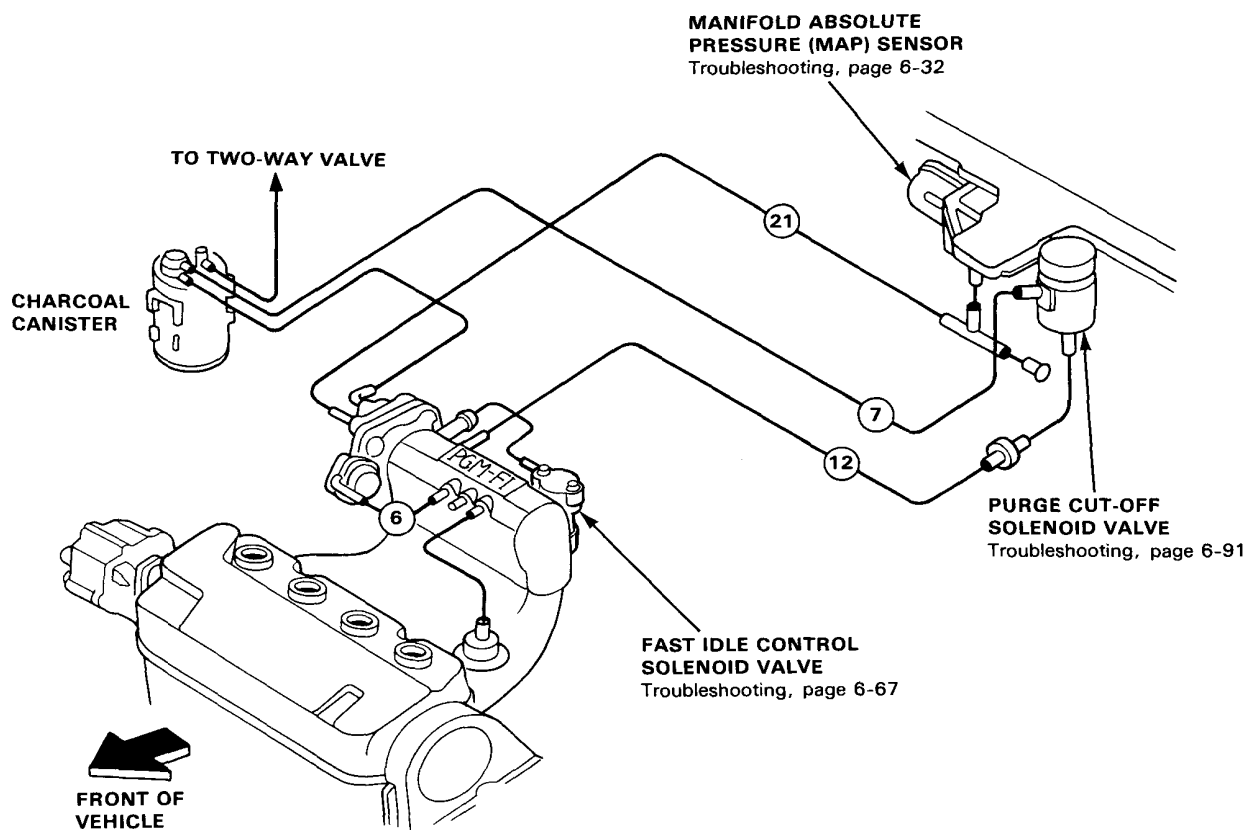
- Testing, section 16

TWO-WAY VALVE

System Description

Vacuum Connections [1.6 l]

SOHC, With CATA



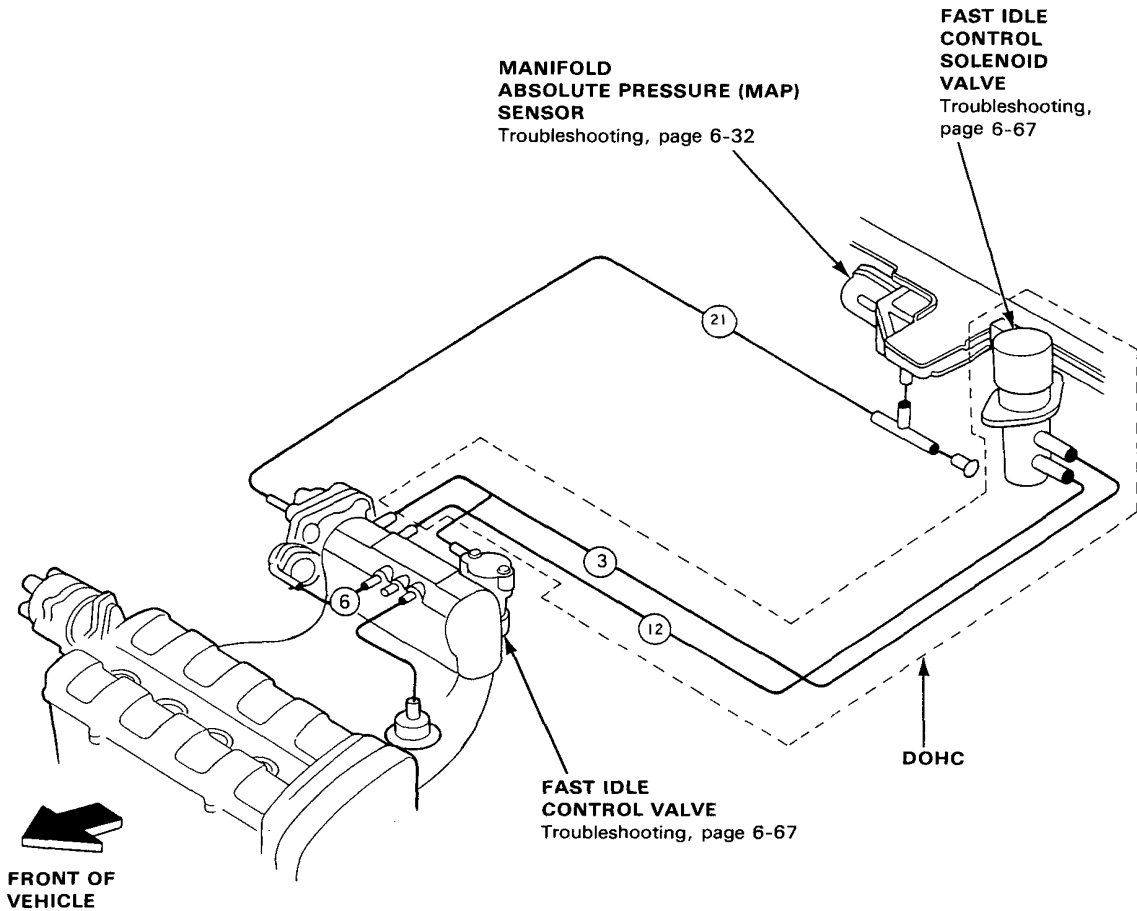
System Description

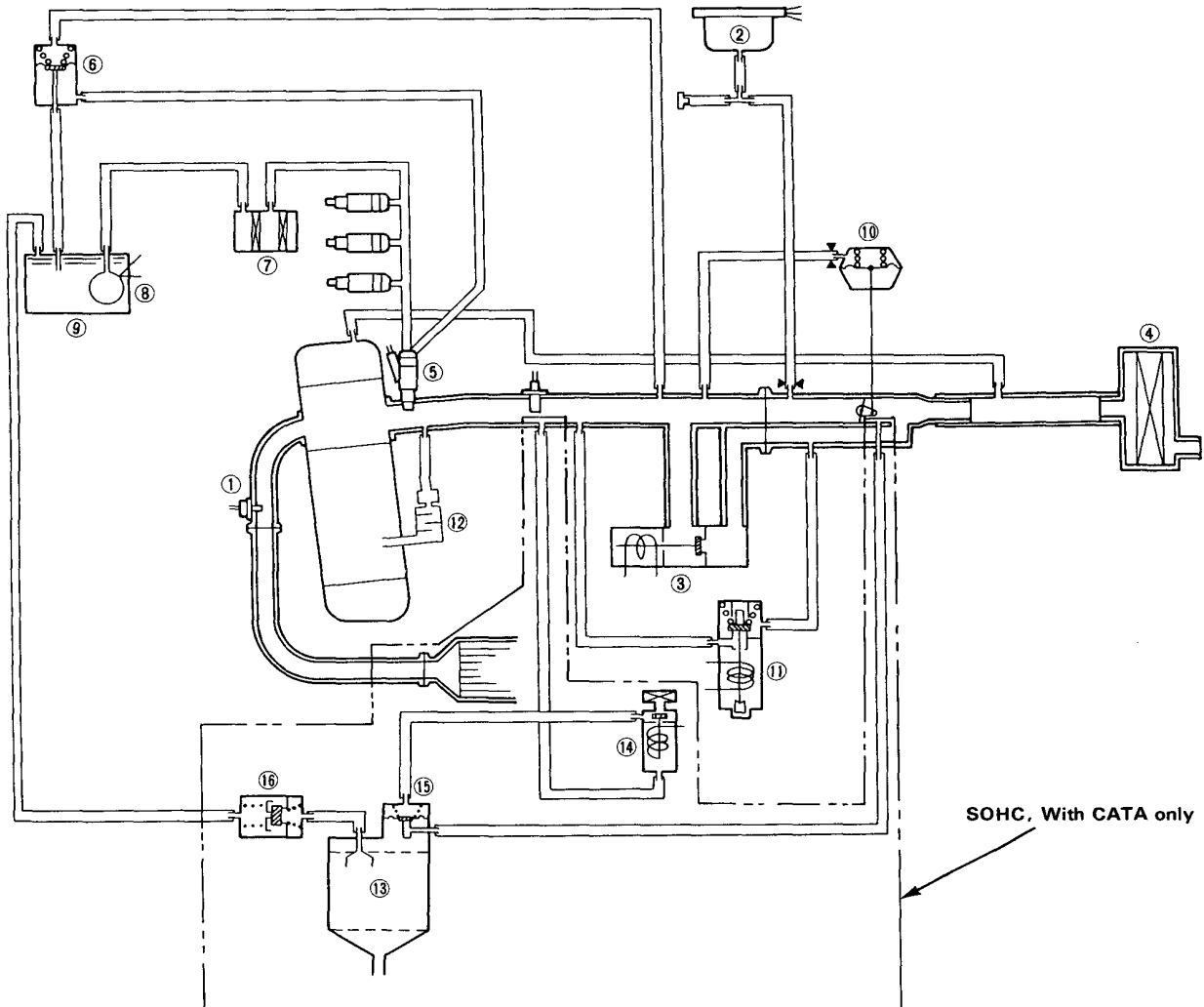
Vacuum Connections [1.6 l]

SOHC, Without CATA

DOHC

NOTE: The illustration is DOHC type. SOHC type is the same as of DOHC type, except for the cylinder head.





- ① OXYGEN (O₂) SENSOR
- ② MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
- ③ ELECTRONIC AIR CONTROL VALVE (EACV)
- ④ AIR CLEANER
- ⑤ FUEL INJECTOR
- ⑥ PRESSURE REGULATOR
- ⑦ FUEL FILTER
- ⑧ FUEL PUMP
- ⑨ FUEL TANK
- ⑩ DASHPOT DIAPHRAGM

- ⑪ FAST IDLE CONTROL SOLENOID VALVE
- ⑫ PCV VALVE
- ⑬ CHARCOAL CANISTER
- ⑭ PURGE CUT-OFF SOLENOID VALVE
- ⑮ PURGE CONTROL DIAPHRAGM VALVE
- ⑯ TWO-WAY VALVE

SOHC, With CATA only

System Description

Electrical Connections [1.5 l]

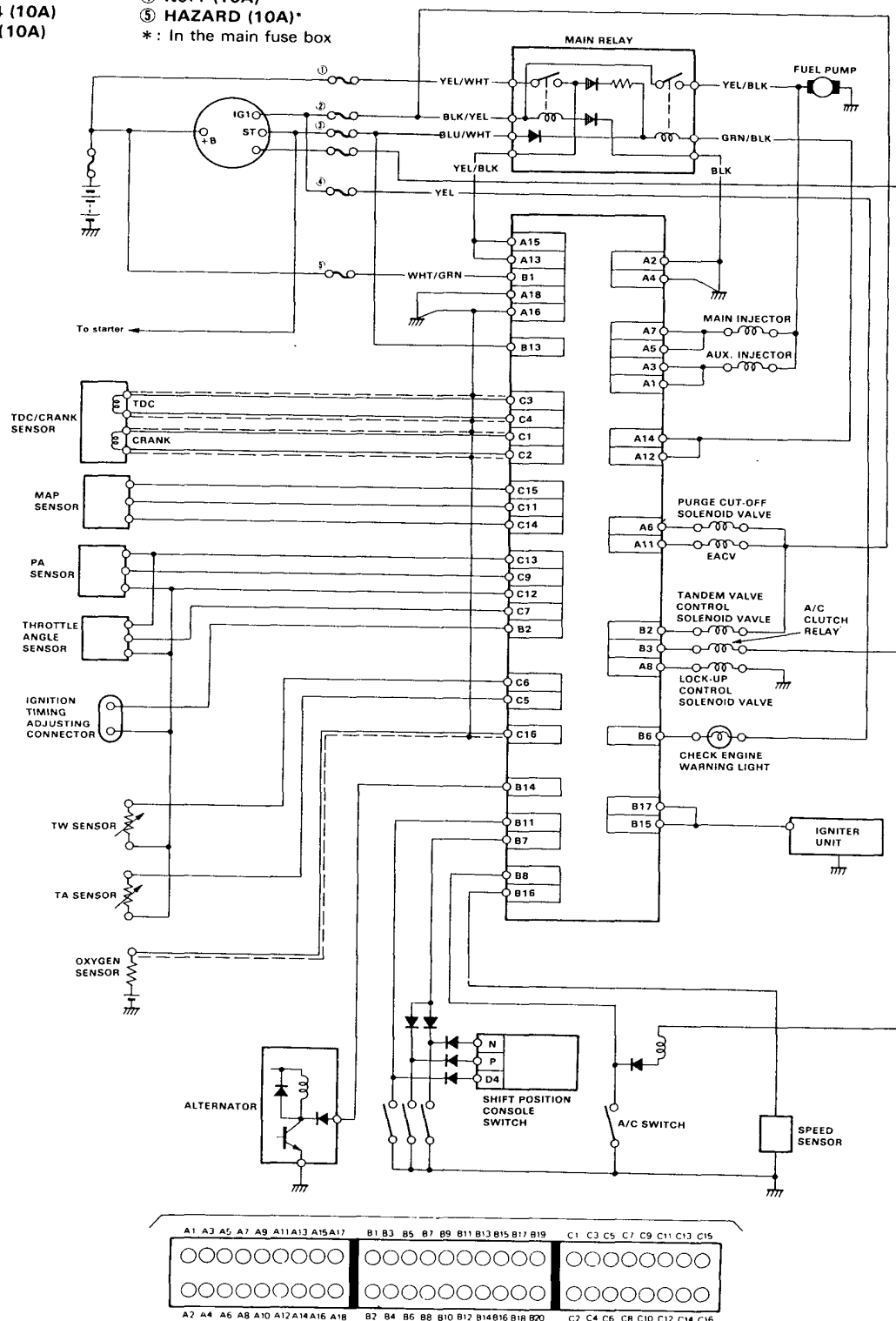
FUSES

- ① ECU (15A)*
- ② No. 14 (10A)
- ③ No. 2 (10A)

④ No. 1 (10A)

⑤ HAZARD (10A)*

*: In the main fuse box



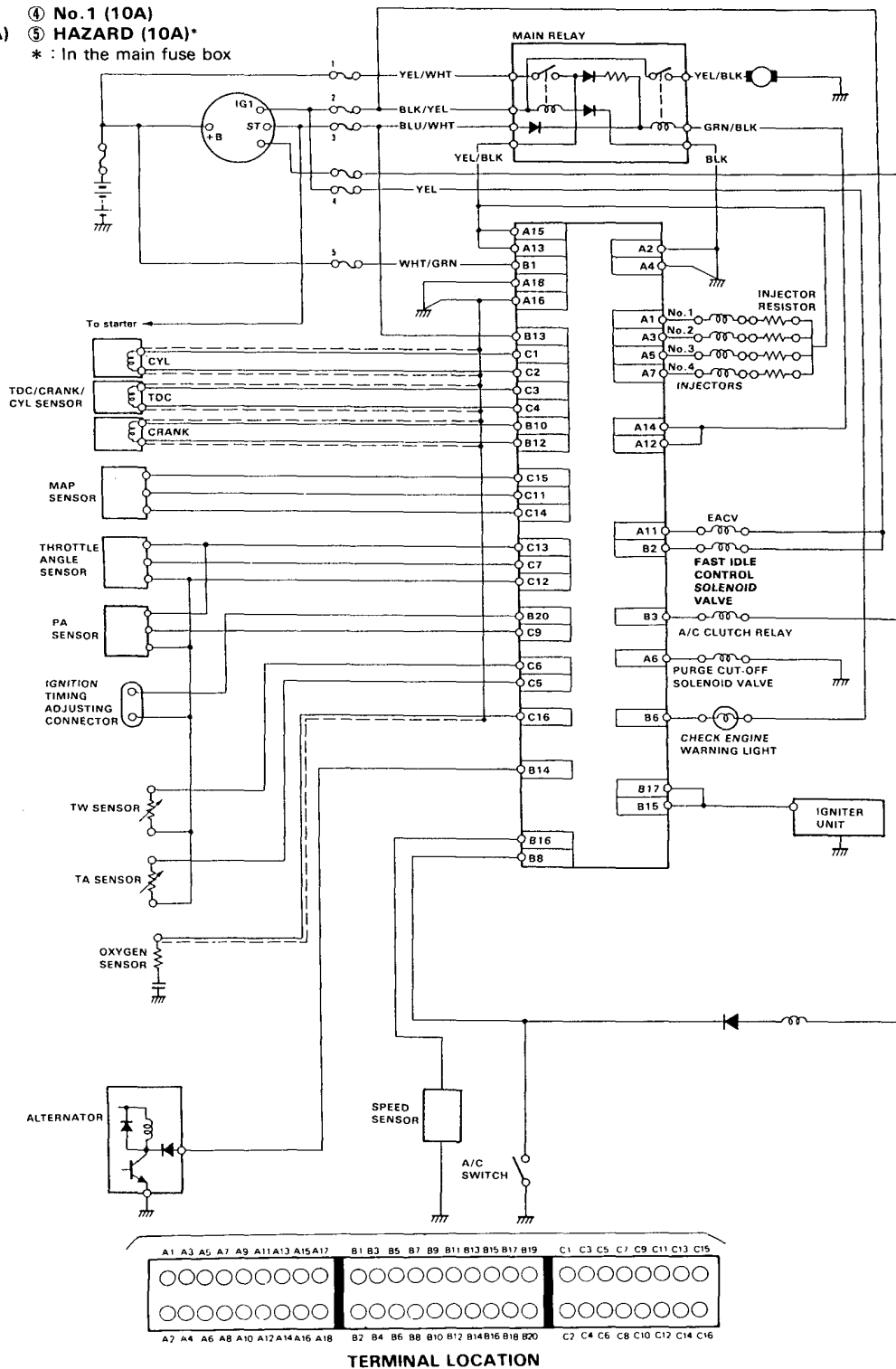
TERMINAL LOCATION

Electrical Connections [1.6 ℓ]

With CATA

FUSES

- ① ECU (15A)* ④ No.1 (10A)
② No.14 (10A) ⑤ HAZARD (10A)*
③ No.2 (10A) *: In the main fuse box



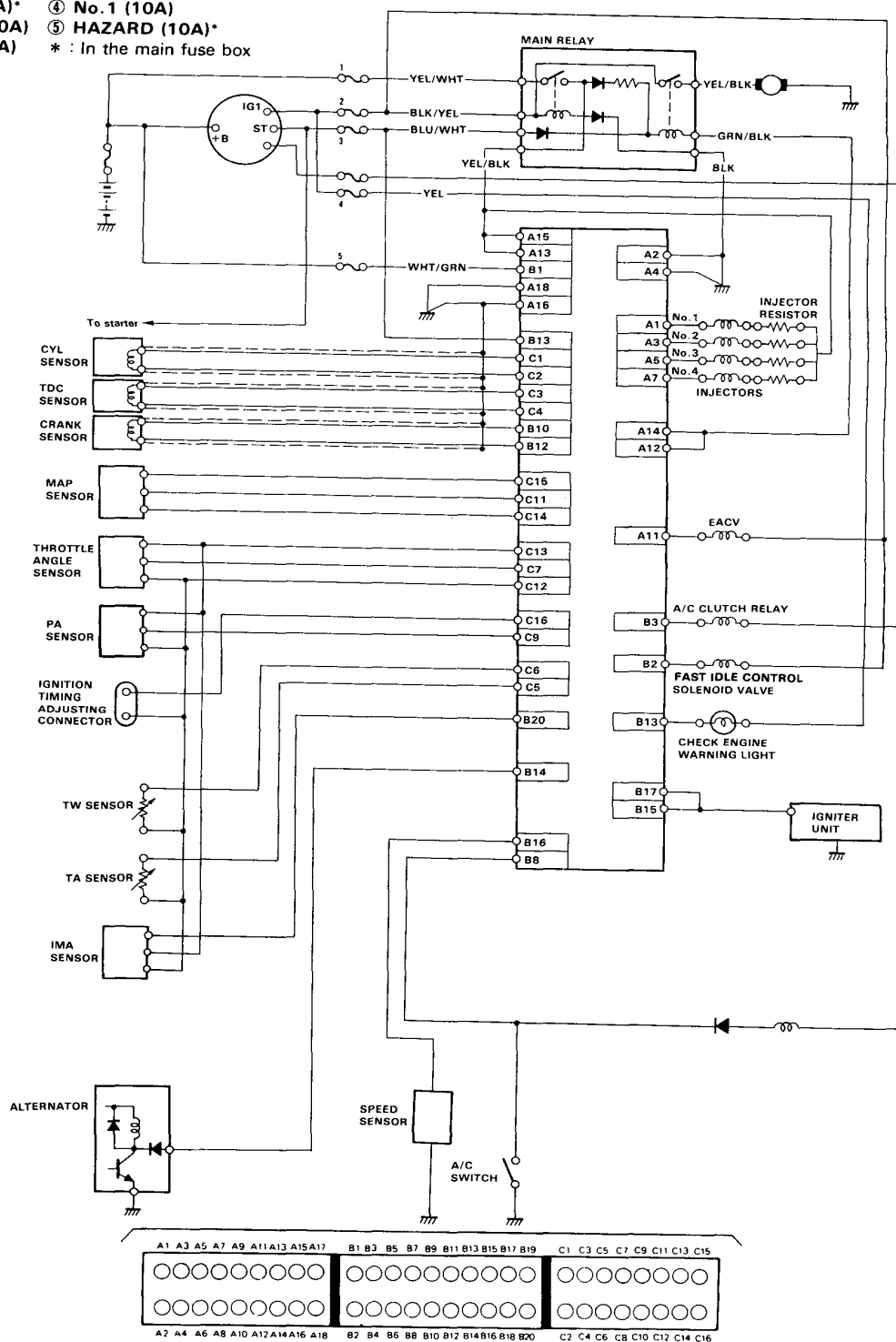
System Description

Electrical Connections [1.6 l]

Without CATA

FUSES

- ① ECU (15A)*
 - ② No.14 (10A)
 - ③ No.2 (10A)
 - ④ No.1 (10A)
 - ⑤ HAZARD (10A)*
- * : In the main fuse box









































Troubleshooting






Troubleshooting Guide [1.5 l]

NOTE: Across each row in the chart, the 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 most likely system ②, etc.

| PAGE | | SYSTEM | PGM-FI | | | | | | |
|---------------------------------------|---------------------------------|--|---|--|--|--|---|---|---|
| | | | ECU | OXYGEN SENSOR | MANIFOLD ABSOLUTE PRESSURE SENSOR | TDC/CRANK SENSOR | COOLANT TEMPERATURE SENSOR | THROTTLE ANGLE SENSOR | INTAKE AIR TEMPERATURE SENSOR |
| SYMPTOM | | 26 | 30 | 32 | 34 | 44 | 46 | 48 | 52 |
| CHECK ENGINE WARNING LIGHT TURNS ON | |  or  |  |  |  |  |  |  |  |
| SELF-DIAGNOSIS INDICATOR (LED) BLINKS | | ① or *  | ①  | ③ or ⑤  | ④ or ⑧  | ⑥  | ⑦  | ⑩  | ⑬  |
| ENGINE WON'T START | | ③  | | | | | | | |
| DIFFICULT TO START ENGINE WHEN COLD | | BU  | | ③  | | ①  | | | |
| IRREGULAR IDLING | WHEN COLD FAST IDLE OUT OF SPEC | BU  | | | | ③  | | | |
| | ROUGH IDLE | BU  | | ③  | | | | | |
| | WHEN WARM IDLE SPEED TOO HIGH | BU  | | | | | | | |
| | WHEN WARM IDLE SPEED TOO LOW | BU  | | | | | | | |
| FREQUENT STALLING | WHILE WARMING UP | BU  | | ②  | | | | | |
| | AFTER WARMING UP | BU  | | | | | | | |
| POOR PERFORMANCE | MISFIRE OR ROUGH RUNNING | BU  | | | | | | | |
| | FAILS EMISSION TEST | BU  | ③  | ②  | | | | | |
| | LOSS OF POWER | BU  | | | | | ②  | | |

- * If codes other than those listed above are indicated, 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.
- BU When the Check Engine warning light and the self-diagnosis indicator are on, the back-up system is in operation. Substitute a known-good ECU and recheck. If the indication goes away, replace the original ECU.












| PGM-FI | | | IDLE CONTROL | | FUEL SUPPLY | | AIR INTAKE | EMISSION CONTROL |
|---|---|---|---|---------------------|---|-------------------|------------|------------------|
| IGNITION OUTPUT SIGNAL | VEHICLE SPEED SENSOR | LOCK-UP CONTROL SOLENOID VALVE | ELEC-TRONIC AIR CONTROL VALVE | OTHER IDLE CONTROLS | FUEL INJECTOR | OTHER FUEL SUPPLY | | |
| 54 | 56 | 58 | — | 60 | 71 | 70 | 79 | — |
|  |  |  |  | |  | | | |
| ⑮ | ⑰ | ⑲ | ⑭ | | ⑯ | | | |
| | | | | | ② | ① | | |
| | | | ② | | | | | |
| | | | ① | ② | | | | |
| | | | ① | | ② | | | |
| | | | ② | ① | | | | |
| | | | ① | | ② | | | |
| ② | | | ① | | | | | |
| | | | ③ | | ② | ③ | | |
| | | | | | ① | ② | | |
| | | | | | | ① | | |
| | | | | | ③ | ① | | |

Troubleshooting

Troubleshooting Guide [1.6 l SOHC, With CATA]

NOTE: Across each row in the chart, the 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 most likely system ②, etc.

| PAGE | SYSTEM | PGM-FI | | | | | | | |
|---------------------------------------|---------------------------------|--|---|---|---|--|---|---|---|
| | | ECU | OXYGEN SENSOR | MANIFOLD ABSOLUTE PRESSURE SENSOR | TDC/CRANK/CYL SENSOR | COOLANT TEMPERATURE SENSOR | THROTTLE ANGLE SENSOR | INTAKE AIR TEMPERATURE SENSOR | ATMOSPHERIC PRESSURE SENSOR |
| SYMPTOM | | 26 | 30 | 32 | 38 | 44 | 46 | 48 | 52 |
| CHECK ENGINE WARNING LIGHT TURNS ON | |  or  |  |  |  |  |  |  |  |
| SELF-DIAGNOSIS INDICATOR (LED) BLINKS | | ① or * | ① | ③ or ⑤ | ④ or ⑧ or ⑨ | ⑥ | ⑦ | ⑩ | ⑬ |
| ENGINE WON'T START | | ③ | | | | | | | |
| DIFFICULT TO START ENGINE WHEN COLD | | BU | | ③ | | ① | | | |
| IRREGULAR IDLING | WHEN COLD FAST IDLE OUT OF SPEC | BU | | | | ② | | | |
| | ROUGH IDLE | BU | | ③ | | | | | |
| | WHEN WARM IDLE SPEED TOO HIGH | BU | | | | | | | |
| | WHEN WARM IDLE SPEED TOO LOW | BU | | | | | | | |
| FREQUENT STALLING | WHILE WARMING UP | BU | | | | | | | |
| | AFTER WARMING UP | BU | | | | | | | |
| POOR PERFORMANCE | MISFIRE OR ROUGH RUNNING | BU | | | | | | | |
| | FAILS EMISSION TEST | BU | ③ | ② | | | | | |
| | LOSS OF POWER | BU | | ③ | | | ② | | |

* If codes other than those listed above are indicated, 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.

BU: When the Check Engine warning light and the self-diagnosis indicator are on, the back-up system is in operation. Substitute a known-good ECU and recheck. If the indication goes away, replace the original ECU.












| PGM-FI | | IDLE CONTROL | | FUEL SUPPLY | | AIR INTAKE | EMISSION CONTROL |
|------------------------|----------------------|-------------------------------|---------------------|---------------|-------------------|------------|------------------|
| IGNITION OUTPUT SIGNAL | VEHICLE SPEED SENSOR | ELEC-TRONIC AIR CONTROL VALVE | OTHER IDLE CONTROLS | FUEL INJECTOR | OTHER FUEL SUPPLY | | |
| 54 | 56 | — | 60 | 75 | 70 | 79 | — |
| | | | | | | | |
| 15 | 17 | 14 | | 16 | | | |
| | | | | 2 | 1 | | |
| | | | 2 | | | | |
| | | 1 | 2 | | | | |
| | | 1 | | 2 | | | |
| | | 2 | 1 | | | | |
| | | 1 | | 2 | | | |
| | | 1 | 2 | | 3 | | |
| | | 1 | 2 | | 3 | | |
| | | 2 | | 1 | | | |
| | | | | 1 | | | |
| | | | | | 1 | | |

Troubleshooting

Troubleshooting Guide [1.6 l SOHC, Without CATA and DOHC]

NOTE: Across each row in the chart, the 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 most likely system ②, etc.

| PAGE | SYSTEM | PGM-FI | | | | | | | |
|-----------------------|--|--|---|---|---|---|---|---|---|
| | | ECU | MANIFOLD ABSOLUTE PRESSURE SENSOR | TDC/ CRANK SENSOR ** | CYL SENSOR ** | TDC/CRANK/CYL SENSOR * | COOLANT TEMPERA- TURE SENSOR | THROTTLE ANGLE SENSOR | INTAKE AIR TEMPERA- TURE SENSOR |
| | SYMPTOM | 26 | 32 | 34 | 50 | 38 | 44 | 46 | 48 |
| | CHECK ENGINE WARNING LIGHT TURNS ON |  or  |  |  |  |  |  |  |  |
| | SELF-DIAGNOSIS INDICATOR (LED) BLINKS | ① or * | ③ or ⑤ | ④ or ⑧ | ⑨ | ④ or ⑧ or ⑨ | ⑥ | ⑦ | ⑩ |
| | ENGINE WON'T START | ② | | | | | | | |
| | DIFFICULT TO START ENGINE WHEN COLD | (BU) | ③ | | | | ① | | |
| IRREGULAR IDLING | WHEN COLD FAST IDLE OUT OF SPEC | (BU) | | | | | ② | | |
| | ROUGH IDLE | (BU) | ③ | | | | | | |
| | WHEN WARM IDLE SPEED TOO HIGH | (BU) | | | | | | | |
| | WHEN WARM IDLE SPEED TOO LOW | (BU) | | | | | | | |
| FREQUENT STALLING | WHILE WARMING UP | (BU) | | | | | | | |
| | AFTER WARMING UP | (BU) | | | | | | | |
| POOR PERFORM- ANCE | MISFIRE OR ROUGH RUNNING | (BU) | | | | | | | |
| | FAILS EMISSION TEST | (BU) | ② | | | | | | |
| | LOSS OF POWER | (BU) | ③ | | | | | ② | |






* If codes other than those listed above are indicated, 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.

(BU): When the Check Engine warning light and the self-diagnosis indicator are on, the back-up system is in operation.

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

* : SOHC, ** : DOHC

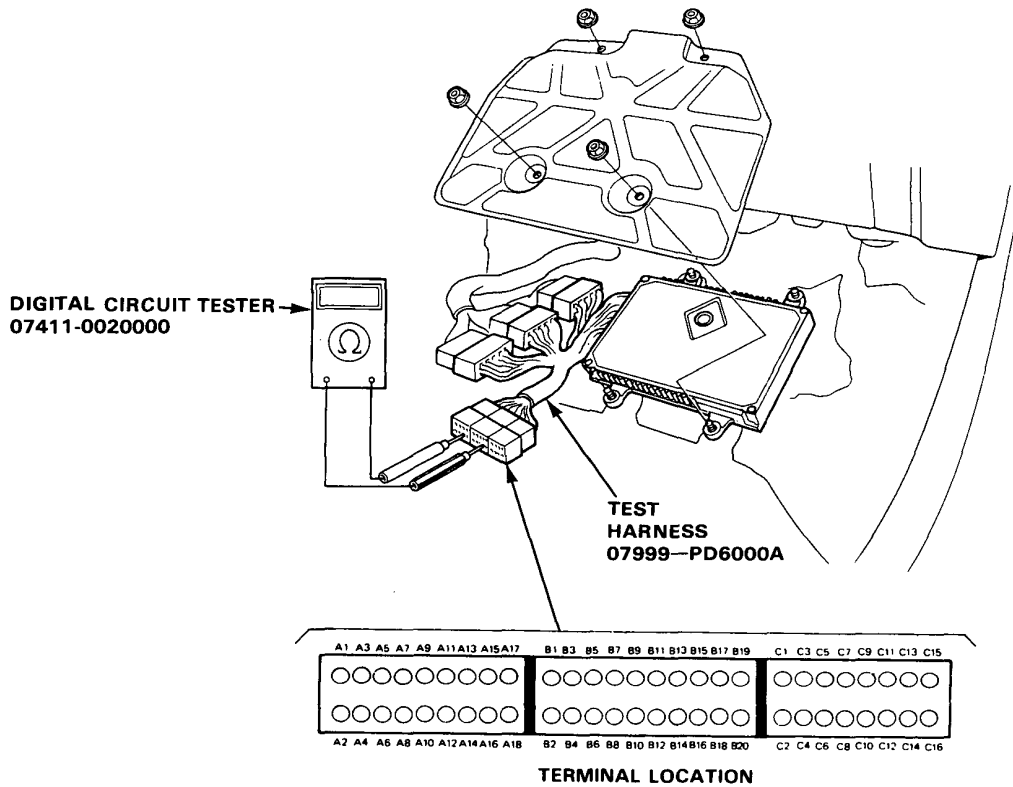


| PGM-FI | | | | IDLE CONTROL | | FUEL SUPPLY | AIR INTAKE | EMISSION CONTROL |
|---|---|---|---|---|---------------------------|----------------|---------------|---------------------|
| IMA SENSOR | ATMO- SPHERIC PRESSURE SENSOR | IGNITION OUTPUT SIGNAL | VEHICLE SPEED SENSOR | ELEC- TRONIC AIR CONTROL VALVE | OTHER IDLE CONTROLS | | | |
| — | 52 | 54 | 56 | — | 60 | 70 | 79 | — |
|  |  |  |  |  | | | | |
| ⑪ | ⑬ | ⑮ | ⑰ | ⑭ | | | | |
| | | ② | | | | ① | | |
| | | | | | ② | | | |
| | | | | ① | ② | | | |
| | | | | ① | | ② | | |
| | | | | ② | ① | | | |
| | | | | ① | | ② | | |
| | | | | ① | ② | ③ | | |
| | | | | ① | ② | ③ | | |
| | | | | ② | | ① | | |
| | | | | | | ① | | |
| | | | | | | ① | | |

Troubleshooting

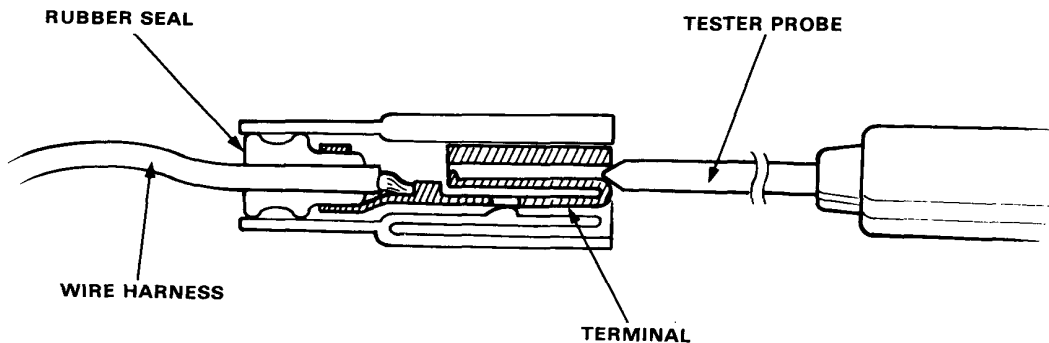
Self-diagnostic Procedure

If the inspection for a particular failure code requires the PGM-FI test harness, remove the right door sill molding, the small cover on the right kick panel, and pull the carpet back to expose the ECU. Unbolt the ECU bracket. Connect the PGM-FI test harness. Then check the system according to the procedure described for the appropriate code(s) listed on the following pages.



CAUTION:

- Puncturing the insulation on a wire can cause poor or intermittent electrical connections.
- For testing at connectors other than the PGM-FI test harness, bring the tester probe into contact with the terminal from the connector side of wire harness connectors in the engine compartment. For female connectors, just touch lightly with the tester probe and do not insert the probe.





How to Read Flowcharts

A flowchart is designed to be used from start to final repair. It's like a map showing you the shortest distance. But beware: if you go off the "map" anywhere but a "stop" symbol, you can easily get lost.

START

(bold type)

Describes the conditions or situation to start a troubleshooting flowchart.

ACTION

Asks you to do something; perform a test, set up a condition, etc.

DECISION

Asks you about the result of an action, then sends you in the appropriate troubleshooting direction.

STOP

(bold type)

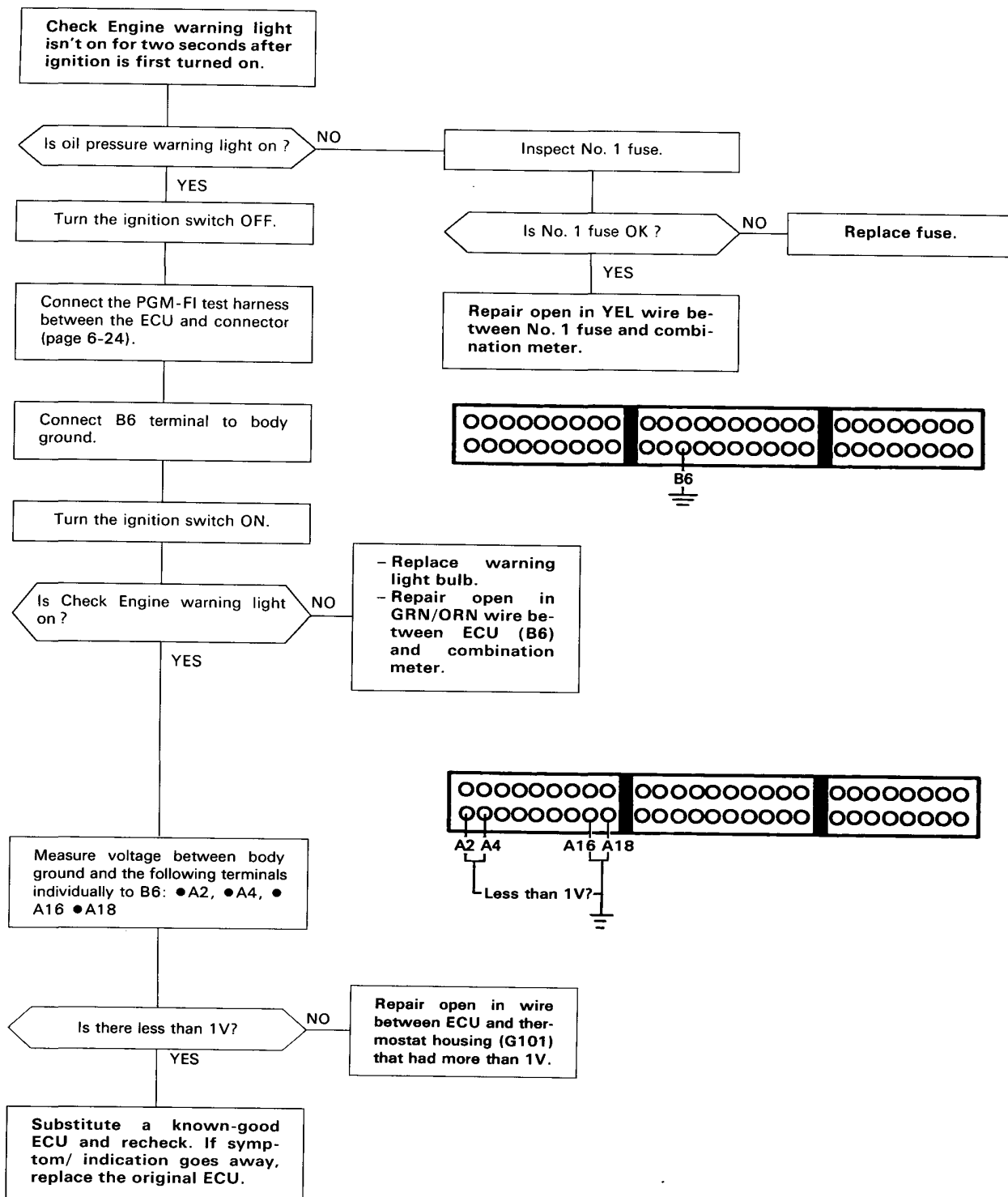
The end of a series of actions and decisions, describes a final repair action and sometimes directs you to an earlier part of the flow to confirm your repair.

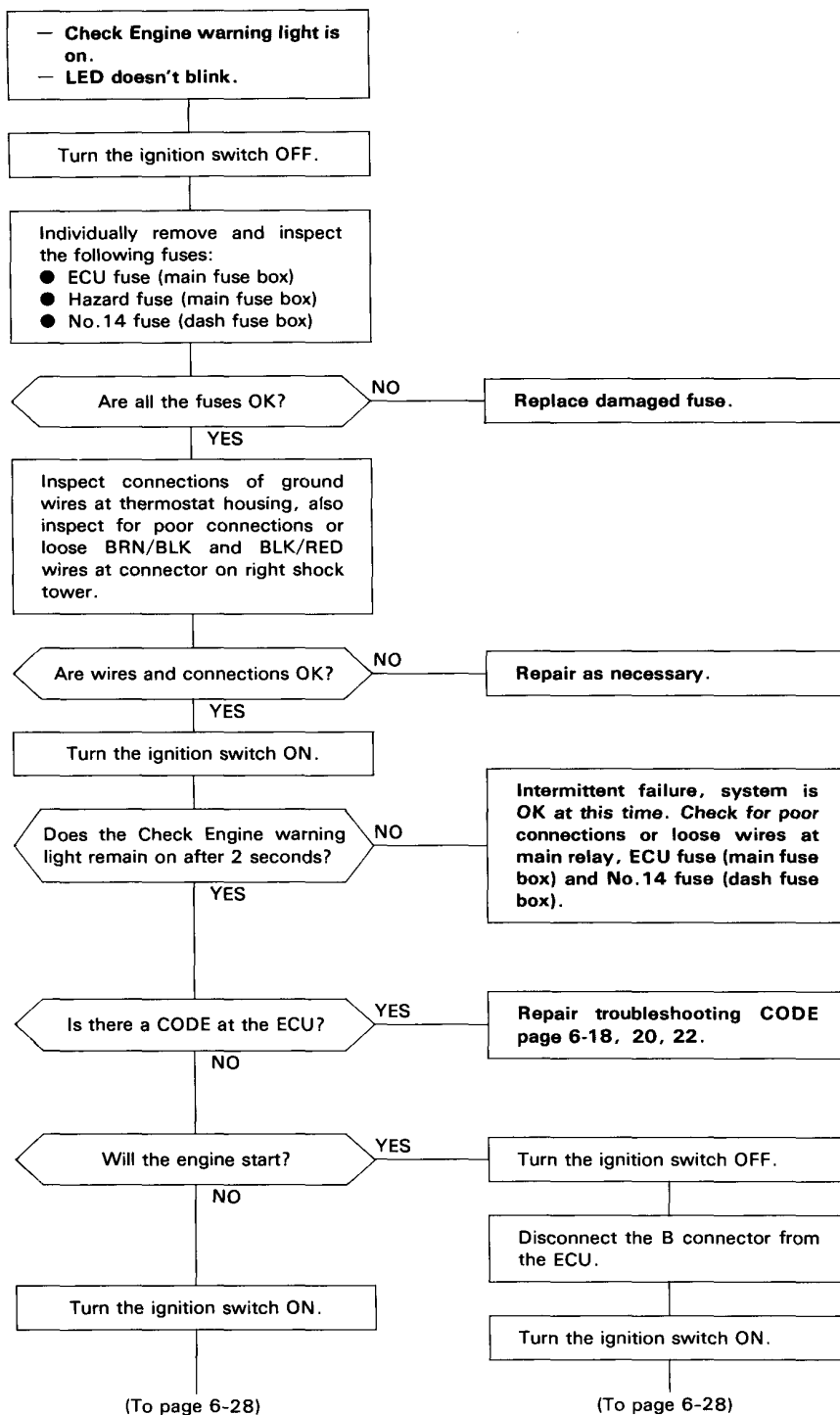
NOTE:

- The term "Intermittent Failure" is used several times in these charts. It simply means a system may have had a failure, but it checks out OK through all your tests. You may need to road test the car to reproduce the failure or if the problem was a loose connection, you may have unknowingly solved it while doing the tests. In any event, if the warning light on the dash does not come on, check for poor connections or loose wires at all connectors related to the circuit that you are troubleshooting.
- "Open" and "Short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground. In simple electronics, this usually means something won't work at all. In complex electronics (like ECUs), this can sometimes mean something works, but not the way it's supposed to.
- If the electrical readings are not as specified when using the PGM-FI test harness, check the test harness connections before proceeding.

PGM-FI Control System

Troubleshooting Flowchart — ECU

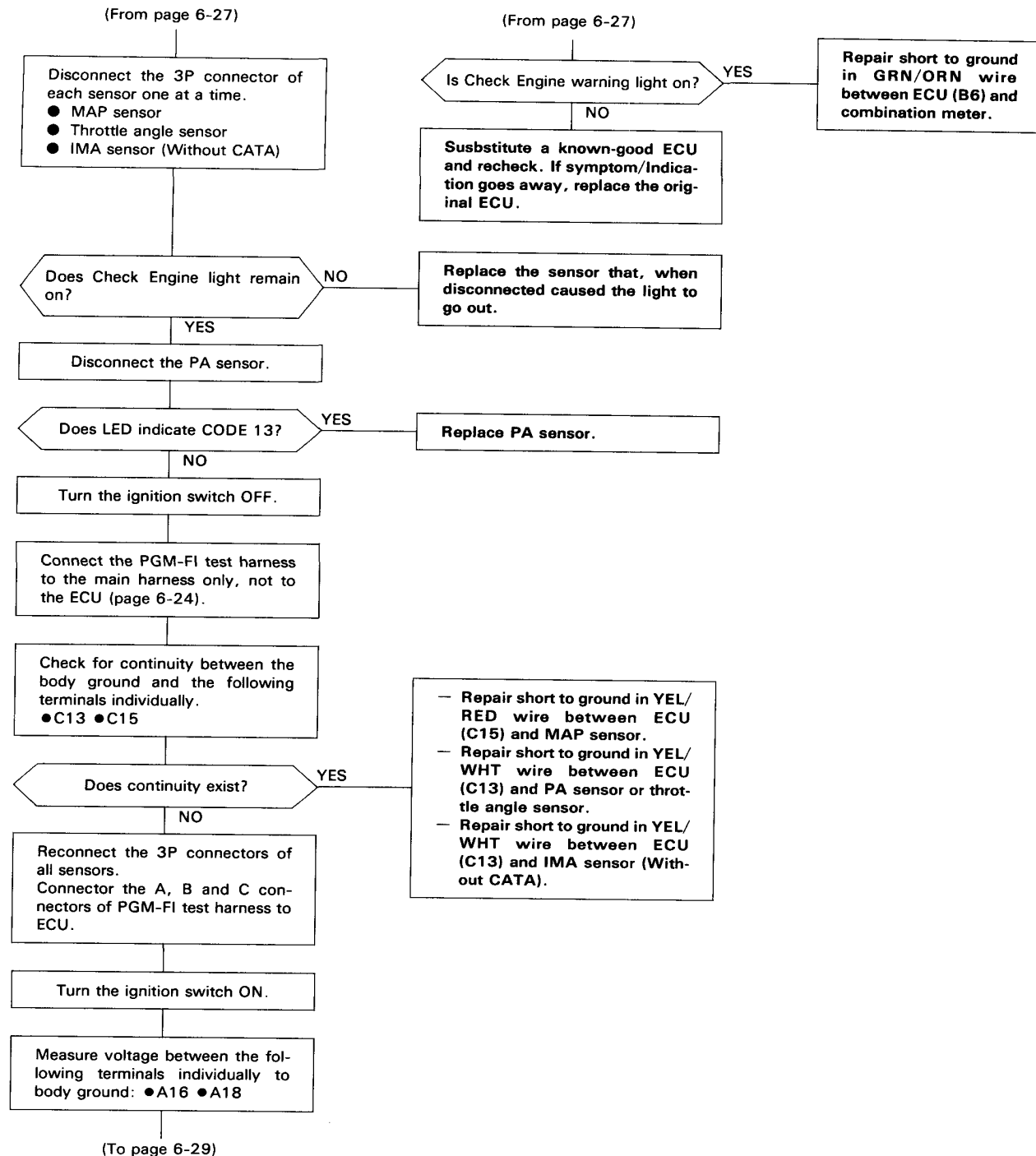




(cont'd)

PGM-FI Control System

Troubleshooting Flow Chart — ECU (cont'd)





(From page 6-28)

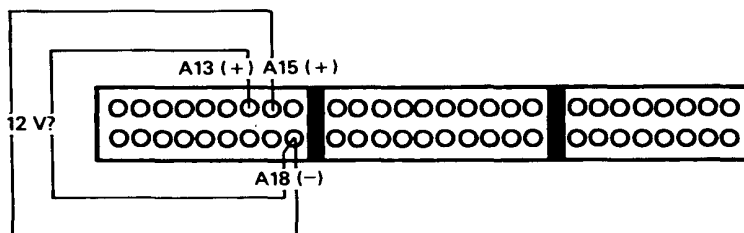
Is there less than 1V?

NO

Repair open in wire that between ECU (A16, A18) and thermostat housing (G101) that had more than 1V.

YES

Measure voltage between A13 (+), A15 (+) terminals and A18 (-) terminal.



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.

PGM-FI Control System

Troubleshooting Flowchart — Oxygen Sensor



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



- Check Engine warning light has been reported on.
- LED indicates CODE 1.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Inspect pressure regulator.

Is it normal ?

NO

Replace the pressure regulator.

YES

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

1.5 l

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

WARNING Block rear wheels before jacking up front of car.

Warm up engine to normal operating temperature again, then put the transmission into second gear and run the engine at 2,000 min^{-1} (rpm) for 15 minutes.
NOTE: Do not close throttle completely during this time.

1.6 l

Hold engine at 1500 min^{-1} (rpm) for 15 minutes.
NOTE: Do not close throttle completely during this time.

Is Check Engine warning light on and does LED indicate CODE 1 ?

NO

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the thermostat housing, O_2 sensor and C210 (round connector located at the right shock tower).

YES

Inspect for poor connections or loose ground wires at thermostat housing.

Are connections and wires OK?

NO

Repair as necessary.

YES

(To page 6-31)



(From page 6-30)

Disconnect engine wire harness from O₂ sensor.

Warm up engine to normal operating temperature again, then hold engine speed at 4,000 min⁻¹ (rpm) for 10 seconds then release throttle completely.

Measure voltage between the connector terminal and body ground.

Was voltage above 0.6 V at 4,000 min⁻¹ (rpm)? Was voltage below 0.4 V during closed throttle deceleration from 4,000 min⁻¹ (rpm)?

NO

Replace O₂ sensor.

YES

Stop engine.

Reconnect O₂ sensor.

Connect the PGM-FI test harness between the ECU and connector (page 6-24).

Restart and warm up engine to normal operating temperature, then hold engine speed at 4,000 min⁻¹ (rpm) for 10 seconds then release throttle completely.

Measure voltage between C16 (+) and A18 (-) terminals.

Was voltage above 0.6 V at 4,000 min⁻¹ (rpm)? Was voltage below 0.4 V during closed throttle deceleration from 4,000 min⁻¹ (rpm)?

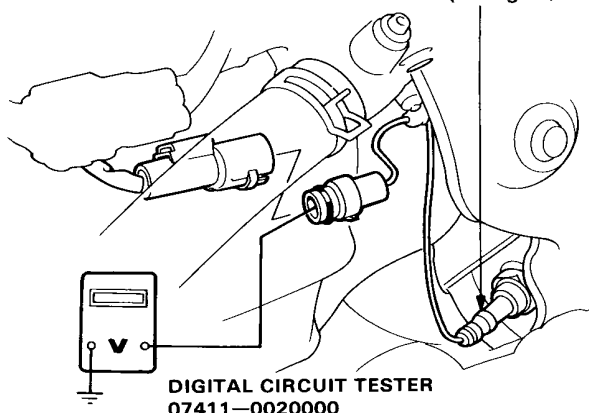
NO

Repair short or open in WHT wire between ECU (C16) and O₂ sensor.

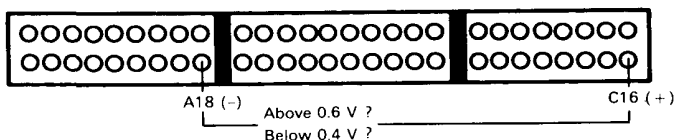
YES

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

O₂ SENSOR
45 N·m (4.5 kg·m, 33lb·ft)



DIGITAL CIRCUIT TESTER
07411-0020000



PGM-FI Control System

Troubleshooting Flowchart — MAP Sensor



Self-diagnosis LED indicator blinks five times: Most likely a mechanical problem (broken hose) in the Manifold Absolute Pressure (MAP) Sensor system.



(1.6 l)

- Check Engine warning light has been reported on.
- LED indicates CODE 5.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start the engine.

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

YES

Stop engine.

Connect vacuum pump to #21 hose and apply vacuum.

Does it hold vacuum?

YES

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

Start engine.

(To page 6-33)

VACUUM PUMP/GAUGE

#21 HOSE

- Intermittent failure, system is OK at this time (test drive may be necessary).
- Check vacuum hoses, pipes, and connections.
- Make sure all connectors are secure.

(1.5 l)

#21 HOSE

VACUUM PUMP/GAUGE

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

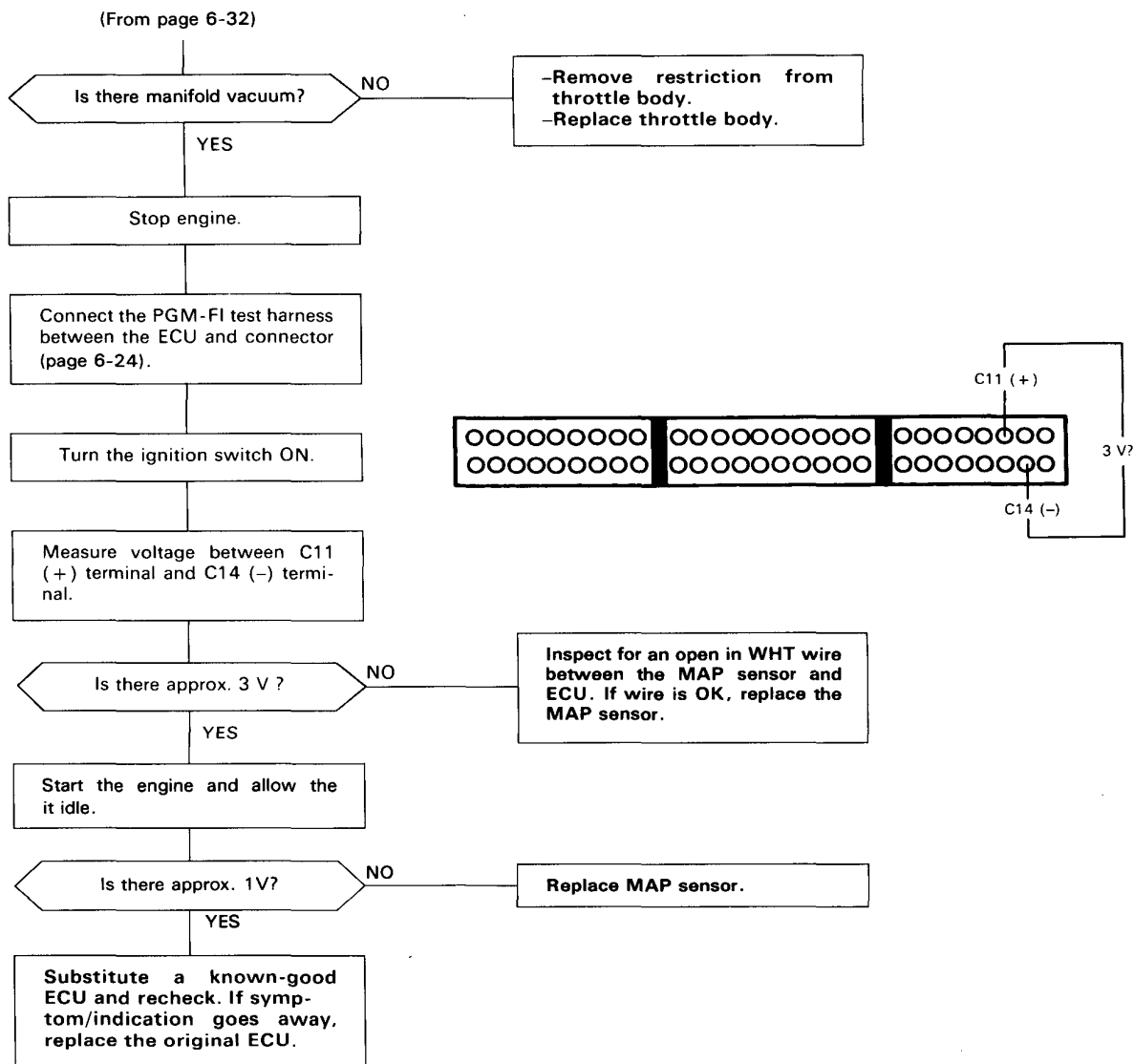
Does it hold vacuum?

NO

Replace MAP sensor.

YES

Replace #21 hose.



PGM-FI Control System

Troubleshooting Flowchart — TDC/CRANK Sensor [1.5 l and DOHC] —



Self-diagnosis LED indicator blinks four times: A problem in the CRANK circuit of the TDC/CRANK Sensor.



Self-diagnosis LED indicator blinks eight times: A problem in the TDC circuit of the TDC/CRANK Sensor.



- Check Engine warning light has been reported on.
- LED indicates CODE 4.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 4?

NO

YES

Stop engine.

Disconnect 6P connector from the TDC/CRANK sensor.

Measure resistance between D terminal and E terminal.

Is there 350–550 Ω ?

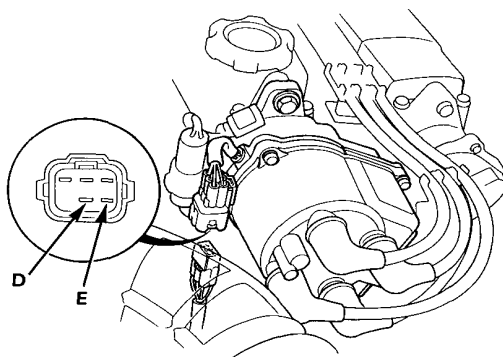
NO

YES

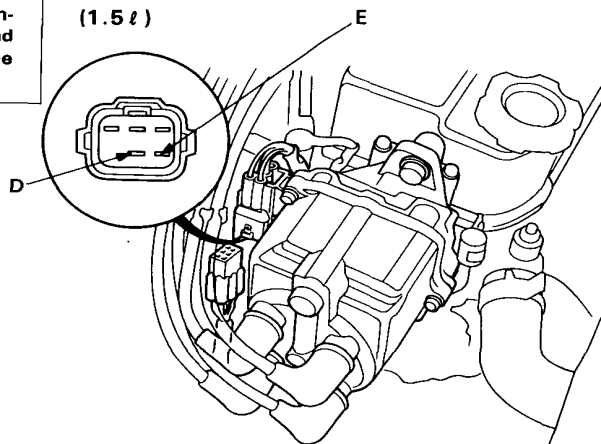
Check for continuity to body ground on D terminal and E terminal individually.

(To page 6-35)

(DOHC)



(1.5 l)

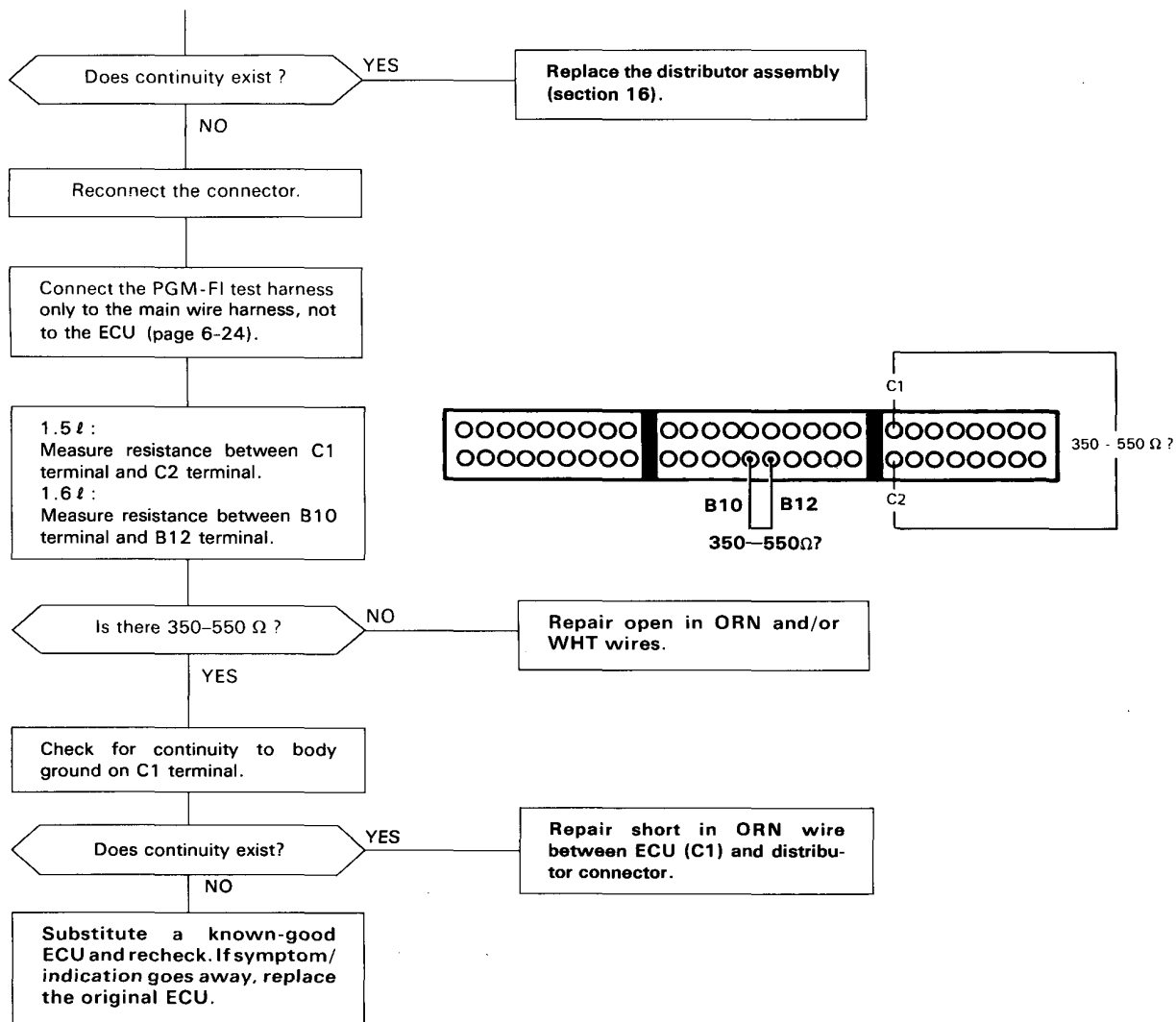


Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C210 (round connector located at the right shock tower).

Replace the distributor assembly (section 16).



(From page 6-34)



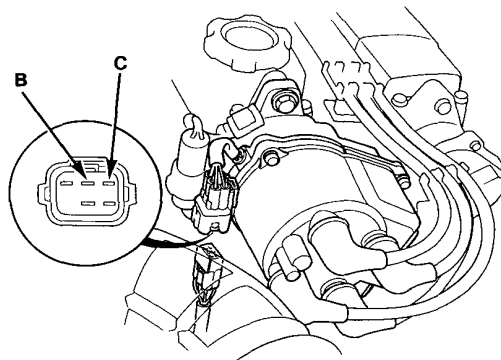
(cont'd)

PGM-FI Control System

Troubleshooting Flowchart — TDC/CRANK sensor [1.5 l and DOHC] (cont'd)



(DOHC)



- Check Engine warning light has been reported on.
- LED indicates CODE 8.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 8?

NO

YES

Stop engine.

Disconnect the 6P connector from the TDC/CRANK sensor.

Measure resistance between B terminal and C terminal.

Is there 350—550 Ω ?

NO

YES

Check for continuity to body ground on B terminal and C terminal individually.

Does continuity exist ?

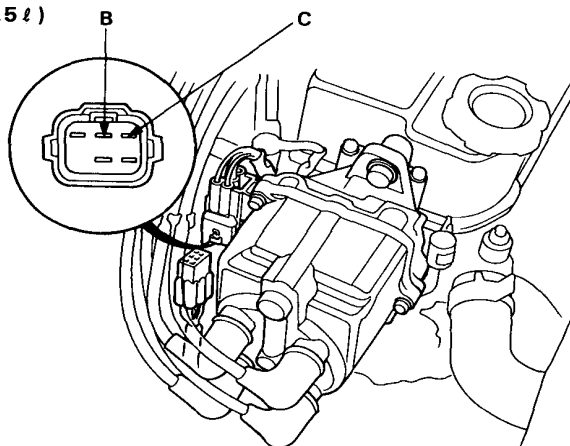
YES

NO

Reconnect the connector.

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at distributor connector and C210 (round connector located at the right shock tower).

(1.5 l)



Replace the distributor assembly (section 16).

Replace the distributor assembly (section 16).

(To page 6-37)



(From page 6-36)

Connect the PGM-FI test harness only to the main wire harness, not to the ECU (page 6-24).

Measure resistance between C3 terminal and C4 terminal.

Is there 350 — 550 Ω ?

NO

Repair open in ORN/
BLU and/or WHT/
BLU wires.

YES

Check for continuity to body ground on C3 terminal.

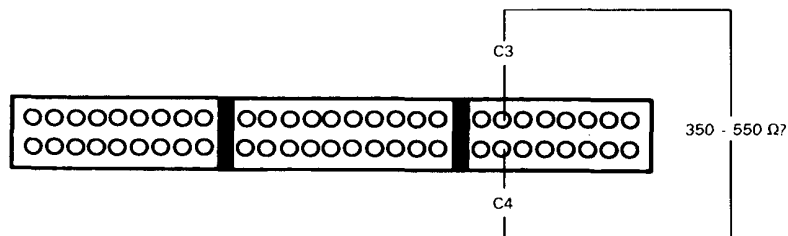
Does continuity exist?

YES

Repair short in ORN/
BLU wire between
ECU (C3) and distribu-
tor connector.

NO

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



PGM-FI Control System

Troubleshooting Flowchart — TDC/CRANK/CYL Sensor [1.6 l]



Self-diagnosis LED indicator blinks four times: A problem in the CRANK circuit of the TDC/CRANK/CYL Sensor.



Self-diagnosis LED indicator blinks eight times: A problem in the TDC circuit of the TDC/CRANK/CYL Sensor.



Self-diagnosis LED indicator blinks nine times: A problem in the CYL circuit of the TDC/CRANK/CYL Sensor.



– Check Engine warning light has been reported on.
– LED indicates CODE 4.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 4?

NO

YES

Stop engine.

Disconnect the 8P connector from the TDC/CRANK/CYL sensor.

Measure resistance between C terminal and D terminal.

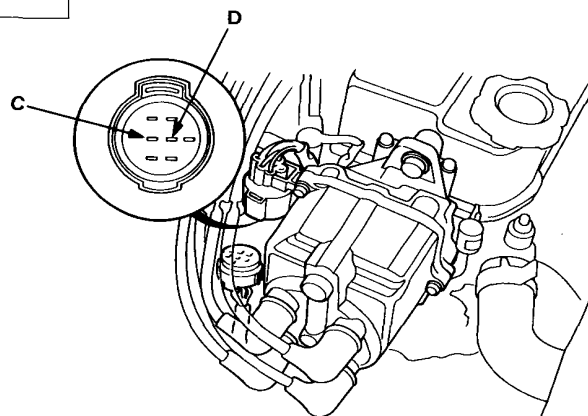
Is there 350–550 Ω ?

NO

YES

Replace the distributor assembly (section 16).

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C210 (round connector located at the right shock tower).



(To page 6-39)



(From page 6-38)

Check for continuity to body ground on C terminal and D terminal individually.

Does continuity exist ?

YES

Replace the distributor assembly (section 16).

NO

Reconnect the connector.

Connect the PGM-FI test harness only to the main wire harness, not to the ECU (page 6-24).

Measure resistance between B10 terminal and B12 terminal.



B10 B12
350 — 550 Ω

Is there 350–550 Ω ?

NO

Repair open in ORN and/or WHT wires.

YES

Check for continuity to body ground on B10 terminal.

Does continuity exist?

YES

Repair short in ORN wire between ECU (B10) and distributor connector.

NO

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

(cont'd)

PGM-FI Control System

Troubleshooting Flowchart — TDC/CRANK/CYL sensor [1.6 l] (cont'd) —



- Check Engine warning light has been reported on.
- LED indicates CODE 8.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 8?

NO

YES

Stop engine.

Disconnect the 8P connector from the TDC/CRANK/CYL sensor.

Measure resistance between A terminal and B terminal.

Is there 350—550 Ω ?

NO

Replace the distributor assembly (section 16).

YES

Check for continuity to body ground on A terminal and B terminal individually.

Does continuity exist ?

YES

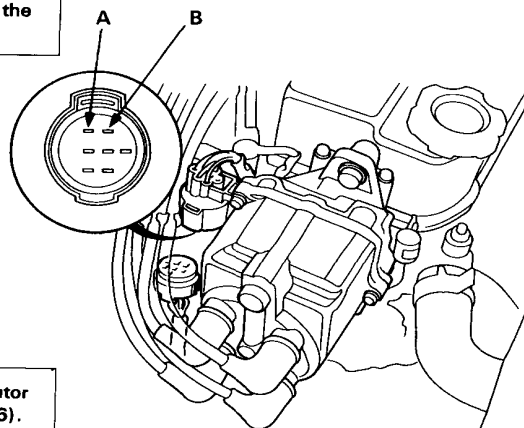
Replace the distributor assembly (section 16).

NO

Reconnect the connector.

(To page 6-41)

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C210 (round connector located at the right shock tower).

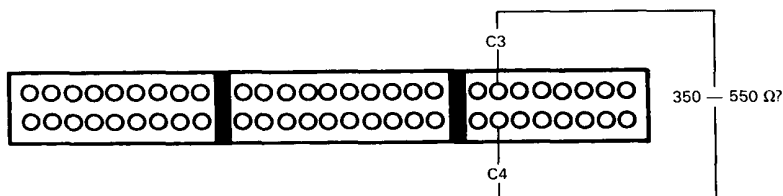




(From page 6-40)

Connect the PGM-FI test harness only to the main wire harness, not to the ECU (page 6-24).

Measure resistance between C3 terminal and C4 terminal.



Is there 350 — 550 Ω ?

NO

Repair open in ORN/
BLU and/or WHT/
BLU wires.

YES

Check for continuity to body ground on C3 terminal.

Does continuity exist?

YES

Repair short in ORN/
BLU wire between
ECU (C3) and distribu-
tor connector.

NO

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

(cont'd)

PGM-FI Control System

Troubleshooting Flowchart — TDC/CRANK/CYL Sensor [1.6 l] (cont'd) -



- Check Engine warning light has been reported on.
- LED indicates CODE 9.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 9?

NO

YES

Stop engine.

Disconnect the 8P connector from the TDC/CRANK/CYL sensor.

Measure resistance between F terminal and G terminal.

Is there 350—550 Ω ?

NO

YES

Check for continuity to body ground on F terminal and G terminal individually.

Does continuity exist ?

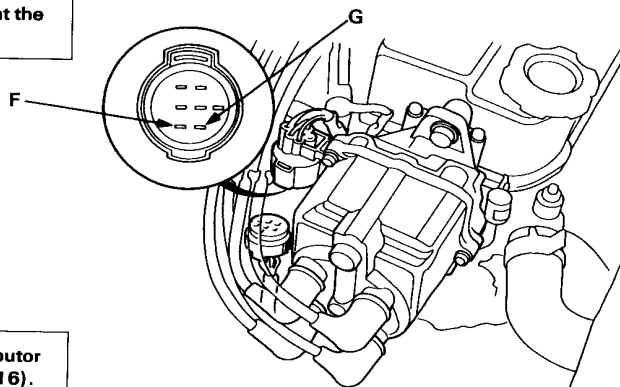
YES

NO

Reconnect the connector.

(To page 6-43)

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C210 (round connector located at the right shock tower).



Replace the distributor assembly (section 16).

Replace the distributor assembly (section 16).



(From page 6-42)

Connect the PGM-FI test harness only to the main wire harness, not to the ECU (page 6-24).

Measure resistance between C1 terminal and C2 terminal.

Is there 350 — 550 Ω ?

NO

Repair open in BLU/GRN and/or BLU/YEL wires.

YES

Check for continuity to body ground on C1 terminal.

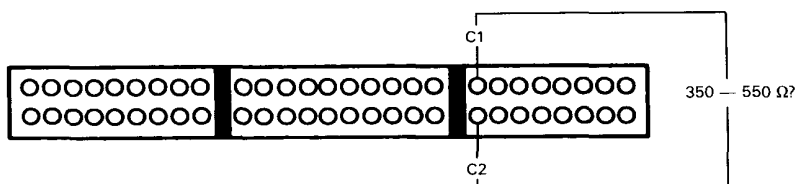
Does continuity exist?

YES

Repair short in BLU/GRN wire between ECU (C1) and distributor connector.

NO

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



PGM-FI Control System

Troubleshooting Flowchart — TW Sensor



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



- Check Engine warning light is on.
- LED indicates CODE 6.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse 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, system is OK at this time (test drive may be necessary).

Check for poor connections or loose wires at TW sensor, C210 and C212 (1.6ℓ) (round connector and square connector located at the right shock tower).

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 Ω ?

NO

Replace the TW sensor.

YES

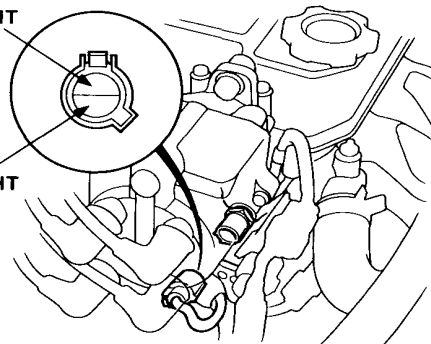
Turn the ignition switch ON.

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

(To page 6-45)

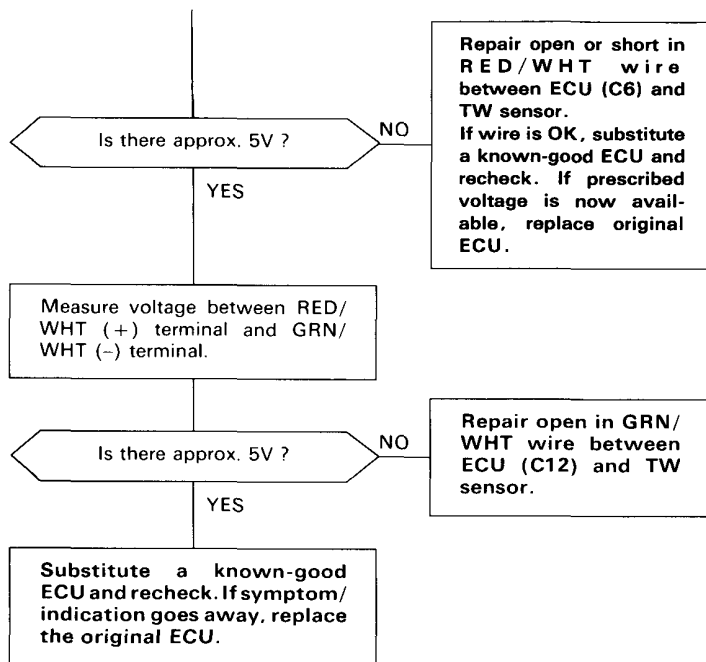
RED/WHT

GRN/WHT





(From page 6-44)



PGM-FI Control System

Troubleshooting Flowchart — Throttle Angle Sensor



Self-diagnosis LED indicator blinks seven times: Most likely a problem in the Throttle Angle Sensor circuit.



- Engine is running
- Check Engine warning light is on
- LED indicates CODE 7

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on and does LED indicate CODE 7?

YES

Turn the ignition switch OFF.

Disconnect the 3P connector from the throttle angle sensor.

Turn the ignition switch ON.

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

Is there approx. 5V ?

YES

Turn the ignition switch OFF.

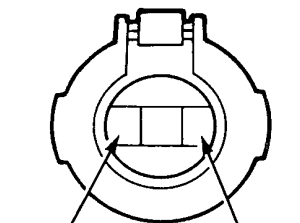
Reconnect the 3P connector.

Connect the PGM-FI test harness between the ECU and connector (page 6-24).

(To page 6-47)

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at throttle angle sensor and C210 (round connector located at the right shock tower).

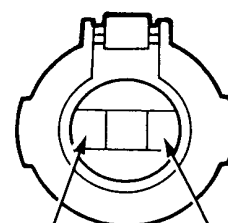
(1.5 l)



GRN/WHT

YEL/WHT

(1.6 l)



YEL/WHT

GRN/WHT

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

Is there approx. 5V ?

YES

Repair open in GRN/ WHT wire between ECU (C12) and throttle angle sensor.

NO

Turn the ignition switch OFF.

Connect the PGM-FI test harness between the ECU and connector (page 6-24).

(To page 6-47)



(From page 6-46).

Turn the ignition switch ON.

Disconnect #6 hose from the dashpot diaphragm and connect a vacuum pump to the diaphragm.

Apply 500 mm Hg to the diaphragm.

Measure voltage between C7(+) terminal and C12(-) terminal.

Is voltage approx. 0.5 V at full close throttle (applying vacuum to the dashpot diaphragm), and approx. 4.5 V at full open throttle?
NOTE: There should be a smooth transition from 0.5 V to 4.5 V as the throttle is depressed.

YES

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

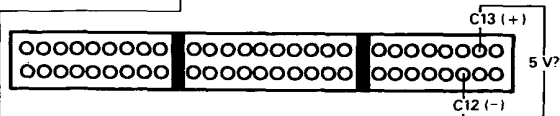
NO

- Replace throttle angle sensor.
- Repair open or short in RED/BLU wire between ECU (C7) and throttle angle sensor.

(From page 6-46)

Turn the ignition switch ON.

Measure voltage between C13(+) terminal and C12(-) terminal.



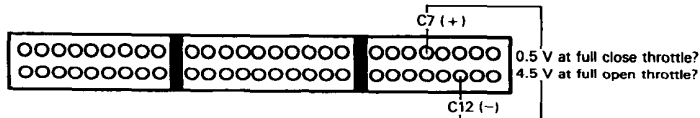
Is there approx. 5V?

YES

Repair open in YEL/WHT wire between ECU(C13) and throttle angle sensor.

NO

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



PGM-FI Control System

Troubleshooting Flowchart — TA Sensor



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



- Check Engine warning light is on.
- LED indicates CODE 10

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Turn the ignition switch ON.

Is Check Engine warning light on and does LED indicate CODE 10?

NO

YES

Turn the ignition switch OFF.

Disconnect the 2P connector from the TA sensor.

Measure resistance between the 2 terminals on the TA sensor.

Is there 1-4 k Ω ?

NO

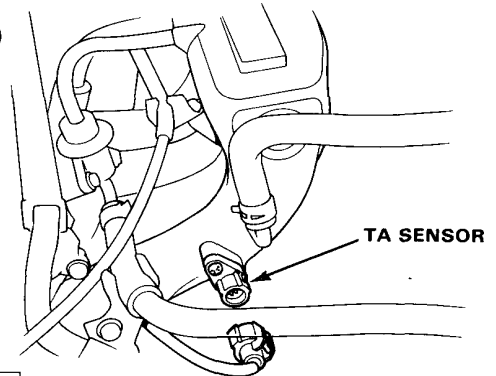
YES

Turn the ignition switch ON.

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

(To page 6-49)

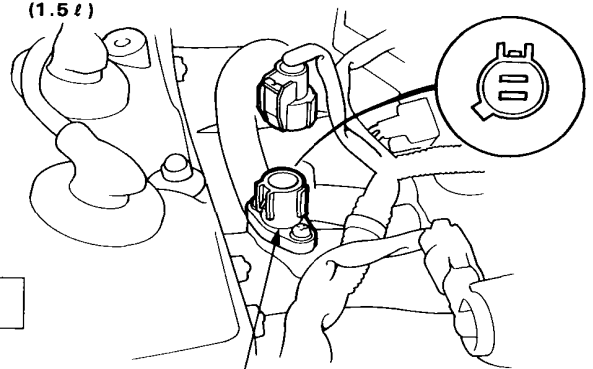
(1.6 l)



TA SENSOR

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at TA sensor, C210 and C212 (1.6 l) (round connector and squar connector located at the right shock tower).

(1.5 l)

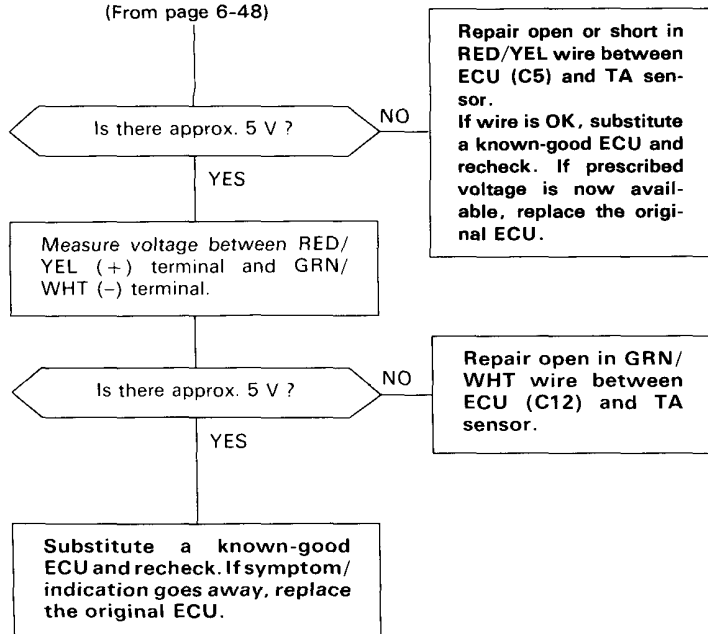


TA SENSOR

Replace TA sensor.

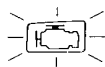


(From page 6-48)



PGM-FI Control System

Troubleshooting Flow Chart — CYL Sensor [DOHC]



Self-diagnosis LED indicator blinks nine times: A problem in the CYL sensor.

—Check Engine warning light has been reported on.
—LED indicates CODE 9.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

Is Check Engine warning light on?
Does LED indicate CODE 9?

NO

YES

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C210 (round connector located at the right shock tower).

Stop engine.

Disconnect the 2P connector from the CYL sensor.

Measure resistance between 2 terminals on the CYL sensor.

Is there 700—1,000 Ω ?

NO

YES

Replace CYL sensor.

Check for continuity to body ground on the 2 terminals individually.

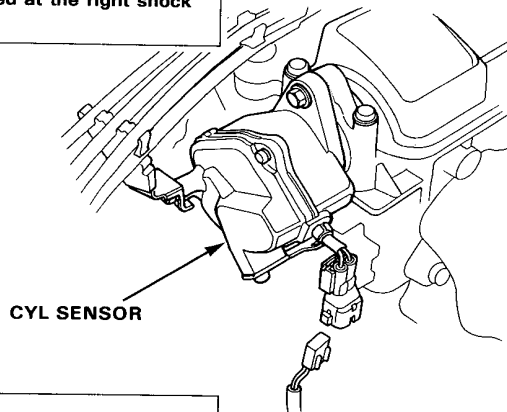
Does continuity exist?

YES

NO

Replace CYL sensor.

(To page 6-51)





(From page 6-50)

Reconnect the connector.

Connect the PGM-FI test harness only to the main wire harness, not to the ECU (page 6-24).

Measure resistance between C1 terminal and C2 terminal.

Is there 700—1,000 Ω ?

NO

Repair open in BLU/GRN and/or BLU/YEL wires.

YES

Check for continuity to body ground on C1 terminal.

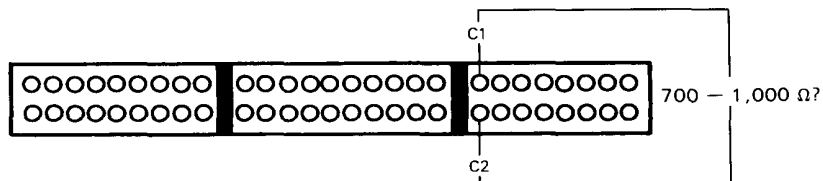
Does continuity exist?

YES

Repair short in BLU/GRN wire between ECU (C1) and distributor connector.

NO

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



PGM-FI Control System

Troubleshooting Flowchart — PA Sensor



Self-diagnosis LED indicator blinks thirteen times: A problem in the Atmospheric Pressure (PA) Sensor circuit.



- Check Engine warning light is on.
- LED indicates CODE 13.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Turn the ignition switch ON.

Is Check Engine warning light on and does LED indicate CODE 13?

NO

Intermittent failure, system is OK at this time (test drive may be necessary). Check for poor connections or loose wires at the PA sensor.

YES

Turn the ignition switch OFF.

Disconnect the main wire harness from PA sensor.

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

Is there approx. 5V?

YES

Measure voltage between YEL/WHT (+) terminal and GRN/WHT (–) terminal.

NO

Repair open in YEL/WHT wire between ECU (C13) and the sensor. If wire is OK, substitute a known-good ECU and recheck. If prescribed voltage is now available replace the original ECU.

Is there approx. 5V?

NO

Repair open or short in GRN/WHT wire between ECU (C12) and the sensor. If wire is OK, substitute a known-good ECU and recheck. If prescribed voltage is now available, replace the original ECU.

YES

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

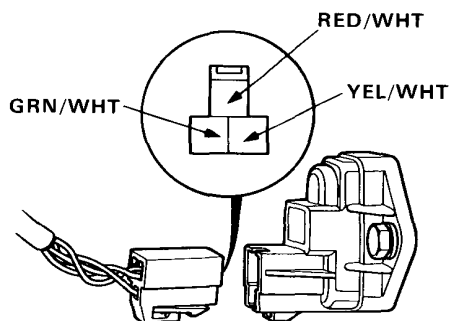
Is there approx. 5V?

NO

Repair open or short in RED/WHT wire between ECU (C9) and PA sensor. If wire is OK, substitute a known-good ECU and recheck. If prescribed voltage is now available, replace the original ECU.

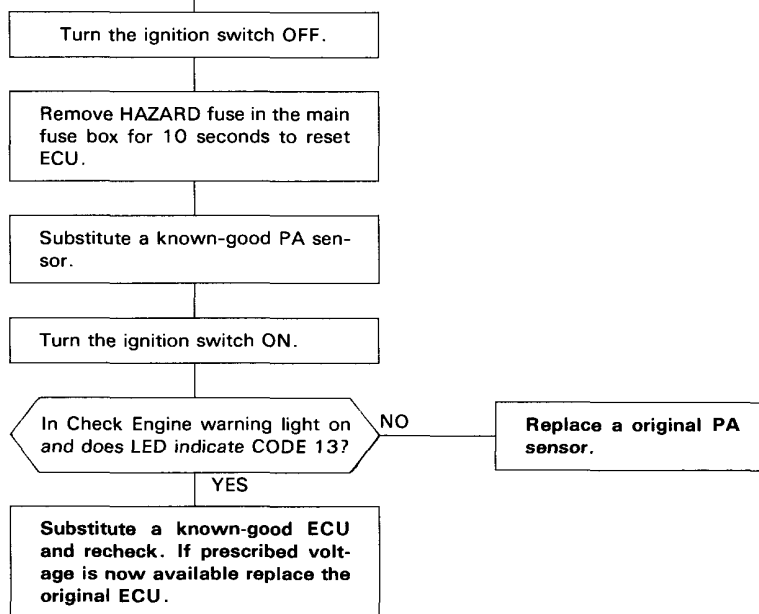
YES

(To page 6-53)





(From page 6-52)



PGM-FI Control System

Troubleshooting Flowchart — Ignition Output Signal



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

- Check Engine warning light is on.
- LED indicates CODE 15.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine.

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

NO

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at the distributor connector and C211 (square connector located at the right shock tower).

YES

Turn the ignition switch OFF.

Disconnect the 2P connector from the distributor.

Turn the ignition switch ON.

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

Is there battery voltage ?

NO

Repair open in BLK/YEL wire between the 2P connector and ignition switch.

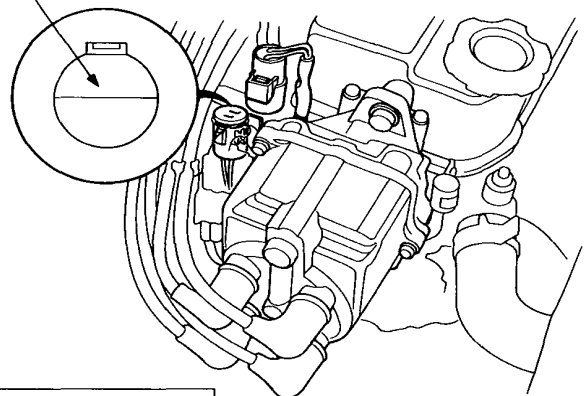
YES

Turn the ignition switch OFF.

Reconnect the 2P connector.

(To page 6-55)

BLK/YEL





(From page 6-54)

Connect the PGM-FI test harness between the ECU and connector (page 6-24).

Turn the ignition switch ON.

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

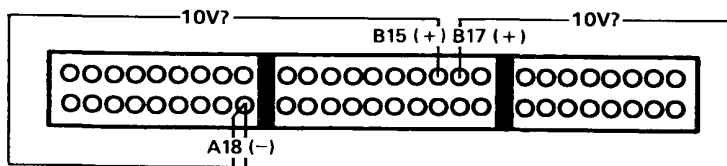
Is there approx. 10V?

NO

- Replace the igniter unit.
- Repair open or short in WHT wires between distributor and ECU (B15 or B17).

YES

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



PGM-FI Control System

Troubleshooting Flowchart — Vehicle Speed Sensor



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

- Check Engine warning light is on.
- LED indicates CODE 17.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Road test necessary:
In 2nd gear accelerate to 3,500 min^{-1} (rpm) and decelerate to 1,500 min^{-1} (rpm) with throttle fully closed.

Is Check Engine warning light and does LED indicate CODE 17?

NO

Intermittent failure, system is OK at this time.
Check for poor connections or loose wires at C405 and C710.

YES

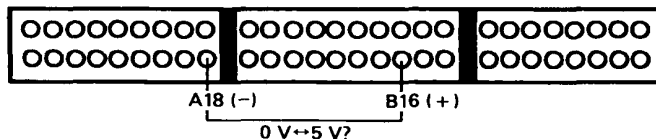
Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.

WARNING Block rear wheels before jacking up front of car.

Connect the PGM-FI test harness between the ECU and connector (page 6-24).

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?

NO

- Repair open or short in YEL/RED wire between ECU (B16) and the speed sensor.
- Faulty speed sensor.
- Substitute a known-good ECU and recheck. If symptom/indication goes away, replace the original ECU.

YES

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



PGM-FI Control System

Troubleshooting Flowchart — Lock-up Control Solenoid Valve [A/T Only] —



Self-diagnosis LED indicator blinks nineteen times: A problem in the Lock-up Control Solenoid Valve circuit.

- Check Engine warning light is on.
- LED indicates CODE 19.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Drive vehicle.

Is Check Engine warning light on and does LED indicate CODE 19?

NO

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at lock-up solenoid valve and C313 (round connector located at the left shock tower).

YES

Turn the ignition switch OFF.

Connect the PGM-FI test harness between the ECU and connector (page 6-24). Disconnect "A" connector from the ECU only, not the main wire harness.

Disconnect the 2P connector from the lock-up control solenoid valve.

Check for continuity between A8 and body ground.

Does continuity exist?

YES

Repair short in YEL wire between ECU (A8) and the 2P connector.

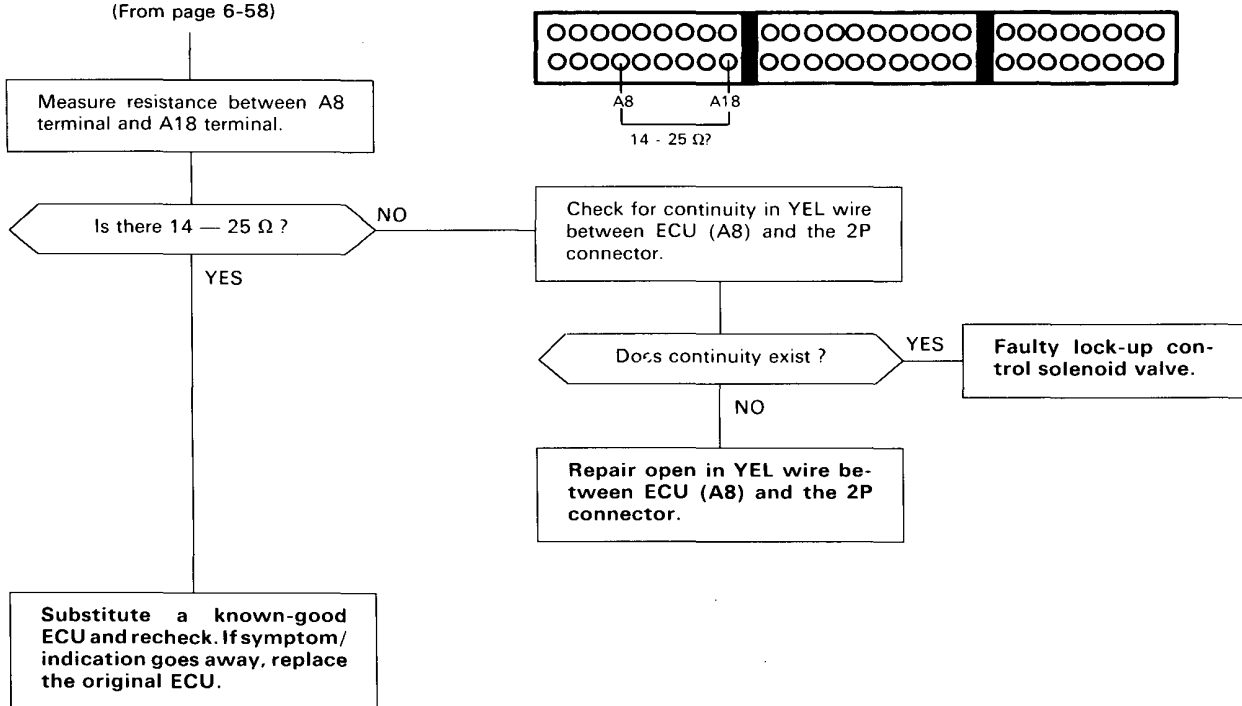
NO

Reconnect the 2P connector.

(To page 6-59)



(From page 6-58)



Idle Control System

System Troubleshooting Guide

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.
- If the idle speed is out of specification and LED does not blink CODE 14, go to inspection described on page 6-61.

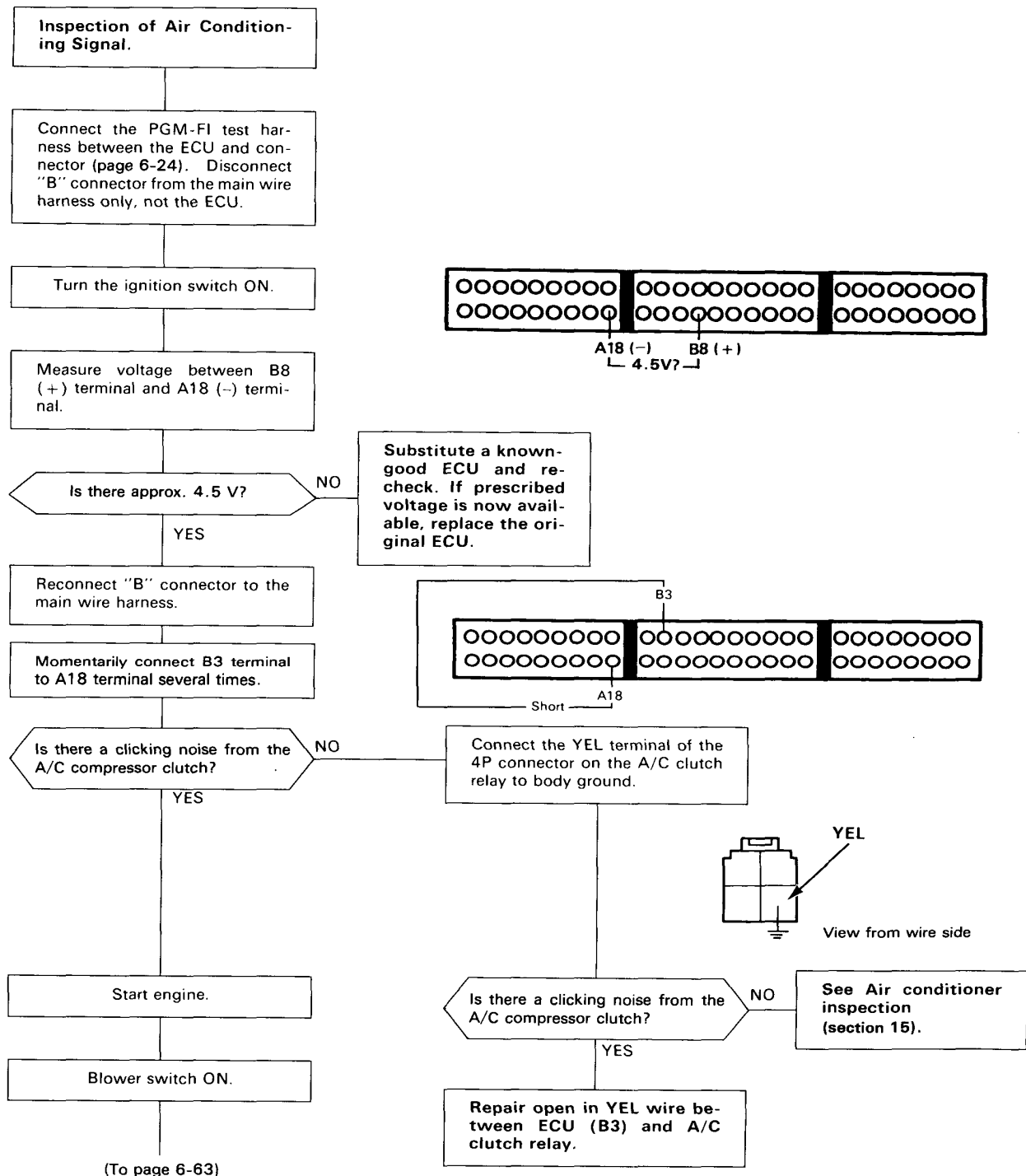
| PAGE | | SUB SYSTEM | IDLE ADJUST-ING SCREW | EACV | AIR CONDI-TIONING SIGNAL | ALTER-NATOR FR SIGNAL | A/T SHIFT POSITION SIGNAL (Automatic) | STARTER SWITCH SIGNAL | FAST IDLE CONTROL (1.6 l) | HOSES AND CONNEC-TIONS |
|---|--|------------|-----------------------|------|--------------------------|-----------------------|---------------------------------------|-----------------------|---------------------------|------------------------|
| SYMPTOM | | | 68, 69 | — | 62 | 64 | — | — | 66 | * |
| ENGINE WON'T START | | | | ② | | | | | | ① |
| DIFFICULT TO START ENGINE WHEN COLD | | | ② | ① | | | | | | |
| WHEN COLD FAST IDLE OUT OF SPEC [1,000—2,000 min ⁻¹ (rpm)] | | | ② | ① | | | | | | ③ |
| ROUGH IDLE | | | ③ | ② | | | | | | ① |
| WHEN WARM ENGINE SPEED TOO HIGH | | | ③ | ② | | | | | | ① |
| WHEN WARM ENGINE SPEED TOO LOW | Idle speed is below specified (no load) | | ② | ① | | ③ | | | | |
| | Idle speed does not increase after initial start up. | | | ① | | | | ② | | |
| | On models with automatic transmis-sion, the idle speed drops in gear | | ③ | ② | | | ① | | | |
| | Idle speeds drops when air conditioner in ON | | ③ | ② | ① | | | | | |
| FREQUENT STALLING | WHILE WARMING UP | | ② | ① | | | | | | |
| | AFTER WARMING UP | | ② | ① | | | | | | |
| FAILS EMISSION TEST | | | | | | | | | | ① |

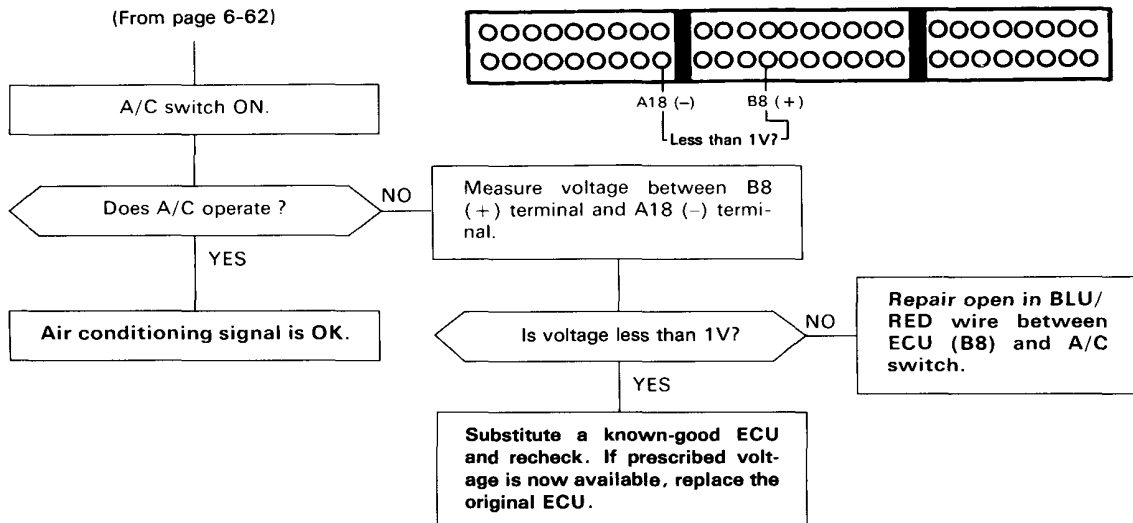


1. When the idle speed is out of specification and LED does not blink CODE 14, check the following items:
 - Adjust the idle speed (page 6-68, 69)
 - Air conditioning signal (page 6-62)
 - Alternator FR signal (page 6-64)
 - A/T shift position signal
 - Starter switch signal
 - Fast idle control (page 6-66)
 - Hoses and connections
 - EACV and its mounting O-rings.
2. If the above items are normal, substitute a known-good EACV and readjust the idle speed (page 6-68, 69)
 - If the idle speed still cannot be adjusted to specification (and LED does not blink CODE 14) after EACV replacement, substitute a known-good ECU and recheck. If symptom goes away, replace the original ECU.

Idle Control System

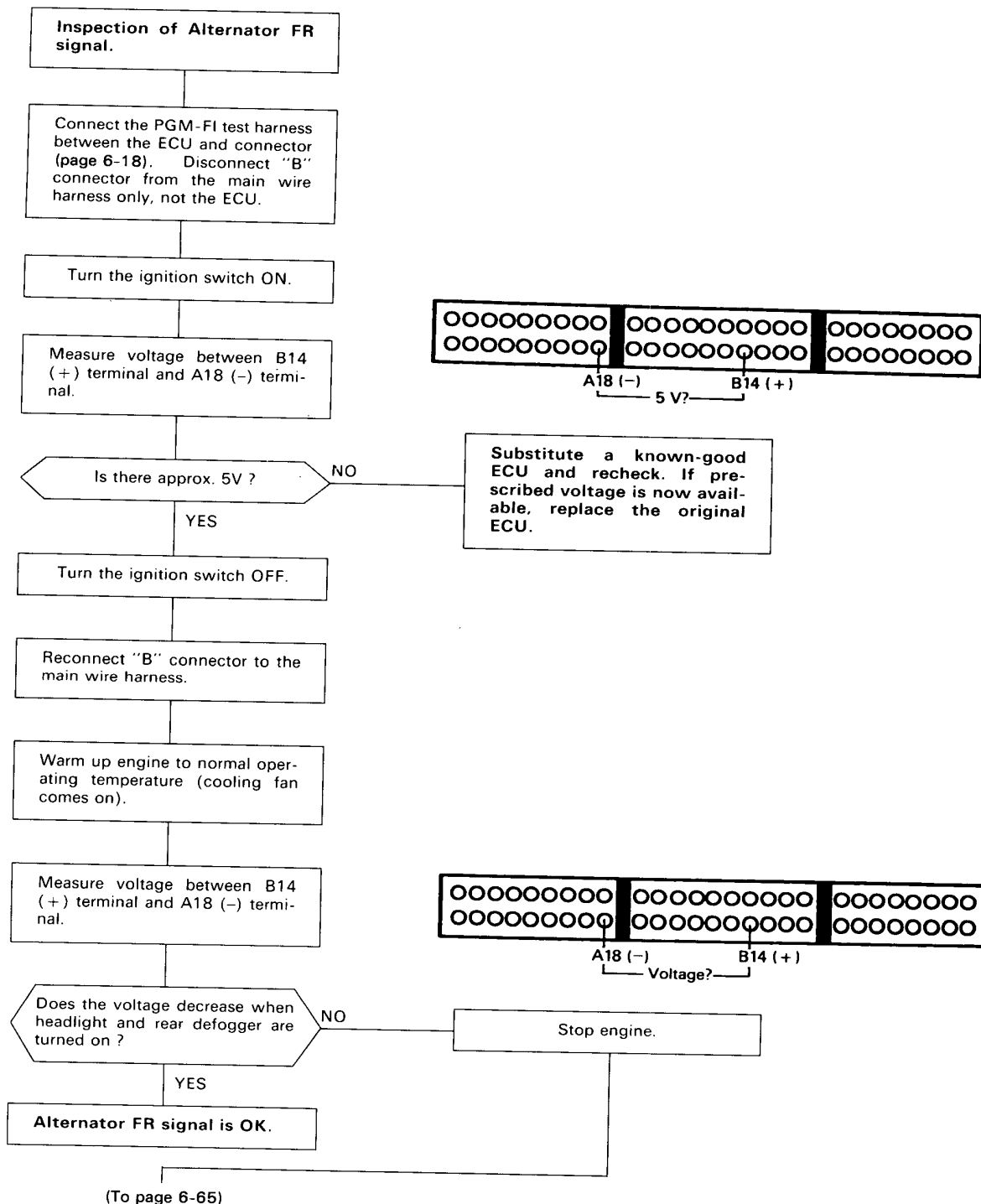
Troubleshooting Flowchart — Air Conditioning Signal





Idle Control System

Troubleshooting Flowchart — Alternator FR Signal





(From page 6-64)

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

Disconnect the negative battery cable from the battery.

Check for continuity between B14 terminal and body ground.

Does continuity exist ?

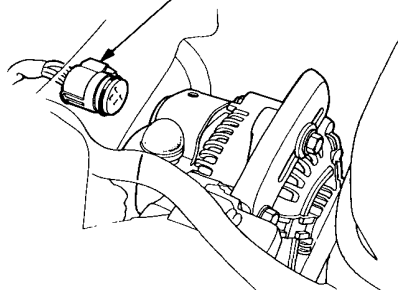
YES

Disconnect GRN connector from the alternator.

NO

Disconnect GRN connector from the alternator.

GRN CONNECTOR



Connect YEL (1.5 ℓ) or BLU (1.6 ℓ) wire to body ground.

Check for continuity between B14 terminal and body ground.

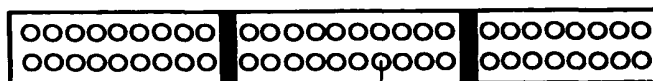
Does continuity exist ?

YES

NO

— Repair open in BLU wire between ECU (B14) and C210 connector, or YEL wire between C101 connector and alternator (1.5 ℓ).
— Repair open in BLU wire between ECU (B14) and alternator (1.6 ℓ).

See Alternator Inspection (section 16).



B14

Continuity?

Check for continuity between B14 terminal and body ground.

Does continuity exist ?

NO

See Alternator Inspection (section 16).

YES

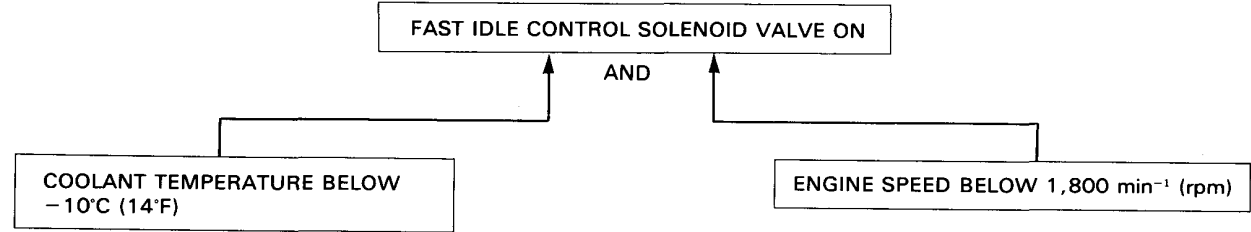
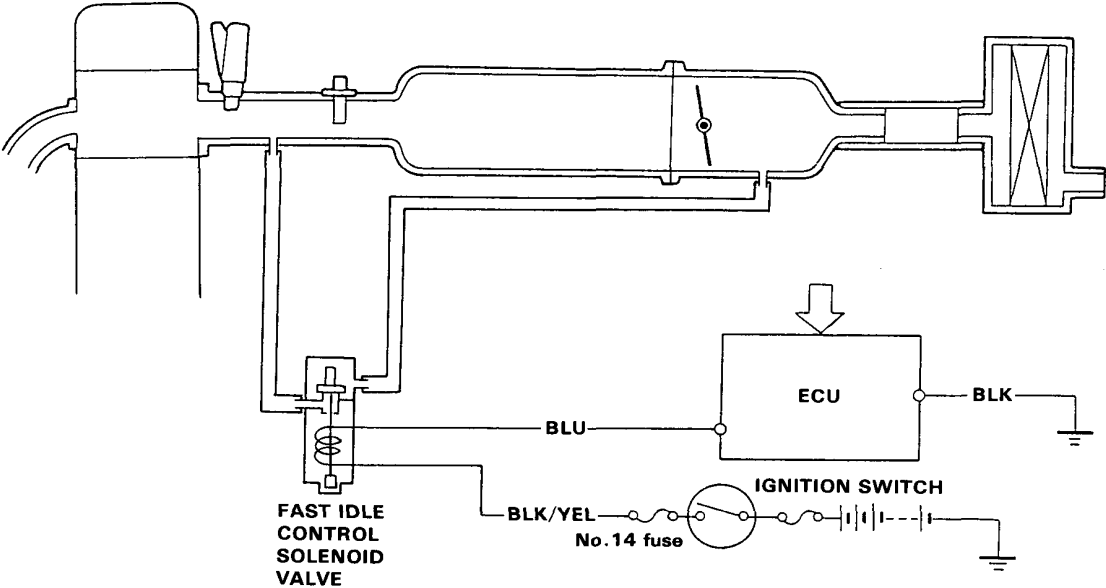
— Repair short in BLU wire between ECU (B14) and C210 or YEL wire between C101 and alternator (1.5 ℓ).
— Repair short in BLU wire between ECU (B14) and alternator (1.6 ℓ).

Idle Control System

Fast Idle Control [1.6 l]

Descripton

The fast idle control solenoid valve is employed to increase the air flow rate for fast idling at extremely low ambient temperature.





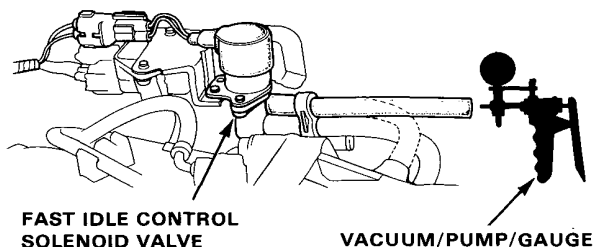
Troubleshooting Flow Chart

Inspection of Fast Idle Control Solenoid Valve.

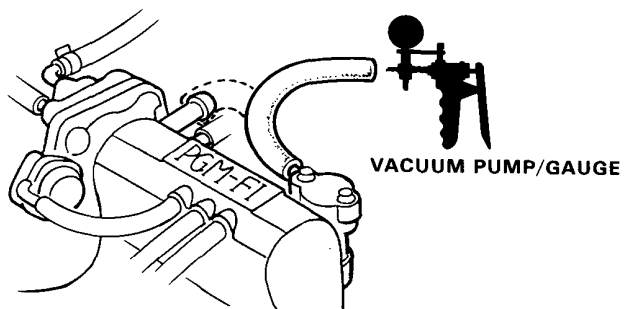
Warm up engine to normal operating temperature (cooling fan comes on).

Disconnect the upper vacuum hose from the fast idle control solenoid valve and connect a vacuum gauge to the valve.

(DOHC)



(SOHC)



Is there any vacuum?

YES

Disconnect the 2P connector from the solenoid valve

NO

Turn the ignition switch OFF.

Disconnect the 2P connector from the solenoid valve.

Connect battery positive to terminal A and battery negative to terminal B of the solenoid valve.

Is there any vacuum?

YES

Replace the fast idle control solenoid valve.

NO

Repair short to ground at BLU wire between ECU (B2) and the 2P connector.
If wire is OK, substitute a known-good ECU and recheck. If symptom goes away, replace the original ECU.

Is there manifold vacuum?

NO

Replace the fast idle control solenoid valve.

YES

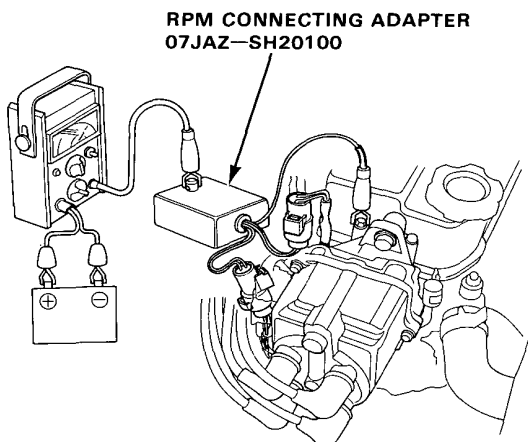
Fast Idle Control Solenoid valve is OK.

Idle Control System

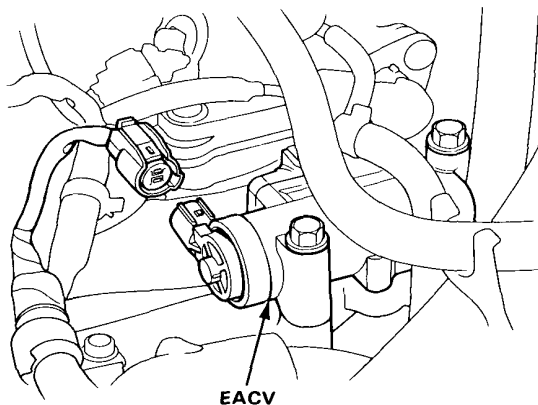
Idle Speed Setting [1.5 l]

Inspection/Adjustment

1. Start the engine and warm it up to normal operating temperature (the cooling fan comes on).
2. Connect a tachometer.



3. Disconnect the 2P connector from the EACV.



4. Check idling in no-load conditions in which the headlights, blower fan, rear defogger, cooling fan, and air conditioner are not operating.

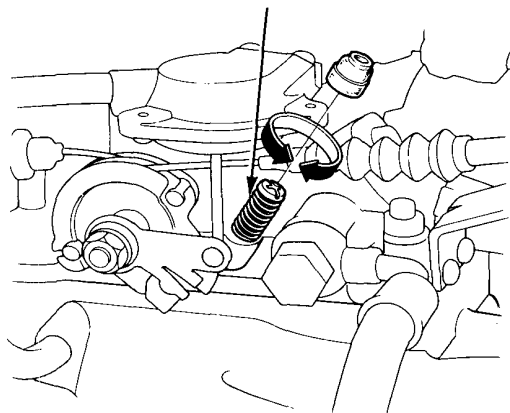
Idle speed should be:

| | |
|-----------|--|
| Manual | $625 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ |
| Automatic | $625 \pm 50 \text{ min}^{-1} \text{ (rpm)}$ (in N or P) |

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

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

IDLE ADJUSTING SCREW



5. Turn the ignition switch OFF.
6. Reconnect the 2P connector on the EACV, then remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.
7. Restart and idle the engine with no-load conditions in which the headlights, blower fan, rear defogger, cooling fan, and air conditioner are not operating for one minute, then check the idle speed.

Idle speed should be:

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

8. Idle the engine for one minute with headlights (Hi) and rear defogger ON and check the idle speed.
If applicable, with Automatic transmission models, idle the engine for one minute in gear (except **N** or **P**) and check the idle speed.

Idle speed should be: $800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$

9. 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: $800 \pm 50 \text{ min}^{-1} \text{ (rpm)}$

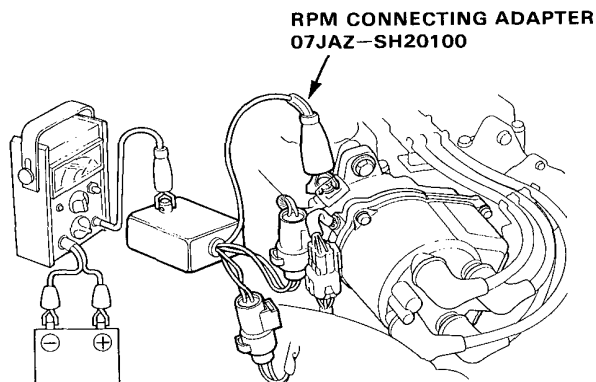
NOTE: If the idle speed is not within specifications, see System Troubleshooting Guide on page 6-60.



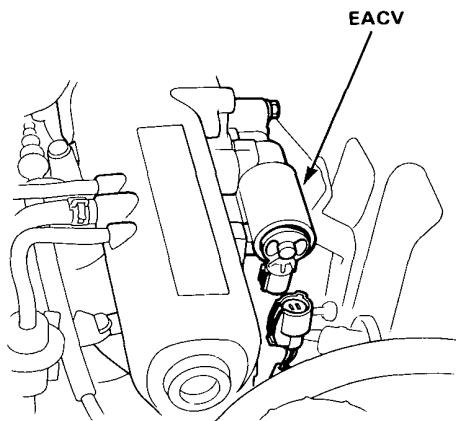
Idle Speed Setting [1.6 l]

Inspection/Adjustment

1. Start the engine and warm it up to normal operating temperature (the cooling fan comes on).
2. Connect a tachometer.



3. Disconnect the 2P connector from the EACV.



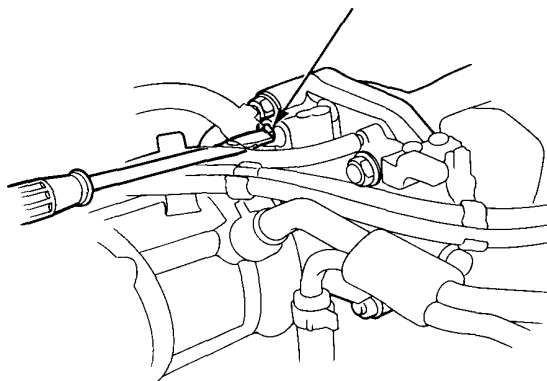
4. Check idling in no-load conditions in which the headlights, blower fan, rear defogger, cooling fan, and air conditioner are not operating.

Idle speed should be: $650 \pm 50 \text{ min}^{-1}$ (rpm)

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

NOTE: If the idle speed is excessively high, check the throttle control system (page 6-85).

IDLE ADJUSTING SCREW



5. Turn the ignition switch OFF.
6. Reconnect the 2P connector on the EACV, then remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.
7. Restart and idle the engine with no-load conditions in which the headlights, blower fan, rear defogger, cooling fan, and air conditioner are not operating for one minute, then check the idle speed.

| | |
|-------------------|-------------------------------------|
| SOHC With CATA | $750 \pm 50 \text{ min}^{-1}$ (rpm) |
| SOHC Without CATA | $780 \pm 50 \text{ min}^{-1}$ (rpm) |
| DOHC | $800 \pm 50 \text{ min}^{-1}$ (rpm) |

8. Idle the engine for one minute with headlights (Hi) and rear defogger ON and check the idle speed.

Idle Speed should be:

| | |
|-------------------|-------------------------------------|
| SOHC With CATA | $780 \pm 50 \text{ min}^{-1}$ (rpm) |
| SOHC Without CATA | $780 \pm 50 \text{ min}^{-1}$ (rpm) |
| DOHC | $800 \pm 50 \text{ min}^{-1}$ (rpm) |

9. 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:

| | |
|-------------------|-------------------------------------|
| SOHC With CATA | $800 \pm 50 \text{ min}^{-1}$ (rpm) |
| SOHC Without CATA | $780 \pm 50 \text{ min}^{-1}$ (rpm) |
| DOHC | $800 \pm 50 \text{ min}^{-1}$ (rpm) |

NOTE: If the idle speed is not within specifications, see System Troubleshooting Guide on page 6-60.

Fuel Supply System

System Troubleshooting Guide

NOTE: Across each row in the chart, the 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 most likely system ②, etc.

1.5l

| PAGE | SUB SYSTEM | FUEL INJECTOR | PRESSURE REGULATOR | FUEL FILTER | FUEL PUMP | MAIN RELAY | CONTAMINATED FUEL |
|-------------------------------------|--------------------------|---------------|--------------------|-------------|-----------|------------|-------------------|
| SYMPTOM | | 71 | — | — | 78 | — | * |
| ENGINE WON'T START | | ③ | | | ① | ② | |
| DIFFICULT TO START ENGINE WHEN COLD | | ② | ③ | ① | | | |
| ROUGH IDLE | | ① | ② | | | | ③ |
| FREQUENT STALLING | WHILE WARMING UP | ① | | ② | ③ | | |
| | AFTER WARMING UP | ① | | ③ | ② | | |
| POOR PERFORMANCE | MISFIRE OR ROUGH RUNNING | ① | ② | | | | ③ |
| | FAILS EMISSION TEST | ① | ② | | | | |
| | LOSS OF POWER | | | ① | ③ | | ② |

1.6l

| PAGE | SUB SYSTEM | FUEL INJECTOR | INJECTOR RESISTOR | PRESSURE REGULATOR | FUEL FILTER | FUEL PUMP | MAIN RELAY | CONTAMINATED FUEL |
|-------------------------------------|--------------------------|---------------|-------------------|--------------------|-------------|-----------|------------|-------------------|
| SYMPTOM | | 75 | — | — | — | 78 | — | * |
| ENGINE WON'T START | | | ③ | | | ① | ② | |
| DIFFICULT TO START ENGINE WHEN COLD | | ③ | | | ② | ① | | |
| ROUGH IDLE | | ① | | ② | | | | ③ |
| FREQUENT STALLING | WHILE WARMING UP | ① | | | ② | ③ | | |
| | AFTER WARMING UP | ① | | | ③ | ② | | |
| POOR PERFORMANCE | MISFIRE OR ROUGH RUNNING | ① | | ② | | | | ③ |
| | FAILS EMISSION TEST | ① | | ② | | | | |
| | LOSS OF POWER | | | | ① | ③ | | ② |

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



Fuel Injectors [1.5 l]

Troubleshooting Flowchart



Self-diagnosis LED indicator blinks sixteen times: A problem in the fuel injector circuit.



- Check Engine warning light is on.
- LED indicates CODE 16.

Turn the ignition switch OFF.

Check for loose wires or connectors at:

- C101 and C102 (right shock tower)
- C122 (left shock tower)
- G101 (thermostat housing)

Are connections OK?

NO

Repair as necessary.

YES

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Start engine and hold at 2000 min⁻¹ (rpm) for 1 minute.

NOTE: If engine will not start, continue cranking for at least 15 seconds to reproduce CODE on ECU.

Does the engine start and run at 2000 min⁻¹ (rpm) for 1 minute.

NO

Is Check Engine warning light on and does LED indicate CODE 16 ?

NO

See Troubleshooting Guide (page 6-18).

YES

Is Check Engine warning light on and does LED indicate CODE 16 ?

NO

Intermittent failure (test drive may be necessary.)

YES

Turn the ignition switch OFF.

Disconnect the 2P connector from the main injector.

Measure resistance between the 2 terminals of the injector.

(To page 6-72)

Turn the ignition switch OFF.

Disconnect the 2P connector from the auxiliary injector.

Measure resistance between the 2 terminals of the injector.

Is resistance 6-10 Ω?

NO

Replace the injector.

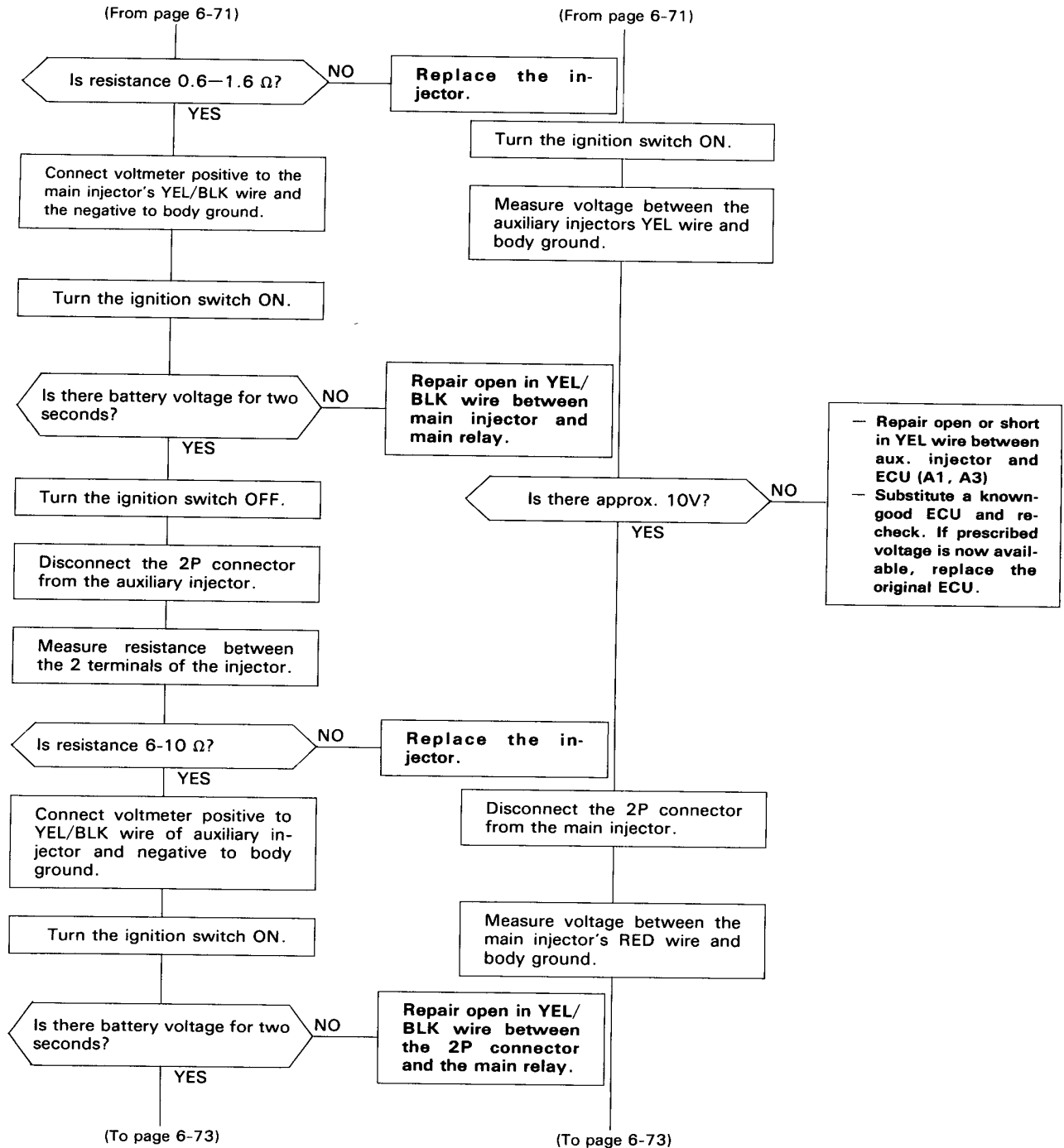
YES

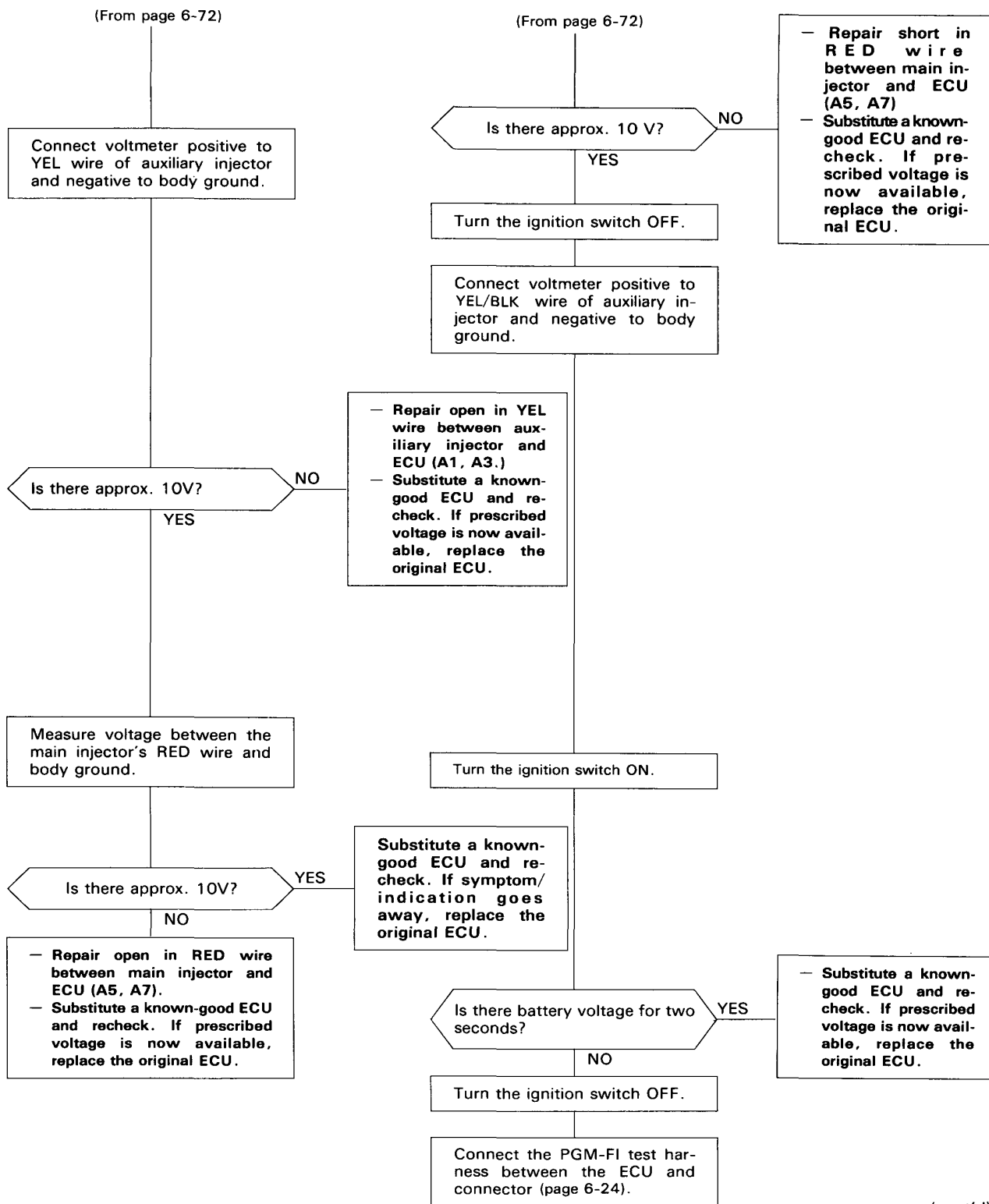
(To page 6-72)

(cont'd)

Fuel Supply System

Fuel Injectors [1.5 l] (cont'd)



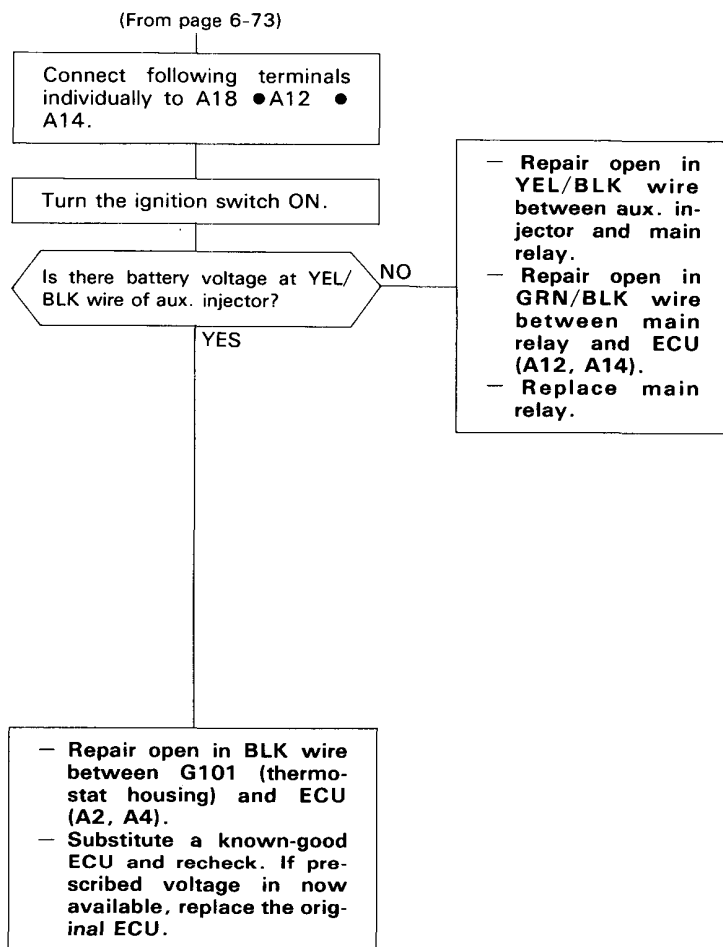


(cont'd)

(To page 6-74)

Fuel Supply System

Fuel Injectors [1.5 l] (cont'd)





Fuel Injectors [1.6 l]

Troubleshooting Flowchart



Self-diagnosis LED indicator blinks sixteen times: A problem in the fuel injector circuit.



- Check Engine warning light is on.
- LED indicates CODE 16.

Turn the ignition switch OFF.

Remove HAZARD fuse in the main fuse box for 10 seconds to reset ECU.

Turn the ignition switch to START position.

Does the engine start ?

NO

YES

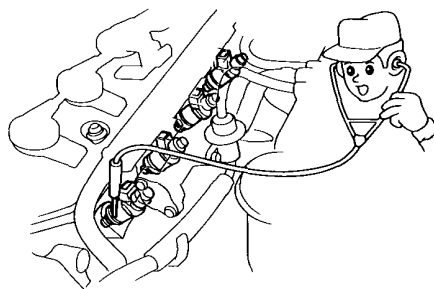
Is Check Engine warning light and does LED indicate CODE 16?

NO

YES

Intermittent failure, system is OK at this time (test drive may be necessary).
Check for poor connections or loose wires at injectors, injector resistor and C313 (round connector on left shock tower).

Check the clicking sound of each injector by means of a stethoscope when the engine is idling.



Do the injectors click ?

YES

NO

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

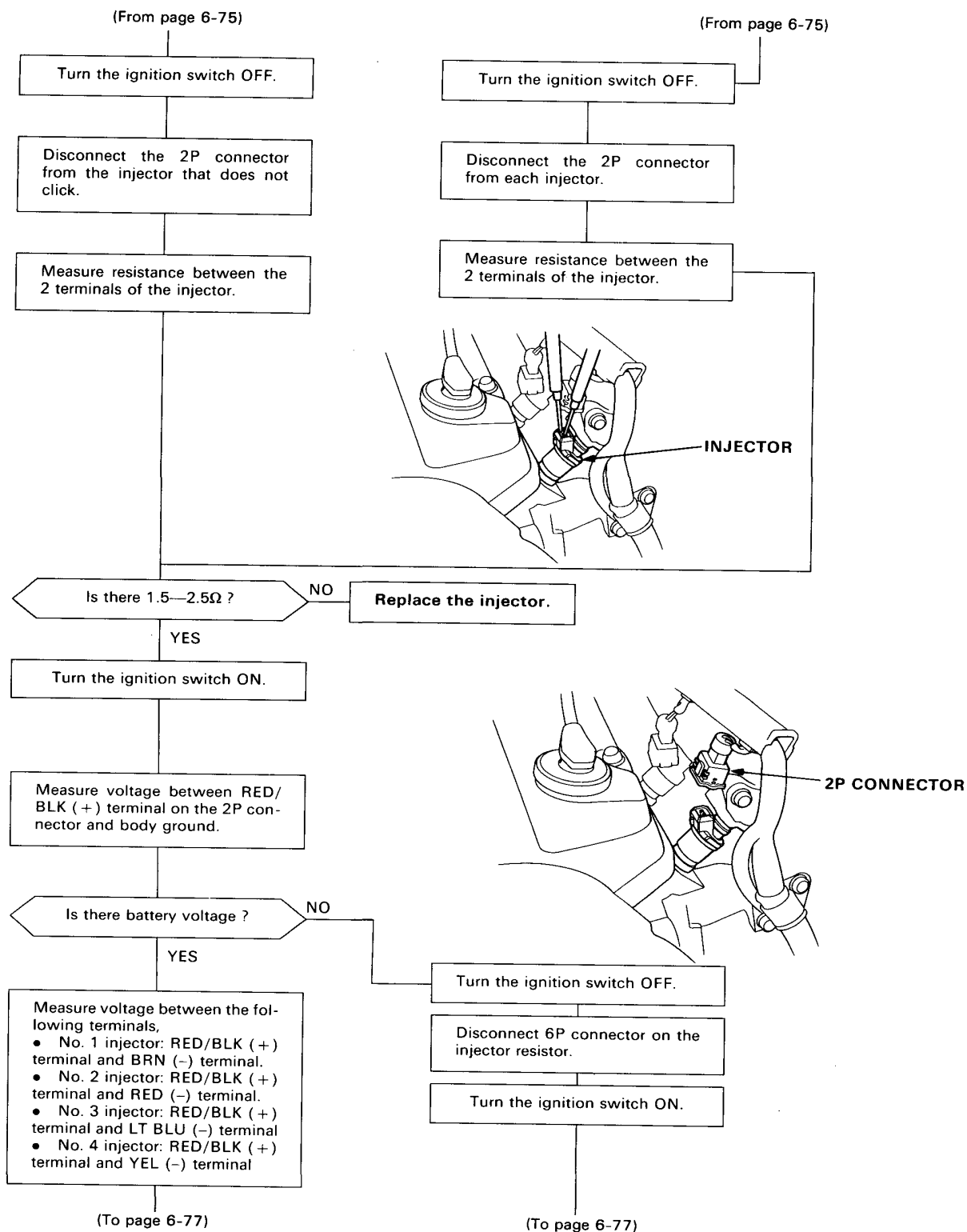
(To page 6-76)

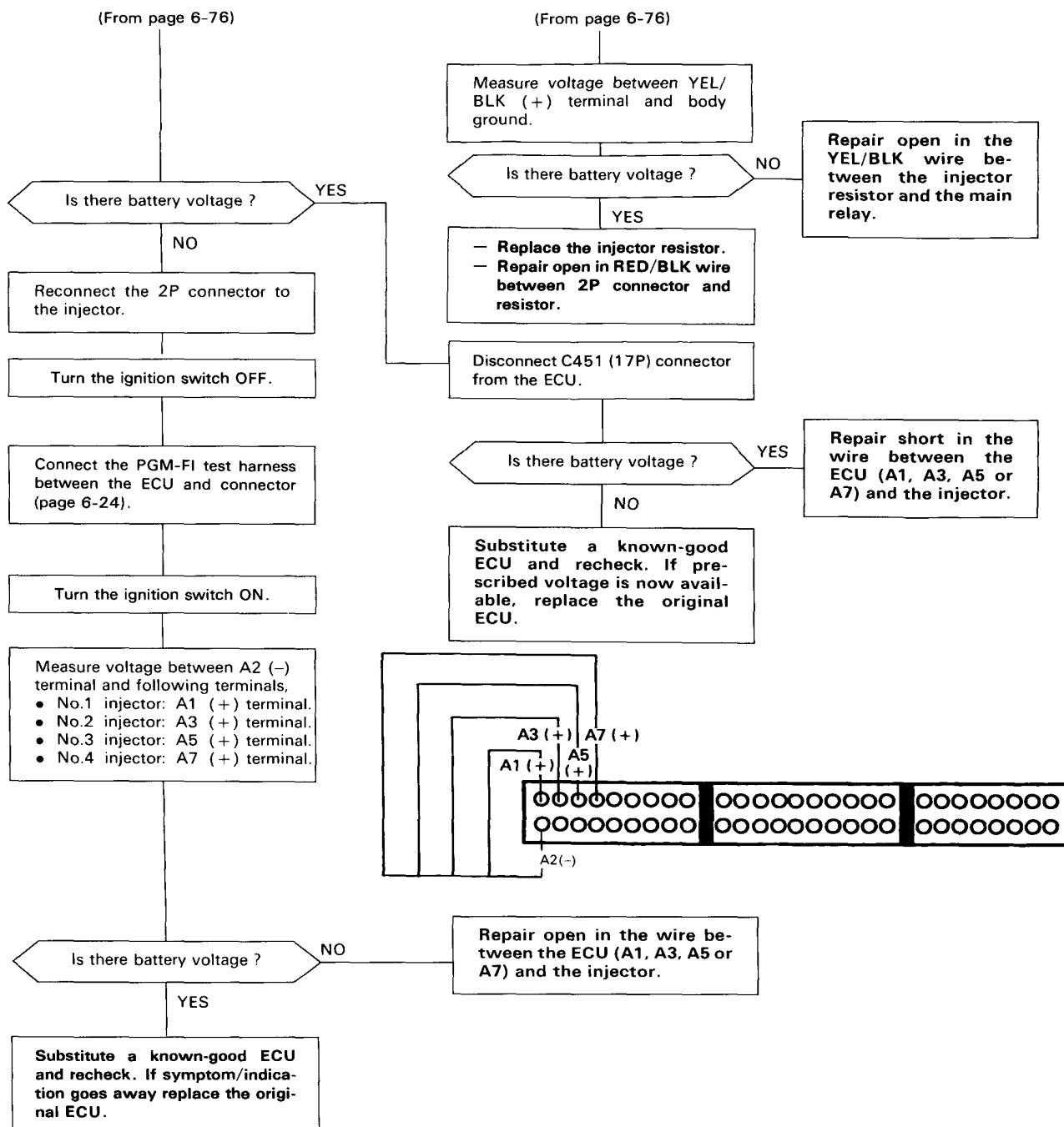
(To page 6-76)

(cont'd)

Fuel Supply System

Fuel Injectors [1.6 l] (cont'd)





Fuel Supply System

Fuel Pump

Testing

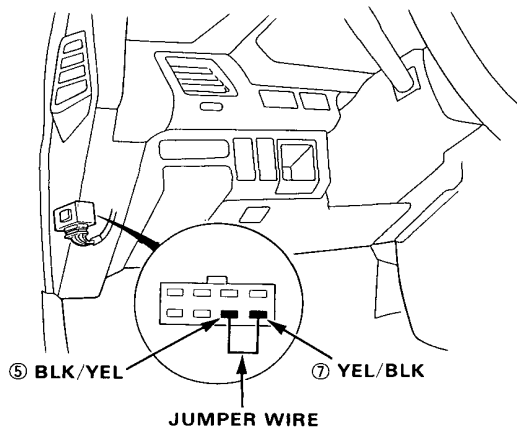
WARNING Do not smoke during the test. Keep open flame away from your work area.

If you suspect a problem with the fuel pump, check that the fuel pump actually runs; when it is ON, you will hear some noise if you hold your ear to the fuel filler port with the fuel filler cap removed. If the pump does not make noise, check as follows:

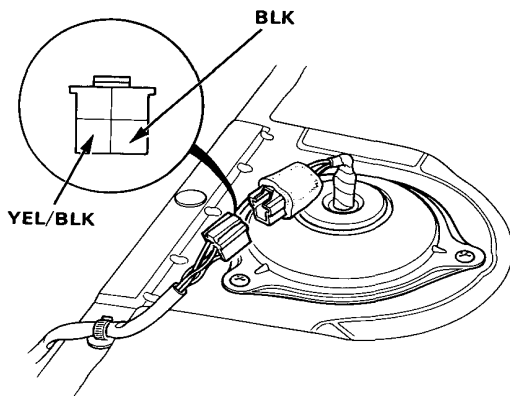
1. Remove the rear seat.
2. Disconnect the 4P connector.

CAUTION: Be sure to turn the ignition switch OFF before disconnecting the wires.

3. Connect the BLK/YEL⑤ wire and YEL/BLK⑦ wire with a jumper wire.



4. Check that battery voltage is available at the fuel pump connector when the ignition switch is turned ON (positive probe to the YEL/BLK wire, negative probe to the BLK wire).



- If battery voltage is available, replace the fuel pump.
- If there is no voltage, check the main relay and wire harness.

Air Intake System



System Troubleshooting Guide

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.

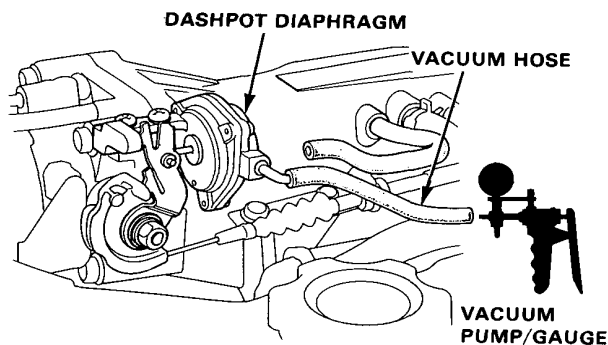
| PAGE | SUB SYSTEM | THROTTLE CABLE | THROTTLE BODY | TANDEM CONTROL SYSTEM (1.5t) | THROTTLE CONTROL SYSTEM |
|-------------------------------------|------------|----------------|---------------|------------------------------|-------------------------|
| SYMPTOM | | 80 | 81 | -- | 84 |
| DIFFICULT TO START ENGINE WHEN COLD | | | | ① | |
| WHEN COLD FAST IDLE OUT OF SPEC | | ③ | ② | | ① |
| WHEN WARM IDLE SPEED TOO HIGH | | ③ | ② | | ① |
| WHEN WARM IDLE SPEED TOO LOW | | | ① | | |
| FREQUENT STALLING WHILE WARMING UP | | ① | ② | ① | |
| LOSS OF POWER | | ② | ② | ① | |

Air Intake System

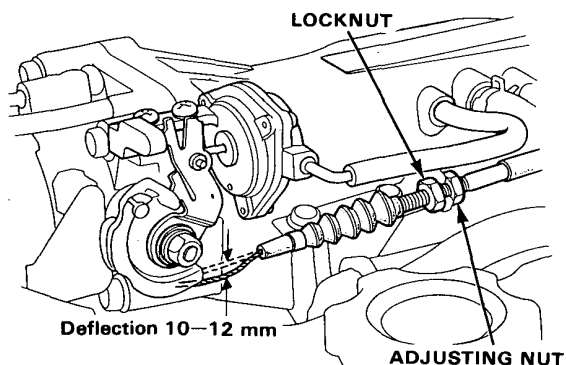
Throttle Cable [1.6ℓ]

Inspection/Adjustment

1. Warm up the engine to normal operating temperature (cooling fan comes on).
2. Check that the throttle cable operates smoothly with no binding or sticking. Repair as necessary.
3. Disconnect #6 hose from the dashpot diaphragm and connect a vacuum pump to the diaphragm. Apply vacuum.



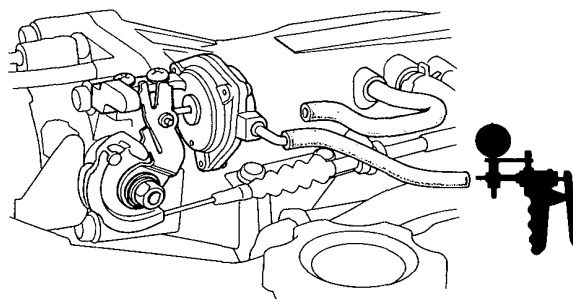
4. Check cable free play at the throttle linkage. Cable deflection should be 10–12 mm (0.39–0.47 in.)



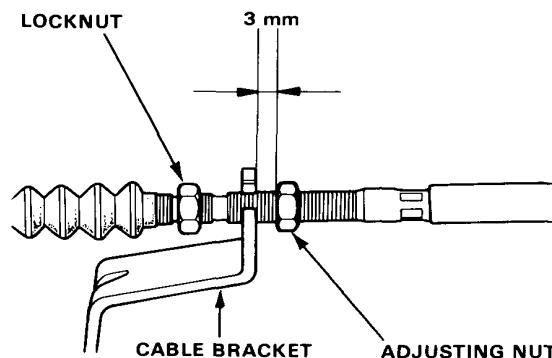
5. If deflection is not within specs, loosen the locknut and turn the adjusting nut until the deflection is as specified.
6. With the cable properly adjusted, check the throttle valve to be sure it opens fully when you push the accelerator pedal to the floor. Also check the throttle valve to be sure it returns to the idle position whenever you release the accelerator.

Installation

1. Fully open the throttle valve, then install the throttle cable in the throttle linkage and install the cable housing in the cable bracket.
2. Warm up the engine to normal operating temperature (the cooling fan comes on).
3. Disconnect #6 hose from the dashpot diaphragm and connect a vacuum pump to the diaphragm. Apply vacuum.



4. Hold the cable sheath, removing all slack from the cable.
5. Turn the adjusting nut until it is 3 mm away from the cable bracket.
6. Tighten the locknut.



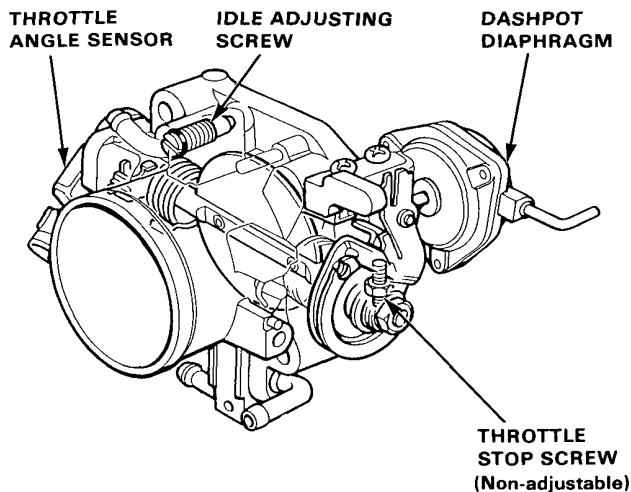
7. Disconnect the vacuum pump and connect the #6 vacuum hose.



Throttle Body [1.6l]

Description

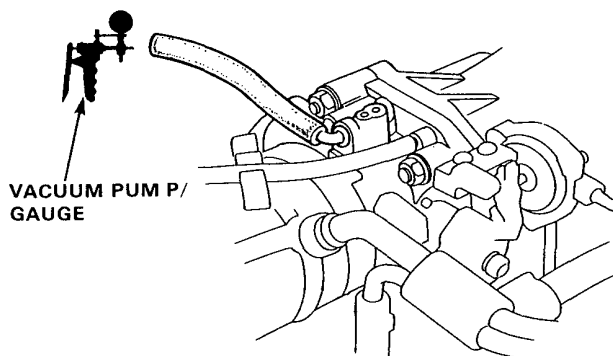
The throttle body is of the single-barrel side-draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head. The idle adjusting screw which increases/decreases bypass air and the canister/purge port are located on the top of the throttle body.



Inspection

CAUTION: Do not adjust the throttle stop screw since it can not be reset except at the factory.

1. Start the engine and allow to reach normal operating temperature (cooling fan comes on).
2. Disconnect the vacuum hose (to the canister) from the top of the throttle body; connect a vacuum gauge to the throttle body.

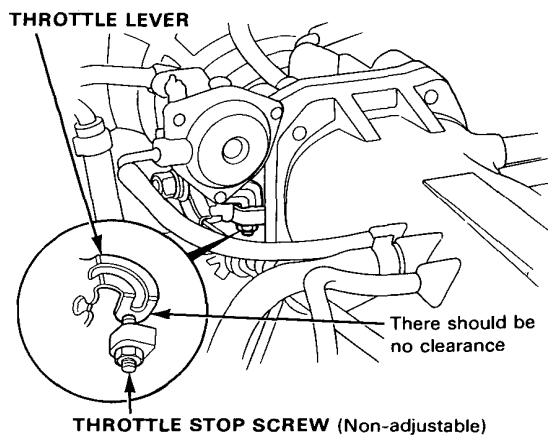


3. Allow the engine to idle and check that the gauge indicates no vacuum.
 - If there is vacuum, check the throttle control system (page 6-85).
4. Check that vacuum is indicated on the gauge when the throttle is opened slightly from idle.
 - If the gauge indicates no vacuum, check the canister port. If the canister port is clogged, clean it with carburetor cleaner.
5. Stop the engine and check that the throttle cable operates smoothly without binding or sticking.
 - If there are any abnormalities in the above steps, check for:
 - Excessive wear or play in the throttle valve shaft.
 - Sticky or binding throttle lever at full close position.
 - Clearance between throttle stop screw and throttle lever at full close position.

(cont'd)

Air Intake System

Throttle Body [1.6 l] (cont'd)

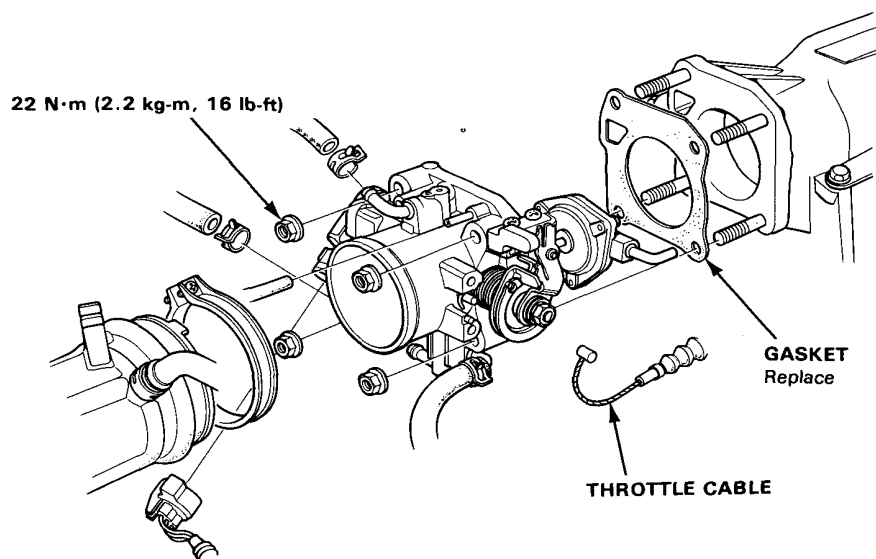


Replace the throttle body if there is excessive play in the throttle valve shaft or if the shaft is binding or sticking.



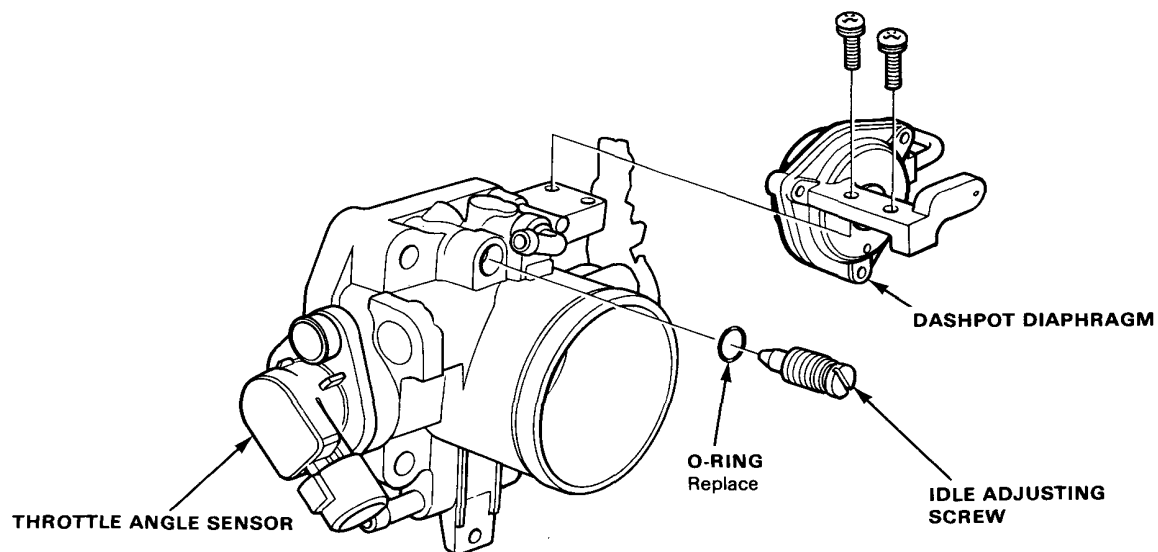
Throttle Body [1.6ℓ]

Disassembly



CAUTION:

- The throttle stop screw is non-adjustable.
- After reassembly, adjust the throttle cable (page 6-80).



Air Intake System

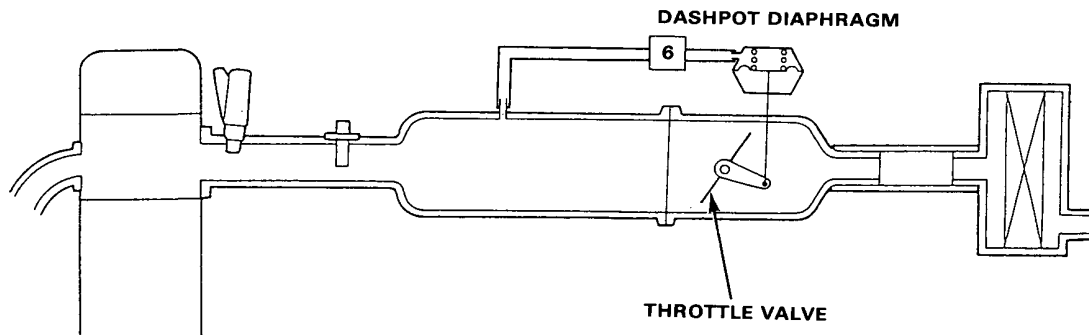
Throttle Control System [1.6ℓ]

Description

The dashpot diaphragm functions as a cranking opener.

When the engine is at idle, intake manifold vacuum is applied on the dashpot diaphragm, pulling up the diaphragm rod so that the throttle valve is in the idle position.

During cranking with the starter, the spring in the dashpot diaphragm pushes the throttle valve open a certain amount for assisting engine starting.



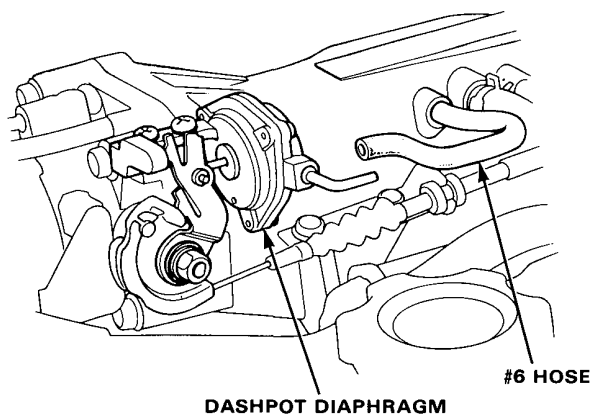


Testing

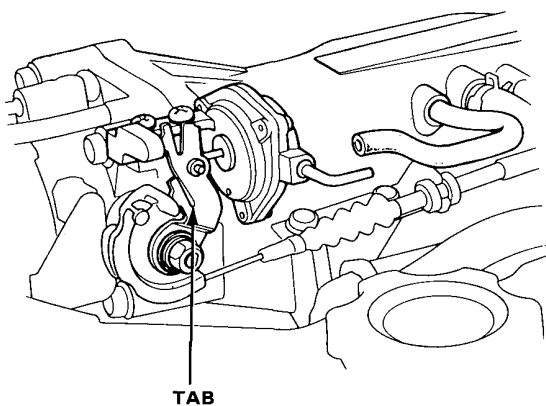
1. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
2. Disconnect the #6 vacuum hose from the dashpot diaphragm and check the engine speed.

Engine speed should be:

| | |
|-----------|--|
| Manual | $2,500 \pm 500 \text{ min}^{-1} \text{ (rpm)}$ |
| Automatic | $2,500 \pm 500 \text{ min}^{-1} \text{ (rpm)}$ |

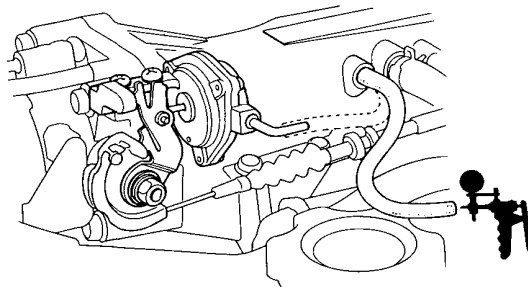


- If the engine speed is excessively high, adjust the engine speed by bending TAB.



- If the engine speed does not change, connect a vacuum pump to the #6 vacuum hose and check vacuum.

There should be vacuum.



- If there is no vacuum, check the #6 vacuum hose for proper connection, cracks, blockage or disconnected hose.

3. Reconnect the #6 vacuum hose and check the idle speed.

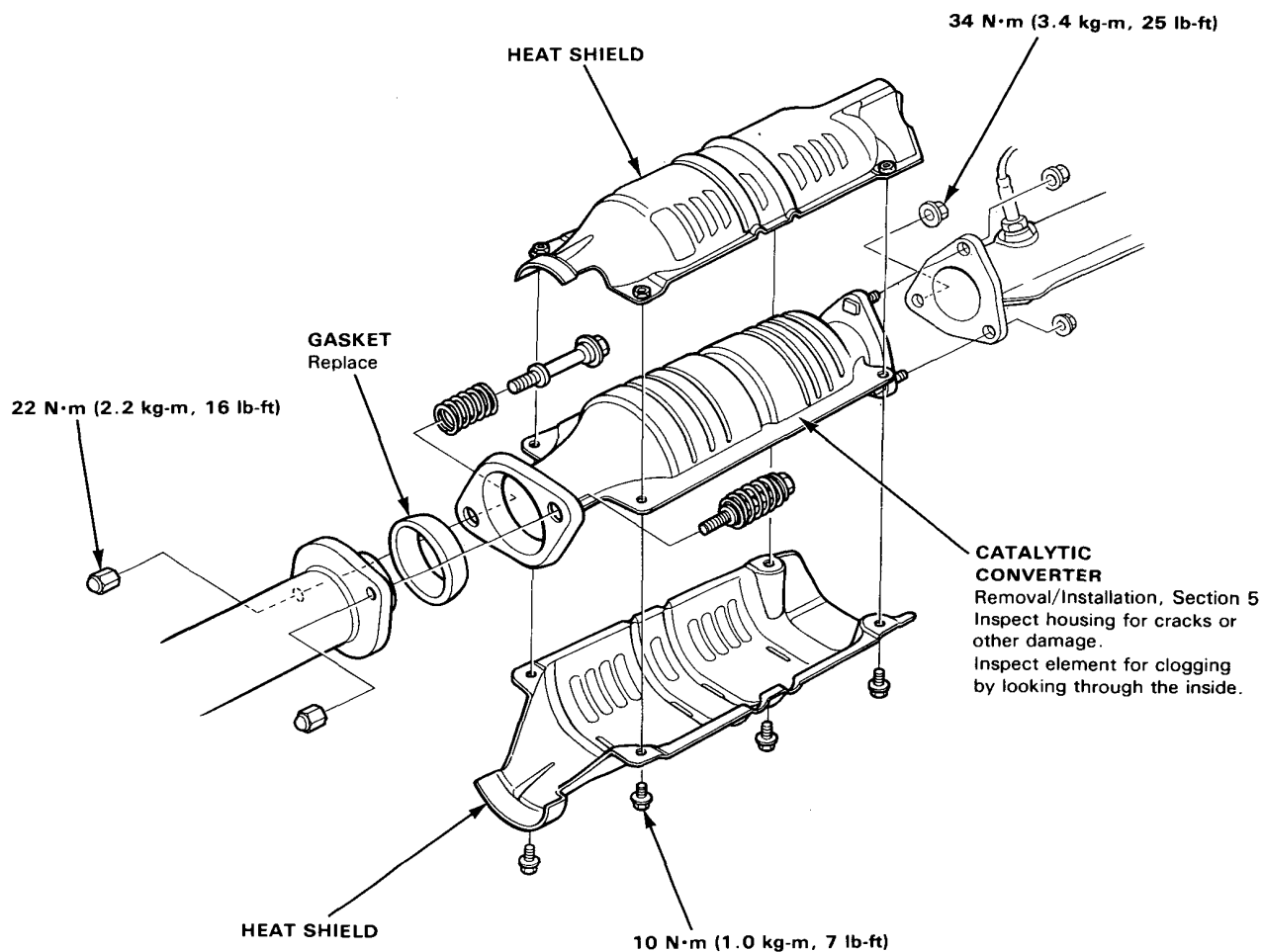
Idle speed should be within specification (page 6-69).

Emission Control System

Catalytic Converter (cont'd)

Inspection

If excessive exhaust system back-pressure is suspected, remove the catalytic converter from the car and make a visual check for plugging, melting or cracking of the catalyst. Replace the catalytic converter if more than 50% of the visible area is damaged or plugged.



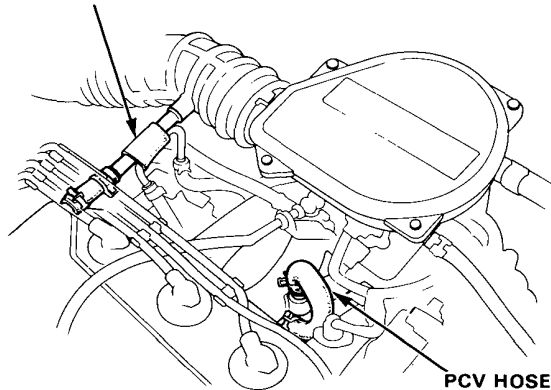


Positive Crankcase Ventilation System [1.5ℓ]

Inspection

1. Check the crankcase ventilation hoses and connections for leaks and clogging.

BREATHER HOSE



2. At idle, make sure there is a clicking sound from the PCV valve when you lightly pinch the PCV hose with your fingers or pliers.
 - If no clicking sound is heard, replace PCV valve and recheck.

Emission Control System

Evaporative Emission Controls [1.5 l]

Troubleshooting Flowchart

Inspection of Evaporative Emission Controls

Disconnect #7 hose from the purge control diaphragm valve (on the charcoal canister) and connect a vacuum gauge to the hose.

Start the engine and allow to idle.
NOTE: Engine coolant temperature must be below 80°C (176°F).

PURGE CONTROL
DIAPHRAGM VALVE

VACUUM PUMP/GAUGE

Is there vacuum ?

YES

Disconnect the 2P connector.

NO

BLK/YEL (+)

GRN (-)

Measure voltage between BLK/
YEL (+) terminal and GRN (-)
terminal.

Is there battery voltage ?

YES

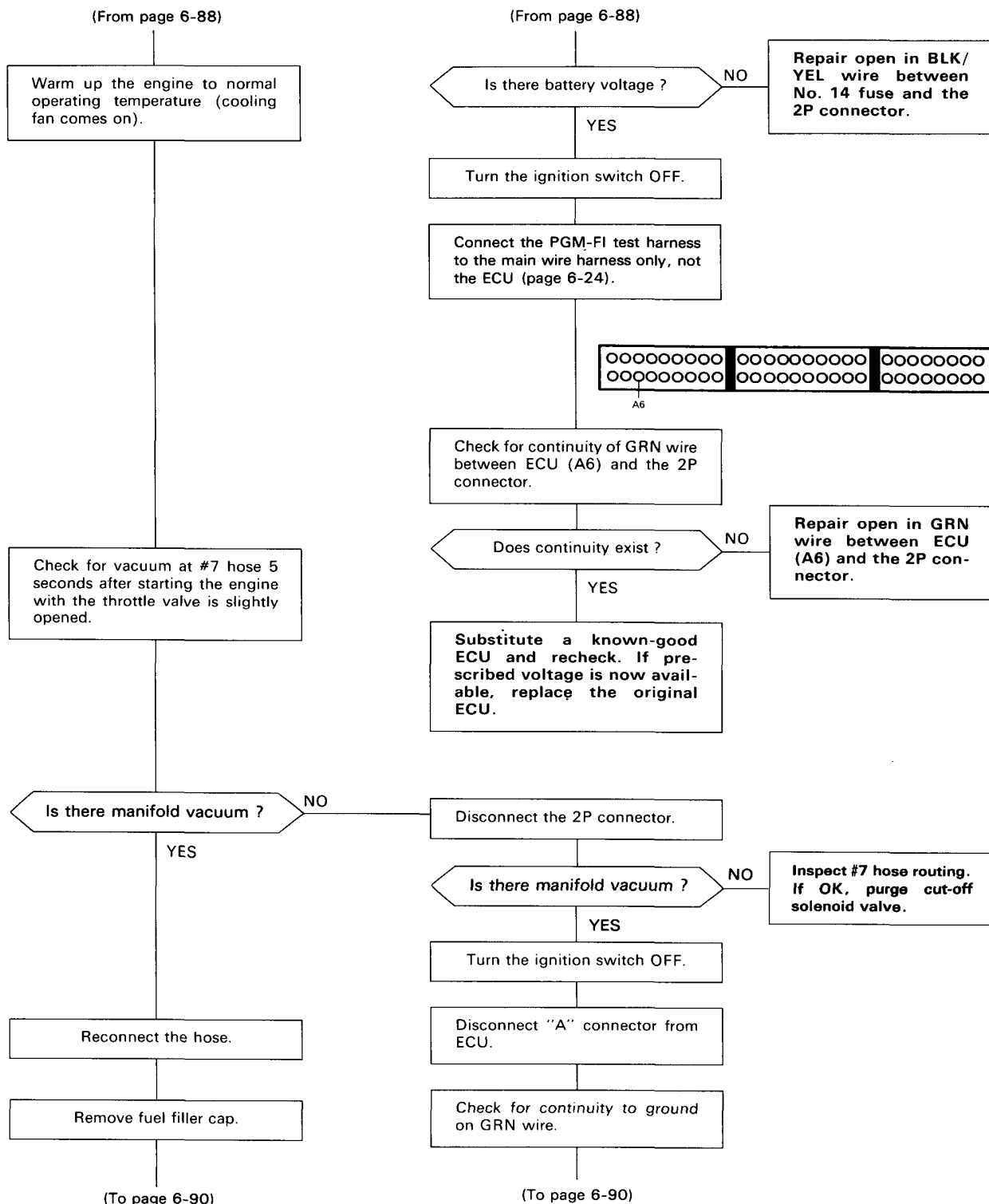
Inspect #7 hose routing.
If OK, replace purge
cut-off solenoid valve.

NO

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

(To page 6-89)

(To page 6-89)



(cont'd)

Emission Control System

Evaporative Emission Controls [1.5 l] (cont'd)

(From page 6-89)

Connect a vacuum gauge to canister purge air hose.

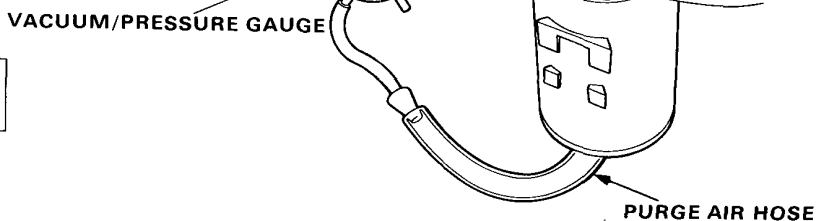
Start the engine and rise speed to $3,500 \text{ min}^{-1}$ (rpm).

Does vacuum appear on gauge within 1 minute?

YES

See two way valve test to complete.
Evaporative emission controls are OK.

VACUUM/PRESSURE GAUGE



PURGE AIR HOSE

(From page 6-89)

Is there continuity to ground?

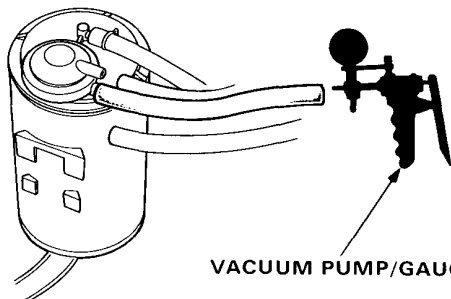
YES

Repair short to ground in GRN wire between ECU (A6) and the 2P connector.

NO

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

Replace the canister.



VACUUM PUMP/GAUGE

Emission Control System



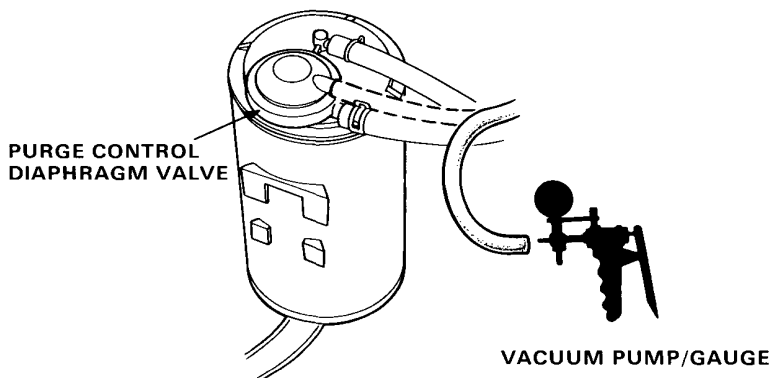
Evaporative Emission Controls [1.6 l]

Troubleshooting Flowchart

Inspection of Evaporative Emission Controls

Disconnect #7 hose from the purge control diaphragm valve (on the charcoal canister) and connect a vacuum gauge to the hose.

Start the engine and allow to idle.
NOTE: Engine coolant temperature must be below 57 °C (135 °F).



Is there vacuum ?

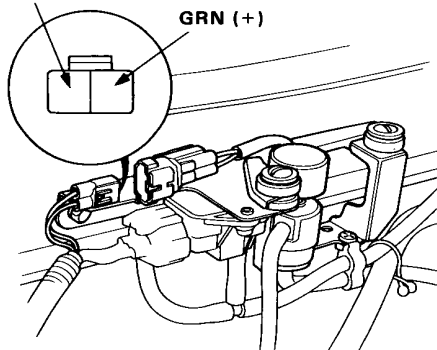
YES

Disconnect the 2P connector.

NO

BLK (-)

GRN (+)



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

Is there battery voltage ?

YES

Replace purge cut-off solenoid valve.

NO

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

(To page 6-92)

(To page 6-92)

(cont'd)

Emission Control System

Evaporative Emission Controls [1.6 l] (cont'd)

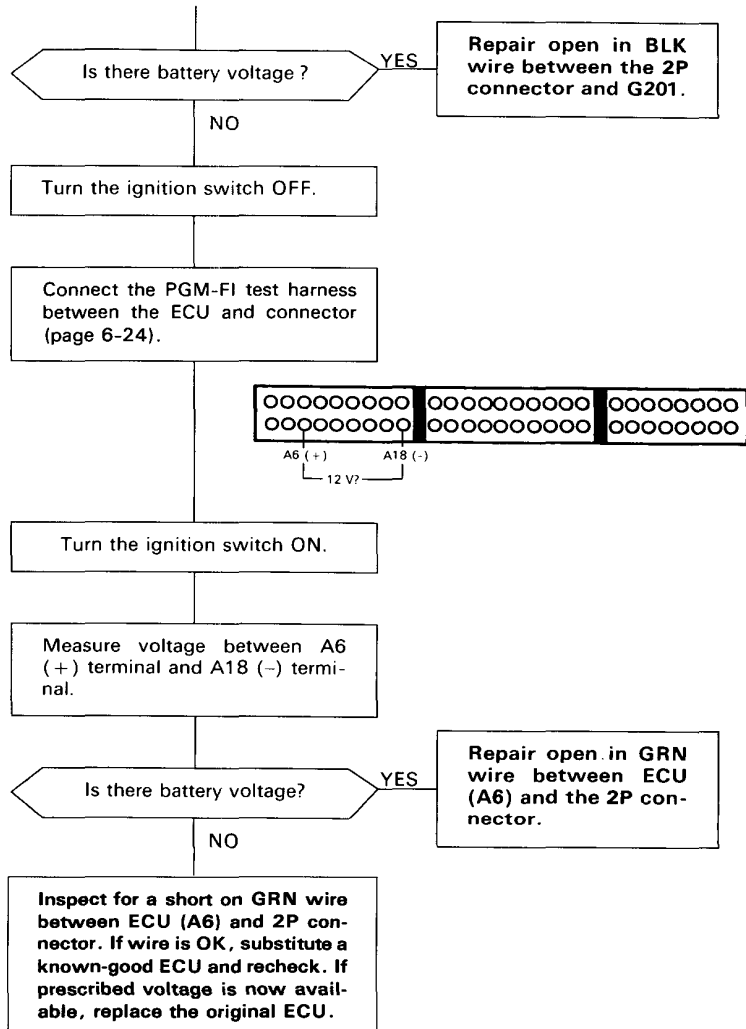
(From page 6-91)

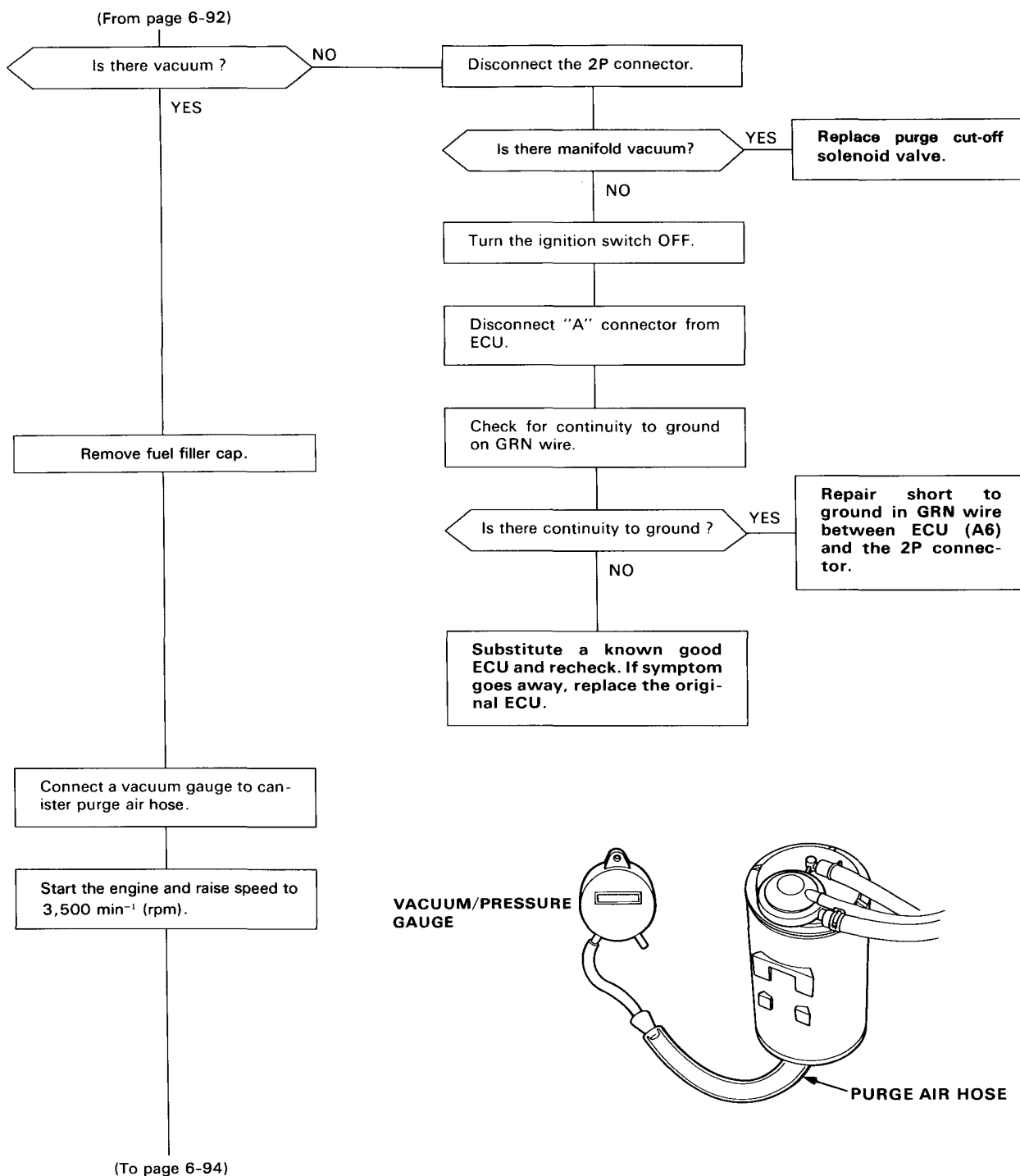
Warm up the engine to normal operating temperature (cooling fan comes on).

Check for vacuum at #7 hose 5 seconds after starting the engine.

(To page 6-93)

(From page 6-91)



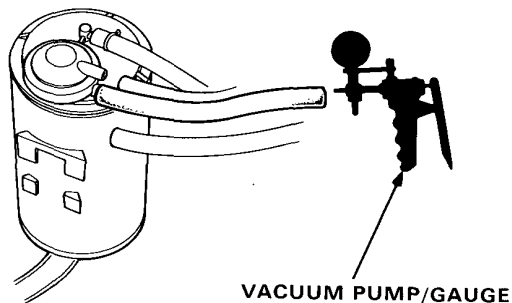
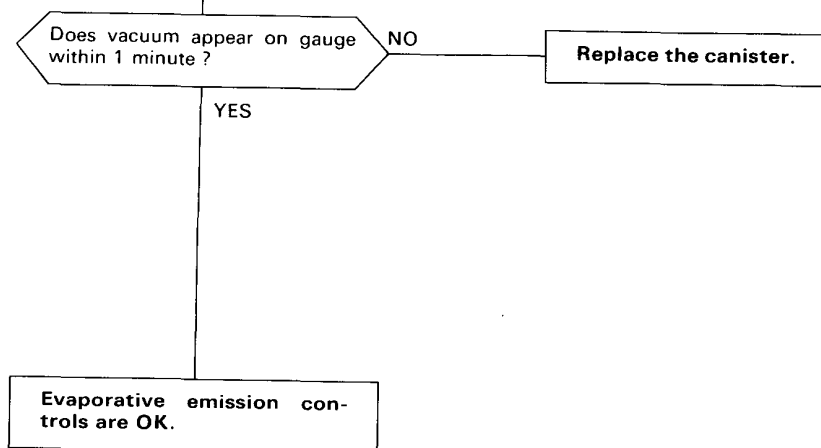


(cont'd)

Emission Control System

Evaporative Emission Controls [1.6ℓ] (cont'd)

(From page 6-93)



Automatic Transmission

| | |
|-----------------------------|-----|
| Servo Valve Body | 9-2 |
| Parking Brake Stopper | 9-3 |



Outline of Model Changes

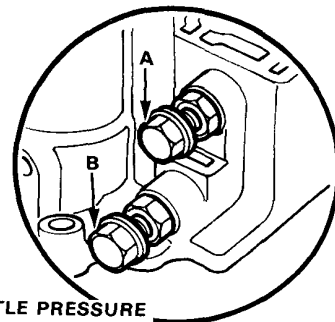
- The servo valve body has been changed.
- The parking brake stoppers have been modified to adjust distance.

Servo Valve Body

Disassembly/Inspection/Reassembly

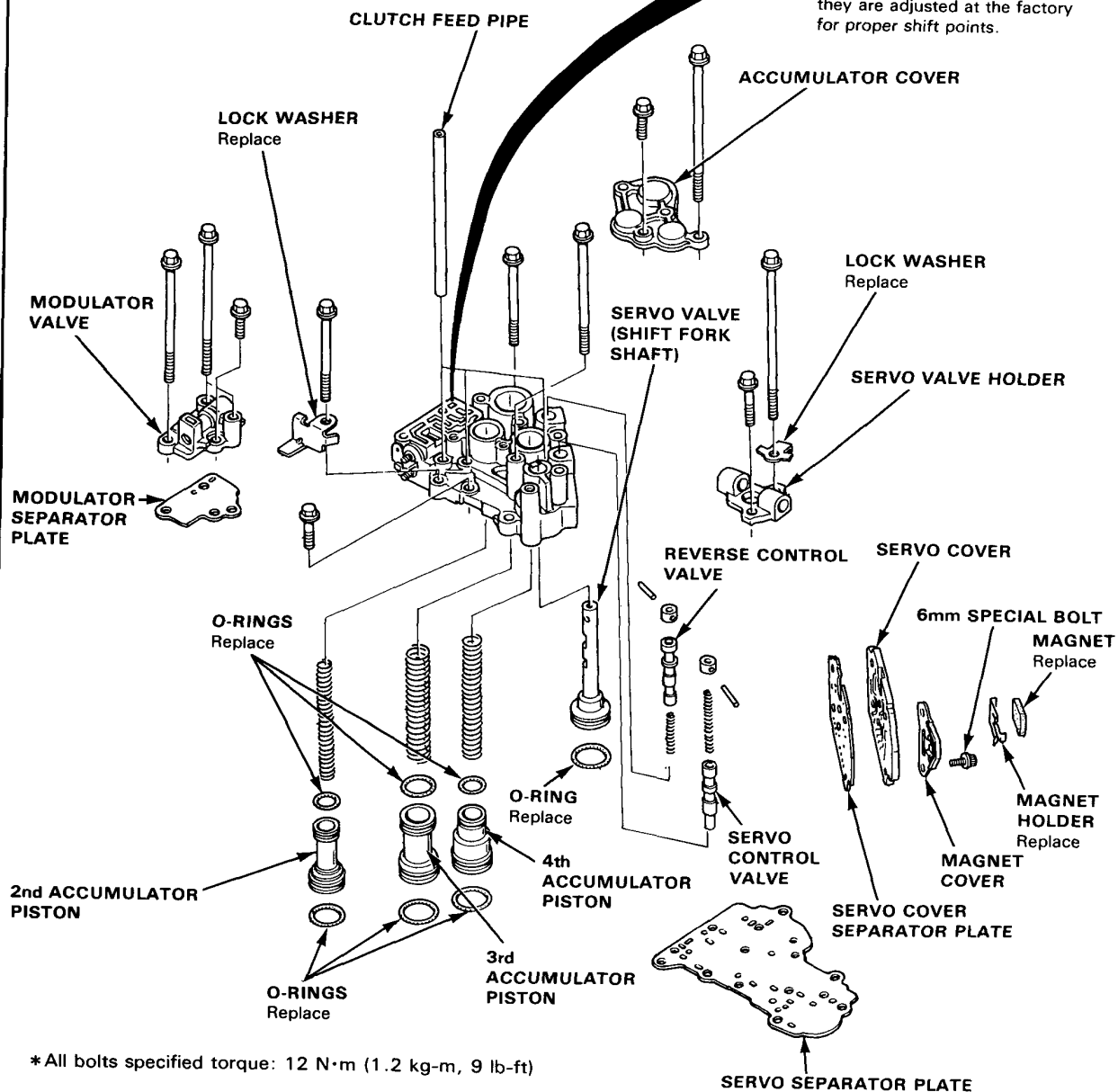
NOTE

- 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.



THROTTLE PRESSURE ADJUSTMENT BOLTS

NOTE: Do not adjust or remove these bolts; they are adjusted at the factory for proper shift points.



*All bolts specified torque: 12 N·m (1.2 kg-m, 9 lb-ft)

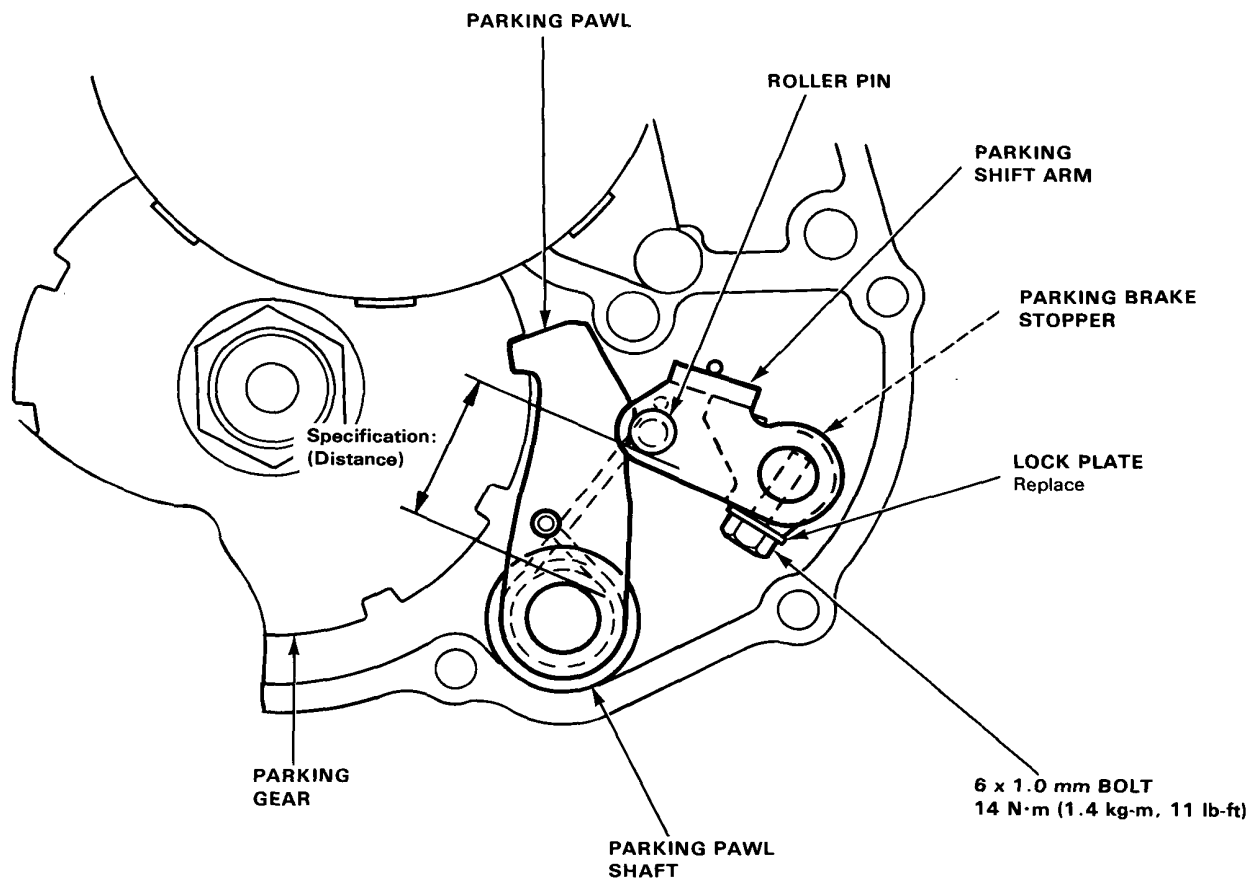
Parking Brake Stopper



Inspection/Adjustment

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

SPECIFICATION: 28.7–29.7 mm (1,130–1,169 in)



3. If the measurement is out of the specification (distance), select the appropriate parking 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 |

Suspension

Rear Suspension

| | |
|----------------------------|------|
| Torque Specification | 12-2 |
| Illustrated Index | 12-3 |
| Damper | |
| Reassembly | 12-4 |
| Installation | 12-4 |



Outline of Model Changes

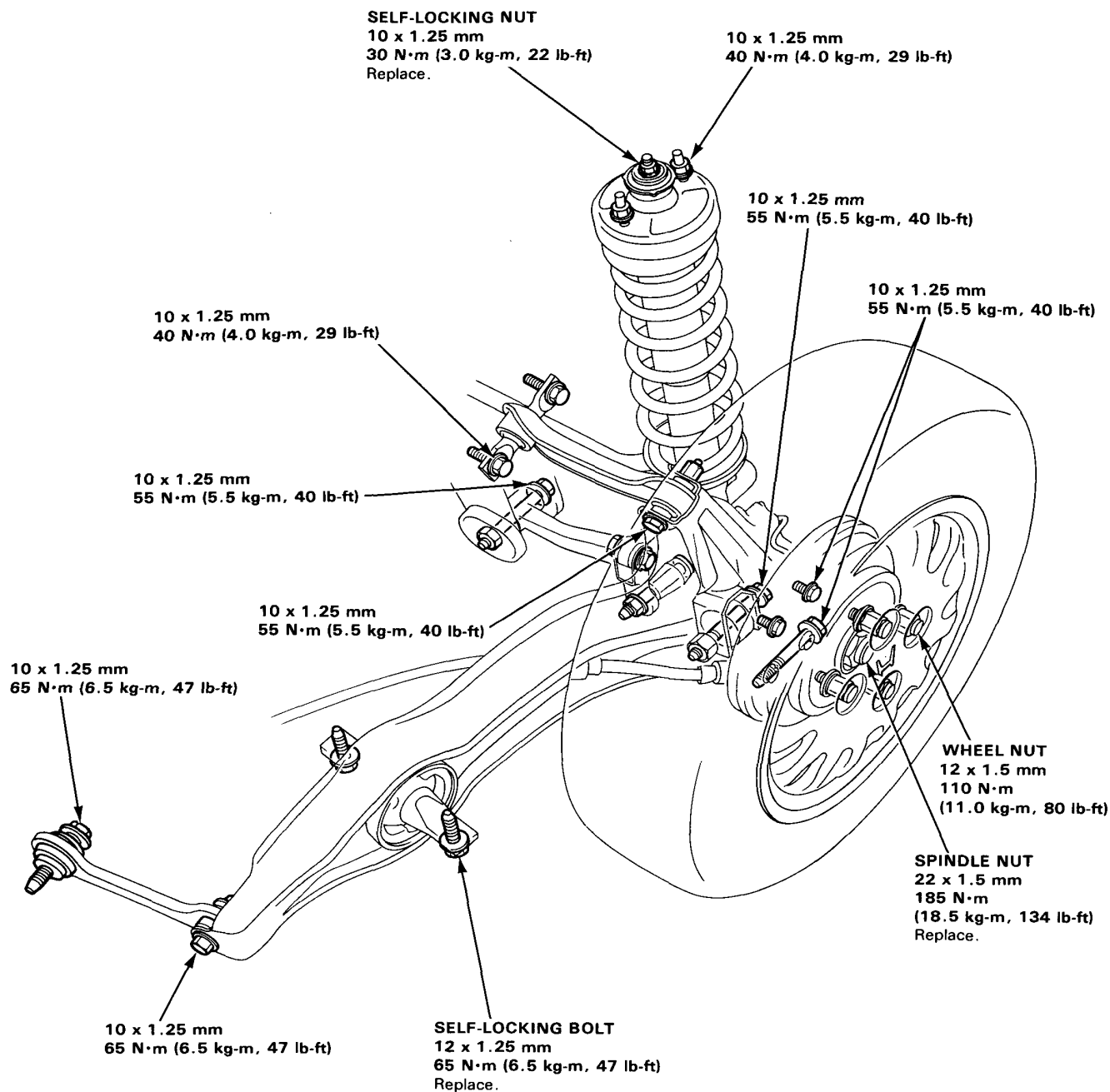
- The rear damper assembly has been modified.
- The lower arm has been changed.
- The trailing arm assembly has been modified.

Rear Suspension

Specifications

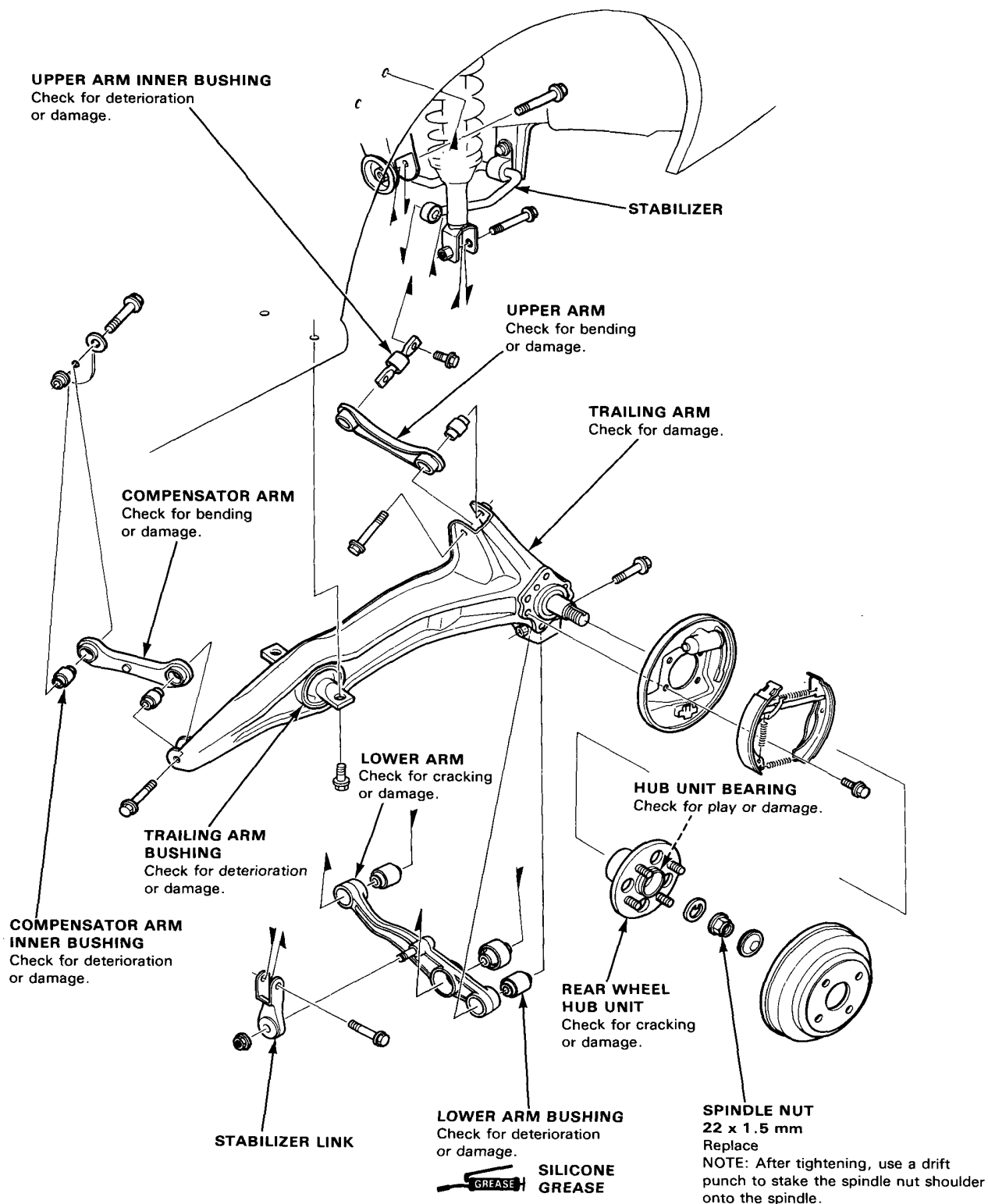
CAUTION:

- Replace the self-locking nuts after removal.
- Replace the self-locking bolts if you can easily thread a nut past their nylon locking inserts.
- The vehicle should be on the ground before any bolts or nuts connected to rubber mounts or bushings are tightened.





Illustrated Index



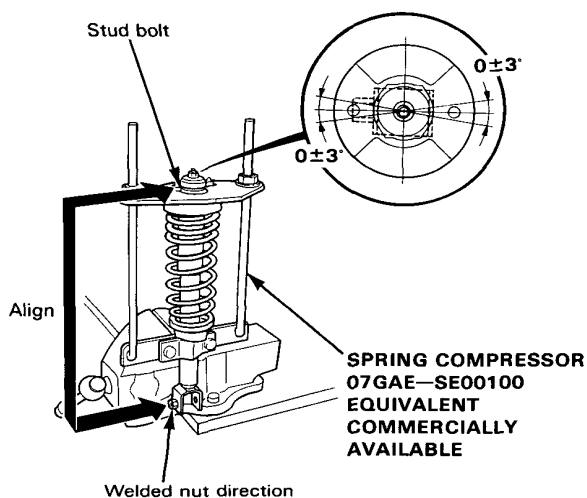
Rear Suspension

Damper Reassembly

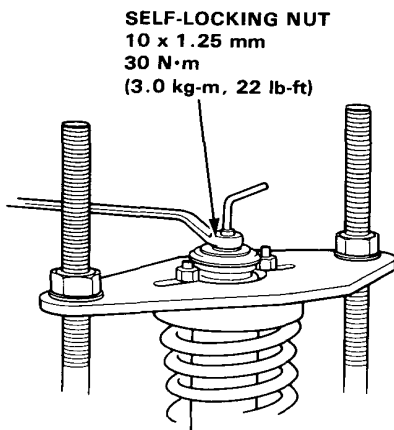
1. Install the damper unit on a spring compressor.
2. Install the damper spring, bump stop, stop plate, dust cover, dust cover plate, mounting rubber, damper mounting rubber, collar and damper mounting base on the damper unit.

CAUTION: Install the damper mounting base so that the angle of the stud bolt is as shown.

3. Compress the damper spring.



4. Install the damper mounting rubber and damper mounting washer, and loosely install a new 10 mm self-locking nut.
5. Hold the damper shaft and tighten the 10 mm self-locking nut.



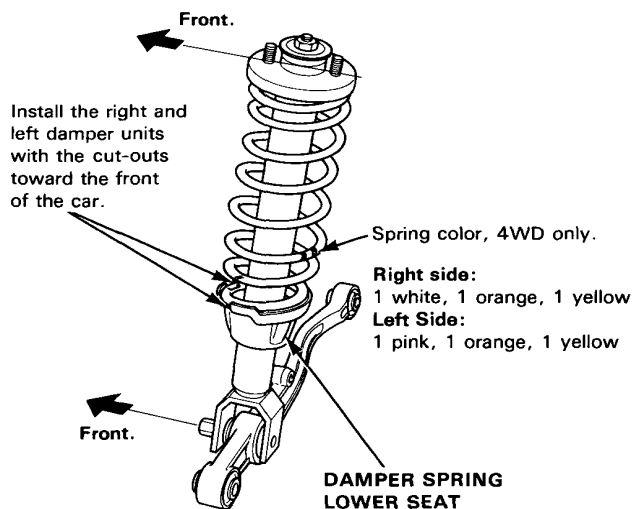
Damper Installation

1. Lower the rear suspension and set the damper assembly.

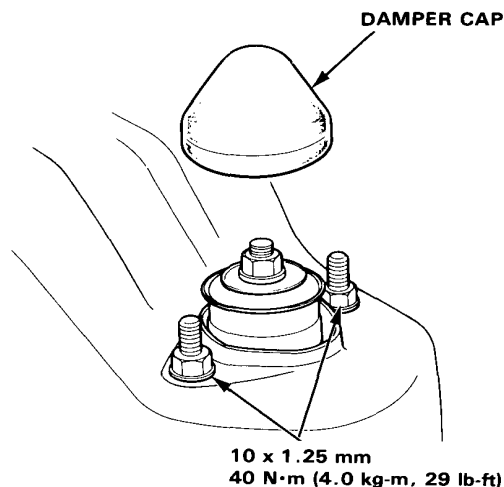
CAUTION: Be sure that the two cut-outs in the damper spring lower seat are toward the front of the car as shown below.

4WD only:

The right and left damper units are not interchangeable and are distinguished by the damper unit label and spring color as below.



2. Loosely install the damper mounting bolt.
3. Install the damper upper base mounting nuts and tighten them.



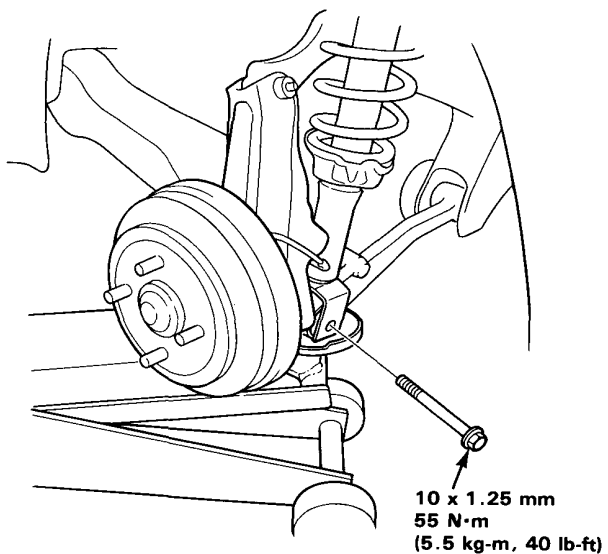
4. Install the damper cap.



5. Raise the rear suspension with a floor jack until the weight of the car is on the damper.

NOTE: The damper mounting bolts should be tightened with the damper under vehicle load.

6. Tighten the damper mounting bolt.



Air Conditioner

Outline15-2



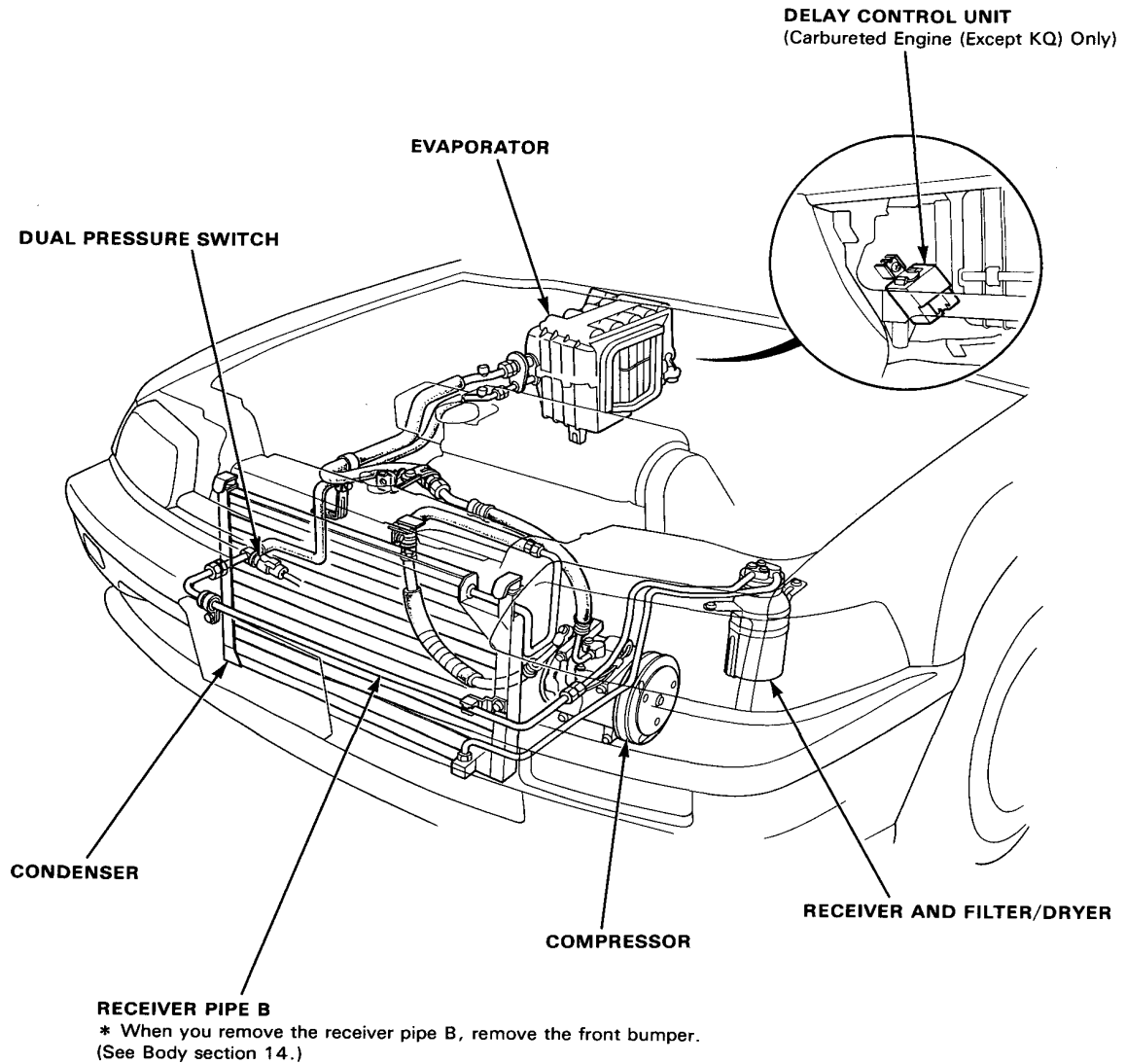
Outline of Model Change

Receiver pipes have been changed.

Air Conditioner

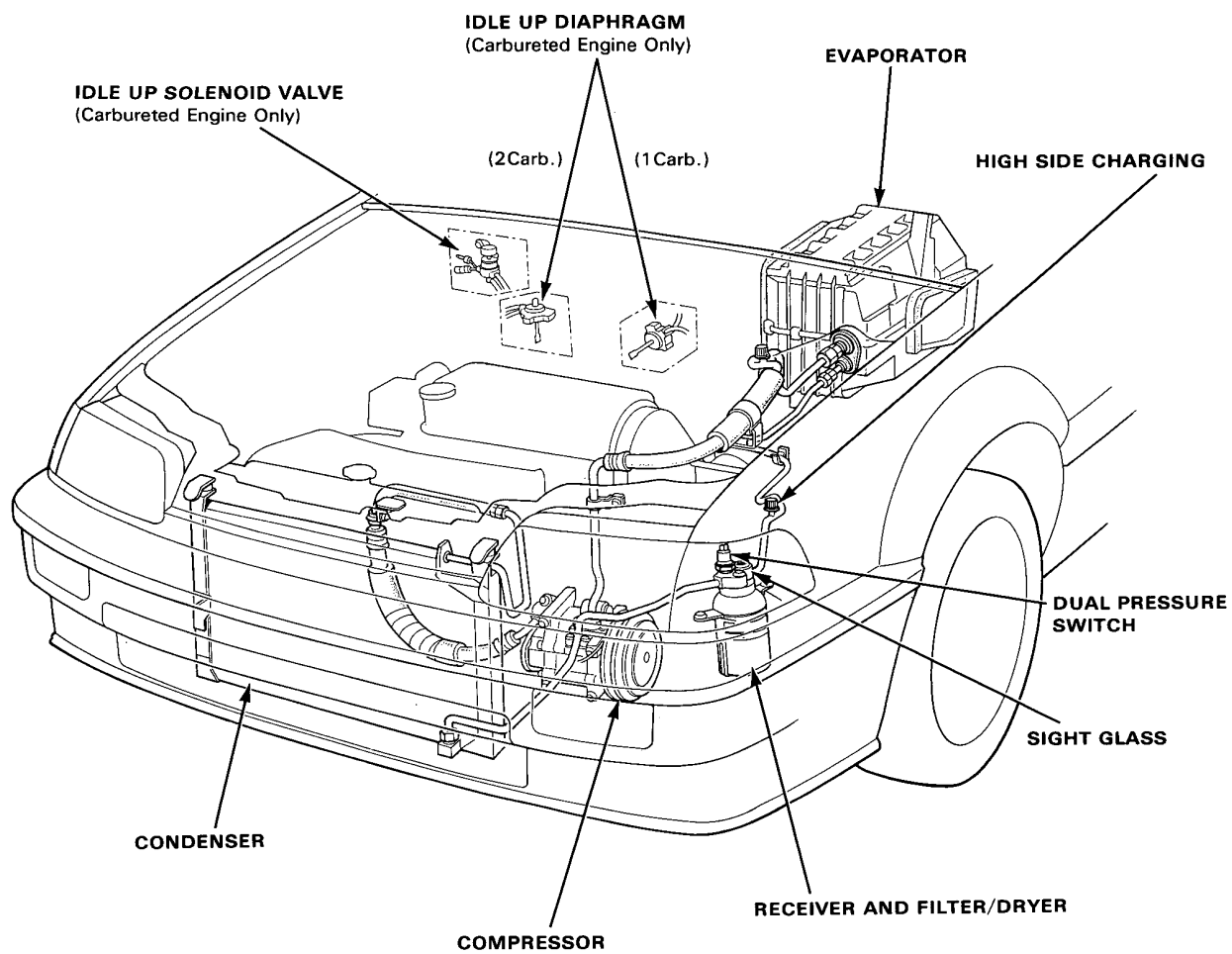
Outline

<LHD>





<RHD>



Electrical

Lighting System

| | |
|--|-------|
| Component Location Index | 16-2 |
| Circuit Diagram | 16-3 |
| Rear Fog Light Switch Removal ... | 16-7 |
| Rear Fog Light Switch Test | 16-7 |
| Lighting Relay Test (KE model only)..... | 16-8 |
| DIM-DIP Resister Test (KE model only)..... | 16-8 |
| Lighting Switch Test | 16-10 |
| Headlight Unit Replacement..... | 16-10 |
| Brake Lights (KQ model) Circuit Diagram | 16-11 |
| Test | 16-11 |
| High Mount Brake Light Replacement | 16-12 |
| Wiring Diagram | 16-14 |

Outline of Model Changes

- The lighting system has been changed.
- The high mount brake light (KQ model only) has been adopted.



Lighting System

Component Location Index

• REAR FOG LIGHT SWITCH

Removal, page 16-7

Test, page 16-7

HIGH BEAM INDICATOR LIGHT
(in the gauge assembly)

LIGHTING SWITCH

Test, page 16-9

Replacement, page 16-10

DIM-DIP RESISTOR

(KE model only)

Test, page 16-8

LIGHTING RELAY

(KE model only)

Test, page 16-8

HEADLIGHTS

Replacement, page 16-10

• DAYTIME RUNNING LIGHT RELAY

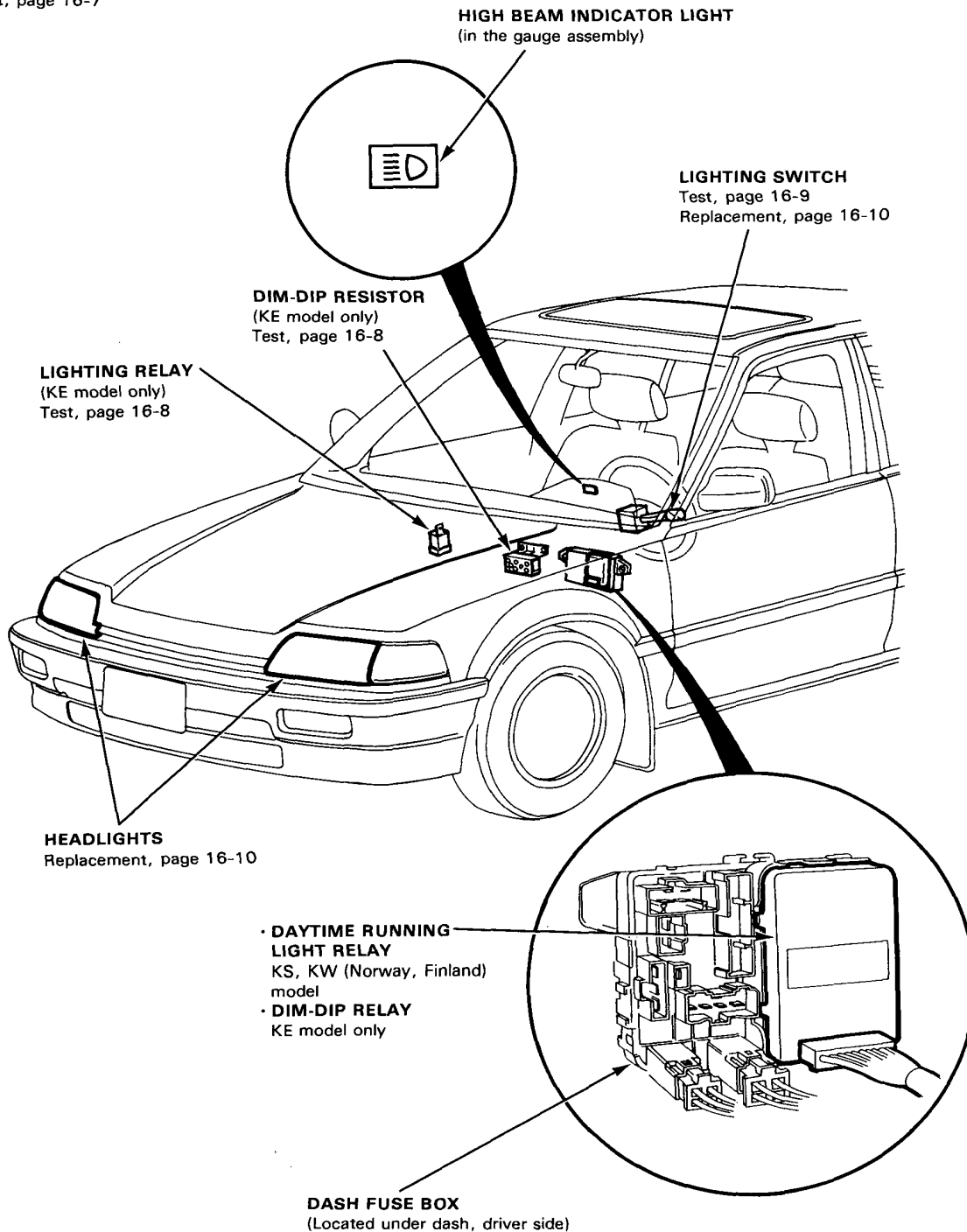
KS, KW (Norway, Finland)
model

• DIM-DIP RELAY

KE model only

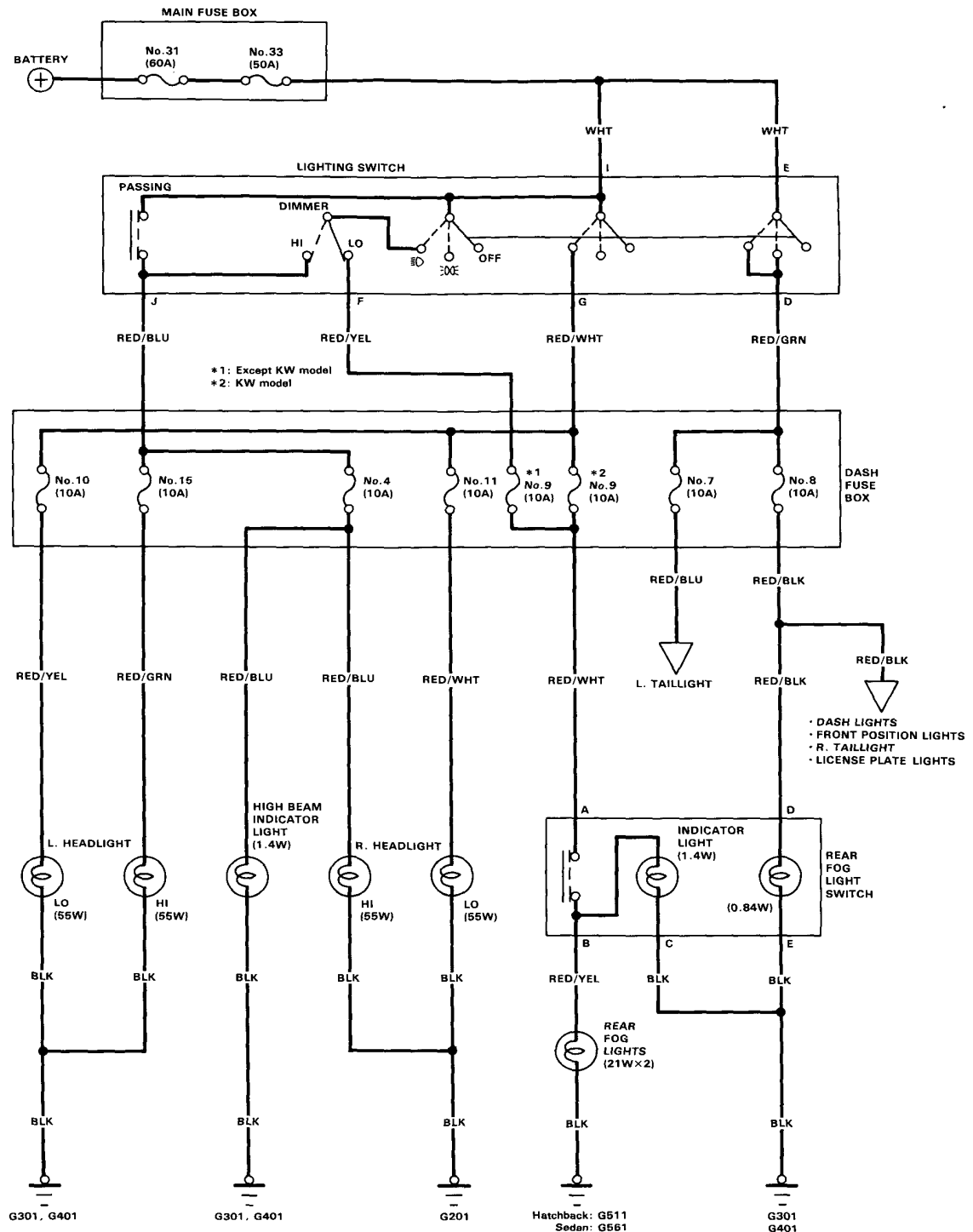
DASH FUSE BOX

(Located under dash, driver side)



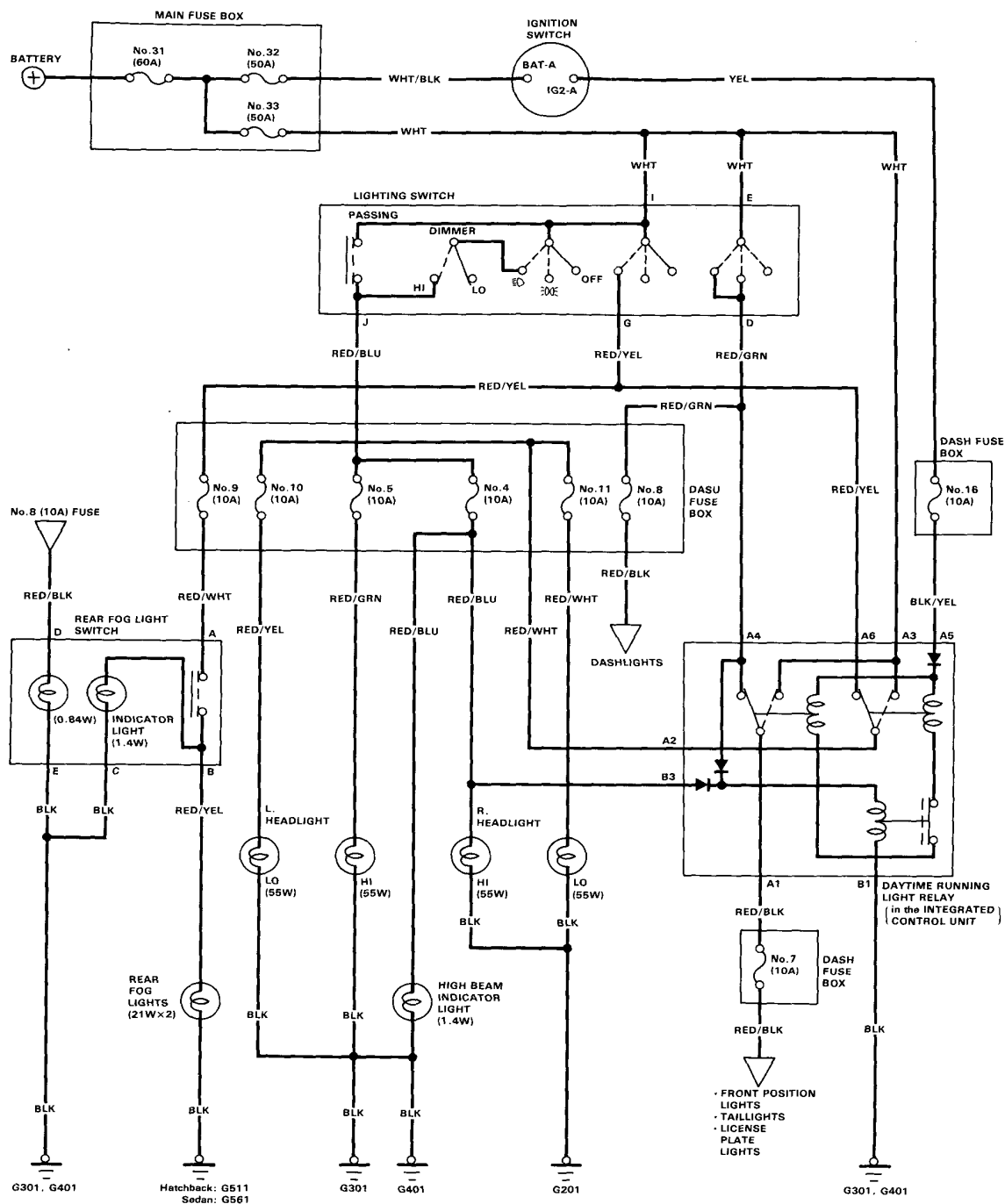


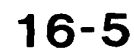
Circuit Diagram (KG, KF, KB, KW and KX models)



Lighting System

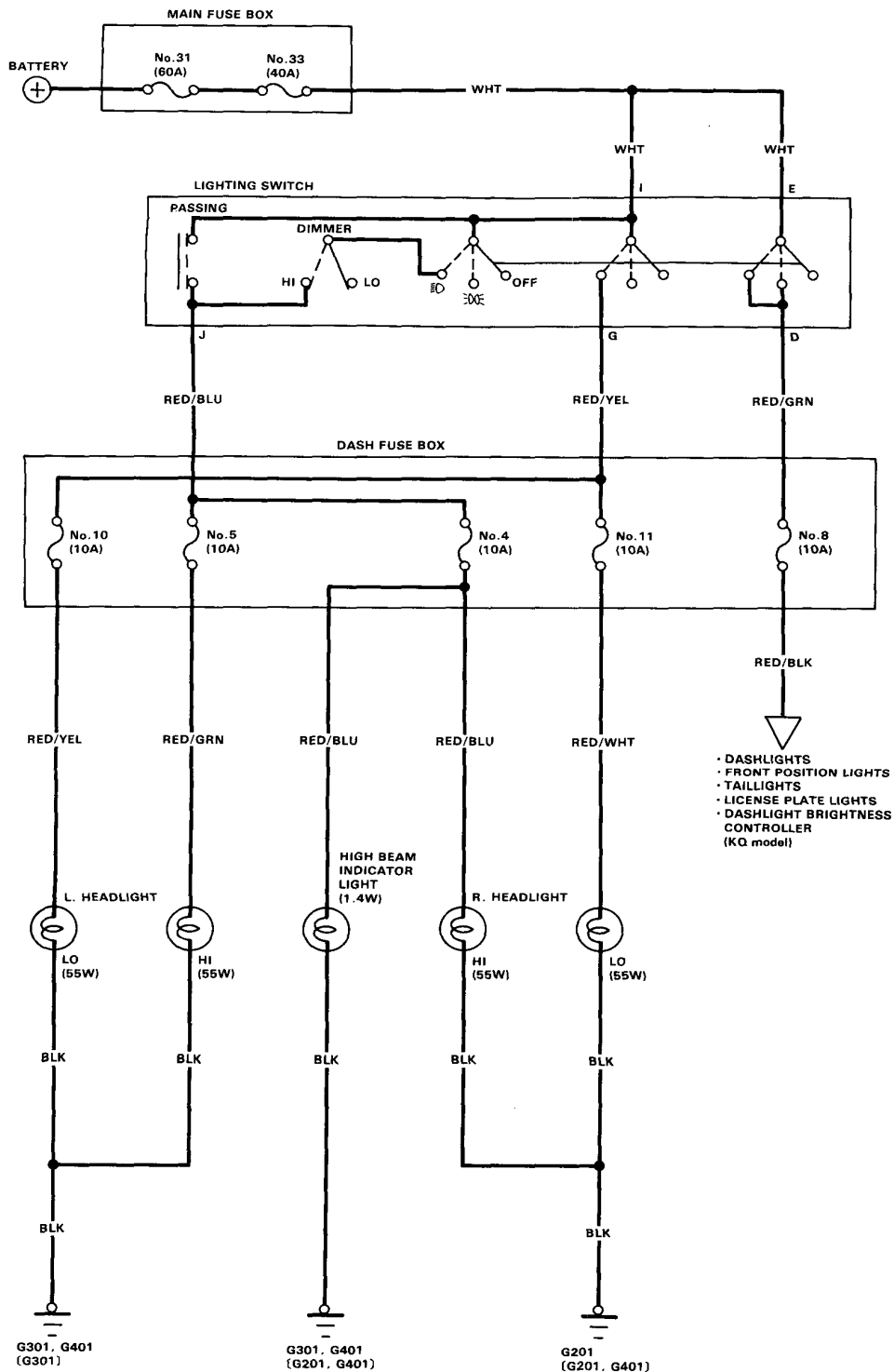
Circuit Diagram (With Daytime Light)





Lighting System

Circuit Diagram (KQ, KT, KY and KP models)

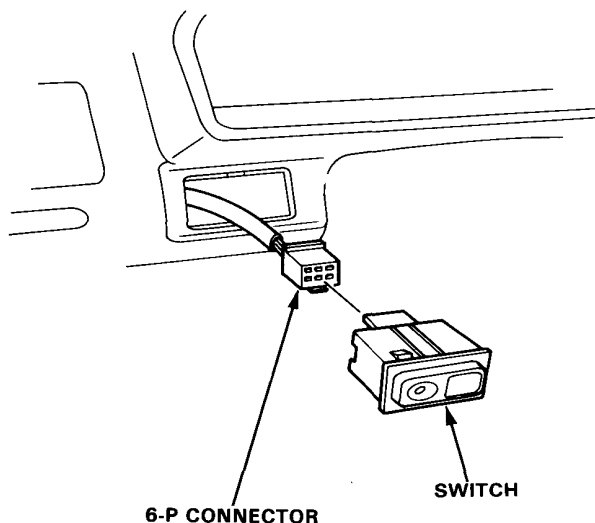


[]: RHD

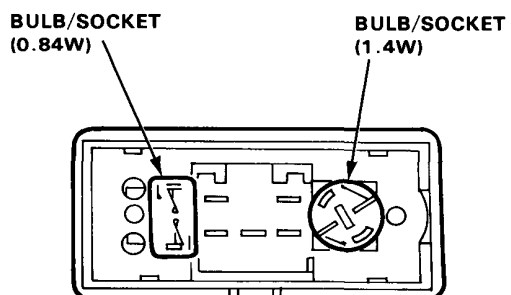


Rear Fog Light Switch Removal

1. Remove the dashboard lower panel. Push out the switch from behind the instrument panel, then disconnect the 6-P connector from the switch.



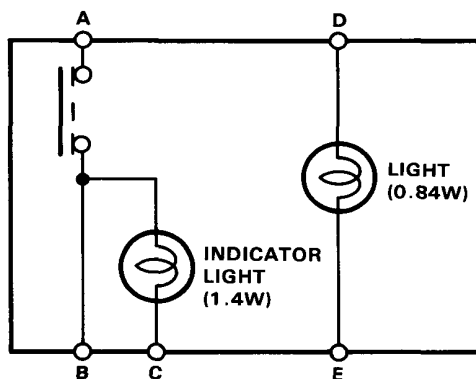
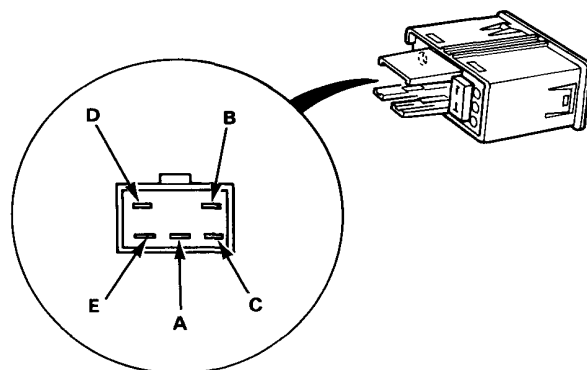
2. Turn the socket 45° counterclockwise (1.4W) and pull out the socket (0.84W) to remove it.



Rear Fog Light Switch Test

1. Remove the switch from the instrument panel.
2. Check for continuity between the terminals according to the table.

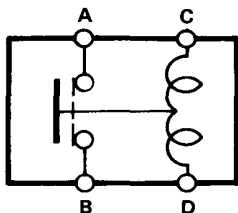
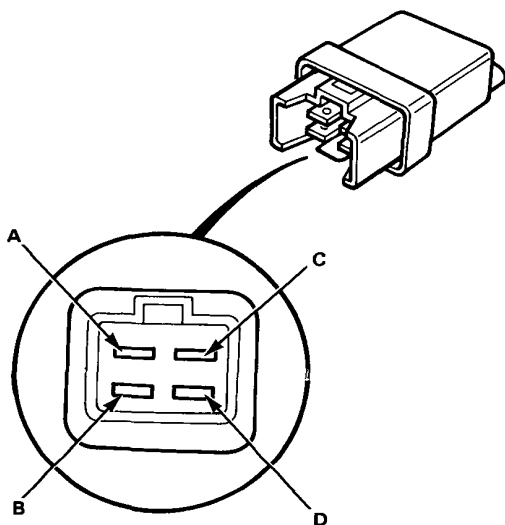
| Terminal Position | A | B | C | D | E |
|-------------------|---|---|---|---|---|
| ON | ○ | ○ | ○ | ○ | ○ |
| OFF | | | | | |



Lighting System

Lighting Relay Test

1. Remove the lighting relay.
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.

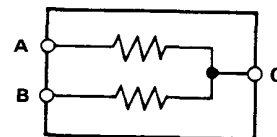
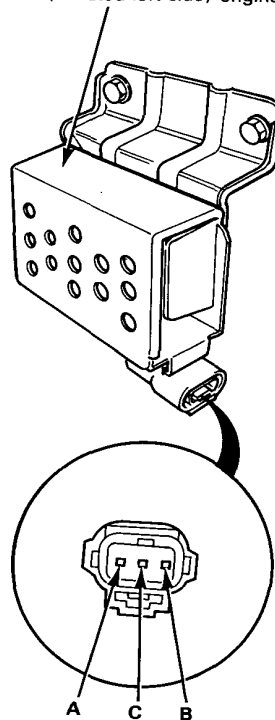


DIM-DIP Resistor Test

CAUTION: Dim-Dip resistor becomes very hot in use of Dim-Dip headlights; do not touch it or the attaching hardware immediately after they have been turned off.

1. Disconnect the 3-P connector from the resistor.
2. There should be continuity between A and C; between B and C terminals.

RESISTOR (Located left side, engine compartment)



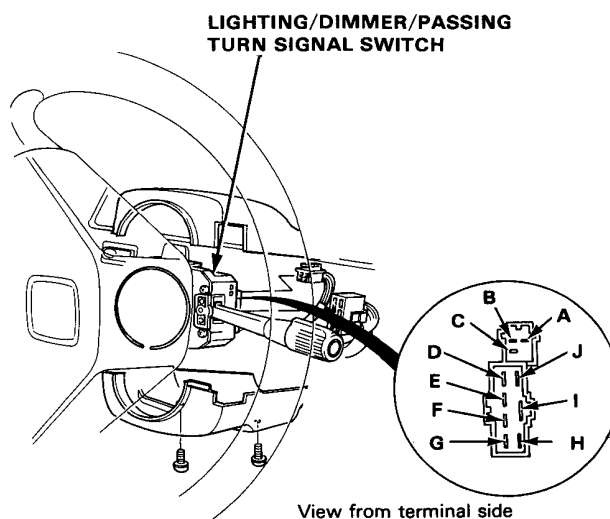
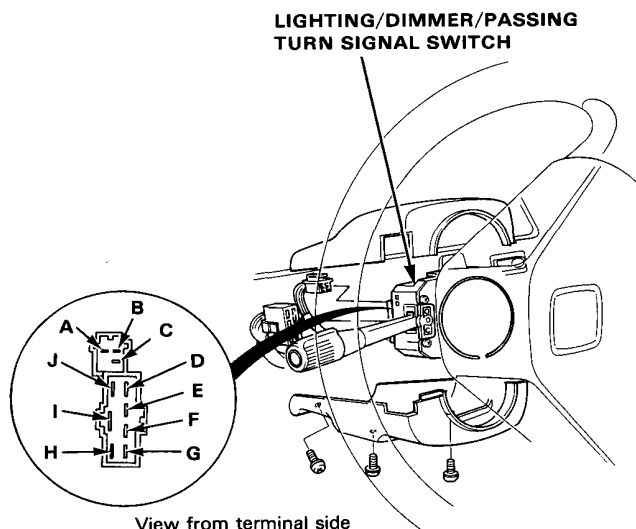


Lighting/Turn Signal Switch Test

1. Remove the column covers.
2. Disconnect the 7-P and 4-P connectors from the switch.
3. Check for continuity between the terminals in each switch position according to the tables.

LHD:

RHD:



Lighting/Dimmer/Passing Switch

| Terminal | | D | E | F * 1 | G | I | J |
|-------------------|------|---|---|-------|---|---|---|
| Position | | | | | | | |
| Lighting switch | OFF | | | | | | |
| | ☎ | ○ | ○ | | | | |
| | ☎ | | | | ○ | ○ | |
| Dimmer switch * 2 | LOW | | | ○ | | ○ | |
| | HIGH | | | | | ○ | ○ |
| Passing switch | OFF | | | | | | |
| | ON | | | | | ○ | ○ |

* 1: KG, KX, KB and KW (Except Finland, Normay) models

* 2: With lighting position in (☎)

Turn Signal Switch

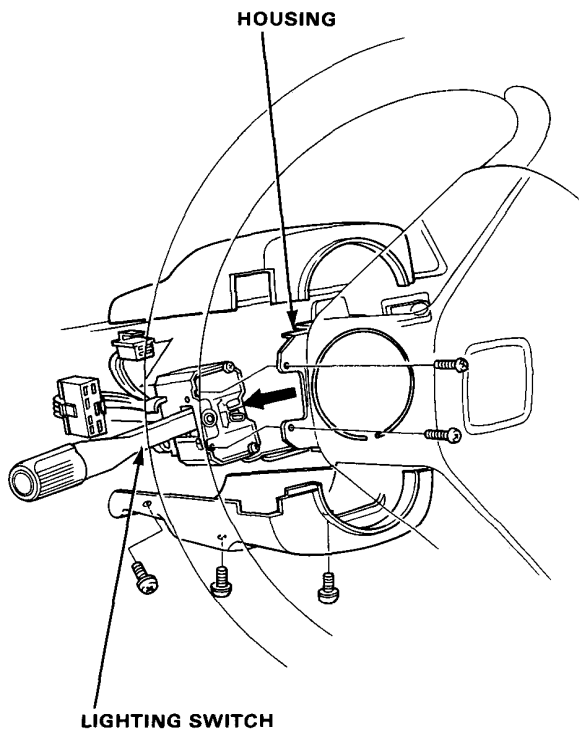
| Terminal | | A | B | C |
|----------|---------|---|---|---|
| Position | | | | |
| LHD: | R | ○ | | ○ |
| | NEUTRAL | | | |
| | L | ○ | ○ | |
| RHD: | R | ○ | ○ | |
| | NEUTRAL | | | |
| | L | ○ | | ○ |

Lighting System

Lighting Switch Replacement

1. Remove the lower and upper covers from the steering column.
2. Disconnect the 7-P and 4-P connectors.
3. Remove the 2 screws and slide the lighting switch out of the housing as shown.

NOTE: Be carefull not to damage the steering wheel cover.

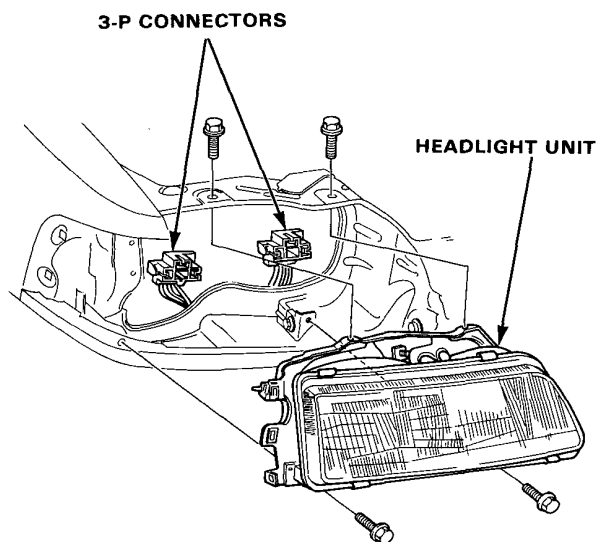


Headlight Unit Replacement

CAUTION:

- Halogen headlights can become very hot in use; do not touch them or the attaching hardware immediately after they have been turned off.
- Do not try to replace or clean the headlights with the lights on.

1. Disconnect the 3-P connectors from behind the unit.
2. Remove the front bumper and 4 mount bolts, then remove the unit.



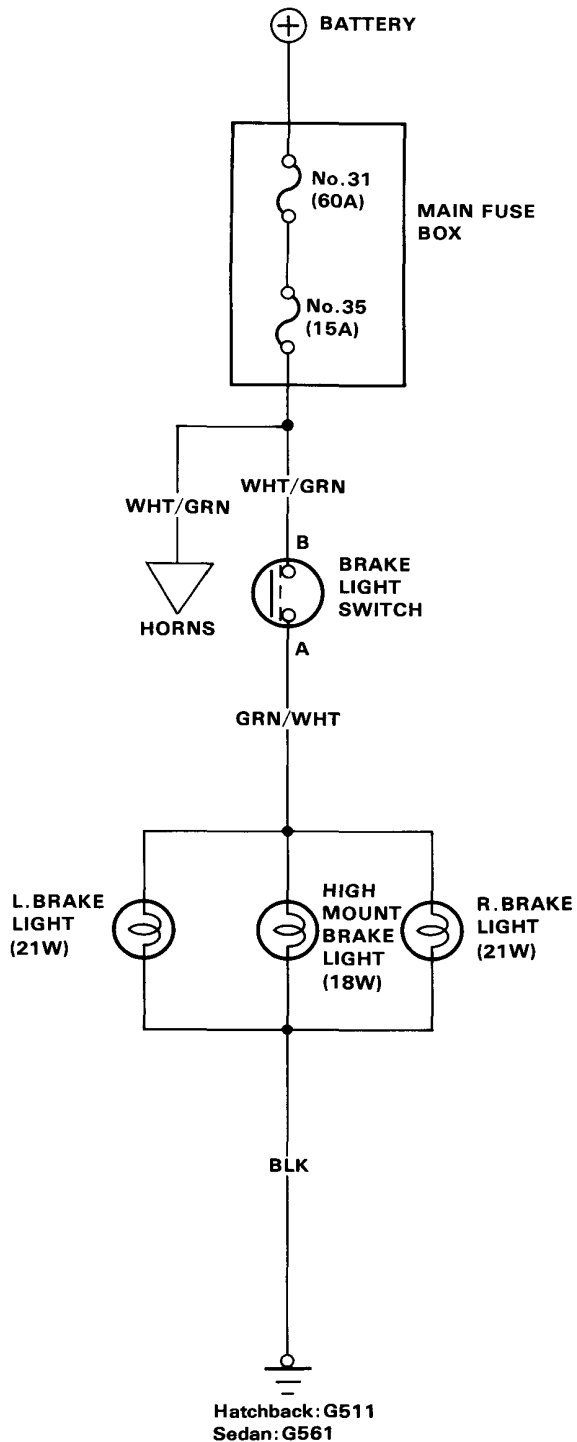
3. After installing the unit, adjust the headlights to local requirements.

Brake Lights (KQ model)



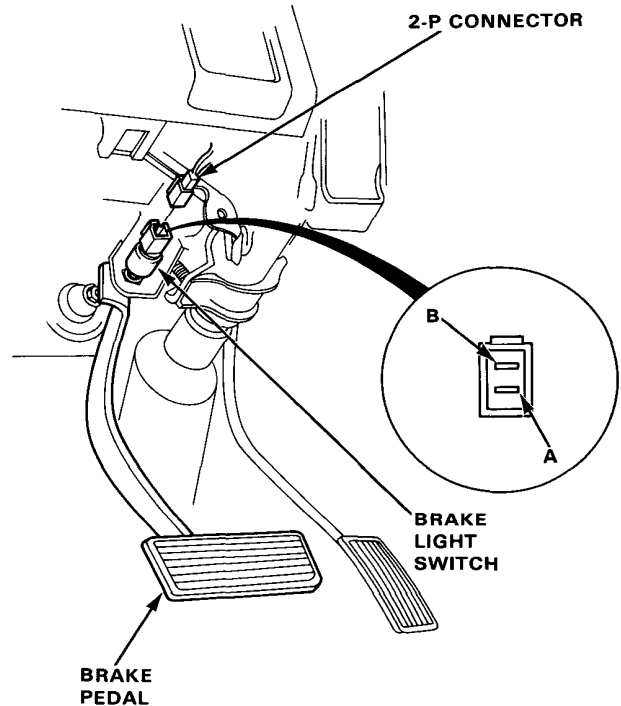
Circuit Diagram

• HIGH MOUNT BRAKE LIGHT Replacement, page 16-12



Test

1. If the brake lights do not go on, check the No. 35 (15A) fuse in the main fuse box, and the brake light bulbs in the taillight assembly and the high mount brake light.
2. If the fuse and bulbs are OK, disconnect the 2-P connector from the brake light switch.



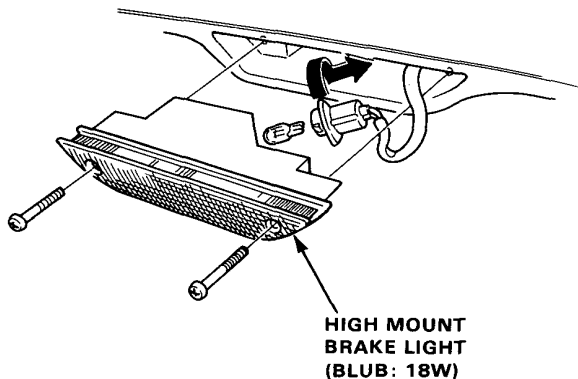
3. Check for continuity between the A and B terminals. There should be continuity with the brake pedal pushed.
 - If no continuity, replace the switch or adjust pedal height.
 - If there is continuity, but the brake lights do not go on:
 - Poor ground (Hatchback: G511, Sedan: G561).
 - An open in the WHT/GRN or GRN/WHT wire.

Brake Lights (KQ model)

High Mount Brake Light Replacement

2D Hatchback:

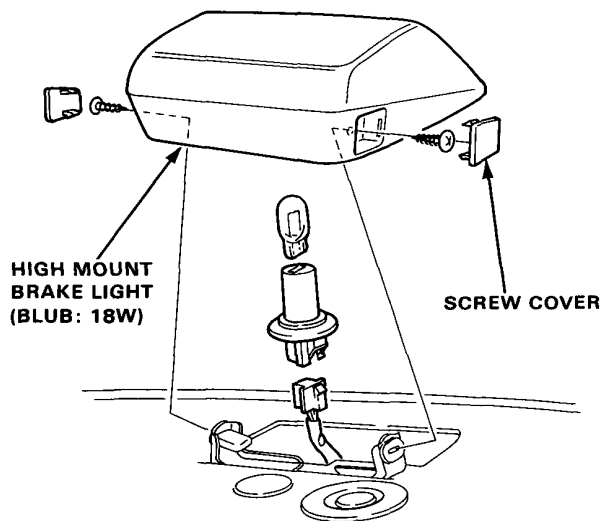
1. Remove the 2 screws securing the high mount brake light lens and pull out the light assembly.
2. Turn the socket 45° counterclockwise to remove the bulb or replace the light assembly.



Sedan:

NOTE: The bulb alone can be replaced without having to remove the high mount brake light.

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.

4D Hatchback:

1. Open the hatch and remove the maintenance cover, then remove the screw.
2. Remove the trim panel and 2 mount bolts.
3. Disconnect the 2-P connector from the high mount brake light then remove the high mount brake light.

NOTE: The bulb alone can be replaced without having to remove the high mount brake light.

