adjuster and shim. See Fig. 2. Install dial indicator on Dial Indicator Stand(J-38957). See Fig. 3.

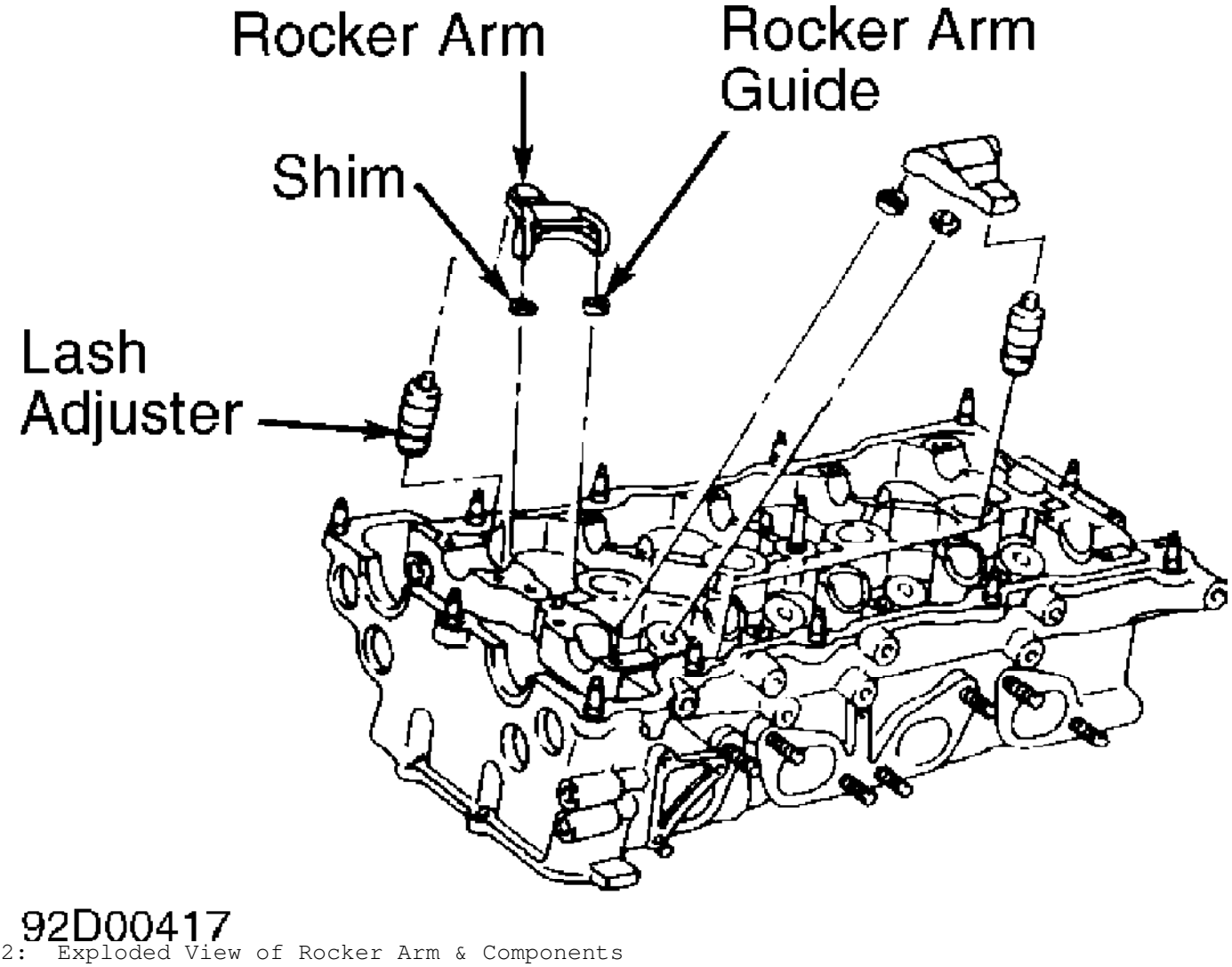


Fig. 2: Exploded View of Rocker Arm & Components
Courtesy of Nissan Motor Co., U.S.A.

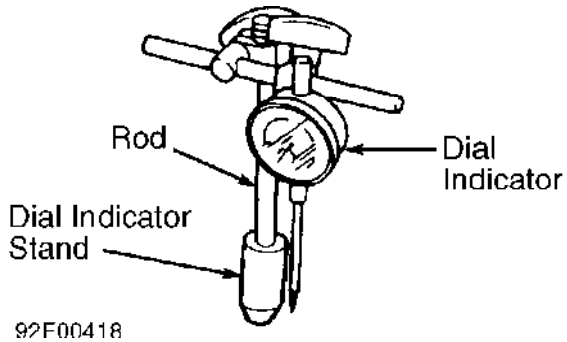


Fig. 3: Installing Dial Indicator Stand
Courtesy of Nissan Motor Co., U.S.A.

2) Install dial indicator assembly in lash adjuster hole in cylinder head. See Fig. 4. Position dial indicator stem on sliding

LATERAL ACCELERATION SWITCHES

See ACCELEROMETERS.

LEDS

See BULBS AND LEDS.

LENSES

LENSE INSPECTION

Condition	Code	Procedure
Application incorrect	A	Require replacement.
Attaching hardware broken	A	Require repair or replacement of hardware.
Attaching hardware missing	C	Require replacement of hardware.
Attaching hardware not functioning	A	Require repair or replacement of hardware.
Broken, affecting performance	A	Require replacement.
Broken, not affecting performance	..	No service suggested or required.
Cracked	A	Require replacement.
Discolored	A	Require replacement.
Leaking	A	Require repair or replacement.
Melted, affecting performance	A	Require replacement.
Melted, not affecting performance	2	Suggest replacement.
Missing	C	Require replacement.

MASTER CYLINDERS

MASTER CYLINDER INSPECTION

Condition	Code	Procedure
Brake fluid leaking from rear of master cylinder bore	B	Require repair or replacement.
Brake pedal drops intermittently	A	(1) Require repair or replacement.
Fluid level low	..	(2) Further inspection required.
Internal valve failure	A	Require repair or replacement.
Master cylinder leaking brake fluid internally	A	Require repair or replacement.
Piston does not return	A	Require repair or replacement.
Ports plugged	A	Require repair or replacement.
Rubber master cylinder cover gasket distorted and gummy	A	(3) Require replacement of the gasket.

Engine pre-oiling can be done using pressure oiler (if available). Connect pressure oiler to cylinder block oil passage such as oil pressure sending unit. Operate pressure oiler long enough to ensure correct amount of oil has filled crankcase. Check oil level while pre-oiling.

If pressure oiler is not available, disconnect ignition system. Remove oil pressure sending unit and replace with oil pressure test gauge. Using starter motor, rotate engine starter until gauge shows normal oil pressure for several seconds. DO NOT crank engine for more than 30 seconds to avoid starter motor damage.

Ensure oil pressure has reached the most distant point from the oil pump. Reinstall oil pressure sending unit. Reconnect ignition system.

INITIAL START-UP

Start the engine and operate engine at low speed while checking for coolant, fuel and oil leaks. Stop engine. Recheck coolant and oil level. Adjust if necessary.

CAMSHAFT

Break-in procedure is required when a new or reground camshaft has been installed. Operate and maintain engine speed between 1500-2500 RPM for approximately 30 minutes. Procedure may vary due to manufacturers recommendations.

PISTON RINGS

Piston rings require a break-in procedure to ensure seating of rings to cylinder walls. Serious damage may occur to rings if correct procedures are not followed.

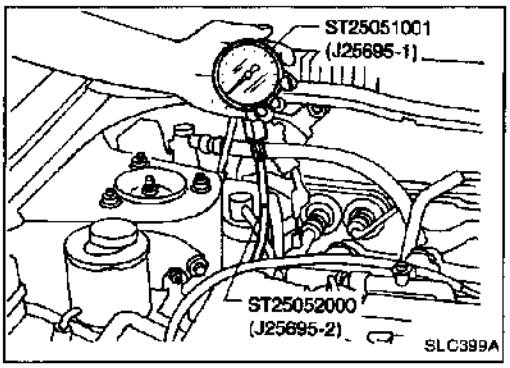
Extremely high piston ring temperatures are produced obtained during break-in process. If rings are exposed to excessively high RPM or high cylinder pressures, ring damage can occur. Follow piston ring manufacturer’s recommended break-in procedure.

FINAL ADJUSTMENTS

Check or adjust ignition timing and dwell (if applicable). Adjust valves (if necessary). Adjust carburetion or injection idle speed and mixture. Retighten cylinder heads (if required). If cylinder head or block is aluminum, retighten bolts when engine is cold. Follow the engine manufacturer’s recommended break-in procedure and maintenance schedule for new engines.

NOTE: Some manufacturer’s require that head bolts be retightened after specified amount of operation. This must be done to prevent head gasket failure.

Oil Pressure Check (Cont'd)



3. Install pressure gauge.
4. Start engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load.

Engine speed rpm	Approximate discharge pressure kPa (kg/cm^2, psi)
Idle speed	More than 78 (0.8, 11)
3,200	314 - 392 (3.2 - 4.0, 46 - 57)

If difference is extreme, check oil passage and oil pump for oil leaks.

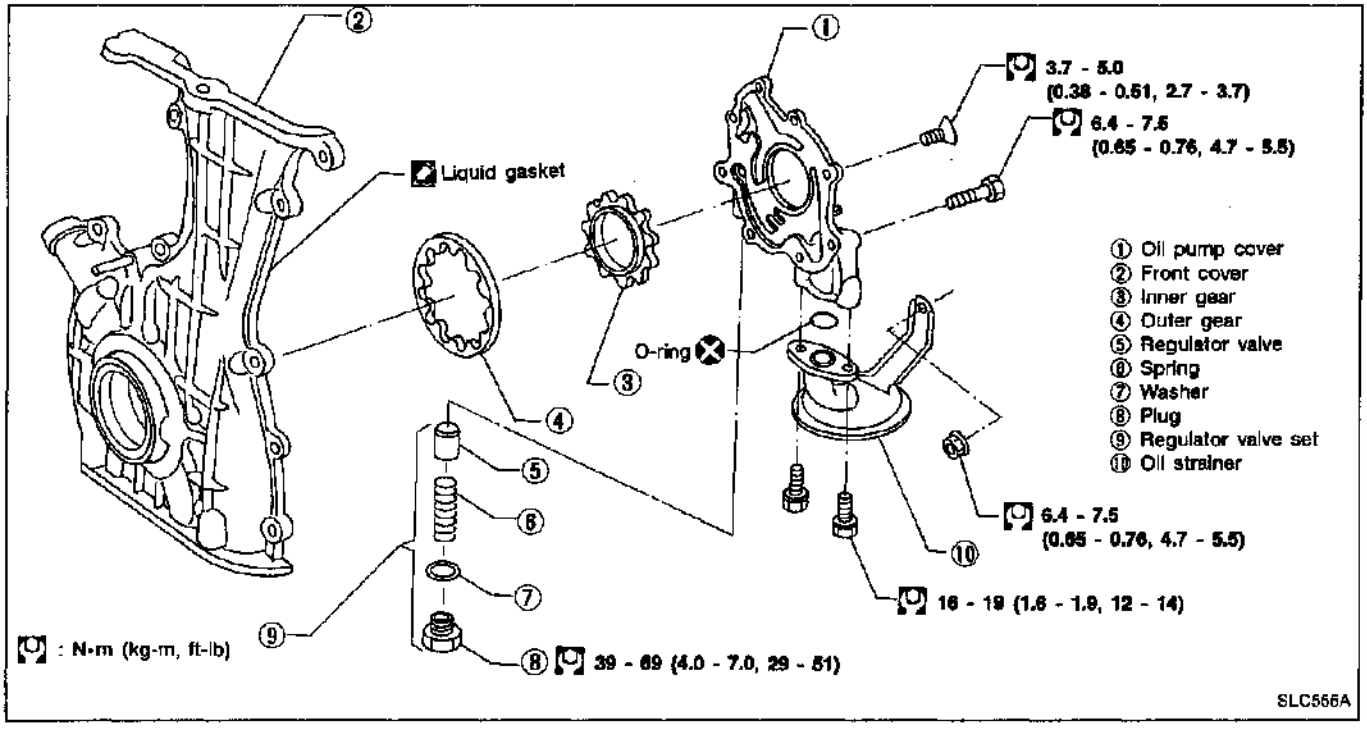
6. Install oil pressure switch with sealant.

Oil Pump

REMOVAL

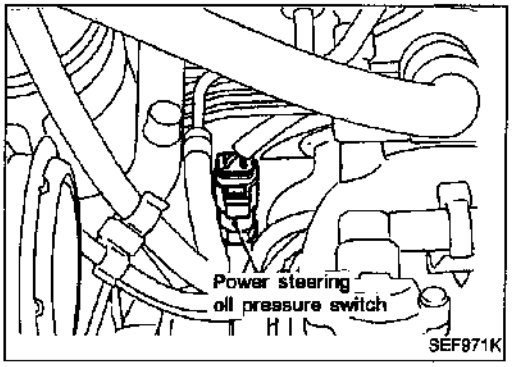
1. Remove drive belts.
2. Remove cylinder head. (Refer to EM section.)
3. Remove oil pans. (Refer to EM section.)
4. Remove oil strainer and baffle plate.
5. Remove front cover assembly.

DISASSEMBLY AND ASSEMBLY



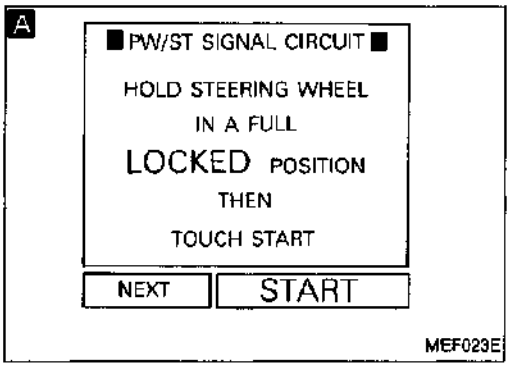
- **Always replace oil seal and O-ring with new ones.**
- **When installing oil pump, apply engine oil to inner and outer gears.**
- **Be sure that O-rings are properly fitted.**

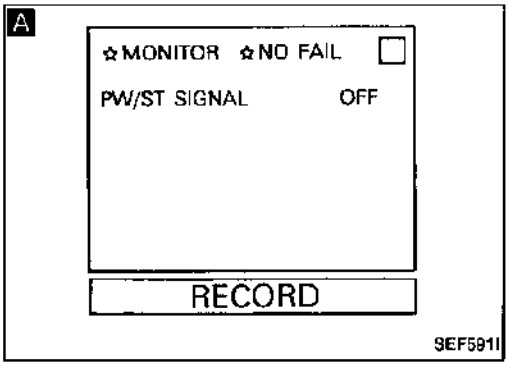
Power Steering Oil Pressure Switch (Cont'd)

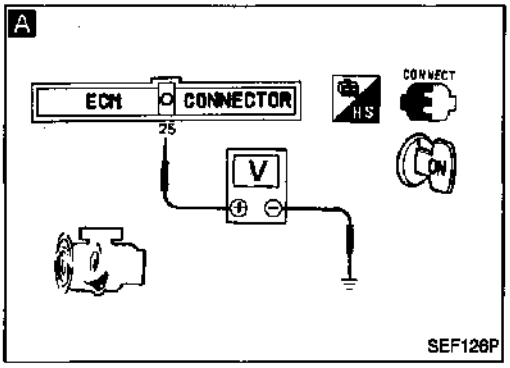


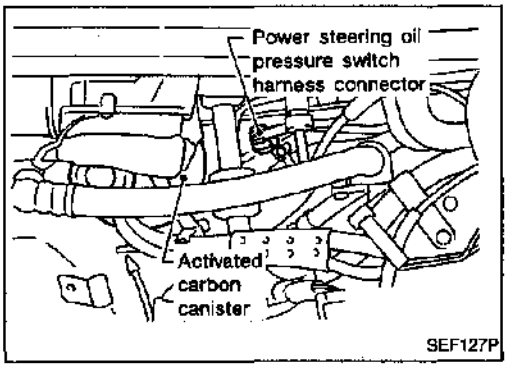
DESCRIPTION

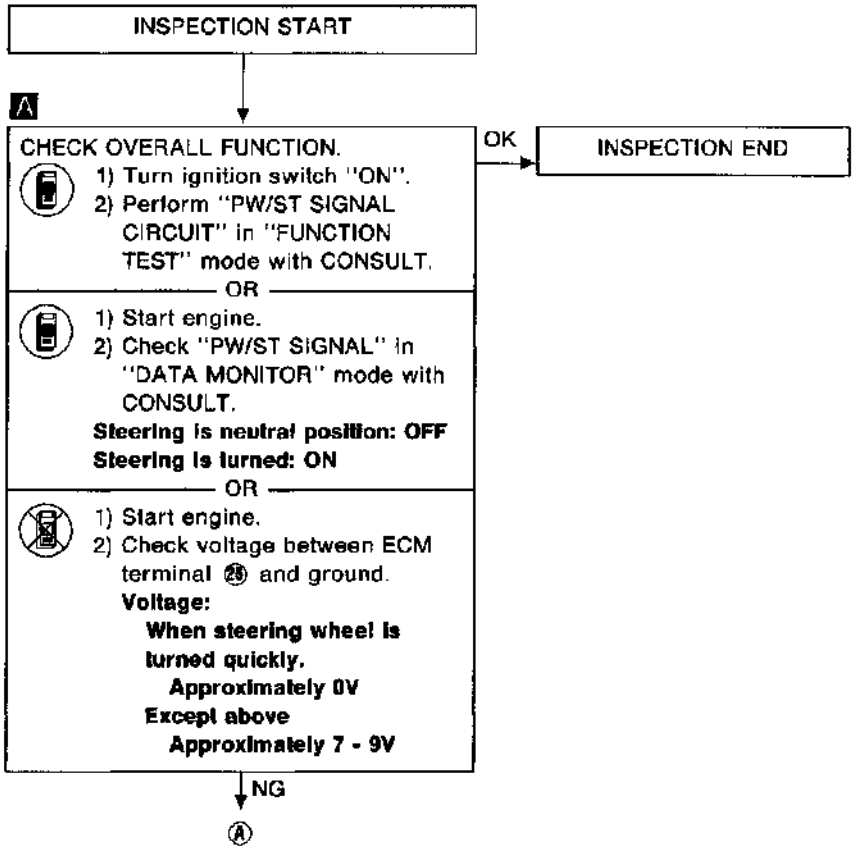
The power steering oil pressure switch is attached to the power steering high-pressure tube and detects a power steering load. When a power steering load is detected, it signals the ECM. The ECM adjusts the IACV-AAC valve to increase the idle speed and adjust for the increased load.





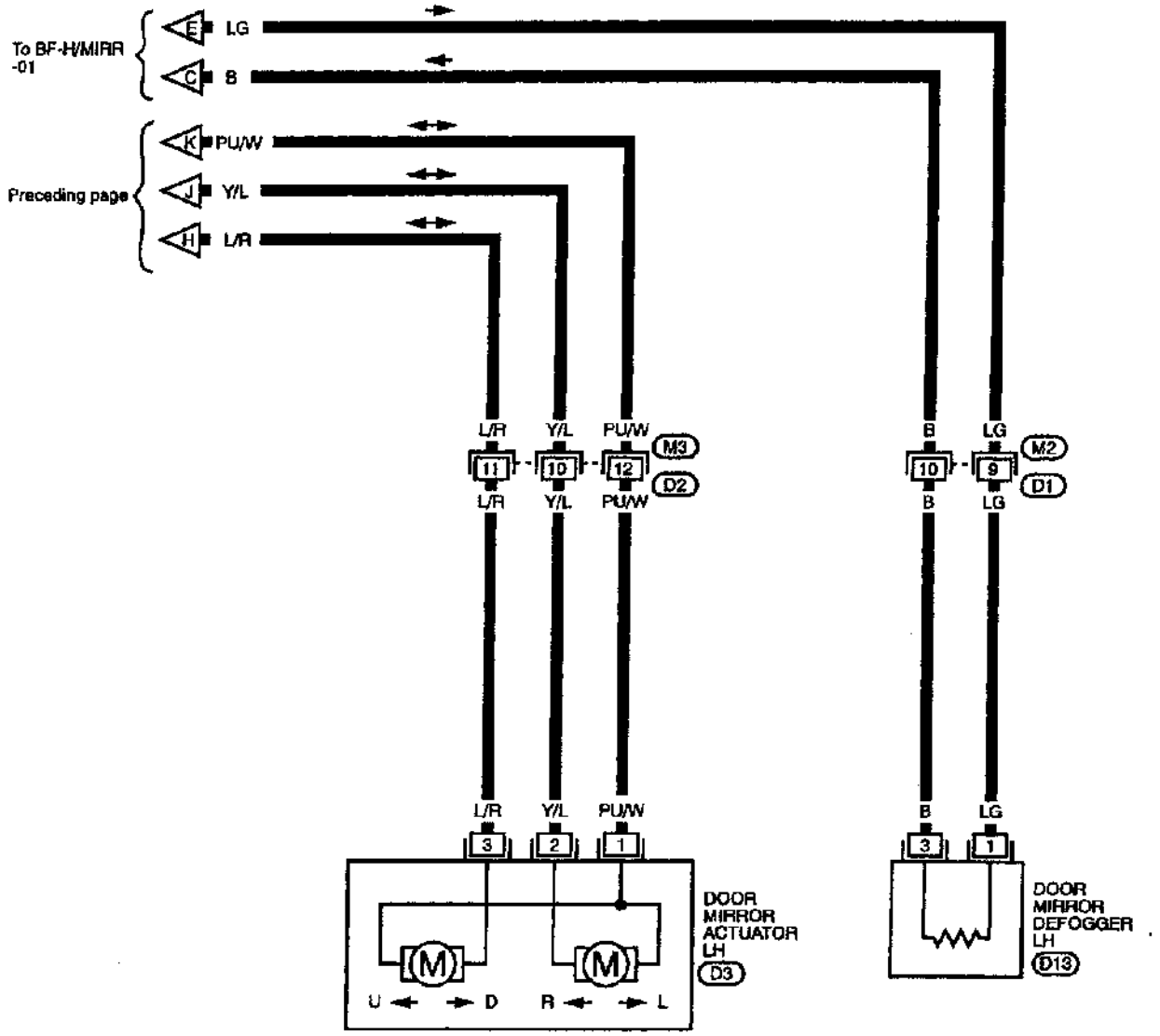


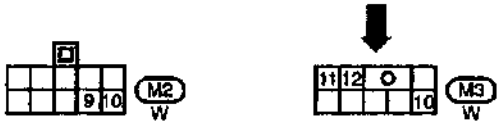


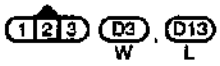


Wiring Diagram — H/MIRR — (Cont'd)

BF-H/MIRR-03

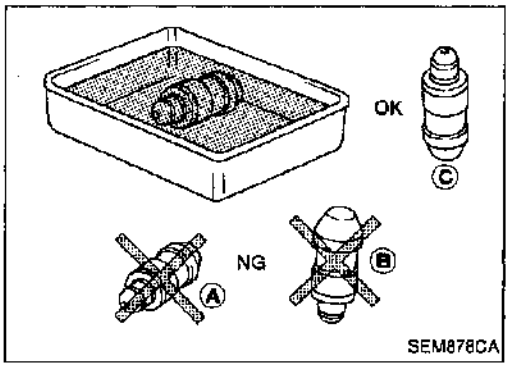






CAUTION:

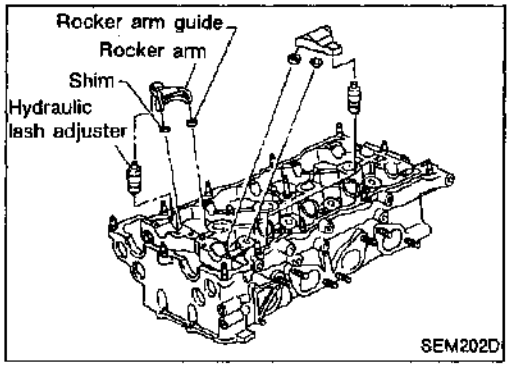
- **Apply new engine oil to the sliding surfaces when installing sliding parts. Sliding parts include rocker arms, camshafts, oil seal, etc.**
- **Apply new engine oil to bolt thread and seat surfaces when tightening the following: Cylinder head bolts, camshaft sprocket bolts and camshaft bracket bolts.**



- **If a hydraulic lash adjuster is kept on its side, there is a risk of air entering it. After removal, always set hydraulic lash adjuster straight up, or keep it soaked in new engine oil.**
- **Do not disassemble hydraulic lash adjusters.**
- **Attach tags to lash adjusters so as not to mix them up.**

Removal

- This removal is the same procedure as those for timing chain. Refer to "Removal" in "TIMING CHAIN" (EM-17).

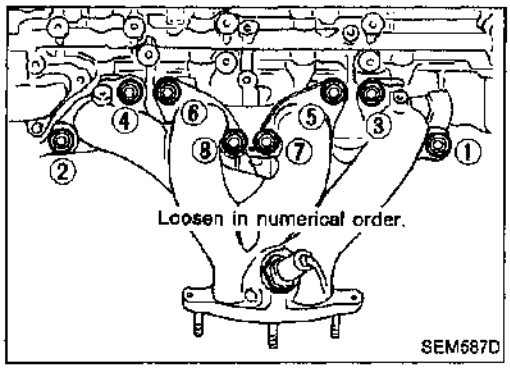


Disassembly

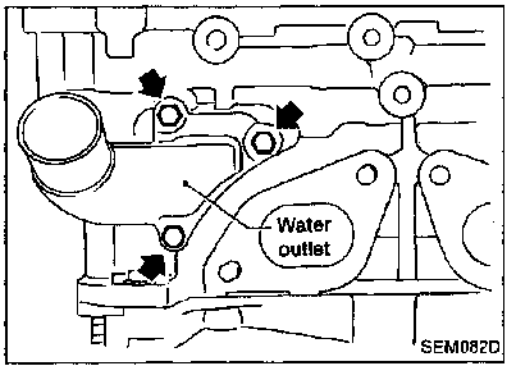
1. Remove rocker arms, shims, rocker arm guides and hydraulic lash adjusters from cylinder head.

CAUTION:

Keep parts in order so that they can be installed in their original positions during assembly. (Install parts in their original positions.)

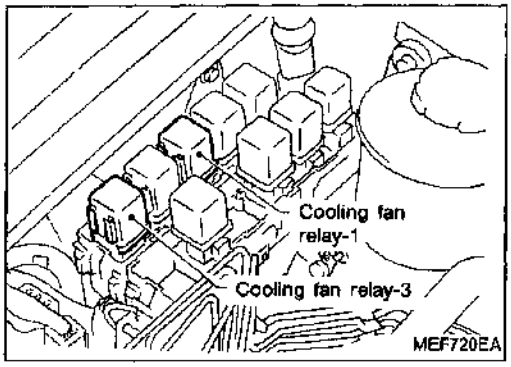


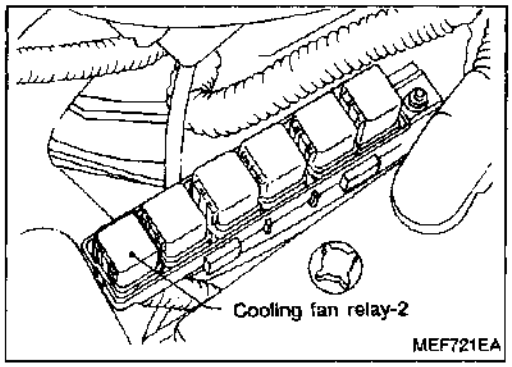
2. Remove crankcase ventilation oil separator.
3. Remove EGR tube.
4. Remove exhaust manifold cover.
5. Remove exhaust manifold.

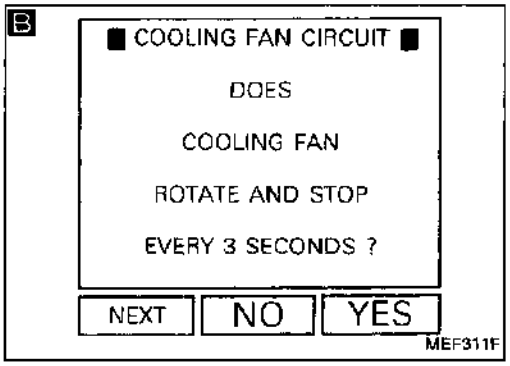


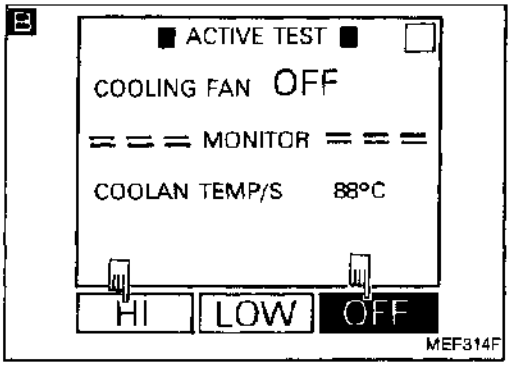
6. Remove water outlet.

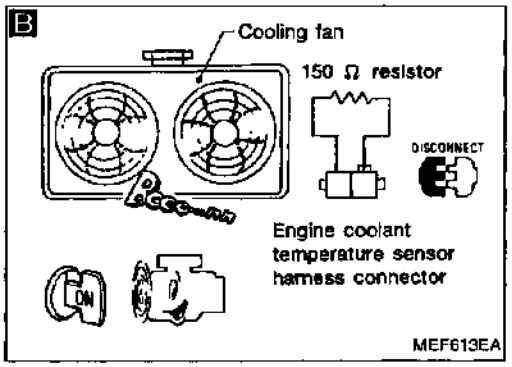
Cooling Fan Control (Cont'd)











Ⓐ

B

CHECK COOLING FAN HIGH SPEED OPERATION.
1) Turn ignition switch "OFF".
2) Reconnect cooling fan relay-2.
3) Disconnect cooling fan relay-1.
4) Turn ignition switch "ON".
5) Perform "COOLING FAN CIRCUIT" in "FUNCTION TEST" mode with CONSULT.

NG → Check cooling fan high speed control circuit. (Go to PROCEDURE B.)

OR

4) Turn ignition switch "ON".
5) Perform "COOLING FAN" in "ACTIVE TEST" mode with CONSULT.

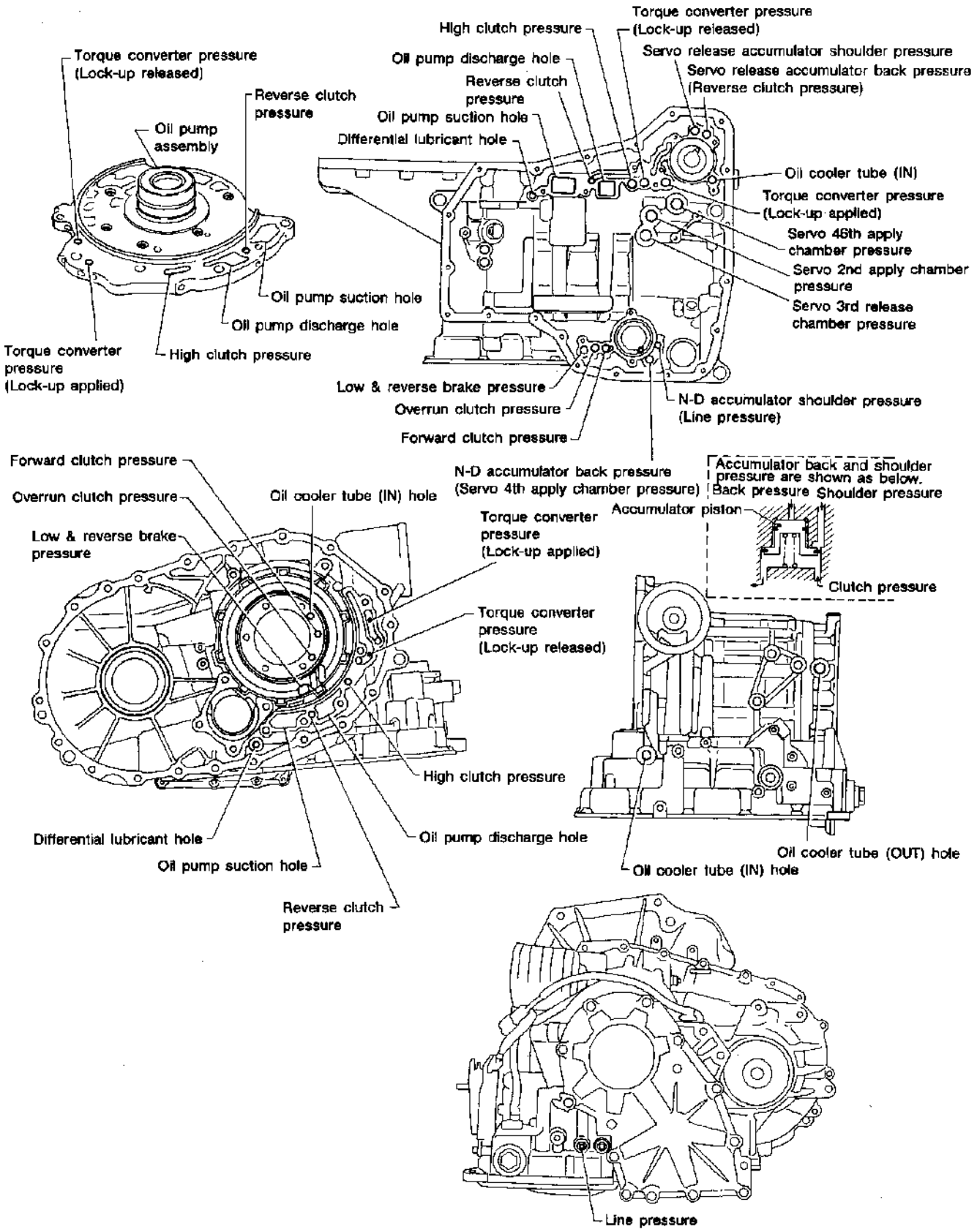
OR

4) Turn air conditioner switch and blower fan switch "OFF".
5) Disconnect engine coolant temperature sensor harness connector.
6) Connect 150Ω resistor to engine coolant temperature sensor harness connector.
7) Restart engine and make sure that cooling fan operates at higher speed than low speed.

OK

INSPECTION END

Oil Channel



SAT894G

Specifications and Adjustments (Cont'd)

OUTPUT SHAFT

Seal ring clearance

Output shaft seal ring clearance mm (in)	
Standard	0.10 - 0.25 (0.0039 - 0.0098)
Allowable limit	0.25 (0.0098)

End play

Output shaft end play mm (in)	0 - 0.5 (0 - 0.020)

Output shaft adjusting shims

Thickness mm (in)	Part number
0.56 (0.0220)	31438-31X46
0.96 (0.0378)	31438-31X47
1.36 (0.0535)	31438-31X48

BEARING RETAINER

Seal ring clearance

Bearing retainer seal ring clearance mm (in)	
Standard	0.10 - 0.25 (0.0039 - 0.0098)
Allowable limit	0.25 (0.0098)

TOTAL END PLAY

Total end play mm (in)	0.25 - 0.55 (0.0098 - 0.0217)

Bearing race for adjusting total end play

Thickness mm (in)	Part number
0.6 (0.024)	31435-31X01
0.8 (0.031)	31435-31X02
1.0 (0.039)	31435-31X03
1.2 (0.047)	31435-31X04
1.4 (0.055)	31435-31X05
1.6 (0.063)	31435-31X06
1.8 (0.071)	31435-31X07
2.0 (0.079)	31435-31X08
2.2 (0.087)	31435-31X09

REVERSE CLUTCH END PLAY

Reverse clutch end play mm (in)	0.65 - 1.00 (0.0256 - 0.0394)

Thrust washers for adjusting reverse clutch end play

Thickness mm (in)	Part number
0.65 (0.0256)	31508-31X00
0.80 (0.0315)	31508-31X01
0.95 (0.0374)	31508-31X02
1.10 (0.0433)	31508-31X03
1.25 (0.0492)	31508-31X04
1.40 (0.0551)	31508-31X05
1.55 (0.0610)	31508-31X06

ACCUMULATOR

O-ring

Unit: mm (in)

Accumulator	Diameter (Small)	Diameter (Large)
Servo release accumulator	26.9 (1.059)	44.2 (1.740)
N-D accumulator	34.6 (1.362)	39.4 (1.551)

Return spring

Unit: mm (in)

Accumulator		Free length	Outer diameter
Servo release accumulator spring	Outer	52.5 (2.067)	21.1 (0.831)
	Inner	52.0 (2.047)	13.1 (0.516)
N-D accumulator spring		45.0 (1.772)	27.6 (1.087)

BAND SERVO

Return spring

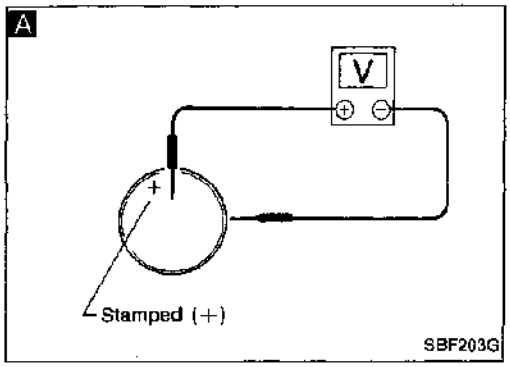
Unit: mm (in)

Return spring	Free length	Outer diameter
2nd servo return spring	32.5 (1.280)	25.9 (1.020)
OD servo return spring	31.0 (1.220)	21.7 (0.854)

REMOVAL AND INSTALLATION

Unit: mm (in)

Distance between end of converter housing and torque converter	15.9 (0.626) or more
Drive plate runout limit	0.2 (0.008)



Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

Check remote controller battery.

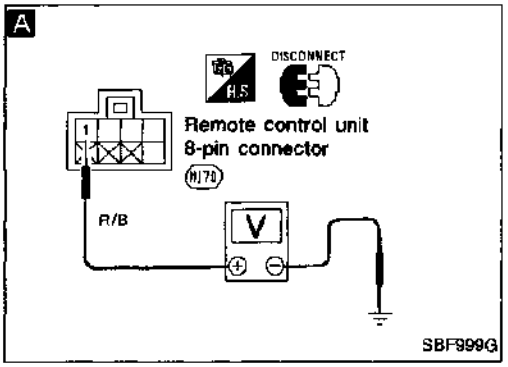
A

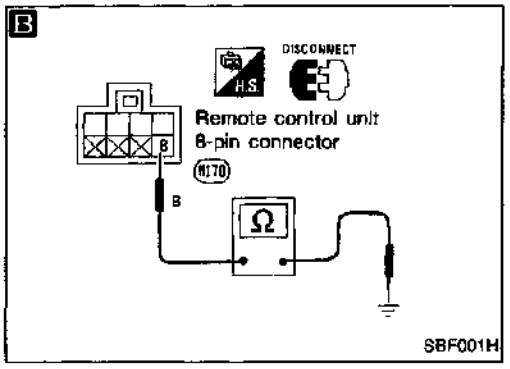
CHECK VOLTAGE OF REMOTE CONTROLLER BATTERY.

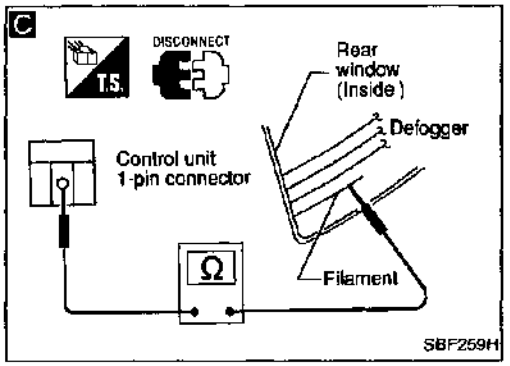
Remove battery and measure voltage across battery positive and ground terminals ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	3V or more

Note:
Remote controller does not function if battery is not set correctly.







DIAGNOSTIC PROCEDURE 2

All remote control systems do not function even if remote controller does.

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT.

1) Remove key from ignition.
2) Disconnect 8-pin connector from control unit. Check voltage across remote control unit terminal ① and GND.

Battery voltage should exist.

NG → Check power supply harness.

OK ↓

B

Check continuity between terminal ⑧ and GND.

Continuity should exist.

NG → Check GND harness.

OK ↓

C

CHECK ANTENNA CIRCUIT.

Disconnect 1-pin connector from control unit.
Check continuity between a terminal and filament on the rear window.

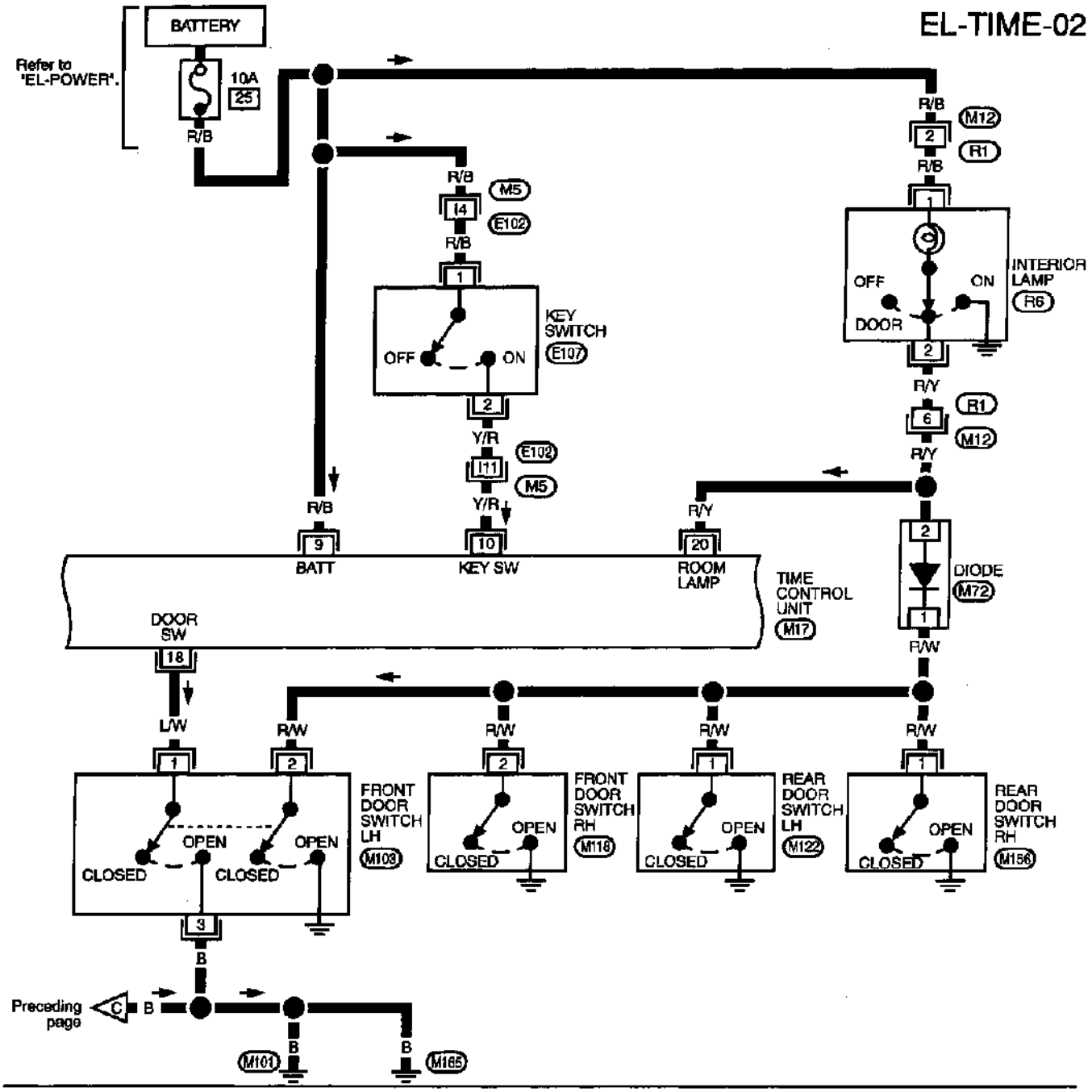
Continuity should exist.

NG → Check antenna circuit. (Refer to REAR WINDOW DEFOGGER "Filament Repair" in EL section.)

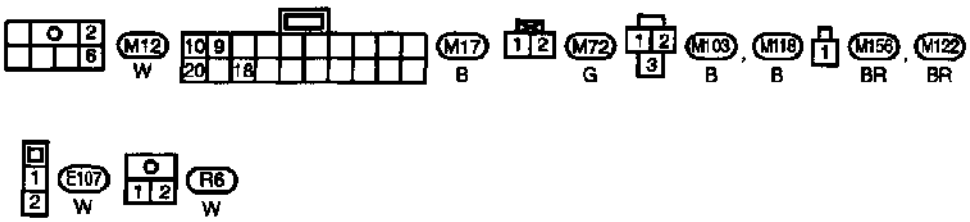
OK ↓

Ⓐ

Wiring Diagram — TIME — (Cont'd)

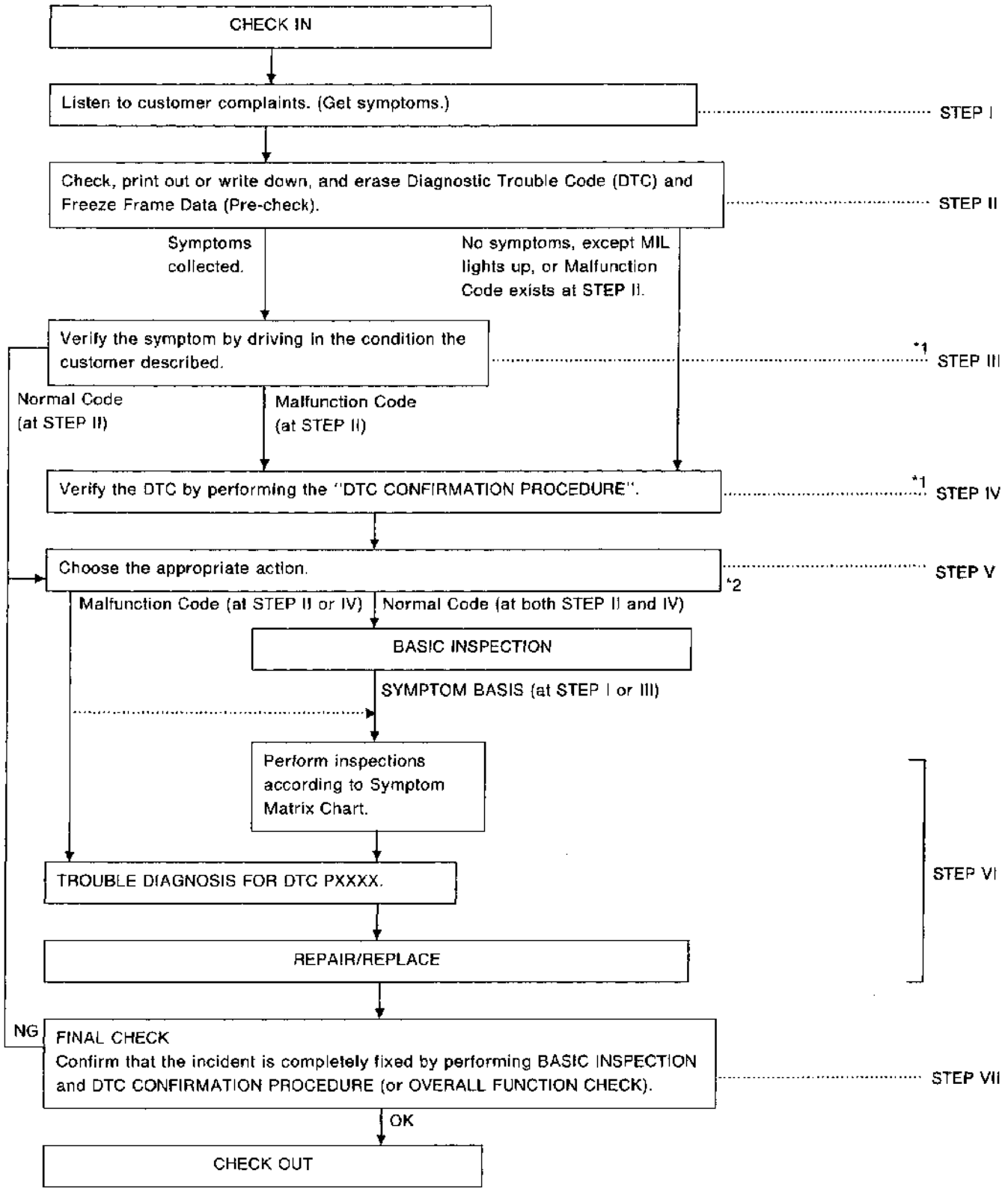


Refer to last page (Foldout page).
M5, E102



MEL112D

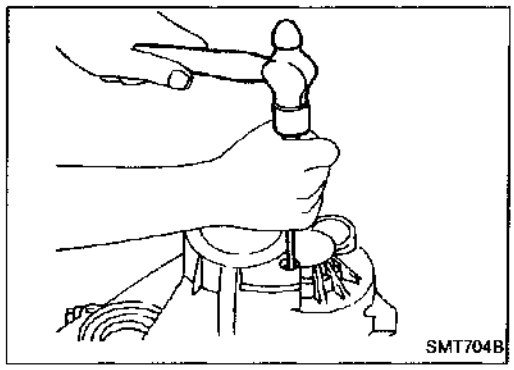
Work Flow



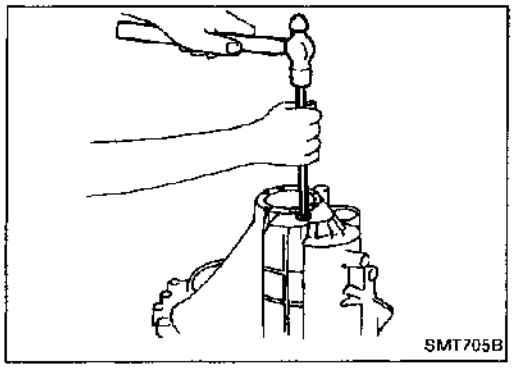
***1: If the incident cannot be duplicated, refer to GI section ("Incident Simulation Tests", "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT").**

***2: If the on-board diagnostic system cannot be performed, check main power supply and ground circuit. Refer to "TROUBLE DIAGNOSIS FOR POWER SUPPLY", EC-89.**

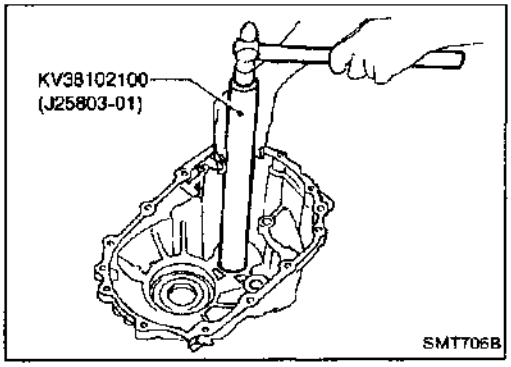
Case Components (Cont'd)



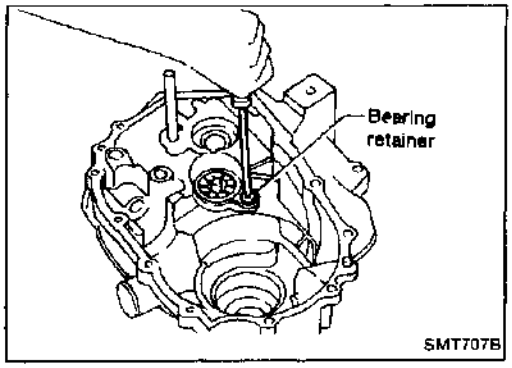
2. Remove input shaft rear bearing by tapping it from welch plug hole.



3. Install welch plug.
- **Apply recommended sealant to mating surface of transmission case.**

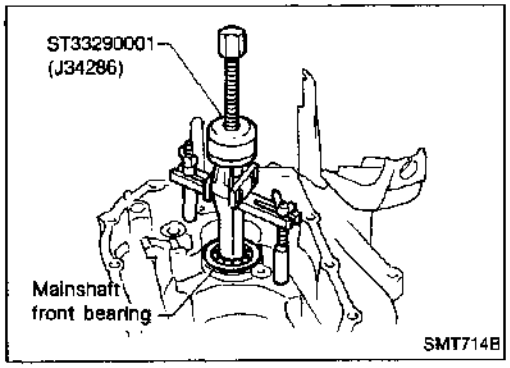


4. Install input shaft rear bearing.



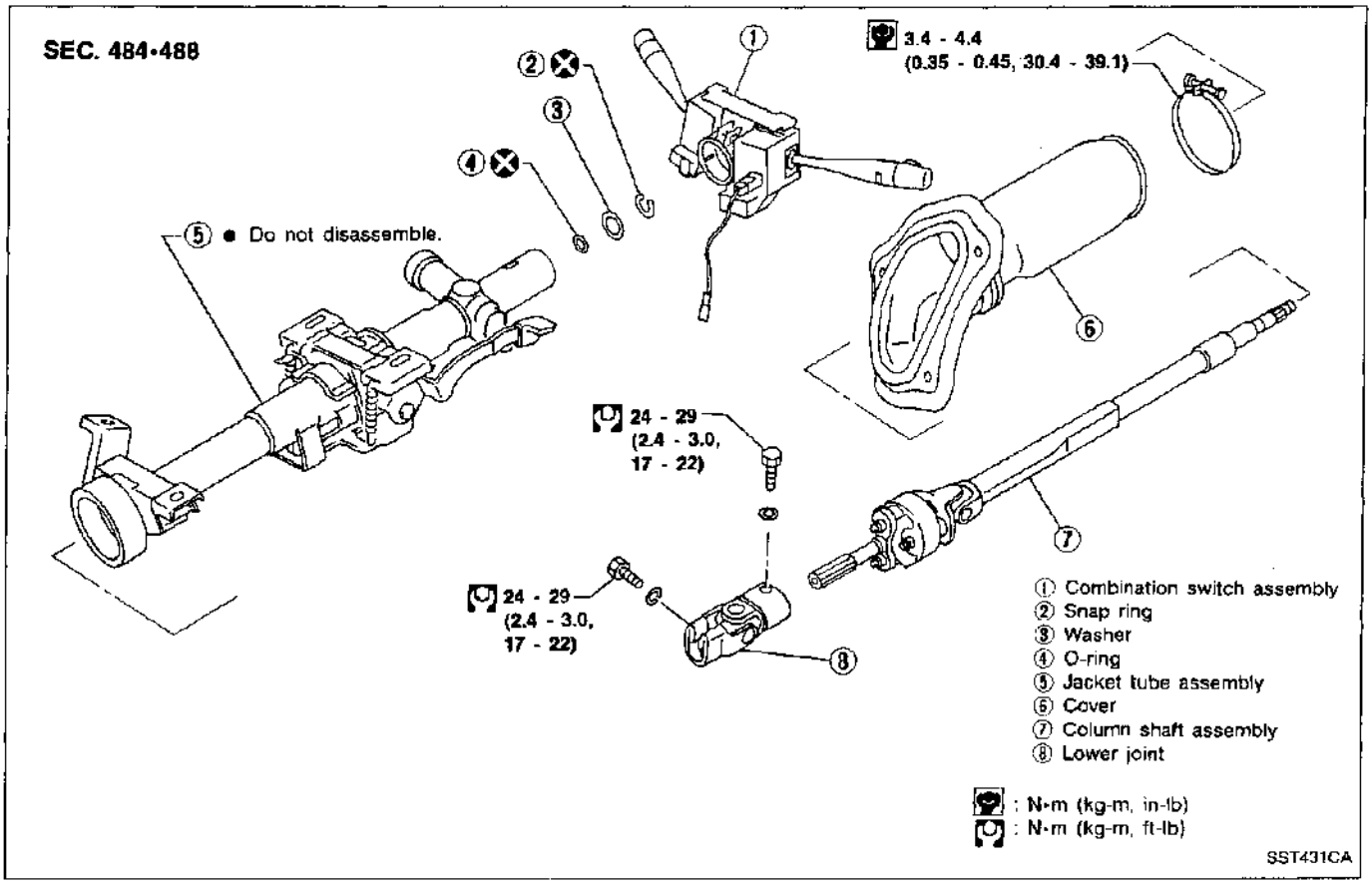
Mainshaft front bearing and oil channel

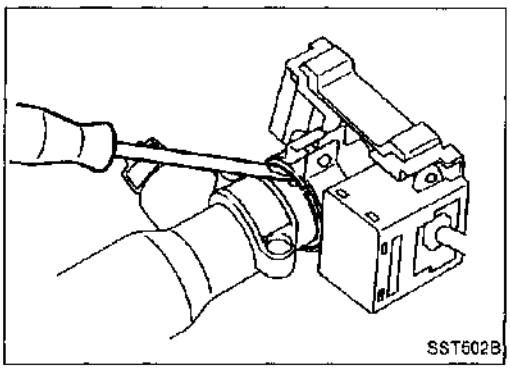
1. Remove mainshaft front bearing retainer.



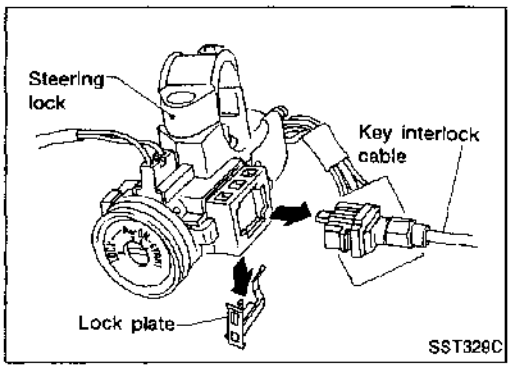
2. Remove mainshaft front bearing.
3. Remove oil channel.

Disassembly and Assembly





- To remove combination switch, insert a suitable tool between mating portion. Lift switch bracket and pull it out.
- When disassembling and assembling, unlock steering lock with key.



- Remove key interlock cable (A/T models).