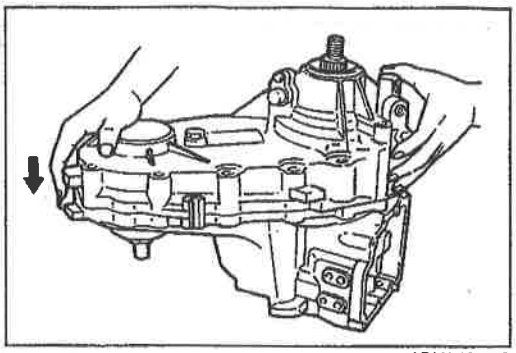
AUTOMATIC TRANSMISSION (Hydraulically-Controlled)

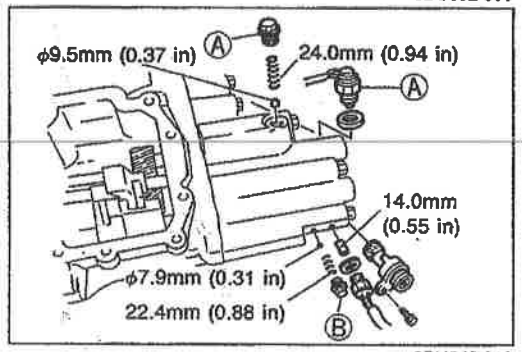
1BU0K1-001



9BU0J2-056

34. Apply sealant to the mating surface of the chain cover, and set the cover on the housing.
35. Apply sealant to the threads of the bolts, and tighten.

Tightening torque:
19—26 N·m (1.9—2.6 m-kg, 14—19 ft-lb)



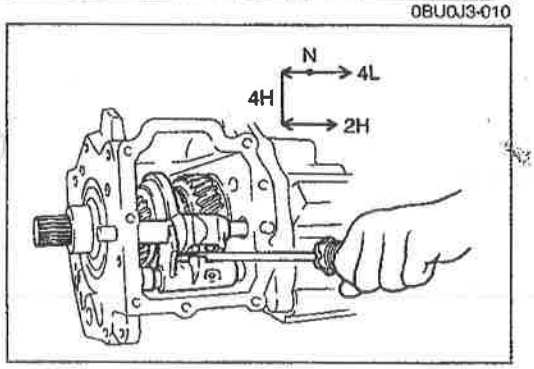
0BU0J3-010

36. Apply sealant to the threads of the plugs.
37. Install the balls, springs, and plugs.

Tightening torque
A: 28—41 N·m (2.9—4.2 m-kg, 21—30 ft-lb)
B: 19—26 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

38. Install the pin and 4x4 indicator switch.

Tightening torque:
39—59 N·m (4.0—6.0 m-kg, 29—43 ft-lb)



1BU0J3-007

39. Install the neutral switch (A/T).

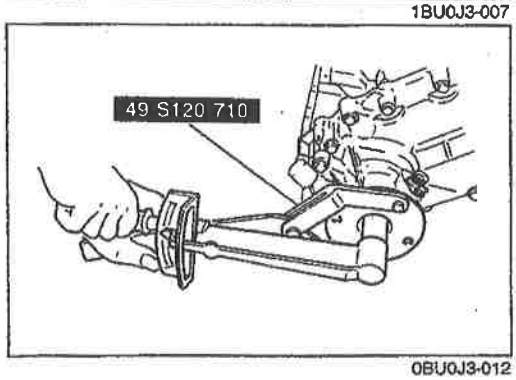
Tightening torque:
39—59 N·m (4.0—6.0 m-kg, 29—43 ft-lb)

40. Install the speedometer driven gear.

Tightening torque:
7.8—11 N·m (80—110 cm-kg, 69—95 in-lb)

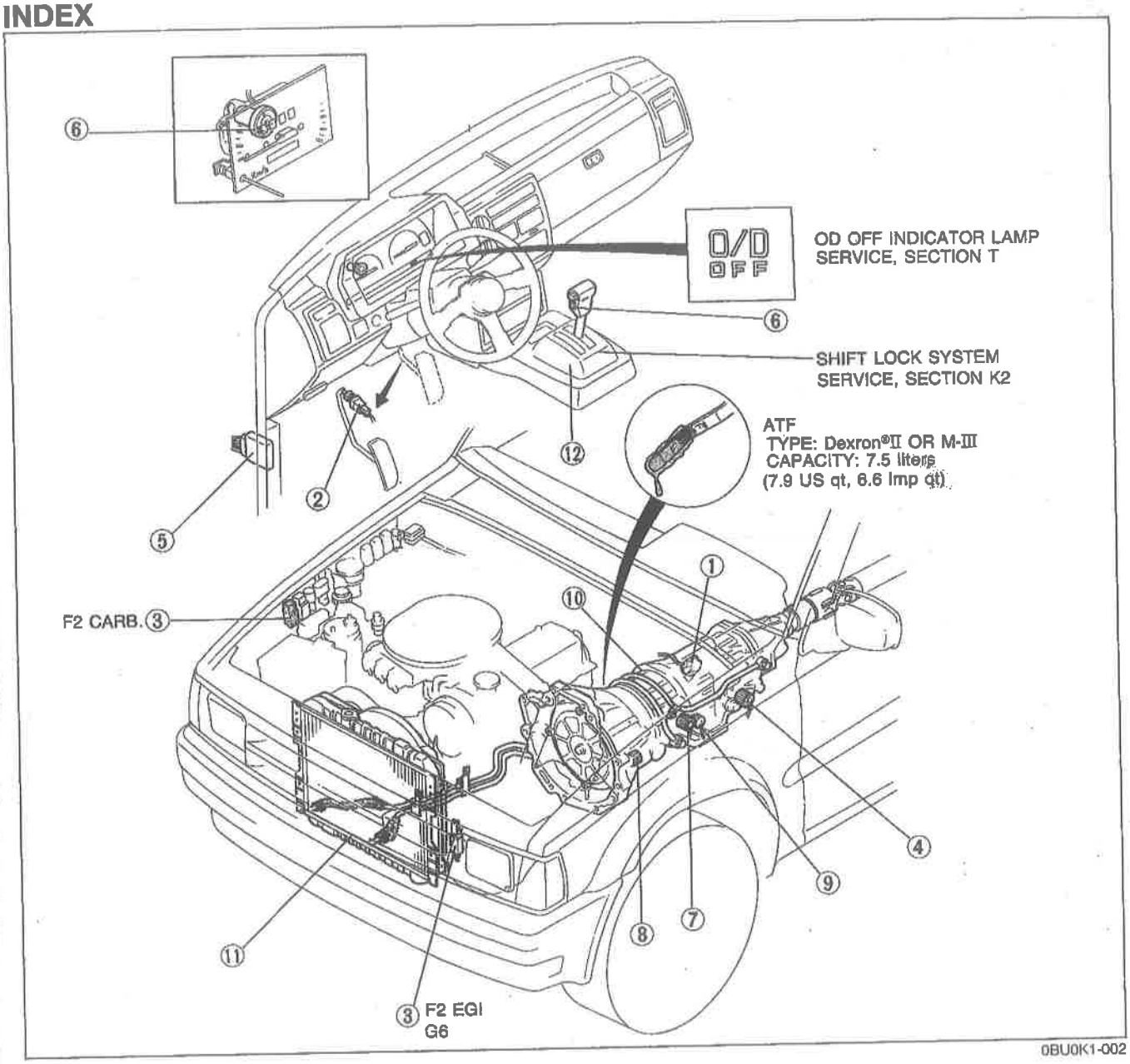
41. Use a screwdriver to verify that the transfer case shifts smoothly.
42. Apply transmission oil to a new oil seal and install it.
43. Install the companion flange with the **SST**.

Tightening torque:
128—177 N·m (13—18 m-kg, 94—130 ft-lb)



0BU0J3-012

INDEX



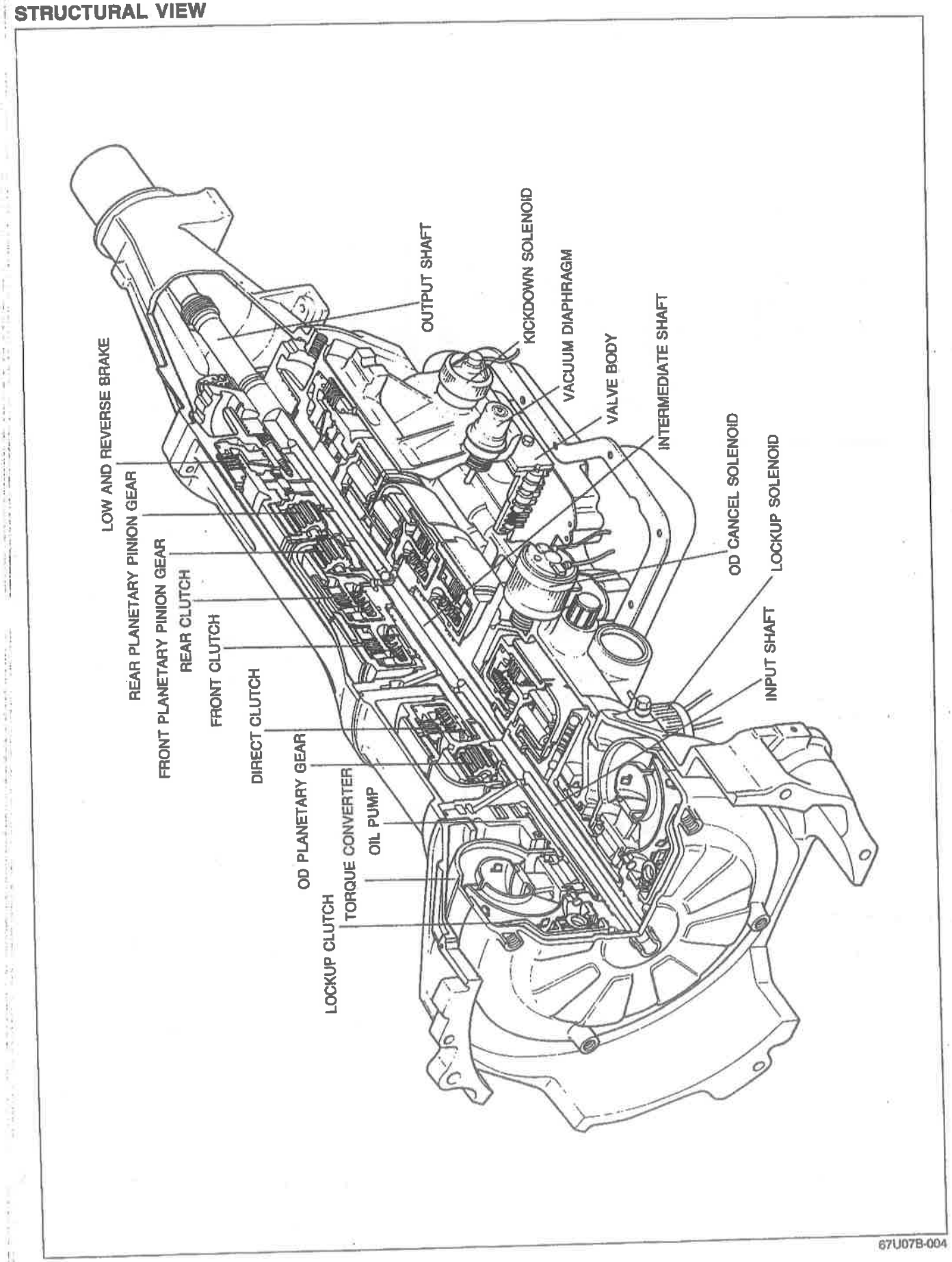
OUTLINE

SPECIFICATIONS

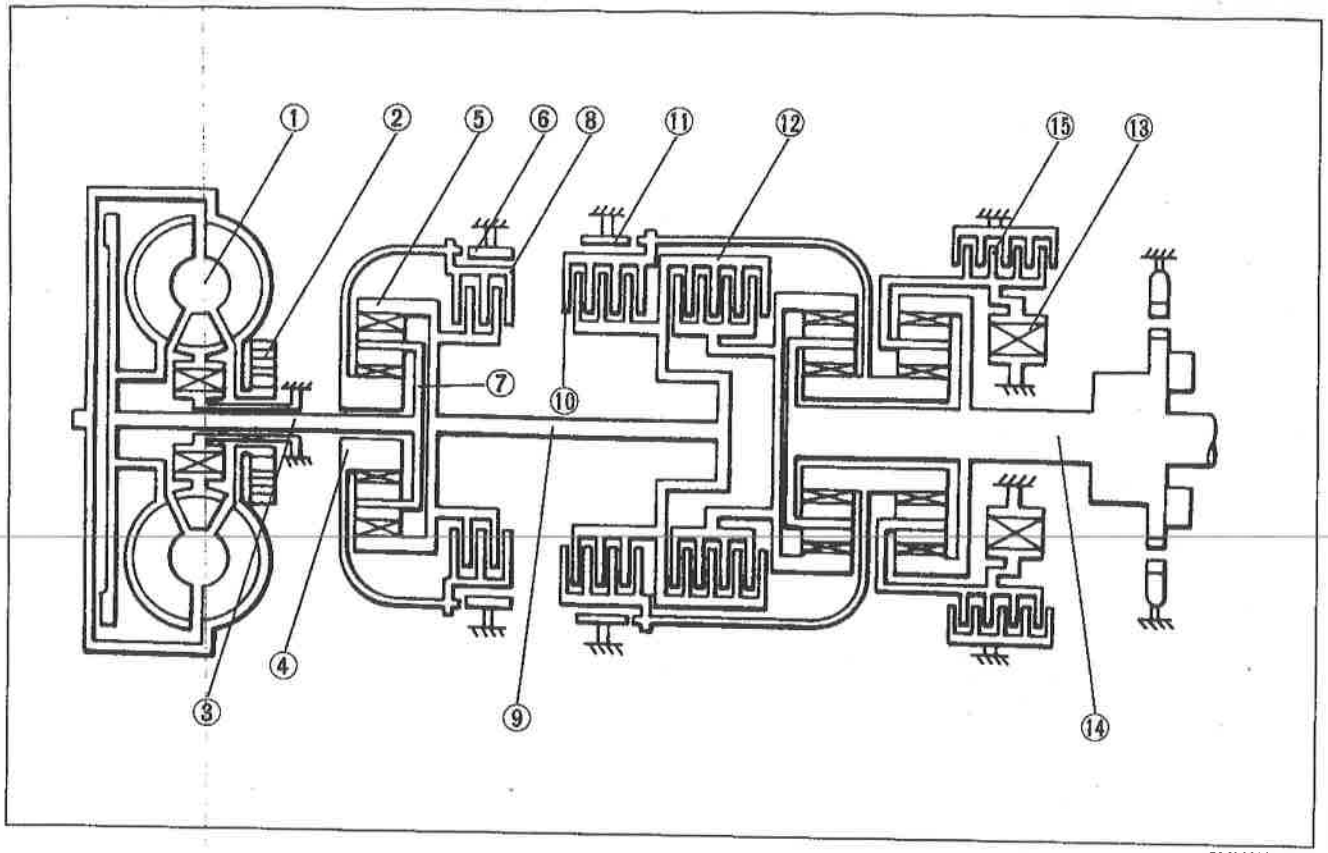
Item \ Transmission/Engine			N4A-HL	
			F2	G6
Torque converter stall torque ratio			1.900	
Gear ratio	1st		2.841	
	2nd		1.541	
	3rd		1.000	
	OD (4th)		0.720	
	Reverse		2.400	
Number of drive/driven plates	Direct clutch		2/2	
	Front clutch		3/5	4/5
	Rear clutch		5/5	
	Low and reverse brake		5/5	
Servo diameter (Piston outer diameter/retainer inner diameter) mm (in)	OD band servo		60/40 (2.36/1.57)	60/36 (2.36/1.42)
	2nd band servo		72/44 (2.83/1.73)	80/56 (3.15/2.21)
Automatic transmission fluid (ATF)	Type		Dexron®II or M-III	
	Capacity liters (US qt, Imp qt)	Total	7.5 (7.9, 6.6)	
		Oil pan	4.0 (4.2, 3.5)	

2BU0K1-001

STRUCTURAL VIEW



POWER FLOW DIAGRAM



9MU0K2-004

1. Torque converter
2. Oil pump
3. Input shaft
4. OD sun gear
5. OD clutch hub
6. OD brake band
7. OD planetary pinion carrier
8. Direct clutch
9. Intermediate shaft
10. Front clutch
11. 2nd brake band
12. Rear clutch
13. One-way clutch
14. Output shaft
15. Low and reverse brake

OPERATION OF COMPONENTS

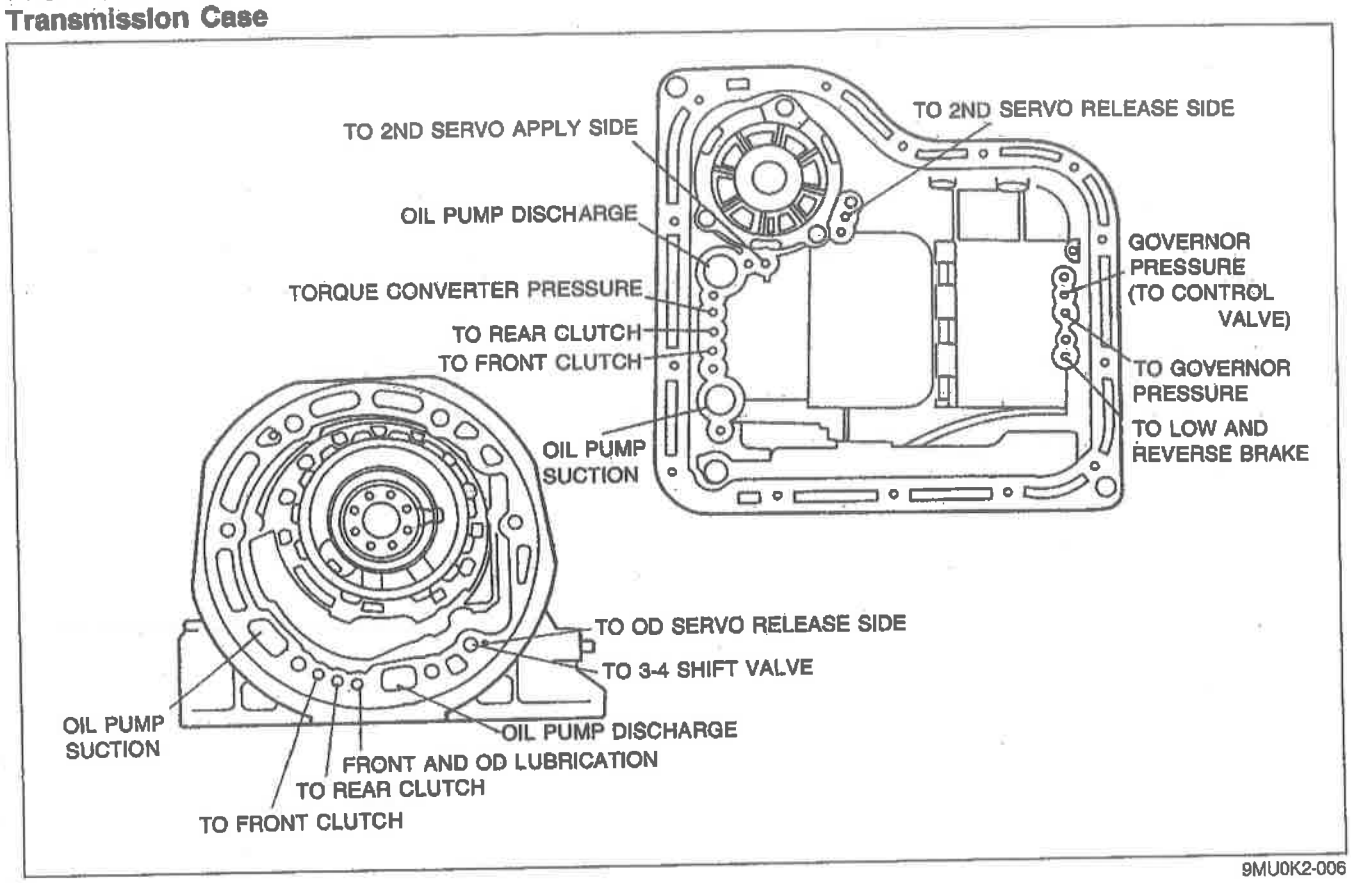
Range	Gear	Direct clutch	OD band servo		Front clutch	Rear clutch	2nd band servo		Low and reverse brake	One-way clutch
			Operation	Release			Operation	Release		
P	—	○	◎	○					○	
R	Reverse	○	◎	○	○			○	○	
N	—	○	◎	○						
D	1st	○	◎	○		○				○
	2nd	○	◎	○		○	○			
	3rd	○	◎	○	○	○	◎	○		
	OD		○		○	○	◎	○		
2	—	○	◎	○		○	○			
1	2nd	○	◎	○		○	○			
	1st	○	◎	○		○			○	

◎: Operates although the band servos remain deactivated because of the larger release pressure side area. Brake band does not operate.

9MU0K2-005

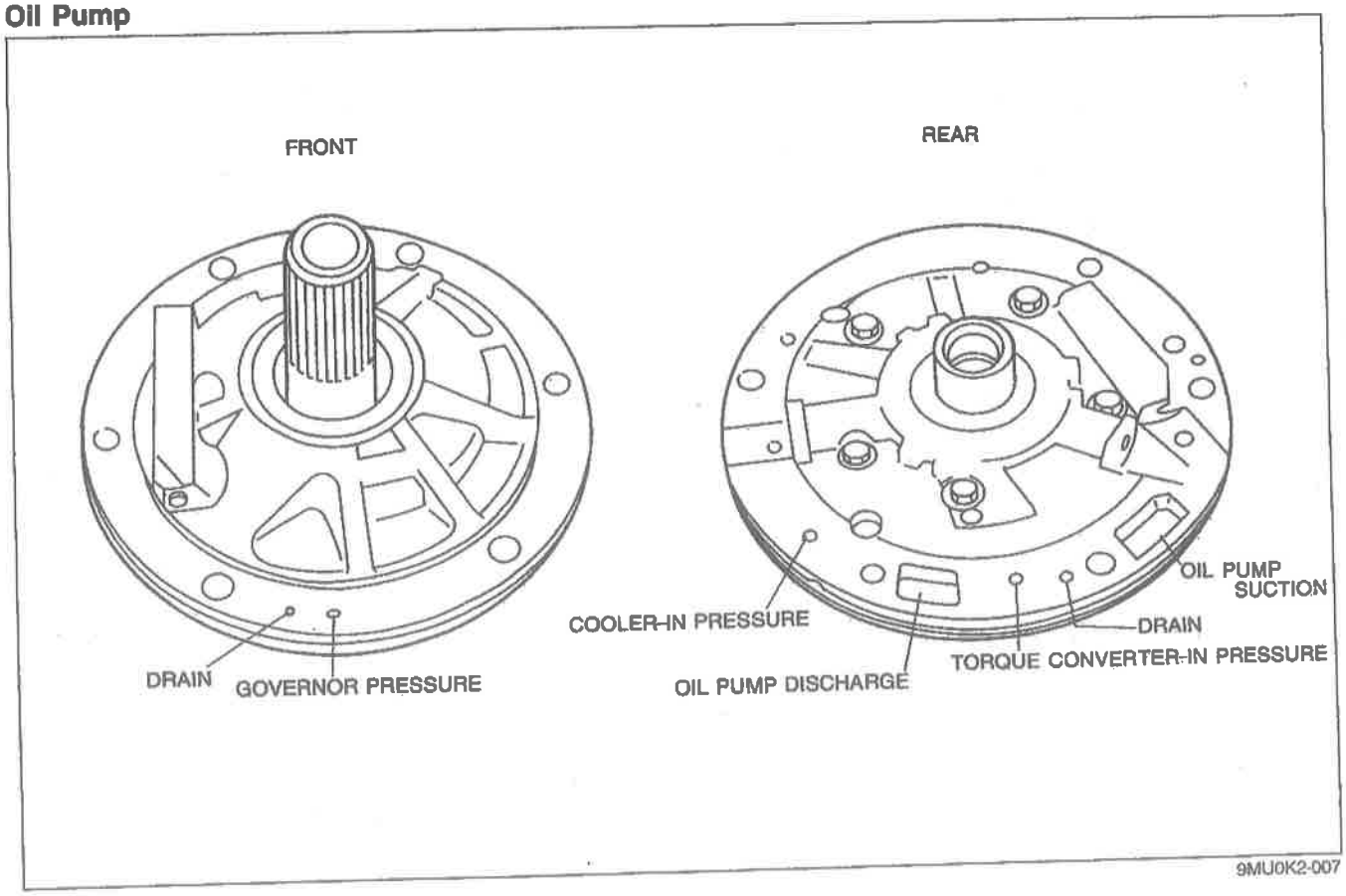
FLUID PASSAGE LOCATIONS

Transmission Case



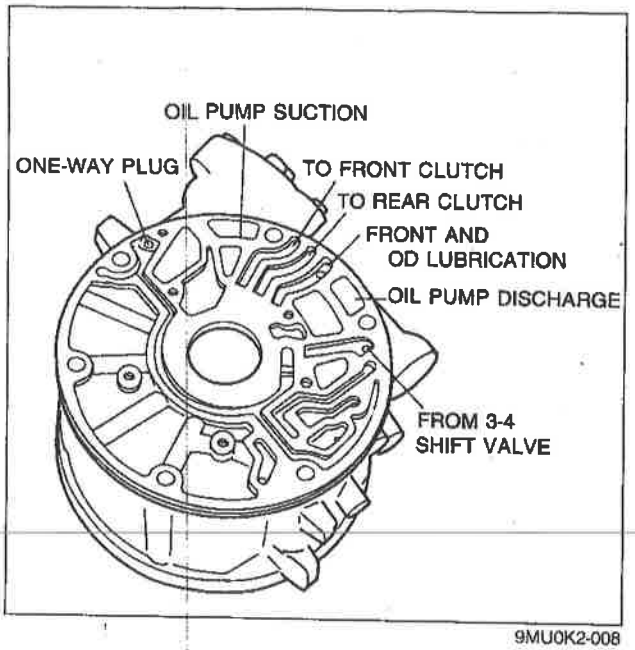
9MU0K2-006

Oil Pump



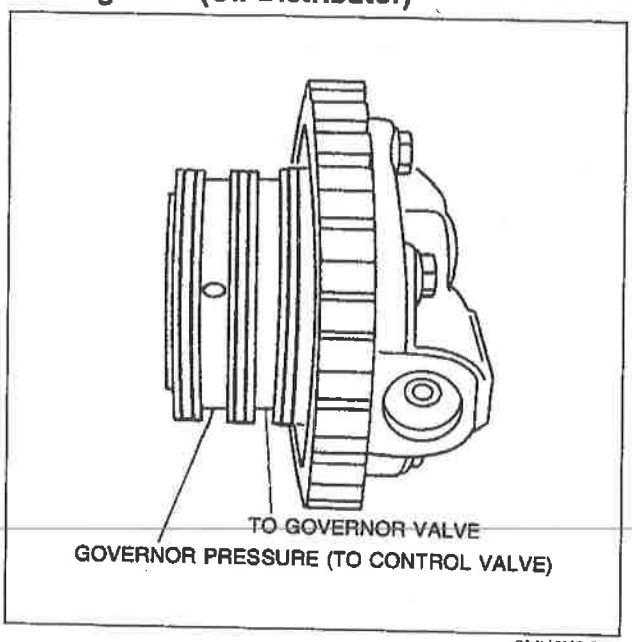
9MU0K2-007

OD Case



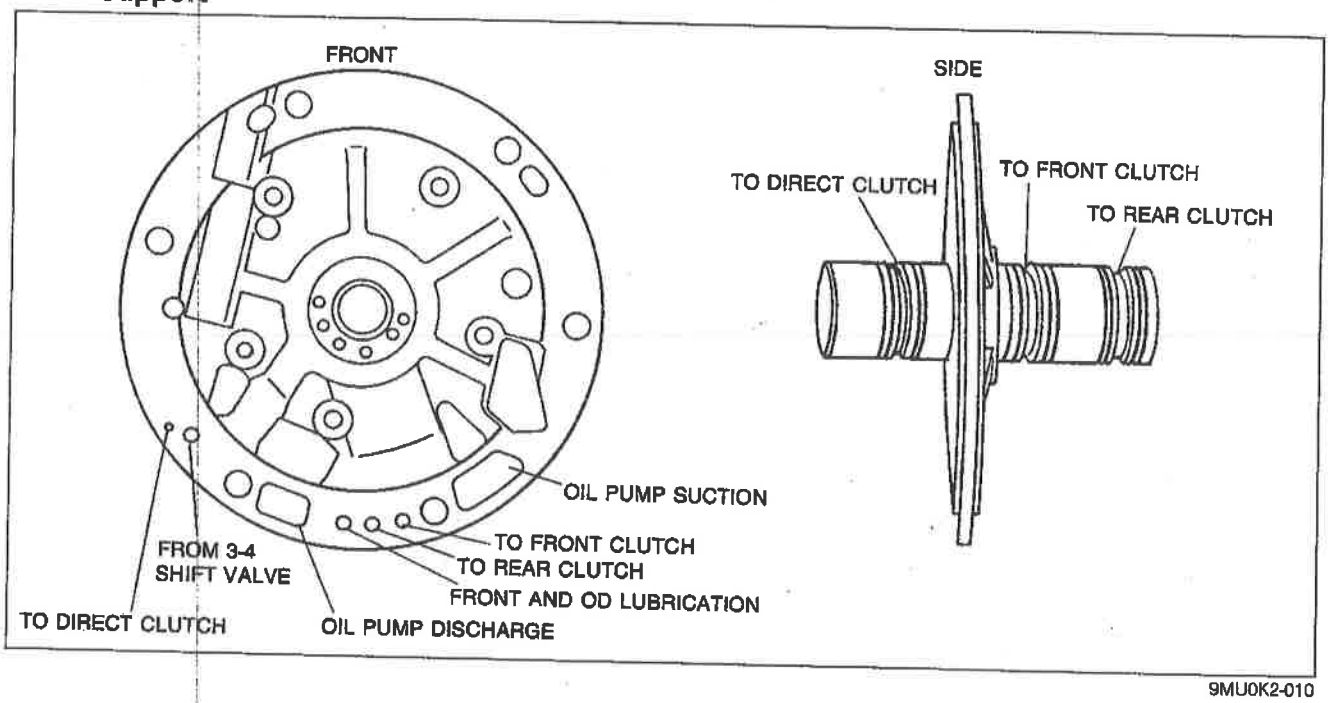
9MU0K2-008

Parking Gear (Oil Distributor)



9MU0K2-009

Drum Support



9MU0K2-010

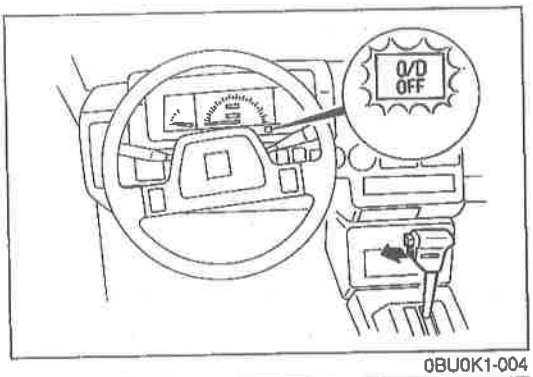
K1

TROUBLESHOOTING

GENERAL NOTE

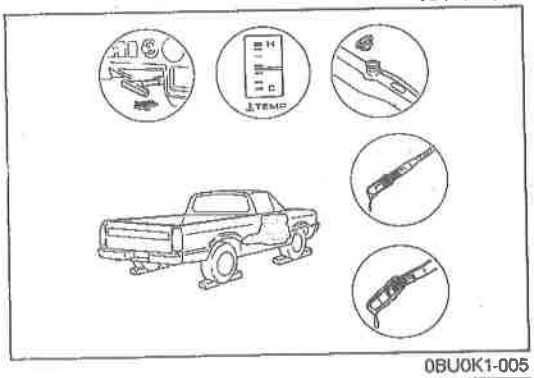
A problem with the automatic transmission may be cause by the engine or the transmission powertrain, hydraulic control system, or the electronic control system.
When troubleshooting, from these points, which can be inspected quickly and easily. The recommended troubleshooting sequence is described below.

9MU0K2-011



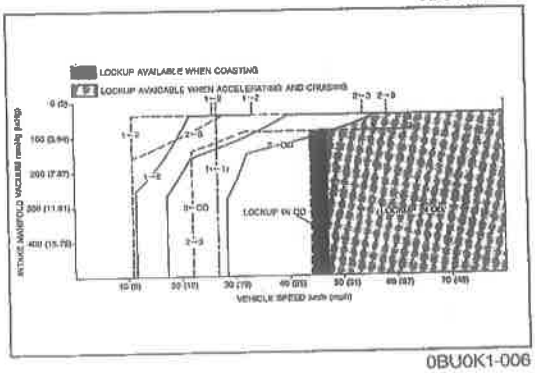
0BU0K1-004

Step 1: Electrical System Inspection
Check the electrical system. (Refer to page K1–13.)



0BU0K1-005

Step 2: Mechanical System Test
Check the engine stall speed, time lag, line pressure, and governor pressure. (Refer to page K1–14.)



0BU0K1-006

Step 3: Road Test
Check the shift points and shift schedule, and check for shift shock. (Refer to page K1–22.)

If the above 3 steps are followed, the cause of the problem should be located.
Another guide to faster location of the causes of problems, the QUICK DIAGNOSIS CHART, is on pages K–9 to 12.
In this chart, numbers are used to indicate the components that may be the cause of 56 possible problems. It is necessary to check only those components indicated by numbers during each steps of the troubleshooting process to locate the cause of the problem quickly.

9BU0KX-007

QUICK DIAGNOSIS CHART

The QUICK DIAGNOSIS CHART shows different problems and the relationship of components that might be the cause.

1. Components indicated in the "Adjustment" column indicate the possibility that the problem may result from an incorrect adjustment.
   Check the adjustment of each component, and readjust if necessary.
2. Components indicated in the "Electrical System Inspection" column can be checked for malfunction through this inspection.
3. Components indicated in the "Mechanical System Test" column can be checked for malfunction by the results of the oil pressure test.
4. Components indicated in the "Road Test" column can be checked for malfunction by the results of the road test.
5. The numbers in the chart indicate the order of inspection for detecting malfunctions.
6. Circled numbers indicate that the transmission must be removed from the vehicle.
7. The checking, adjusting, repair, and replacement procedures for components are described in the page(s) shown in the "Reference page" column.

9MU0K2-016

Item \ Inspection point and reference page		ON VEHICLE: Pre-liminary			ON VEHICLE: Electronic control system						ON VEHICLE: Hydraulic control system										OFF VEHICLE: Powertrain									
		K1–33	K1–127	Section F1	K1–25	K1–26,27	Section G	K1–28	K1–28	K1–29	K1–107	K1–14	K1–18,20,21	K1–98	K1–92	K1–61	K1–68	K1–64	K1–6	K1–64	K1–50	K1–50	K1–49	K1–56	K1–71	K1–76	K1–61	K1–68	K1–87	K1–83	K1–54,81,84	K1–95
		ATF level and condition	Shift mechanism	Engine idle speed and condition	Inhibitor switch and wiring	Kickdown switch, Kickdown solenoid, and wiring	Ignition switch and starter	OD OFF switch	OD cancel solenoid	Lockup solenoid	Vacuum diaphragm and piping	Engine stall speed	Line and governor pressure	Control valve body	Governor valve	OD band servo	2nd band servo	Accumulator	Transmission air check	OD cancel valve	Lockup control valve	Oil pump	Torque converter	Direct clutch	Front clutch	Rear clutch	OD brake band	2nd brake band	Low and reverse brake	One-way clutch	Planetary gear	Parking gear
Adjustment		X	X	X	X	X					X					X	X														
Electrical System Inspection						X		X	X	X																					
Mechanical System Test														X								X	X	X	X	X		X	X	X	
Road Test															X							X	X		X	X	X	X	X		
Engine starting	Engine does not start in N or P range		2		3		1																								
	Engine starts in ranges other than N, and P ranges		1		2																										
Accelerating	Vehicle does not move in D range (moves in 1, 2, and R ranges)		1										2	3															④		
	Vehicle does not move in forward ranges (moves in R range) Extremely poor acceleration	1	2										3	4					5						⑥						
	Vehicle does not move in R range (moves in forward range) Extremely poor acceleration	1	2										3	4					5					⑦	⑧		⑥				
	Vehicle does not move in any range	1	2										3	4					5		⑥		⑧								⑦
	Slippage felt when accelerating	1	2								6		3	4					5		⑦										
	Vehicle moves in N range		1											2											③						
	Excessive creep			1																											
	No creep at all	1	2	3										4							⑤										
	Low max. speed and poor acceleration	1	2	6								3	4	5							⑫		⑨	⑩	⑪		⑦	⑧			

Item	Inspection point and reference page	ON VEHICLE: Pre-liminary			Electronic control system					Hydraulic control system										OFF VEHICLE: Powertrain									
		K1–33	K1–127	Section F1	K1–25	K1–26,27	Section G	K1–28	K1–28	K1–29	K1–107	K1–14	K1–18,20,21	K1–98	K1–92	K1–61	K1–68	K1–64	K1–6	K1–64	K1–50	K1–50	K1–49	K1–56	K1–71	K1–76	K1–61	K1–68	K1–87	K1–83	K1–54,81,84	K1–95
		ATF level and condition	Shift mechanism	Engine idle speed and condition	Inhibitor switch and wiring	Kickdown switch, Kickdown solenoid, and wiring	Ignition switch and starter	OD OFF switch	OD cancel solenoid	Lockup solenoid	Vacuum diaphragm and piping	Engine stall speed	Line and governor pressure	Control valve body	Governor valve	OD band servo	2nd band servo	Accumulator	Transmission air check	OD cancel valve	Lockup control valve	Oil pump	Torque converter	Direct clutch	Front clutch	Rear clutch	OD brake band	2nd brake band	Low and reverse brake	One-way clutch	Planetary gear	Parking gear
No shift	Does not shift from 1st to 2nd		1			3					2			4	5		6		7							⑧		⑨				
	Does not shift from 2nd to 3rd		1			3					2			4	5		6		7						⑧						
	Does not shift from 3rd to OD		1			3		8	9		2			4	5	6			7	⑫				⑩			⑪					
	Lockup does not occur in OD									3					1	2					⑤							④				
	Does not shift from OD to 3rd	1						6	7		2			3	4				5	⑪				⑧	⑨		⑩					
	Does not shift from 3rd to 2nd or from OD to 2nd	1									2			3	4		5		6						⑦		⑧	⑨				
	Does not shift from 2nd to 1st or from 3rd to 1st	1									2			3	4		5		6									⑦		⑧		
	Does not kickdown when accelerator depressed in 3rd within kickdown range	1				2					3			4	5													⑥				
	Does not kickdown when accelerator depressed in OD within kickdown range	1				2					3			4	5									⑥								
	Excessive engine speed when accelerated in 3rd due to delayed kickdown	1	2										3	4	5				6						⑦							
	Excessive engine speed when accelerated in OD due to delayed kickdown	1	2										3	4	5				6								⑦					
	Does not shift from 3rd to 2nd on D range to 2-range shift	1	2											3	4		5								⑥			⑦				
	Does not shift from 3rd to 1st on D range to 1-range shift	1	2										3	4	5		6								⑦			⑧				

Item	Inspection point and reference page	Pre-liminary			Electronic control system						Hydraulic control system												Powertrain									
		K1–33	K1–127	Section F1	K1–25	K1–26,27	Section G	K1–28	K1–28	K1–29	K1–107	K1–14	K1–18,20,21	K1–98	K1–92	K1–61	K1–68	K1–64	K1–6	K1–64	K1–50	K1–50	K1–49	K1–56	K1–71	K1–76	K1–61	K1–68	K1–87	K1–83	K1–54,81,84	K1–95
		ATF level and condition	Shift mechanism	Engine idle speed and condition	Inhibitor switch and wiring	Kickdown switch, Kickdown solenoid, and wiring	Ignition switch and starter	OD OFF switch	OD cancel solenoid	Lockup solenoid	Vacuum diaphragm and piping	Engine stall speed	Line and governor pressure	Control valve body	Governor valve	OD band servo	2nd band servo	Accumulator	Transmission air check	OD cancel valve	Lockup control valve	Oil pump	Torque converter	Direct clutch	Front clutch	Rear clutch	OD brake band	2nd brake band	Low and reverse brake	One-way clutch	Planetary gear	Parking gear
Shift shock	Excessive N range to D range shift shock			1							2		3	4												⑤						
	Excessive 1st to 2nd shift shock	1									2	3					4		5		⑦							⑥			
	Excessive 2nd to 3rd shift shock										1		2	3			4				⑥							⑤			
	Excessive 3rd to OD shift shock										1		2	3						⑤							④				
	Vehicle brakes when shifted from 1st to 2nd	1												2															③	⑤		
	Vehicle brakes when shifted from 2nd to 3rd	1												3			2													④		
	Vehicle brakes when shifted from 3rd to OD	1												3			2										④					
	Shift shock felt when accelerator released and deceleration occurs		1			3					2		4	5	6			7														
	Excessively large 2nd to 1st shock in 1 range		1								2	3	4	5																⑥		
Shift point	Excessively high 1st to 2nd, 2nd to 3rd, and 3rd to OD shift points	1				3					2		4	5	6																	
	Excessively high OD to 3rd, 3rd to 2nd, and 2nd to 1st shift points		1			3					2		4	5	6																	
	Kickdown operates or engine overruns when depressing pedal in 3rd beyond kick-down vehicle speed limit	1	2										3	4	5										⑥							
	Kickdown operates or engine overruns when depressing pedal in OD beyond kick-down vehicle speed limit	1	2										3	4	5												⑥					
Shift sequence	Shifts directly from 1st to 3rd	1												2	3				4								⑤					
	Shifts directly from 1st to OD	1												2	3				4						⑤							
	Shifts from 2nd to 1st, or 2nd to 3rd in 2 range		1										2	3																		
	Shifts from 1st to 2nd, or 2nd to 3rd in 1 range		1											2																		

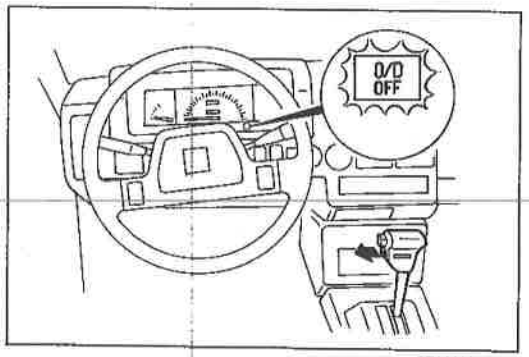
Item	Inspection point and reference page	ON VEHICLE: Pre-liminary			Electronic control system					Hydraulic control system										OFF VEHICLE: Powertrain									
		K1–33	K1–127	Section F1	K1–25	K1–26,27	Section G	K1–28	K1–28	K1–29	K1–107	K1–14	K1–18,20,21	K1–98	K1–92	K1–61	K1–68	K1–64	K1–6	K1–64	K1–50	K1–50	K1–49	K1–56	K1–71	K1–76	K1–61	K1–68	K1–87	K1–83	K1–54,81,84	K1–95
		ATF level and condition	Shift mechanism	Engine idle speed and condition	Inhibitor switch and wiring	Kickdown switch, Kickdown solenoid, and wiring	Ignition switch and starter	OD OFF switch	OD cancel solenoid	Lockup solenoid	Vacuum diaphragm and piping	Engine stall speed	Line and governor pressure	Control valve body	Governor valve	OD band servo	2nd band servo	Accumulator	Transmission air check	OD cancel valve	Lockup control valve	Oil pump	Torque converter	Direct clutch	Front clutch	Rear clutch	OD brake band	2nd brake band	Low and reverse brake	One-way clutch	Planetary gear	Parking gear
Slipping	Little shift shock or excessive slippage while 1st to 2nd shifting	1	2								3		4	5		6			7								⑧				
	Little shift shock or excessive slippage while 2nd to 3rd shifting	1	2								3		4	5		6			7					⑧							
	Little shift shock or excessive slippage while 3rd to OD shifting	1	2								3		4	5		6			7							⑧					
	No shift shock or engine overruns when shifting 1st to 2nd	1	2	4							3	5		6					7			⑨					⑧				
	Engine overruns or slips when shifting OD to 3rd	1									2		3	4			5		6					⑦	⑧		⑨					
	Engine overruns or slips when shifting 3rd to 2nd	1									2		3				4		5						⑧		⑦					
Noise	Transmission noisy in P and N ranges	1											2									③										
	Transmission noisy in D, 2, 1, and R ranges	1											2									④				③				⑤	⑥	
Others	No engine braking in 1 range		1										2	3					4										⑤			
	Vehicle moves in P range or parking gear not disengaged when P range disengaged		1																												②
	Transmission overheats	1		4									5	6		2	3		7			⑭	⑮	⑧	⑨	⑩	⑪	⑫	⑬		⑯	
	White smoke discharged from exhaust while running	1									2	3	4	5					6			⑬	⑭	⑦	⑧	⑨	⑩	⑪	⑫		⑮	
	Abnormal odor from oil level gauge pipe	1																				⑧	⑨	②	③	④	⑤	⑥	⑦		⑩	
	Transmission shifts to OD even when OD OFF switch depressed								1	2											③											
	Vehicle surges in OD										1																					

0BU0K1-007

ELECTRICAL SYSTEM INSPECTION

In this inspection, the function of the electrical control system (inhibition of OD and lockup) and components are checked.

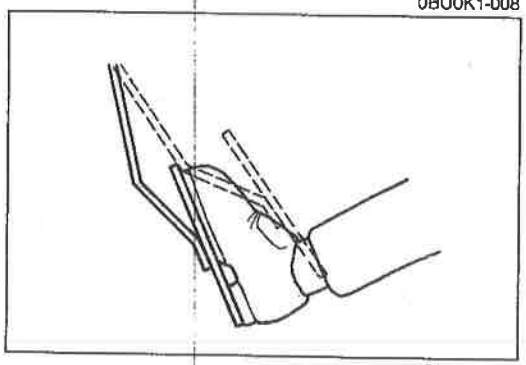
9MU0K2-018



0BU0K1-008

OD OFF SWITCH FUNCTION

1. Drive the vehicle in D range.
2. Check that OD and lockup are provided.
3. Depress the OD OFF switch, and check that OD and lockup operations are canceled.
4. If not correct, check the OD OFF switch, OD cancel solenoid, and lockup solenoid.
   (Refer to pages K1–28, 29.)

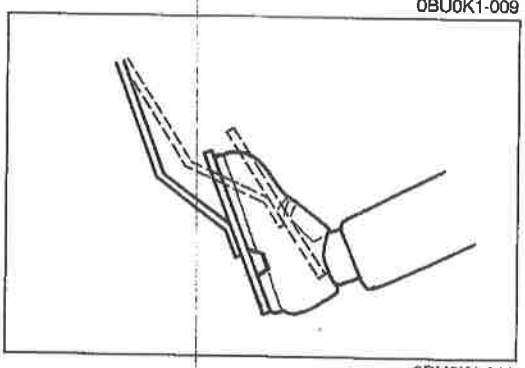


0BU0K1-009

KICKDOWN AND 4-3 SWITCH FUNCTION

Kickdown Switch Function

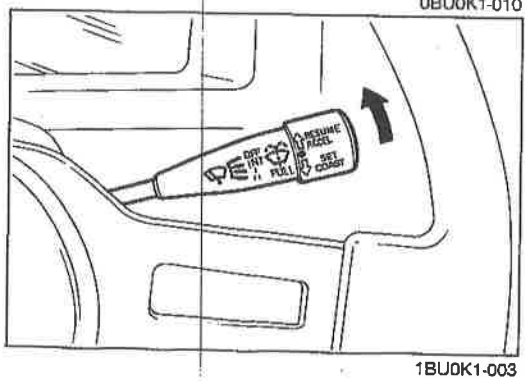
1. Drive the vehicle in D range.
2. Depress the accelerator pedal 7/8 or more, and check the kickdown.
3. If it is not correct, check the kickdown switch, kickdown solenoid and kickdown relay.
   (Refer to pages K1–26, 27.)



0BU0K1-010

4-3 Switch Function

1. Drive the vehicle in OD below 100 km/h (62 mph) in D range.
2. Depress the accelerator pedal 6/8 of its maximum, and check that OD is canceled.
3. If not correct, check the 4-3 switch.
   (Refer to page K1–26.)



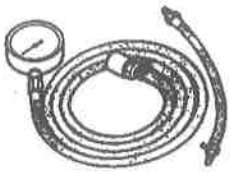
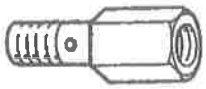
1BU0K1-003

CRUISE CONTROL SWITCH FUNCTION

1. Turn the main cruise control switch ON.
2. Drive the vehicle in OD below 100 km/h (62 mph) and above 40 km/h (25 mph) in D range.
3. Set the cruise control for operation.
4. Depress the SET switch, and check that the OD is canceled.
5. Accelerate to OD, turn the RESUME switch, and check that the OD is canceled.
6. If not correct, check the cruise control operation.
   (Refer to Section T.)

MECHANICAL SYSTEM TEST

PREPARATION
SST

49 0378 400A Gauge set, oil pressure 	49 H075 406 Adapter oil pressure gauge 	49 H019 002 Adapter 
49 B019 901 Gauge, oil pressure 		

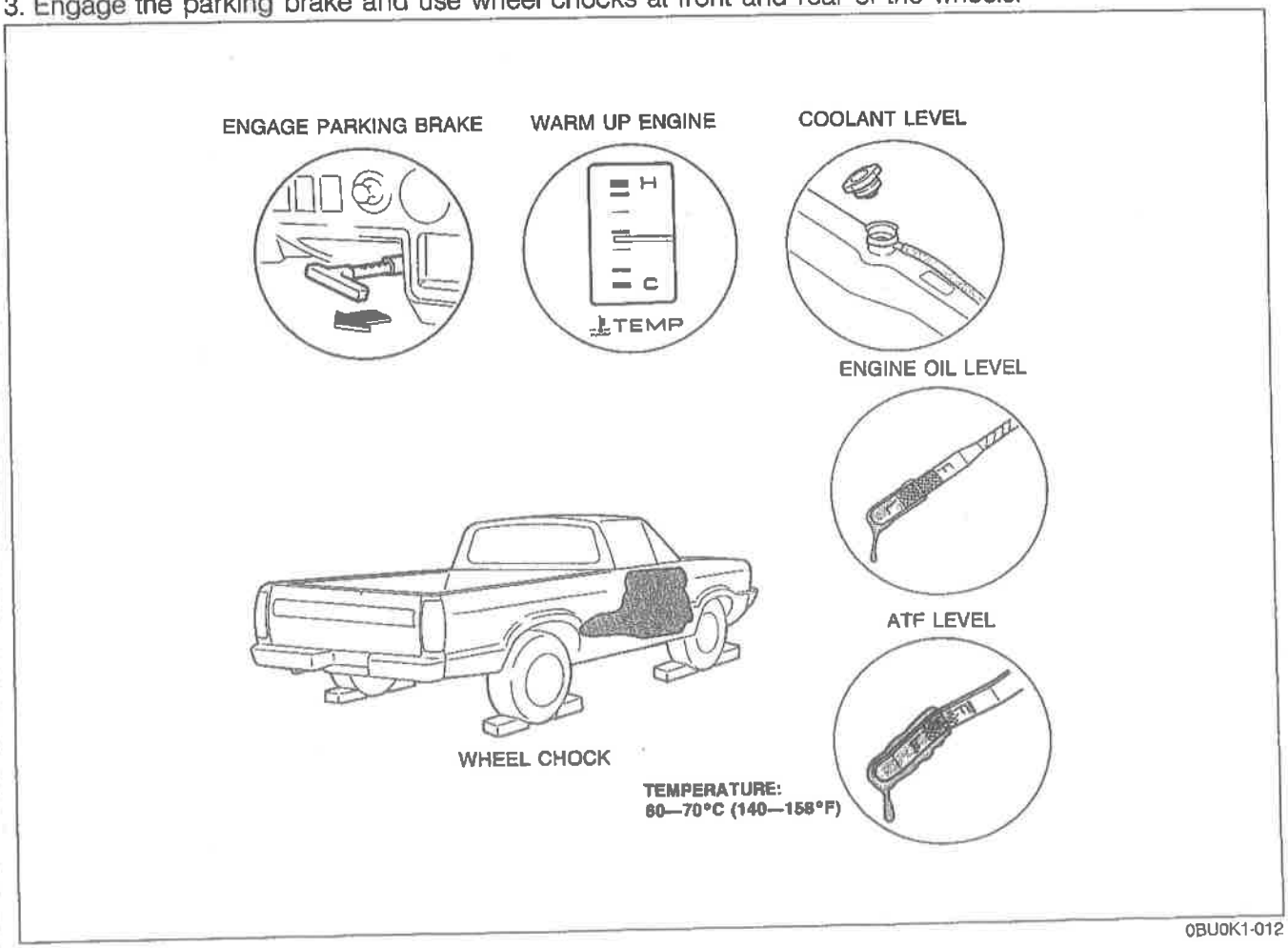
1BU0K1-004

STALL TEST

This test is performed to determine if there is slippage of the friction elements or malfunction of the hydraulic components.

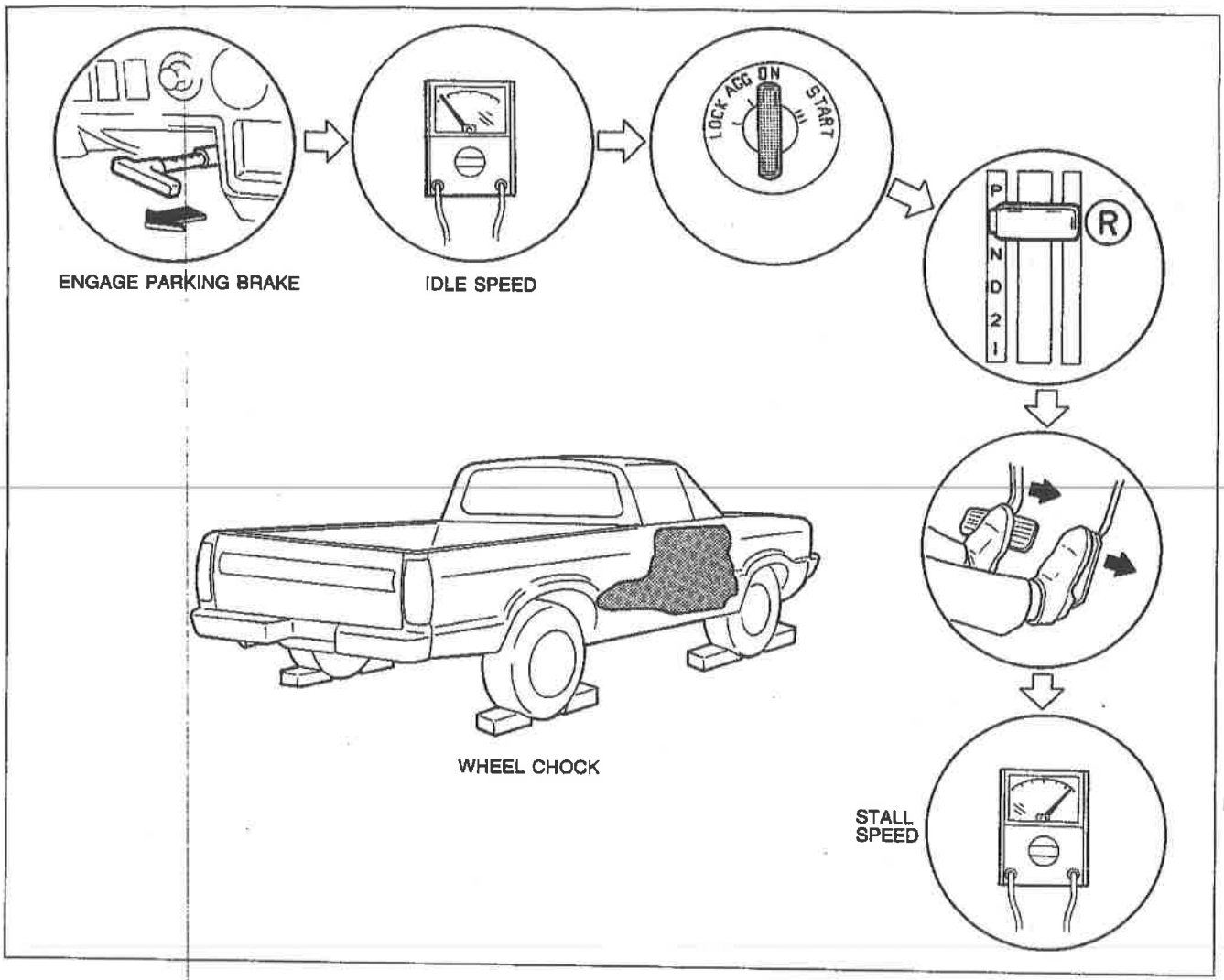
Preparation

1. Check the engine coolant, engine oil, and ATF levels before testing.
2. Warm the engine thoroughly to raise the ATF temperature to operating level **(60—70°C, 140—158°F)**.
3. Engage the parking brake and use wheel chocks at front and rear of the wheels.



0BU0K1-012

Procedure



2BU0K1-002

1. Connect a tachometer to the engine.
2. Start the engine and check the idle speed in P range. (Refer to Sections F1, F2.)

Idle speed
F2 Carb. : 800—850 (800 $\pm^{50}_{0}$) rpm
F2 EGI, G6: 750—790 rpm

3. Shift the selector lever to R range.

Caution
Step 4 must be performed within 5 seconds to prevent possible transmission damage.

4. Firmly depress the foot brake with the left foot, and gently depress the accelerator pedal with the right foot.

Caution
Step 5 must be performed within 5 seconds to prevent possible transmission damage.

5. When the engine speed no longer increases, quickly read the engine speed and release the accelerator.

Caution
Idling for at least one minute is to cool the ATF and to prevent deterioration of the fluid.

6. Move the selector lever to N range and let the engine idle for at least one minute.

Caution
Be sure to allow sufficient cooling time between each stall test.

7. Perform the stall test for the following ranges in the same manner.
   (1) D range
   (2) 2 range
   (3) 1 range

Engine stall speed
F2 EGI : 1,850—2,250 rpm
F2 Carb.: 1,800—2,200 rpm
G6 : 2,100—2,500 rpm

0BU0K1-014

Evaluation of Stall Test

Condition		Possible cause	
Above specification	In all ranges	Insufficient line pressure	Worn oil pump
			Oil leakage from oil pump, control valve, and/or transmission case
			Stuck pressure regulator valve
			Direct clutch slipping
	In D, 2, and 1 ranges	Rear clutch slipping	
	In D range only	One-way clutch slipping	
	In 2 range only	Brake band slipping	
	In R range only	Low and reverse brake slipping	
		Front clutch slipping	
		Perform road test to determine if this is caused by low and reverse brake or front clutch, as follows: a) Effective engine braking in 1 range.....Front clutch b) No engine braking in 1 range.....Low and reverse brake	
Within specification		All shift control elements within transmission are functioning normally	
Below specification		Engine out of tune	
		One-way clutch slipping within torque converter	

9MU0K2-027

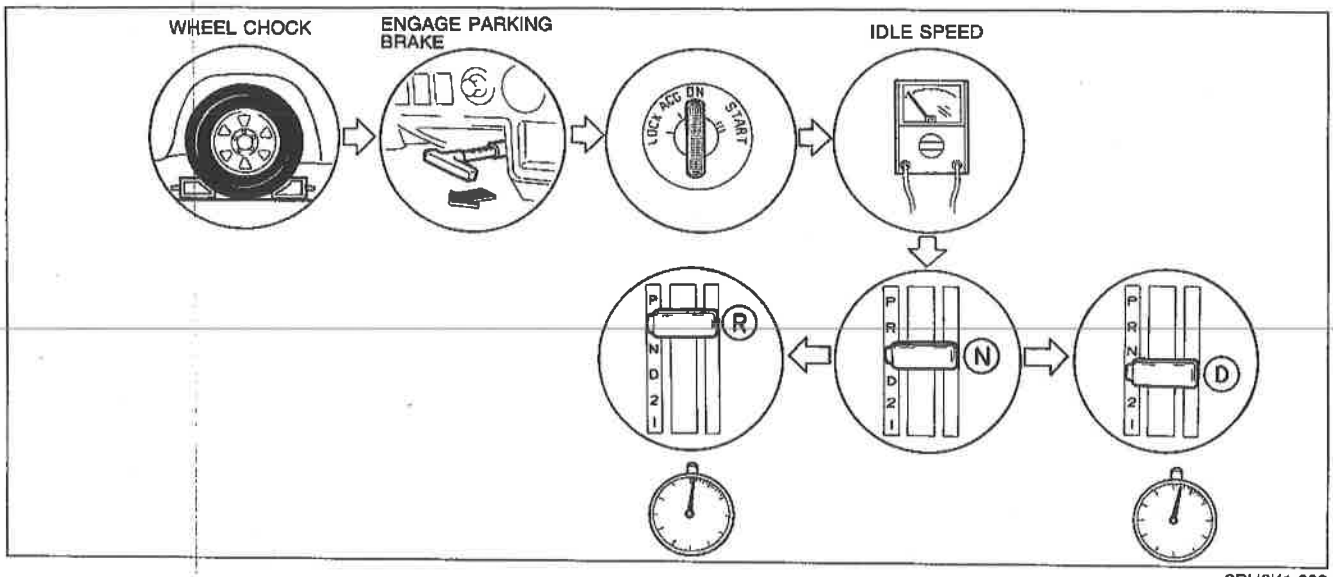
TIME LAG TEST

If the selector lever is shifted while the engine is idling, there will be a certain time lapse, or time lag, before shock is felt. This step measures this time lag for checking condition of the front, rear, and one-way clutch; low and reverse brake; and orifice check valve.

Preparation

Perform the preparation procedure shown in STALL TEST. (Refer to page K1–14.)

Procedure



2BU0K1-003

1. Start the engine and check the idle speed in P range. (Refer to Sections F1, F2.)

   Idle speed
   F2 Carb. : 800—850 (800 $\pm^{50}_{0}$) rpm
   F2 EGI, G6: 750—790 rpm

2. Shift from N range to D range.
3. Use a stop watch to measure the time it takes from shifting until shock is felt.

   Caution
   Idling for at least one minute is to cool the ATF and prevent deterioration of the fluid.

4. Shift the selector to N range and run the engine at idle for at least one minute or more.

   Note
   Make three measurements for each test and take the average value.

5. Perform the test for N range to R range in the same manner.

   Specified time lag: N → D range ..... 0.5—1.0 second
   N → R range ..... 0.5—1.0 second

Evaluation of Time Lag Test

Condition		Possible Cause
N → D shift	More than specification	Insufficient line pressure
		Rear clutch slipping
		One-way clutch slipping
	Less than specification	Excessive line pressure
N → R shift	More than specification	Insufficient line pressure
		Low and reverse brake slipping
		Front clutch slipping
	Less than specification	Stuck orifice check valve
		Excessive line pressure

9MU0K2-029

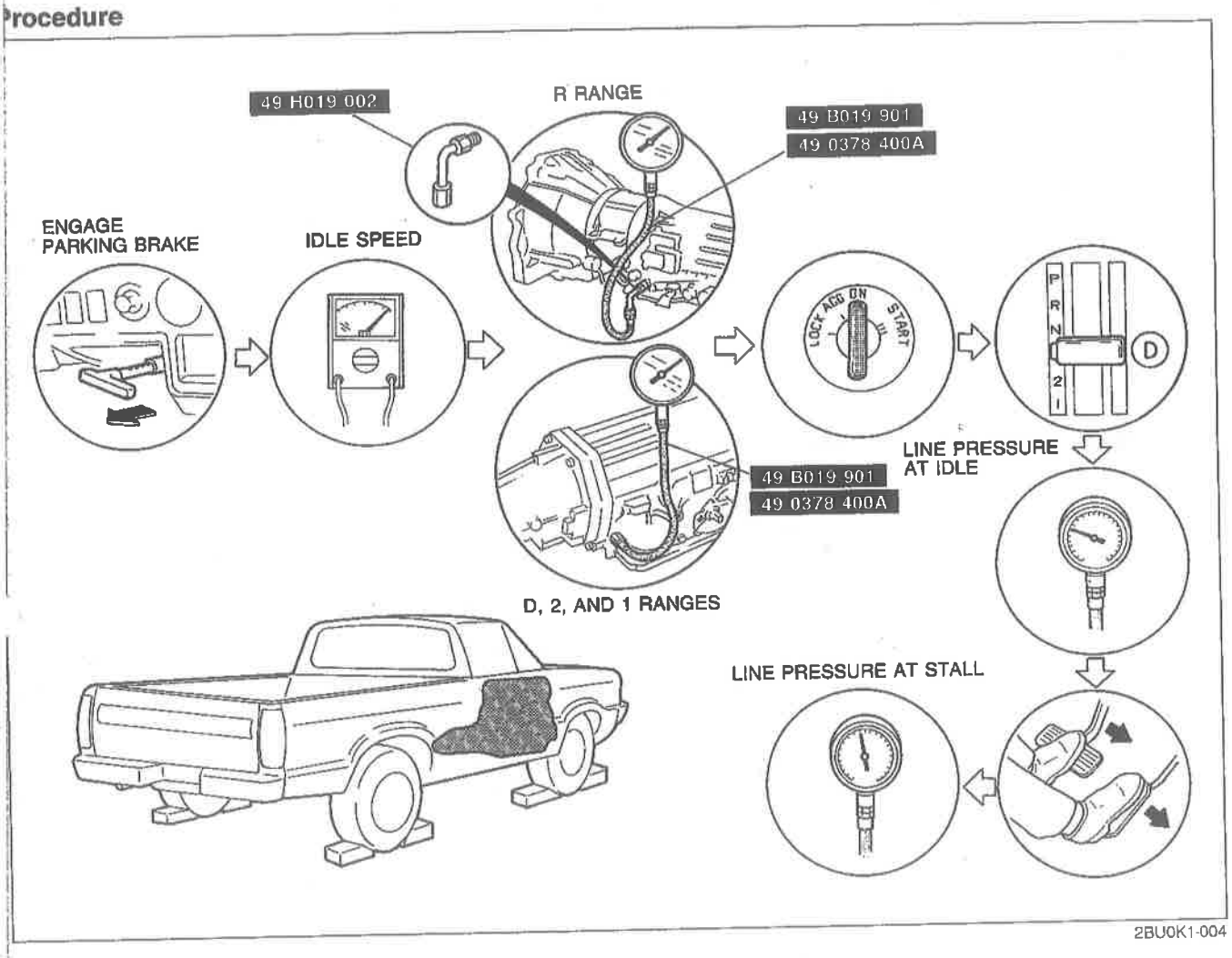
INE PRESSURE TEST

his test measures line pressures for checking the hydraulic components and inspecting for oil leakage.

eparation

. Perform the preparation procedure shown in STALL TEST.
. Connect a tachometer to the engine.
. Connect the **SST** to the line pressure inspection hole(s).

rocedure



2BU0K1-004

1. Start the engine and check the idle speed in P range. (Refer to Sections F1, F2.)

Idle speed
F2 Carb. : 800—850 (800 $\pm^{50}_{0}$) rpm
F2 EGI, G6: 750—790 rpm

2. Shift the selector lever to D range and read the line pressure at idle.

Caution
Step 3 must be performed within 5 seconds to prevent possible transmission damage.

3. Depress the brake pedal firmly with the left foot and gradually depress the accelerator pedal with the right foot.

Caution
Step 4 must be performed within 5 seconds to prevent possible transmission damage.

4. Read the line pressure as soon as the engine speed becomes constant; then release the accelerator pedal.

Caution
Idling for at least one minute is to cool the ATF and prevent deterioration of the fluid.

5. Shift the selector lever to N range and run the engine at idle for at least one minute.
6. Read the line pressure at idle and at the engine stall speeds for each range in the same manner.

Specified line pressure:

Range	Pressure kPa (kg/cm², psi)			
	Idle		Stall	
	F2 engine	G6 engine	F2 engine	G6 engine
D, 1	294—392 (3.0—4.0, 43—57)		932—1,128 (9.5—11.5, 135—164)	1,118—1,315 (11.4—13.4, 162—191)
2	589—1,148 (6.0—11.7, 85—166)	1,010—1,570 (10.3—16.0, 146—228)	981—1,177 (10.0—12.0, 142—172)	1,403—1,599 (14.3—16.3, 203—232)
R	520—657 (5.3—6.7, 75—95)	549—687 (5.6—7.0, 80—100)	1,736—1,923 (17.7—19.6, 252—279)	2,188—2,374 (22.3—24.2, 317—344)

0BU0K1-017

Evaluation of Line Pressure Test

Condition		Possible cause
Below standard	In all ranges	Worn oil pump
		Fluid leakage from the oil pump, control valve, or transmission case
		Stuck pressure regulator valve
		Fluid leakage from the direct clutch and/or OD band servo release side
	In D, 1, and 2 ranges	Fluid leakage from the rear clutch or governor hydraulic circuit, or both
	In R range only	Fluid leakage from the low and reverse brake hydraulic circuit
Excessive line pressure at idle		Leaking or disconnected vacuum hose
		Leaking vacuum diaphragm

9MU0K2-032

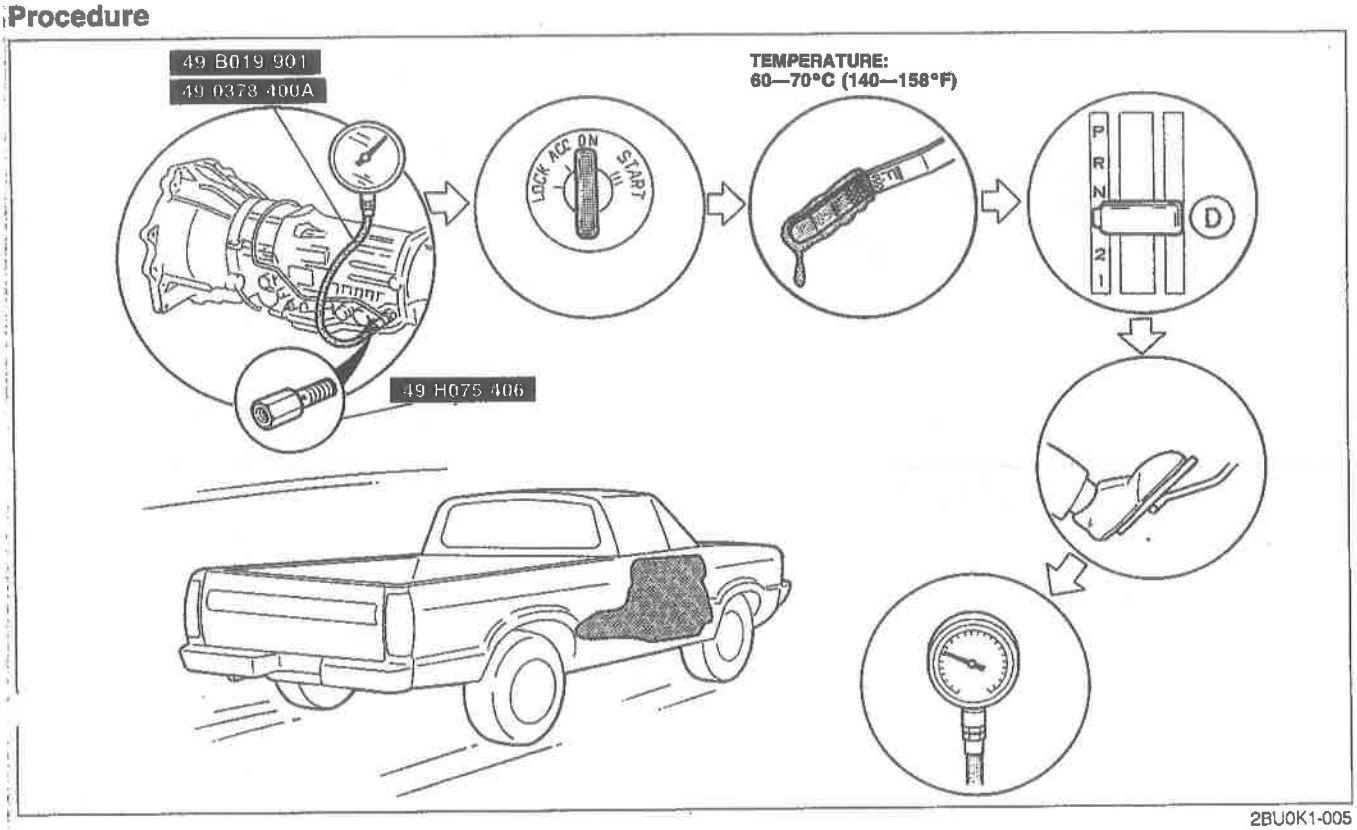
GOVERNOR PRESSURE TEST

This test checks governor pressures for inspecting hydraulic components and for oil leakage.

Preparation

1. Connect the **SST** to the governor pressure output hole.
2. Place the **SST** inside the vehicle.
3. Start the engine and warm up the ATF; then check the ATF level.

Procedure



2BU0K1-005

1. Start the engine and check the idle speed in P range.

Idle speed
F2 Carb. : 800—850 (800 $^{+50}_{0}$) rpm
F2 EGI, G6: 750—790 rpm

2. Drive the vehicle in D range.
3. Read the governor pressure at the speeds listed in the table below.

Specified governor pressure:

Vehicle speed km/h (mph)	Governor pressure kPa (kg/cm², psi)		
	F2 EGI	F2 Carb.	G6
30 (19)	69—128 (0.7—1.3, 10—18)	88—147 (0.9—1.5, 13—21)	78—137 (0.8—1.4, 11—20)
55 (34)	157—235 (1.6—2.4, 23—34)	196—275 (2.0—2.8, 28—40)	186—265 (1.9—2.7, 27—38)
85 (53)	314—412 (3.2—4.2, 46—60)	412—510 (4.2—5.2, 60—74)	392—491 (4.0—5.0, 57—71)

0BU0K1-019

Evaluation of Governor Pressure Test

Condition	Possible cause
Not within specification	Fluid leakage from line pressure hydraulic circuit
	Fluid leakage from governor pressure hydraulic circuit
	Defective or stuck governor valve

9MU0K2-035

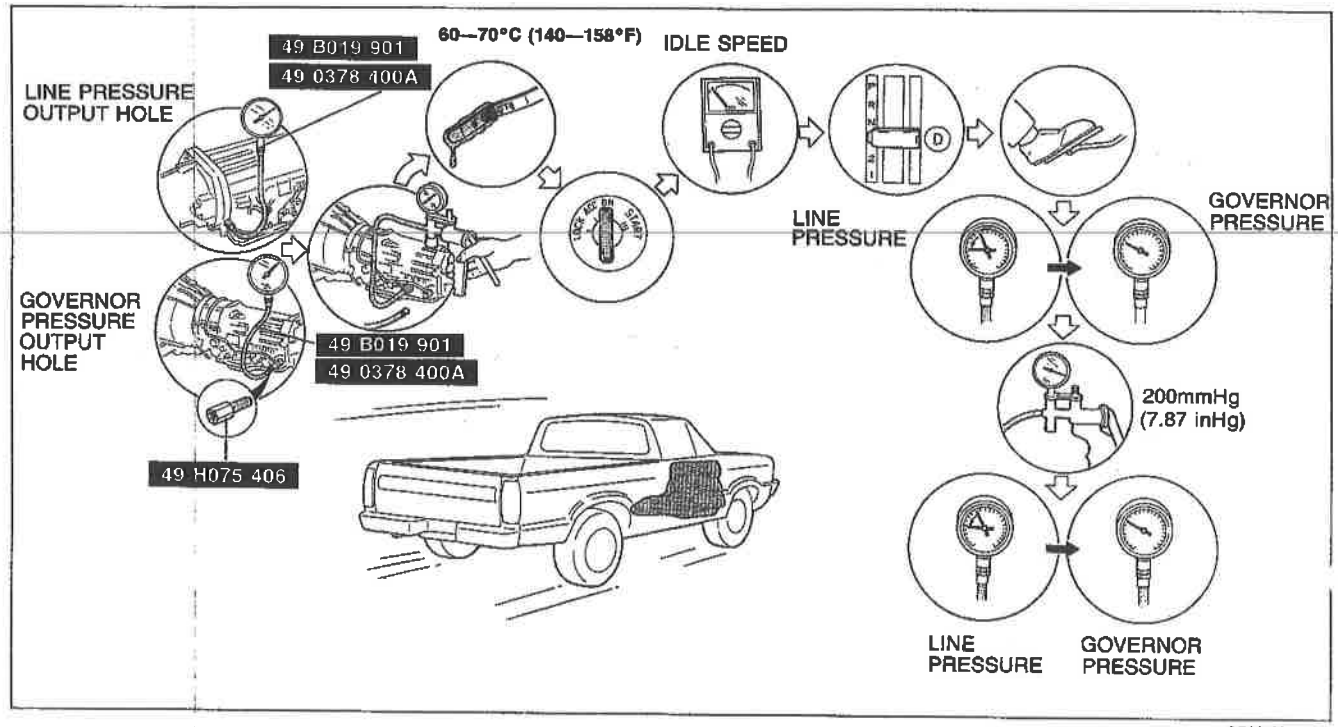
LINE PRESSURE CUTBACK POINT TEST

This test checks line pressure cutback point for checking of the hydraulic components.

Preparation

1. Connect the **SST** to the line pressure output hole and the governor pressure output hole.
2. Place the **SST** inside the vehicle.
3. Disconnect the hose and plug it to the vacuum diaphragm.
4. Connect a vacuum pump to the vacuum diaphragm and place the pump inside the vehicle.
5. Start the engine and warm up the ATF; then check the ATF level.

Procedure



2BU0K1-006

1. Start the engine and check the idle speed in P range.

Idle speed
F2 Carb. : 800—850 (800 $\pm^{50}_{0}$) rpm
F2 EGI, G6: 750—790 rpm

2. Gradually accelerate the vehicle in D range.
3. Read the governor pressure at the point where the line pressure suddenly drops.
4. Apply **200 mmHg (7.87 inHg)** vacuum, and repeat Steps 2 and 3.

Specified governor pressure:

Vacuum mmHg (inHg)	Governor pressure kPa (kg/cm², psi)		
	F2 EGI	F2 Carb.	G6
Atmospheric pressure	108—167 (1.1—1.7, 16—24)	137—196 (1.4—2.0, 20—28)	128—186 (1.3—1.9, 18—27)
200 (7.87)	59—118 (0.6—1.2, 9—17)	69—128 (0.7—1.3, 10—18)	78—137 (0.8—1.4, 11—20)

0BU0K1-021

Evaluation of Cutback Point Test

Condition	Possible cause
Not within specification	Missing diaphragm rod, rod length incorrect, or both
	Stuck valve in control valve

9MU0K2-038

ROAD TEST

This step is performed to inspect for problems in the various ranges. If these tests show any problems, refer to the mechanical sections to adjust or replace.

Caution
Perform the test at normal ATF operating temperature (60—70°C, 140—158°F).

D-RANGE TEST

Shift Point, Shift Pattern, and Shift Shock

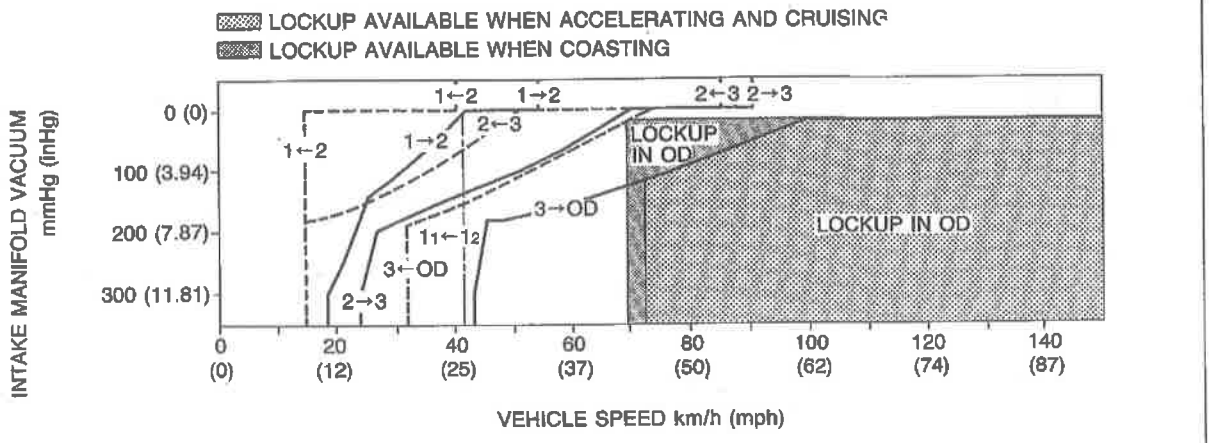
1. Shift the selector lever to D range and depressed the OD OFF switch.
2. Accelerate the vehicle with half and full throttle opening.
3. Check that 1-2, 2-3 and 3-OD upshifts and downshifts and lockup are obtained. The shift points must be as shown in the D range shift diagram.

Note
a) Vehicle speed on a chassis roller may not meet the specified shift diagram because of incorrect tire size.
b) There is no lockup or OD when the OD OFF switch is released.

4. Check the upshifts and downshifts for shift shock or slippage.
5. While driving in 3rd shift the selector lever to 2 range and check that 3-2 downshift immediately occurs, then decelerate and check that engine braking effect is felt in 2nd gear.

Basic shift diagram

F2 EGI



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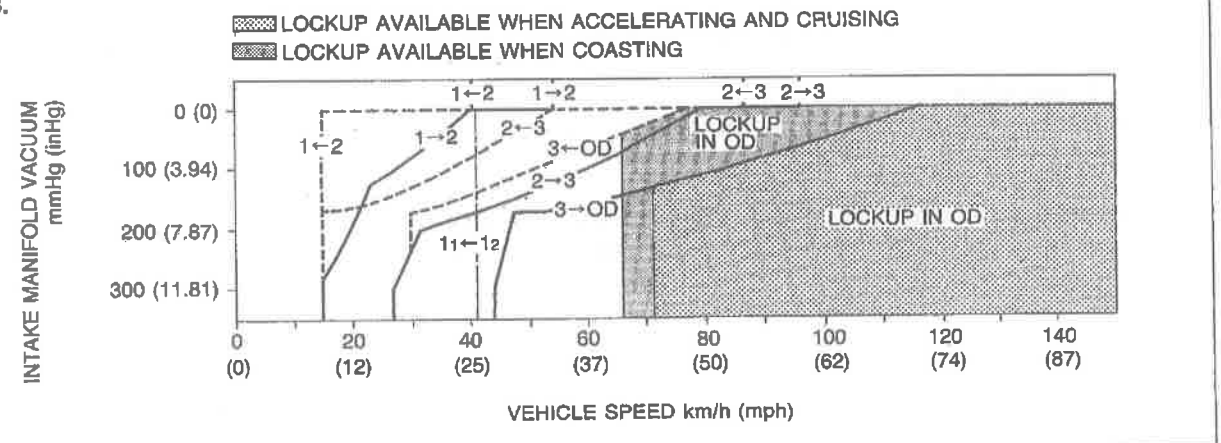
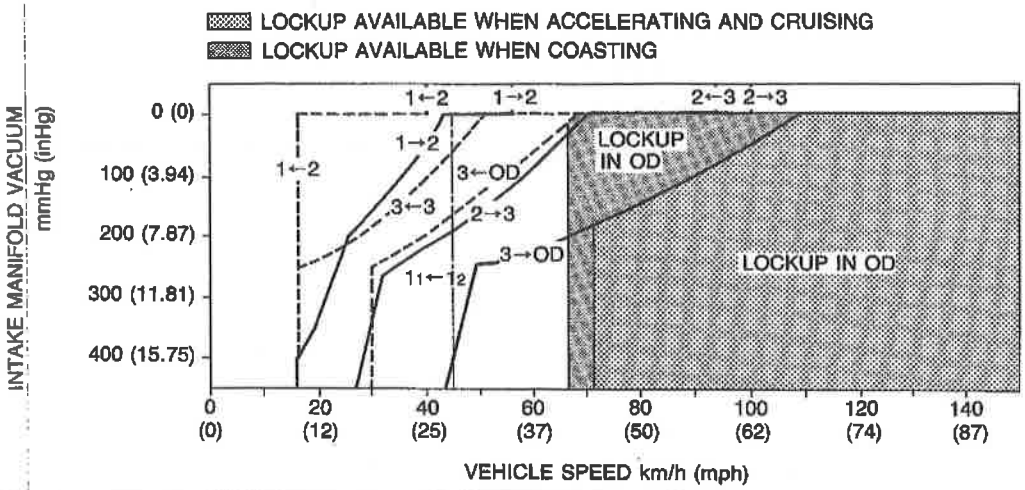
F2 CARB.



G6



Noise and Vibration
Drive the vehicle in OD (lockup), OD (no lockup), and 3rd. Check for abnormal noise or vibration.

Note
Abnormal noise and vibration can also be caused by the torque converter, propeller shaft, or differential. Therefore, check for the cause made with extreme care.

Kickdown
Drive the vehicle in OD, 3rd, and 2nd gears and check that kickdown occurs for OD→3, 2, or 1; 3→2, or 1; 2→1 and that the shift points are as shown in the basic shift diagram.

2-RANGE TEST
Shift Pattern
1. Shift the selector lever to 2 range.
2. Accelerate the vehicle in 2 range and check that 2nd gear is held.

Noise and vibration
Drive the vehicle in 2nd gear and check for abnormal noise or vibration.

Note
Abnormal noise and vibration can also be caused by the torque converter, propeller shaft, or differential. Therefore, check for the cause made with extreme care.

1-RANGE TEST
Shift Pattern
1. Shift the selector lever to 1 range.
2. Accelerate the vehicle in 1 range and check that 1st gear is held.

Noise and vibration
Drive the vehicle in 1st gear and check for abnormal noise or vibration.

Note
Abnormal noise and vibration can also be caused by the torque converter, propeller shaft, or differential. Therefore, check for the cause made with extreme care.

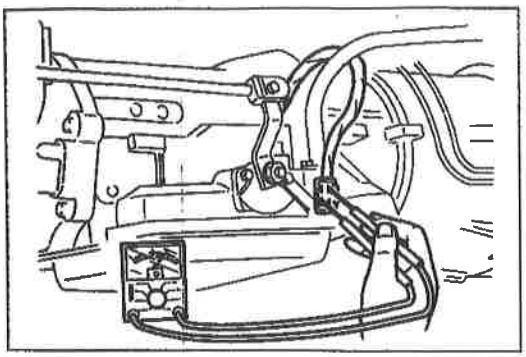
P-RANGE TEST
1. Shift into P range on a gentle slope, release the brake, and check that the vehicle does not roll.
2. Shift into P range while driving the vehicle at **maximum** of **4 km/h (2.5 mph)** on a level surface, and check that the vehicle stops.

9MU0K2-040

Vehicle speed at gearshift table

Range	Throttle condition (Manifold vacuum)	Shifting	Vehicle speed km/h (mph)		
			F2 EGI	F2 Carb.	G6
D	Fully opened	$D_1 \rightarrow D_2$	51—57 (32—35)	52—58 (32—36)	53—59 (33—37)
		$D_2 \rightarrow D_3$	93—99 (58—61)	88—94 (55—58)	97—103 (60—64)
		OD→D_3	Above 84 (52)	Above 83 (51)	Above 91 (56)
		$D_3 \rightarrow D_2$	84—90 (52—56)	83—89 (51—55)	91—97 (56—60)
		$D_2 \rightarrow D_1$	37—43 (23—27)	38—44 (24—27)	37—43 (23—27)
	Half throttle 200 mmHg (7.87 inHg)	$D_1 \rightarrow D_2$	16—22 (10—14)	20—26 (12—16)	23—29 (14—18)
		$D_2 \rightarrow D_3$	29—35 (18—22)	24—30 (15—18)	40—46 (25—29)
		D_3→OD	43—49 (27—30)	42—48 (26—30)	64—70 (40—43)
		Lockup ON (OD)	68—74 (42—46)	70—76 (43—47)	68—74 (42—46)
		Lockup OFF (OD)	63—69 (39—43)	66—72 (41—45)	63—69 (39—43)
		OD→D_3	26—32 (16—20)	29—35 (18—22)	36—42 (22—26)
		$D_3 \rightarrow D_2$	12—18 (7—11)	12—18 (7—11)	25—31 (16—19)
		$D_2 \rightarrow D_1$	12—18 (7—11)	12—18 (7—11)	13—19 (8—12)
	Fully closed	$D_1 \rightarrow D_2$	12—18 (7—11)	16—22 (10—14)	13—19 (8—12)
		$D_2 \rightarrow D_3$	24—30 (15—19)	21—27 (13—17)	24—30 (15—19)
		D_3→OD	41—47 (25—29)	40—46 (25—29)	40—46 (25—29)
		OD→D_3	26—32 (16—20)	29—35 (18—22)	27—33 (17—20)
		$D_3 \rightarrow D_2$	12—18 (7—11)	12—18 (7—11)	13—19 (8—12)
		$D_2 \rightarrow D_1$	12—18 (7—11)	12—18 (7—11)	13—19 (8—12)
1	—	$1_2 \rightarrow 1_1$	38—44 (24—27)	38—44 (24—27)	41—47 (25—29)

0BU0K1-023



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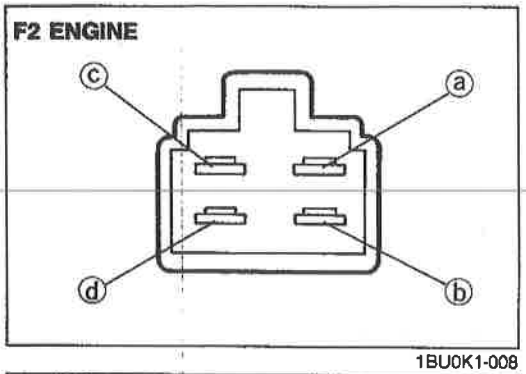

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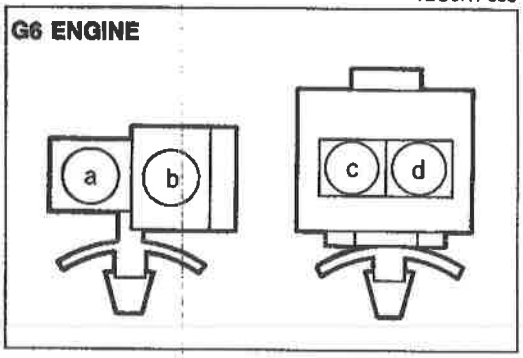

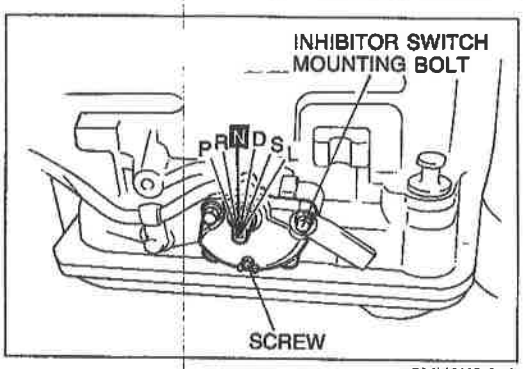

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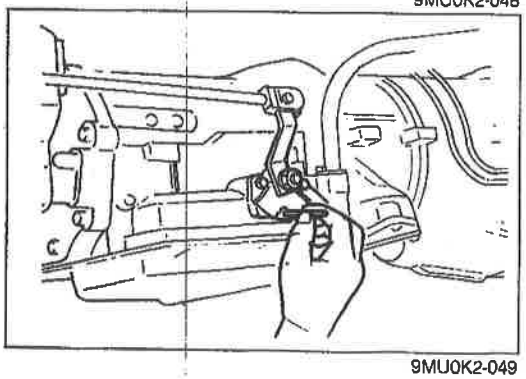


9MU0K2-049

ELECTRONIC SYSTEM COMPONENTS

INHIBITOR SWITCH

Inspection

Operation

1. Check that the starter operate with the ignition switch at START position and the selector in the P and in the N range only, and that it does not operate in any other position.
2. Check that the backup lights illuminate when shifted to the R range with the ignition switch ON.
3. Check the inhibitor switch if it is not as specified.

Continuity

1. Jack up the vehicle and support it with safety stands.
2. Disconnect the control linkage from the manual shaft.
3. Disconnect the inhibitor switch connector.
4. Check continuity of the terminals as shown.

Position	Connector terminal			
	a	b	c	d
P	○—○			
R			○—○	
N	○—○			
D, 1, 2				

○—○ : Indicates continuity

5. If not correct, adjust the inhibitor switch.
6. If correct, check or adjust the selector lever and control linkage.

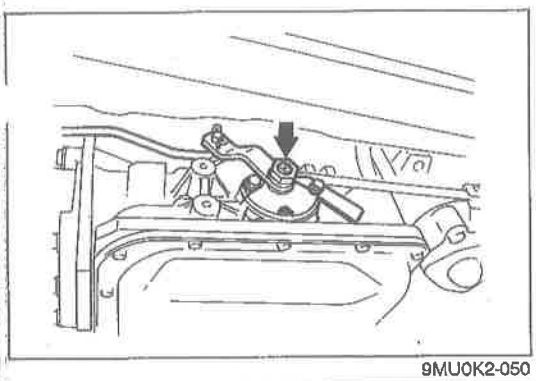
Adjustment

1. Move the manual shaft to N position.
2. Loosen the inhibitor switch mounting bolts.
3. Remove the screw on the switch body and move the inhibitor switch so that the screw hole is aligned with the small hole inside the switch. Check their alignment by inserting an **approx. 2.0mm (0.079 in)** diameter pin through the holes.

4. Tighten the mounting bolts and remove the pin.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)

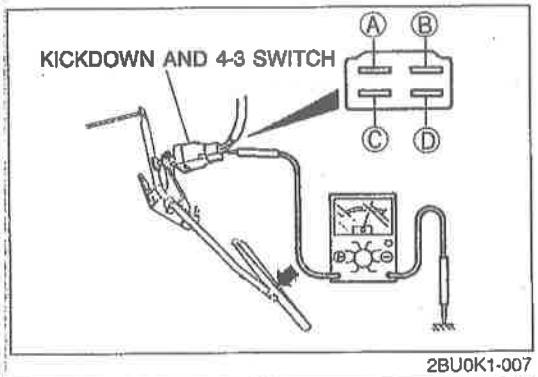
5. Install and tighten the screw in the switch body..
6. Check the continuity of the inhibitor switch.
7. If not correct, replace the inhibitor switch.



9MU0K2-050

8. Connect the control linkage.

Tightening torque:
29—39 N·m (3.0—4.0 m-kg, 22—29 ft-lb)



2BU0K1-007

KICKDOWN AND 4-3 SWITCH

Inspection

Kickdown switch terminal voltage

1. Turn the ignition switch ON.
2. Check the voltage of terminal Ⓒ (YG).

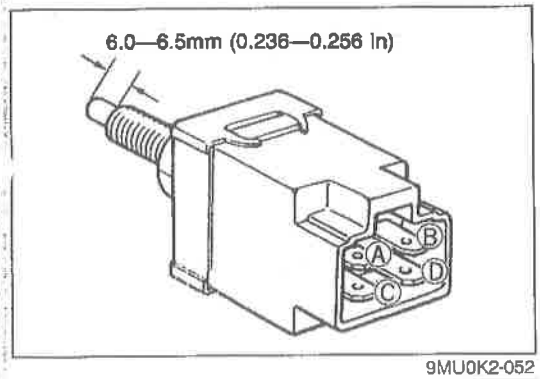
VB: Battery voltage

Terminal voltage	Depressed
VB	7/8—8/8 (Full)
0V	0/8—7/8

3. If not correct, check the continuity between terminals.

Kickdown switch continuity

1. Disconnect the connector.
2. Check the continuity between terminals Ⓒ and Ⓓ when the tip of the switch is depressed **6.0—6.5mm (0.236—0.256 in)**.
3. If not correct, replace the switch.
4. If correct, adjust the switch.



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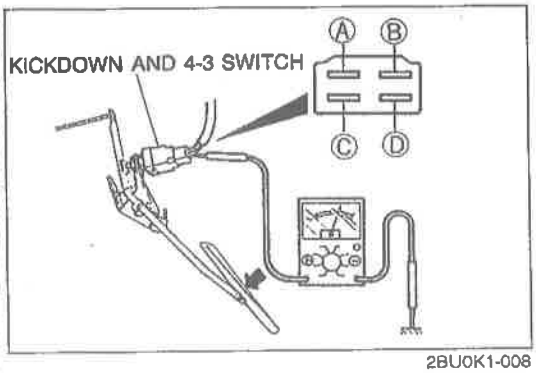


2BU0K1-008

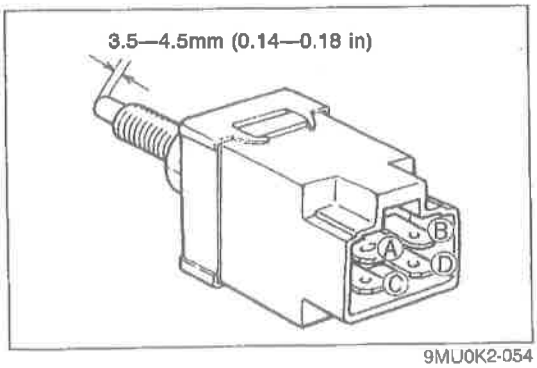
4-3 switch terminal voltage

1. Turn the ignition switch ON.
2. Check the voltage of terminal Ⓐ (GB).

VB: Battery voltage

Terminal voltage	Depressed
VB	6/8—8/8
0V	0/8—5/8

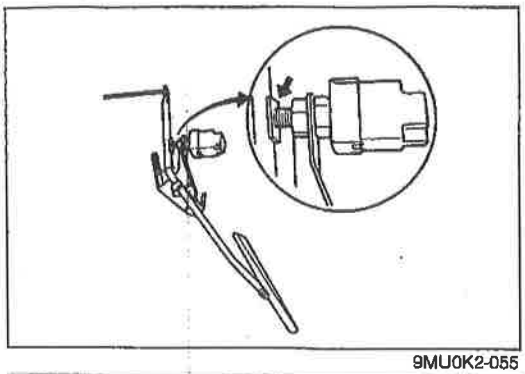
3. If not correct, check the continuity between terminals.



9MU0K2-054

4-3 switch continuity

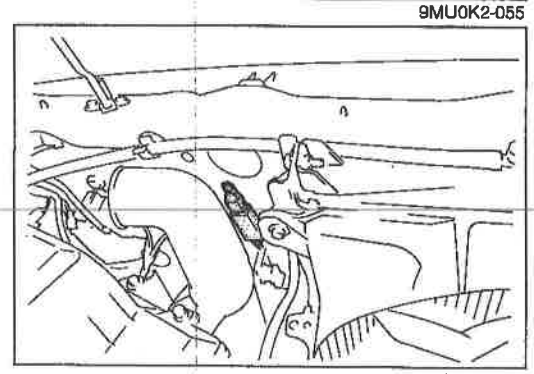
1. Disconnect the connector.
2. Check the continuity between terminals Ⓐ and Ⓑ when the tip of the switch is depressed **3.5—4.5mm (0.14—0.18 in)**.
3. If not correct, replace the switch.
4. If correct, adjust the switch.


9MU0K2-055

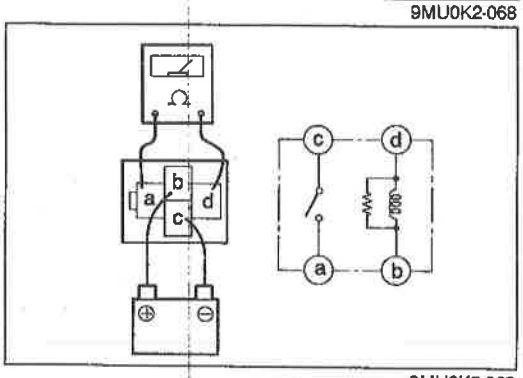
Adjustment
1. Disconnect the connector.
2. Loosen the locknut and back the switch out fully.
3. Depress the accelerator pedal fully and hold it.
4. With the accelerator pedal fully down, turn the kickdown switch clockwise until it turns ON (clicking sound heard). Then, turn switch 1/4 turn further clockwise.
5. Tighten the locknut and release the accelerator pedal.

Tightening torque:
14—18 N·m (1.4—1.8 m-kg, 10—13 ft-lb)

6. Reconnect the connector.
7. Depress the accelerator pedal fully and verify that the kickdown switch clicks at the fully depressed position.

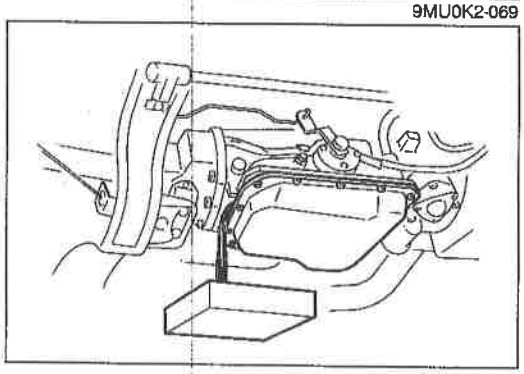

9MU0K2-068

KICKDOWN RELAY
Inspection
1. Remove the kickdown relay.



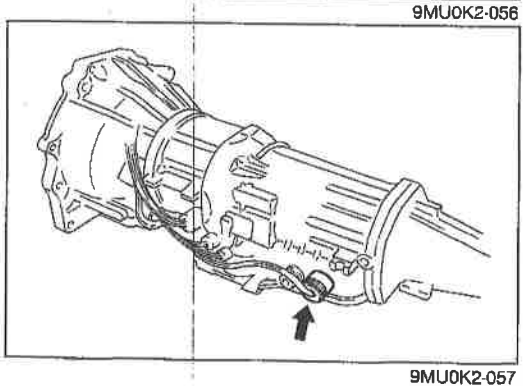
9MU0K2-069

2. Connect a battery and an ohmmeter as shown.
3. First check that there is continuity; then disconnect the battery and check that there is no continuity.
4. If not correct, replace the relay.

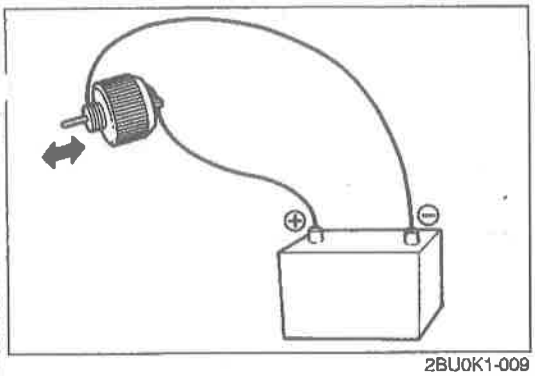

9MU0K2-056

KICKDOWN SOLENOID
Inspection
1. Jack up the vehicle and support it with safety stands.
2. Loosen the oil pan mounting bolts and drain **approx. 1.0 liter (1.1 US qt, 0.9 Imp qt)** of ATF.
3. Tighten the oil pan mounting bolts.

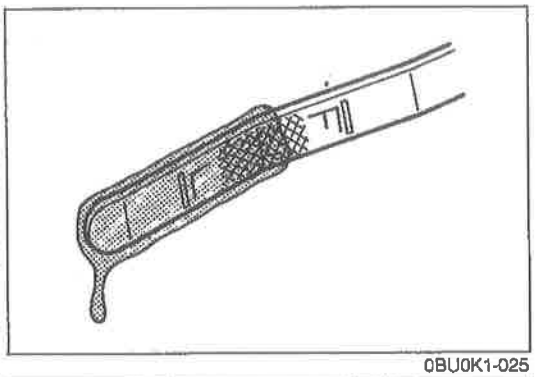
Tightening torque:
5.9—7.8 N·m (60—80 cm-kg, 52—69 in-lb)


9MU0K2-057

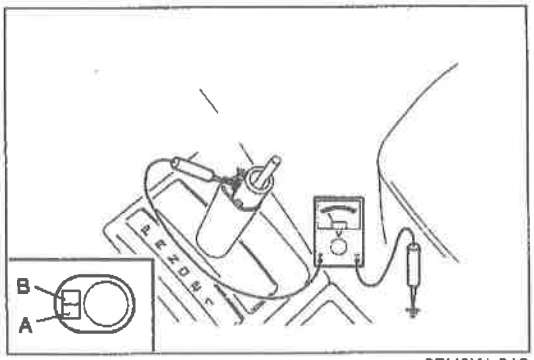
4. Remove the kickdown solenoid.


2BU0K1-009

5. Apply battery voltage to the kickdown solenoid and verify that the kickdown solenoid clicks.
6. If not correct, replace the kickdown solenoid.
7. Apply the ATF to the new O-ring and install it to the solenoid; then install the kickdown solenoid.


0BU0K1-025

8. Add ATF to the correct level. (Refer to page K1–33.)



2BU0K1-010

OD OFF SWITCH

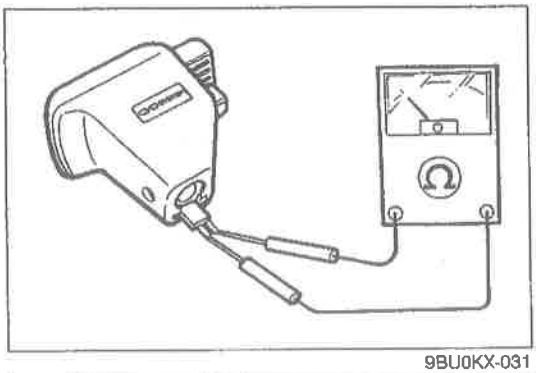
Inspection

Terminal voltage

1. Remove the selector lever knob.
2. Turn the ignition switch ON.
3. Check the voltage between terminal A and ground, and between terminal B and ground.

VB: Battery voltage

Terminal	Terminal voltage
A and ground	0V
B and ground	VB


9BU0KX-031

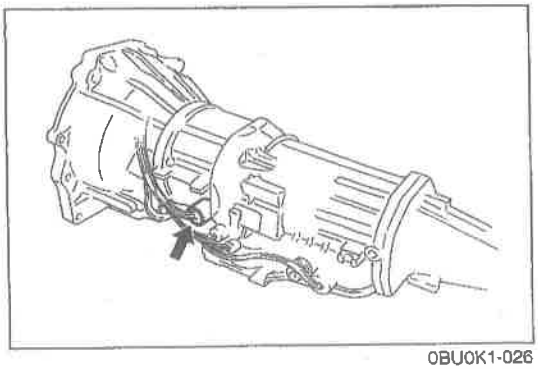
4. If correct, check continuity between the terminals.
5. If not correct, check the wiring harness.

Continuity

1. Check continuity of the terminals.

Continuity	Switch
Yes	Released
No	Depressed

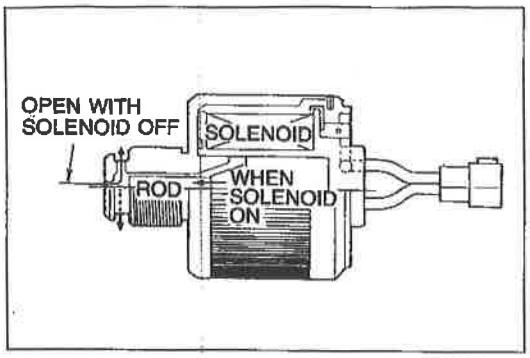
2. If not correct, replace the selector lever knob.


0BU0K1-026

OD CANCEL SOLENOID

Inspection

1. Jack up the vehicle and support it with safety stands.
2. Drain the ATF as described in KICKDOWN SOLENOID section. (Refer to page K1–27.)
3. Remove the OD cancel solenoid.

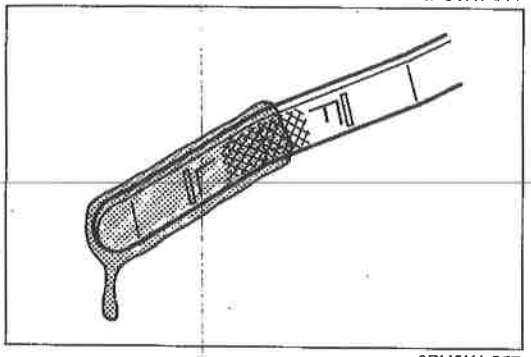


2BU0K1-011

4. Apply battery voltage to the solenoid and verify operation of the solenoid.

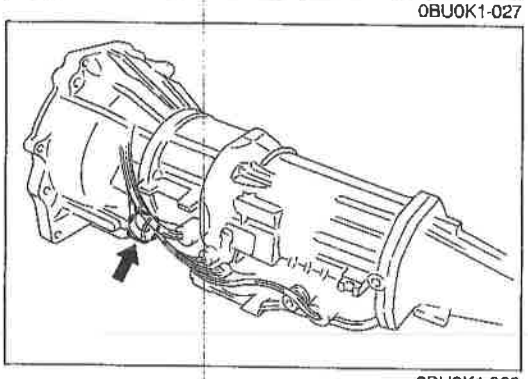
Note
The oil passage should close when current is applied and open when it is cut off.

5. If not correct, replace the OD cancel solenoid.
6. Apply the ATF to the new O-ring and install it to the solenoid; then install the OD cancel solenoid.



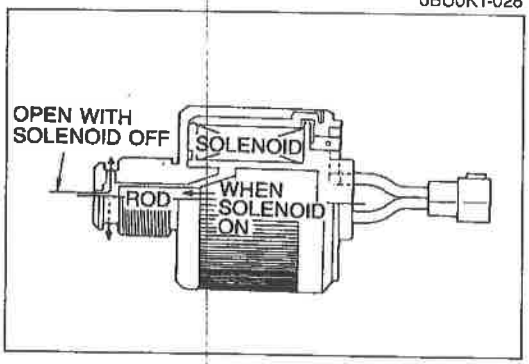
0BU0K1-027

7. Add ATF to the correct level. (Refer to page K1–33.)



0BU0K1-028

LOCKUP SOLENOID
Inspection
1. Jack up the vehicle and support it with safety stands.
2. Drain the ATF as described in KICKDOWN SOLENOID section. (Refer to page K1–27.)
3. Remove the lockup solenoid.

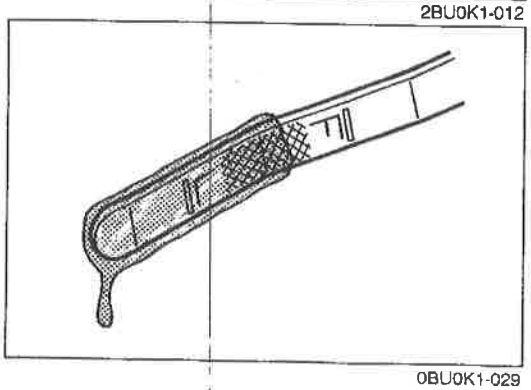


2BU0K1-012

4. Apply battery voltage to the solenoid and verify operation of the solenoid.

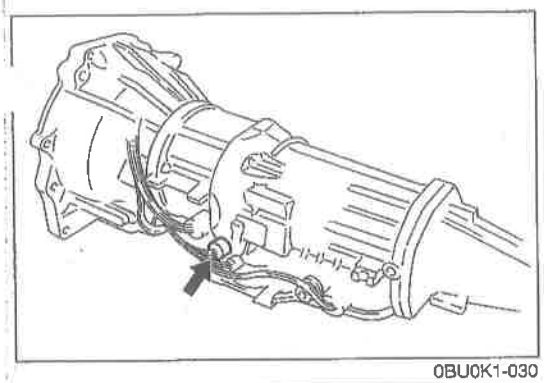
Note
The oil passage should close when current is applied and open when it is cut off.

5. If not correct, replace the lockup solenoid.
6. Apply the ATF to the new O-ring and install it to the solenoid; then install the lockup solenoid.

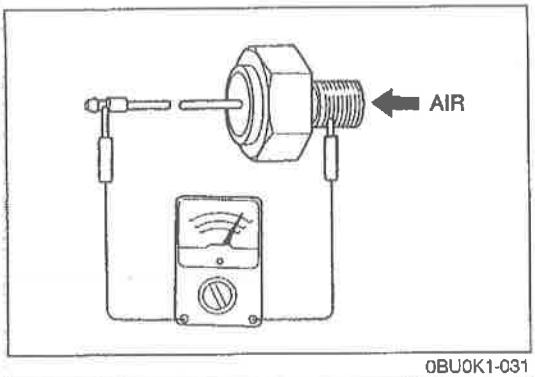


0BU0K1-029

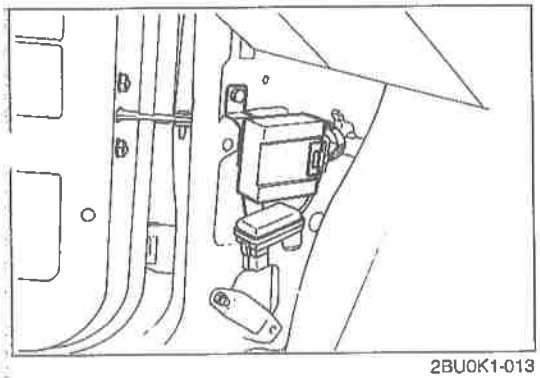
7. Add ATF to the correct level. (Refer to page K1–33.)



0BU0K1-030



0BU0K1-031



2BU0K1-013

OIL PRESSURE SWITCH

Inspection

1. Jack up the vehicle and support it with safety stands.
2. Drain the ATF as described in KICKDOWN SOLENOID section. (Refer to page K1–27.)
3. Remove the oil pressure switch.
4. Use air pressure to verify operation of the switch.

Continuity	Pressure
Yes	Less than 49 kPa (0.5 kg/cm^2, 7.1 psi)
No	More than 294 kPa (3.0 kg/cm^2, 42.7 psi)

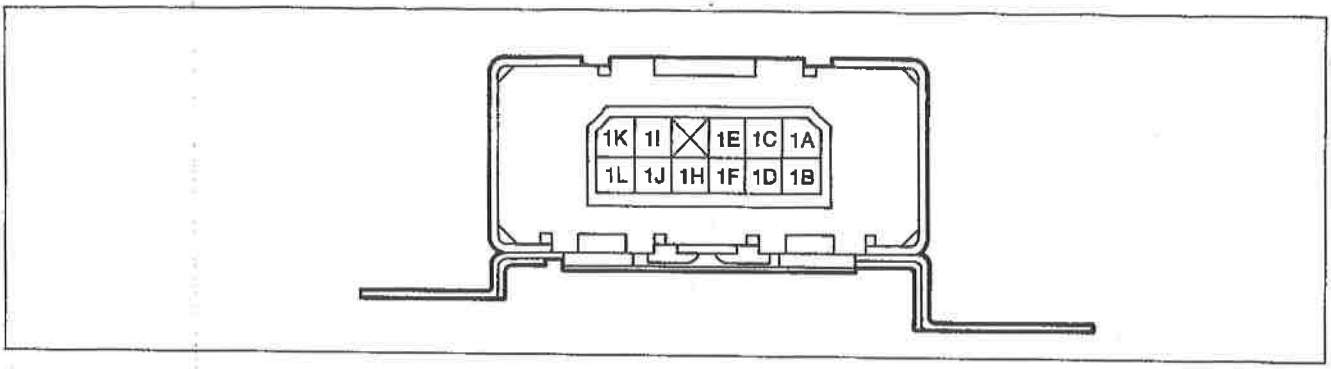
5. If not correct, replace the oil pressure switch.
6. Apply the ATF to the new O-ring and install it to the solenoid; then install the oil pressure switch.
7. Add ATF to the correct level. (Refer to page K1–33.)

4AT CONTROL UNIT

Inspection

1. Turn the IG switch OFF, and make sure the control unit F terminal is grounded.
2. Turn ON the IG switch, and make sure the E terminal voltage is battery voltage.

F2 engine

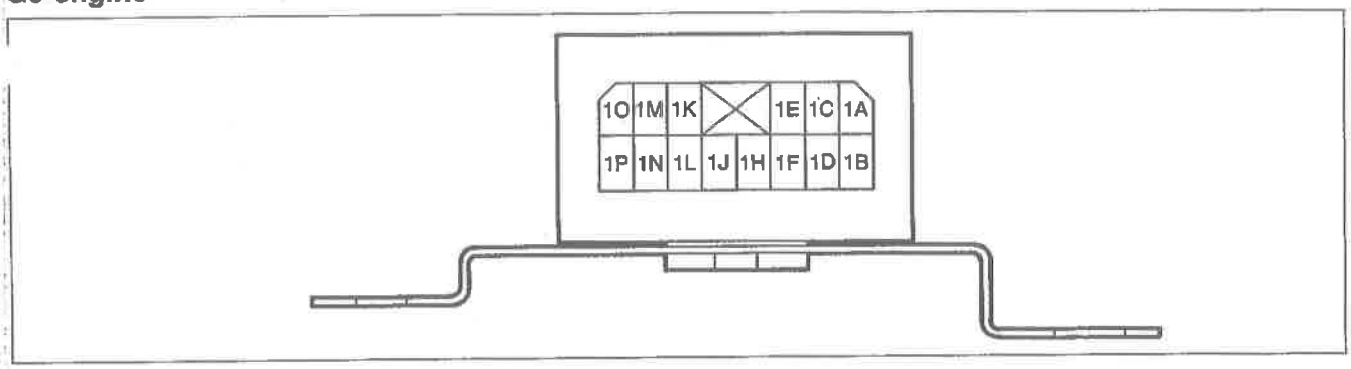


VB: Battery voltage

Terminal	Connected to	Voltage	Condition
1A (Output)	OD cancel solenoid	VB	Solenoid OFF: • OD gear position
		Below 1.5V	Solenoid ON: • 1st, 2nd, and 3rd gear positions in forward ranges • P, R, and N ranges
1B (Ground)	—	0V	Constant
1C	—	—	—
1D	—	—	—
1E (Input)	OD OFF switch	VB	OD OFF switch depressed (ON): • OD not available
		0V	OD OFF switch released (OFF): • OD available
1F (Input)	Cruise control unit	VB	Normal conditions
		Below 1.5V	Set or Resume switch ON, or vehicle speed 8 km/h (5 mph) lower than preset speed (Driving vehicle: cruise control operation)
1H (Input)	Kickdown relay	VB	Kickdown relay OFF: • Other than conditions below
		Below 1.5V	Kickdown relay ON: • Kickdown switch On (throttle opening more than 7/8)
1I (Input)	Speed sensor	1.5—7V	During driving
		Approx. 7V or below 1.5V	Vehicle stopped
1J	—	—	—
1K (Input)	4-3 switch	VB	Switch ON: • Throttle opening 6/8—8/8
		0V	Switch OFF: • Other than conditions above
1L	—	—	—

2BU0K1-014

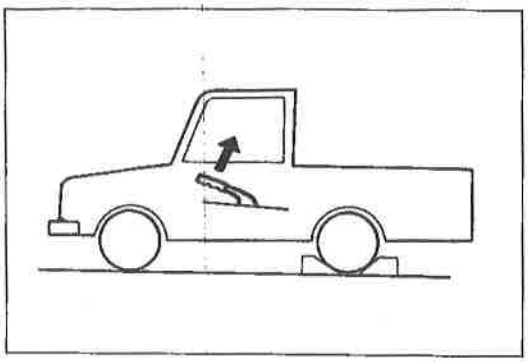
G6 engine

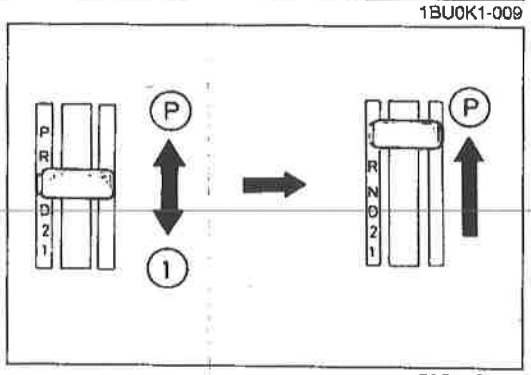


VB: Battery voltage

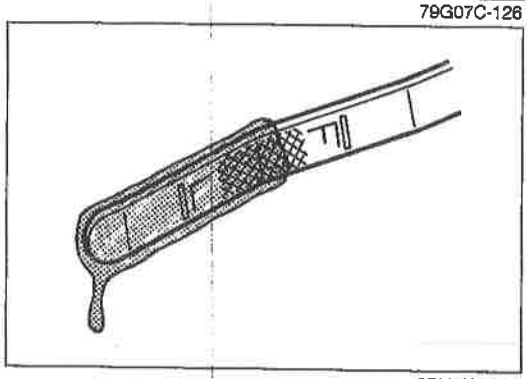
Terminal	Connected to	Voltage	Condition
1A (Battery power)	Battery	VB	Ignition switch ON
		0V	Ignition switch OFF
1B (Ground)	Battery ground	0V	Constant
1C (Input)	OD OFF switch	VB	OD OFF switch depressed (ON): • OD not available
		0V	OD OFF switch released (OFF): • OD available
1D	—	—	—
1E (Input)	4-3 switch	VB	Switch ON: • Throttle opening 6/8—8/8
		0V	Switch OFF: • Other than conditions above
1F (Input)	Oil pressure switch	VB	Switch OFF: • 1st, 2nd, and 3rd gear positions in forward ranges • P, R, and N ranges
		0V	Switch ON: • OD gear position
1H (Input)	Engine control unit	VB	2Y terminal of engine control unit voltage VB • Normal condition
		0V	2Y terminal of engine control unit voltage 0V • Throttle fully—open position
1I	—	—	—
1J (Input)	Cruise control unit	VB	Normal conditions
		Below 1.5V	Set or Resume switch ON, or vehicle speed 8 km/h (5 mph) lower than preset speed (Driving vehicle: cruise control operation)
1K (Output)	OD cancel solenoid	VB	Solenoid OFF: • OD gear position
		Below 1.5V	Solenoid ON: • 1st, 2nd, and 3rd gear positions in forward ranges • P, R, and N ranges
1L (Input)	Speed sensor	1.5—7V	During driving
		Approx. 7V or below 1.5V	Vehicle stopped
1M (Input)	Kickdown relay	VB	Kickdown relay OFF: • Other than conditions below
		Below 1.5V	Kickdown relay ON: • Kickdown switch ON (throttle opening more than 7/8)
1N (Output)	Lockup solenoid	VB	Solenoid OFF: • Non-lockup
		Below 1.5V	Solenoid ON: • Lockup

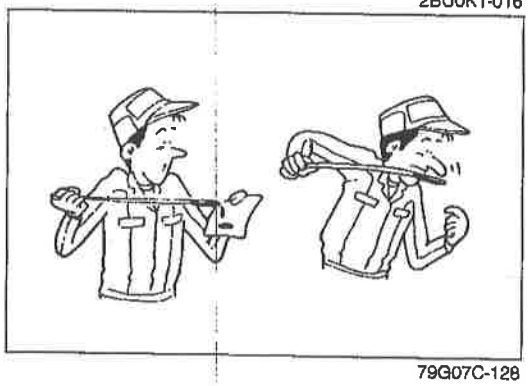
2BU0K1-015


1BU0K1-009



79G07C-126


2BU0K1-016


79G07C-126

AUTOMATIC TRANSMISSION FLUID (ATF)

INSPECTION

Level

1. Apply the parking brake and position wheel chocks securely to prevent the vehicle from rolling.

Note
Place the vehicle on a flat, level surface.

2. Warm up the engine until the ATF reaches **60—70°C (140—158°F)**.

3. While the engine is idling, shift the selector lever from P to 1 and back again.
4. Let the engine idle.
5. Shift the selector lever to P.

6. Ensure that the ATF level is between the notches on the transmission level gauge. Add ATF to specification if necessary.

ATF type: Dexron®II or M-III

Condition

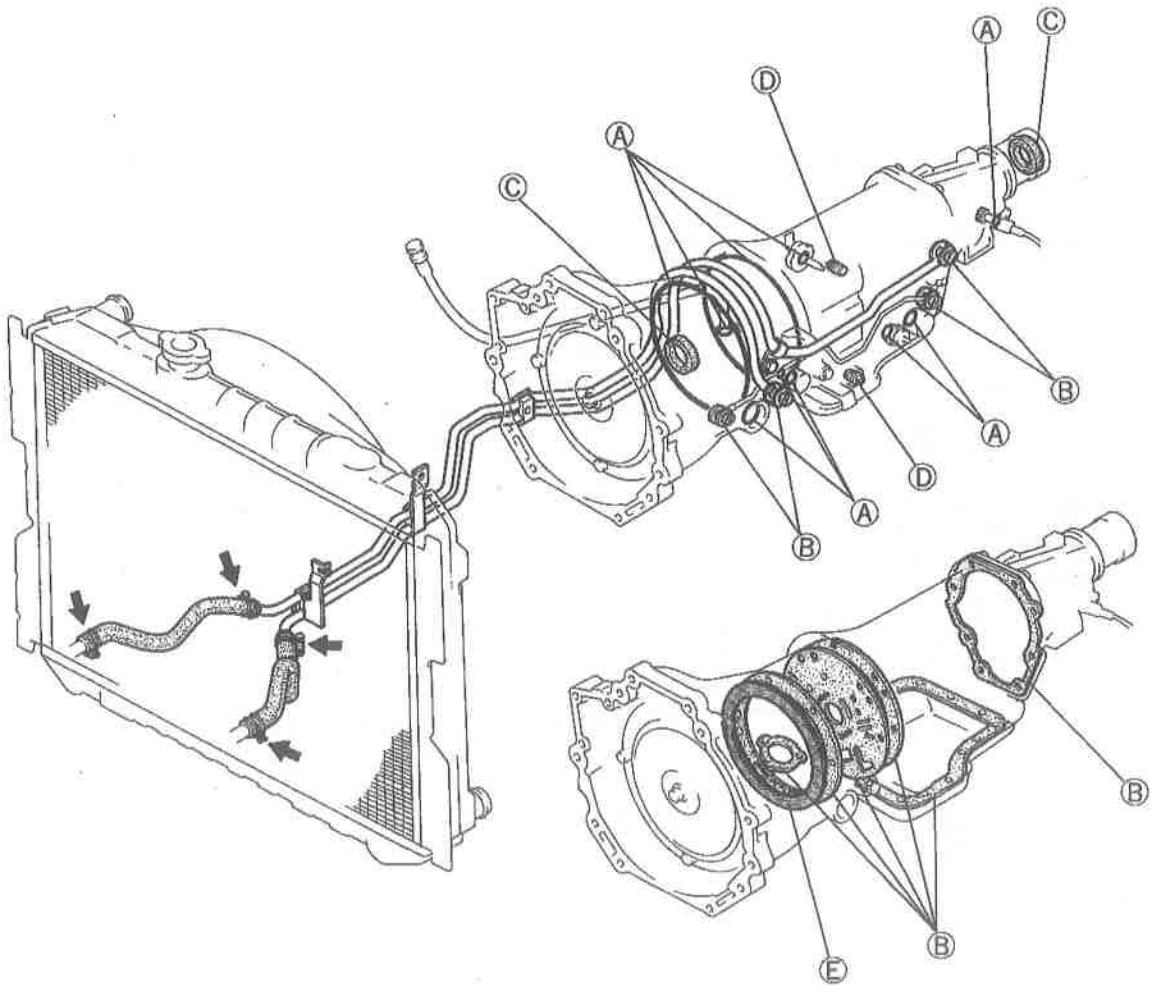
1. Check the ATF for discoloration.
2. Check the ATF for any unusual smell.

Note
Determine whether or not the automatic transmission should be disassembled by observing the condition of the ATF carefully.
If the ATF is muddy and varnished, it indicates burned drive plates.

Fluid leaks

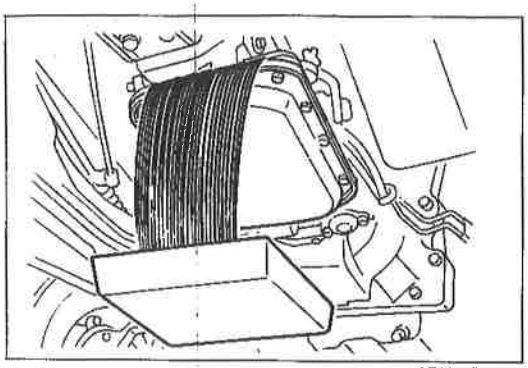
Check for fluid leaks of the transmission as shown below; repair or replace as necessary.

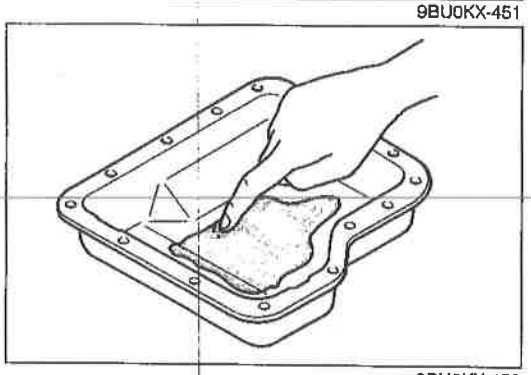
1. Gaskets, O-ring, and plugs
2. Oil hoses, oil pipes, and connections
3. Oil cooler

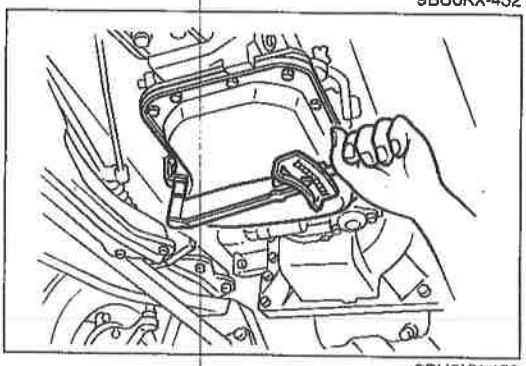


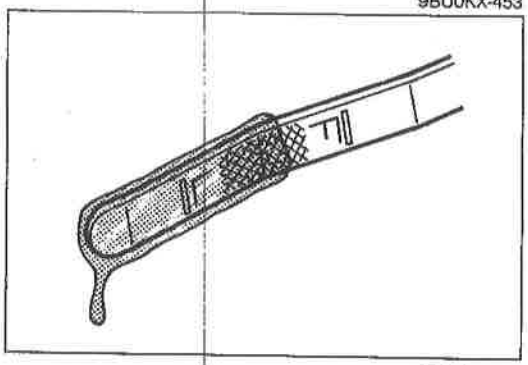
Ⓐ ..... O-RING
Ⓑ ..... GASKET
Ⓒ ..... OIL SEAL
Ⓓ ..... PLUG
Ⓔ ..... OTHERS

9MU0K2-075


9BU0KX-451


9BU0KX-452


9BU0KX-453


2BU0K1-017

Replacement

1. Jack up the vehicle and support it with safety stands.

   Warning
   Be careful when draining ; the ATF is hot.

2. Loosen the oil pan installation bolts, and drain the ATF into a container.

3. Remove the oil pan and gasket.
4. Clean the oil pan and the magnet.

5. Install the oil pan along with a new gasket.

   Tightening torque:
   5.9—7.8 N·m (60—80 cm-kg, 52—69 in-lb)

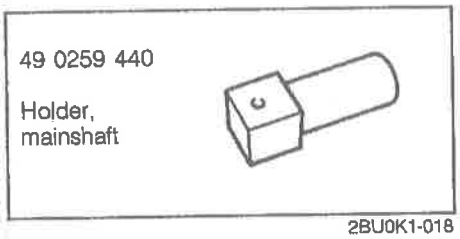
6. Add **approx. 4.0 liters (4.2 US qt, 3.5 Imp qt)** ATF, and check the ATF level. (Refer to page K1–33.)

   Specified ATF: Dexron®II or M-III

TRANSMISSION

TRANSMISSION UNIT (REMOVAL AND INSTALLATION)

Preparation
SST

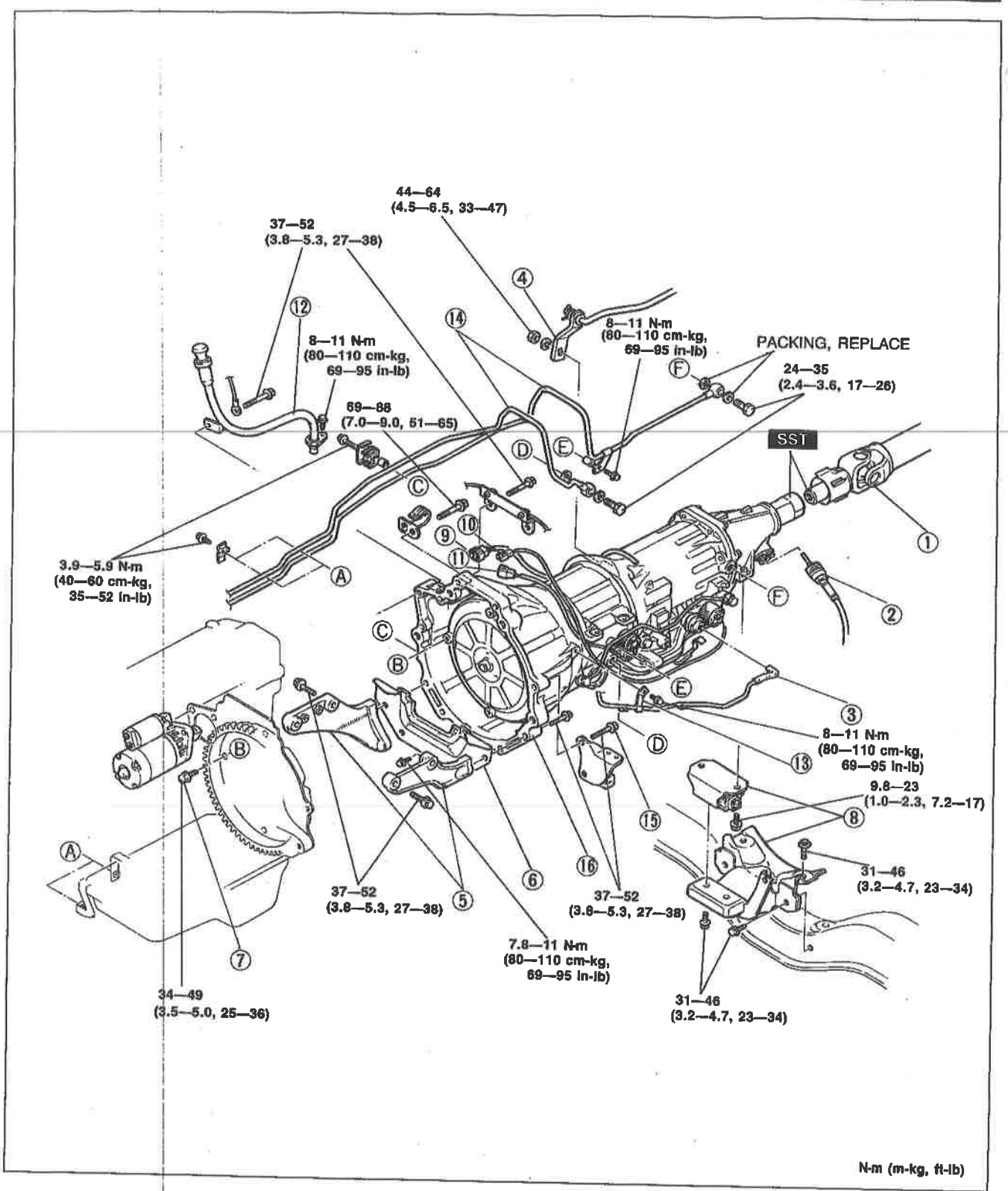


2BU0K1-018

1. Disconnect the negative battery cable.
2. Jack up the vehicle and support it with safety stands.
3. Drain the ATF into a suitable container.
4. Remove in the order shown in the figure, referring to **Removal Note**.

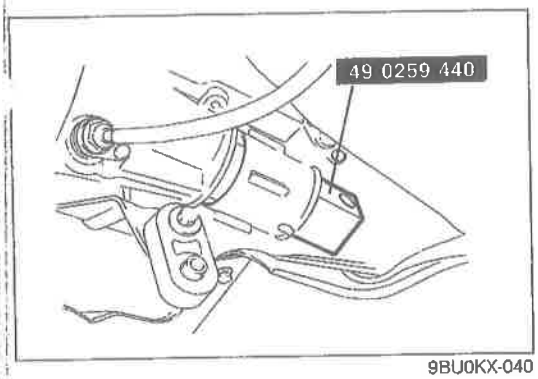
Caution
Do not turn the transmission over before removing the oil pan.

5. After removal, remove the oil pan to check condition of the transmission.
6. Install in the order shown in the figure, referring to **Installation Note**.
7. Fill the transmission with the specified amount and type of the ATF after installation.
8. Warm up the engine, and inspect for oil leakage and transmission operation.



2BU0K1-019

1. Propeller shaft
   Removal..... page K1–38
2. Speedometer cable
3. Vacuum hose
4. Shift lever
5. Gusset plate
6. Undercover
7. Torque converter attaching bolt
   Installation.... page K1–126
8. Mission mount bracket (A/T lower 30mm (1.2 in))
9. Inhibitor SW connector
10. Kickdown solenoid connector
11. OD cancel solenoid connector
12. Level gauge pipe
13. Vacuum pipe bracket
14. Oil cooler pipe
15. Mission mount bolt
16. Automatic transmission

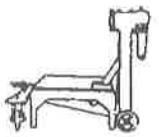
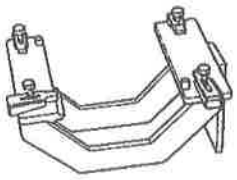
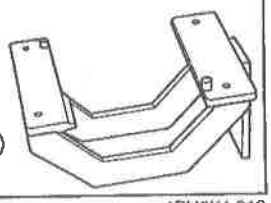
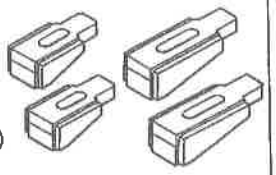
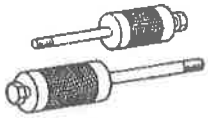


9BU0KX-040

Removal note
Propeller shaft
When the propeller shaft is removed from the extension housing, immediately insert the **SST** into the extension housing to prevent oil leakage.

TRANSMISSION UNIT (DISASSEMBLY)

Preparation
SST

49 0107 680A Engine stand 	49 U019 0A0A Transmission hanger 	49 H075 495B Body (Part of 49 U019 0A0A) 
49 U019 003 Holder (Part of 49 U019 0A0A) 	49 0378 390 Puller, oil pump 	

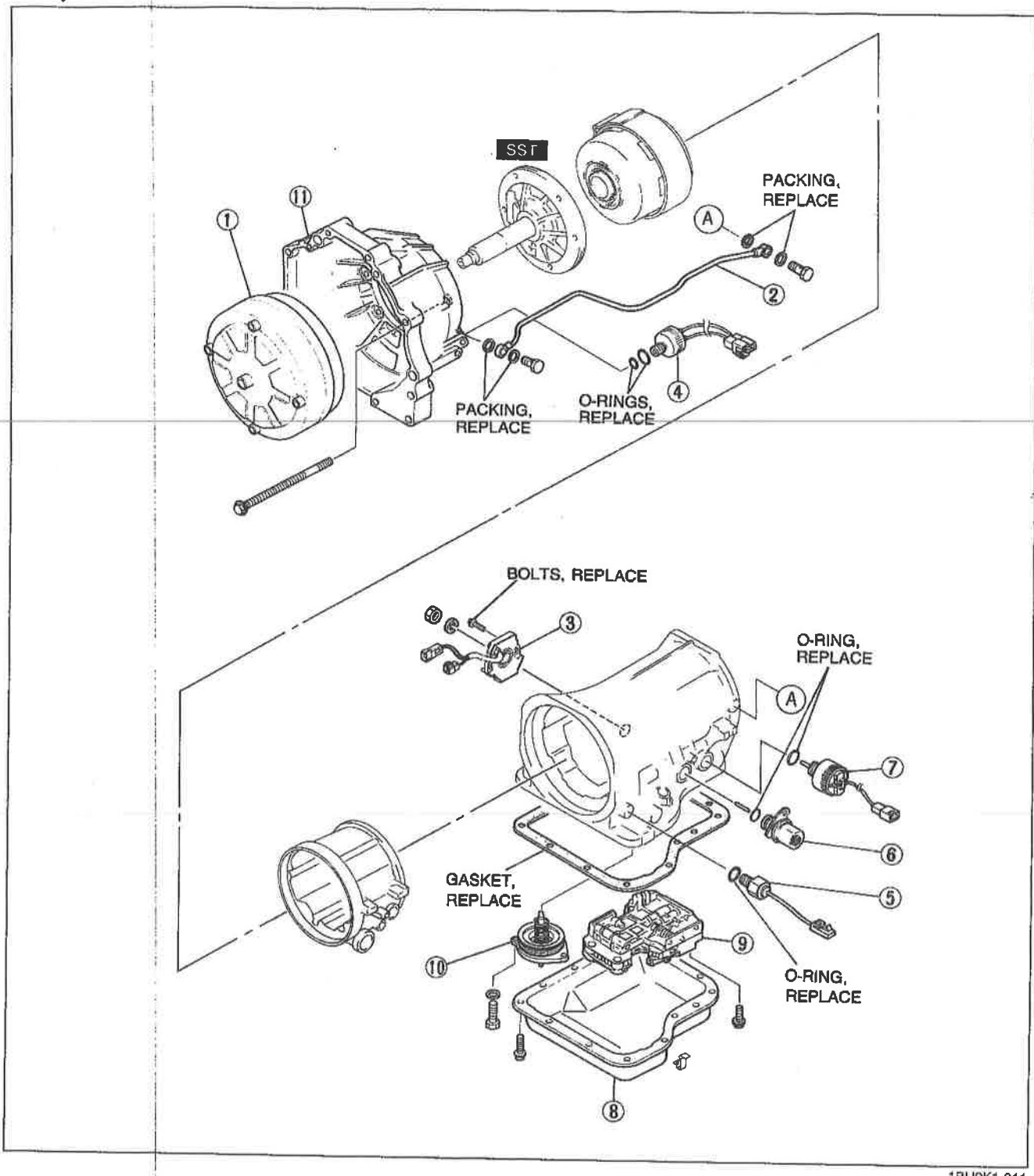
1BU0K1-010

Precaution
General notes:
1. Disassemble transmission in a clean area (dustproof work space) to prevent entry of dust into the mechanisms.
2. Inspect the individual transmission components in accordance with the QUICK DIAGNOSIS CHART during disassembly.
3. Use only plastic hammers when applying force to separate the light alloy case joints.
4. Never use rags during disassembly; they may leave particles that can clog fluid passages.
5. Several parts resemble one another; organize them so they do not get mixed up.
6. Disassemble the control valve assembly and thoroughly clean it when a clutch or brake band is burned; or when the ATF has degenerated.

Cleaning notes:
1. Clean the transmission exterior thoroughly with steam or cleaning solvents, or both, before disassembly.
2. Clean the removed parts with cleaning solvent, and dry with compressed air. Clean out all holes and passages with compressed air, and check that there are no obstructions.
3. Wear eye protection when using compressed air to clean components.

9MU0K2-083

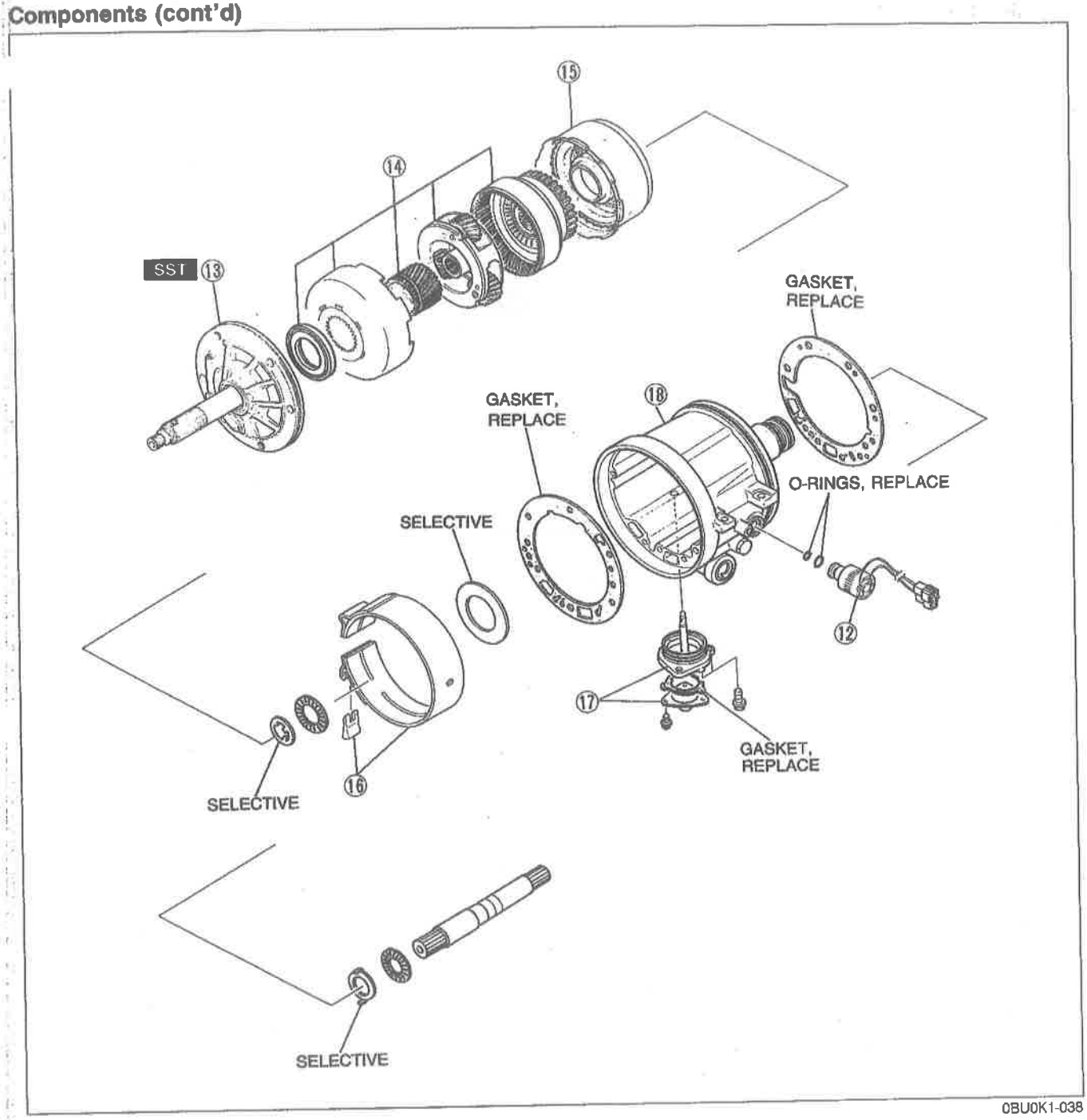
Components



1BU0K1-011

1. Torque converter
   Inspection ..... page K1–49
2. Governor pressure pipe
3. Inhibitor switch
   Inspection ..... page K1–25
   Adjustment..... page K1–25
4. Lockup solenoid (G6 engine)
   Inspection ..... page K1–31
5. Oil pressure switch (G6 engine)
   Inspection .... page K1– 30
6. Vacuum diaphragm
   Inspection .... page K1–107
7. Kickdown solenoid
   Inspection .... page K1– 27
8. Oil pan
9. Control valve body
   Disassembly, and
   Inspection .. page K1– 98
   Assembly ..... page K1–104
10. 2nd band servo
    Disassembly, and
    Inspection .. page K1– 68
    Assembly ..... page K1– 69
11. Converter housing

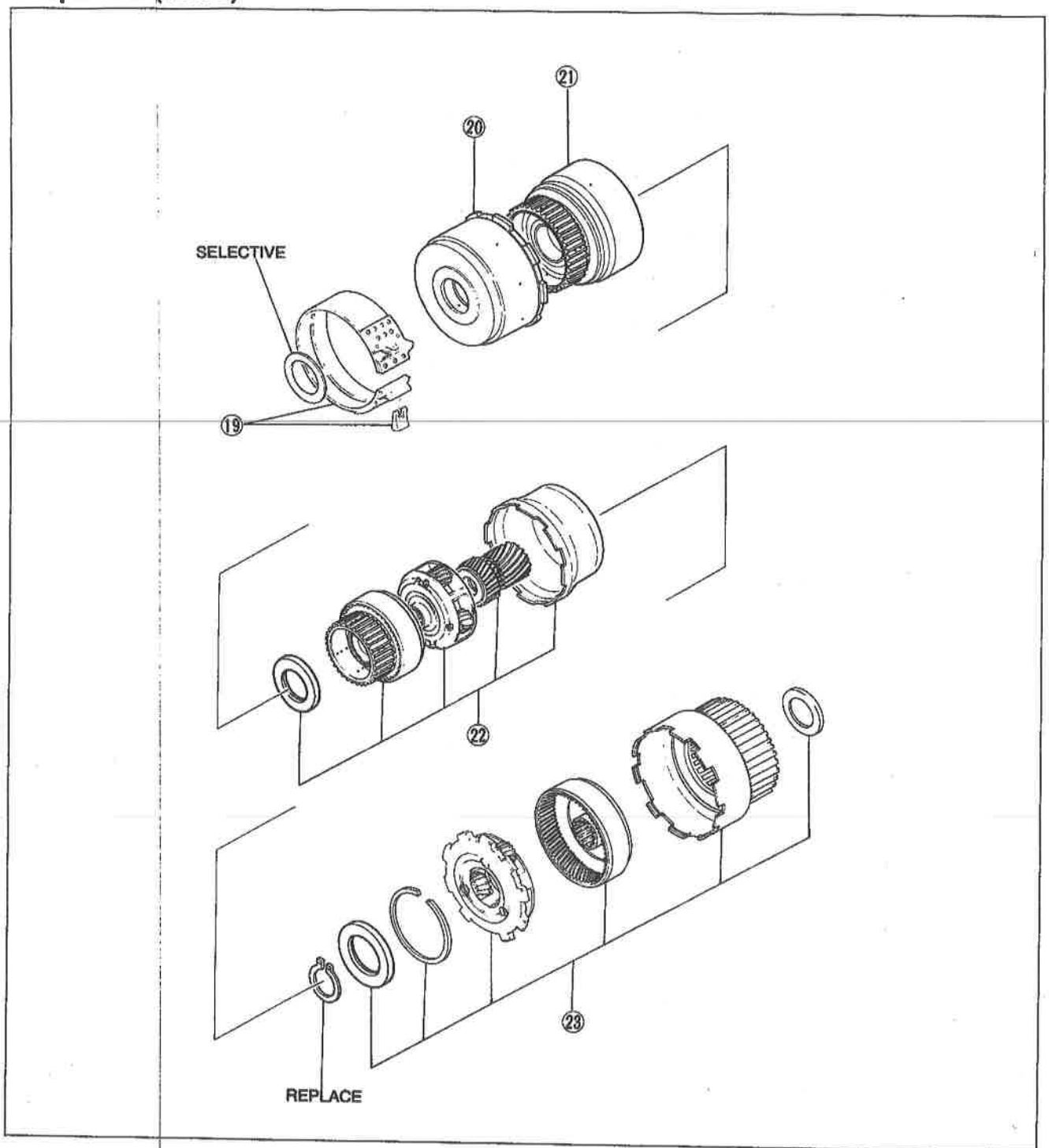
Components (cont'd)



0BU0K1-038

12. OD cancel solenoid
    Inspection ..... page K1–27
13. Oil pump
    Disassembly, and
    Inspection .... page K1–50
    Assembly ..... page K1–52
14. OD connecting shell and OD planetary gear unit
    (OD sun gear, OD planetary pinion carrier, OD clutch hub)
    Disassembly, and
    Inspection .... page K1–54
    Assembly ..... page K1–55
15. Direct clutch
    Disassembly, and
    Inspection .... page K1–55
    Assembly ..... page K1–59
16. OD brake band and band strut
17. OD band servo and cover
    Disassembly, and
    Inspection .... page K1–61
    Assembly ..... page K1–62
18. Drum support, accumulator, and OD case
    Disassembly, and
    Inspection .... page K1–64
    Assembly ..... page K1–65

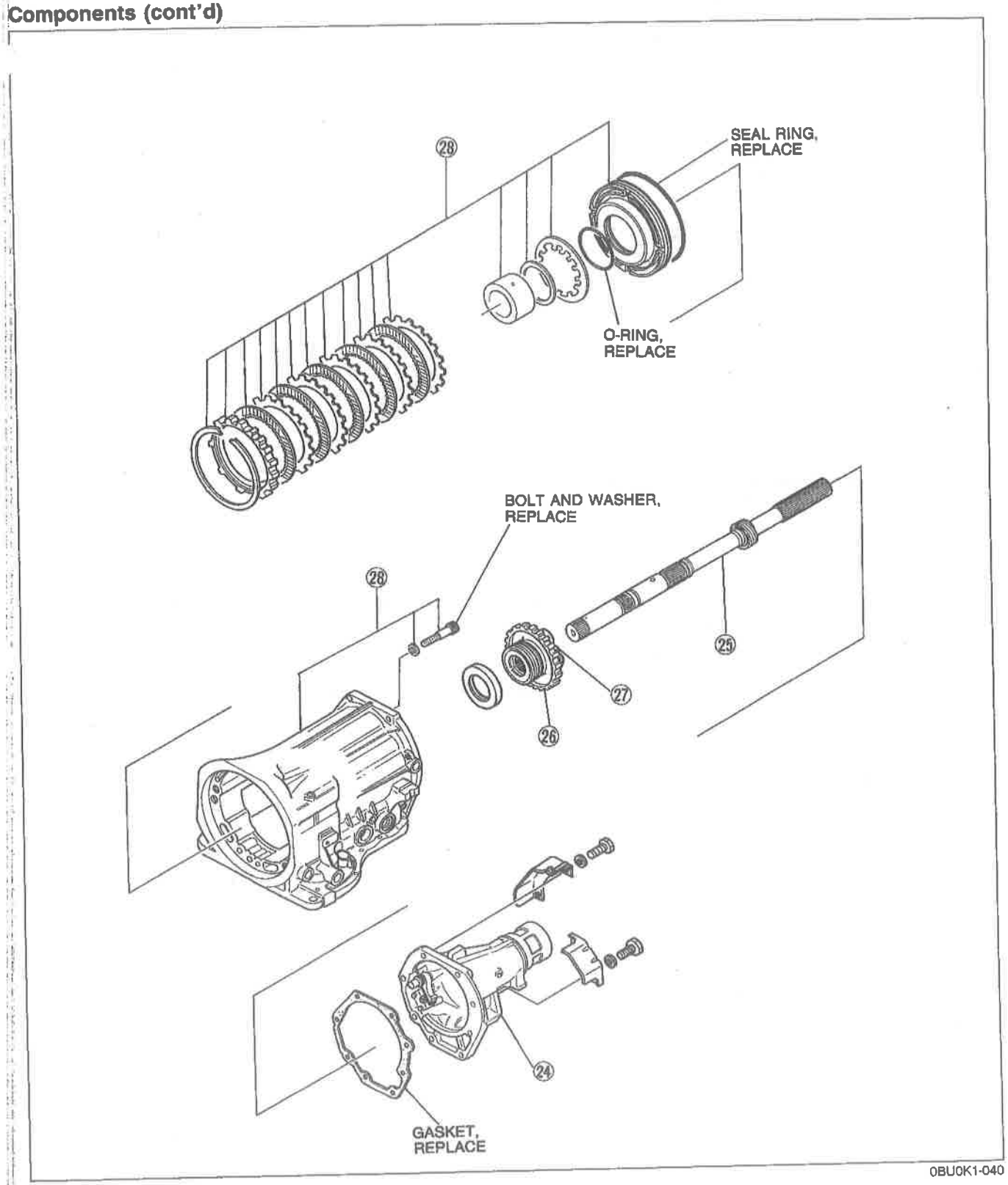
Components (cont'd)



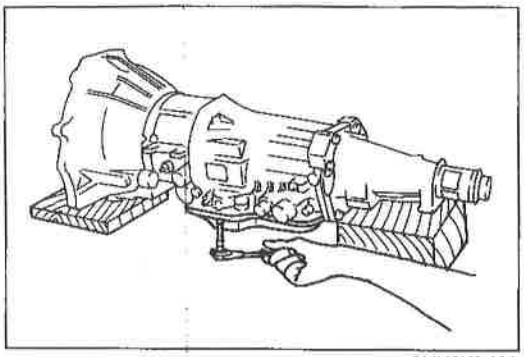
0BU0K1-039

19. 2nd brake band and band strut
20. Front clutch
    Disassembly, and Inspection .... page K1–71
    Assembly ..... page K1–74
21. Rear clutch
    Disassembly, and Inspection .... page K1–76
    Assembly ..... page K1–79
22. Connecting shell and front planetary gear unit (rear clutch hub, front planetary pinion carrier, rear sun gear)
    Disassembly, and Inspection .... page K1–81
    Assembly ..... page K1–82
23. Rear planetary gear unit (connecting drum, rear planetary pinion carrier, one-way clutch)
    Disassembly, and Inspection .... page K1–83
    Assembly ..... page K1–85

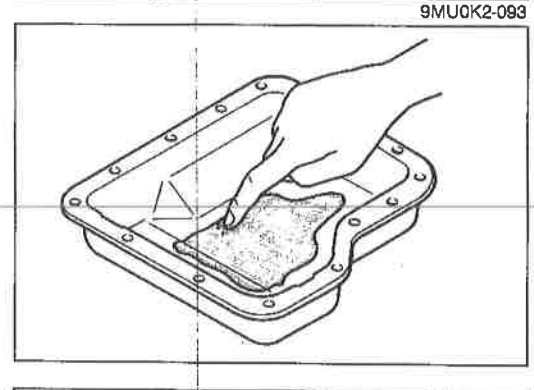
Components (cont'd)



24. Extension housing
    Disassembly, and
    Inspection .... page K1–95
    Assembly ..... page K1–96
25. Output shaft
26. Parking gear
27. Governor
    Disassembly, and
    Inspection .... page K1–92
    Assembly ..... page K1–93
28. Low and reverse brake
    Disassembly, and
    Inspection .... page K1–87
    Assembly ..... page K1–90



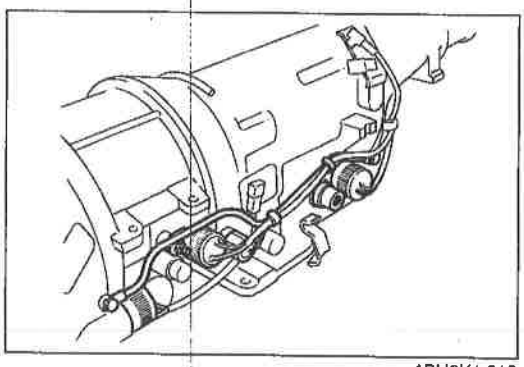
9MU0K2-093



Procedure

Caution
Keep the transmission oil pan-down so that any foreign material will remain in the pan.

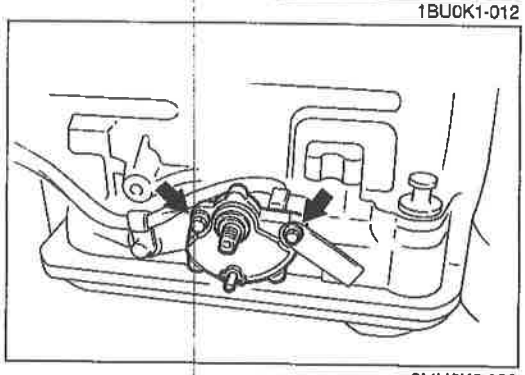
1. Place the transmission on wooden blocks under the converter housing and the extension housing.
2. Remove the oil pan and gasket.
   Examine any material found in the pan or on the magnet to determine the condition of the transmission.
   Clutch facing material ..... Drive plate and brake band wear
   Steel (magnetic) ..... Bearing, gear, and driven plate wear
   Aluminum (nonmagnetic) .... Bushings or cast aluminum parts wear
   If large amounts of material are found, replace the torque converter and carefully check the transmission for the cause.
3. Install the oil pan with a few bolts to protect the valve body.



1BU0K1-012

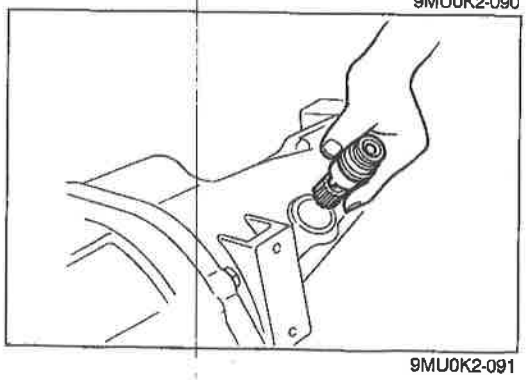
Caution
Do not leave the vacuum rod in the tip of the vacuum diaphragm after removal.

4. Remove the governor pressure pipe, kickdown solenoid, vacuum diaphragm, oil pressure switch (G6 engine), OD cancel solenoid, and lockup solenoid (G6 engine).



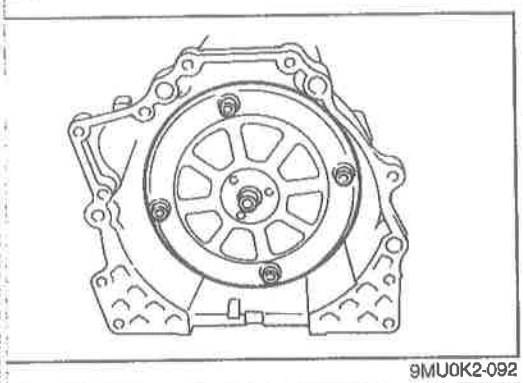
9MU0K2-090

5. Remove the inhibitor switch.



9MU0K2-091

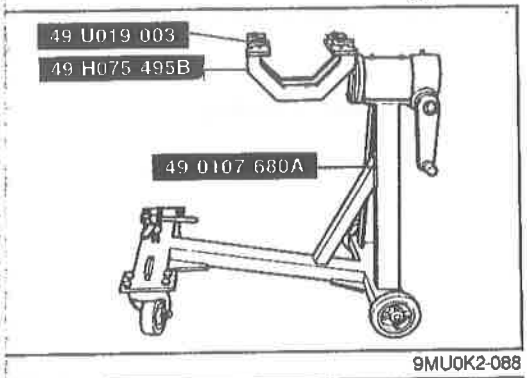
6. Remove the speedometer driven gear from the extension housing.
7. Remove the O-ring from the speedometer driven gear.



9MU0K2-092

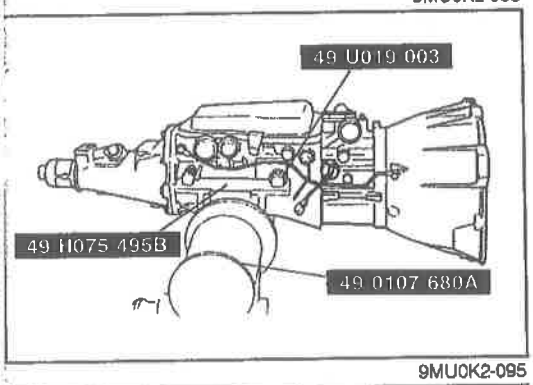
Caution
Be careful not to spill the ATF when removing the torque converter.

8. Remove the torque converter.



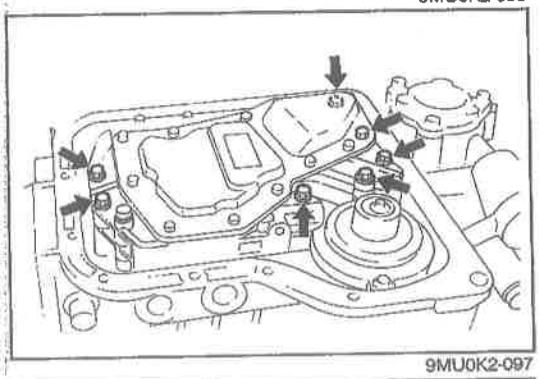
9MU0K2-088

9. Assemble the **SST** as shown.



9MU0K2-095

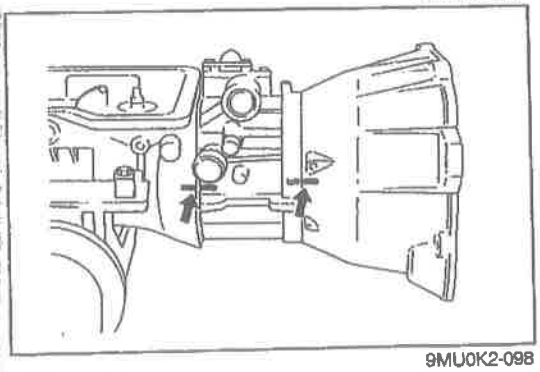
10. Mount the transmission onto the **SST**.
11. Remove the oil pan and gasket.



9MU0K2-097

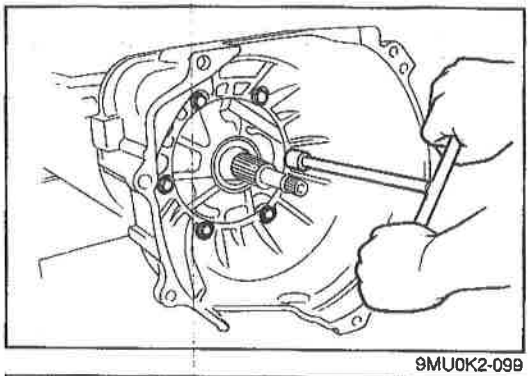
Note
Neatly arrange bolts of different lengths for proper reassembly.

12. Remove the control valve body as shown in the figure.



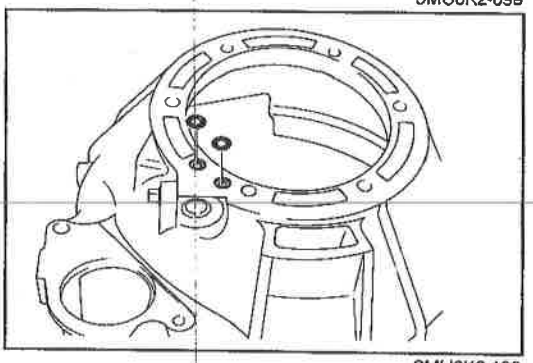
9MU0K2-098

13. Mark the converter housing, OD case, and transmission case for proper reassembly.



9MU0K2-099

14. Remove the converter housing from the OD case.

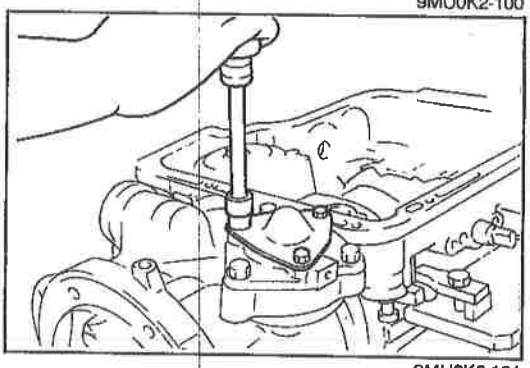


9MU0K2-100

15. Remove the O-rings from the converter housing.

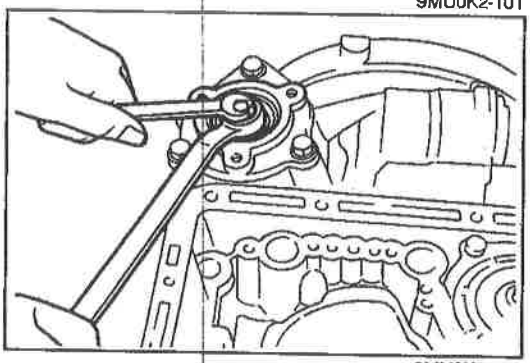
Caution
Do not damage the converter housing.

16. Clean the sealing compound from the converter housing.



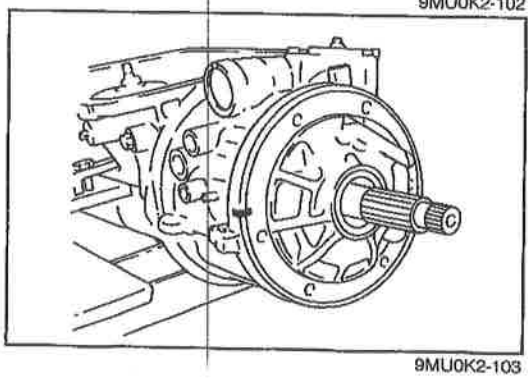
9MU0K2-101

17. Remove the OD band servo cover and gasket.



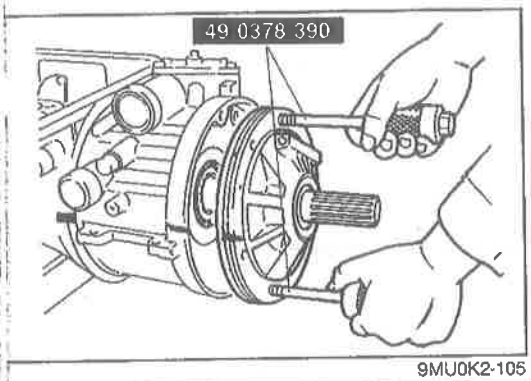
9MU0K2-102

18. Loosen the OD band servo locknut and tighten the piston stem.



9MU0K2-103

19. Mark the OD case and oil pump for proper reassembly.

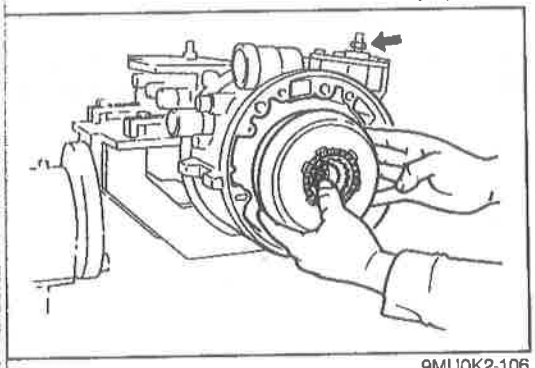


9MU0K2-105

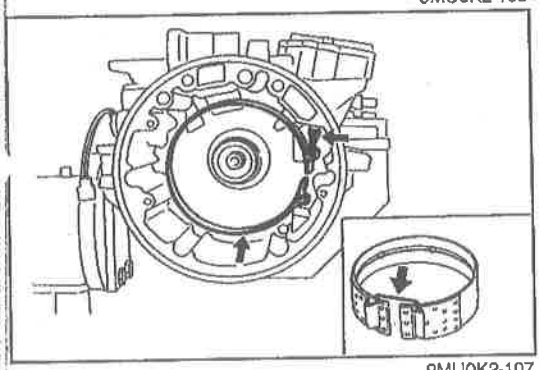
20. Install the **SST** to the oil pump assembly.

Caution
Carefully remove the oil pump to prevent the OD connection shell, sun gear, and planetary pinion carrier from falling out.

21. Remove the oil pump assembly from the OD case by sliding weights of the **SST** evenly then remove the **SST** from the oil pump.

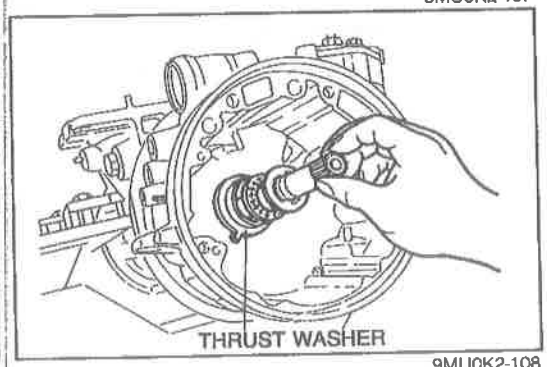

9MU0K2-106

22. Loosen the piston stem of the OD band servo. Remove the OD connecting shell and OD planetary gear unit (OD sun gear, OD planetary pinion carrier, OD clutch hub), and direct clutch.


9MU0K2-107

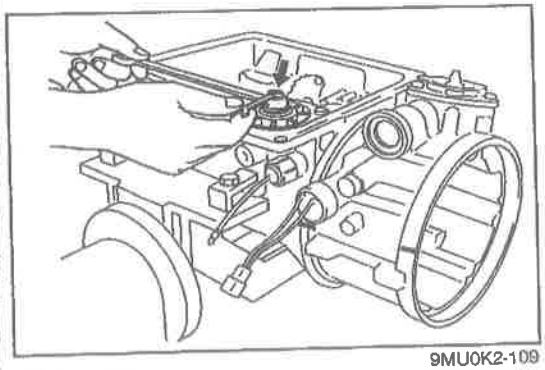
Caution
To prevent the brake lining from cracking or peeling, do not stretch the OD brake band. Secure it with a wire clip.

23. Remove the OD brake band and band strut.

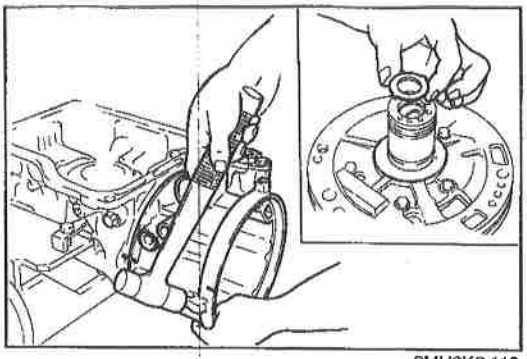


9MU0K2-108

24. Remove the bearing races, bearing, and thrust washer. Inspect the following parts and repair or replace as necessary. Remove the intermediate shaft.
    1) Bearing
       Inspect for damage or rough rotation
    2) Bearing race
       Inspect bearing surface for scoring or scratches


9MU0K2-109

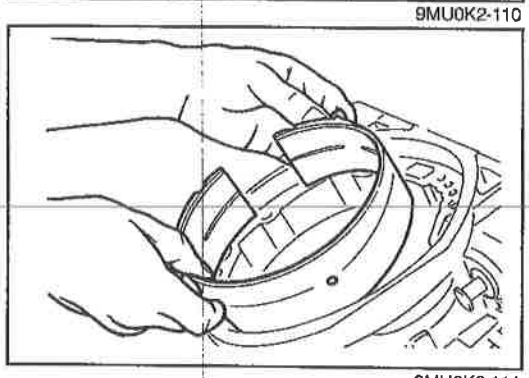
25. Loosen the 2nd band servo locknut and tighten the piston stem.



9MU0K2-110

Caution
Do not lose the bearing race.

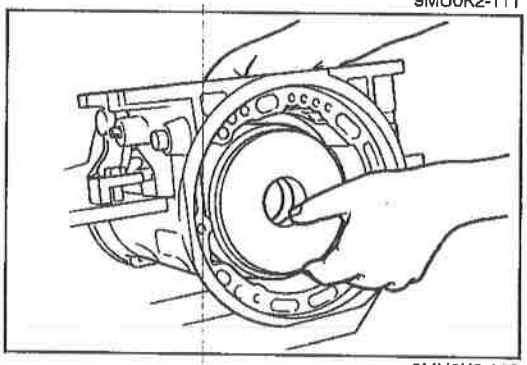
26. Separate the drum support, accumulator and OD case from the transmission case by tapping it lightly with a plastic hammer. Remove the gasket.
27. Remove the bearing race and thrust washer from the drum support, accumulator and OD case.



9MU0K2-111

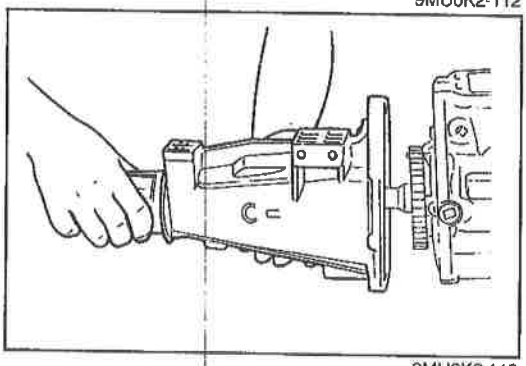
Caution
To prevent the brake lining from cracking or peeling, do not stretch the 2nd band brake. Secure it with a wire clip.

28. Loosen the piston stem of the 2nd band servo. Remove the 2nd brake band and band strut.



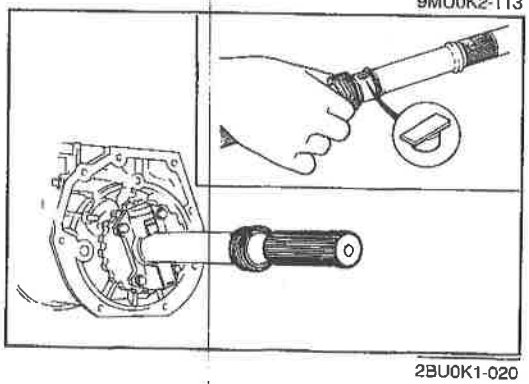
9MU0K2-112

29. Remove the front clutch, rear clutch, connecting shell, and front planetary gear unit (rear clutch hub, front planetary pinion carrier, rear sun gear) as a unit.



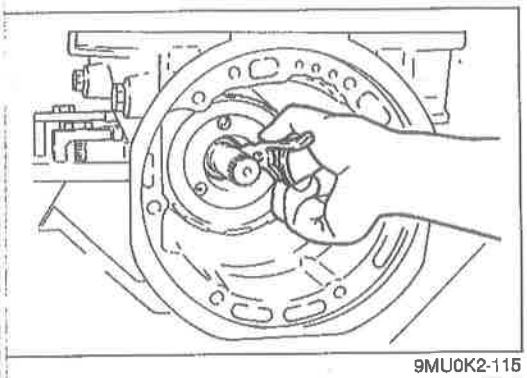
9MU0K2-113

30. Remove the extension housing and gasket.



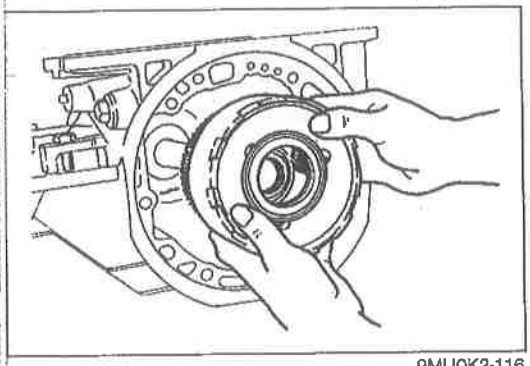
2BU0K1-020

31. Remove the rear snap ring and speedometer drive gear.
32. Remove the key and front snap ring.



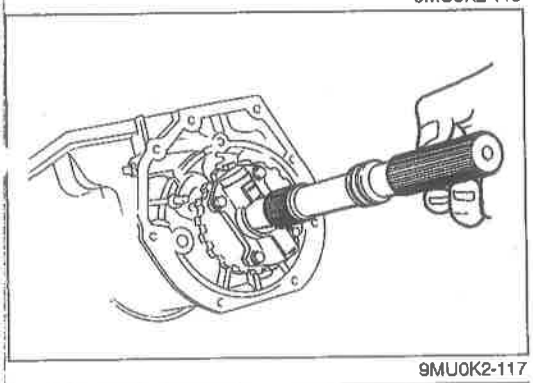
9MU0K2-115

33. Remove the snap ring from the output shaft with snap ring pliers.



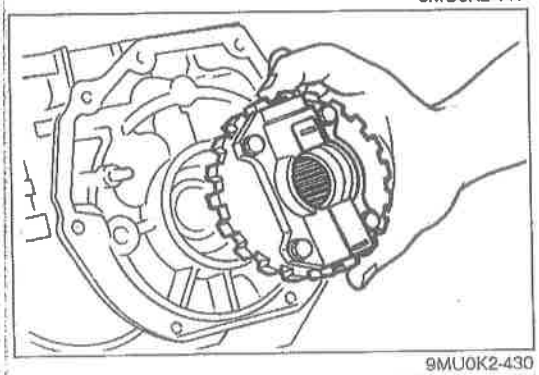
9MU0K2-116

34. Remove the rear planetary gear unit (connecting drum, rear planetary pinion carrier, one-way clutch).



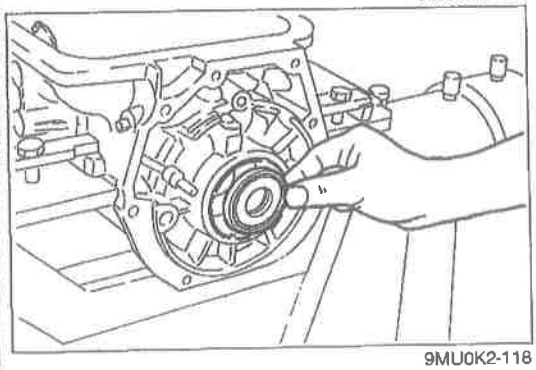
9MU0K2-117

35. Pull out the output shaft.



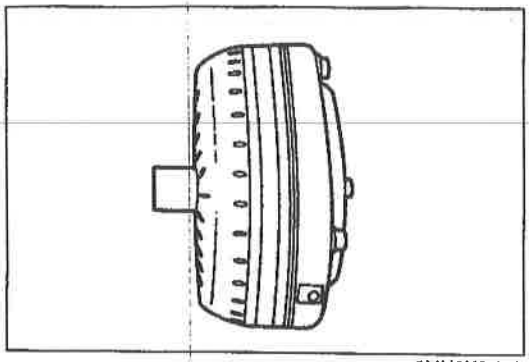
9MU0K2-430

36. Remove the governor valve and parking gear as a unit.

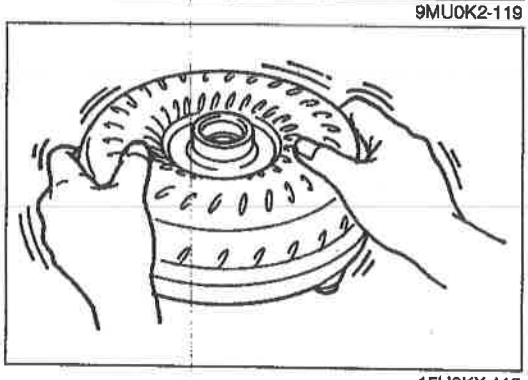


9MU0K2-118

37. Remove the bearing.
Inspect the following parts and repair or replace as necessary.
Bearing
Inspect for damage or rough rotation.



9MU0K2-119



15U0KX-113

TORQUE CONVERTER

Inspection

1. Check the outside of the converter for damage and cracks and replace the torque converter if there is any problem.
2. Check for rust on the pilot hub or on the boss, and remove it completely if there is any.

Washing inside the converter

1. Drain any ATF remaining in the converter.
2. Pour in solvent **(0.5 liter, 0.5 US qt, 0.4 Imp qt)**.
3. Shake the converter to clean the inside. Pour out the solvent.
4. Pour in ATF.
5. Shake the converter to clean the inside. Pour out the ATF.

OIL PUMP

Preparation

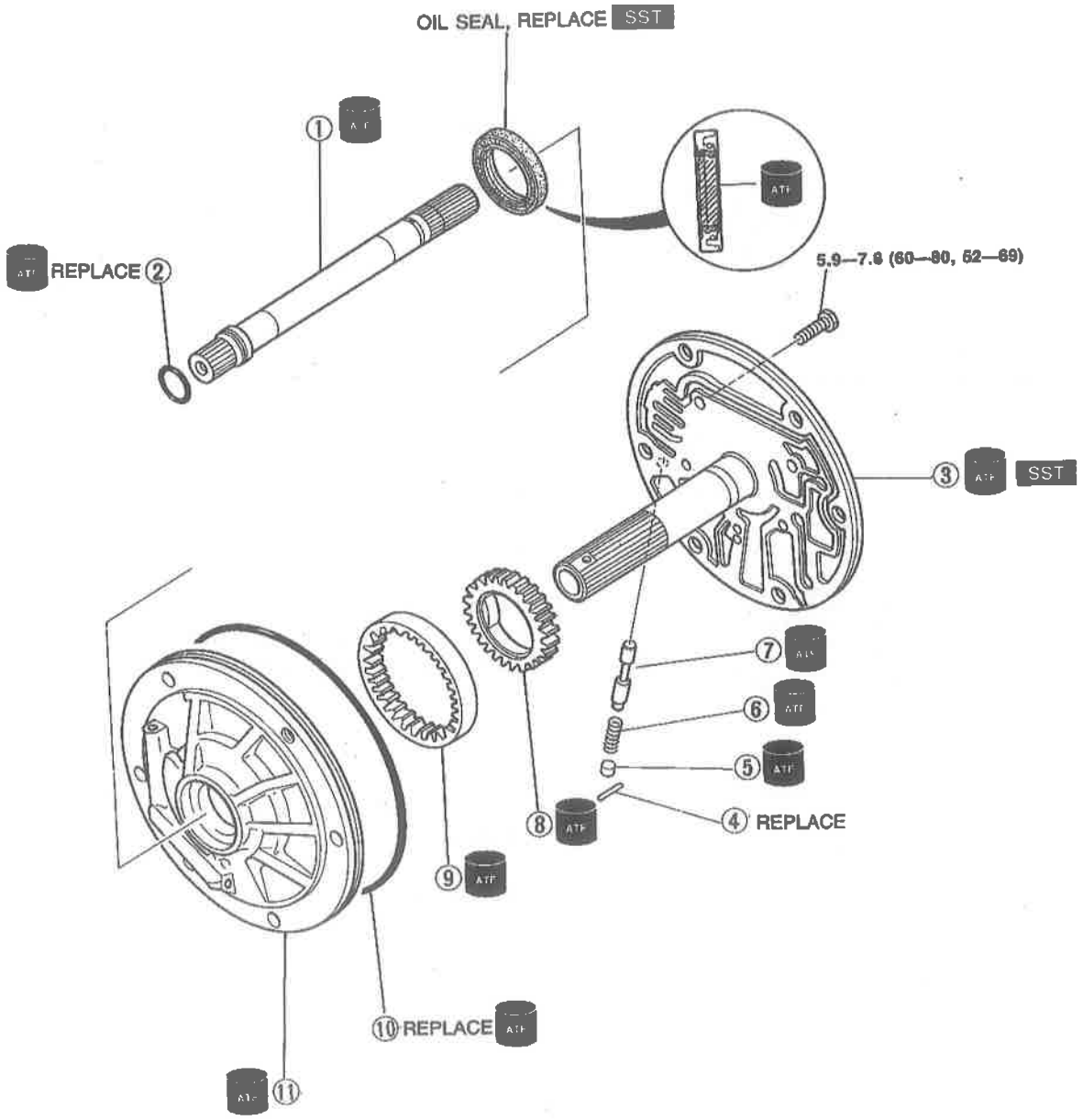
SST

49 S019 0A0 Set centering tool	49 S019 001 Holder (Part of 49 S019 0A0)	49 S019 002 Shaft (Part of 49 S019 0A0)
49 S019 003 Stand (Part of 49 S019 0A0)	49 S019 004 Pin (Part of 49 S019 0A0)	49 G030 795 Installer, Oil seal
49 G030 796 Body (Part of 49 G030 795)	49 G030 797 Handle (Part of 49 G030 795)	

9MU0K2-121

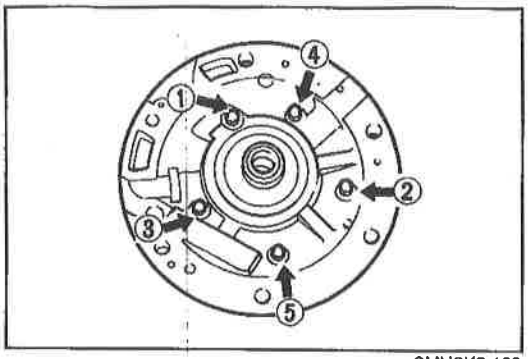
Disassembly and Inspection

Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



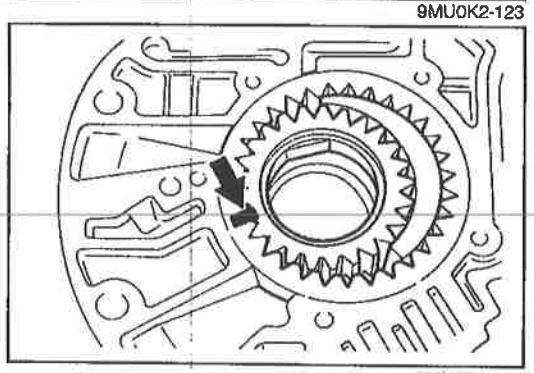
1BU0K1-014

1. Input shaft
2. O-ring
3. Oil pump cover
   Inspection ..... page K1–51
4. Roll pin
5. Plug
6. Spring
   Inspection ..... page K1–52
7. Lockup control valve
   Inspect for sticking, scoring, or scratches
8. Inner gear
   Removal..... page K1–51
   Inspection ..... page K1–51
9. Outer gear
   Removal..... page K1–51
   Inspection ..... page K1–52
10. O-ring
11. Oil pump housing
    Inspection ..... page K1–51



9MU0K2-123

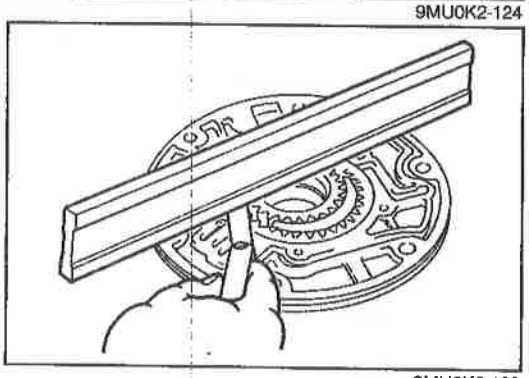
Disassembly note
Oil pump cover
Loosen the mounting bolts evenly in the pattern shown, and remove the oil pump cover from the oil pump housing.


9MU0K2-124

Inner gear and outer gear

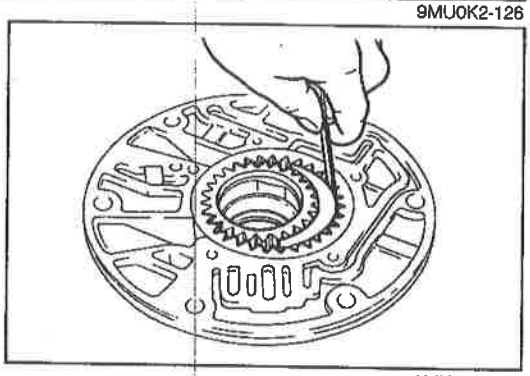
Caution
Do not use a punch to mark the gears.

Mark the inner and outer gear positions, and remove the gears from the housing.


9MU0K2-126

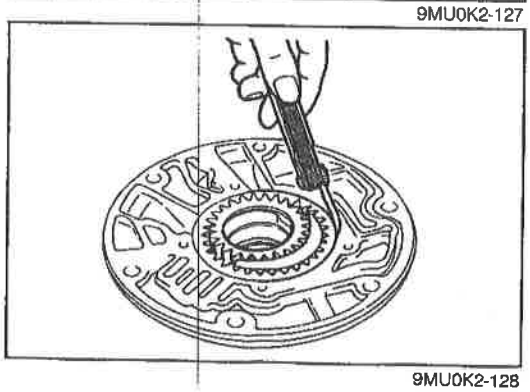
Inspection
Clearance
1. Measure the clearance between the gears and the pump cover.

Standard clearance:
0.02—0.04mm (0.0008—0.0016 in)
Maximum clearance: 0.08mm (0.0031 in)


9MU0K2-127

2. Measure the clearance between the outer gear teeth tip and the crescent.

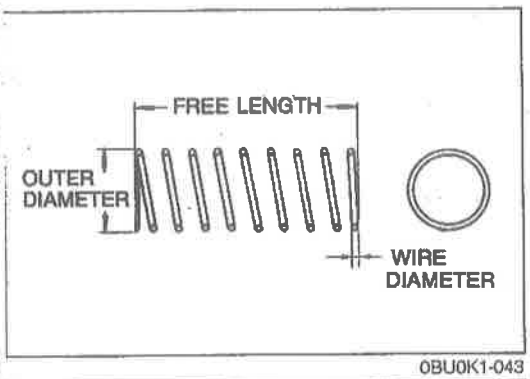
Standard clearance:
0.14—0.21mm (0.0055—0.0083 in)
Maximum clearance: 0.25mm (0.0098 in)


9MU0K2-128

3. Measure the side clearance between the outer gear the and housing.

Standard clearance:
0.05—0.20mm (0.0020—0.0079 in)
Maximum clearance: 0.25mm (0.0098 in)

4. If not within specification, replace the oil pump assembly.



0BU0K1-043

Spring

1. Measure the spring specifications.

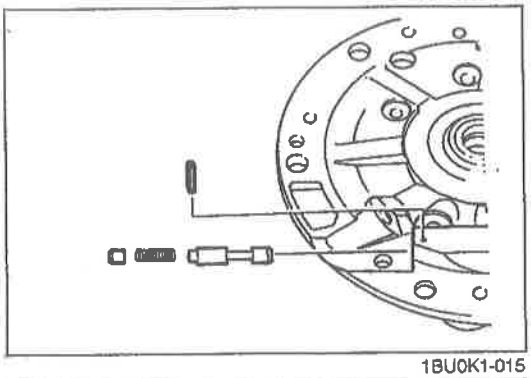
Specifications

Item / Engine	Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
F2 EGI	5.5 (0.217)	25.0 (0.984)	15.0	0.7 (0.028)
F2 Carb.	5.5 (0.217)	26.3 (1.035)	15.5	0.7 (0.028)
G6	5.5 (0.217)	24.7 (0.972)	15.5	0.7 (0.028)

2. If not within specification, replace the spring.

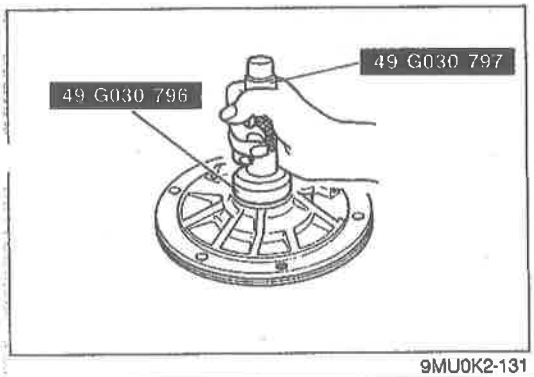
Assembly procedure

1. Apply ATF to the lockup control valve, spring, and plug, and install them into the oil pump housing.
2. Tap in the new roll pin.



1BU0K1-015

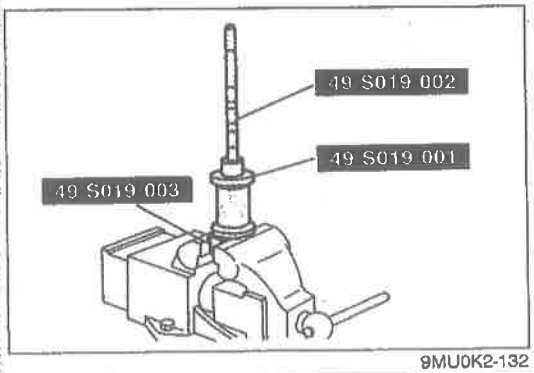
3. Apply ATF to a new oil seal, and install it with the **SST**.



9MU0K2-131

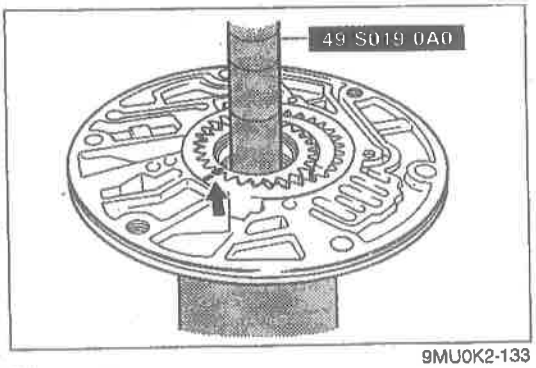
Note
Use protective plates to prevent damaging the SST.

4. Assemble the **SST** and secure it in a vice.

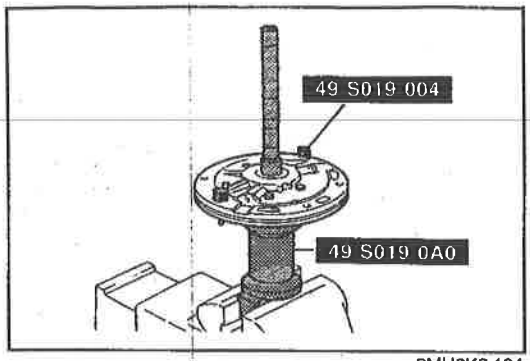


9MU0K2-132

5. Apply ATF to the new O-ring, and place it on the pump cover.
6. Set the pump housing on the **SST**.
7. Apply ATF to the inner and outer gears, and install them in the pump housing with their matching marks toward the pump cover.



9MU0K2-133

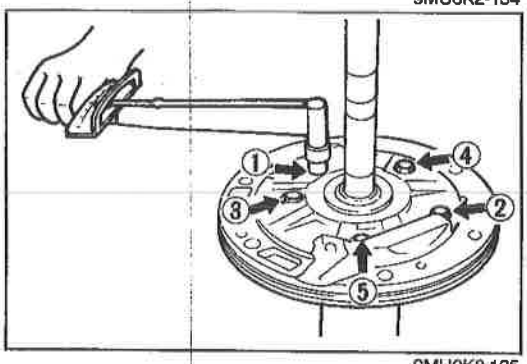


9MU0K2-134

8. Set the pump cover on the **SST**.

Caution
Do not damage the oil seal with the splines of the oil pump cover.

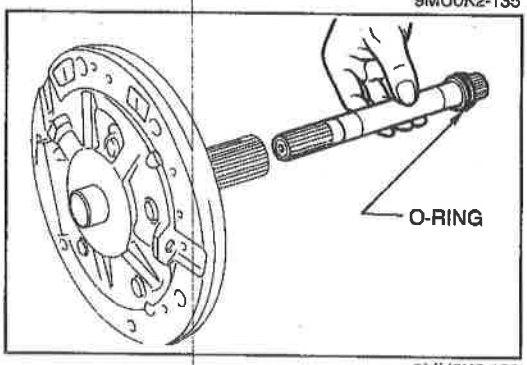
9. Install the **SST** (pins) for alignment.



9MU0K2-135

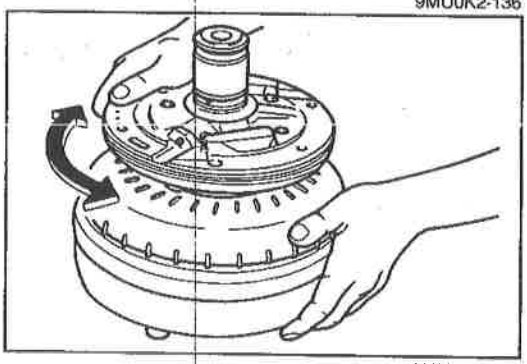
10. Tighten the bolts evenly and gradually in the order shown.

Tightening torque:
5.9—7.8 N·m (60—80 cm-kg, 52—69 in-lb)



9MU0K2-136

11. Apply ATF to a new O-ring, and install it onto the input shaft.
12. Apply ATF to the input shaft, and install it into the oil pump.

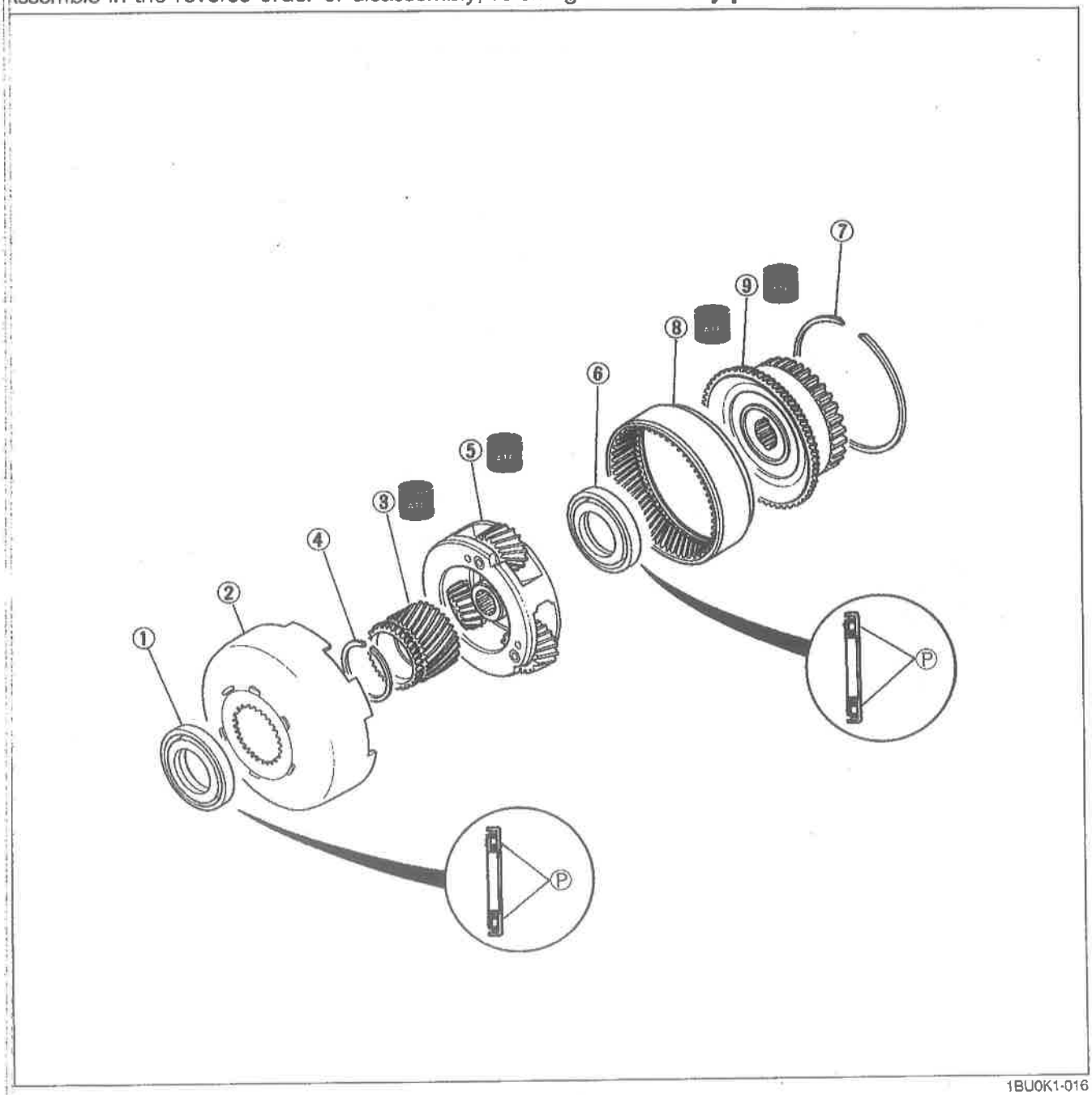

9MU0K2-137

13. Set the oil pump on the torque converter, and verify that the pump turns smoothly.

OD CONNECTING SHELL AND OD PLANETARY GEAR UNIT (OD SUN GEAR, OD PLANETARY PINION CARRIER, OD CLUTCH HUB)

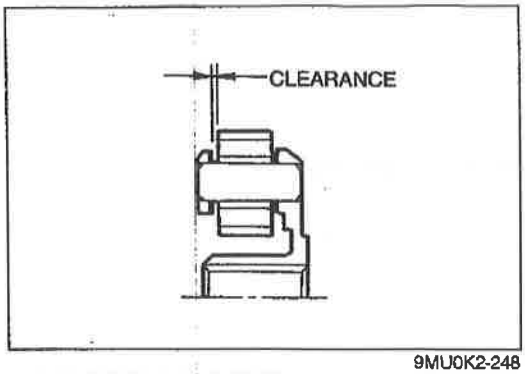
Disassembly and Inspection

Disassemble in the order shown in the figure.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



1BU0K1-016

1. Bearing
   Inspect for damage or rough rotation
2. OD connecting shell
3. Sun gear
   Inspect individual gear teeth for damage, wear, or cracks
4. Snap ring
5. OD planetary pinion carrier
   Inspect individual gear teeth for damage, wear, or cracks, and rotation of pinion gears
   Inspection ..... page K1–55
6. Bearing
   Inspect for damage or rough rotation
7. Snap ring
8. Internal gear
   Inspect individual gear teeth for damage, wear, or cracks
9. OD clutch hub

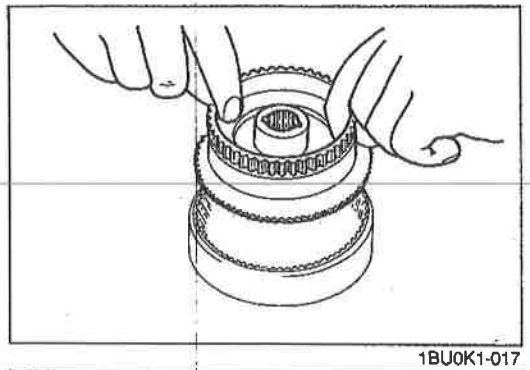


9MU0K2-248

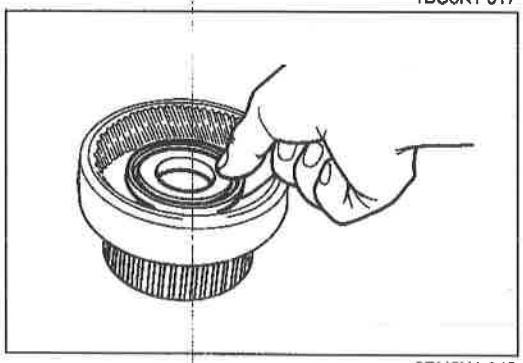
Inspection
OD planetary pinion carrier
1. Measure the clearance between the pinion washer and the planetary pinion carrier.

Clearance
Standard: 0.2—0.7mm (0.008—0.028 in)
Maximum: 0.8mm (0.031 in)

2. If not within specification, replace the planetary pinion carrier.

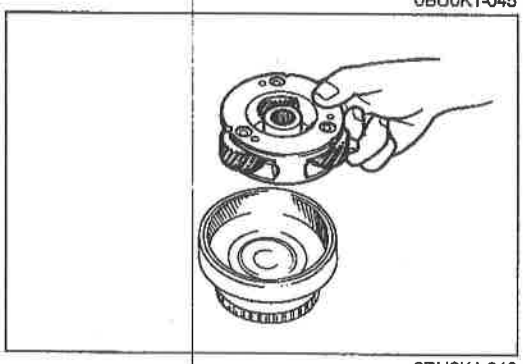

1BU0K1-017

Assembly procedure
1. Apply ATF to the OD clutch hub and internal gear, and assemble them with the snap ring.

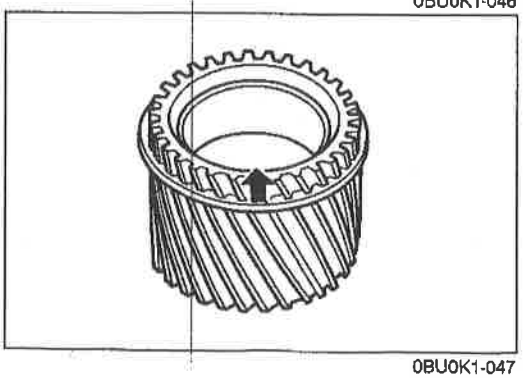

0BU0K1-045

2. Apply petroleum jelly to the bearing, and install it onto the OD clutch hub with the black surface facing upward.

Bearing outer diameter: 70.0mm (2.756 in)

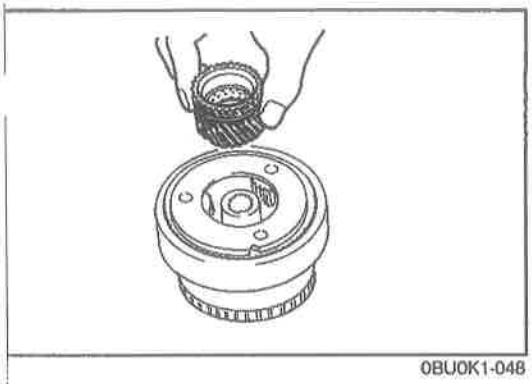

0BU0K1-046

3. Apply ATF to the OD planetary pinion carrier, and install it into the internal gear.


0BU0K1-047

Note
Pay close attention to the front and rear directions of the sun gear. The grooved side (arrow) is the front.

4. Install the snap ring onto the sun gear.



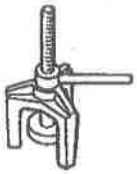
0BU0K1-048

5. Apply ATF to the sun gear, and install it into the OD planetary pinion carrier.

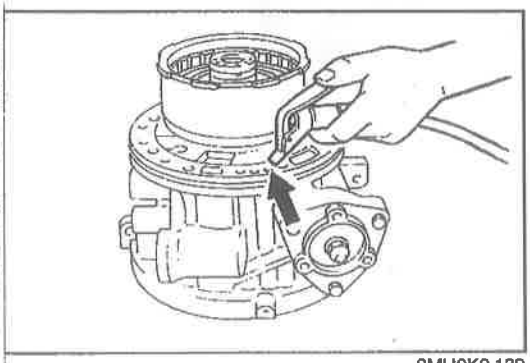
DIRECT CLUTCH

Preparation

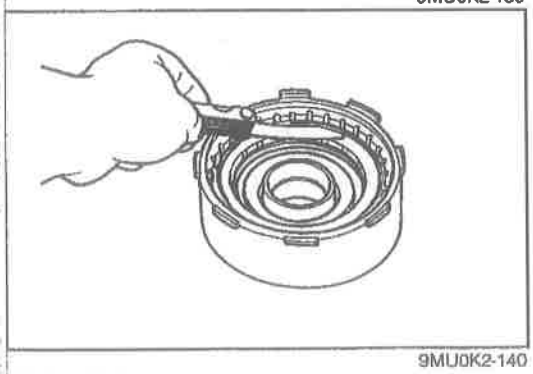
SST

49 0378 375 Compressor, clutch spring	

9MU0K2-138



9MU0K2-139



9MU0K2-140

Preinspection

Direct clutch operation

1. Install the direct clutch onto the drum support along with the seal rings.
   Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

2. Verify that the retaining plate moves toward the snap ring. If not, the seal ring or O-ring may be damaged or fluid may be leaking at the piston check ball. Inspect them, and replace as necessary when assembling.

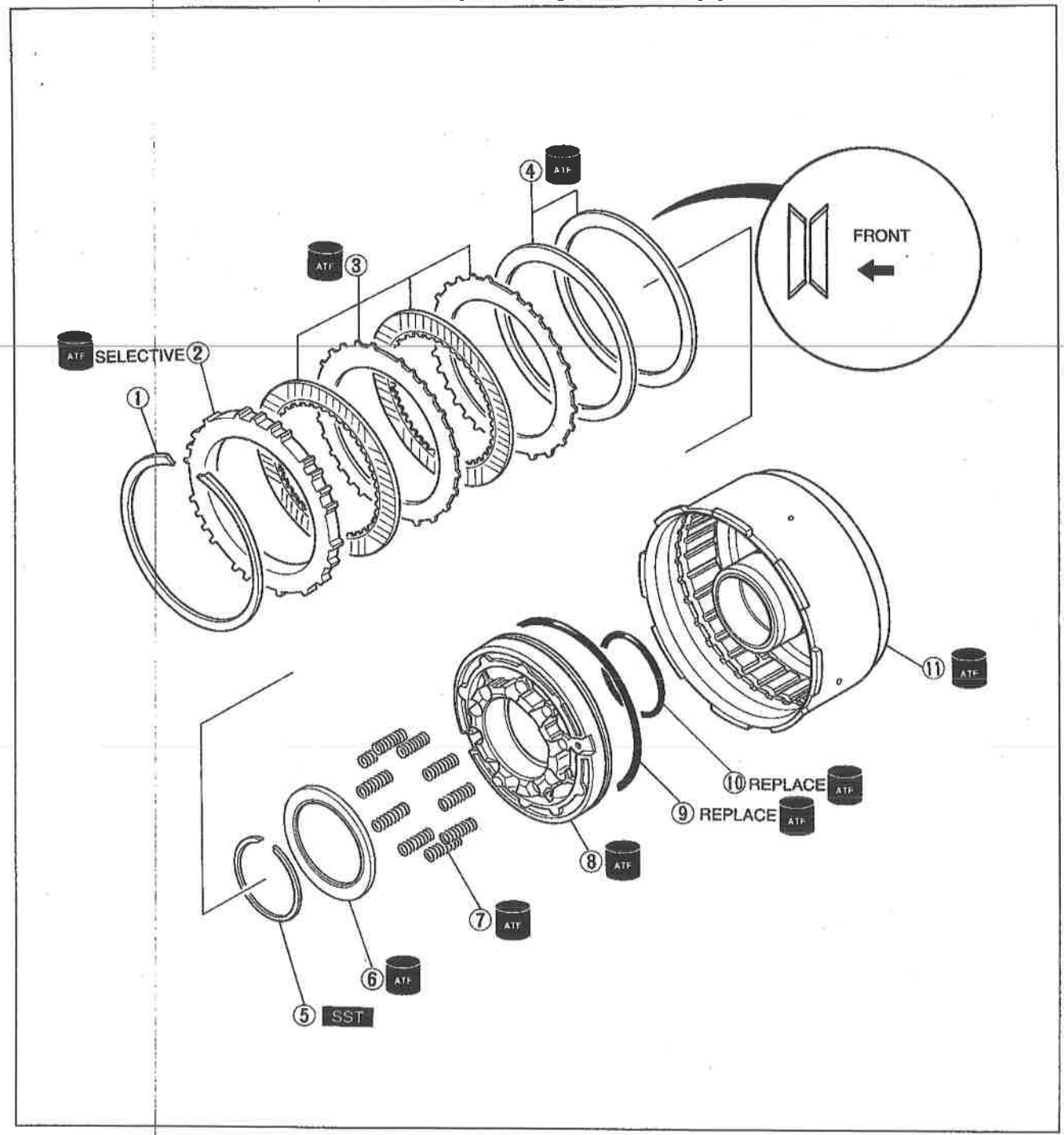
Clearance between retaining plate and snap ring

Measure the clearance between the retaining plate and the snap ring.

Clearance: 1.6—1.8mm (0.063—0.071 In)

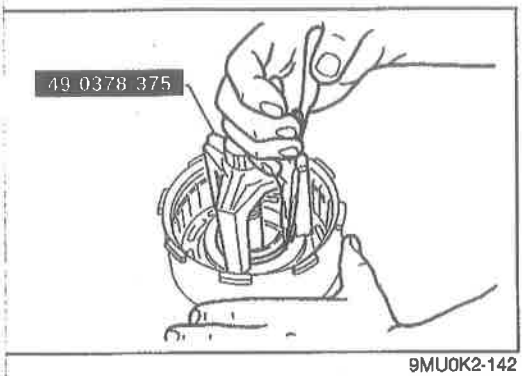
Select and install the correct retaining plate when assembling.

Disassembly and Inspection
Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.

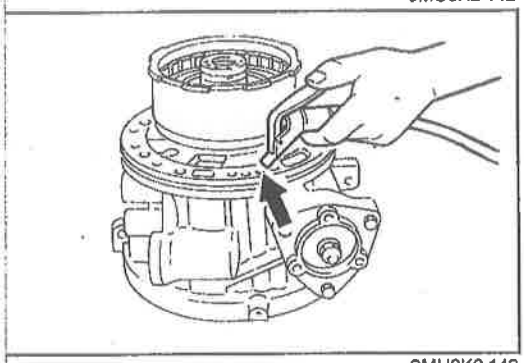


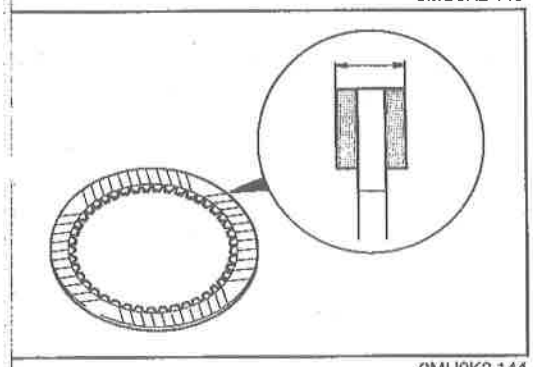
1BU0K1-018

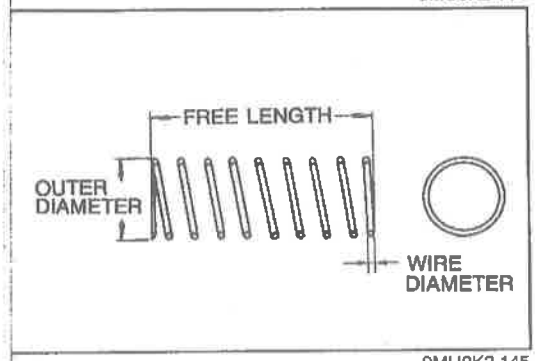
1. Snap ring
2. Retaining plate
3. Drive plates and driven plates
   Inspect for wear or burning
   Inspection ..... page K1–58
4. Dished plates
5. Snap ring
   Removal..... page K1–58
6. Spring retainer
7. Return spring
   Inspection ..... page K1–58
8. Clutch piston
   Inspect balls for sticking by shaking piston
   Removal..... page K1–58
   Inspection ..... page K1–58
9. Seal ring
10. O-ring
11. Direct clutch drum



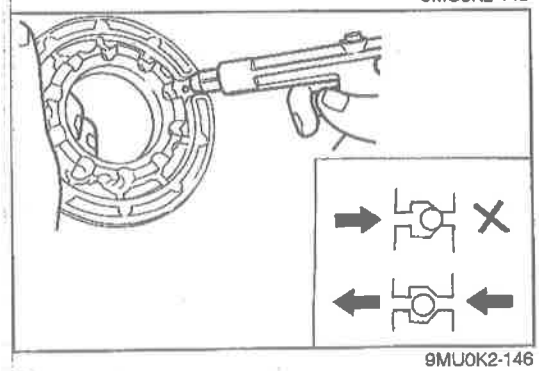
9MU0K2-142


9MU0K2-143


9MU0K2-144



9MU0K2-145


9MU0K2-146

Disassembly note
Snap ring

Caution
Do not damage the snap ring.

1. Compress the spring with the **SST**, then remove the snap ring with snap ring pliers.
2. Remove the spring retainer and spring.

Clutch piston
1. Install the direct clutch drum onto the drum support along with the seal rings.
2. Remove the piston by applying compressed air through the oil passage.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

Inspection
Drive plate
1. Measure the facing thickness in three places, and determine the average of the three readings.

Standard thickness: 1.6mm (0.063 in)
Minimum thickness: 1.4mm (0.055 in)

2. If not within specification, replace the drive plates.

Return spring
1. Measure the spring specifications.

Specifications

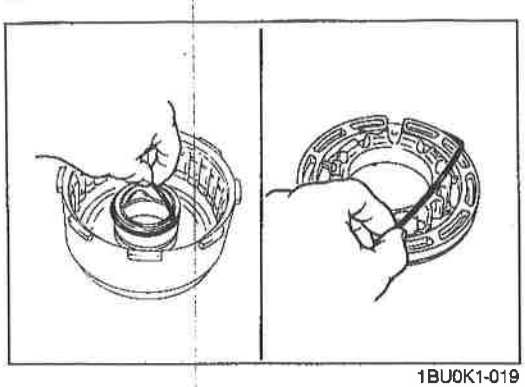
Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
8.0 (0.315)	30.5 (1.201)	14.5	1.3 (0.051)

2. If not within specification, replace the return spring.

Clutch piston
1. Verify that there is no air leakage when applying compressed air through the oil hole opposite the return spring.
2. Verify that there is airflow when applying compressed air through the oil hole on the return spring side.

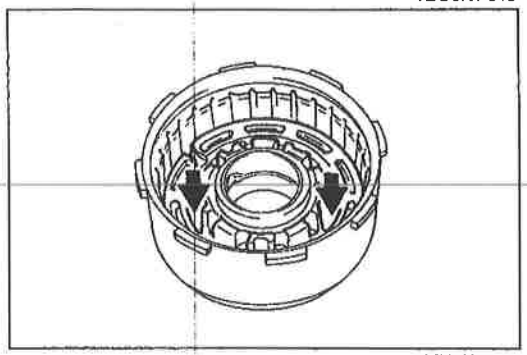
Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

3. If not correct, replace the clutch piston.


1BU0K1-019

Assembly procedure

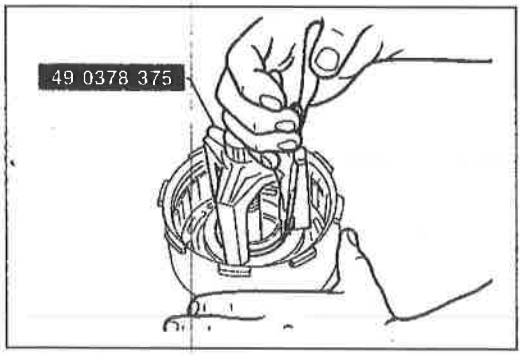
1. Apply ATF to a new O-ring and install it onto the rear clutch drum.
2. Apply ATF to a new seal ring and install it onto the piston.


9MU0K2-148

3. Apply ATF to the inside of the direct clutch drum.

Caution
Apply even pressure to the outer edge of the piston to avoid damaging the seal rings when installing.

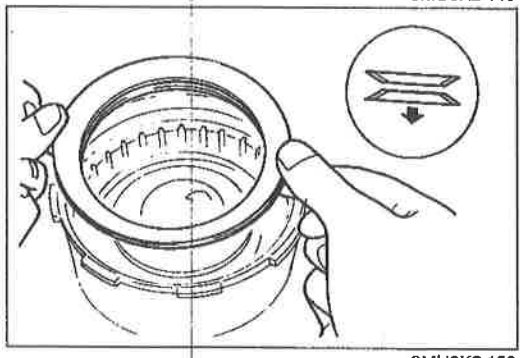
4. Install the piston in the direct clutch drum.



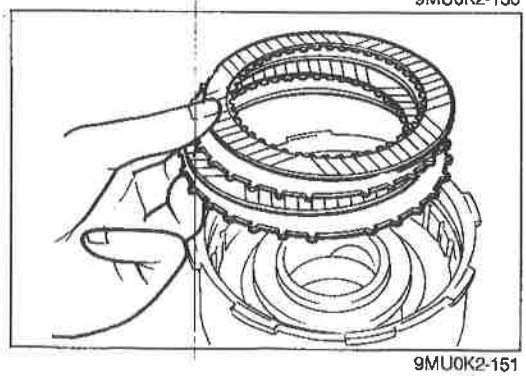
9MU0K2-149

Caution
a) Do not overexpand the snap ring when installing.
b) Do not align the snap ring end-gap with the spring retainer stop.

5. Install the springs and spring retainer and compress them with the **SST**.
6. Install the snap ring.


9MU0K2-150

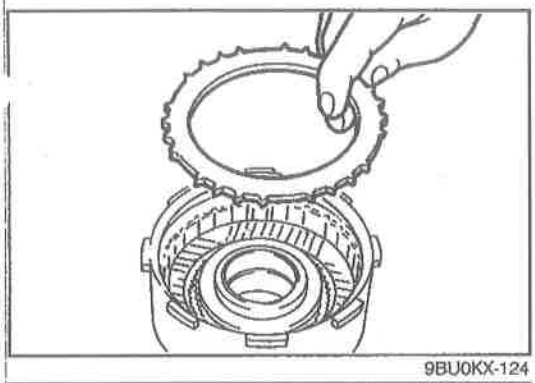
7. Install the dished plates as shown.


9MU0K2-151

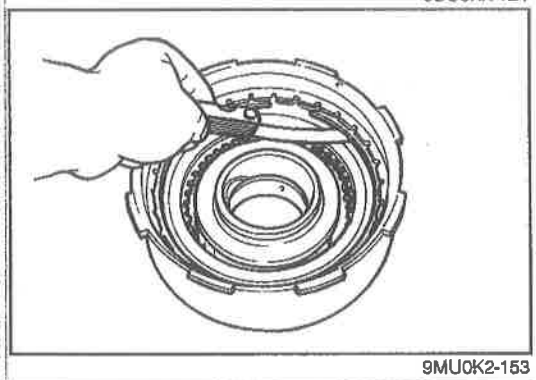
Caution
Align the flats of the drive plates with the lubrication hole of the clutch drum, then set them into the drum.

Note
Installation order:
Driven-Drive-Driven-Drive

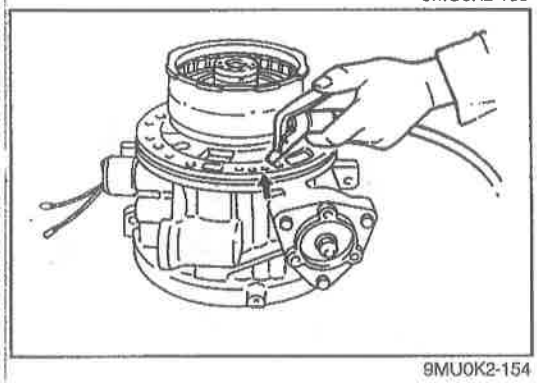
8. Apply ATF to the drive plates and driven plates and install them into the direct clutch drum.



9BU0KX-124



9MU0K2-153



9MU0K2-154

Caution
Align the flat portion of the retaining plate with the lubrication hole of the clutch drum, then set it into the drum.

9. Install the retaining plate.

Caution
Do not deform the snap ring.

10. Install the snap ring.

11. Measure the clearance between the retaining plate and the snap ring with a feeler gauge. If not within specification, adjust the clearance by installing the correct retaining plate.

Clearance: 1.6—1.8mm (0.063—0.071 in)

Retaining plate sizes

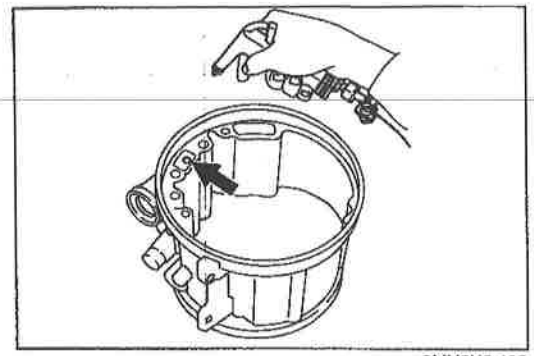
mm (in)

5.6 (0.220)	5.8 (0.228)	6.0 (0.236)
6.2 (0.244)	6.4 (0.252)	6.6 (0.260)
6.8 (0.268)	7.0 (0.276)	

Caution
Apply air for no more than three(3) seconds.

12. Install the direct clutch onto the drum support along with the seal rings. Apply compressed air to the oil passage and check the clutch operation.

Air pressure: 392 kPa (4.0 kg/cm^2, 67 psi) max.

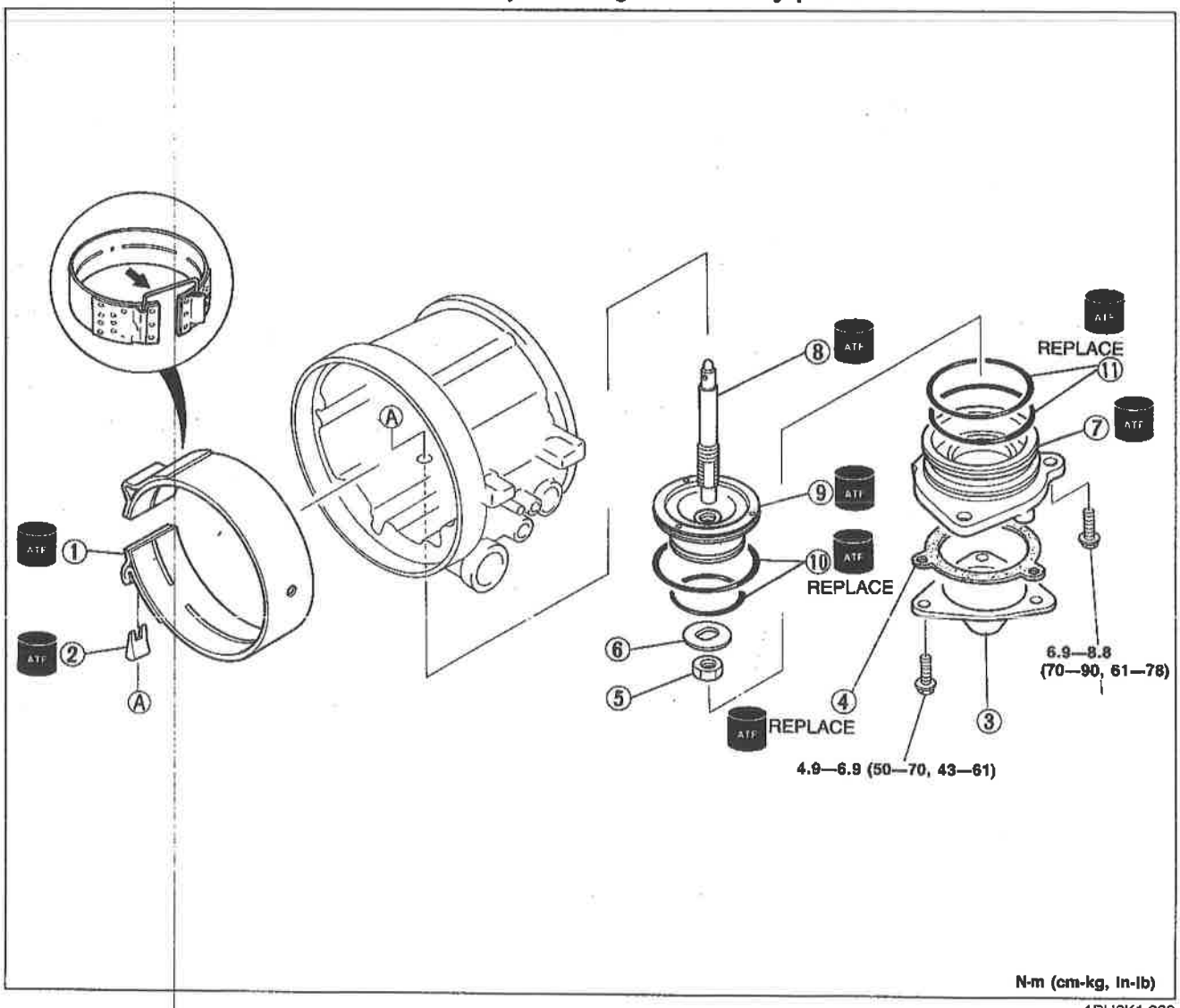

9MU0K2-432

OD BAND SERVO
Preinspection
OD band servo operation
1. Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

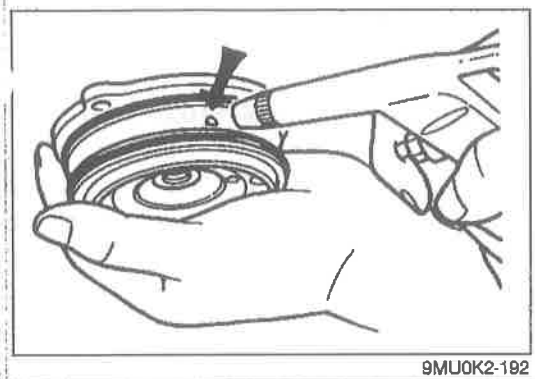
2. Verify that the piston stem moves to the brake band.
   If not, the seal rings or the oil seal may be damage or the piston assembly may be sticking.
   Inspect them, and replace as necessary when assembling.

Disassembly
Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



1BU0K1-020

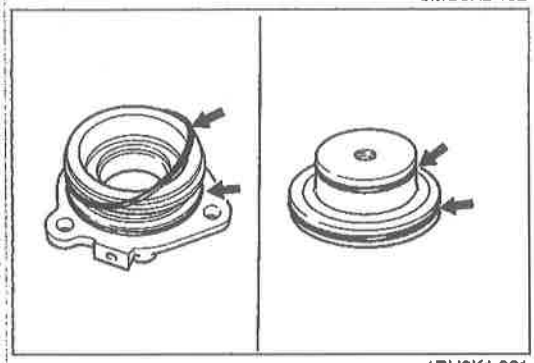
1. Brake band
   Inspect for wear or burning
2. Band strut
3. OD band servo cover
4. Gasket
5. Nut
6. Washer
7. Body
8. Piston stem
9. Piston assembly
   Removal..... page K1–62
10. Seal rings
11. O-rings



9MU0K2-192

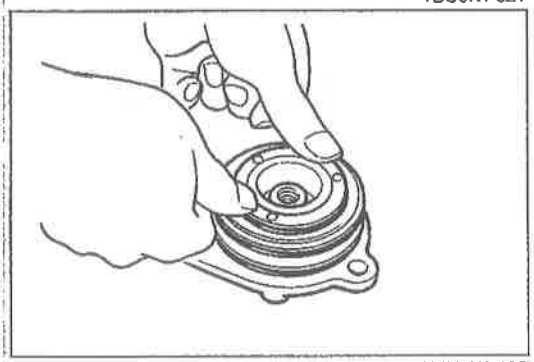
Disassembly note
Piston assembly
Remove the piston assembly from the body by applying compressed air through the oil passage hole.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.



1BU0K1-021

Assembly procedure
1. Apply ATF to the new seal rings, and install them onto the body.
2. Apply ATF to the new O-rings, and install them onto the piston assembly.

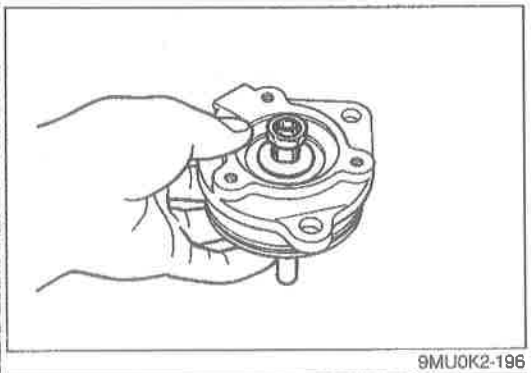


9MU0K2-195

3. Apply ATF to the piston assembly and body.

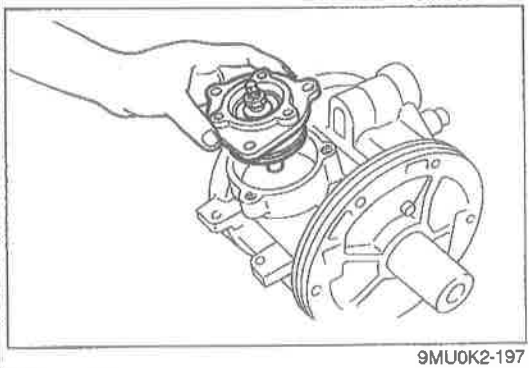
Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal rings when installing.

4. Press the piston assembly in the body.



9MU0K2-196

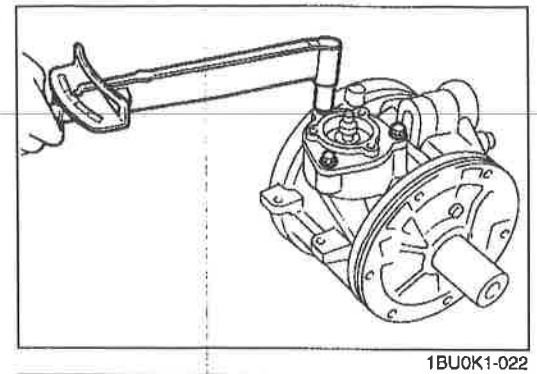
5. Apply ATF to the piston stem and washer, and install them into the body.
6. Loosely tighten the nut.



9MU0K2-197

Caution
Apply even pressure to the outside edge of the body to avoid damaging the O-ring when installing.

7. Apply ATF to a new gasket, and install it onto the OD case.
8. Install the piston assembly.



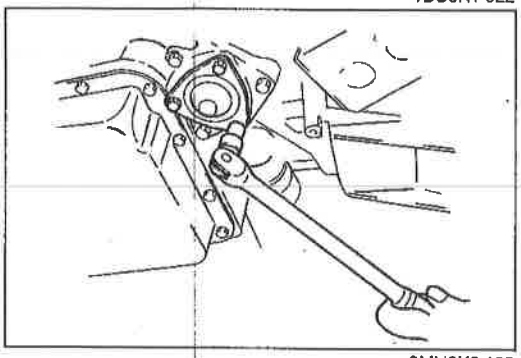
1BU0K1-022

9. Install and tighten the bolts.

Tightening torque:
9.8—14.7 N·m (1.0—1.5 m-kg, 7.2—10.8 ft-lb)

On-vehicle Adjustment

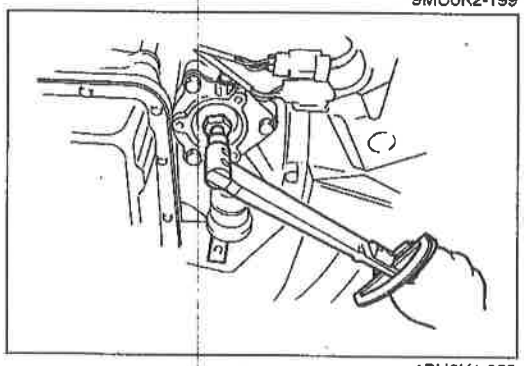
1. Remove the OD band servo cover and gasket.



9MU0K2-199

2. Loosen the locknut and tighten the piston stem.

Tightening torque:
6.9—9.8 N·m (0.7—1.0 m-kg, 5.1—7.2 ft-lb)



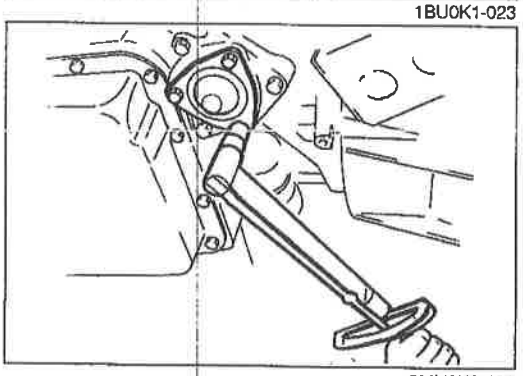
1BU0K1-023

3. Loosen the stem the number of turns shown below.

Stem: 2 turns

4. Tighten the locknut.

Tightening torque:
15—40 N·m (1.5—4.0 m-kg, 11—30 ft-lb)



9MU0K2-431

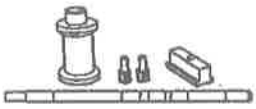
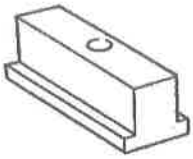
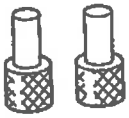
5. Install a new gasket and the OD band servo cover.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)

DRUM SUPPORT, ACCUMULATOR, AND OD CASE

Preparation

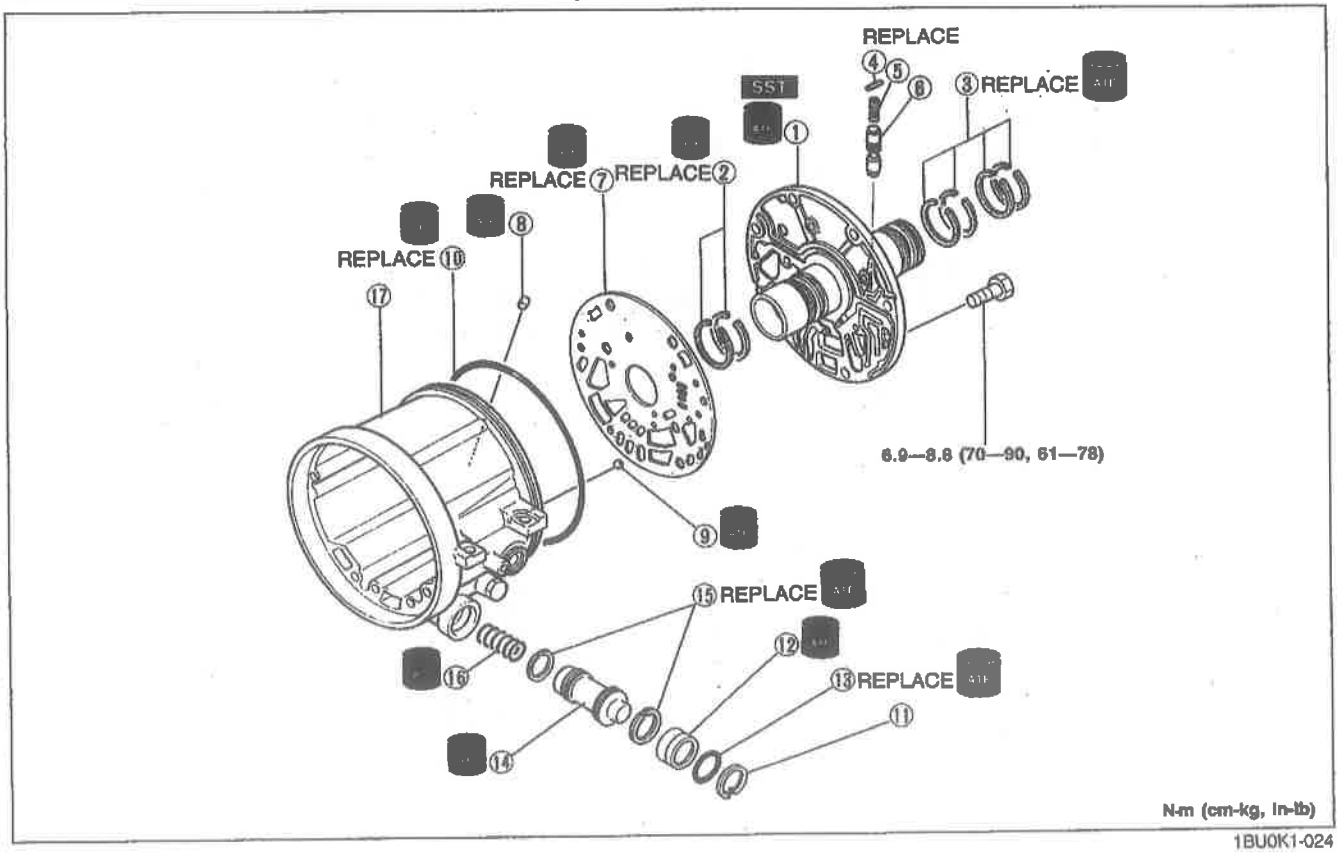
SST

49 S019 0A0 Set, centering tool 	49 S019 001 Holder (Part of 49 S019 0A0) 	49 S019 002 Shaft (Part of 49 S019 0A0) 
49 S019 003 Stand (Part of 49 S019 0A0) 	49 S019 004 Pin (Part of 49 S019 0A0) 	

9MU0K2-232

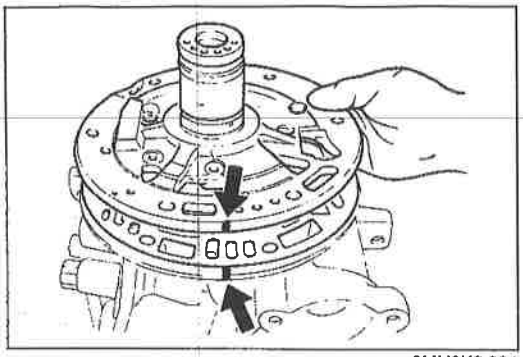
Disassembly and Inspection

Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.

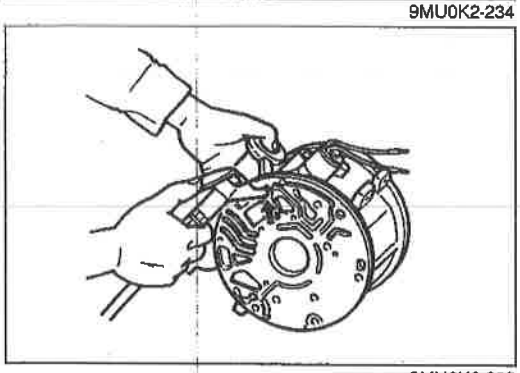


1BU0K1-024

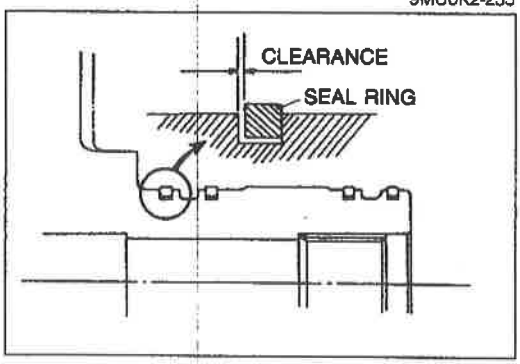
1. Drum support
   Removal..... page K1–65
   Inspection ..... page K1–65
2. Seal rings
3. Seal rings
4. Roll pin
5. Spring
   Inspection ..... page K1–65
6. OD cancel valve
   Inspect for sticking, scoring, or scratches
7. Gasket
8. One-way valve
9. Steel ball
10. Seal ring
11. Snap ring
12. Accumulator plug
    Removal..... page K1–65
13. O-ring
14. Accumulator piston
15. Seal rings
16. Spring
    Inspection ..... page K1–65
17. OD case



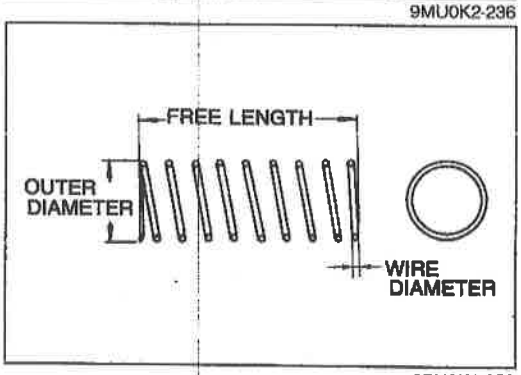
9MU0K2-234



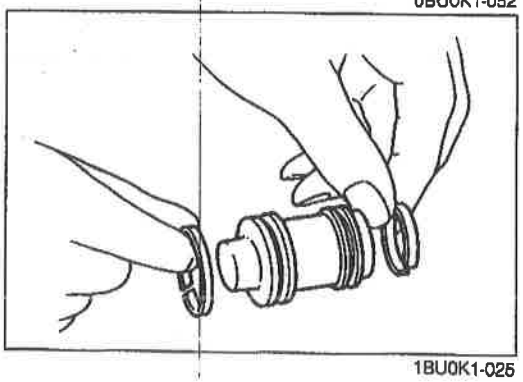
9MU0K2-235



9MU0K2-236



0BU0K1-052



1BU0K1-025

Disassembly note
Drum support
Mark the OD case and drum support for proper reassembly, then remove the drum support.

Accumulator plug
Remove the accumulator plug, piston, and spring by applying compressed air through the oil passage.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

Inspection
Drum support
1. Apply ATF to the new seal rings and install them into the seal ring grooves of the drum support.
2. Measure the clearance between the seal rings and the seal ring grooves.

Clearance
Standard: 0.04—0.16mm (0.0016—0.0063 in)
Maximum: 0.40mm (0.016 in)

3. If not within specification, replace the drum support.

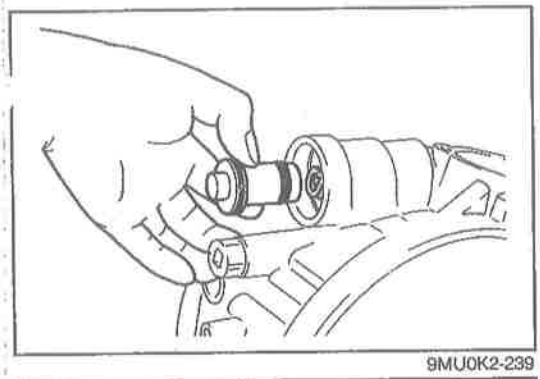
Spring
1. Measure the spring specifications.

Specifications

Item / Spring	Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
OD cancel	4.95 (0.195)	23.0 (0.906)	14.8	0.65 (0.026)
Accumulator	14.85 (0.585)	39.7 (1.563)	9.3	1.8 (0.071)

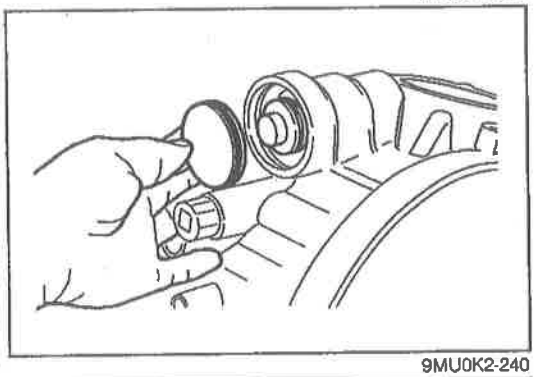
2. If not within specification, replace the spring.

Assembly procedure
1. Apply ATF to the new seal rings, and install them onto the accumulator piston.


9MU0K2-239

Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal rings when installing.

2. Apply ATF to the spring and accumulator piston, and install them into the OD case.

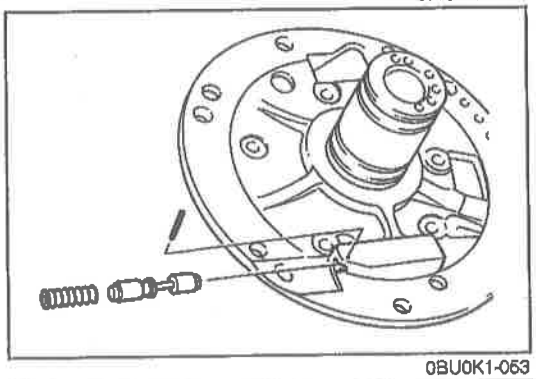

9MU0K2-240

3. Apply ATF to a new O-ring, and install it on the accumulator plug.
4. Install the accumulator plug and snap ring.

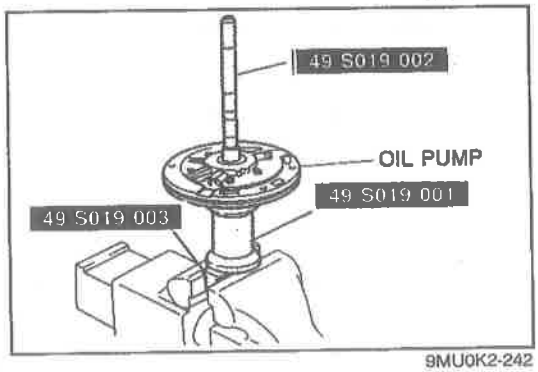
Caution
Apply air for no more than three(3) seconds.

5. Check the accumulator operation by applying compressed air through the oil passage.

Air pressure: 392 kPa (4.0kg/cm^2, 57 psi) max.


0BU0K1-053

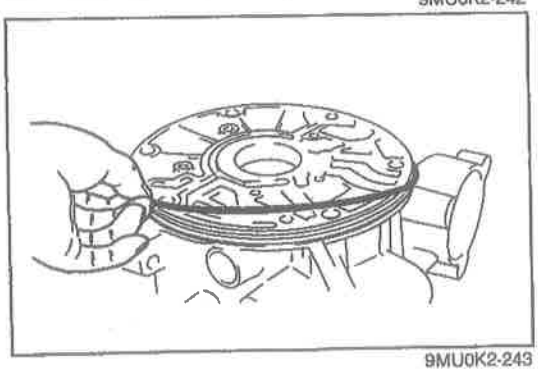
6. Apply ATF to the OD cancel valve and spring, and install it into the drum support.
7. Tap in a new roll pin.



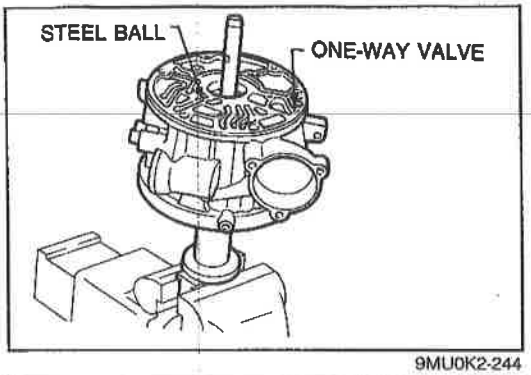
9MU0K2-242

Note
Use protective plates to prevent damaging the SST.

8. Set the oil pump onto the **SST**.

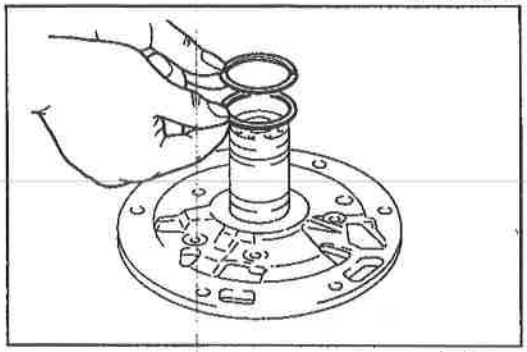

9MU0K2-243

9. Apply ATF to a new seal ring, and install it onto the drum support.

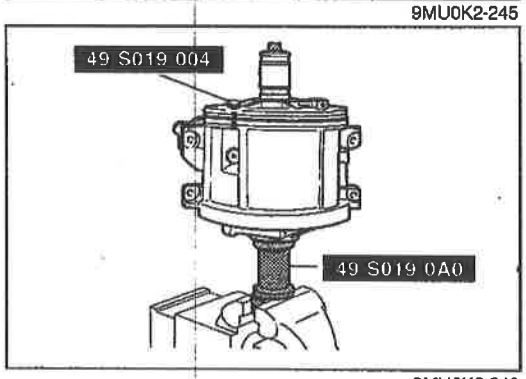


9MU0K2-244

10. Apply ATF to the OD case, and mount it onto the oil pump.
11. Install the steel ball and the one-way valve.

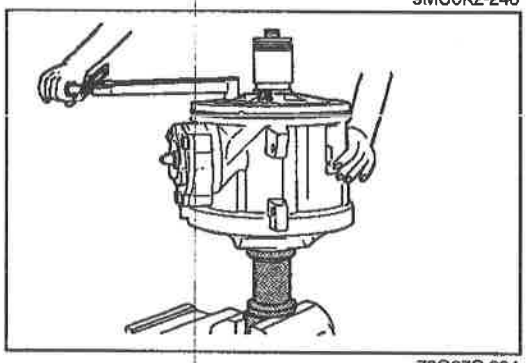

9MU0K2-245

12. Apply ATF to the new seal rings, and install them onto the drum support.



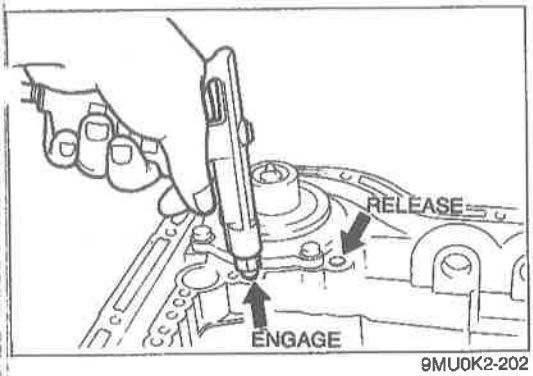
9MU0K2-246

13. Apply ATF to the drum support, and install the support and a new gasket onto the OD case, aligning the marks.
14. Install the **SST** (pins).


79G07C-284

15. Tighten the drum support mounting bolts.

Tightening torque:
6.9—8.8 N·m (70—90 cm-kg, 61—78 in-lb)



9MU0K2-202

2ND BAND SERVO

Preinspection

2ND band servo operation

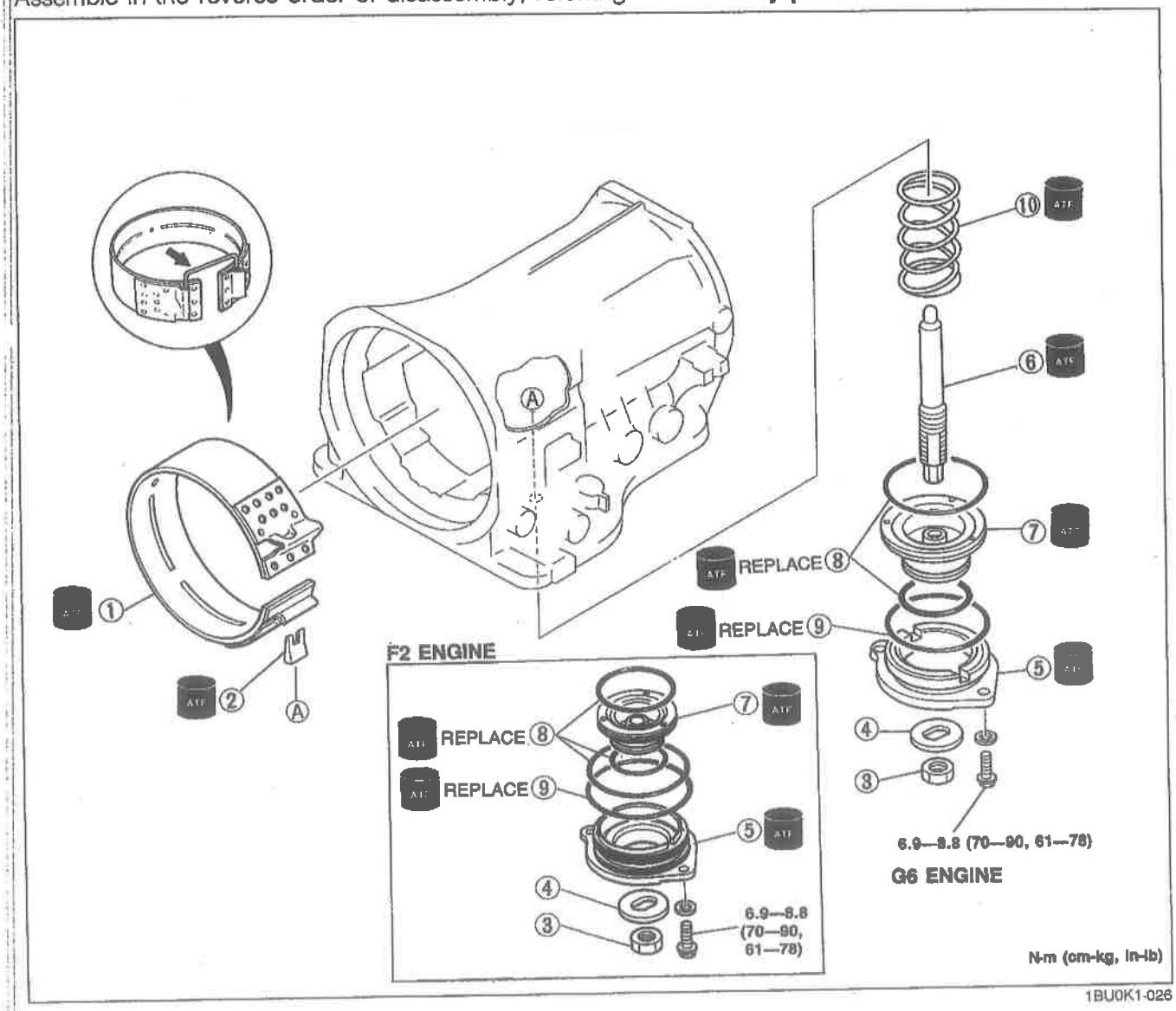
1. Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

2. Verify that the piston stem moves to the brake band.
   If not, the seal rings or the oil seal may be damage or the piston assembly may be sticking.
   Inspect them, and replace as necessary when assembling.

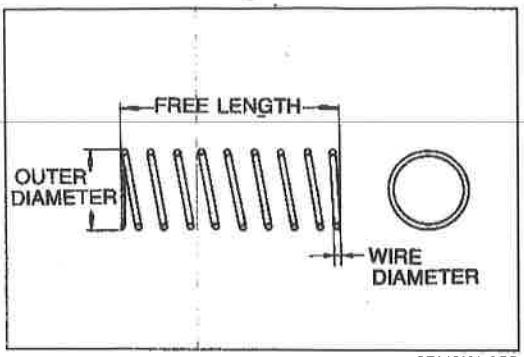
Disassembly and Inspection

Disassemble in the order shown in the figure.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.

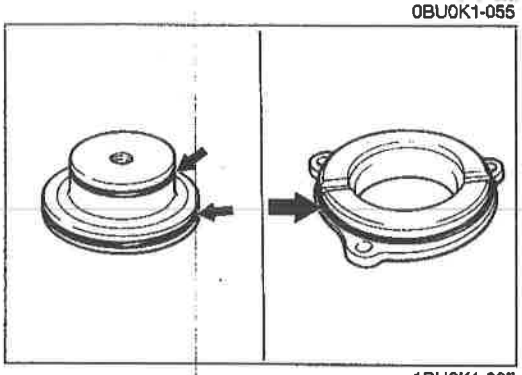


1BU0K1-026

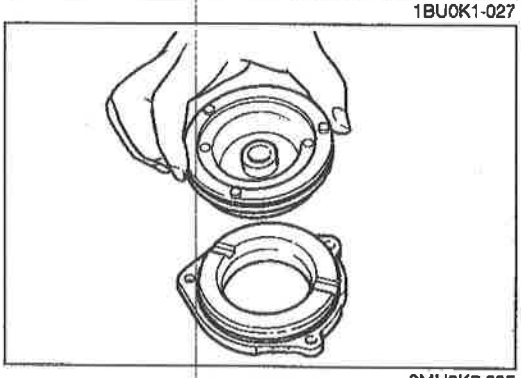
1. Brake band
   Inspect for wear or burning
2. Band strut
3. Nut
4. Washer
5. Body
6. Piston stem
7. Piston assembly
8. D-ring
9. O-ring
10. Return spring
    Inspection ..... page K1–69



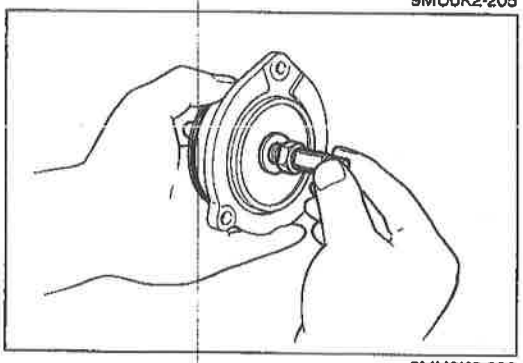
0BU0K1-055



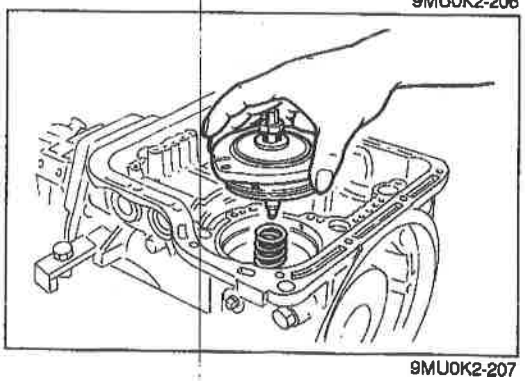
1BU0K1-027



9MU0K2-205



9MU0K2-206



9MU0K2-207

Inspection
Return spring
1. Measure the spring specifications.

Specifications

Item / Engine	Free length mm (in)	Wire dia. mm (in)
F2	36.0 (1.417)	3.5 (0.138)
G6	38.7 (1.542)	3.5 (0.138)

2. If not within specification, replace the return spring.

Assembly procedure

Note
Install the D-rings with the swelling surface outward.

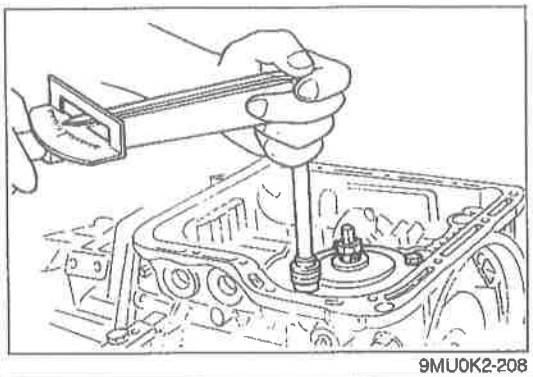
1. Apply ATF to the D-rings, and install them onto the piston assembly.
2. Apply ATF to a new O-ring, and install it onto the piston assembly.
3. Apply ATF to the piston assembly and body.

Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal rings when installing.

4. Press the piston assembly into the body.
5. Apply ATF to the piston stem and washer, and install them into the body.
6. Loosely tighten the nut.
7. Apply ATF to the return spring, and install it into the transmission case.

Caution
Apply even pressure to the outside edge of the body to avoid damaging the O-ring when installing.

8. Install the piston assembly.



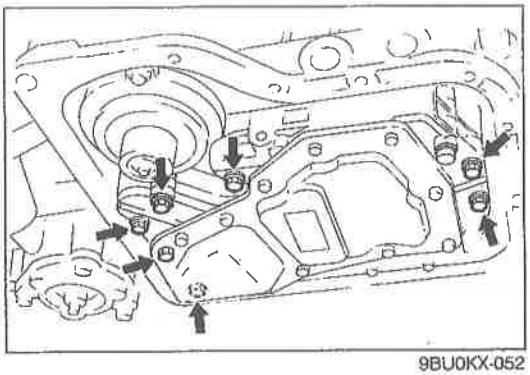
9MU0K2-208

9. Install and tighten the bolts.

Tightening torque:
6.9—8.8 N·m (70—90 cm-kg, 61—78 in-lb)

On-vehicle Adjustment

1. Remove the valve body assembly.



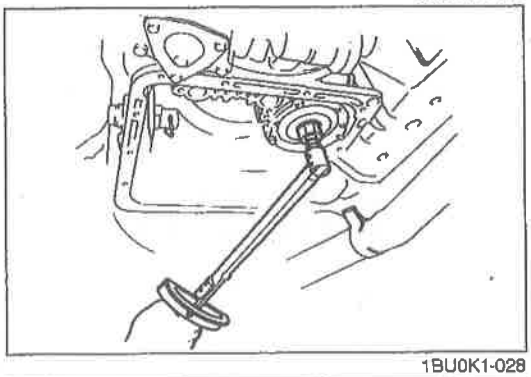
9BU0KX-052

2. Loosen the locknut and tighten the piston stem.

Tightening torque:
11.8—14.7 N·m (1.2—1.5 m-kg, 8.7—10.8 ft-lb)

3. Loosen the stem the number of turns shown below.

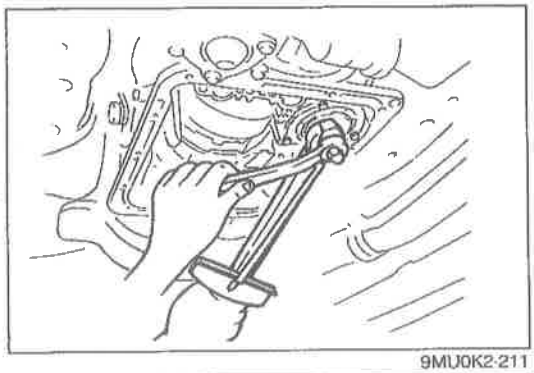
Stem: 3 turns



1BU0K1-028

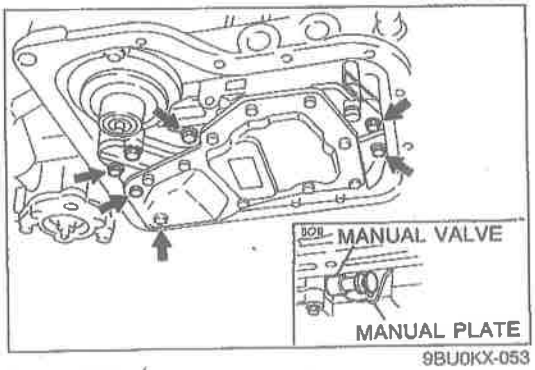
4. Hold the stem and tighten the locknut.

Tightening torque:
15—39 N·m (1.5—4.0 m-kg, 11—29 ft-lb)



9MU0K2-211

5. Install the valve body assembly.

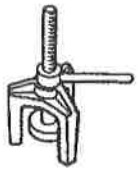


9BU0KX-053

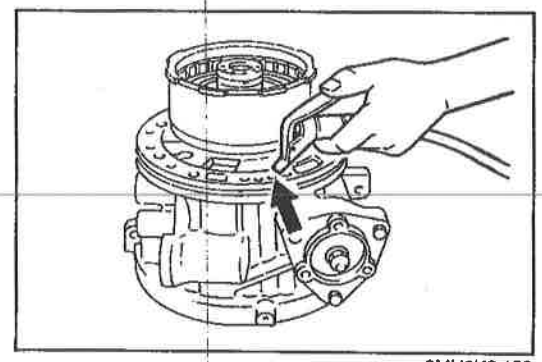
FRONT CLUTCH

Preparation

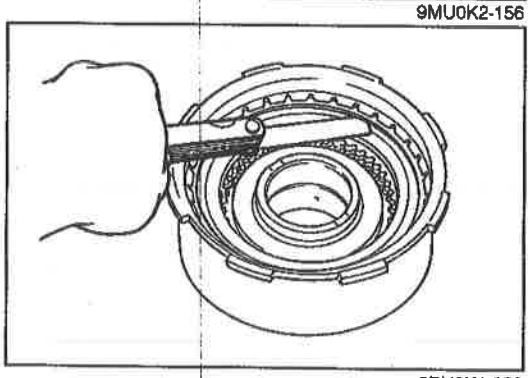
SST

49 0378 375 Compressor, clutch spring	

9MU0K2-155



9MU0K2-156



0BU0K1-056

Preinspection

Front clutch operation

1. Install the front clutch onto the drum support along with the seal rings.
   Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

2. Verify that the retaining plate moves toward the snap ring. If not, the seal ring or O-ring may be damaged or fluid may be leaking at the piston check ball. Inspect them, and replace when assembling.

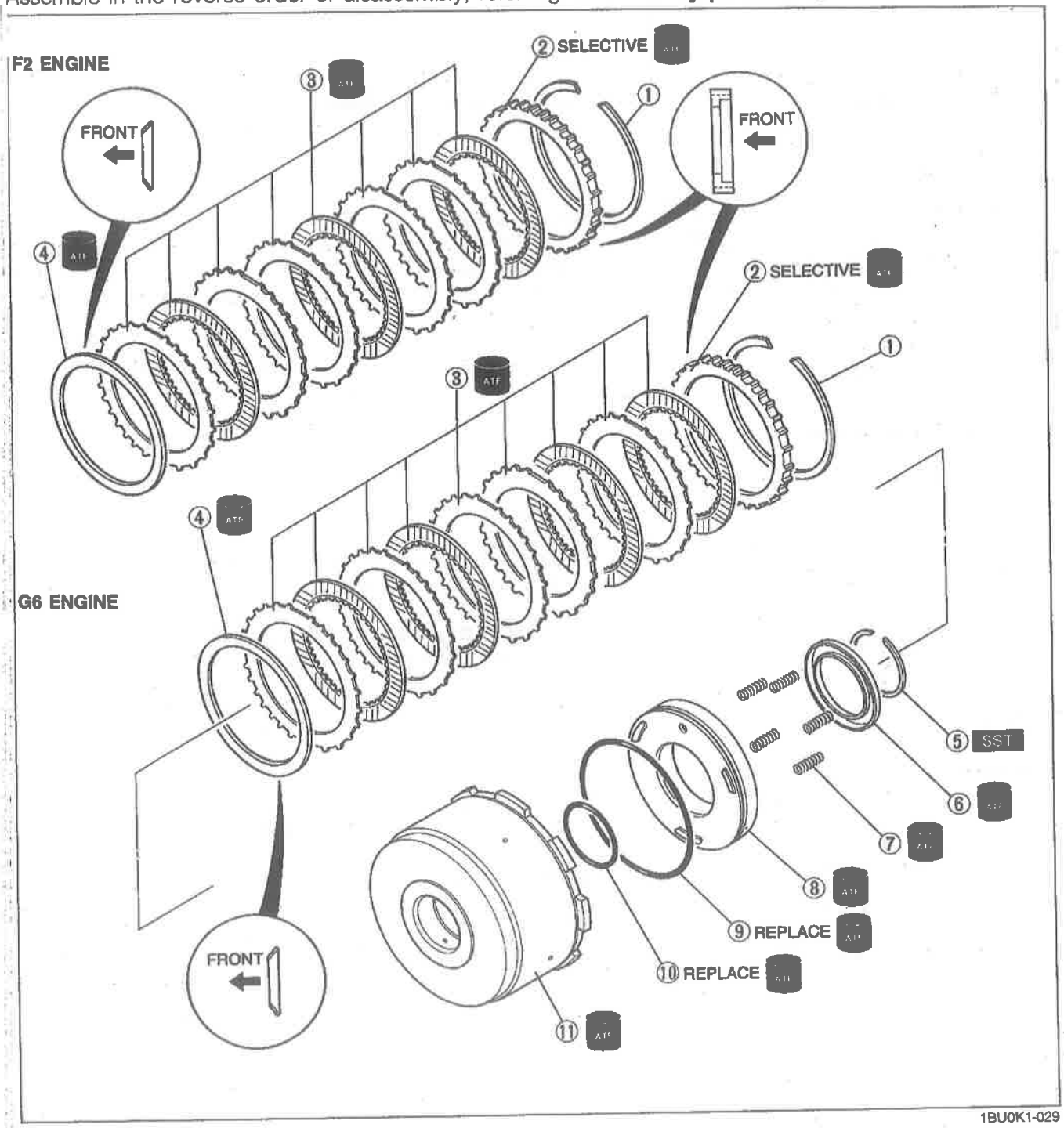
Clearance between retaining plate and snap ring

Measure the clearance between the retaining plate and the snap ring.

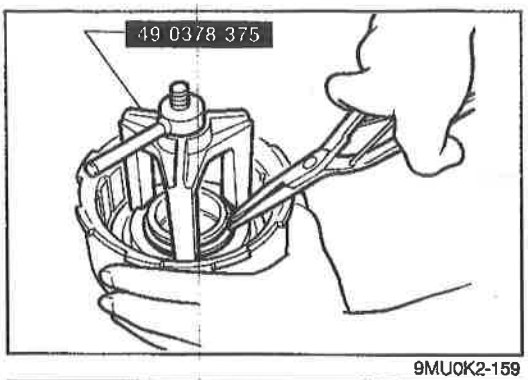
Clearance
F2 engine: 1.6—1.8mm (0.063—0.071 in)
G6 engine: 0.9—1.1mm (0.035—0.043 in)

Select and install the correct retaining plate when assembling.

Disassembly and Inspection
Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



1. Snap ring
2. Retaining plate
3. Drive plates and driven plates
   Inspect for wear or burning
   Inspection ..... page K1–73
4. Dished plates
5. Snap ring
   Removal..... page K1–73
6. Spring retainer
7. Return spring
   Inspection ..... page K1–73
8. Clutch piston
   Inspect balls for sticking by shaking piston
   Removal..... page K1–73
   Inspection ..... page K1–73
9. Seal ring
10. O-ring
11. Front clutch drum

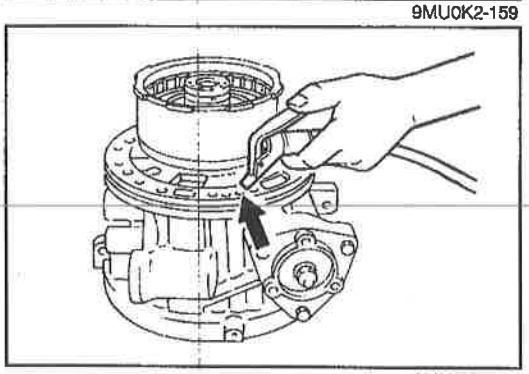


9MU0K2-159

Disassembly note
Snap ring

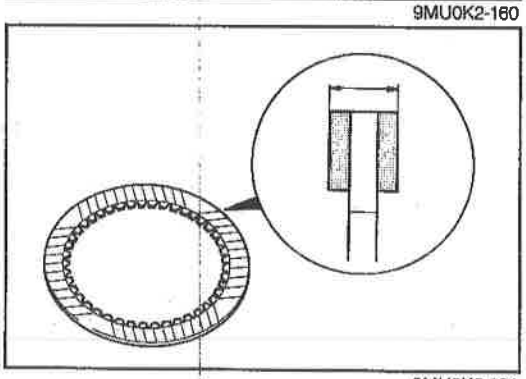
Caution
Do not damage the snap ring.

1. Compress the spring with the **SST**, then remove the snap ring with snap ring pliers.
2. Remove the spring retainer and spring.


9MU0K2-160

Clutch piston
1. Install the front clutch drum onto the drum support along with seal rings.
2. Remove the piston by applying compressed air through the oil passage.

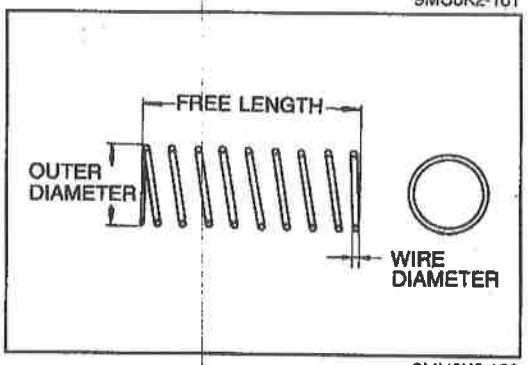
Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.


9MU0K2-161

Inspection
Drive plate
1. Measure the facing thickness in three places, and determine the average of the three readings.

Standard thickness: 1.6mm (0.063 in)
Minimum thickness: 1.4mm (0.055 in)

2. If not within specification, replace the drive plates.



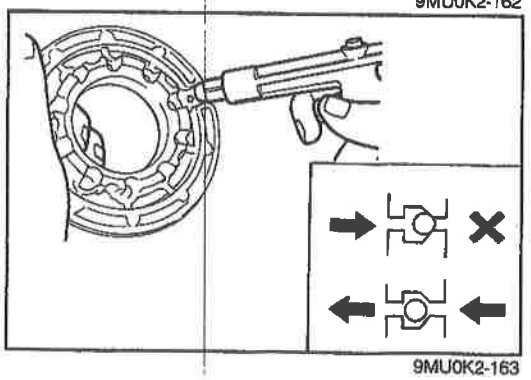
9MU0K2-162

Return spring
1. Measure the spring specifications.

Specifications

Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
8.0 (0.315)	30.5 (1.201)	14.5	1.3 (0.051)

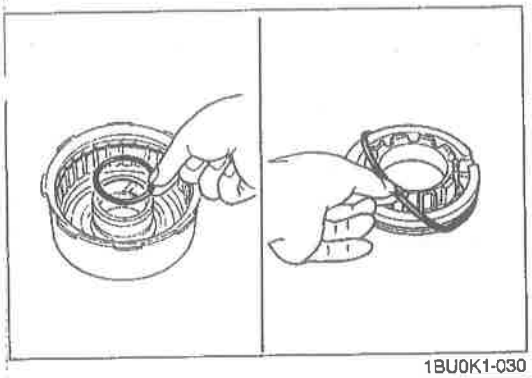
2. If not within specification, replace the return spring.


9MU0K2-163

Clutch piston
1. Verify that there is no air leakage when applying compressed air through the oil hole opposite the return spring.
2. Verify that there is airflow when applying compressed air through the oil hole on the return spring side.

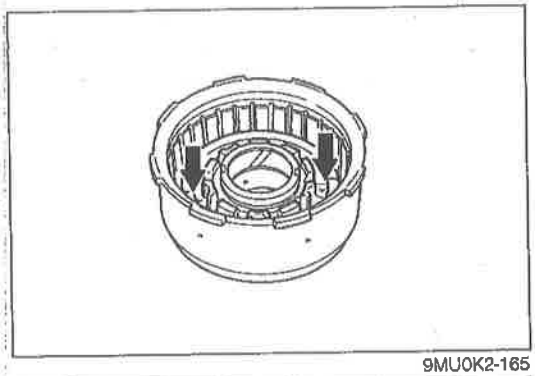
Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

3. If not correct, replace the clutch piston.


1BU0K1-030

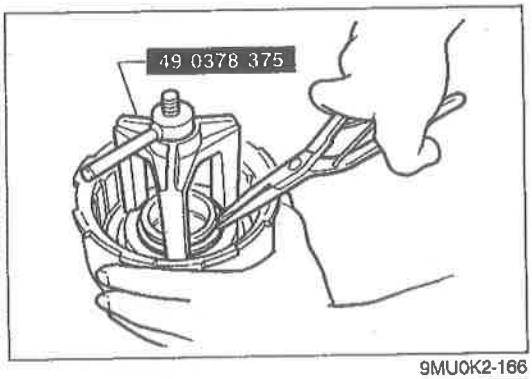
Assembly procedure

1. Apply ATF to a new O-ring and install it onto the front clutch drum.
2. Apply ATF to a new seal ring and install it onto the piston.


9MU0K2-165

Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal rings when installing.

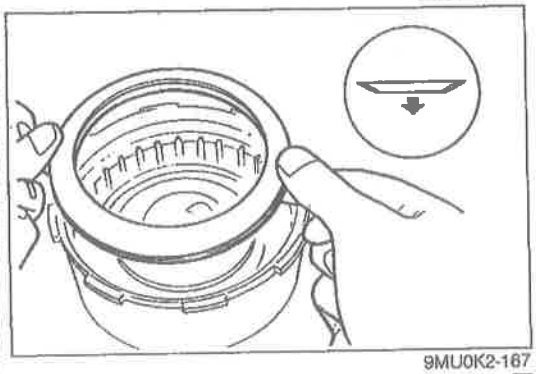
3. Apply ATF to the inside of the front clutch drum.
4. Install the piston in the front clutch drum.



9MU0K2-166

Caution
a) Do not overexpand the snap ring when installing.
b) Do not align the snap ring end-gap with the spring retainer stop.

5. Install the springs and spring retainer, then compress them with the **SST**.
6. Install the snap ring.

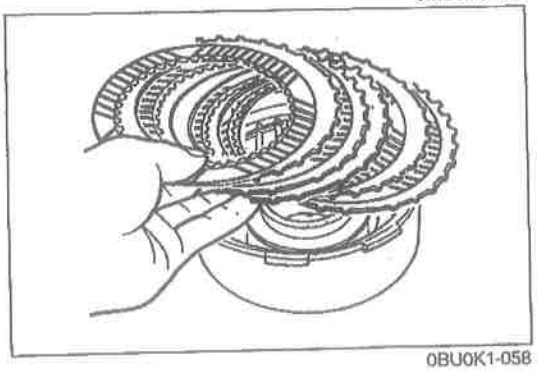

9MU0K2-167

7. Install the dished plates as shown.

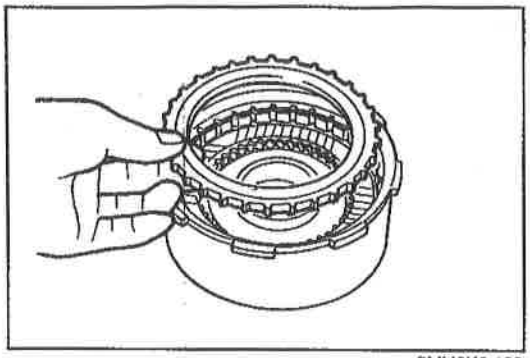
Caution
Align the flats of the drive plates with the lubrication hole of the clutch drum, then set them into the drum.

Note
Installation order (F2 engine):
Driven-Drive-Driven-Driven-Drive-Driven-Driven-Drive

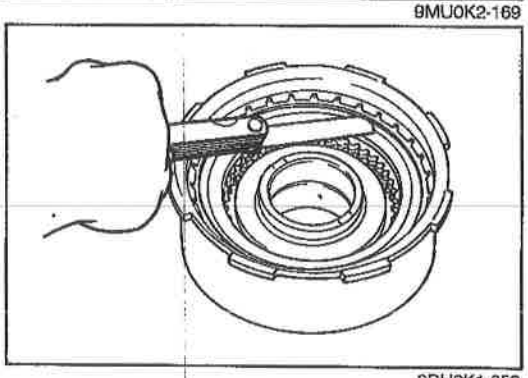
Installation order (G6 engine):
Driven-Drive-Driven-Drive-Driven-Driven-Drive-Driven-Drive


0BU0K1-058

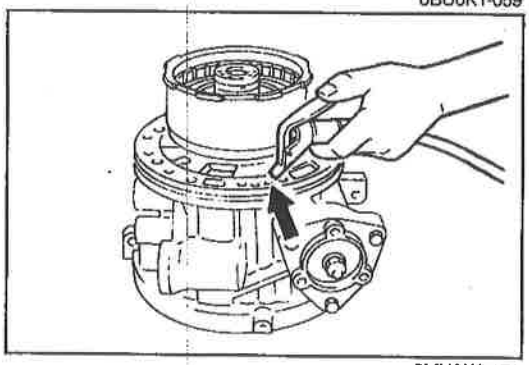
8. Apply ATF to the drive plates and driven plates and install them into the front clutch drum.



9MU0K2-169



0BU0K1-059



9MU0K2-171

Caution
Align the flats of the retaining plate with the lubrication hole of the clutch drum, then set it into the drum.

9. Install the retaining plate with the step facing upward.

Caution
Do not deform the snap ring.

10. Install the snap ring.

11. Measure the clearance between the retaining plate and snap ring with a feeler gauge. If not within specification, adjust the clearance by installing the correct retaining plate.

Clearance
F2 engine: 1.6—1.8mm (0.063—0.071 in)
G6 engine: 0.9—1.1mm (0.035—0.043 in)

Retaining plate sizes
F2 engine:

mm (in)

5.0 (0.197)	5.2 (0.205)	5.4 (0.213)
5.6 (0.220)	5.8 (0.228)	6.0 (0.236)

G6 engine:

mm (in)

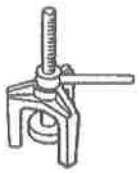
5.6 (0.220)	5.8 (0.228)	6.0 (0.236)
6.2 (0.244)	6.4 (0.252)	6.6 (0.260)
6.8 (0.268)	7.0 (0.276)	

Caution
Apply air for no more than three(3) seconds.

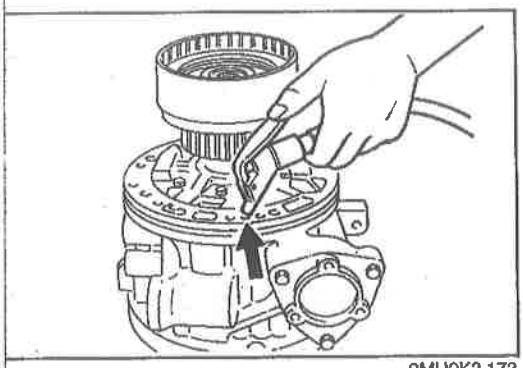
12. Install the front clutch onto the drum support along with the seal rings. Apply compressed air through the oil passage and check the clutch operation.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

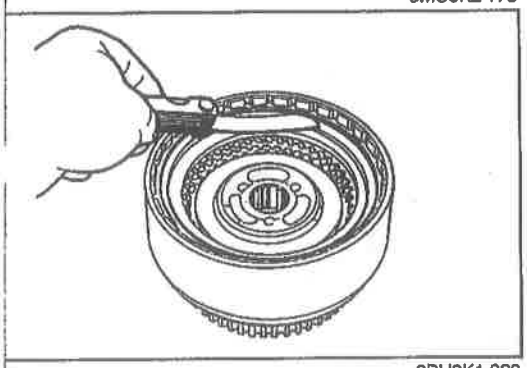
REAR CLUTCH
Preparation
SST

49 0378 375 Compressor, clutch spring	

9MU0K2-172



9MU0K2-173



0BU0K1-060

Preinspection
Rear clutch operation

1. Install the rear clutch onto the drum support along with the seal rings. Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

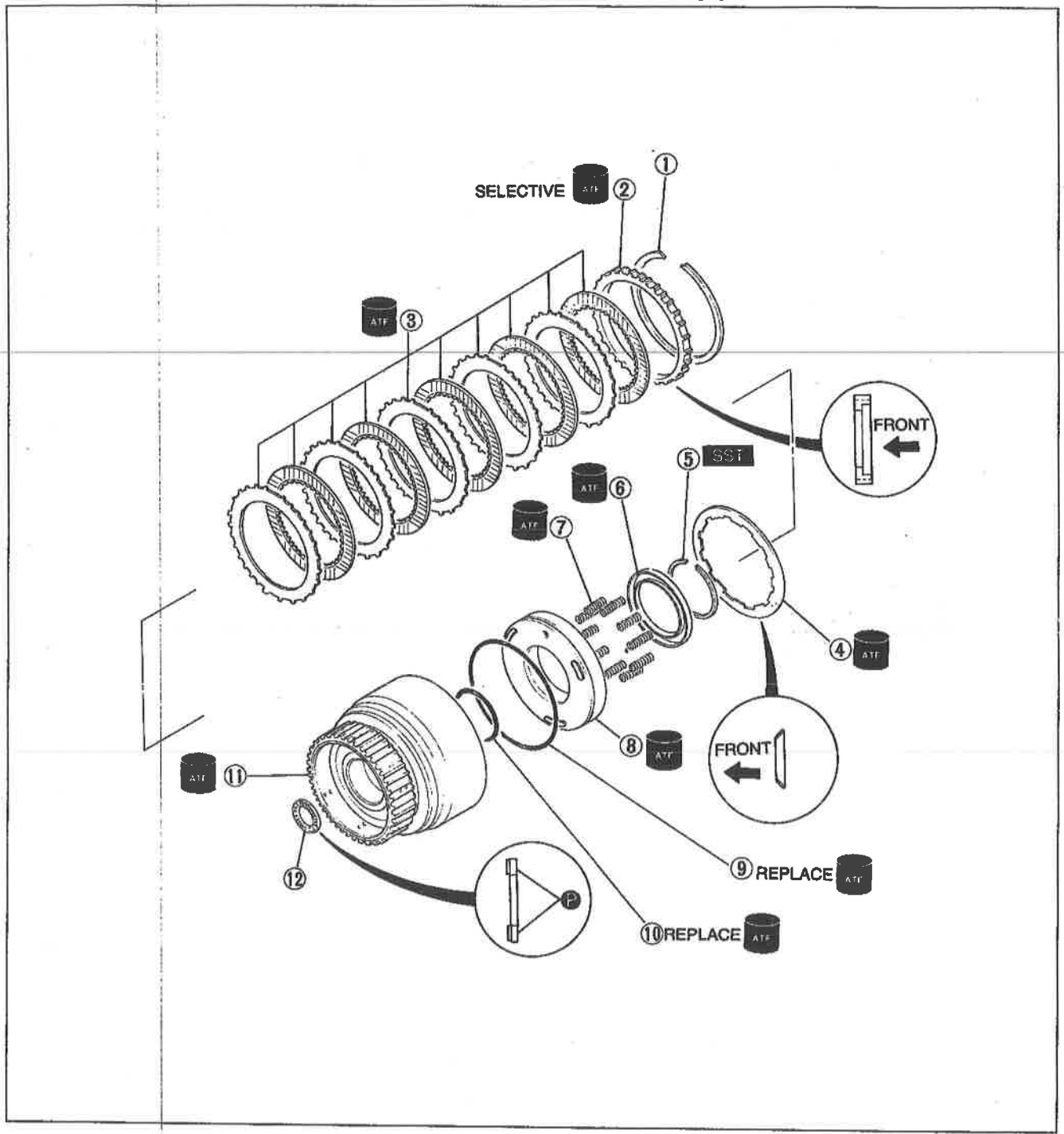
2. Verify that the retaining plate moves toward the snap ring. If not, the seal ring or O-ring may be damaged or fluid may be leaking at the piston check ball. Inspect them, and replace when assembling.

Clearance between retaining plate and snap ring
Measure the clearance between the retaining plate and the snap ring.

Clearance: 0.8—1.0mm (0.031—0.039 in)

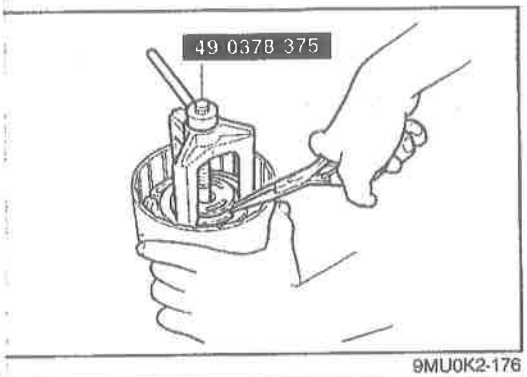
If not within specification, replace the dished plate, drive plates, driven plates, and retaining plate when assembling.

Disassembly and Inspection
Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



2BU0K1-021

1. Snap ring
2. Retaining plate
3. Drive plates and driven plates
   Inspect for wear or burning
   Inspection ..... page K1–78
4. Dishes plate
5. Snap ring
   Removal ..... page K1–78
6. Spring retainer
7. Return spring
   Inspection ..... page K1–78
8. Clutch piston
   Inspect balls for sticking by shaking, piston
   Removal ..... page K1–78
   Inspection ..... page K1–78
9. Seal ring
10. O-ring
11. Rear clutch drum
12. Bearing
    Inspect for damage or rough rotation

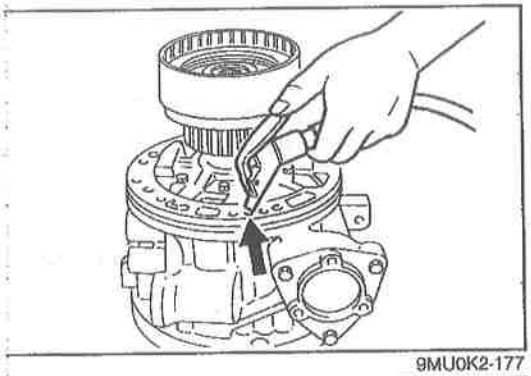


9MU0K2-176

Disassembly note
Snap ring

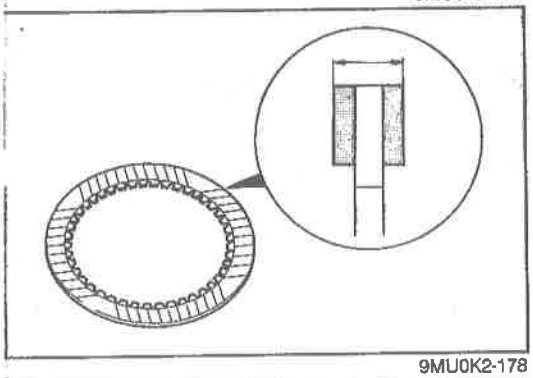
Caution
Do not damage the snap ring.

1. Compress the spring with the **SST**, then remove the snap ring with snap ring pliers.
2. Remove the spring retainer and spring.


9MU0K2-177

Clutch piston
1. Install the rear clutch drum onto the drum support along with the seal rings.
2. Remove the piston by applying compressed air through the oil passage.

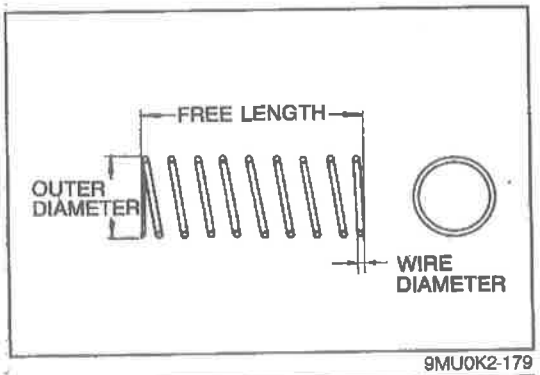
Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.


9MU0K2-178

Inspection
Drive plate
1. Measure the facing thickness in three places and determine the average of the three readings.

Standard thickness: 1.6mm (0.063 in)
Minimum thickness: 1.4mm (0.055 in)

2. If not within specification, replace the drive plates.



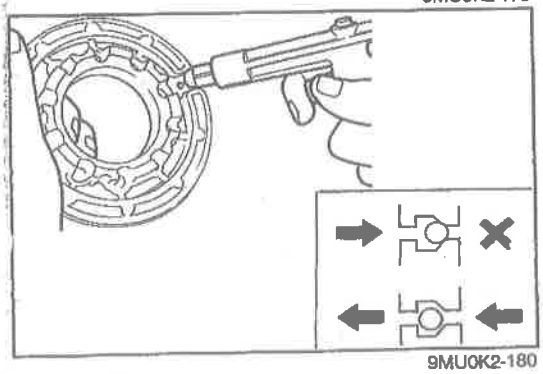
9MU0K2-179

Return spring
1. Measure the spring specifications.

Specifications

Outer dia. mm (in)	Free length mm (in)	No. of coils	wire dia. mm (in)
8.0 (0.315)	30.5 (1.201)	14.5	1.3 (0.051)

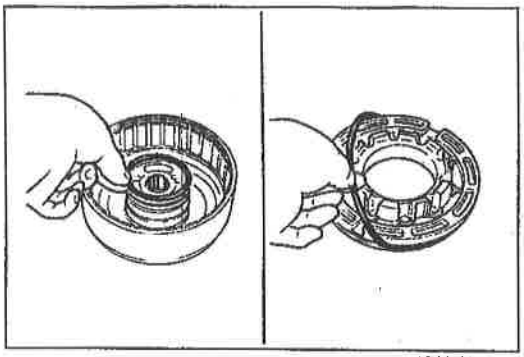
2. If not within specification, replace the return spring.


9MU0K2-180

Clutch piston
1. Verify that there is no air leakage when applying compressed air through the oil hole opposite the return spring.
2. Verify that there is airflow when applying compressed air through the oil hole on the return spring side.

Air pressure: 392 kPa (4.0 kg/cm^2, 57psi) max.

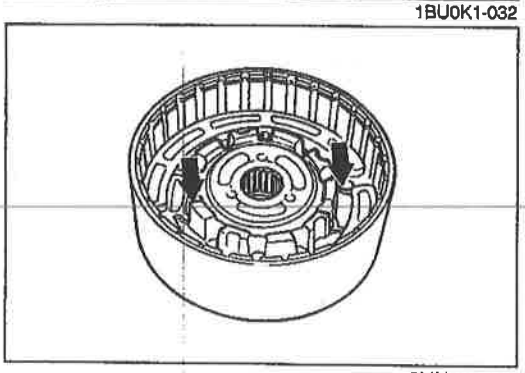
3. If not correct, replace the clutch piston.



1BU0K1-032

Assembly procedure

1. Apply ATF to a new O-ring and install it onto the rear clutch drum.
2. Apply ATF to a new seal ring and install it onto the piston.

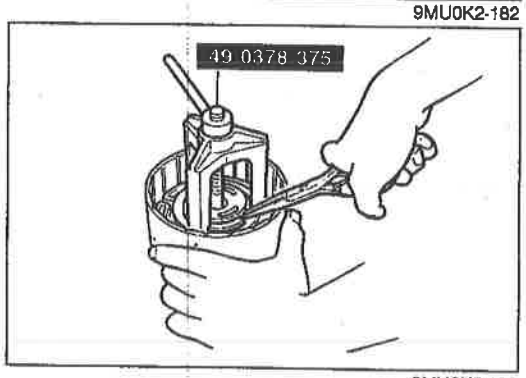


9MU0K2-182

3. Apply ATF to the inside of the rear clutch drum.

Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal rings when installing.

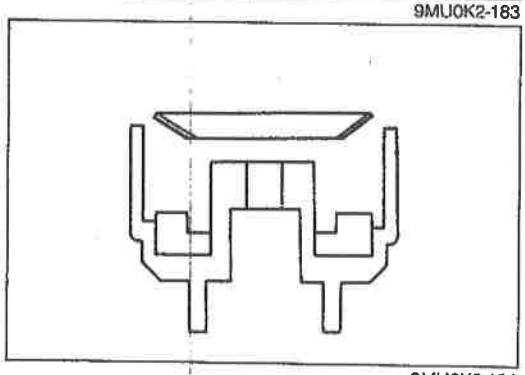
4. Install the piston in the rear clutch drum.



9MU0K2-183

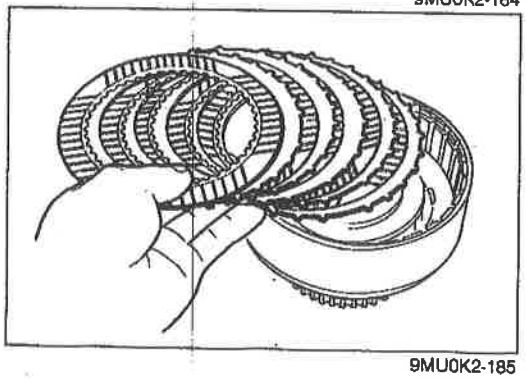
Caution
a) Do not overexpand the snap ring when installing.
b) Do not align the snap ring end-gap with the spring retainer stop.

5. Install the springs and spring retainer and compress them with the **SST**.
6. Install the snap ring.



9MU0K2-184

7. Install the dished plate as shown.

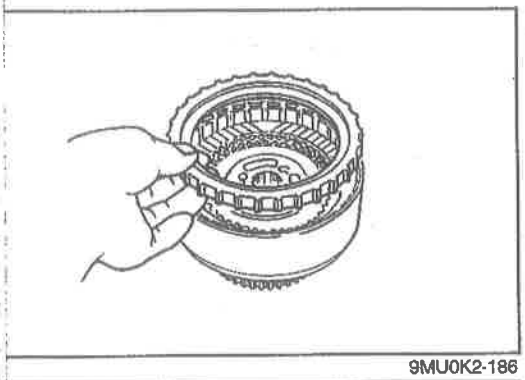


9MU0K2-185

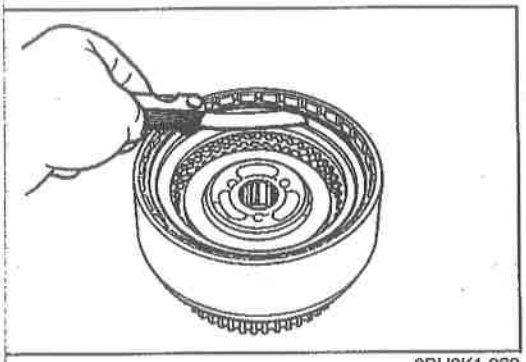
Caution
Align the flats of the drive plates with the lubrication hole of the clutch drum, then set them into the drum.

Note
Installation order:
Driven-Drive-Driven-Drive-Driven-Drive-Driven-Drive-Driven-Drive

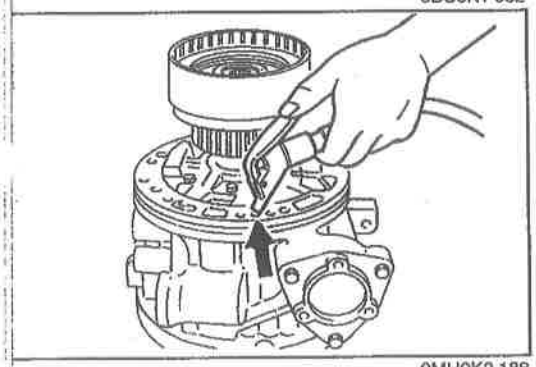
8. Apply ATF to the drive plates and driven plates and install them into the rear clutch drum.



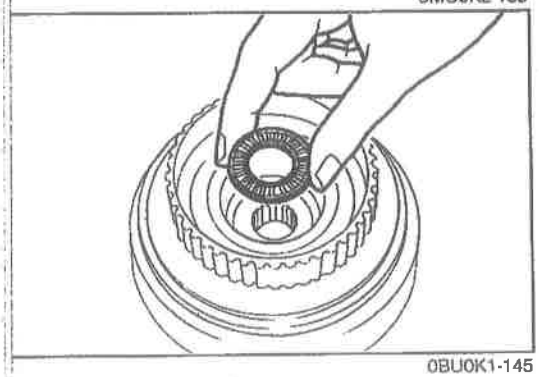
9MU0K2-186



0BU0K1-062



9MU0K2-188



0BU0K1-145

Caution
Align the flats of the retaining plate with the lubrication hole of the clutch drum, then set it into the drum.

9. Install the retaining plate with the step facing upward.

Caution
Do not deform the snap ring.

10. Install the snap ring.

11. Measure the clearance between the retaining plate and snap ring with a feeler gauge. If not within specification, adjust the clearance by installing the correct retaining plate.

Clearance: 0.8—1.0mm (0.031—0.039 in)

Retaining plate sizes

mm (in)

9.4 (0.370)	9.6 (0.378)	9.8 (0.386)
10.0 (0.394)	10.2 (0.402)	10.4 (0.409)
10.6 (0.417)		

Caution
Apply air for no more than three(3) seconds.

12. Install the rear clutch onto the drum support along with the seal rings.
Apply compressed air to the oil passage and check the clutch operation.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

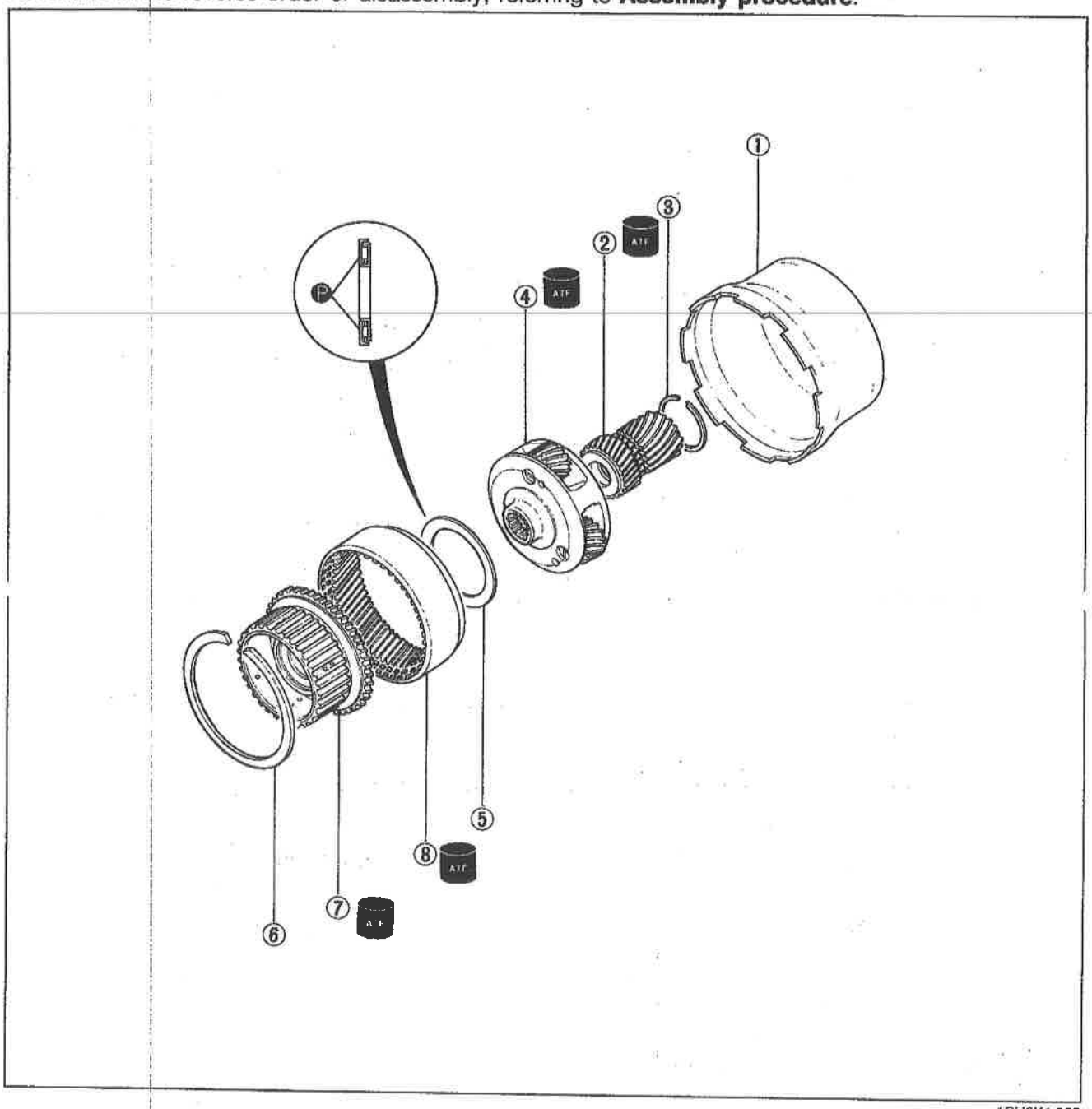
13. Apply petroleum jelly to the bearing race, and install it onto the rear clutch drum.

Bearing race outer diameter: 51.5mm (2.028 in)

CONNECTING SHELL AND FRONT PLANETARY GEAR UNIT (REAR CLUTCH HUB, FRONT PLANETARY PINION CARRIER, REAR SUN GEAR)

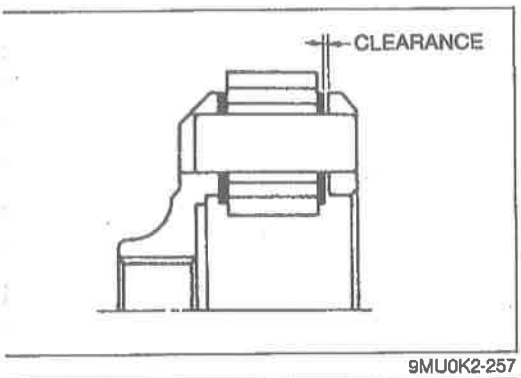
Disassembly and Inspection

Disassemble in the order shown in the figure.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



1BU0K1-033

1. Connecting shell
2. Front sun gear
   Inspect individual gear teeth for damage, wear, or cracks
3. Snap ring
4. Front planetary pinion carrier
   Inspect individual gear teeth for damage, wear, or cracks, and rotation of pinion gears
   Inspection ..... page K1–80
5. Bearing
   Inspect for damage or rough rotation
6. Snap ring
7. Rear clutch hub
8. Internal gear
   Inspect individual gear teeth for damage, wear, or cracks



9MU0K2-257

Inspection

Front planetary pinion carrier

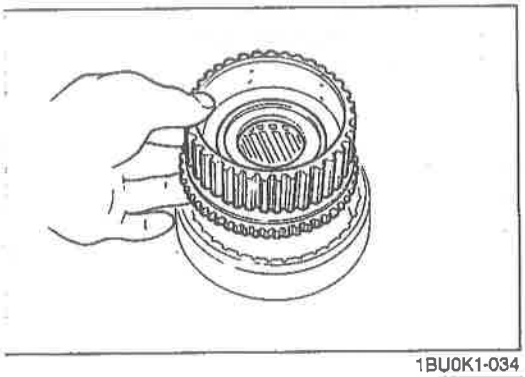
1. Measure the clearance between the pinion washer and the planetary pinion carrier.

Clearance
Standard : 0.2—0.7mm (0.008—0.028 in)
Maximum: 0.8mm (0.031 in)

2. If not within specification, replace the planetary pinion carrier.

Assembly procedure

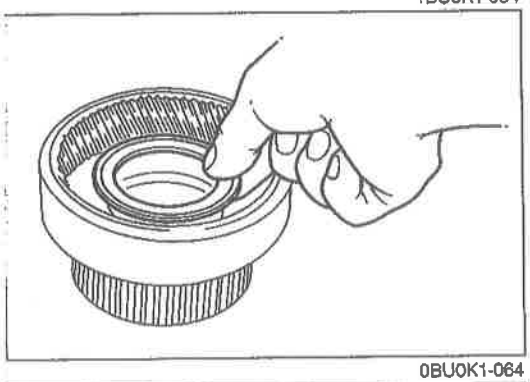
1. Apply ATF to the rear clutch hub and internal gear, and assemble them with the snap ring.



1BU0K1-034

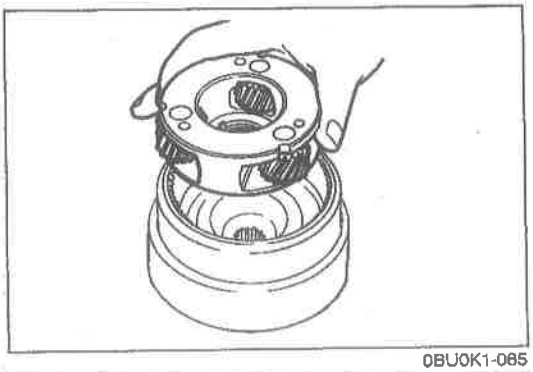
2. Apply petroleum jelly to the bearings, and install it onto the rear clutch hub with the black surface facing upward.

Bearing outer diameter: 70.0mm (2.756 in)



0BU0K1-064

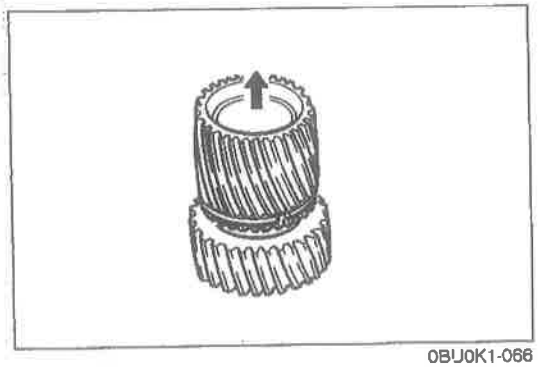
3. Apply ATF to the front planetary pinion carrier, and install it into the internal gear.



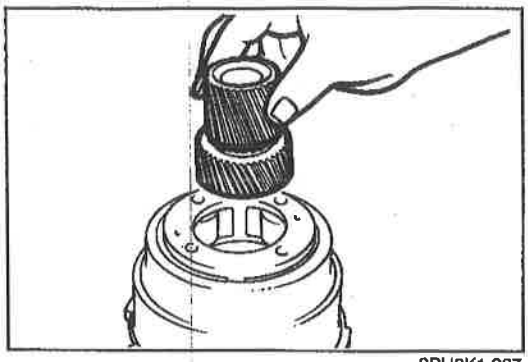
0BU0K1-065

Note
Pay close attention to the front and rear directions of the sun gear. The grooved side (arrow) is the front.

4. Install the snap ring onto the sun gear.

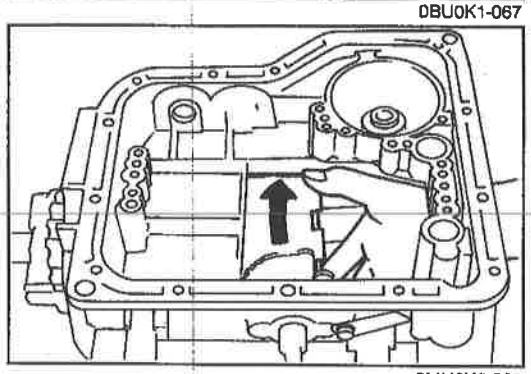


0BU0K1-066



0BU0K1-067

5. Apply ATF to the sun gear, and install it into the front planetary pinion carrier.



9MU0K2-263

REAR PLANETARY GEAR UNIT (CONNECTING DRUM, REAR PLANETARY PINION CARRIER, ONE-WAY CLUTCH)

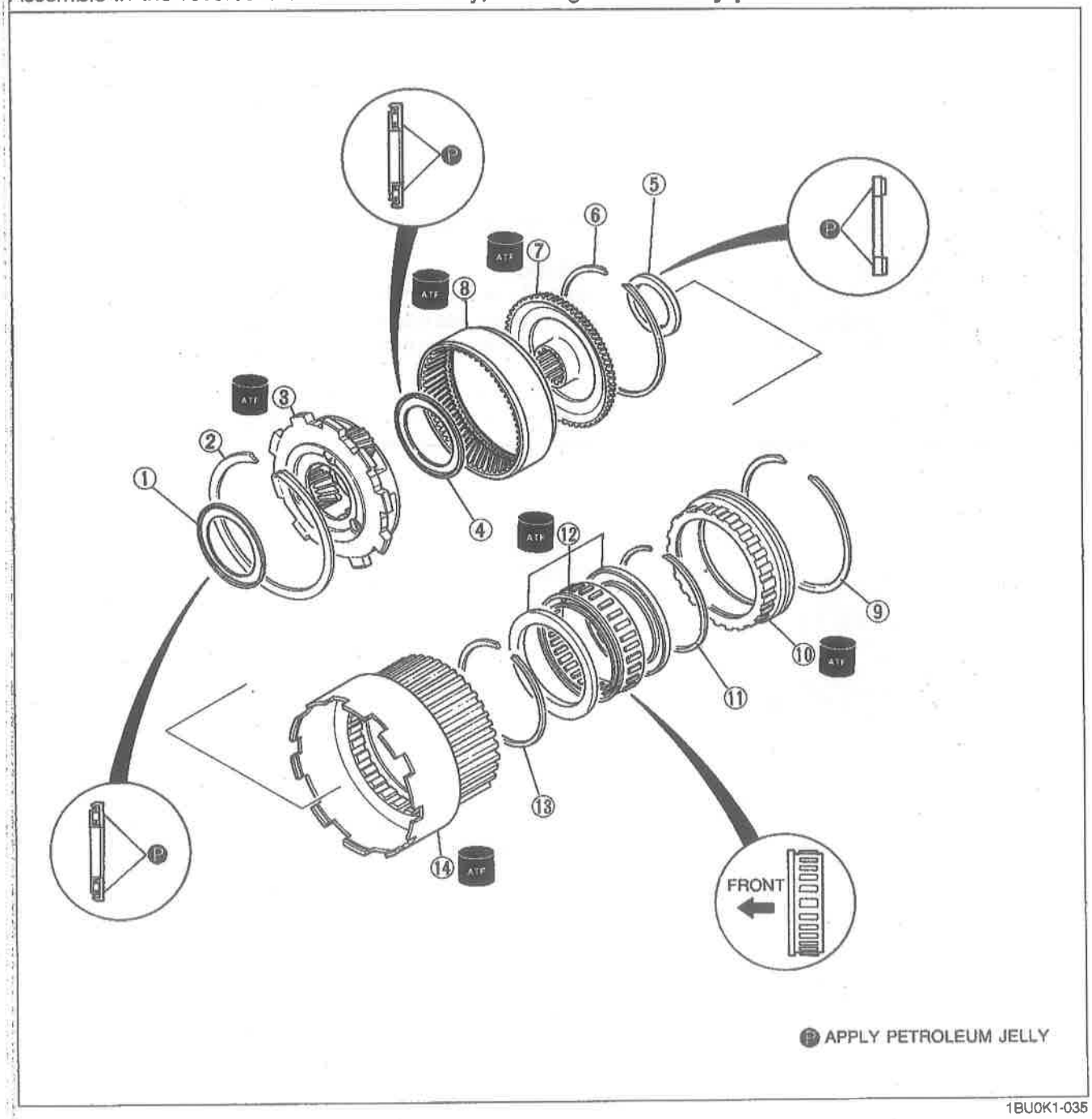
Preinspection

One-way clutch operation

Install the rear planetary gear unit and check that the rear planetary gear unit rotate smoothly when turned clockwise and locked when turned counterclockwise.
If not, replace the one-way clutch.

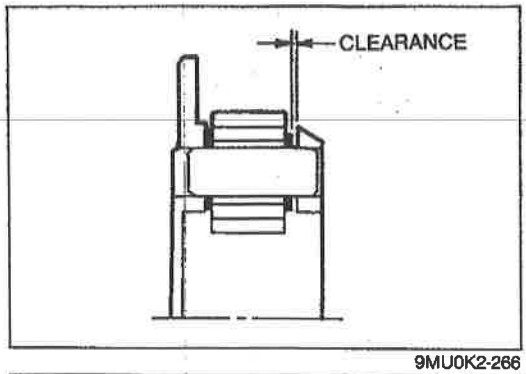
Disassembly and Inspection

Disassemble in the order shown in the figure.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure.**

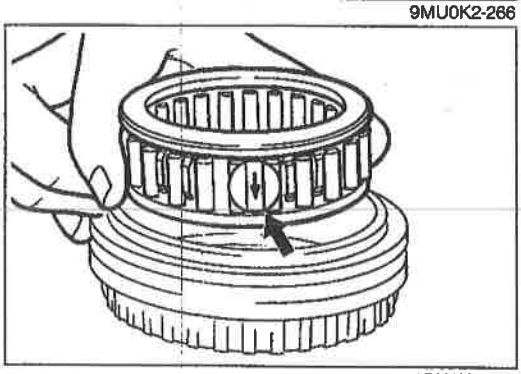


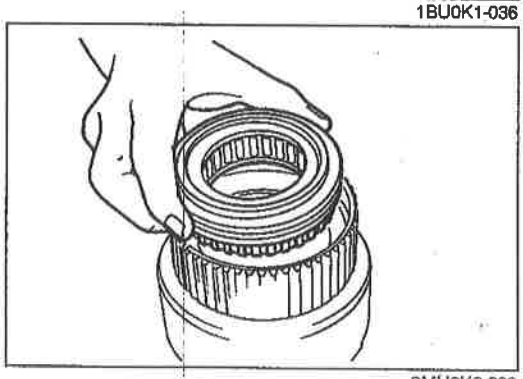
1BU0K1-035

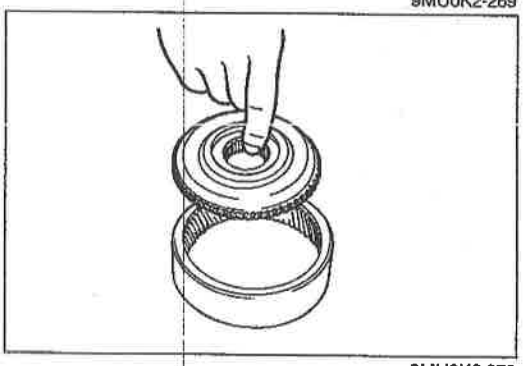
1. Bearing
   Inspect for damage or rough rotation
2. Snap ring
3. Rear planetary pinion carrier
   Inspect individual gears teeth for damage, wear, or cracks, and rotation of pinion gears
   Inspection ..... page K1–85
4. Bearing
   Inspect for damage or rough rotation
5. Bearing
   Inspect for damage or rough rotation
6. Snap ring
7. Drive flange
   Inspect individual gears teeth for damage, wear, or cracks
8. Internal gear
   Inspect individual gears teeth for damage, wear, or cracks
9. Snap ring
10. One-way clutch outer race
11. Snap ring
12. One-way clutch
13. Snap ring
14. Connecting drum

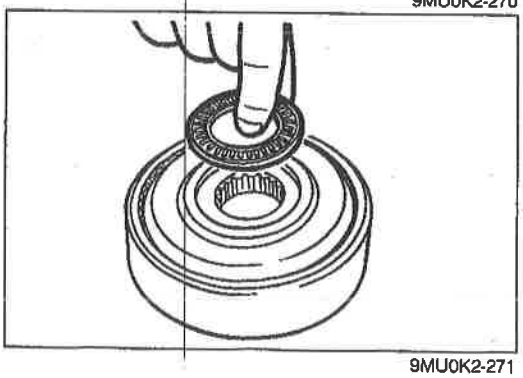


9MU0K2-266


1BU0K1-036


9MU0K2-269


9MU0K2-270


9MU0K2-271

Inspection

Rear planetary pinion carrier

1. Measure the clearance between the pinion washer and the planetary pinion carrier.

Clearance
Standard: 0.2—0.7mm (0.008—0.028 in)
Maximum: 0.8mm (0.031 in)

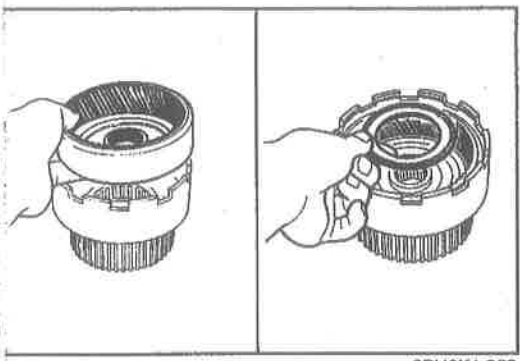
2. If not within specification, replace the planetary pinion carrier.

Assembly procedure

Caution
Install the side indicated by an arrow in the figure toward the front when inserting the one-way clutch into the one-way clutch outer race.

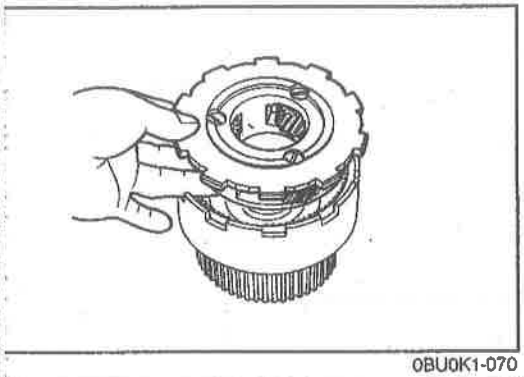
1. Install the snap ring in the one-way clutch outer race.
2. Apply ATF to the one-way clutch, and install it into the one-way clutch outer race.
3. Apply ATF to the connecting drum, and install it into the one-way clutch outer race.
4. Install the snap ring.
5. Apply ATF to the drive flange and internal gear, and install it into the internal gear.
6. Install the snap ring.
7. Apply petroleum jelly to the bearing, and install it onto the drive flange.

Bearing outer diameter: 47.0mm (1.850 in)

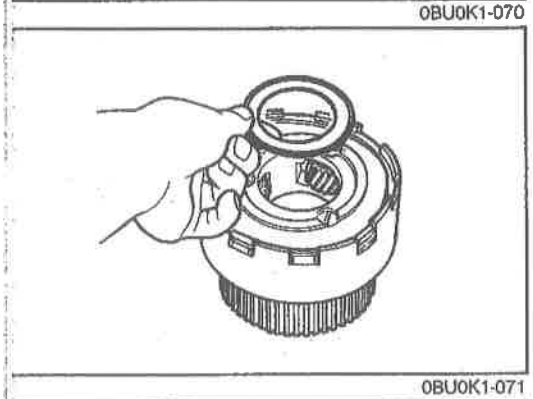

0BU0K1-069

8. Install the internal gear and the drive flange into the connecting drum.
9. Apply petroleum jelly to the bearing, and install it into the drive flange with the black surface facing upward.

Bearing outer diameter: 70.0mm (2.756 in)

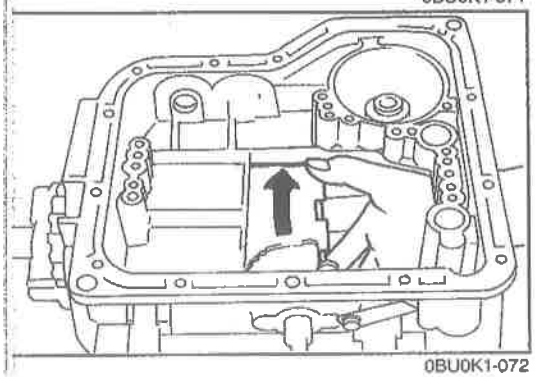

0BU0K1-070

10. Apply ATF to the rear planetary pinion carrier, and install it into the connecting drum.
11. Install the snap ring.


0BU0K1-071

12. Apply petroleum jelly to the bearing, and install it into the bearing race with the black surface facing upward.

Bearing race outer diameter: 70.0mm (2.756 in)


0BU0K1-072

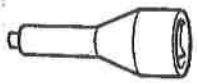
Note
If it turns counterclockwise, the one-way clutch is installed upside down.

13. Check the one-way clutch operation by turning right and left. If should turn clockwise only, and locked counterclockwise.

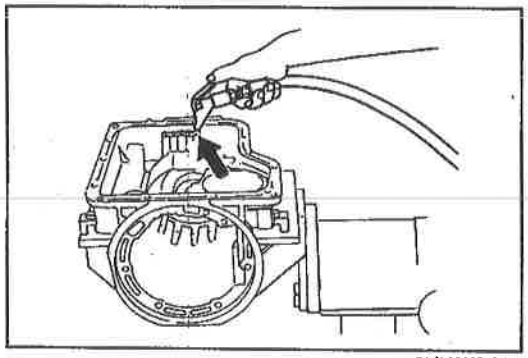
LOW AND REVERSE BRAKE

Preparation

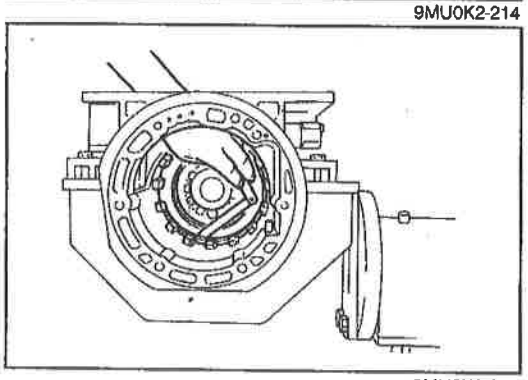
SST

49 0378 346 Hex wrench	

9MU0K2-213



9MU0K2-214



9MU0K2-215

Preinspection

Low and reverse brake operation

1. Apply compressed air through the oil passage as shown.

   Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

2. Verify that the retaining plate moves toward the snap ring. If not, the seal ring or O-ring may be damaged or fluid may be leaking at the piston check ball. Inspect them, and replace as necessary when assembling.

Clearance between retaining plate and snap ring

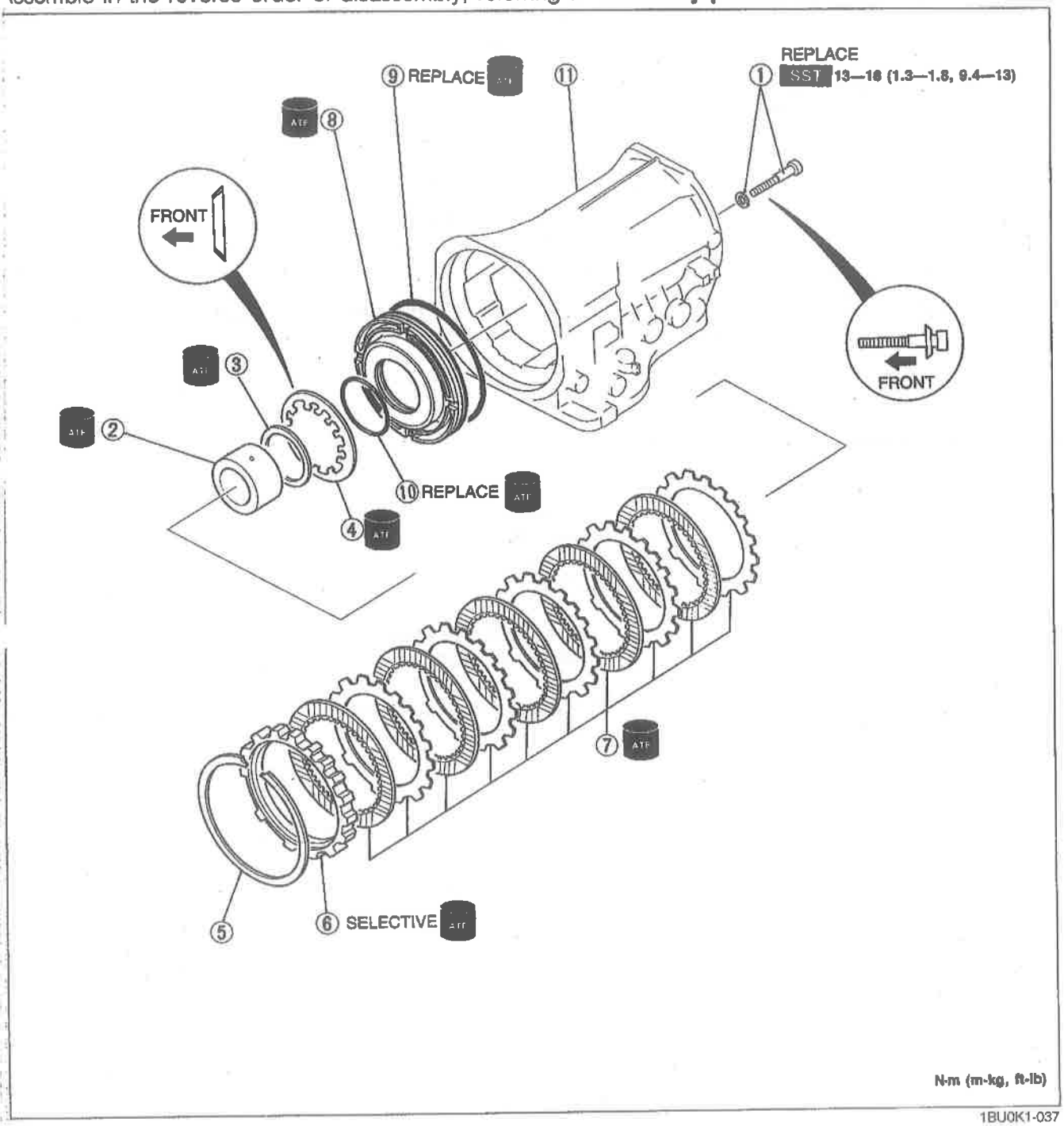
Measure the clearance between the retaining plate and the snap ring.

Clearance: 0.8—1.05mm (0.031—0.041 in)

Select and install the correct retaining plate when assembling.

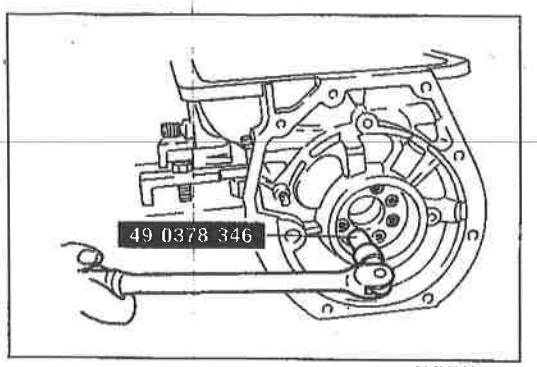
Disassembly and Inspection

Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



1BU0K1-037

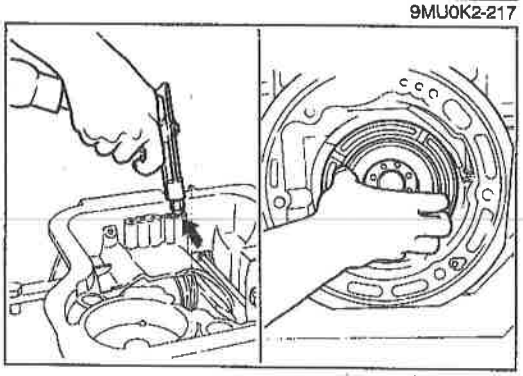
1. Allen head bolts and dished washers
2. One-way clutch inner race
   Removal..... page K1–89
3. Thrust washer
4. Return spring
   Inspection ..... page K1–89
5. Snap ring
6. Retaining plate
7. Drive plates and driven plates
   Inspect for wear or burning
   Inspection ..... page K1–89
8. Low and reverse brake piston
   Inspect balls for sticking by shaking piston
   Removal..... page K1–89
   Inspection ..... page K1–89
9. Seal ring
10. O-ring
11. Transmission case



9MU0K2-217

Disassembly note
One-way clutch inner race

1. Remove the allen head bolts from the rear of the transmission case with the **SST**.
2. Remove the one-way clutch inner race, thrust washer, and piston return spring.

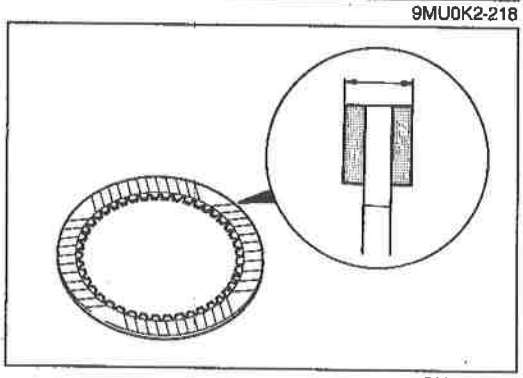


9MU0K2-218

Low and reverse brake piston

Remove the piston by applying compressed air through the oil passage.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.



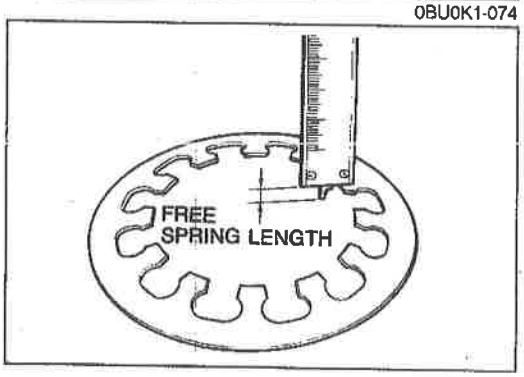
0BU0K1-074

Inspection
Drive plate

1. Measure the facing thickness in three places, and determine the average of the three readings.

Standard thickness: 2.0mm (0.079 in)
Minimum thickness: 1.8mm (0.071 in)

2. If not within specification, replace the drive plates.



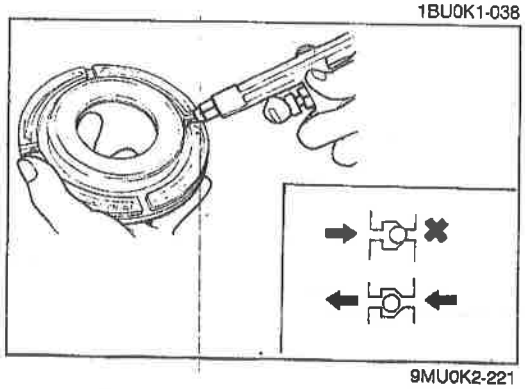
1BU0K1-038

Return spring

1. Measure the return spring free length.

Spring free length: 5.9—6.2mm (0.232—0.244 in)

2. If not within specification, replace the return spring.



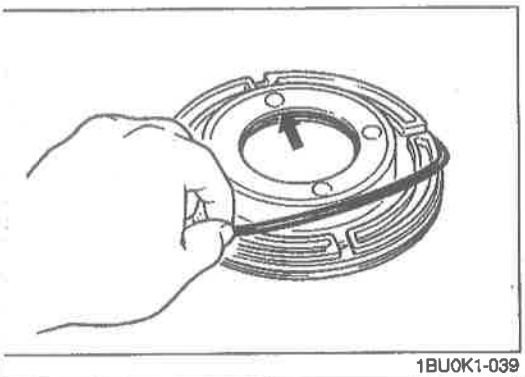
9MU0K2-221

Clutch piston

1. Verify that there is no air leakage when applying compressed air through the oil hole opposite the return spring.
2. Verify that there is airflow when applying compressed air through the oil hole on the return spring side.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.

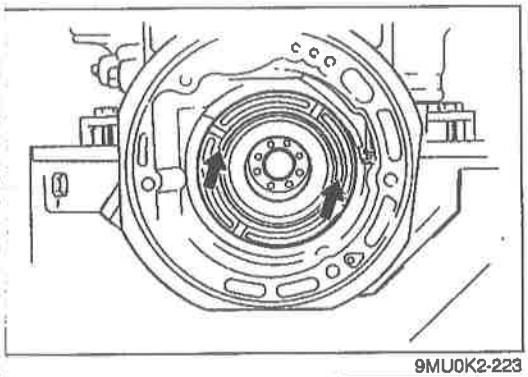
3. If not correct, replace the clutch piston.



1BU0K1-039

Assembly procedure

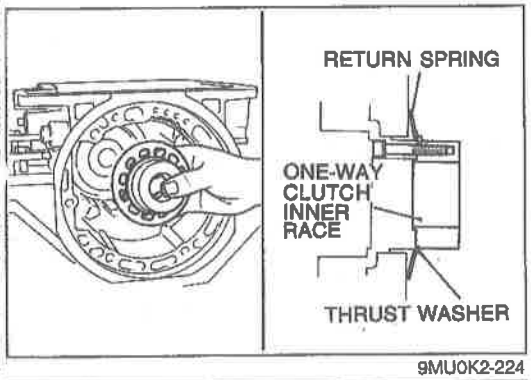
1. Apply ATF to a new O-ring and install it onto the piston.
2. Apply ATF to a new seal ring and install it onto the piston.



9MU0K2-223

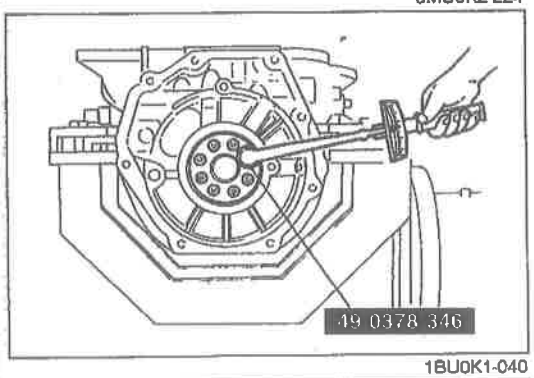
Caution
Apply even pressure to the outside edge of the piston to avoid damaging the seal ring and O-ring when installing.

3. Install the low and reverse brake piston.



9MU0K2-224

4. Apply ATF to the one-way clutch inner race, thrust washer, and return spring.
5. Assemble the one-way clutch inner race, thrust washer, and return spring, and install them in the transmission case.
6. Check that the return spring, thrust washer, and rings are properly positioned before securing the bolts.

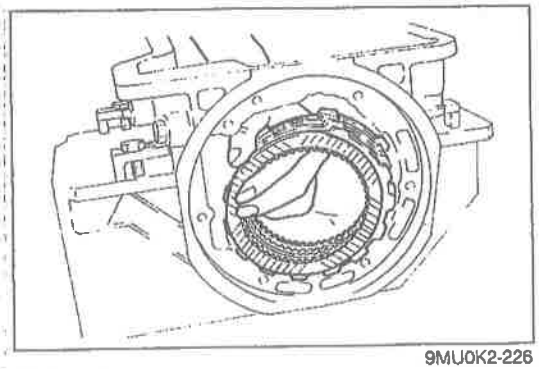


1BU0K1-040

Note
Do not reuse the bolts and washers.

7. Tighten the inner race mounting new bolts and new washer with the **SST**.

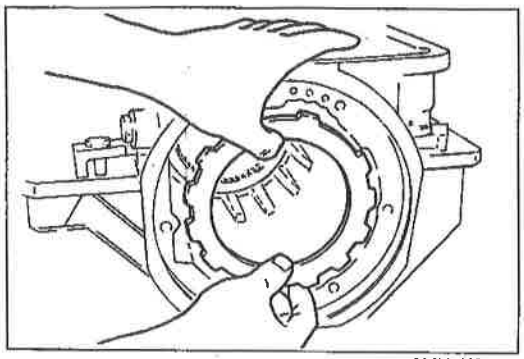
Tightening torque:
13—18 N·m (1.3—1.8 m-kg, 9.4—13 ft-lb)



9MU0K2-226

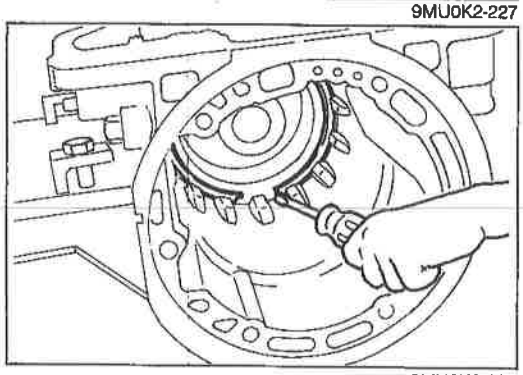
Note
Installation order:
Driven-Drive-Driven-Drive-Driven-Drive-Driven-Drive-Driven-Drive

8. Apply ATF to the driven plates and driven plates, and install them into the transmission case.



9MU0K2-227

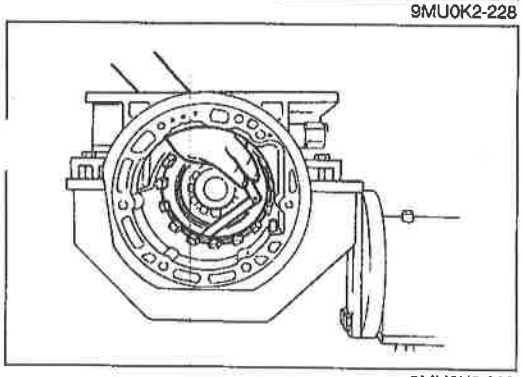
9. Install the retaining plate.



9MU0K2-228

Caution
Do not deform the snap ring.

10. Install the snap ring with a screwdriver.



9MU0K2-229

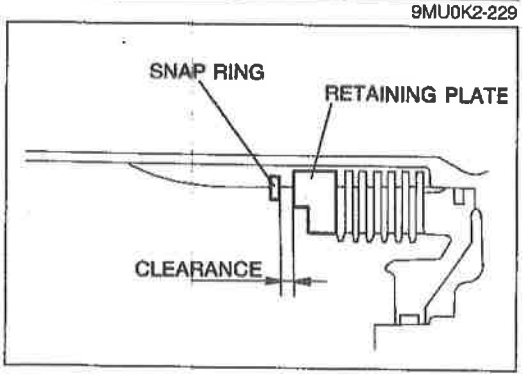
11. Measure the clearance between the snap ring and the retaining plate with a feeler gauge. If not within specification, adjust the clearance by installing the proper retaining plate.

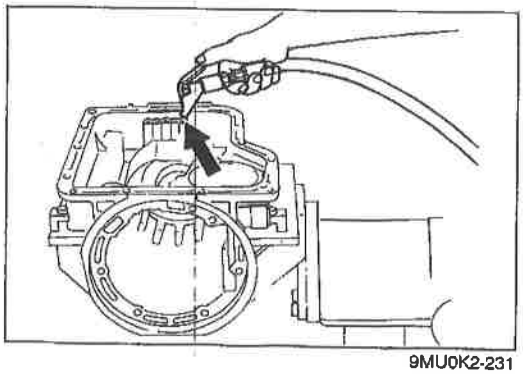
Clearance: 0.8—1.05mm (0.031—0.041 in)

Retaining plate sizes

mm (in)

7.8 (0.307)	8.0 (0.315)	8.2 (0.323)
8.4 (0.331)	8.6 (0.339)	8.8 (0.346)



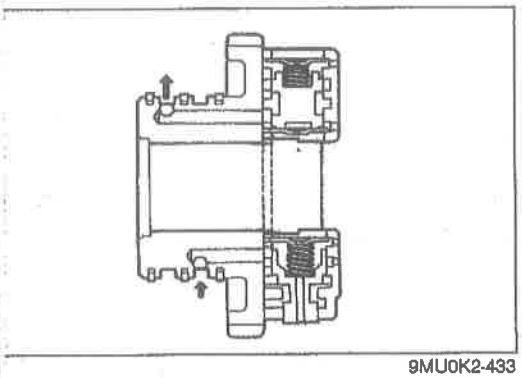


9MU0K2-231

Caution
Apply air for no more than three(3) seconds.

12. Check operation of the piston by applying compressed air through the oil passage of the low and reverse brake.

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.



9MU0K2-433

GOVERNOR

Preinspection

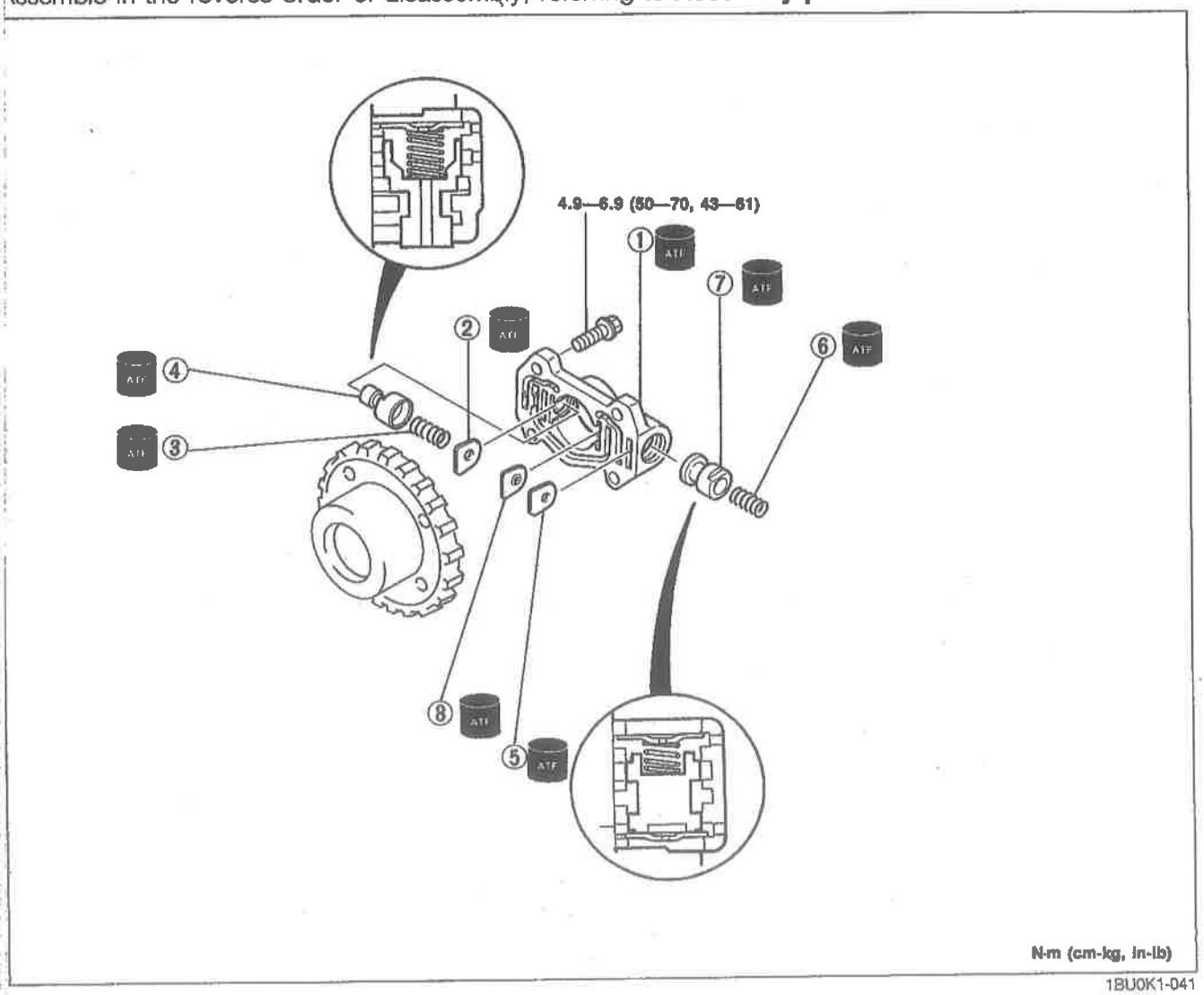
Governor valve operation

Caution
The compressed air must be less than 500 kPa (5.0 kg/cm^2, 71 psi) and should not be applied for more than five(5) seconds.

Check that the valves move slightly, and that a vibrating sound is heard when compressed air is applied as shown.

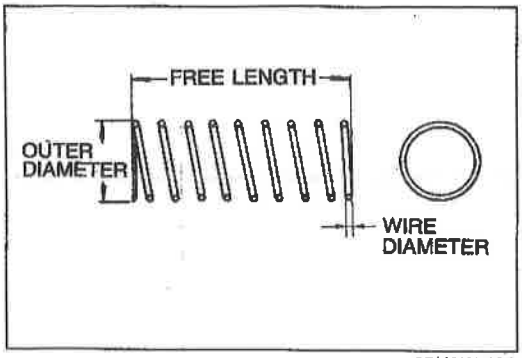
Disassembly and Inspection

Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace as necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.

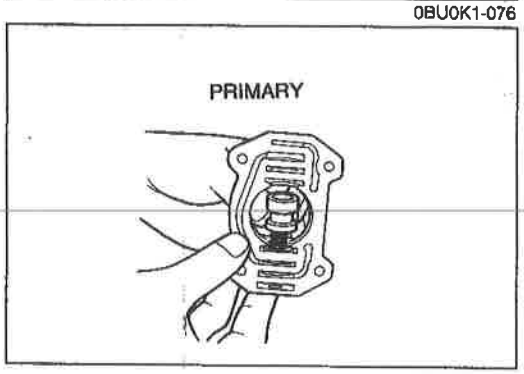


1BU0K1-041

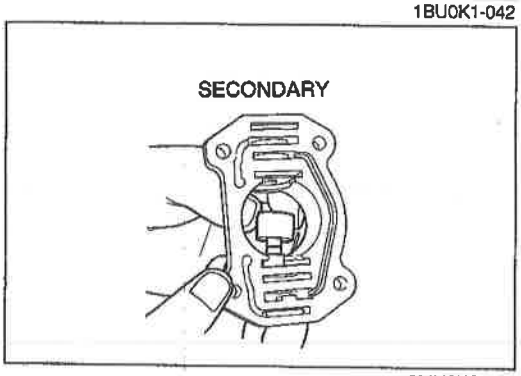
1. Governor valve body
   Inspect for damage or scoring
2. Retainer plate
3. Secondary governor spring
   Inspection ..... page K1–93
4. Secondary governor valve
   Inspect for sticking, scoring or scratches
5. Retainer plate
6. Primary governor spring
   Inspection ..... page K1–93
7. Primary governor valve
   Inspect for sticking, scoring or scratches
8. Retainer plate



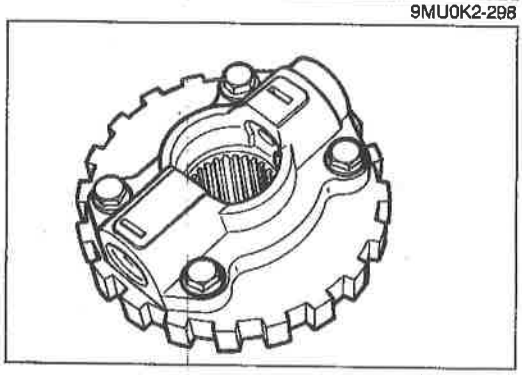
0BU0K1-076



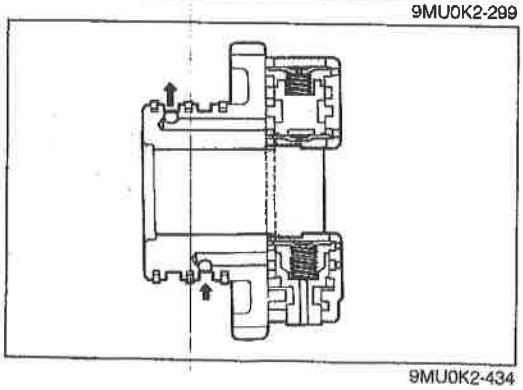
1BU0K1-042



9MU0K2-298



9MU0K2-299



9MU0K2-434

Inspection

Secondary and primary governor springs

1. Measure the spring specifications.

Specifications

Spring	Item	Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
Secondary	F2 Carb.	9.0 (0.354)	21.7 (0.854)	10.0	0.8 (0.031)
	F2 EGI	9.2 (0.362)	25.2 (0.992)	7.5	0.7 (0.028)
	G6	9.0 (0.354)	21.7 (0.854)	10.0	0.8 (0.031)
Primary		8.75 (0.344)	21.8 (0.858)	7.0	0.45 (0.018)

2. If not within specification, replace the spring.

Assembly procedure

1. Apply ATF to the primary governor valve, primary spring, and retainer plate, and install them into the governor valve body.

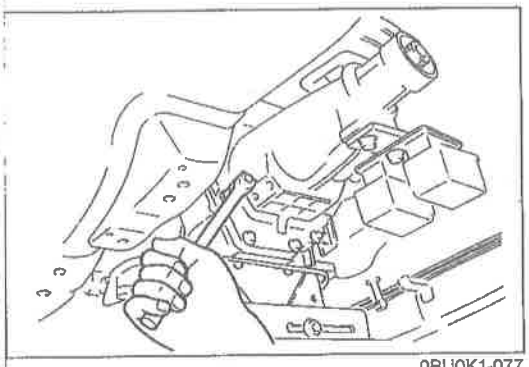
2. Apply ATF to the secondary governor valve, secondary spring, and retainer plate, and install them into the governor valve body.

3. Install the governor assembly onto the parking gear.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)

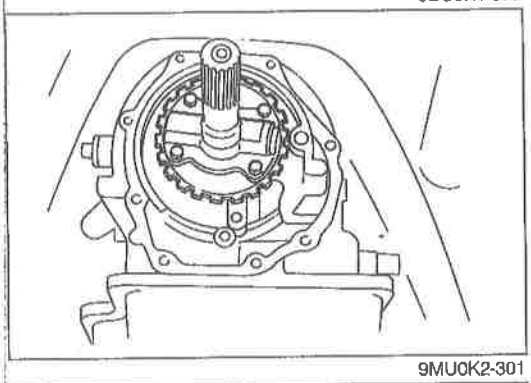
Caution
The compressed air must be less than 500 kPa (5.0 kg/cm^2, 71 psi) and should not be applied for more than five(5) seconds.

4. Check that the valves move slightly, and that a vibrating sound is heard when compressed air is applied as shown in the figure.

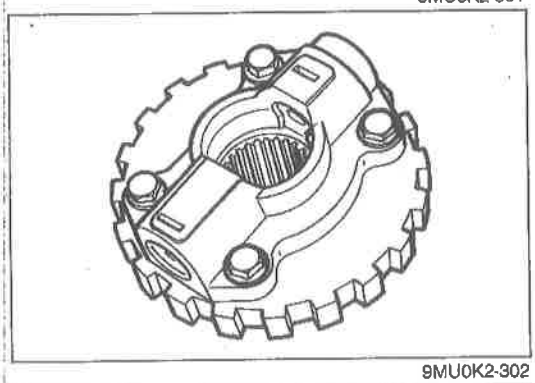

0BU0K1-077

On-vehicle Removal

1. Remove the extension housing. (Refer to page K1–95.)
2. Remove the speedometer drive gear.


9MU0K2-301

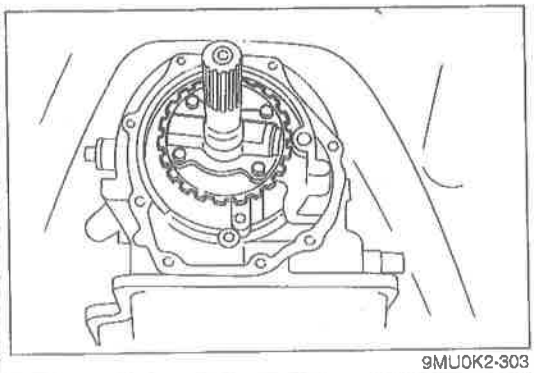
3. Remove the governor and parking gear.
4. Separate the governor from the parking gear.


9MU0K2-302

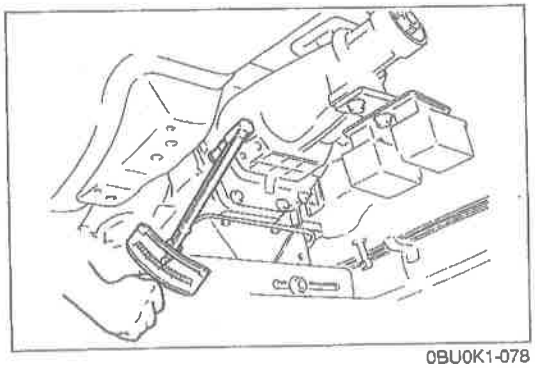
On-vehicle Installation

1. Install the governor onto the parking gear.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)


9MU0K2-303

2. Install the governor and parking gear onto the output shaft, and secure it with a new snap ring.

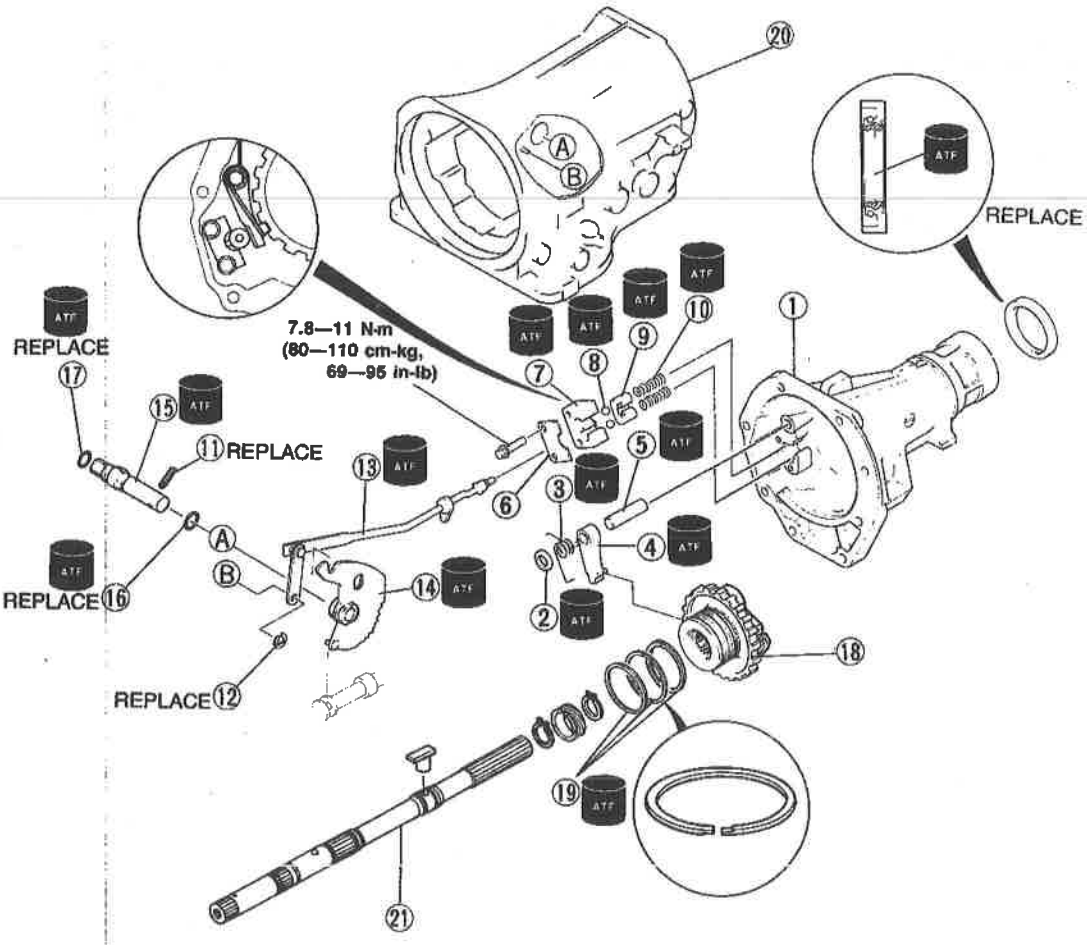

0BU0K1-078

3. Install the speedometer drive gear.
4. Install the extension housing. (Refer to page K1–95.)

EXTENSION HOUSING AND PARKING MECHANISM
Disassembly and Inspection

Caution
Do not remove the oil seal if not necessary for repairs.

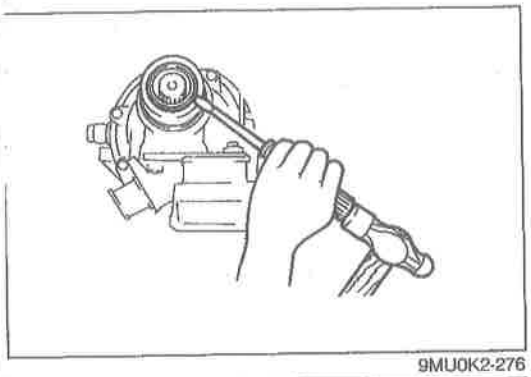
Disassemble in the order shown in the figure, referring to **Disassembly Note**.
Inspect all parts, and repair or replace if necessary.
Assemble in the reverse order of disassembly, referring to **Assembly procedure**.



N·m (m-kg, ft-lb)

2BU0K1-022

1. Extension housing
2. Dowel spacer
3. Return spring
4. Parking pawl
5. Pawl shaft
6. Retainer plate
7. Actuator support
8. Steel ball
9. Retainer
10. Spring
    Inspection ..... page K1–96
11. Roll pin
12. Retaining ring
13. Parking rod
    Inspect individual gear teeth for damage or wear and condition of spring
14. Manual plate
15. Manual shaft
16. O-ring
17. O-ring
18. Parking gear
    Inspection ..... page K1–96
19. Seal rings
20. Transmission case
21. Output shaft
    Inspect splines for damage or wear

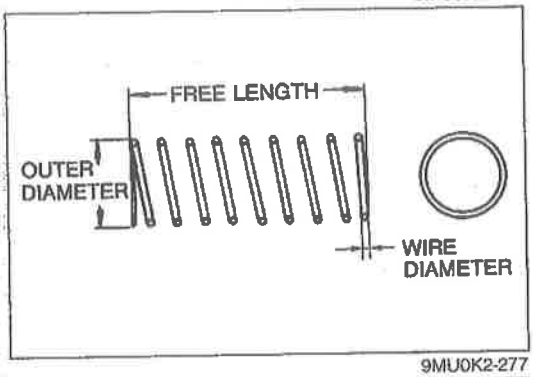


9MU0K2-276

Disassembly note
Oil seal

Caution
Do not remove the seal unless necessary.

Remove the oil seal with a screwdriver.



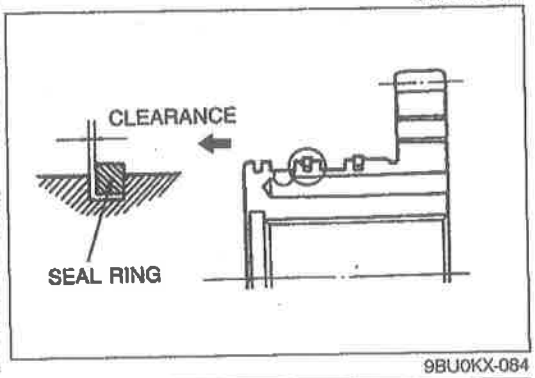
9MU0K2-277

Inspection
Spring
1. Measure the spring specifications.

Specifications

Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
7.2 (0.283)	32.0 (1.260)	14.0	0.7 (0.028)

2. If not within specification, replace the spring.

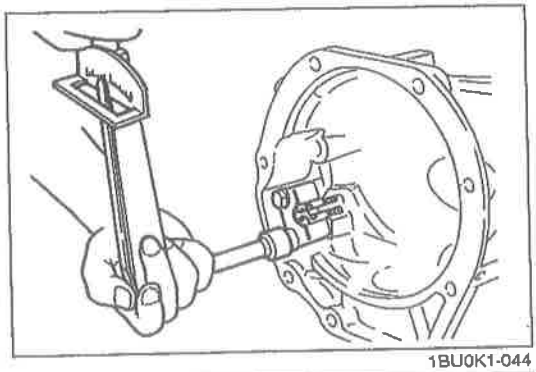


9BU0KX-084

Oil distributor
1. Measure the clearance between the seal rings and the grooves.

Clearance
Standard: 0.04—0.16mm (0.0016—0.0063 in)
Maximum: 0.40mm (0.016 in)

2. If not within specification, replace the parking gear.

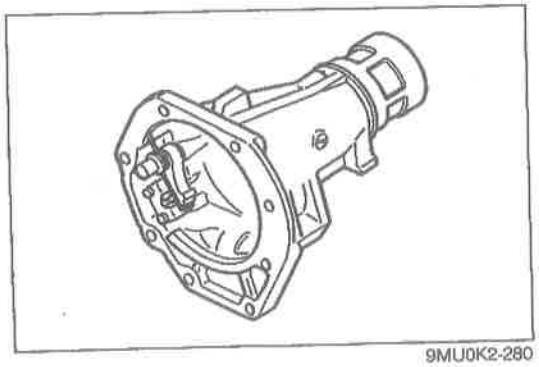


1BU0K1-044

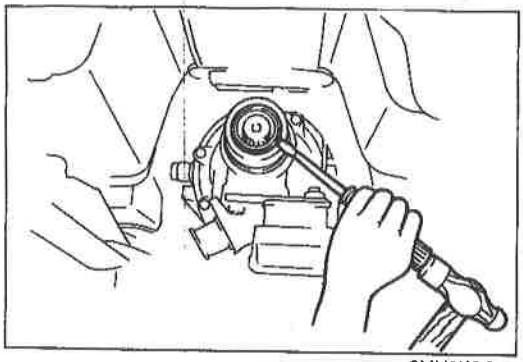
Assembly procedure
1. Apply ATF to a new oil seal, and install it into the extension housing.
2. Apply ATF to the springs and retainer and install them into the extension housing.
3. Apply ATF to the steel balls and actuator support and install them into the extension housing.
4. Apply ATF to the retainer plate, and install it into the extension housing.

Tightening torque:
7.8—11 N·m (80—110 cm-kg, 69—95 in-lb)

5. Apply ATF to the pawl shaft, and install it into the extension housing.
6. Apply ATF to the parking pawl and return spring, and install them into the extension housing.
7. Apply ATF to the dowel spacer, and install it into the extension housing.



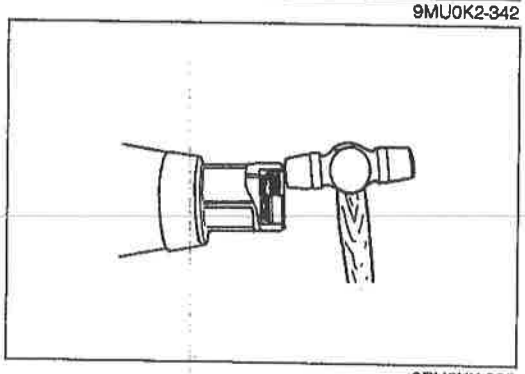
9MU0K2-280


9MU0K2-342

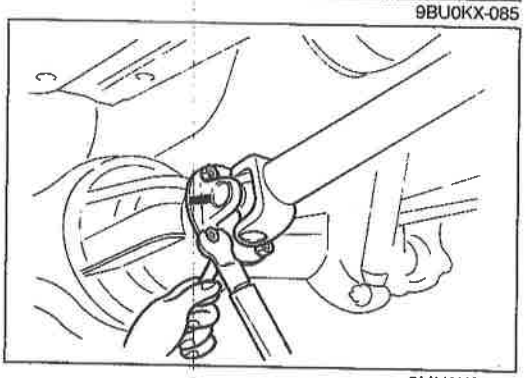
OIL SEAL

On-vehicle Replacement

1. Remove the propeller shaft. (Refer to Section L.)
2. Pry the oil seal from the extension housing.


9BU0KX-085

3. Coat the new oil seal lip with ATF.
4. Install the oil seal squarely into the extension housing with a plastic hammer.

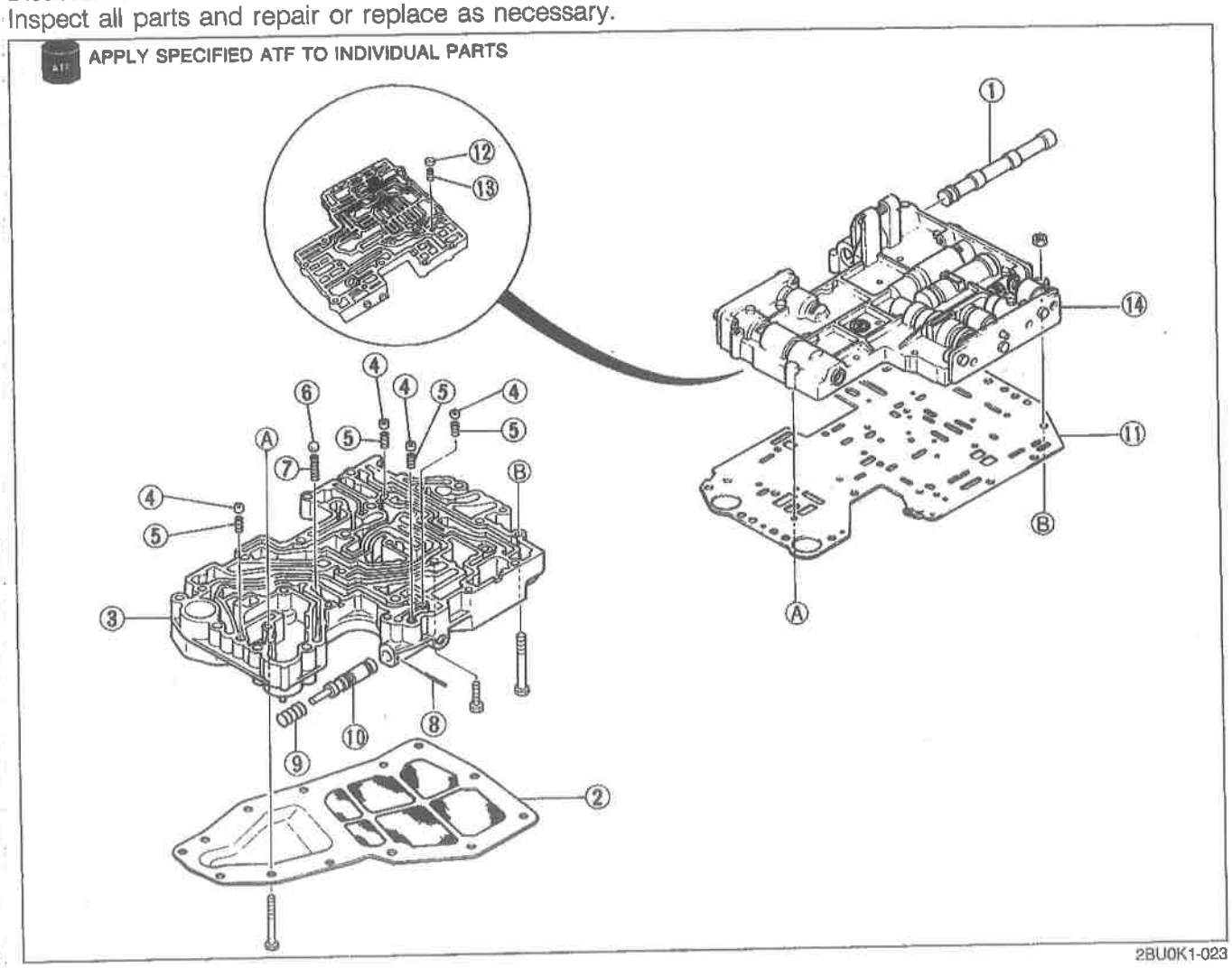

9MU0K2-344

5. Install the propeller shaft. (Refer to Section L.)

CONTROL VALVE BODY
Disassembly and Inspection

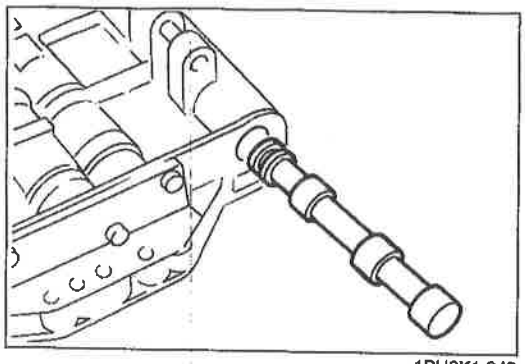
Caution
a) Be especially careful when handling the control valve because it consists of the most precise and delicate parts of the transmission.
b) Neatly arrange the removed parts to avoid confusing them with similar parts.
c) Clean the removed parts with cleaning solvent and dry them with compressed air. Clean out all holes and passages with compressed air.

Disassemble in the order shown in the figure, referring to **Disassembly procedure**.
Inspect all parts and repair or replace as necessary.



2BU0K1-023

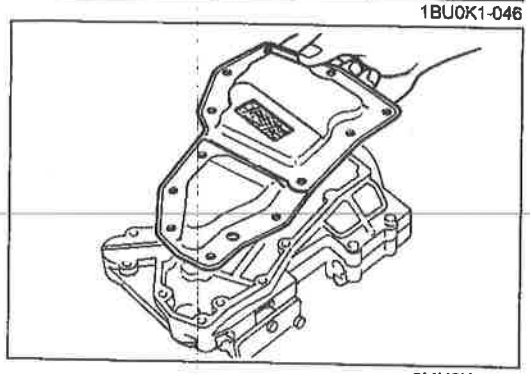
1. Manual valve
   Inspect for sticking, scoring, or scratches
2. Oil strainer
   Inspect for clogging or damage
3. Lower valve body
   Inspect for damage or scoring
4. Orifice check valve
5. Orifice check spring
   Inspection ..... page K1–100
6. Throttle relief ball
7. Throttle relief spring
   Inspection ..... page K1–100
8. Roll pin
9. 3-2 timing spring
   Inspection ..... page K1–100
10. 3-2 timing valve
    Inspect for sticking and scoring
11. Separate plate
    Inspect fluid passage for clogging or damage
12. Orifice check valve
13. Orifice check spring (F2 engine)
    Inspection ..... page K1–100
14. Upper valve body
    Disassembly and Inspection .. page K1–101
    Assembly ..... page K1–102



1BU0K1-046

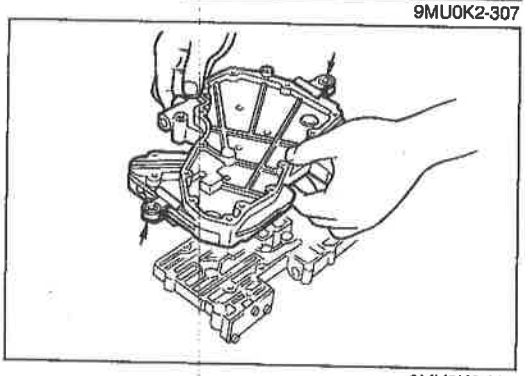
Disassembly Procedure

1. Remove the manual valve.



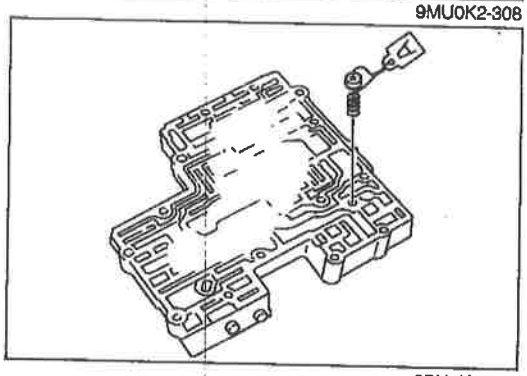
9MU0K2-307

2. Remove the oil strainer.



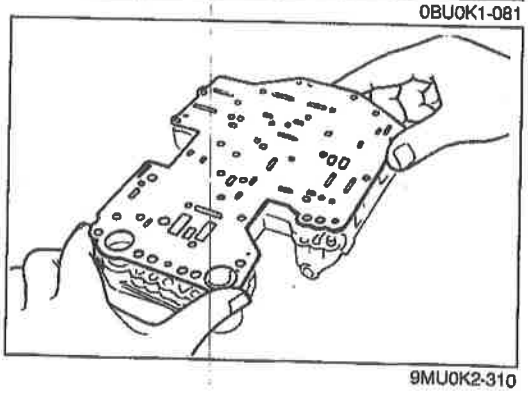
9MU0K2-308

3. Hold the lower valve body and separate plate together with a large clip.
4. Remove the bolts.
5. Remove the lower valve body.



0BU0K1-081

6. Remove the orifice check valve and spring (F2 engine) from the upper valve body.

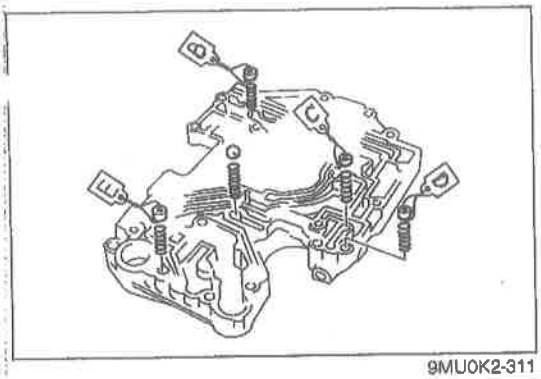


9MU0K2-310

7. Remove the holding clip.

Caution
Remove the separate plate gently to avoid losing the orifice check valves and springs and the throttle relief ball and spring in the valve body.

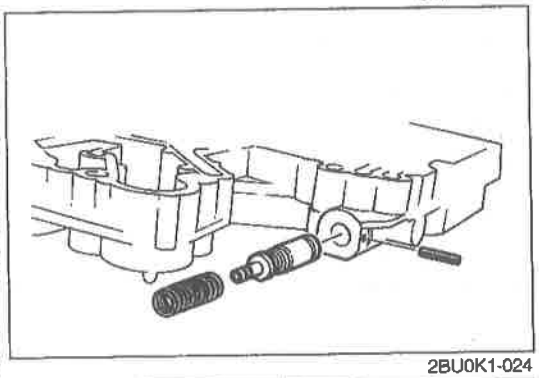
8. Remove the separate plate.



9MU0K2-311

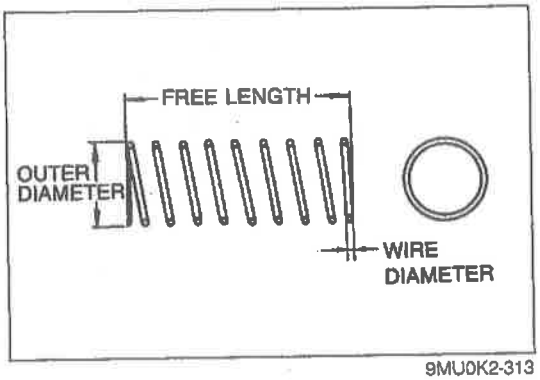
Note
Tag the orifice check valves as shown for proper reassembly.

9. Remove the orifice check valves, throttle relief ball, and springs.



2BU0K1-024

10. Remove the roll pin.
11. Remove the 3-2 timing valve and spring.



9MU0K2-313

Inspection

1. Measure the spring specifications.
   If not within specification, replace the spring(s).

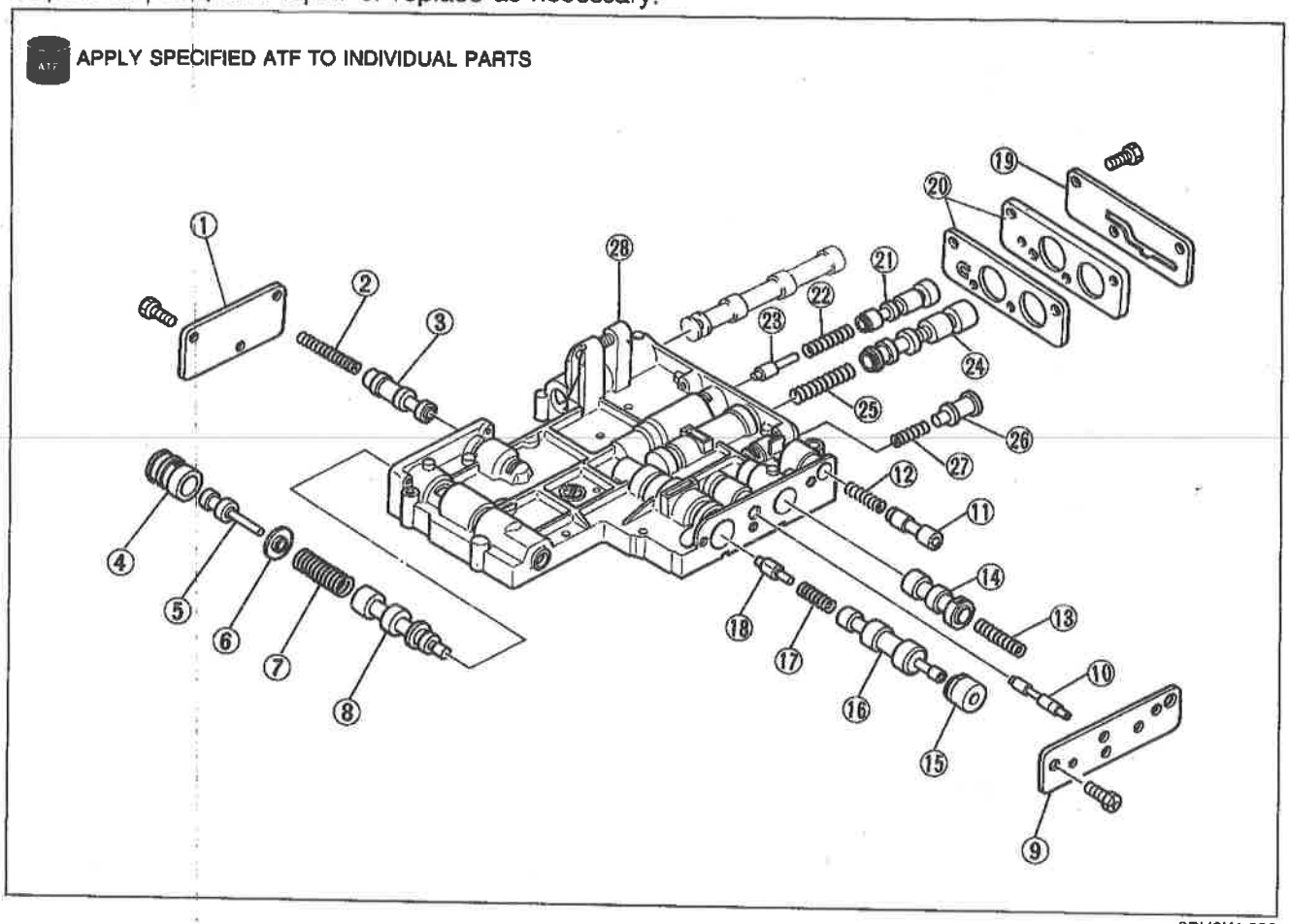
Spring \ Item		Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
Orifice check		5.0 (0.197)	15.5 (0.610)	12.0	0.23 (0.009)
Throttle relief		6.5 (0.256)	26.8 (1.055)	16.0	0.9 (0.035)
3-2 timing	F2	7.5 (0.295)	23.2 (0.913)	11.0	0.8 (0.031)
	G6	7.4 (0.291)	20.7 (0.815)	11.0	0.9 (0.035)

1BU0K1-047

UPPER VALVE BODY

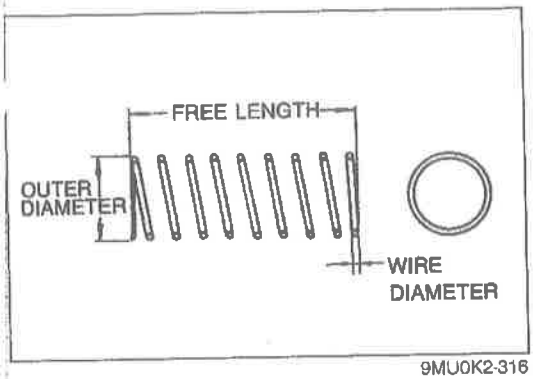
Disassembly and Inspection

Disassemble in the order shown in the figure.
Inspect all parts, and repair or replace as necessary.



0BU0K1-083

1. Side plate D
2. Second lock spring
   Inspection .... page K1–102
3. Second lock valve
   Inspect for sticking, scoring, or scratches
4. Pressure regulator sleeve
   Inspect for sticking, scoring, or scratches
5. Pressure regulator plug
   Inspect for sticking, scoring, or scratches
6. Pressure regulator valve
   Inspect for sticking, scoring, or scratches
7. Pressure regulator spring
   Inspection .... page K1–102
8. Pressure regulator valve
   Inspect for sticking, scoring, or scratches
9. Side plate B
10. Vacuum throttle valve
    Inspect for sticking, scoring, or scratches
11. Downshift valve
    Inspect for sticking, scoring, or scratches
12. Downshift spring
    Inspection .... page K1–102
13. Throttle backup spring
    Inspection .... page K1–102
14. Throttle backup valve
    Inspect for sticking, scoring, or scratches
15. 3-4 shift sleeve
    Inspect for sticking, scoring, or scratches
16. 3-4 shift valve
    Inspect for sticking, scoring, or scratches
17. 3-4 shift spring
    Inspection .... page K1–102
18. 3-4 shift plug
    Inspect for sticking, scoring, or scratches
19. Side plate A
20. Separators (G6 engine)
21. 2-3 shift valve
    Inspect for sticking, scoring, or scratches
22. 2-3 shift spring
    Inspection .... page K1–102
23. 2-3 shift plug
    Inspect for sticking, scoring, or scratches
24. 1-2 shift valve
    Inspect for sticking, scoring, or scratches
25. 1-2 shift spring
    Inspection .... page K1–102
26. Pressure modifier valve
    Inspect for sticking, scoring, or scratches
27. Pressure modifier spring
    Inspection .... page K1–102
28. Upper valve body
    Inspect for damage or scoring



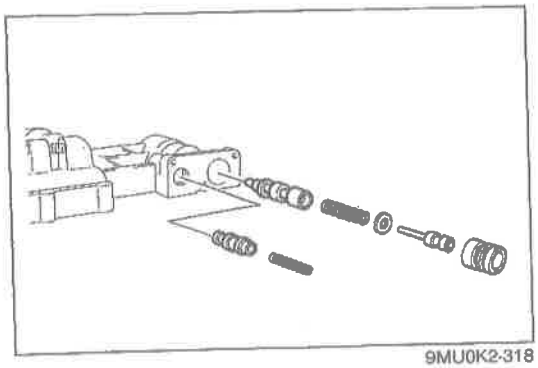
9MU0K2-316

Inspection

1. Measure the springs specifications.
2. If not within specification, replace the spring(s).

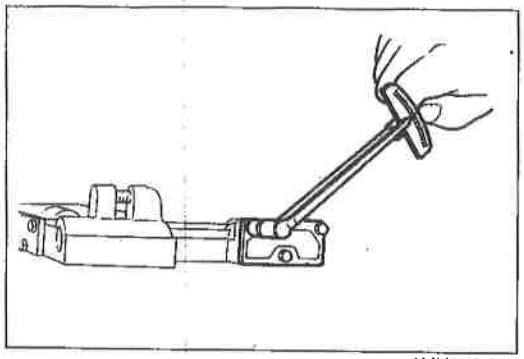
Spring \ Item		Outer dia. mm (in)	Free length mm (in)	No. of coils	Wire dia. mm (in)
Second lock		5.55 (0.219)	33.5 (1.319)	18.0	0.55 (0.022)
Pressure regulator		11.7 (0.461)	43.0 (1.692)	15.0	1.2 (0.047)
Downshift		5.55 (0.219)	21.9 (0.862)	14.0	0.55 (0.022)
Throttle backup	F2	7.3 (0.287)	36.0 (1.417)	16.0	0.8 (0.031)
	G6	7.4 (0.291)	29.8 (1.173)	13.5	0.9 (0.035)
3-4 shift	F2 EGI	7.2 (0.283)	28.1 (1.106)	12.0	0.8 (0.031)
	F2 Carb.	7.3 (0.287)	25.24 (0.994)	13.0	0.9 (0.035)
	G6	6.6 (0.260)	30.3 (1.193)	14.6	0.8 (0.031)
2-3 shift	F2 EGI	6.9 (0.272)	41.0 (1.614)	20.0	0.7 (0.028)
	F2 Carb.	6.9 (0.272)	31.6 (1.244)	16.25	0.8 (0.031)
	G6	7.3 (0.287)	42.0 (1.654)	17.6	0.75 (0.030)
1-2 shift		6.65 (0.262)	32.2 (1.268)	18.0	0.65 (0.026)
Pressure modifier	F2 EGI, G6	8.6 (0.339)	15.5 (0.610)	7.5	0.6 (0.024)
	F2 Carb.	9.1 (0.358)	18.5 (0.728)	7.4	0.6 (0.024)

0BU0K1-084


9MU0K2-318

Assembly

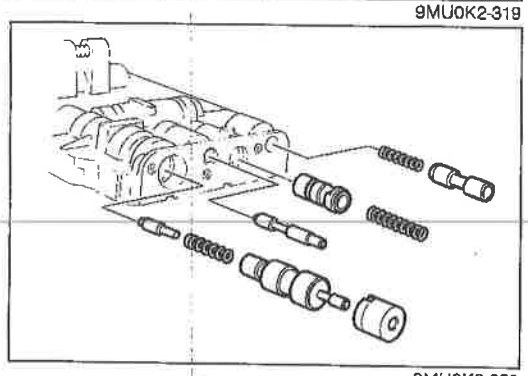
1. Insert the pressure regulator valve, spring, spring seat, plug, and sleeve into the lower valve body.
2. Insert the second lock valve and spring into the lower valve body.



9MU0K2-319

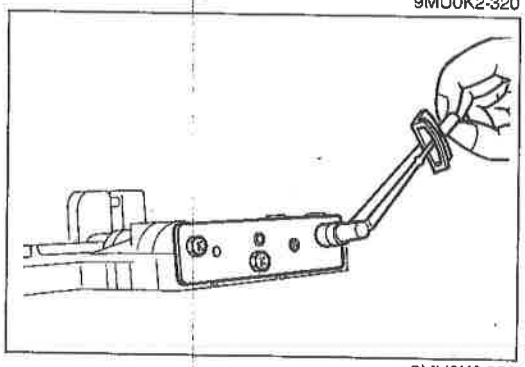
3. Install side plate D in position where it will not interfere with the set plate.
4. Tighten the installation bolts.

Tightening torque:
2.5—3.4 N·m (25—35 cm-kg, 22—30 In-lb)



9MU0K2-320

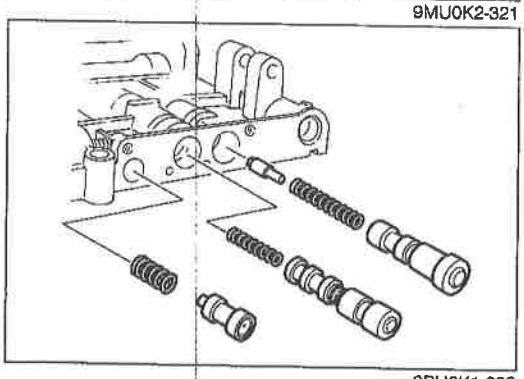
5. Insert the downshift valve, and spring into the lower valve body.
6. Insert the throttle backup valve, and spring into the lower valve body.
7. Insert the vacuum throttle valve, into the lower valve body.
8. Insert the 3-4 shift plug, spring, valve, and sleeve into the lower valve body.
9. Install side plate B so that it will not contact the vacuum throttle valve.



9MU0K2-321

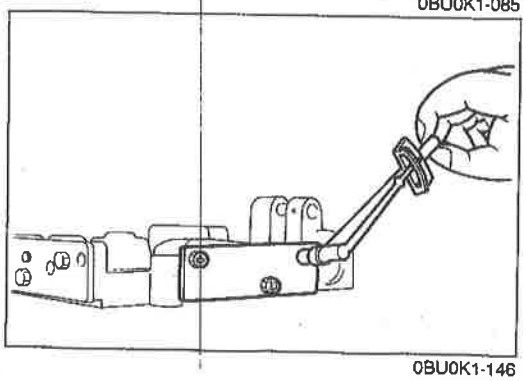
10. Tighten the installation bolts.

Tightening torque:
2.5—3.4 N·m (25—35 cm-kg, 22—30 in-lb)



0BU0K1-085

11. Insert the pressure modifier valve and spring into the lower valve body.
12. Insert the 1-2 shift valve and spring into the lower valve body.
13. Insert the 2-3 shift valve, spring, and plug into the lower valve body.

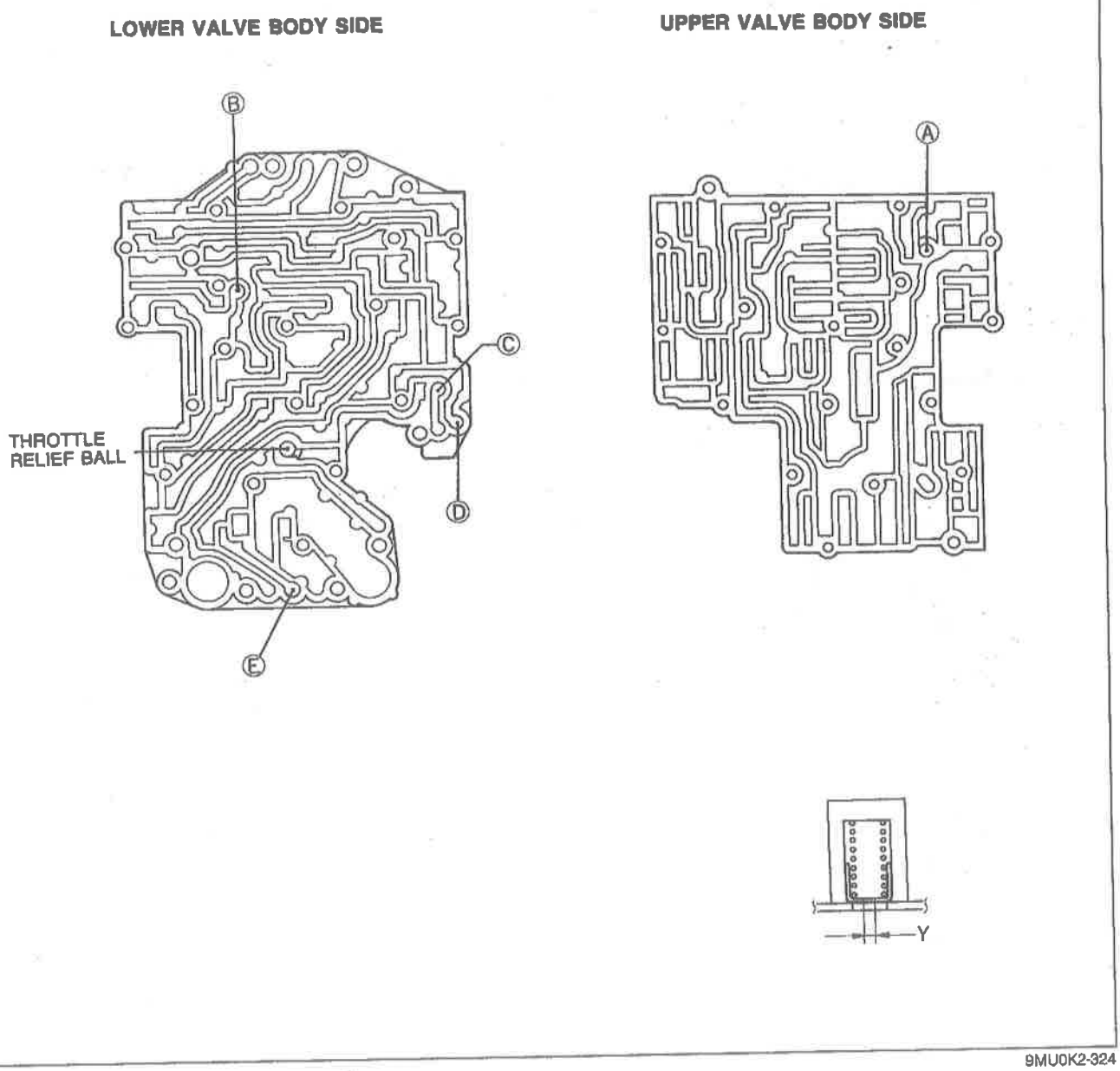


0BU0K1-146

14. Install the separators (G6 engine) and side plate A so that it will not interfere with the set plate.
15. Tighten the installation bolts.

Tightening torque:
2.5—3.4 N·m (25—35 cm-kg, 22—30 in-lb)

CONTROL VALVE BODY
Assembly
Orifice check valve location

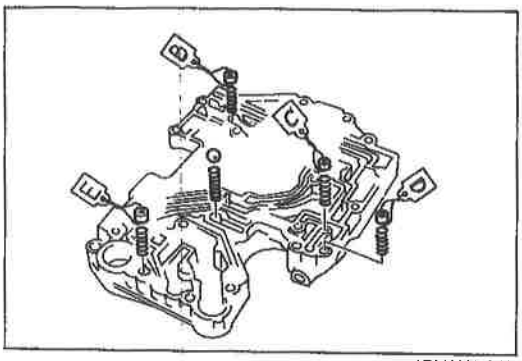


9MU0K2-324

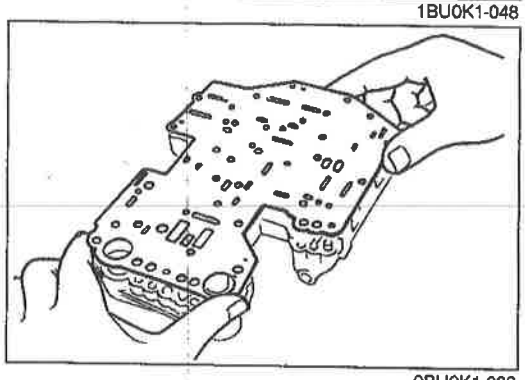
Orifice check valve specifications

		Y diameter mm (in)	
		F2 engine	G6 engine
Upper valve body side	Ⓐ	ϕ 2.0 (0.079)	
Lower valve body side	Ⓑ	ϕ 1.5 (0.059)	
	Ⓒ	ϕ 1.3	ϕ 1.7 (0.067)
	Ⓓ	ϕ 2.0	ϕ 2.2 (0.087)
	Ⓔ	ϕ 2.0 (0.079)	

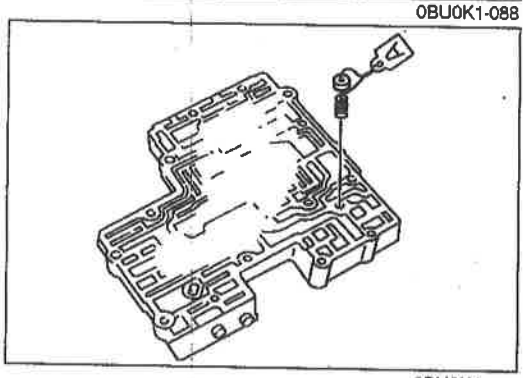
0BU0K1-086



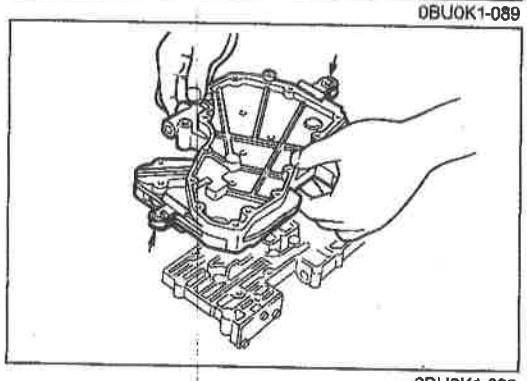
1BU0K1-048



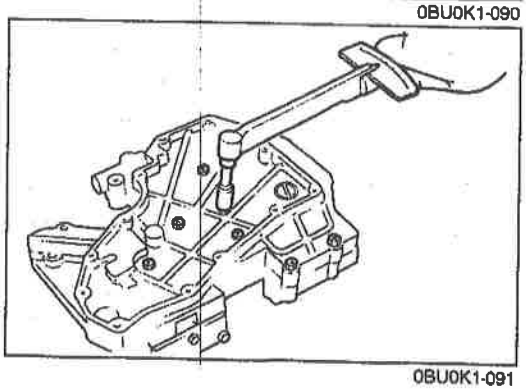
0BU0K1-088



0BU0K1-089



0BU0K1-090



0BU0K1-091

Assembly Procedure

Note
Be sure the orifice check valve and throttle relief ball are properly inserted. (Refer to page K1–104.)

1. Install the orifice check valves and springs, and the throttle relief ball and spring to the lower valve body.

2. Position the separate plate on the lower valve body. Align the plate and valve body, and hold them together with large clips.

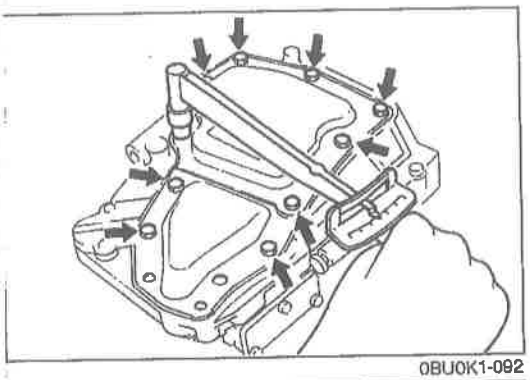
Note
Be sure the orifice check valve and throttle relief ball are properly inserted. (Refer to page K1–104.)

3. Install the orifice check valve and spring (F2 engine) to the upper valve body.

4. Turn over the lower valve body and separate plate and set them onto the upper valve body.
5. Remove the holding clips.

6. Install and tighten the installation bolts.

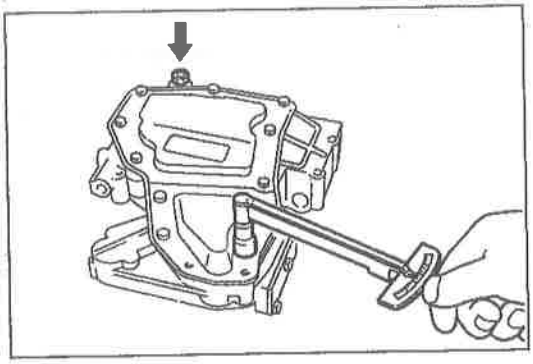
Tightening torque:
2.5—3.4 N·m (25—35 cm-kg, 22—30 in-lb)

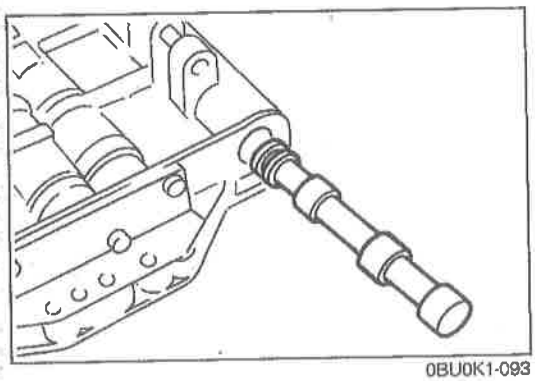


0BU0K1-092

7. Install the oil strainer.

Tightening torque
Bolt: 2.9—3.9 N·m (30—40 cm-kg, 26—35 in-lb)
Nut: 4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)





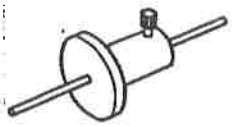
0BU0K1-093

8. Insert the manual valve into the lower valve body.

VACUUM DIAPHRAGM

Preparation

SST

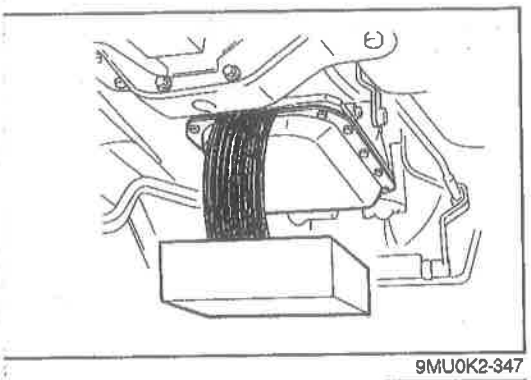
49 G032 355 Adjustment gauge	

9MU0K2-345

General note

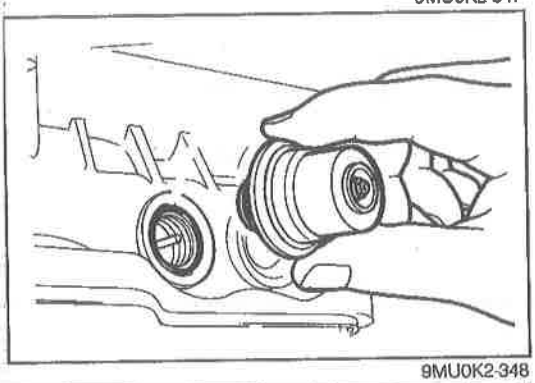
Excessive shift shock and improper shifting often indicate a vacuum diaphragm malfunction.

9MU0K2-346


9MU0K2-347

On-vehicle Removal

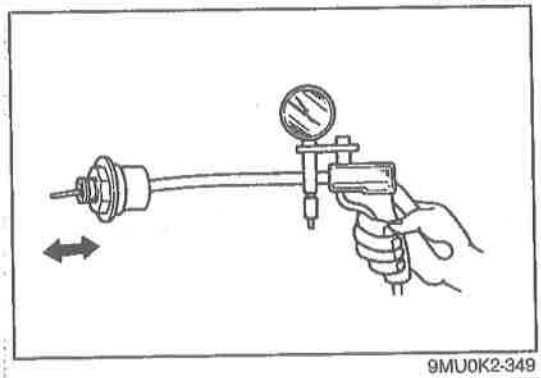
1. Jack up the vehicle and support it with safety stands.
2. Loosen the oil pan mounting bolts, and drain **approx. 1.0 liter (1.1 US qt, 0.9 Imp qt)** of ATF.


9MU0K2-348

3. Disconnect the vacuum hose.

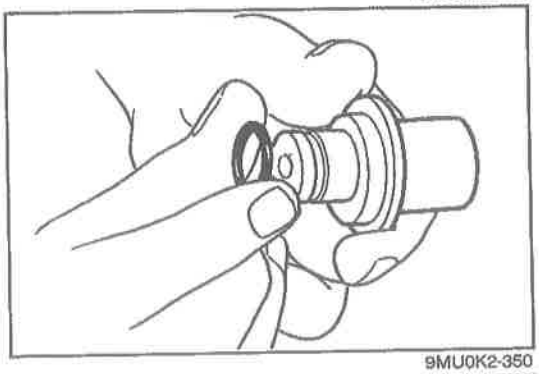
Caution
When removing the vacuum diaphragm, do not drop the vacuum diaphragm rod into the oil pan.

4. Remove the vacuum diaphragm, O-ring, and vacuum diaphragm rod.


9MU0K2-349

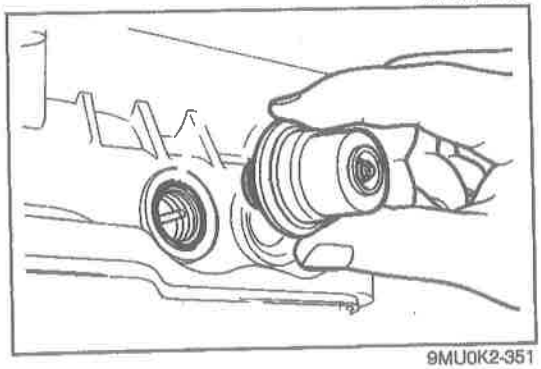
Inspection

1. Check that the vacuum diaphragm rod moves when vacuum is applied to the vacuum diaphragm.
2. If not correct, replace the vacuum diaphragm.

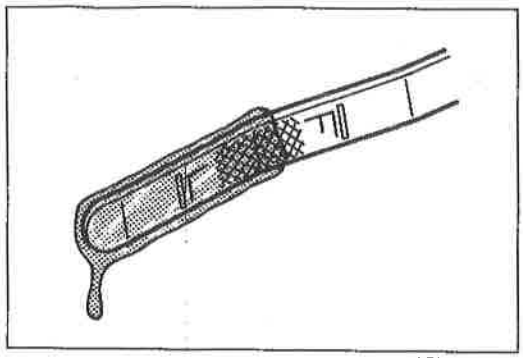

9MU0K2-350

On-vehicle Installation

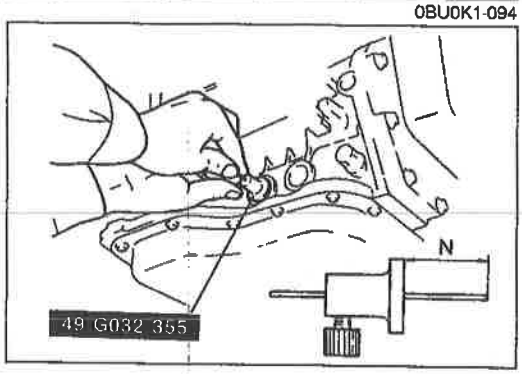
1. Apply ATF to a new O-ring, and install it onto the vacuum diaphragm.


9MU0K2-351

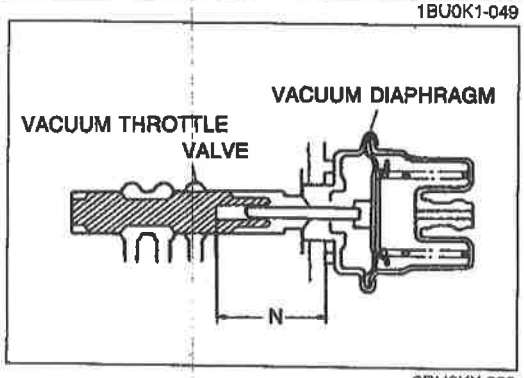
2. Apply ATF to the vacuum diaphragm rod and vacuum diaphragm, and install them into the transmission case.
3. Connect the vacuum hose.



0BU0K1-094



1BU0K1-049



9BU0KX-068

4. Add **approx. 1.0 liter (1.1 US qt, 0.9 Imp qt)** of ATF and check the oil level. (Refer to page K1–33.)
5. Warm up the ATF to normal operating temperature **(50—80°C, 122—176°F)**, then check for following:
   (1) Fluid leakage
   (2) Vacuum leakage

On-vehicle Adjustment

1. Remove the vacuum diaphragm, vacuum diaphragm rod, and O-ring from the transmission case. (Refer to On-vehicle Removal, page K1–108.)
2. Measure dimension N indicated in the figure with the **SST** and a scale.
3. Select the proper diaphragm rod from the table.

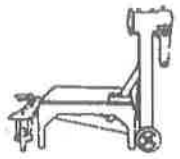
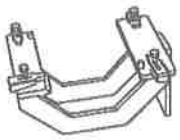
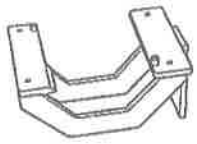
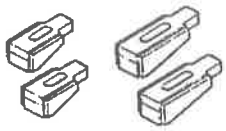
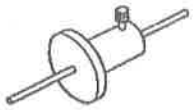
Dimension N	Applicable diaphragm rod
Below 25.65mm (1.0099 in)	29.0mm (1.14 in)
25.65—25.90mm (1.0099—1.0197 in)	29.5mm (1.16 in)
25.90—26.40mm (1.0197—1.0394 in)	29.75mm (1.17 in)
26.40—26.65mm (1.0394—1.0492 in)	30.0mm (1.18 in)
26.65—27.15mm (1.0492—1.0650 in)	30.5mm (1.20 in)
27.15mm (1.0689 in) or over	31.0mm (1.22 in)

4. Install the correct vacuum diaphragm rod, O-ring, and vacuum diaphragm.
   (Refer to On-vehicle Installation, page K1–108.)

TRANSMISSION UNIT (ASSEMBLY)

Preparation

SST

49 0107 680 A Engine stand 	49 U019 0A0A Transmission hanger 	49 H075 495B Body (Part of 49 U019 0A0A) 
49 U019 003 Holder (Part of 49 U019 0A0A) 	49 G032 355 Adjustment gauge 	

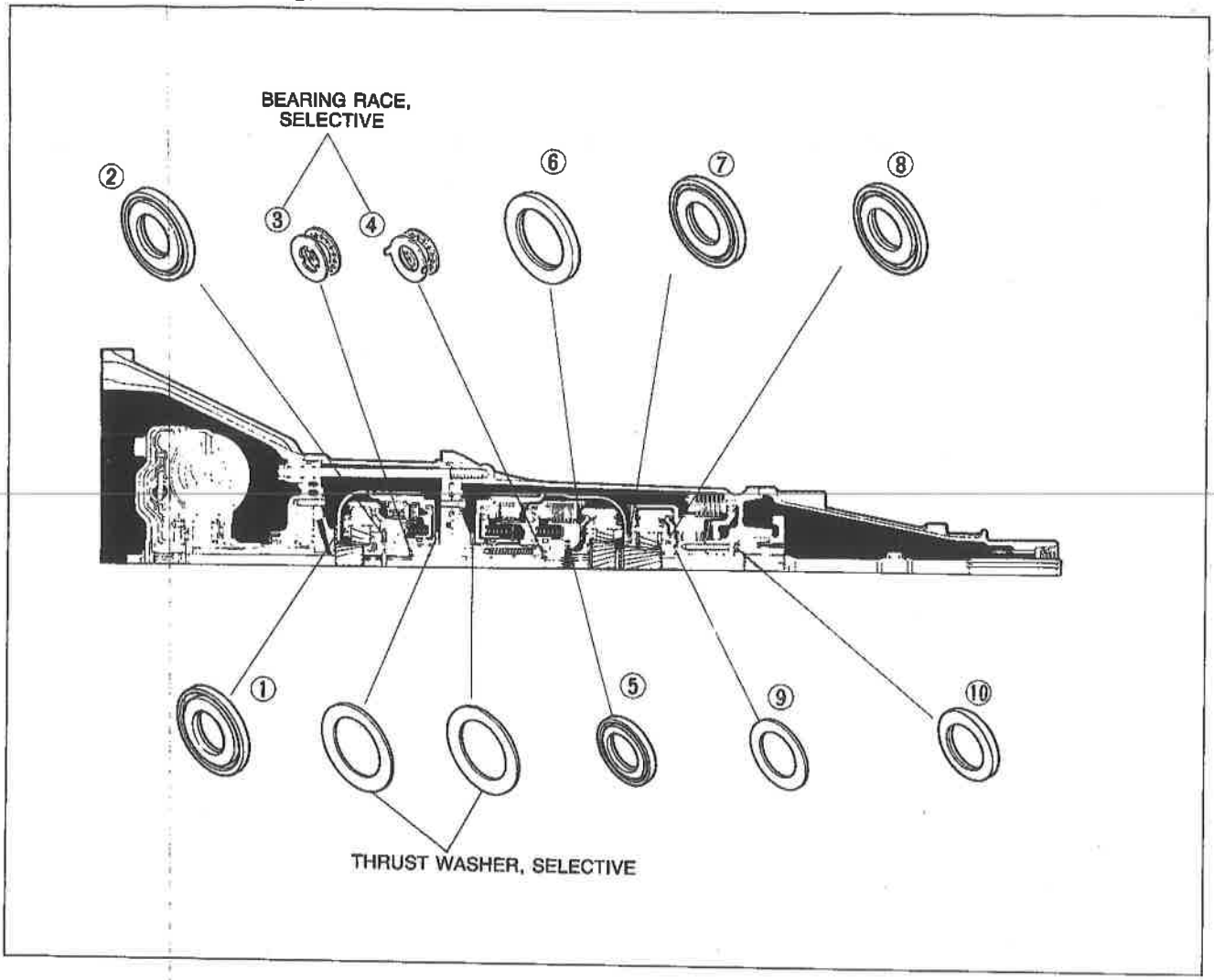
1BU0K1-050

Precaution

1. If the drive plates or brake bands are replaced with new ones, soak the new ones in ATF for at least two hours before installation.
2. Before assembly, apply ATF to all seal rings, rotating parts, O-rings, D-rings, and sliding parts.
3. All O-rings, D-rings, seals, and gaskets must be replaced with the new ones included in the overhaul kit.
4. Use petroleum jelly, not grease, during reassembly.
5. When it is necessary to replace a bushing, replace the subassembly that includes that bushing.
6. Assemble the housing within 10 minutes after applying sealant, and allow it to cure at least 30 minutes after assembly before filing the transmission with ATF.

9MU0K2-356

Thrust Washer, Bearing, and Race Location



9MU0K2-357

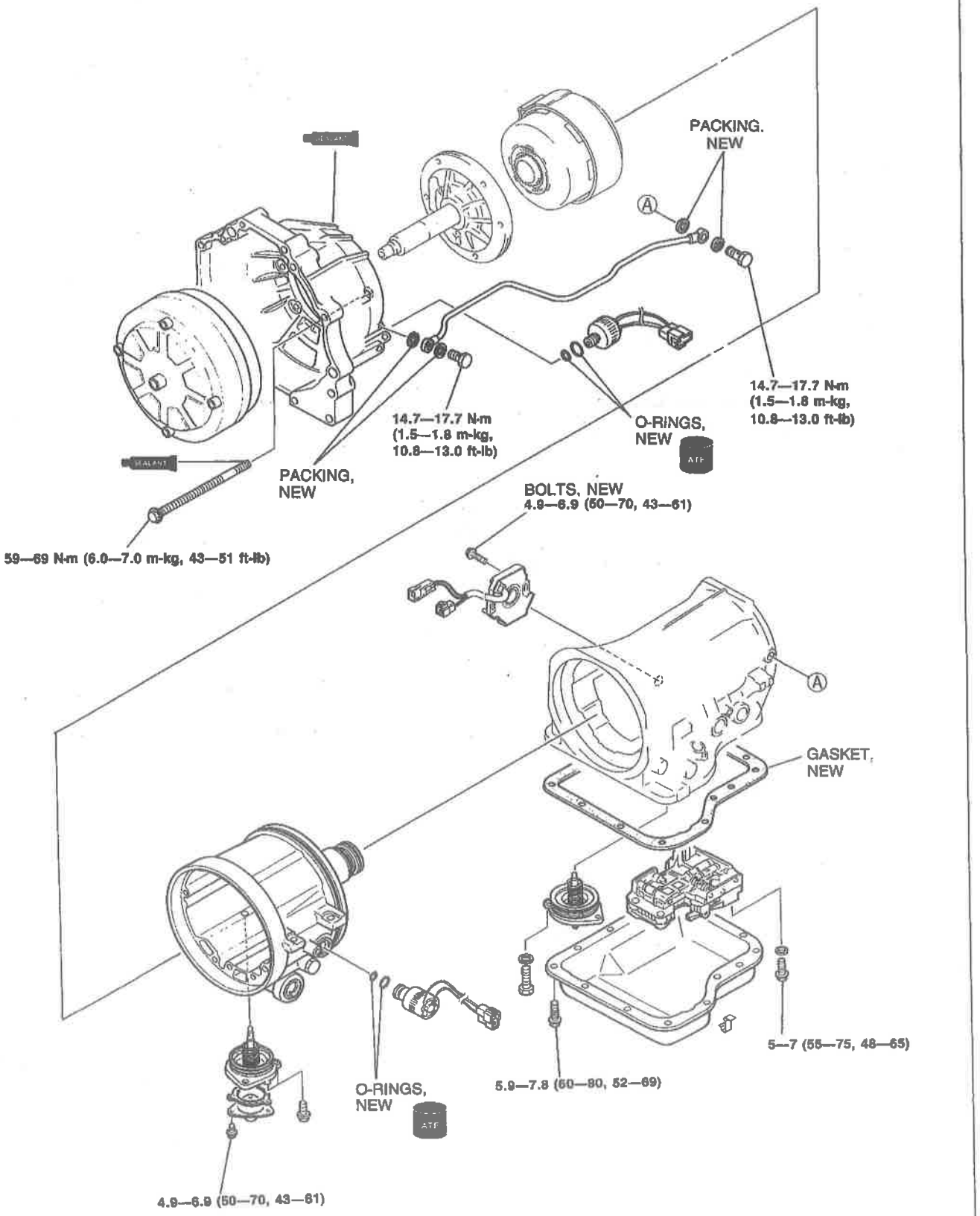
Outer diameter of bearing and race

		1	2	3	4	5	6
Bearing	mm (in)	70.0 (2.756)	70.0 (2.756)	35.0 (1.378)	35.0 (1.378)	53.0 (2.087)	70.0 (2.756)
Race	mm (in)	—	—	33.0 (1.299)	33.0 (1.299)	—	—

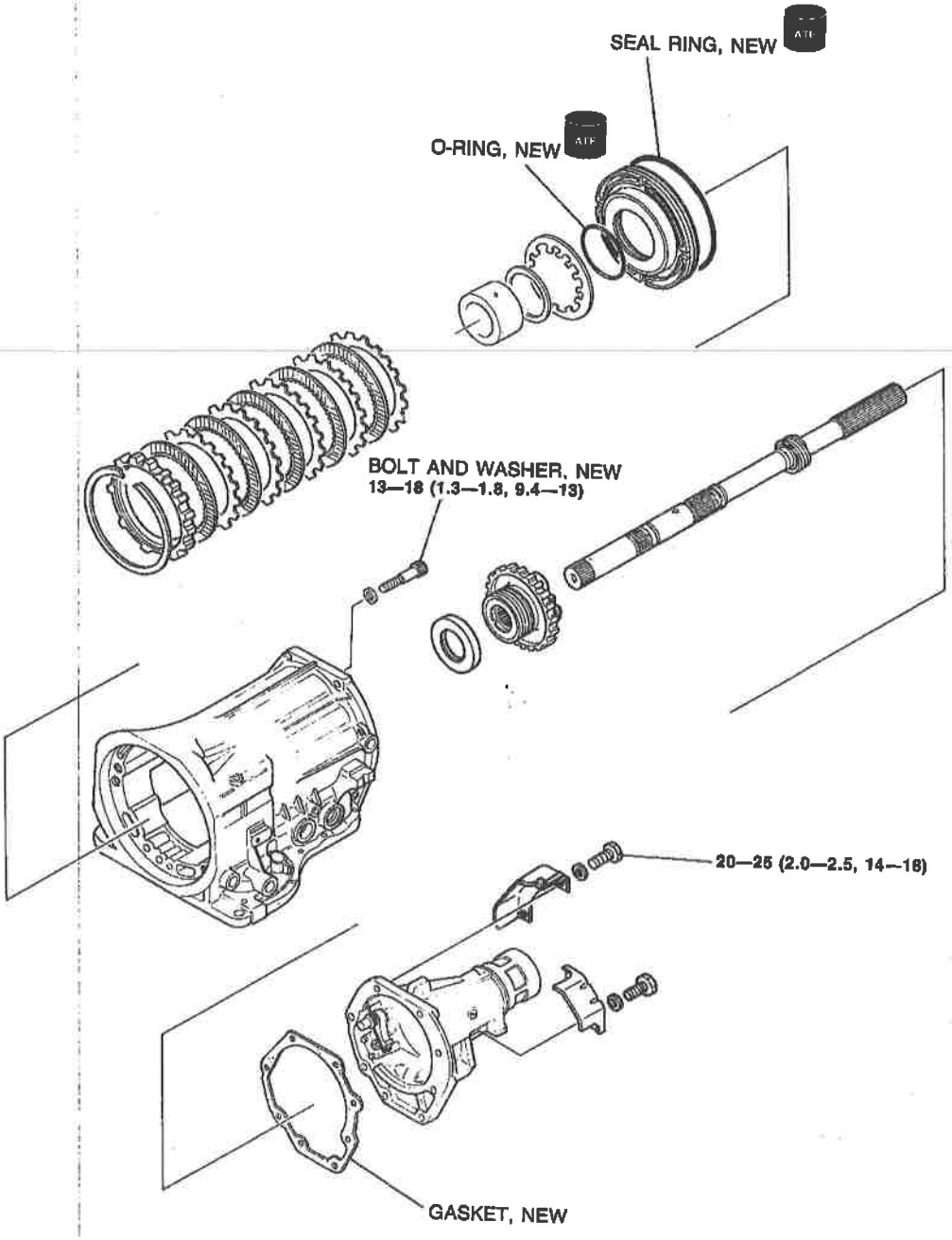
		7	8	9	10
Bearing	mm (in)	70.0 (2.756)	70.0 (2.756)	47.0 (1.850)	53.0 (2.087)
Race	mm (in)	—	—	—	—

0BU0K1-096

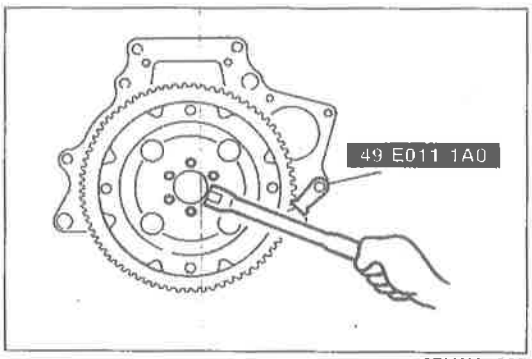
Torque specifications



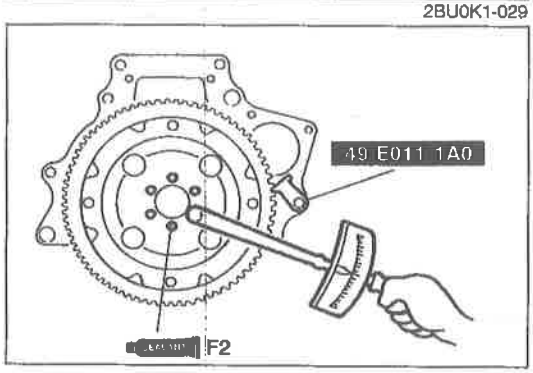
Torque specifications (cont'd)



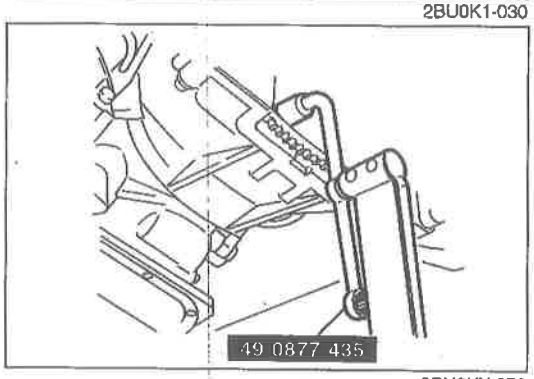
N·m (m-kg, ft-lb)



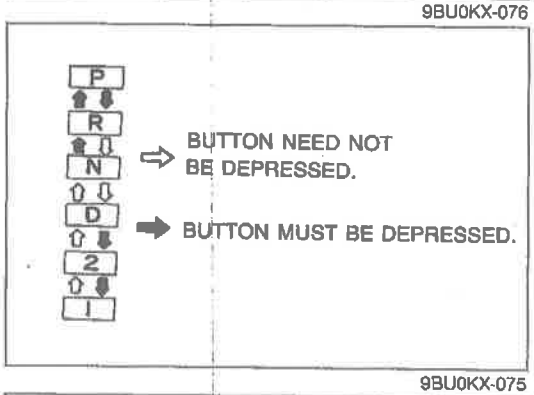
2BU0K1-029



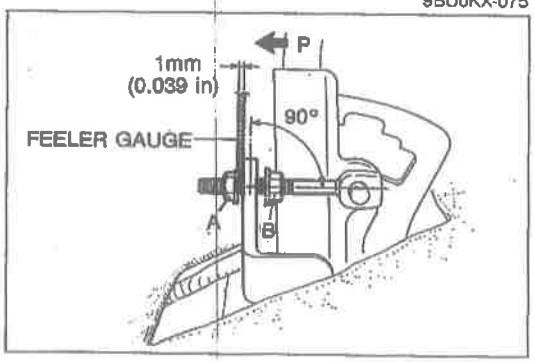
2BU0K1-030



9BU0KX-076



9BU0KX-075



9BU0KX-077

Removal note
Drive plate
Remove the drive plate with the **SST** or equivalent.

Installation note
Drive plate
1. Assemble the adapter, drive plate, and backing plate.
2. Install the **SST** or equivalent and tighten the bolts.

Tightening torque
B2200: 96—103 N·m (9.8—10.5 m-kg, 71—81 ft-lb)
B2600: 91—98 N·m (8.3—10.0 m-kg, 67—72 ft-lb)

3. Install the transmission. (Refer to page K1–36.)
4. Loosely and equally tighten the torque converter bolts, then further tighten them to the specified tightening torque.

Tightening torque:
34—49 N·m (3.5—5.0 m-kg, 25—36 ft-lb)

Caution
When tightening the bolts with the SST, tighten them to the minimum specified tightening torque.

SHIFT MECHANISM

INSPECTION
1. Verify that the gearshift lever can be shifted as shown in the figure.
2. Make sure of a click at each range when the lever is shifted from P—1 ranges.
3. Verify that the positions of the gearshift lever and the indicator are exact.
4. Verify that the knob returns smoothly when used to shift.
5. If not correct adjust or repair the selector lever.

ADJUSTMENT
Lever Position
1. Shift the selector lever to P range.
2. Loosen locknuts A and B so that they are both at least 1mm (0.039 in) away from the adjustment lever.
3. Shift the transmission to P range by moving the manual shaft of the transmission.
4. With the link at 90° to the lever, adjust the clearance between the adjustment lever and locknut A.

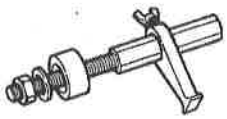
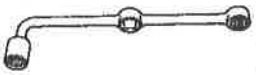
Clearance: 1mm (0.039 in)

5. Remove the feeler gauge and tighten locknut B.

Tightening torque:
8—11 N·m (80—110 cm-kg, 69—95 in-lb)

DRIVE PLATE

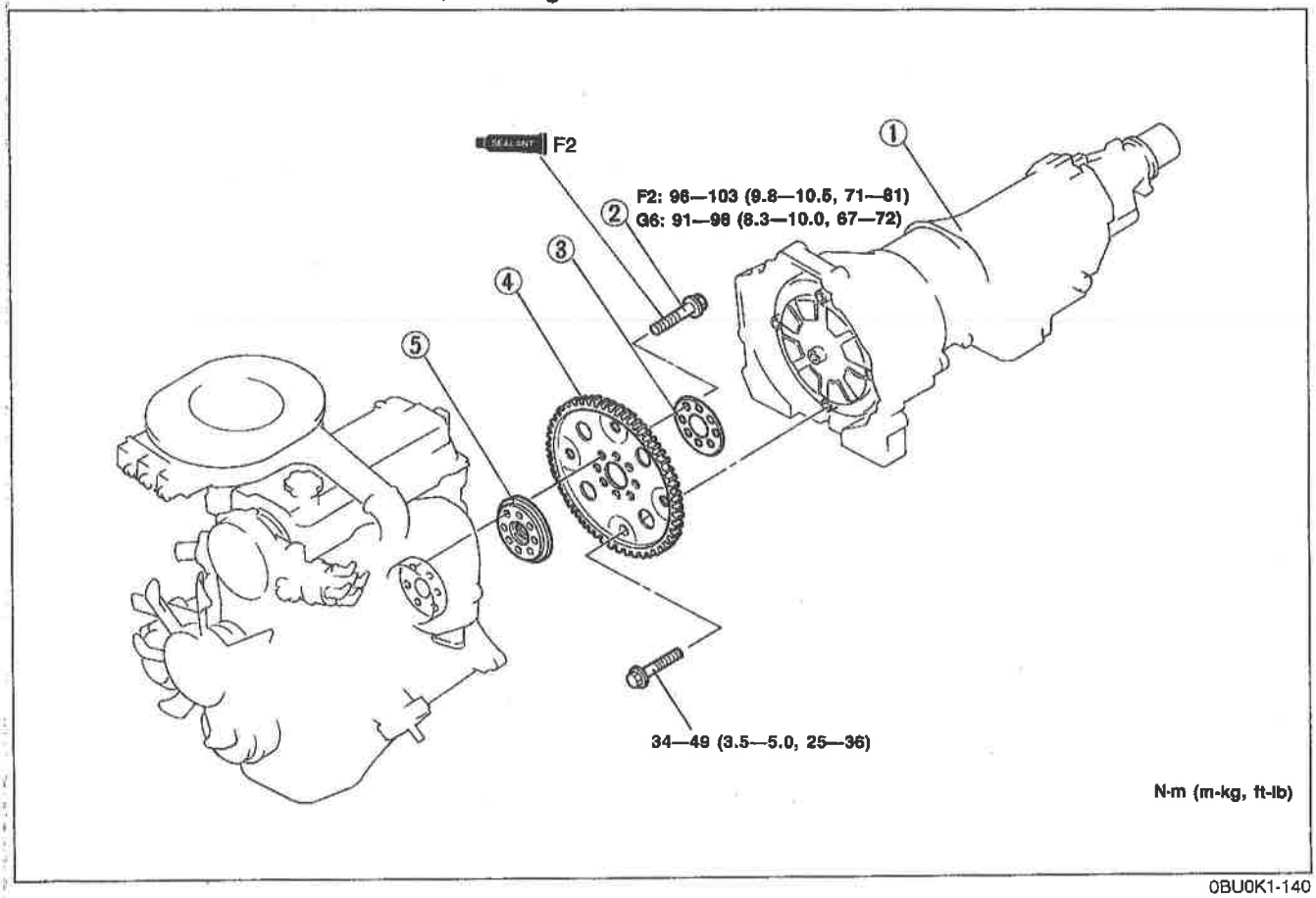
Preparation
SST

49 E011 1A0 Brake set, ring gear 	49 E011 103 Shaft (Part of 49 E011 1A0) 	49 E011 104 Collar (Part of 49 E011 1A0) 
49 E011 105 Stopper (Part of 49 E011 1A0) 	49 0877 435 Special wrench 	

2BU0K1-028

Removal, Inspection, and Installation

Remove in the order shown in the figure, referring to **Removal Note**.
Inspect all parts, and repair or replace as necessary.
Install in the reverse order removal, referring to **Installation Note**.

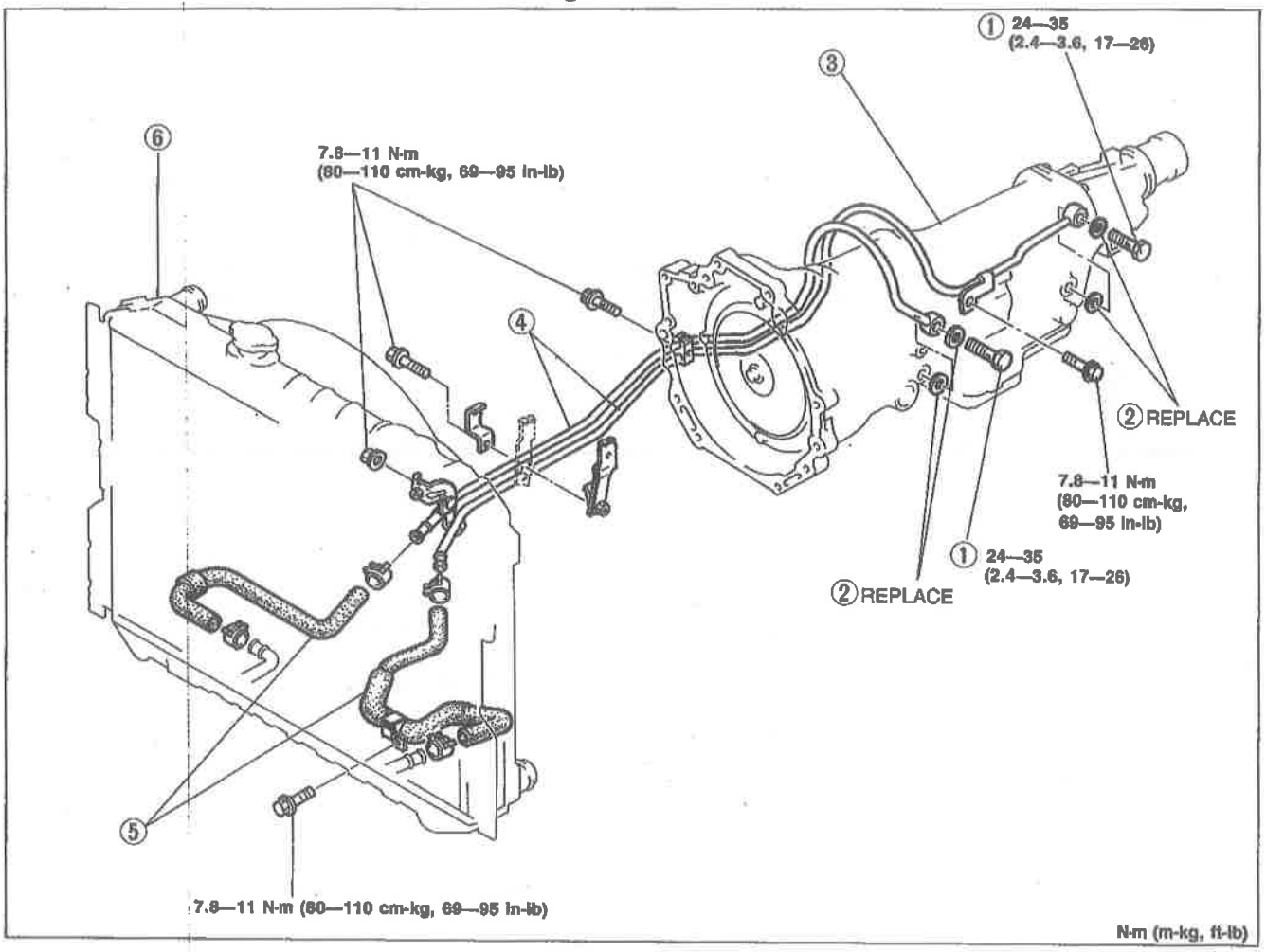


0BU0K1-140

1. Transmission
   Removal ..... page K1–36
   Installation ..... page K1–36
2. Bolts
3. Backing plate
4. Drive plate
   Inspect for cracks and ring gear for wear or damage
5. Adapter

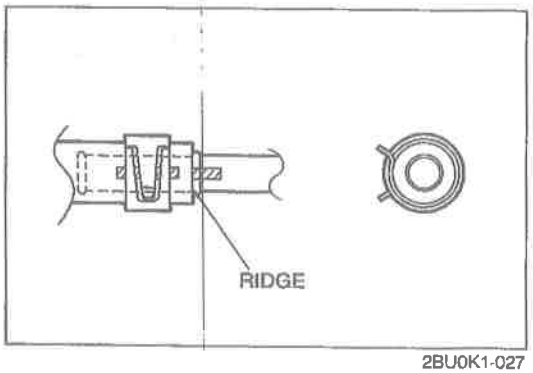
OIL COOLER

Removal, Inspection, and Installation
Remove in the order shown in the figure.
Inspect all parts and repair or replace as necessary.
Install in the reverse order of removal, referring to **Installation Note**.



0BU0K1-138

1. Connector bolts
   Inspect for clogging
2. Packing
3. Transmission
   Removal ..... page K1–36
   Installation ..... page K1–36
4. Oil pipe
   Inspect for damage or cracks
5. Oil hose
   Inspect for damage or cracks
6. Radiator
   Refer to Section E

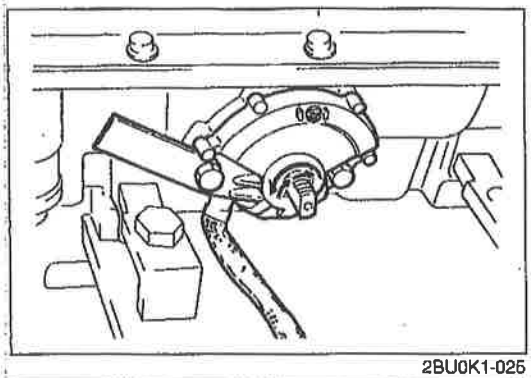


2BU0K1-027

Installation note
Oil pipe

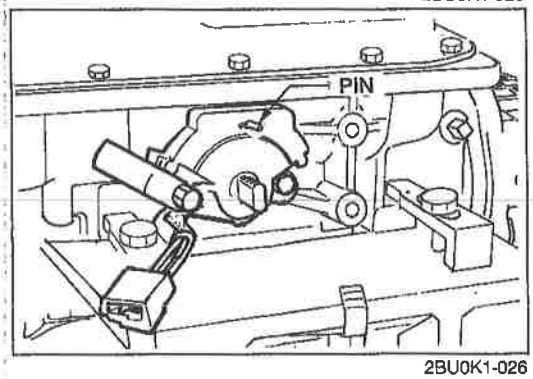
Caution
- **If reuse the hose clamp, position the hose clamp in the original location on the hose. Squeeze the clamp lightly with large pliers to ensure a good fit.**

1. Align the marks, and slide the oil cooler hoses onto the oil cooler pipes until it contacts the ridge.
2. Install the hose clamps as shown and tighten them as specified.
3. Verify that the hose clamps do not interfere with other parts.



2BU0K1-025

56. Rotate the manual shaft fully reward, then return it two (2) notches to the N position.

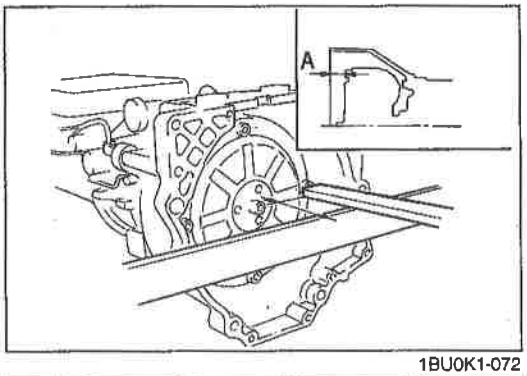


2BU0K1-026

57. Loosely tighten the new inhibitor switch bolts.
58. Remove the screw on the switch body and move the inhibitor switch so that the screw hole on the switch body is aligned with the small hole inside the switch. Check their alignment by inserting a **2.0mm (0.0079 in)** diameter pin into the holes.
59. Tighten the switch attaching bolts.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)

60. Remove the pin, and tighten the screw into the hole.

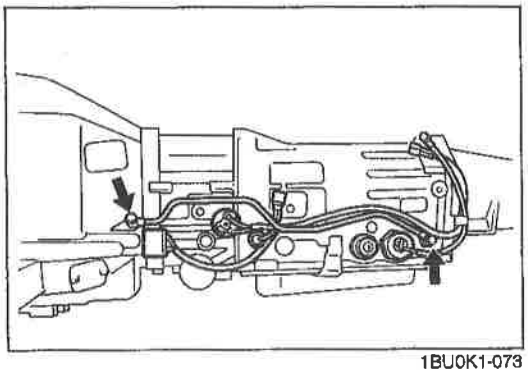


1BU0K1-072

61. Ensure that the torque converter is installed correctly by measuring the distance (A) between the end of the torque converter and the end of the converter housing.

"A": 54.2mm (2.13 in) min.

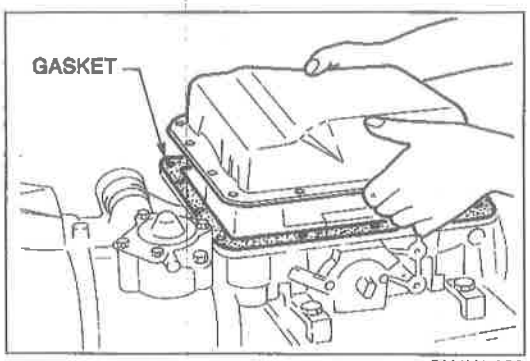
62. Remove the transmission from the engine stand.



1BU0K1-073

63. Install the governor pressure pipe

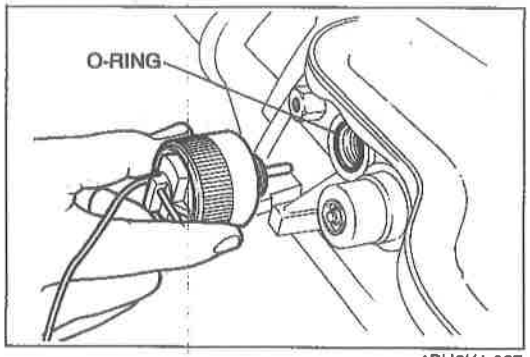
Tightening torque:
14.7—17.7 N·m (1.5—1.8 m-kg, 10.8—13.0 ft-lb)



1BU0K1-066

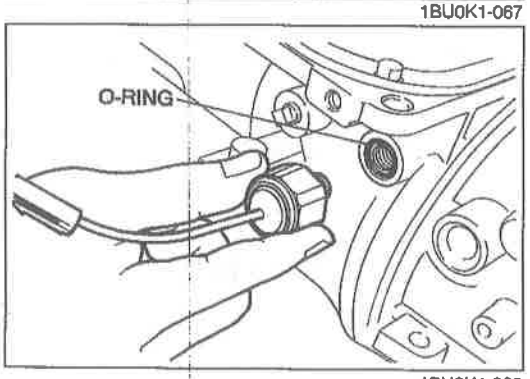
46. Install the oil pan along with a new gasket.
47. Install the bracket and the pan mounting bolts.

Tightening torque:
5.9—7.8 N·m (60—80 cm-kg, 52—69 in-lb)



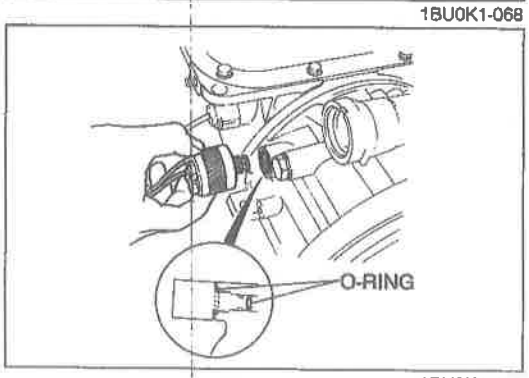
1BU0K1-067

48. Apply ATF to a new O-ring and install it to the transmission case.
49. Install the downshift solenoid.



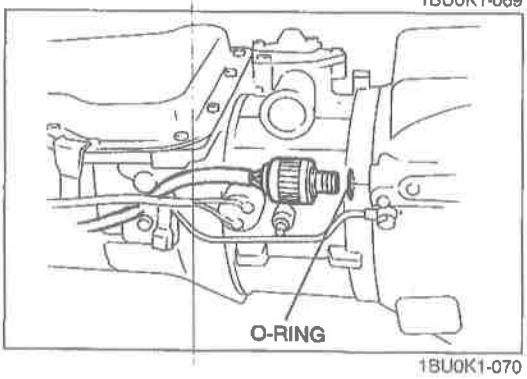
1BU0K1-068

50. Apply ATF to a new O-ring and install it into the transmission case.
51. Install the transmission oil pressure switch.



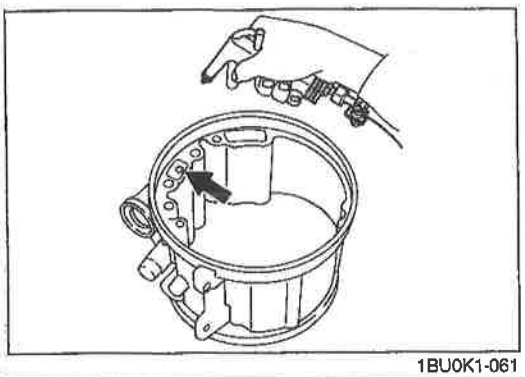
1BU0K1-069

52. Apply ATF to the new O-rings and install them into the transmission case.
53. Install the OD cancel solenoid.



1BU0K1-070

54. Apply ATF to the new O-rings and install them into the transmission case.
55. Install the lockup solenoid (G6 engine).

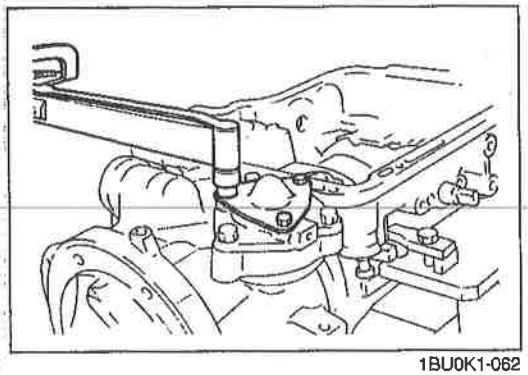


1BU0K1-061

Caution
Apply air for no more than three(3) seconds.

38. Check the servo piston operation by applying compressed air through the oil passage of the OD band servo.

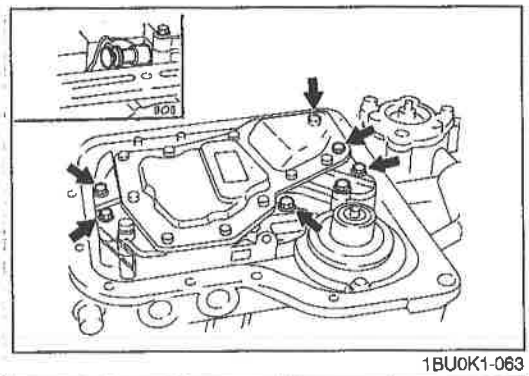
Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.



1BU0K1-062

39. Set a new gasket on the OD band servo.
40. Install the OD band servo cover.

Tightening torque:
4.9—6.9 N·m (50—70 cm-kg, 43—61 in-lb)

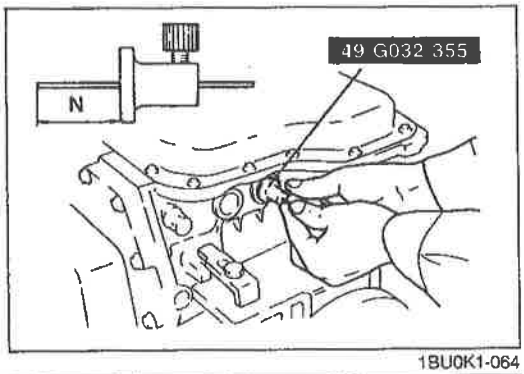


1BU0K1-063

Note
Be careful to place the manual plate in the correct position of the manual valve.

41. Set the valve body assembly in position.
42. Install the bolts.

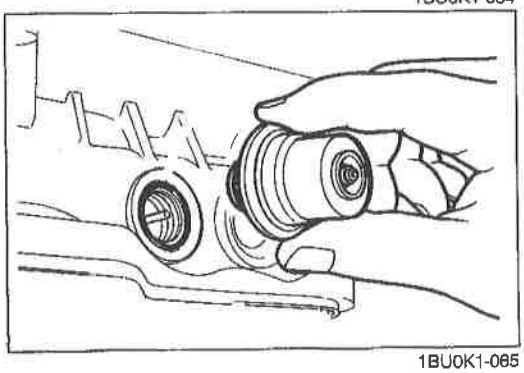
Tightening torque:
5—7 N·m (55—75 cm-kg, 48—65 in-lb)



1BU0K1-064

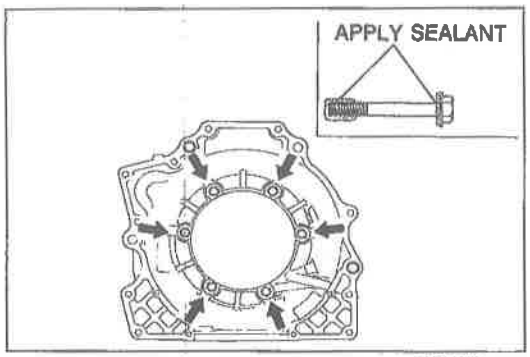
43. Apply ATF to a new O-ring and install it onto the vacuum diaphragm.
44. Select the diaphragm rod.
    (1) Measure dimension N with the **SST** and a scale.
    (2) Select the proper diaphragm rod in accordance with the table below.

Dimension N	Applicable diaphragm rod
Below 25.65mm (1.0099 in)	29.0mm (1.14 in)
25.65—25.90mm (1.0099—1.0197 in)	29.5mm (1.16 in)
25.90—26.40mm (1.0197—1.0394 in)	29.75mm (1.17 in)
26.40—26.65mm (1.0394—1.0492 in)	30.0mm (1.18 in)
26.65—27.15mm (1.0492—1.0689 in)	30.5mm (1.20 in)
27.15mm (1.0689 in) or over	31.0mm (1.22 in)



1BU0K1-065

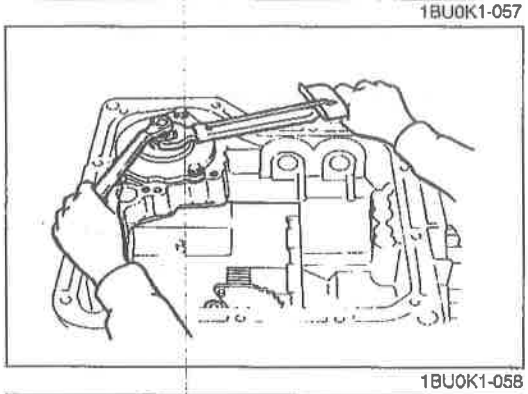
45. Apply ATF to the new O-rings, and install them to the vacuum diaphragm; then install the vacuum diaphragm to the transmission case.



1BU0K1-057

32. Remove the converter housing bolts used as guide. Apply sealant to the bolts.
33. Install the converter housing onto the transmission case, and tighten bolts evenly in a crisscross pattern.

Tightening torque:
59—69 N·m (6.0—7.0 m-kg, 43—51 ft-lb)


1BU0K1-058

34. Apply ATF to the piston stem.
35. Adjust the 2nd brake band.
(1) Loosen the locknut and tighten the piston stem.

Tightening torque:
11.8—14.7 N·m (1.2—1.5 m-kg, 8.7—10.8 ft-lb)

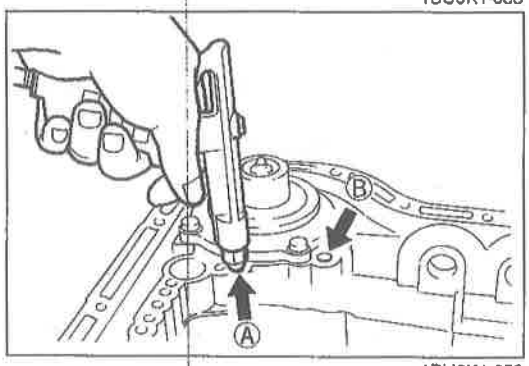
(2) Loosen the stem the number of turns shown below.

Stem: 3 turns

(3) Hold the stem and tighten the locknut.

Tightening torque:
15—39 N·m (1.5—4.0 m-kg, 11—29 ft-lb)

Caution
Apply air for no more than three(3) seconds.

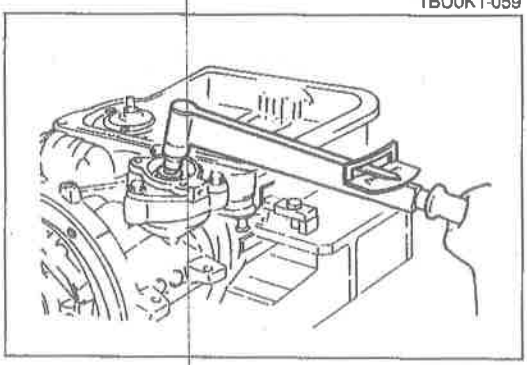


1BU0K1-059

36. Check the servo piston operation by applying compressed air through the oil passages of the 2nd band servo.

Ⓐ : Engage
Ⓑ : Release

Air pressure: 392 kPa (4.0 kg/cm^2, 57 psi) max.


1BU0K1-060

37. Apply ATF to the piston stem.
Adjust the OD brake band.
(1) Loosen the locknut and tighten the piston stem.

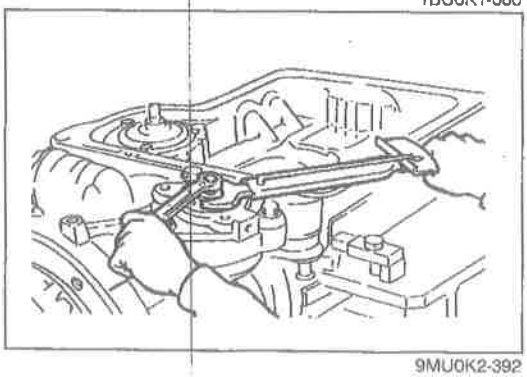
Tightening torque:
7—10 N·m (70—100 cm-kg, 61—87 in-lb)

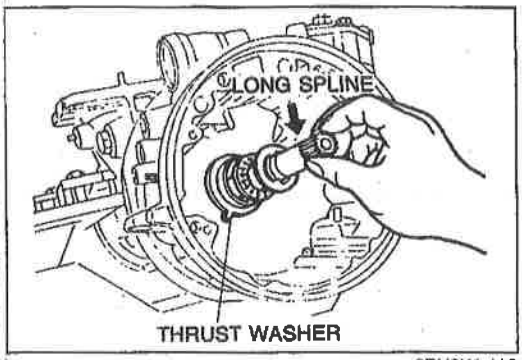
(2) Loosen the stem the number of turns shown below.

Stem: 2 turns

(3) Hold the stem and tighten the locknut.

Tightening torque:
15—39 N·m (1.5—4.0 m-kg, 11—29 ft-lb)


9MU0K2-392

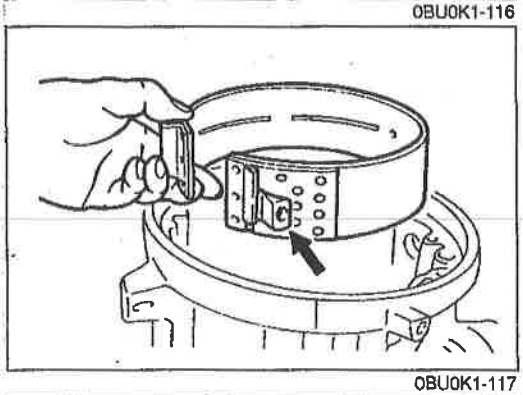


0BU0K1-116

Caution
The end with the long spline is the front.
Long spline: 23.0mm (0.906 in)
Short spline: 18.6mm (0.772 in)

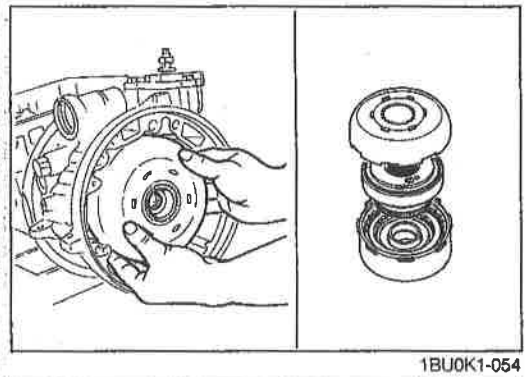
23. Insert the intermediate shaft.
24. Apply petroleum jelly to the thrust washer and install it into the OD case.
25. Apply petroleum jelly to the small bearing and small bearing race, and install them as shown.

Bearing outer diameter: 35.0mm (1.318 in)
Bearing race outer diameter: 33.0mm (1.299 in)



0BU0K1-117

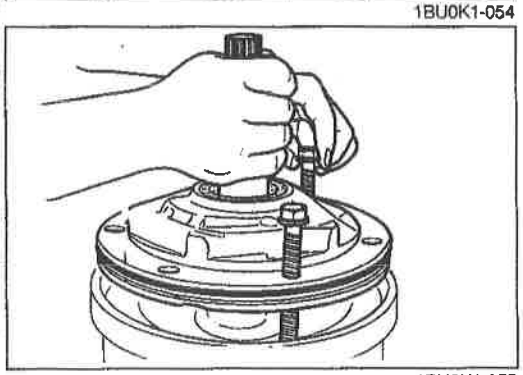
26. Install the OD brake band and band strut.



1BU0K1-054

27. Install the direct clutch assembly.
28. Apply petroleum jelly to the bearing and install it onto the OD connecting shell with the black surface facing upward.

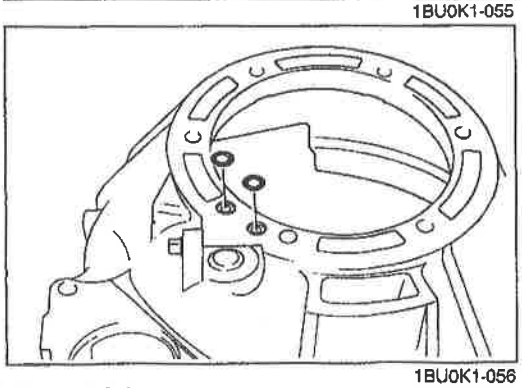
Bearing outer diameter: 70.0mm (2.756 in)



1BU0K1-055

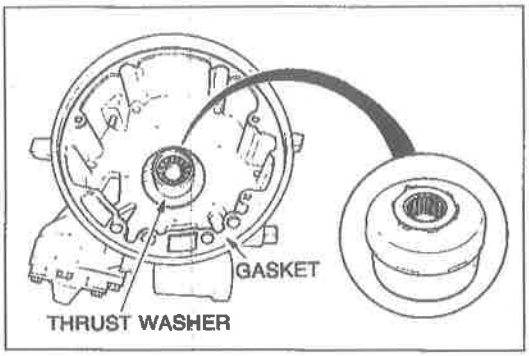
Caution
a) Do not damage the seal rings or O-ring.
b) Do not use a hammer, plastic or otherwise, to install the oil pump.

29. Install the oil pump assembly into the transmission case using two converter housing bolts as guide.

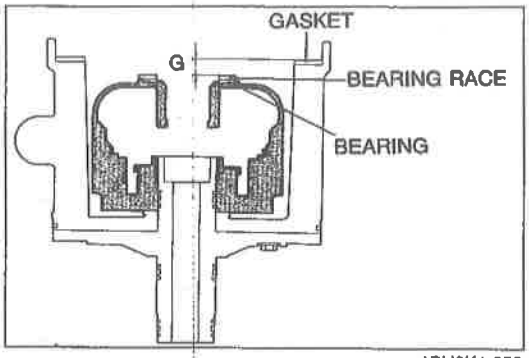


1BU0K1-056

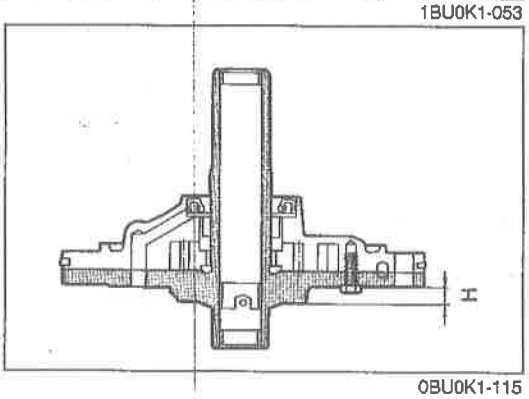
30. Coat the contact surfaces of the converter housing and transmission case with sealant.
31. Install new O-rings.



9MU0K2-380



1BU0K1-053



0BU0K1-115

(6) Adjust the total end play by selecting the proper bearing race.

Bearing race sizes

mm (in)

1.2 (0.047)	1.4 (0.055)	1.6 (0.063)
1.8 (0.071)	2.0 (0.079)	2.2 (0.087)

Note
Do not install the planetary pinion carrier at this time.

22. Check and adjust the direct clutch end play.
(1) Install the bearing race in the OD case.

Note
Install the bearing with the black surface toward the oil pump cover side.

(2) Install the direct clutch, sun gear, connecting shell, and bearings in the OD case.
(3) Measure distances G and H with a straight edge and vernier calipers.
(4) Calculate the direct clutch end play by using the formula below.

Formula: T = G—H—0.1mm (0.004 in)

T : Total end play
G : The distance between the oil pump mounting surface (including the oil pump gasket) and the connecting shell bearing surface.
H : The distance between the oil pump side connecting shell bearing contact surface and the oil pump gasket contact surface.
0.1: The compression amount of a new gasket.

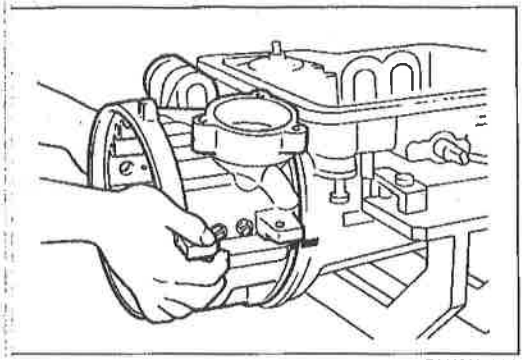
Total end play: 0.5—0.8mm (0.020—0.031 in)

(5) Adjust the direct clutch end play by selecting the proper thrust washer.

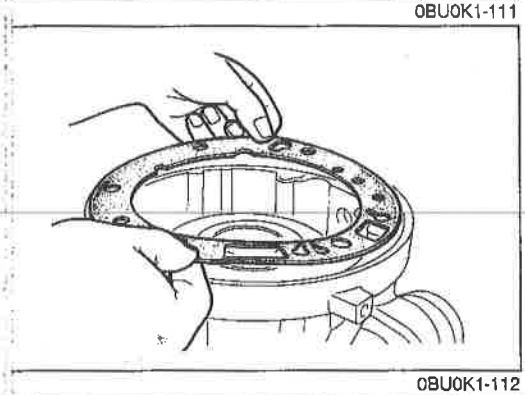
Thrust washer sizes

mm (in)

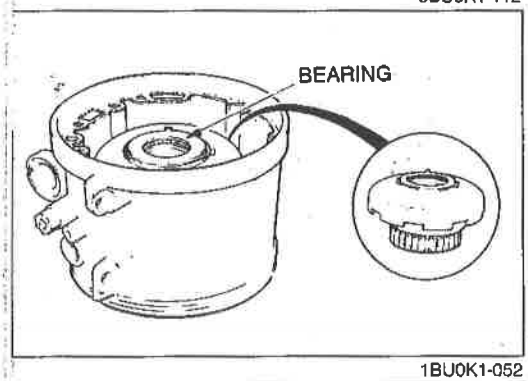
1.3 (0.051)	1.5 (0.059)	1.7 (0.067)
1.9 (0.075)	2.1 (0.083)	2.3 (0.091)
2.5 (0.098)	2.7 (0.106)	



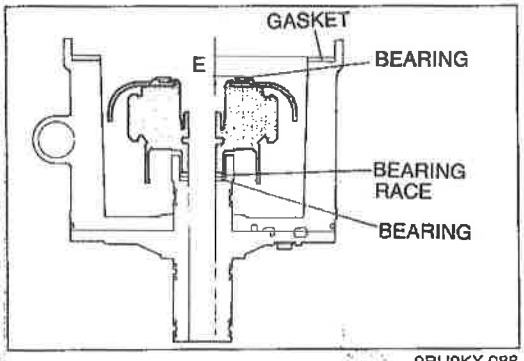
0BU0K1-111



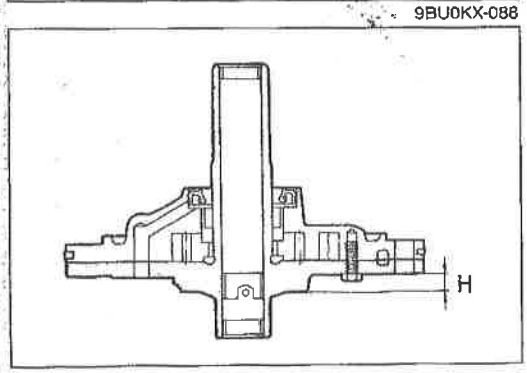
0BU0K1-112



1BU0K1-052



9BU0KX-088



Note
a) Align the marks of the transmission case and OD case. Tap lightly with a plastic hammer to avoid damaging the seal rings when installing.
b) Install two bolts for alignment.

19. Check that the bearing race is atop the front clutch and that the bearing is on the bottom of the front clutch hole, then mount the OD case.

20. Set a new gasket in place.

Note
Do not install the direct clutch drum at this time.

21. Check and adjust the OD planetary gear unit total end play.
    (1) Position the OD case upright.
    (2) Install the bearing on the OD case.

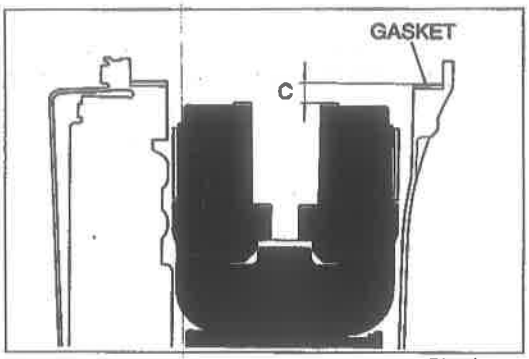
Note
Install the bearing with the black surface toward the oil pump cover side.

    (3) Install the planetary carrier, sun gear, connecting shell, and bearing as a unit in the OD case.
    (4) Measure distances E and H with a straight edge and vernier calipers.
    (5) Calculate the OD gear train total end play by using the formula below.

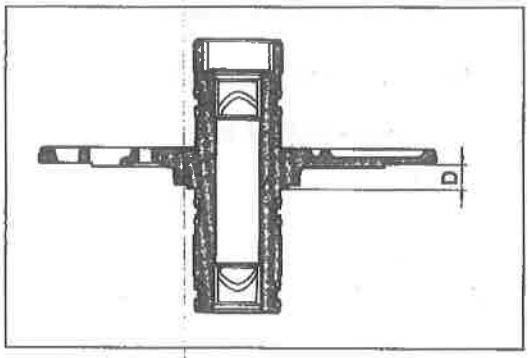
Formula: T = E—H—0.1mm (0.004 in)

T : Total end play
E : The distance between the oil pump mounting surface (including the oil pump gasket) and the connecting shell bearing surface.
H : The distance between the oil pump side connecting shell bearing contact surface and the oil pump gasket contact surface.
0.1: The compression amount of a new gasket.

Total end play: 0.25—0.50mm (0.0098—0.0197 in)



0BU0K1-108



(2) Measure distances C and D with a straight edge and vernier calipers.
(3) Calculate the front clutch end play by using the formula below.

Formula: T = C—D—0.1mm (0.004 in)

T : Front clutch end play
C : The distance between the drum support mounting surface (including the drum support gasket) of the transmission case and the bearing surface on the front clutch assembly.
D : The distance between the sliding surface of the bearing and the drum support gasket contact surface.
0.1: The compression amount of a new gasket.

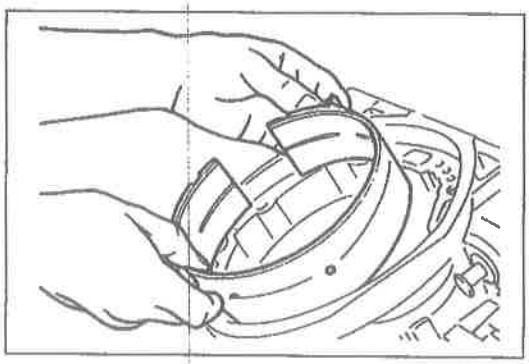
Front clutch end play: 0.5—0.8mm (0.020—0.031 in)

(4) Adjust the front clutch end play by selecting the proper thrust washer.

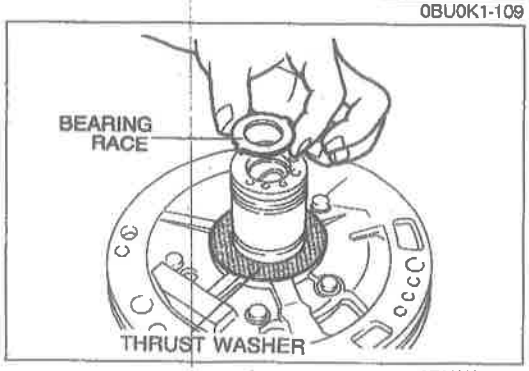
Thrust washer sizes

mm (in)

1.3 (0.051)	1.5 (0.059)	1.7 (0.067)
1.9 (0.075)	2.1 (0.083)	2.3 (0.091)
2.5 (0.098)	2.7 (0.106)	



0BU0K1-109

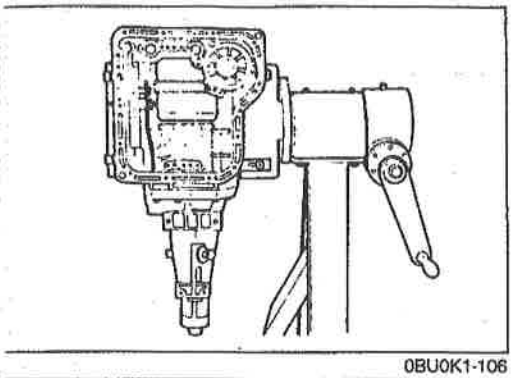


0BU0K1-110

16. Set the 2nd brake band and strut in position.
17. Tighten the piston stem lightly.

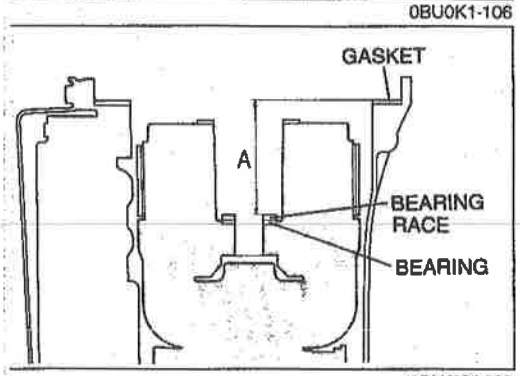
18. Apply petroleum jelly to the bearing race and thrust washer, and install them as shown.

Bearing race and thrust washer outer diameters
Bearing race: 33.0mm (1.299 in)
Thrust washer: 66.0mm (2.598 in)

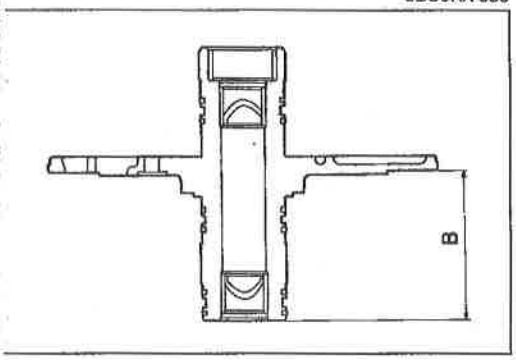


0BU0K1-106

14. Check and adjust the rear clutch total end play.
    (1) Position the front of the transmission case upward.
    (2) Set the drum support bearing and race on the rear clutch.



9BU0KX-086



(3) Measure distances A and B with a straight edge and vernier calipers.
(4) Calculate the total end play by using the formula below.

Formula: T = A—B—0.1mm (0.004 in)

T : Total end play
A : The distance between the drum support mounting surface (including the drum support gasket) and the drum support bearing race surface on the rear clutch assembly.
B : The distance between the drum support bearing race contact surface and the drum support gasket contact surface.
0.1: The compression amount of a new gasket.

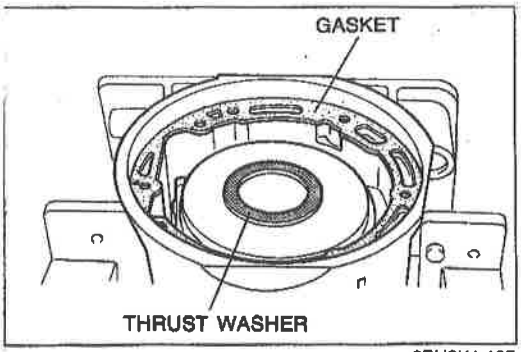
Total end play: 0.25—0.50mm (0.0098—0.0197 in)

(5) Adjust the total end play by selecting the proper bearing race.

Bearing race sizes

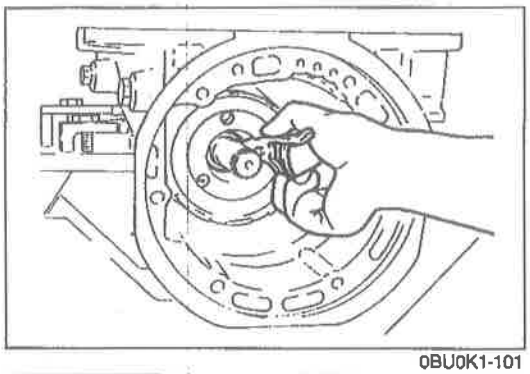
mm (in)

1.2 (0.047)	1.4 (0.055)	1.6 (0.063)
1.8 (0.071)	2.0 (0.079)	2.2 (0.087)



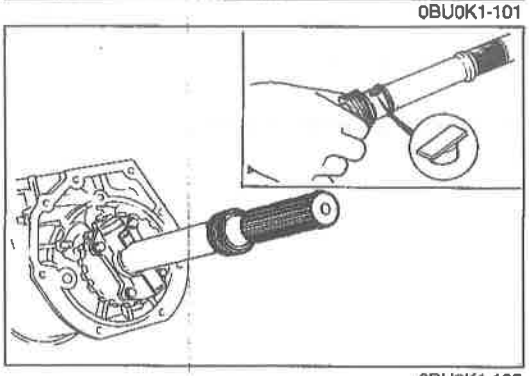
0BU0K1-107

15. Check and adjust the front clutch end play.
    (1) Set the bearing race and bearing in position.



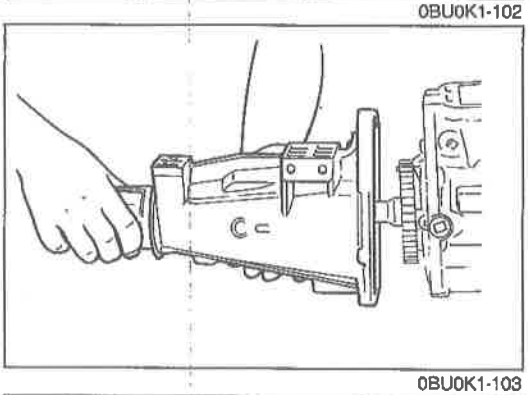
0BU0K1-101

7. Install a new snap ring onto the front of the output shaft.



0BU0K1-102

8. Install the front snap ring, key, and speedometer drive gear onto the output shaft.
9. Secure the speedometer drive gear with the rear snap ring.

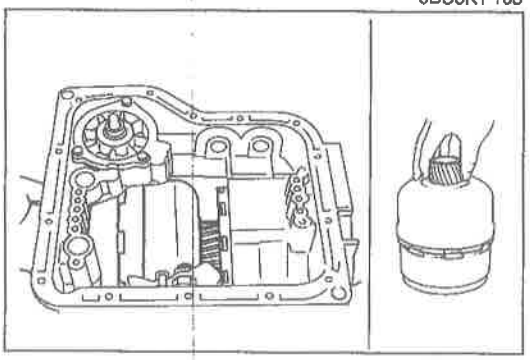


0BU0K1-103

10. Install the extension housing along with a new gasket.

Tightening torque:
20—25 N·m (2.0—2.5 m-kg, 14—18 ft-lb)

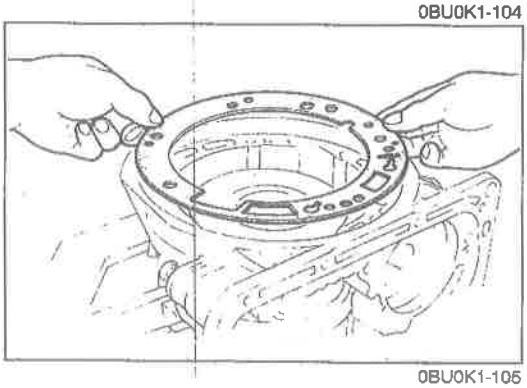
11. Check that the output shaft is locked with the manual lever in P range.



0BU0K1-104

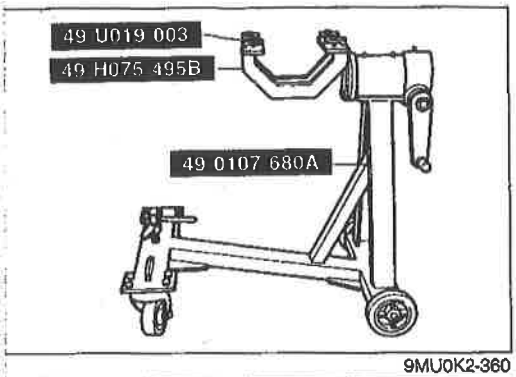
Caution
Be very careful to avoid incorrect assembly of the many similar bearings and races.
(Refer to page K1–116.)

12. Install the front clutch, rear clutch, rear clutch hub, front planetary carrier, connecting shell, internal gear, sun gear, bearing, and bearing races as a unit into the transmission case.



0BU0K1-105

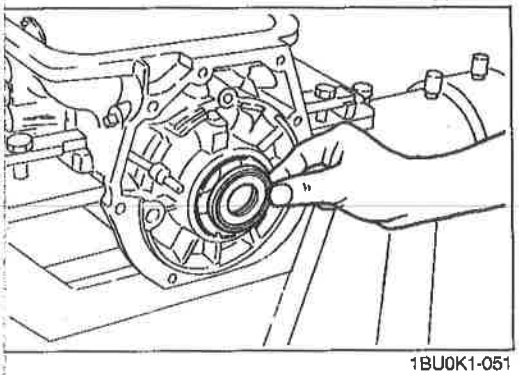
13. Set a new gasket into the front of the case.



9MU0K2-360

Procedure

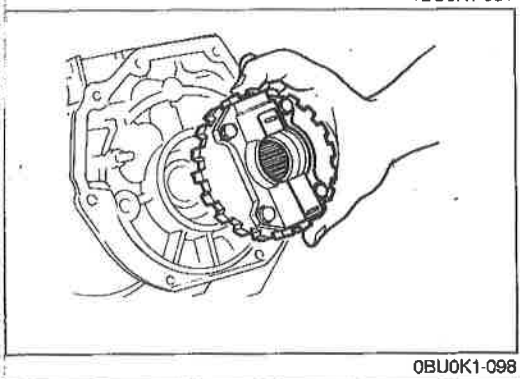
1. Assemble the **SST** as shown.
2. Mount the transmission case onto the **SST**.



1BU0K1-051

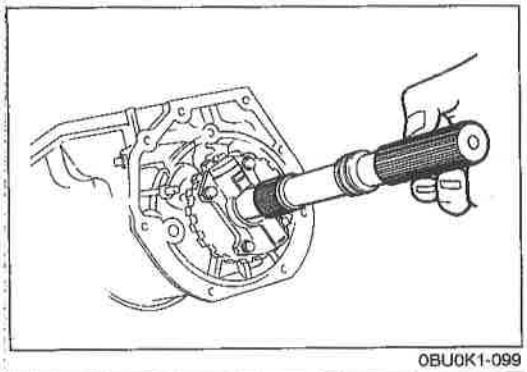
3. Apply petroleum jelly to the bearing, and install it into the rear of the transmission case shown in the figure.

   Bearing outer diameter: 53.0mm (2.087 In)



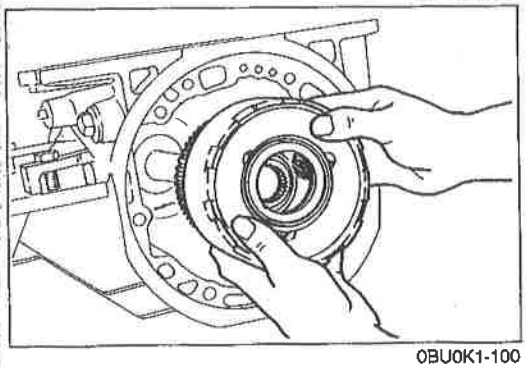
0BU0K1-098

4. Install the oil distributor in the transmission case.



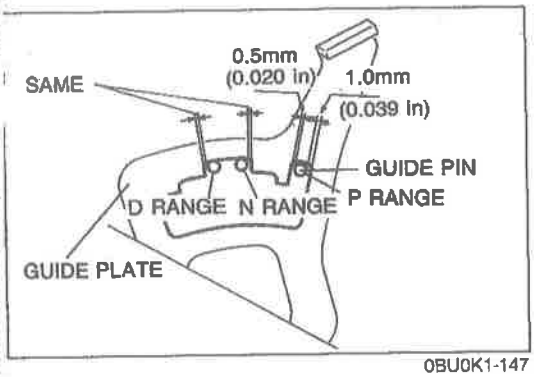
0BU0K1-099

5. Insert the output shaft.



0BU0K1-100

6. Install the rear planetary gear unit (connecting drum, rear planetary pinion carrier and one-way clutch) in the low and reverse brake side.



0BU0K1-147

6. Measure the clearance between the guide plate and the guide pin in P range.

Clearance
Front: Approx. 1mm (0.039 in)
Rear : Approx. 0.5mm (0.020 in)

7. Move the selector lever to N and D ranges and check that the clearance between the guide plate and guide pin is the same in both ranges.

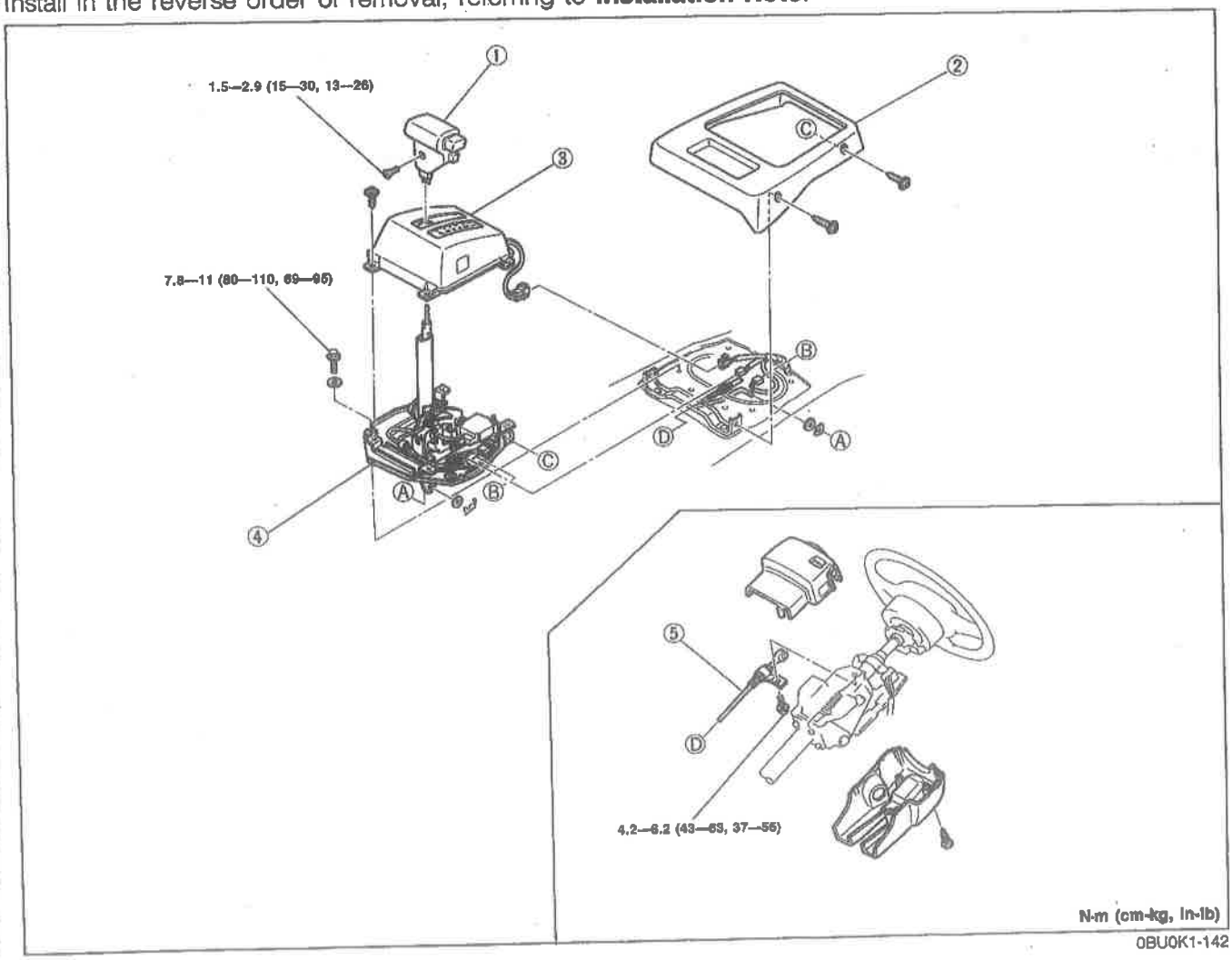
8. If not equal, readjust locknuts A and B.
9. Check the selector lever operation. (Refer to Inspection.)

Indicator
Adjust the body of the indicator to properly align with the selector.

0BU0K1-148

REMOVAL AND INSTALLATION

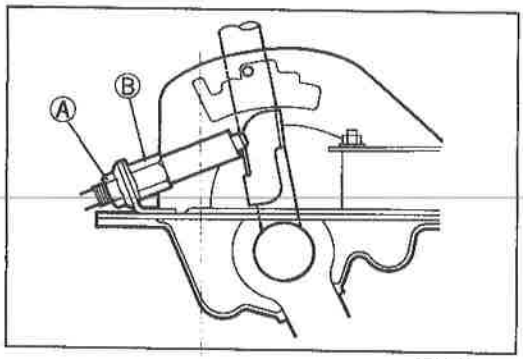
Disconnect the negative battery cable.
Remove in the order shown in the figure, referring to **Removal Note**.
Inspect all parts, and repair or replace as necessary.
Install in the reverse order of removal, referring to **Installation Note**.



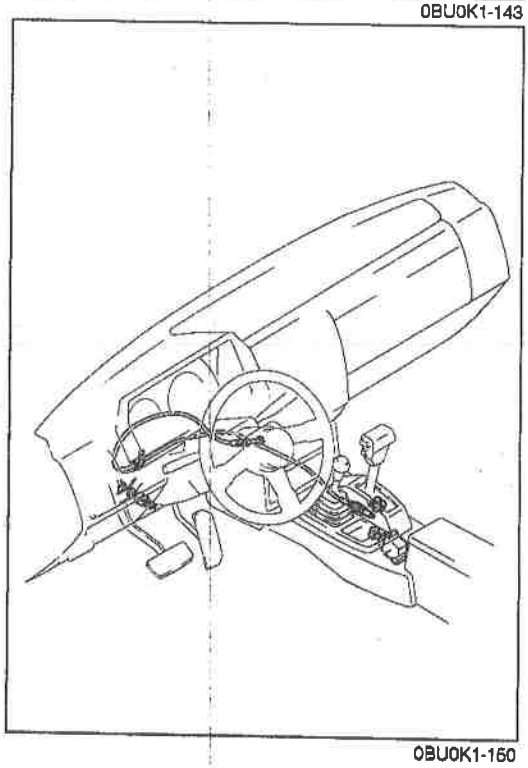
0BU0K1-142

1. Selector knob
2. Console
3. Indicator panel
   Installation ..... page K1–130
4. Selector lever
   Removal ..... page K1–129
   Installation ..... page K1–130
5. Interlock cable
   Removal ..... page K1–129
   Installation ..... page K1–129

0BU0K1-149



0BU0K1-143



0BU0K1-160

Removal Note
Selector lever
1. Shift the selector lever to N range.

Caution
Do not loosen locknut Ⓑ, it is factory preset for proper shift-lock system operation.

2. Loosen the locknut Ⓐ.

Caution
Do not kink the cable.

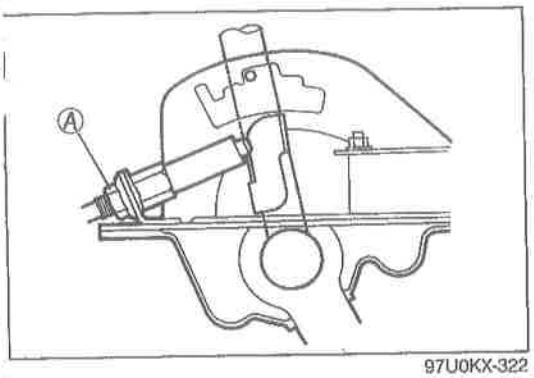
3. Separate the cable from the selector lever.

Interlock cable

Note
Do not remove the interlock cable if not necessary.

1. Remove the instrument panel. (Refer to Section S.)
2. Remove the interlock cable.

Installation Note
Interlock cable
1. Install the interlock cable.
2. Install the instrument panel. (Refer to Section S.)



97U0KX-322

Selector lever

1. Shift the selector lever to N range.
2. Install the selector lever.

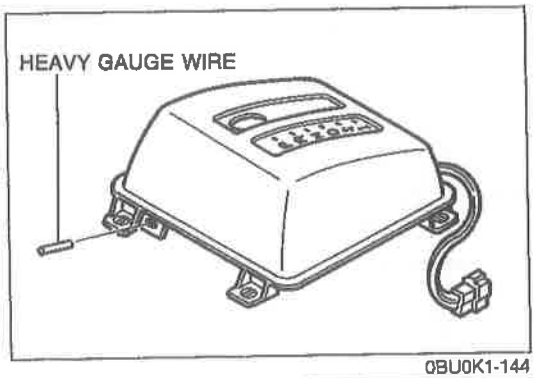
Tightening torque:
7.8—11 N·m (80—110 cm-kg, 69—95 in-lb)

Caution
Do not kink the cable.

3. Install the cable and tighten locknut Ⓐ.

Tightening torque:
9.8—15 N·m (1.0—1.5 m-kg, 7.2—11 ft-lb)

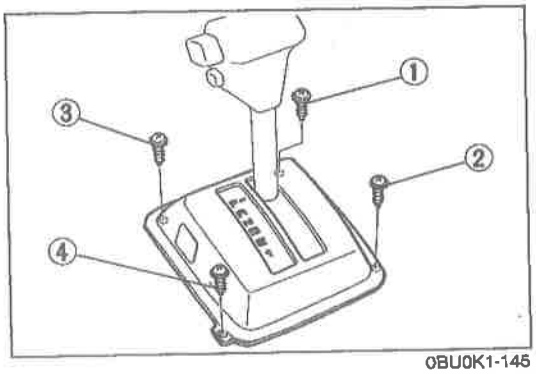
4. Check shift-lock system operation.
(Refer to page K–159, Steps 5 to 8.)



0BU0K1-144

Indicator panel

1. Temporarily install the indicator panel.
2. Align the alignment grooves in the slider with the holes in the indicator panel. Install suitable heavy-gauge wire to hold the slider.

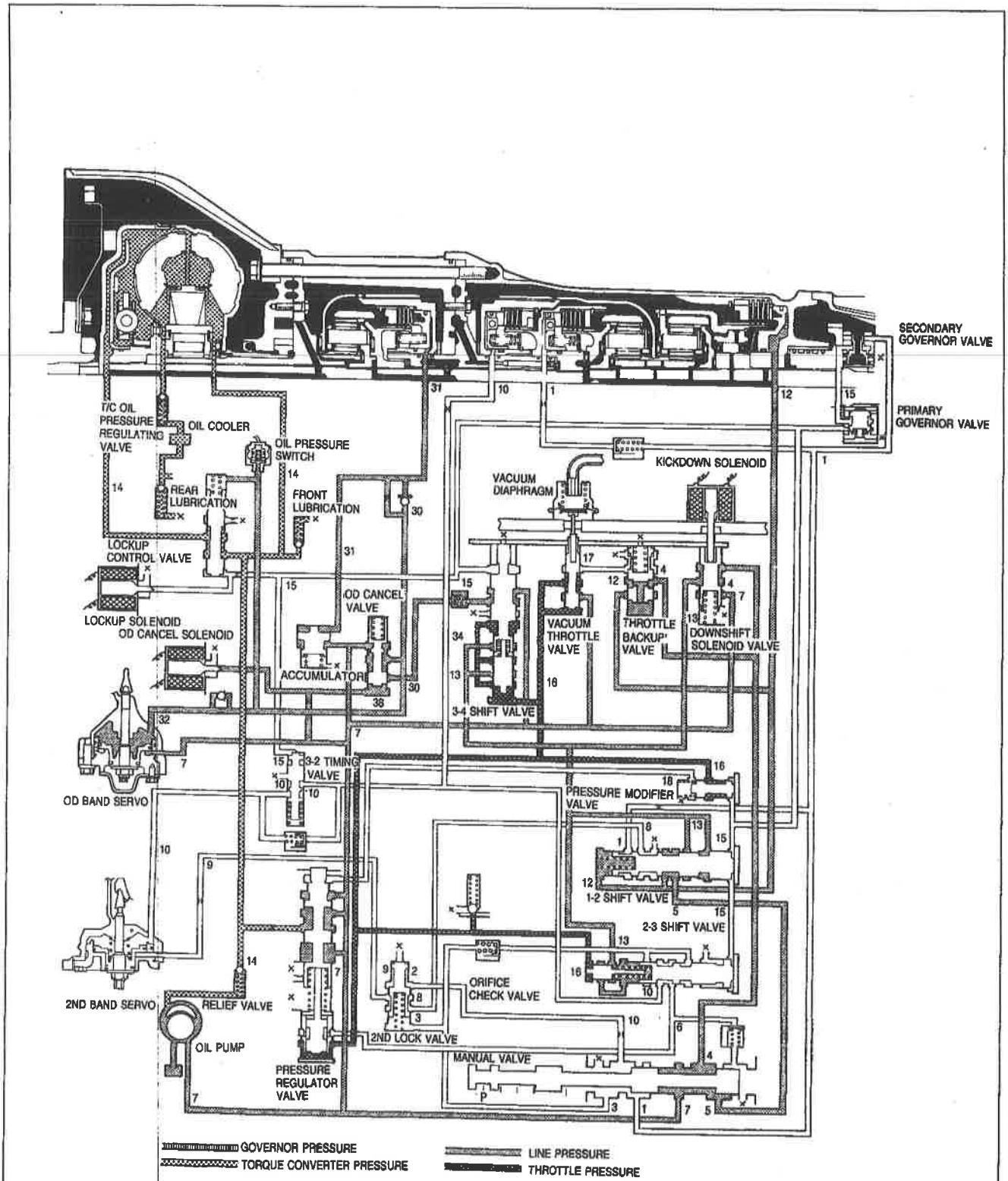


0BU0K1-145

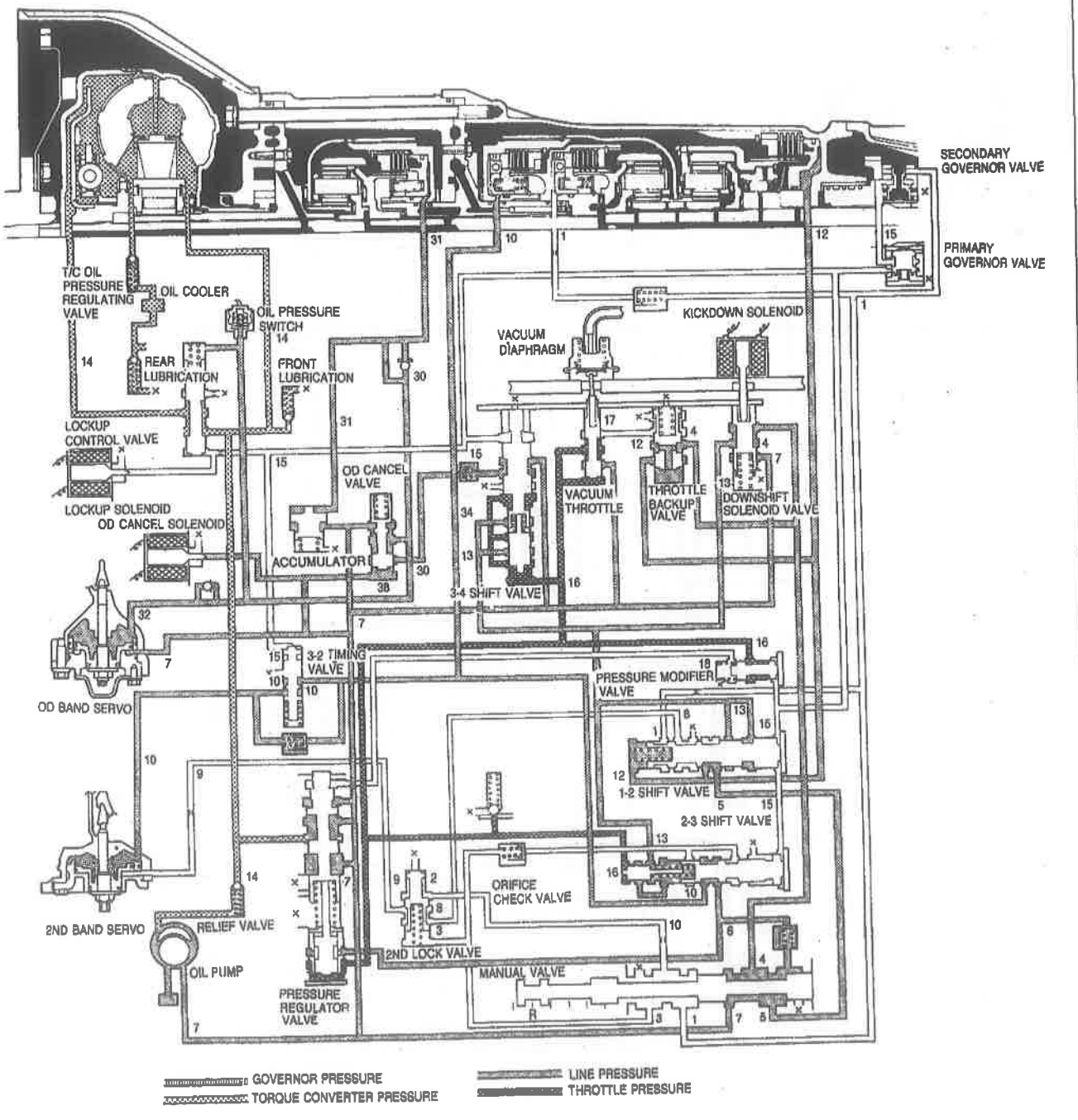
3. Tighten the indicator screws in the order shown in the figure.

HYDRAULIC CIRCUIT

P RANGE

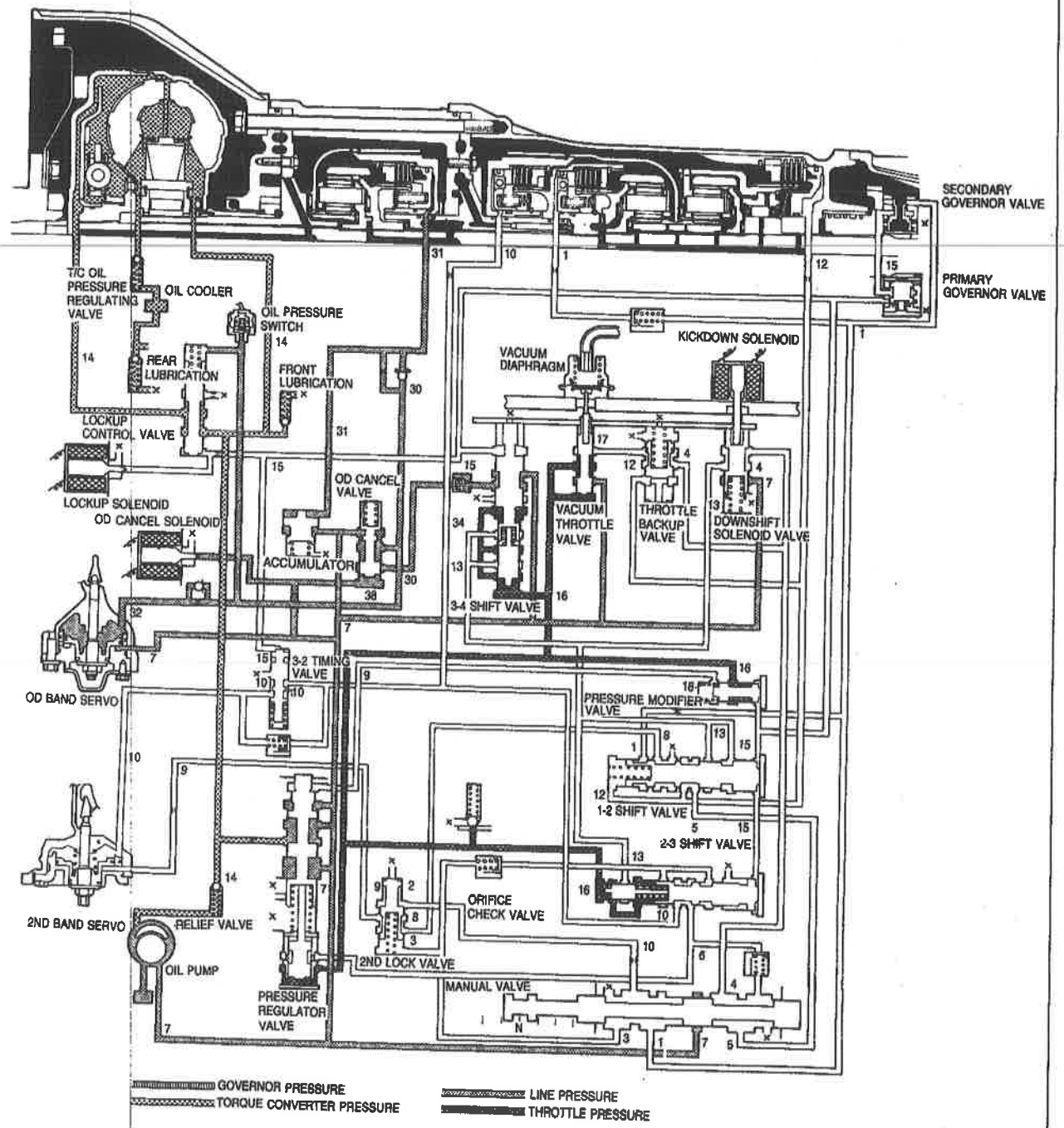


R RANGE

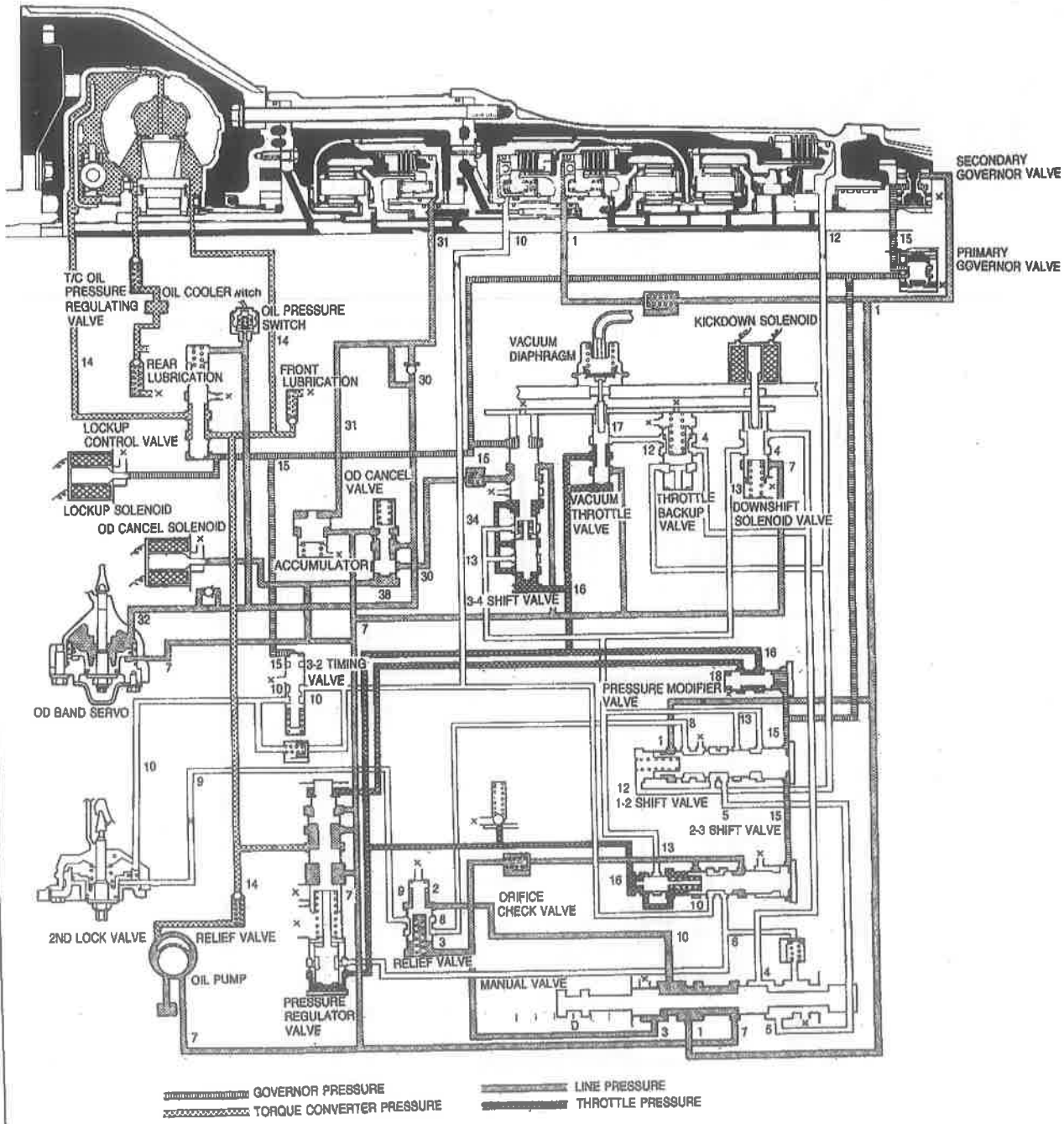


9MU0K2-437

N RANGE

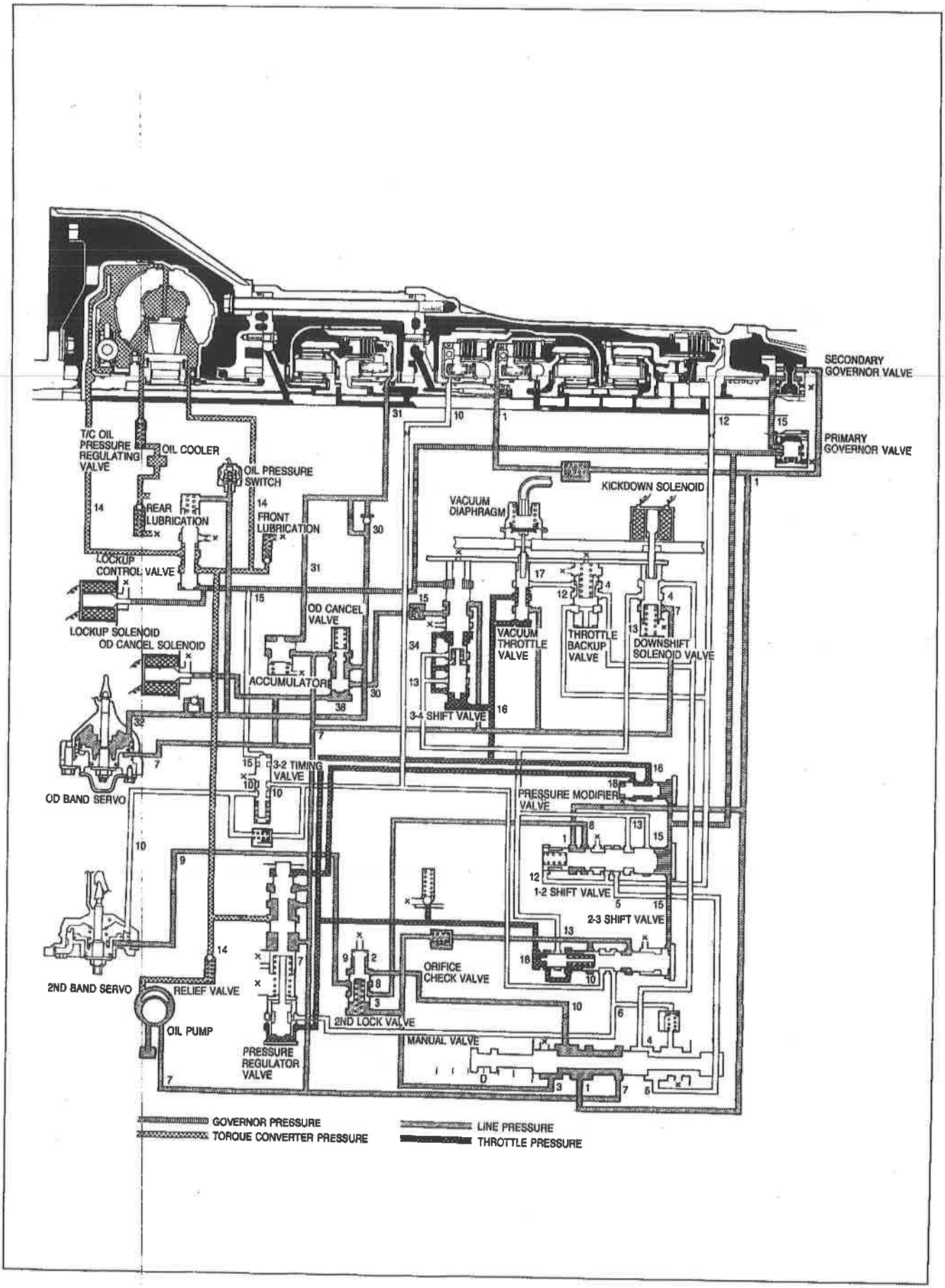

SECONDARY GOVERNOR VALVE
PRIMARY GOVERNOR VALVE
T/C OIL PRESSURE REGULATING VALVE
OIL COOLER
OIL PRESSURE SWITCH
REAR LUBRICATION
FRONT LUBRICATION
LOCKUP CONTROL VALVE
LOCKUP SOLENOID
OD CANCEL SOLENOID
OD CANCEL VALVE
ACCUMULATOR
OD BAND SERVO
2ND BAND SERVO
RELIEF VALVE
OIL PUMP
PRESSURE REGULATOR VALVE
3-2 TIMING VALVE
2ND LOCK VALVE
ORIFICE CHECK VALVE
MANUAL VALVE
N
VACUUM DIAPHRAGM
KICKDOWN SOLENOID
VACUUM THROTTLE VALVE
THROTTLE BACKUP VALVE
DOWNSHIFT SOLENOID VALVE
3-4 SHIFT VALVE
PRESSURE MODIFIER VALVE
1-2 SHIFT VALVE
2-3 SHIFT VALVE
GOVERNOR PRESSURE
TORQUE CONVERTER PRESSURE
LINE PRESSURE
THROTTLE PRESSURE

D RANGE; 1ST GEAR

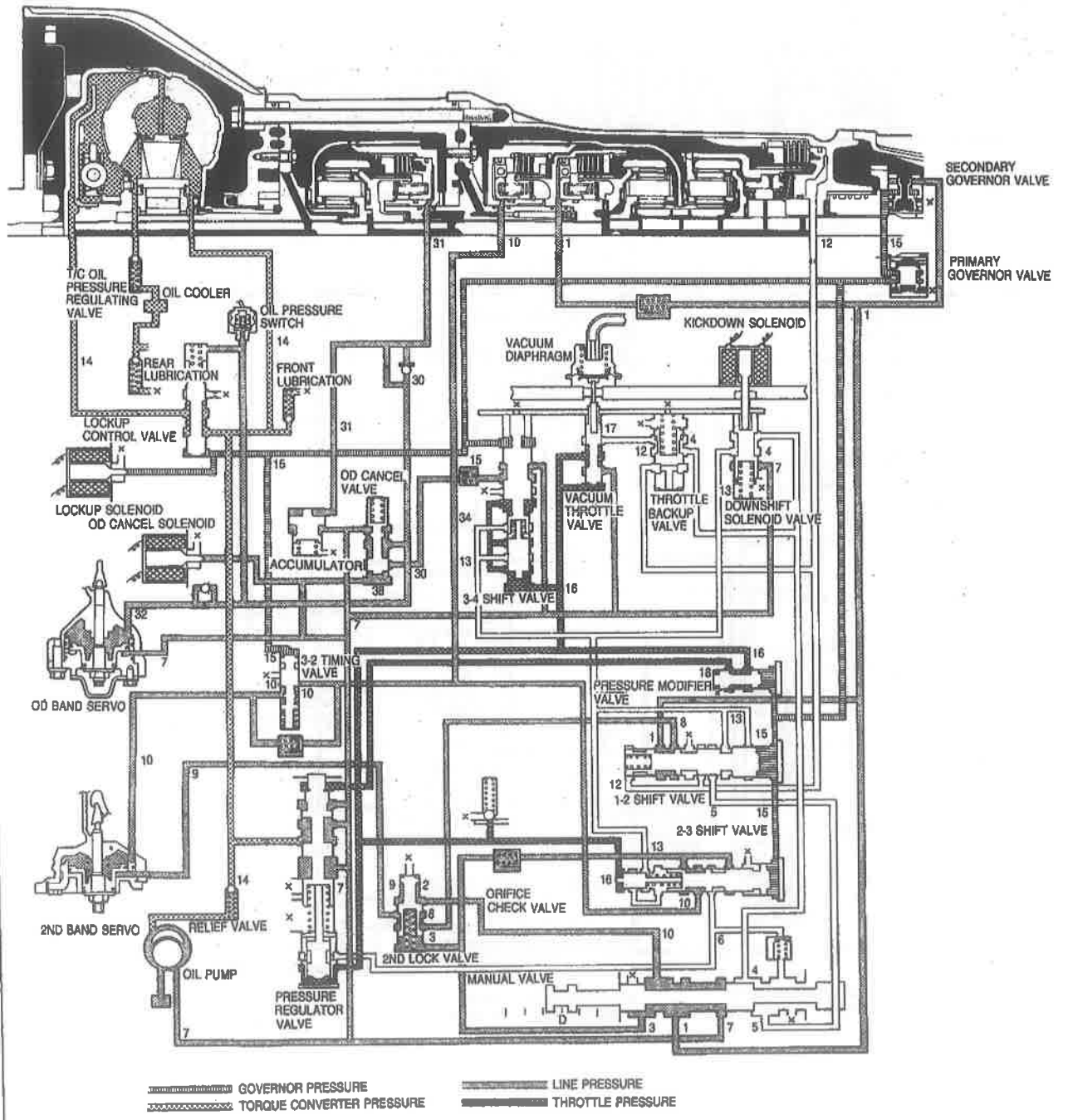


9MU0K2-439

D RANGE; 2ND GEAR

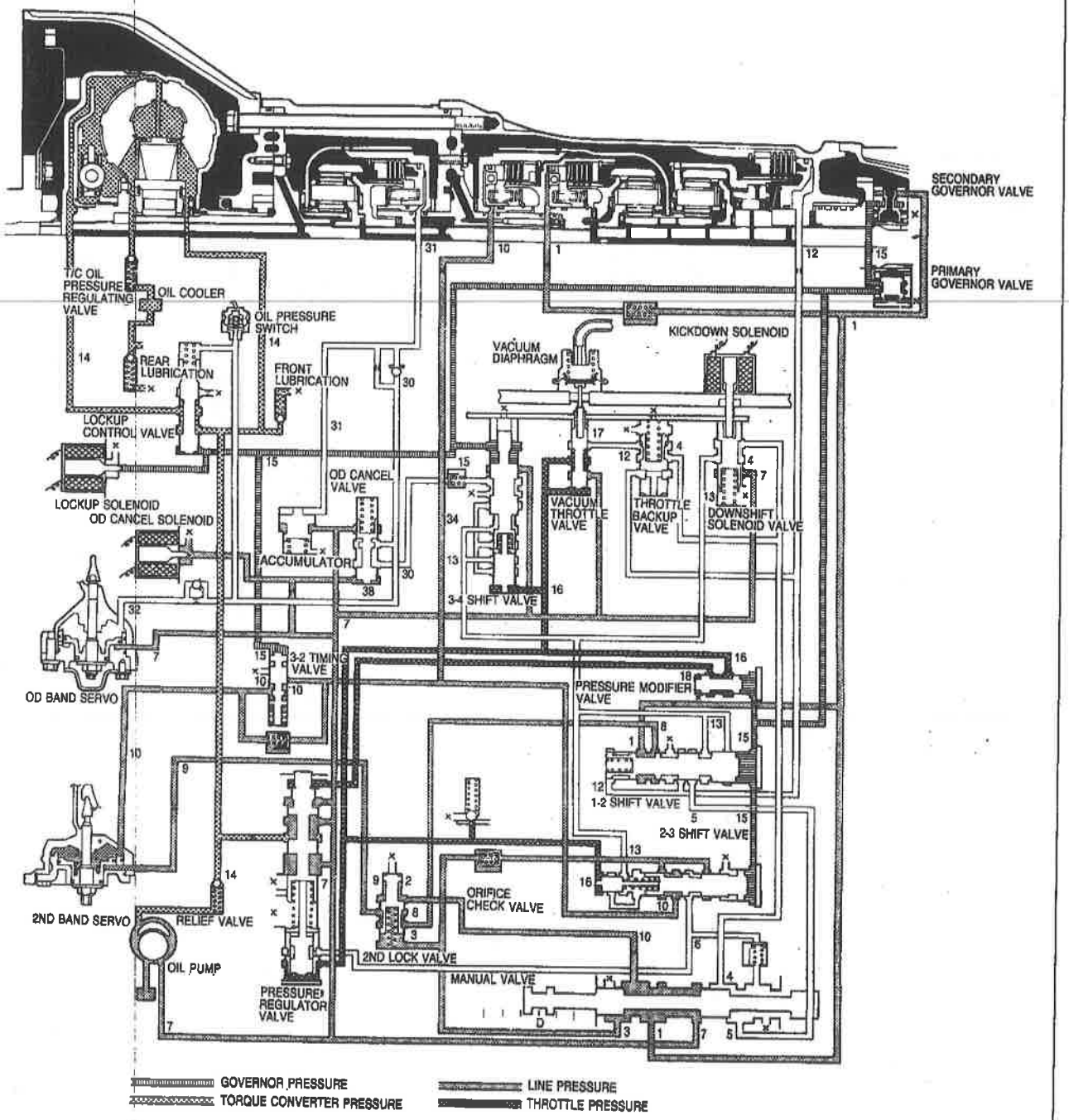


D RANGE; 3RD GEAR

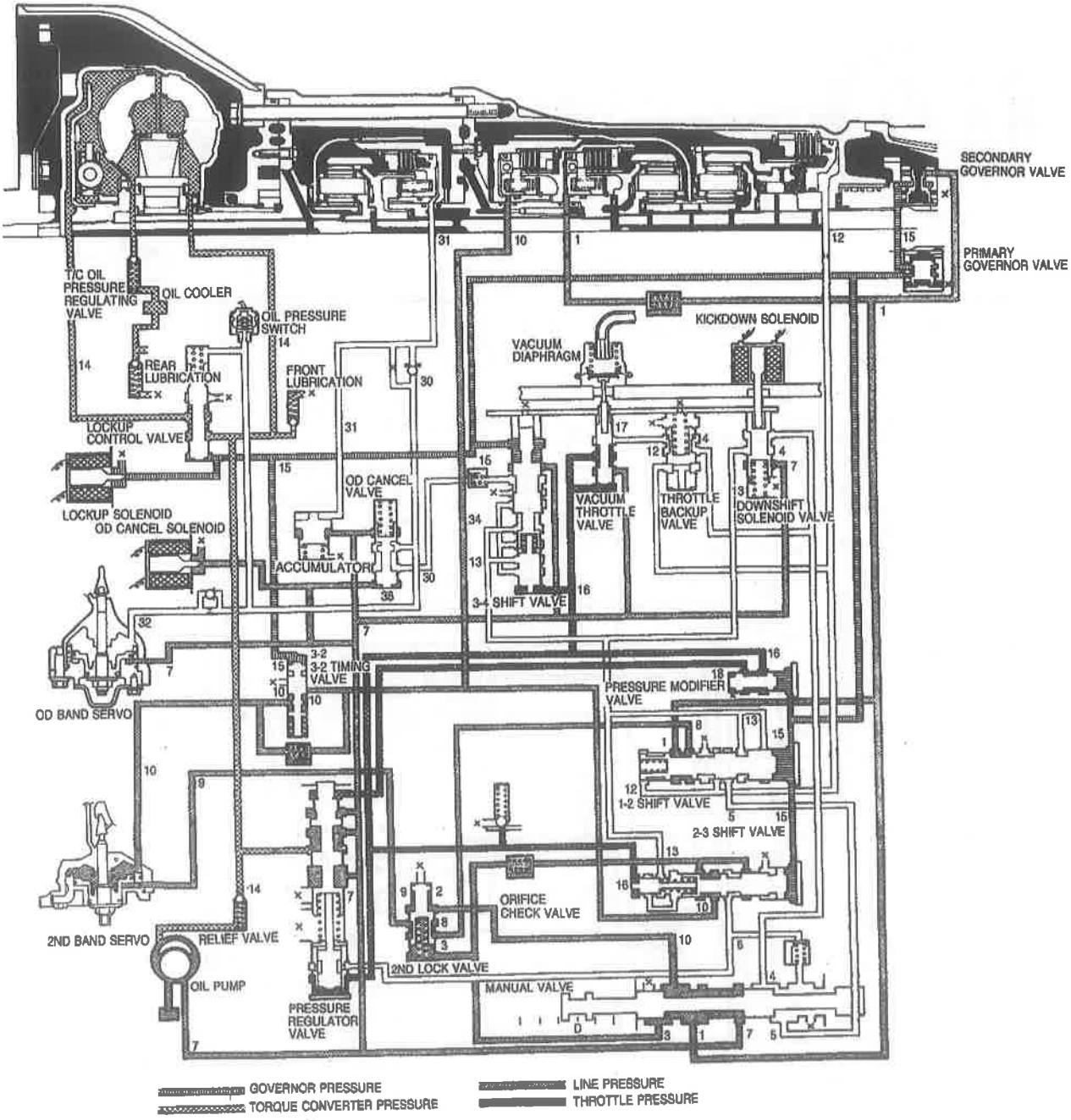


9MU0K2-441

D RANGE; OD

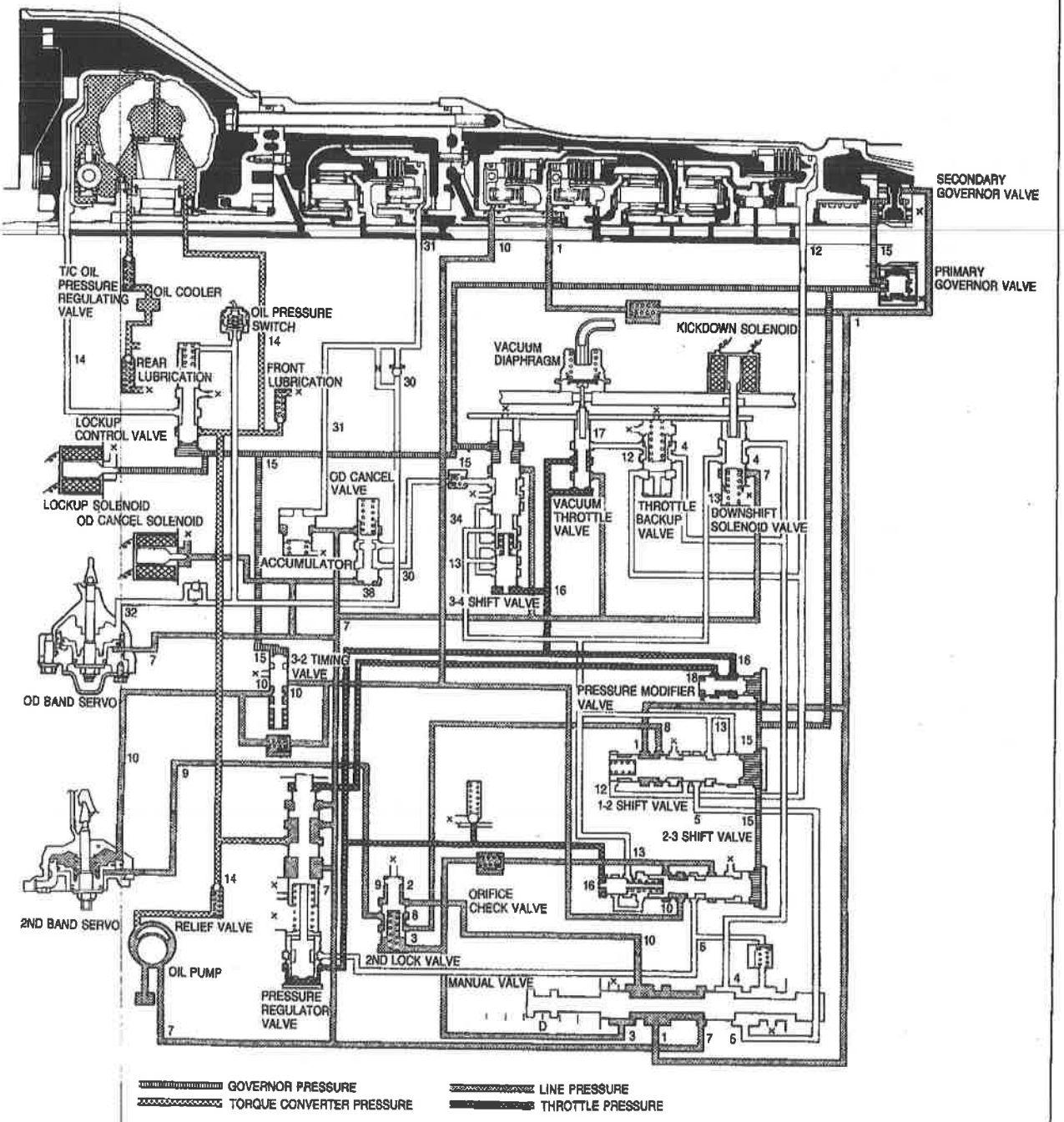

SECONDARY GOVERNOR VALVE
PRIMARY GOVERNOR VALVE
T/C OIL PRESSURE REGULATING VALVE
OIL COOLER
OIL PRESSURE SWITCH
REAR LUBRICATION
FRONT LUBRICATION
LOCKUP CONTROL VALVE
LOCKUP SOLENOID
OD CANCEL SOLENOID
OD CANCEL VALVE
ACCUMULATOR
OD BAND SERVO
3-2 TIMING VALVE
2ND BAND SERVO
RELIEF VALVE
OIL PUMP
PRESSURE REGULATOR VALVE
2ND LOCK VALVE
ORIFICE CHECK VALVE
MANUAL VALVE
VACUUM DIAPHRAGM
KICKDOWN SOLENOID
VACUUM THROTTLE VALVE
THROTTLE BACKUP VALVE
DOWNSHIFT SOLENOID VALVE
3-4 SHIFT VALVE
PRESSURE MODIFIER VALVE
1-2 SHIFT VALVE
2-3 SHIFT VALVE
GOVERNOR PRESSURE
TORQUE CONVERTER PRESSURE
LINE PRESSURE
THROTTLE PRESSURE

D RANGE; OD, LOCKUP OFF

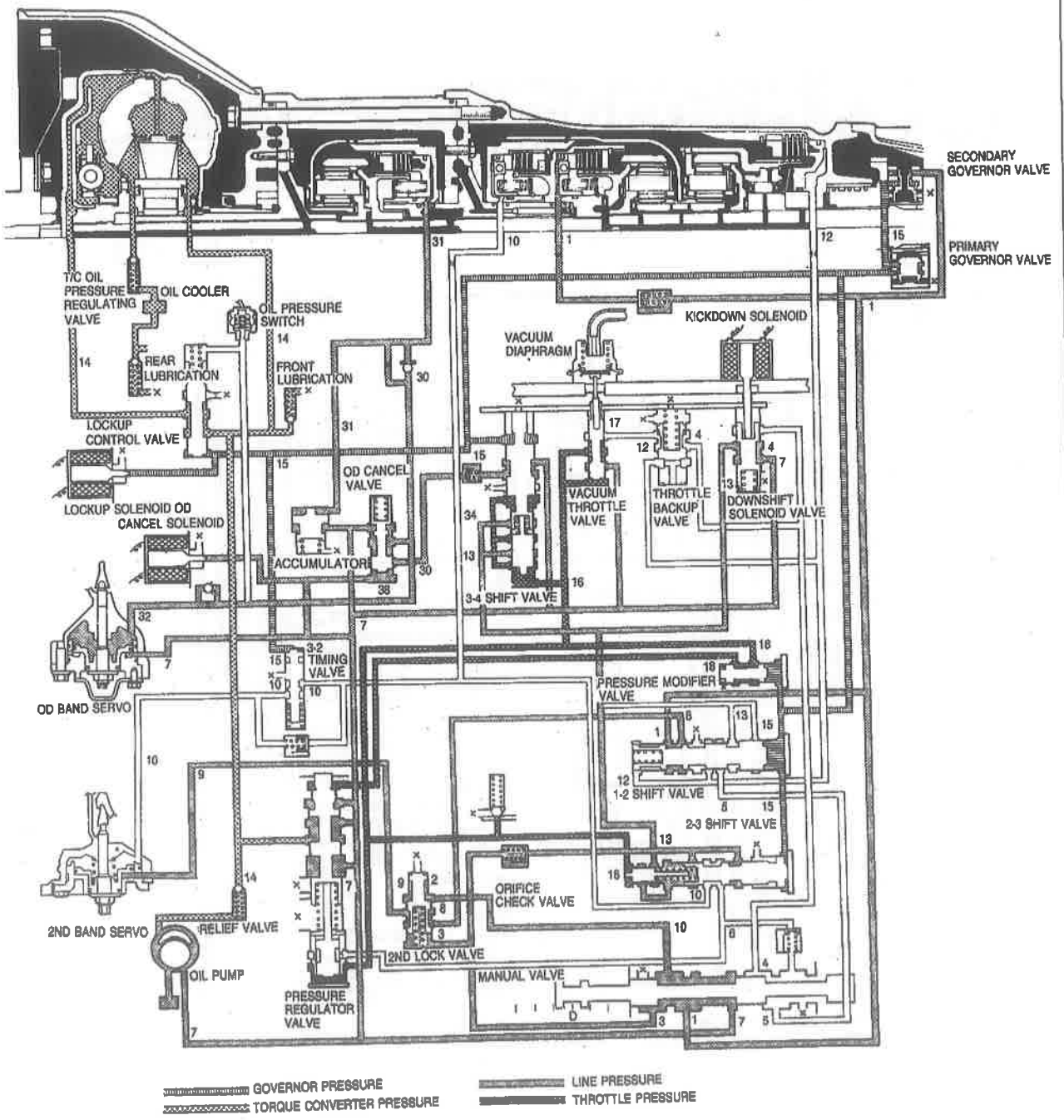


9MU0K2-443

D RANGE; OD, LOCKUP ON

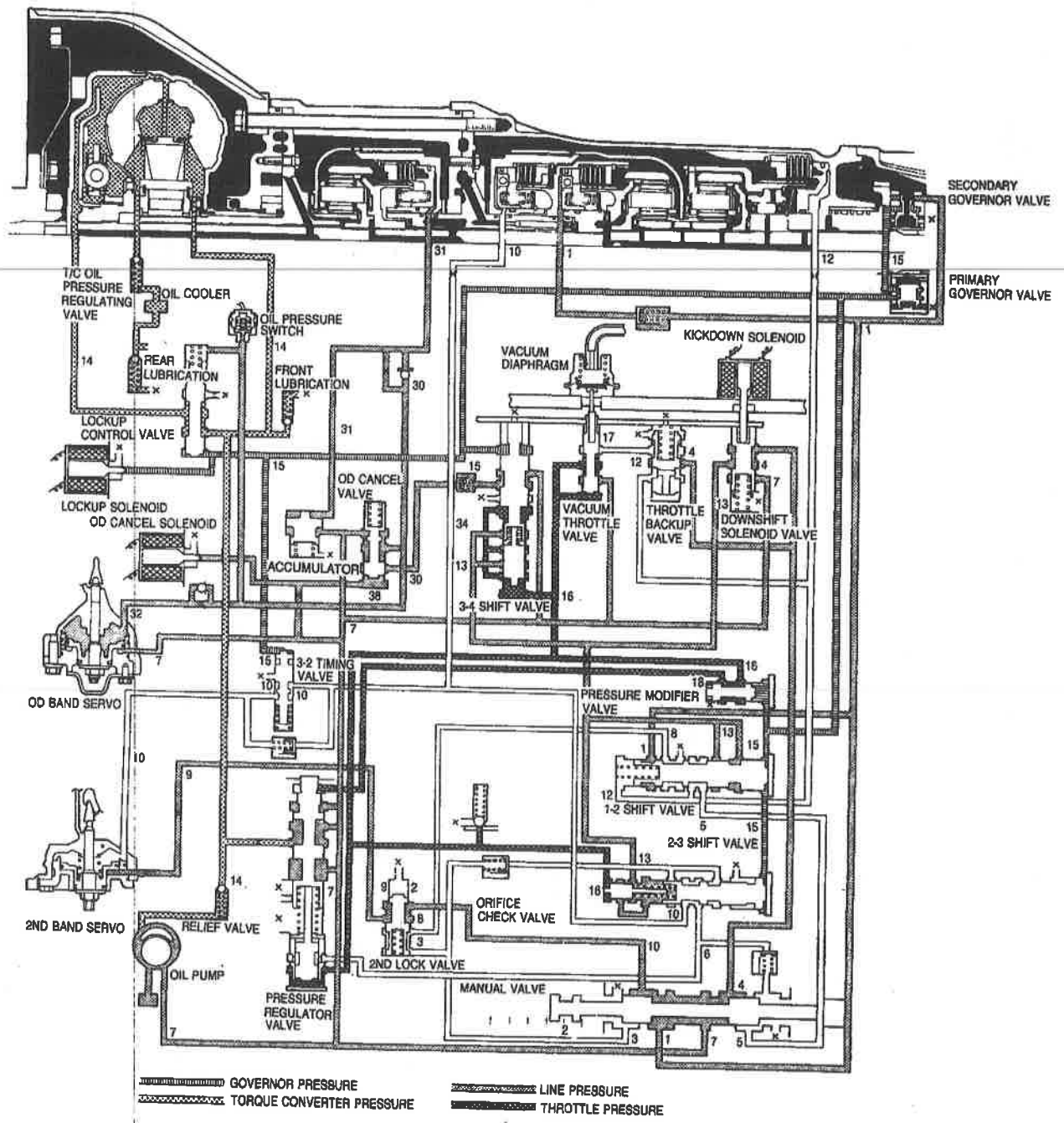


D RANGE; KICKDOWN

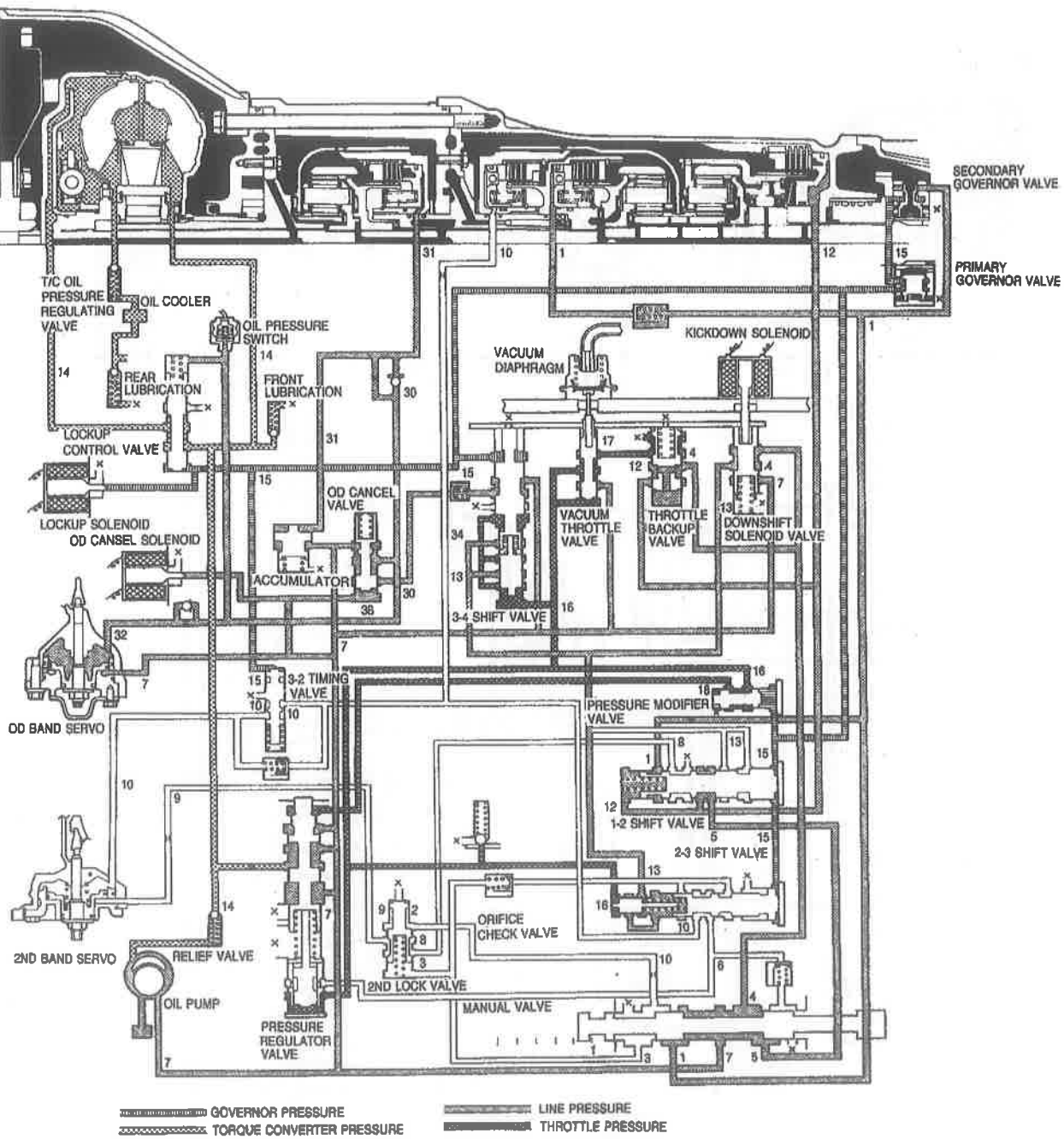


9MU0K2-445

2 RANGE


SECONDARY GOVERNOR VALVE
PRIMARY GOVERNOR VALVE
T/C OIL PRESSURE REGULATING VALVE
OIL COOLER
OIL PRESSURE SWITCH
REAR LUBRICATION
FRONT LUBRICATION
LOCKUP CONTROL VALVE
LOCKUP SOLENOID
OD CANCEL SOLENOID
OD CANCEL VALVE
ACCUMULATOR
OD BAND SERVO
2ND BAND SERVO
RELIEF VALVE
OIL PUMP
PRESSURE REGULATOR VALVE
3-2 TIMING VALVE
2ND LOCK VALVE
ORIFICE CHECK VALVE
MANUAL VALVE
VACUUM DIAPHRAGM
KICKDOWN SOLENOID
VACUUM THROTTLE VALVE
THROTTLE BACKUP VALVE
DOWNSHIFT SOLENOID VALVE
3-4 SHIFT VALVE
PRESSURE MODIFIER VALVE
1-2 SHIFT VALVE
2-3 SHIFT VALVE
GOVERNOR PRESSURE
TORQUE CONVERTER PRESSURE
LINE PRESSURE
THROTTLE PRESSURE

1 RANGE; 1ST GEAR



9MU0K2-447

1 RANGE; 2ND GEAR