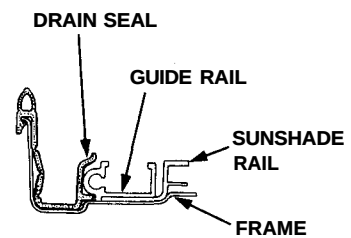
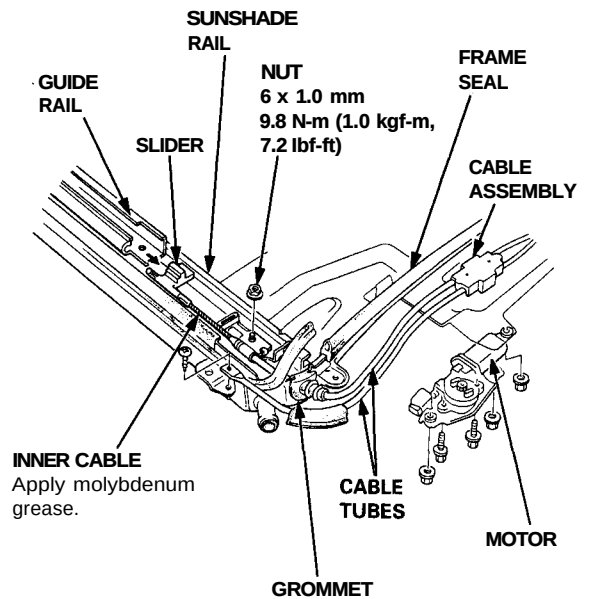




Guide Rails/Cable Assembly Replacement

CAUTION: Wear gloves to remove and install the guide rails and cable assembly.

1. Remove the frame (see page [20-52](#)).
2. Remove the motor (see page [20-52](#)).
3. Remove the nuts, and lift off each guide rails, then remove the cable assembly with sliders attached.



4. If necessary, remove the sunshade rail and frame seal from the frame.

NOTE: Take care not to bend the cable tubes and guide rails.

(cont'd)

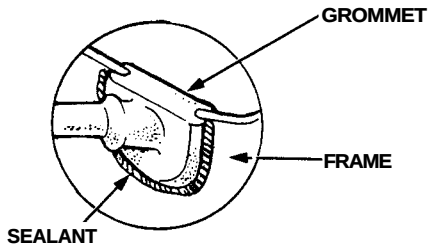
Moonroof

Guide Rails/Cable Assembly Replacement (cont'd)

5. Installation is the reverse of the removal procedure.

NOTE:

- Damaged parts should be replaced.
- Fill the groove in each grommet with sealant.

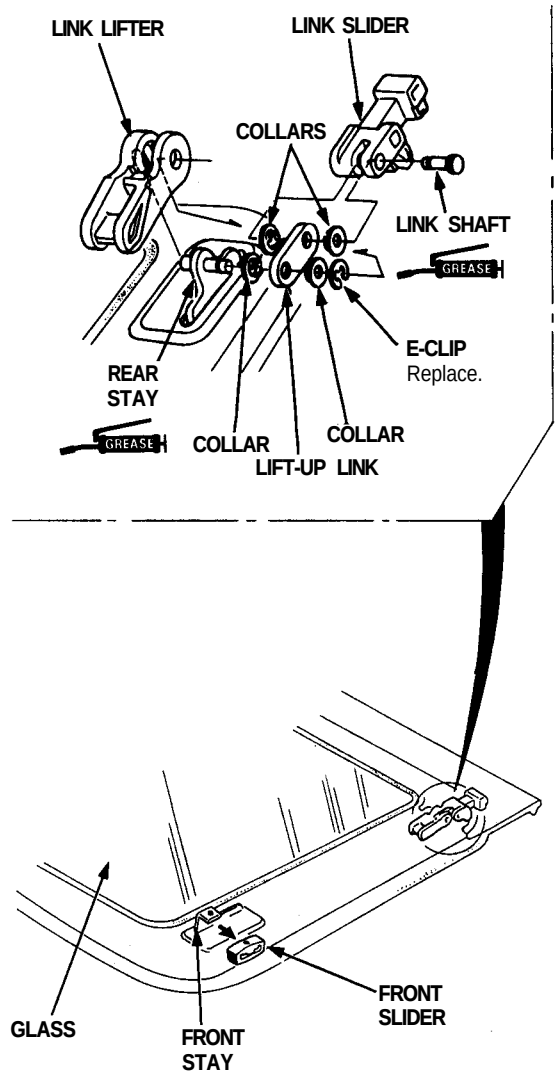


- Install the frame seal securely.
- Before installing the motor, make sure both sliders are parallel (see page [20-49](#)).
- Before installing the motor, install the frame and glass, then check the opening drag.

Moonroof

Link Slider/Lift-up Link Replacement

1. Remove the glass (see page 20-51).
2. Pull the front slider from the front stay.



3. Remove the link lifter, then remove the E-clip.
4. Remove the lift-up link from the rear stay. Drive the link shaft out, then separate the lift-up link and link slider.
5. Installation is the reverse of the removal procedure.

NOTE:

- Damaged parts should be replaced.
- Grease the sliding portion.

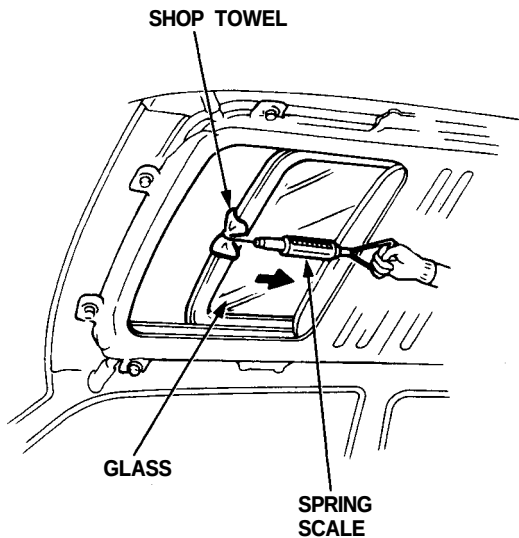


Opening Drag Check (Motor Removed)

Before installing the motor, measure the effort required to open the glass using a spring scale as shown.

CAUTION: When using a spring scale, protect the leading edge of the glass with a shop towel.

If load is over 40 N (4 kgf, 9 lbf), check side clearance and glass height adjustment (see page 20-50).

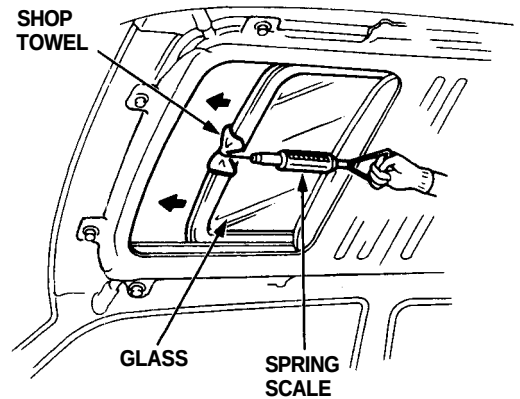


Closing Force Check (Motor Installed)

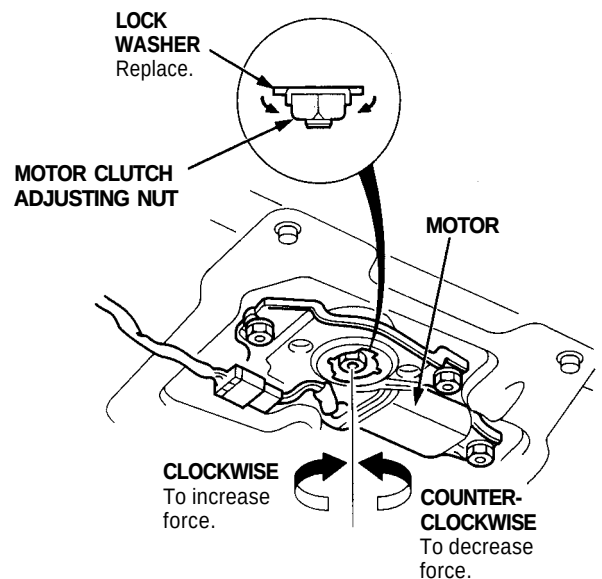
1. After installing all removed parts, have a helper hold the switch to close the glass while you measure force required to stop it. Attach a spring scale as shown. Read the force as soon as the glass stops moving, then immediately release the switch and spring scale.

CAUTION: When using a spring scale, protect the leading edge of the glass with a shop towel.

**Closing Force: 200 - 290 N
(20 - 30 kgf, 44 - 66 lbf)**



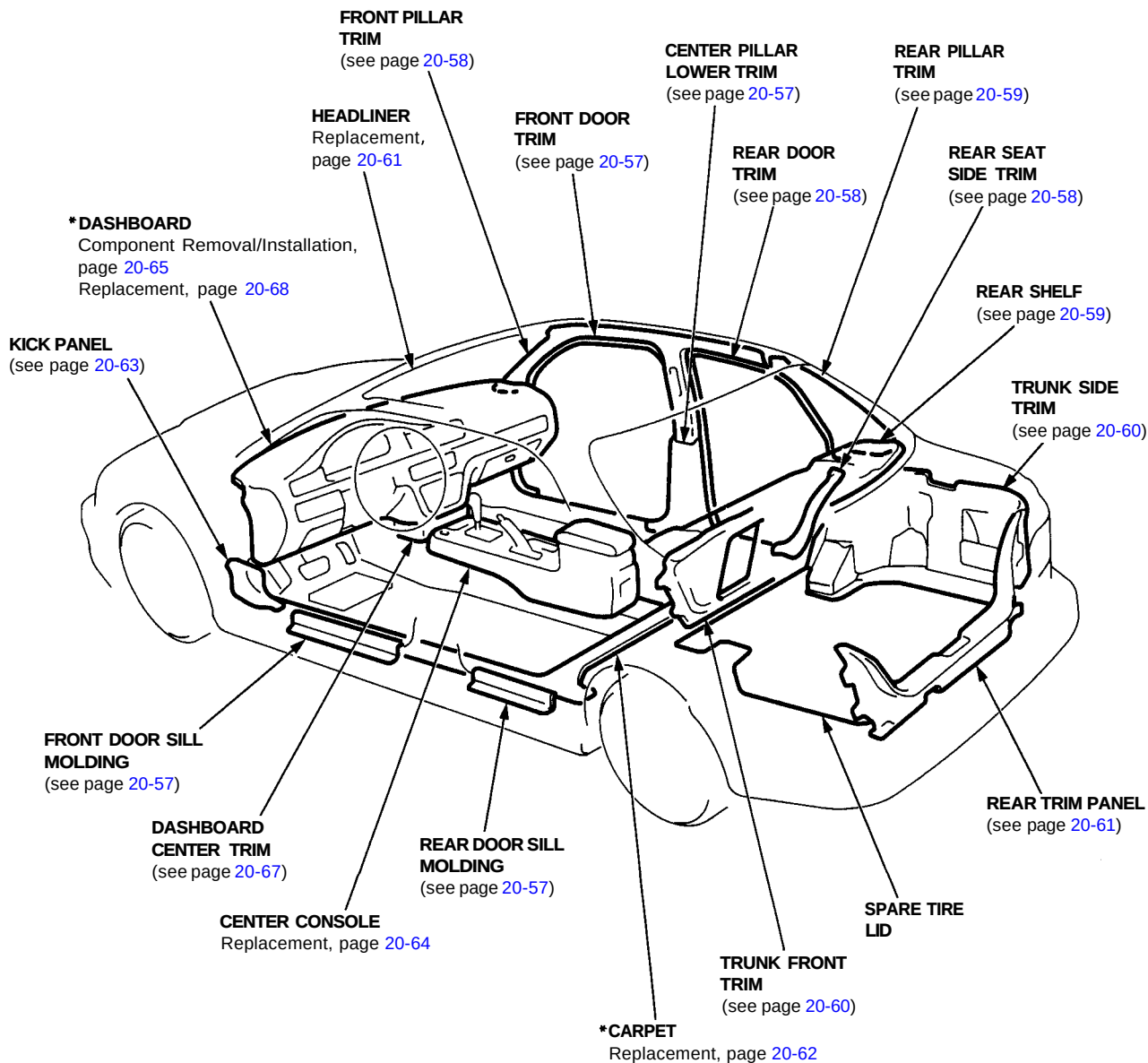
2. If the force is not within specification, install a new lock washer, adjust the tension by turning the motor clutch adjusting nut, and bend the lock washer against the motor clutch adjusting nut.



Interior

Component Location Index

SRS components are located in the areas marked with an asterisk (*). Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.





Interior Trim

Replacement

CAUTION:

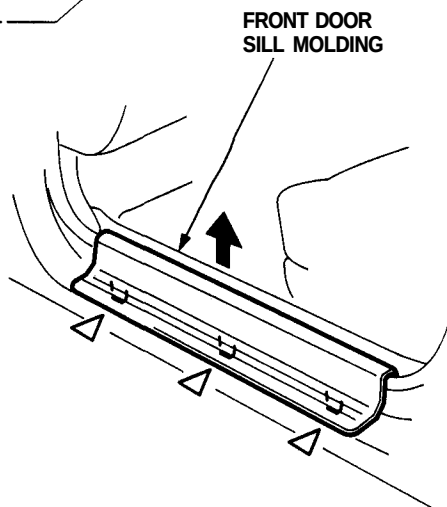
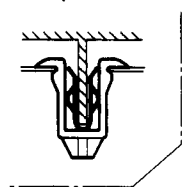
- Wear gloves to remove and install the trim.
- When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to bend or scratch the trim.

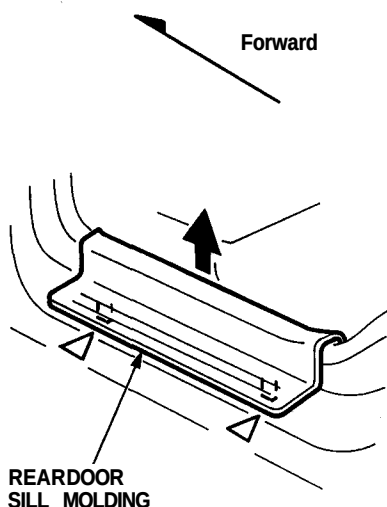
Front and rear door sill moldings/Front door trim/Center pillar lower trim/Front pillar trim:

1. Remove the front and rear door sill moldings.

▷: Clip locations, 5



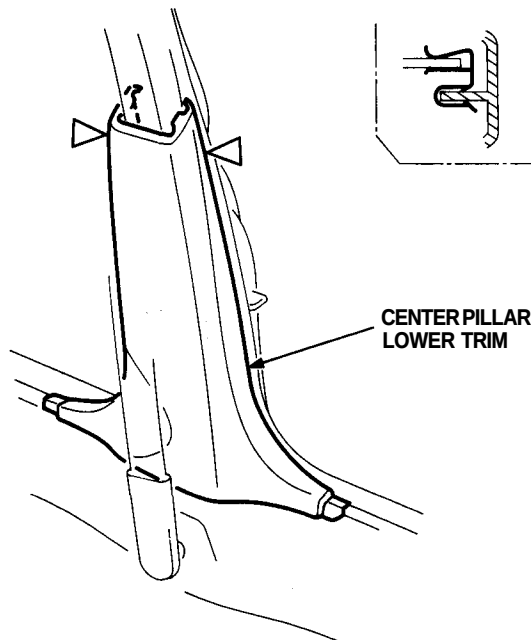
FRONT DOOR
SILL MOLDING



REAR DOOR
SILL MOLDING

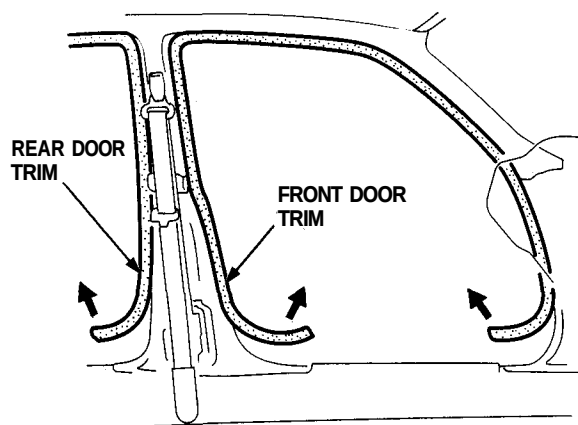
2. Remove the kick panel (see page 20-63).
3. Slide the front seat forward fully.
4. Remove the center pillar lower trim.

▷: Clip locations, 2



CENTER PILLAR
LOWER TRIM

5. Remove the front door trim, and pull away the rear door trim as necessary.



REAR DOOR
TRIM

FRONT DOOR
TRIM

(cont'd)

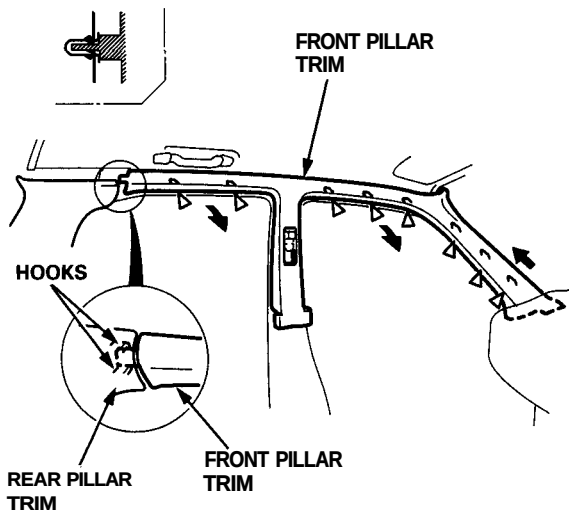
Interior Trim

Replacement (cont'd)

6. Remove the upper anchor bolt from the front seat belt (see page 20-88).
7. Remove the front pillar trim.

NOTE: Pull away the top of the rear pillar trim, then remove the rear end of the front pillar trim from the rear pillar trim.

▷: Clip locations, 8

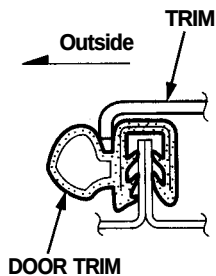


8. Installation is the reverse of the removal procedure.

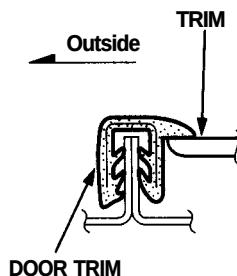
NOTE:

- If necessary, replace any damaged clips.
- Make sure the front and rear door trim is installed securely.

Lower portion:

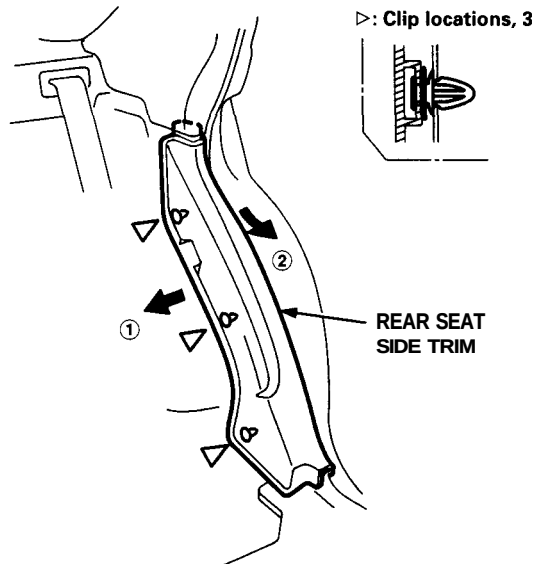


Upper portion:

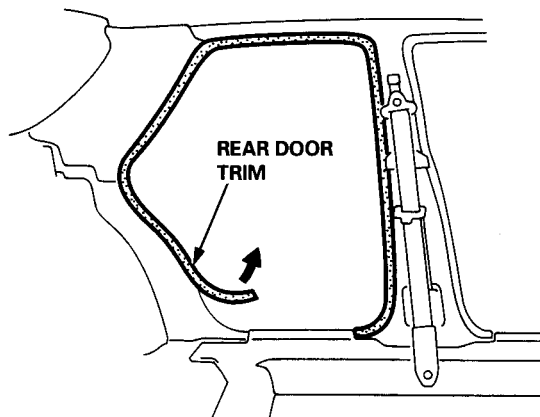


Rear seat side trim/Rear door trim:

1. Remove the rear seat cushion and rear seat-back (see page 20-85).
2. Remove the rear door sill molding (see page 20-57).
3. Remove the rear seat side trim.



4. Remove the center pillar lower trim (see page 20-57).
5. Remove the rear door trim.



6. Installation is the reverse of the removal procedure.

NOTE:

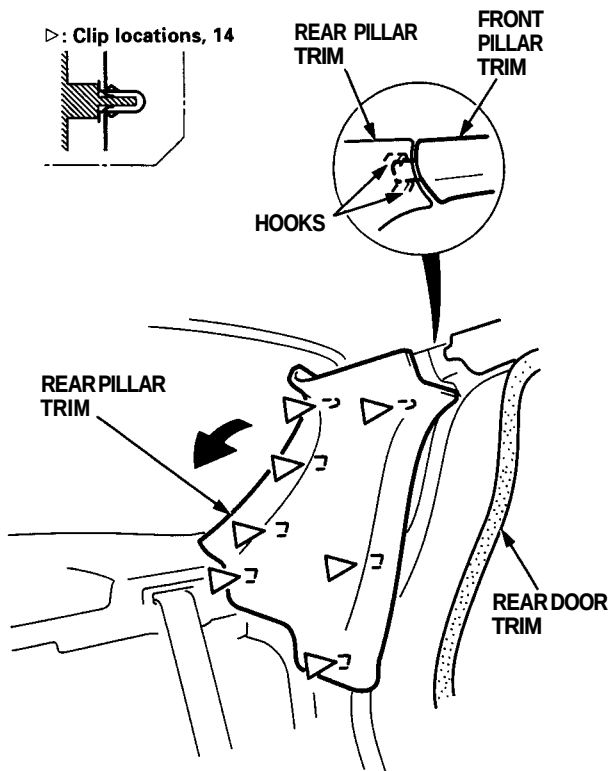
- If necessary, replace any damaged clips.
- Make sure the rear door trim is installed securely.



Rear pillar trim/Rear shelf:

1. Remove the rear seat cushion and rear seat-back (see page 20-85).
2. Pull away the rear door trim as on each side necessary.
3. Remove the rear pillar trim from each side.

NOTE: Detach the hooks from the front pillar trim by sliding the rear pillar trim backward.



4. Remove the high mount brake light.

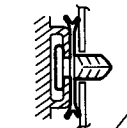
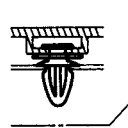
5. Remove the rear shelf.

▷: Clip locations

A ▷, 4

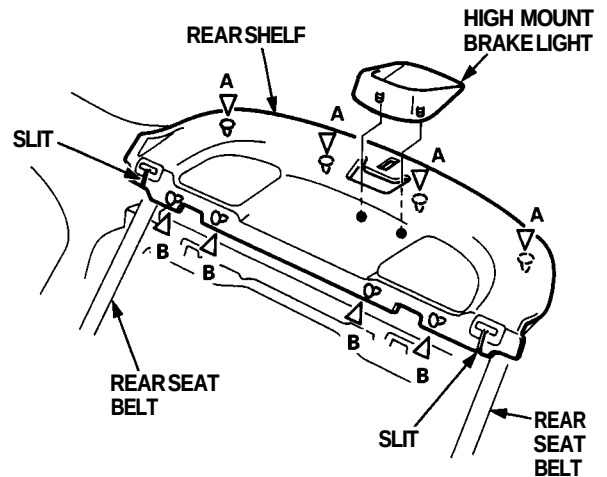
B ▷, 4

●: Nut locations, 2



5 x 0.8 mm
4 N-m (0.4 kgf-m,
3 lbf-ft)

NOTE: Slip the rear seat belts through the slit in the rear shelf.



6. Installation is the reverse of the removal procedure.

NOTE:

- If necessary, replace any damaged clips.
- When installing the rear shelf and rear seat-back, make sure there are no twists or kinks in the rear seat belt.
- Make sure the rear door trim is installed securely (see page 20-58).

Trunk Trim

Replacement

CAUTION:

- Wear gloves to remove and install the trim and panels.
- When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to bend or scratch the trim and panels.

Trunk front trim/Trunk side trim:

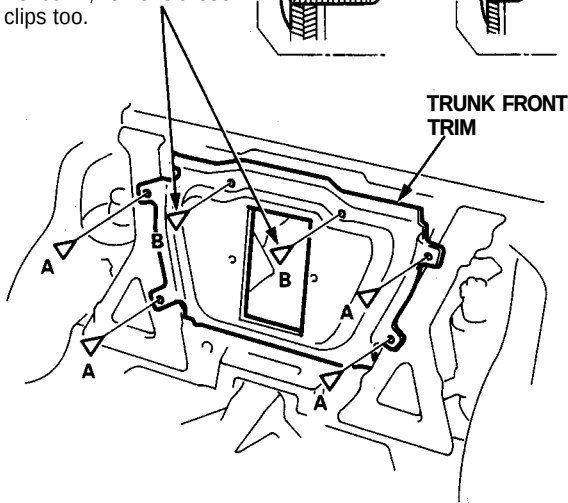
1. Remove the rear seat cushion and rear seat-back (see page 20-85).
2. Remove the clips. If necessary, remove the trunk front trim.

▷: Clip locations

A ▷, 4

B ▷, 2

When removing the trunk front trim, remove these clips too.



3. Open the trunk lid, then remove the spare tire lid.

4. Remove the trunk side trim.

▷: Clip locations

A ▷, 2

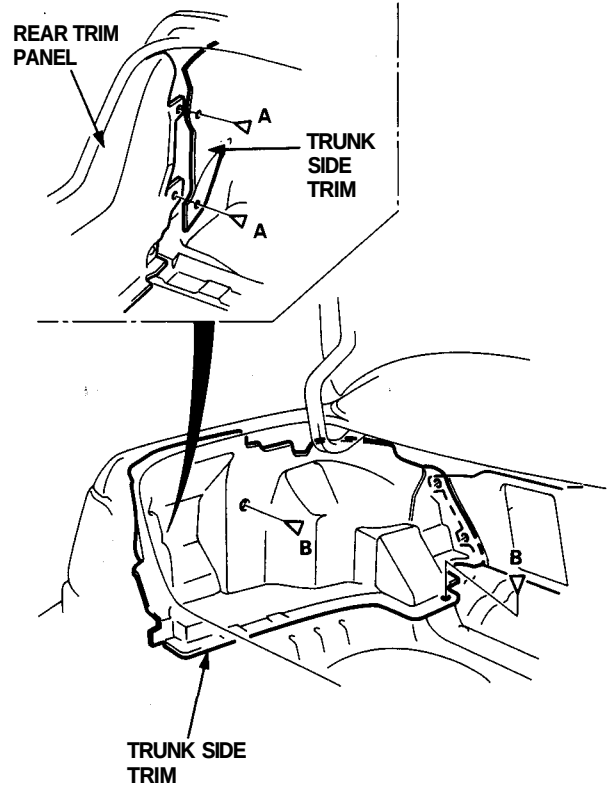
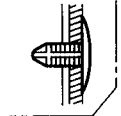
-1) Push the inner clip.

-2) Detach the clip by pulling

NOTE: Do not push it in too far.



B ▷, Left, 2
Right, 3

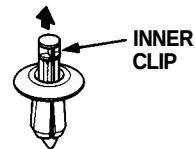


5. Installation is the reverse of the removal procedure.

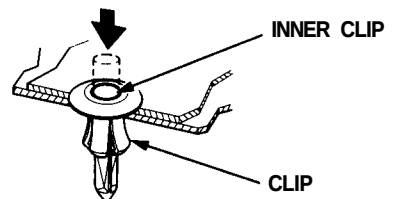
NOTE:

- If necessary, replace any damaged clips.
- When installing the trunk side trim, install the A clips on the rear of it as follows.

- a. Pull the inner clip up as shown.

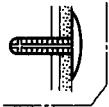
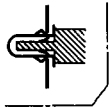
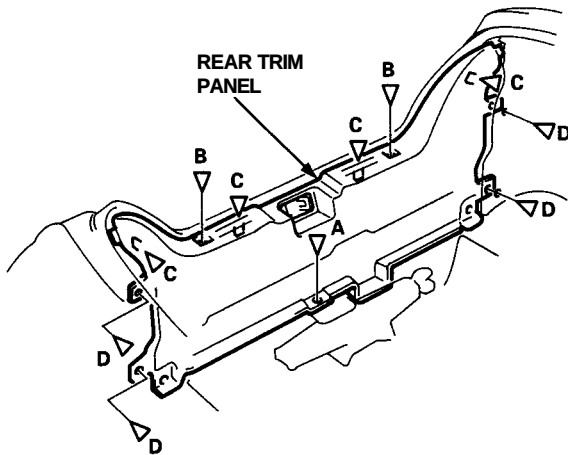


- b. Install the clip in the rear trim panel, then push the inner clip until it's flush.



**Rear trim panel:**

1. Open the trunk lid, then remove the spare tire lid.
2. Remove the rear trim panel.

▷: Clip locations**A ▷, 1****B ▷, 2****C ▷, 4****D ▷, 4 (see page 20-60)**

3. Installation is the reverse of the removal procedure.
NOTE: If necessary, replace any damaged clips.

(cont'd)



Headliner

Replacement

CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE:

- Take care not to bend and scratch the headliner.
- Be careful not to damage the dashboard and other interior trim.

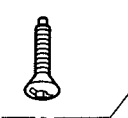
1. Remove:

- Front and rear door sill moldings (one side, see page 20-57)
- Front and rear door trim (both sides, see pages 20-57,20-58)
- Front pillar trim (one side, see page 20-58)
- Center pillar lower trim (one side, see page 20-57)
- Rear pillar trim (one side, see page 20-59)
- Spotlight and spotlight trim (see page 20-35)
- Rearview mirror (see page 20-35)
- Ceiling light (see section 23)
- Window antenna terminal cover (see page 20-43)

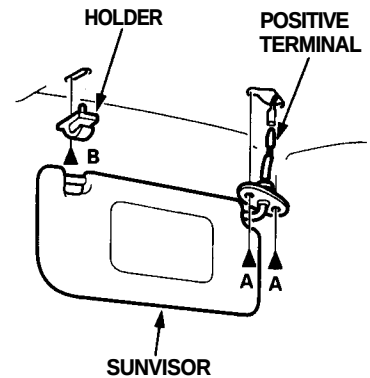
2. Remove the sunvisor and holder from each side. Disconnect both positive terminals.

►: Screw locations

A ►, 4

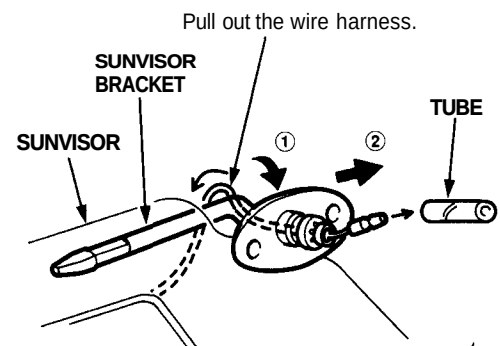


B ►, 2



NOTE:

- If necessary, remove the sunvisor bracket as shown.
- When installing the sunvisor bracket, apply grease and make sure it's installed properly.



(cont'd)

Headliner

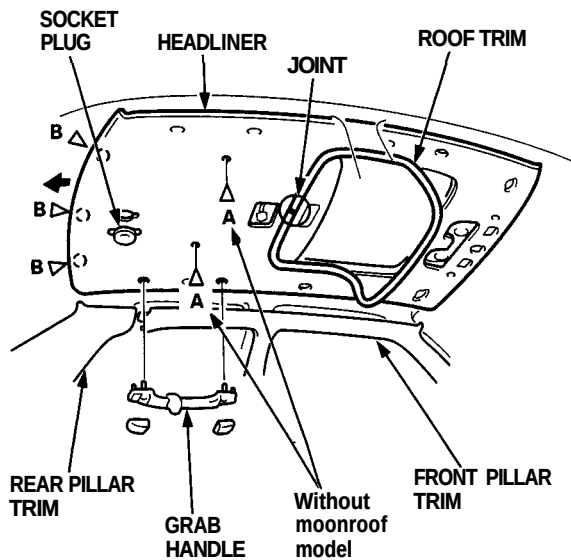
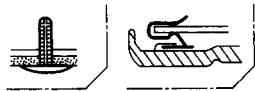
Replacement(cont'd)

- Remove the grab handles and clips, and remove the roof trim and socket plug (moonroof model).

▷: Clip locations

A ▷, 2

B ▷, 3



- Lower the front and rear pillar trim on one side.
- Detach the clips by sliding the headliner back, then remove it.

NOTE: Take care not to damage the window antenna terminal.

- Remove the headliner through the passenger's door opening.
- Installation is the reverse of the removal procedure.

NOTE:

- When inserting the headliner through the door opening, be careful not to fold or bend it. Also, be careful not to scratch the body.
- Check that both sides of the headliner are securely attached to the trim.
- When installing the roof trim, install the joint toward the rear.

Carpet

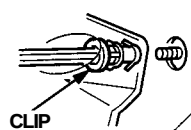
Replacement

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

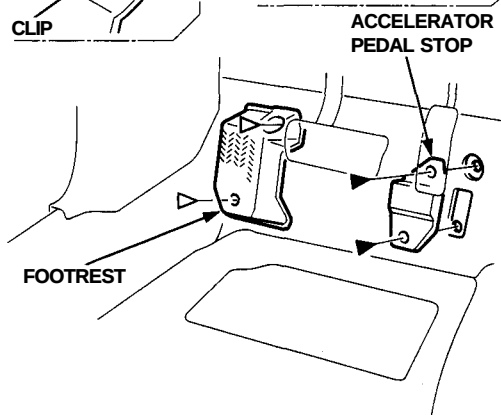
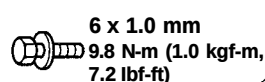
1. Remove:
 - Front seat (see page [20-71](#))
 - Rear seat cushion (see page [20-85](#))
 - Front door sill molding (see page [20-57](#))
 - Rear door sill molding (see page [20-57](#))
 - Front seat belt lower anchor (see page [20-88](#))
 - Center pillar lower trim (see page [20-57](#))
 - Center console (see page [20-64](#))
 - Dashboard center trim (see page [20-67](#))
 - Opener cover (see page [20-115](#))
2. Remove the accelerator pedal stop and footrest.

NOTE: Loosen the clips using a hex wrench by turning them counterclockwise.

▷: Clip locations, 2

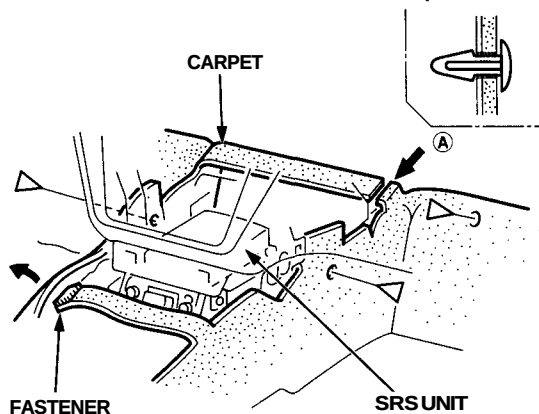


▷: Bolt locations, 2



3. Cut area **A** in the carpet, then pull it back as shown.

▷: Clip locations, 3



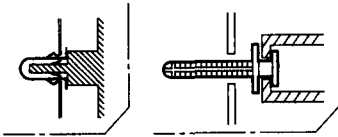


4. Remove the kick panels.

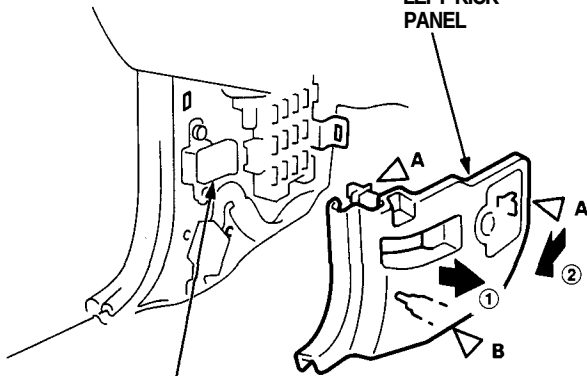
▷: Clip locations

A ▷, 3

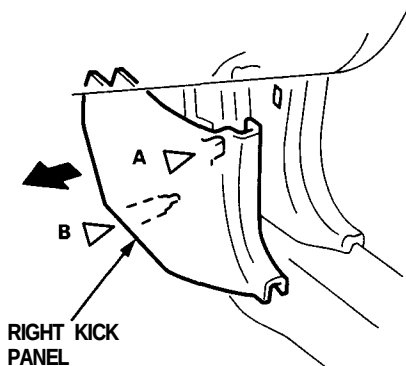
B ▷, 2



LEFT KICK PANEL



Remove the kick panel while pulling the hood release handle.

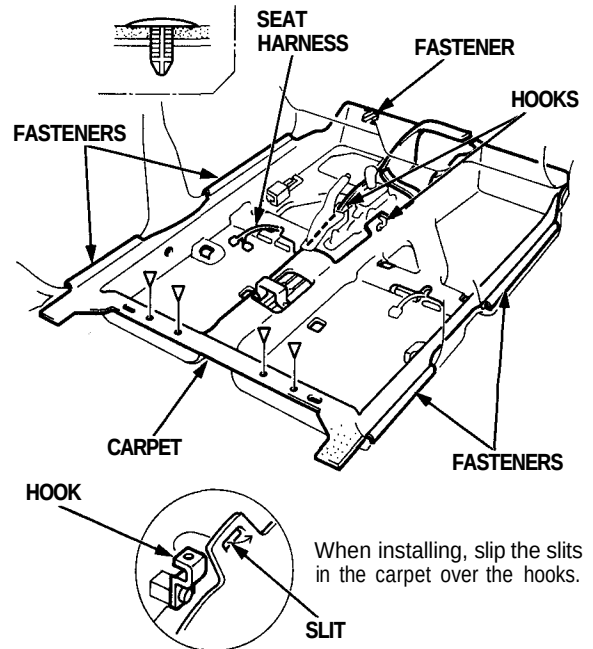


RIGHT KICK PANEL

5. Detach the retainers, then remove the carpet.

NOTE: Take care not to damage, wrinkle or twist the carpet.

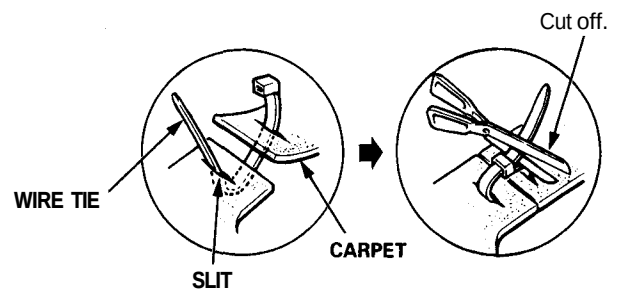
▷: Clip locations, 4



6. Installation is the reverse of the removal procedure.

NOTE:

- Take care not to damage, wrinkle or twist the carpet.
- Make sure the seat harness is routed correctly.
- If necessary, replace any damaged clips.
- Reattach the cut area ® in the carpet with a wire tie as shown.



Center Console

Replacement

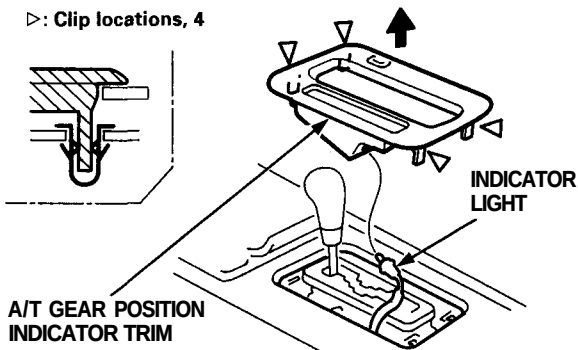
CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to scratch the center console, front seat and related parts.

Center console/Center console panel removal:

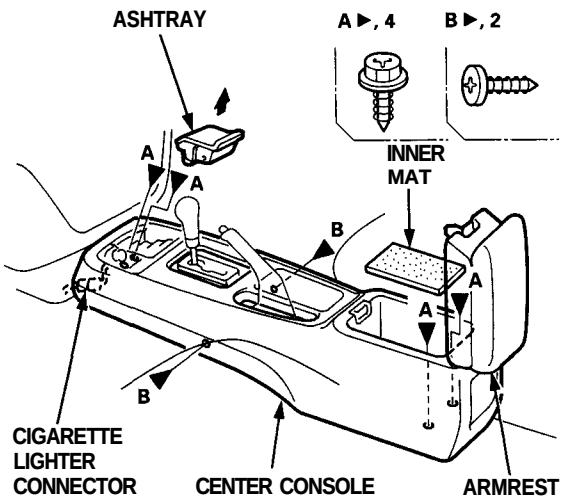
1. Slide the front seats backward fully.
2. Remove the A/T gear position indicator trim, and disconnect the indicator light.

▷: Clip locations, 4



3. Open the armrest, then remove the inner mat and remove the ashtray.

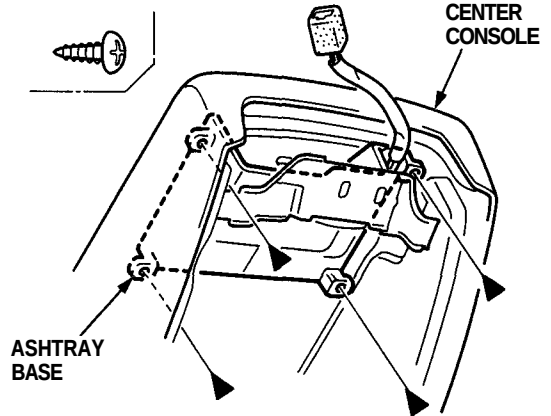
▷: Screw locations



4. Remove the screws, then remove the center console. Disconnect the cigarette lighter connector.

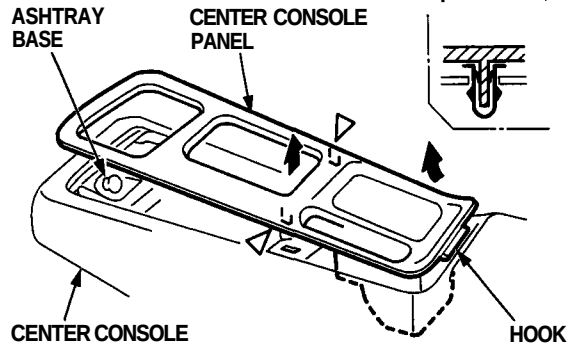
5. Remove the screws from under the center console.

▷: Screw locations, 4



6. Detach the clips, then remove the center console panel.

▷: Clip locations, 2



7. Installation is the reverse of the removal procedure.

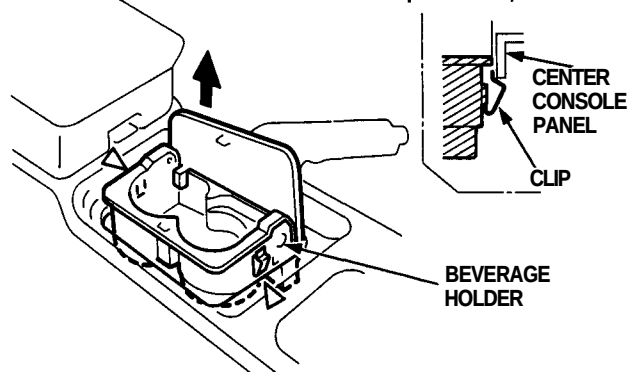
NOTE:

- Make sure the wire harnesses are not pinched.
- Make sure the connector is connected properly.

Beverage holder removal:

Detach the clips, then pull it up.

▷: Clip locations, 2





Dashboard

Component Removal/Installation

CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape, and apply protective tape around the related parts, to prevent damage.

NOTE: Take care not to scratch the dashboard and related parts.

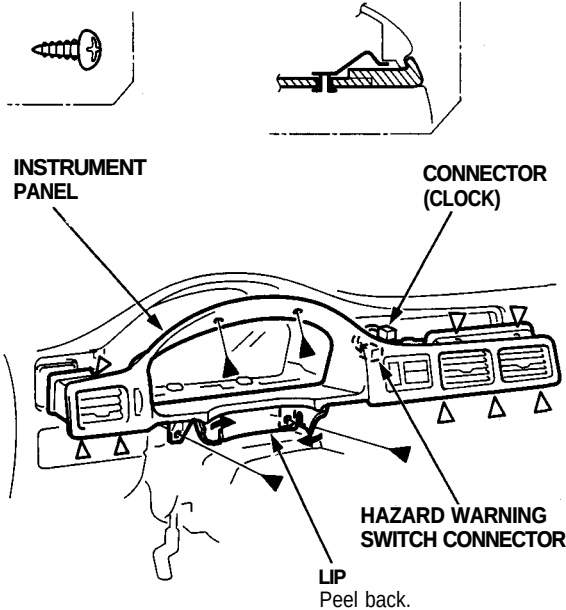
Instrument panel removal:

1. Lower the steering column.
2. Remove the screws, and detach the clips, then carefully pull out the instrument panel. Disconnect the clock and hazard warning switch connectors, then remove the instrument panel.

NOTE: Remove the lower screws while peeling back the lip.

►: Screw locations, 4

>: Clip locations, 8



3. Installation is the reverse of the removal procedure.

NOTE: Make sure the connectors are connected properly.

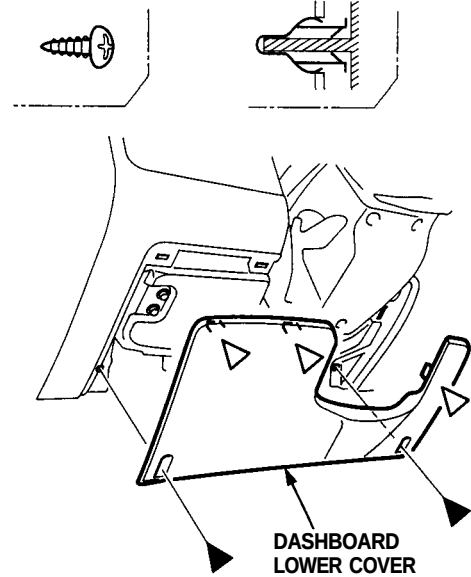
Dashboard lower cover and knee bolster removal:

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

1. Remove the screws, and detach the clips, then remove the dashboard lower cover.

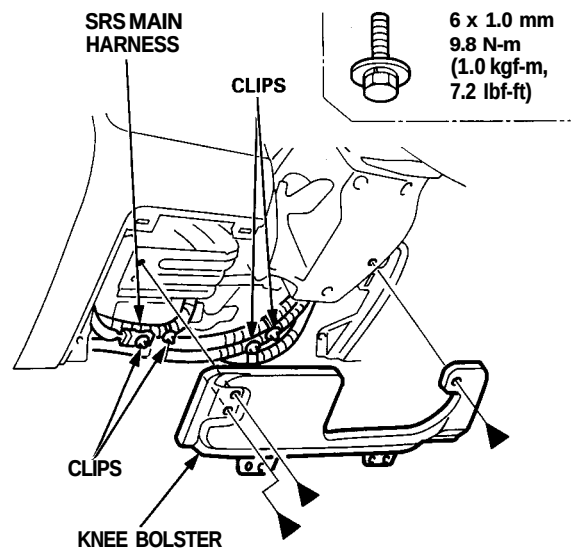
►: Screw locations, 2

▷: Clip locations, 3



2. Remove the bolts, detach the harness clips and connector clip, then remove the knee bolster.

►: Bolt locations, 3



3. Installation is the reverse of the removal procedure.

(cont'd)

Dashboard

Component Removal/Installation (cont'd)

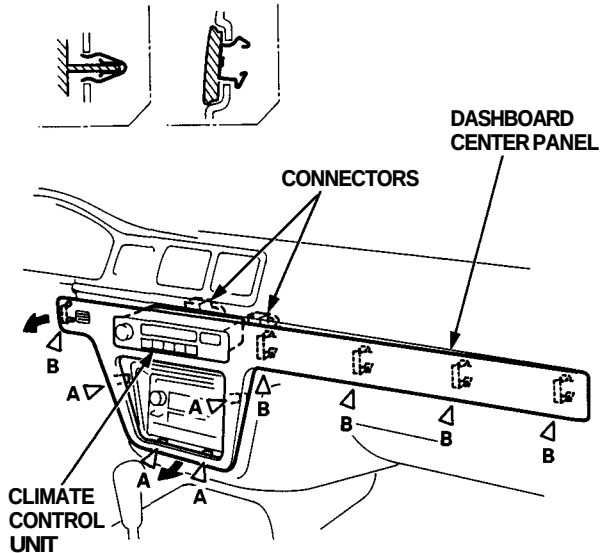
Dashboard center panel/Radio panel/Switch panel removal:

1. Carefully detach the clips, then pull out the dashboard center panel.

▷: Clip locations

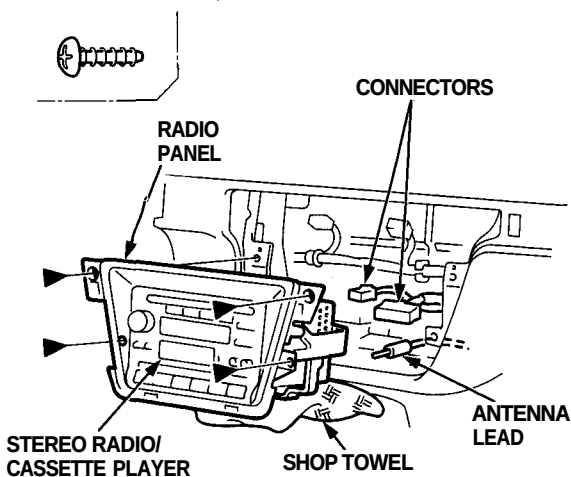
A ▷, 4

B ▷, 5



2. Disconnect the connectors, then remove the dashboard center panel.
3. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
4. Remove the screws, then pull out the radio panel with the stereo radio/cassette player. Disconnect the connectors and antenna lead, then remove it.

▷: Screw locations, 4



5. Installation is the reverse of the removal procedure.

NOTE:

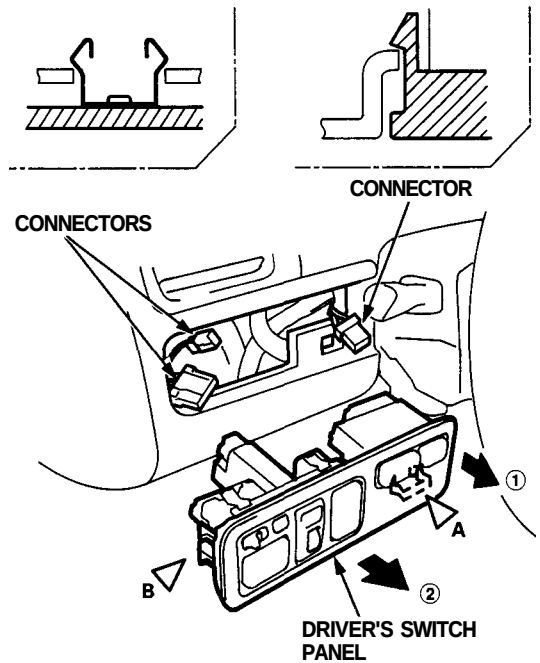
- Make sure the connectors and antenna lead are connected properly.
- Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Driver's switch panel removal:

1. Carefully detach the clips, then pull out the driver's switch panel. Disconnect the connectors, then remove it.

A ▷: Clip location, 1

B ▷: Hook location, 1



2. Installation is the reverse of the removal procedure.

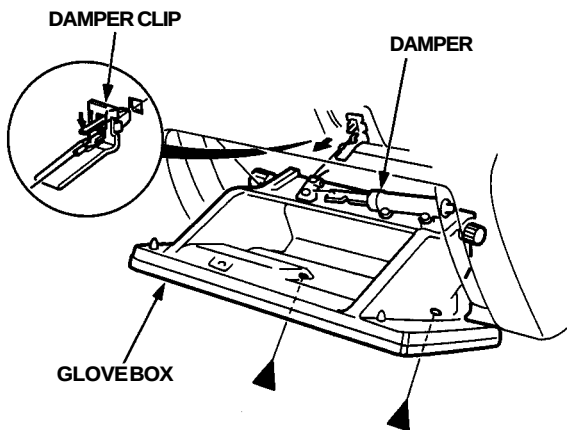
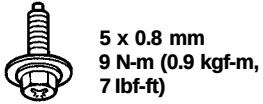
NOTE: Make sure the connectors are connected properly.



Glove box removal:

1. Open the glove box.
2. Detach the damper clip. Remove the bolts while holding the glove box, then remove it.

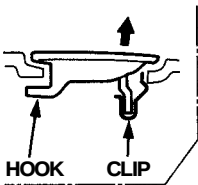
►: Bolt locations, 2



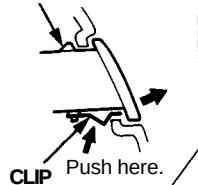
3. Installation is the reverse of the removal procedure.

Side air vent (Front passenger's)/Side defogger trim removal:

►: Clip locations A ►, 1

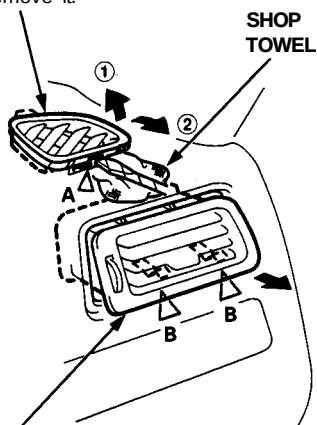


B ►, 2 HOOK



SIDE DEFOGGER TRIM

Carefully pry it at the rear edge, then remove it.



SIDE AIR VENT

Open the glove box, then push the clips from the glove box opening by hand, and pull it out.



Replacement

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS [section 24](#) before performing repairs or service.

NOTE:

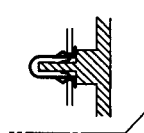
- An assistant is helpful when removing and installing the dashboard.
- Take care not to scratch the dashboard, body and related parts.

1. Remove:
 - Dashboard lower cover (see page [20-65](#))
 - Knee bolster (see page [20-65](#))
 - Center console (see page [20-64](#))
 - Glove box
 - Kick panels (see page [20-63](#))

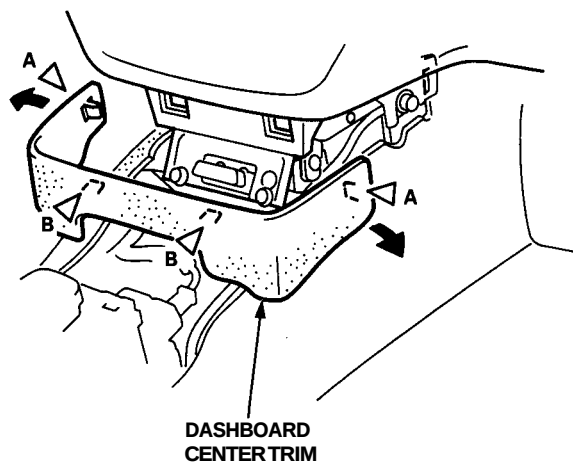
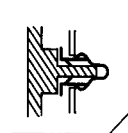
2. Remove the dashboard center trim.

▷: Clip locations

A ▷, 2



B ▷, 2



3. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.

(cont'd)

Dashboard

Replacement (cont'd)

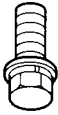
4. Lower the steering column (see [section 17](#)).

▲ WARNING To avoid accidental deployment and possible injury, always disconnect the driver's airbag connector before lowering the steering column (see [section 24](#)).

NOTE: To prevent damage to the steering column, wrap it with a shop towel.

►: Bolt locations, 2

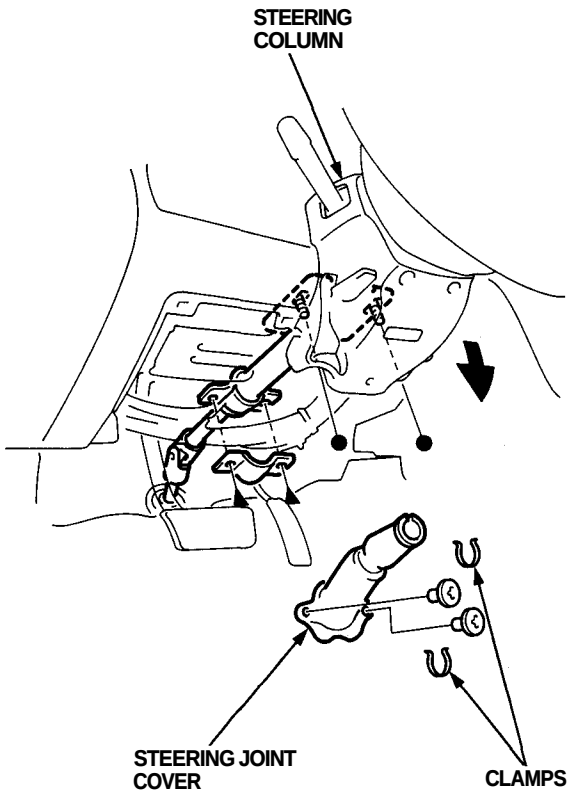
●: Nut locations, 2



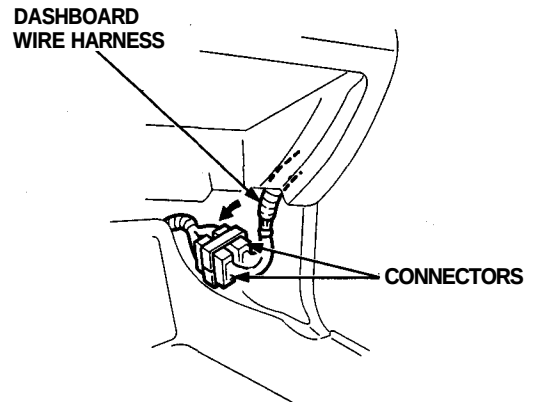
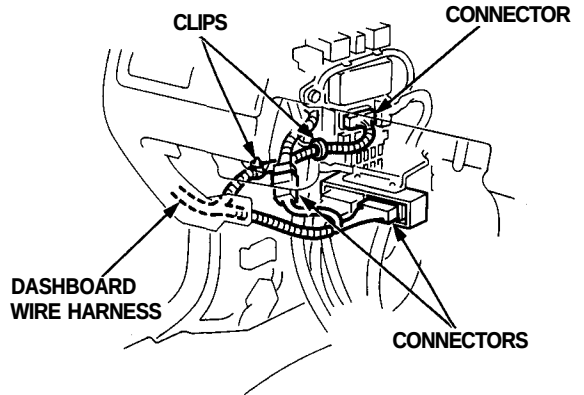
10 x 1.25 mm
38 N-m (3.9 kgf-m,
28 lbf-ft)



8 x 1.25 mm
16 N-m (1.6 kgf-m,
12 lbf-ft)
Replace.



5. Disconnect the dashboard wire harness connectors and harness clips.



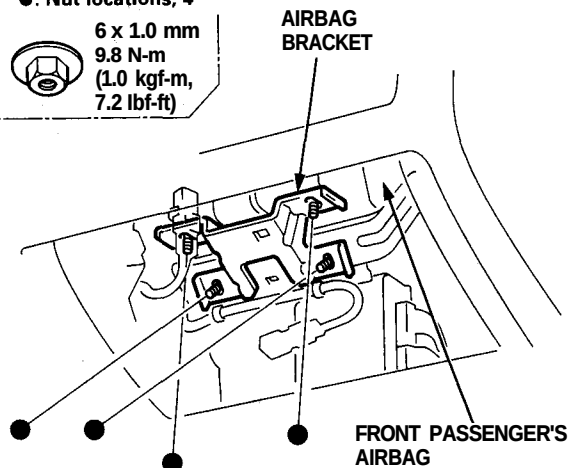
6. Remove the airbag bracket.

▲ WARNING To avoid accidental deployment and possible injury, always install the protective short connector on the front passenger's airbag connector when the SRS main harness is disconnected (see [section 24](#)).

●: Nut locations, 4



6 x 1.0 mm
9.8 N-m
(1.0 kgf-m,
7.2 lbf-ft)



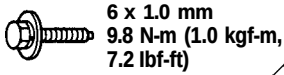


7. Remove the bolts.

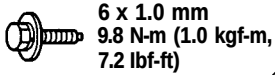
CAUTION: Use protective plates on the bottom of the front pillar trim.

►: Bolt locations

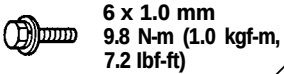
A ►, 4



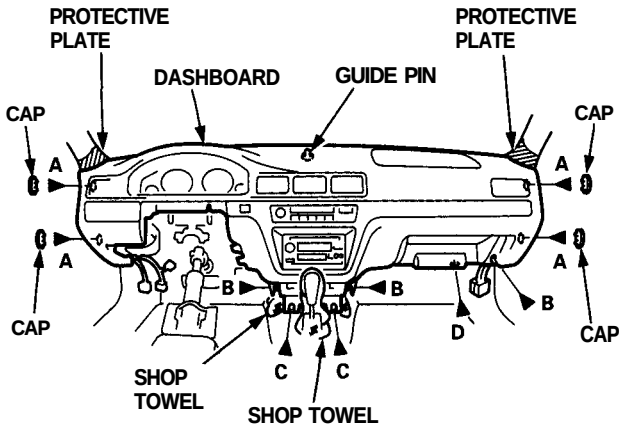
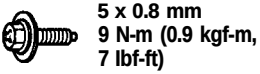
B ►, 3



C ►, 2

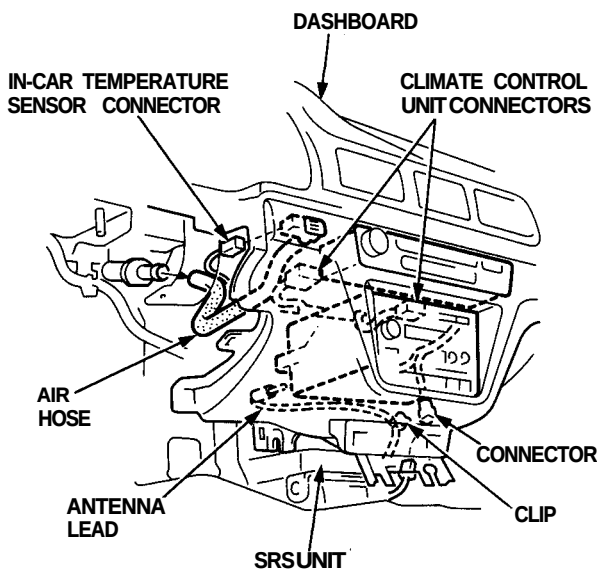


D ►, 1



8. Lift and pull out the dashboard half-way, then disconnect the connectors, antenna lead and air hose while holding the dashboard.

CAUTION: Do not drop the dashboard.



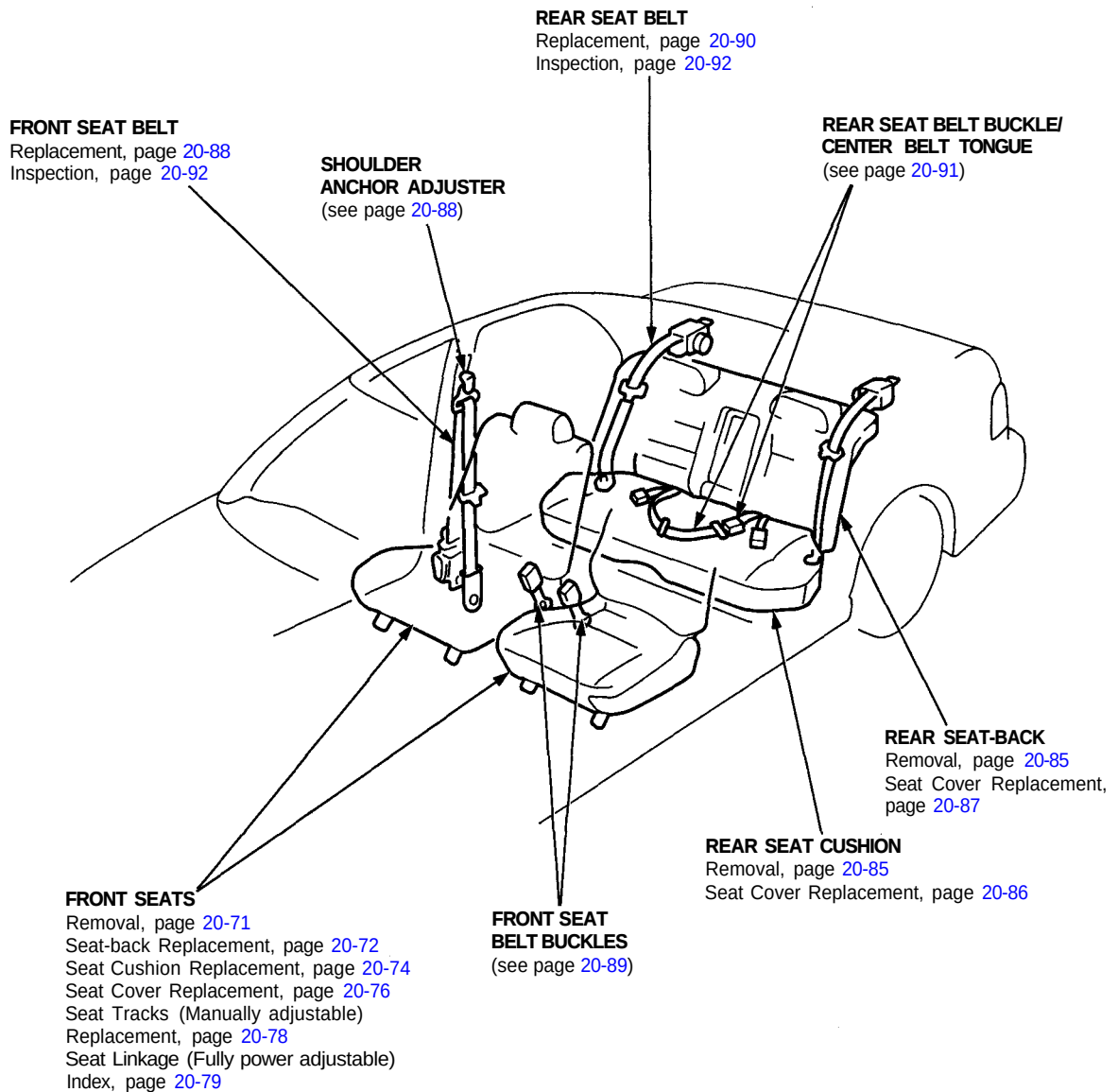
9. Installation is the reverse of the removal procedure.

NOTE:

- Make sure the dashboard fits onto the guide pin correctly.
- Before tightening the bolts, make sure the dashboard wire harnesses are not pinched.
- Make sure the connectors, antenna lead and air hose are connected properly.
- Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Seats/Seat Belts

Component Location Index





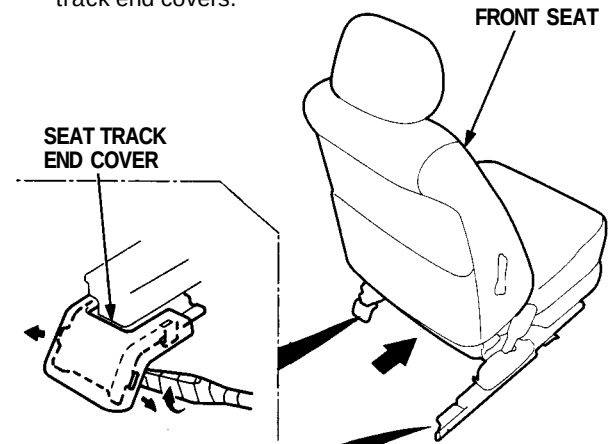
Front Seat

Removal

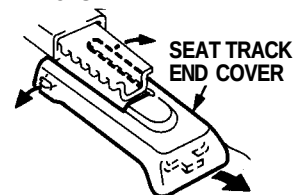
CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to scratch the seat covers and body.

- Slide the front seat forward, then remove the seat track end covers.



Driver's:



Passenger's:



- Remove the bolts.

►: Bolt locations

A ►, 1

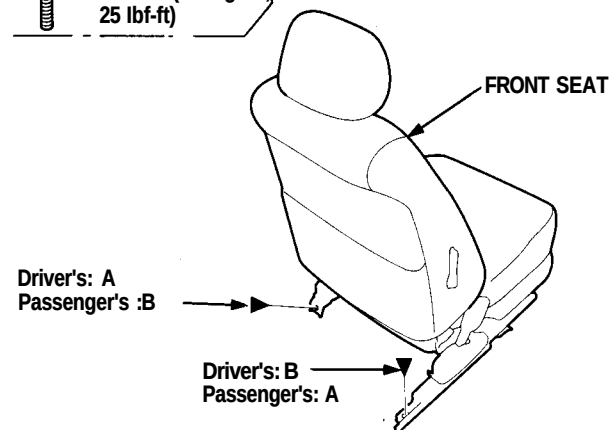


10 x 1.25 mm
34 N-m (3.5 kgf-m,
25 lbf-ft)

B ►, 1



10 x 1.25 mm
34 N-m (3.5 kgf-m,
25 lbf-ft)

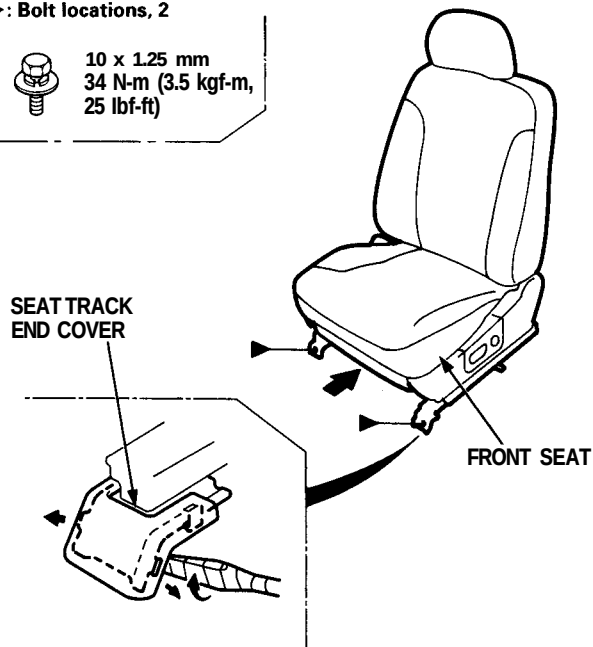


- Slide the front seat backward, then remove the seat track end cover, and remove the bolts.

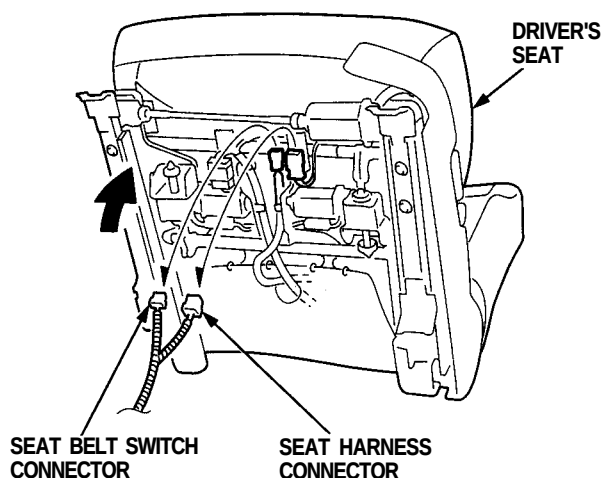
►: Bolt locations, 2



10 x 1.25 mm
34 N-m (3.5 kgf-m,
25 lbf-ft)



- Lift the driver's seat, then disconnect the seat harness connector and seat belt switch connector.



- Carefully remove the front seat through the door opening.
- Installation is the reverse of the removal procedure.

NOTE: Make sure the connectors are connected properly (driver's).

Front Seat

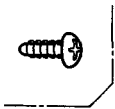
Seat-back Replacement

CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to scratch the seat covers and body.

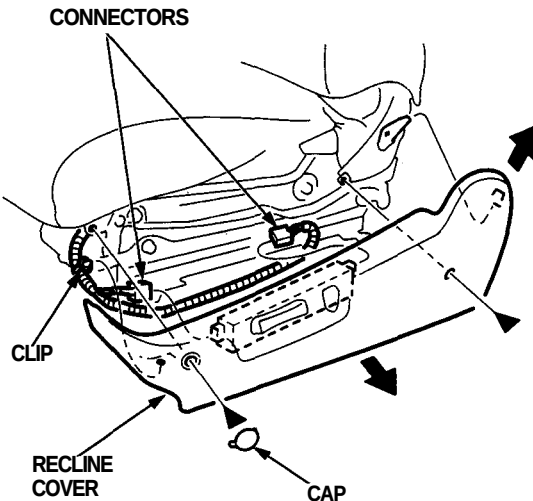
1. Remove the front seat through the door opening (see page 20-71).
2. Remove the recline cover.

►: Screw locations, 2

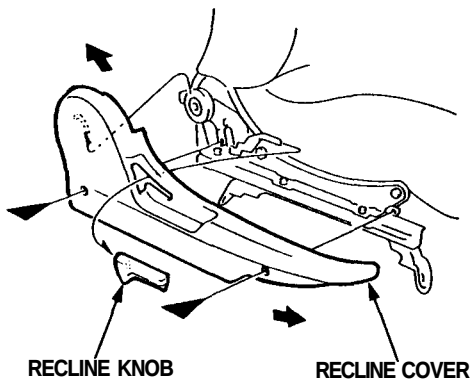


Fully power adjustable:

Disconnect the connectors.



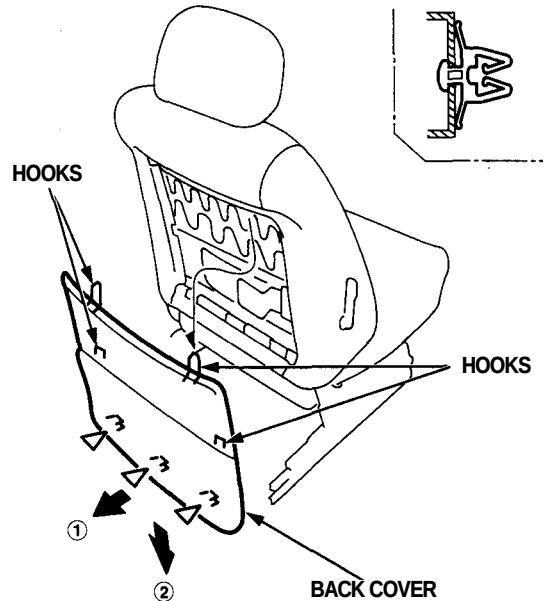
Manually adjustable:



3. Remove the back cover.

NOTE: If necessary, replace any damaged clips.

►: Clip locations, 3



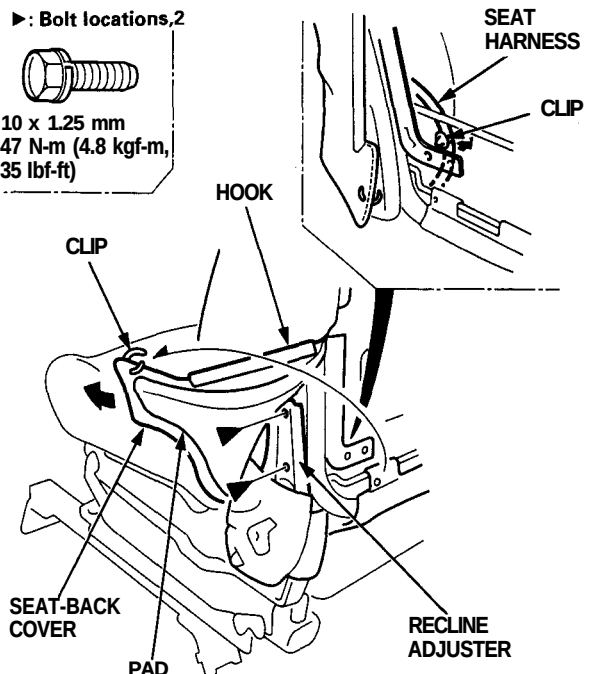
4. Release the hook and clip. Detach the harness clip (fully power adjustable seat). Fold the seat-back cover and pad, then remove the bolts.

NOTE: Replace the released clip of the seat-back cover with a new one.

►: Bolt locations, 2



10 x 1.25 mm
47 N-m (4.8 kgf-m,
35 lbf-ft)





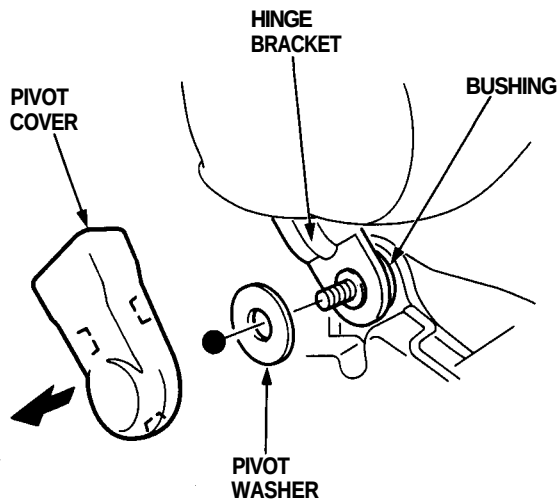
5. Remove the pivot cover, then remove the pivot nut.

●: Pivot nut location, 1

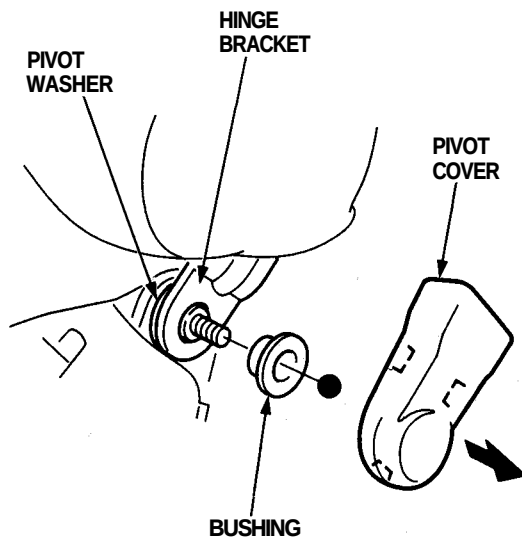


8 x 1.25 mm
22 N-m (2.2 kgf-m,
16 lbf-ft)

Fully power adjustable:

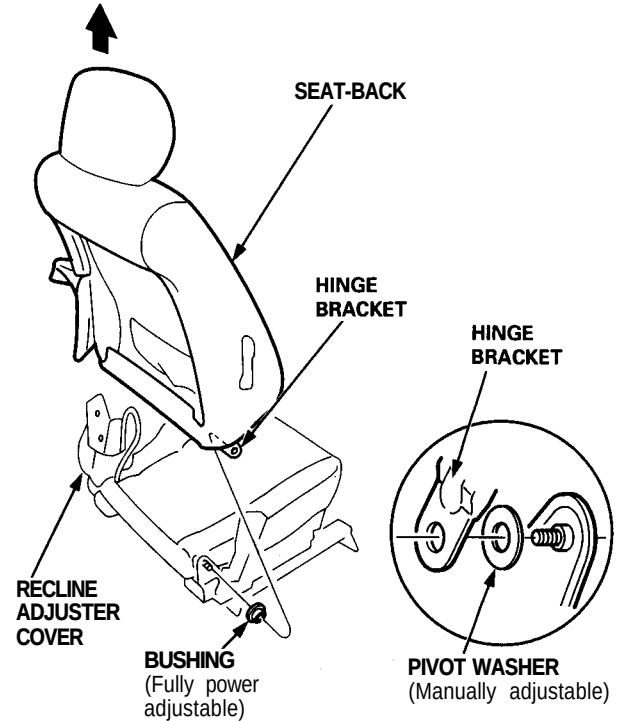


Manually adjustable:

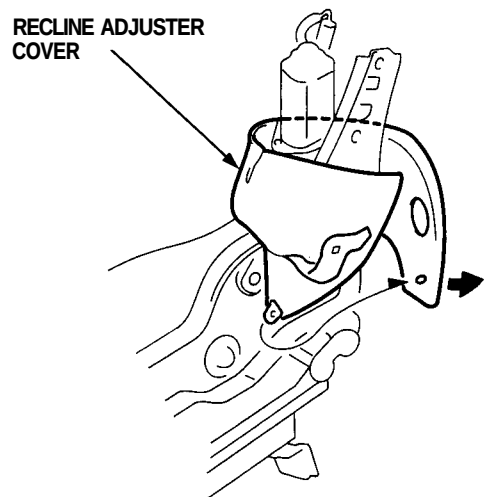


6. Remove the seat-back.

NOTE: Take care not to bend the hinge bracket.



7. If necessary, remove the recline adjuster cover (fully power adjustable seat).



8. Installation is the reverse of the removal procedure.

NOTE:

- Make sure the bushing and pivot washer are installed properly.
- To prevent wrinkles when installing the seat-back cover, make sure the material is stretched evenly over the pad.

Front Seat

Seat Cushion Replacement

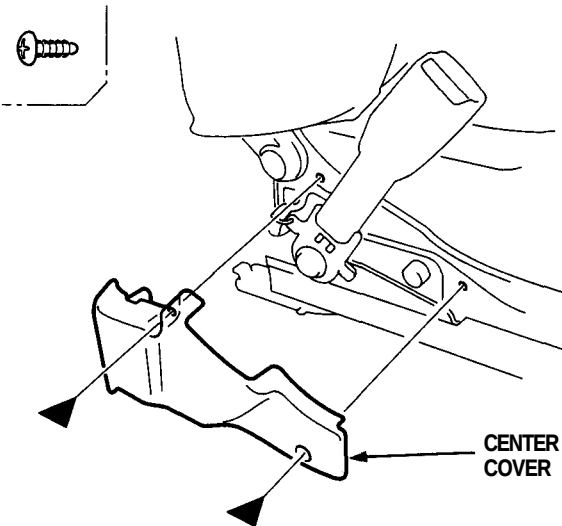
CAUTION: When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE: Take care not to scratch the seat covers and body.

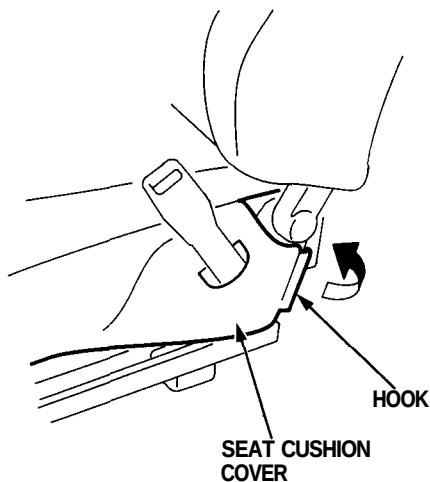
1. Remove the front seat through the door opening (see page 20-71).
2. Remove the recline cover (see page 20-72).
3. Remove the center cover (fully power adjustable seat), or release the hook (manually adjustable seat).

Fully power adjustable:

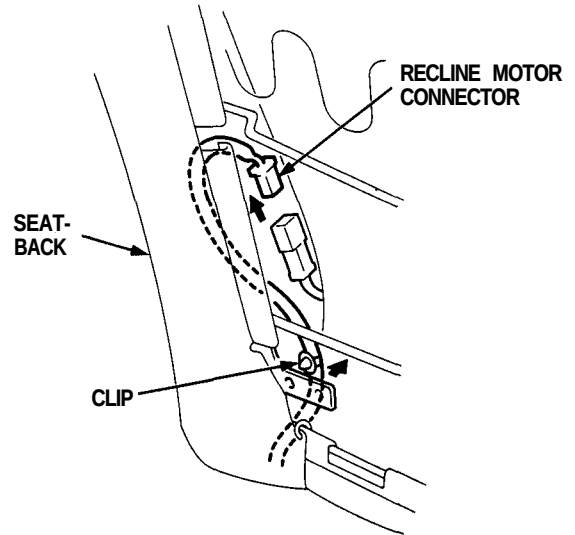
►: Screw locations, 2



Manually adjustable:



4. Fully power adjustable seat: Remove the back cover (see page 20-72), then disconnect the recline motor connector, and detach the harness clip.

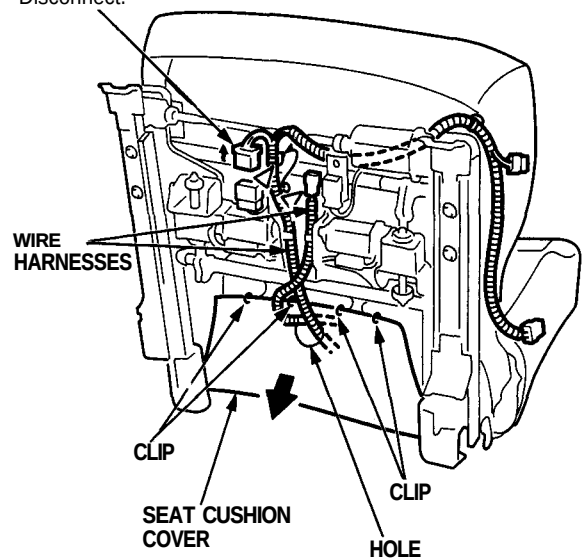


5. Fully power adjustable seat: Disconnect the connectors, and detach the harness clips and connector clips. Release the clips, then fold the seat cushion cover, and slip the wire harnesses through the hole in the seat cushion cover.

NOTE: Replace the released clips of the seat cushion cover with new ones.

CONNECTOR Disconnect.

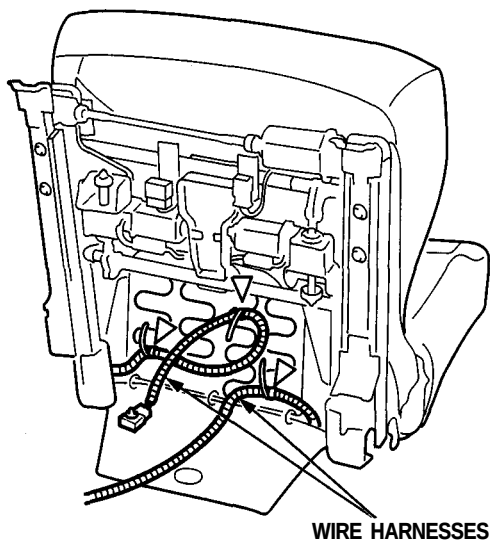
►: Clip locations, 2





6. Fully power adjustable seat: Release the wire ties from the seat cushion.

▷: Wire tie locations, 3



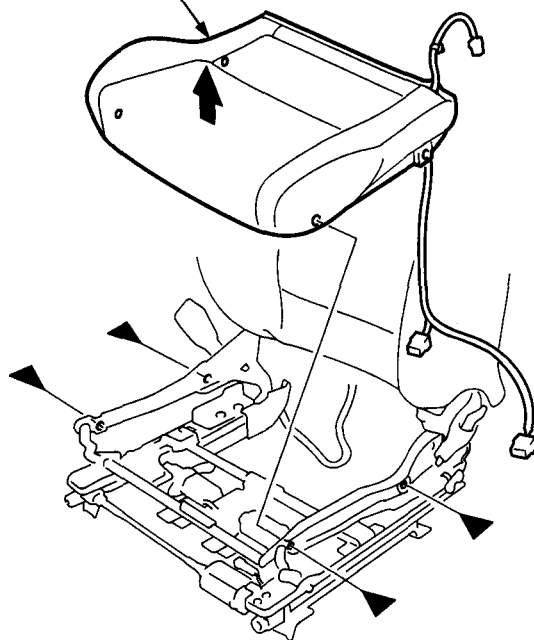
7. Remove the bolts, then remove the seat cushion.

▷: Bolt locations, 4

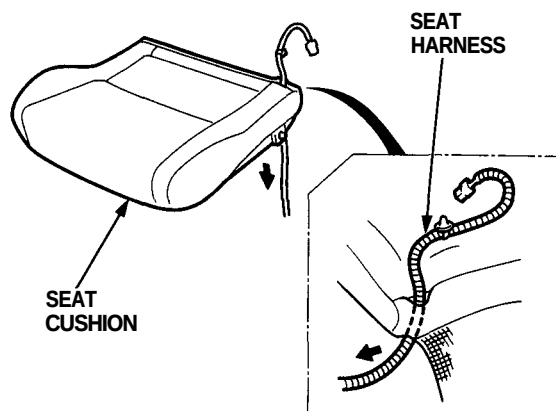


10 x 1.25 mm
47 N-m (4.8 kgf-m,
35 lbf-ft)

SEAT CUSHION



8. Fully power adjustable seat: Pull the seat harness out from the seat cushion.



9. Installation is the reverse of the removal procedure.

NOTE:

- Make sure the seat harness is routed and fastened properly.
- Make sure the connectors are connected properly.

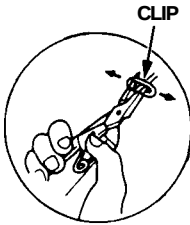
Front Seat

Seat Cover Replacement

CAUTION: Wear gloves to remove and install the seat covers.

NOTE

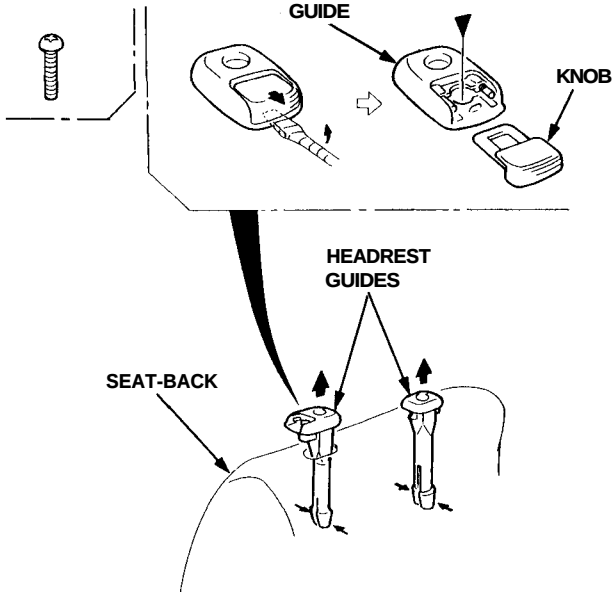
- Take care not to tear the seams or damage the seat covers.
- Remove the clips as shown.



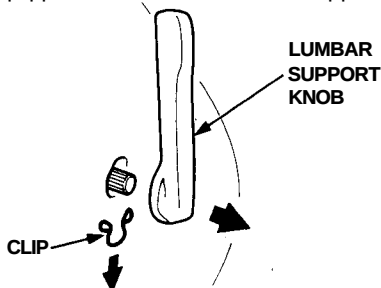
Seat-back cover removal:

1. Slide the front seat forward, and fold the seat-back forward.
2. Remove the back cover (see page 20-72).
3. Remove the headrest and headrest guides.

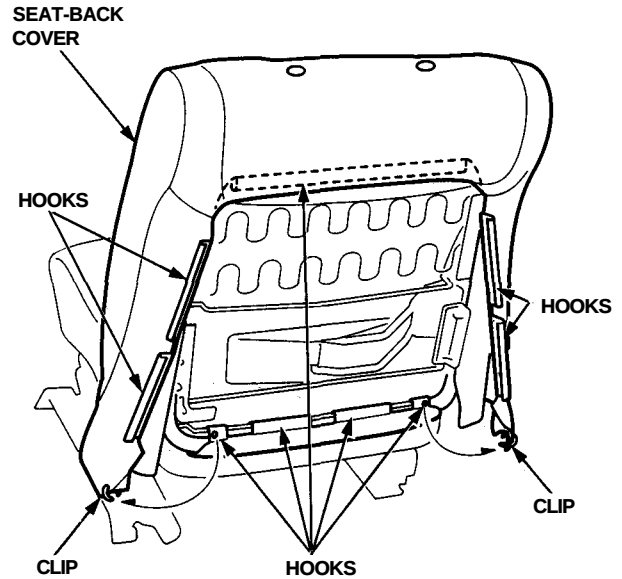
►: Screw location, 1



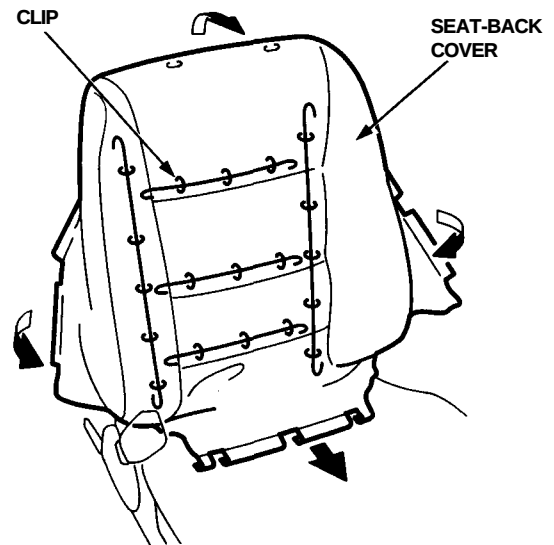
4. If so equipped, remove the lumbar support knob.



5. Loosen the seat-back cover by releasing all the hooks and the clip.



6. Pull back the edge of the seat-back cover all the way around, release the clips, and remove the seat-back cover.



7. Installation is the reverse of the removal procedure.

NOTE:

- To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hooks and clip.
- Replace the released clips with new ones.



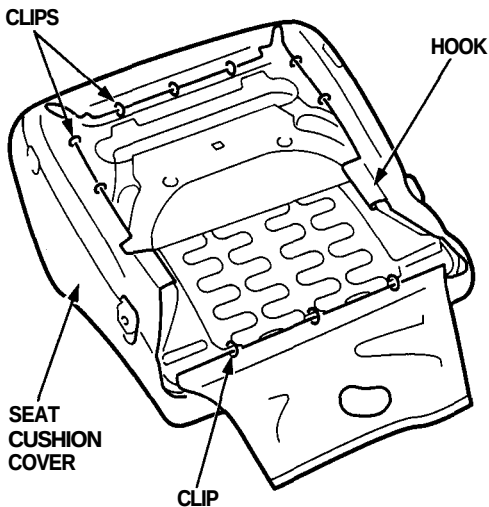
Seat cushion cover removal:

1. Remove the seat cushion (see page 20-74).

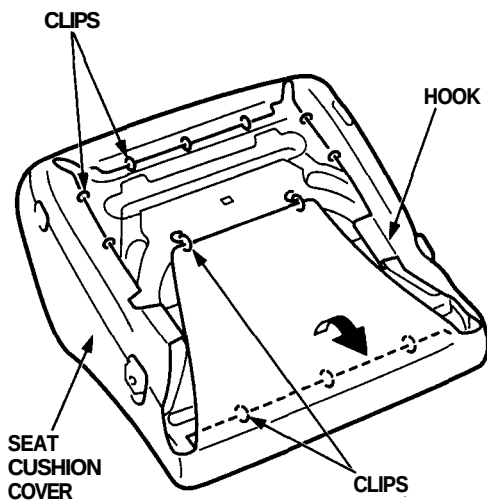
NOTE: Remove the seat harness from the seat cushion (fully power adjustable seat, see page 20-74).

2. Remove the clips and hooks from under the seat cushion, then loosen the seat cushion cover.

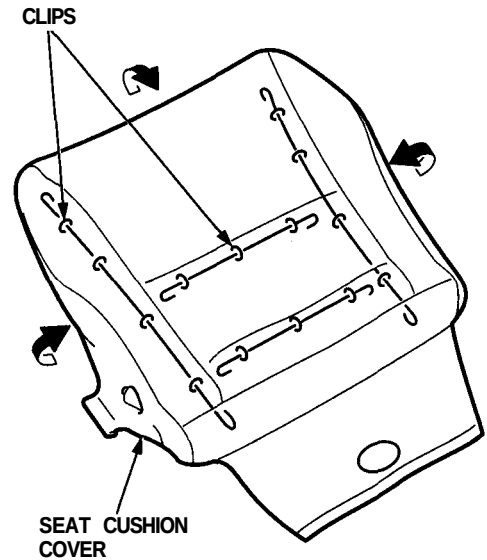
Fully power adjustable:



Manually adjustable:



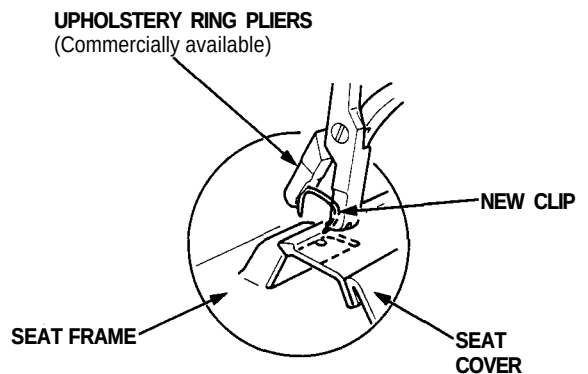
3. Pull back the edge of the seat cushion cover all the way around, release the clips, and remove the seat cushion cover.



4. Installation is the reverse of the removal procedure.

NOTE:

- To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips, hooks and inside springs.
- Replace the released clips with new ones.



Front Seat

Seat Tracks (Manually adjustable) Replacement

NOTE: Take care not to scratch the seat covers and body.

1. Remove the front seat through the door opening (see page [20-71](#)).
2. Remove:
 - Seat-back (see page [20-72](#))
 - Seat cushion (see page [20-74](#))
 - Seat belt buckle (see page [20-89](#))

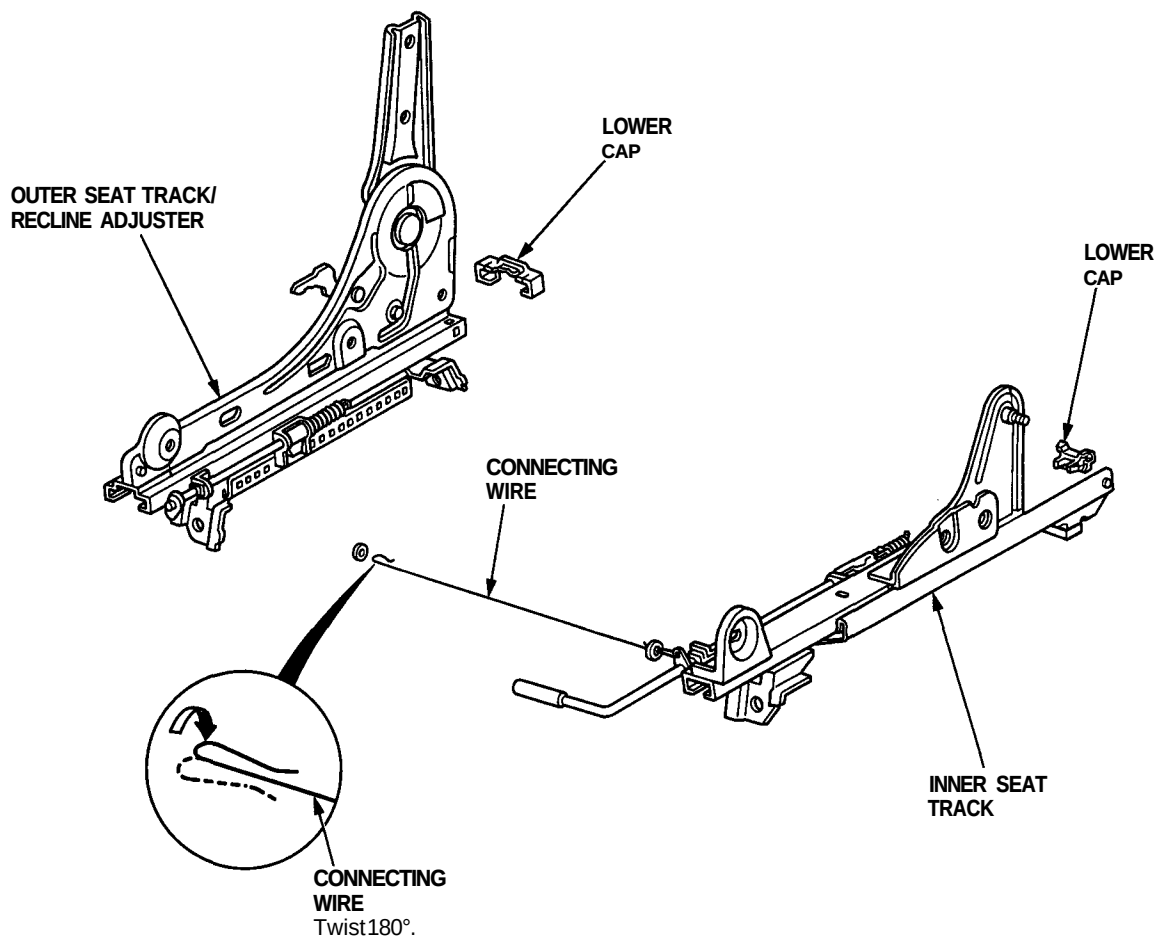
3. Disconnect the connecting wire from the seat track.

NOTE: Take care not to bend the connecting wire.

4. Installation is the reverse of the removal procedure.

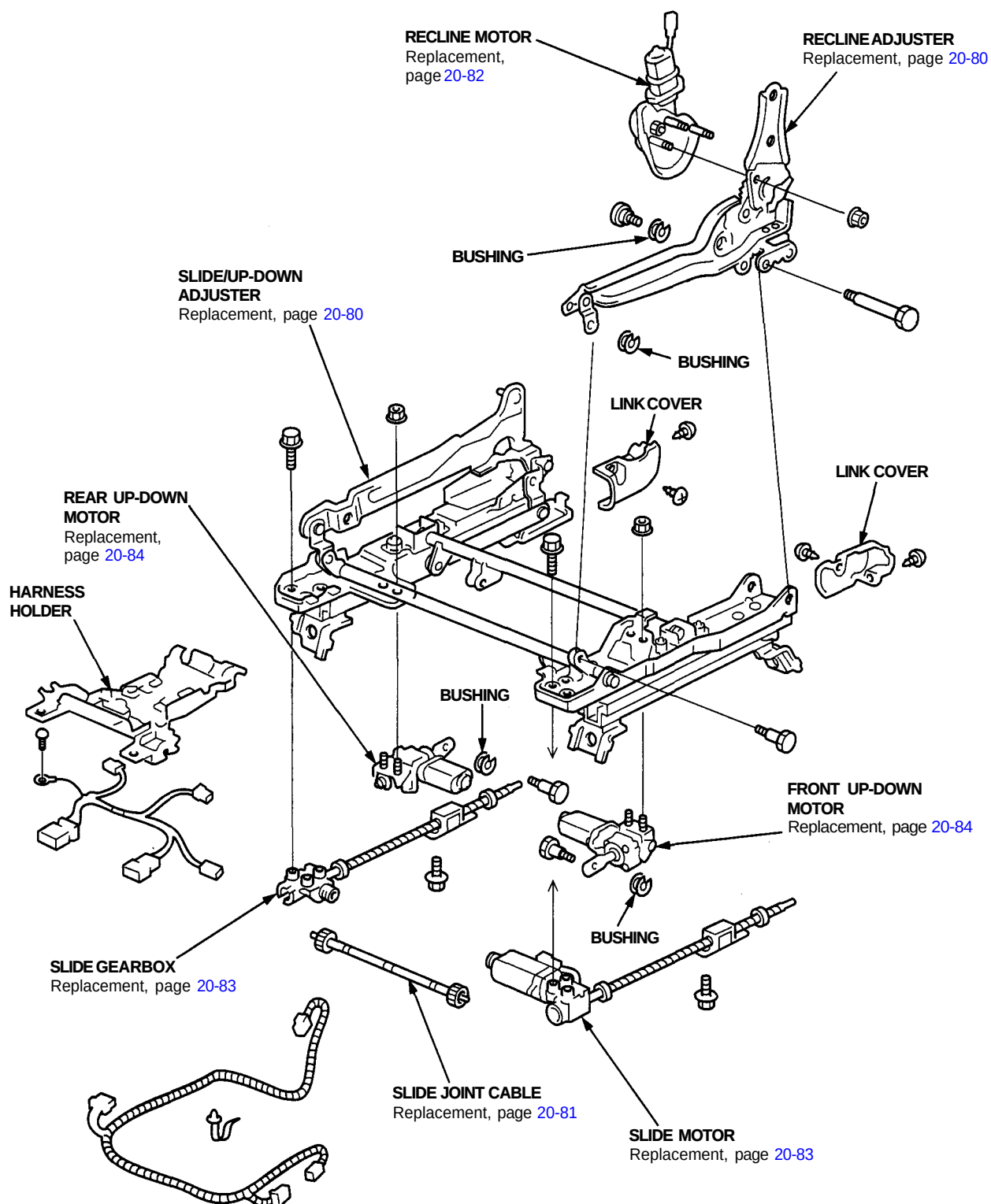
NOTE:

- Grease the sliding portion.
- Connect the connecting wire by twisting it 180° as shown.
- Check the seat track and recline adjuster operation.





Seat Linkage (Fully power adjustable) Index



Front Seat

Recline Adjuster, Slide/Up-down Adjuster Replacement

CAUTION: Wear gloves to remove and install the recline adjuster and slide/up-down adjuster.

NOTE:

- Take care not to scratch the seat covers and body.
- Before removing the front seat, raise the seat cushion to its front maximum height.

1. Remove the front seat through the door opening (see page 20-71).
2. Remove the seat-back and seat cushion (see pages 20-72, 20-74).
3. If necessary, remove the seat belt buckle (see page 20-89) and recline adjuster cover (see page 20-73).
4. Separate the recline adjuster and slide/up-down adjuster.

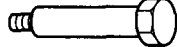
►: Bolt locations

A ►, 1



6 x 1.0 mm
5 N-m (0.5 kgf-m,
4 lbf-ft)

B ►, 1

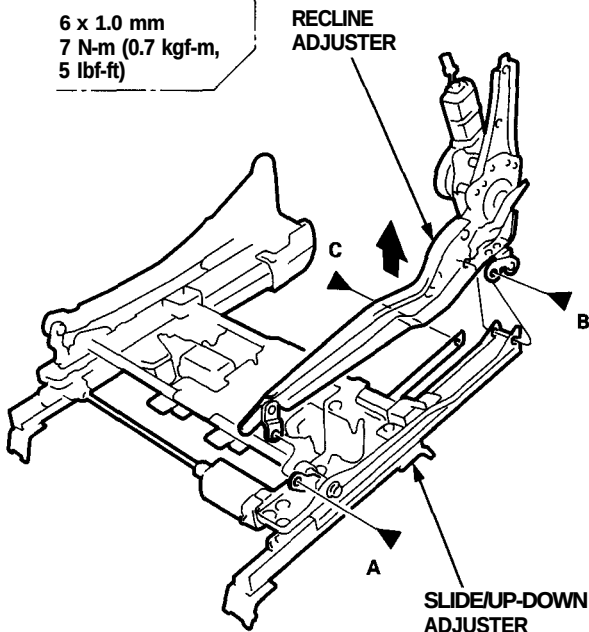


8 x 1.25mm
14 N-m (1.4 kgf-m,
10 lbf-ft)

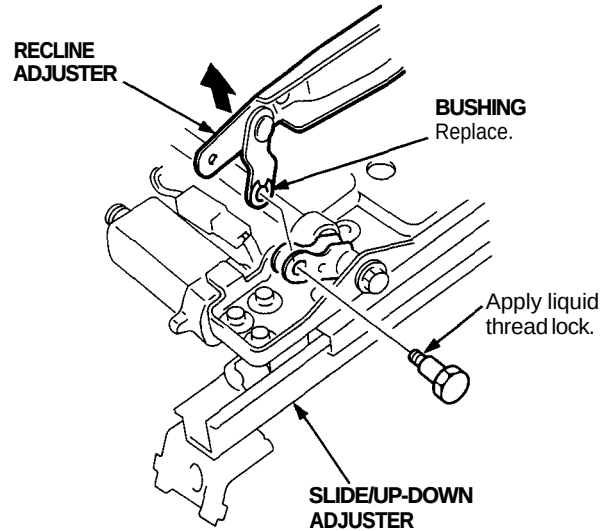
C ►, 1



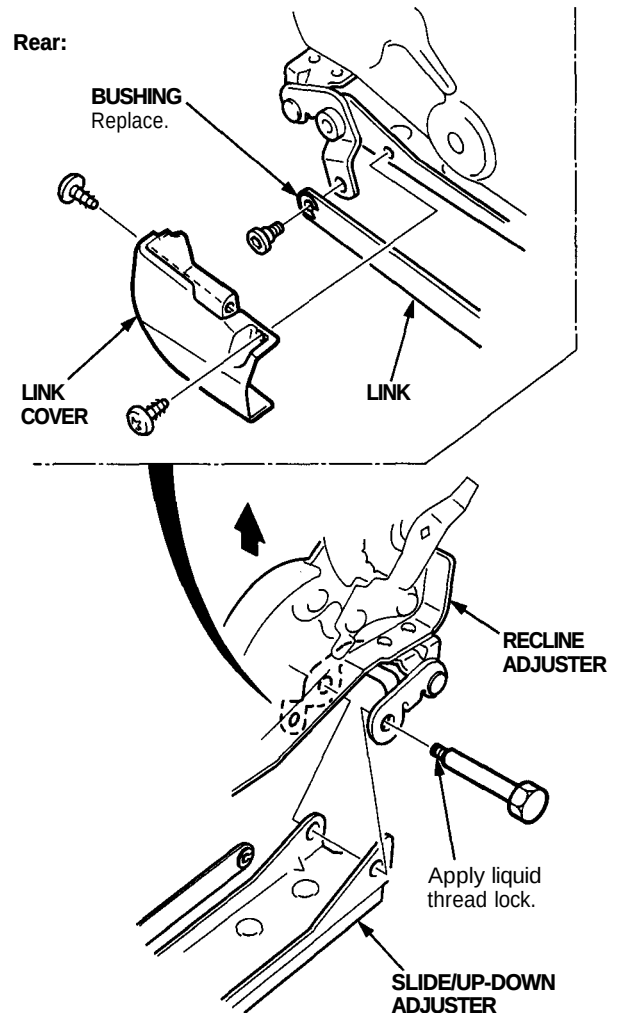
6 x 1.0 mm
7 N-m (0.7 kgf-m,
5 lbf-ft)



Front:



Rear:



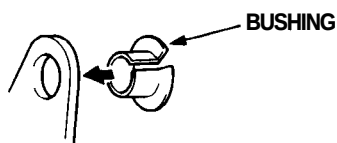


5. Installation is the reverse of the removal procedure.

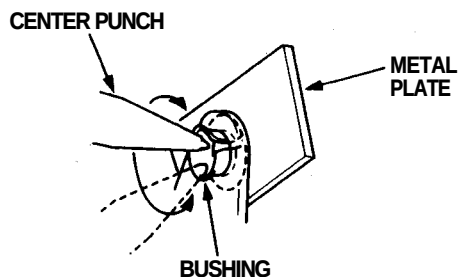
NOTE:

- Replace the bushings with new ones as follows.

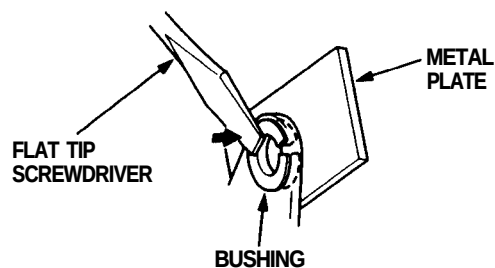
- a. Install the bushing.



- b. Hold the bushing down against a metal plate, then flare the edge of the bushing using a center punch as shown.



- c. Flatten the bushing using a flat tip screwdriver as shown.



- Check the recline adjuster and slide/up-down adjuster operations.



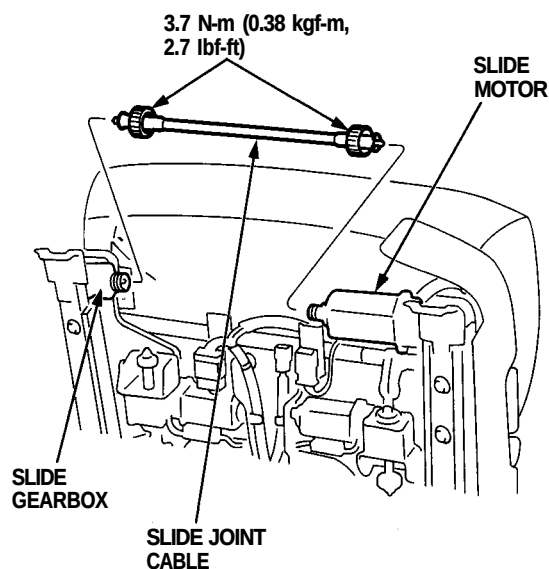
Side Joint Cable Replacement

CAUTION: Wear gloves to remove and install the slide joint cable.

NOTE: Take care not to scratch the seat covers.

1. Remove the front seat, then lay it on its back (see page [20-71](#)).
2. Remove the slide joint cable.

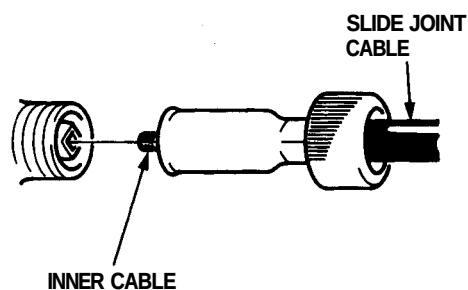
NOTE: Take care not to bend the slide joint cable.



3. Installation is the reverse of the removal procedure.

NOTE:

- When installing the slide joint cable, set the inner cable securely.



- Check that the slide motor and slide gearbox operate properly.

Front Seat

Recline Motor Replacement

CAUTION: Wear gloves to remove and install the recline motor.

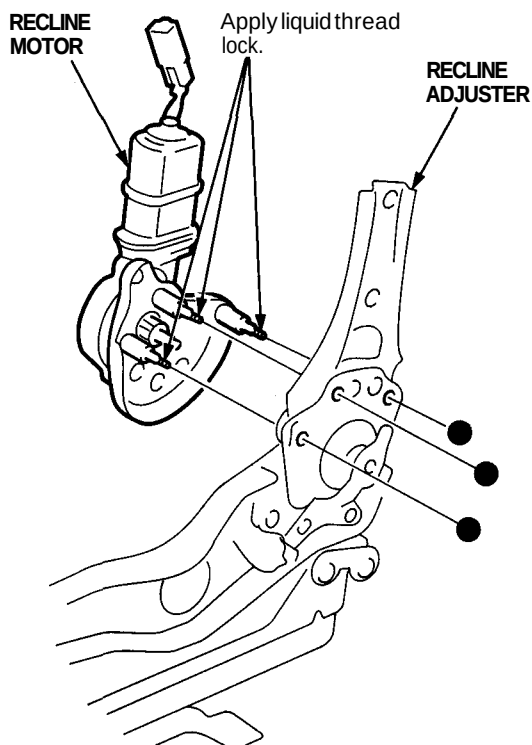
NOTE: Take care not to scratch the seat covers.

1. Remove the front seat through the door opening (see page 20-71).
2. Remove:
 - Seat-back (see page 20-72)
 - Seat cushion (see page 20-74)
 - Recline adjuster cover (see page 20-73)
3. Remove the recline motor.

●: Nut locations, 3



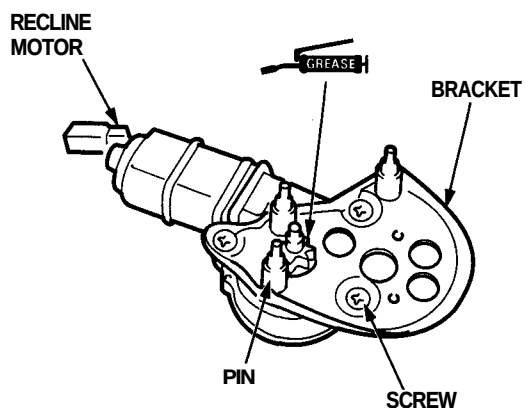
5 x 0.8 mm
3 N·m (0.3 kgf-m,
21 lbf-ft)



4. Installation is the reverse of the removal procedure.

NOTE:

- Before installing the recline motor, apply grease (molybdenum grease) to the gear portion.
- Replace the recline motor, bracket, pin and screw as an assembly.
- Make sure the connector is connected properly.
- Check the recline adjuster operation.





Slide Motor, Slide Gearbox Replacement

CAUTION: Wear gloves to remove and install the slide motor and slide gearbox.

NOTE:

- Take care not to scratch the seat cover.
- To remove the slide motor and slide gearbox, slide the front seat backward fully, and raise the seat cushion to its front maximum height.

1. Remove the front seat through the door opening (see page 20-71).
2. Remove the recline cover (see page 20-72).
3. Remove the slide joint cable (see page 20-81).
4. Disconnect the slide motor connector.
5. Remove the bolts from each side.

►: Bolt locations

A ►, 6



6 x 1.0 mm
8 N-m (0.8 kgf-m,
6 lbf-ft)

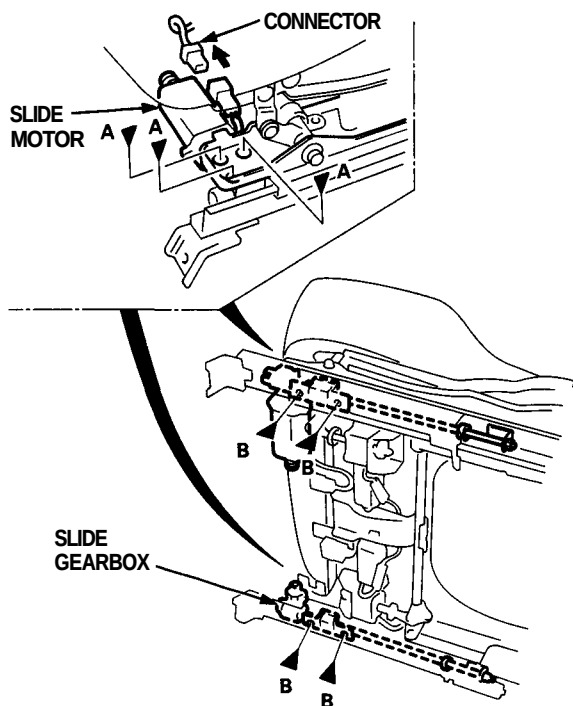
Apply liquid thread lock.

B ►, 4



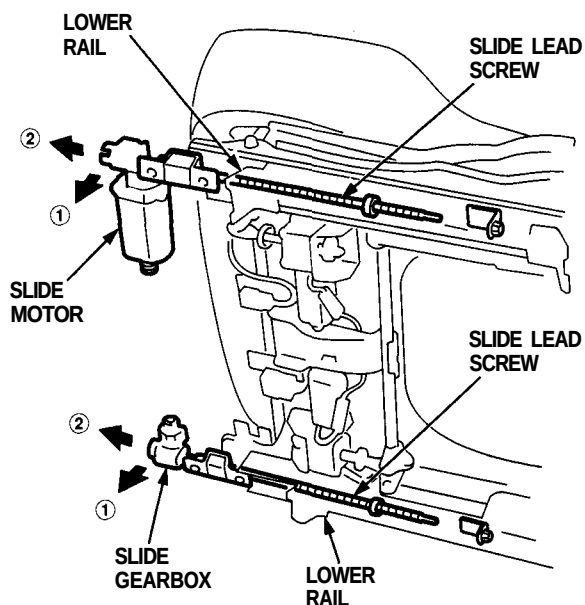
6 x 1.0 mm
9 N-m (0.9 kgf-m,
7 lbf-ft)

Apply liquid thread lock.



6. Remove the slide motor and slide gearbox while moving the lower rails.

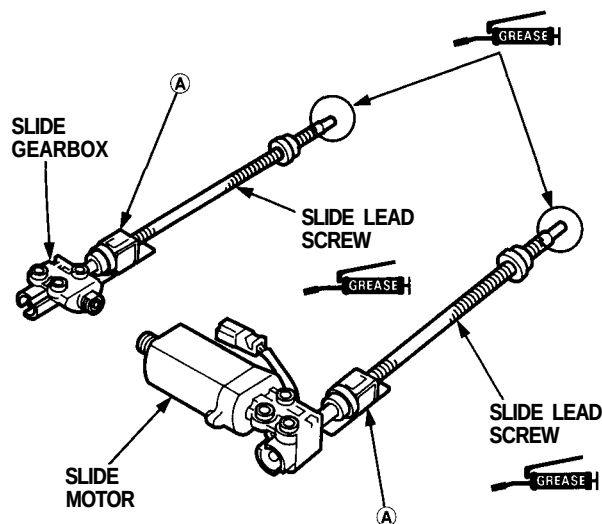
NOTE: Take care not to damage the slide lead screws.



7. Installation is the reverse of the removal procedure.

NOTE:

- Before installing the slide motor and slide gearbox, grease the slide lead screws as shown.
- Before installing the slide motor and slide gearbox, align portion A as shown.
- Check the slide lead screw for bending.

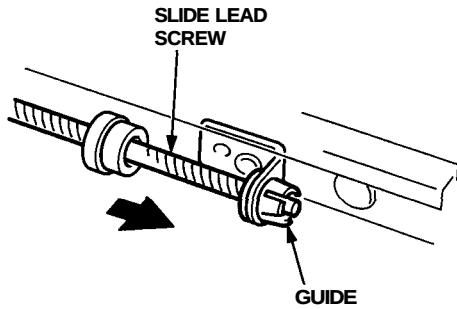


(cont'd)

Front Seat

Slide Motor, Slide Gearbox Replacement (cont'd)

- When installing the slide motor and slide gearbox, make sure the end of the slide lead screw is positioned properly.



- When installing the slide joint cable, engage the inner cable securely.
- Make sure the slide motor connector is connected properly.
- Check the slide motor and slide gearbox operations.

Front Seat

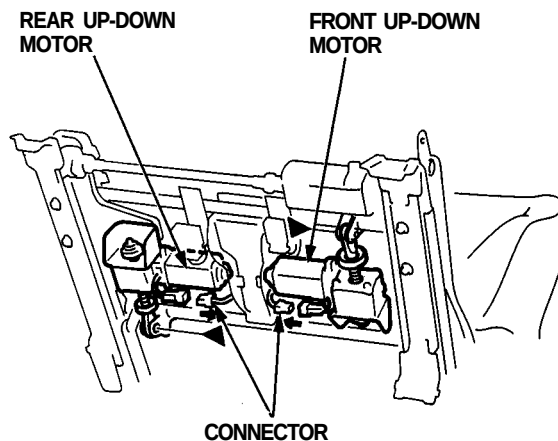
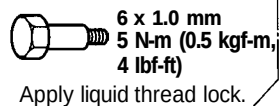
Front and Rear Up-down Motors Replacement

CAUTION: Wear gloves to remove and install the front and rear up-down motors.

NOTE:

- Take care not to scratch the seat covers.
 - Before removing the front seat, raise the seat cushion to its maximum height.
1. Remove the front seat through the door opening (see page 20-71).
 2. Remove the seat cushion (see page 20-74).
 3. From under the seat linkage, disconnect the front and rear up-down motor connectors, and remove the bolts.

►: Bolt locations, 2



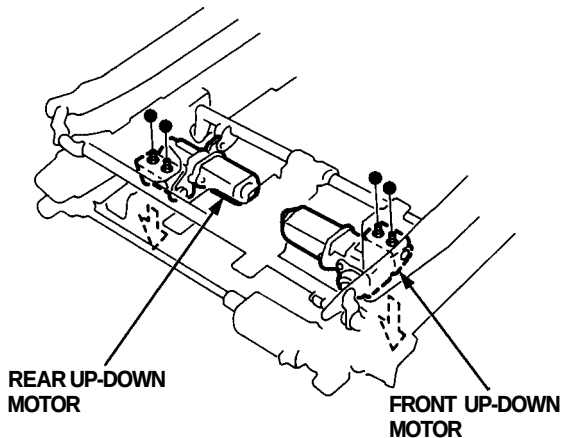


4. From the top of the seat linkage, remove the nuts, then remove the front and rear up-down motors by pulling them down.

●: Nut locations, 4



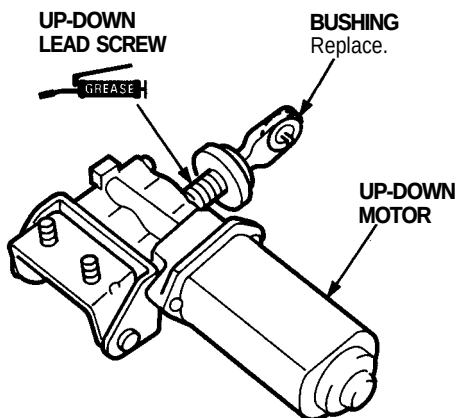
8 x 1.25 mm
14 N·m (1.4 kgf-m,
10 lbf-ft)



5. Installation is the reverse of the removal procedure.

NOTE:

- Before installing the front and rear up-down motors, grease the up-down lead screws.
- Check the up-down lead screw for bending.
- Replace the bushings with new ones as described on page [20-81](#).
- Make sure the connectors are connected properly.
- Check the front and rear up-down motors operations.



(cont'd)



Rear Seat

Removal

NOTE: Take care not to scratch the seat covers and body.

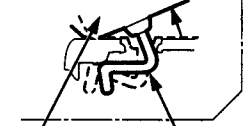
1. Remove the seat cushion.

►: Bolt location, 1



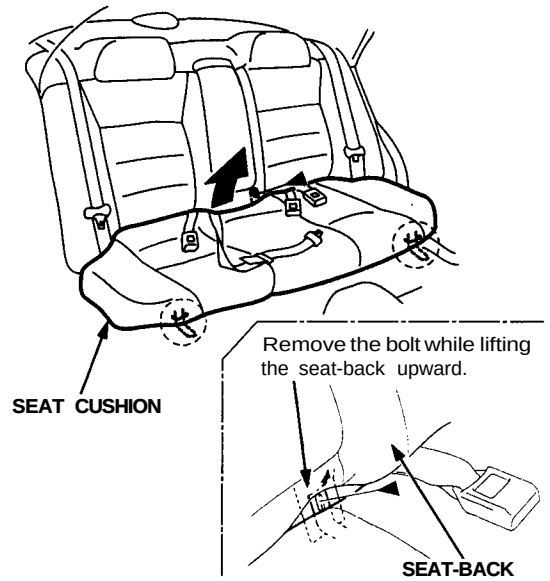
6 x 1.0 mm
9.8 N-m
(1.0 kgf-m,
7.2 lbf-ft)

○: Hook locations, 2



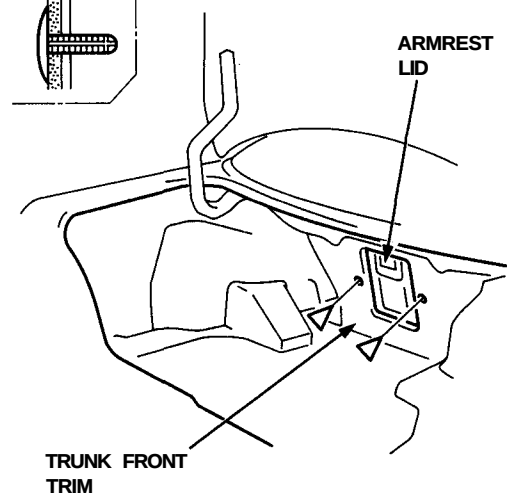
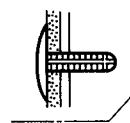
SEAT CUSHION

HOOK



2. Open the trunk lid, then remove the clips.

▷: Clip locations, 2



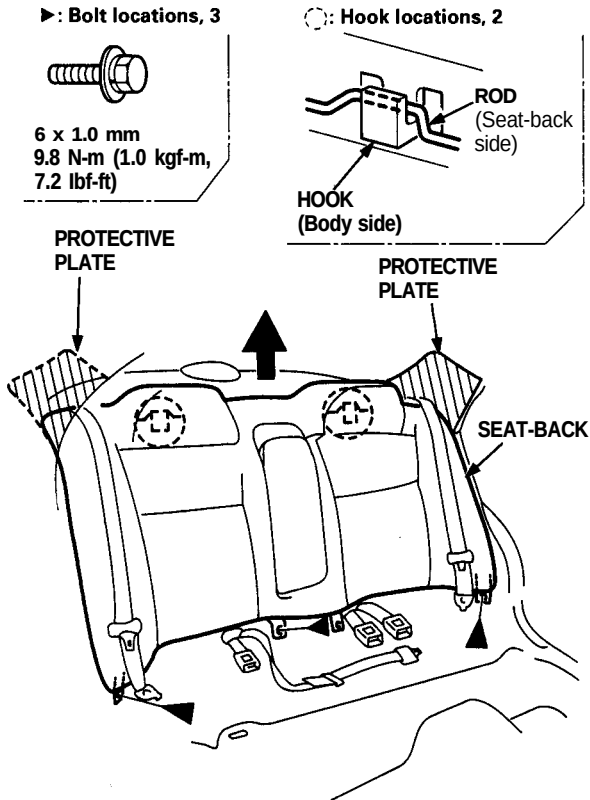
(cont'd)

Rear Seat

Removal (cont'd)

3. Remove the seat-back by lifting it upward.

CAUTION: Use protective plates on the bottom of the rear pillar trim.



4. Installation is the reverse of the removal procedure.

NOTE: Before attaching the seat-back and seat cushion, make sure there are no twists or kinks in the rear seat belts and center belts.

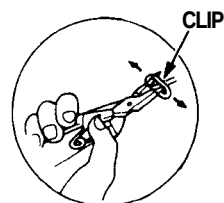
Rear Seat

Seat Cover Replacement

CAUTION: Wear gloves to remove and install the seat covers.

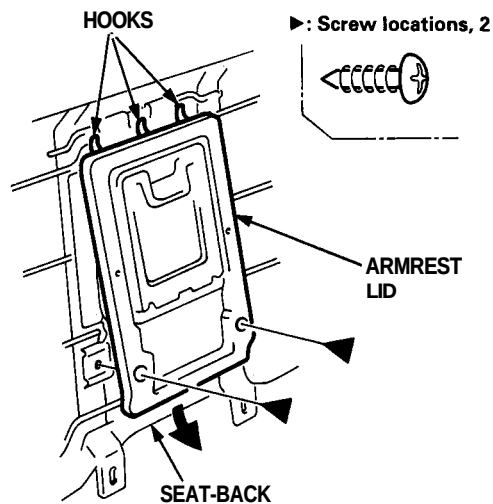
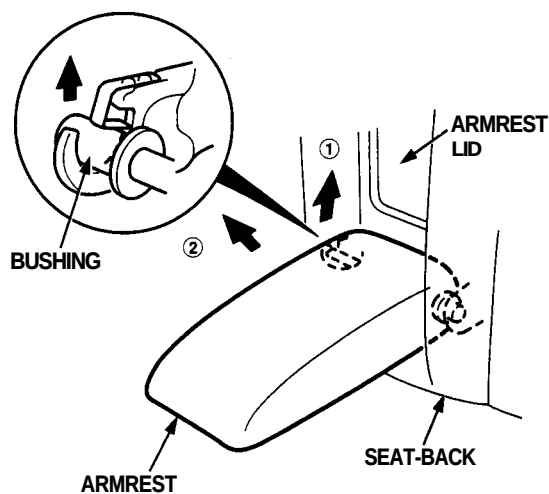
NOTE:

- Take care not to tear the seams or damage the seat covers.
- Remove the clips as shown.



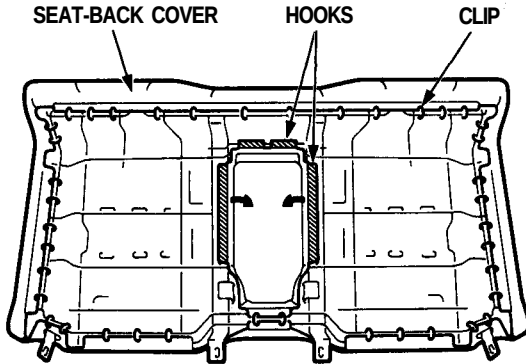
Seat-back cover removal:

1. Remove the seat-back (see page 20-85).
2. Remove the armrest and armrest lid.

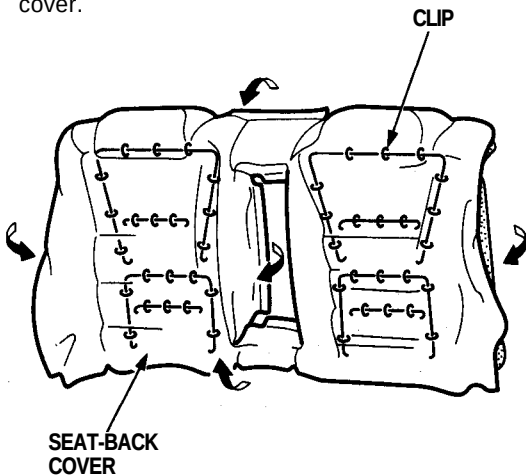




3. Loosen the seat-back cover by releasing all the clips and hooks.



4. Pull back the edge of the seat-back cover all the way around, release the clips, and remove the seat-back cover.



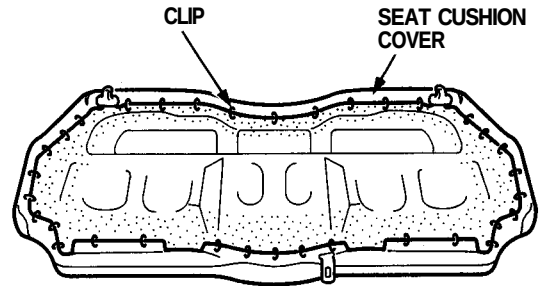
5. Installation is the reverse of the removal procedure.

NOTE:

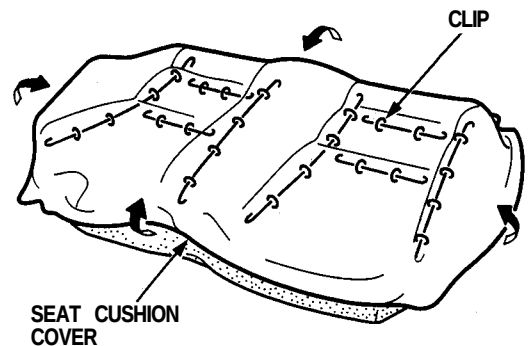
- To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hooks and clips.
- Replace the released clips with new ones.

Seat cushion cover removal:

1. Remove the seat cushion (see page 20-85).
2. Loosen the seat cushion cover by releasing all the clips.



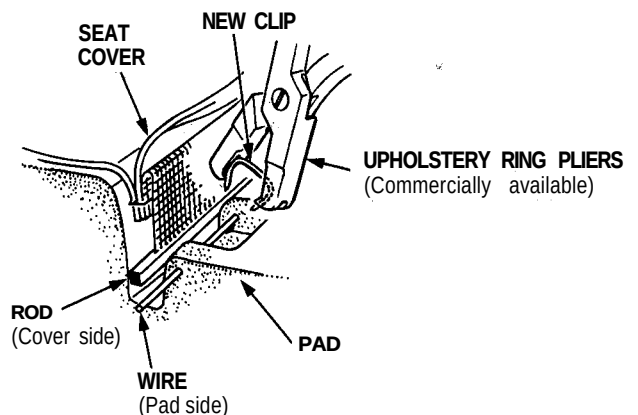
3. Pull back the edge of the seat cushion cover all the way around, release the clips, and remove the seat cushion cover.



4. Installation is the reverse of the removal procedure.

NOTE:

- To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips.
- Replace the released clips with new ones.



Seat Belt

Inspection

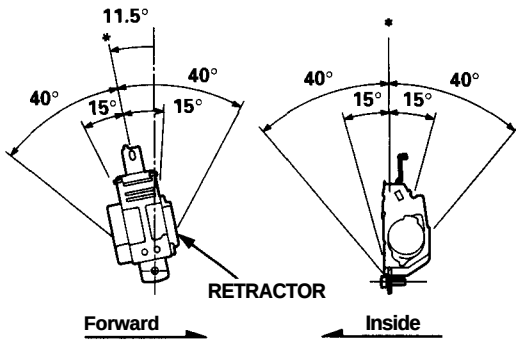
Retractor Inspection

1. Before installing the retractor, check that the seat belt can be pulled out freely.
2. Make sure that the seat belt does not lock when the retractor is leaned slowly up to 15° from the mounted position. The seat belt should lock when the retractor is leaned over 40°.

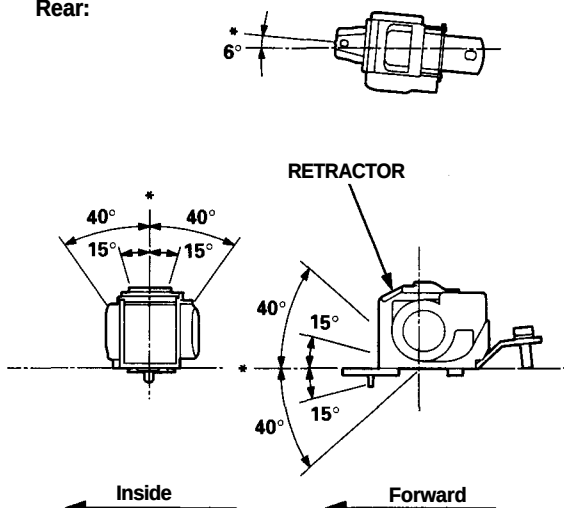
CAUTION: Do not attempt to disassemble the retractor.

Front:

*: Mounted Position



Rear:



3. Replace the seat belt with a new one if there is any abnormality.

On-the-Car Seat Belt Inspection

1. Check that the seat belt is not twisted or caught on anything.
2. After installing the anchors, check for free movement on the anchor bolts. If necessary, remove the anchor bolts and check that the washers and other parts are not damaged or improperly installed.
3. Check the seat belts for damage or discoloration. Clean with a shop towel if necessary.

CAUTION: Use only soap and water to clean.

NOTE: Dirt build-up in the metal loops of the upper anchors can cause the seat belts to retract slowly. Wipe the inside of the loops with a clean cloth dampened in isopropyl alcohol.

4. Check that the seat belt does not lock when pulled out slowly. The seat belt is designed to lock only during a sudden stop or impact.
5. Make sure that the seat belt will retract automatically when released.
6. For each passenger's seat belt, make sure that the locking mechanism in the seat belt retractor will engage when the seat belt is pulled all the way out.
7. Replace the seat belt with a new one if there is any abnormality.

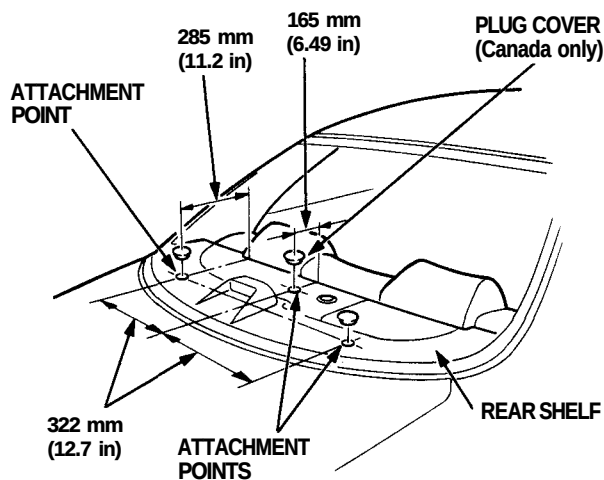


Child Seat Anchor Plate

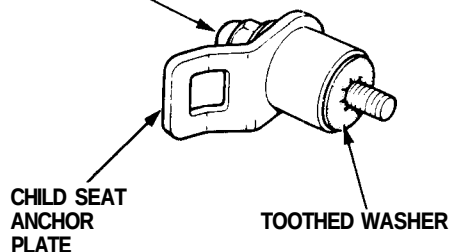
Attachment points are provided for a rear seat mounted child restraint system which uses a top tether. The attachment points are located on the rear shelf, just behind the rear seat-back. When using a child seat with a top tether, install the child seat anchor plates securely.

NOTE:

- Remove the plug covers from the attachment points of the rear shelf (Canada).
- Use a razor blade or sharp knife to carefully cut a 1 inch diameter circle at the location of the attachment point (USA).



8 x 1.25 mm
22 N-m (2.2 kgf-m, 16 lbf-ft)



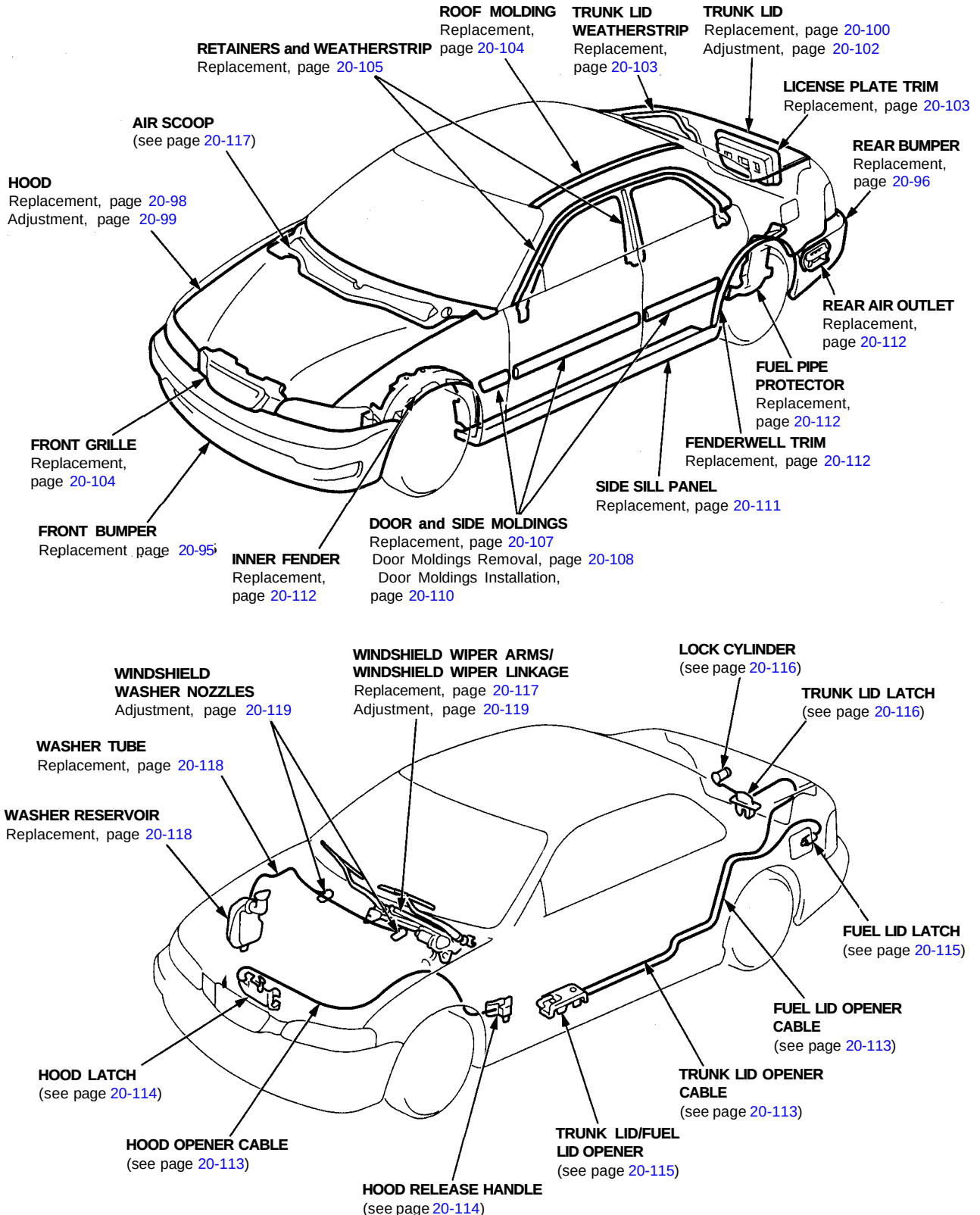
NOTE:

- Do not remove the toothed washer from the child seat anchor plate. Use the child seat anchor plate with the toothed washer attached to it.
- When installing a child seat on the rear seat, follow the instructions of the manufacturer of the child seat.
- Additional anchor plates are available.

⚠ WARNING Do not use the child seat anchor plate for any other purpose; it is designed exclusively for installation of a child seat.

Exterior/Opener Cable/Opener and Latch/Wiper and Washer

Component Location Index





Front Bumper

Replacement

CAUTION: Wear gloves to remove and install the front bumper.

NOTE:

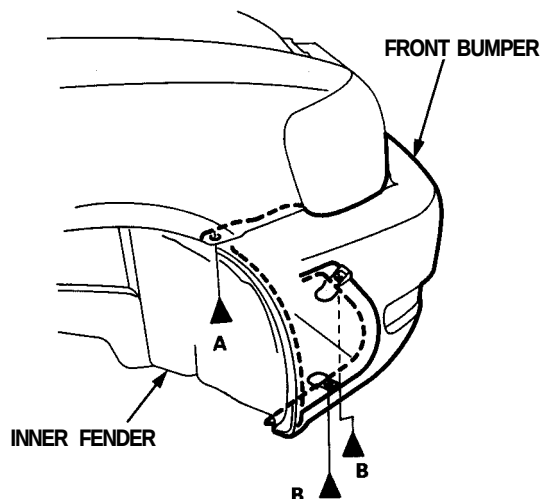
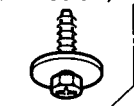
- An assistant is helpful when removing the front bumper.
- Take care not to scratch the front bumper and body.
- Open the hood.

1. Remove the front grille (see page 20-104).
2. Remove the bolts and screw from each side.

►: Bolt, screw locations

A ►: Screw, 2

B ►: Bolt, 4

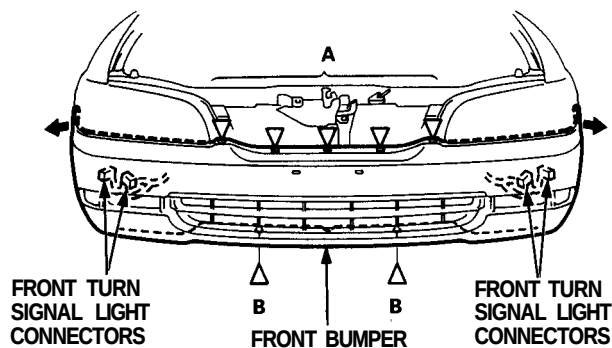
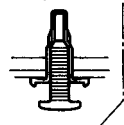
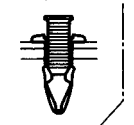


3. Remove the clips. Remove the front bumper, then disconnect the connectors.

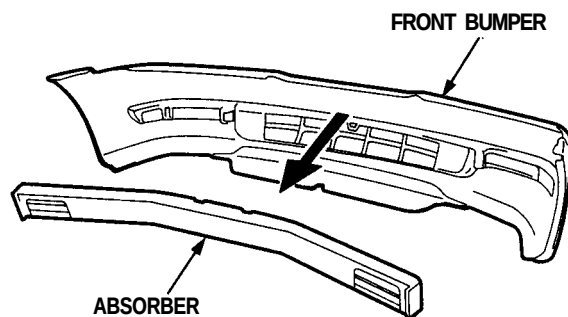
▷: Clip locations

A ▷, 5

B ▷, 2



4. Remove the absorber from the front bumper.



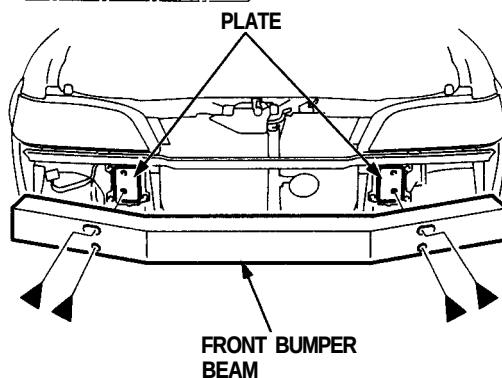
5. Remove the front bumper beam.

►: Bolt locations, 4



8 x 1.25 mm
22 N-m (2.2 kgf-m,
16 lbf-ft)

**CORROSION RESISTANT
BOLT**

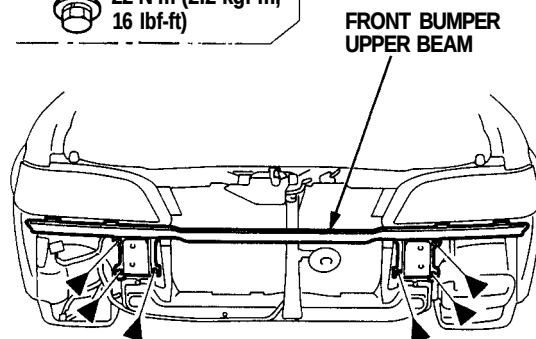


6. Remove the front bumper upper beam.

►: Bolt locations, 6



8 x 1.25 mm
22 N-m (2.2 kgf-m,
16 lbf-ft)



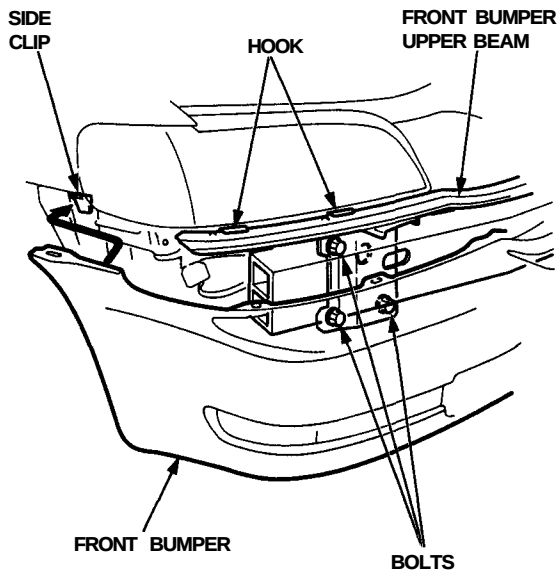
(cont'd)

Front Bumper

Replacement (cont'd)

7. Installation is the reverse of the removal procedure.

NOTE: Align the front bumper with the front fender and headlight properly, then tighten the bolts.



Rear Bumper

Replacement

CAUTION: Wear gloves to remove and install the rear bumper.

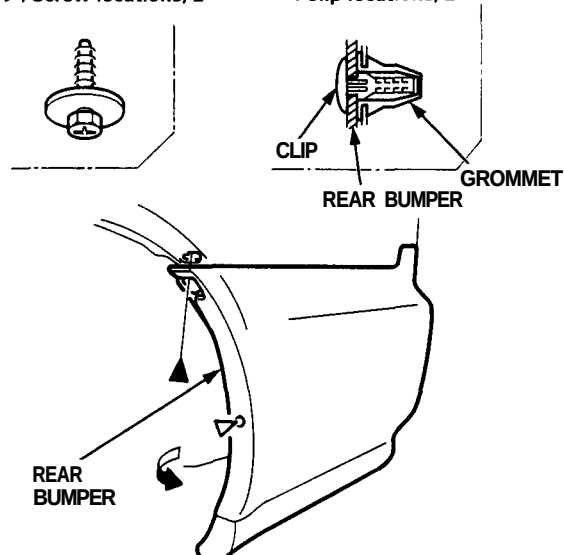
NOTE:

- An assistant is helpful when removing the rear bumper.
- Take care not to scratch the rear bumper and body.
- Open the trunk lid.

1. Remove the screws and clip from each side.

▷: Screw locations, 2

▷: Clip locations, 2

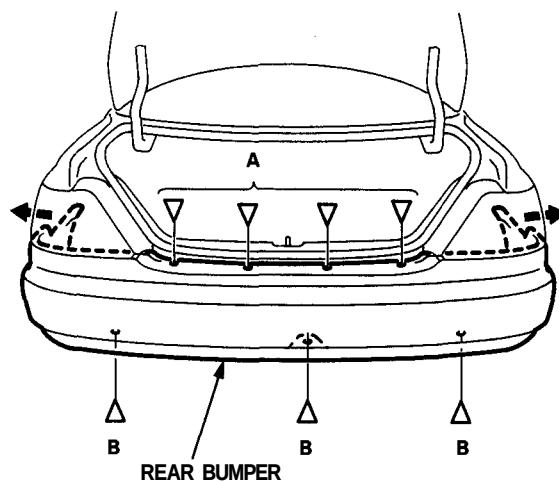
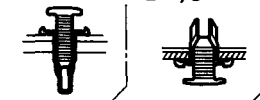


2. Remove the clips, then remove the rear bumper.

▷: Clip locations

A ▷, 4

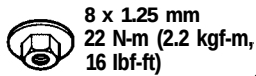
B ▷, 3



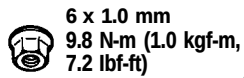


3. Pull the trunk side trim back, then remove the nut from the trunk area on each side.
4. Remove the nuts from under the rear floor on each side, then remove the absorber and rear bumper beam. Remove the nuts, then remove the rear bumper upper beam.

●: Nut locations
A ●, 4

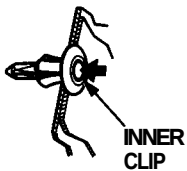


B ●, 4

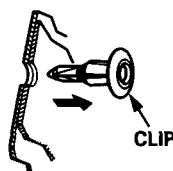


▷: Clip locations, 4

-1) Push the inner clip.
NOTE: Do not push it in too far.



-2) Detach the clip by pulling it.

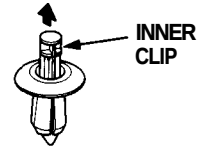


5. Installation is the reverse of the removal procedure.

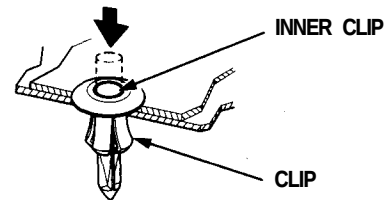
NOTE:

- If necessary, replace any damaged clips.
- When installing the trunk side trim, install the clips as follows.

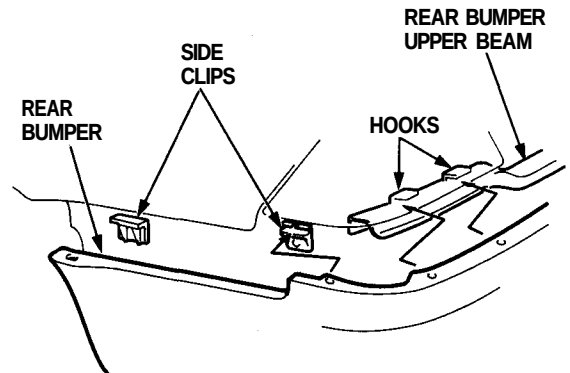
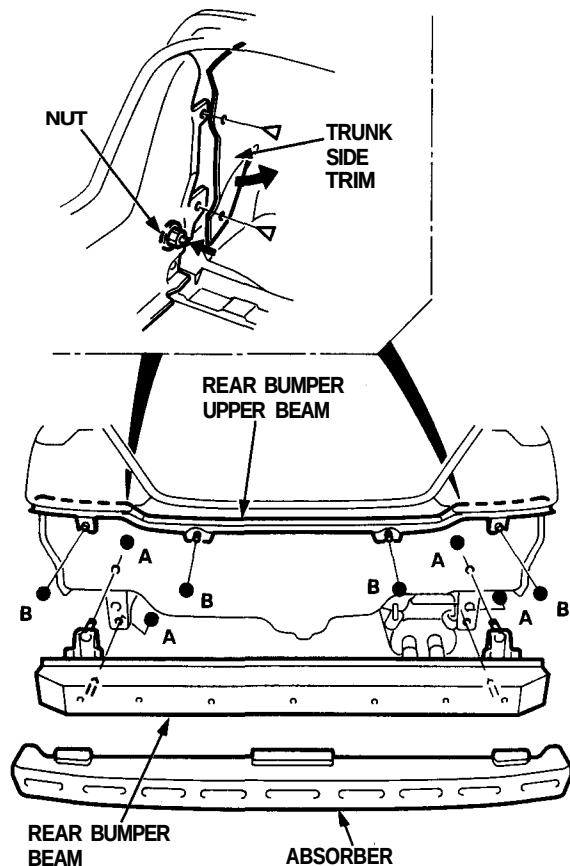
- a. Pull the inner clip up as shown.



- b. Install the clip in the trunk side trim, then push the inner clip until it's flush.



- Make sure the rear bumper engages the side clips and hooks on each side securely.



Hood

Replacement

NOTE:

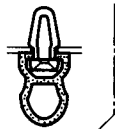
- An assistant is helpful when removing the hood.
- Take care not to damage the hood and body.
- When removing the clips, use a clip remover.
- Open the hood.

1. If necessary, remove the hood edge protector and hood insulator.

▷: Clip locations
A ▷, 21



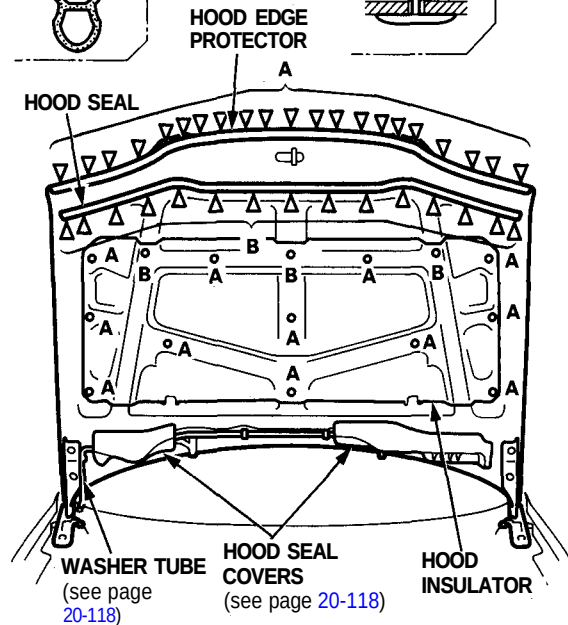
B ▷, 15



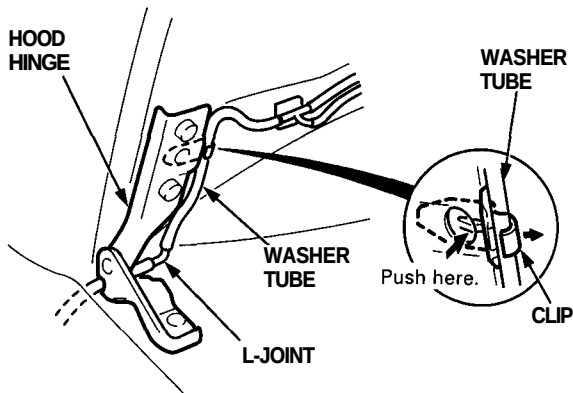
○: Clip locations
A ○, 12



B ○, 3



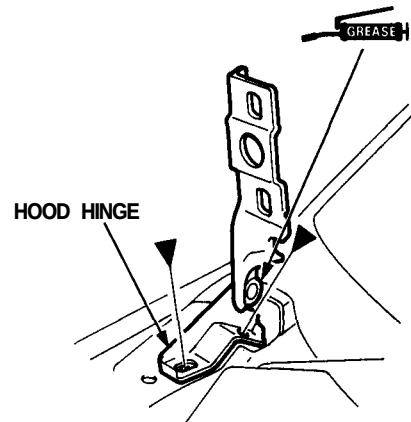
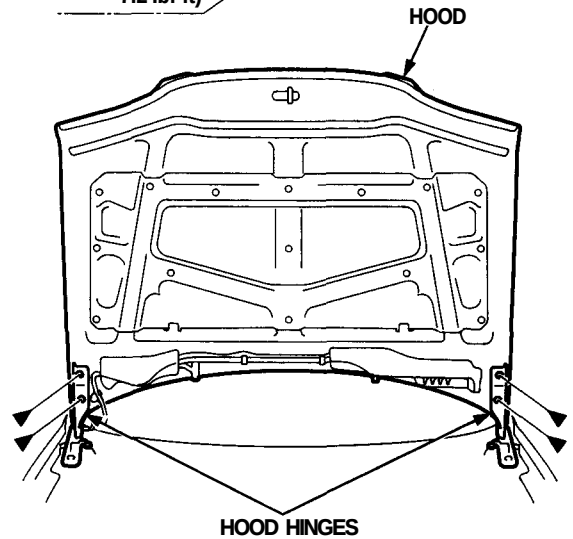
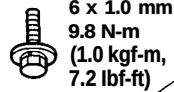
2. Disconnect the washer tube at the L-joint, and detach the clip from the hood hinge.



3. Remove the hood.

NOTE: If necessary, remove the hood hinge.

▷: Bolt locations, 4



4. Installation is the reverse of the removal procedure.

NOTE:

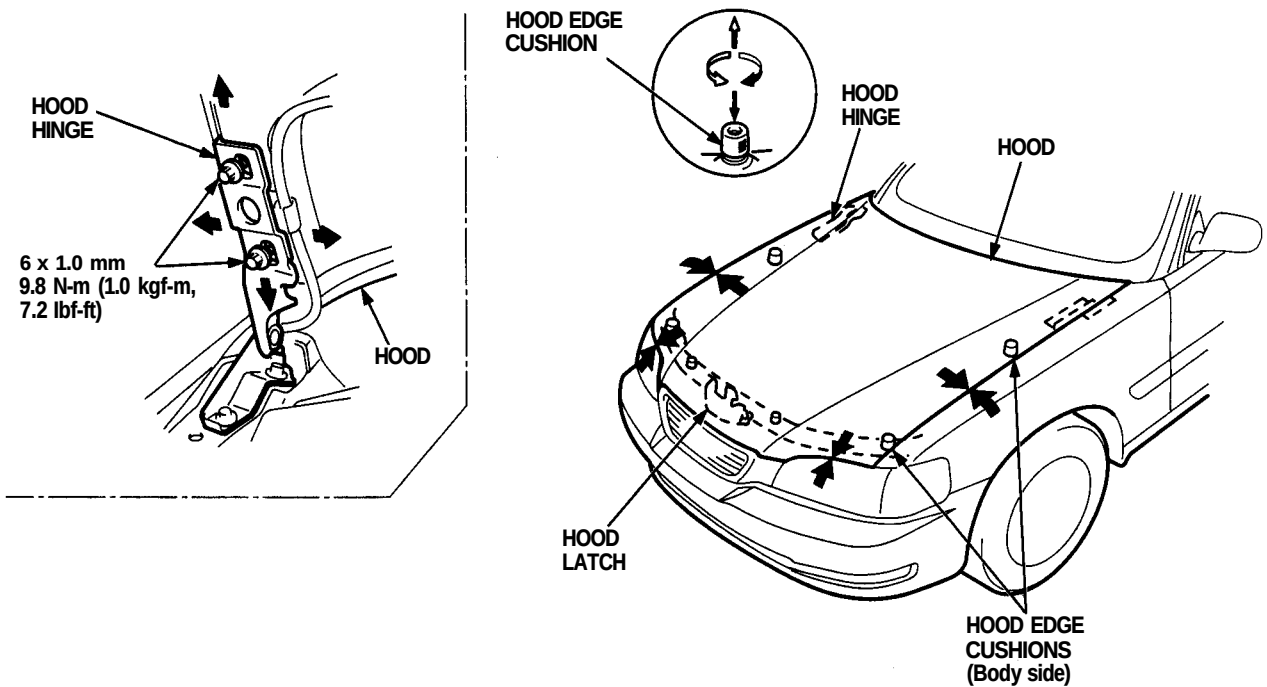
- If necessary, replace any damaged clips.
- Make sure the hood locks securely.
- Make sure the hood opens properly.
- Adjust the hood alignment.
- Adjust the aim of the windshield washer nozzles (see page 20-119).



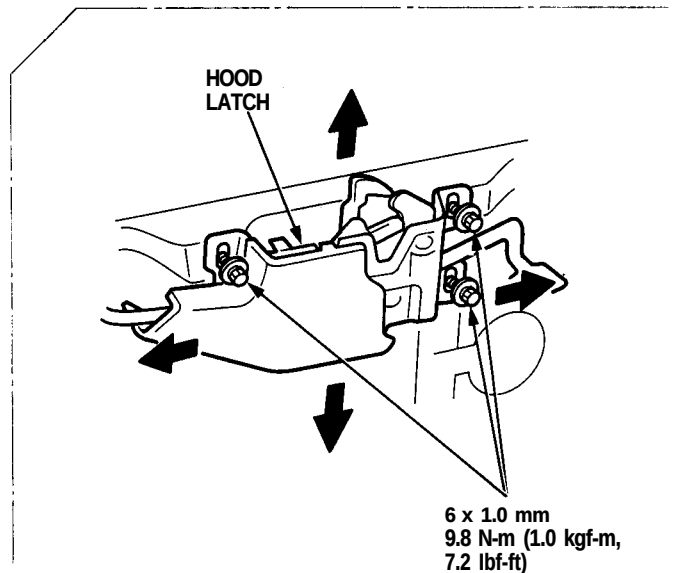
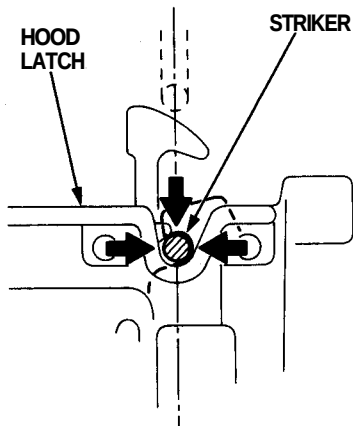
Adjustment

NOTE: Before adjusting the hood, loosen each bolt slightly.

1. Adjust the hood hinges right and left, as well as fore and aft, by using the elongated holes.
2. Turn the hood edge cushions, as necessary, to make the hood fit flush with the body at front and side edges.
3. Adjust the hood latch to obtain the proper height at the forward edge.
4. After adjustment, tighten each bolt securely.



NOTE: Move the hood latch right or left until the striker is centered in the hood latch as shown.



Trunk Lid

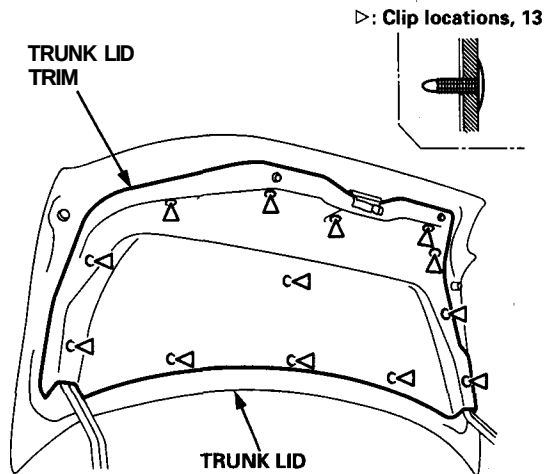
Replacement

CAUTION: Wear gloves to remove and install the trunk lid.

NOTE:

- An assistant is helpful when removing and installing the trunk lid.
- Take care not to damage the trunk lid and body.
- Take care not to scratch the trunk lid trim.
- Open the trunk lid.

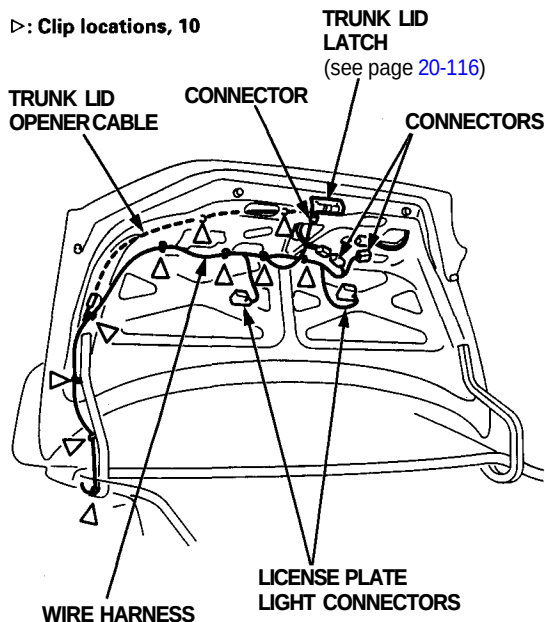
1. Remove the trunk lid trim.



2. Disconnect the connectors and trunk lid opener cable. Remove the wire harness and trunk lid opener cable from the trunk lid.

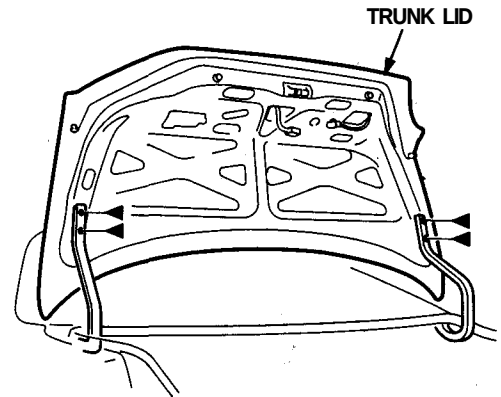
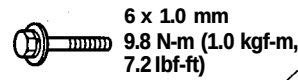
NOTE: Before pulling out the opener cable, tie a string to the end of it so you can pull it back in when the trunk lid is reinstalled.

▷: Clip locations, 10

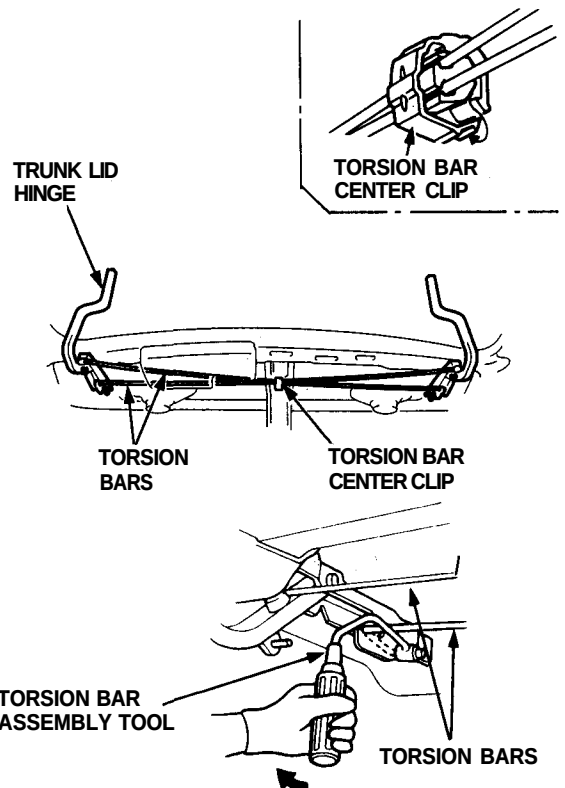


3. Remove the bolts, then remove the trunk lid.

▷: Bolt locations, 4



4. If necessary, remove the trunk lid hinge as follows.
 - a. Remove the rear shelf (see page 20-59).
 - b. Remove the torsion bars with the torsion bar assembly tool.





- c. Remove the bolts, then remove the trunk lid hinge.

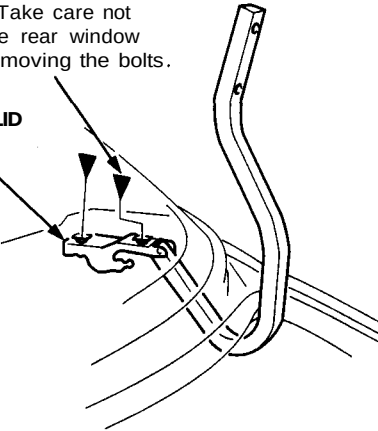
►: Bolt locations, 4



6 x 1.0 mm
9.8 N-m (1.0 kgf-m,
7.2 lbf-ft)

NOTE: Take care not to hit the rear window when removing the bolts.

TRUNK LID
HINGE



5. Installation is the reverse of the removal procedure.

NOTE:

- Make sure the connectors are connected properly.
- Adjust the torsion bars fore or aft with the torsion bar assembly tool as shown.



○ = Normal position
● = Higher tension

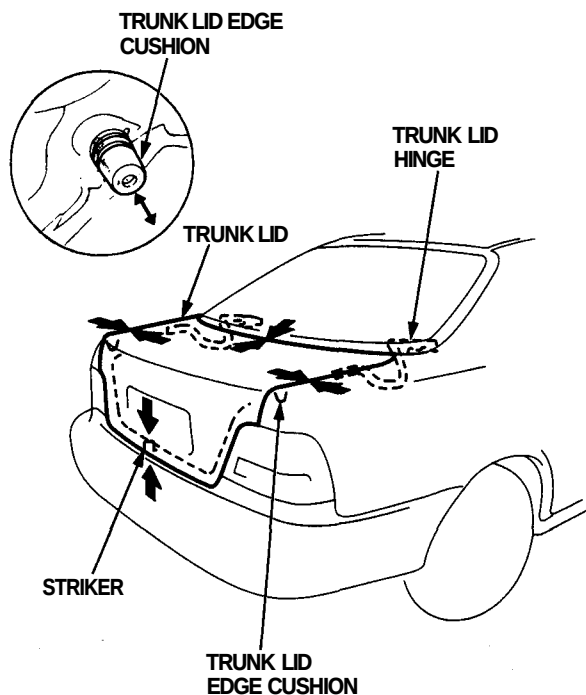
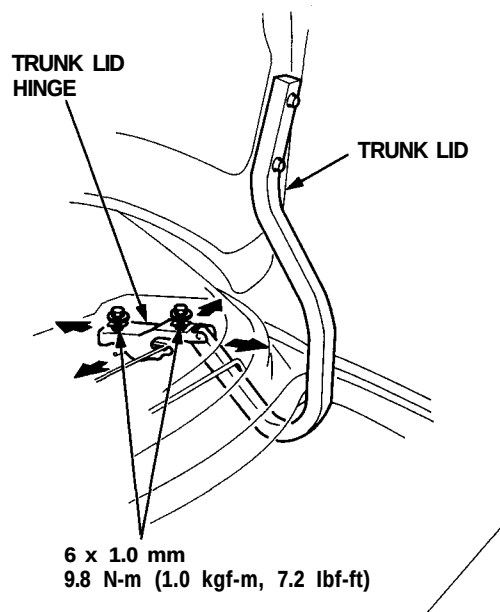
- Make sure the trunk lid locks securely.
- Make sure the trunk lid opens properly.
- Adjust the trunk lid alignment (see page [20-102](#)).

Trunk Lid

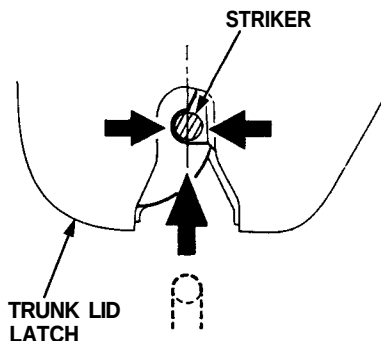
Adjustment

NOTE: Before adjusting the trunk lid, loosen each bolt slightly.

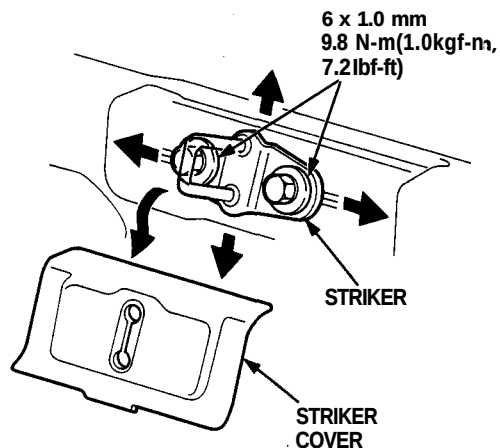
1. Adjust the trunk lid hinges right and left, as well as fore and aft, by using the elongated holes.
2. Turn the trunk lid edge cushions, as necessary, to make the trunk lid fit flush with the body at the rear and side edges.
3. Adjust the fit between the trunk lid and the trunk lid opening by moving the striker.
4. After adjustment, tighten each bolt securely.



NOTE: Move the striker right or left until it's centered in the trunk lid latch as shown.



NOTE: When adjusting the striker, remove the rear trim panel (see page 20-61), then remove the striker cover.





TrunkLidWeatherstrip

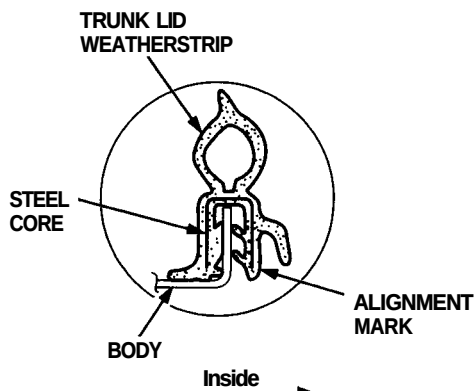
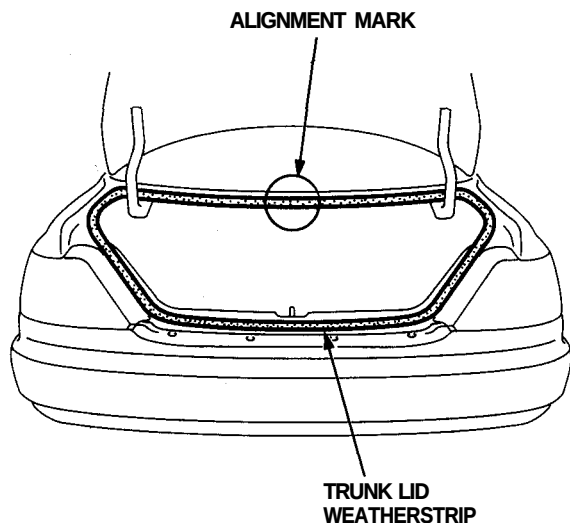
License Plate Trim

Replacement

When installing the trunk lid weatherstrip, align it with the alignment mark on the trunk lid opening.

NOTE:

- Make sure there are no wrinkles in the weatherstrip.
- Check for water leaks.



Replacement

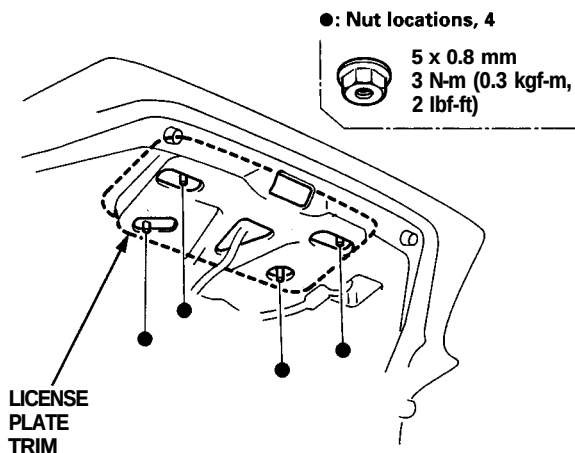
CAUTION: Wear gloves to remove and install the license plate trim.

NOTE:

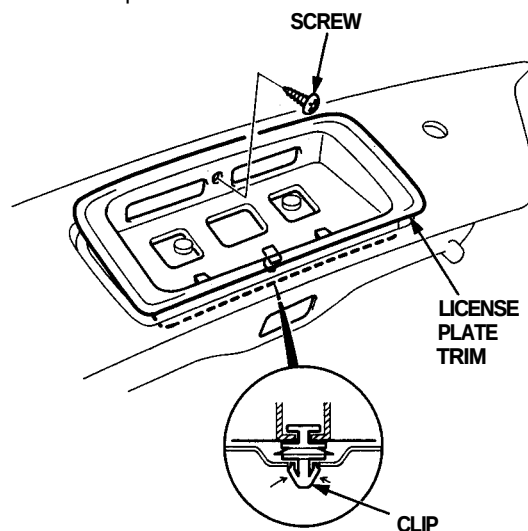
- Take care not to scratch the trunk lid.
- Remove the license plate.

1. Open the trunk lid, then remove the trunk lid trim (see page 20-100).
2. Remove the trunk lid latch (see page 20-116).
3. Remove the nuts.

NOTE: Take care not to drop the nuts inside the trunk lid.



4. Remove the screw and detach the clip, then remove the license plate trim.



5. Installation is the reverse of the removal procedure.

NOTE: If damaged, replace the clip.

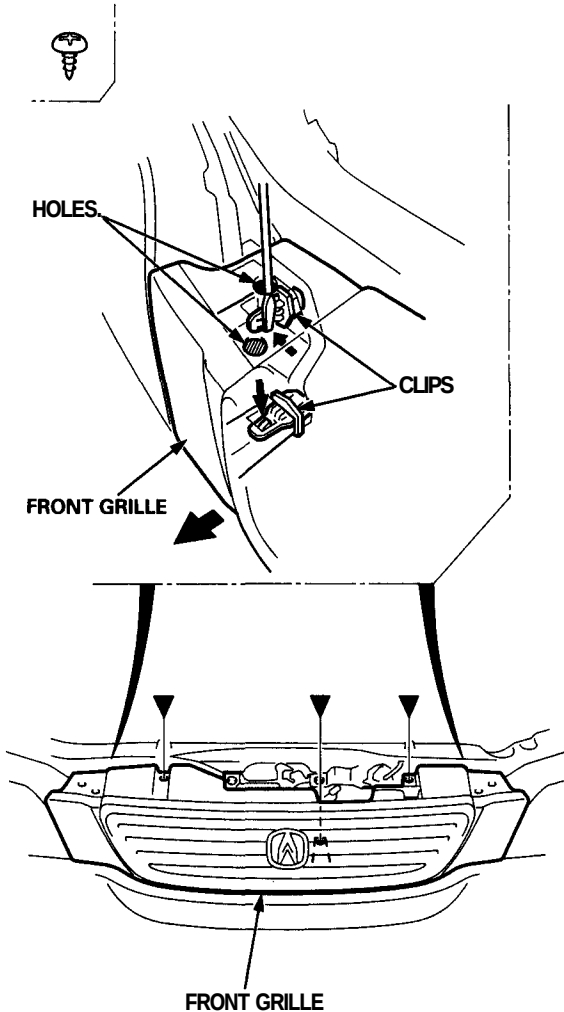
Front Grille

Replacement

NOTE: Take care not to scratch the front grille and front bumper.

1. Open the hood, then remove the screws.
2. Detach the clips on each side with a flat tip screwdriver, then remove the front grille.

►: Screw locations, 3



3. If necessary, disassemble the front grille.
4. Installation is the reverse of the removal procedure.

NOTE: If necessary, replace any damaged clips.

Roof Molding

Replacement

CAUTION:

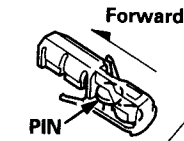
- Wear gloves to remove the roof molding.
- When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

NOTE:

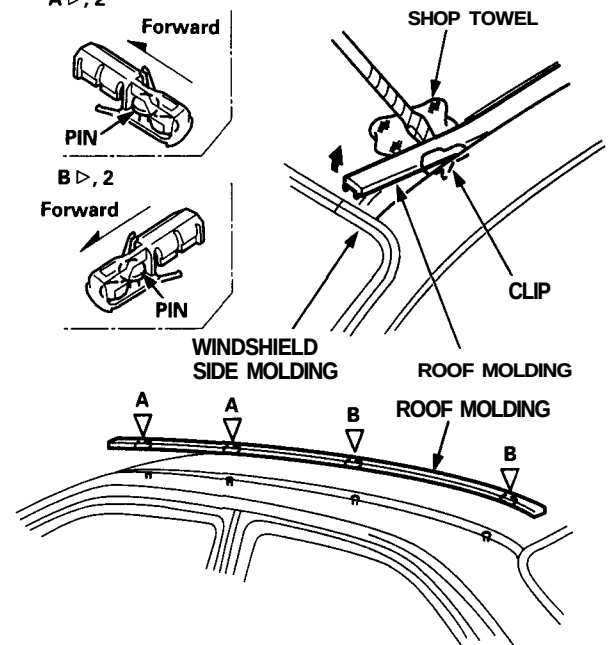
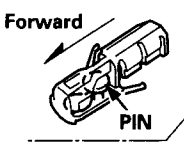
- Take care not to scratch the body.
- The steel core in the roof molding cannot be restored to its original shape once it is bent. Replace the roof molding when the steel core is bent.
- Starting at the front, carefully pry the roof molding.

►: Clip locations

A ►, 2



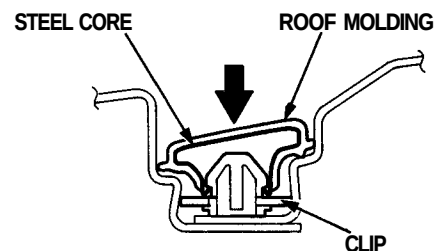
B ►, 2



To install the roof molding, remove any damaged clips from the roof molding, install new clips on the body, then install the roof molding on the car.

NOTE:

- Take care not to damage the windshield side molding.
- Make sure the roof molding is installed securely.





Retainers and Weatherstrip

Replacement

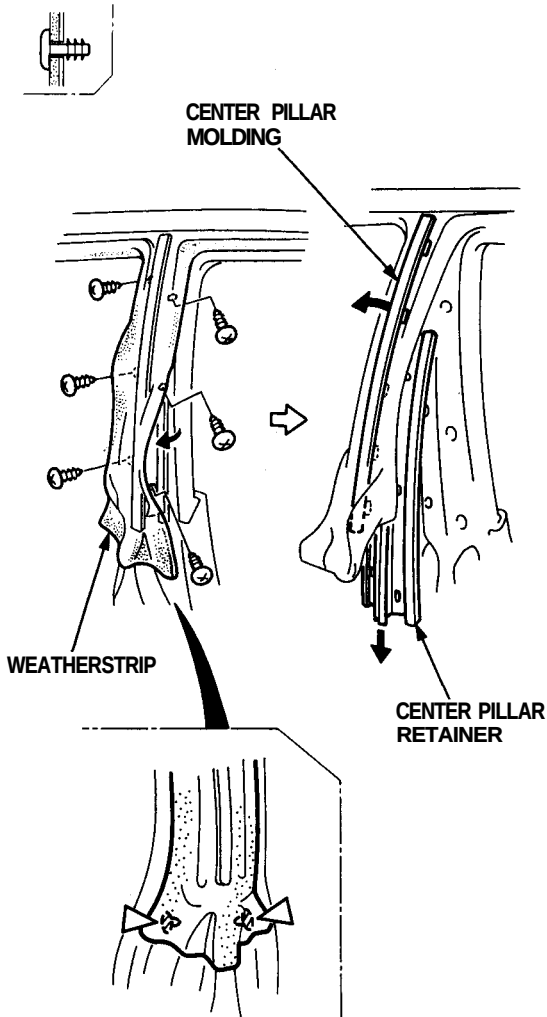
CAUTION: Wear gloves to remove and install the retainers.

NOTE:

- Take care not to bend the retainers and not to scratch the body.
- If the weatherstrip is damaged, replace it with a new one.

1. Detach the clips from the center pillar lower portion, and remove the screws while peeling back the weatherstrip.
2. Remove the center pillar retainer by sliding it down, then remove the center pillar molding from the weatherstrip.

▷: Clip locations, 2



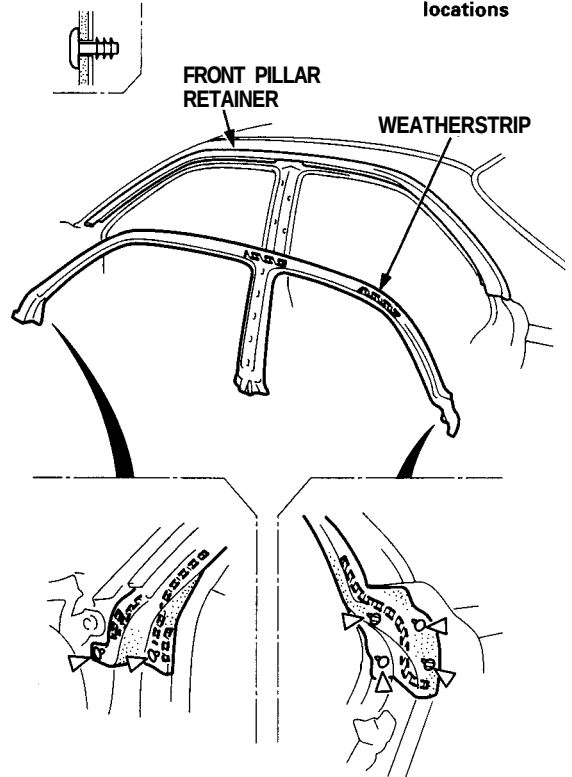
3. Detach the clips, then pull away the weatherstrip.

NOTE:

- Remove the bonded portions of the weatherstrip gradually.
- If the old weatherstrip is to be reinstalled, scrape off the old butyl tapes, then clean the weatherstrip surface with alcohol. Glue the new butyl tapes on the weatherstrip.

▷: Clip locations, 6

~~~~~: Butyl tape locations



(cont'd)

# Retainers and Weatherstrip

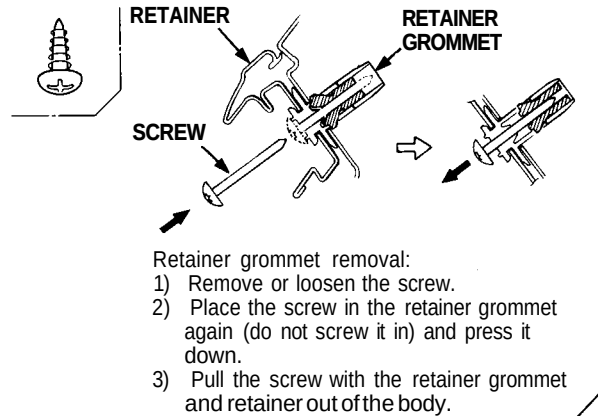
## Replacement (cont'd)

4. Remove the screws, and detach the retainer grommet and clip, then remove the front pillar retainer.

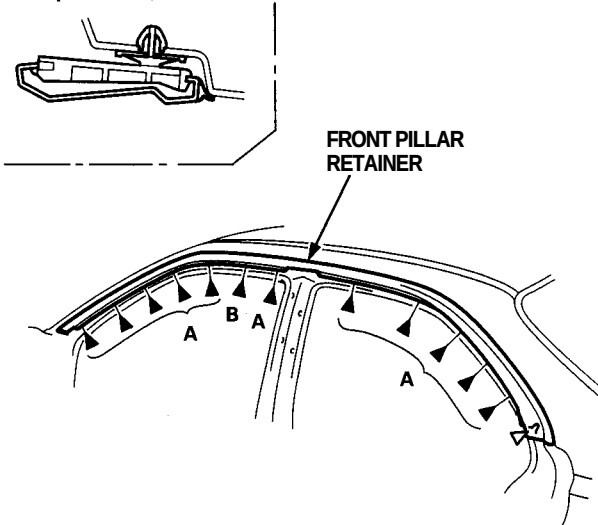
►: Screw locations

A ►, 11

B ►, 1



►: Clip location, 1



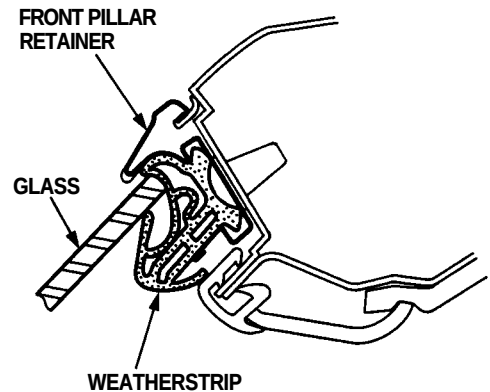
NOTE: When installing the retainer, align the retainer grommet and clip with the body holes.

5. Installation is the reverse of the removal procedure.

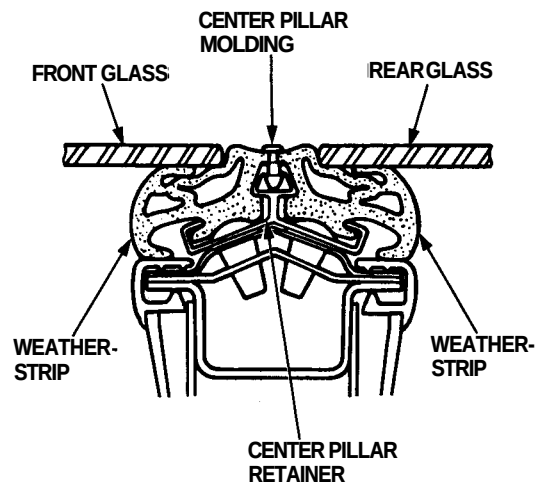
NOTE:

- If necessary, replace any damaged clips.
- Make sure the weatherstrip is installed on the retainers properly.
- If necessary, adjust the position of the door glass (see page 20-24).
- Check for water leaks.

Roof side section:



Center pillar section:





# Door and Side Moldings

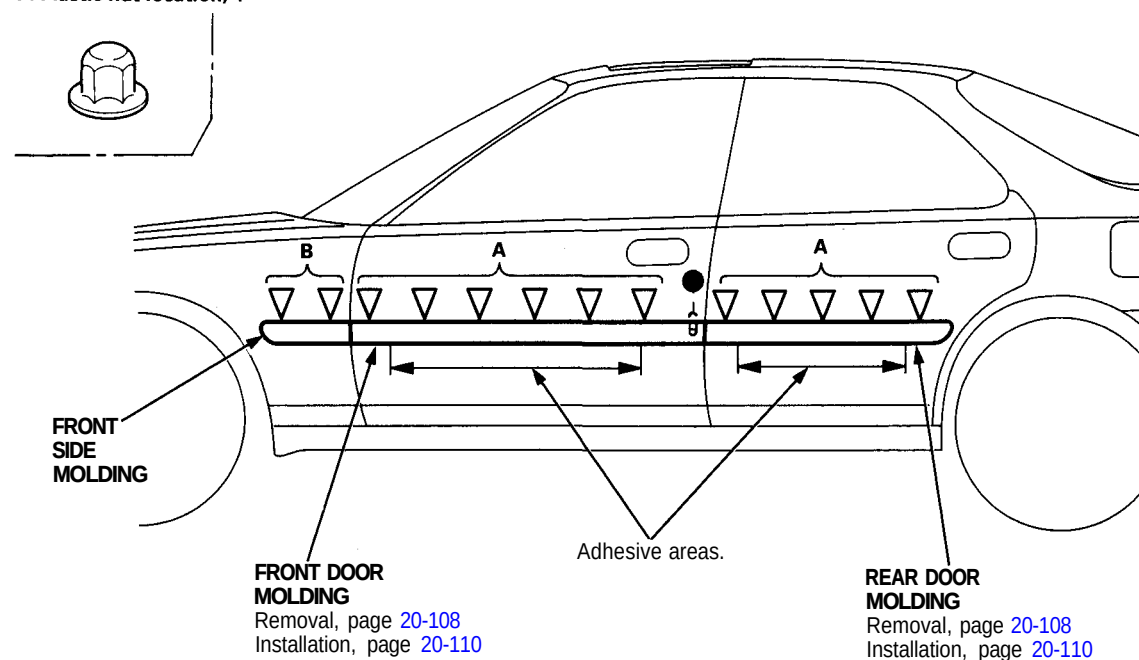
## Replacement

**CAUTION:** When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

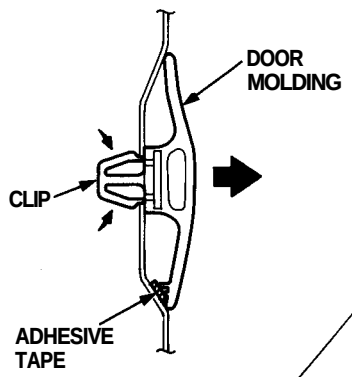
**NOTE:**

- To remove the front side molding, remove the inner fender (see page [20-112](#)).
- To remove the door molding, remove the door panel and plastic cover (see pages [20-4](#), [20-15](#)).
- Take care not to bend the door moldings.
- Before reassembling, clean the door bonding surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease and water from getting on the surface.

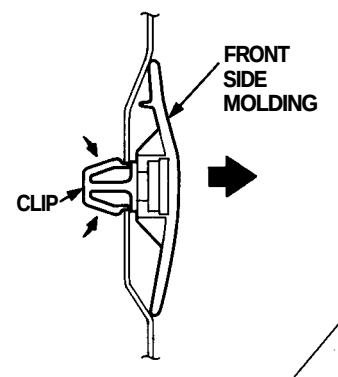
●: Plastic nut location, 1



▷: Clip locations  
A ▷, 11



B ▷, 2



Installation is the reverse of the removal procedure.

**NOTE:** If necessary, replace any damaged clips.

# Door Moldings

## Removal

The following materials and tools are required to repair the door moldings.

NOTE: Follow the manufacturer's instructions.

Materials: (Reference)

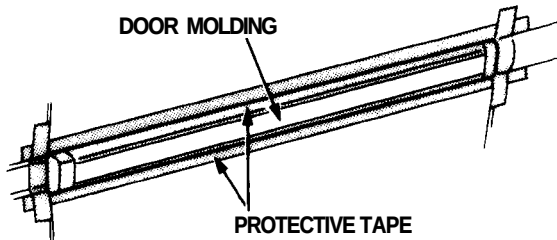
- Stripe remover  
3M 08907
- Stripe adhesive remover  
3M 08908
- Adhesive tape  
3M Super Automotive Attachment Tape

Tools:

- Protective tape
- Knife or Cutter
- Sponge or Shop towel
- Infrared dryer
- Film
- Putty knife
- Alcohol

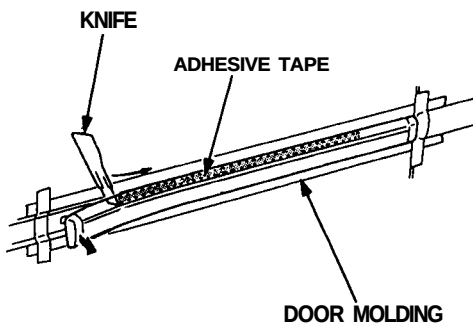
**CAUTION: Wear gloves to remove and install the door moldings.**

1. Remove the door panel and pull back the plastic cover (see pages [20-4](#), [20-15](#)).
2. Apply protective tape on and around the molding.

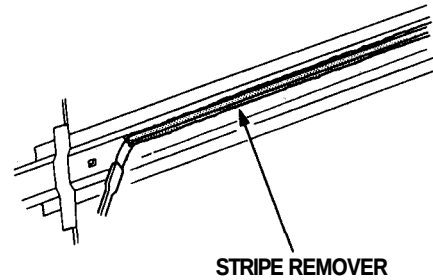


3. Release the clips from inside of the door. Carefully cut the adhesive tape with a knife or cutter while pulling the edge of the molding away from the door as shown.

NOTE: Take care not to scratch or bend the molding.

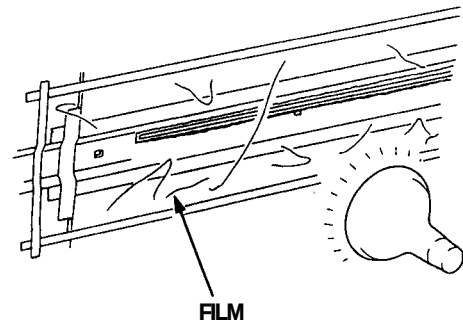


4. Apply the stripe remover evenly to the bonding surface of the door.

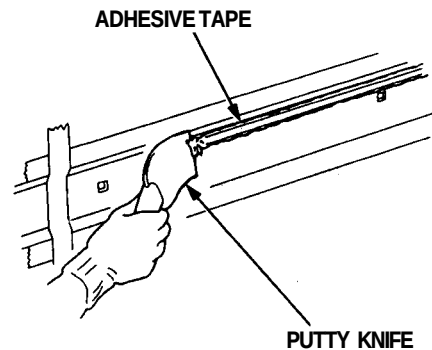


5. Cover the bonding surface of the door with a film, then heat to 104 - 122°F (40 - 50°C) for 5-10 minutes with an infrared dryer.

NOTE: Use care when heating to prevent deformation of the door.



6. Scrape the adhesive tape with a putty knife.





7. For removal of adhesive tape residue, follow-up with stripe adhesive remover, then scrape the adhesive tape with a putty knife.

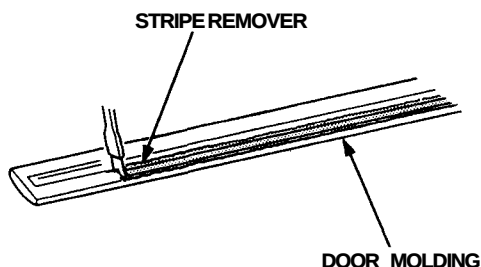
8. Peel off the protective tape, then clean the bonding surface with a sponge dampened in alcohol.

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

9. Remove the clips from the molding.

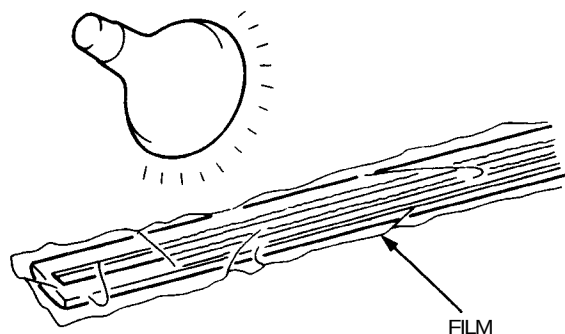
NOTE: If necessary, replace any damaged clips.

10. Apply the stripe remover evenly to the bonding surface of the molding.

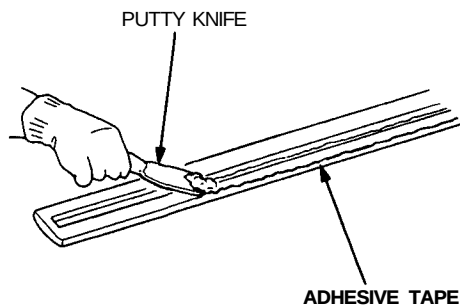


11. Wrap the molding with film, then heat to 104- 122°F (40 - 50°C) for 5 - 10 minutes with an infrared dryer.

NOTE: Use care when heating to prevent deformation of the molding.



12. Scrape the adhesive tape with a putty knife.



13. For removal of adhesive tape residue, follow-up with stripe adhesive remover, then scrape the adhesive tape with a putty knife.

14. Peel off the protective tape, then clean the molding with a sponge dampened in alcohol.

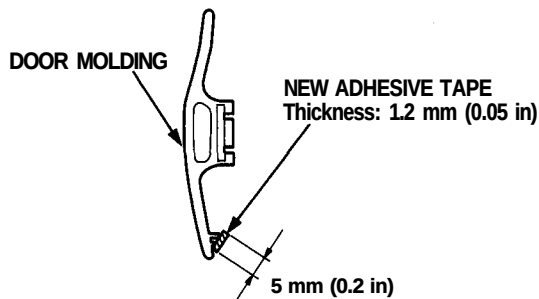
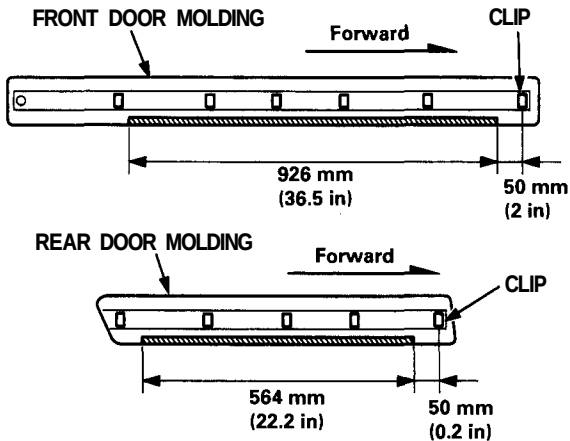
NOTE: Make sure the bonding surface is kept free of water, oil and grease.

# Door Moldings

## Installation

1. Glue the new adhesive tape to the moldings as shown.

 : Adhesive tape locations



2. Install the clips on the molding.
3. Heat the bonding surface of the door and door molding with an infrared dryer.  
Door: 104- 140°F (40-60°C)  
Molding: 68 - 86°F (20 - 30°C)

NOTE: Use care when heating to prevent deformation of the molding.

4. Align the molding with the clip locations and set the molding. Lightly push on the molding until its edge is fully seated on the adhesive tape.

NOTE: Do not spray water on the molding within the first 24 hours after installation.

5. Reassemble all removed parts.



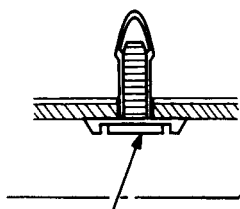
# Side Sill Panel

## Replacement

NOTE: Take care not to scratch the body.

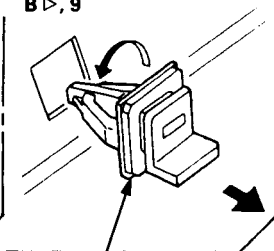
### ▷: Clip locations

A ▷, 7



NOTE: Loosen the screw, then remove the lower clip using a clip remover.

B ▷, 9



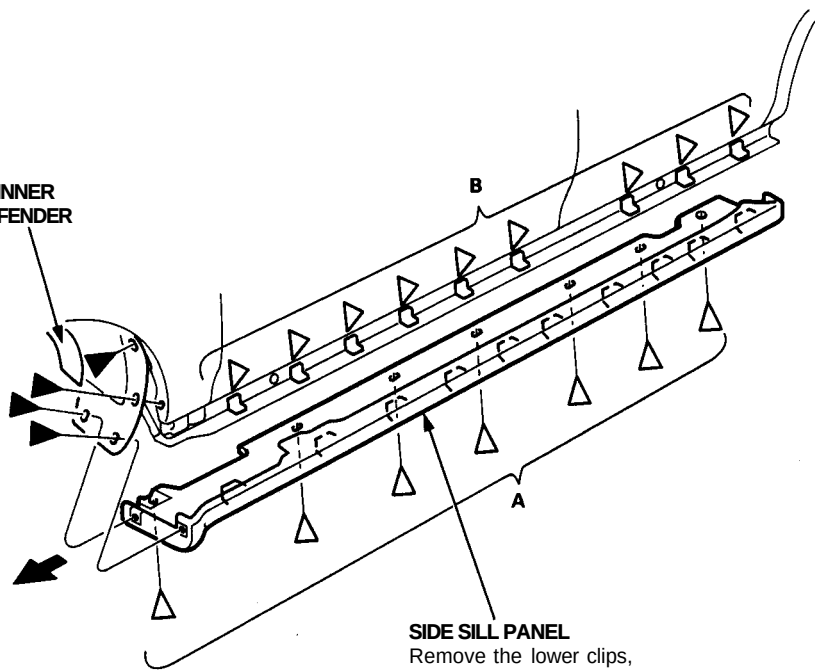
#### SIDE CLIP

Remove the side clips from the body by turning them 45°

### ▷: Screw locations, 4



INNER FENDER



#### SIDE SILL PANEL

Remove the lower clips, then remove the side sill panel by sliding it forward.

SIDE CLIP

LOWER CLIP

SIDE SILL PANEL

SIDE CLIP

Forward

NOTE: When removing the side sill panel, the side clips will stay in the body.

To install the side sill panel, remove the side clips from the body, install them on the side sill panel, then install the side sill panel on the car.

NOTE:

- Take care not to twist the side sill panel.
- If necessary, replace any damaged side and lower clips.

# Inner Fender, Fenderwell Trim, Fuel Pipe Protector and Rear Air Outlet

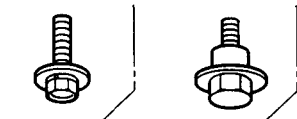
## Replacement

NOTE: If necessary, replace any damaged clips.

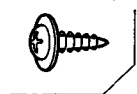
### Innerfender:

#### ►: Bolt, screw locations

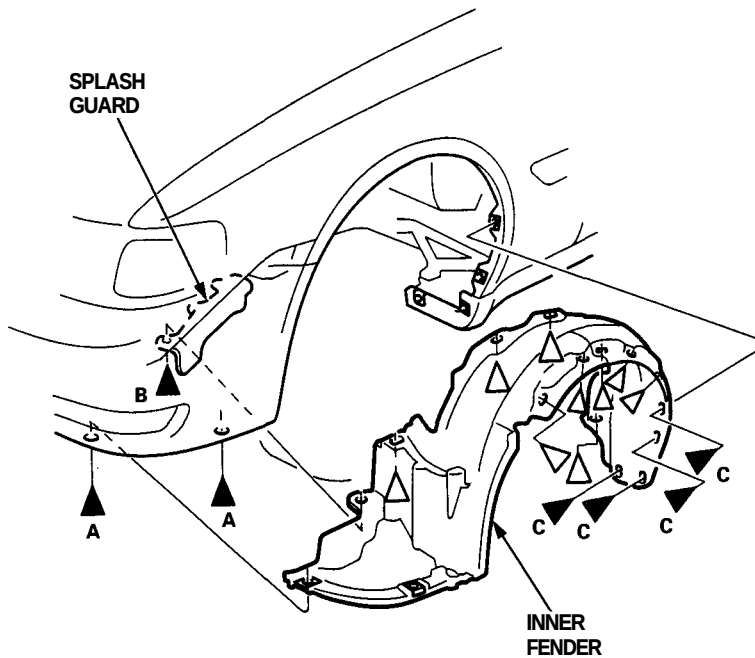
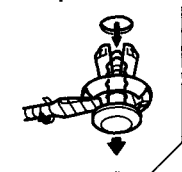
A ►: Bolt, 2    B ►: Bolt, 1



#### C ►: Screw, 4



#### ▷: Clip locations, 9



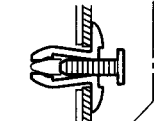
### Fenderwell trim/Fuel pipe protector/Rear air outlet:

#### NOTE:

- Take care not to bend the fenderwell trim.
- Before installing the fenderwell trim, clean the body bonding surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease or water from getting on the surface.
- To remove the fuel pipe protector, first remove the rear wheel (see [section 18](#)).
- To remove the rear air outlet, first remove the rear bumper (see page [20-96](#)).

#### ▷: Clip locations

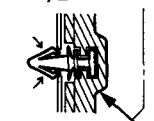
A ►, 5



#### Hook locations, 2

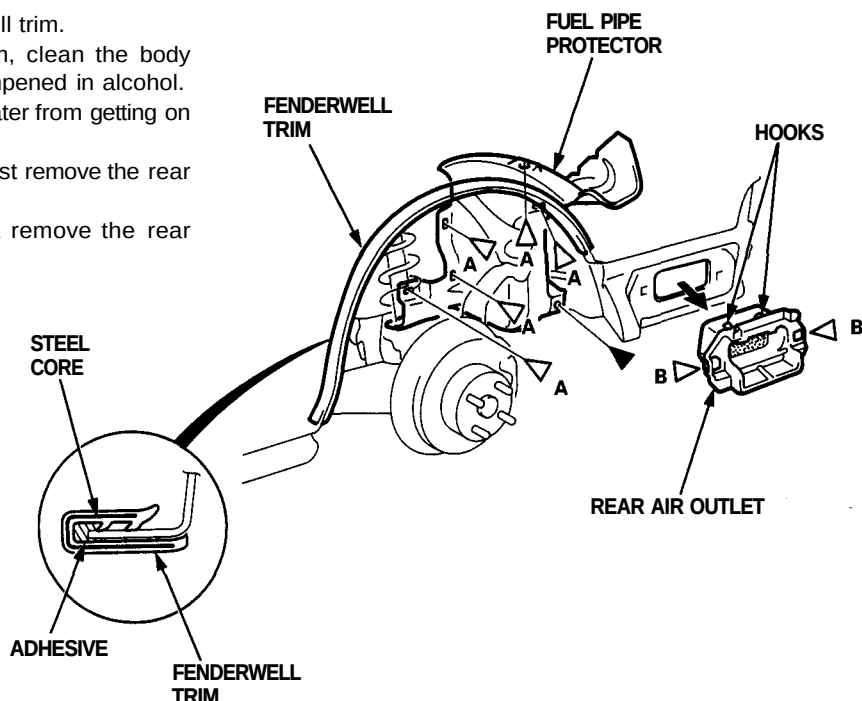
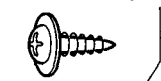


B ►, 2



REAR AIR OUTLET

#### ►: Screw location, 1





# Opener Cables

## Replacement

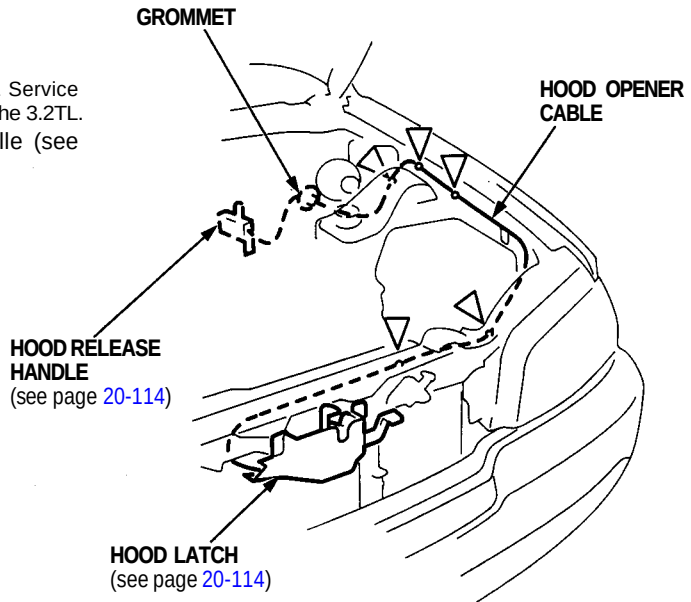
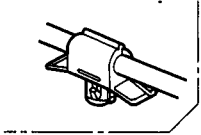
### NOTE:

- When removing the clips, use a clip remover.
- Take care not to bend the opener cables.

### Hood opener cable:

NOTE: Refer to page 20-10a of the '96-98 Acura 3.2TL Service Manual supplement for the differences on this page for the 3.2TL.  
NOTE: Open the hood, and remove the front grille (see page 20-104).

▷: Clip locations, 5



### Trunk lid/Fuel lid opener cable:

NOTE: Remove the following parts from the left side of the vehicle, then pull the carpet back, as necessary (see page 20-62).

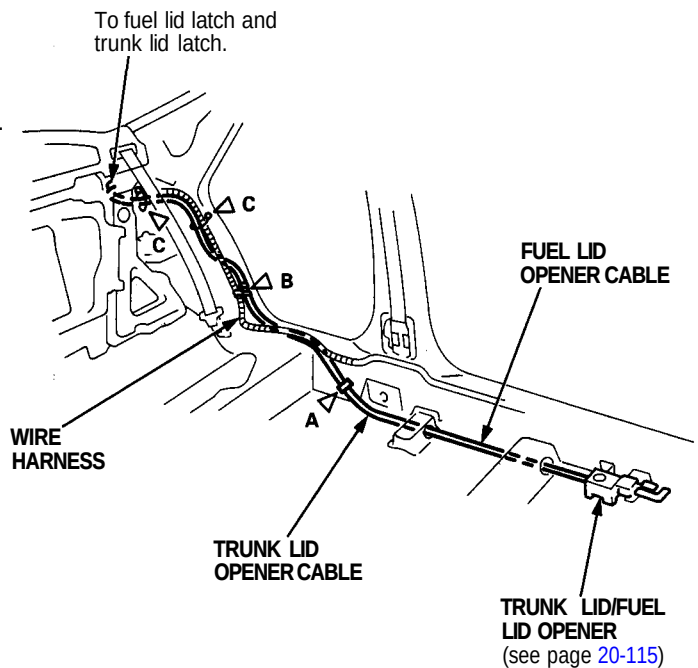
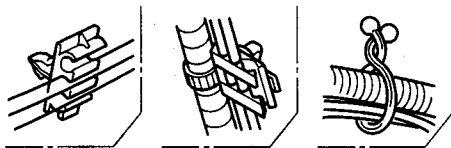
- Front and rear door sill moldings (see page 20-57).
- Center pillar lower trim (see page 20-57).
- Rear seat cushion and rear seat-back (see page 20-85).
- Rear seat side trim (see page 20-58).
- Spare tire lid and trunk side trim (see page 20-60).
- Trunk lid trim (see page 20-100).

▷: Clip locations

A ▷, 1

B ▷, 1

C ▷, 2



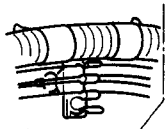
(cont'd)

# Opener Cables

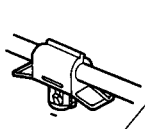
## Replacement (cont'd)

▷: Clip locations

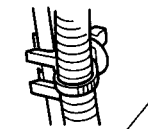
D ▷, 1



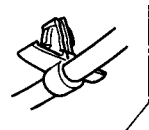
E ▷, 1



F ▷, 3



G ▷, 2



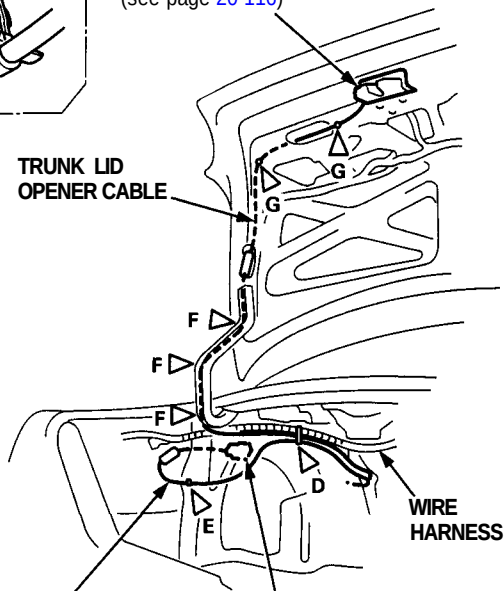
TRUNK LID LATCH  
(see page [20-116](#))

TRUNK LID  
OPENER CABLE

FUEL LID  
OPENER CABLE

FUEL LID  
LATCH  
(see page [20-115](#))

WIRE  
HARNESS



Installation is the reverse of the removal procedure.

### NOTE:

- Make sure each opener cable is routed and connected properly.
- Make sure the hood, trunk lid and fuel lid open properly.

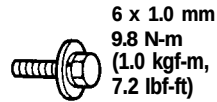
# Opener and Latch

## Replacement

NOTE: Take care not to bend the opener cables.

### Hood release handle:

#### ►: Bolt locations, 2



**HOOD OPENER  
CABLE**  
(see page 20-113)

### HOOD RELEASE HANDLE

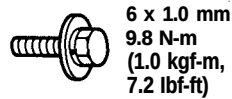
Remove the left kick  
panel (see page  
20-63).

### Hood latch:

NOTE: Refer to page 20-11a of the '96-98 Acura 3.2TL Service Manual supplement for the differences on this page for the 3.2TL.

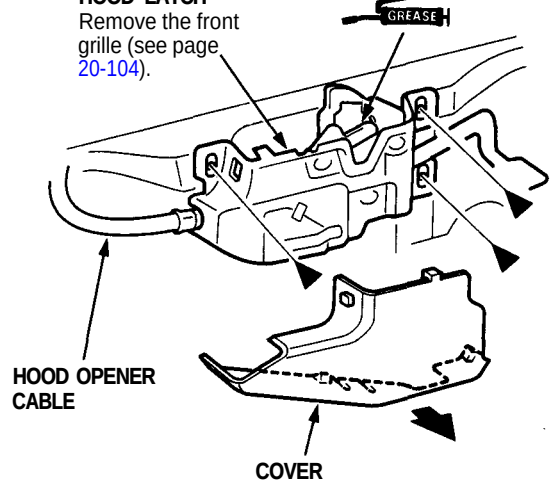
NOTE: If necessary, remove the cover.

#### ►: Bolt locations, 3



### HOOD LATCH

Remove the front  
grille (see page  
20-104).



Installation is the reverse of the removal procedure.

#### NOTE:

- Make sure the opener cable is connected properly.
- Make sure the hood locks securely.
- Make sure the hood opens properly.



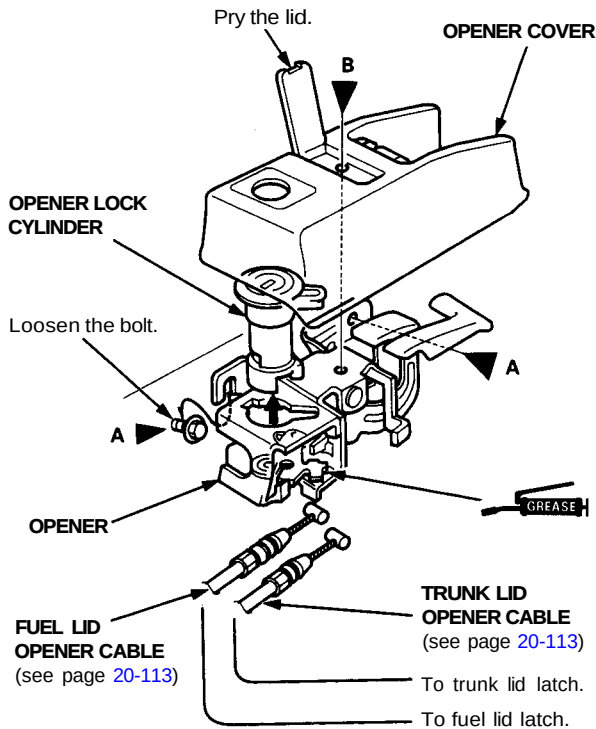
### Trunk lid/Fuel lid opener:

►: Bolt, screw locations

A ►: Bolt, 2

B ►: Screw, 1

6 x 1.0 mm  
9.8 N-m  
(1.0 kgf-m,  
7.2 lbf-ft)



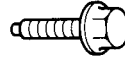
Installation is the reverse of the removal procedure.

#### NOTE:

- Make sure the opener cable is connected properly.
- Make sure the trunk lid and fuel lid open properly.

### Fuel lid latch:

►: Bolt locations, 2



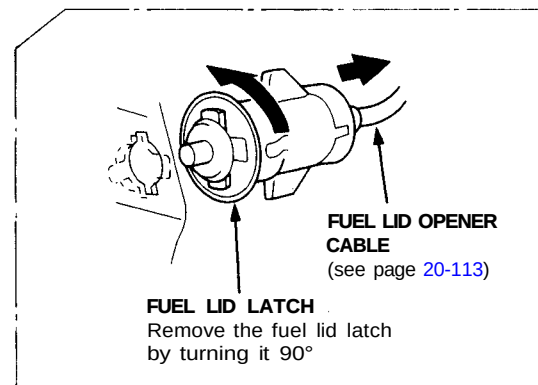
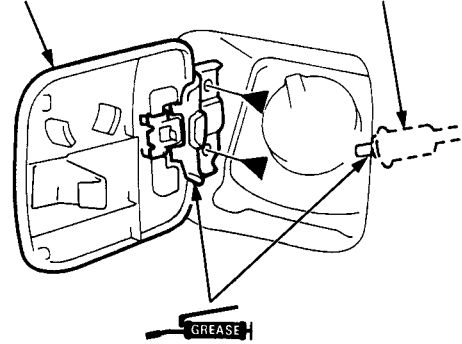
6 x 1.0 mm  
9.8 N-m (1.0 kgf-m,  
7.2 lbf-ft)

#### FUEL LID

After installing, check for a flush fit with the body.

#### FUEL LID LATCH

Pull the rear edge of the left trunk side trim back (see page 20-60).



Installation is the reverse of the removal procedure.

#### NOTE:

- Make sure the opener cable is connected properly.
- Make sure the fuel lid locks securely.
- Make sure the fuel lid opens properly.

(cont'd)

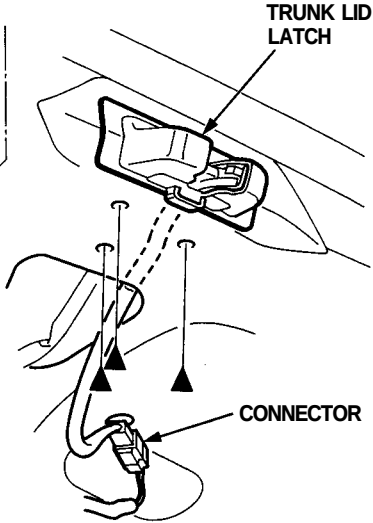
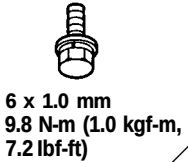
# Opener and Latch

## Replacement (cont'd)

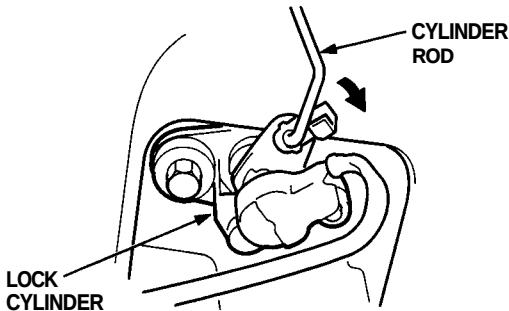
### Trunk lid latch/Lock cylinder:

1. Remove the trunk lid trim (see page 20-100).
2. Remove the bolts, and disconnect the connector.

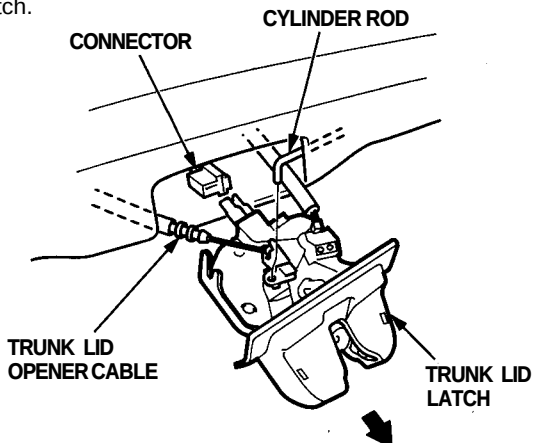
#### ►: Bolt locations, 3



3. Disconnect the cylinder rod from the lock cylinder.

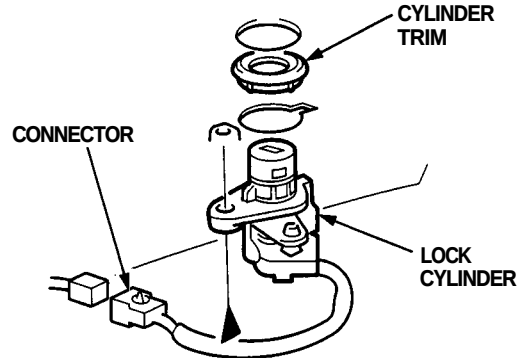
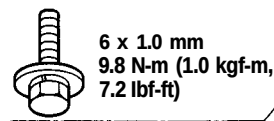


4. Pull the trunk lid latch out, disconnect the cylinder rod, opener cable and connector, then remove the latch.

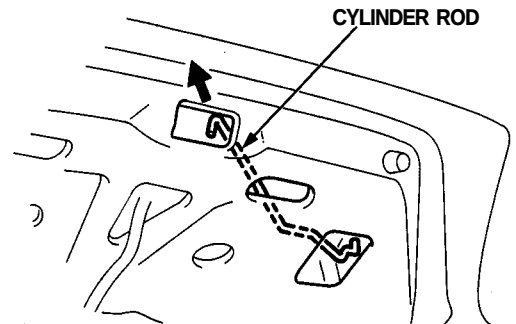


5. Disconnect the connector, remove the bolt, then pull the lock cylinder and cylinder trim out.

#### ►: Bolt location, 1



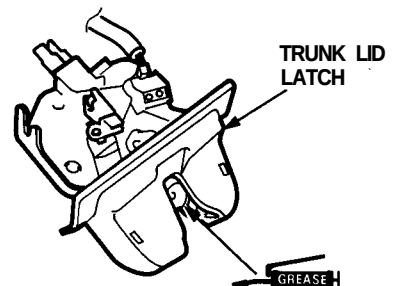
6. Pull the cylinder rod out.



7. Installation is the reverse of the removal procedure.

#### NOTE:

- Grease the trunk latch.
- Make sure the trunk lid locks securely.
- Make sure the trunk lid opens properly.
- Make sure the connector is connected properly.





# Hood Latch

## Replacement

NOTE: Take care not to bend the opener cables.

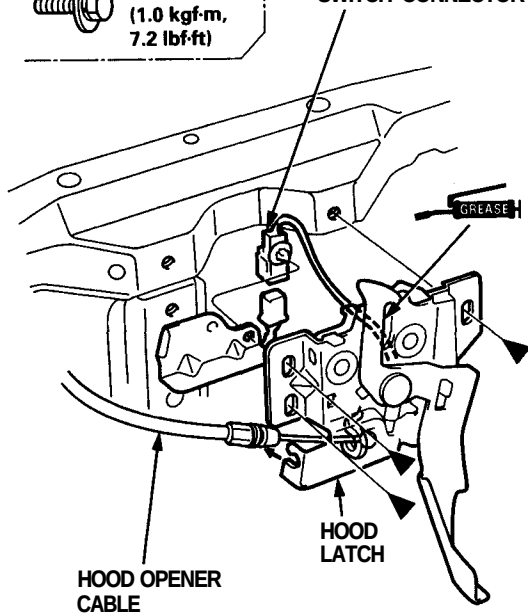
1. Open the hood, and remove the front bulkhead cover (see page [20-6](#)).
2. Remove the hood latch, and disconnect the hood opener cable and hood latch switch connector.

►: Bolt locations, 3



6 x 1.0 mm  
9.8 N·m  
(1.0 kgf·m,  
7.2 lbf·ft)

HOOD LATCH  
SWITCH CONNECTOR



3. Installation is the reverse of the removal procedure.

NOTE:

- Make sure the hood opener cable is connected properly.
- Make sure the hood locks securely.



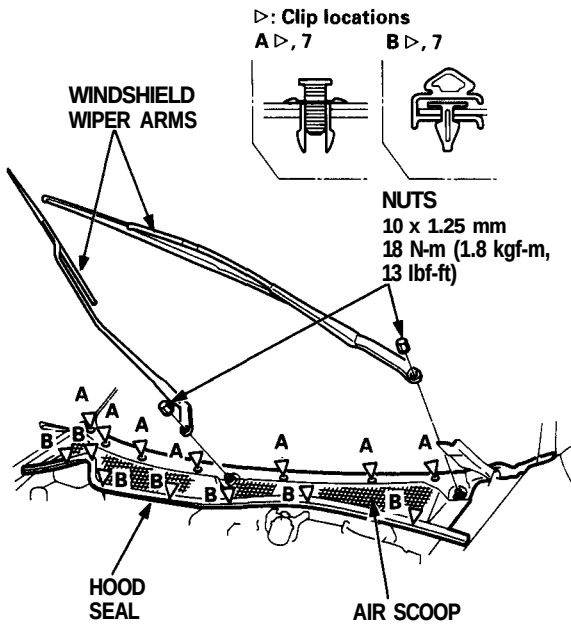
# Windshield Wiper Arms/Windshield Wiper Linkage

## Replacement

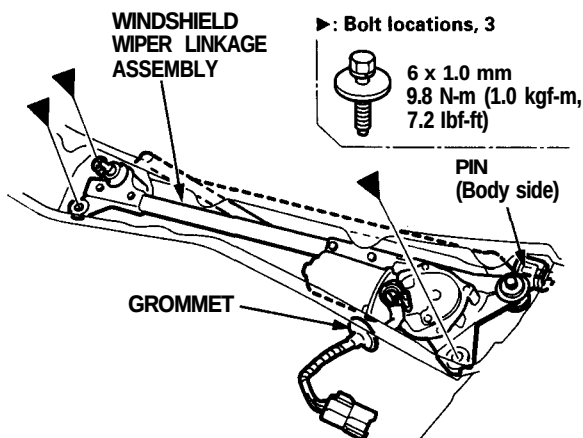
**CAUTION:** Wear gloves to remove and install the windshield wiper linkage.

**NOTE:** Take care not to scratch the hood and body.

1. Open the hood.
2. Remove the windshield wiper arms, then remove the hood seal and air scoop.

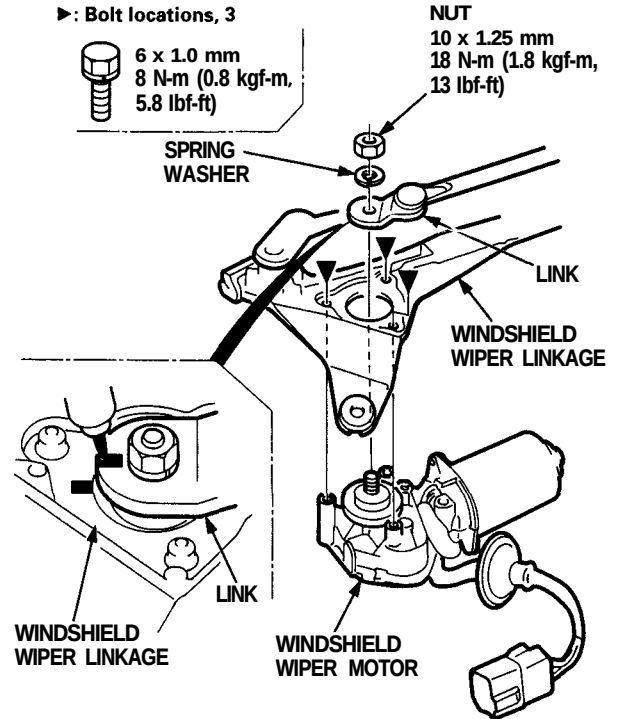


3. Disconnect and detach the connector, then remove the windshield wiper linkage assembly.



4. Separate the windshield wiper linkage and windshield wiper motor.

**NOTE:** Scribe a line across the link and windshield wiper linkage to show the original adjustment.



5. Installation is the reverse of the removal procedure.

**NOTE:**

- Make sure the connector is connected properly.
- If necessary, replace any damaged clips.
- Install the windshield wiper arms properly as described on page [20-119](#).
- Check the windshield wiper motor operation.
- Grease the moving parts.

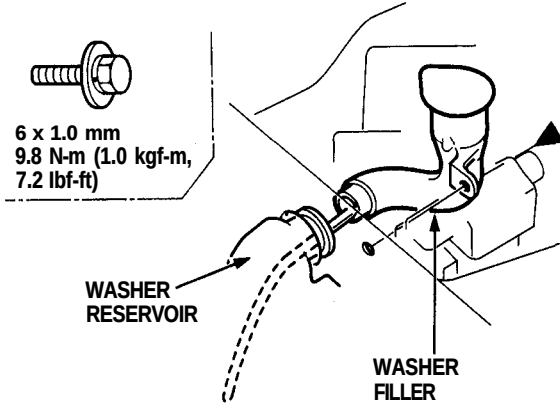
# Washer Reservoir

## Replacement

**CAUTION:** Wear gloves to remove and install the washer reservoir.

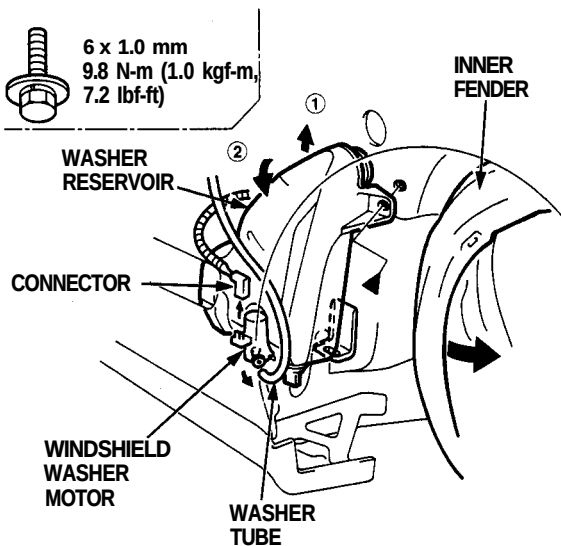
1. Open the hood.
2. Remove the bolt, then pull out the washer filler.

►: Bolt location, 1



3. Pull away the inner fender as necessary (see page 20-112).
4. Disconnect the washer tube and windshield washer motor connector.

►: Bolt location, 1



5. Remove the bolt, then remove the washer reservoir.
6. Installation is the reverse of the removal procedure.

### NOTE:

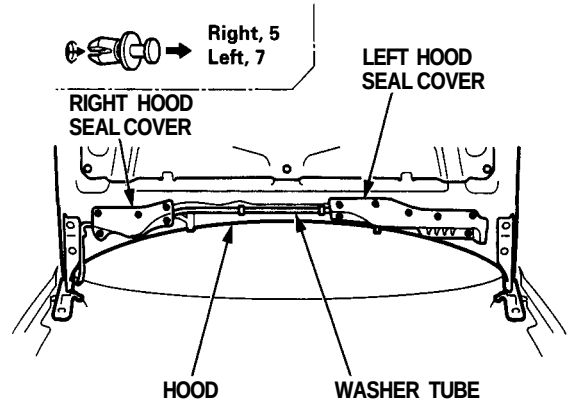
- Make sure the windshield washer motor connector and washer tube are connected properly.
- Check the windshield washer motor operation.

# Washer Tube

## Replacement

1. Open the hood.
2. Remove the hood seal covers from the hood.

●: Clip locations



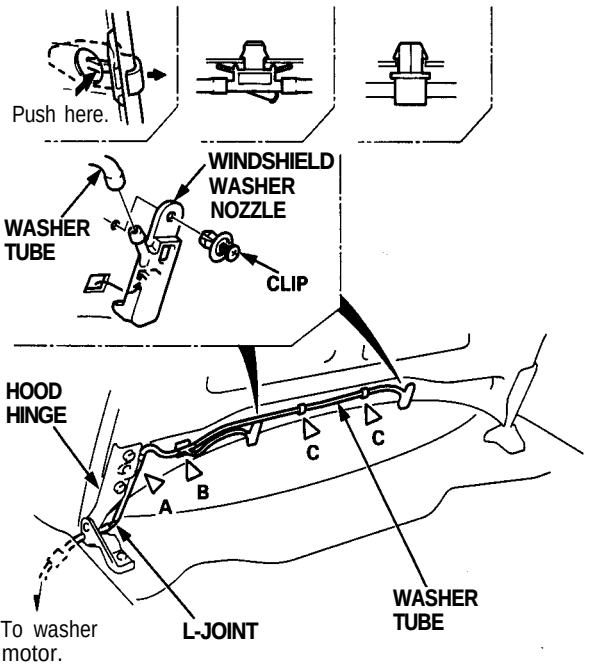
3. Detach the clips, and remove both windshield washer nozzles. Disconnect the washer tube at the L-joint, then remove the washer tube.

▷: Clip locations

A ▷, 1

B ▷, 1

C ▷, 2



4. Installation is the reverse of the removal procedure.

### NOTE:

- Take care not to pinch the washer tube.
- If necessary, replace any damaged clips.
- Adjust the aim of the windshield washer nozzles.

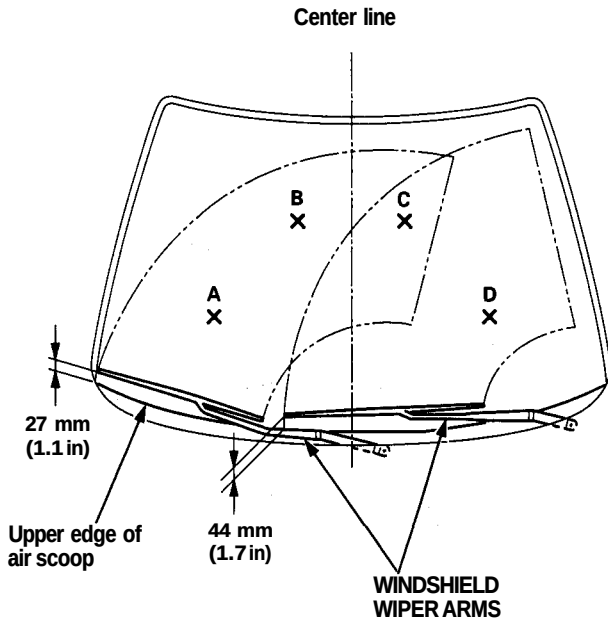


# Wiper Arms/Washer Nozzles

## Adjustment

1. Adjust the wiper arms so that their park positions match the illustration.

View from front to rear



2. By inserting a tack and moving it as necessary, adjust the washer nozzles so that they aim at positions A, B, C, and D shown in the illustration.

NOTE: Refer to page [20-14a](#) of the '96-98 Acura 3.2TL Service Manual supplement for the differences on this page for the 3.2TL.

NOTE: The fluid jets should hit within a 50 mm (2.0 in) radius around each of points A, B, C, and D.

| Distance<br>Nozzle aim | from center<br>line | from upper edge<br>of air scoop |
|------------------------|---------------------|---------------------------------|
| A                      | 336 mm (13.2 in)    | 409 mm (16.1 in)                |
| B                      | 123 mm (4.8 in)     | 533 mm (21.0 in)                |
| C                      | 123 mm (4.8 in)     | 533 mm (21.0 in)                |
| D                      | 336 mm (13.2 in)    | 409 mm (16.1 in)                |

# Emblems

## Installation

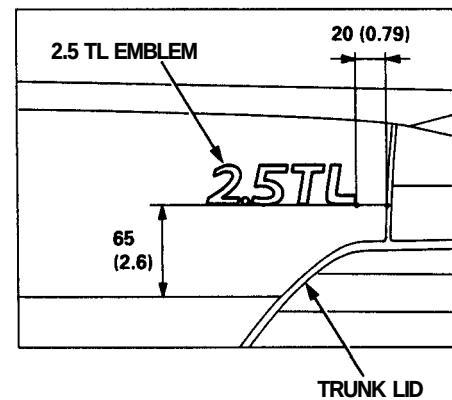
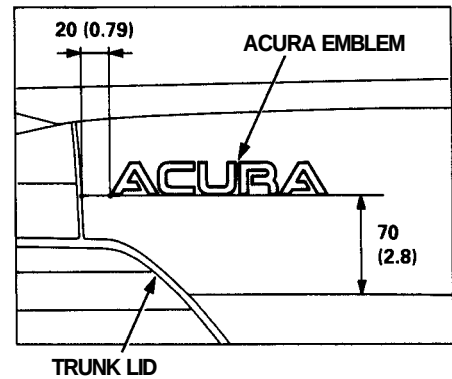
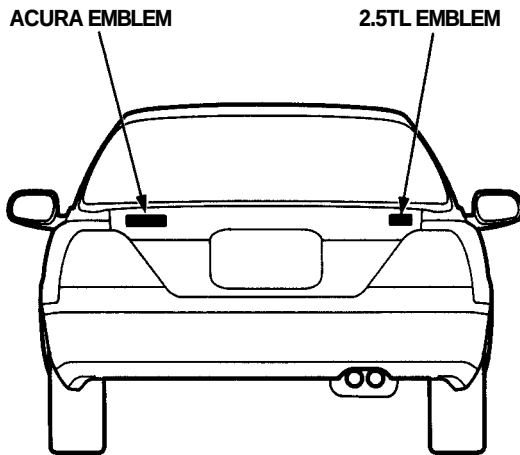
Apply the emblems where shown.

**NOTE:**

- Before applying, clean the trunk lid surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease and water from getting on the surface.

**Attachment Points (Reference):**

Unit: mm (in)

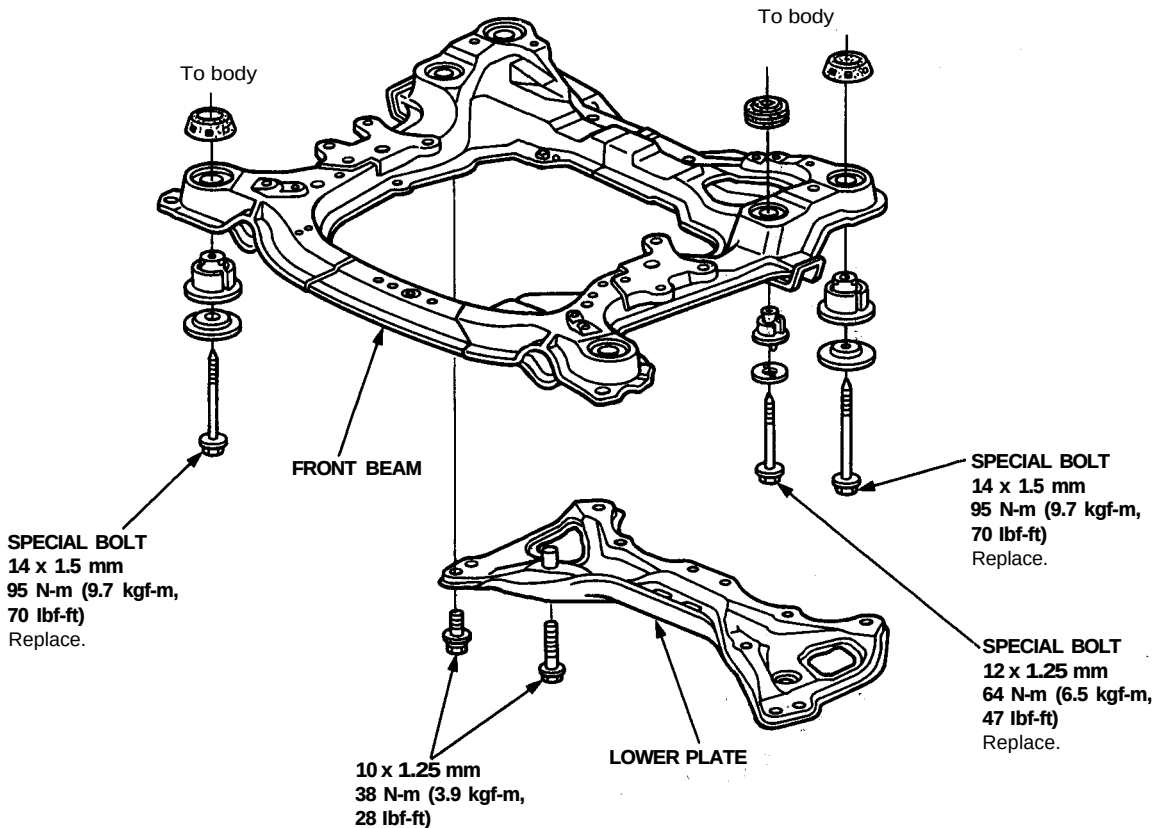
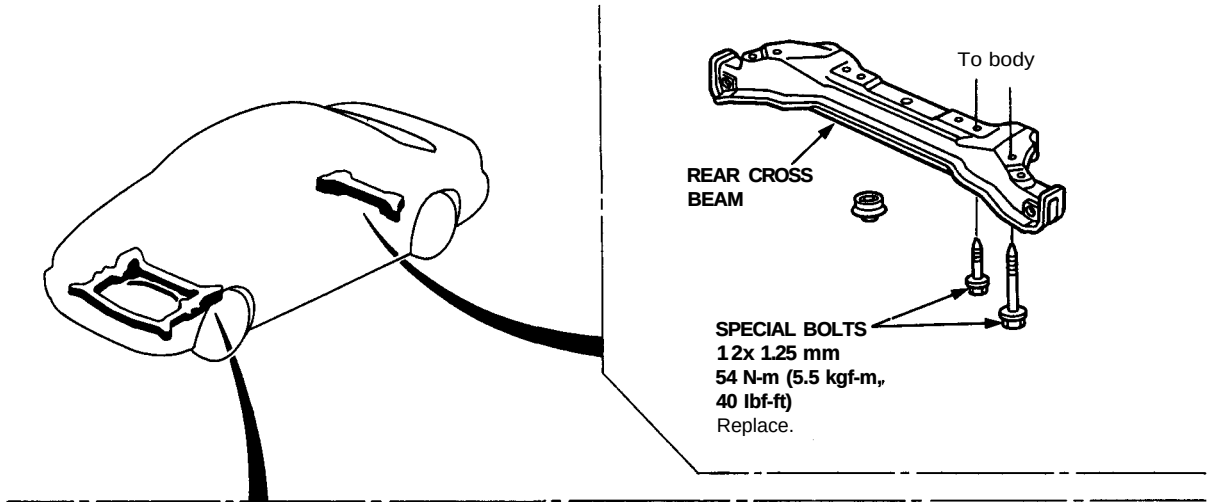




# Sub-frame

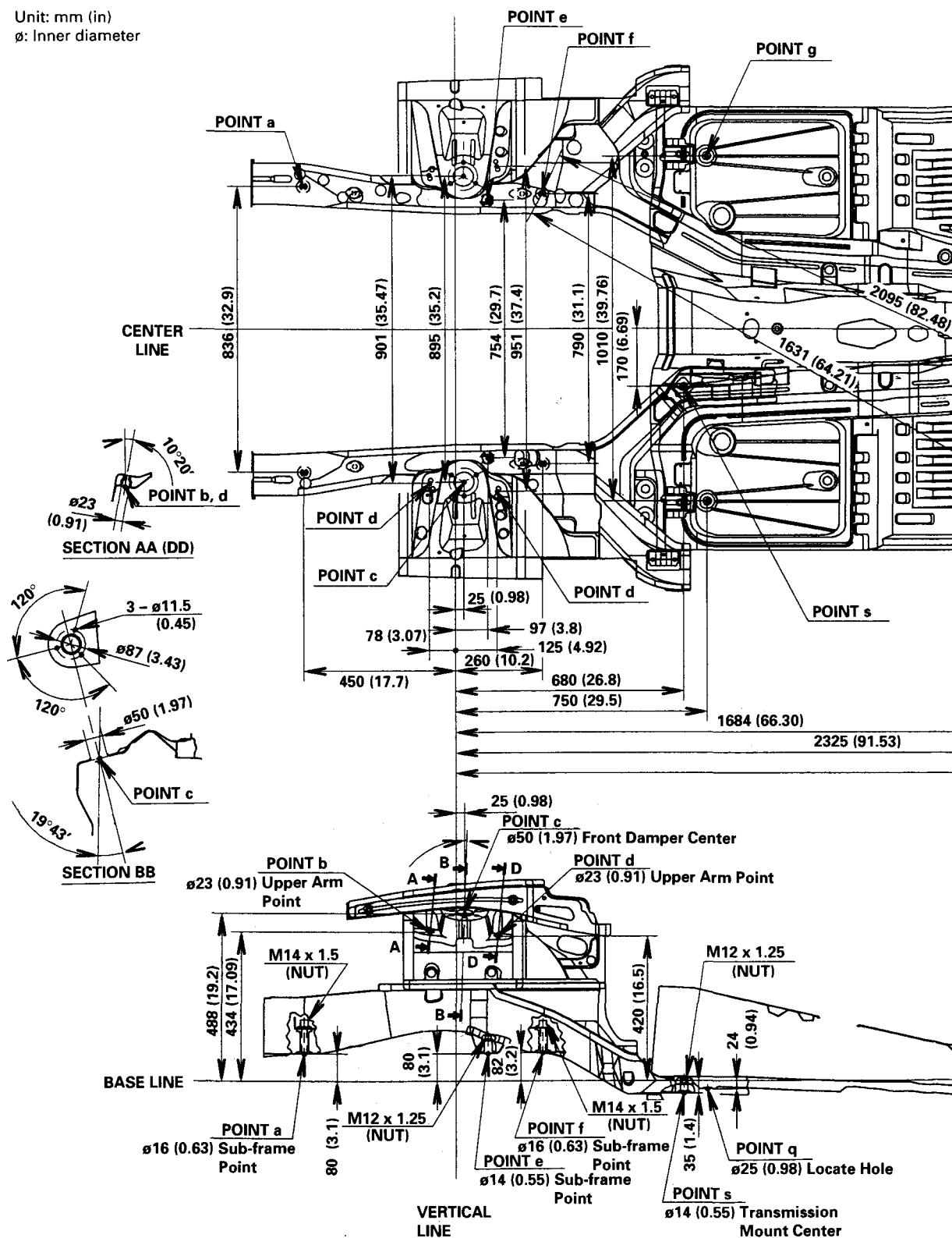
## Sub-frame Torque Sequence:

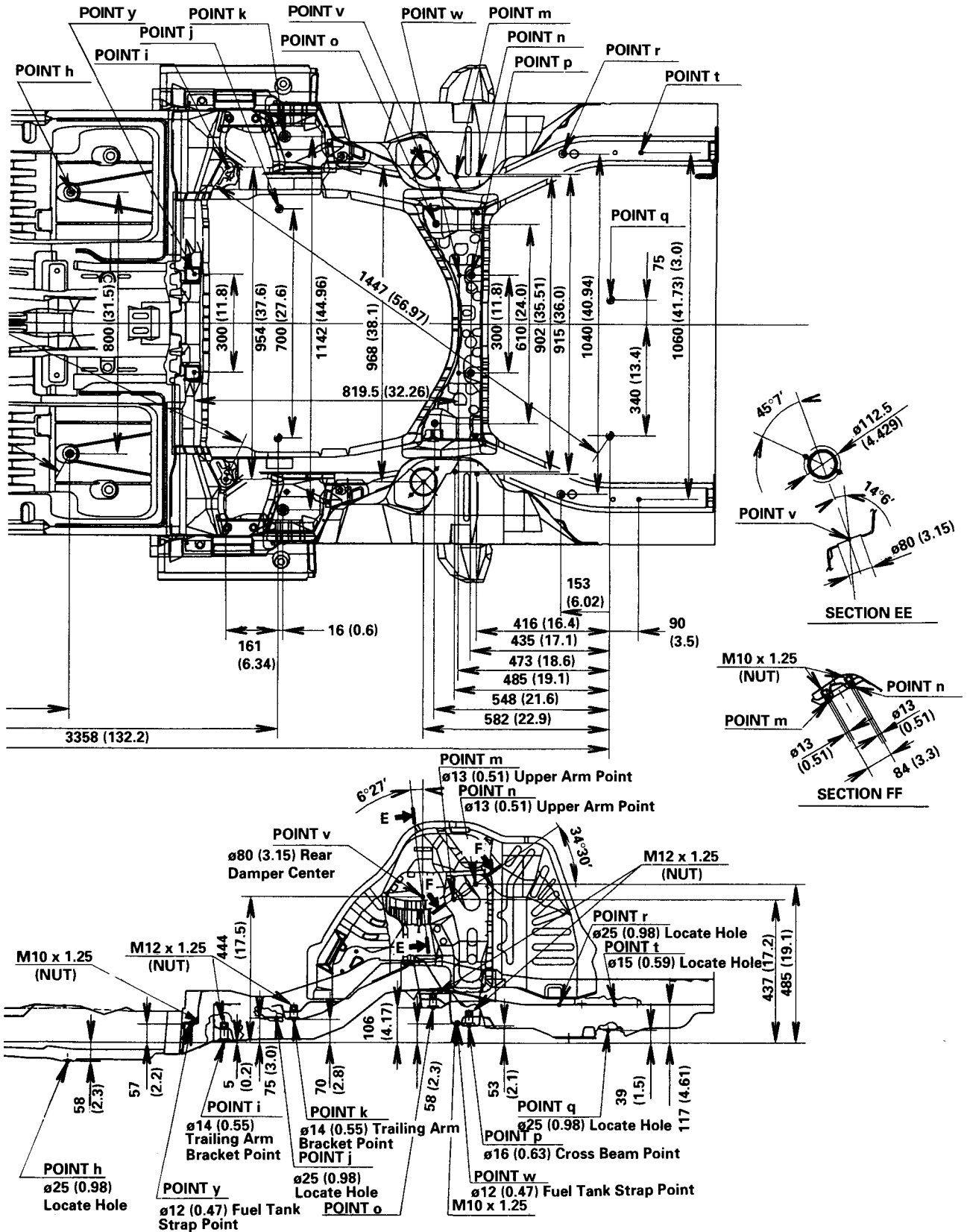
**CAUTION:** After loosening the sub-frame mounting bolts, be sure to replace them with new ones.



# Frame Repair Chart

Unit: mm (in)  
 ø: Inner diameter



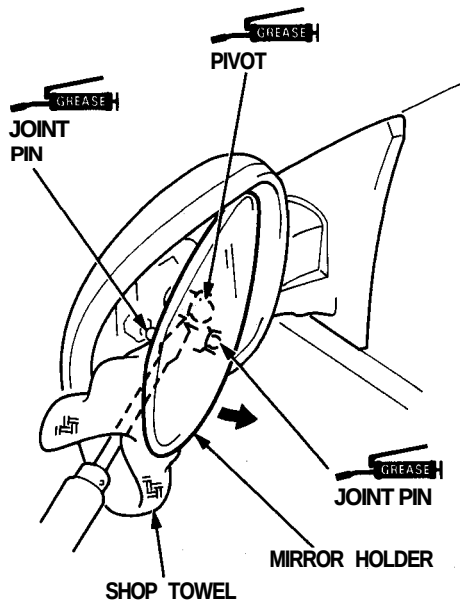


# Mirror

## Mirror Holder Replacement

**CAUTION:** Wear gloves to remove and install the mirror holder.

1. Carefully pry out the mirror holder with a flat tip screwdriver as shown.



2. Installation is the reverse of the removal procedure.

## Mirror Visor and Mirror Cover Replacement

1. Remove the mirror holder.
2. Push the mirror base forward, then remove the screws.
3. Detach the hook, then remove the mirror visor.

### ►: Screw locations

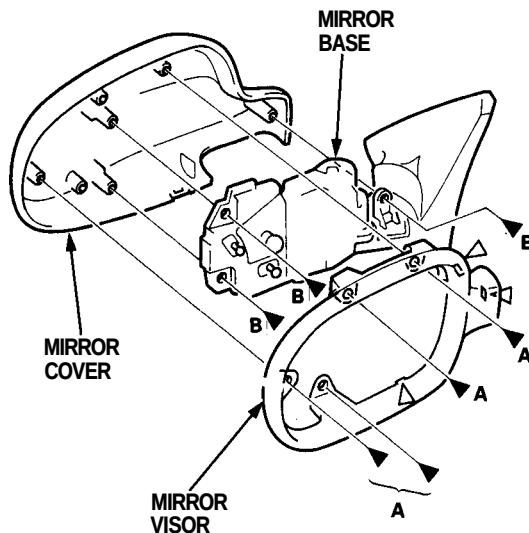
A ►, 4



B ►, 3



►: Hook locations, 3



4. Installation is the reverse of the removal procedure.



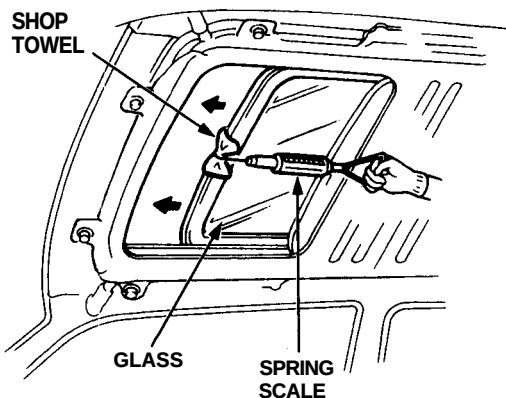
# Moonroof

## Closing Force and Opening Drag Check

1. Remove the headliner (see page [20-61](#)).
2. Closing force check: Have an assistant hold the switch to close the glass while you measure force required to stop it. Attach a spring scale as shown. Read the force as soon as the glass stops moving, then immediately release the switch and spring scale.

**CAUTION:** When using a spring scale, protect the leading edge of the glass with a shop towel.

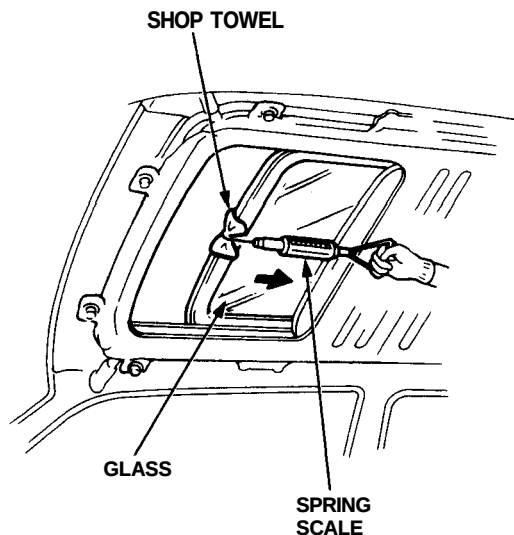
**Closing Force:** 200 - 290 N (20 - 30 kgf, 44 - 66 lbf)



3. If the force is not within specification, remove the moonroof motor (see page [20-52](#)), then check:
  - The gear portion and the inner cable for breakage and damage. If the gear portion is broken, replace the motor. If the inner cable is damaged, remove the frame (see page [20-52](#)), and replace the cable assembly (see page [20-53](#)).
  - The moonroof motor (see [section 23](#)). If the motor fails to run or doesn't turn smoothly, replace it.
  - The opening drag.

4. Opening drag check: Measure the effort required to open the glass using a spring scale as shown.

**CAUTION:** When using a spring scale, protect the leading edge of the glass with a shop towel.



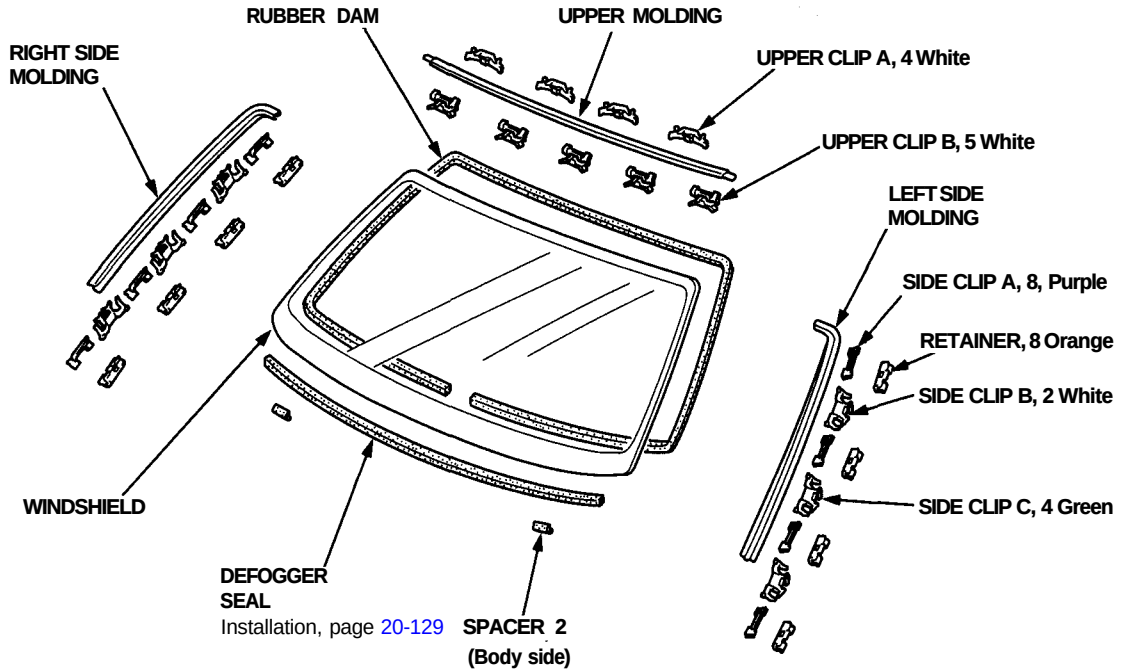
5. If the load is over 40 N (4 kgf, 9 lbf), check:
  - The side clearance and glass height adjustment (see pages [20-49](#), [20-50](#)).
  - For broken or damaged sliding parts (see pages [20-53](#), [20-54](#)). If any sliding parts are damaged, replace them.

# Windshield/Rear Window

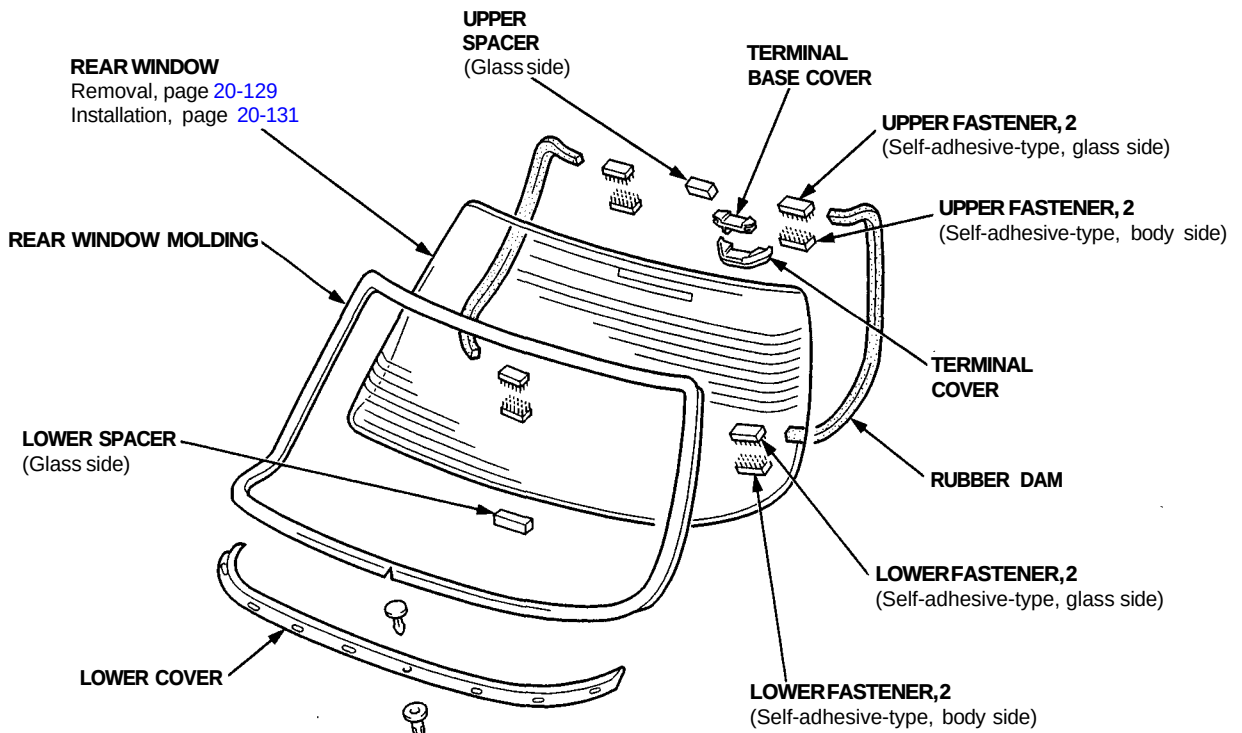
## Index

NOTE: The numbers after the part names show the quantities of the parts used.

### Windshield:



### Rear Window:



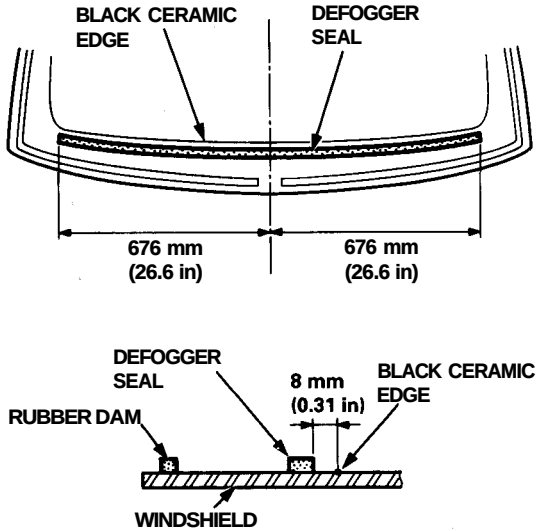


# Defogger Seal

## Installation

Glue the defogger seal to the inside face of the windshield as shown.

NOTE: Be careful not to touch the windshield where adhesive will be applied.



(cont'd)



# Rear Window

## Removal

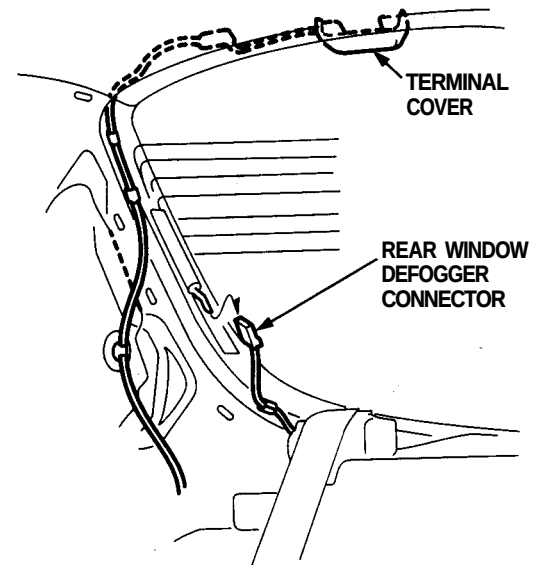
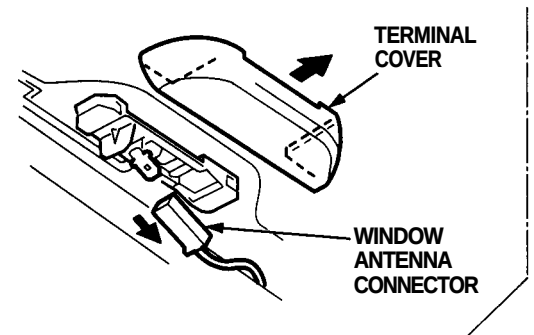
### CAUTION:

- Wear gloves to remove and install the rear window.
- Use seat covers to avoid damaging any surfaces.
- Do not damage the rear window defogger grid lines, window antenna grid lines, and terminals.

1. To remove the rear window, first remove the:
  - Trunk lid (see page [20-100](#))
  - Rear seat cushion and seat-back (see page [20-85](#))
  - Rear pillar trim (see page [20-59](#))
  - Rear shelf (see page [20-59](#))
2. Pull down the rear of the headliner (see page [20-61](#)).

**CAUTION:** Take care not to bend the headliner excessively.

3. Disconnect the rear window defogger connector from each side, remove the terminal cover, then disconnect the window antenna connector.



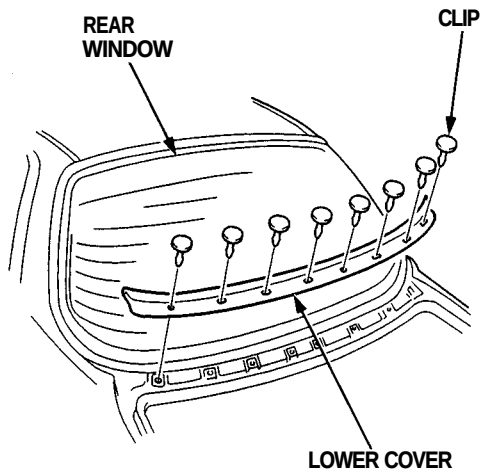
(cont'd)

# Rear Window

## Removal(cont'd)

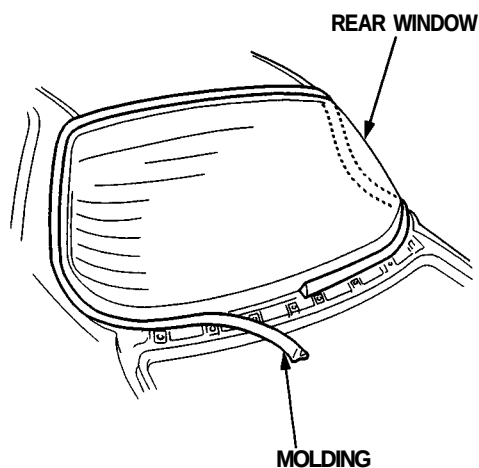
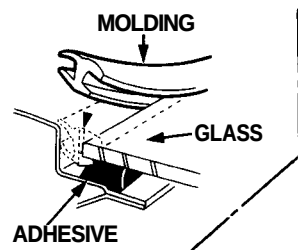
4. Remove the clips, then remove the lower cover.

NOTE: Use a clip remover to remove the clips.

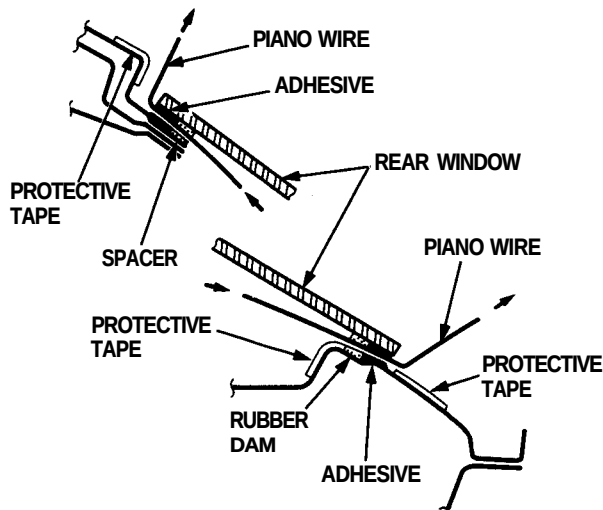


5. Remove the molding.

NOTE: If the molding removal is difficult to remove, cut it with a knife.

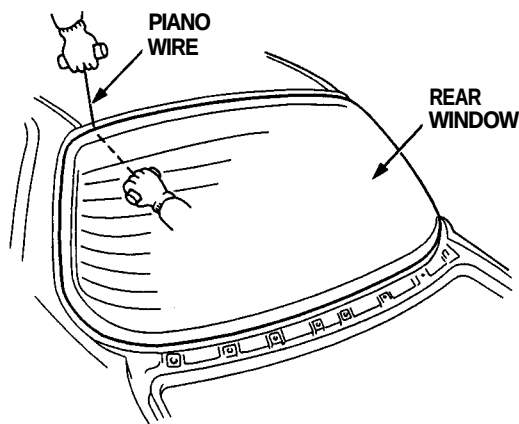


6. Apply protective tape to along the edge of the body as shown. Using an awl, make a hole through the rubber dam and adhesive from inside the car. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.



7. With a helper on the outside, pull the piano wire back and forth in a sawing motion, and carefully cut through the rubber dam and adhesive around the entire rear window.

**CAUTION:** Hold the piano wire as close to the rear window as possible to prevent damage to the body.



8. Carefully remove the rear window.



## Installation

- Using a knife, scrape the old adhesive smooth with a knife to a thickness of about 2 mm (0.08 in) on the bonding surface around the entire rear window opening flange.

**NOTE:**

- Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding
- Mask off surrounding surfaces before painting.
- Remove the upper spacer and rubber dam from the body.

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

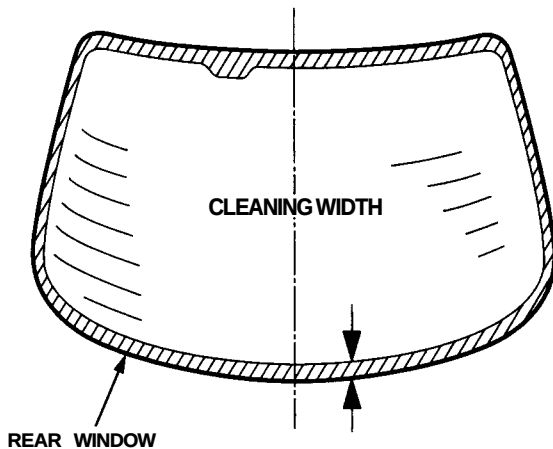
**NOTE:** After cleaning, keep oil, grease and water from getting on the surface.

- If the old rear window is to be reinstalled, use a putty knife to scrape off all traces of old adhesive and the rubber dam, then clean the rear window surface with alcohol where new adhesive is to be applied.

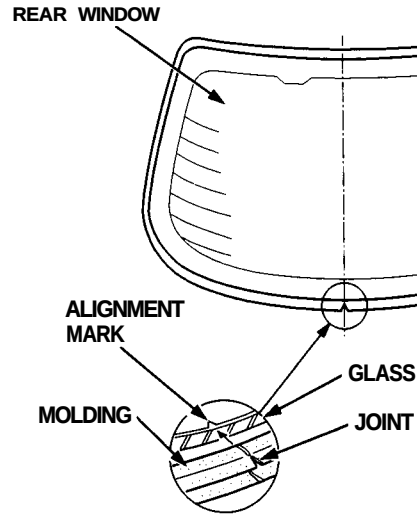
**NOTE:** Make sure the bonding surface is kept free of water, oil and grease.

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

**NOTE:** Clean the shadowed area.



- Glue the molding around the edge of the rear window as shown.

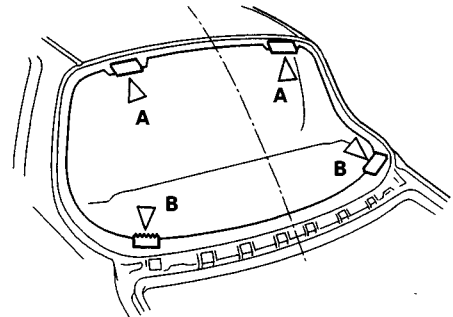
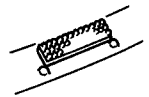


- Glue the upper fastener and lower fastener to the body as shown.

**A: Upper fastener locations, 2**



**B: Lower fastener locations, 2**

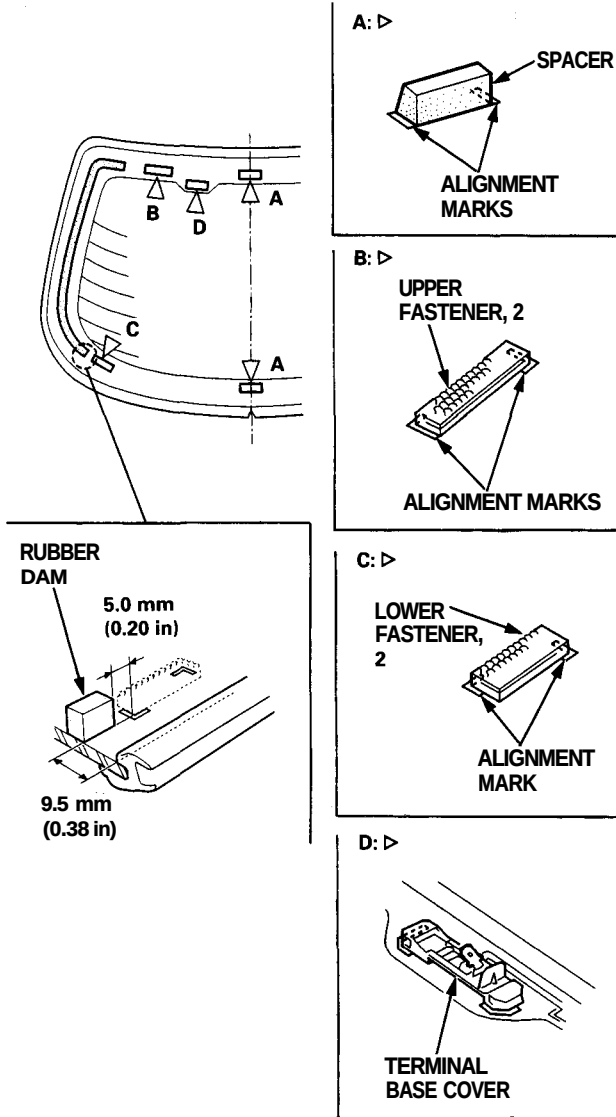


(cont'd)

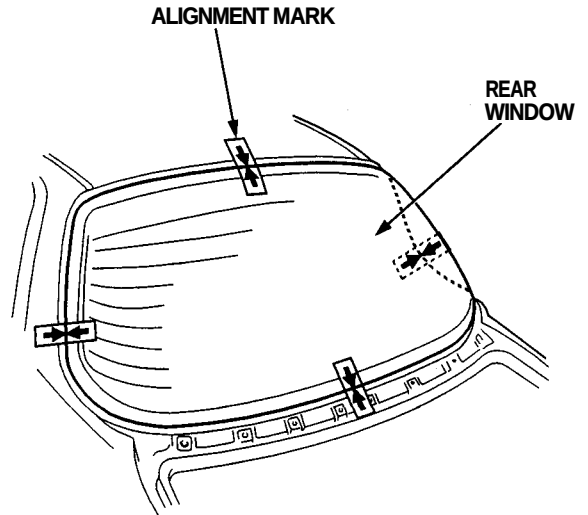
# Rear Window

## Installation (cont'd)

6. Glue the rubber dam, upper fastener, lower fastener, upper spacer, lower spacer and terminal base cover to the inside face of the rear window, as shown.



7. Set the rear window in the opening, then center it. Make alignment marks across the rear window and body with a grease pencil at the four points shown.

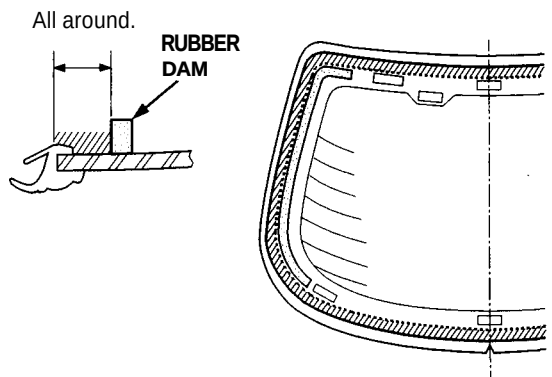


8. Remove the rear window.
9. With a sponge, apply a light coat of glass primer around the edge of the rear window as shown, then lightly wipe it off with gauze or cheesecloth.

### NOTE:

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

: Apply glass primer here.



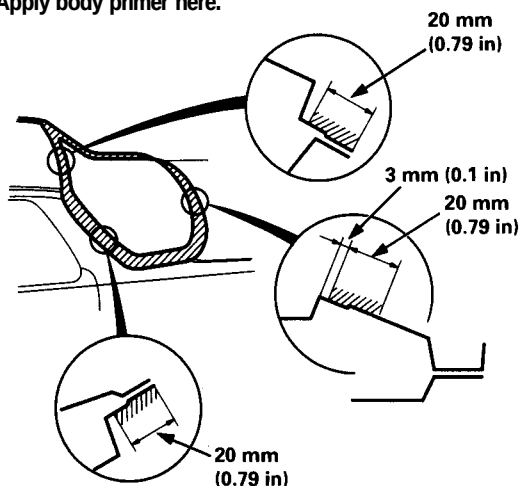


10. With a sponge, apply a light coat of body primer to the original adhesive remaining around the rear window opening flange. Let the body primer dry for at least 10 minutes.

## NOTE:

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

 : Apply body primer here.



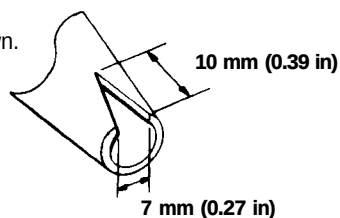
11. Thoroughly mix the adhesive and hardener together on a glass or metal plate with a putty knife.

## NOTE:

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

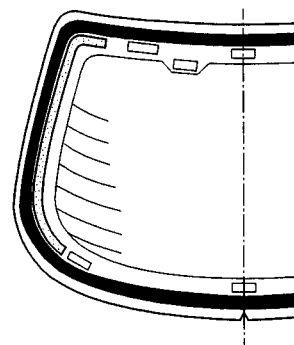
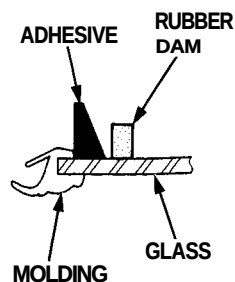
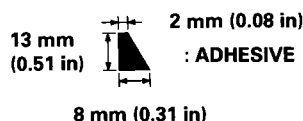
12. Before filling a cartridge, cut the end of the nozzle as shown.

Cut nozzle end as shown.



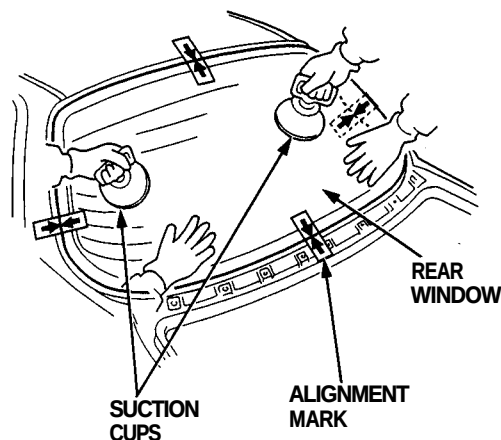
13. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive around the edge of the rear window as shown.

NOTE: Apply the adhesive within 30 minutes after applying the glass primer.



14. Use suction cups to hold the rear window over the opening, align it with the alignment marks made in step 7, and set it down on the adhesive. Lightly push on the rear window until its edges are fully seated on the adhesive all the way around.

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



(cont'd)

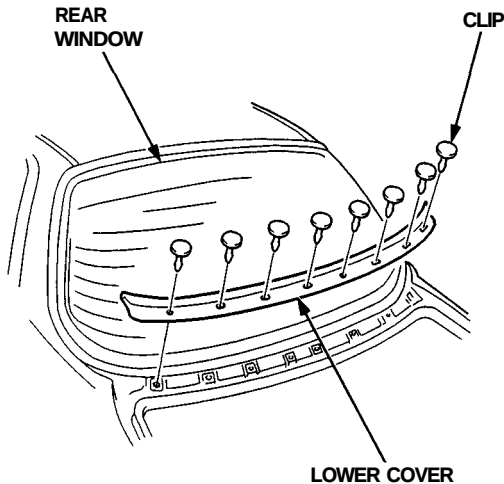
# Rear Window

## Installation (cont'd)

15. Scrape or wipe the excess adhesive off with a putty knife or towel.

NOTE: To remove adhesive from a painted surface or the rear window, use a soft shop towel dampened with alcohol.

16. Install the lower cover.



17. Let the adhesive dry for at least one hour, then spray water over the rear window and check for leaks. Mark leaking areas and let the rear window dry, then seal with sealant.

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

18. Reinstall all remaining removed parts.

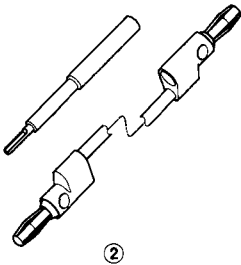
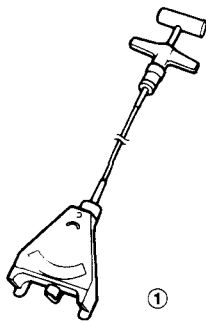
NOTE: Advise the customer not to do the following things for two to three days:

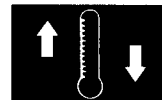
- Slam the doors with all the windows rolled up.
- Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

# Special Tools

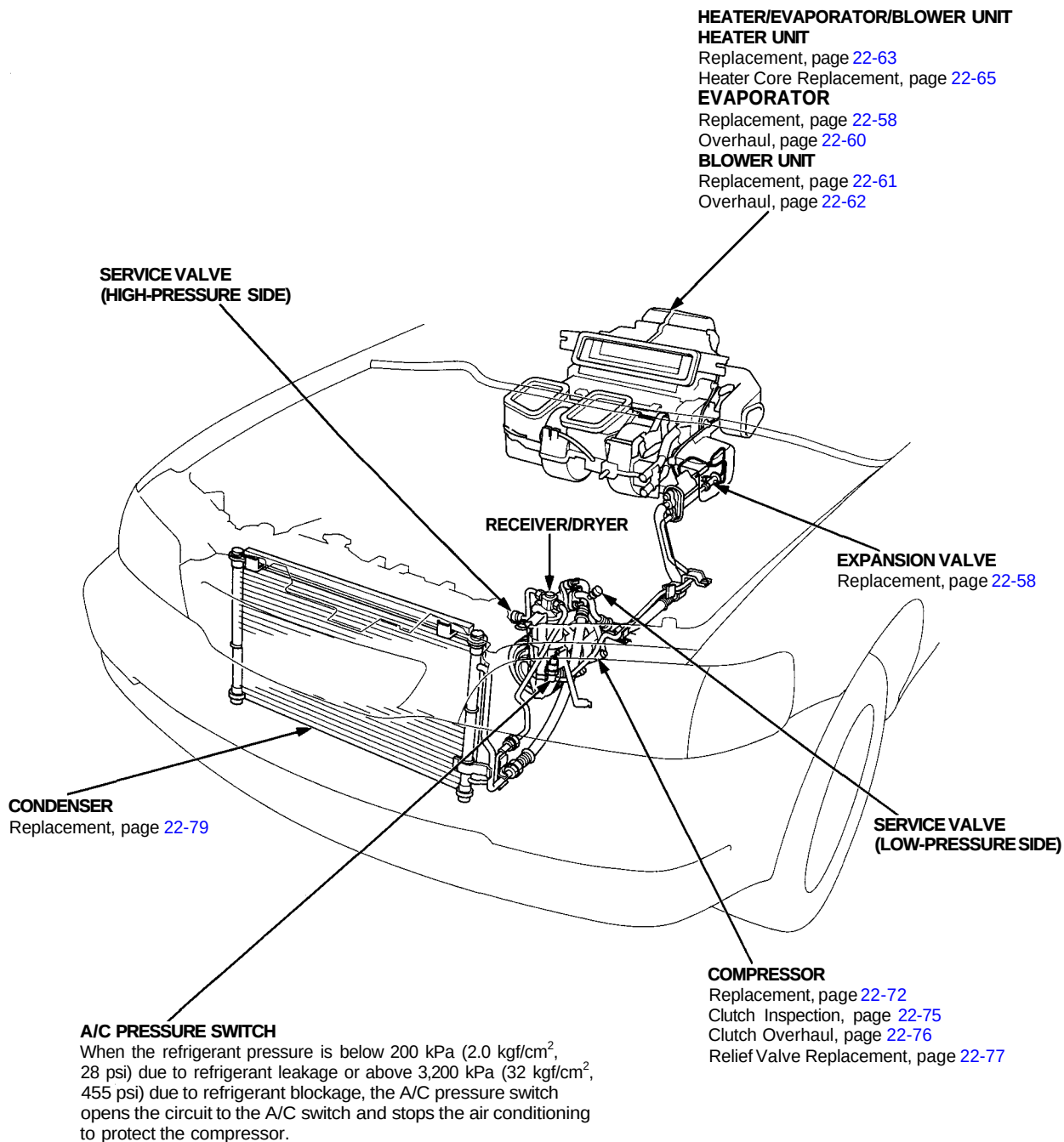
| Ref. No. | Tool Number    | Description        | Qty | Page Reference                      |
|----------|----------------|--------------------|-----|-------------------------------------|
| ①        | *07JGG-001010A | Belt Tension Gauge | 1   | <a href="#">22-78, 22-24a</a>       |
| ②        | 07SAZ-001000A  | Backprobe Set      | 2   | <a href="#">22-42, 22-45, 22-46</a> |

\* Included in the Belt Tension Gauge Set, 07TGG - 001000A.





# Illustrated Index



# Wiring/Connector Locations

NOTE: Refer to page 22-3a of the '96-98 Acura 3.2TL Service Manual supplement for the differences on this page for the 3.2TL.

**BLOWER MOTOR RELAY**  
(Located on the under-dash relay box)  
Test, page 22-57

**RADIATOR FAN CONTROL MODULE**  
(Located under right side of dash)  
Test, page, 22-48

**HEATER VALVE CONTROL SOLENOID VALVE CONNECTOR**

**SUNLIGHT SENSOR**  
Replacement, page 22-55  
Test, page 22-55

**MAIN WIRE HARNESS**

**RADIATOR FAN CONNECTOR**

**COMPRESSOR CLUTCH RELAY CONNECTOR**  
[Wire colors: WHT, RED, YEL/BLK, RED/BLU]  
Test, page 22-57

**COMPRESSOR CLUTCH CONNECTOR**

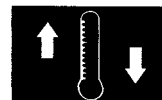
**A/C PRESSURE SWITCH CONNECTOR**

**OUTSIDE AIR TEMPERATURE SENSOR**  
Replacement, page 22-54  
Test, page 22-54

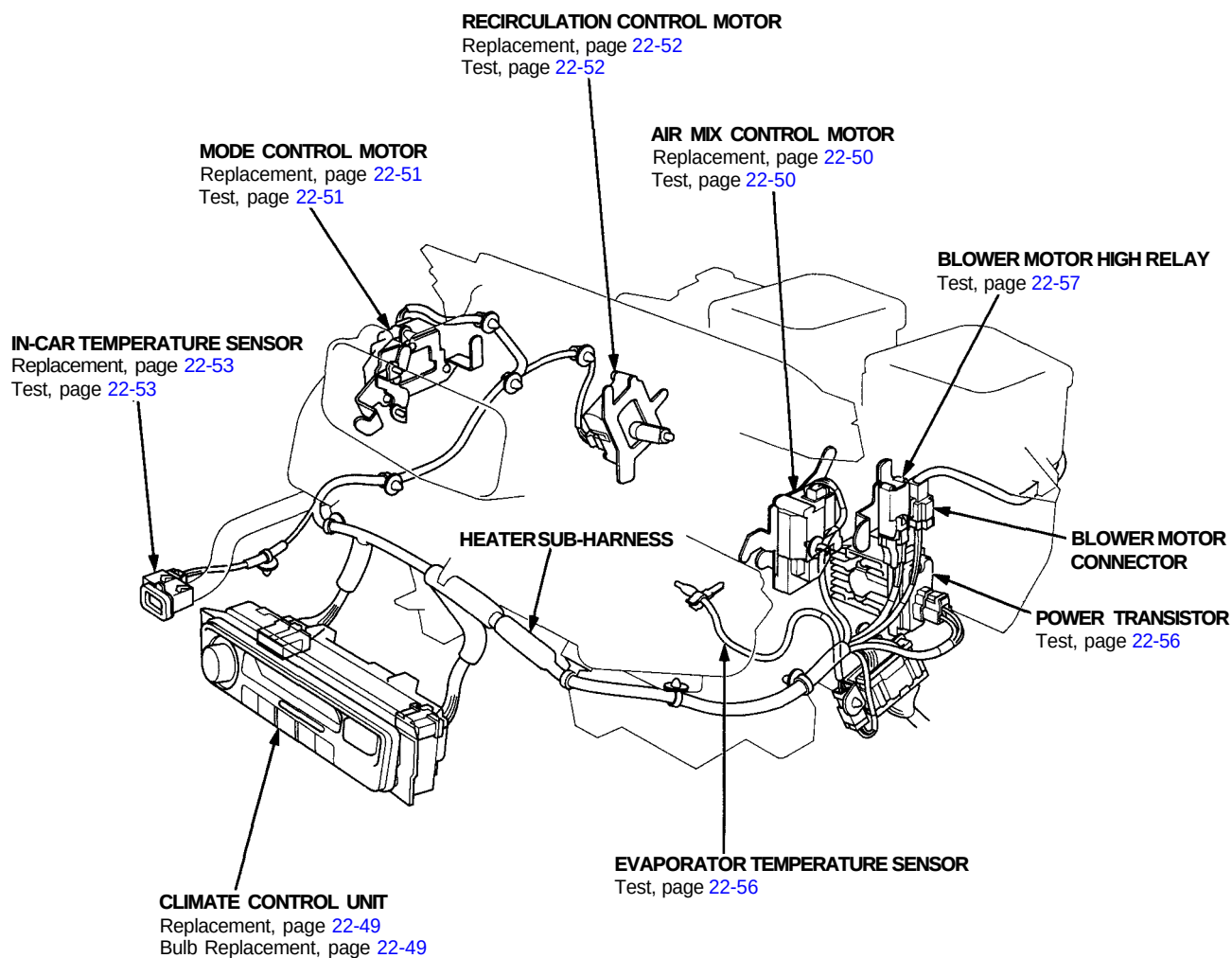
**CONDENSER FAN CONNECTOR**

**CONDENSER FAN RELAY CONNECTOR**  
[Wire colors: WHT, YEL/WHT, WHT/GRN, LT GRN/YEL]  
Test, page 22-57

**RADIATOR FAN RELAY CONNECTOR**  
[Wire colors: WHT, YEL, WHT/BLU and LT GRN/YEL]  
Test, page 22-57



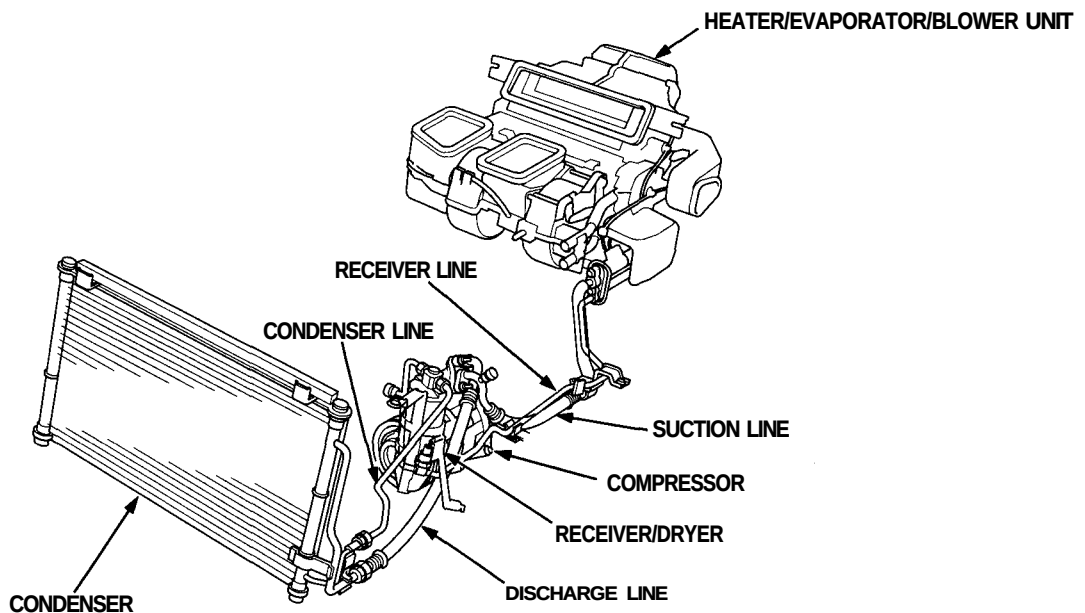
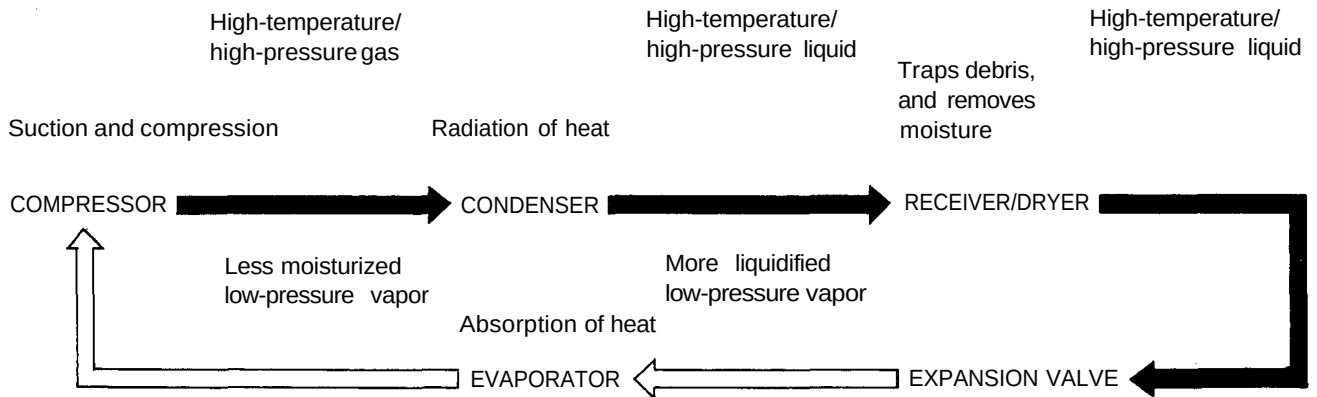
SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS (section 24) before performing repairs or service.



# Description

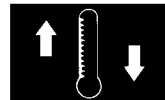
## Outline

The air conditioner system removes heat from the passenger compartment by circulating refrigerant through the system as shown below.



This vehicle uses HFC-134a (R-134a) refrigerant which does not contain chlorofluorocarbons. Pay attention to the following service items:

- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (ND-OIL 8) designed for the R-134a compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in compressor failure.
- All A/C system parts (compressor, discharge line, suction line, evaporator, condenser, receiver/dryer, expansion valve, O-rings for joints) have to be proper for refrigerant R-134a. Do not confuse with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- R-12 and R-134a refrigerant servicing equipment are not interchangeable. Use only a Recovery/Recycling/Charging System that is U.L.-listed and is certified to meet the requirements of SAE J2210 to service R-134a air conditioning systems.
- Always recover the refrigerant R-134a with an approved Recovery/Recycling/Charging System before disconnecting any A/C fitting.



# Troubleshooting

## Symptom Chart

For electrical malfunctions which are indicated by the self-diagnostic system, refer to self-diagnosis function (see next page).

### NOTE:

- Check the engine coolant level, and allow the engine to warm up before troubleshooting.
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a multimeter when testing.
- Before performing any troubleshooting procedures check:
  - Fuses \*<sup>1</sup> No. 17 (30 A), \*<sup>1</sup> No. 34 (20 A), \*<sup>1</sup> No. 38 (20 A), \*<sup>1</sup> No. 39 (10 A), \*<sup>2</sup> No. 4 (\*<sup>3</sup>), \*<sup>2</sup> No. 7 (7.5 A), \*<sup>2</sup> No. 8 (7.5 A)
  - Grounds No. G101, G301, G401, G403, G404
  - Cleanliness and tightness of all connectors
- \*<sup>1</sup>: In the under-hood fuse/relay box
- \*<sup>2</sup>: In the under-dash fuse/relay box
- \*<sup>3</sup>: No.4 (15 A): '95 and '96 models  
       : No.4 (20 A): '97 and '98 models

| Symptom                                                                                              | Remedy                                                                                                                       |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Check the malfunction indicator lamp (MIL).                                                          | Perform the procedures in the flowchart (see page <a href="#">22-28</a> ).                                                   |
| No heater and A/C in either manual or AUTO modes.                                                    | Perform the procedures in the flowchart (see page <a href="#">22-29</a> ).                                                   |
| Mode control motor does not run, or one or more modes are inoperative.                               | Perform the procedures in the flowchart (see page <a href="#">22-30</a> ).                                                   |
| Recirculation control doors do not change between FRESH and RECIRCULATE.                             | Perform the procedures in the flowchart (see page <a href="#">22-32</a> ).                                                   |
| Radiator fan does not run at all (but condenser fan runs with the A/C on).                           | Perform the procedures in the flowchart (see page <a href="#">22-34</a> , 2.5L).<br>(see page <a href="#">22-10a</a> , 3.2L) |
| Condenser fan does not run at all (but radiator fan runs with the A/C on).                           | Perform the procedures in the flowchart (see page <a href="#">22-37</a> , 2.5L).<br>(see page <a href="#">22-13a</a> , 3.2L) |
| Both fans (radiator and condenser) do not run for engine cooling, but they both run with the A/C on. | Perform the procedures in the flowchart (see page <a href="#">22-40</a> ).                                                   |
| Both fans do not run with the A/C on (2.5L) or at all (3.2L).                                        | Perform the procedures in the flowchart (see page <a href="#">22-41</a> , 2.5L) ( <a href="#">22-18a</a> , 3.2L).            |
| Compressor clutch does not engage.                                                                   | Perform the procedures in the flowchart (see page <a href="#">22-43</a> ).                                                   |
| A/C system does not come on (compressor and both fans).                                              | Perform the procedures in the flowchart (see page <a href="#">22-46</a> , 2.5L) ( <a href="#">22-16a</a> , 3.2L).            |

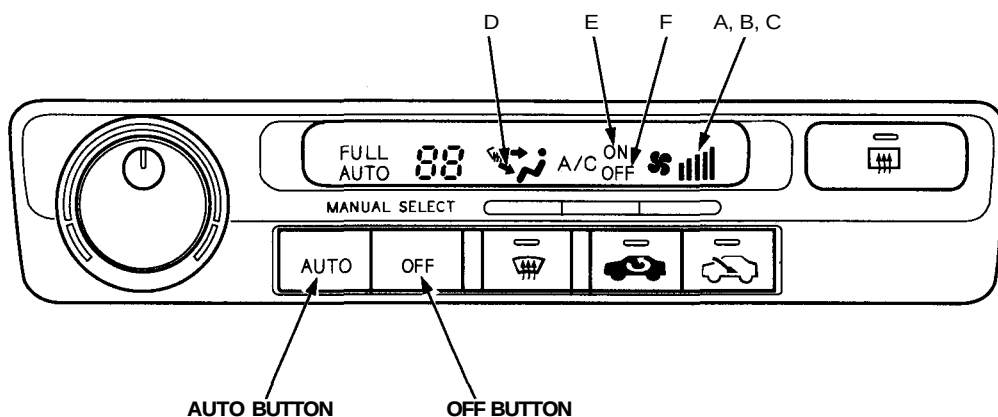
# Troubleshooting

## Self-diagnosis Function

The climate control unit has a self-diagnosis function.

### Running the Self-diagnosis Function

Turn the ignition switch ON (II), then press both the AUTO and OFF buttons at the same time. While the buttons are pressed, indicator lights A, B, C, D, E and F respectively will come on to indicate a faulty component.

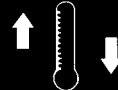


|   | Indicator | Component with problem         | Possible cause                                       | See page                                            |
|---|-----------|--------------------------------|------------------------------------------------------|-----------------------------------------------------|
| A |           | In-car temperature sensor      | Faulty sensor, open or short circuit                 | <a href="#">22-12</a>                               |
| B |           | Outside air temperature sensor | Faulty sensor, open or short circuit                 | <a href="#">22-14</a>                               |
| C |           | Sunlight sensor                | Faulty sensor, open or short circuit                 | <a href="#">22-16</a>                               |
| D |           | Evaporator temperature sensor  | Faulty sensor, open or short circuit                 | <a href="#">22-18</a>                               |
| E | ON        | Air mix control motor          | Open or short circuit, obstructed door, faulty motor | <a href="#">22-20</a>                               |
| F | OFF       | Blower motor                   | Open or short circuit, faulty motor                  | <a href="#">22-22 or 22-24 (2.5L), 22-6a (3.2L)</a> |

NOTE: In case of multiple problems, the respective indicator lights will come on. If indicator lights A, B, C, D, and E come on at the same time, there may be an open in the common ground wire of the sensors.

### Resetting the Self-diagnosis Function

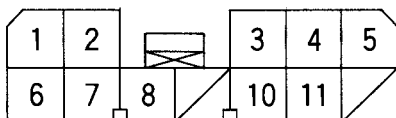
Turning the ignition switch OFF will cancel the self-diagnosis function. After service work, run the self-diagnosis function once again to check that there is no other problem.



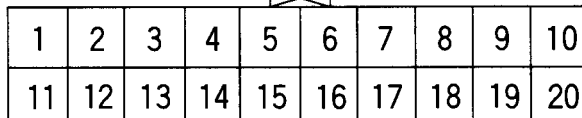
## Climate Control Unit Input/Output Signals

### CLIMATE CONTROL UNIT CONNECTORS

12P CONNECTOR



20P CONNECTOR



### WIRE SIDE OF FEMALE TERMINALS

12P CONNECTOR

| Terminal No. | Wire Color | Signal                              |       | Terminal No. | Wire Color | Signal                |        |
|--------------|------------|-------------------------------------|-------|--------------|------------|-----------------------|--------|
| 1            | WHT/GRN    | BACK UP                             | INPUT | 7            | RED        | BRIGHTNESS CONTROLLER | OUTPUT |
| 2            | BLK/YEL    | IG2                                 | INPUT | 8            | BLK        | GROUND                | OUTPUT |
| 3            | YEL/GRN    | REAR WINDOW DEFOGGER RELAY          | INPUT | 9            |            |                       |        |
| 4            | YEL        | HEATER VALVE CONTROL SOLENOID VALVE | INPUT | 10           | RED/WHT    | AIR MIX COOL          | INPUT  |
| 5            | BLU/RED    | BLOWER FEEDBACK                     | INPUT | 11           | RED/YEL    | AIR MIX HOT           | INPUT  |
| 6            | RED/BLK    | COMBINATION LIGHT SWITCH            | INPUT | 12           |            |                       |        |

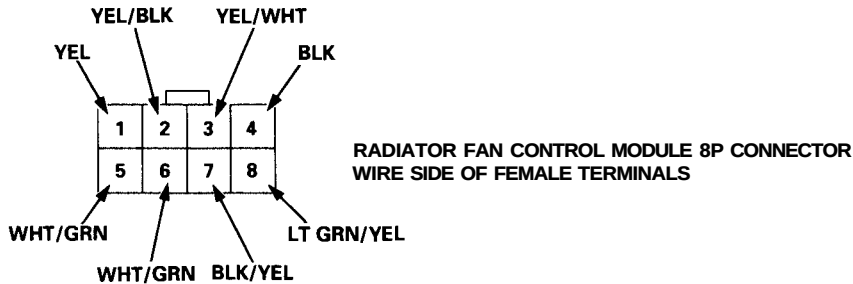
20P CONNECTOR

| Terminal No. | Wire Color | Signal                 |        | Terminal No. | Wire Color | Signal                                  |        |
|--------------|------------|------------------------|--------|--------------|------------|-----------------------------------------|--------|
| 1            | RED/BLK    | POWER TRANSISTOR BASE  | OUTPUT | 11           | BLK        | MODE MOTOR GROUND                       | INPUT  |
| 2            | GRN        | AIR MIX POTENTIAL +5 V | OUTPUT | 12           | BLK/GRN    | SENSOR GROUND                           | INPUT  |
| 3            | BRN        | FRESH                  | INPUT  | 13           | ORN/WHT    | SUNLIGHT SENSOR                         | OUTPUT |
| 4            | RED/GRN    | RECIRCULATE            | INPUT  | 14           | RED/WHT    | ENGINE COOLANT TEMPERATURE (ECT) SENSOR | OUTPUT |
| 5            | YEL/BLU    | MODE DEF               | INPUT  | 15           | PNK/WHT    | OUTSIDE AIR TEMPERATURE SENSOR          | OUTPUT |
| 6            | GRY        | MODE HEAT/DEF          | INPUT  | 16           | GRY/RED    | IN-CAR TEMPERATURE SENSOR               | OUTPUT |
| 7            | BLU/RED    | MODE HEAT              | INPUT  | 17           | BLU        | AIR MIX POTENTIAL                       | INPUT  |
| 8            | BRN        | MODE HEAT/VENT         | INPUT  | 18           | LT GRN     | EVAPORATOR TEMPERATURE SENSOR           | OUTPUT |
| 9            | YEL/RED    | MODE VENT              | INPUT  | 19           | BLU/BLK    | BLOWER MOTOR HIGH RELAY                 | INPUT  |
| 10           | PNK        | A/C PRESSURE SWITCH    | INPUT  | 20           | ORN        | VEHICLE SPEED SENSOR (VSS)              | OUTPUT |

# Troubleshooting

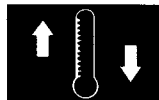
## Radiator Fan Control Module Input Tests

NOTE: Perform the following tests with the radiator fan control module 8P connector connected, the ignition switch ON (II), and the A/C switch OFF. If you find the cause of a problem, correct it before you continue.



| Terminal No. | Wire color | Test condition                                          | Desired results                                              | Corrective action if desired results are not obtained                                                                                                                                                                                                                                                                                                                                                        |
|--------------|------------|---------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4            | BLK        | Check for voltage to body ground.                       | There should be less than one volt.                          | Repair open to body ground.                                                                                                                                                                                                                                                                                                                                                                                  |
| 6            | WHT/GRN    | Check for battery voltage:                              | There should be battery voltage.                             | Check No. 39 (10 A) fuse in the under-hood fuse/relay box; if OK, repair open in the WHT/GRN wire.                                                                                                                                                                                                                                                                                                           |
| 7            | BLK/YEL    | Check for battery voltage:<br>Ignition switch - ON (II) |                                                              | Check No. 4* fuse in the under-dash fuse/relay box; if OK, repair open in the BLK/YEL wire.                                                                                                                                                                                                                                                                                                                  |
| 2            | YEL/BLK    | Check for battery voltage:<br>Ignition switch - ON (II) |                                                              | Check No. 8 (7.5 A) fuse in the under-dash fuse/relay box; if OK, repair open in the YEL/BLK wire.                                                                                                                                                                                                                                                                                                           |
| 3            | YEL/WHT    | Check for battery voltage:<br>Ignition switch - ON (II) |                                                              | Replace the radiator fan control module. Before you connect the new radiator fan control module, disconnect both fan relays. Check for continuity between the YEL/WHT (or YEL) wire and ground, using the 20 k $\Omega$ scale on your ohmmeter. There should be no continuity. If there is continuity, the new radiator fan control module will be damaged when you connect it.                              |
| 1            | YEL        | Check for battery voltage:<br>Ignition switch - ON (II) |                                                              |                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8            | LT GRN/YEL | Connect to body ground:<br>Ignition switch - ON (II)    | Condenser fan and radiator fan should come on.               | Check for an open in the LT GRN/YEL wire between the radiator fan control module and the condenser fan relay or the radiator fan relay. If OK, check for an open in the YEL/WHT wire between the radiator fan control module and the condenser fan relay, or the YEL wire between the radiator fan control module and the radiator fan relay. If OK, test the condenser fan relay or the radiator fan relay. |
| 5            | WHT/GRN    | Check for voltage.                                      | Approx. 11 V (engine coolant temperature below 207°F [97°C]) | Faulty engine coolant temperature (ECT) switch B, short to body ground, or faulty radiator fan control module.                                                                                                                                                                                                                                                                                               |

\* No.4 (15 A): '95 and '96 models  
No.4 (20 A): '97 and '98 models



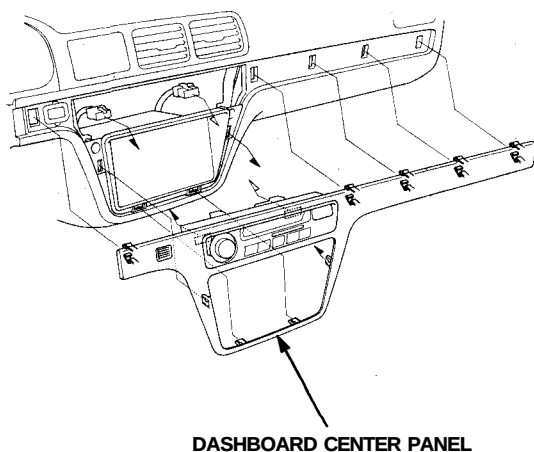
# Climate Control Unit

## Replacement

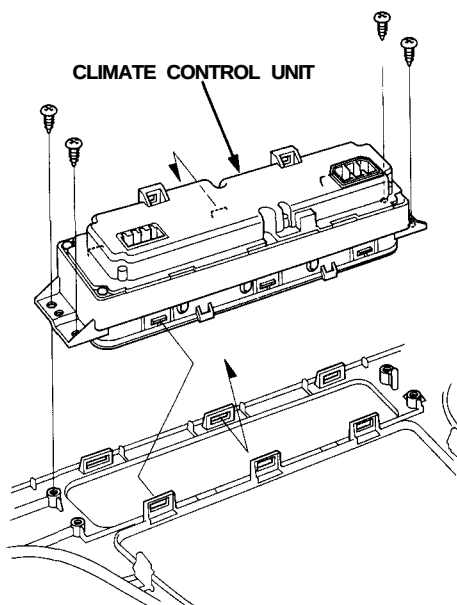
1. Remove the dashboard center panel together with the climate control unit, then disconnect the connectors.

### CAUTION:

- Be careful not to damage the dashboard center panel and the dashboard.
- Do not pull between the clips: Otherwise, the panel may break.



2. Remove the four self-tapping screws and the climate control unit.



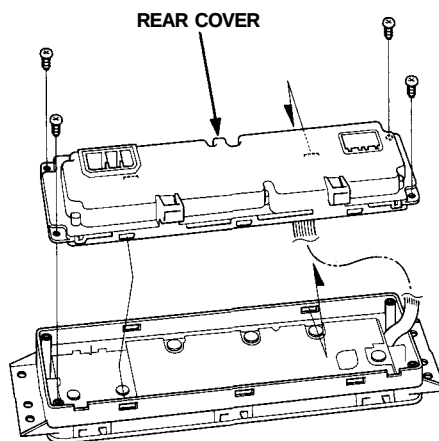
3. Install in the reverse order of removal.

## Bulb Replacement

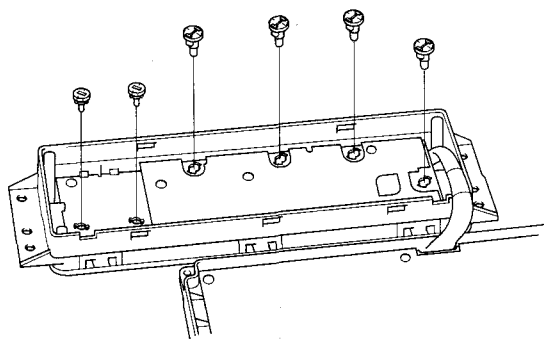
### CAUTION:

- Before replacing bulbs, discharge the static electricity (which accumulated on you when you removed the climate control unit) by touching the door striker or other metal parts of the body.
- Do not touch the electronic components on the printed circuit board in the climate control unit.

1. Remove the climate control unit (see previous column).
2. Carefully remove the four self-tapping screws and the rear cover.



3. Remove the bulb(s) with a flat-tip screwdriver.



4. Install in the reverse order of removal. Make note of the following items.

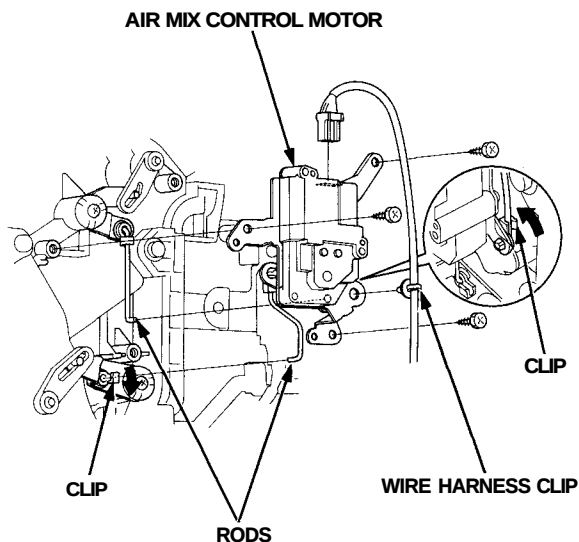
### NOTE:

- Do not kink or pull on the wires between the control unit and printed circuit board.
- After installation, operate the climate control unit to see whether it works properly.
- Run the self-diagnosis function to confirm that there are no problems in the system.

# Air Mix Control Motor

## Replacement

1. Turn the ignition switch ON (II), then set the temperature control dial on MAX COOL. Turn the ignition switch OFF.
2. Remove the glove box (see [section 20](#)).
3. Remove the wire harness clip, and disconnect the 5P connector from the air mix control motor.
4. Unlock the clips from the air mix control rods, then remove the three self-tapping screws and the air mix control motor.



5. Remove the rod from the air mix control motor.
6. Install in the reverse order of removal. After installation, make sure the air mix control motor runs smoothly.

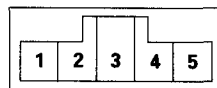
## Test

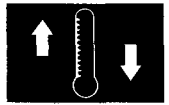
1. Disconnect the 5P connector from the air mix control motor.
2. Connect battery power to the No. 1 terminal of the air mix control motor and ground the No. 5 terminal; the air mix control motor should run, and stop at HOT. If it doesn't, reverse the connections; the air mix control motor should run, and stop at COOL.

NOTE: If the air mix control motor does not run, remove it, then check the air mix control linkage and doors for smooth movement. If they move smoothly, replace the air mix control motor.

3. Measure the resistance between the No. 2 and No. 3 terminals. It should be approximately  $6\text{ k}\Omega \pm 20\%$ .
4. Measure the resistance between the No. 3 and No. 4 terminals. It should be approx.  $1.2\text{ k}\Omega \pm 20\%$  at MAX HOT and approximately  $4.8\text{ k}\Omega \pm 20\%$  at MAX COOL.

AIR MIX CONTROL MOTOR

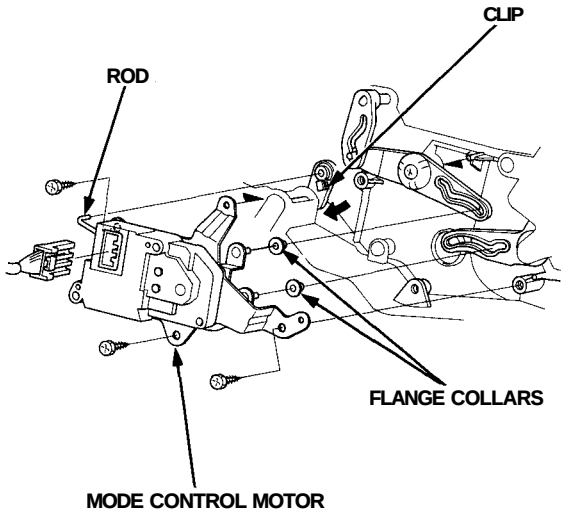




# Mode Control Motor

## Replacement

1. Turn the ignition switch ON (II), then set the mode control switch on VENT. Turn the ignition switch OFF.
2. Remove the dashboard (see [section 20](#)).
3. Disconnect the 7P connector from the mode control motor.
4. Unhook the clip from the mode control rod, then remove the three self-tapping screws, the mode control motor and the flange collars.



5. Remove the rod from the mode control motor.
6. Install in the reverse order of removal. After installation, make sure the mode control motor runs smoothly.

## Test

1. Disconnect the 7P connector from the mode control motor.
2. Connect battery power to the No. 1 terminal, and ground the No. 7 terminal.

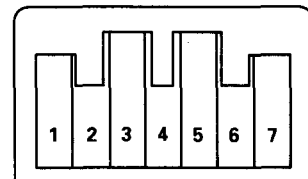
**CAUTION: Never connect the battery in the opposite direction.**

3. Using a jumper wire, connect the No. 7 terminal individually to the No. 2, 3, 4, 5 and 6 terminals in that order. Each time the connection is made, the mode control motor should run smoothly and stop.

**NOTE:** If the mode control motor does not run when jumping the first terminal, jump that terminal again after jumping the other terminals.

The mode control motor is OK if it runs when jumping the first terminal again.

**MODE CONTROL MOTOR**

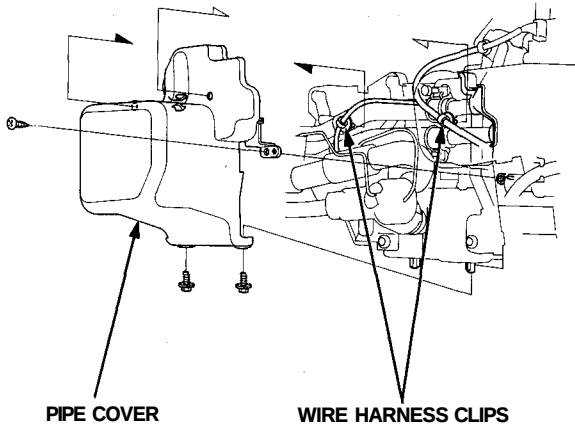


4. If the mode control motor does not run in step 2, remove it, then check the mode control linkage and doors for smooth movement. If they move smoothly, replace the mode control motor.

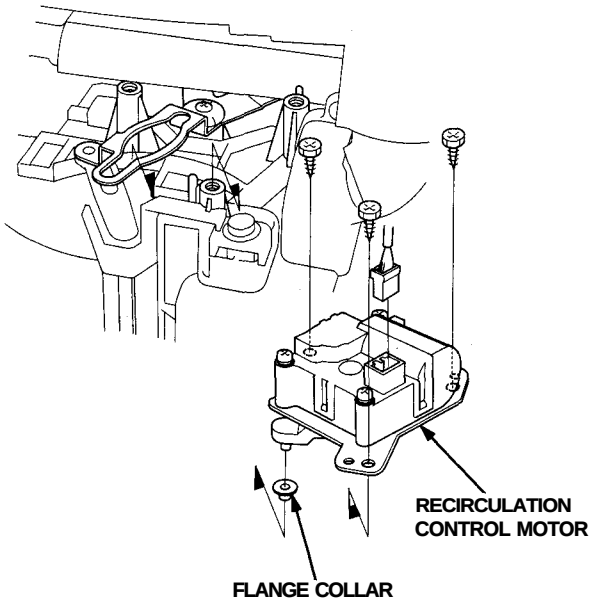
# Recirculation Control Motor

## Replacement

1. Remove the wire harness clips, the three self-tapping screws and the pipe cover.



2. Disconnect the 4P connector from the recirculation control motor.
3. Remove the three self-tapping screws, the recirculation control motor and the flange collar.



4. Install in the reverse order of removal. After installation, make sure the recirculation control motor runs smoothly.

## Test

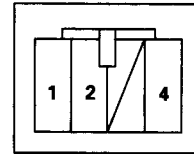
1. Disconnect the 4P connector from the recirculation control motor.
2. Connect battery power to the No. 1 terminal, and ground the No. 2 and No. 4 terminals; the recirculation control motor should run smoothly.

**CAUTION:** Never connect the battery in the opposite direction.

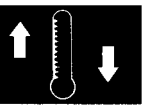
3. Disconnect the No. 2 or No. 4 terminals from ground; the recirculation control motor should stop at FRESH or RECIRCULATE.

**NOTE:** Don't cycle the recirculation control motor for a long time.

**RECIRCULATION CONTROL MOTOR**



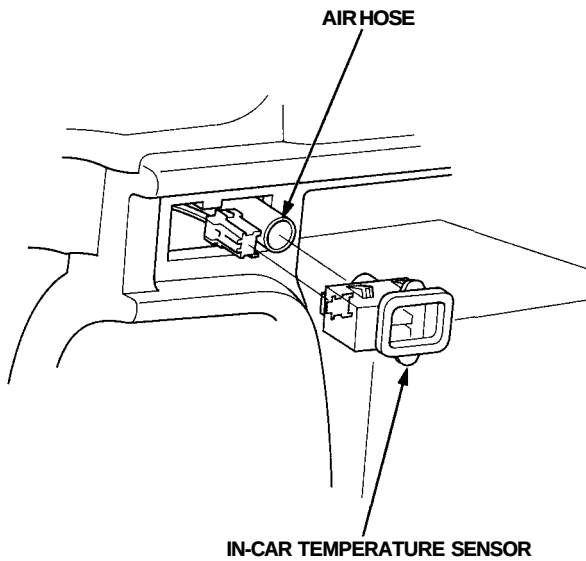
4. If the recirculation control motor does not run in step 1, remove it, then check the recirculation control linkage and doors for smooth movement. If they move smoothly, replace the recirculation control motor.



# In-car Temperature Sensor

## Replacement

1. Remove the dashboard center panel (see page 22-49).
2. Remove the in-car temperature sensor from the dashboard, then disconnect the 2P connector and the air hose.



3. Install in the reverse order of removal.

NOTE: Be sure to connect the air hose securely.

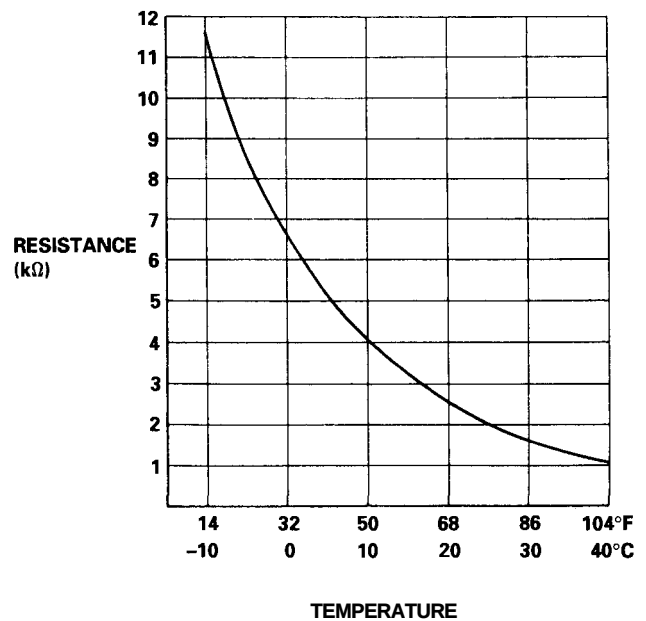
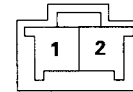
## Test

Compare the resistance reading between the No. 1 and No. 2 terminals of the in-car temperature sensor with the specifications shown in following graph; resistance should be within specifications.

NOTE: Check for change in resistance by heating or cooling the sensor with a hair drier, etc.

**CAUTION:** The sensor uses a thermistor which can be damaged if high current is applied during testing. Therefore, use a circuit tester with an output of 1 mA or less at the 20 k $\Omega$  range.

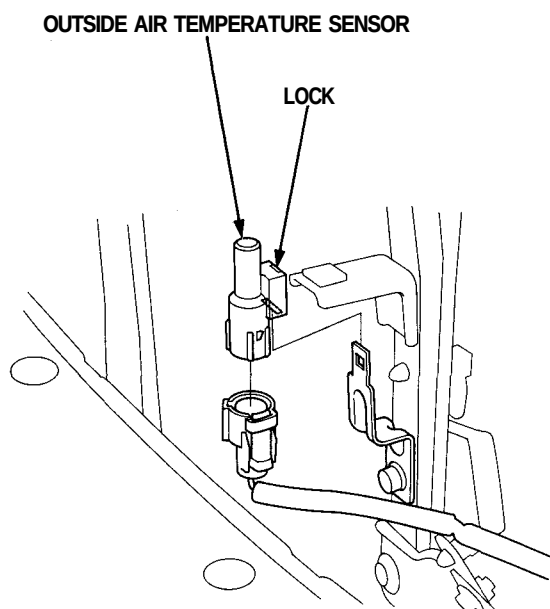
IN-CAR TEMPERATURE SENSOR



# Outside Air Temperature Sensor

## Replacement

1. Disconnect the 2P connector from the outside air temperature sensor.
2. Release the lock, and remove the outside air temperature sensor.



3. Install in the reverse order of removal.

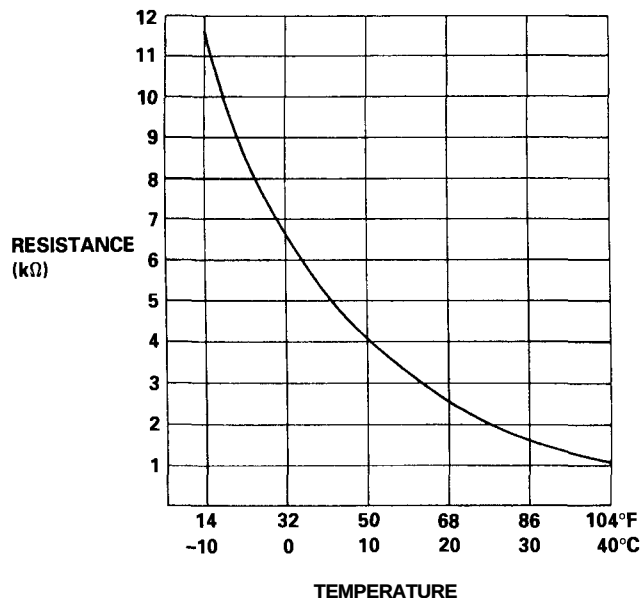
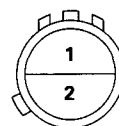
## Test

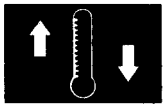
Compare the resistance reading between the No. 1 and No. 2 terminals of the outside air temperature sensor with the specifications shown in following graph; resistance should be within specifications.

NOTE: Dip the sensor in ice water, and measure resistance. Then pour hot water on the sensor, and check for change in resistance.

**CAUTION:** The sensor uses a thermistor which can be damaged if high current is applied during testing. Therefore, use a circuit tester with an output of 1 mA or less at the 20 k $\Omega$  range.

OUTSIDE AIR TEMPERATURE SENSOR



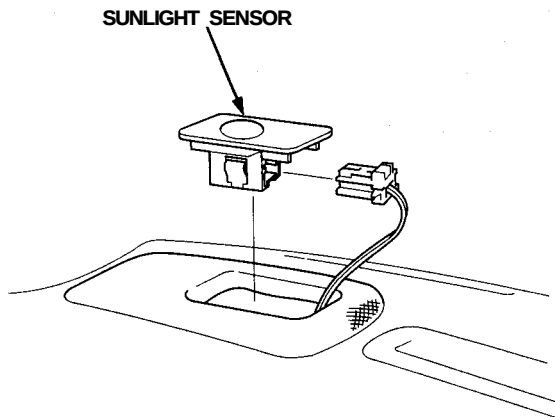


# Sunlight Sensor

## Replacement

1. Remove the sunlight sensor from the left tweeter speaker grille, and disconnect the 2P connector.

NOTE: Be careful not to damage the left tweeter speaker grille.



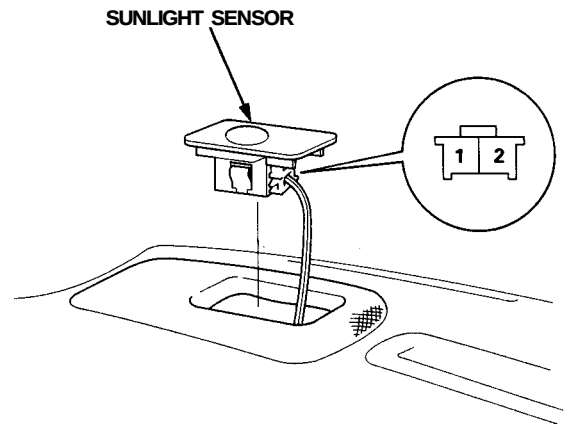
2. Install in the reverse order of removal.

## Test

Turn the ignition switch ON (II). Measure the voltage between the terminals with the (+) probe on the No. 1 terminal and the (-) probe on the No. 2 terminal with the 2P connector connected. Voltage should be;

- $3.7 \pm 0.2$  V or more with the sensor out of direct sunlight.
- $3.6 \pm 0.2$  V or less with the sensor in direct sunlight.

NOTE: The voltage will not change under the light of a flashlight or a fluorescent lamp.



# Evaporator Temperature Sensor

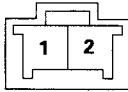
## Test

Compare the resistance reading between the No. 1 and No. 2 terminals of the evaporator temperature sensor with the specifications shown in following graph; resistance should be within specifications.

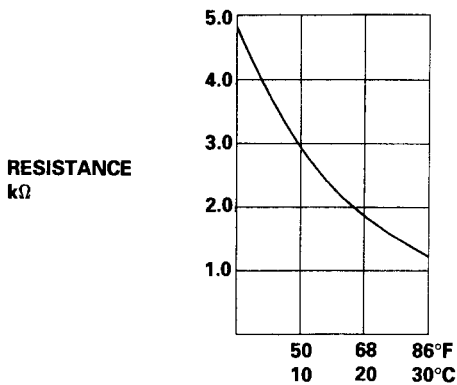
1. Dip the sensor in ice water, and measure resistance.
2. Pour hot water on the sensor, and check for change in resistance.

**CAUTION:** The sensor uses a thermistor which can be damaged if high current is applied during testing. Therefore, use a circuit tester with an output of 1 mA or less at the 20 k $\Omega$  range.

EVAPORATOR TEMPERATURE SENSOR



TERMINAL SIDE OF MALE TERMINALS



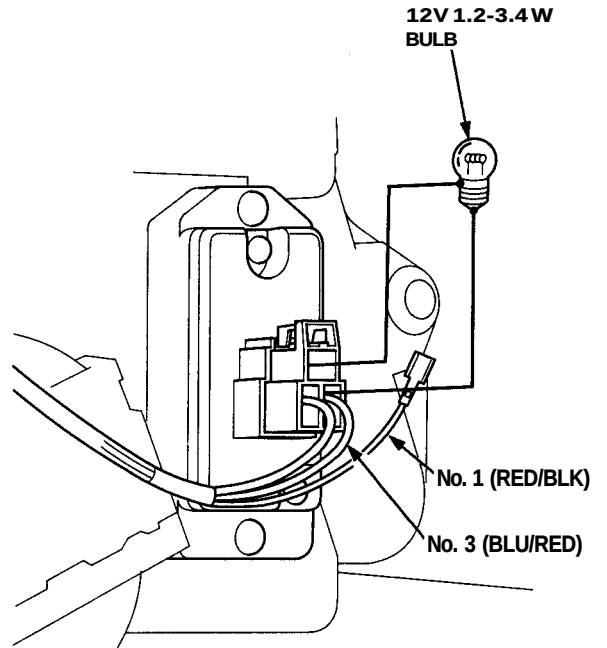
# Power Transistor

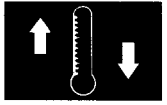
## Test

1. Disconnect the 3P connector from the power transistor.
2. Pull out the No. 1 (RED/BLK) terminal from the connector.
3. Connect a 1.2 - 3.4 watt bulb as shown, then reconnect the 3P connector to the power transistor.
4. Turn the ignition switch ON (II), and check that the blower motor runs.

### CAUTION:

- To avoid a loose or disconnected terminal, be careful not to damage the locking tab when disconnecting and connecting the terminal.
- Insulate the No. 1 (RED/BLK) terminal from the body until the testing is completed.

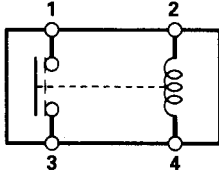




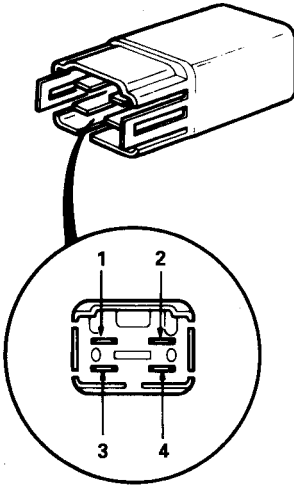
# Relays

## Test

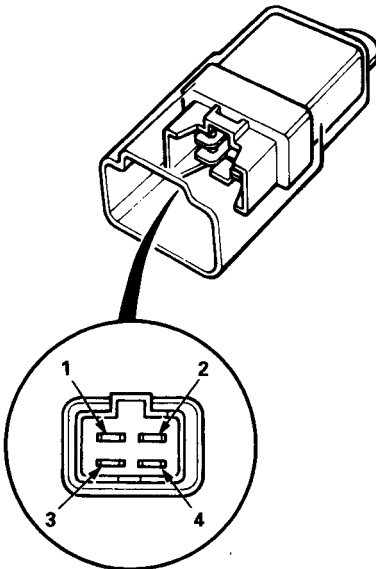
There should be continuity between the No. 1 and No. 3 terminals when power and ground are connected to the No. 2 and No. 4 terminals, and there should be no continuity when power is disconnected.



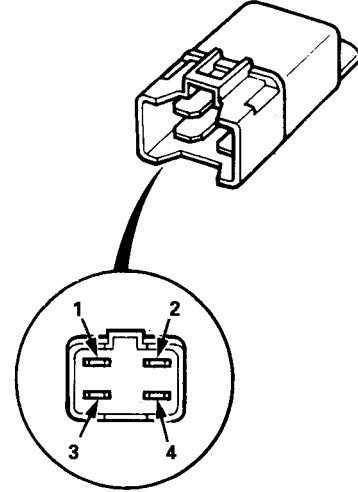
- Blower motor relay



- Radiator fan relay
- Condenser fan relay
- Compressor clutch relay



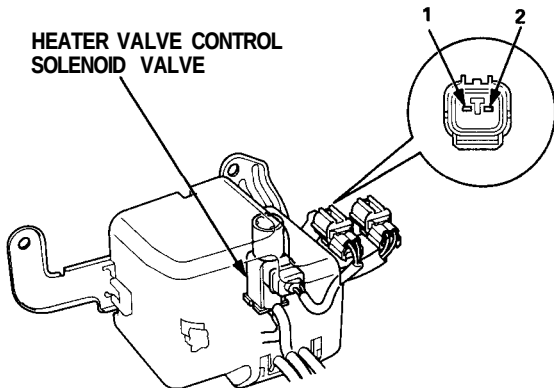
- Blower motor high relay



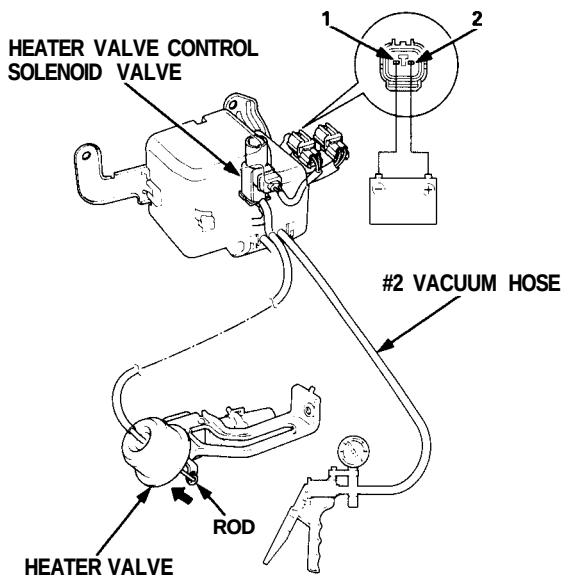
# Heater Valve

## Test

1. Disconnect the 2P connector from the heater valve control solenoid valve.
2. Check for continuity between the No. 1 and No. 2 terminals of the heater valve control solenoid valve.



3. Disconnect the #2 vacuum hose from the intake manifold, then connect a vacuum pump to the #2 vacuum hose.



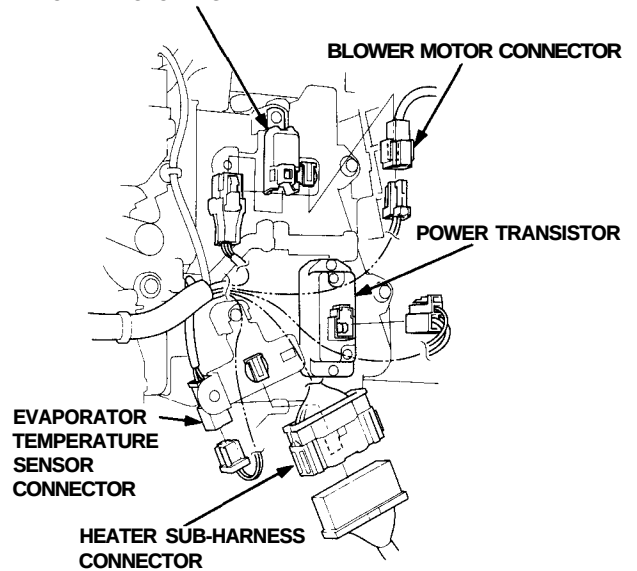
4. Connect battery power to the No. 2 terminal of the heater valve control solenoid valve, and ground the No. 1 terminal.
5. Check that the rod of the heater valve is pulled toward the diaphragm when vacuum is applied to the heater valve control solenoid with a vacuum pump.
6. Check that the rod is returned to the original position when power is disconnected.

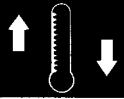
# Evaporator

## Replacement

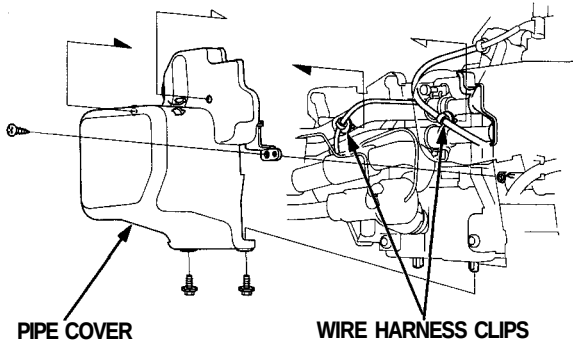
1. Recover the refrigerant with a Recovery/Recycling/Charging System (see page [22-71](#)).
2. Remove the dashboard lower cover, the knee bolster and the glove box (see [section 20](#)).
3. Remove the ECM (see [section 11](#)).
4. Remove the ABS control unit and the radiator fan control module together with the bracket, then remove the TCM (see [section 14](#)). Remove the security control unit.
5. Disconnect the connectors from the power transistor, blower motor high relay, evaporator temperature sensor, blower motor and the heater sub-harness, then remove the blower motor and heater sub-harness connectors from the brackets. Disconnect the passenger's airbag harness clip.

### BLOWER MOTOR HIGH RELAY



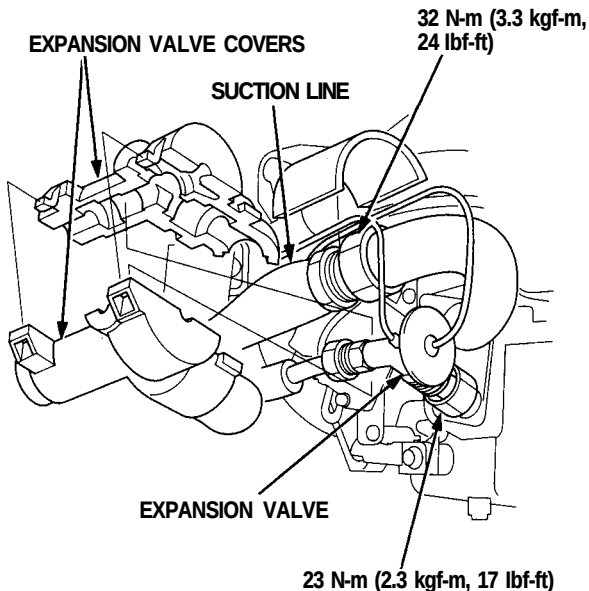


6. Remove the wire harness clips, the three self-tapping screws and the pipe cover.



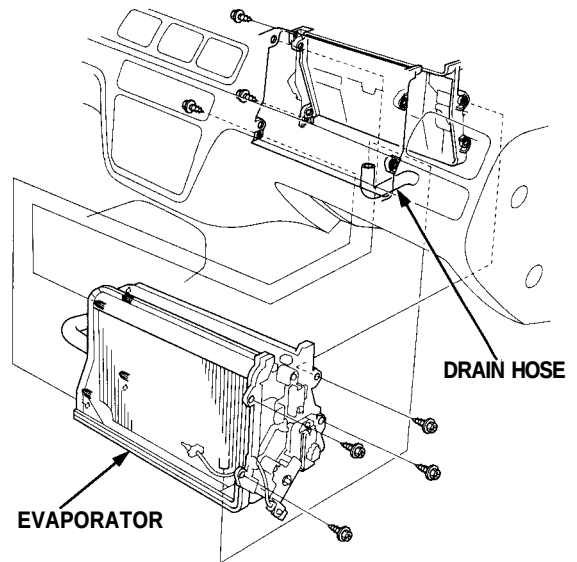
7. Remove the expansion valve covers, then disconnect the suction line and unbolt the expansion valve from the evaporator.

NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



8. Disconnect the drain hose, and remove the seven self-tapping screws. Then pull the evaporator out of the front passengers side to remove it.

NOTE: Be careful not to damage the evaporator fins when removing the evaporator.



9. Install in the reverse order of removal. Make note of the following items.

- If you're installing a new evaporator, add refrigerant oil (ND-OIL 8) (see page 22-66).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (ND-OIL 8) before installing them.

NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

- Be careful not to damage the evaporator fins when installing the evaporator.
- Install the expansion valve capillary tube with the capillary tube in contact with the suction line directly, and wrap it with tape.

NOTE: Make sure there is no foreign matter stuck between the capillary tube and the suction line.

- Make sure that there is no air leakage.
- Charge the system (see page 22-82), and test its performance (see page 22-68).

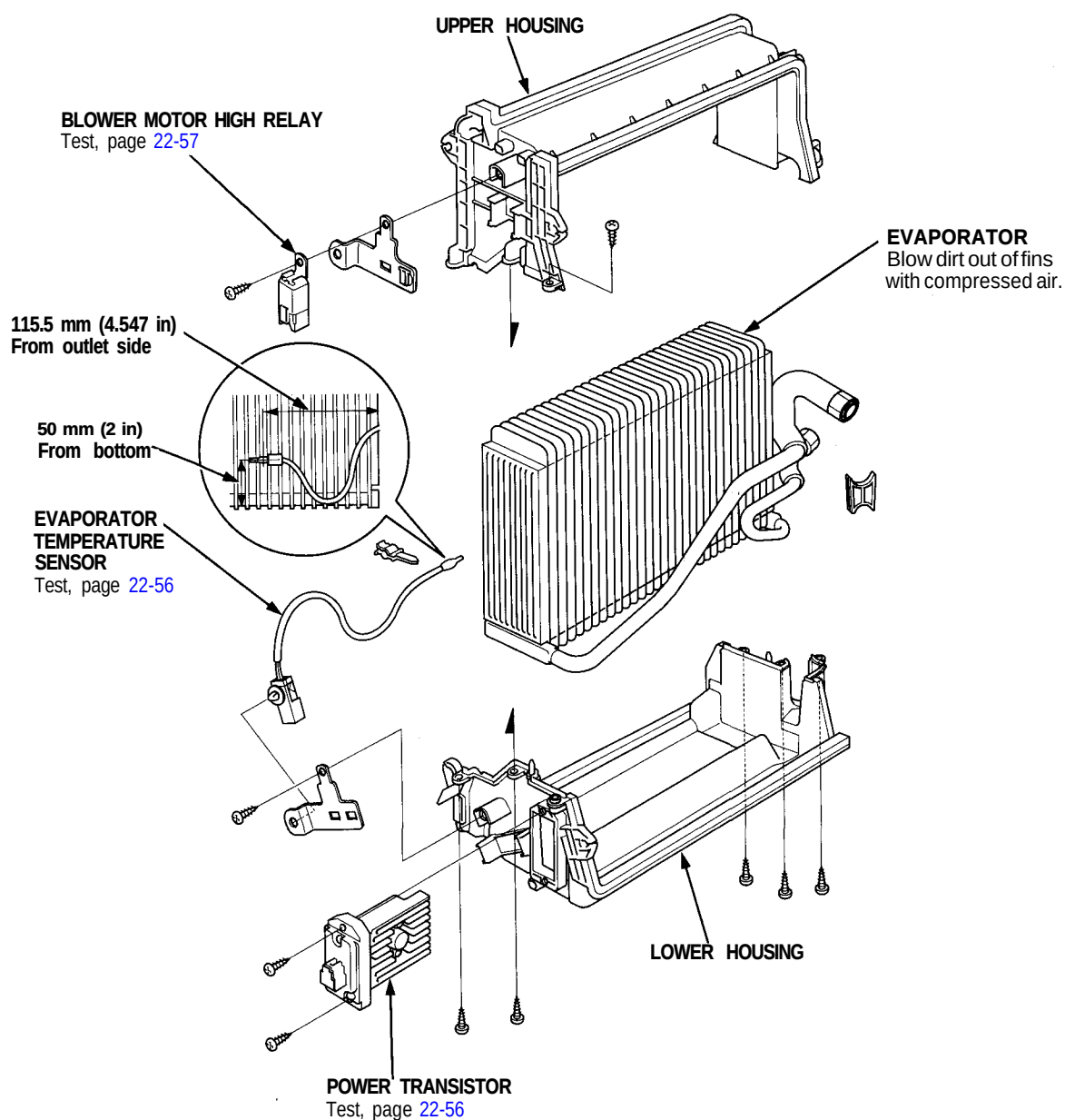
# Evaporator

## Overhaul

1. Pull the evaporator temperature sensor out from the evaporator fins.
2. Remove the two self-tapping screws and the power transistor.
3. If necessary, remove the blower motor high relay.
4. Remove the six self-tapping screws from the housings.
5. Carefully separate the housings, then remove the evaporator.
6. Assemble in the reverse order of disassembly. Make note of following items.
  - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (ND-OIL 8) before installing them.

NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

  - Reinstall the evaporator temperature sensor to its original location.



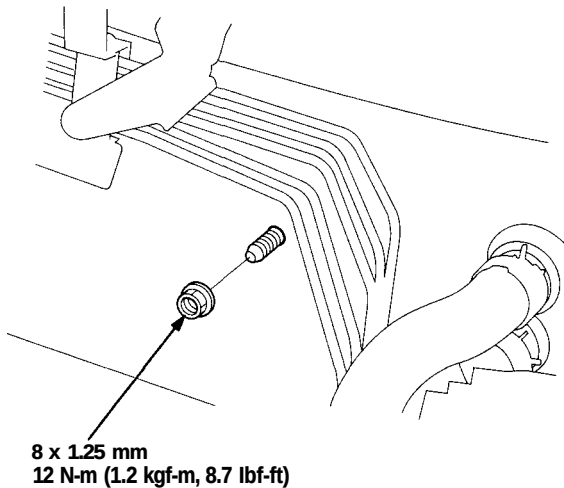


# Blower Unit

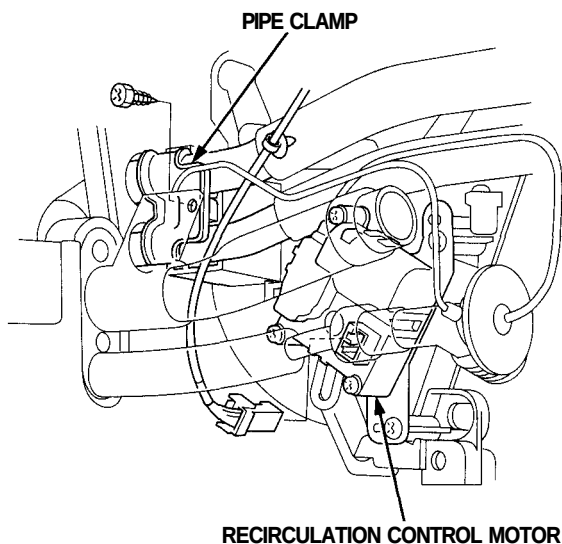
## Replacement

1. Remove the evaporator (see page 22-58).
2. Remove the mounting nut from the blower unit.

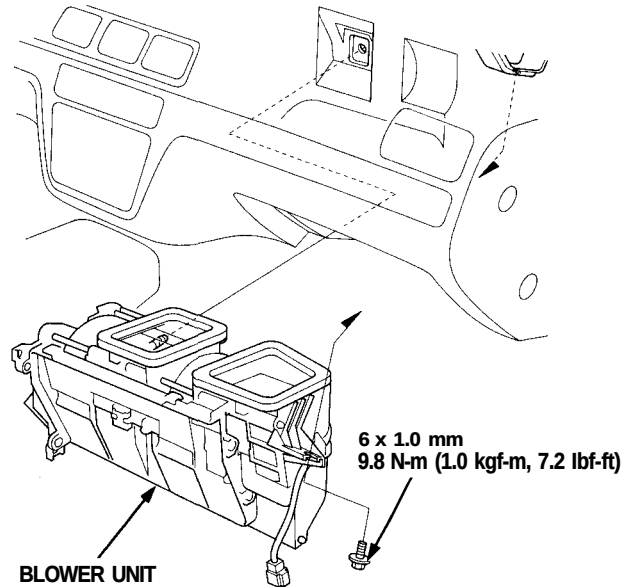
NOTE: When removing the mounting nut, take care not to damage or bend the fuel pipes, brake pipes, etc.



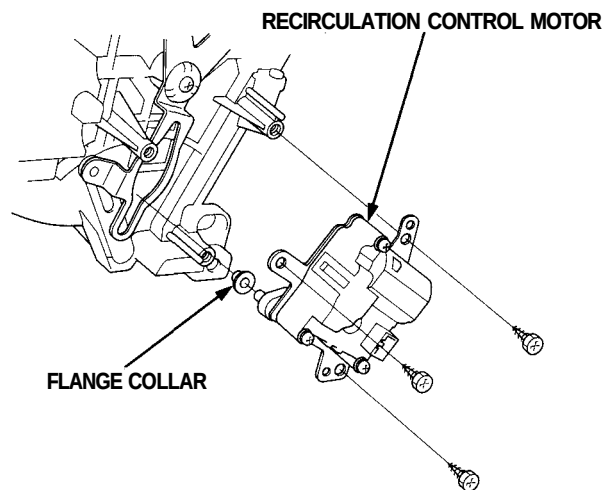
3. Disconnect the connector from the recirculation control motor, and remove the self-tapping screw from the pipe clamp.



4. Remove the mounting bolt, then remove the blower unit by moving it back and toward the right.



5. If necessary, remove the three self-tapping screws, the recirculation control motor and the flange collar.

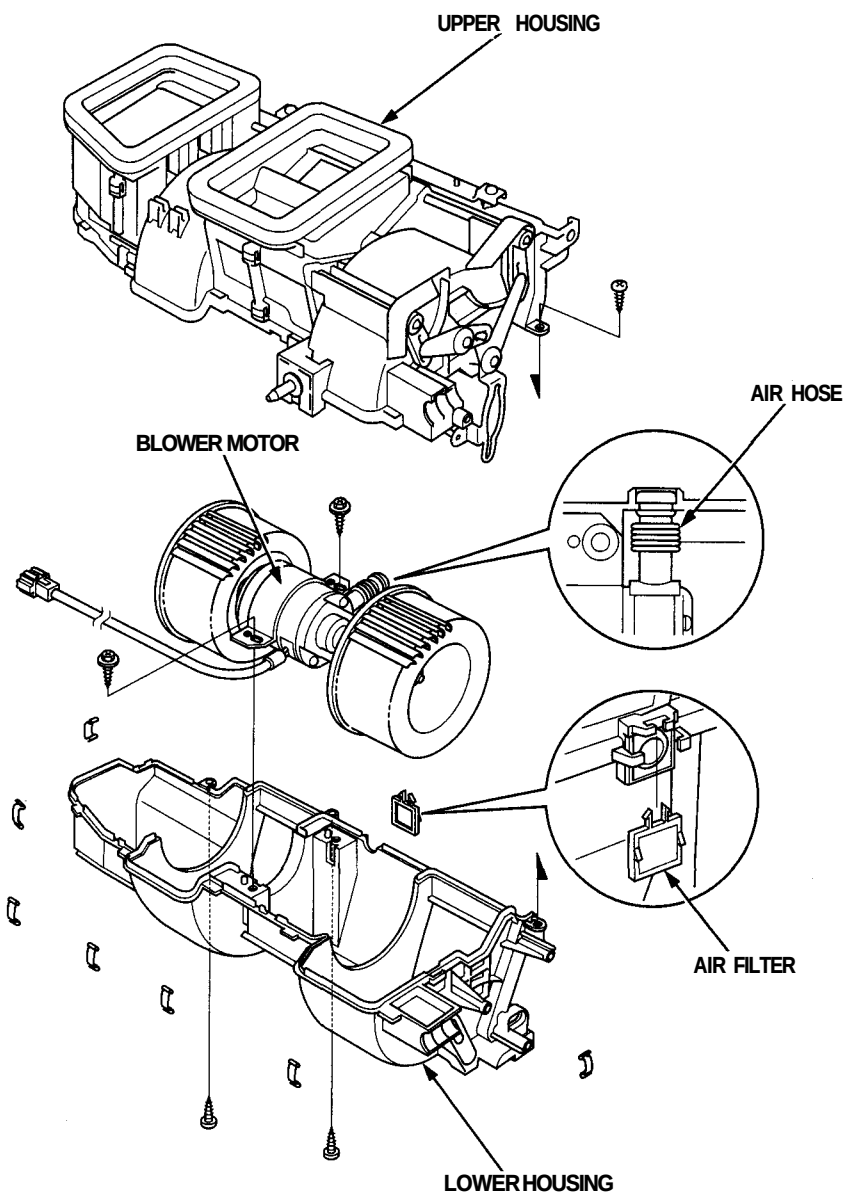


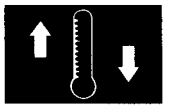
6. Install in the reverse order of removal. Make note of the following items.
  - Make sure that the recirculation control doors and linkage move smoothly without binding.
  - After reinstalling the recirculation control motor, make sure the recirculation control motor runs smoothly (see page 22-52).
  - Make sure that there is no air leakage.

# Blower Unit

## Overhaul

1. Remove the air filter.
2. Remove the three self-tapping screws and the seven clamps from the housings.
3. Carefully separate the housings.
4. Remove the two self-tapping screws and the blower motor.
5. Assemble in the reverse order of disassembly. Make note of following items.
  - Make sure that the recirculation control doors and linkage move smoothly without binding.
  - When assembling, be sure to install the air hose of the blower motor to the housings as shown.





# Heater Unit

## Replacement

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

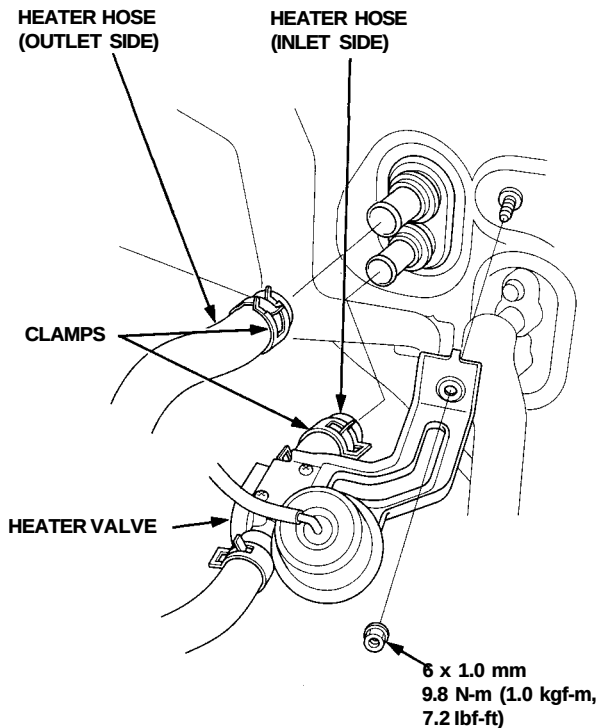
1. Disconnect the negative cable from the battery.
2. When the engine is cool, drain the engine coolant from the radiator (see [section 10](#)).

**⚠ WARNING** Do not remove the radiator cap when the engine is hot; the engine coolant is under pressure and could severely scald you.

3. Remove the mounting nut and the heater valve, then disconnect the heater hoses from the heater unit.

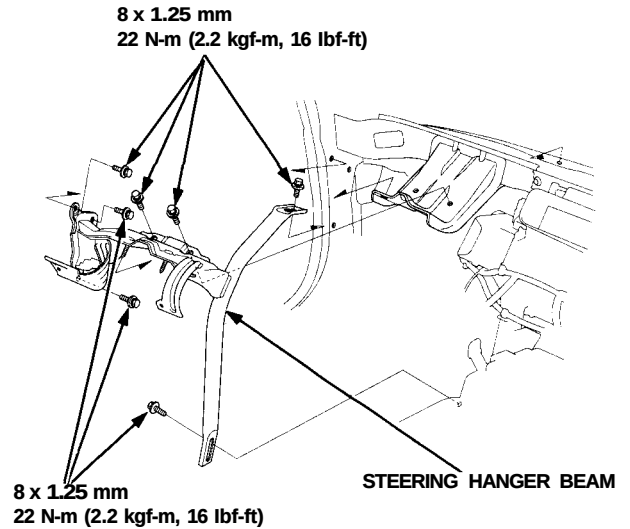
**CAUTION:** Engine coolant will damage paint. Quickly rinse any spilled engine coolant from painted surfaces.

**NOTE:** Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan.

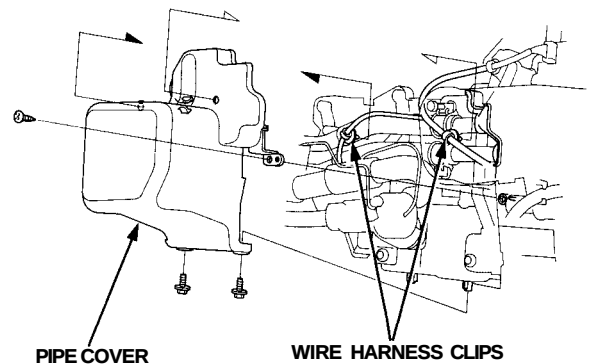


4. Remove the dashboard (see [section 20](#)).

5. Remove the seven mounting bolts and the steering hanger beam.



6. Remove the wire harness clips, the three self-tapping screws and the pipe cover.

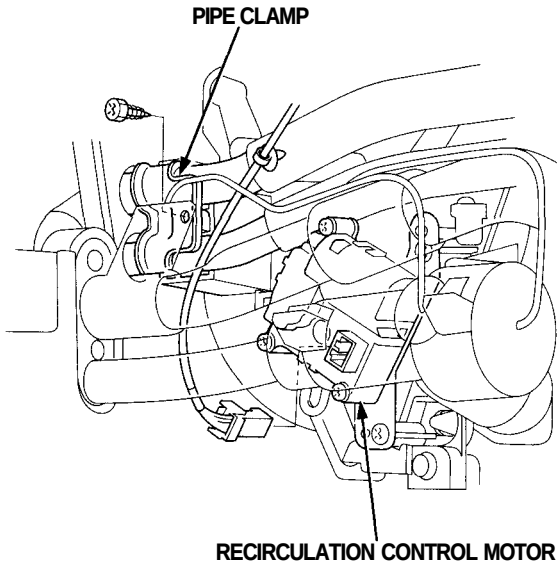


(cont'd)

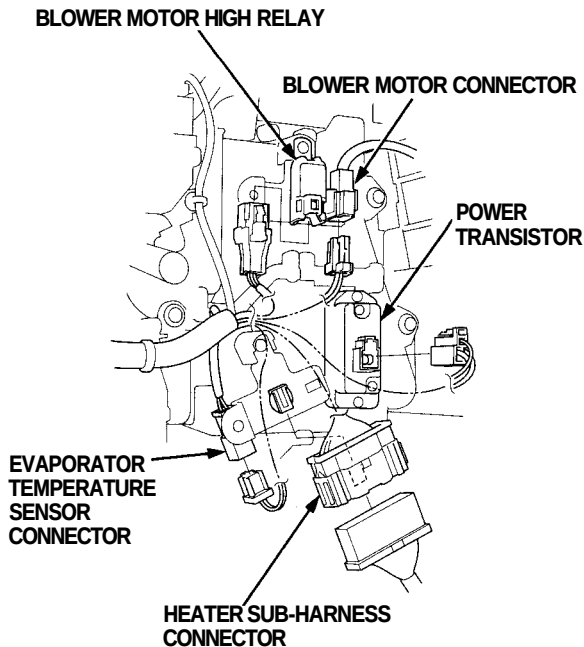
# Heater Unit

## Replacement (cont'd)

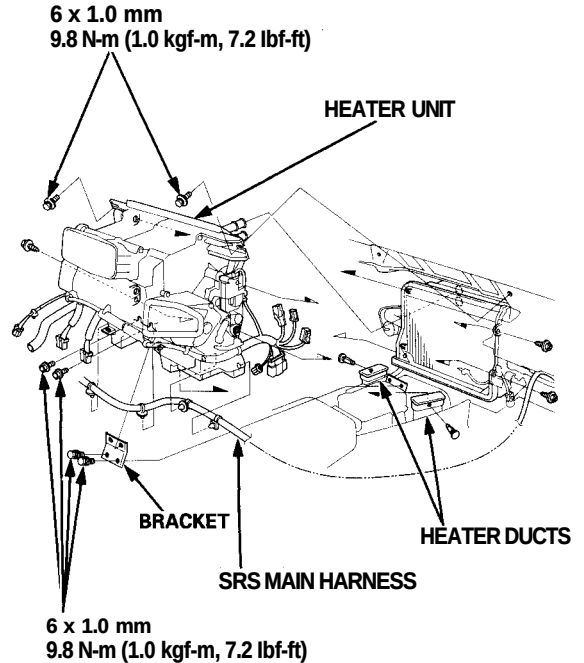
7. Disconnect the connector from the recirculation control motor, then remove the self-tapping screw from the pipe clamp.



8. Disconnect the connectors from the power transistor, blower motor high relay, evaporator temperature sensor, blower motor and the heater sub-harness, then remove the heater sub-harness connector from the bracket.

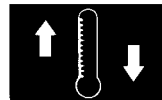


9. Remove the clips from the right and left heater ducts, and the SRS main harness clips from the heater unit. Remove the three self-tapping screws, the six mounting bolts, the bracket and the heater unit.



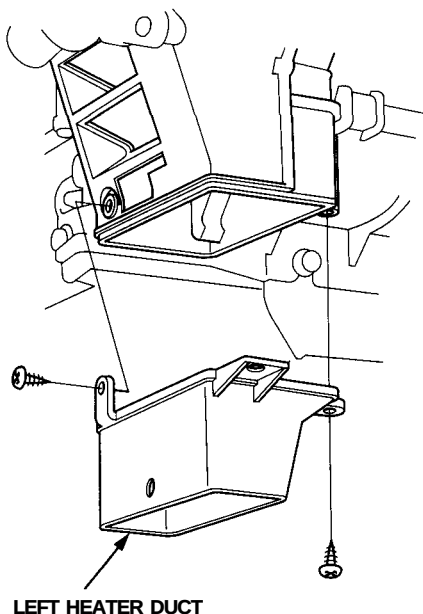
10. Install in the reverse order of removal. Make note of the following items.

- Apply sealant to the grommets.
- Do not interchange the inlet and outlet heater hoses. Make sure that the clamps are secure.
- Loosen the bleed bolt on the engine, and refill the radiator and the coolant reservoir with the proper engine coolant mixture (see [section 10](#)). Tighten the bleed bolt when all the trapped air has escaped and engine coolant begins to flow from it (see [section 10](#)).
- Make sure that there is no air leakage.

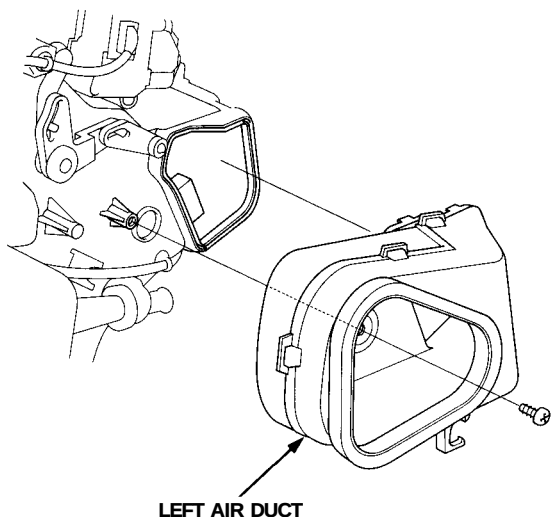


## Heater Core Replacement

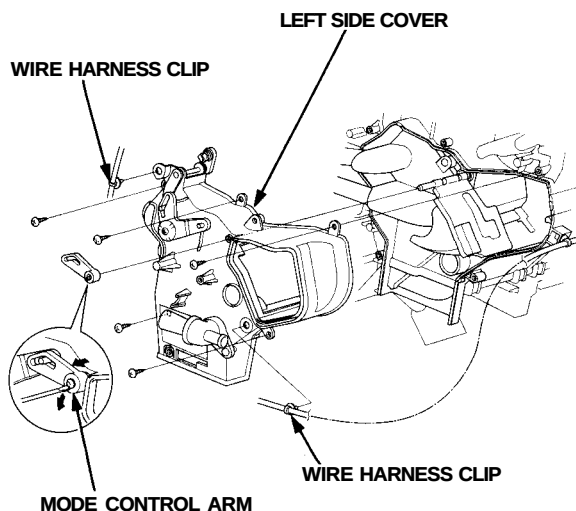
1. Remove the heater unit (see page [22-63](#)).
2. Remove the mode control motor (see page [22-51](#)).
3. Remove the two self-tapping screws and the left heater duct.



4. Remove the self-tapping screw and the left air duct.

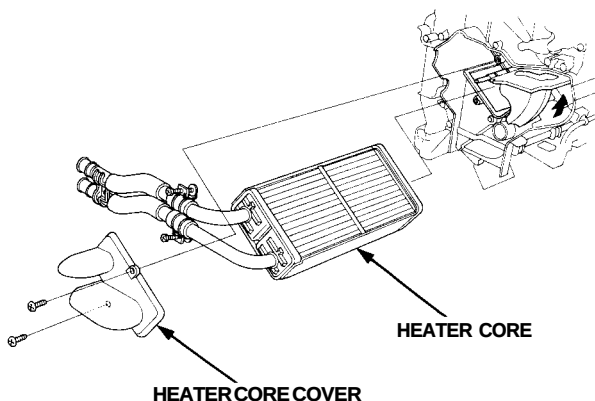


5. Remove the wire harness clips, and the mode control arm with a flat-tip screwdriver as shown. Remove the five self-tapping screws and the left side cover.



6. Remove the two self-tapping screws and the heater core cover, then pull out the heater core.

**NOTE:** Be careful not to bend the inlet and outlet pipes during heater core removal.



7. Install in the reverse order of removal. Make note of the following items.

- Make sure that the mode control doors and linkage move smoothly without binding.
- After reinstalling the mode control motor, make sure the mode control motor runs smoothly (see page [22-51](#)).

# A/C Service Tips and Precautions

The air conditioner system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil\*, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system, and do not attempt to use R-12 servicing equipment; damage to the air conditioner system or your servicing equipment will result.

\* DENSO ND-OIL8:

- P/N 38897 - PR7 - A01AH: 120 ml (4 fl-oz, 4.2 Imp-oz)
- P/N 38899 - PR7 - A01: 40 ml (1 1/3 fl-oz, 1.4 Imp-oz)

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove R-134a from the air conditioner system.

**CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.**

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

**⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.**

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
2. Keep moisture and dust out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
3. Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
4. When tightening or loosening a fitting, use a second wrench to support the matching fitting.
5. When discharging the system, use a R-134a refrigerant Recovery/Recycling/Charging System; don't release refrigerant into the atmosphere.
6. Add refrigerant oil after replacing the following parts:

NOTE:

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.

**Condenser ..... 25 ml (5/6 fl-oz, 0.9 Imp-oz)**

**Evaporator ..... 50 ml (1 2/3 fl-oz, 1.8 Imp-oz)**

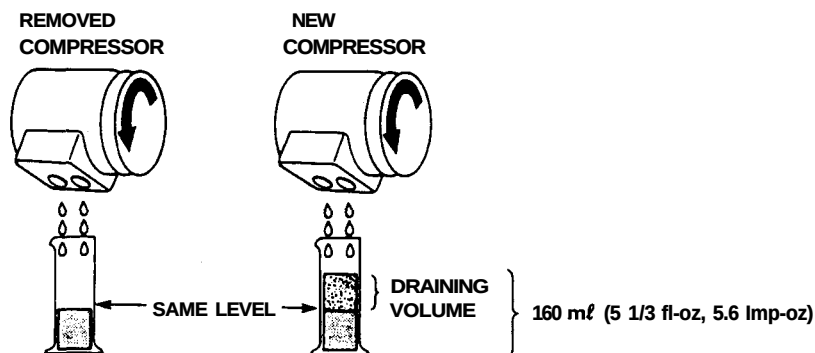
**Line or hose ..... 20 ml (2/3 fl-oz, 0.7 Imp-oz)**

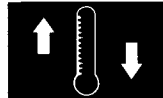
**Receiver/Dryer ..... 15 ml (fl-oz, 0.5 Imp-oz)**

**Leakage repair ..... 25 ml (5/6 fl-oz, 0.9 Imp-oz)**

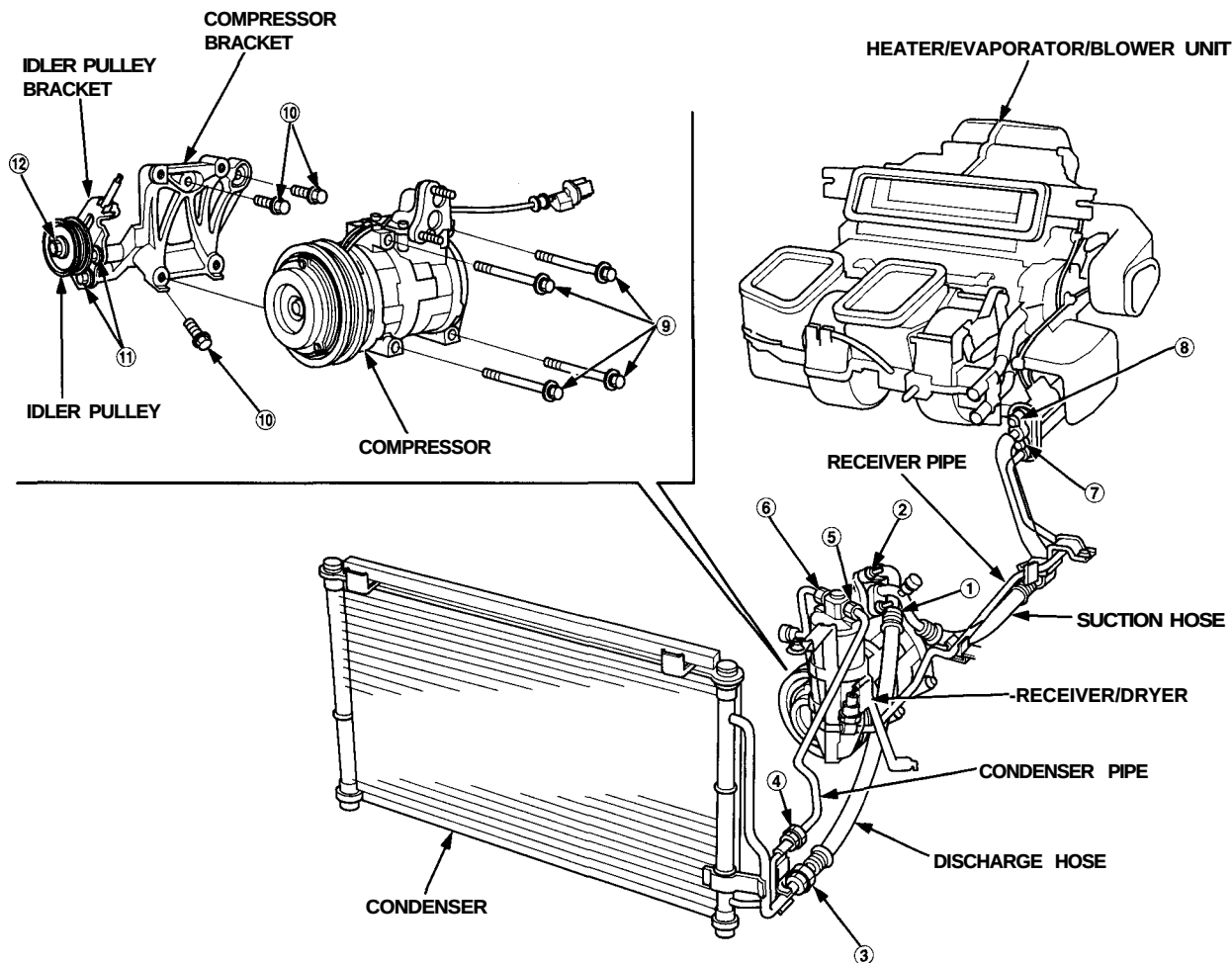
**Compressor ..... For compressor replacement, subtract the volume of oil drained from the removed compressor from 160 ml (5 1/3 fl-oz, 5.6 Imp-oz), and drain the calculated volume of oil from the new compressor: 160 ml (5 1/3 fl-oz, 5.6 Imp-oz) — Volume of removed compressor = Volume to drain from new compressor.**

NOTE: Even if no oil is drained from the removed compressor, don't drain more than 50 ml (1 2/3 fl-oz, 1.8 Imp-oz) from the new compressor.





# A/C System Torque Specifications



NOTE: When installing the compressor bracket, tighten the bolts on the oil pan first, then those on the cylinder block (see page 22-73).

|                                                                 |                                 |
|-----------------------------------------------------------------|---------------------------------|
| ① Suction hose to the compressor (6 x 1.0 mm).....              | 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft) |
| ② Discharge hose to the compressor (6 x 1.0 mm).....            | 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft) |
| ③ Discharge hose to the condenser.....                          | 22 N-m (2.2 kgf-m, 16 lbf-ft)   |
| ④ Condenser pipe to the condenser.....                          | 13 N-m (1.3 kgf-m, 9.4 lbf-ft)  |
| ⑤ Condenser pipe to the receiver/dryer.....                     | 13 N-m (1.3 kgf-m, 9.4 lbf-ft)  |
| ⑥ Receiver pipe to the receiver/dryer.....                      | 13 N-m (1.3 kgf-m, 9.4 lbf-ft)  |
| ⑦ Receiver pipe to the evaporator (6 x 1.0 mm).....             | 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft) |
| ⑧ Suction hose to the evaporator (6 x 1.0 mm).....              | 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft) |
| ⑨ Compressor to compressor bracket (8 x 1.25 mm).....           | 22 N-m (2.2 kgf-m, 16 lbf-ft)   |
| ⑩ Compressor bracket to cylinder block (10 x 1.25 mm).....      | 49 N-m (5.0 kgf-m, 36 lbf-ft)   |
| ⑪ Idler pulley bracket to compressor bracket (8 x 1.25 mm)..... | 22 N-m (2.2 kgf-m, 16 lbf-ft)   |
| ⑫ Idler pulley to idler pulley bracket (8 x 1.25 mm).....       | 44 N-m (4.5 kgf-m, 32 lbf-ft)   |

# A/C System Service

## Performance Test

The performance test will help determine if the air conditioner system is operating within specifications.

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioner system.

**CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.**

If accidental system discharge occurs, ventilate work area before resuming service.

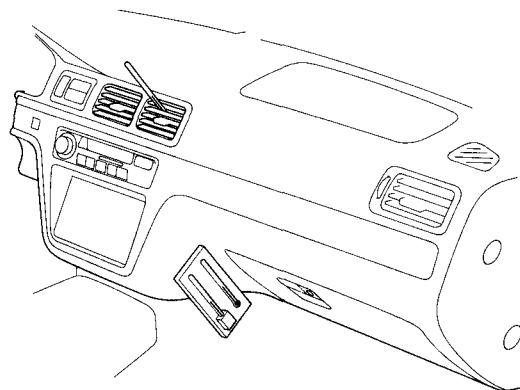
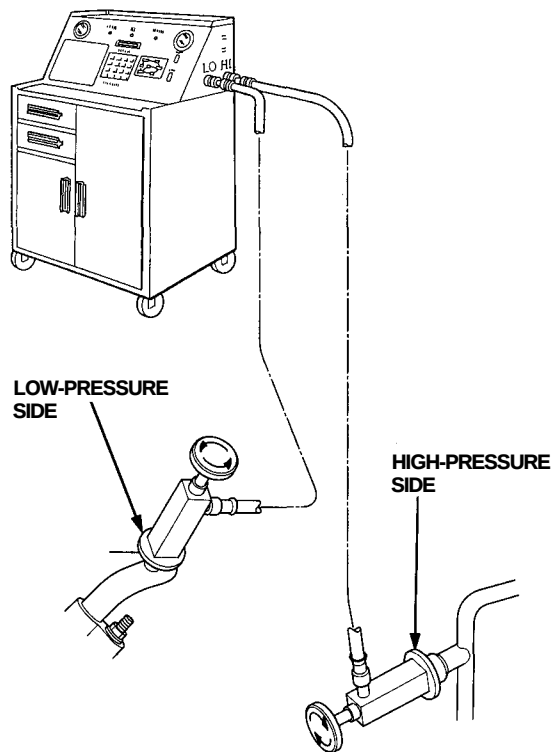
R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

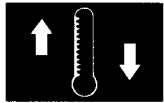
**⚠ WARNING** Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant Recover/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.
2. Insert a thermometer in the center vent outlet. Determine the relative humidity and air temperature.
3. Test conditions:
  - Avoid direct sunlight.
  - Open hood.
  - Open front doors.
  - Set the temperature control dial on MAX COOL, the mode control switch on VENT and the recirculation control switch on RECIRCULATE.
  - Turn the A/C switch on, and the fan switch on MAX.
  - Run the engine at 1,500 rpm.
  - No driver or passengers in vehicle
4. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the dash vent and the high and low system pressure from the A/C gauges.

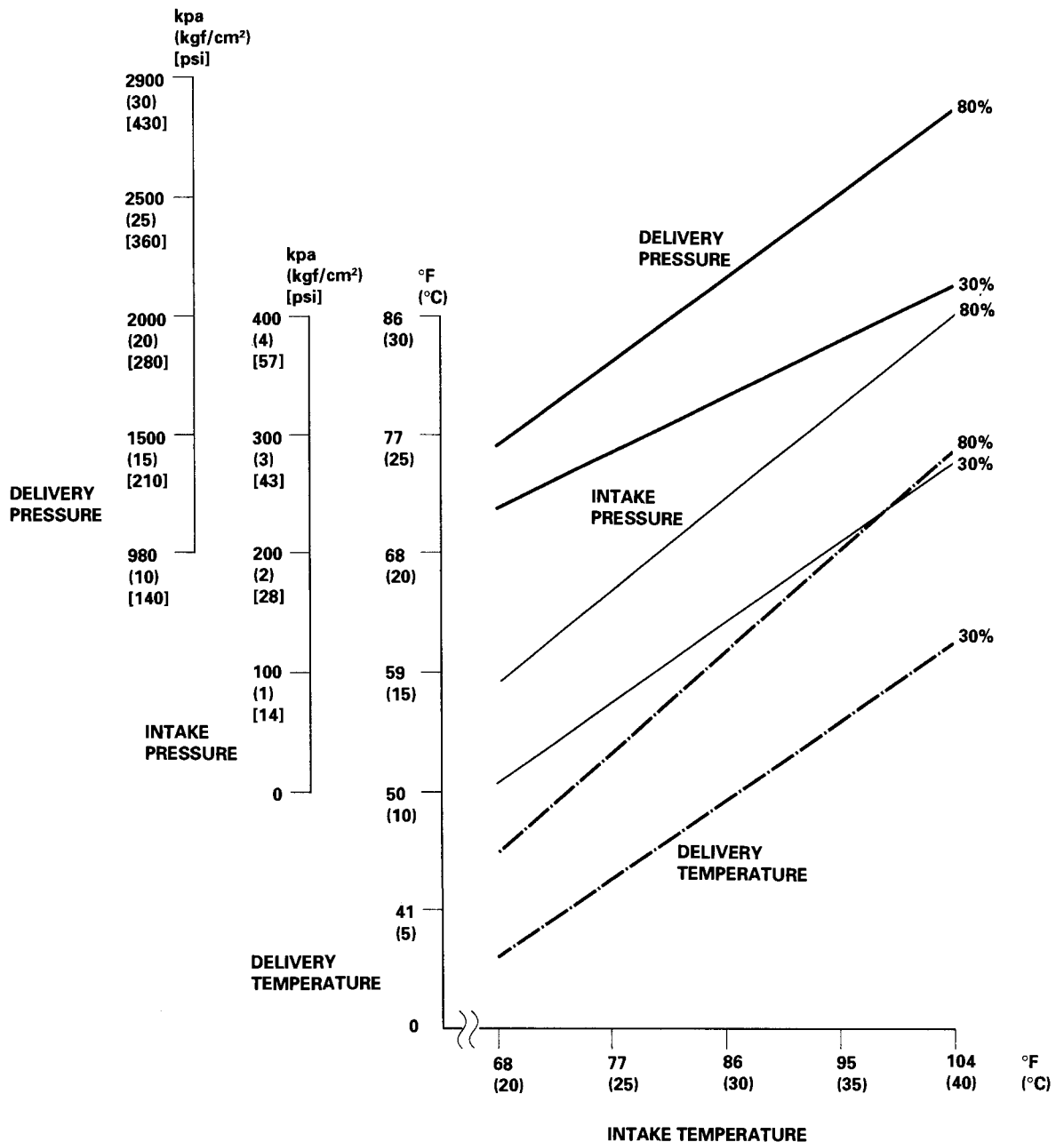
### Recovery/Recycling/Charging System





5. To complete the charts:

- Mark the delivery temperature along the vertical line.
- Mark the intake temperature (ambient air temperature) along the bottom line.
- Draw a line straight up from the air temperature to the humidity.
- Mark a point one line above and one line below the humidity level (10% above and 10% below the humidity level).
- From each point, draw a horizontal line across the delivery temperature.
- The delivery temperature should fall between the two lines.
- Complete the low side pressure test and high side pressure test in the same way.
- Any measurements outside the line may indicate the need for further inspection.

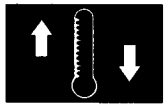


# A/C System Service

## Pressure Test Chart

NOTE: Performance Test is on page [22-68](#).

| Test results                                    | Related symptoms                                                                                                                 | Probable cause                                                                                                                                                   | Remedy                                                                                                                                                  |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discharge (high) pressure abnormally high       | After stopping compressor, pressure drops to about 200 kPa (2.0 kgf/cm <sup>2</sup> , 28 psi) quickly, and then falls gradually. | Air in system                                                                                                                                                    | Recover, evacuate, and recharge with specified amount.<br>Evacuation: see page <a href="#">22-81</a><br>Charging: see page <a href="#">22-82</a>        |
|                                                 | Reduced or no air flow through condenser                                                                                         | <ul style="list-style-type: none"> <li>• Clogged condenser or radiator fins</li> <li>• Condenser or radiator fan not working properly</li> </ul>                 | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Check voltage and fan rpm.</li> <li>• Check fan direction.</li> </ul>                        |
|                                                 | Line to condenser is excessively hot.                                                                                            | Restricted flow of refrigerant in system                                                                                                                         | Restricted lines                                                                                                                                        |
| Discharge pressure abnormally low               | High and low pressures are balanced soon after stopping compressor. Low side is higher than normal.                              | <ul style="list-style-type: none"> <li>• Faulty compressor discharge valve</li> <li>• Faulty compressor seal</li> </ul>                                          | Replace the compressor.                                                                                                                                 |
|                                                 | Outlet of expansion valve is not frosted, low pressure gauge indicates vacuum.                                                   | <ul style="list-style-type: none"> <li>• Faulty expansion valve</li> <li>• Moisture in system</li> </ul>                                                         | <ul style="list-style-type: none"> <li>• Replace.</li> <li>• Recover, evacuate, and recharge with specified amount.</li> </ul>                          |
| Suction (low) pressure abnormally low           | Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.                          | <ul style="list-style-type: none"> <li>• Frozen expansion valve</li> <li>• Faulty expansion valve</li> </ul>                                                     | Replace the expansion valve.                                                                                                                            |
|                                                 | Discharge temperature is low, and the air flow from vents is restricted.                                                         | Frozen evaporator                                                                                                                                                | Run the fan with compressor off, then check A/C thermostat.                                                                                             |
|                                                 | Expansion valve is frosted.                                                                                                      | Clogged expansion valve                                                                                                                                          | Clean or replace.                                                                                                                                       |
|                                                 | Receiver/dryer outlet is cool, and inlet is warm (should be warm during operation).                                              | Clogged receiver/dryer                                                                                                                                           | Replace.                                                                                                                                                |
| Suction pressure abnormally high                | Low-pressure hose and check joint are cooler than the temperature around evaporator.                                             | <ul style="list-style-type: none"> <li>• Expansion valve open too long</li> <li>• Loose expansion capillary tube</li> </ul>                                      | Repair or replace.                                                                                                                                      |
|                                                 | Suction pressure is lowered when condenser is cooled by water.                                                                   | Excessive refrigerant in system                                                                                                                                  | Recover, evacuate, and recharge with specified amount.                                                                                                  |
|                                                 | High and low pressure are equalized as soon as the compressor is stopped, and both gauges fluctuate while running.               | <ul style="list-style-type: none"> <li>• Faulty gasket</li> <li>• Faulty high pressure valve</li> <li>• Foreign particle stuck in high-pressure valve</li> </ul> | Replace the compressor.                                                                                                                                 |
| Suction and discharge pressures abnormally high | Reduced air flow through condenser.                                                                                              | <ul style="list-style-type: none"> <li>• Clogged condenser or radiator fins</li> <li>• Condenser or radiator fan not working properly</li> </ul>                 | <ul style="list-style-type: none"> <li>• Clean condenser and radiator.</li> <li>• Check voltage and fan rpm.</li> <li>• Check fan direction.</li> </ul> |
| Suction and discharge pressure abnormally low   | Low-pressure hose and metal end areas are cooler than evaporator.                                                                | Clogged or kinked low pressure hose parts                                                                                                                        | Repair or replace.                                                                                                                                      |
|                                                 | Temperature around expansion valve is too low compared with that around receiver/dryer.                                          | Clogged high-pressure line                                                                                                                                       | Repair or replace.                                                                                                                                      |
| Refrigerant leaks                               | Compressor clutch is dirty.                                                                                                      | Compressor shaft seal leaking                                                                                                                                    | Replace the compressor.                                                                                                                                 |
|                                                 | Compressor bolt(s) are dirty.                                                                                                    | Leaking around bolt(s)                                                                                                                                           | Tighten bolt(s) or replace compressor.                                                                                                                  |
|                                                 | Compressor gasket is wet with oil.                                                                                               | Gasket leaking                                                                                                                                                   | Replace the compressor.                                                                                                                                 |



## Recovery

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioner system.

**CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.**

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

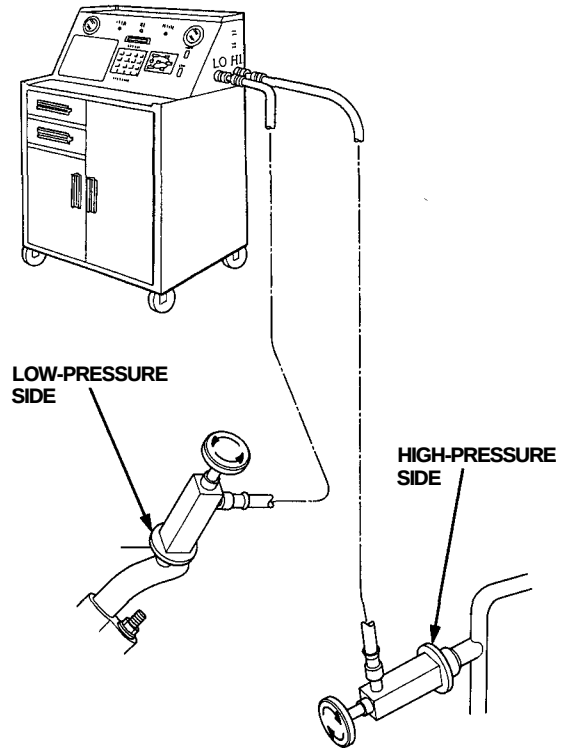
**⚠ WARNING** Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.
2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed.

**NOTE:** Be sure to install the same amount of new refrigerant oil back into the A/C system before charging.

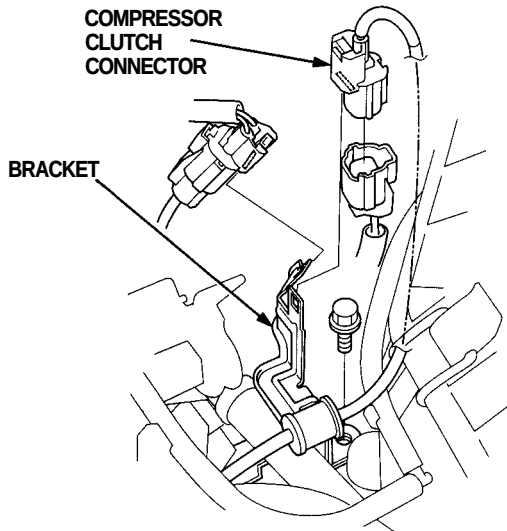
Recovery/Recycling/Charging System



# Compressor

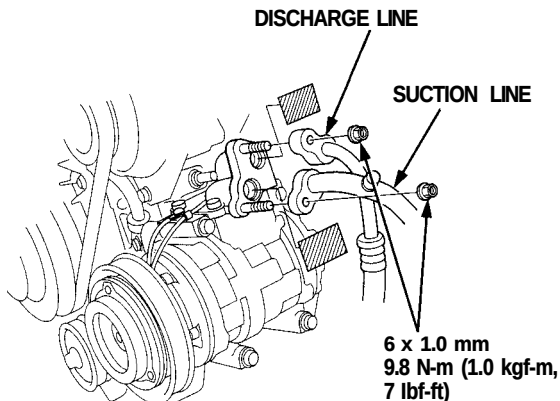
## Replacement

1. If the compressor is marginally operable, run the engine at idle speed, and let the air conditioner work for a few minutes, then shut the engine off.
2. Disconnect the negative cable from the battery.
3. Recover the refrigerant with a Recovery/Recycling/Charging System (see page 22-71).
4. Remove the intake air duct (see section 5).
5. Remove the A/C compressor belt (see page 22-78).
6. Remove the connectors from the bracket, then disconnect the compressor clutch connector. Remove the bolt and the bracket.

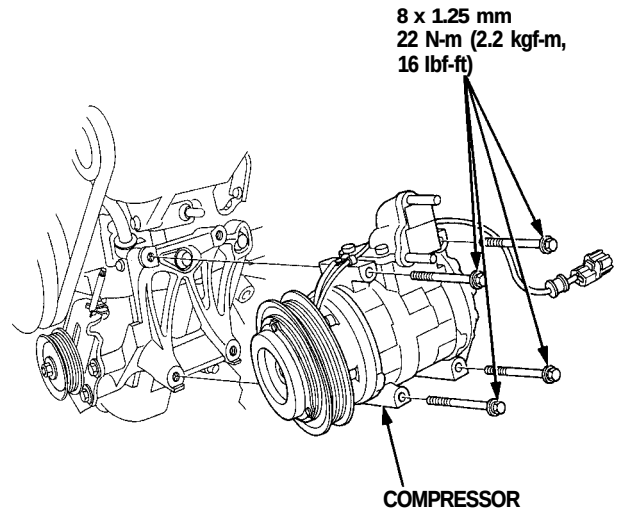


7. Remove the nuts, then disconnect the suction line and the discharge line from the compressor.

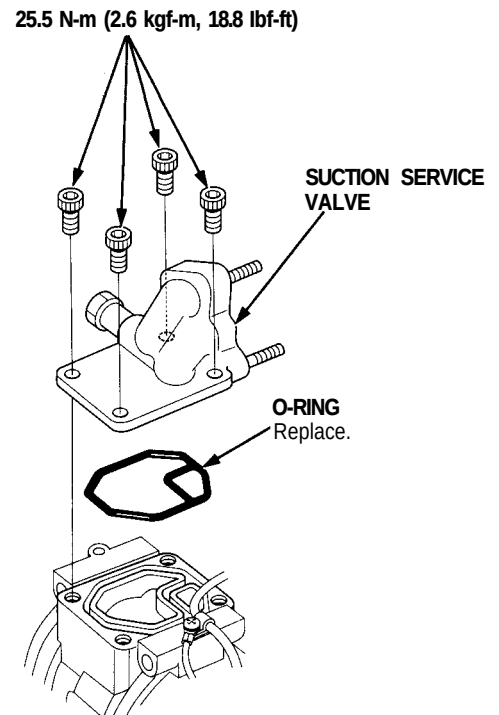
NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

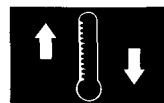


8. Remove the four mounting bolts and the compressor.



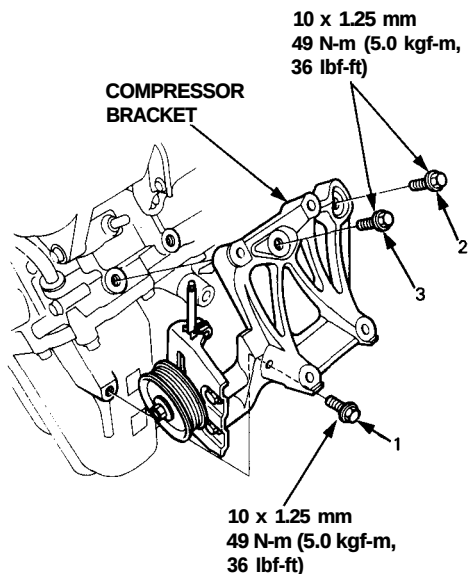
9. Remove the four bolts and the suction service valve from the compressor.



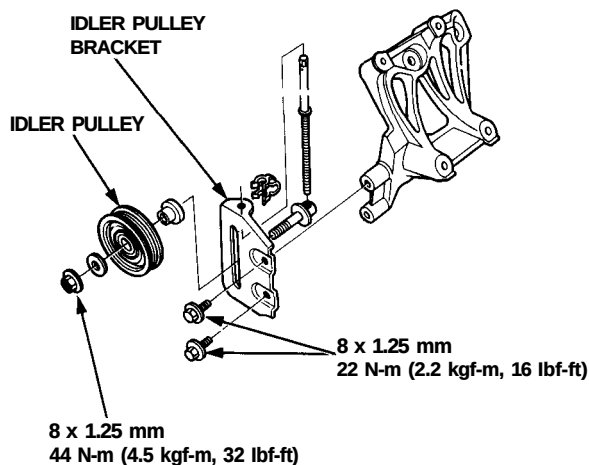


10. If necessary, remove the three mounting bolts and the compressor bracket.

NOTE: When installing, tighten the mounting bolts in the order of No. 1 through No. 3 and in two steps; first tighten temporarily, then torque to the specified tension after making sure that there is no clearance between the compressor bracket and its mounting face.



11. If necessary, remove the idler pulley and the idler pulley bracket. Check the idler pulley bearing for play and drag. Replace it with a new one if it's noisy or has excessive play or drag.



12. Install in the reverse order of removal. Make note of the following items.

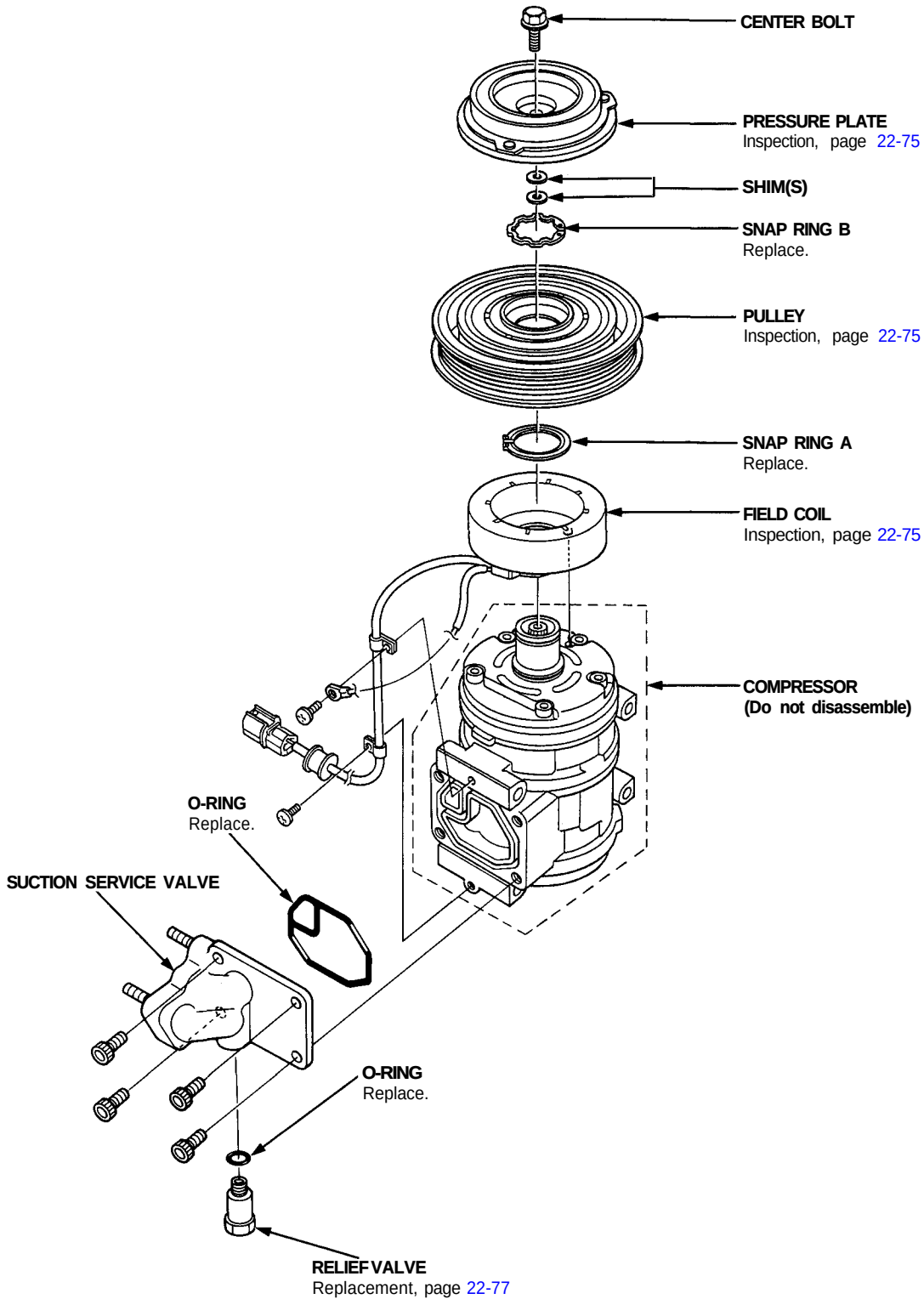
- If you're installing a new compressor, drain all the refrigerant oil from the removed compressor, and measure its volume. Subtract the volume of drained oil from 160 ml (5 1/3 fl-oz, 5.6 Imp-oz); the result is the amount of oil you should drain from the new compressor (through the suction fitting).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them.

NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

- Use refrigerant oil (ND-OIL 8) for R-134a DENSO piston type compressors only.
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
- Adjust the A/C compressor belt (see page 22-78).
- Charge the system (see page 22-82), and test its performance (see page 22-68).

# Compressor

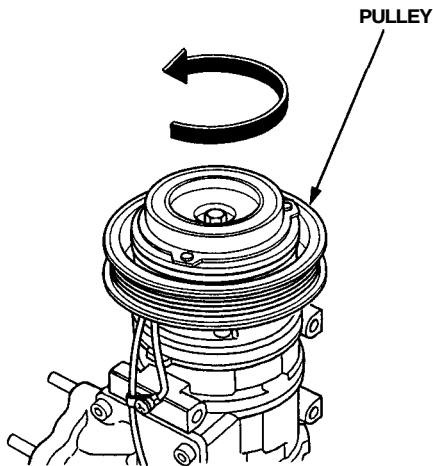
## Illustrated Index





## Clutch Inspection

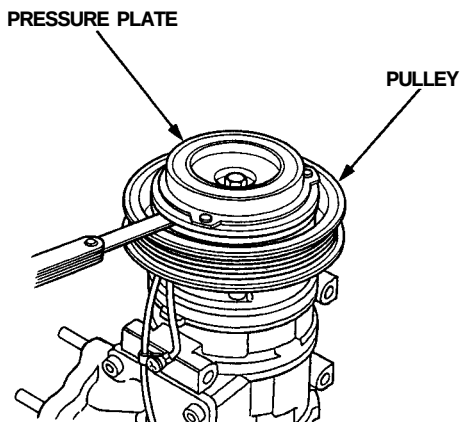
- Check the plated parts of the pressure plate for color changes, peeling or other damage. If there is damage, replace the clutch set.
- Check the pulley bearing play and drag by rotating the pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag.



- Measure the clearance between the pulley and the pressure plate all the way around. If the clearance is not within specified limits, the pressure plate must be removed and shims added or removed as required, following the procedure on page [22-76](#).

**Clearance:  $0.5 \pm 0.15$  mm ( $0.020 \pm 0.006$  in)**

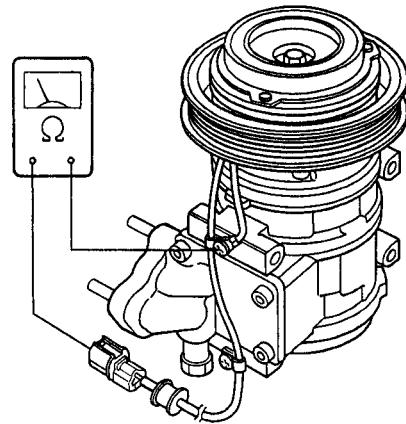
NOTE: The shims are available in three thicknesses: 0.1 mm, 0.3 mm and 0.5 mm.



- Check resistance of the field coil.

**Field Coil Resistance:  $3.6 \pm 0.2$  ohms at 68 F (20°C)**

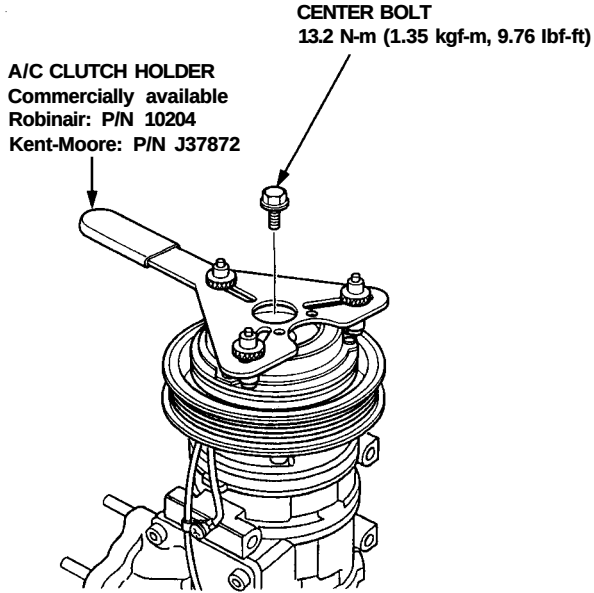
If resistance is not within specifications, replace the field coil.



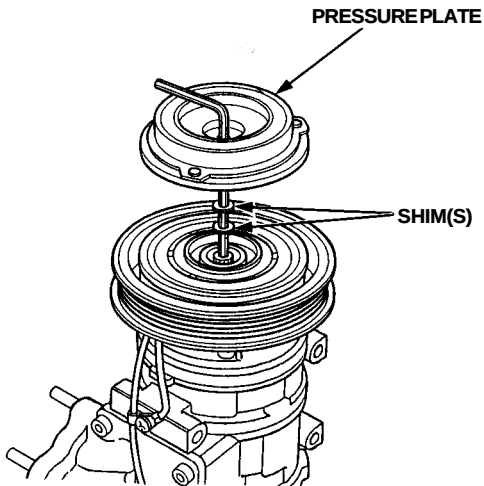
# Compressor

## Clutch Overhaul

1. Remove the center bolt while holding the pressure plate.



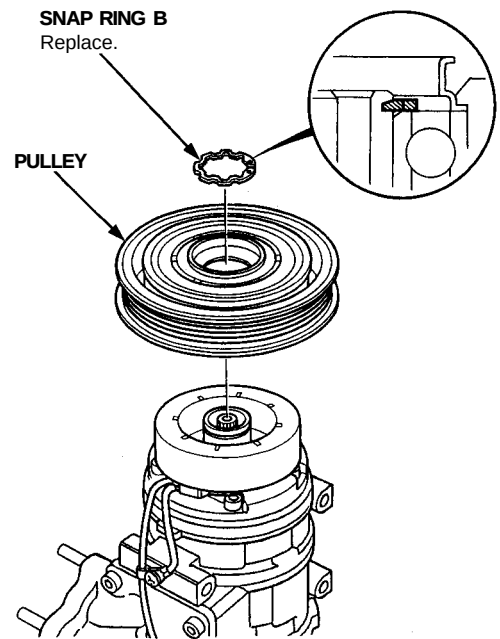
2. Remove the pressure plate and shim(s), taking care not to lose the shim(s).

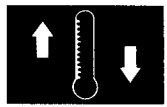


3. Remove the snap ring B with snap ring pliers, then remove the pulley.

### NOTE:

- Be careful not to damage the pulley and compressor during removal/installation.
- Once the snap ring B is removed, replace it with a new one.

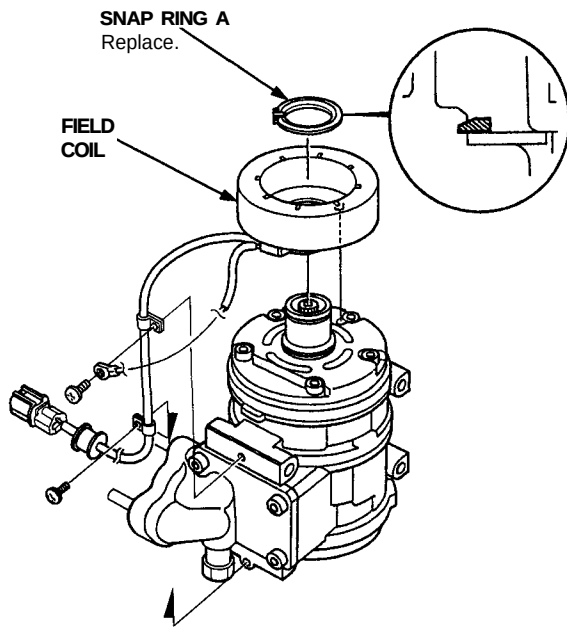




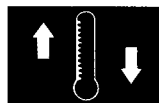
4. Remove the screw from the field coil ground terminal. Remove the snap ring A with snap ring pliers, then remove the field coil.

NOTE:

- Be careful not to damage the field coil and compressor during removal/installation.
- Once the snap ring A is removed, replace it with a new one.



5. Install in the reverse order of removal. Make note of the following items.
- Install the field coil with the wire side facing down (see above).
  - Clean the pulley and compressor sliding surfaces with non-petroleum solvent.
  - Make sure the snap rings are fully seated in the groove.
  - Apply locking agent to the threads of the center bolt, and tighten it securely.
  - Make sure that the pulley turns smoothly after it's reassembled.

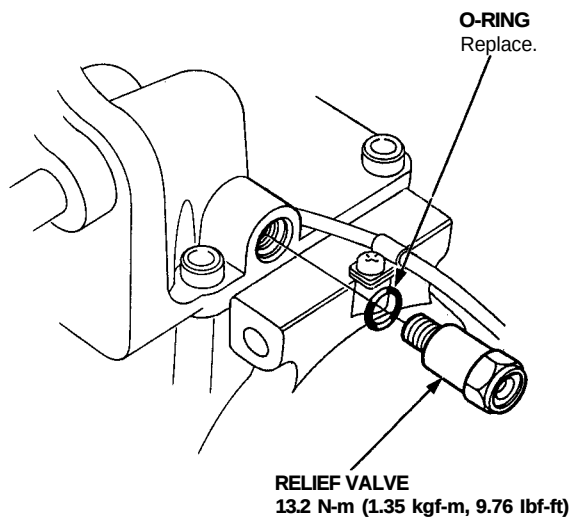


## Relief Valve Replacement

1. Remove the relief valve and the O-ring.

**NOTE:**

- Do not let the compressor oil run out.
- Make sure that no foreign matter enters the system.



2. Clean the mating surfaces.
3. Replace the O-ring with a new one at the relief valve, and apply a thin coat of refrigerant oil (ND-OIL 8) before installing it.

**NOTE:**

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container, and seat it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.

4. Install and tighten the relief valve.
5. Charge the system (see page 22-82), and test its performance(see page 22-68).

# A/C Compressor Belt

## Adjustment

### Deflection Method

1. Apply a force of 98 N (10 kgf, 22 lbf), and measure the deflection between the A/C compressor and the crankshaft pulley.

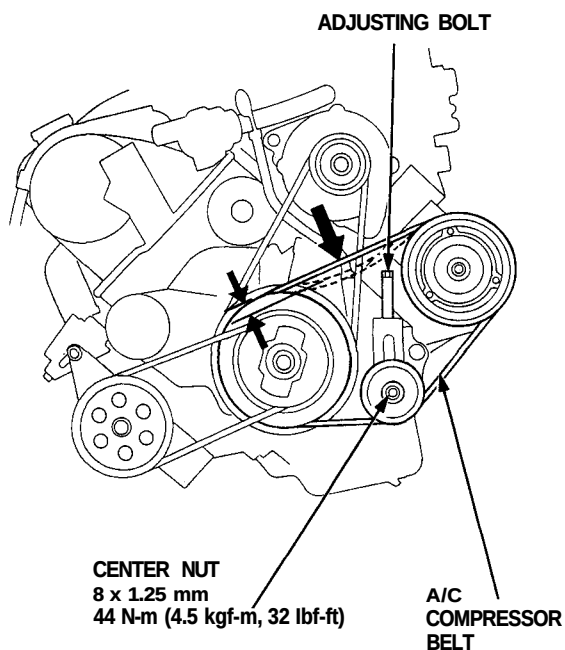
#### A/C Compressor Belt

**Used Belt: 9.0 - 11.0 mm (0.35 - 0.43 in)**

**New Belt: 5.0 - 6.5 mm (0.20 - 0.26 in)**

#### NOTE:

- If there are cracks or any damage evident on the belt, replace it with a new one.
  - "Used belt" means a belt which has been used for five minutes or more.
  - "New belt" means a belt which has been used for less than five minutes.
2. Loosen the center nut of the idler pulley.
  3. Turn the adjusting bolt to get proper belt tension, then retighten the center nut.
  4. Recheck the deflection of the A/C compressor belt.



### Tension Gauge Method

1. Attach the special tool to the A/C compressor belt as shown below, and measure the tension of the belt.

#### A/C Compressor Belt

**Used Belt: 390 - 540 N**

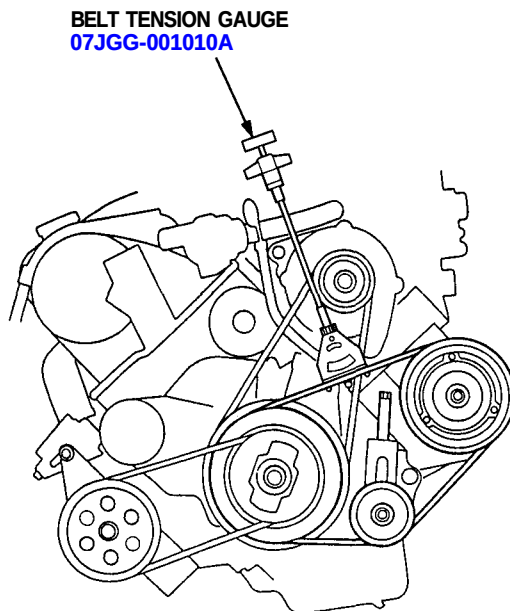
**(40 - 55 kgf, 88 - 120 lbf)**

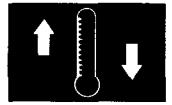
**New Belt: 830-1,030 N**

**(85 - 105 kgf, 190 - 230 lbf)**

#### NOTE:

- If there are cracks or any damage evident on the belt, replace it with a new one.
  - Follow the manufacturer's instructions for the belt tension gauge.
  - "Used belt" means a belt which has been used for five minutes or more.
  - "New belt" means a belt which has been used for less than five minutes.
2. Loosen the center nut of the idler pulley.
  3. Turn the adjusting bolt to get proper belt tension, then retighten the center nut.
  4. Recheck the tension of the A/C compressor belt.



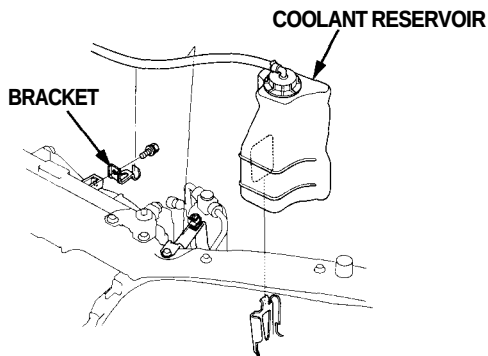


# Condenser

## Replacement

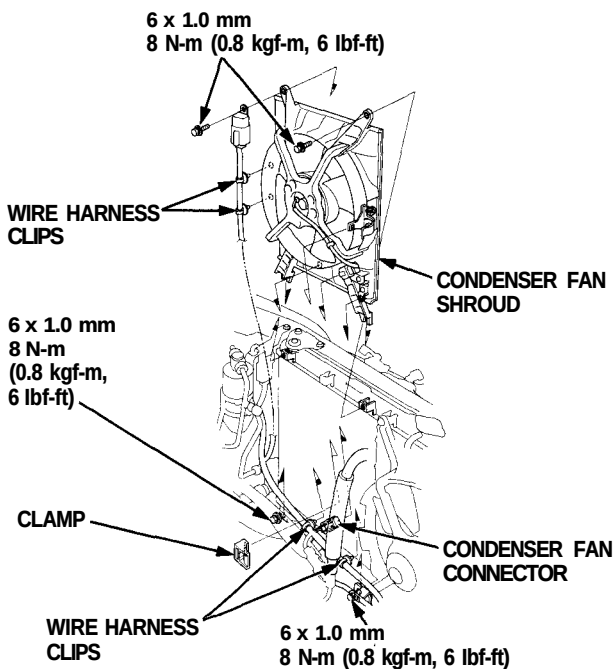
1. Recover the refrigerant with a Recovery/Recycling/Charging System (see page 22-71).
2. Remove the front grille (see section 20).
3. Remove the bolt, the reservoir hose bracket and the coolant reservoir.

NOTE: Do not disconnect the reservoir hose from the coolant reservoir and the radiator.



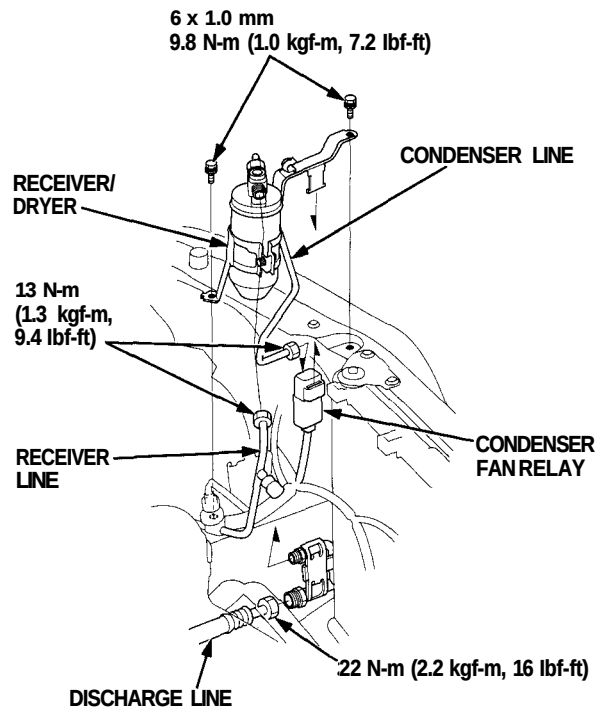
4. Remove the power steering clamp and the wire harness clip from the condenser fan shroud. Disconnect the condenser fan connector. Loosen the two lower mounting bolts, then remove the two upper mounting bolts and the condenser fan shroud.

NOTE: Be careful not to damage the radiator fins when removing the condenser fan shroud.

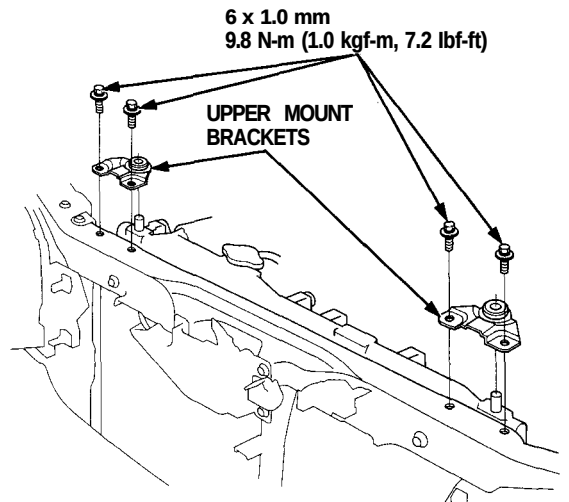


5. Remove the condenser fan relay from the receiver/dryer bracket. Disconnect the receiver line from the receiver/dryer and the condenser line from the condenser, then remove the two bolts and the receiver/dryer. Disconnect the discharge line from the condenser.

NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



6. Remove the four bolts and the two radiator upper mount brackets.



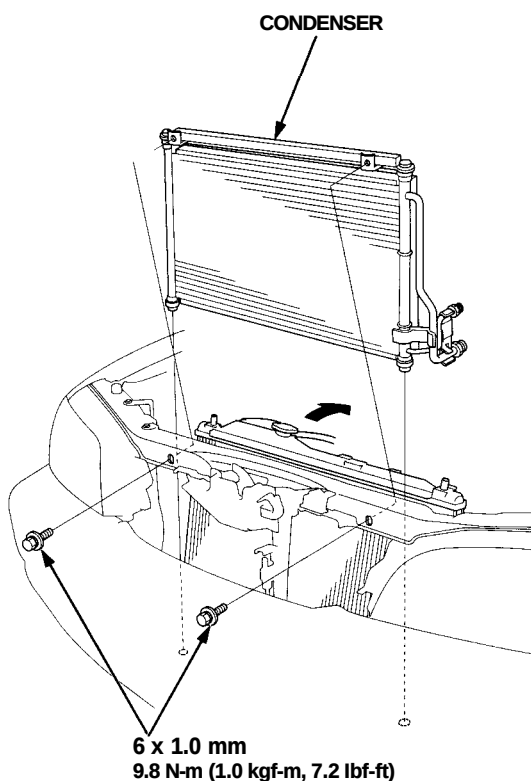
(cont'd)

# Condenser

## Replacement (cont'd)

7. Remove the two mounting bolts, then lift out the condenser as shown.

NOTE: Be careful not to damage the radiator and condenser fins when removing the condenser.

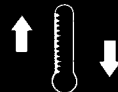


8. Install in the reverse order of removal. Make note of the following items.

- If you're installing a new condenser, add refrigerant oil (ND-OIL 8) (see page [22-66](#)).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (ND-OIL 8) before installing them.

NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

- Be careful not to damage the radiator and condenser fins when installing the condenser and the condenser fan shroud.
- Be sure to install the condenser mount cushions securely into the holes.
- Charge the system (see page [22-82](#)), and test its performance (see page [22-68](#)).



# A/C System Service

## Evacuation

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioner system.

**CAUTION:** Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

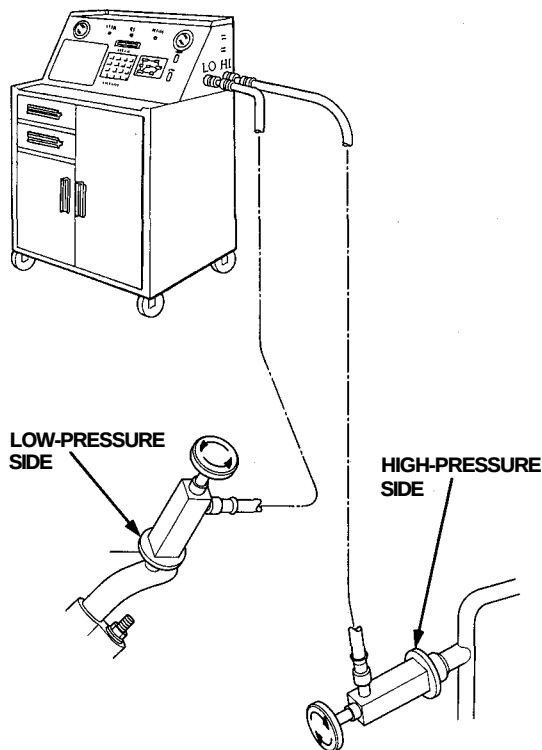
**⚠ WARNING** Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using a R-134a refrigerant Recovery/Recycling/Charging System. (If the system has been open for several days, the receiver/dryer should be replaced, and the system should be evacuated for several hours.)
2. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.

**NOTE:** If low-pressure does not reach more than 93.3 kPa (700 mmHg, 27.6 in.Hg) in 15 minutes, there is probably a leak in the system. Partially charge the system, and check for leaks (see Leak Test).

Recovery/Recycling/Charging System



# A/C System Service

## Charging

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioner system.

**CAUTION:** Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

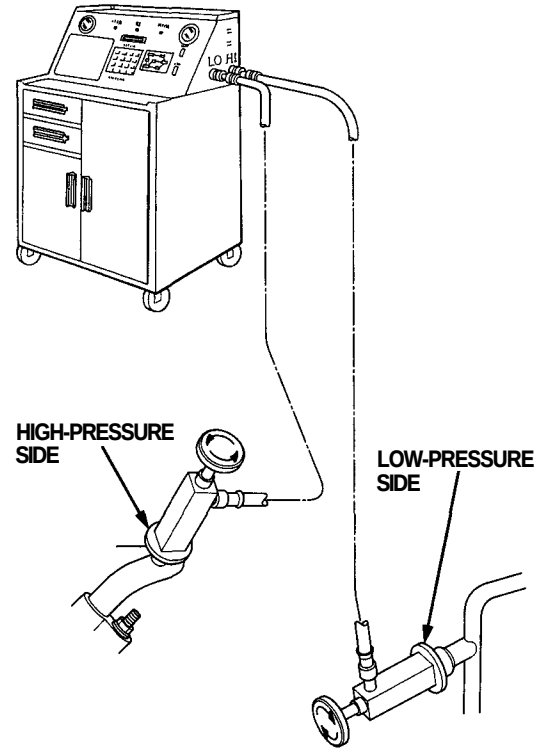
If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

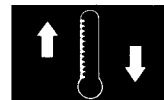
**Refrigerant capacity:**  $750 \pm 10$  g ( $26.5 \pm 1.8$  oz)

**CAUTION:** Do not overcharge the system; the compressor will be damaged.

Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.

Recovery/Recycling/Charging System





## Leak Test

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioner system.

**CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.**

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

**⚠ WARNING** Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.

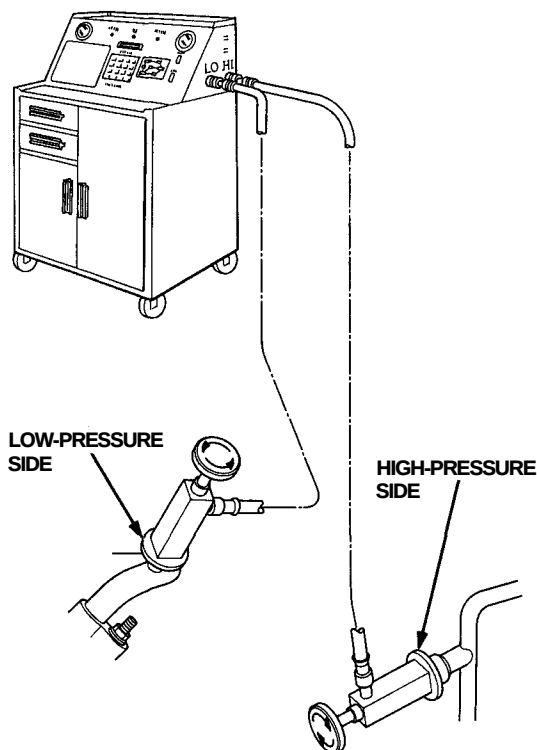
**NOTE:** Be sure to install the same amount of new refrigerant oil back into the A/C system before charging.

2. Open high-pressure valve to charge the system to the specified capacity, then close the supply valve, and remove the charging system couplers.

**Refrigerant capacity: 750 $\pm$ 50 g (26.5 $\pm$ 1.8 oz)**

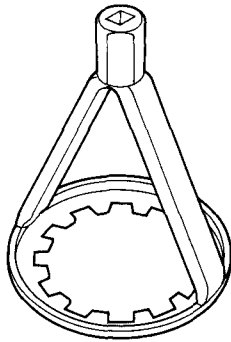
3. Check the system for leaks using a R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz) per year or better.
4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), recover the system according to the Recovery Procedure on page [22-71](#).
5. After checking and repairing leaks, the system must be evacuated (see System Evacuation on page [22-81](#)).

Recovery/Recycling/Charging System

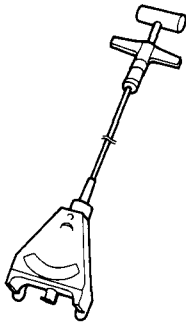


Special Tools

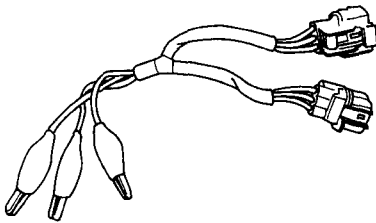
| Ref. No. | Tool Number     | Description           | Qty | Page Reference                                                |
|----------|-----------------|-----------------------|-----|---------------------------------------------------------------|
| ①        | 07GAC - SE0020A | Fuel Sender Wrench    | 1   | <a href="#">23-122</a>                                        |
| ②        | 07JGG-001010A   | Belt Tension Gauge    | 1   | <a href="#">23-104</a> (2.5L) or <a href="#">23-89</a> (3.2L) |
| ③        | 07LAJ - PT3020A | Test Harness          | 1   | <a href="#">23-118</a> , <a href="#">23-119</a>               |
| ④        | 07PAZ-0010100   | SCS Service Connector | 1   | <a href="#">23-84</a> (2.5L) or <a href="#">23-74</a> (3.2L)  |



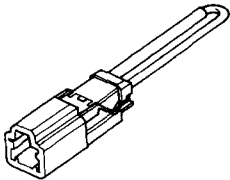
①



②



③



④



# Troubleshooting

## Tips and Precautions

### Before Troubleshooting

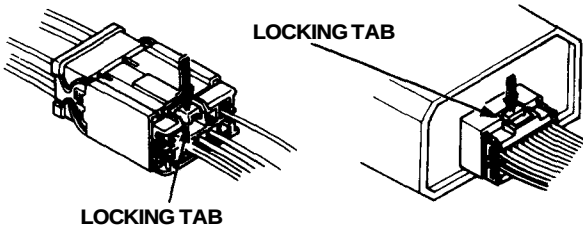
- Check applicable fuses in the appropriate fuse/relay box.
- Check the battery for damage, state of charge, and clean and tight connections.
- Check the alternator belt tension.

### CAUTION:

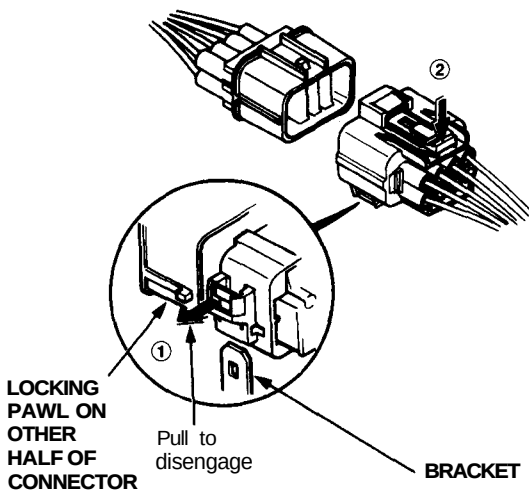
- Do not quick-charge a battery unless the battery ground cable has been disconnected, otherwise you will damage the alternator diodes.
- Do not attempt to crank the engine with the battery ground cable loosely connected or you will severely damage the wiring.

### Handling Connectors

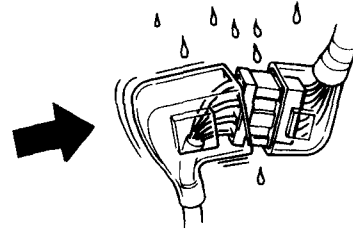
- Make sure the connectors are clean and have no loose wire terminals.
- Make sure multiple cavity connectors are packed with grease (except waterproof connectors).
- All connectors have push-down release type locks.



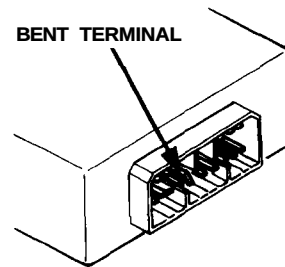
- Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
- Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket.



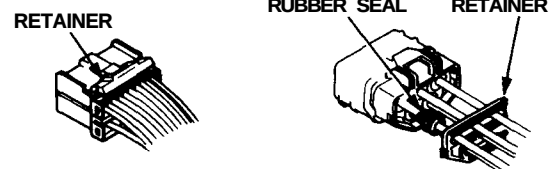
- Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
- Always reinstall plastic covers.



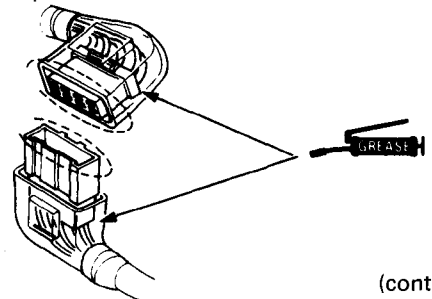
- Before connecting connectors, make sure the terminals are in place and not bent.



- Check for loose retainer and rubber seals.



- The backs of some connectors are packed with grease. Add grease if necessary. If the grease is contaminated, replace it.

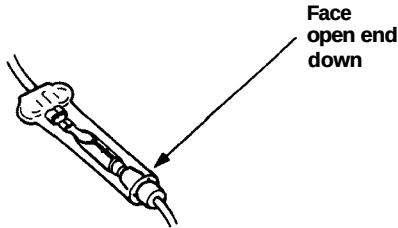


(cont'd)

# Troubleshooting

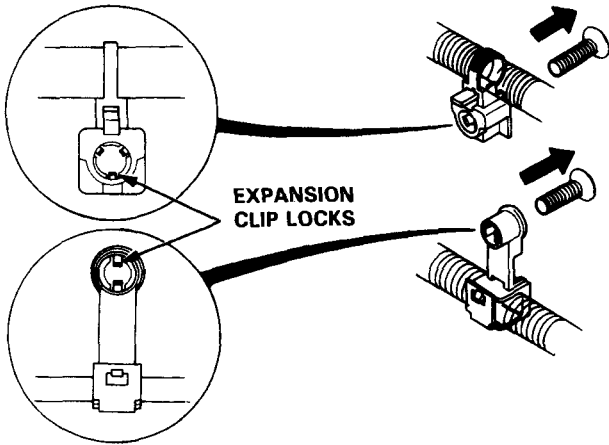
## Tips and Precautions (cont'd)

- Insert the connector all the way and make sure it is securely locked.
- Position wires so that the open end of the cover faces down.

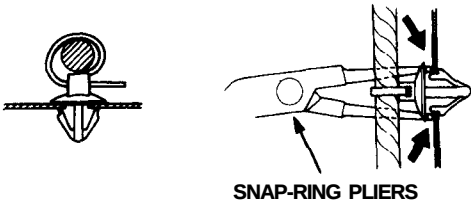


### Handling Wires and Harnesses

- Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.
- Remove clips carefully; don't damage their locks.

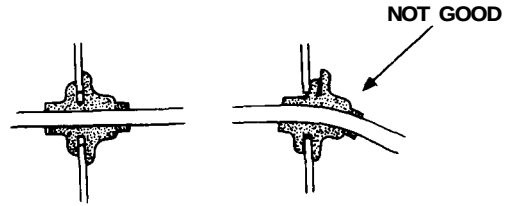


Slip pliers under the clip base and through the hole at an angle, then squeeze the expansion tabs to release the clip.



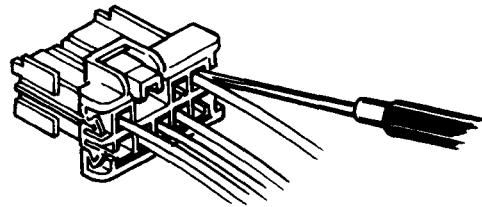
- After installing harness clips, make sure the harness doesn't interfere with any moving parts.
- Keep wire harnesses away from exhaust pipes and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.

- Seat grommets in their grooves properly.

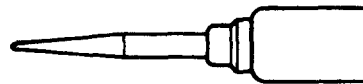


### Testing and Repairs

- Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape.
- After installing parts, make sure that no wires are pinched under them.
- When using electrical test equipment, follow the manufacturer's instructions and those described in this manual.
- If possible, insert the probe of the tester from the wire side (except waterproof connector).



- Use a probe with a tapered tip.



- Refer to the instructions in the Honda Terminal Kit for identification and replacement of connector terminals.



## Five-step Troubleshooting

### 1. Verify The Complaint

Turn on all the components in the problem circuit to verify the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.

### 2. Analyze The Schematic

Look up the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power feed through the circuit components to ground. If several circuits fail at the same time, the fuse or ground is a likely cause.

Based on the symptoms and your understanding of the circuit operation, identify one or more possible causes of the problem.

### 3. Isolate The Problem By Testing The Circuit

Make circuit tests to check the diagnosis you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

### 4. Fix The Problem

Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.

### 5. Make Sure The Circuit Works

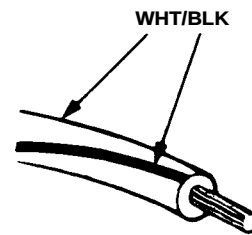
Turn on all components in the repaired circuit in all modes to make sure you've fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on the fuse. Make sure no new problems turn up and the original problem does not recur.

## Wire Color Codes

The following abbreviations are used to identify wire colors in the circuit schematics:

|              |             |
|--------------|-------------|
| WHT .....    | White       |
| YEL .....    | Yellow      |
| BLK .....    | Black       |
| BLU .....    | Blue        |
| GRN .....    | Green       |
| RED .....    | Red         |
| ORN .....    | Orange      |
| PNK.....     | Pink        |
| BRN .....    | Brown       |
| GRY.....     | Gray        |
| PUR .....    | Purple      |
| LT BLU ..... | Light Blue  |
| LT GRN ..... | Light Green |

The wire insulation has one color or one color with another color stripe. The second color is the stripe.

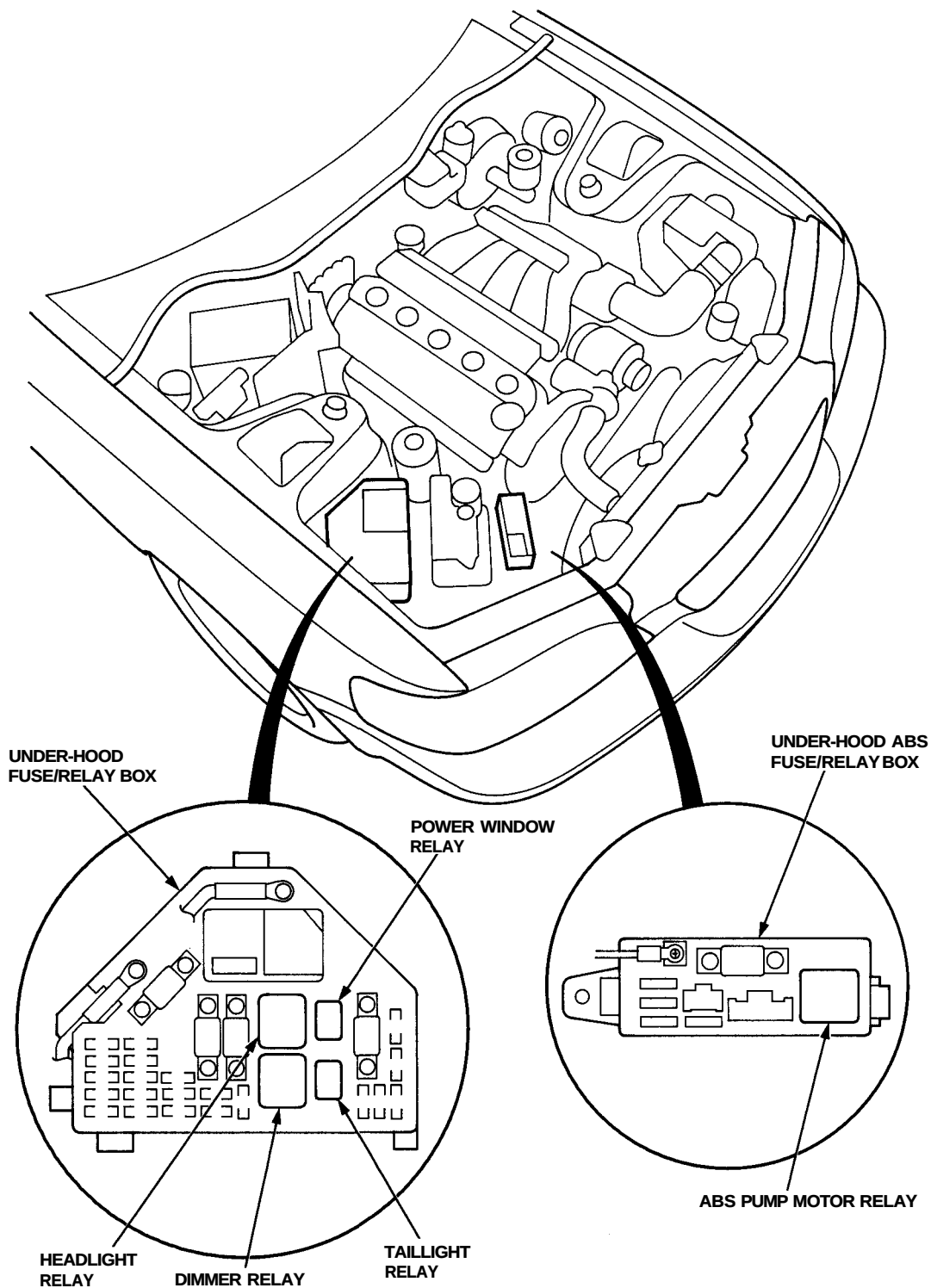


NOTE: Different wires with the same color in the same system have been given number suffixes to distinguish them (for example, YEL<sup>1</sup> and YEL<sup>2</sup> are not the same).



# Relay and Control Unit Locations

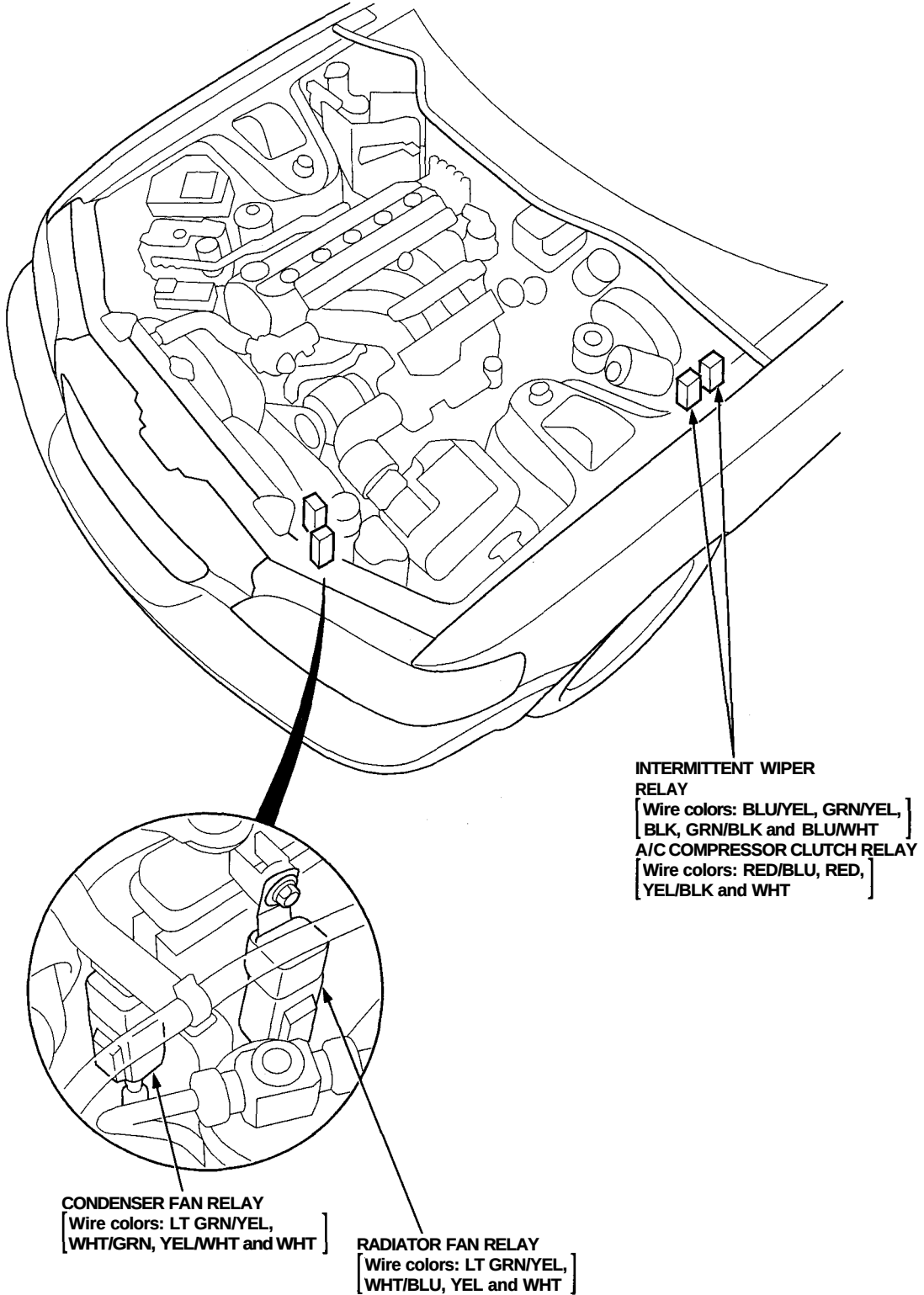
## Engine Compartment



(cont'd)

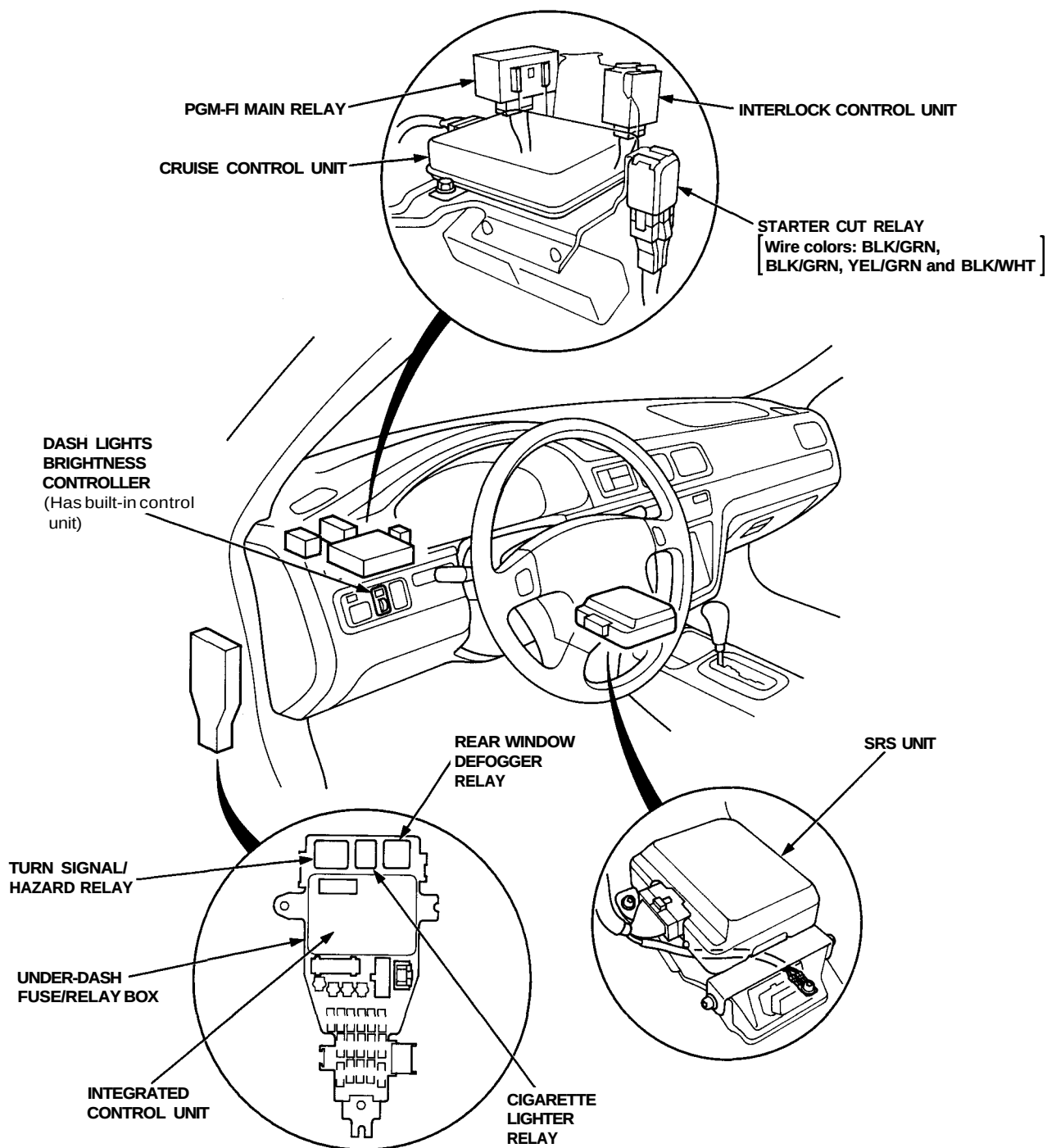
# Relay and Control Unit Locations

## Engine Compartment (cont'd)





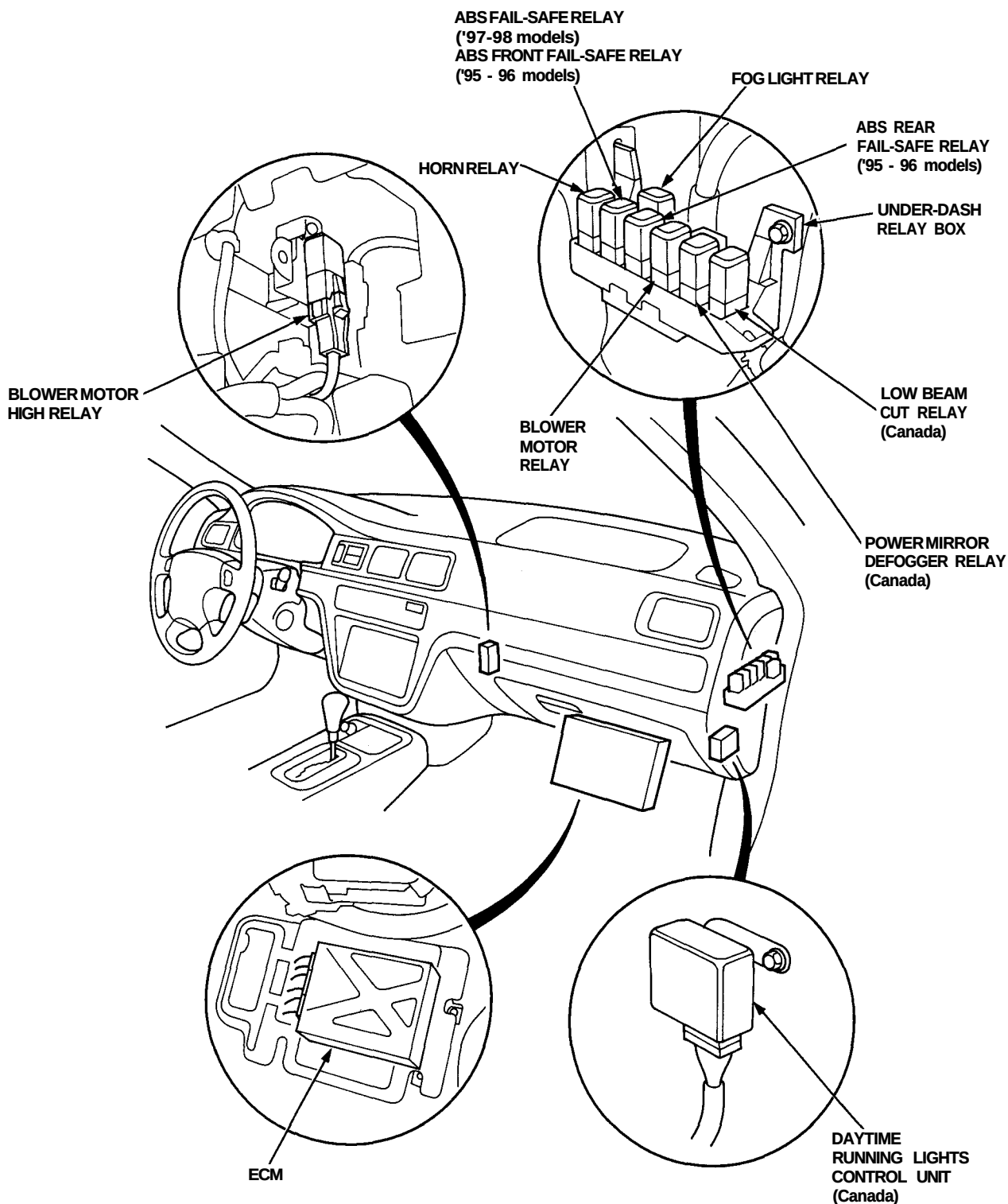
## Dashboard

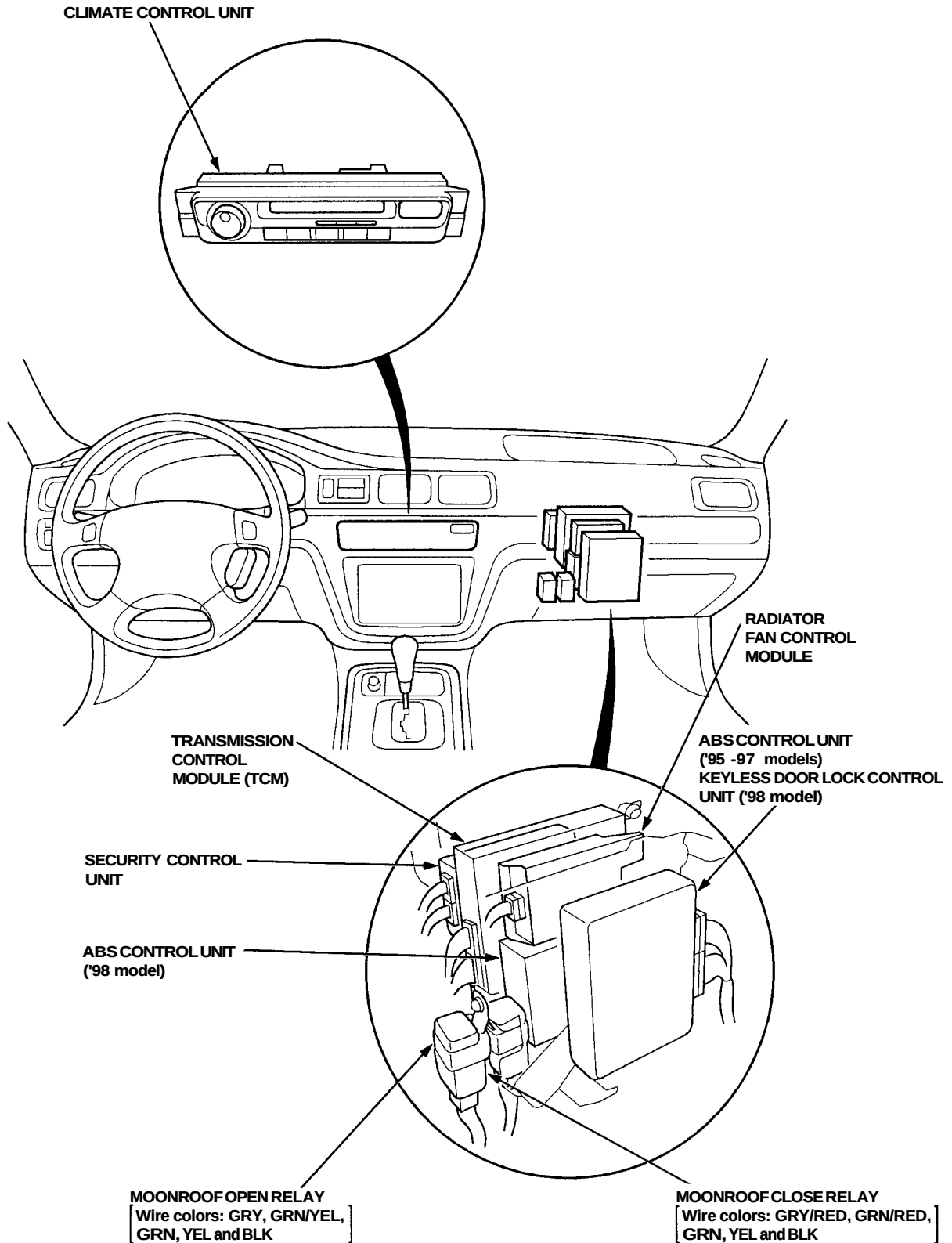
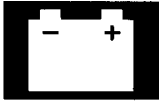


(cont'd)

# Relay and Control Unit Locations

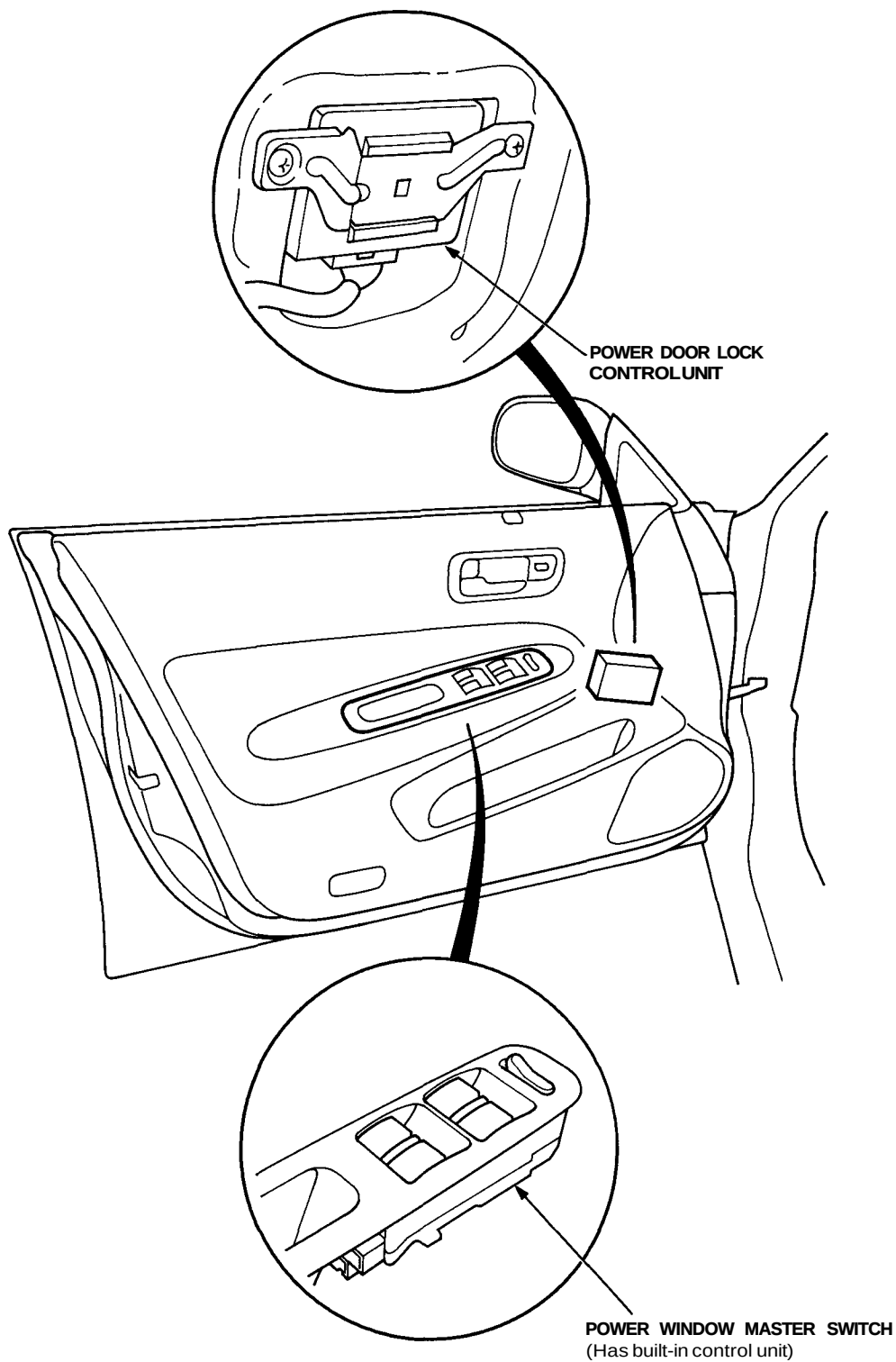
## Dashboard (cont'd)





# Relay and Control Unit Locations

## Door



# Battery

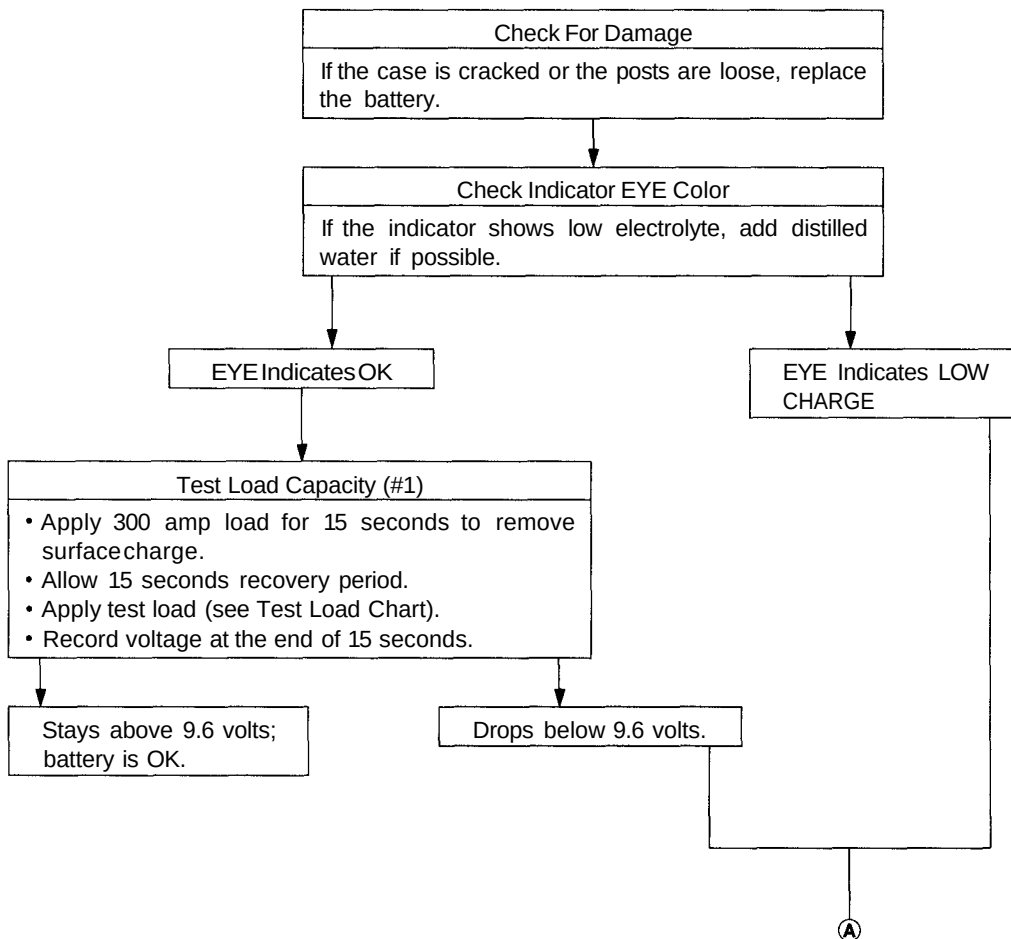
## Test

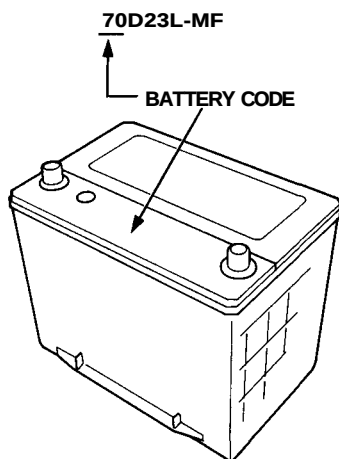
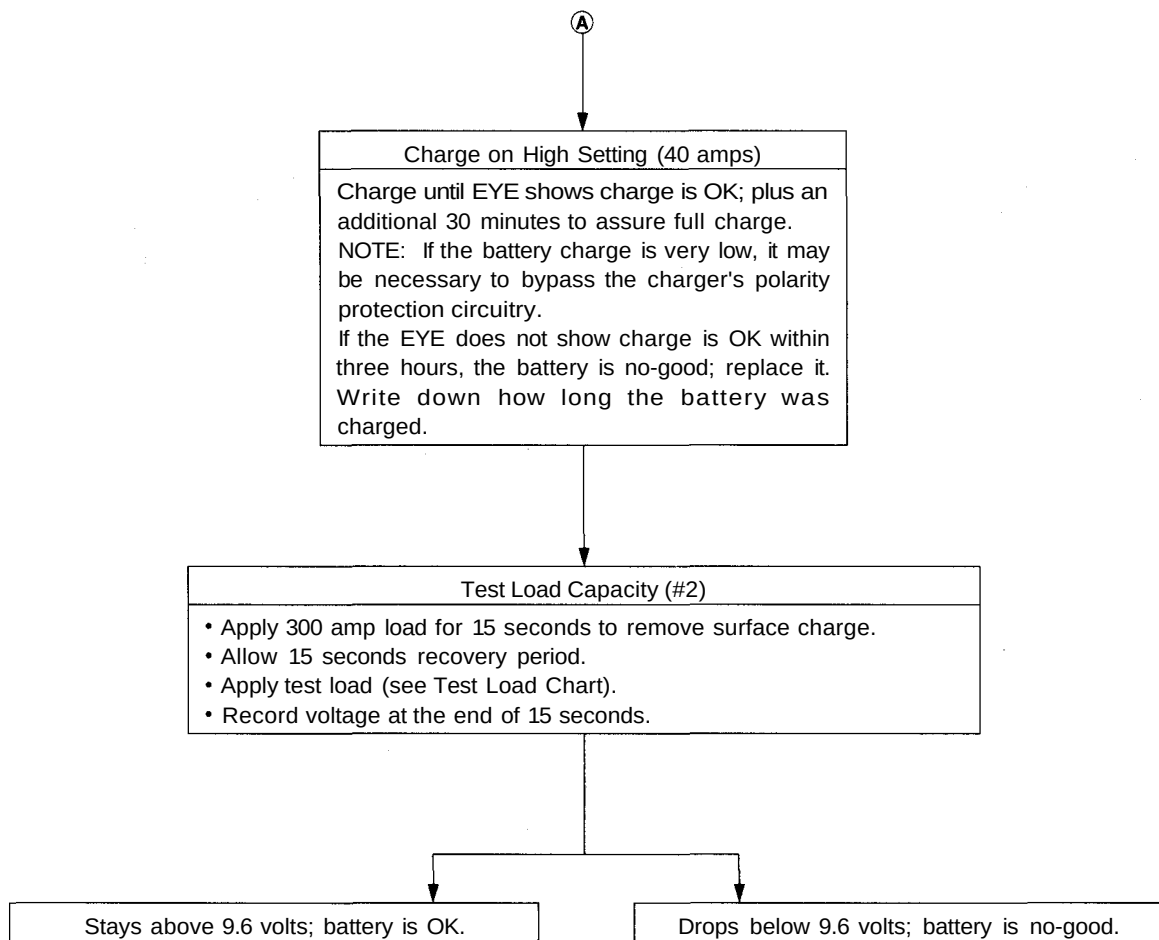
### ⚠ WARNING

- **Battery fluid (electrolyte) contains sulfuric acid. It may cause severe burns if it gets on your skin or in your eyes. Wear protective clothing and a face shield.**
  - If electrolyte gets on your skin or clothes, rinse it off with water immediately.
  - If electrolyte gets in your eyes, flush it out by splashing water in your eyes for at least 15 minutes; call a physician immediately.
- **A battery gives off hydrogen gas. If ignited, the hydrogen will explode and could crack the battery case and splatter acid on you. Keep sparks, flames, and cigarettes away from the battery.**
- **Overcharging will raise the temperature of the electrolyte. This may force electrolyte to spray out of the battery vents. Follow the charger manufacturer's instructions, and charge the battery at a proper rate.**

Use either a JCI or Bear ARBST tester, and follow the manufacturer's procedures. If you don't have one of these computerized testers, follow this conventional test procedure:

To get accurate results, the temperature of the electrolyte must be between 70°F (21°C) and 100°F (38°C).





| TEST LOAD CHART                                                                                                                                           |                         |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------|
| Use the test load or 1/2 the cold cranking amps (CCA) printed on the label on the top of the battery. If neither is indicated, use the information below: |                         |             |
| BATTERY CODE                                                                                                                                              | COLD CRANKING AMPS(CCA) | LOAD (amps) |
| 70                                                                                                                                                        | 440                     | 220         |

# Power Relays

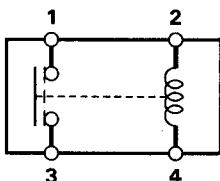
## Relay Test

NOTE: See page 23-189 for turn signal/hazard relay input test.

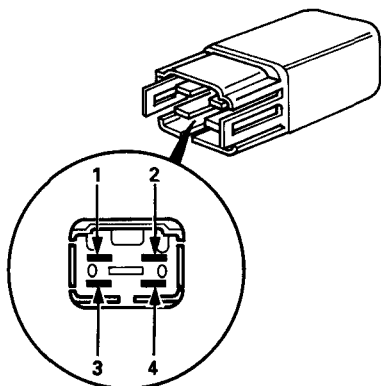
### Normally-open type:

1. Check for continuity between the terminals.
  - There should be continuity between the No. 1 and No. 3 terminals when power and ground are connected to the No. 2 and No. 4 terminals.
  - There should be no continuity between the No. 1 and No. 3 terminals when power is disconnected.

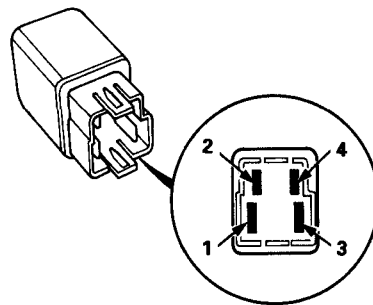
| Terminal              | 1 | 3 |
|-----------------------|---|---|
| Power (No. 2 – No. 4) |   |   |
| Disconnected          |   |   |
| Connected             |   |   |



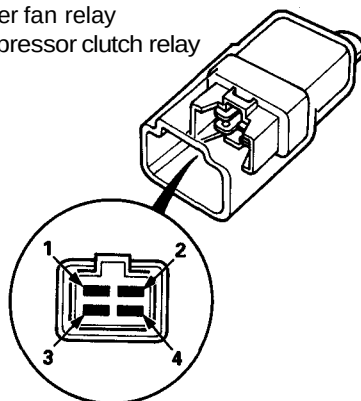
- Cigarette lighter relay
- Fog light relay
- Horn relay
- ABS front fail-safe relay } ('95-'96 models)
- ABS rear fail-safe relay }
- ABS fail-safe relay ('97 - '98 models)
- Blower motor relay
- Power mirror defogger relay (Canada and '98 USA)
- Taillight relay
- Power window relay



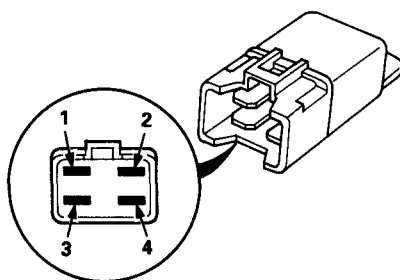
- ABS pump motor relay



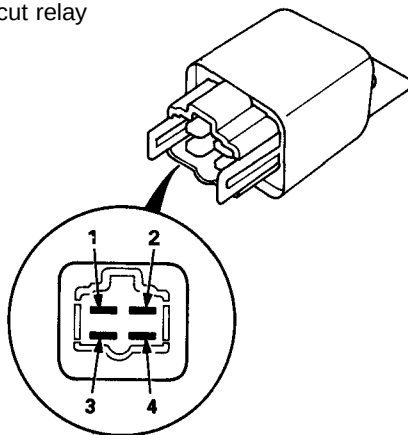
- Radiator fan relay
- Condenser fan relay
- A/C compressor clutch relay



- Blower motor high relay

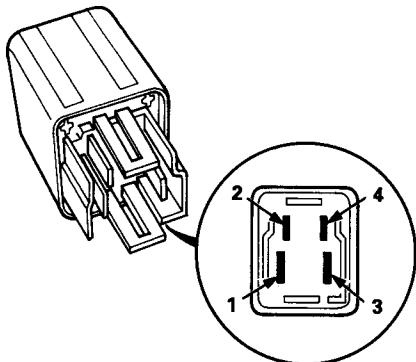


- Starter cut relay





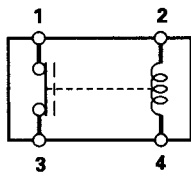
- Headlight relay
- Rear window defogger relay



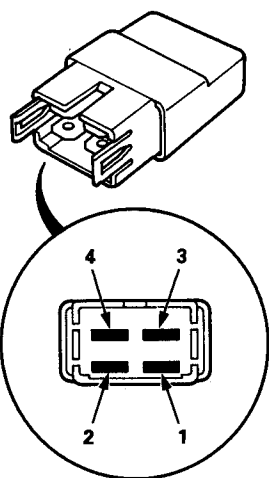
#### Normally-closed Type:

- Check for continuity between the terminals.
  - There should be no continuity between the No. 1 and No. 3 terminals when power and ground are connected to the No. 2 and No. 4 terminals.
  - There should be continuity between the No. 1 and No. 3 terminals when power is disconnected.

| Terminal              | 1 | 3 |
|-----------------------|---|---|
| Power (No. 2 – No. 4) |   |   |
| Connected             |   |   |
| Disconnected          | ○ | ○ |



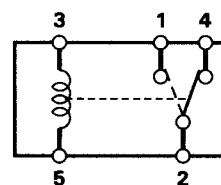
- Low beam cut relay (Canada)



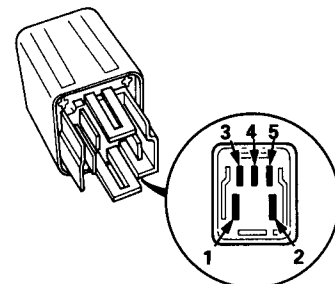
#### Five-terminal type:

- Check for continuity between the terminals.
  - There should be continuity between the No. 1 and No. 2 terminals when power and ground are connected to the No. 3 and No. 5 terminals.
  - There should be continuity between the No. 2 and No. 4 terminals when power is disconnected.

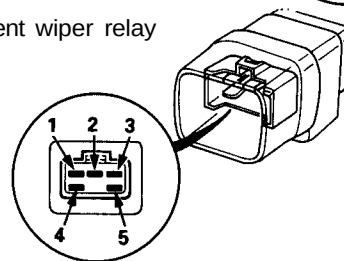
| Terminal              | 1 | 2 | 4 |
|-----------------------|---|---|---|
| Power (No. 3 – No. 5) |   |   |   |
| Disconnected          |   | ○ | ○ |
| Connected             | ○ | ○ |   |



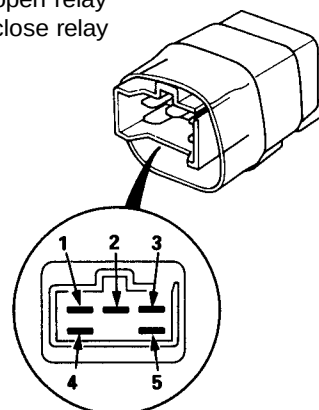
- Dimmer relay



- Intermittent wiper relay



- Moonroof open relay
- Moonroof close relay



# Under-dash Fuse/Relay Box

## Removal/Installation

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

### Removal:

1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable, and wait at least three minutes.
3. '95 - 96 models: Connect the short connectors (RED) to the airbag side of the connectors.

### Driver's Side:

- Remove the access panel from the steering wheel, then remove the short connector (RED) from the panel.
- Disconnect the 2P connector between the driver's airbag and cable reel (see [section 24](#)).

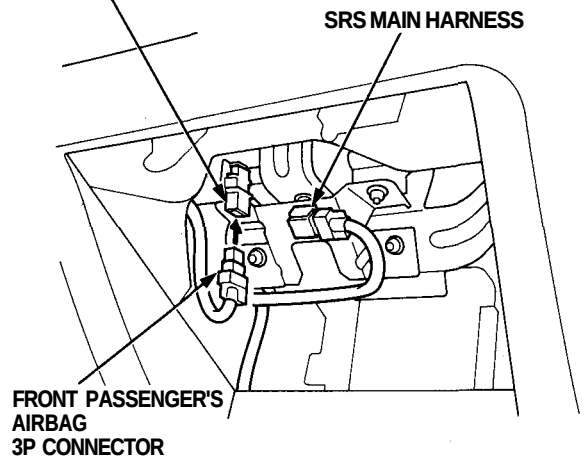
### Front Passenger's Side:

- Remove the glove box.

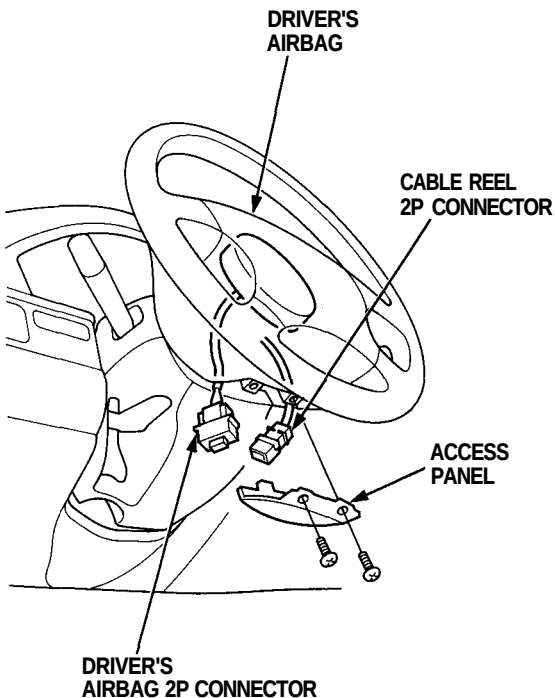
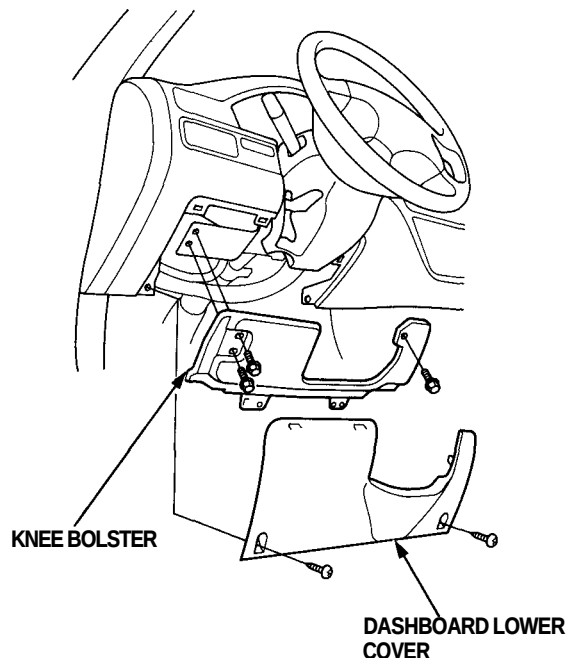
NOTE: Before removing the glove box, remove the glove box damper (see [section 20](#)).

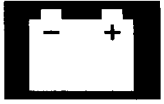
- Disconnect the front passenger's airbag 3P connector from the SRS main harness, then connect the short connector (RED) to the front passenger's airbag 3P connector.

### SHORT CONNECTOR (RED)

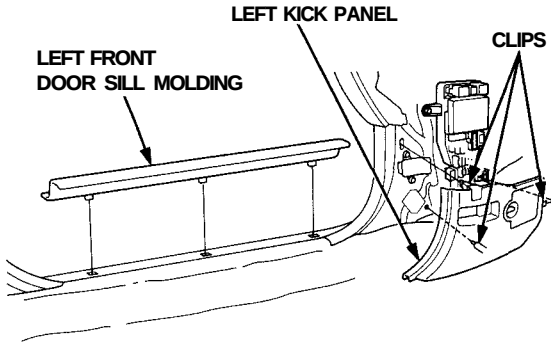


4. Remove the driver's foot rest (see [section 20](#)).
5. Remove the dashboard lower cover and knee bolster.

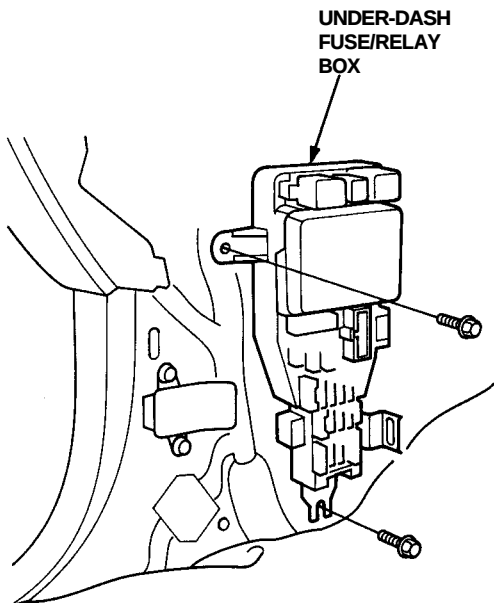




6. Remove the left front door sill molding and the left kick panel.



7. Remove the two mounting bolts, and pull the under-dash fuse/relay box away from the left kick panel.



8. Disconnect the under-dash fuse/relay box connectors, and remove the under-dash fuse/relay box.

NOTE: To disconnect the SRS main harness 2P connector from the under-dash fuse/relay box, see [section 24](#).

#### Installation:

1. Connect the connectors to the under-dash fuse/relay box, then install the fuse/relay box in the reverse order of removal.

NOTE: To reconnect the SRS main harness 2P connector, see [section 24](#).

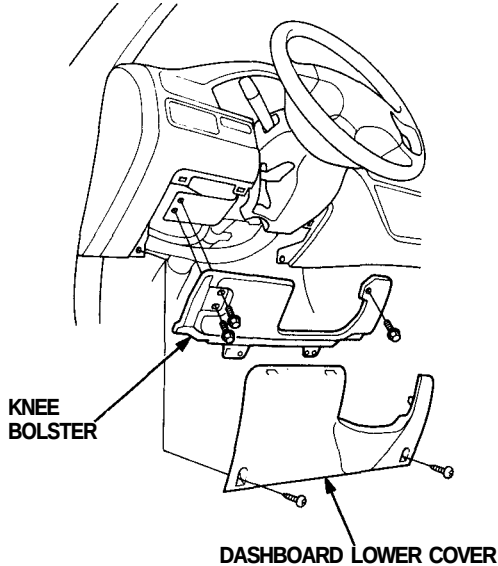
2. '95 - 96 models: Reconnect the driver's airbag 2P connector to the cable reel 2P connector, and reinstall the access panel on the steering wheel.
3. '95 - 96 models: Remove and properly store the short connector (RED), then reconnect the front passenger's airbag connector (and reinstall the glove box).
4. Reconnect the battery positive cable, then the negative cable.
5. Enter the anti-theft code for the radio, then enter the customer's radio station presets.
6. Confirm that all systems work properly.

# Ignition Switch

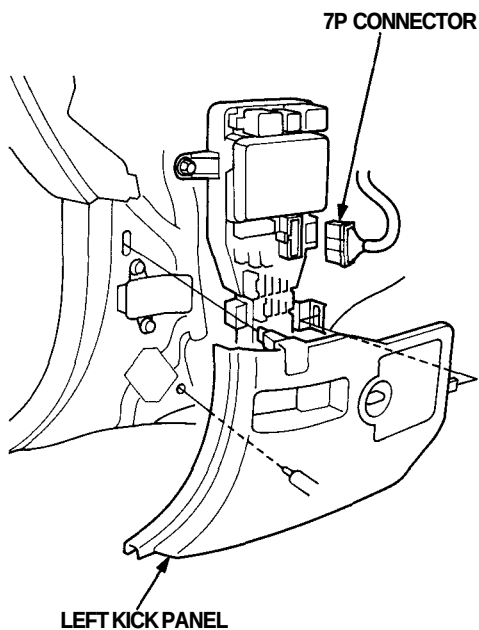
## Test

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS (section 24) before performing repairs or service.

1. Remove the dashboard lower cover and knee bolster.

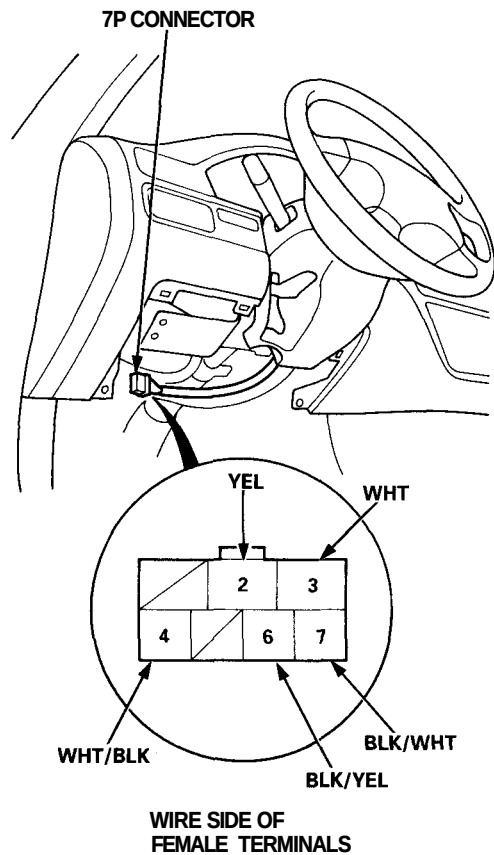


2. Remove the left front door sill molding and the left kick panel.
3. Disconnect the switch harness 7P connector from the under-dash fuse/relay box.



4. Check for continuity between the terminals in each switch position according to the table.

| Terminal<br>Position | 2<br>(IG2) | 3<br>(BAT) | 4<br>(ACC) | 6<br>(IG1) | 7<br>(ST) |
|----------------------|------------|------------|------------|------------|-----------|
| O (LOCK)             |            |            |            |            |           |
| I (ACC)              |            | ○          | ○          |            |           |
| II (ON)              | ○          | ○          | ○          | ○          |           |
| III (START)          |            | ○          | ○          | ○          | ○         |



5. If the continuity checks do not agree with the table, check for a bad connection between the switch and switch harness.

- If the connection is OK, replace the switch.
- If the connection isn't OK, repair as necessary, and recheck. If continuity checks still do not agree with the table, replace the switch.

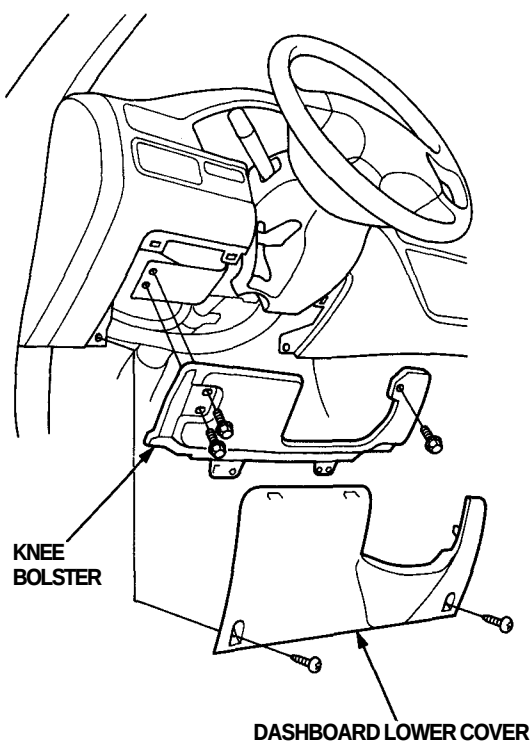


## Steering Lock Replacement

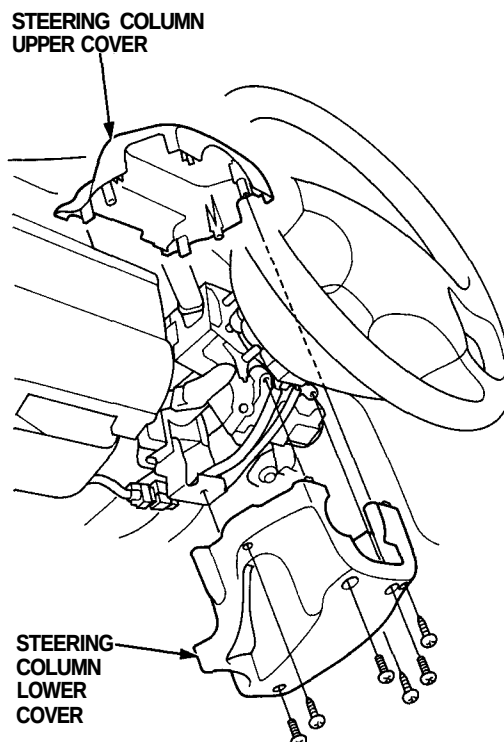
SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

### Removal:

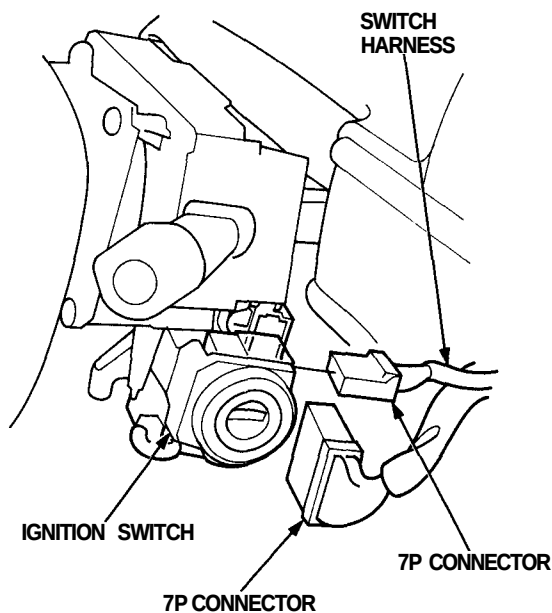
1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's pre-set buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable, and wait at least three minutes.
3. Remove the dashboard lower cover and knee bolster.



4. Remove the steering column covers.



5. Disconnect the connectors from the switch.

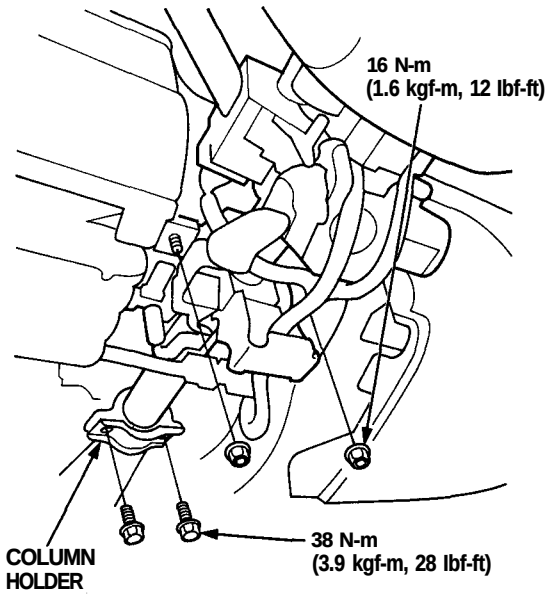


(cont'd)

# Ignition Switch

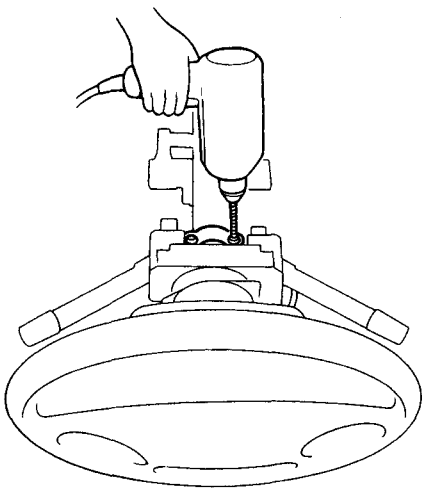
## Steering Lock Replacement (cont'd)

6. Remove the column holder mounting bolts and nuts.



7. Lower the steering column assembly.
8. Center-punch each of the two shear bolts, and drill their heads off with a 5 mm (3/16 in) drill bit.

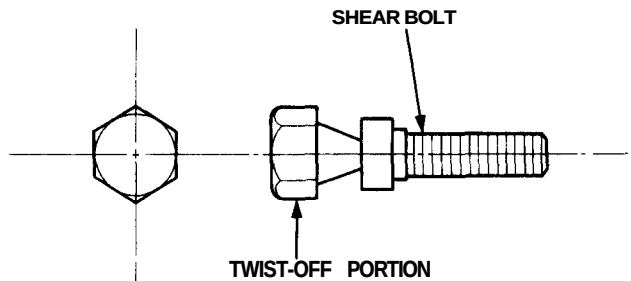
**CAUTION:** Do not damage the switch body when removing the shear bolts.



9. Remove the shear bolts from the switch body, then remove the steering lock assembly.

### Installation:

1. Install the new ignition switch without the key inserted.
2. Loosely tighten the new shear bolts.
3. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
4. Tighten the shear bolts until the hex heads twist off.



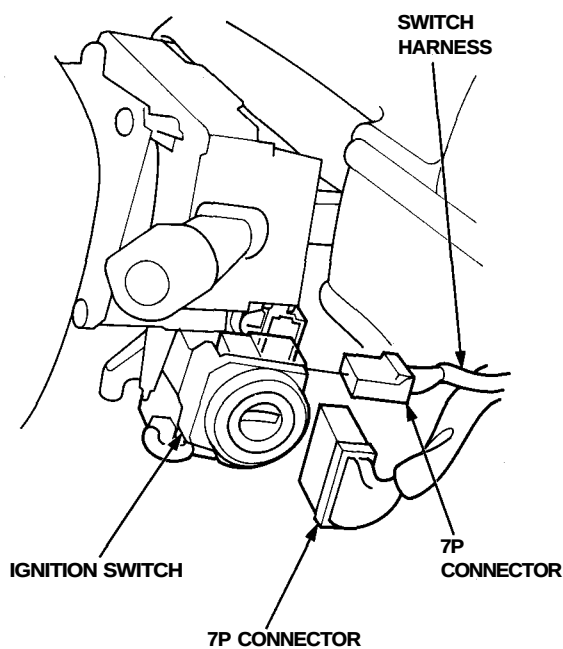
5. Install in the reverse order of removal.
6. Enter the anti-theft code for the radio, then enter the customer's radio station presets.



## Electrical Switch Replacement

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

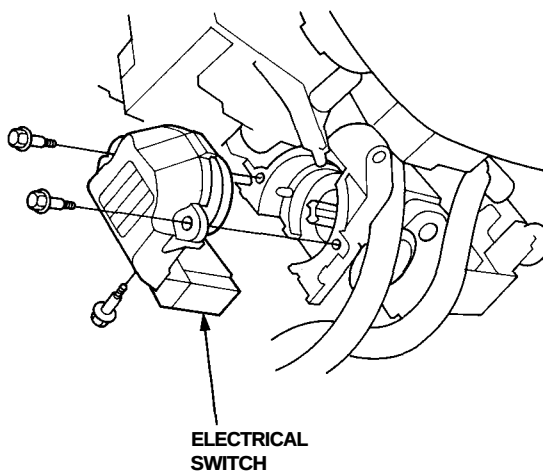
1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's pre-set buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable, and wait at least three minutes.
3. Remove the dashboard lower cover and knee bolster (see page [23-67](#)).
4. Remove the steering column covers (see page [23-67](#)).
5. Disconnect the connectors from the switch.



6. Remove the column holder mounting bolts and nuts (see page [23-68](#)).
7. Lower the steering column assembly.
8. Center-punch each of the two shear bolts, and drill their heads off with a 5 mm (3/16 in) drill bit (see page [23-68](#)).

**CAUTION: Do not damage the switch body when removing the shear bolts.**

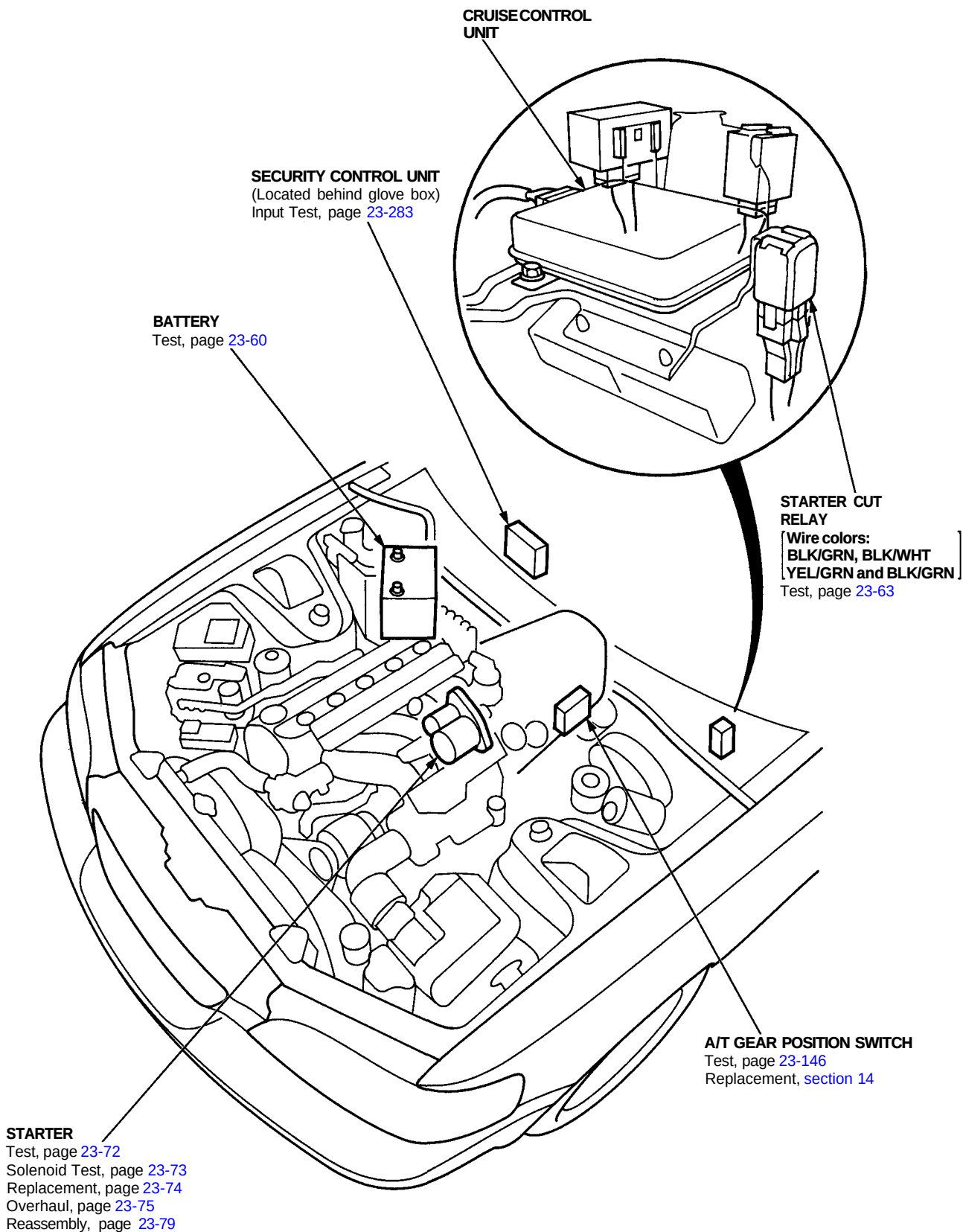
9. Remove the shear bolts from the switch body, then remove the steering lock assembly.
10. Remove the three screws, and replace the electrical switch.



11. Install in the reverse order of removal (see page [23-68](#) for steering lock installation).

# Starting System

## Component Location Index



# Starting System

## Starter Test

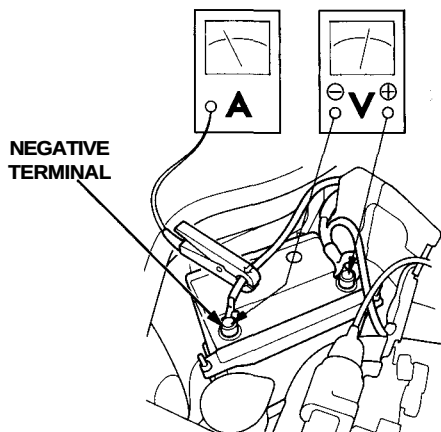
NOTE: The air temperature must be between 59 and 100°F (15 and 38°C) before testing.

### Recommended Procedure:

- Use a starter system tester.
- Connect and operate the equipment in accordance with the manufacturer's instructions.
- Test and troubleshoot as described.

### Alternate Procedure:

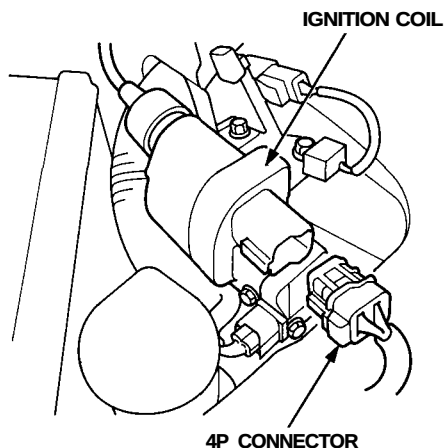
- Use following equipment:
  - Ammeter, 0 - 400 A
  - Voltmeter, 0 - 20 V (accurate within 0.1 volt)
  - Tachometer, 0 - 1,200 rpm
- Hook up a voltmeter and ammeter as shown.



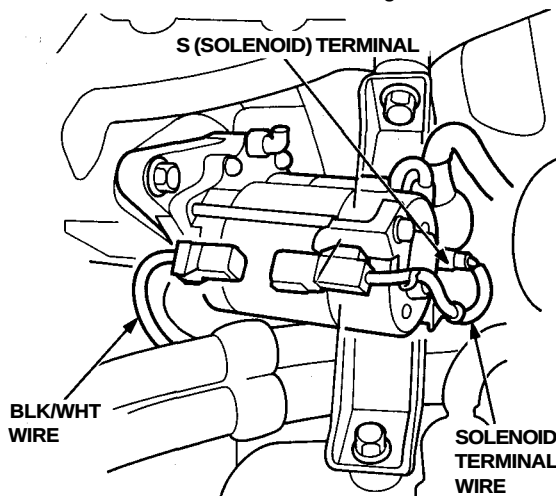
NOTE: After this test, or any subsequent repair, reset the ECM to clear any codes (see [section 11](#)).

### Check the Starter Engagement

1. Disconnect the 4P connector from the ignition coil.



2. With the shift lever in **P** or **N**, turn the ignition switch to START (III).
  - The starter should crank the engine. If the starter does not crank the engine, go to step 3.
  - If it cranks the engine erratically or too slowly, go to "Check for Wear and Damage" on the next page.
3. Check the battery, battery positive cable, ground, starter cut relay, security control unit, and the wire connections for looseness and corrosion. Test again. If the starter still does not crank the engine, go to step 4.
4. Unplug the connector (BLK/WHT wire and solenoid terminal) from the starter. Make sure the shift lever is in **P** or **N**, then connect a jumper wire from the battery positive (+) terminal to the solenoid terminal. The starter should crank the engine.



- If the starter still does not crank the engine, remove it, and diagnose its internal problem.
  - If the starter cranks the engine, go to step 5 and continue the test.
5. Check the ignition switch (see page [23-66](#)).
  6. Check the starter cut relay (see page [23-63](#)).
  7. Check the A/T gear position switch (see page [23-146](#)).
  8. Check the security control unit (see page [23-283](#)).
  9. Check for an open in the BLK/GRN wire between the ignition switch and starter cut relay, and check for an open in the BLK/WHT wire between the starter cut relay and starter.

**Check for Wear and Damage**

The starter should crank the engine smoothly and steadily. If the starter engages, but cranks the engine erratically, remove it, and inspect the starter drive gear and torque converter ring gear for damage.

Check the drive gear overrunning clutch for binding or slipping when the armature is rotated with the drive gear held. If the clutch is damaged, replace the clutch assembly.

**Check Cranking Voltage and Current Draw**

Cranking voltage should be no less than 8.5 volts. Current draw should be no more than 380 amperes.

If cranking voltage is too low, or current draw too high, check for:

- Dead or low battery
- Open circuit in starter armature commutator segments
- Starter armature dragging
- Shorted armature winding
- Excessive drag in engine

**Check Cranking rpm**

Engine speed during cranking should be above 100 rpm.

If speed is too low, check for:

- Loose battery or starter terminals
- Excessively worn starter brushes
- Open circuit in commutator segments
- Dirty or damaged helical spline or drive gear
- Defective drive gear overrunning clutch

**Check Starter Disengagement**

With the shift lever in **[P]** or **[N]**, turn the ignition switch to "START (III)", and release to "ON (II)". The starter drive gear should disengage from the drive plate/ring gear when you release the key.

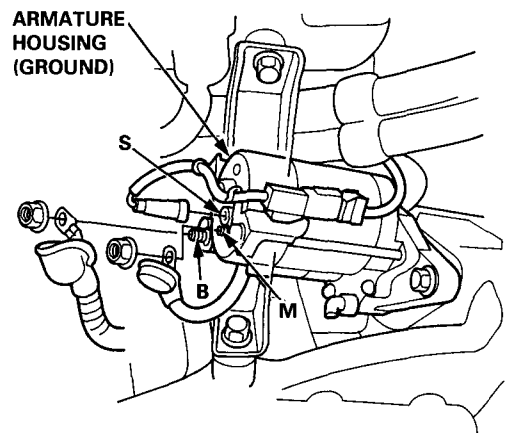
If the drive gear hangs up on the drive plate/ring gear, check for:

- Solenoid plunger and switch malfunction
- Dirty drive gear assembly or damaged overrunning clutch

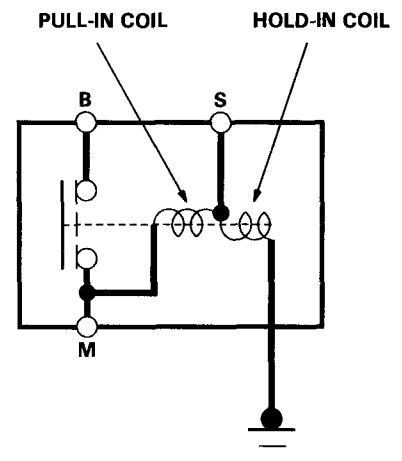


## Starter Solenoid Test

1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable.
3. Check the hold-in coil for continuity between the S terminal and the armature housing (ground). The coil is OK if there is continuity.



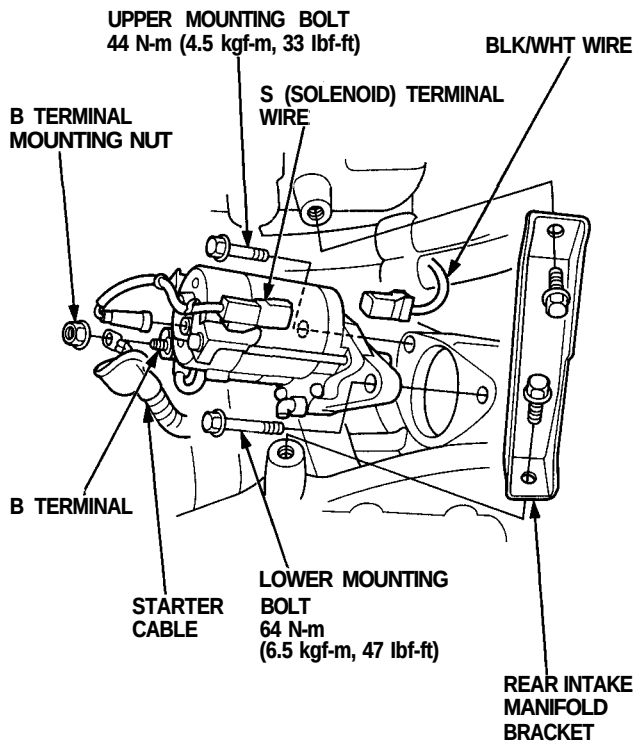
4. Check the pull-in coil for continuity between the S and M terminals. The coil is OK if there is continuity.



# Starting System

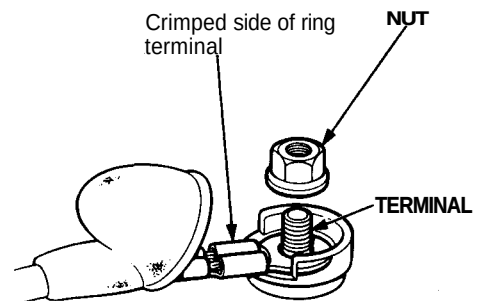
## Starter Replacement

1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable.
3. Remove the rear intake manifold bracket.
4. Disconnect the starter cable from the B terminal on the solenoid, then disconnect the BLK/WHT wire from the S (SOLENOID) terminal wire.



5. Remove the two bolts holding the starter, then remove the starter.
6. Install in the reverse order of removal.

NOTE: When installing the starter cable, make sure that the crimped side of the ring terminal is facing out.

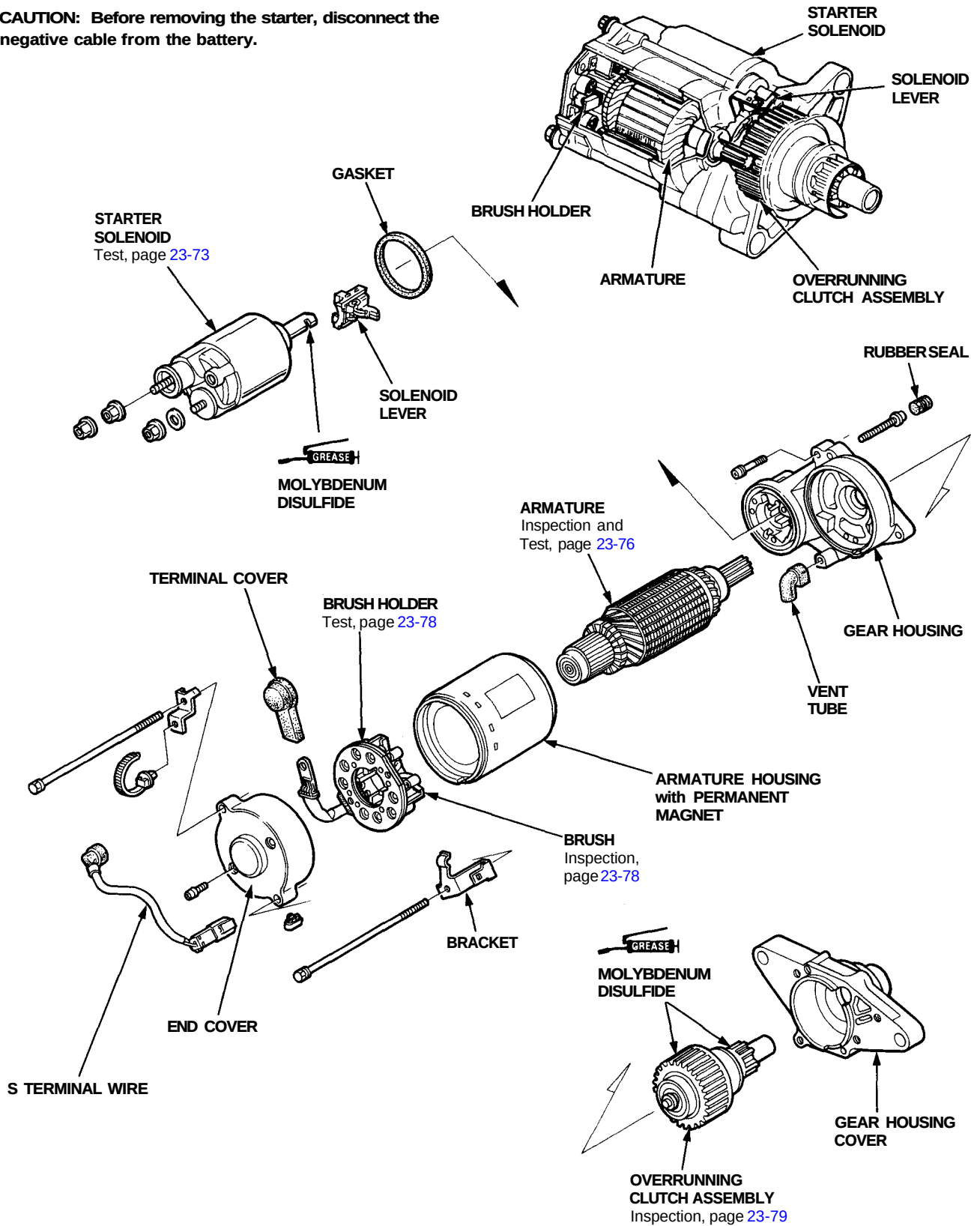


7. Connect the battery positive cable and negative cable to the battery.
8. Enter the anti-theft code for the radio, then enter the customer's radio station presets.



## Starter Overhaul

**CAUTION:** Before removing the starter, disconnect the negative cable from the battery.

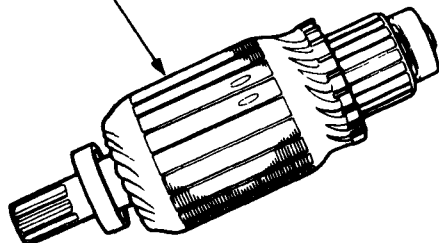


# Starting System

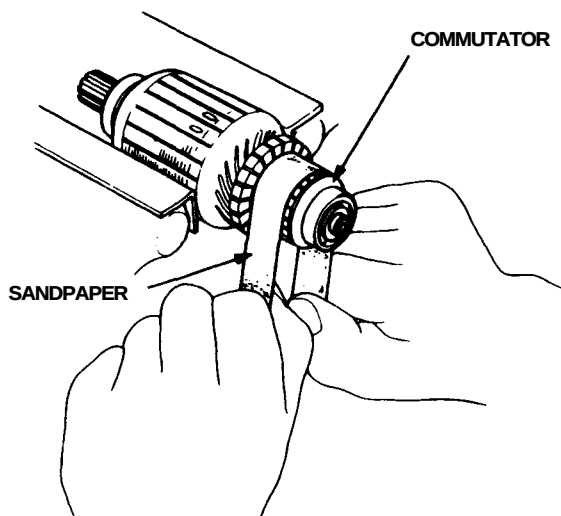
## Armature Inspection and Test

1. Inspect the armature for wear or damage due to contact with the permanent magnet. If there is wear or damage, replace the armature.

Inspect for damage



2. Check commutator surface and diameter.
  - If the surface is dirty or burnt, resurface with emery cloth or a lathe within the following specifications, or recondition with #500 or #600 sandpaper.

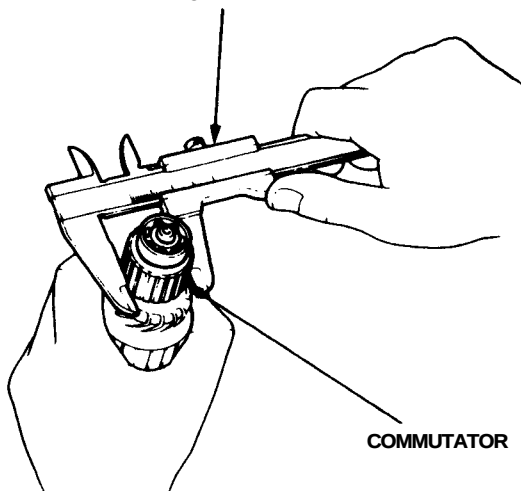


- If commutator diameter is below the service limit, replace the armature.

### Commutator Diameter

| Standard (NEW)                   | Service Limit         |
|----------------------------------|-----------------------|
| 28.0-28.1 mm<br>(1.102-1.106 in) | 27.5 mm<br>(1.083 in) |

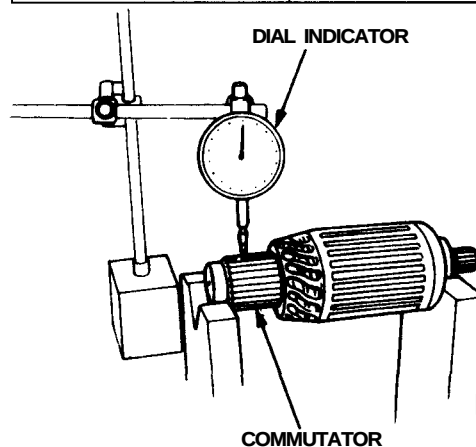
VERNIER CALIPER



3. Measure the commutator runout.
  - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
  - If the commutator runout is not within the service limit, replace the armature.

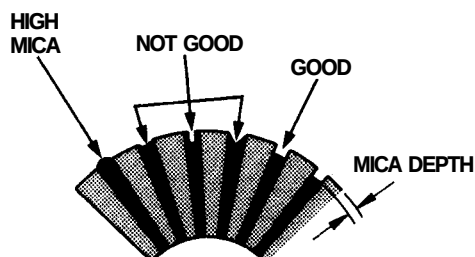
### Commutator Runout

| Standard (NEW)             | Service Limit         |
|----------------------------|-----------------------|
| 0-0.02 mm<br>(0-0.0008 in) | 0.05 mm<br>(0.002 in) |





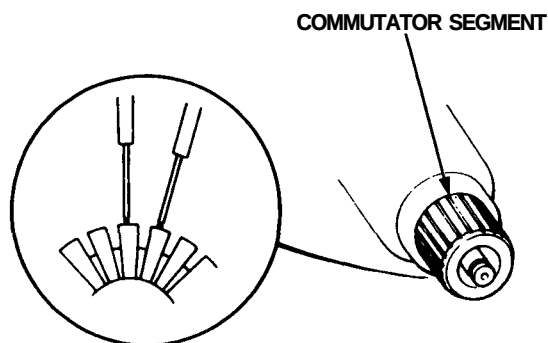
4. Check for mica depth. If necessary, undercut the mica with a hacksaw blade to achieve proper depth. If the service limit cannot be maintained, replace the armature.



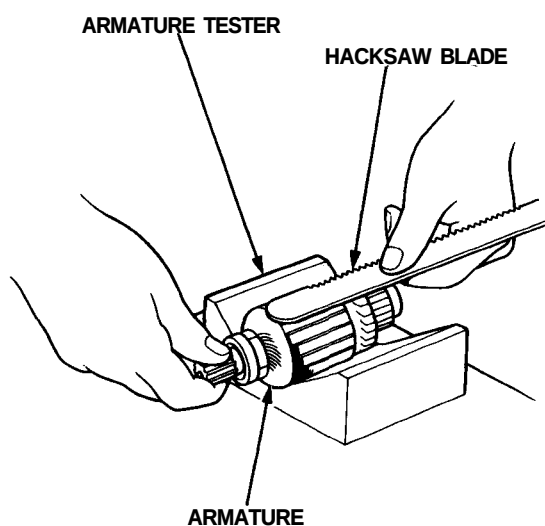
#### Commutator Mica Depth

| Standard (NEW)                  | Service Limit         |
|---------------------------------|-----------------------|
| 0.4-0.5 mm<br>(0.016 -0.020 in) | 0.15 mm<br>(0.006 in) |

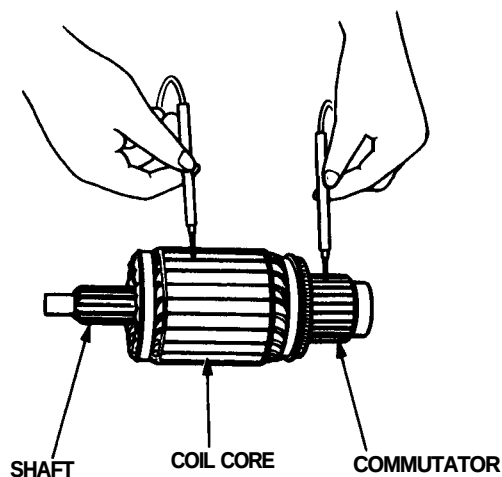
5. Check for continuity between the segments of the commutator. If an open circuit exists between any segments, replace the armature.



6. Place the armature on an armature tester. Hold a hacksaw blade on the armature core. If the blade is attracted to the core or vibrates while the core is turned, the armature is shorted. Replace the armature.



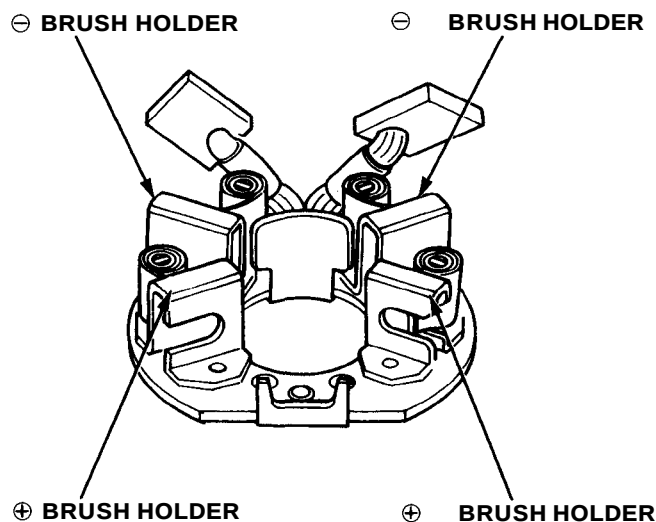
7. Check with an ohmmeter that no continuity exists between the commutator and armature coil core, and between the commutator and armature shaft. If continuity exists, replace the armature.



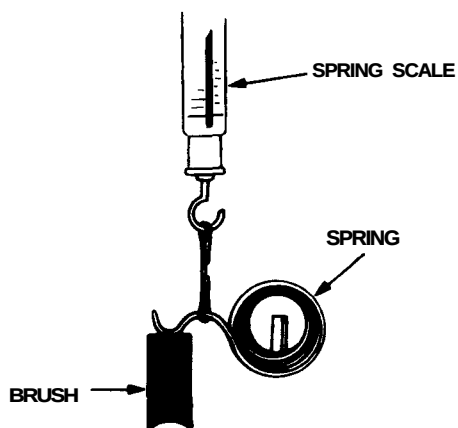
# Starting System

## Starter Brush Holder Test

1. Check that there is no continuity between the ⊕ and ⊖ brush holders. If there is continuity, replace the brush holder assembly.



2. Insert the brush into the brush holder, and bring the brush into contact with the commutator, then attach a spring scale to the spring. Measure the spring tension at the moment the spring lifts off the brush.



### Spring Tension

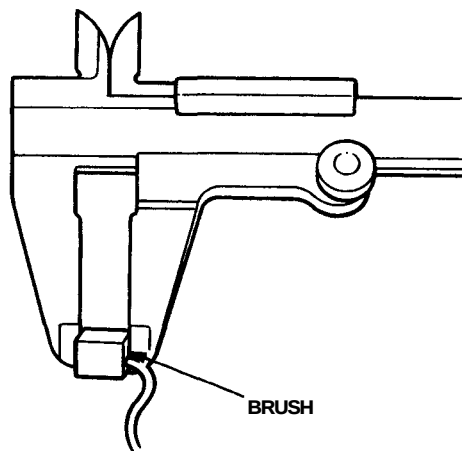
15.7-17.7 N (1.60-1.80 kgf, 3.53-3.97 lbf)

## Starter Brush Inspection

Measure the brush length. If not within the service limit, replace the brush holder assembly.

### Brush Length

| Standard (NEW)                   | Service Limit        |
|----------------------------------|----------------------|
| 15.8- 16.2 mm<br>(0.62 -0.64 in) | 11.0 mm<br>(0.43 in) |

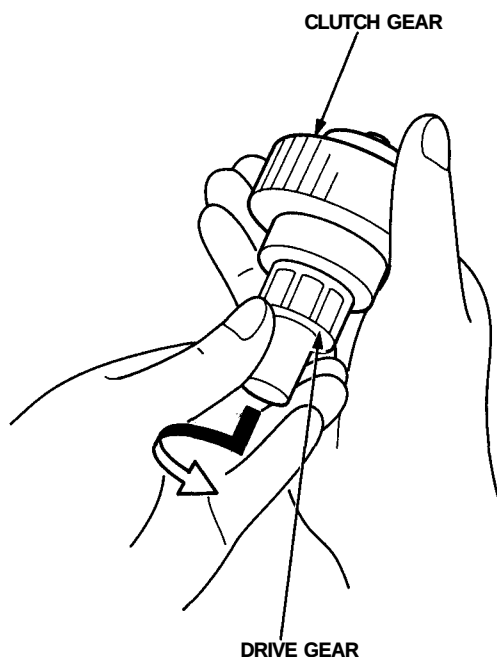


NOTE: To seat new brushes after installing them in their holders, slip a strip of #500 or #600 sandpaper, with the grit side up, over the commutator, and smoothly rotate the armature. The contact surface of the brushes will be sanded to the same contour as the commutator.



## Overrunning Clutch Inspection

1. Slide the overrunning clutch along the shaft. Does it move freely? If not, replace it.
2. Rotate the overrunning clutch both ways. Does it lock in one direction and rotate smoothly in reverse? If it does not lock in either direction or it locks in both directions, replace it.

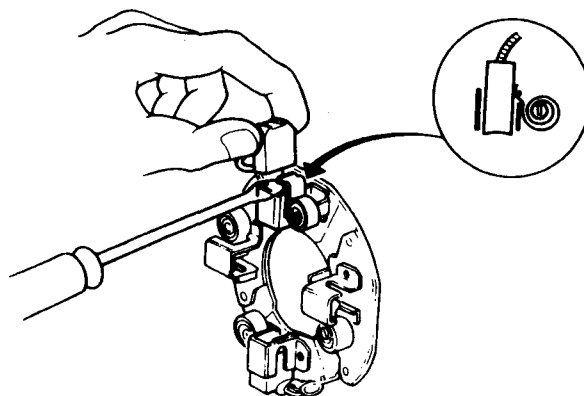


3. If the starter drive gear is worn or damaged, replace the overrunning clutch assembly; the gear is not available separately.
4. Check the condition of the torque converter ring gear if the starter drive gear teeth are damaged.

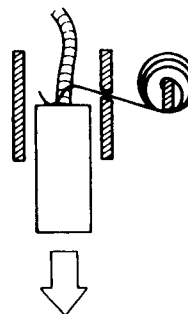
## Starter Reassembly

NOTE: Use the illustration on page 23-75 as reference for reassembly.

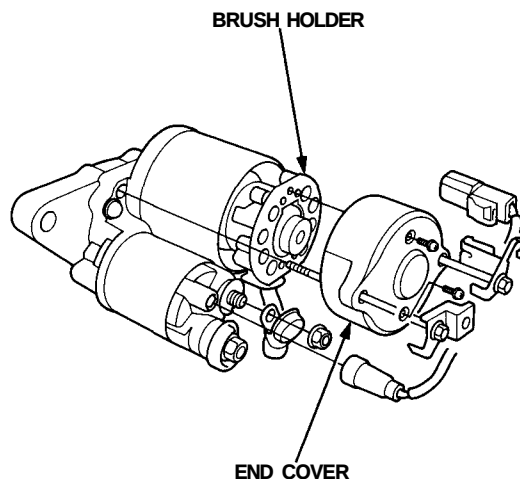
1. Pry back each brush spring with a screwdriver, then position the brush about halfway out of its holder, and release the spring to hold it there.



2. Install the armature in the housing. Next, pry back each brush spring again, and push the brush down until it seats against the commutator, then release the spring against the end of the brush.



3. Install the end cover on the brush holder.



# Starting System

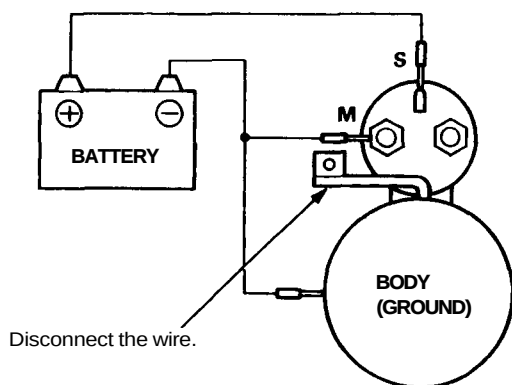
## Performance Test

**NOTE:** Before starting the following checks, disconnect the wire from terminal M, and make a connection as described below using as heavy a wire as possible (preferably equivalent to the wire used for the car).

### Pull-in Coil Test:

Connect the battery as shown. If the starter pinion pops out, it is working properly.

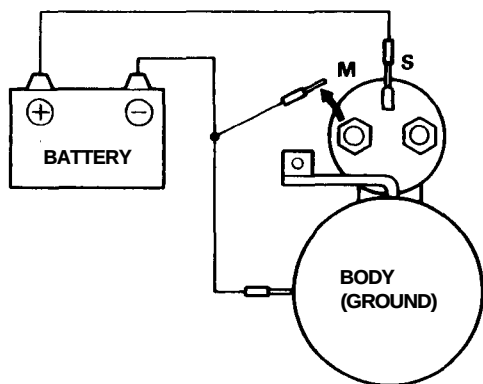
**CAUTION:** Do not leave the battery connected for more than 10 seconds.



### Hold-in Coil Test:

Disconnect the battery from the M terminal. If the pinion does not retract, the hold-in coil is working properly.

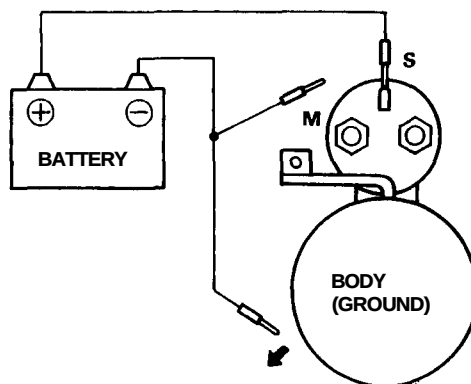
**CAUTION:** Do not leave the battery connected for more than 10 seconds.



### Retracting Test:

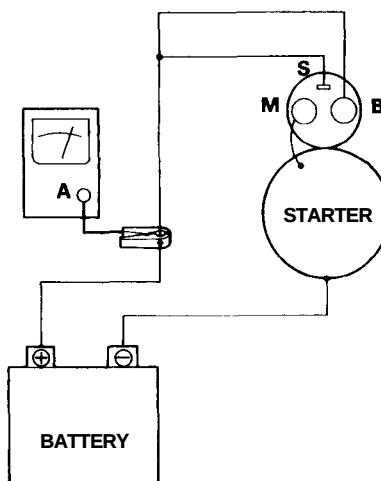
Disconnect the battery also from the body. If the pinion retracts immediately, it is working properly.

**CAUTION:** Do not leave the battery connected for more than 10 seconds.



### Starter No-load Test:

1. Clamp the starter firmly in a vise.
2. Connect the starter to the battery as shown in the diagram below, and confirm that the motor starts and keeps rotating.



3. If the electric current and motor speed meet the specifications when the battery voltage is at 11 V, the starter is working properly.

### Specifications:

- 80 A or less current draw
- 2,600 rpm or more rpm

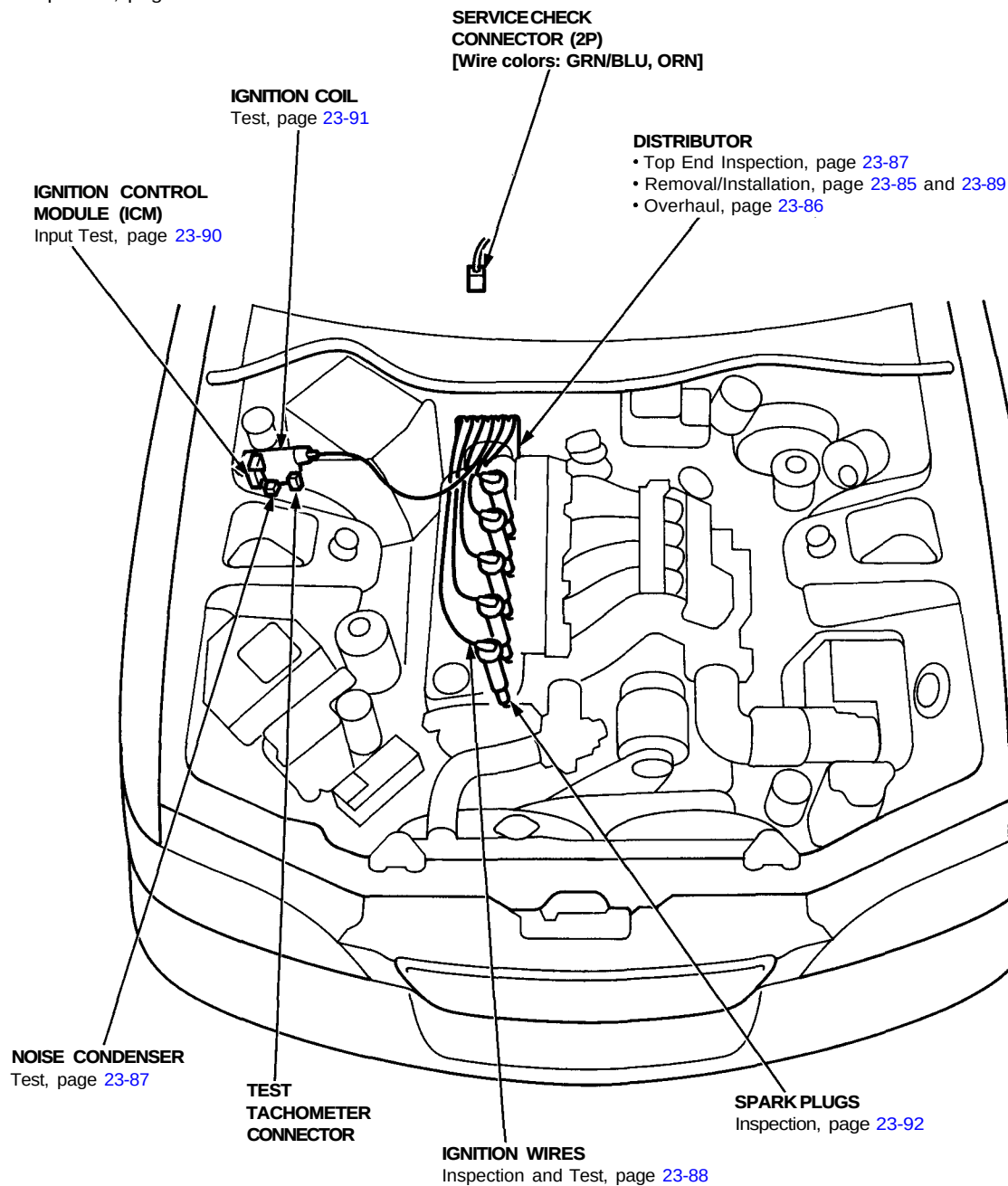


# Ignition System

## Component Location Index

### IGNITION TIMING CONTROL SYSTEM

- Description, page [23-82](#)
- Inspection, page [23-84](#)

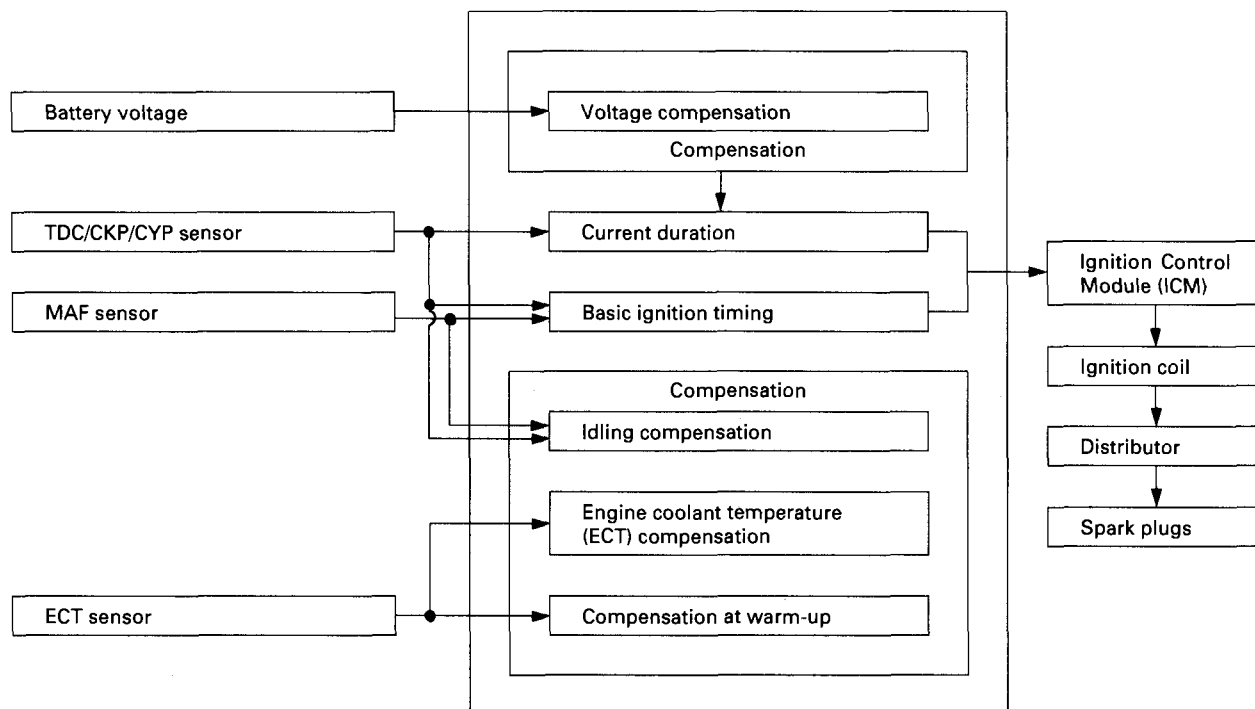


# Ignition System

## Description

### Ignition Timing Control:

The programmed ignition (PGM-IG) used in this engine provides optimum control of ignition timing. A microcomputer determines the timing in response to engine speed and intake air flow mass. The input signals are transmitted by the TDC/CKP/CYP sensor, throttle position (TP) sensor, engine coolant temperature (ECT) sensor, and MAF sensor. This system, which is not dependent on a governor or vacuum diaphragm, is capable of setting lead angles with complicated characteristics which cannot be provided by conventional governors or diaphragms.



### Basic Control:

The control unit has stored within it the optimum basic ignition timing for operating conditions based upon engine speed and intake air flow mass. With compensating signals from sensors, the system determines optimum ignition timing and duration for ambient conditions and sends voltage pulses to the ICM.

Compensation of ignition timing:

| Compensation Item       | Related Sensor and Information   | Description                                                                                                                              |
|-------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Idling                  | TDC/CKP/CYP sensor<br>MAF sensor | Ignition timing is controlled to the target speed with compensation according to the idling speed.                                       |
| Compensation at warm-up | ECT sensor                       | Lag angle is adjusted according to warm-up conditions to bring about a good balance between operating performance and exhaust gas level. |
| ECT compensation        | ECT sensor                       | Compensation for lead angle at low engine coolant temperature and lag angle at high engine coolant temperature.                          |

### Control at Start:

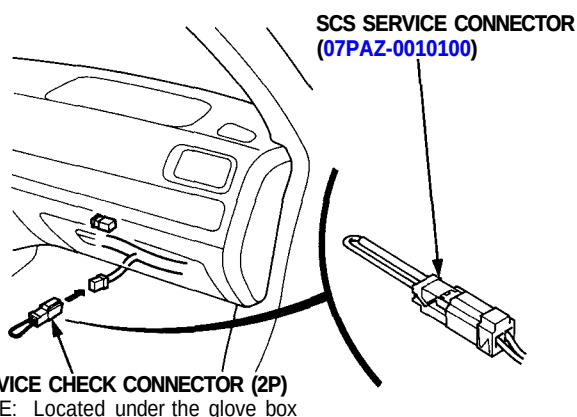
Ignition timing is fixed at 5° BTDC for cranking. The cranking is detected by the TDC sensor (cranking rpm) and starter signal.

# Ignition System

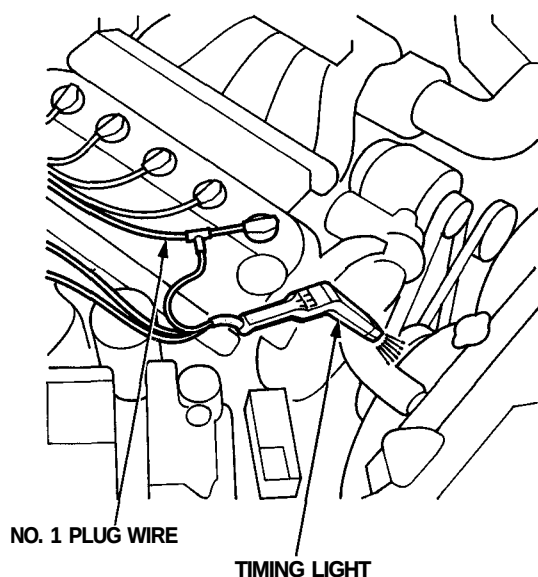
## Ignition Timing Inspection

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

1. Start the engine. Hold the engine at 3,000 rpm with no load (shift lever in **N** or **P** position) until the radiator fan comes on, then let it idle.
2. Pull out the service check connector located under the glove box. Connect the GRN/BLU and ORN wire terminals with the special tool.



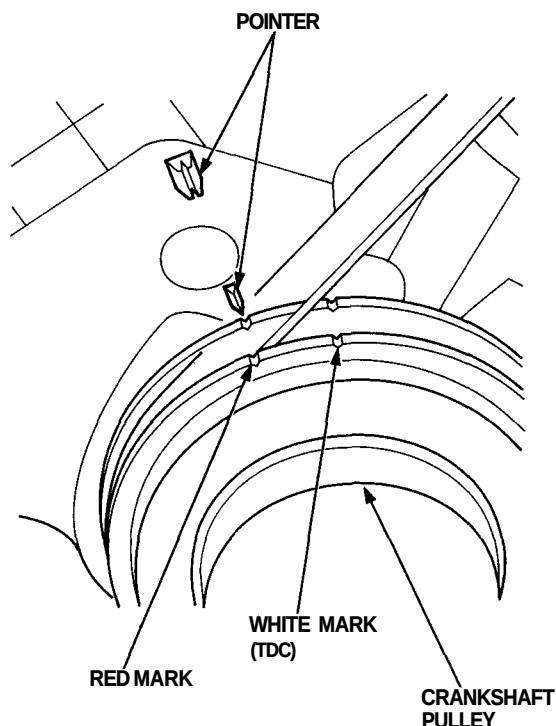
3. Check the idle speed (see page [23-85](#)).
4. Connect a timing light to the No. 1 ignition wire.
  - Point the light toward the pointer on the timing belt cover.



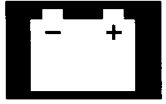
5. Inspect ignition timing at idle speed.

### Ignition Timing:

**15° ± 2° BTDC (RED) at 700 ± 50 rpm with shift lever in **N** or **P** position and electrical systems turned off.**

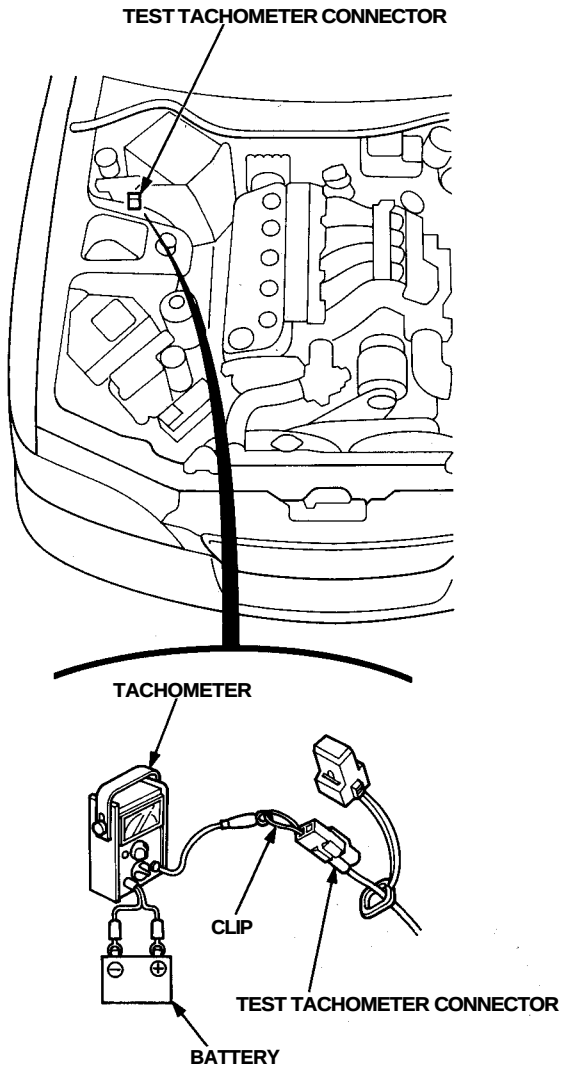


6. If the ignition timing is incorrect, replace the ECM (there is no way to adjust ignition timing).
7. Disconnect the special tool from the service check connector.



## Idle Speed Check

1. Start the engine. Hold the engine at 3,000 rpm with no load (shift lever in **N** or **P**) until the radiator fan comes on, then let it idle.
2. Connect a tachometer to the test tachometer connector.

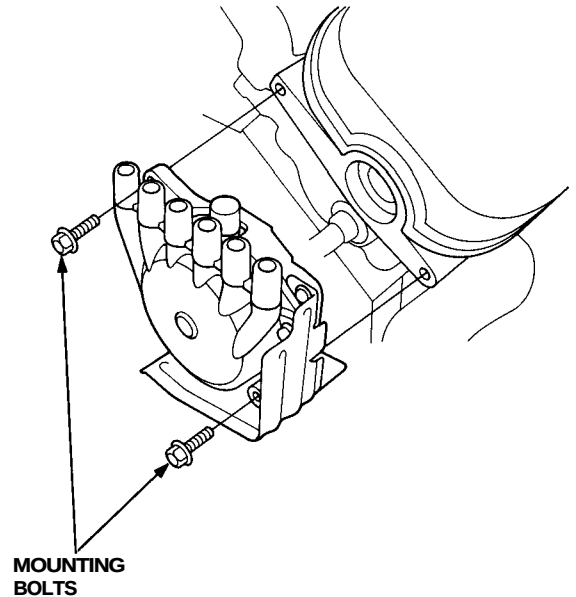


**Idle speed:  $700 \pm 50$  rpm with shift lever in position **N** or **P** and electrical systems turned off.**

3. Adjust the idle speed if necessary (see [section 11](#)).

## Distributor Removal

1. Disconnect the ignition wires from the distributor ignition (DI) cap.



2. Remove the distributor mounting bolts, then remove the distributor from the cylinder head.

# Ignition System

## Distributor Overhaul

### DISTRIBUTOR IGNITION (DI) CAP

Check for cracks, wear, damage, and fouling; if necessary, clean or replace.

### CARBON POINT SPRING

### CARBON POINT

### DISTRIBUTOR IGNITION (DI) ROTOR HEAD

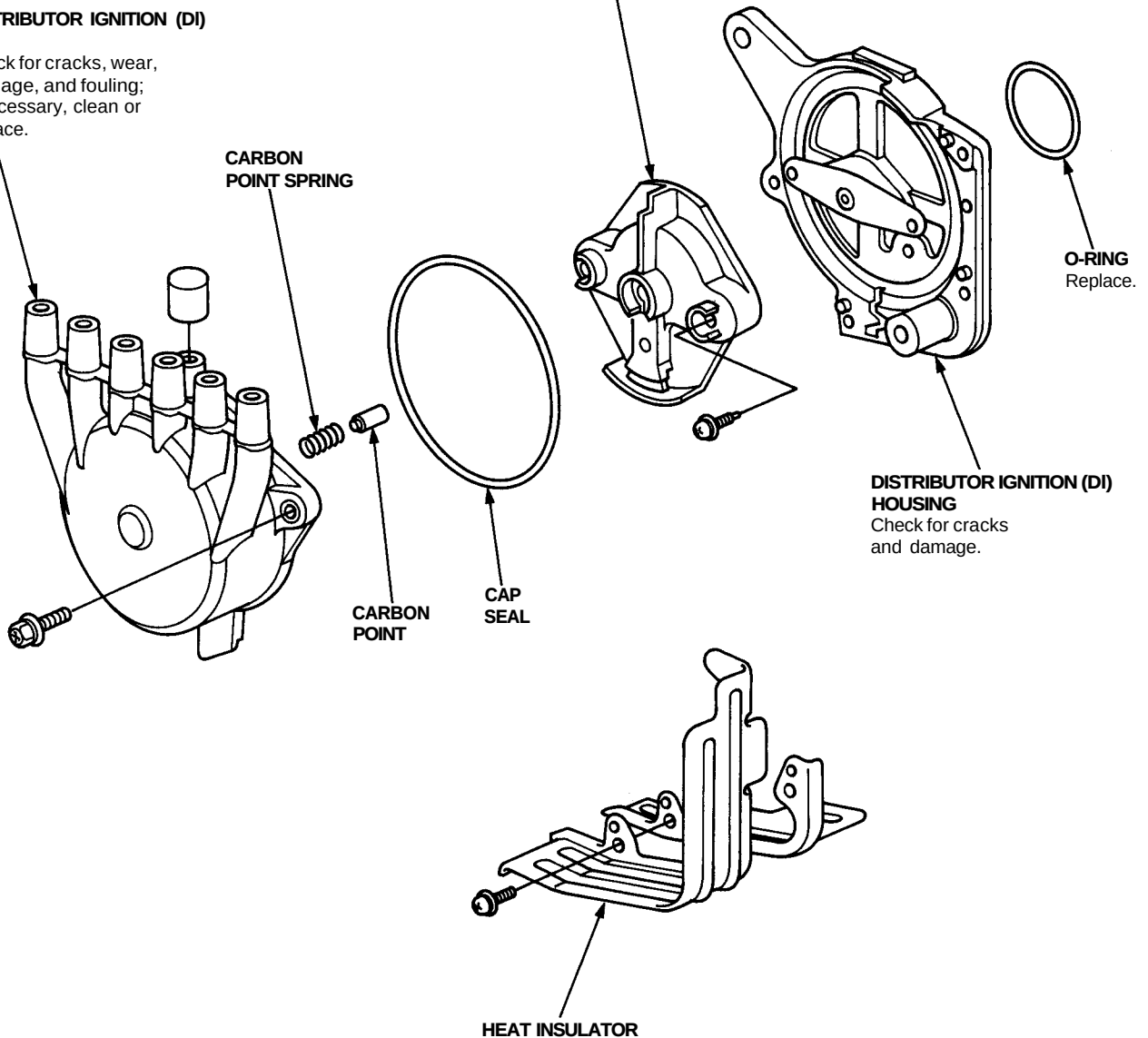
### CAP SEAL

### O-RING Replace.

### DISTRIBUTOR IGNITION (DI) HOUSING

Check for cracks and damage.

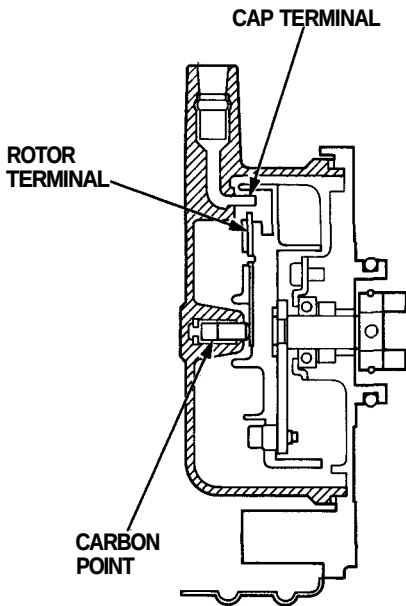
### HEAT INSULATOR





## Distributor Top End Inspection

1. Check for rough or pitted rotor and cap terminals.
2. Scrape or file off the carbon deposits. Smooth the rotor terminal with an oil stone or #600 sandpaper if rough.

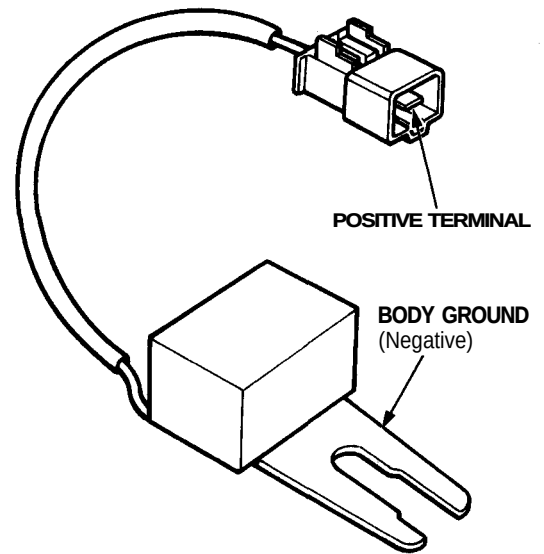


3. Check the distributor ignition (DI) cap for cracks, wear, and damage. If necessary, clean or replace it.

## Noise Condenser Capacity Test

1. Use a commercially available condenser tester. Connect the condenser tester probes and measure the condenser capacity.

**Condenser capacity:  $0.47 \pm 0.09$  microfarads ( $\mu\text{F}$ )**



NOTE: The noise condenser is intended to reduce ignition noise. However, condenser failure may cause the engine to stop running.

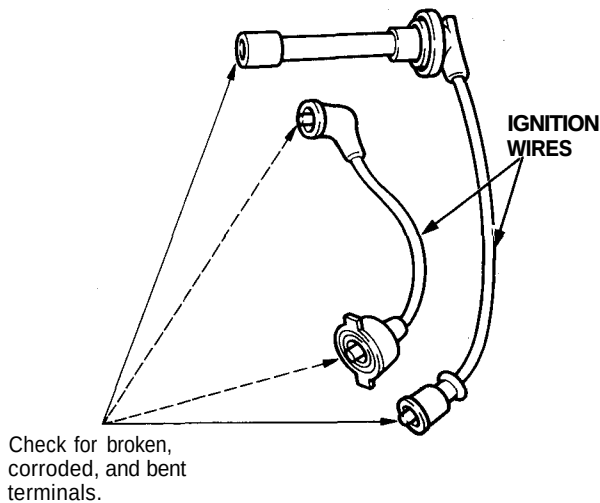
2. If not within the specifications, replace the noise condenser.

# Ignition System

## Ignition Wire Inspection and Test

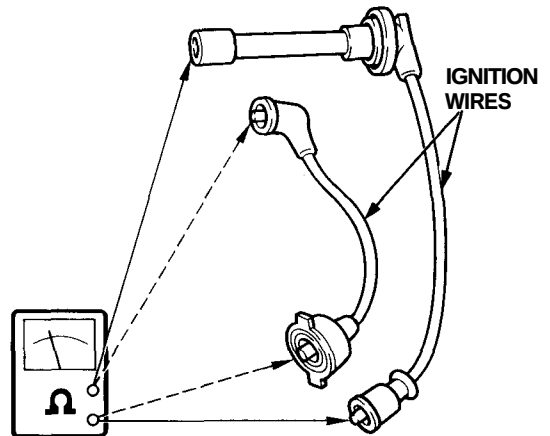
**CAUTION:** Carefully remove the ignition wires by pulling on the rubber boots. Do not bend the wires; you might break them inside.

1. Check the condition of the ignition wire terminals. If any terminal is corroded, clean it, and if it is broken or distorted, replace the wire.



2. Connect ohmmeter probes and measure resistance.

**Ignition Wire Resistance:**  
**25k $\Omega$  max. at 68°F (20°C)**



3. If resistance exceeds 25 k $\Omega$ , replace the ignition wire.



## Distributor Installation

### NOTE:

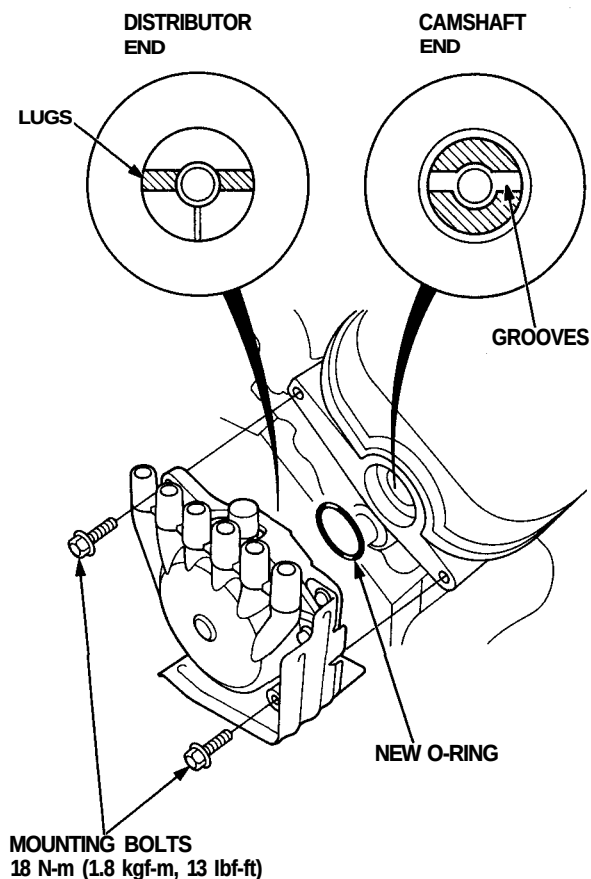
- Use the illustration on page [23-86](#) as reference for reassembly.
- Before you install the distributor, bring the No. 1 piston to compression stroke TDC.

1. Coat a new O-ring with engine oil, then install it.
2. Clean the mating surfaces of the distributor and the cylinder head.

NOTE: Make sure that the distributor vent hole is not clogged.

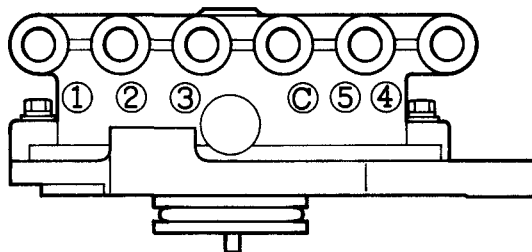
3. Slip the distributor into position.

NOTE: The lug on the end of the distributor and its mating grooves in the camshaft end are both offset to eliminate the possibility of installing the distributor 180° out of time.



4. Install the mounting bolts, then tighten them.

5. Connect the ignition wires and ignition coil wire in the numbered sequence shown.



6. Inspect the timing with a timing light as shown on page [23-84](#).

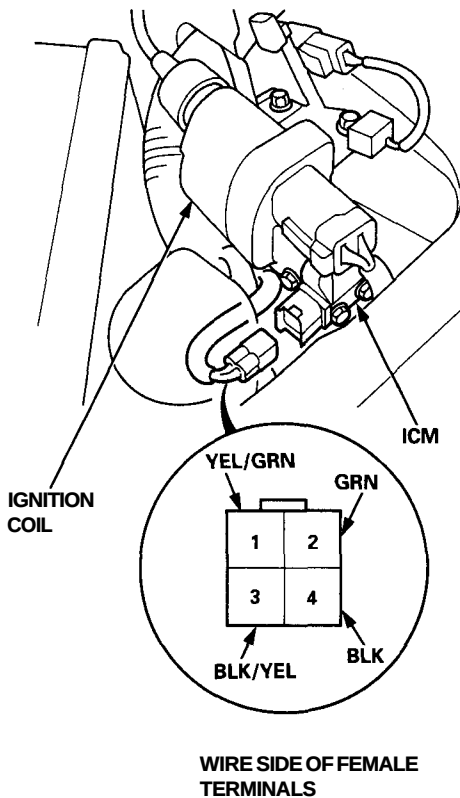
# Ignition System

## Ignition Control Module (ICM) Input Test

### NOTE:

- See [section 11](#) when the malfunction indicator lamp (MIL) blinks.
- Perform an input test on the ignition control module (ICM) after finishing the fundamental tests for the ignition system and fuel emission system.

Disconnect the 4P connector from the ICM. Make the following input tests at the connector terminals. If all tests prove OK, yet the system still fails to work, replace the ICM.



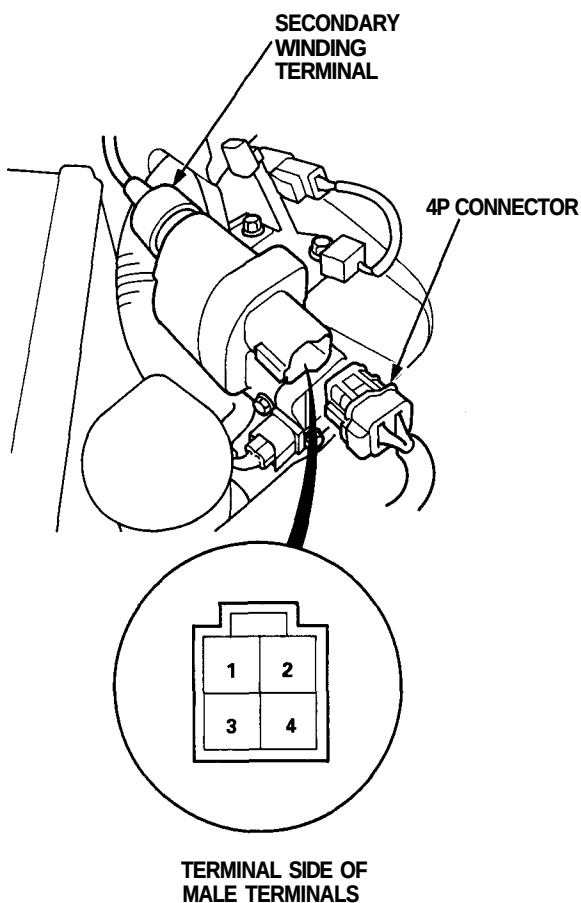
1. Check for continuity between the No. 4 terminal and body ground.
  - If there is continuity, go to step 2.
  - If there is no continuity, check for:
    - An open in the BLK wire.
    - Disconnected terminals.
    - Poor ground (G101).

2. With the ignition switch ON (II), there should be battery voltage between the No. 3 (+) and No. 4 (-) terminals.
  - If there is battery voltage, go to step 3.
  - If there is no voltage, check for:
    - An open in the BLK/YEL wire.
    - Disconnected terminals.
    - Faulty ignition coil (see page [23-91](#)).
3. With the ignition switch ON (II), there should be battery voltage between the No. 2 (+) and No. 4 (-) terminals.
  - If there is no voltage, check for:
    - An open in the GRN wire between the ignition coil and ICM.
    - Faulty ignition coil (see page [23-91](#)).



## Ignition Coil Test

1. Turn the ignition switch OFF.
2. Disconnect the 4P connector and ignition coil wire.



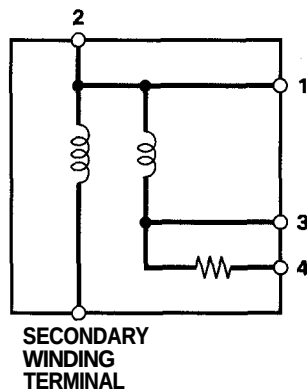
3. Using an ohmmeter, measure resistance between the terminals. Replace the coil if the resistance is not within specifications.

NOTE: Resistance will vary with the coil temperature; specifications are at 68°F (20°C).

**Primary Winding Resistance**  
(Between the No. 2 and No. 3 terminals):  
0.36 - 0.44 ohms

**Secondary Winding Resistance**  
(Between the No. 2 and secondary winding terminals):  
10.8-16.2k $\Omega$

**Resistance between the No. 3 and No. 4 terminals:**  
2.0-2.3k $\Omega$

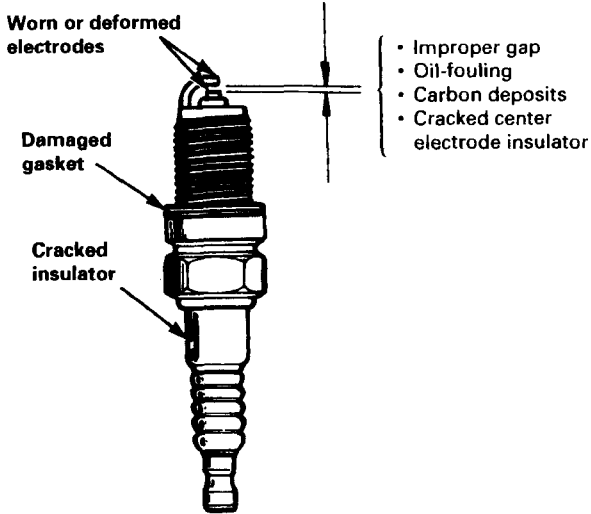


4. Check for continuity between the No. 1 and No. 2 terminals. Replace the coil if there is no continuity.

# Ignition System

## Spark Plug Inspection

1. Inspect the electrodes and ceramic insulator for:



### Burned or worn electrodes may be caused by:

- Advanced ignition timing
- Loose spark plug
- Plug heat range too low
- Insufficient cooling

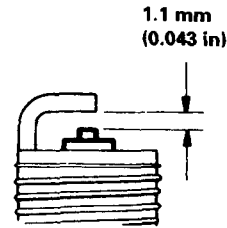
### Fouled plug may be caused by:

- Retarded ignition timing
- Oil in combustion chamber
- Incorrect spark plug gap
- Plug heat range too high
- Excessive idling/low speed running
- Clogged air cleaner element
- Deteriorated ignition coil or ignition wires

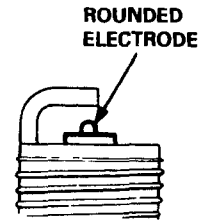
2. Check the electrode gap.
  - Adjust the gap with a suitable gapping tool.

### Electrode Gap

|          |                                         |
|----------|-----------------------------------------|
| Standard | 1.1 $\pm$ 0.1 mm (0.043 $\pm$ 0.004 in) |
|----------|-----------------------------------------|



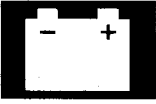
- Replace the plug if the center electrode is rounded as shown below:



### Spark Plugs

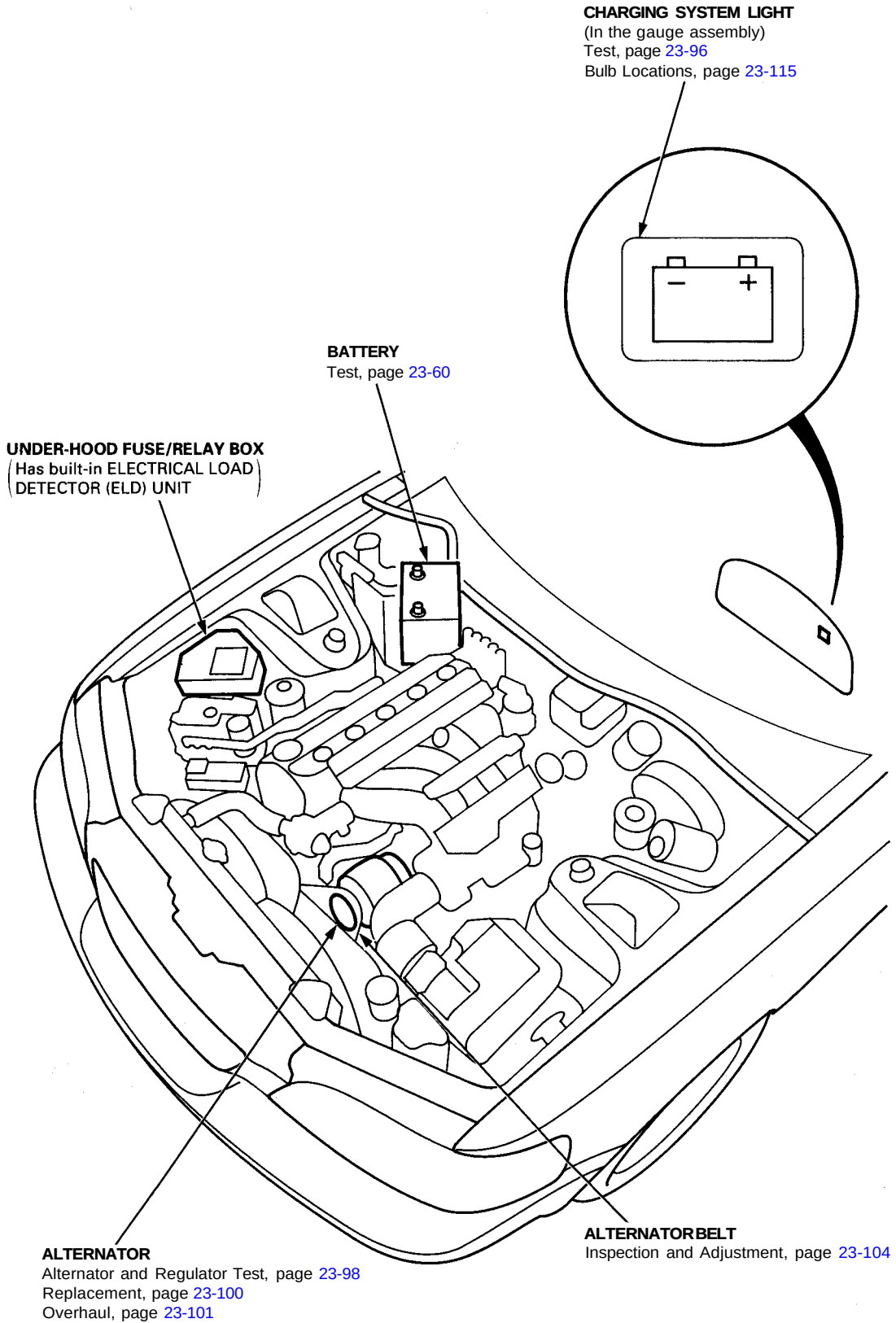
|                                      |
|--------------------------------------|
| BKR5E-N11 (NGK)<br>K16PR-L11 (DENSO) |
|--------------------------------------|

3. Apply a small quantity of anti-seize compound to the plug threads, and screw the plugs into the cylinder head finger-tight. Then torque them to 18 N-m (1.8 kgf-m, 13 lbf-ft).



# Charging System

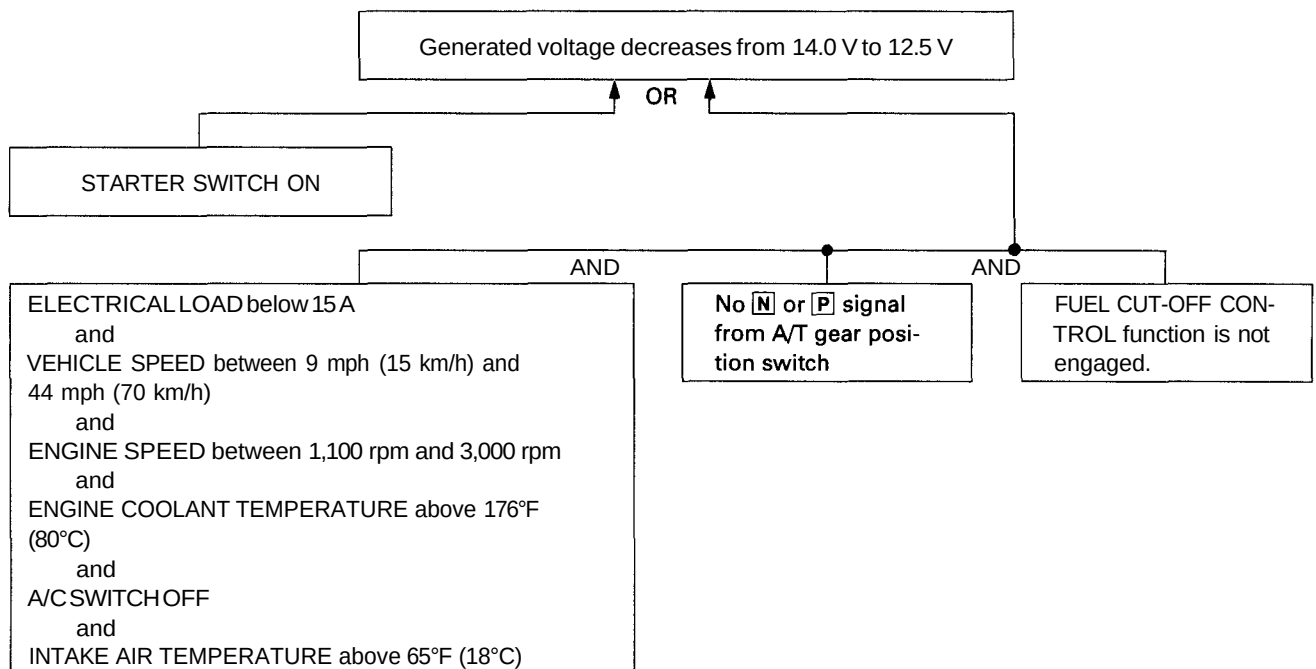
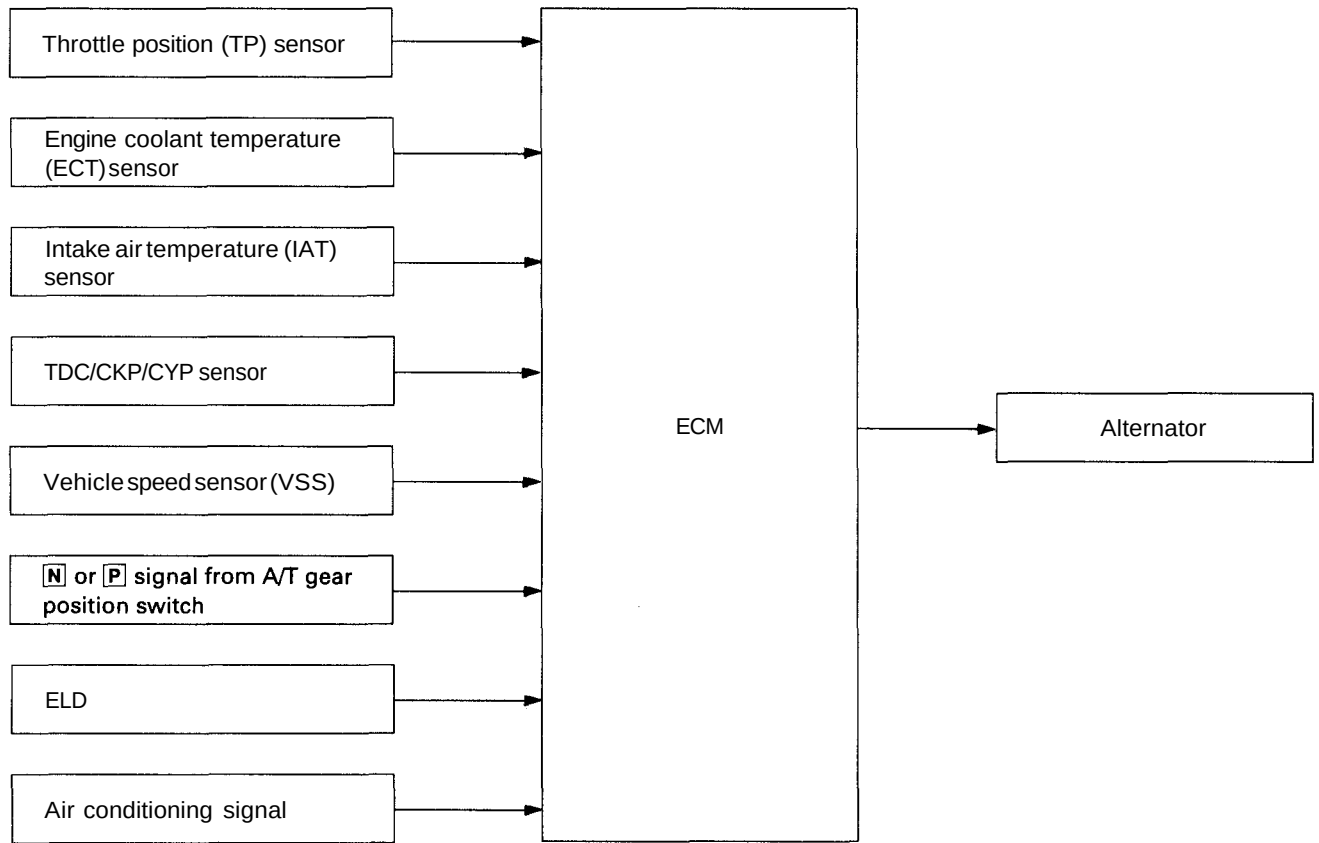
## Component Location Index



## Charging System

### Description

To improve fuel economy, the alternator control system within the ECM changes the voltage generated at the alternator in accordance with driving conditions.

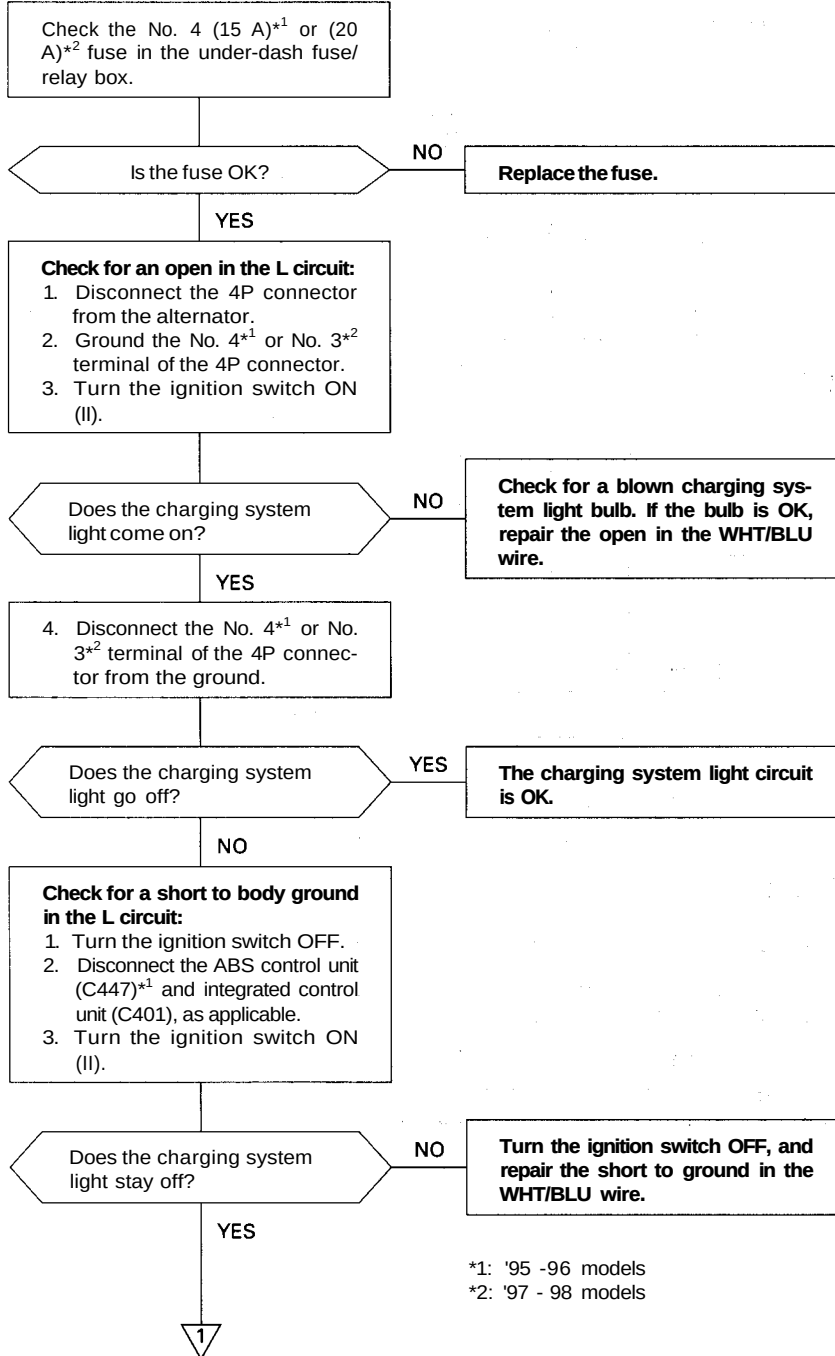


# Charging System

## Troubleshooting

If the charging system light is on, or the battery is dead or low, test the following items in the order listed below.

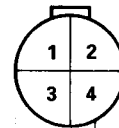
1. Battery (see page 23-60)
2. Charging System Light
3. Alternator/Regulator



\*1: '95 -'96 models  
\*2: '97 -'98 models

### ALTERNATOR 4P CONNECTOR

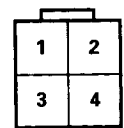
'95 - '96 models



L (WHT/BLU)



'97 - '98 models



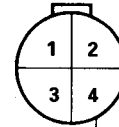
L (WHT/BLU)



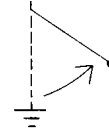
WIRE SIDE OF FEMALE TERMINALS

### ALTERNATOR 4P CONNECTOR

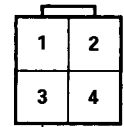
'95 - '96 models



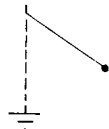
L (WHT/BLU)



'97 - '98 models

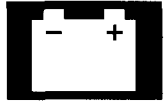


L (WHT/BLU)

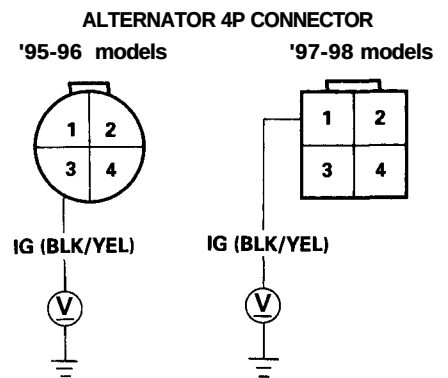
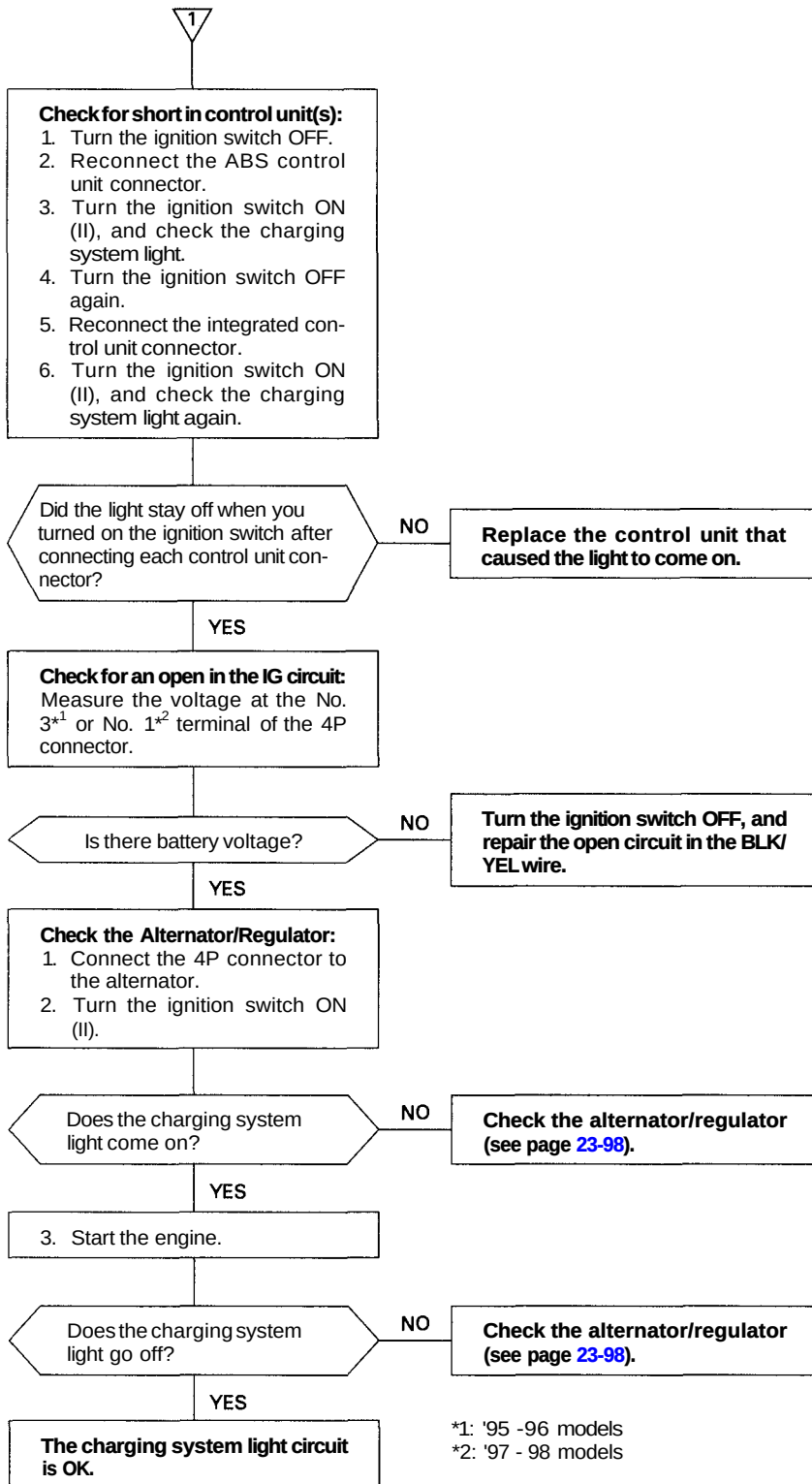


WIRE SIDE OF FEMALE TERMINALS

(To page 23-97)



(From page 23-96)



WIRE SIDE OF FEMALE TERMINALS

\*1: '95 -'96 models  
\*2: '97 - '98 models

(cont'd)

# Charging System

## Troubleshooting (cont'd)

NOTE: Be sure the battery is sufficiently charged (see page 23-60).

### Alternator/Regulator Test-1:

1. Connect the Sun VAT-40 (or equivalent tester), and turn the selector switch to position 1 (starting).
2. Shift to **P** or **N** position, and start the engine. Hold the engine at 3,000 rpm with no load until the radiator fan comes on, then let it idle.
3. Raise the engine speed to 2,000 rpm, and hold it there.

Is the voltage over 15.1 V?

NO

### Alternator/Regulator Test-2:

1. Release the accelerator pedal, and let the engine idle.
2. Make sure all accessories are turned off. Turn the selector switch to position 2 (charging).
3. Remove the inductive pick-up, and zero the ammeter.
4. Place the inductive pick-up over the B terminal wire of the alternator so that the arrow points away from the alternator.
5. Raise the engine speed to 2,000 rpm, and hold it there.

Is the voltage less than 13.5 V?

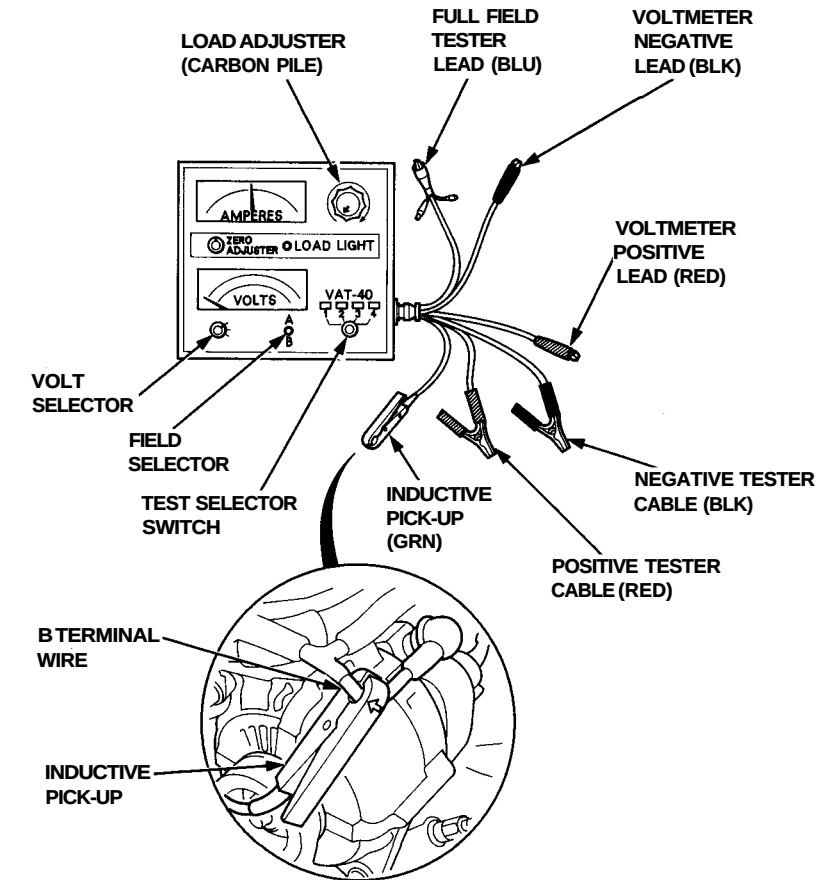
NO

### Alternator/Regulator Test-3:

Apply a load with the VAT-40 until the battery voltage drops to between 12 – 13.5 V.

2

(To page 23-99)



Replace the voltage regulator.

Test and repair the alternator components.



(From page 23-98)

2

Is the amperage 75 A or more?

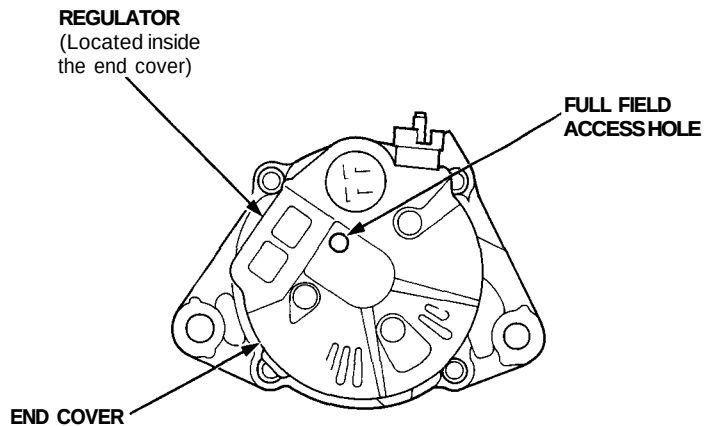
YES

**The charging system is OK.**

NO

**Alternator/Regulator Test-4:**

With the engine speed still at 2,000 rpm, full-field the alternator.

**CAUTION:** The voltage will rise quickly when the alternator is full-fielded. Do not allow the voltage to exceed 18 V; it may damage the electrical system.**NOTE:** Attach a probe to the VAT-40 full field test lead, and insert the probe into the full field access hole at the back of the alternator. Switch the field selector to the "A (Ground)" position momentarily, and check the amperage reading.

Is the alternator output 75 A or more?

NO

**Test and repair the alternator components.**

YES

**BLK/YEL Wire Test:**

1. Turn the ignition switch OFF, then turn it on (II) again.
2. Disconnect the 4P connector from the alternator.
3. Check for voltage at the No. 3 \* or No. 1\*<sup>2</sup> terminal of the 4P connector.

Is there battery voltage?

NO

**Repair the open in the BLK/YEL wire.**

YES

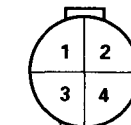
**Replace the voltage regulator.**

\*1: '95-96 models

\*2: '97 - 98 models

**ALTERNATOR 4P CONNECTOR**

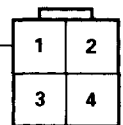
'95-96 models



IG (BLK/YEL)



'97-98 models



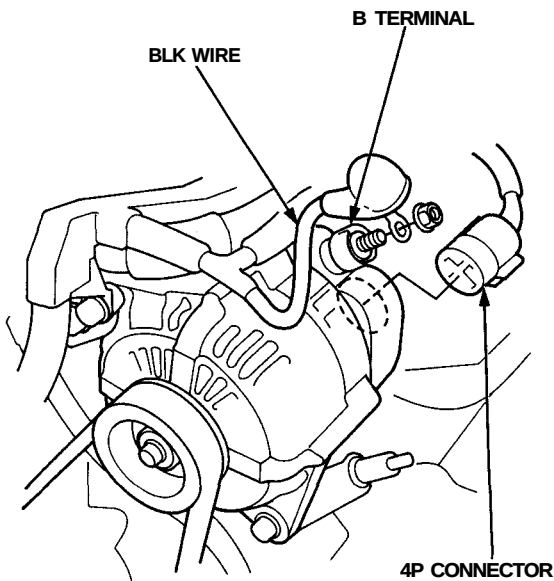
IG (BLK/YEL)

**WIRE SIDE OF FEMALE TERMINALS**

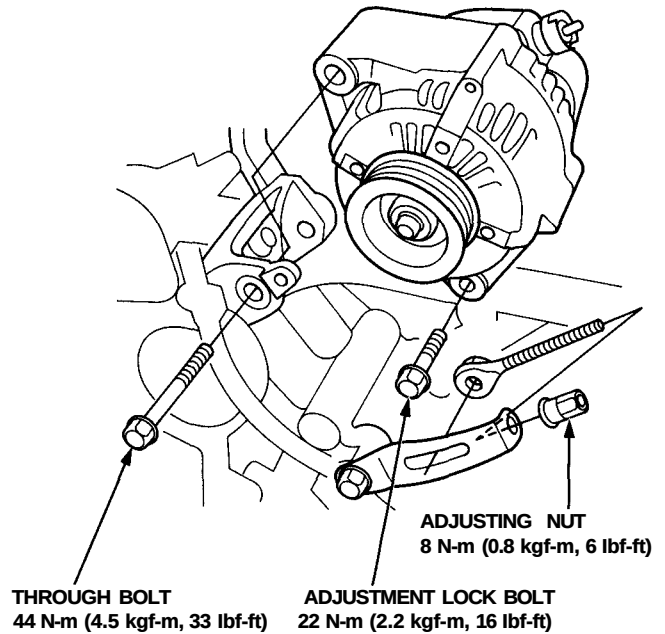
# Charging System

## Alternator Replacement

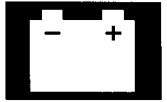
1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's pre-set buttons.
2. Disconnect the battery negative cable, then disconnect the positive cable.
3. Disconnect the 4P connector from the alternator.
4. Remove the terminal nut and BLK wire from the B terminal.



5. Loosen the through bolt, then loosen the adjustment lock bolt, and then the adjusting nut.



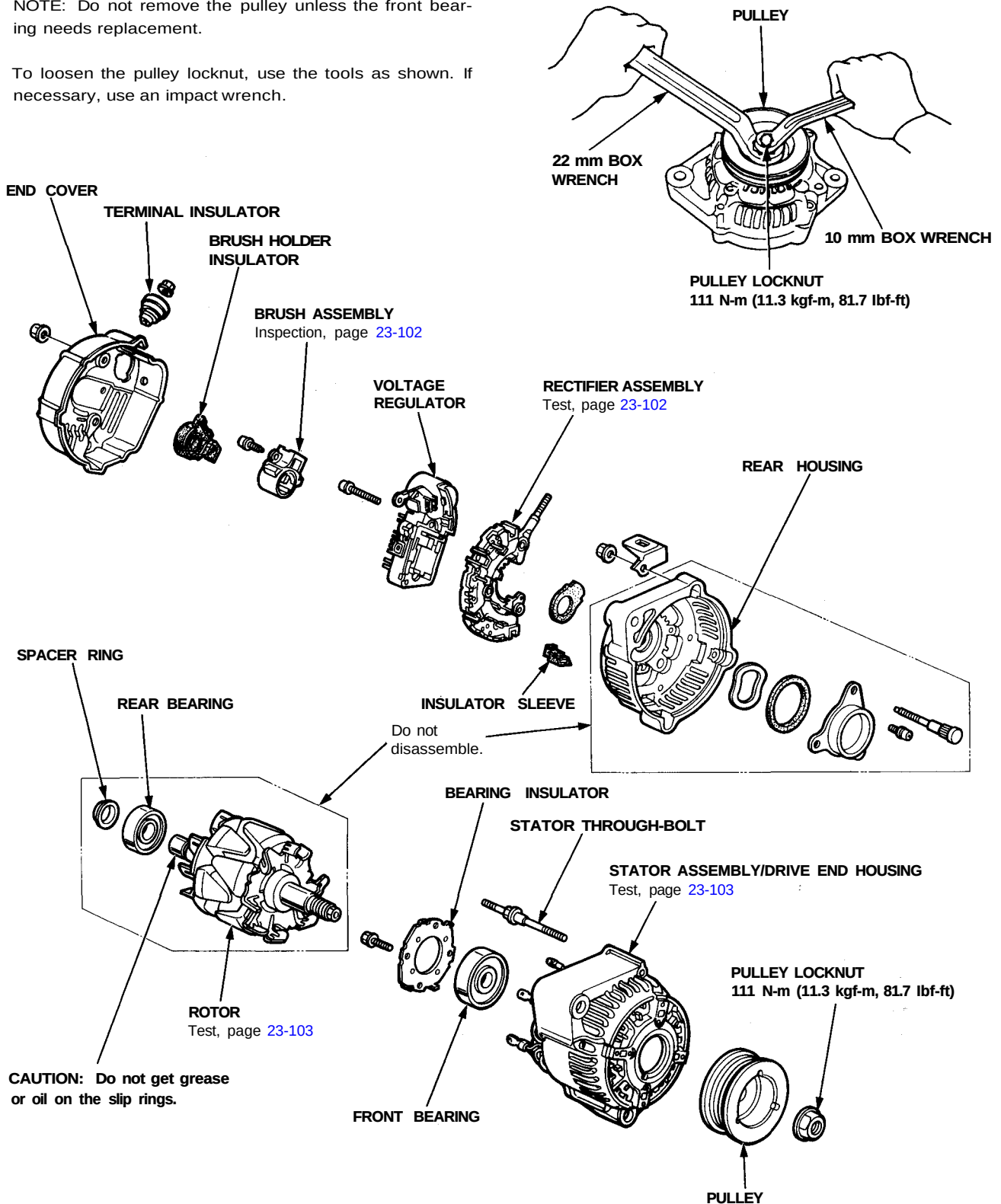
6. Remove the belt from the alternator.
7. Remove the adjustment lock bolt and the through bolt, then remove the alternator.
8. Install in the reverse order of removal.
9. Adjust the alternator belt tension (see page [23-105](#)).
10. Enter the anti-theft code for the radio, then enter the customer's radio station presets.



## Alternator Overhaul

**NOTE:** Do not remove the pulley unless the front bearing needs replacement.

To loosen the pulley locknut, use the tools as shown. If necessary, use an impact wrench.



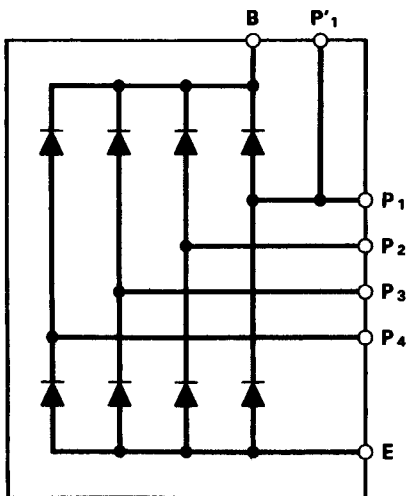
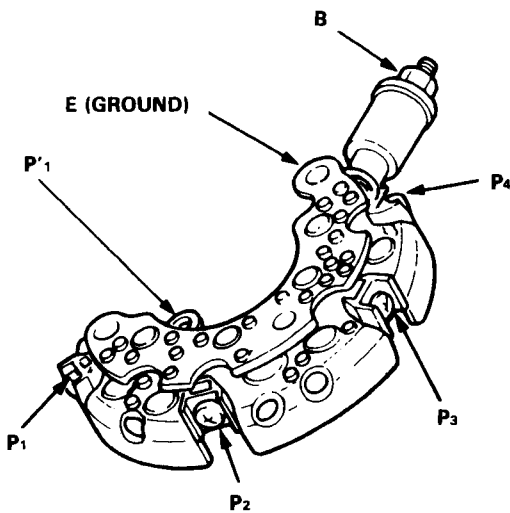
**CAUTION:** Do not get grease or oil on the slip rings.

# Charging System

## Rectifier Test

NOTE: The diodes are designed to allow current to pass in one direction while blocking it in the opposite direction. Since the alternator rectifier is made up of eight diodes (four pairs), each diode must be tested for continuity in both directions with an ohmmeter that has diode checking capability; a total of 16 checks.

1. Check for continuity in each direction, between the B and P, and between the E (ground) and P terminals of each diode pair. All diodes should have continuity in only one direction.



2. If any of the eight diodes fails, replace the rectifier assembly. (Diodes are not available separately.)

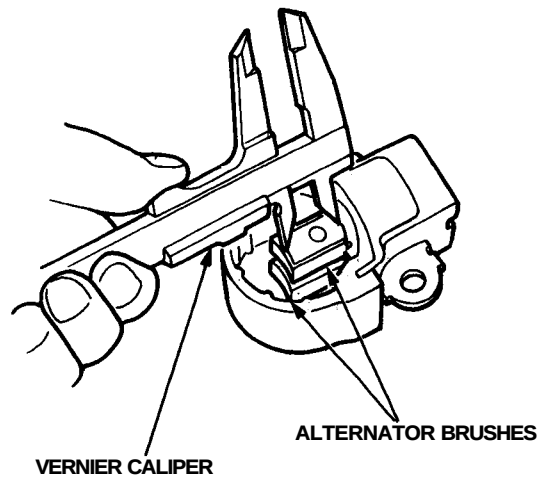
## Alternator Brush Inspection

1. Remove the end cover, then take out the brush holder by removing its two screws.
2. Measure the length of the brushes with a vernier caliper.

### Alternator Brush Length:

**Standard:** 10.5 mm (0.41 in)

**Service Limit:** 1.5 mm (0.06 in)

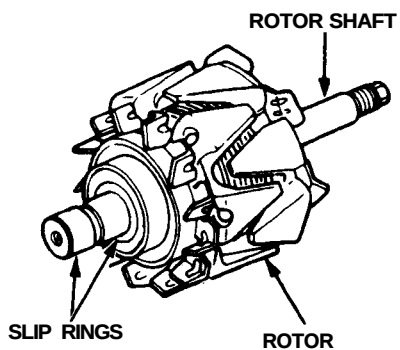


If the brushes are less than the service limit, replace the alternator brush assembly.



## Rotor Slip Ring Test

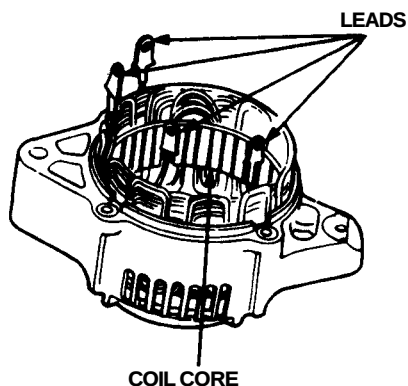
1. Check the resistance between the slip rings. There should be 1.8 - 3.0 ohms.
  - If resistance meets the specification, go to step 2.
  - If resistance does not meet the specification, replace the alternator.



2. Check that there is no continuity between the slip rings and the rotor or rotor shaft.
3. If the rotor fails either continuity check, replace the alternator.

## Stator Test

1. Check that there is continuity between each pair of leads.



2. Check that there is no continuity between each lead and the coil core.
3. If the coil fails either continuity check, replace the alternator.

# Charging System

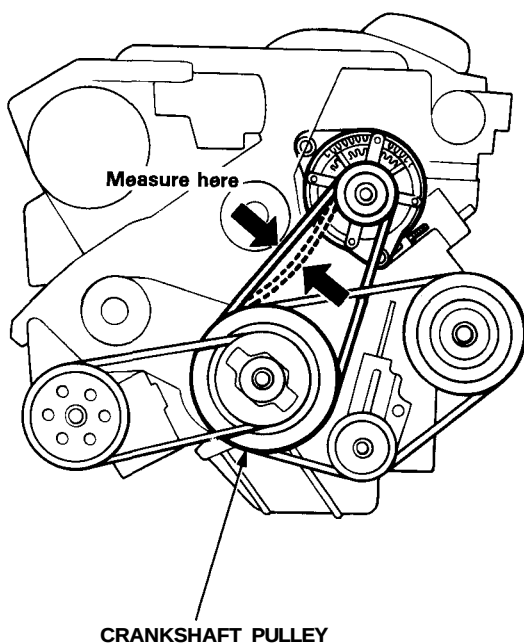
## Alternator Belt Inspection and Adjustment

### Deflection Method:

Apply a force of 98 N (10 kgf, 22 lbf), and measure the deflection between the alternator and the crankshaft pulley.

**Deflection: 9.0 - 11.5 mm (0.35 - 0.45 in)**

NOTE: On a brand-new belt (one that has been run for less than five minutes), the deflection should be 5.5 - 7.0 mm (0.22 - 0.28 in) when first measured. If the belt is worn or damaged, replace it.

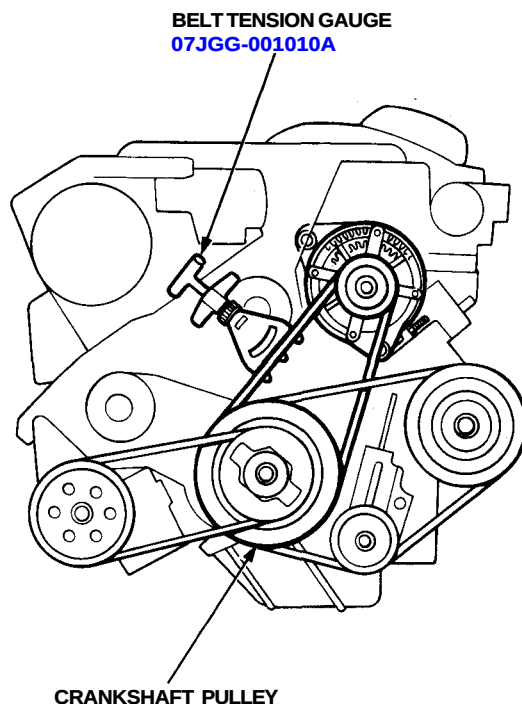


### Belt Tension Gauge Method:

Following the gauge manufacturer's instructions, attach the special tool to the belt, and measure the tension.

**Tension: 390 - 540 N (40 - 55 kgf, 88 - 121 lbf)**

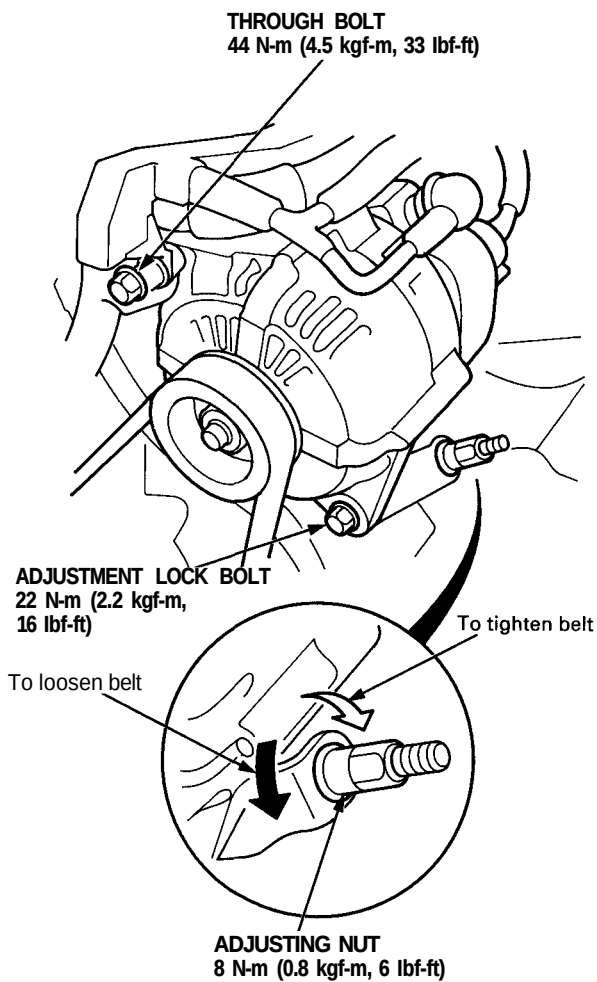
NOTE: On a brand-new belt, (one that has been run for less than five minutes), the tension should be 830 - 1030 N (85 - 105 kgf, 187 - 231 lbf) when first measured. If the belt is worn or damaged, replace it.





**If adjustment is necessary:**

1. Loosen the through bolt and the adjusting lock bolt.
2. Move the alternator by turning the adjusting nut to obtain the proper belt tension, then retighten the bolts.

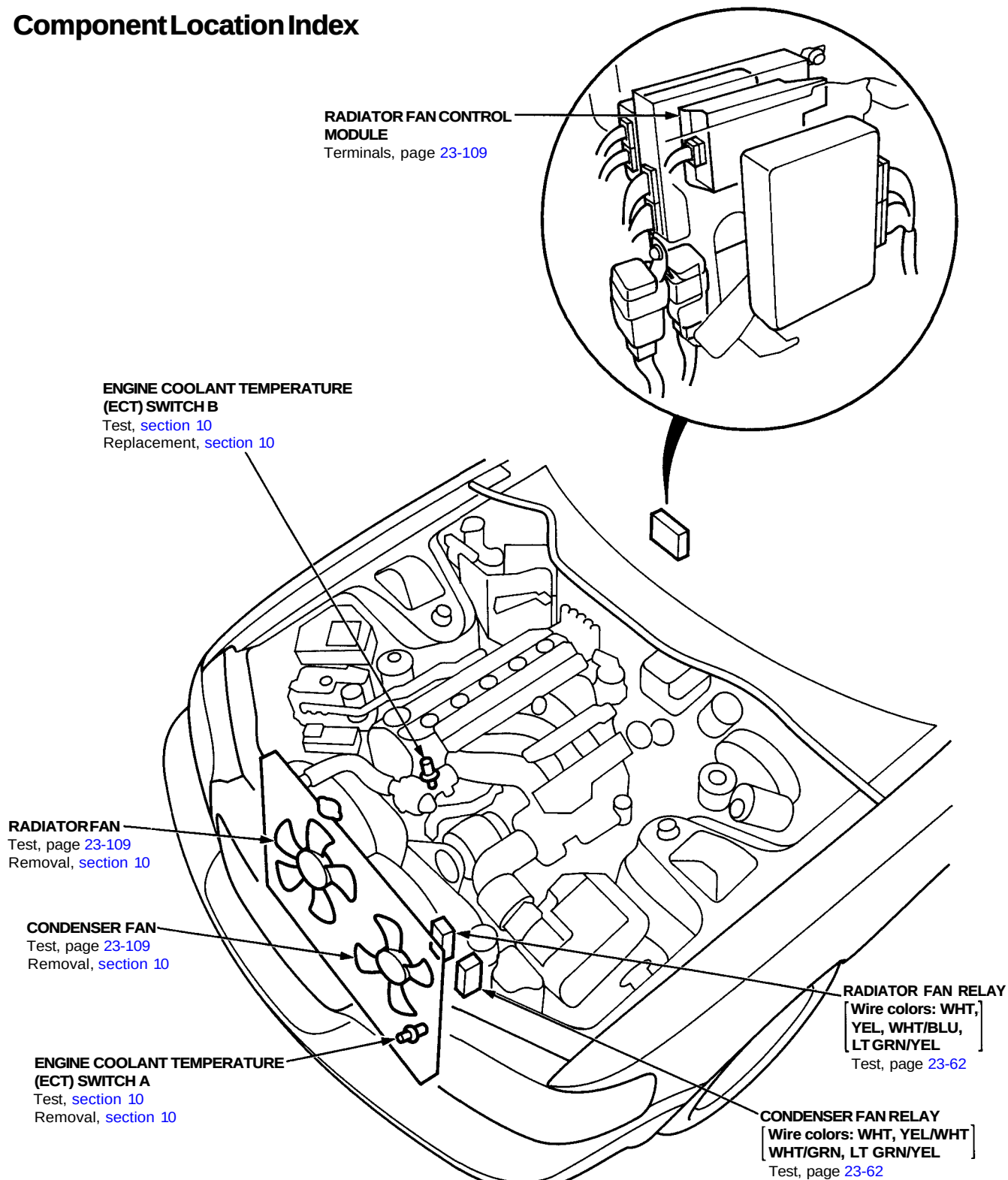


3. Recheck the deflection or tension of the belt.

NOTE: For the power steering pump belt and A/C compressor belt adjustments, refer to [section 17](#) and [section 22](#).

# Fan Controls

## Component Location Index



### Description:

Radiator Fan Control System

When the engine coolant temperature (ECT) is above approximately 207°F (97°C) after the engine has stopped, the radiator fan will run for about 15 minutes.

The engine coolant temperature (ECT) switch B is on the thermostat cover, and the radiator fan control module is located under the right side of the dash.

## Troubleshooting

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

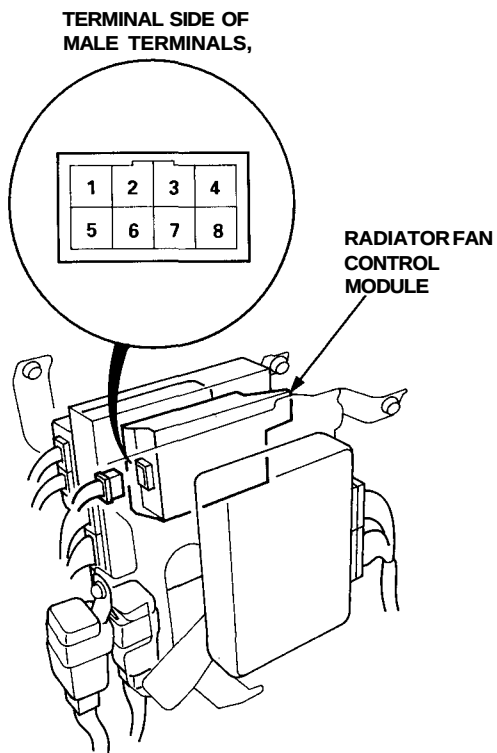
| Symptom                                                 |                      | Item to be inspected                                                            |                                                                |                                                                             |                                                                |                                     |                                     |                                           |                                           |                                    |                      |                                                                                                                 |
|---------------------------------------------------------|----------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------|
|                                                         |                      | Blown No. 34 (20 A) or No. 38 (20 A) fuse<br>(In the under-hood fuse/relay box) | Blown No. 39 (10 A) fuse<br>(In the under-hood fuse/relay box) | Blown No. 4 (15 A)*1 or (20 A)*2 fuse<br>(In the under-dash fuse/relay box) | Blown No. 8 (7.5 A) fuse<br>(In the under-dash fuse/relay box) | Radiator fan or condenser fan relay | Radiator fan or condenser fan motor | Engine coolant temperature (ECT) switch A | Engine coolant temperature (ECT) switch B | Faulty radiator fan control module | A/C system           | Poor ground                                                                                                     |
| Only one fan operates (with engine and A/C ON).         |                      | 1                                                                               |                                                                |                                                                             |                                                                | 2                                   | 3                                   |                                           |                                           |                                    | G301                 | WHT <sup>1</sup> , WHT <sup>2</sup> , WHT/BLU, WHT/GRN <sup>2</sup> , YEL <sup>1</sup> , YEL/WHT, or LT GRN/YEL |
| Fans do not rotate.                                     | Under all conditions |                                                                                 |                                                                |                                                                             | 1                                                              |                                     |                                     | 2                                         |                                           |                                    | G301                 | YEL/BLK, LT GRN/YEL or YEL <sup>2</sup>                                                                         |
|                                                         | A/C ON               |                                                                                 |                                                                |                                                                             |                                                                |                                     |                                     |                                           |                                           | 1                                  |                      |                                                                                                                 |
| Radiator fan control module fails to function properly. |                      |                                                                                 | 1                                                              | 2                                                                           |                                                                |                                     |                                     | 3                                         | 4                                         |                                    | G101<br>G401<br>G404 | WHT/GRN <sup>1</sup> , BLK/YEL <sup>1</sup> , WHT/GRN <sup>2</sup> or BLK/YEL <sup>2</sup>                      |

**\*1: '95 – 96 models**

**\*2: '97 – 98 models**



## Radiator Fan Control Module Terminals

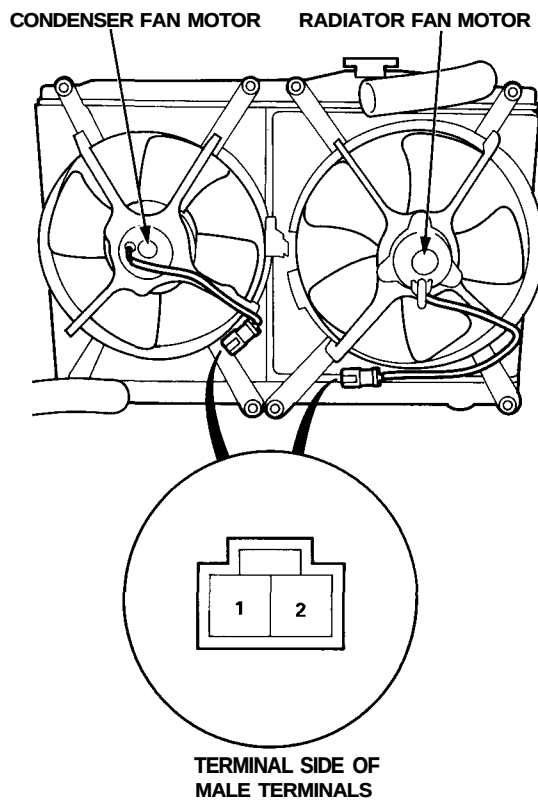


NOTE: See [section 22](#) for the input test.

| Terminal | Wire                 | Connects to                                                                                                           |
|----------|----------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1        | YEL <sup>1</sup>     | Radiator fan relay (Coil ⊕)                                                                                           |
| 2        | YEL/BLK              | Power supply [For radiator fan and condenser fan relays via radiator fan control module with ignition switch ON (II)] |
| 3        | YEL/WHT              | Condenser fan relay (Coil ⊕)                                                                                          |
| 4        | BLK                  | Ground (G401, G404)                                                                                                   |
| 5        | WHT/GRN <sup>2</sup> | Engine coolant temperature (ECT) switch B                                                                             |
| 6        | WHT/GRN <sup>1</sup> | Power supply (For radiator fan control module with ignition switch OFF)                                               |
| 7        | BLK/YEL <sup>1</sup> | IG1 (Control module reset signal)                                                                                     |
| 8        | LT GRN/YEL           | Radiator fan and condenser fan relays (Coil ⊖)                                                                        |

## Fan Motor Test

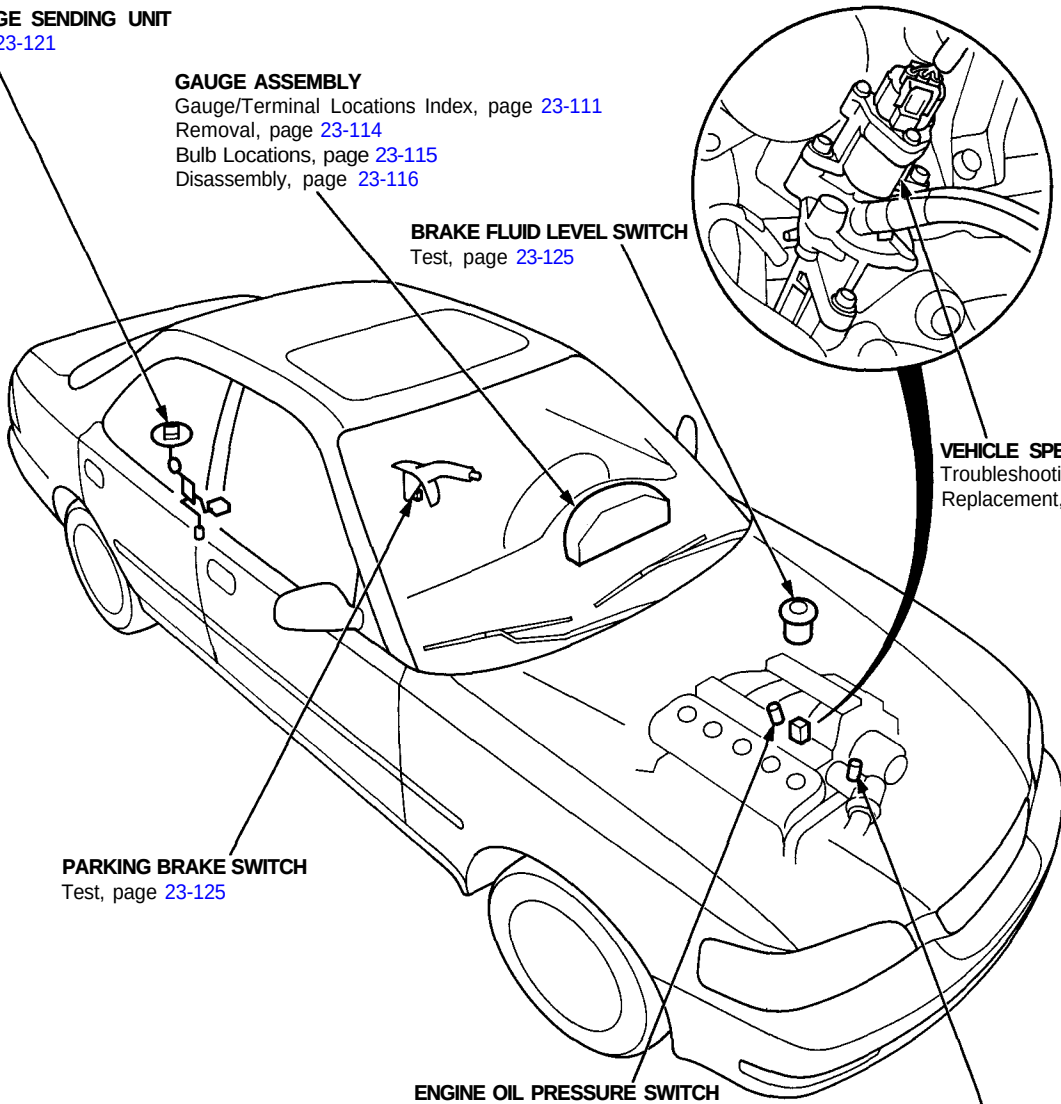
1. Disconnect the 2P connector from each fan motor.



2. Test the motor by connecting battery power to the No. 2 terminal and ground to the No. 1 terminal.
3. If the motor fails to run or does not run smoothly, replace it.

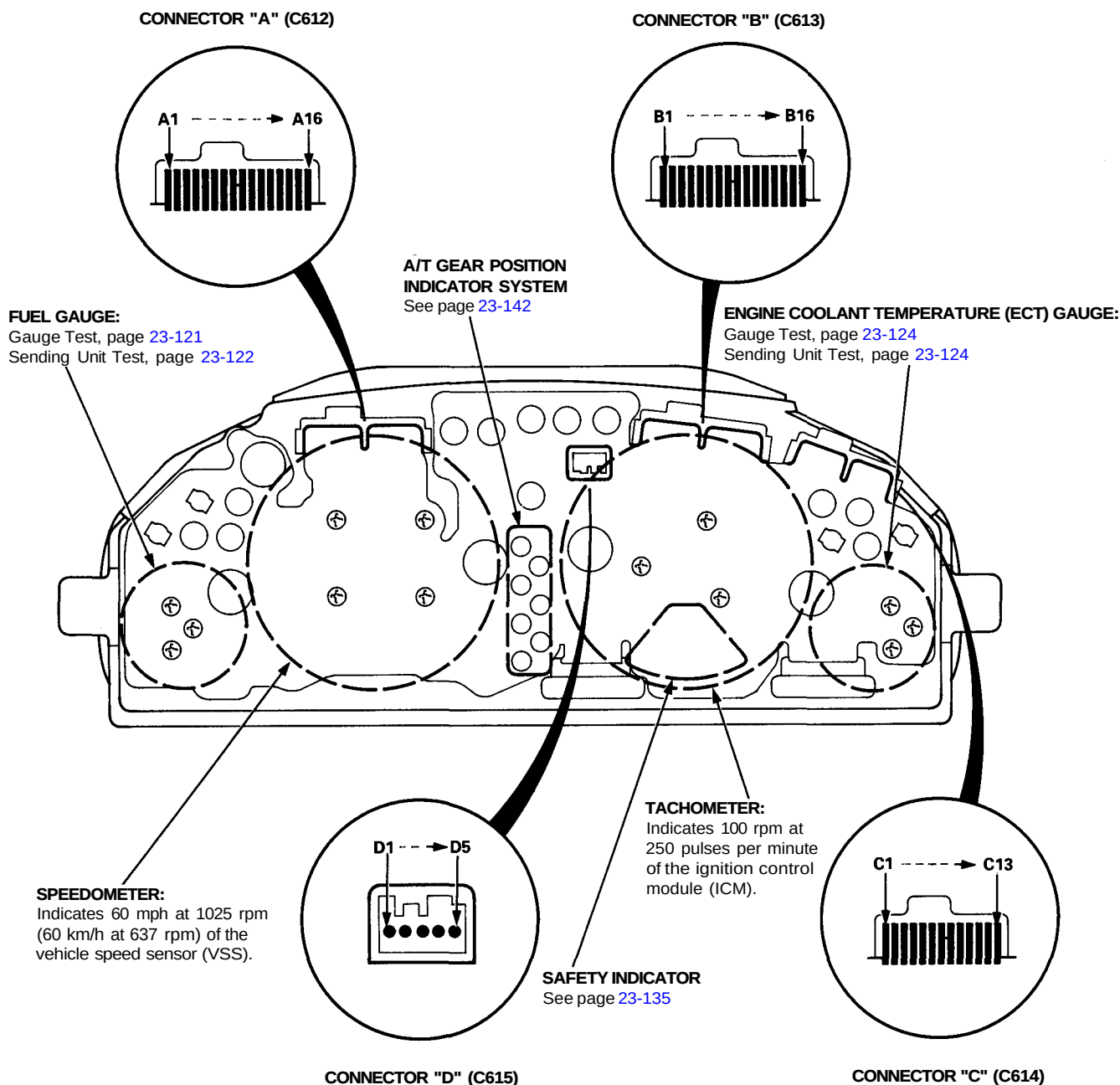
# Gauge Assembly

## Component Location Index

**FUEL GAUGE SENDING UNIT**Test, page [23-121](#)**GAUGE ASSEMBLY**Gauge/Terminal Locations Index, page [23-111](#)Removal, page [23-114](#)Bulb Locations, page [23-115](#)Disassembly, page [23-116](#)**BRAKE FLUID LEVEL SWITCH**Test, page [23-125](#)**PARKING BRAKE SWITCH**Test, page [23-125](#)**ENGINE OIL PRESSURE SWITCH**Test, page [23-120](#)**ENGINE COOLANT TEMPERATURE (ECT)  
GAUGE SENDING UNIT**Test, page [23-124](#)**VEHICLE SPEED SENSOR (VSS)**Troubleshooting, page [23-117](#)Replacement, page [23-120](#)



## Gauge/Terminal Location Index

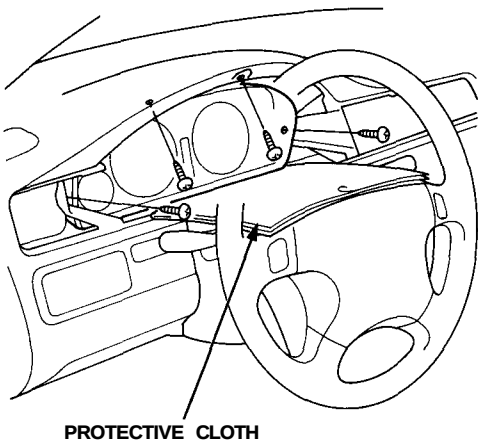


# Gauge Assembly

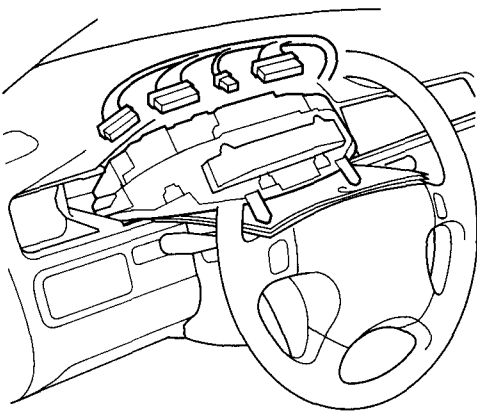
## Removal

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS ([section 24](#)) before performing repairs or service.

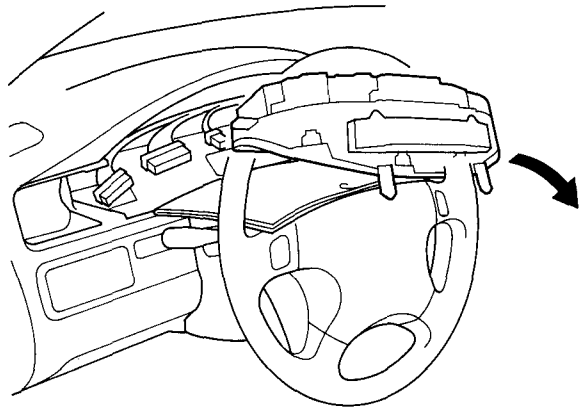
1. Remove the instrument panel (see [section 20](#)).
2. Remove the four screws from the gauge assembly, and spread a protective cloth on the upper column cover.



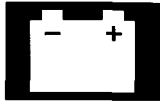
3. Pry the gauge assembly out, and disconnect the connectors.



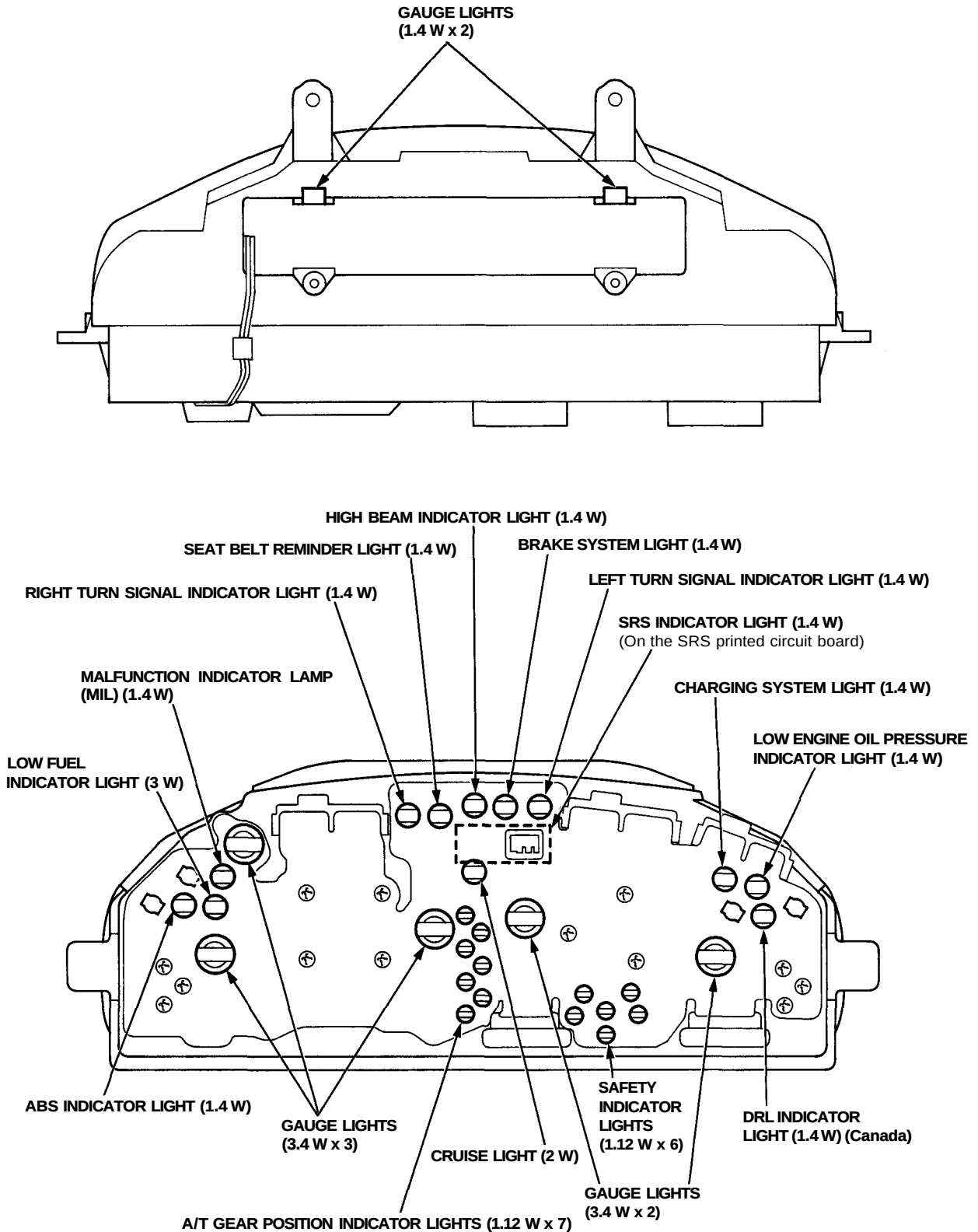
4. Carefully remove the gauge assembly.



5. Install in the reverse order of removal.

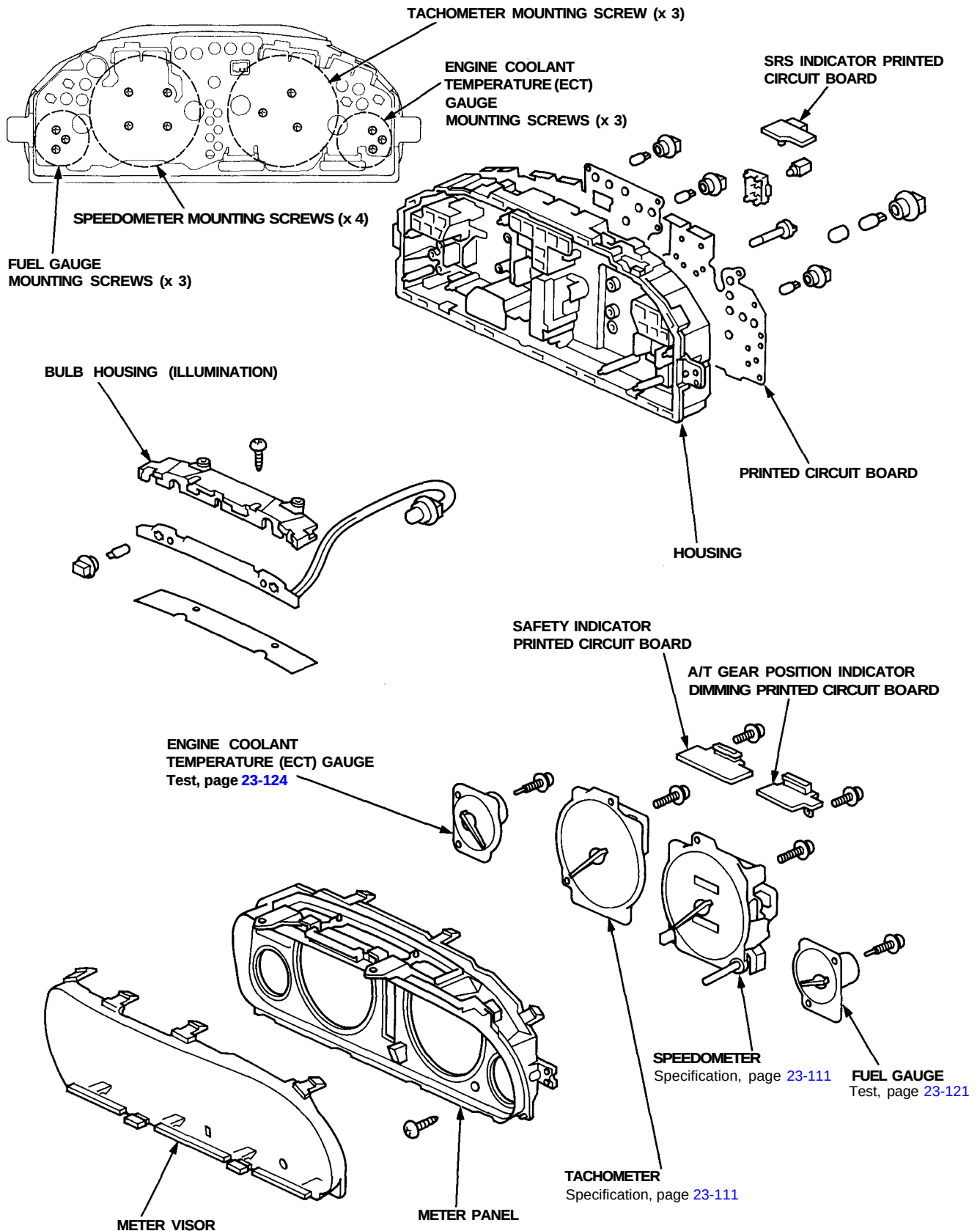


## Bulb Locations



# Gauge Assembly

## Disassembly





# Speedometer/Trip Meter/Odometer

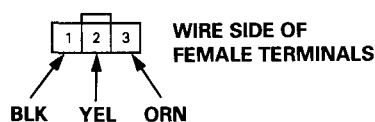
## Troubleshooting

NOTE:

- The numbers in the table show the troubleshooting sequence.
- If necessary, replace the speedometer, trip meter, and odometer as a unit.

| Symptom                                                 | Item to be inspected                                          |             |                     |                                                                         |
|---------------------------------------------------------|---------------------------------------------------------------|-------------|---------------------|-------------------------------------------------------------------------|
|                                                         | Blown No. 1 (10 A) fuse<br>(In the under-dash fuse/relay box) | Speedometer | Trip meter/odometer | Main printed circuit film<br>Vehicle speed sensor (VSS) troubleshooting |
| Trip meter and odometer work, but speedometer does not. |                                                               | 1           |                     | 2                                                                       |
| Speedometer works, but trip meter and odometer do not.  |                                                               |             | 1                   | 2                                                                       |
| Speedometer, trip meter, and odometer do not work.      | 1                                                             |             |                     | 2                                                                       |

## VSS Input Test



| Trml | Wire | Test condition          | Test: Desired result                                               | Possible cause if result is not obtained                                                                                                                               |
|------|------|-------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | BLK  | Under all conditions    | Check for continuity to ground:<br>There should be continuity.     | <ul style="list-style-type: none"> <li>• Poor ground (G101)</li> <li>• An open in the wire</li> </ul>                                                                  |
| 2    | YEL  | Ignition switch ON (II) | Check for voltage to ground:<br>There should be battery voltage.   | <ul style="list-style-type: none"> <li>• Blown No. 1 (10 A) fuse in the under-dash fuse/relay box</li> <li>• Short to ground</li> <li>• An open in the wire</li> </ul> |
| 3    | ORN  | Ignition switch ON (II) | Check for voltage to ground:<br>There should be about 5 V or more. | <ul style="list-style-type: none"> <li>• Short to ground</li> <li>• An open in the wire</li> </ul>                                                                     |

NOTE: A short to ground in the ORN wire can be caused by a short in any component connected to it.

# Vehicle Speed Sensor (VSS)

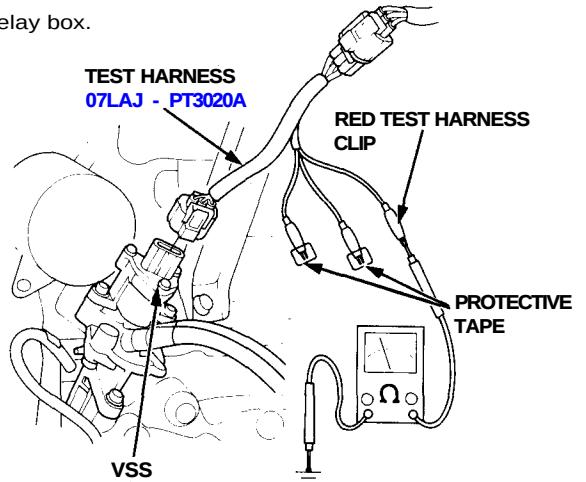
## Troubleshooting

Speedometer, trip meter, and odometer do not work.

Before testing, inspect the No. 1 (10 A) fuse in the under-dash fuse/relay box.

### Test the BLK wire:

1. Disconnect the 3P connector from the vehicle speed sensor (VSS).
2. Connect the test harness only to the engine wire harness.
3. Connect the RED test harness clip to the positive probe of an ohmmeter.
4. Check for continuity between the RED test harness clip and body ground.



Is there continuity?

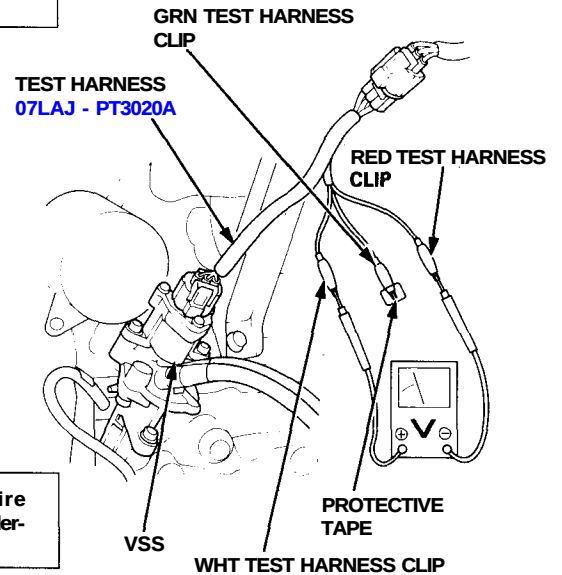
NO

Repair open in the BLK wire between the VSS and G101.

YES

### Test the YEL wire:

1. Connect the other test harness connector to the VSS.
2. Connect the WHT test harness clip to the positive probe of a voltmeter, and connect the RED test harness clip to the negative probe.
3. Turn the ignition switch ON (II).



Is there battery voltage?

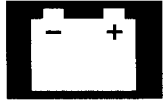
NO

Repair open in the YEL wire between the VSS and the under-dash fuse/relay box.

YES



(To page 23-119)



(From page 23-118)

**Test the ORN wire:**

Connect the GRN test harness clip to the positive probe of a voltmeter, and connect the RED test harness clip to the negative probe.

Is there about 5 V or more?

NO

Repair open or short in the ORN wire between the VSS and ECM, transmission control module (TCM), and cruise control unit.

YES

**Test the VSS:**

1. Turn the ignition switch OFF.
2. Raise the front of the car, and support it with safety stands.
3. Put the car in neutral with the ignition switch ON (II).
4. Slowly rotate one wheel with the other wheel blocked.

Does voltage pulse from 0 to approx. 5 V or more?

NO

Replace the VSS (see page 23-120).

YES

**Test the Speedometer:**

1. Disconnect the 16P connector "A" (C612) from the gauge assembly.
2. Connect a voltmeter between the ORN wire, and body ground.
3. Slowly rotate one wheel with the other wheel blocked.

Does the meter indicate pulsing voltage (0 to approx. 5 V or more)?

NO

Repair open in the ORN wire between the VSS and the speedometer.

YES

Replace the speedometer.

TEST HARNESS  
07LAJ - PT3020A

WHT TEST HARNESS  
CLIP

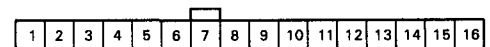
RED TEST  
HARNESS  
CLIP

VSS

PROTECTIVE  
TAPE

GRN TEST HARNESS CLIP

GAUGE ASSEMBLY 16P CONNECTOR "A" (C612)



ORN



WIRE SIDE OF  
FEMALE TERMINALS

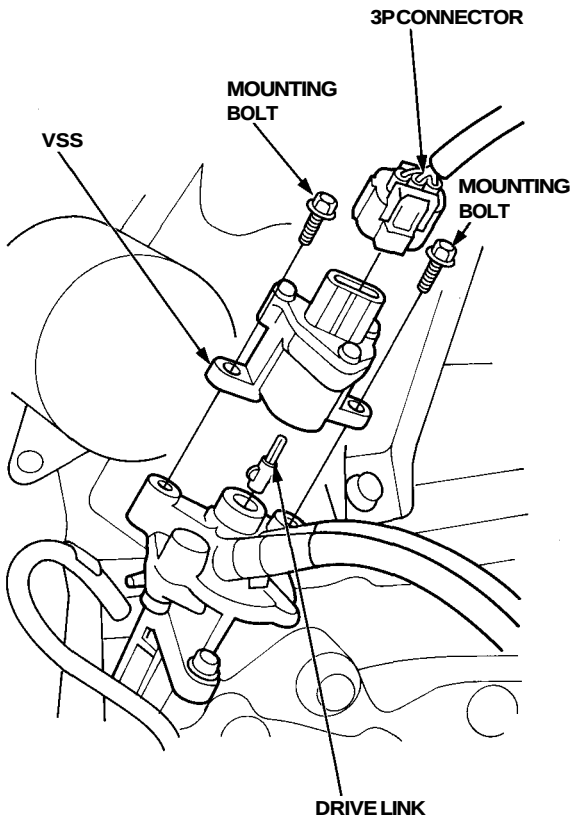
# Engine Low Oil Pressure Indicator System

## Vehicle Speed Sensor (VSS)

### Replacement

1. Disconnect the 3P connector from the vehicle speed sensor (VSS).
2. Remove the two mounting bolts, then remove the VSS.

NOTE: The VSS drive link is a very small part; be careful not to lose it.

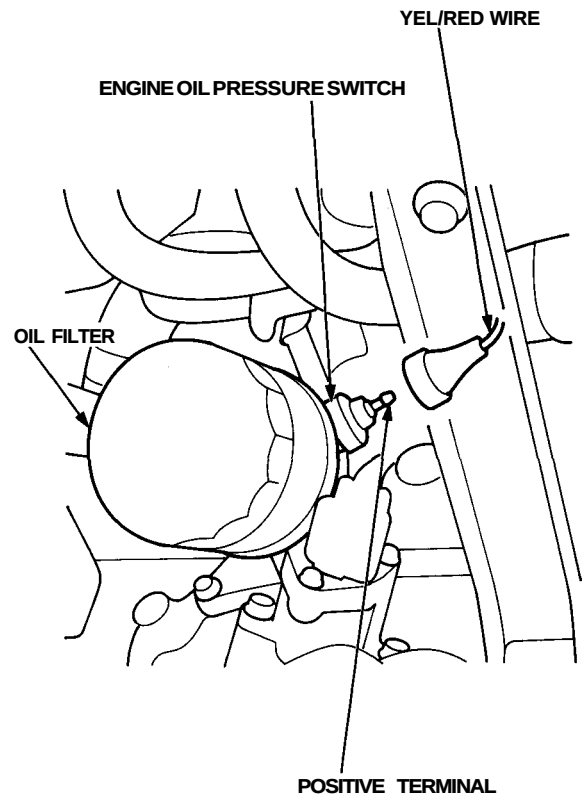


3. Install in the reverse order of removal.

### Switch Test

1. Remove the YEL/RED wire from the engine oil pressure switch.
2. Check for continuity between the positive terminal and the engine (ground).

- There should be continuity with the engine stopped.
- There should be no continuity when the engine runs.



3. If the switch fails to operate, check the engine oil level. If the engine oil level is OK, check the engine oil pressure and, if necessary, inspect the oil pump (see [section 8](#)).