

**SERVICE
BULLETIN**

1985

mazda

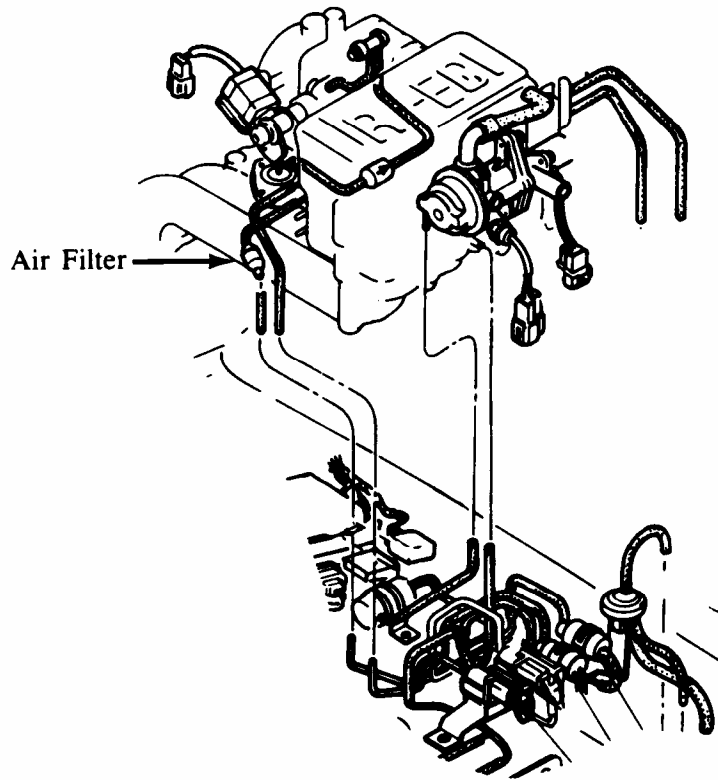
Category 4
Fuel & Emission Control System
(Includes Intake & Exhaust Systems)

RX-7 (13B)

SUBJECT Filter for the Vent Solenoid Valve.

DESCRIPTION

To prevent high idle speed or idle speed hunting caused by a sticking vent solenoid valve, an air filter has been installed between the dynamic chamber and vent solenoid valve since the production date of March, 1985.



VIN OF PRODUCTION CHANGE

RX-7 (13B):

JM1FB332 F0889474

March, 1985

PARTS INFORMATION

*Filter Set:

8AF1 13 SGY

*Set Component Parts:

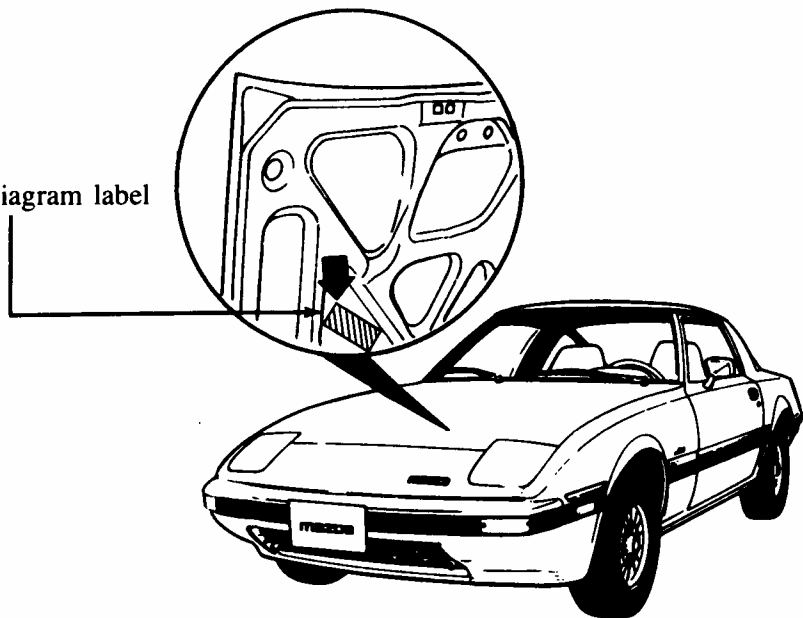
PART NAME	QTY
Vacuum Hose	2
Air Filter	1
Vacuum Diagram Label	1

PART NUMBER		DESCRIPTION	QTY		INTERCHANGEABILITY
NEW	OLD		NEW	OLD	
N236 13 253A	N304 13 245	Vacuum Hose	2	1	NO
N304 20 308	—	Air Filter	1	—	NO
N304 69 044C	N304 69 044B	Vacuum Diagram Label	1	1	NO
* 8AF1 13 SGY	—	Filter Set	1	—	NO

NOTE:

The air filter kit has also been established as a service part for the vehicle produced prior to this production change. If high idle speed or idle speed hunting is caused by the malfunction of the vent solenoid valve, install the air filter and attach the vacuum diagram lable at the same time of replacing the vent solenoid valve. See Service Bulletin Category 4, 008/84 for additional information.*

Attach vacuum diagram label



RX-7 (12A)

SUBJECT Altitude Compensator Valve.

DESCRIPTION

An altitude compensator valve is attached to the 1981-1985 RX-7 carburetor to supply additional air into the carburetor at high altitudes (between 1640-4920 ft) in order to lean the mixture for better driveability. If the altitude compensator remains open at low altitudes, the following driveability problems may occur:

- Lack of acceleration, hesitation on acceleration
- No power under load
- Engine stumble, surge or bucking below approximately 3000 rpm
- Rough idle

If the above driveability problems are encountered in RX-7 (12A), always check the altitude compensator as shown below before repairing the carburetor.

PARTS INFORMATION

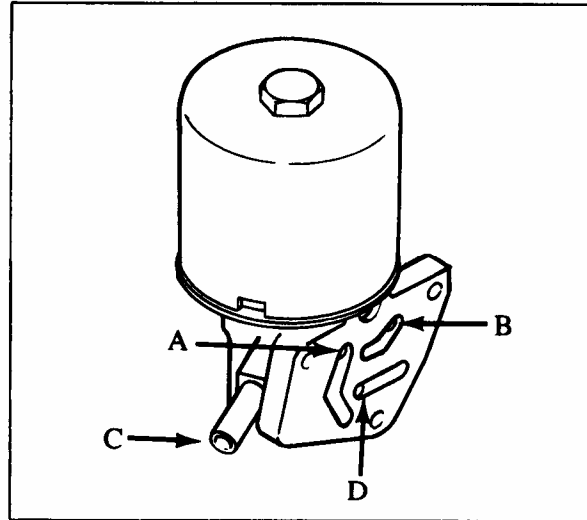
PART NUMBER	DESCRIPTION	APPLIED MODEL
N249 20 770	Altitude Compensator Valve	1981-1985 RX-7

CHECKING PROCEDURE

1. Remove the altitude compensator valve.
2. Blow through the valve from port A and B. Check that:
 - Above 4920 feet - air into port A exits from port D and air into port B exits from port C.
 - Below 1640 feet - air does not pass.If not, replace the altitude compensator valve.

NOTE:

The operating specification of the altitude compensator valve will vary between 1640-4920 feet depending on atmospheric pressure.



Category 4

015/85
9/20/85

1980-1985 RX-7 & 1981-1985 GLC

SUBJECT

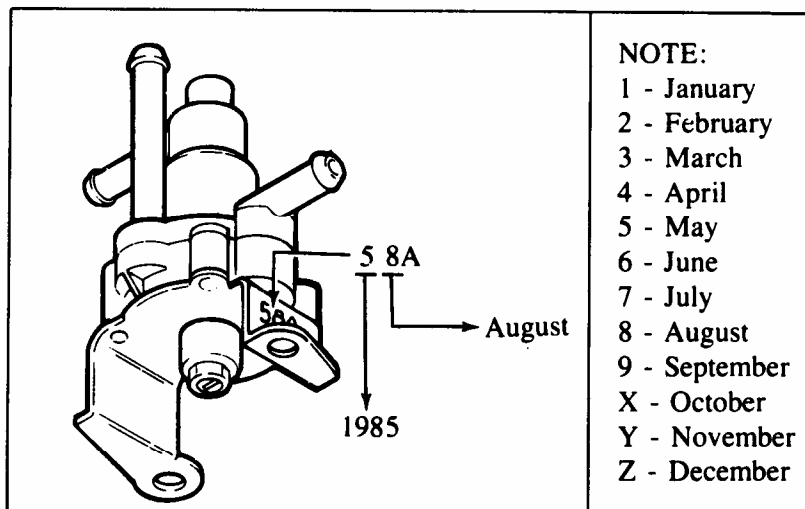
Whistle Noise from Check & Cut Valve.

DESCRIPTION

Modified check & cut valves are available as service parts for 1981-1985 RX-7 and 1982-1985 GLC in order to prevent a whistle noise. The whistle noise tends to occur from the check & cut valve at high temperature and low fuel level, and can be heard from the rear of the vehicle.

If a customer complains about the whistle noise, replace the check & cut valve with the modified one.

The part numbers of 8341-42-910 for RX-7/GLC and BA01-42-910 for GLC have not been changed, however, a modified check & cut valve can be distinguished from an unmodified one by the production date stamped on the bracket as shown.



The check & cut valves produced on and after the following date are the modified ones.

RX-7 August 10, 1985 (58A)
GLC September 1, 1984 (49A)

With regard to GLC, the modified check & cut valve has been already installed since the production of September 1, 1984.

VIN OF PRODUCTION CHANGE

GLC Sedan:	JM1BD221 F0806474	September 1, 1984
3-Door Hatchback:	JM1BD231 F0806124	September 1, 1984
5-Door Hatchback:	JM1BD241 F0800198	September 1, 1984

PARTS INFORMATION

PART NUMBER	DESCRIPTION	APPLIED MODEL
8341 42 910	Check Valve	1980-85 RX-7 1981 GLC
BA01 42 910	Check Valve	1982-85 GLC

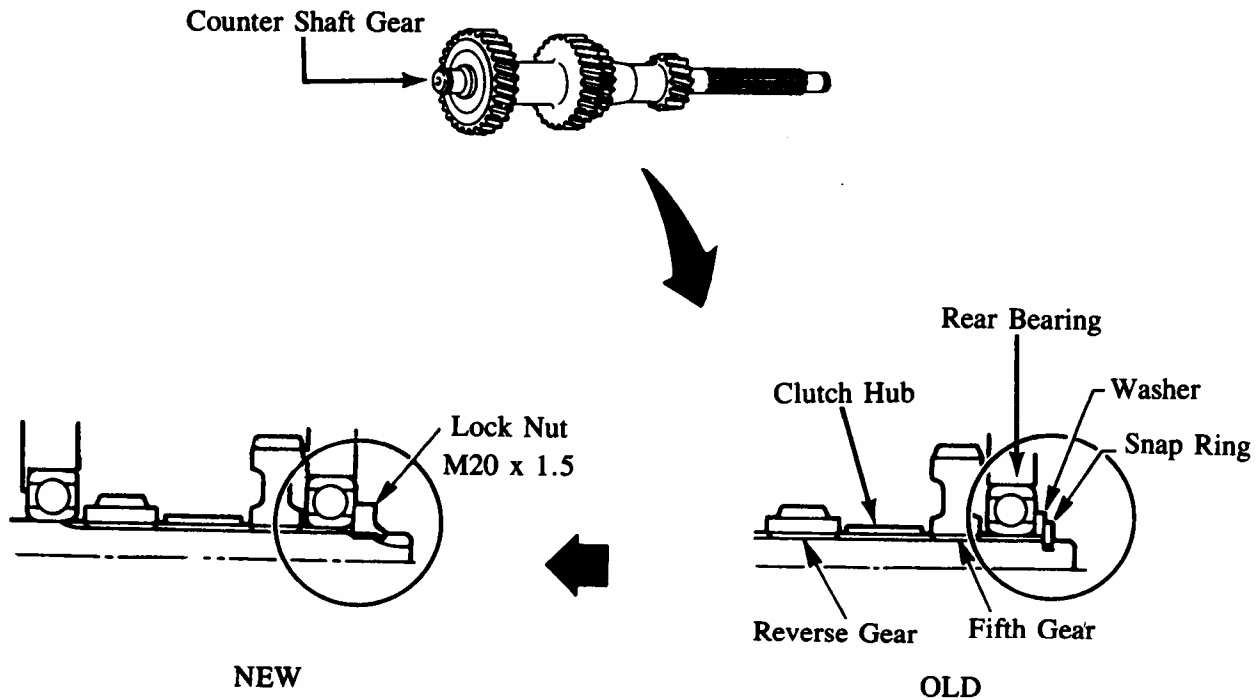
Category 7
Transmission & Transaxle
(Includes Differential for FWD)

1985 RX-7 & 1984 B2000/B2200

SUBJECT Counter Shaft Gear & Lock Nut.

DESCRIPTION

In order to retain the rear bearing on the counter shaft gear more securely, the snap ring has been replaced by a lock nut.



NOTES:

- Tighten the lock nut to: 94-145 ft-lb
127-196 N-m
13-20 kg-m

- Stake the lock nut as shown:



or



VIN OF PRODUCTION CHANGE

RX-7	12A:	JM1FB331 F0874076	November, 1984
	13B:	JM1FB332 F0874076	November, 1984
B2000	Short Bed:	JM2UC121 E0915651	November, 1984
	Long Bed:	JM2UC221 E0843304	November, 1984
B2200	Short Bed:	JM2UD121 E0801669	November, 1984
	Long Bed:	JM2UD221 E0803494	November, 1984

PARTS INFORMATION

PART NUMBER		DESCRIPTION	APPLIED MODEL	INTERCHANGEABILITY
NEW	OLD			
M505 17 300B	M505 17 300A	Counter Shaft Gear	RX-7 (12A)	NO
M508 17 301D	M508 17 301C	Counter Shaft Gear	RX-7 (13B)	NO
8943 17 301E	8943 17 301D	Counter Shaft Gear	B2000/B2200	NO
M501 17 309	—	Lock Nut	ALL	—
—	0419 17 288	Adjust Shim	ALL	—
—	0419 17 291	Adjust Shim	ALL	—
—	0419 17 292	Adjust Shim	ALL	—
—	0419 17 293	Adjust Shim	ALL	—
—	9957 32 000	Snap Ring	ALL	—

Category 7

010/85
5/13/85

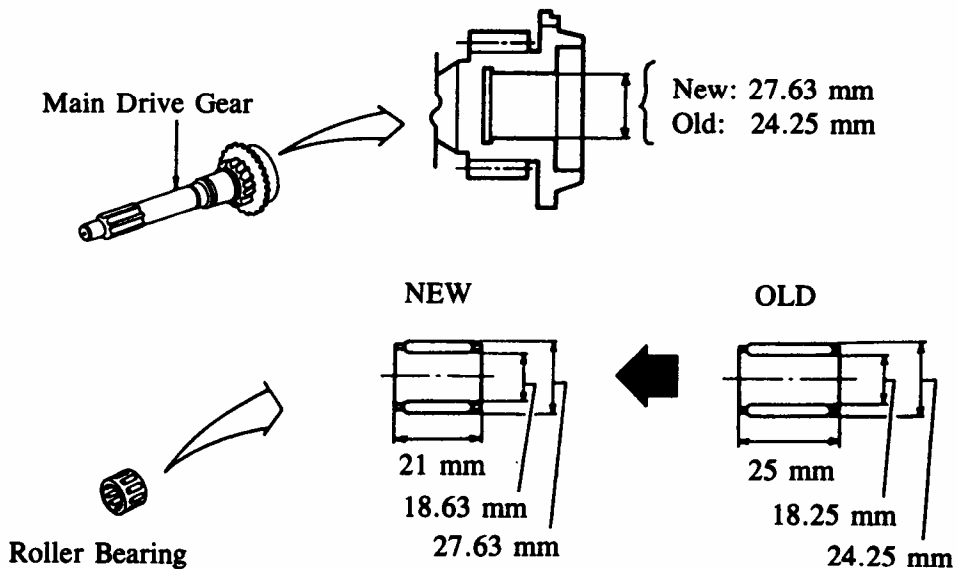
1985 RX-7 & 1984 B2000/B2200

SUBJECT Roller Bearing & Main Shaft.

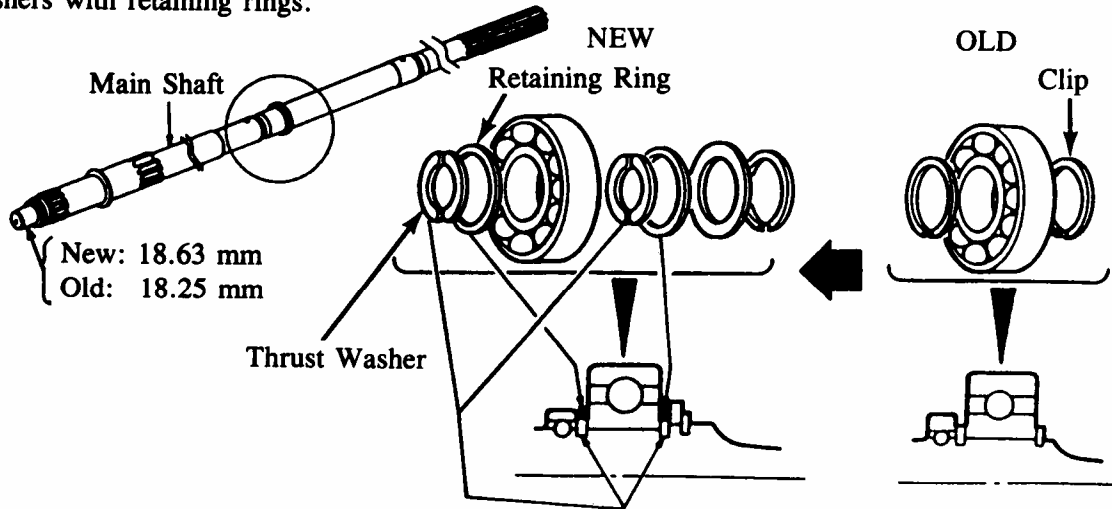
DESCRIPTION

To further improve the reliability of the transmission, the following modifications have been made.

1. The roller bearing has been enlarged and the recess in the main drive gear has been enlarged to accept the new roller bearing.



2. The method of retaining the bearing on the main shaft has been changed from clips to thrust washers with retaining rings.



VIN OF PRODUCTION CHANGE

RX-7	12A:	JM1FB331 F0876904	December, 1984
	13B:	JM1FB332 F0876904	December, 1984
B2000	Short Bed:	JM2UC121 E0919987	December, 1984
	Long Bed:	JM2UC221 E0844354	December, 1984
B2200	Short Bed:	JM2UD121 E0801687	December, 1984
	Long Bed:	JM2UD221 E0803537	December, 1984

PARTS INFORMATION

RX-7

PART NUMBER		DESCRIPTION	APPLIED MODEL/ DESCRIPTION	INTERCHANGEABILITY
NEW	OLD			
M506 17 201A	M506 17 201	Main Drive Gear	(12A)	NO
M502 17 221A	M502 17 221	Main Shaft	(12A)	NO
M506 17 201A	M506 17 201	Main Drive Gear	(13B)	NO
M505 17 221A	M505 17 221	Main Shaft	(13B)	NO
M501 17 210	0249 17 210B	Roller Bearing	-	NO
0839 17 305B	-	Retaining Ring	-	-
0884 17 632B	0884 17 632A	Thrust Washer	(T=6.2)	NO
0884 17 633B	0884 17 633A	Thrust Washer	(T=6.4)	NO
0884 17 634B	0884 17 634A	Thrust Washer	(T=6.5)	NO
0884 17 635B	0884 17 635A	Thrust Washer	(T=6.6)	NO
M501 17 651	0862 17 641A	Thrust Washer	(T=3.0)	NO

RX-7

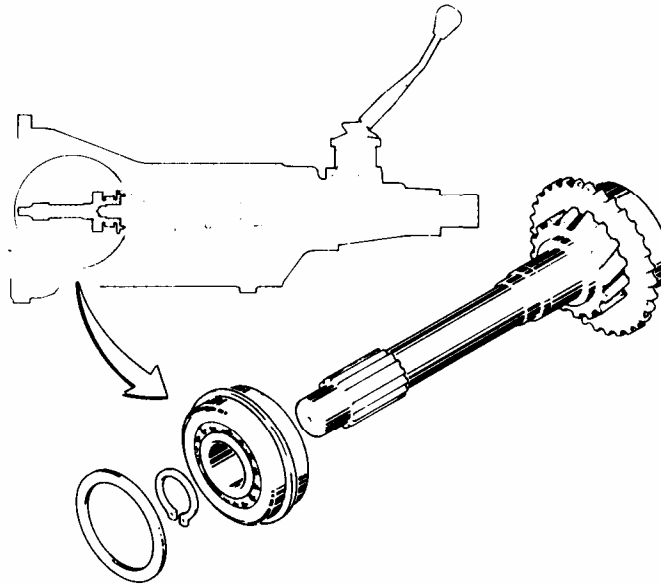
PART NUMBER		DESCRIPTION	APPLIED MODEL/ DESCRIPTION	INTERCHANGEABILITY
NEW	OLD			
M501 17 653	0862 17 642A	Thrust Washer	(T=3.1)	NO
M501 17 654	0862 17 643A	Thrust Washer	(T=3.2)	NO
M501 17 655	0862 17 644A	Thrust Washer	(T=2.9)	NO
M501 17 652	—	Ring	—	—
9995 52 640	—	Adjust Washer	—	—

1985 RX-7 & 1986 B2000

SUBJECT Transmission Front Bearing Modification.

DESCRIPTION

The ball bearing of the main drive gear has been changed to a specially heat treated bearing in order to further improve the durability of the transmission.



VIN OF PRODUCTION CHANGE

RX-7	12A:	JM1FB331 F0887701	February, 1985
	13B:	JM1FB332 F0887701	February, 1985
B2000	Short Bed:	JM2UF111 G0518804*	February, 1985
	Long Bed	JM2UF211 G0518804*	February, 1985

PARTS INFORMATION

PART NUMBER		DESCRIPTION	INTERCHANGEABILITY
NEW	OLD		
M502 17 295A	M502 17 295	Ball Bearing	NEW → OLD

The revised sections are indicated by an asterisk. Please replace the original Service Bulletin with the revised bulletin.

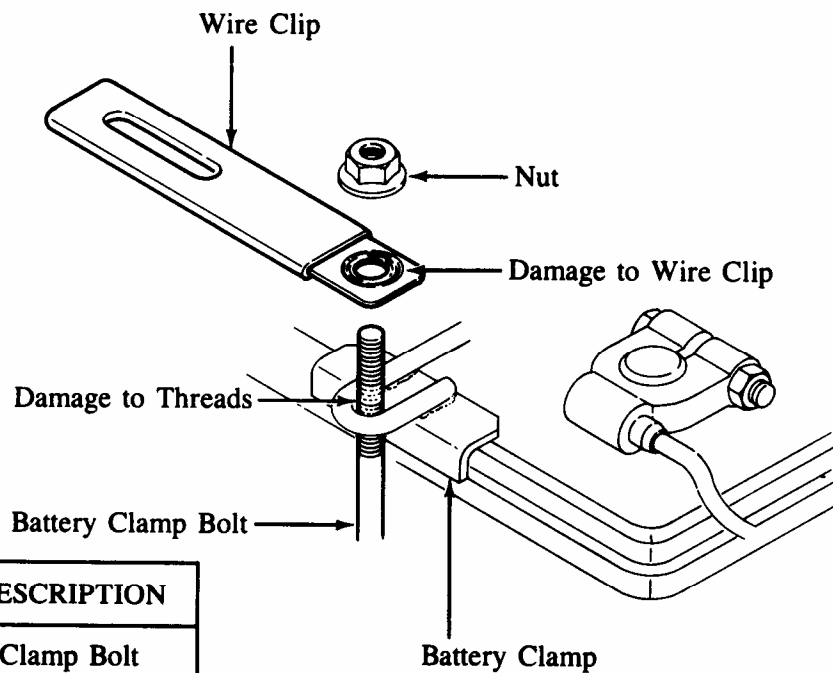
Category 14
Body

RX-7

SUBJECT Battery Clamp Bolt & Nut.DESCRIPTION

During installation of the battery clamp rod and nut, it is possible for wire clip to become pinched in the threads on the clamp bolt, resulting in the nut binding on the clamp rod.

If you encounter this problem, please follow the repair procedure below.

PARTS INFORMATION

PART NUMBER	DESCRIPTION
0613 65 857A	Clamp Bolt
9994 00 602	Nut

REPAIR PROCEDURE

1. Carefully remove the nut from the battery clamp bolt.
2. Use a die to repair the threads on the clamp bolt.
3. Install a small washer on top of the wire clip to prevent damage to the threads on the clamp bolt during reinstallation.

ALL MODELS

SUBJECT Turn Signal Switch Cancel Cam.DESCRIPTION

If the turn signal switch does not cancel, the most probable cause is a broken cancel cam. The cancel cam is available separately and can be replaced as shown below.

REPAIR PROCEDURE

1. Put a mark on the steering wheel and steering shaft so that the steering wheel can be reinstalled in the same position.
2. Remove the retaining nut for the steering wheel and remove the steering wheel with a steering wheel puller.

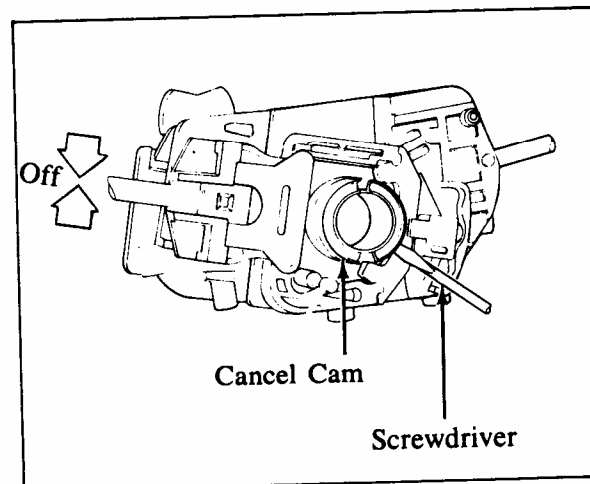
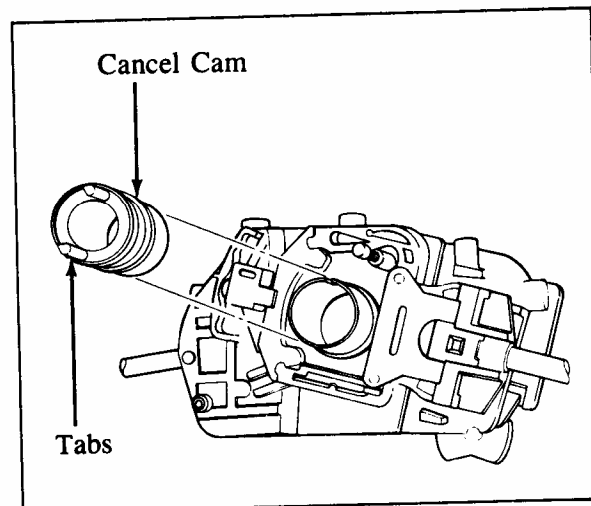
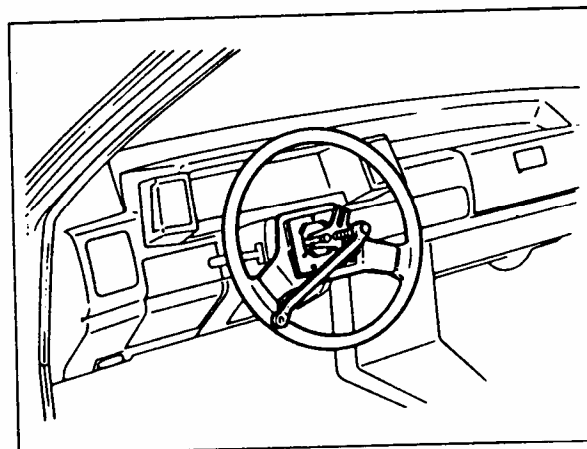
CAUTION: Do not strike the steering shaft with a hammer as this will damage the steering shaft.

3. Inspect the cancel cam. If the tabs are broken off the cancel cam, the combination switch can be repaired by replacing the cancel cam.

NOTE: It is not necessary to remove the combination switch to replace the cancel cam.

4. Place the turn signal in the "OFF" position.
5. Carefully pry the cancel cam from the combination switch using a screwdriver.
6. Install the new cancel cam to the combination switch.

NOTE: It is not necessary to apply additional grease to the cancel cam.

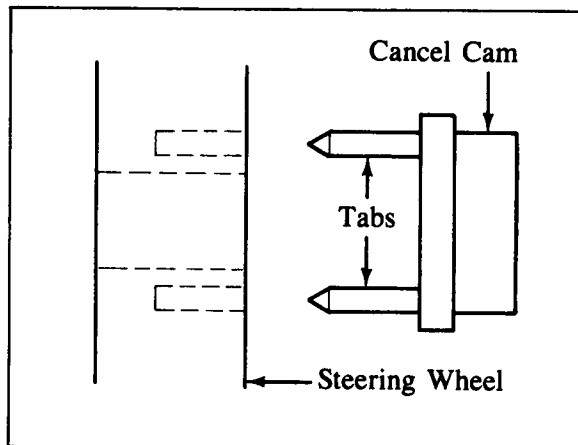


7. Align the tabs of the cancel cam with the holes in the steering wheel and install the steering wheel.

NOTE: The cancel cam will be broken if the tabs are not aligned with the holes in the steering wheel.

8. Install the steering wheel and torque the retaining nut to specification.

RX-7, 626, GLC: 29-36 ft-lb
B2000, B2200: 22-29 ft-lb



WARRANTY INFORMATION

Customer Comment Code:	7E	
Damage Code:	01	
Part No. of Main Cause:	RX-7:	BA29 66 126
	GLC:	BA29 66 126
	GLC(W):	BA29 66 126
	626:	BA29 66 126 (w/o cluster switch)
		H001 66 126 (w/o cluster switch)
	B2000/B2200:	UA13 66 126
Operation No:	60253X-RX	
Labor Hour:	0.3 Hr.	

Category 14

018/85
7/16/85

1984-1985 RX-7

SUBJECT Extra Length Seat Belt.

DESCRIPTION

An extra length seat belt 200 mm (8 inches) longer than the original is available for the RX-7.

PARTS INFORMATION

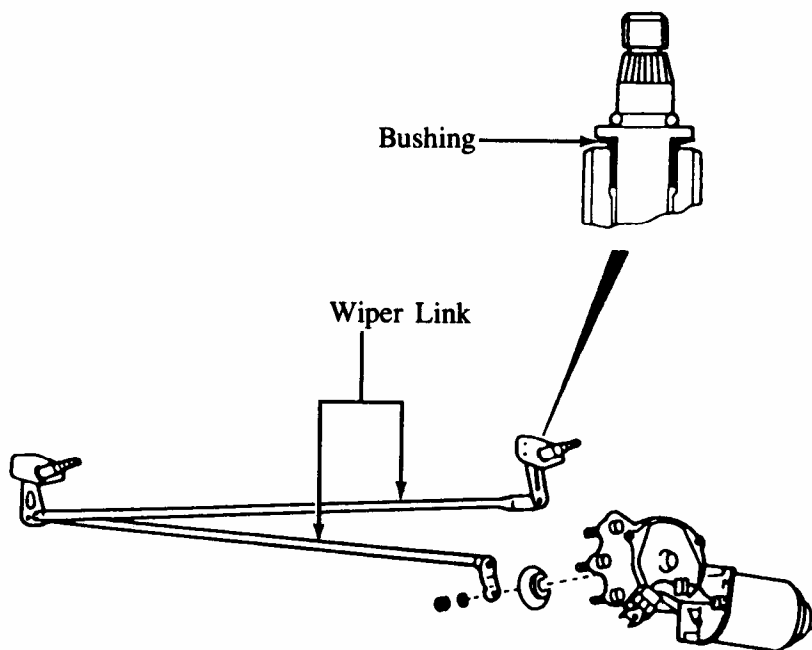
PART NUMBER	DESCRIPTION	APPLIED MODEL
FA77 57 630 07	Front Seat Belt (Dark Grey)	1984-85 RX-7 (R)
FA77 57 630 12	Front Seat Belt (Wine/Red)	
FA77 57 630 84	Front Seat Belt (Brown)	
FA77 57 690 07	Front Seat Belt (Dark Grey)	1984-85 RX-7 (L)
FA77 57 690 12	Front Seat Belt (Wine/Red)	
FA77 57 690 84	Front Seat Belt (Brown)	

1981-1985 RX-7

SUBJECT Wiper Link.

DESCRIPTION

A new wiper link has been established as a service part. This new wiper link features a bushing as shown below.



PARTS INFORMATION

PART NUMBER		DESCRIPTION	INTERCHANGEABILITY	APPLIED MODEL
NEW	OLD			
FA54 76 601A	FA54 76 601	Wiper Link	NEW → OLD	1984-85 RX-7
8871 76 601B	8871 76 601A	Wiper Link	NEW → OLD	1981-83 RX-7

NOTE:

A new part can be used in place of the former part, but the former part may not be used in place of the new part.

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Category 15
Body Electrical System

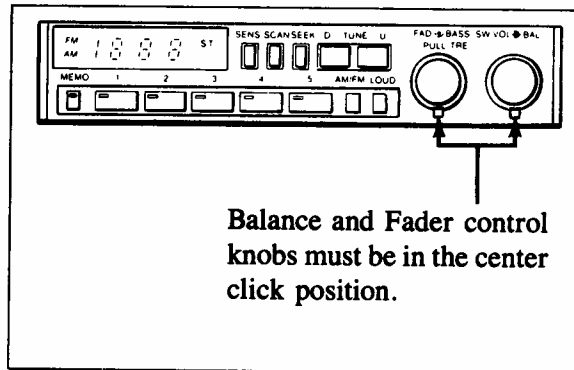
1984-1985 626 & RX-7

SUBJECT Audio System Troubleshooting (ETR).**DESCRIPTION**

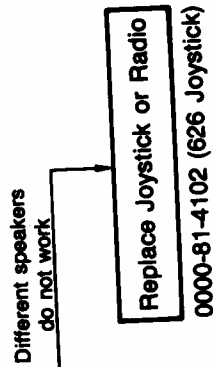
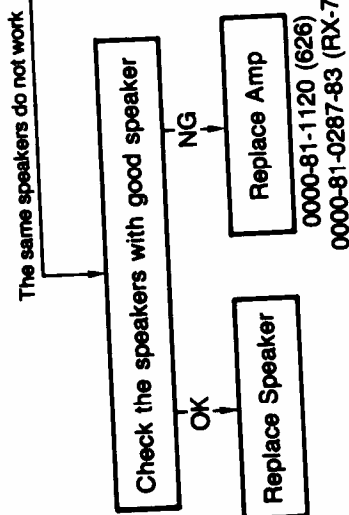
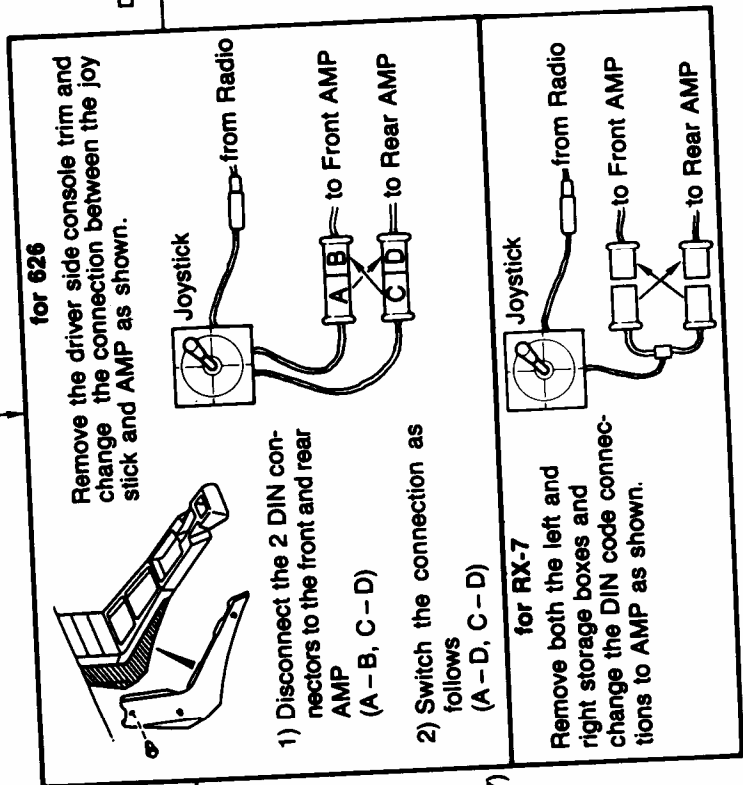
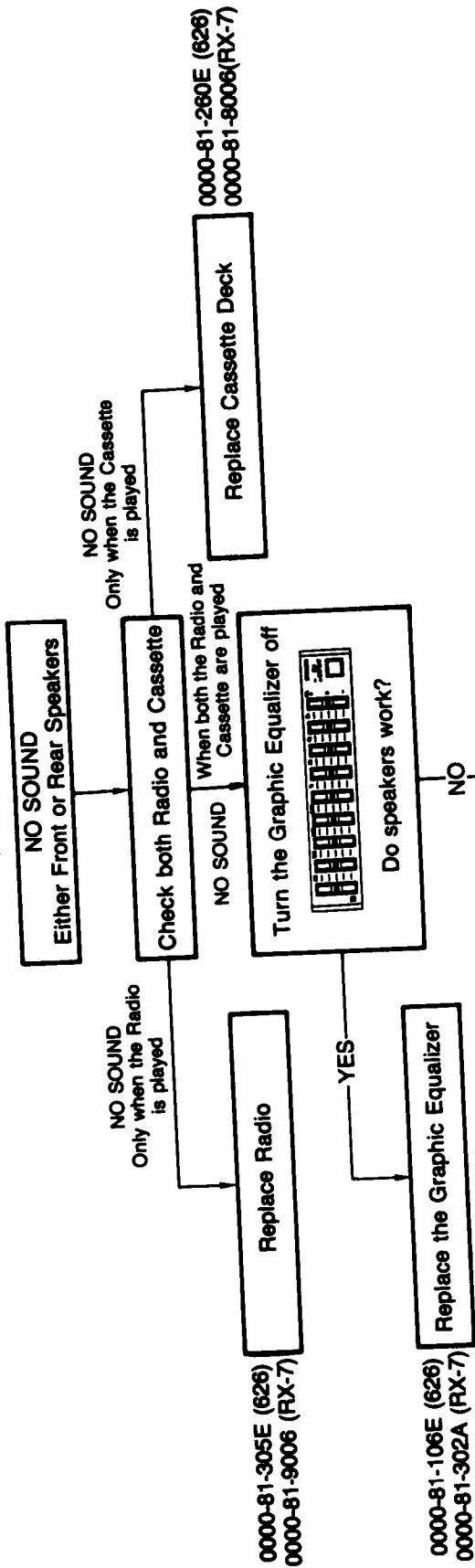
A troubleshooting guide for 626 and RX-7 has been established. Whenever a customer complaint of no sound from any speakers is encountered, please make a proper diagnosis of the problem in accordance with the following procedures:

NOTE:

1. This procedure shows how to locate the problem area without using any test equipment. Faulty wiring or an improper electrical connection may be the cause of an inoperative component. After locating the problem area, please check the wiring and electrical connections before replacing a component.
2. Always be sure that the balance and fader control knobs are in the center click position.

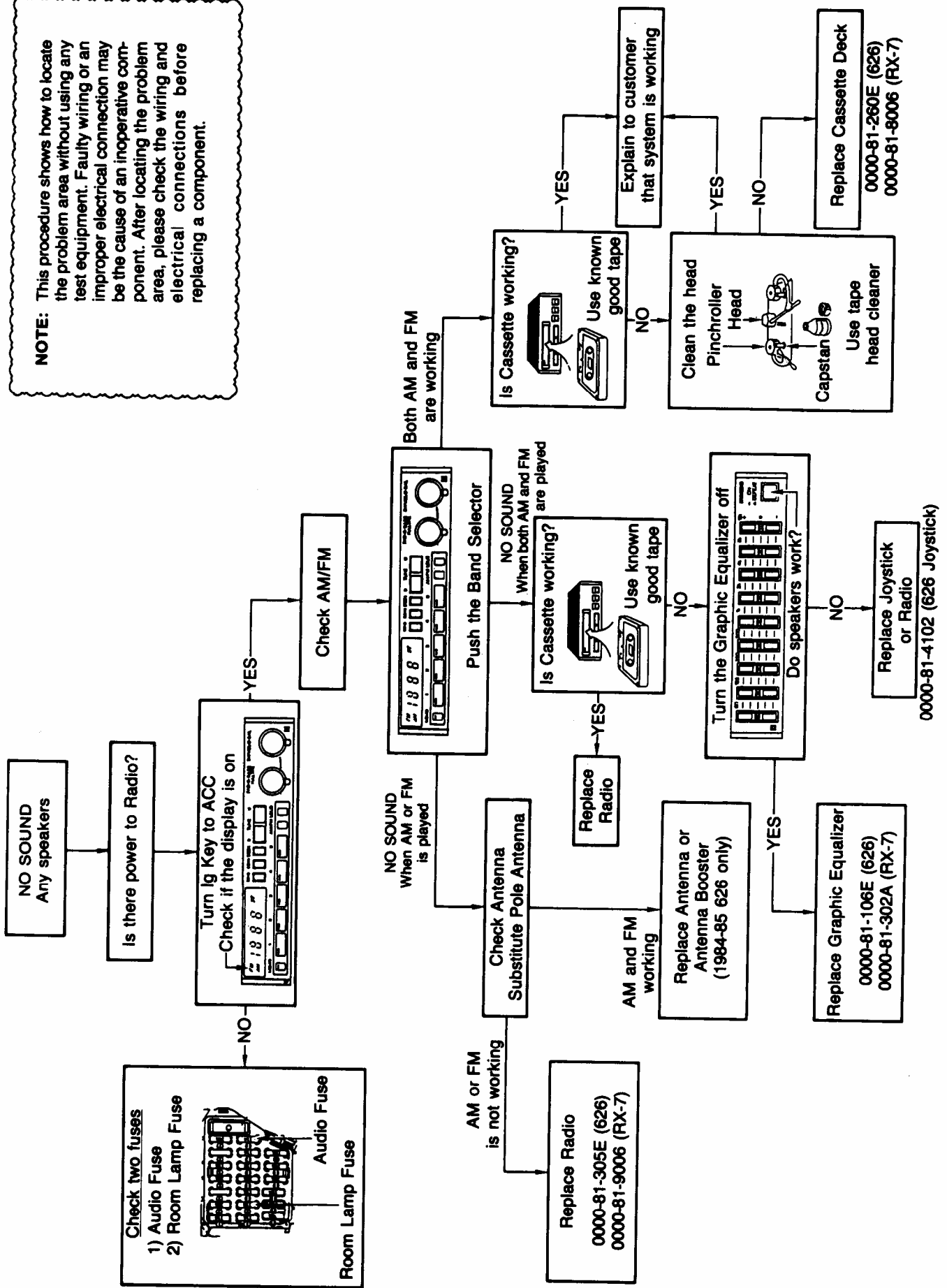


Troubleshooting for 626 & RX-7 ETR



NOTE: This procedure shows how to locate the problem area without using any test equipment. Faulty wiring or an improper electrical connection may be the cause of an inoperative component. After locating the problem area, please check the wiring and electrical connections before replacing a component.

NOTE: This procedure shows how to locate the problem area without using any test equipment. Faulty wiring or an improper electrical connection may be the cause of an inoperative component. After locating the problem area, please check the wiring and electrical connections before replacing a component.



NOTE:

The previously established noise filter kit (P/N GA97 76 990) is for 1983 626 only and cannot be used for 1984-85 626.

PARTS INFORMATION

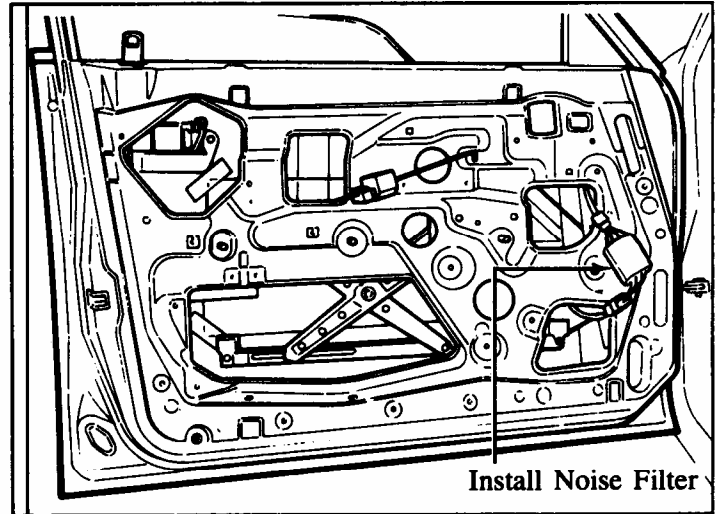
PART NUMBER	DESCRIPTION	APPLIED MODEL
GA97 76 991	Noise Filter	1984-85 626

INSTALLATION PROCEDURE

1. Remove the left and right door trim.
2. Disconnect the connectors for the left and right mirrors and install the filters as shown.

NOTE:

2 (two) filters are necessary for one vehicle.



Category 15

010/85
6/25/85

GLC, 626, RX-7 & B2000

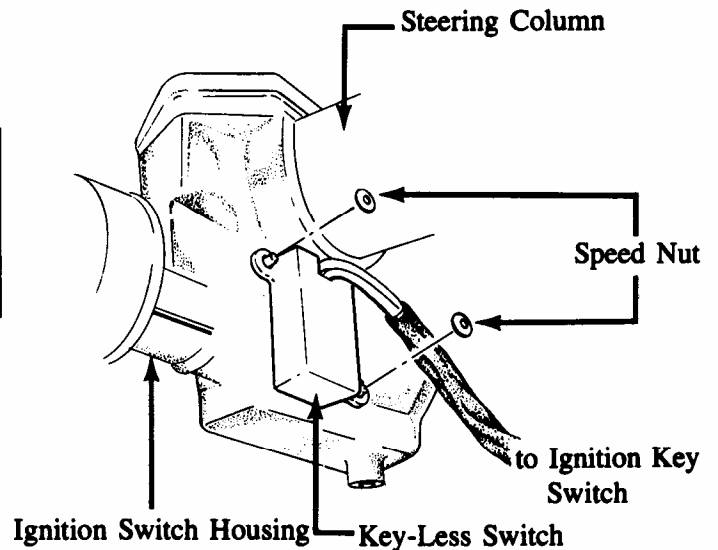
SUBJECT Speed Nut for Ignition Key Switch.

DESCRIPTION

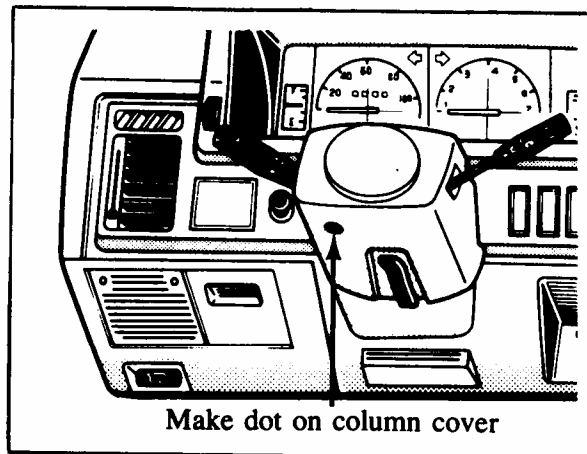
The speed nut for fixing the key-less switch to the ignition key cylinder housing has been established as a service part. If the replacement of the ignition key switch is necessary, please use the new speed nut to secure the key-less switch.

PARTS INFORMATION

PART NUMBER		DESCRIPTION
NEW	OLD	
BC46 66 158	-	Speed Nut



18. Using a felt tip marker pen, make a small dot, approximately 1/4" diameter on the underside of the lower column cover to show that the repair has been completed.



WARRANTY INFORMATION

Customer Comment Code: 99
Damage Code: 99
Process No: A5-008A
Part No. of Main Cause: UB39 66 122
Operation No: XX0064-RX
Labor Hour: 0.5 Hr.

Category 15

012/85
9/9/85

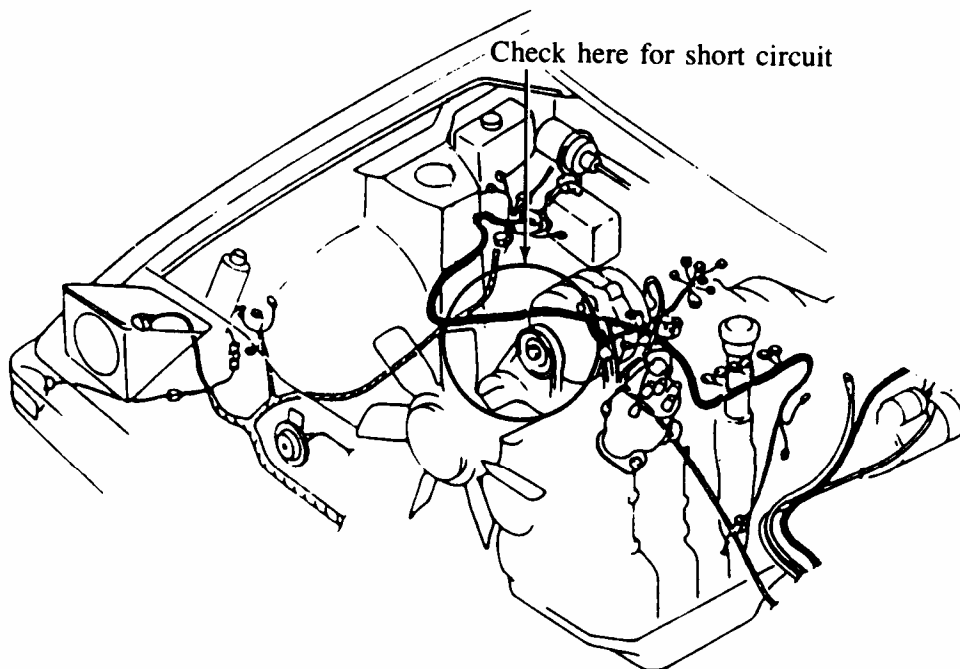
1979-1984 RX-7

SUBJECT Engine Harness.

DESCRIPTION

If the "ENGINE" fuse blows, preventing the engine from starting, the problem may be due to an electrical short circuit in the engine harness. Carefully inspect and repair the engine harness, if necessary, in the area of the thermostat and air hose to the air cleaner.

To prevent short circuiting, the clearance between the engine harness and the air hose to the air cleaner has been increased since the production of October 1, 1984.



VIN OF PRODUCTION CHANGE

RX-7:

JM1FB33 E0866965

October 1, 1984

1979-1985 RX-7

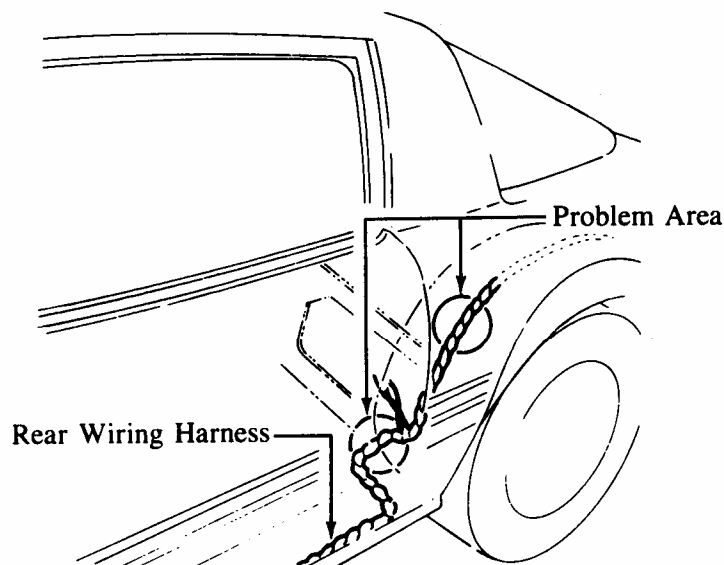
SUBJECT Rear Harness.

DESCRIPTION

Many electrical problems and blown fuses may be caused by a short circuit in the rear harness. The rear harness may be cut by a sharp metal edge where the harness is routed over the inner wheel well. Some electrical problems reported from the field include:

PROBLEM	RESULT
"RADIO, ANTENNA" fuse blown	Radio, antenna inoperative
"TAIL, ILLUM" fuse blown	Tail lights, head lights, license plate lights inoperative
"METER, BACK" fuse blown	Meters, warning lights, back up lights inoperative
"OPENER" fuse blown	Fuel door release inoperative
Open circuit in rear harness	Rear defroster or rear wiper inoperative
Short circuit in rear harness	Rear wiper operates with wiper switch in "OFF" position

If this problem is found, repair the rear harness as necessary and wrap the harness with foam rubber to protect the harness from contact with the sharp metal edges in the area shown.



To prevent this problem, the routing of the rear harness has been changed since the production of July 11, 1984.

VIN OF PRODUCTION CHANGE

RX-7:

JM1FB33 F0852204

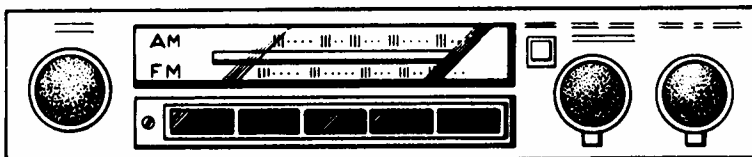
July 11, 1984

1985 RX-7 & 1986 B2000

SUBJECT Manually Tuned Radio (MTR) Modifications.

DESCRIPTION

Station preset pushbuttons on some 1985 RX-7s and 1986 B2000s equipped with manually tuned radio (MTR) may malfunction due to the buttons breaking. In order to prevent this problem, the pushbuttons have been modified beginning with VINs listed below.



NOTE:

This modification was NOT applied to the 1985 RX-7 because production had already ceased for this vehicle.

VIN OF PRODUCTION CHANGE

1986 B2000 Short Bed:	JM2UF111		
Long Bed:	JM2UF211	G0587246	August, 1985
Cab Plus:	JM2UF311		

PARTS INFORMATION

0000 81 3015 MTR (Clarion) for 1985 RX-7, 1986 B2000

NOTE:

The part number for the MTR radio has NOT been changed. However, the modified push buttons have been installed on all exchange radios.

WARRANTY INFORMATION

	(All areas except MMA-C)	(MMA-C only)
Customer Comment Code:	7E	B2
Damage Code:	05	AD
Process No:	J5-002A	
Part No. of Main Cause:	0000-81-3015	
Operation No:	66860X-R-X	
Labor Hour:	0.7 Hr.(1986 B2000)	0.5 Hr.(1985 RX-7)

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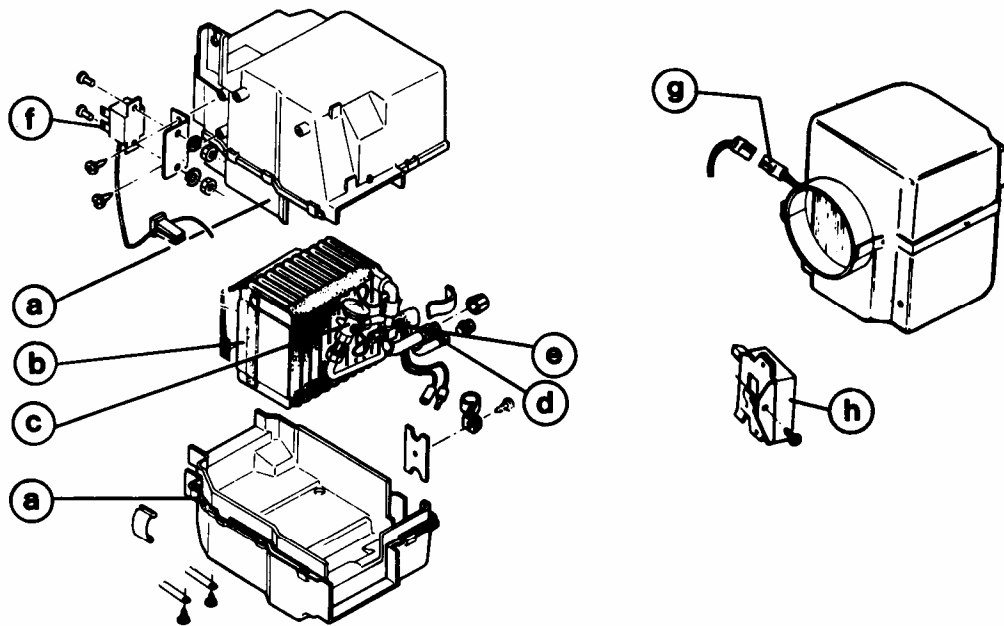
Category 16
Air Conditioning System

ALL MODELS

SUBJECT Air Conditioner Replacement Parts (Except RX-7 Nippondenso).**DESCRIPTION**

Claims for air conditioner replacement parts will not be accepted if the complete assembly is replaced. Warranty will be paid only for the replacement of the shortcoming part according to the Air Conditioning Suggested Repair Times.

The following three parts lists and illustrations give the replaceable parts for the evaporator, the compressor and the clutch.

**1. Evaporator Parts:**

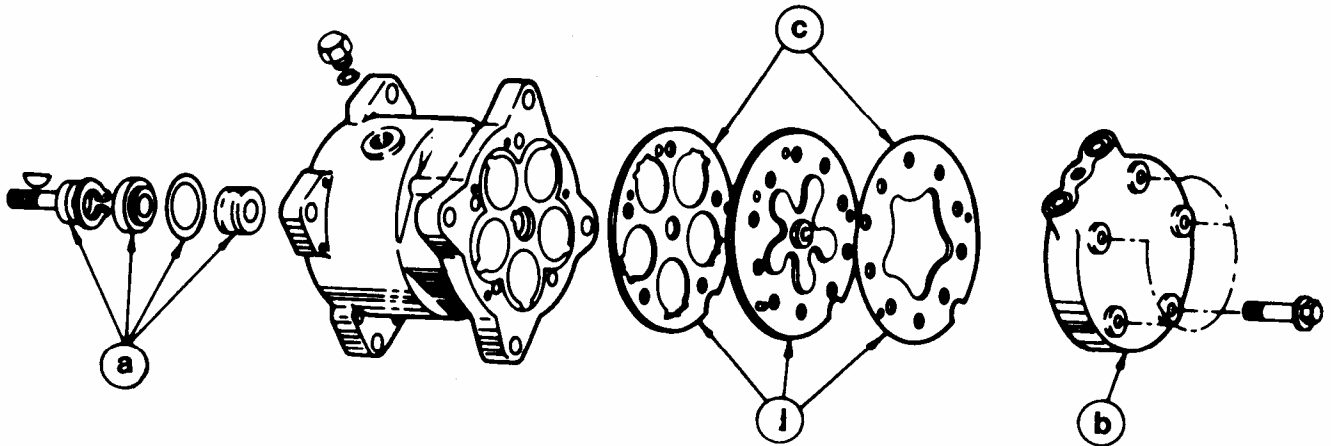
- | | |
|----------------------------|----------------------------|
| a. Case | e. Super Heat Switch |
| b. Coil | f. Thermostat |
| c. Expansion Valve | g. Thermistor Probe |
| d. Extension Tube Assembly | h. Temperature Control Box |

IMPORTANT:

Two types of evaporator cases are used. One type features a case which is held together with clips. The other type uses a case which is glued together. If the case is glued together, evaporator items a thru e are NOT replaceable. The glued-type case must be replaced as an assembly.

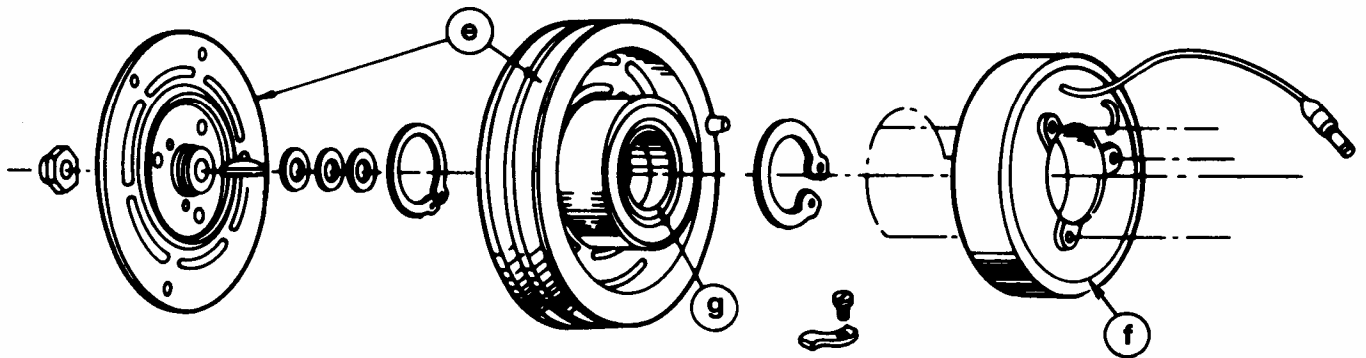
2. Compressor Parts:

- a. Shaft Seal Kit
- b. Compressor Head
- c. Gasket Kit
- d. Valve Plate Assembly w/Gasket



3. Clutch Parts:

- e. Front Plate & Rotor (Clutch)
- f. Field Coil
- g. Bearing



REPAIR PROCEDURES FOR EVAPORATOR

A. Removal of Evaporator from Vehicle

1. Disconnect the battery negative (-) terminal.

CAUTION:

On vehicles equipped with electronic memory radios or electronic clocks, be sure to record the customers channel selections (AM/FM) prior to disconnecting the negative terminal. Reprogramming the radio and resetting the clock will be necessary after repairs have been completed.

2. Slowly discharge the refrigerant gas (R-12) from the system.

NOTE:

If oil comes out during discharging, make sure to return the same amount (using fresh refrigerant oil) back to the system.

3. Using two (2) wrenches for equalized support, disconnect the liquid and suction fittings from the evaporator.

NOTE:

Cap open fittings immediately to keep moisture out of the system.

4. Remove underdash cover and glove box (where applicable).
5. Remove all A/C wire connectors from evaporator.
6. Remove right and left seal plates.
7. Remove nuts/bolts securing evaporator, and remove unit from vehicle.

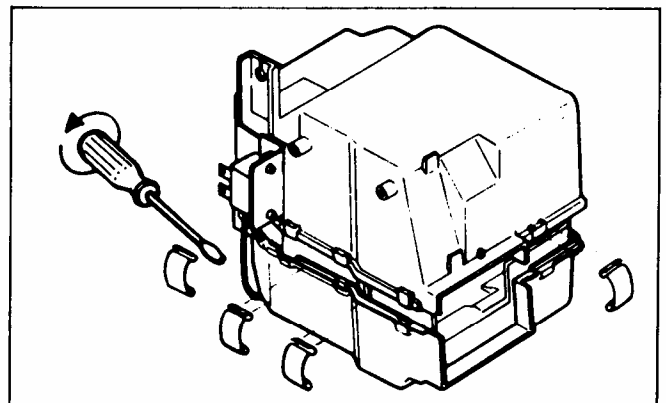
B. Disassembly of Evaporator Unit

1. Mark the location of the thermostat's capillary tube or thermistor probe in the evaporator core fins, then remove from the core.

NOTE:

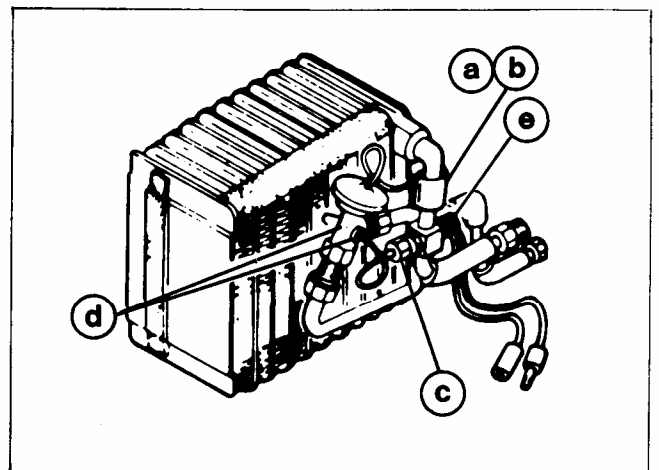
Proper positioning of the probe during installation is extremely important for proper cooling.

2. Remove clips, screws and evaporator core from upper and lower case.



C. Expansion Valve and/or Core Replacement

1. Remove the following items:
 - a. Prestite Tape
 - b. Clip holding Control Bulb
 - c. Equalizer Line Fitting (where applicable)
 - d. Expansion Valve Fittings (use two (2) wrenches for equalized support)

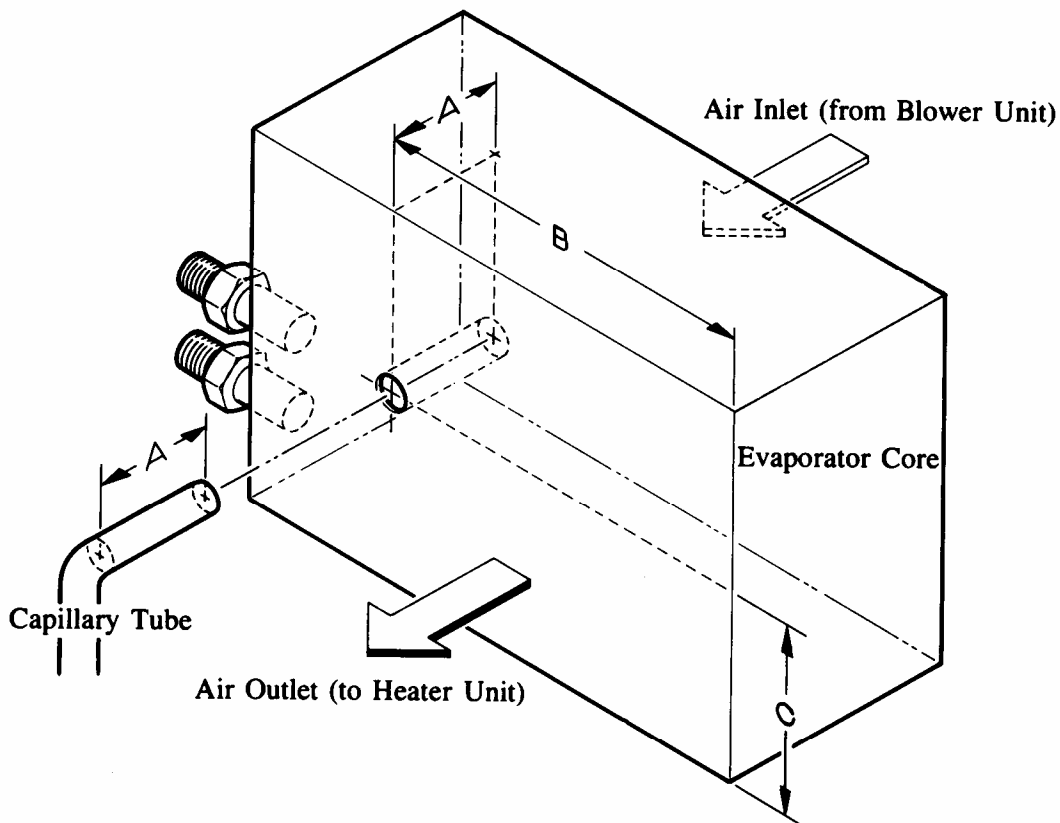


2. If evaporator core replacement is necessary on the 626, transfer the super heat switch and the wire mesh screen (if available) to the new core. (Use new foam tape to hold the wire mesh screen.)

D. Assembly & Installation of Evaporator Unit

1. Follow the removal procedures in reverse order and note the following items:
 - a. Lubricate all fittings and "O"-rings with refrigerant oil before connecting them.
 - b. Use new "O"-rings on every line fitting which is either loosened or removed.
 - c. When tightening line fittings, use two (2) wrenches for equalized support.
 - d. All fittings and connections must be tightened to the correct torque specification (see torque specifications below).
 - e. Location and depth of the capillary tube/thermistor probe is extremely important. Refer to the probe location and depth chart attached for proper location.

Evaporator Torque Specifications	
Fittings	Torque Ft-Lbs
Evaporator inlet	12
Evaporator outlet	24
Superheat switch for 626	7.25
EXPANSION VALVE:	
-Valve to coil	24-29
-Valve to external tube	10-15
-External equalizer connector	10



Probe Location & Depth Chart

		GLC	RX-7	626 Gas/Diesel	1986 B2000
A	inch	7/8"~ 1 1/8"	2 3/16"~ 3 1/16"	2 1/16"~ 2 5/16"	1 5/8"~ 2 5/16"
	mm	21~ 30	54~ 74	50~ 60	40~ 60
B	inch	3"~ 3 3/8"	3 7/8"~ 4 3/16"	1 3/16"~ 1 3/8"	1 3/16"~ 1 3/8"
	mm	76~ 86	97~ 107	30~ 35	30~ 35
C	inch	2 1/4"~ 2 9/16"	3 5/16"~ 3 11/16"	5 9/16"~ 5 7/8"	5 9/16"~ 5 7/8"
	mm	56~ 66	84~ 94	140~ 150	140~ 150

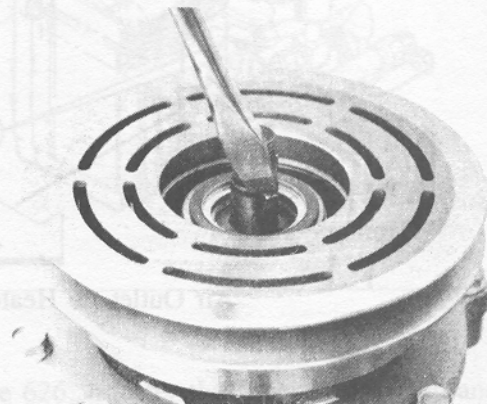
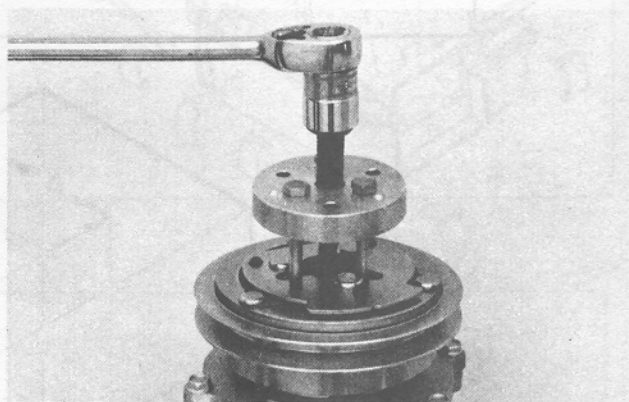
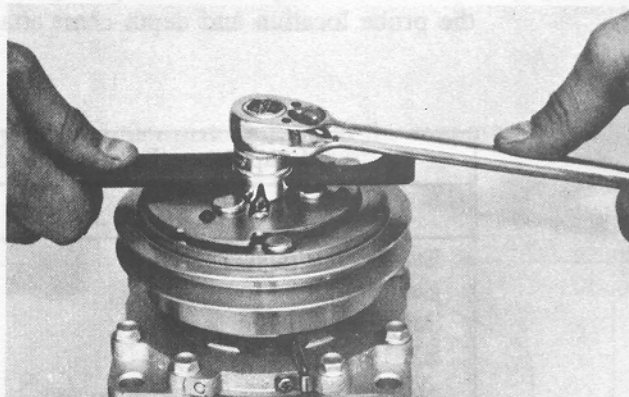
REPAIR PROCEDURES FOR COMPRESSOR

A. Steps for Clutch Removal

1. Insert the two (2) pins of the clutch holder into any two (2) threaded holes of the clutch front plate. Hold clutch plate stationary. Remove hex nut.
2. Remove clutch front plate using puller. Align puller center bolt to compressor shaft. Thumb tighten the three (3) puller bolts into the threaded holes. Turn center bolt clockwise until front plate is loosened
3. Remove shaft key by lightly tapping it loose with a screwdriver and hammer.

NOTE:

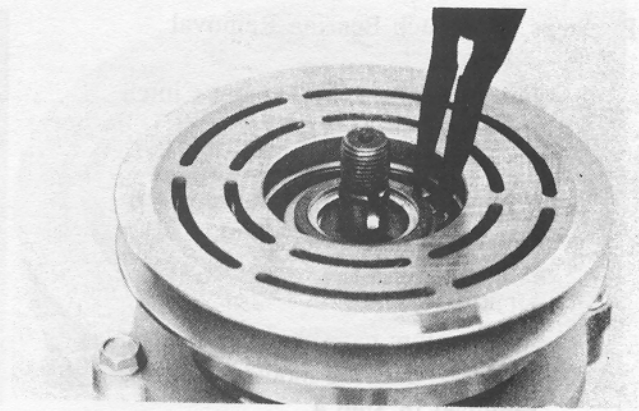
Steps 1 thru 3 must be performed before servicing either the shaft seal or clutch assembly.



4. Remove the external front housing snap ring by using snap ring pliers (spread type).

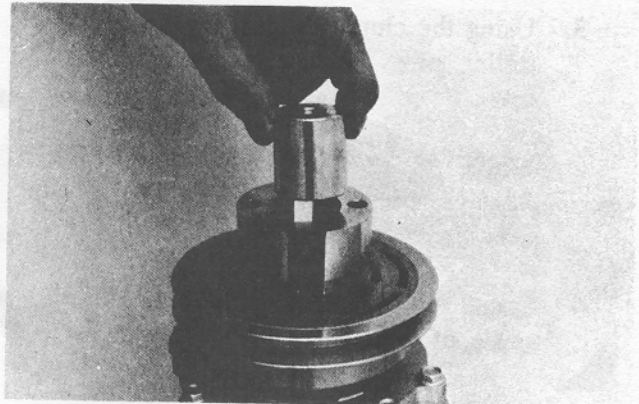
NOTE:

Some compressors may have two (2) snap rings in front, one which is used on front housing (shown at right) and the other which secures the clutch bearing. Remove both snap rings.

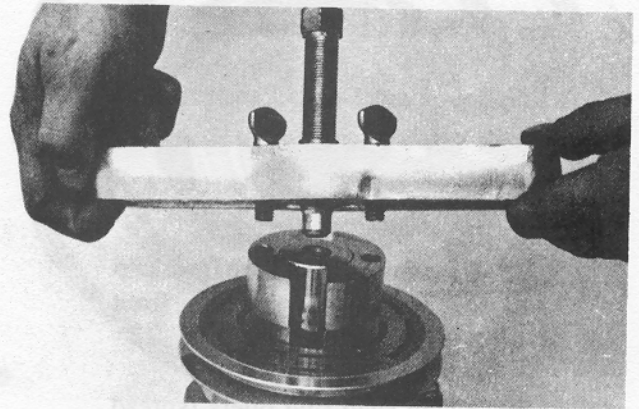


5. Remove rotor pulley assembly:

- a. Insert the lip of the clutch puller jaws into the snap ring groove.
- b. Place the clutch pilot over the shaft.

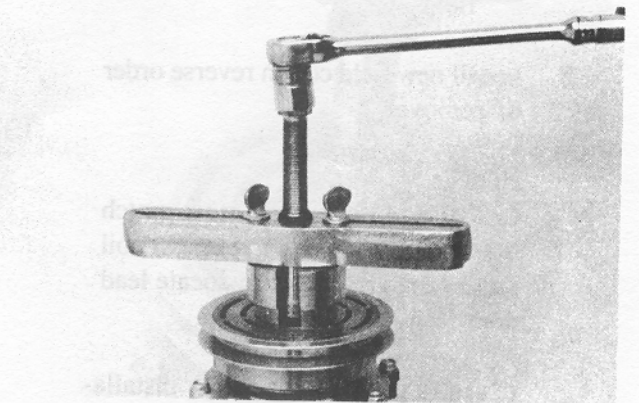


- c. Place the clutch puller handle onto the puller jaws.
- d. Finger tighten the securing bolts into the puller jaws.



- e. Hold rotor puller set handle stationary and turn the puller center bolt clockwise until rotor pulley is free.

(Turn to page 11 for clutch installation procedures)

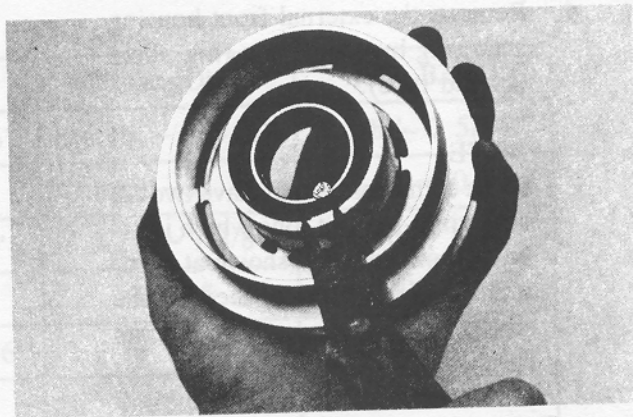


B. Steps for Clutch Bearing Removal

1. Follow Steps 1 thru 5 under Clutch Removal.
2. Remove the bearing retaining snap ring using snap ring pliers.

NOTE:

Some rotors have the snap ring in the front; this ring should have been removed in Step 4.

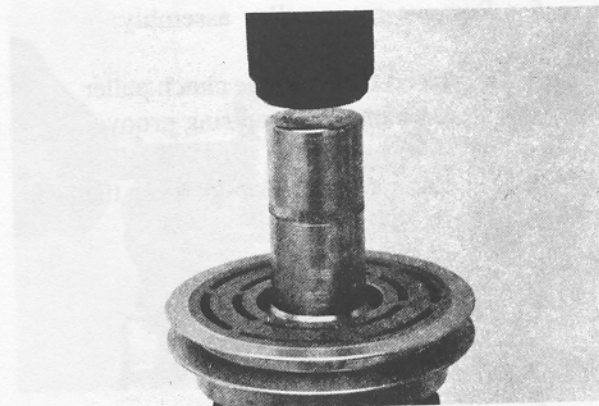


3. Using the clutch rotor bearing installer, press the bearing from the rotor.

NOTE:

Always press the bearing out towards the snap ring side.

4. Install the new bearing in reverse order of removal.



C. Steps for Field Coil Removal

1. Follow Steps 1 thru 5 under clutch removal.
2. Remove field coil:

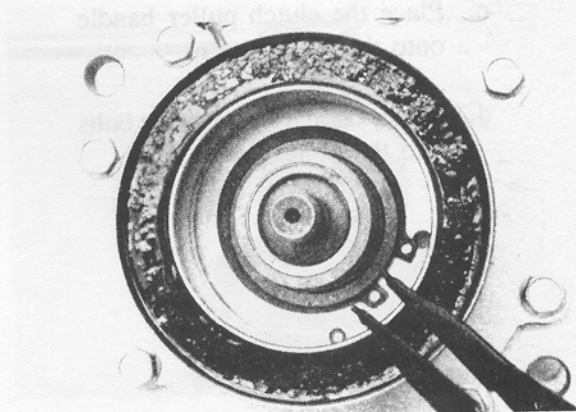
- a. Loosen coil lead wire from clip on top of compressor front housing.
- b. Using snap ring pliers (spread type), remove snap ring and field coil.

3. Install new field coil in reverse order of removal.

NOTE:

Coil flange protrusion must match hole in front housing to prevent coil movement and correctly locate lead wire.

(Turn to page 11 for clutch installation procedures)



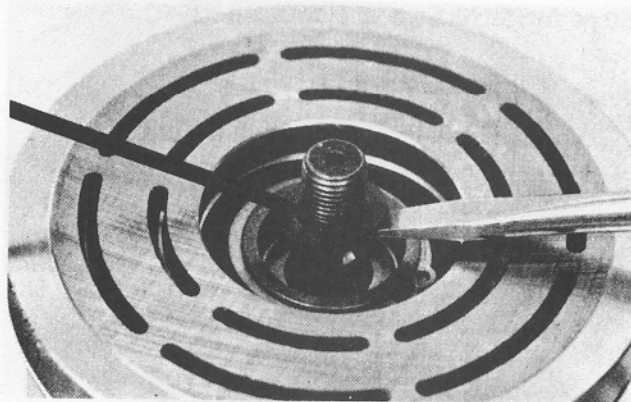
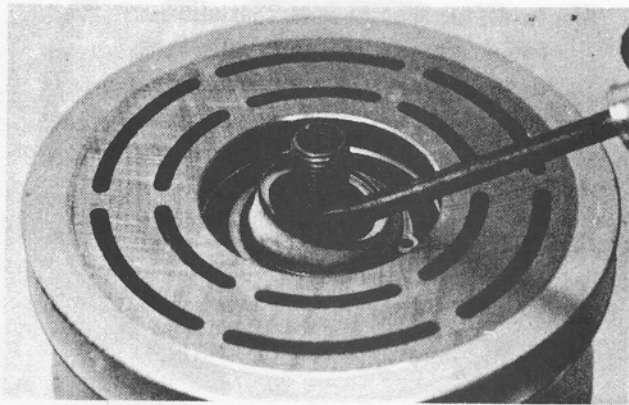
D. Steps for Shaft Seal Removal

1. Follow Steps 1 thru 3 under Clutch Removal.

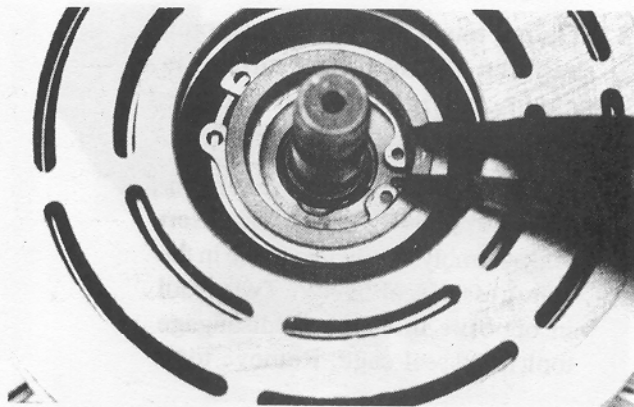
NOTE:

Shaft seal replacement should be done on the bench. Never use any old parts of the shaft seal assembly. Renew the complete assembly.

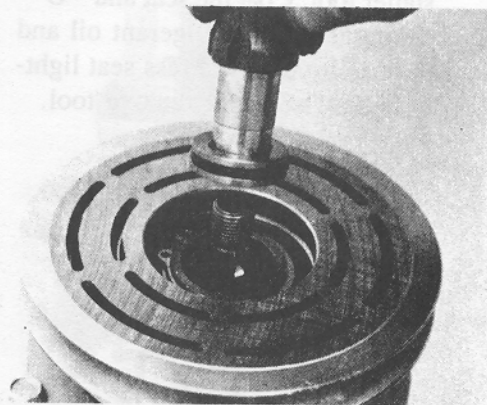
2. Using a screwdriver, pry out the felt ring being careful not to damage the shaft housing.
3. Remove the clutch shims . Use "O"-ring hook and a small screwdriver (as shown) to prevent shim from binding on shaft.



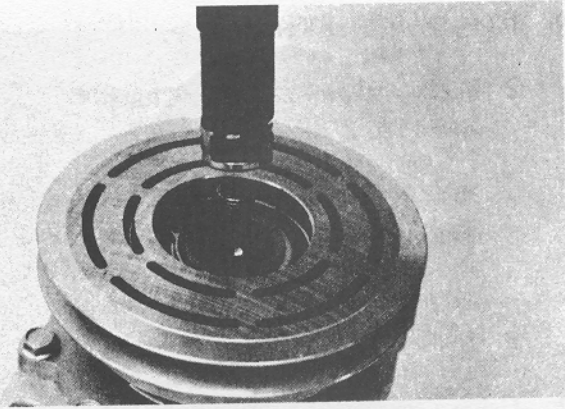
4. Remove shaft seal seat retaining snap ring with pliers (pinch type).



5. Remove shaft seal seat using seal remover and installer tool.

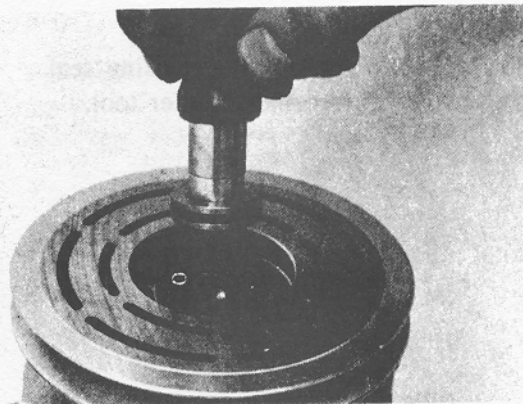


6. Insert the seal remover and installer tool against the seal assembly. Press down against the seal spring and twist the tool until feeling it engage in the slots of the seal cage. Lift out seal assembly.

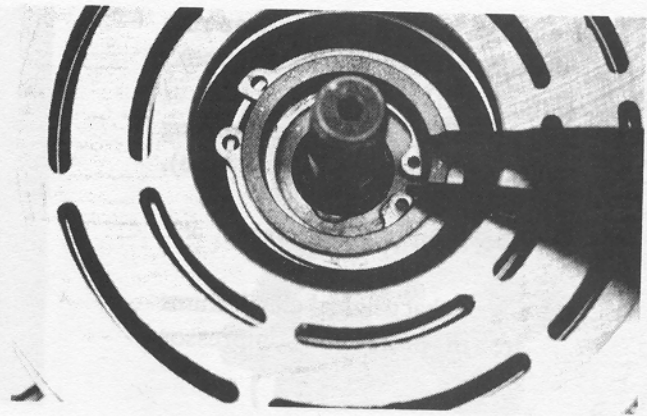


E. Steps for Shaft Seal Replacement

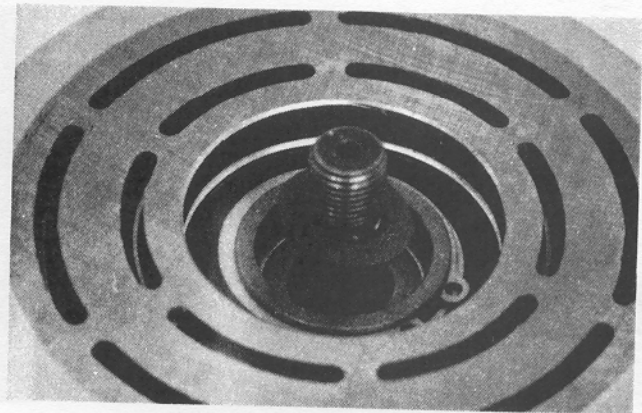
1. Clean seal cavity thoroughly:
 - a. Clean thoroughly with a "lint-free" or synthetic cloth and clean refrigerant oil. Then blow out with dry pressurized vapor.
 - b. Make sure all foreign substances are thoroughly removed.
2. Insert seal sleeve protector over compressor shaft.
3. Do not touch the new seal lapping surfaces. Dip the mating surfaces in clean refrigerant oil before proceeding.
4. Engage slots of seal remover and installer to new seal cage and insert seal assembly firmly into place in the compressor seal cavity. Twist tool in opposite direction to disengage tool from seal cage. Remove tool.
5. Place the new seal seat onto the installer tool. Coat the seat and "O"-ring with clean refrigerant oil and install into cavity. Press seat lightly against seal and remove tool.



6. Re-install snap ring. Beveled edge faces outward (away) from compressor. It may be necessary to lightly tap the snap ring to securely position it in its groove.

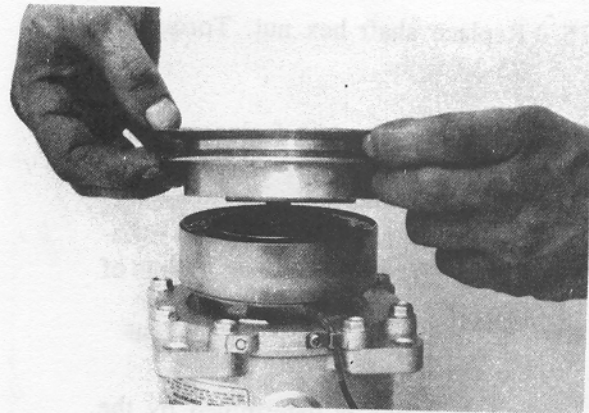


7. Replace clutch spacer shims.
8. Tap new felt ring into place.
9. Re-install clutch front plate as outlined under clutch installation.



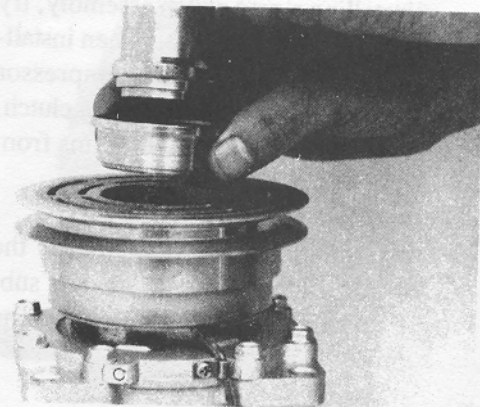
F. Steps for Clutch Installation

1. Replace rotor pulley:
 - a. Support the compressor on the four (4) mounting ears at the rear of the compressor. If using a vise, clamp only on the mounting ears - NEVER ON THE COMPRESSOR BODY.
 - b. Align rotor assembly squarely on the front housing hub.
 - c. Using rotor installer set, place the ring part of the set into the bearing cavity. Make certain the outer edge rests firmly on the rotor bearing outer race.

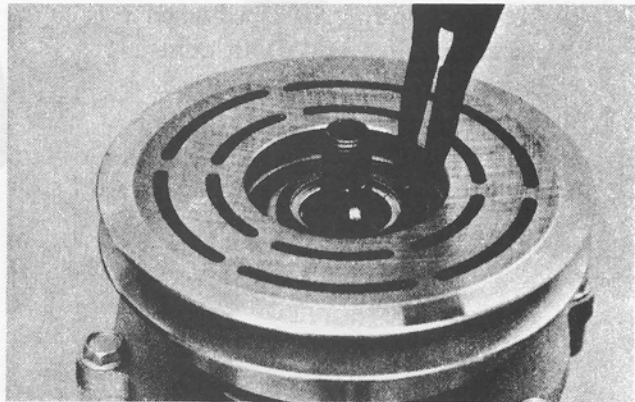


- Place the tool set driver into the ring as shown.

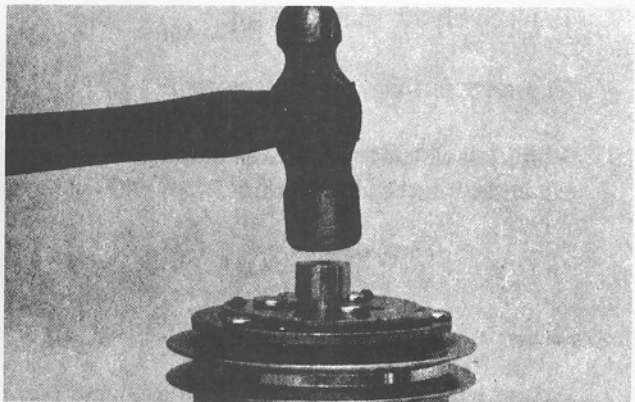
- d. With a hammer, tap the end of the driver while guiding the rotor to prevent binding. Tap until the rotor bottoms against the compressor front housing hub. Listen for a distinct change of sound during the tapping process.



2. Re-install internal bearing snap ring (if used) with pliers (pinch type).
3. Re-install external front housing snap ring with pliers (spread type).
4. Replace front plate assembly.
 - a. Check that original clutch shims are in place on compressor shaft.

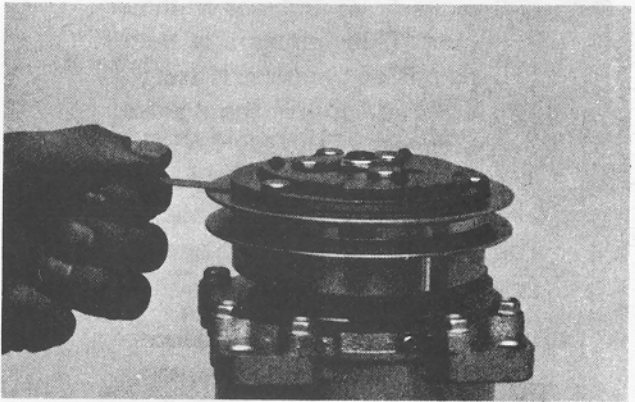


- b. Replace compressor shaft key.
- c. Align front plate keyway to compressor shaft key.



- d. Using shaft protector, tap front plate to shaft until it has bottomed to the clutch shims. Note distinct sound change.

5. Replace shaft hex nut. Torque to 25-30 ft-lbs.
6. Check air gap with feeler gauge to .016'' to .031''. If air gap is not consistent around the circumference, lightly pry up at the minimum variations. Lightly tap down at points of maximum variation.



NOTE:

The air gap is determined by the spacer shims. When re-installing or installing a new clutch assembly, try the original shims first. When installing a new clutch onto a compressor that previously did not have a clutch, use .040, .020 and .005 shims from the clutch accessory kit.

If the air gap does not meet the specification in Step 6, add or subtract shims by repeating Steps 4 and 5.

G. Steps for Cylinder Head and Valve Plate Removal

1. Remove the five (5) cylinder head bolts.

2. Use a small hammer and the gasket scraper to tap the outer edge of the cylinder head until it frees from the valve plate. Inspect for damage. (The cylinder head gasket normally sticks to the valve plate.)

CAUTION

Do not turn the adjusting screw more than 90°, otherwise the evaporator coils may freeze, resulting in an adverse effect on the cooling performance.

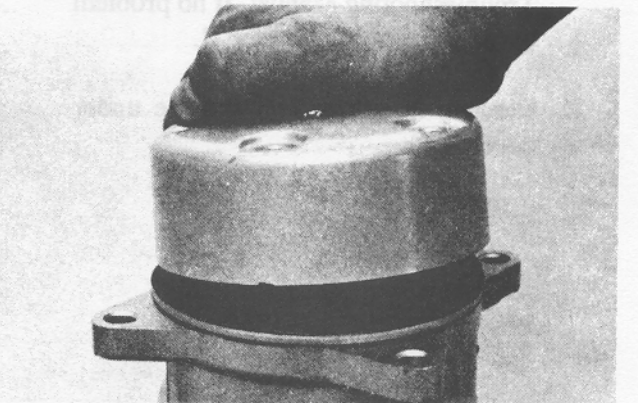
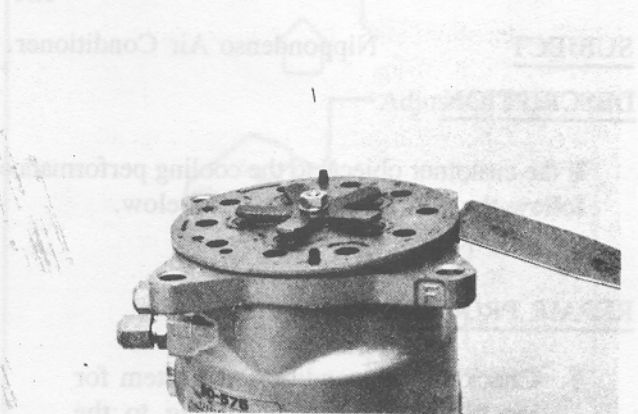
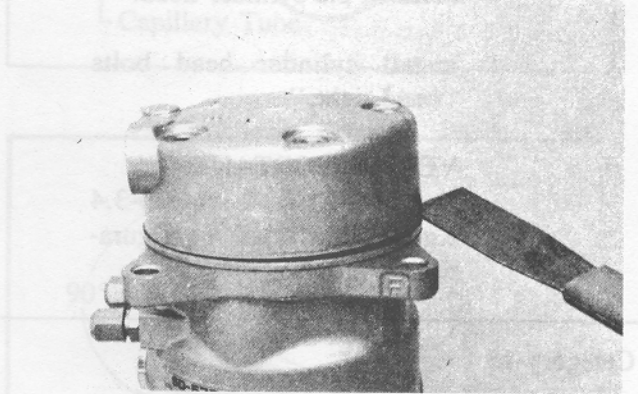
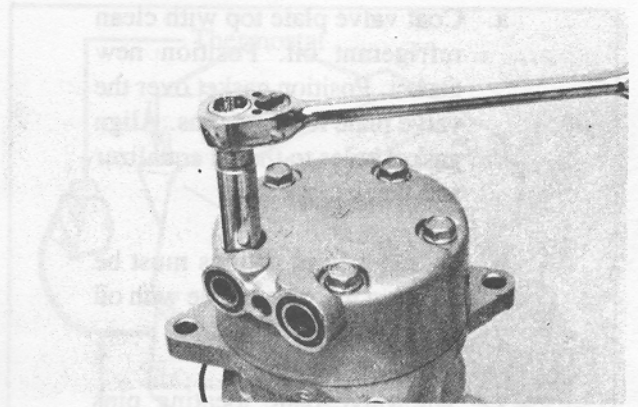
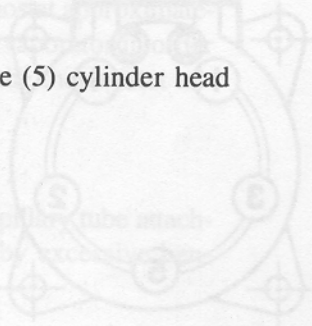
3. Position gasket scraper between the outside edge of the valve plate and the cylinder block and lightly tap the valve plate loose. Inspect reed valves and discharge retainer. Discard assembly if any portion is damaged.

H. Steps for Installing Cylinder Head, Valve Plate & Gaskets

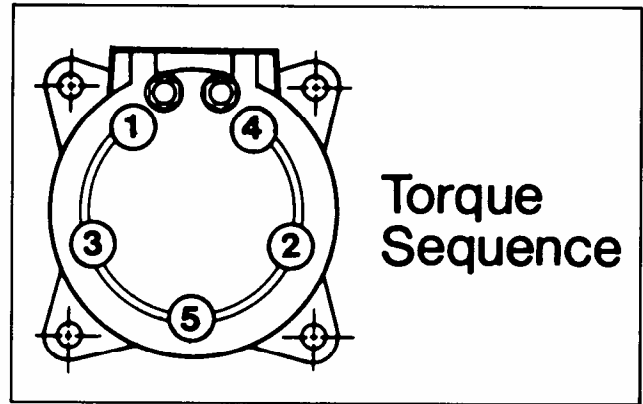
When installing the head or valve plate, use the new gaskets in the parts kit.

Cylinder Head Only:

1. Re-inspect valve plate for damage and removal of all old gasket material.



- a. Coat valve plate top with clean refrigerant oil. Position new gasket. Position gasket over the valve plate locating pins. Align gasket holes to the oil equalizer and orifice opening.
- b. Cylinder head fittings must be pointing up or be in line with oil filler plug.
- c. The valve plate locating pins must be securely in the locating holes in the cylinder head.
- d. Install cylinder head bolts "hand tight."



VERY IMPORTANT:
Torque to 22-25 ft-lbs (3.0-3.4 Kg-m) using "star" configuration as shown.

Category 16

006/85
6/17/85

RX-7 13B

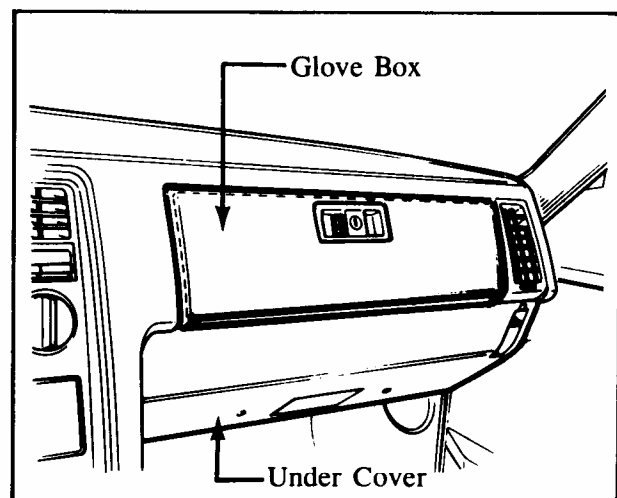
SUBJECT Nippondenso Air Conditioner.

DESCRIPTION

If the customer objects to the cooling performance of the air conditioner on RX-7 13B vehicles, please follow the procedure described below.

REPAIR PROCEDURE

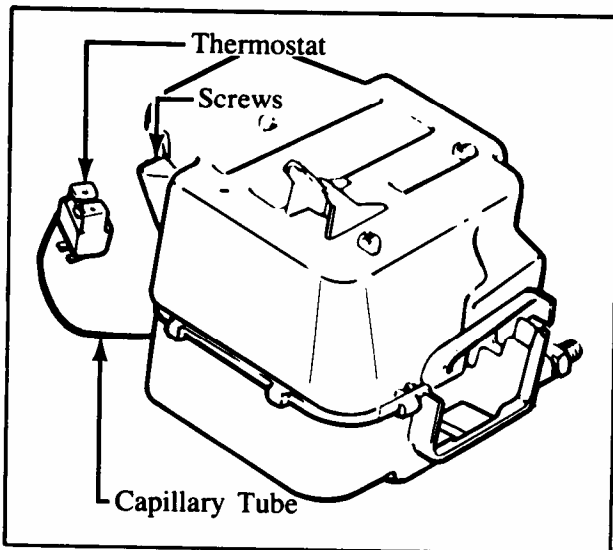
1. Check the air conditioning system for insufficient cooling according to the Mazda Air Conditioning Technical and Troubleshooting Manual. If no problem is found, proceed to Step 2.
2. Remove the glove box and the under cover.



3. Remove the 2 screws securing the thermostat. Pull the thermostat approximately 1" away from the evaporator in order to provide access to the thermostat adjusting screw.

NOTE:

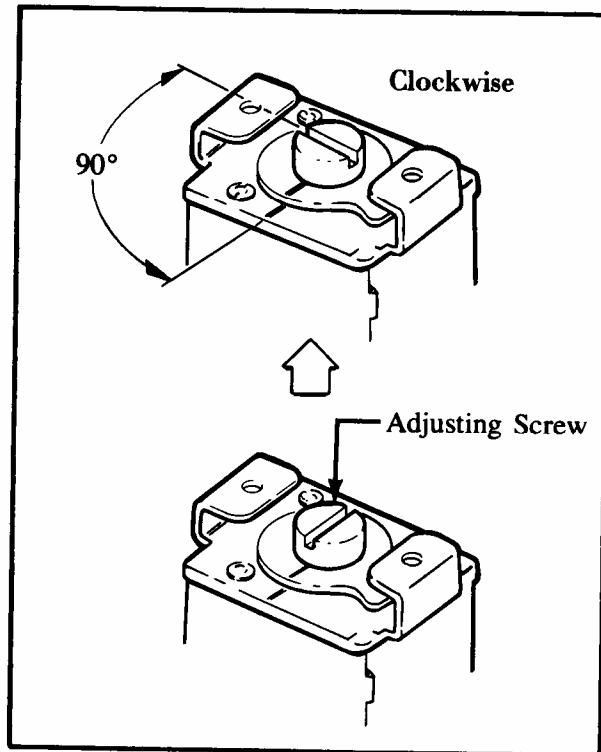
Do not damage the capillary tube attached to the thermostat by excessive bending or twisting.



4. Turn the adjusting screw of the thermostat clockwise 90° from the original position.

CAUTION:

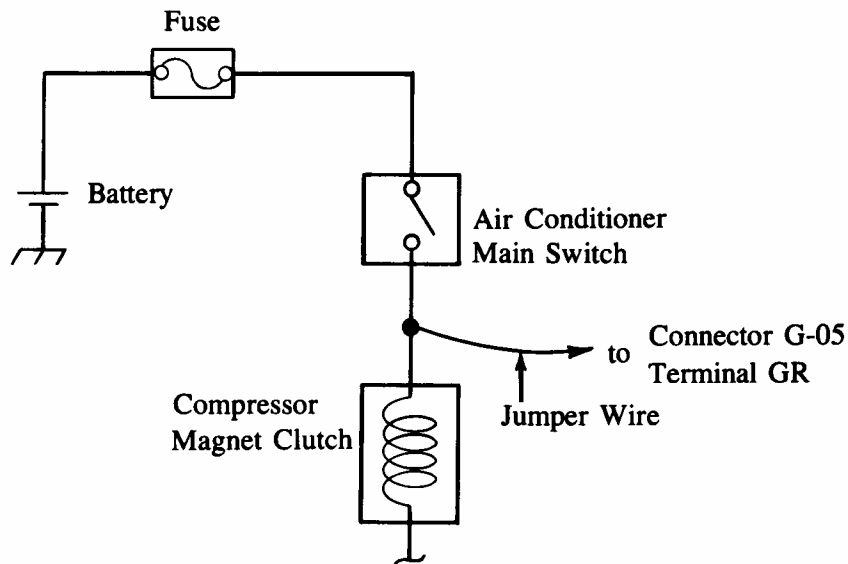
Do not turn the adjusting screw more than 90°, otherwise the evaporator core will freeze, resulting in an adverse effect on the cooling performance.



5. Reassemble in the reverse order of disassembly.

WARRANTY INFORMATION

Customer Comment Code:	A1
Damage Code:	AB
Process No:	B5015A
Part No. of Main Cause:	0000 68 500080
Operation No:	XX0060-R-X
Labor Hour:	0.4 Hr.



IDLE UP CHECKING PROCEDURE

How to adjust RPM:

1. Connect a tachometer to engine.
2. Warm up the engine to normal operating temperature.
3. Turn off all electric devices (cooler, blower, lights, etc.)
4. Using jumper wire, ground the brown wire at the three-way valve.
5. Set the engine RPM at 1400(\pm 100) by adjusting the idle-up screw.

Category 16

008/85
7/16/85

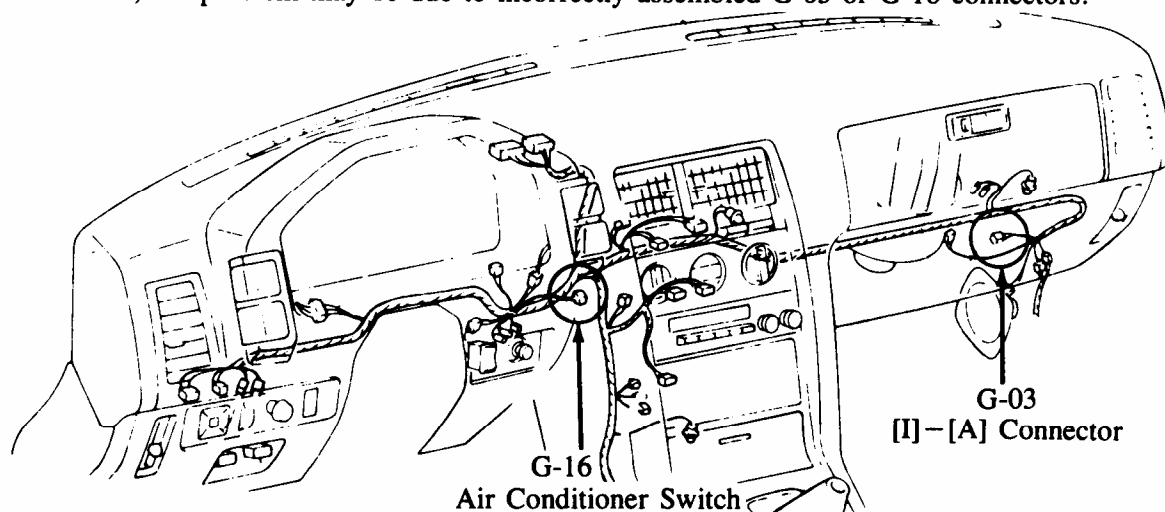
RX-7

SUBJECT Air Conditioner Indicator Light.

DESCRIPTION

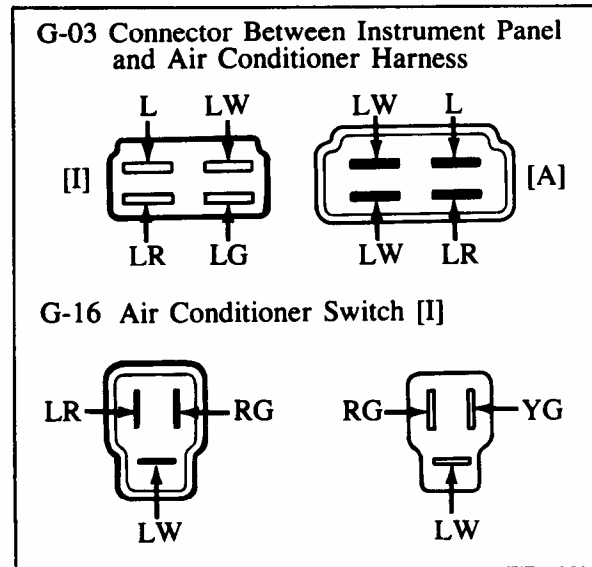
Some air conditioner kits manufactured by Lone Star Manufacturing Company may contain incorrectly assembled harness connectors.

If the indicator light on the air conditioner switch does not illuminate, or illuminates dimly after installation, the problem may be due to incorrectly assembled G-03 or G-16 connectors.



REPAIR PROCEDURE

1. Check that the G-03 accessory connector (A) is assembled correctly as viewed from the harness side of the connector. If not, remove the incorrect terminals and reassemble according to the connector diagram.
2. Check that the G-16 accessory connector (A) is assembled correctly as viewed from the harness side of the connector. If not, remove the incorrect terminals and reassemble according to the connector diagram.



Category 16

009/85
9/20/85

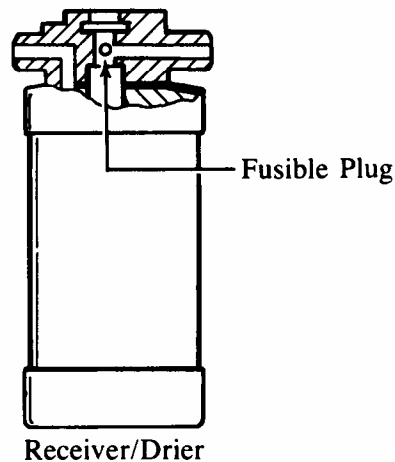
1979-1985 RX-7

SUBJECT Air Conditioner Inoperative.

DESCRIPTION

If the air conditioner is inoperative and the fusible plug on the receiver/drier is blown, replace the receiver/drier, then evacuate the system and recharge with the proper amount of refrigerant according to the Mazda Air Conditioner Technical & Troubleshooting Manual.

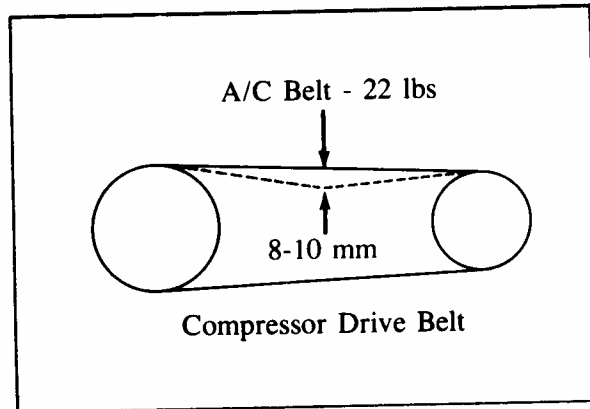
To determine the cause of the blown fusible plug, proceed as shown below.



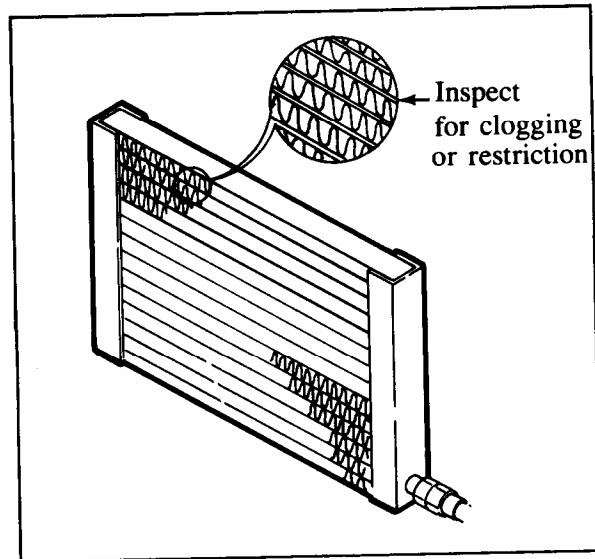
TROUBLESHOOTING PROCEDURE

1. Check the tension of the compressor drive belt. Adjust if necessary.

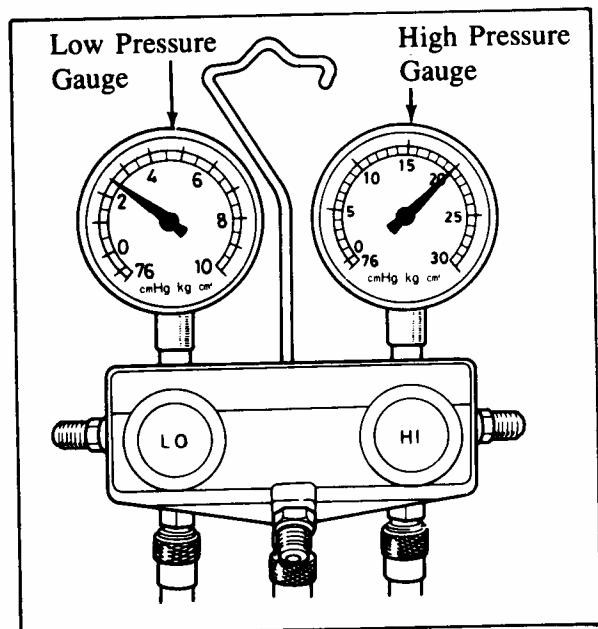
Specification: 5/16" to 3/8" (8-10 mm) deflection when center span of belt is pushed with a force of 22 lb (10 kg).



2. Check that the fins on the condenser are not clogged or restricted. Clean, if necessary.



3. Attach a manifold to the suction and discharge fittings. Refer to the Mazda Air Conditioning Technical & Troubleshooting Manual. If the high pressure gauge shows an excessively high pressure, go to Step 4.

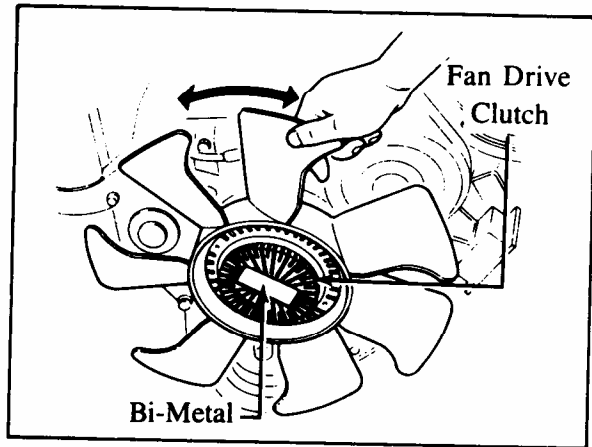


4. Check the fan drive clutch and replace, if necessary.

- When the engine is cold, turn the cooling fan by hand and check that resistance is felt.
- Check to be sure that there is no fluid leakage from the fan drive clutch.
- Check to be sure that there is no deformation of the bi-metal.
- Check that there is no bearing play or grease leakage.

For 1984-85 RX-7:

Refer to the applicable Workshop Manual, Section 3, "Cooling System".



mazda

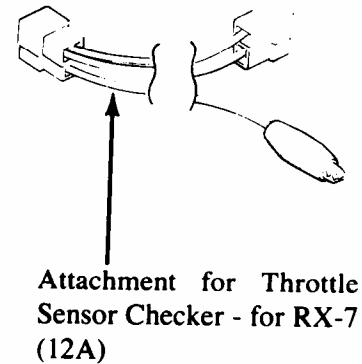
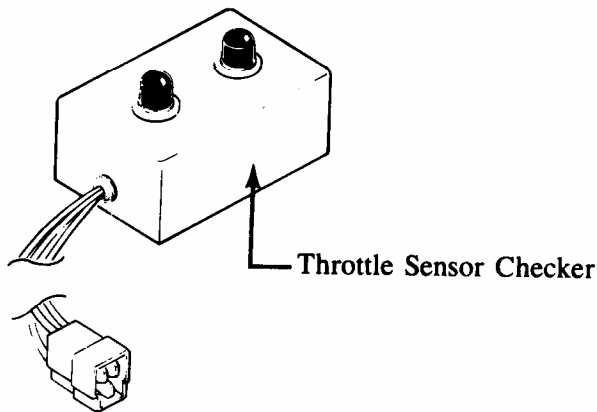
**Category 40
Special Tool**

RX-7

SUBJECT Throttle Sensor Checker.

DESCRIPTION

The Throttle Sensor Checker and Attachment have been established for adjusting the throttle sensor for 1984-1985 RX-7 (13B) with E.G.I. and 1981-1985 RX-7 (12A) with carburetor.



PARTS INFORMATION

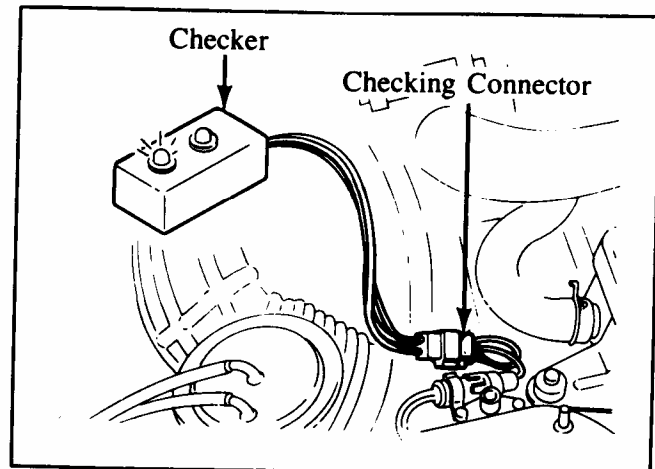
PART NUMBER	DESCRIPTION
0000 41 0200	Throttle Sensor Checker & Attachment

USAGE

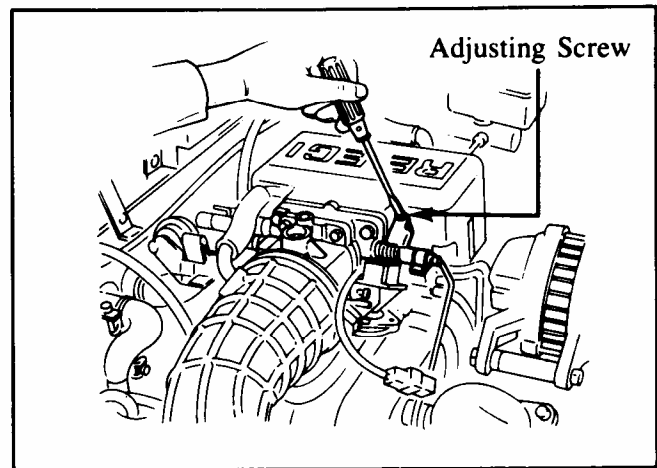
1984-1985 RX-7 (13B) with E.G.I.

CHECKING THROTTLE SENSOR

1. Warm up the engine to the normal operating temperature. Turn off the engine.
2. Connect the checker to the checking connector (green).
3. Turn on the ignition switch and check that one of the lamps illuminates.



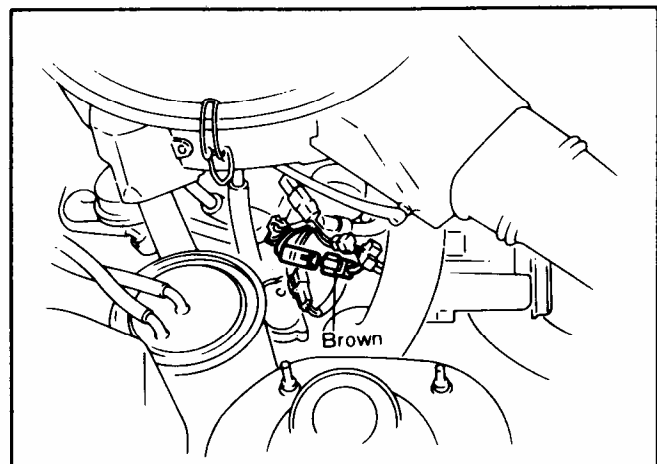
4. If both lamps illuminate or neither lamp illuminates, proceed as follows:
 - Remove the cap from the adjusting screw.
 - If both lamps illuminate, turn the adjusting screw counterclockwise until only the red lamp illuminates. Then turn the adjusting screw an additional $\frac{1}{4}$ turn counterclockwise.
 - If neither lamp illuminates, turn the adjusting screw clockwise until only the red lamp illuminates. Then turn the adjusting screw an additional $\frac{1}{4}$ turn clockwise.
5. Reinstall the cap on the adjusting screw.



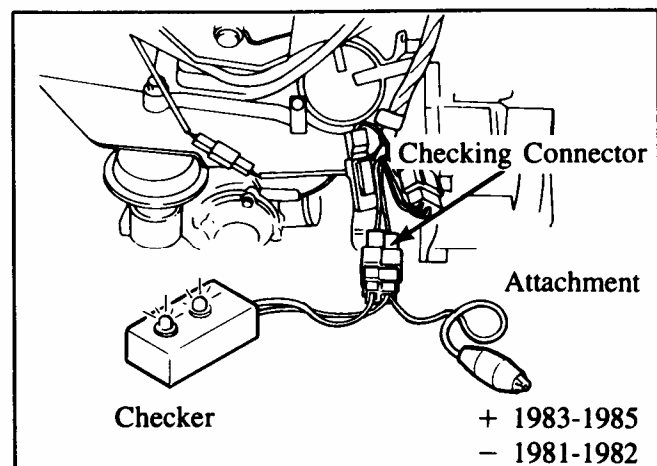
1981-1985 RX-7 (12A) with carburetor

CHECKING THROTTLE SENSOR

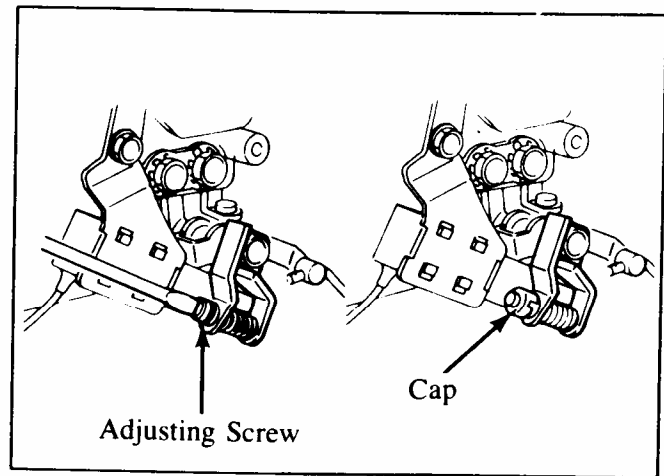
1. Warm up the engine to the normal operating temperature. Turn off the engine.
2. Disconnect the connector (brown) as shown.



3. Connect the attachment for the throttle sensor checker to the checking connector as shown. The color of the checking connector is:
 - Green - 1984-1985 RX-7
 - Black - 1981-1983 RX-7
4. Attach the red clip of the attachment to the battery as follows:
 - + terminal - 1983-1985 RX-7
 - terminal - 1981-1982 RX-7
5. Start the engine. Raise the engine speed to 3000 rpm and release the throttle. Check that the green and red lamps illuminate at the same time.
6. If the green and red lamp do not illuminate at the same time, proceed as follows:



- Remove the cap from the adjusting screw.
 - If the red lamp illuminates first, turn the adjusting screw counterclockwise until both lamps illuminate at the same time.
 - If the green lamp illuminates first, turn the adjusting screw clockwise until both lamps illuminate at the same time.
7. Install the cap on the adjusting screw.
 8. Connect the connector (brown) disconnected in Step 2.



1984-1985 RX-7

SUBJECT Correction to Workshop Manual.

DESCRIPTION

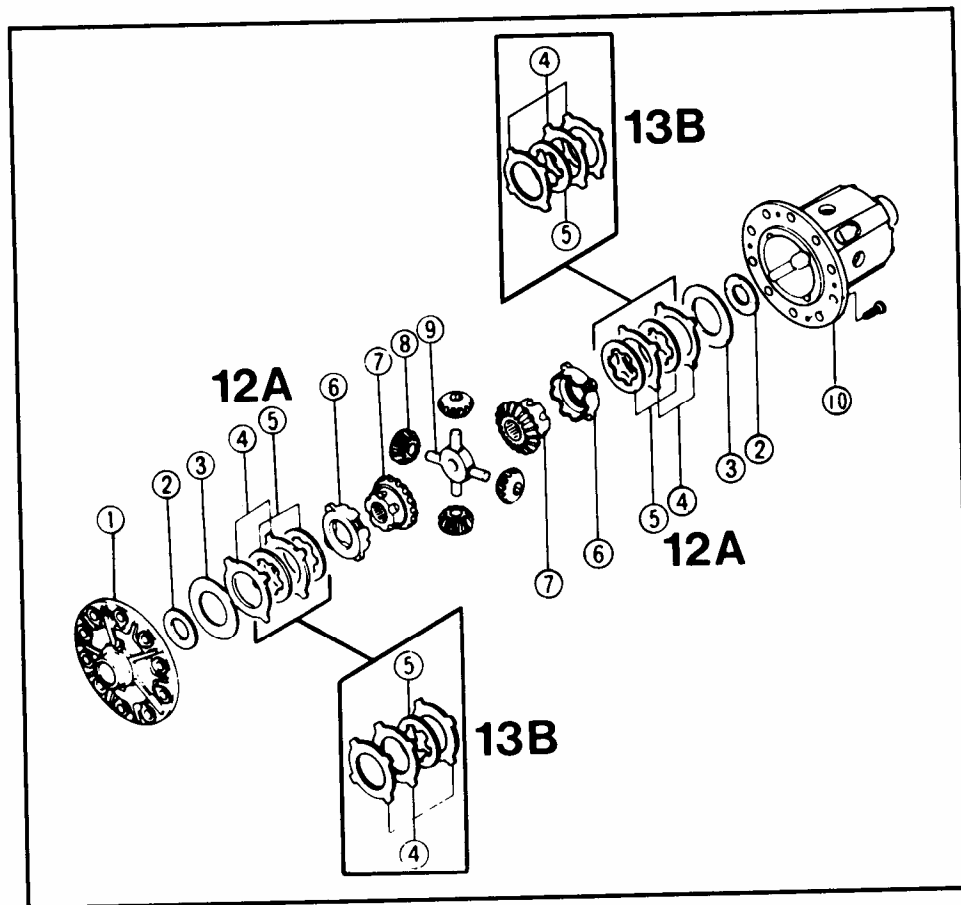
Please make the following corrections to the 1984-85 RX-7 Workshop Manuals. Self-adhesive stickers are provided for your convenience.

A. Figure 47U09X-031 (Addition to illustration)

1984 - Page 9-12

1985 - Page 9-15

NOTE: The quantity and installation order of friction discs and plates are corrected below.



4. Remove the following parts.

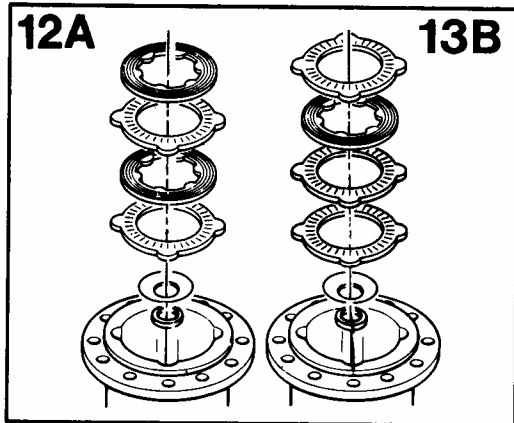
- 1) Differential case left
- 2) Thrust washer
- 3) Conical spring
- 4) Friction plate
- 5) Friction disc
- 6) Pressure ring
- 7) Side gear
- 8) Pinion gear
- 9) Spider
- 10) Differential case right

B. Figures 47U09X-054, 055 and 056 (Replacement for Assembly of differential - LSD model)

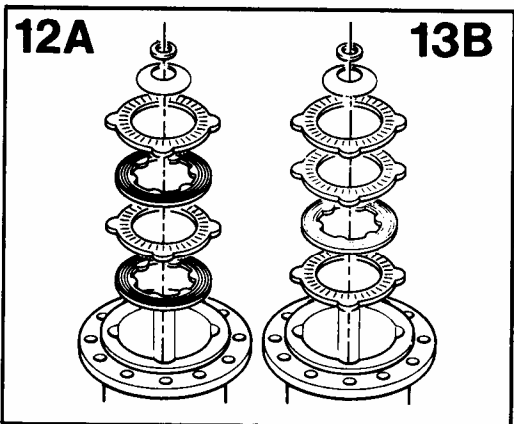
1984 - Page 9-19

1985 - Page 9-22

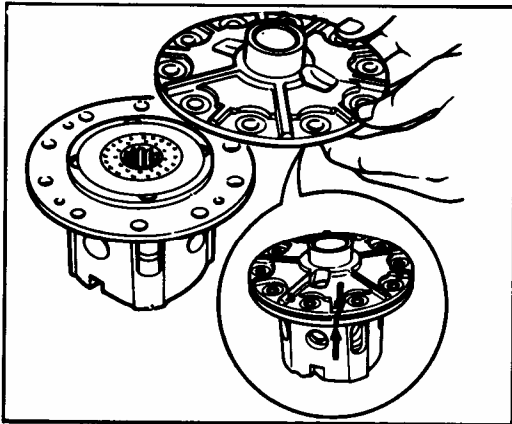
NOTE: The quantity and installation order of friction disc and plate are corrected below.



47U09X-054



47U09X-055



47U09X-056

Assembly of differential (LSD model)

1. Install the following parts to differential case right in the following order.

Order	Engine	12A	13B
1		Thrust washer	
2		Conical spring	
3		Friction plate	Friction plate
4		Friction disc	Friction plate
5		Friction plate	Friction disc
6		Friction disc	Friction plate
7		Pressure ring	

NOTE

Centralize the friction discs so that the splines of the side gear can be easily inserted into friction discs.

Order	Engine	12A	13B
8		Side gear	
9		Pinion gear and spider assembly	
10		Side gear	
11		Pressure ring	
12		Friction disc	Friction plate
13		Friction plate	Friction disc
14		Friction disc	Friction plate
15		Friction plate	Friction plate
16		Conical spring	
17		Thrust washer	
18		Differential case left	

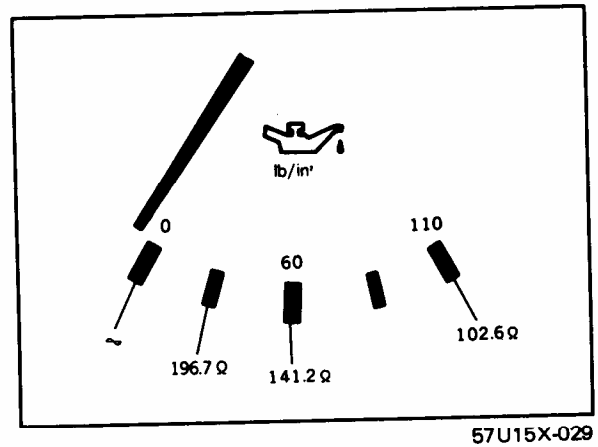
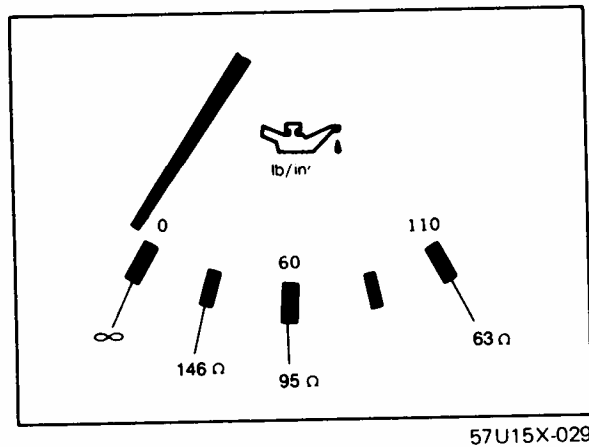
CAUTION

When installing the differential case left onto the differential case right, align the identification marks on the differential case and tighten the attaching screws temporarily.

C. Figure 47U15X-029 (1984) & 57U15X-029 (1985)

1984 - Page 15-21 (figure 47U15X-029)

1985 - Page 15-21 (figure 57U15X-029)



Category 60

013/85
3/15/85

1983-1985 ALL MODELS

SUBJECT Correction to Workshop Manuals.

DESCRIPTION

Please make the following corrections to the 1983-1985 Workshop Manuals. Self-adhesive stickers for one set of manuals has been provided for your convenience. If you are making corrections to more than one set of manuals you will need to make photo copies of the correction stickers so that you can paste them into your remaining manuals.

<p>4:14 1983 4A:59 1984 4A:60 1985</p>	<p>4. Apply vacuum of more than 500 mm-Hg (19.7 in-Hg) to <u>both vacuum diaphragms at the same time</u> and make sure the clearance (G2) is specified value.</p>	<p>4. Apply vacuum of more than 500 mm-Hg (19.7 in-Hg) to <u>No.1 vacuum diaphragms</u> and make sure the clearance (G2) is specified value.</p>
<p>7B:57 1984</p>	<p>4. Damage to the <u>return spring and thrust washer.</u></p>	<p>4. Damage to the <u>thrust spring ring, return spring and thrust washer.</u></p>
<p>7B:66 1984</p>	<p>4. Set and install the one-way clutch inner race, thrust washer <u>and piston return spring.</u></p>	<p>4. Set and install the one-way clutch inner race, thrust washer, <u>piston return spring and thrust spring ring.</u></p>
<p>11:16 1984,85</p>	<p>Checking Brake Disc Standard thickness: <u>22mm(0.866in)</u> Thickness limit: <u>20mm(0.787in)</u></p>	<p>Checking Brake Disc Standard thickness: <u>10mm(0.3937in)</u> Thickness limit: <u>9mm(0.3543in)</u></p>
<p>15:44 1984,85</p>	<p>Circuit Diagram <u>Wiper</u> Motor</p>	<p>Circuit Diagram <u>Washer</u> Motor</p>

Page No.	Correct	Incorrect
15:92 1984	<p>6. (second bullet)</p> <ul style="list-style-type: none"> ● Check whether or not LED No.5 illuminates and LED <u>No.6</u> goes off when the SW 4 lever is moved to the upper position. 	<p>6. (second bullet)</p> <ul style="list-style-type: none"> ● Check whether or not LED No.5 illuminates and LED <u>No.7</u> goes off when the SW 4 lever is moved to the upper position.
22:5 1984 30:5 1985	<p>Alternator Rated output 12A Engine - <u>55A</u> 13B Engine - <u>60A</u></p>	<p>Alternator Rated output 12A Engine - <u>12V 50A</u> 13B Engine - <u>12V 55A</u></p>
22:9 1984 30:9 1985	<p>11. <u>Braking System</u> <u>Max. allowable lateral run-out of brake disc:</u> <u>0.1 mm (0.0039 in)</u> <u>Thickness of lining</u> <u>Standard:</u> <u>6 mm (0.2362 in)</u> <u>Thickness limit:</u> <u>1 mm (0.039 in)</u> <u>Caliper cylinder bore:</u> <u>34.93 mm (1.3752 in)</u> <u>Rear drum brake</u> <u>Drum diameter</u> <u>Standard:</u> <u>200 mm (7.8741 in)</u> <u>Limit:</u> <u>201 mm (7.9135 in)</u> <u>Thickness of lining</u> <u>Standard:</u> <u>4.0 mm (0.1575 in)</u> <u>Thickness limit:</u> <u>1.0 mm (0.039 in)</u> <u>Wheel cylinder bore:</u> <u>19.05 mm (0.750 in)</u> <u>Clearance between piston and bore</u> <u>Standard:</u> <u>0.040–0.125 mm</u> <u>(0.0016–0.0049 in)</u> <u>Limit:</u> <u>0.15 mm (0.006 in)</u></p>	<p>11. <u>Braking System</u> <u>Max. allowable lateral:</u> <u>10 mm (0.3937 in)</u> <u>run-out of brake disc:</u> <u>9 mm (0.3543 in)</u> <u>Thickness of lining</u> <u>Standard:</u> <u>0.1 mm (0.0039 in)</u> <u>Thickness limit</u> <u>Caliper cylinder bore:</u> <u>6 mm (0.2362 in)</u> <u>Rear drum brake:</u> <u>1 mm (0.039 in)</u> <u>Drum diameter:</u> <u>34.93 mm (1.3752 in)</u> <u>Standard</u> <u>Limit</u> <u>Thickness of lining:</u> <u>200 mm (7.8741 in)</u> <u>Standard:</u> <u>201 mm (7.9135 in)</u> <u>Thickness limit</u> <u>Wheel cylinder bore:</u> <u>4.0 mm (0.1575)</u> <u>Clearance between piston:</u> <u>1.0 mm (0.039 in)</u> <u>and bore:</u> <u>19.05 mm (0.750 in)</u></p>

Page No.	Correct	Incorrect
<p>4B:70 1984,85</p>		<p>Control unit connector</p>
<p>7B:57 1984,85</p>		
<p>7B:60 1984</p>		

Page No.	Correct	Incorrect
<p>7B:61 1984,85</p>		
<p>7B:65 1984</p>		
<p>7B:65 1985</p>		
<p>15:44 1984,85</p>		
<p>15:87 1984,85 G-1 G-2 1984 (Wiring Diagram) 50:26 50:28 1985</p>		