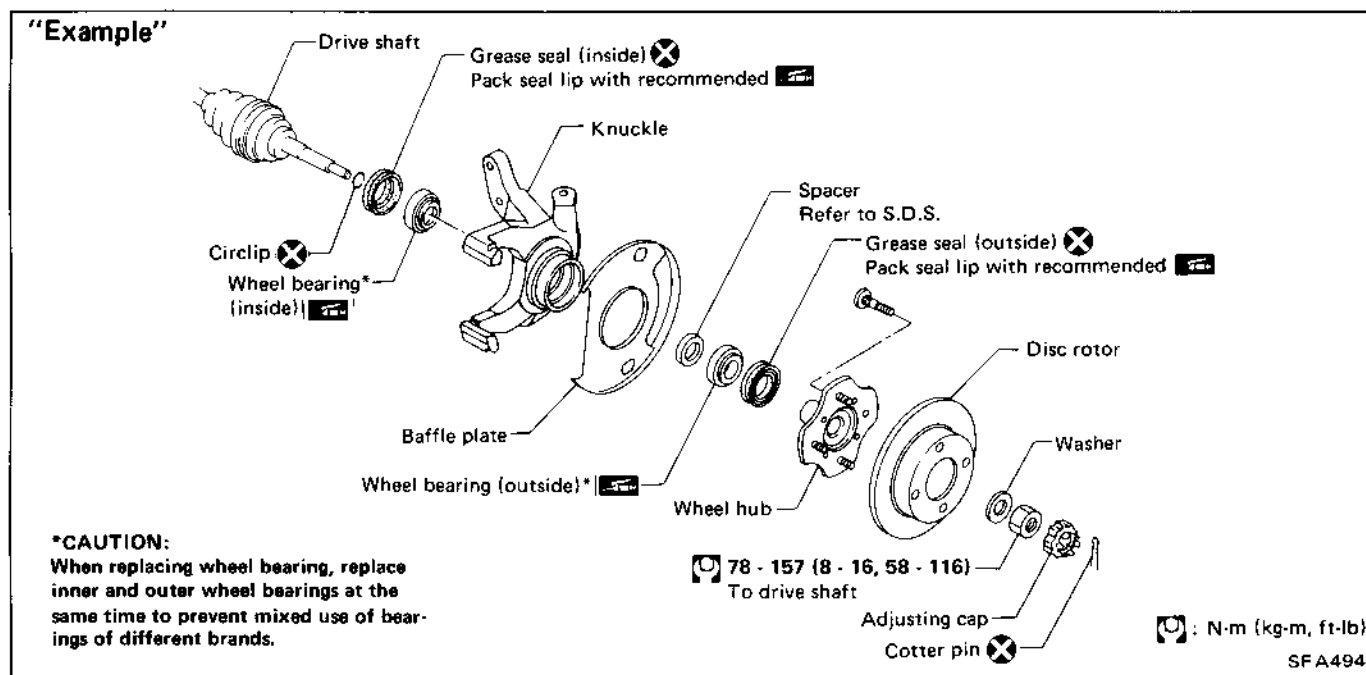








HOW TO USE THIS MANUAL

1. **A QUICK REFERENCE INDEX**, a black tab (e.g. **FA**) is provided on the first page. You can quickly find the first page of each section by mating it to the section's black tab.
2. **THE CONTENTS** are listed on the first page of each section.
3. **THE TITLE** is indicated on the upper portion of each page and shows the part or system.
4. **THE PAGE NUMBER** of each section consists of two letters, which designate the particular section, and a number (e.g. "FA-5").
5. **THE LARGE ILLUSTRATION** is an exploded view (See below) and contains tightening torques, lubrication points and other information necessary to perform repairs. The illustration should be used in reference to the service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.

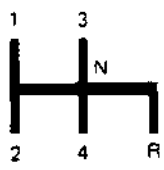
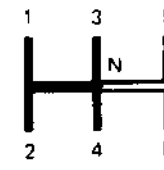


6. **THE SMALL ILLUSTRATION** shows the important steps such as inspection, use of special tools, knacks of work and hidden or tricky steps which are not shown in the previous large illustration. Assembly, inspection and adjustment procedures for the complicated units such as the automatic transaxle or transmission, etc. are presented in a step-by-step format where necessary.
7. The followings **SYMBOLS AND ABBREVIATIONS** are used:

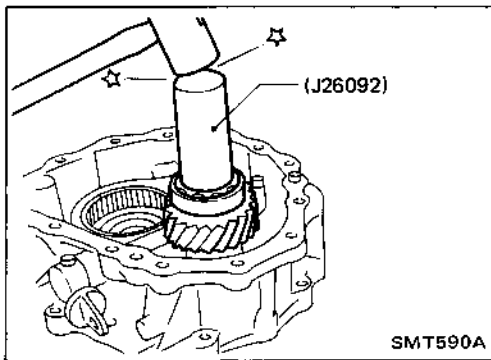
	: Tightening Torque	S.D.S.:	Service Data and Specifications
	: Should be lubricated with grease. Unless otherwise indicated, use recommended multi-purpose grease.	L.H., R.H.:	Left-Hand, Right-Hand
	: Should be lubricated with oil.	M/T:	Manual Transaxle/Transmission
	: Sealing point	A/T:	Automatic Transaxle/Transmission
	: Checking point	Tool:	Special Service Tools
	: Always replace when disassembled.		

SERVICE DATA AND SPECIFICATIONS (S.D.S.)

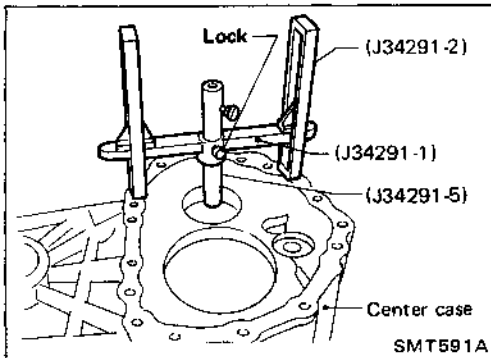
General Specifications

Vehicle model	2WD		4WD		2WD	4WD
Transmission model	F4W71C		FS5W71C		FS5R30A	
Engine	Z24i				VG30i	
No. of speeds	4		5			
Shift pattern						
Synchromesh type	Warner					
Gear ratio						
1st	3.321	3.321	3.592	3.985	3.580	4.061
2nd	1.902	1.902	2.246	2.246	2.077	2.357
3rd	1.308	1.308	1.415	1.415	1.360	1.490
4th	1.000	1.000	1.000	1.000	1.000	1.000
O.D.	—	0.838	0.821	0.821	0.811	0.862
Reverse	3.382	3.382	3.657	3.657	3.636	4.125
No. of teeth						
Mainshaft						
Drive	22	22	21	21	22	20
1st	33	33	33	34	32	32
2nd	27	27	28	28	30	30
3rd	26	26	26	26	29	28
O.D.	—	22	21	21	24	23
Reverse	36	36	36	36	30	30
Countershaft						
Drive	31	31	32	32	32	33
1st	14	14	14	13	13	13
2nd	20	20	19	19	21	21
3rd	28	28	28	28	31	31
O.D.	—	37	39	39	43	44
Reverse	15	15	15	15	12	12
Reverse idler gear	21	21	21	21	22	22
Oil capacity ℓ (US pt, Imp pt)	1.7 (3-5/8, 3)	2.0 (4-1/4, 3-1/2)	4.0 (8-1/2, 7)		2.4 (5-1/8, 4-1/4)	3.6 (7-5/8, 6-3/8)

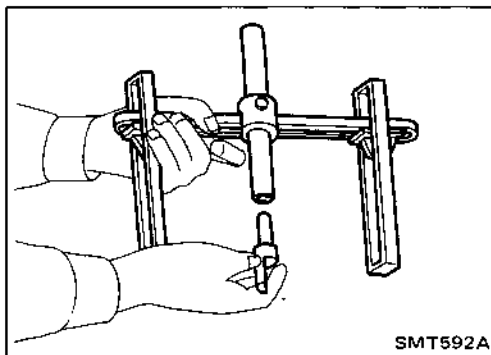
ASSEMBLY



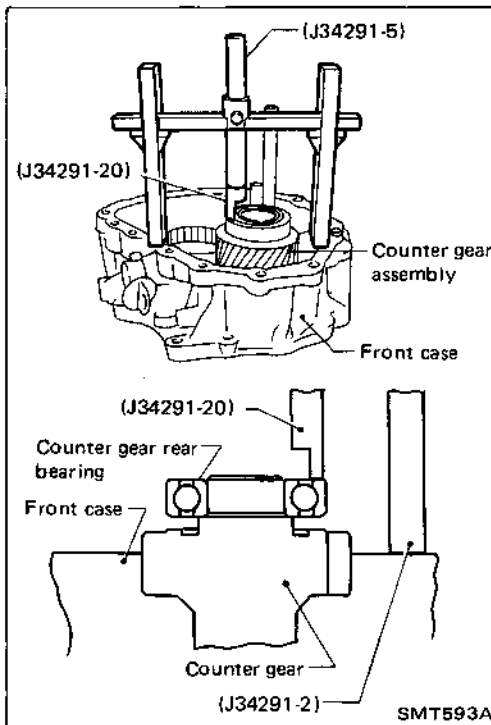
2. Select counter gear rear bearing shim.
- a. Seat counter gear assembly.



- b. Place J34291-1 (bridge), J34291-2 (legs) and J34291-5 (gauging cylinder) on machined surface of center case and allow gauging cylinder to rest on top outer portion of counter gear rear bearing. Lock gauging cylinder in place.



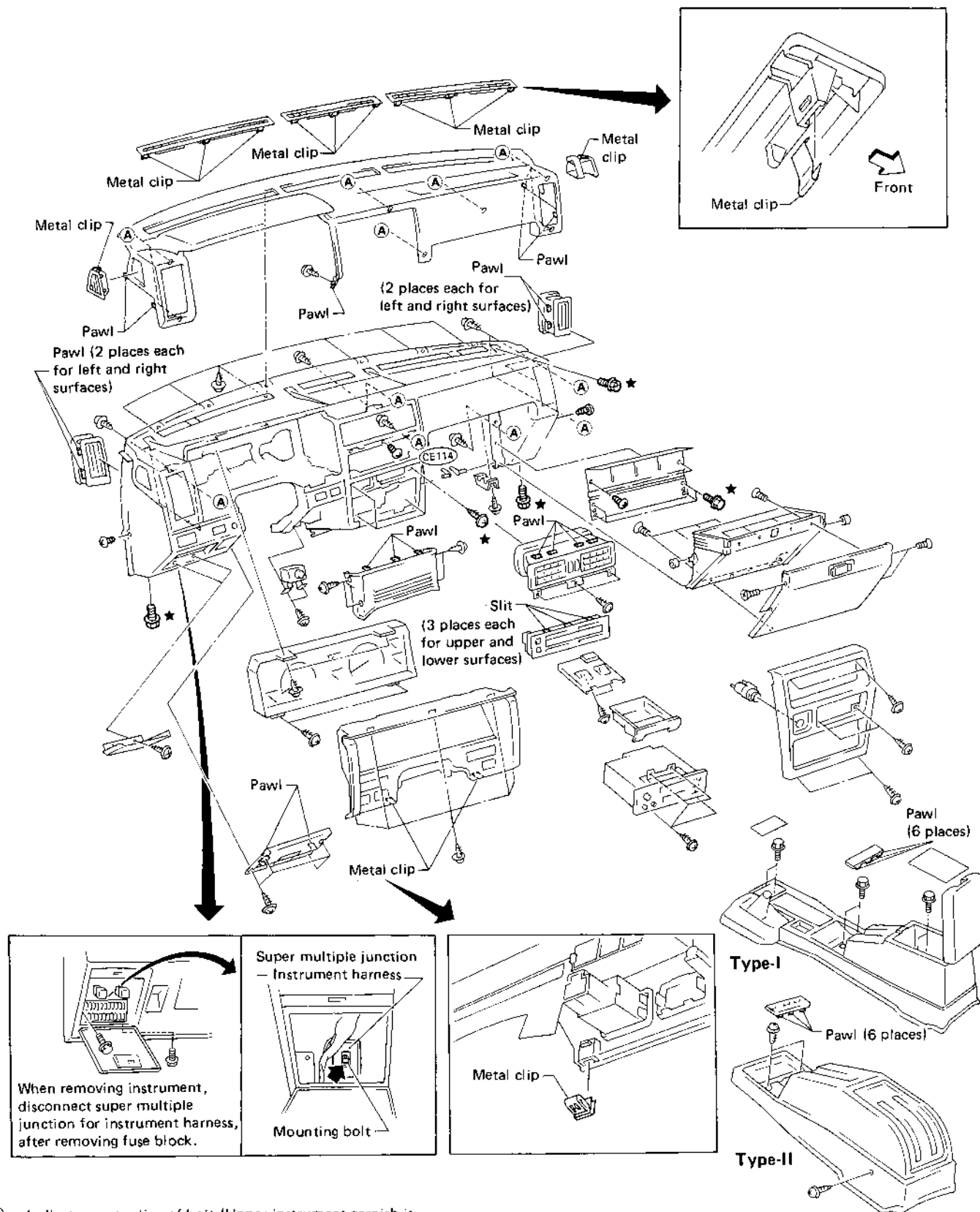
- c. Insert J34291-20 (gauging plunger) into J34291-5 (gauging cylinder).



- d. Place bridge, legs, gauging cylinder and gauging plunger onto machined surface of front case assembly, and allow gauging plunger to drop until it contacts counter gear rear bearing mating surface.

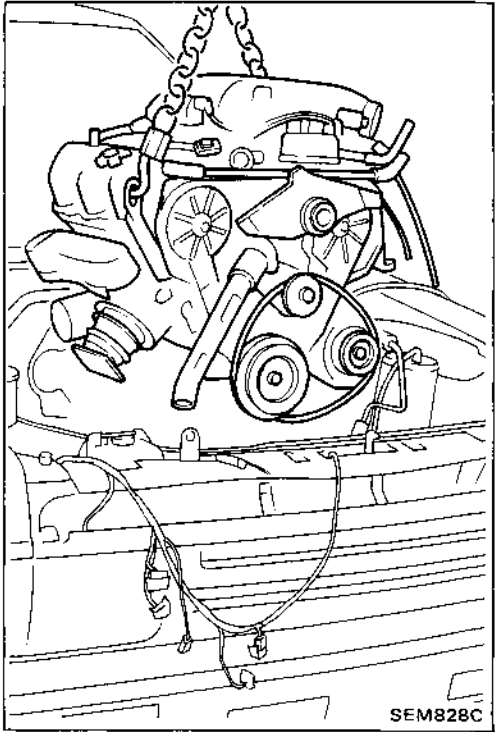
INSTRUMENT

- These parts are made of plastic, so do not use excessive force and be careful not to damage it.
- When removing instrument assembly, remove front pillar garnish.



- Ⓐ : Indicates center line of bolt (Upper instrument garnish is secured by screws from behind instrument panel.)
- ★ : Instrument assembly mounting screw

SBF814D

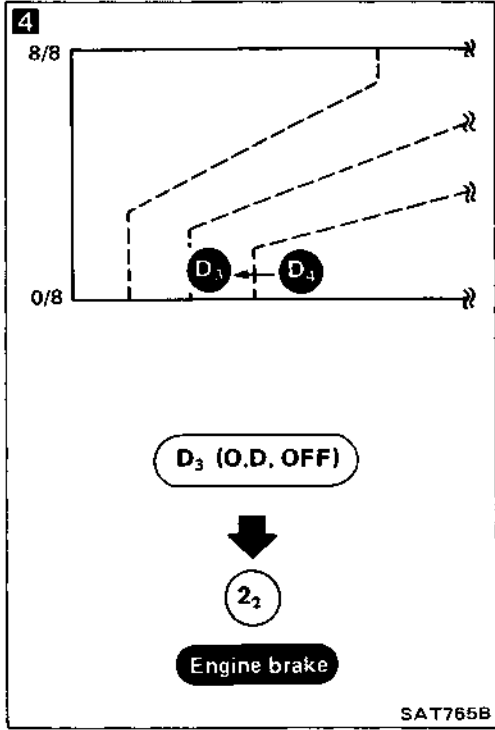
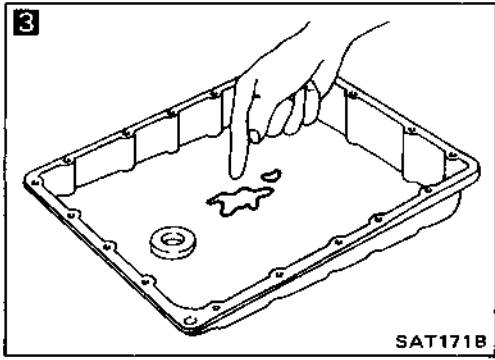
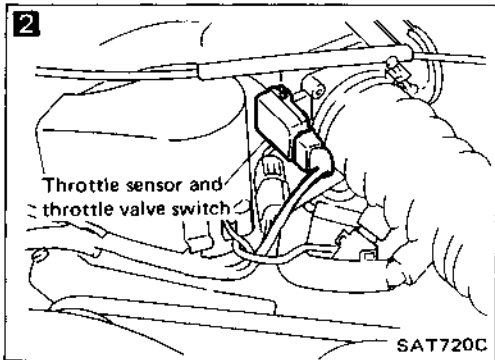
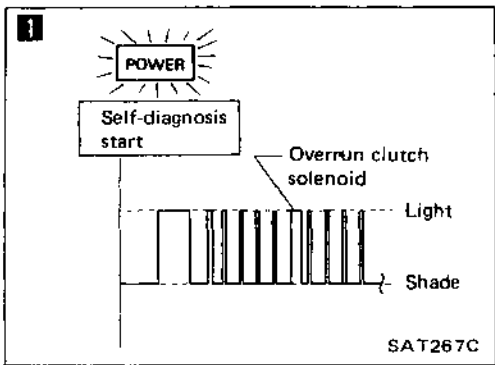


Removal

1. Remove engine undercover and hood.
 2. Drain engine coolant.
 3. Remove vacuum hoses, fuel tubes, wires, harnesses and connectors and so on.
 4. Remove radiator with shroud and cooling fan.
 5. Remove drive belts.
 6. Remove power steering oil pump and air conditioner compressor.
 7. Remove front exhaust tube.
 8. Remove transmission from vehicle.
- Refer to MT and AT sections.**
9. Install engine slingers.
 10. Hoist engine with engine slingers and remove engine mounting bolts from both sides.
 11. Remove engine from vehicle.

Diagnostic Procedure 16

SYMPTOM: Engine speed does not return to idle smoothly when A/T is shifted from D₄ to D₃ with accelerator pedal released.
 Vehicle does not decelerate by engine brake when changing overdrive switch to "OFF" position with accelerator pedal released.
 Vehicle does not decelerate by engine brake when changing selector lever from "D" to "2" range with accelerator pedal released.



```

    graph TD
        Q1[1. Does self-diagnosis show damage to overrun clutch solenoid circuit after cruise test?] -- Yes --> A1[Check overrun clutch solenoid circuit. - Refer to "Self-diagnosis".]
        Q1 -- No --> Q2[2. Check throttle sensor. - Refer to section EF & EC.]
        Q2 -- N.G. --> A2[Repair or replace throttle sensor.]
        Q2 -- O.K. --> Q3[3. 1. Remove oil pan.  
2. Check A/T fluid condition.]
        Q3 -- N.G. --> A3[1. Remove control valve assembly. - Refer to "ON-VEHICLE SERVICE".  
2. Check the following items:  
• Overrun clutch control valve  
• Overrun clutch reducing valve  
• Overrun clutch solenoid]
        Q3 -- O.K. --> A4[3. Disassemble A/T.  
4. Check the following items:  
• Overrun clutch assembly  
• Oil pump assembly]
        A3 --> Q4[4. Check again.]
        A4 --> Q4
        Q4 -- N.G. --> A5[1. Perform A/T control unit input/output signal inspection.  
2. If N.G., recheck A/T control unit pin terminals for damage or connection of A/T control unit harness connector.]
        Q4 -- O.K. --> END[INSPECTION END]
    
```

SERVICE DATA AND SPECIFICATIONS (S.D.S.)

Final Drive (Cont'd)

INSPECTION AND ADJUSTMENT (C200)

Ring gear runout

Ring gear runout limit mm (in)	0.05 (0.0020)
-----------------------------------	---------------

Side gear adjustment

Side gear backlash (Clearance between side gear and differential case) mm (in)	0.10 - 0.20 (0.0039 - 0.0079)
--	----------------------------------

Available side gear thrust washers

Thickness mm (in)	Part number
0.775 (0.0305)	38424-E3000
0.825 (0.0325)	38424-E3001
0.875 (0.0344)	38424-E3002
0.925 (0.0364)	38424-E3003

— Additional service for limited slip differential model —

Differential torque adjustment

Differential torque N·m (kg·m, ft·lb)	177 - 216 (18 - 22, 130 - 159)
Number of discs and plates (One side)	
Friction disc	6
Friction plate	6
Spring disc	0
Spring plate	1
Wear limit of plate and disc mm (in)	0.1 (0.004)
Allowable warpage of friction disc and plate mm (in)	0.05 - 0.15 (0.0020 - 0.0059)

Available disc and plates

Part name	Thickness mm (in)	Part number
Friction disc	1.48 - 1.52 (0.0583 - 0.0598)	38433-C6002 (Standard type)
	1.58 - 1.62 (0.0622 - 0.0638)	38433-C6003 (Adjusting type)
Friction plate	1.48 - 1.52 (0.0583 - 0.0598)	38432-C6001
Spring plate	1.48 - 1.52 (0.0583 - 0.0598)	38435-C6011

Total preload adjustment

Total preload N·m (kg·cm, in·lb)	1.2 - 2.3 (12 - 23, 10 - 20)
Ring gear backlash mm (in)	0.13 - 0.18 (0.0051 - 0.0071)

Drive pinion height adjustment

Available drive pinion preload adjusting washers

Thickness mm (in)	Part number
3.09 (0.1217)	38154-P6017
3.12 (0.1228)	38154-P6018
3.15 (0.1240)	38154-P6019
3.18 (0.1252)	38154-P6020
3.21 (0.1264)	38154-P6021
3.24 (0.1276)	38154-P6022
3.27 (0.1287)	38154-P6023
3.30 (0.1299)	38154-P6024
3.33 (0.1311)	38154-P6025
3.36 (0.1323)	38154-P6026
3.39 (0.1335)	38154-P6027
3.42 (0.1346)	38154-P6028
3.45 (0.1358)	38154-P6029
3.48 (0.1370)	38154-P6030
3.51 (0.1382)	38154-P6031
3.54 (0.1394)	38154-P6032
3.57 (0.1406)	38154-P6033
3.60 (0.1417)	38154-P6034
3.63 (0.1429)	38154-P6035
3.66 (0.1441)	38154-P6036

Drive pinion preload adjustment

Drive pinion preload N·m (kg·cm, in·lb) With front oil seal	1.1 - 1.7 (11 - 17, 9.5 - 14.8)
---	------------------------------------

Side bearing adjustment

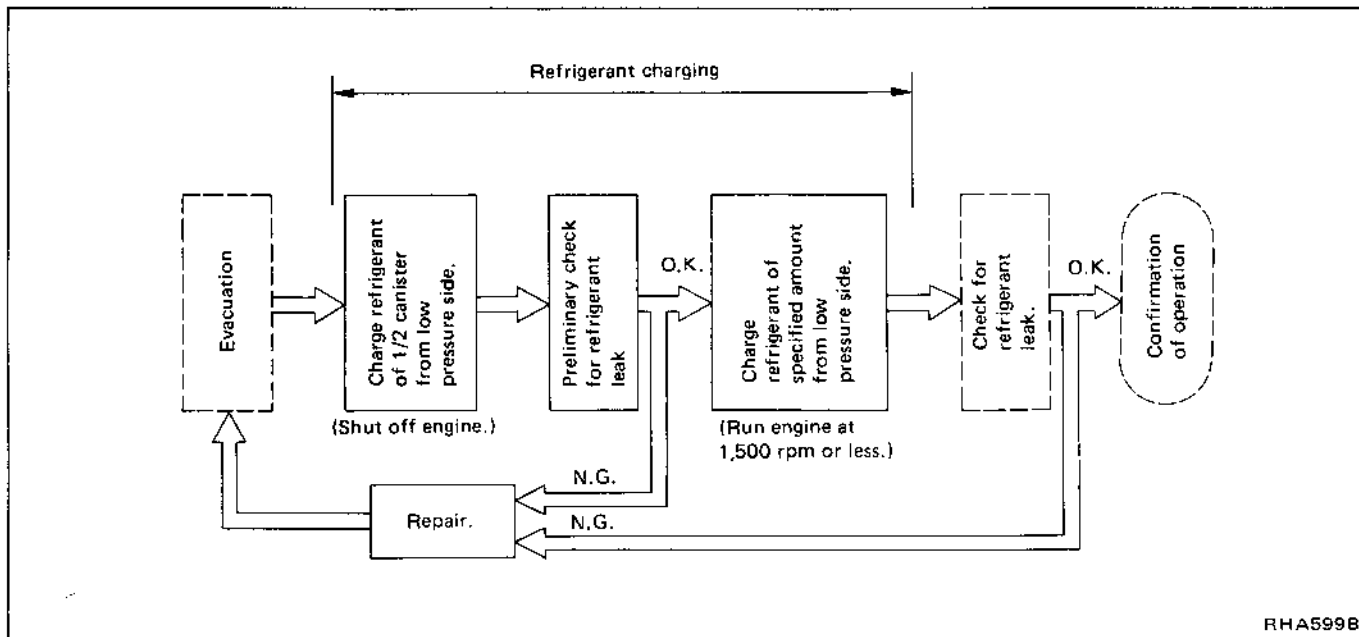
Differential carrier assembly turning resistance N (kg, lb)	34.3 - 39.2 (3.5 - 4.0, 7.7 - 8.8)
--	---------------------------------------

Available side retainer adjusting shims

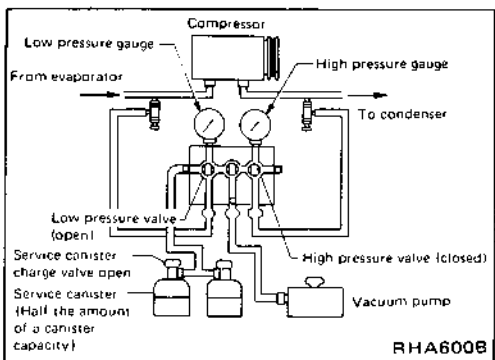
Thickness mm (in)	Part number
2.00 (0.0787)	38453-N3100
2.05 (0.0807)	38453-N3101
2.10 (0.0827)	38453-N3102
2.15 (0.0846)	38453-N3103
2.20 (0.0866)	38453-N3104
2.25 (0.0886)	38453-N3105
2.30 (0.0906)	38453-N3106
2.35 (0.0925)	38453-N3107
2.40 (0.0945)	38453-N3108
2.45 (0.0965)	38453-N3109
2.50 (0.0984)	38453-N3110
2.55 (0.1004)	38453-N3111
2.60 (0.1024)	38453-N3112

EVACUATING, CHARGING AND CHECKING

Charging Refrigerant WORK PROCEDURE



RHA599B



RHA600B

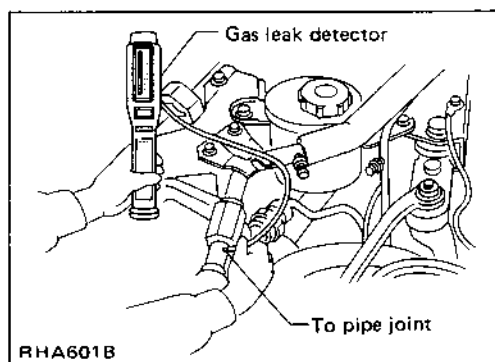
PRELIMINARY CHARGING PROCEDURE

This operation is performed to check the refrigerant leakage and to protect the compressor.

1. Turn the charge valve handle to open a hole in the service canister to allow the refrigerant to flow through the gauge manifold.
2. Open the low pressure valve of the gauge manifold, and charge the refrigerant into the system from the low pressure side.
3. After charging approx. 200 g (7.05 oz) of refrigerant, shut off the low pressure valve.

CAUTION:

- The refrigerant charging operation must be performed after shutting off the engine. If the compressor is operated with an insufficient amount of refrigerant, the compressor may seize up due to a lack of return of the compressor oil.
- Do not shake nor hold the refrigerant canister upside down.



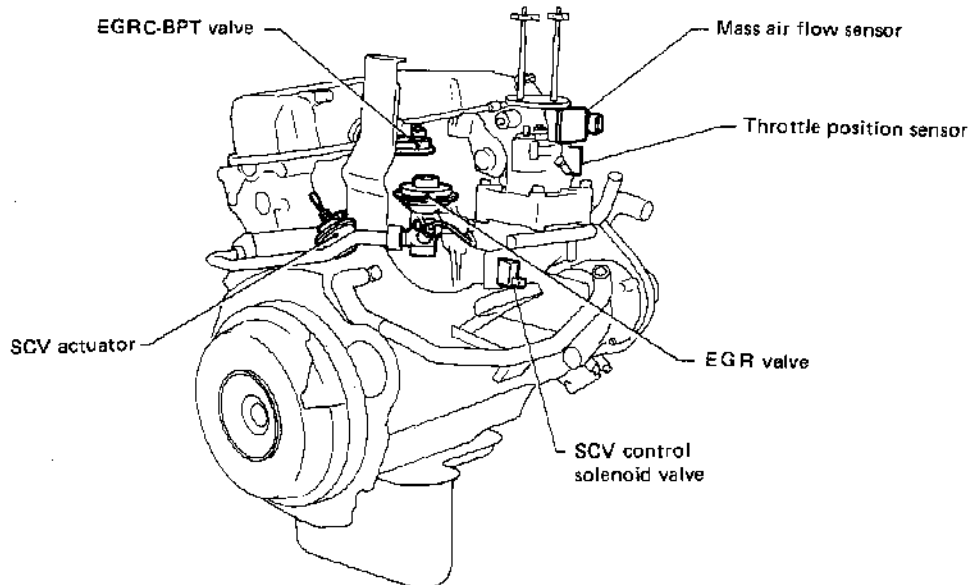
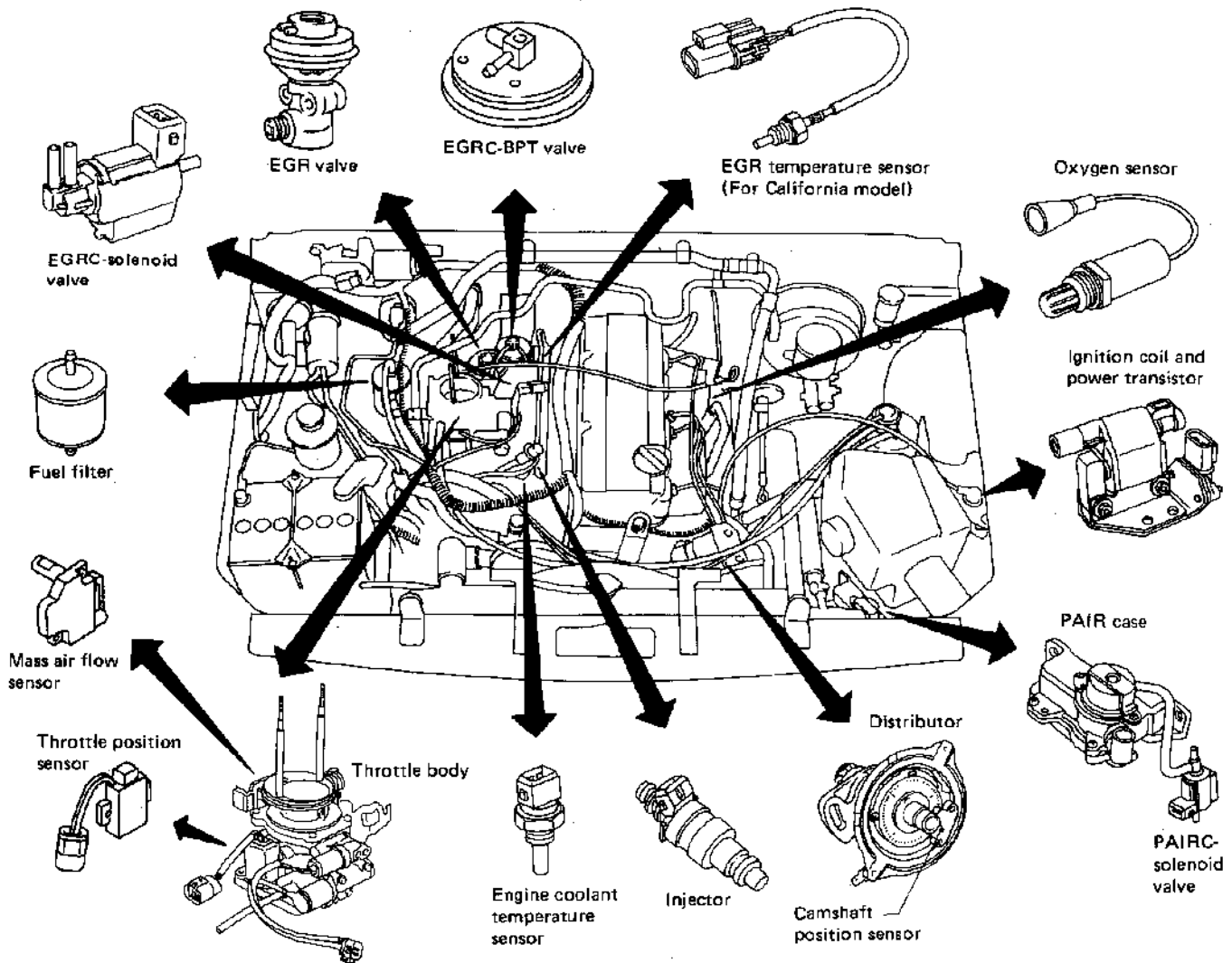
RHA601B

PRELIMINARY CHECK FOR REFRIGERANT LEAKS

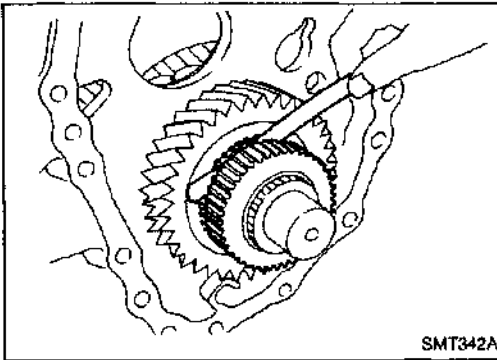
1. Make sure that the gauge manifold valve is closed.
2. Check for refrigerant leak from each connector in the system using the leak detector.

At this point, the pressure in the system is not high. Only large amounts of refrigerant leak due to loose pipe joints, etc. can be detected.

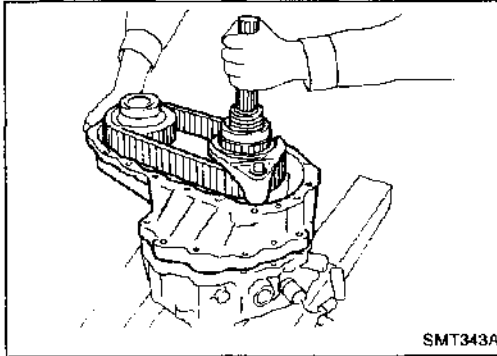
ECCS Component Parts Location (Cont'd)



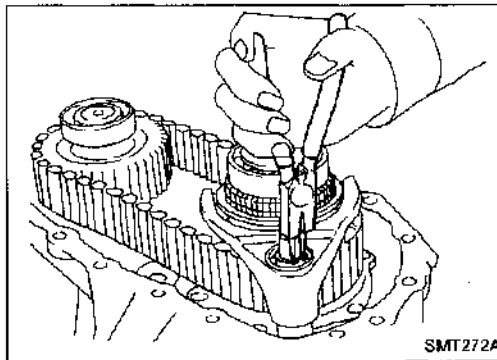
ASSEMBLY



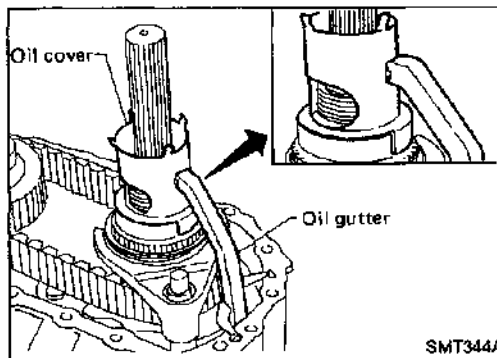
- n. Measure end play of low gear.
Standard: 0.2 - 0.35 mm (0.0079 - 0.0138 in)



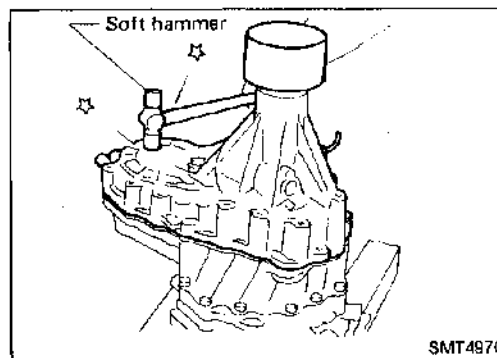
6. Apply sealant to mating surface and put center case assembly onto front case and tighten bolts.



7. Install snap ring to 2-4 shift rod.



8. Install oil gutter and oil cover.
9. Apply gear oil to each part in center case.



10. Apply sealant to mating surface and install rear case on center case.
11. Install 4WD switch.
Apply sealant to thread of switch.

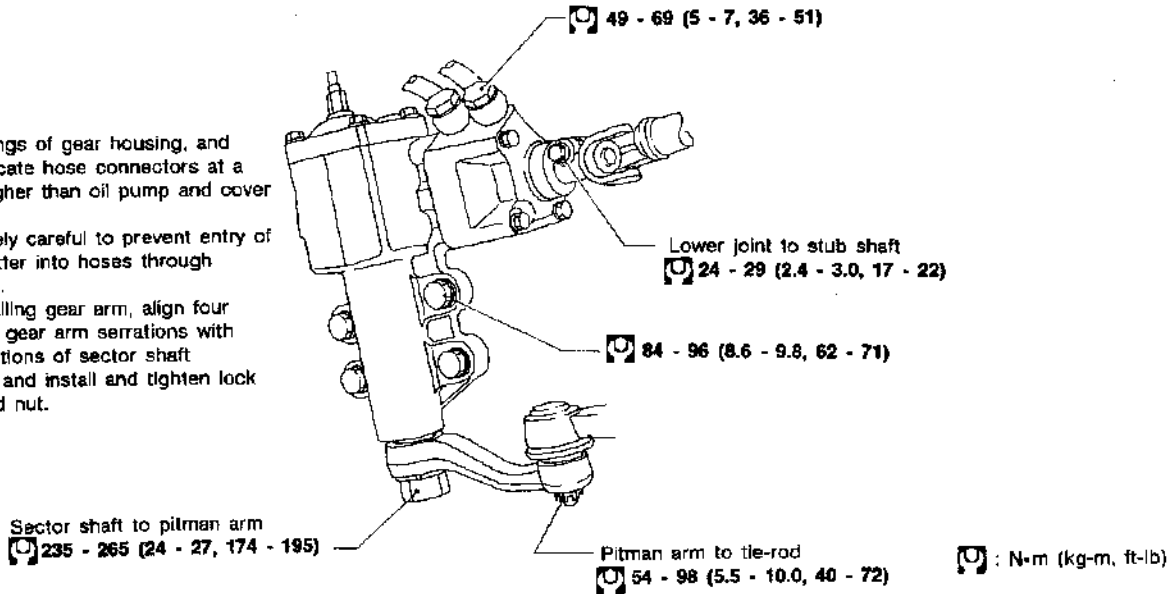
POWER STEERING GEAR (Model: PB59K)

Removal

Before removing, clean exteriors of gear housing and oil pump with steam and dry with compressed air.

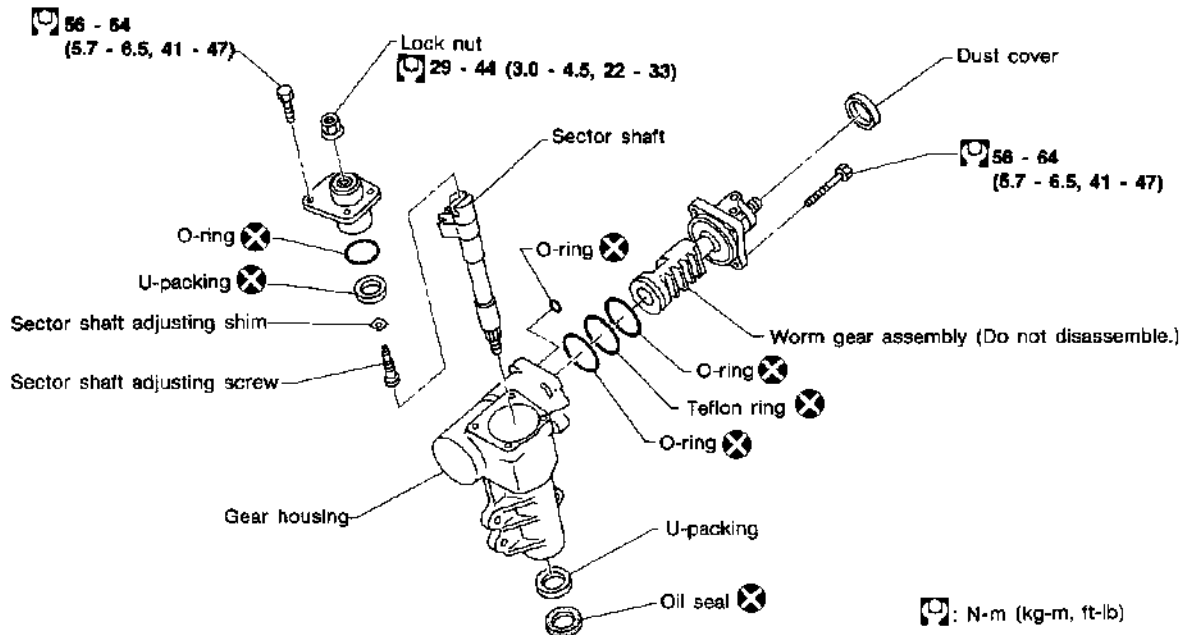
STEERING GEAR

- Plug openings of gear housing, and securely locate hose connectors at a position higher than oil pump and cover with rag.
- Be extremely careful to prevent entry of foreign matter into hoses through connectors.
- When installing gear arm, align four grooves of gear arm serrations with four projections of sector shaft serrations, and install and tighten lock washer and nut.



SST123CA

Power Steering Gear Component

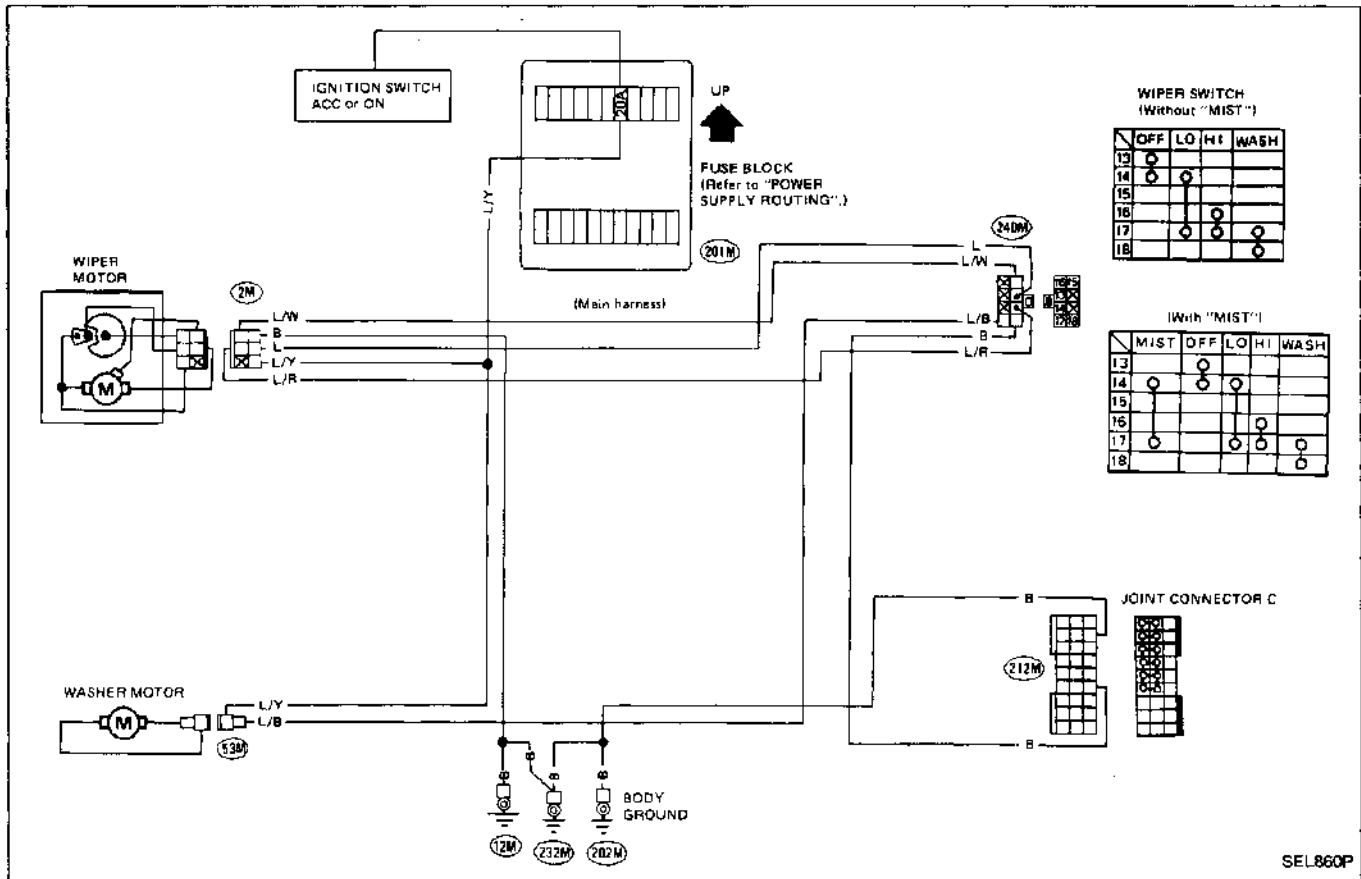


SST314C

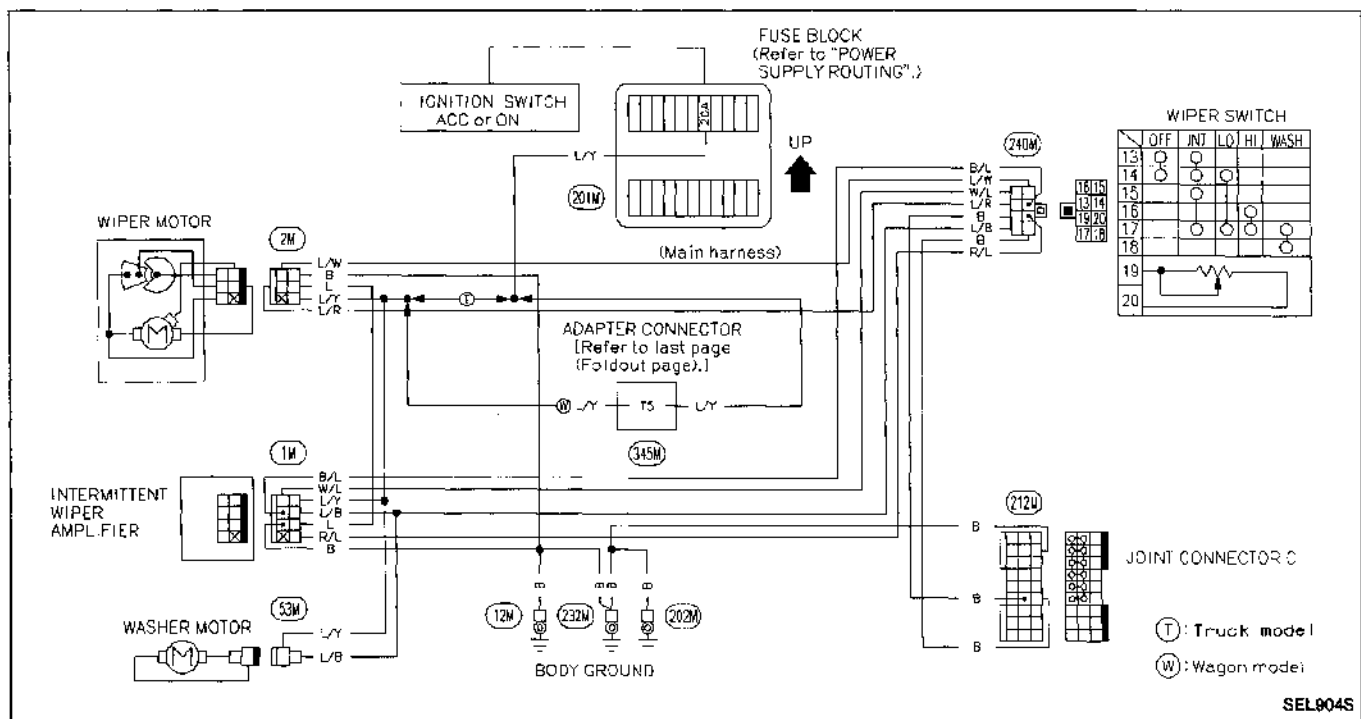
WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram

WITHOUT INTERMITTENT WIPER

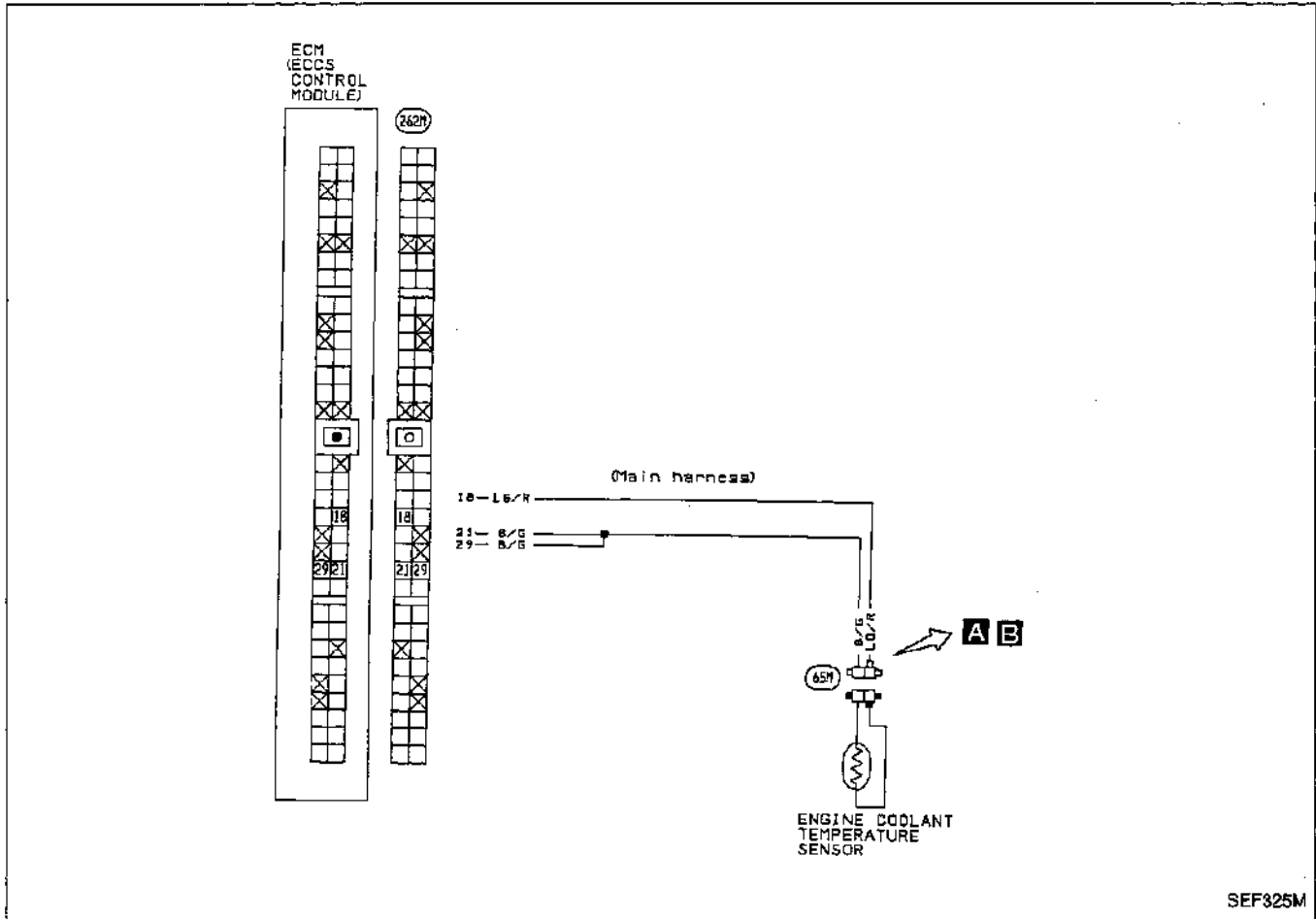


WITH INTERMITTENT WIPER

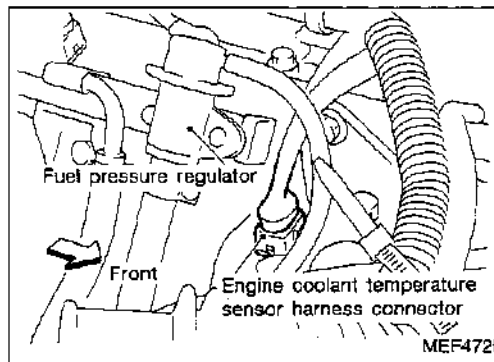
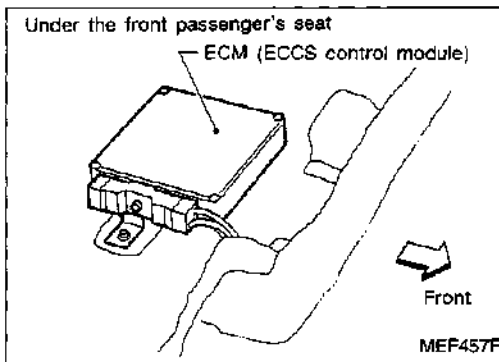


Diagnostic Procedure 25

ENGINE COOLANT TEMPERATURE SENSOR (Diagnostic trouble code No. 13)
(MALFUNCTION INDICATOR LAMP ITEM)

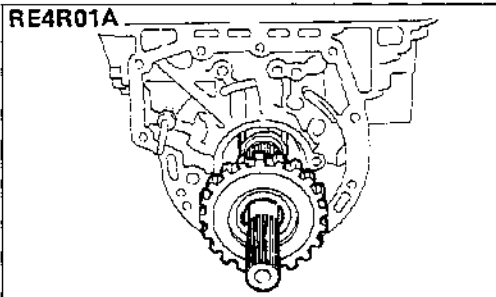


Harness layout

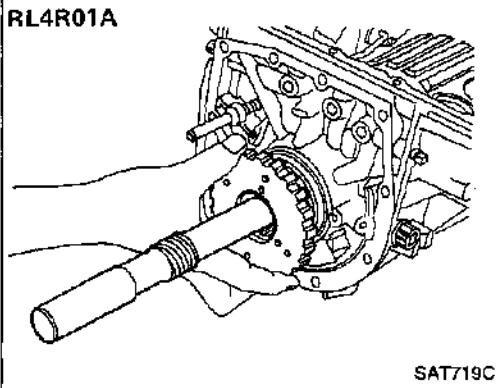


DISASSEMBLY

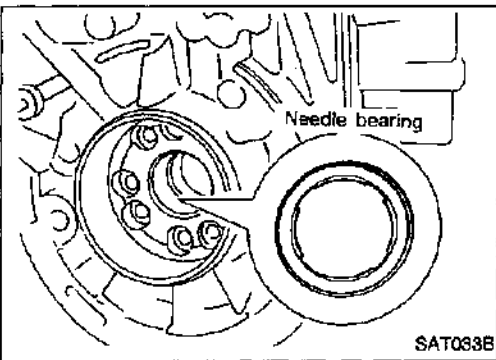
Disassembly (Cont'd)



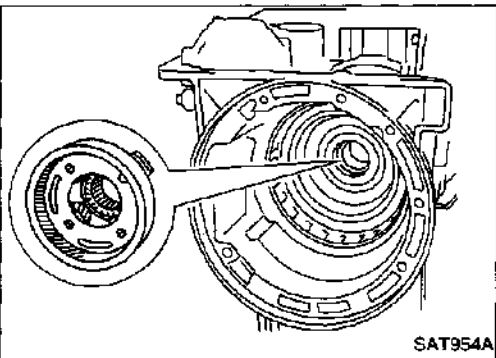
- e. Remove output shaft and parking gear as a unit from transmission case.
- f. Remove parking gear from output shaft.



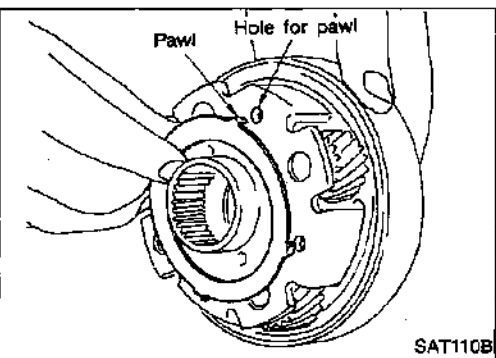
- g. Remove needle bearing from transmission case.



- 19. Remove rear side clutch and gear components.
 - a. Remove front internal gear.

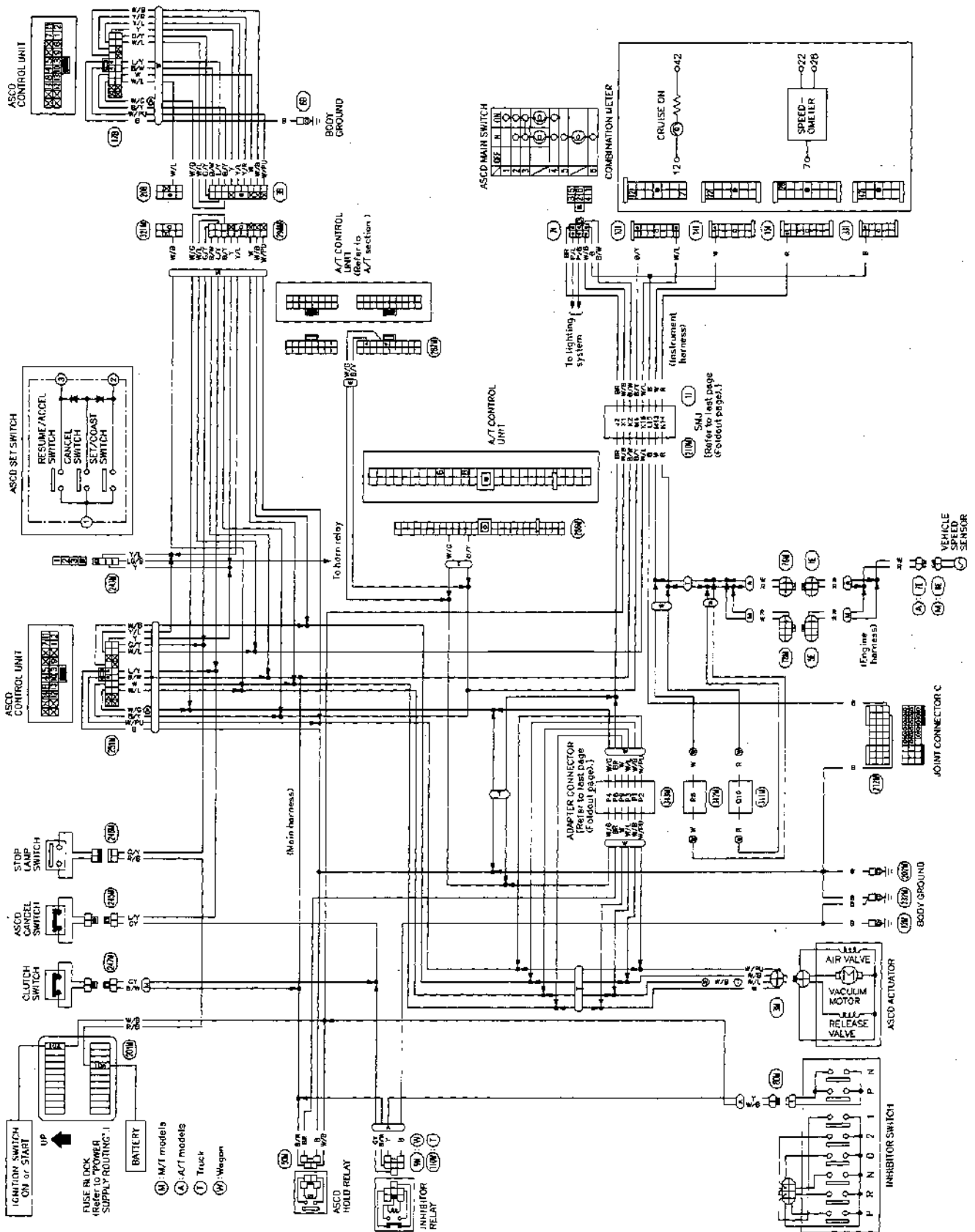


- b. Remove bearing race from front internal gear.



AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram



GI
MA
EM
LC
EF & EC
FE
CL
MT
AT
TF
PD
FA
RA
BR
ST
BF
HA
EL
IDX