AUTO TRANS OVERHAUL - R4AC1 & V4AC1

AUTOMATIC TRANSMISSIONS Mitsubishi R4AC1 & V4AC1

APPLICATION

NOTE: Mitsubishi branded vehicles are identified as "Pickup" in this article.

TRANSMISSION APPLICATION

Vehicle Application	Transmission Model
Pickup & Ram-50	
2WD	R4AC1
4WD	V4AC1

IDENTIFICATION

Vehicle information code plate is riveted to firewall in engine compartment. See **Fig. 1** .

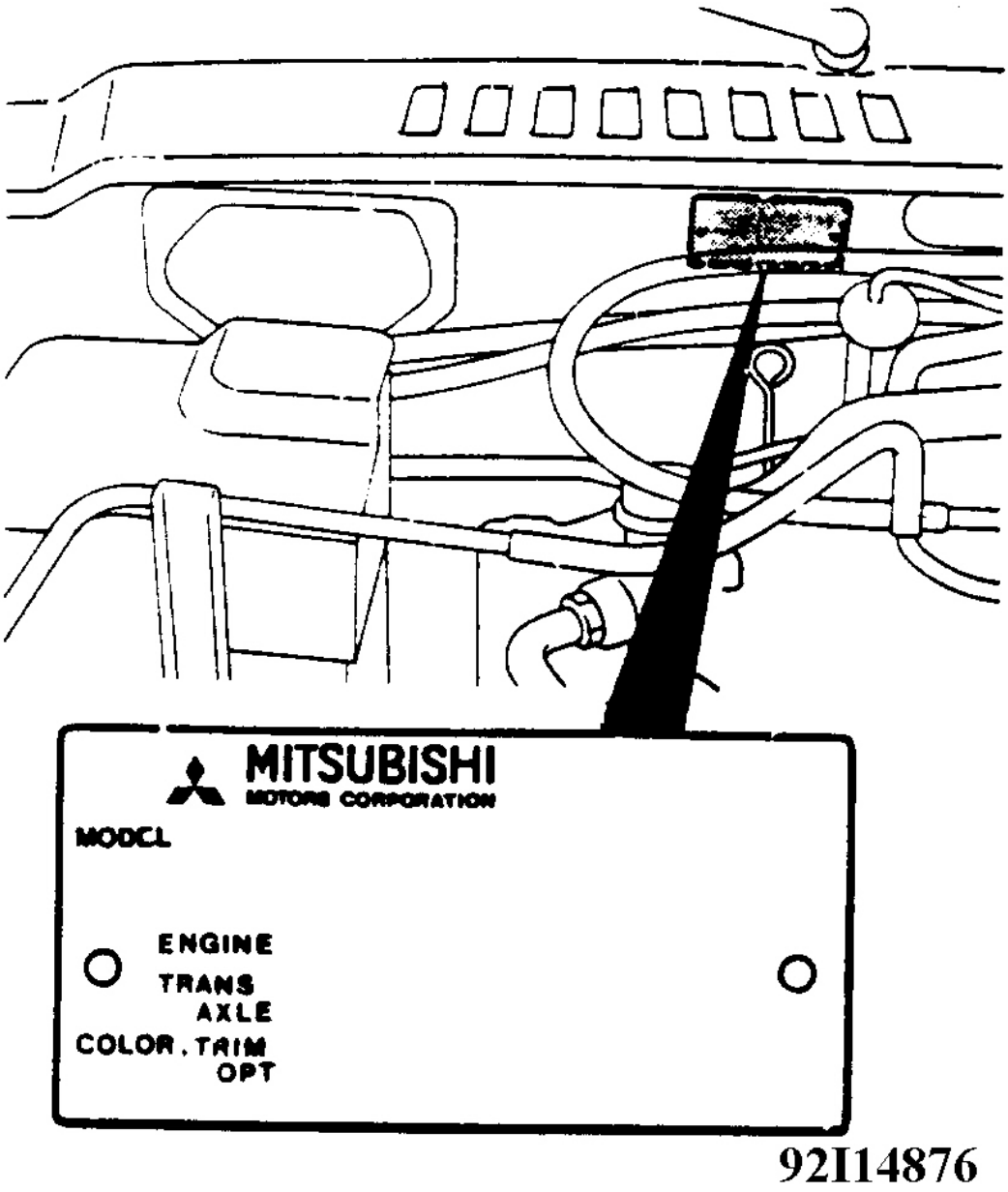

Fig. 1: Locating Vehicle Identification Code Plate
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

DESCRIPTION

Transmissions consist of a 3-element torque converter with lock-up clutch, 4 multiple disc clutch assemblies, 2 band type brakes, and 2 roller type overrunning clutches. Lock-up and overdrive engagement are controlled by a electronic Transmission Control Unit (TCU), which signals valve body solenoids. All other shifting functions

are hydraulically controlled.

The 4WD V4AC1 model is coupled to a Mitsubishi 4WD transfer case assembly. For overhaul and diagnostic information on this transfer case, see appropriate **TRANSFER CASE** article in the TRANSFER CASE section.

LUBRICATION & ADJUSTMENTS

See the TRANSMISSION SERVICING - A/T article in the AUTOMATIC TRANS SERVICING section.

- For Pickup see, **TRANSMISSION SERVICING - A/T**
- For Ram-50 see, **TRANSMISSION SERVICING - A/T**

NOTE: Before diagnosing shifting problems, check fluid level and condition, manual linkage adjustment and throttle linkage adjustment. Fluid level should be checked with gear selector in neutral and fluid at normal operating temperature of approximately 150-200°F (65-93°C). Fluid level is correct if between upper mark and lower mark in "HOT" range on dipstick.

ON-VEHICLE SERVICE

SPEEDOMETER PINION GEAR

Removal

Remove bolt and retainer securing speedometer pinion adapter in overdrive housing. With cable housing connected, carefully work adapter and pinion out of extension case.

Inspection & Installation

1. Check speedometer cable housing for fluid and replace seal in adapter (if necessary). See **Fig. 2** .
2. Before installing pinion adapter assembly, ensure adapter flange and its mating area on overdrive housing are perfectly clean. Dirt or sand will cause misalignment resulting in speedometer pinion gear noise.
3. Note number of gear teeth and install speedometer pinion gear into adapter. Rotate speedometer pinion gear and adapter assembly so number on adapter, corresponding to number of gear teeth, is in the 6 o'clock position. Install retainer and bolt. Tighten retainer bolt to 97 INCH lbs. (11 N.m). Refill with transmission fluid as necessary.

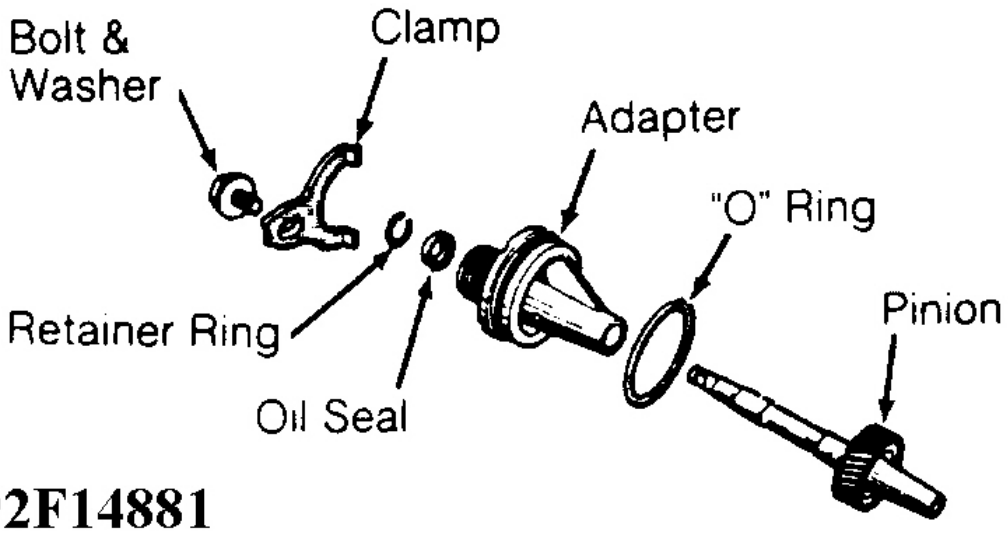

Fig. 2: Exploded View of Speedometer Pinion & Adapter
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

NEUTRAL START & BACK-UP LIGHT SWITCH

NOTE: Neutral start switch circuit is center terminal of 3-terminal switch located near manual lever in transmission case.

Testing & Replacement

1. Remove wiring connector from switch, and test for continuity between center terminal and transmission case ground. Continuity should exist in "P" or "N" only. Check gearshift linkage adjustment before replacing a switch which fails test.
2. Unscrew switch from transmission case. Move gear selector lever to "P" then "N" positions, and ensure switch operating lever fingers are centered in switch opening. See **Fig. 3** . Screw switch and NEW seal into transmission case and tighten to 25 ft. lbs. (34 N.m). Retest switch and refill transmission fluid to proper level.
3. Back-up light switch circuit is 2 outside terminals of switch. To test switch, remove wire connector from switch and check for continuity between 2 outside terminals. Continuity should exist only with transmission in "R" position. Continuity should not exist from terminals to transmission case.

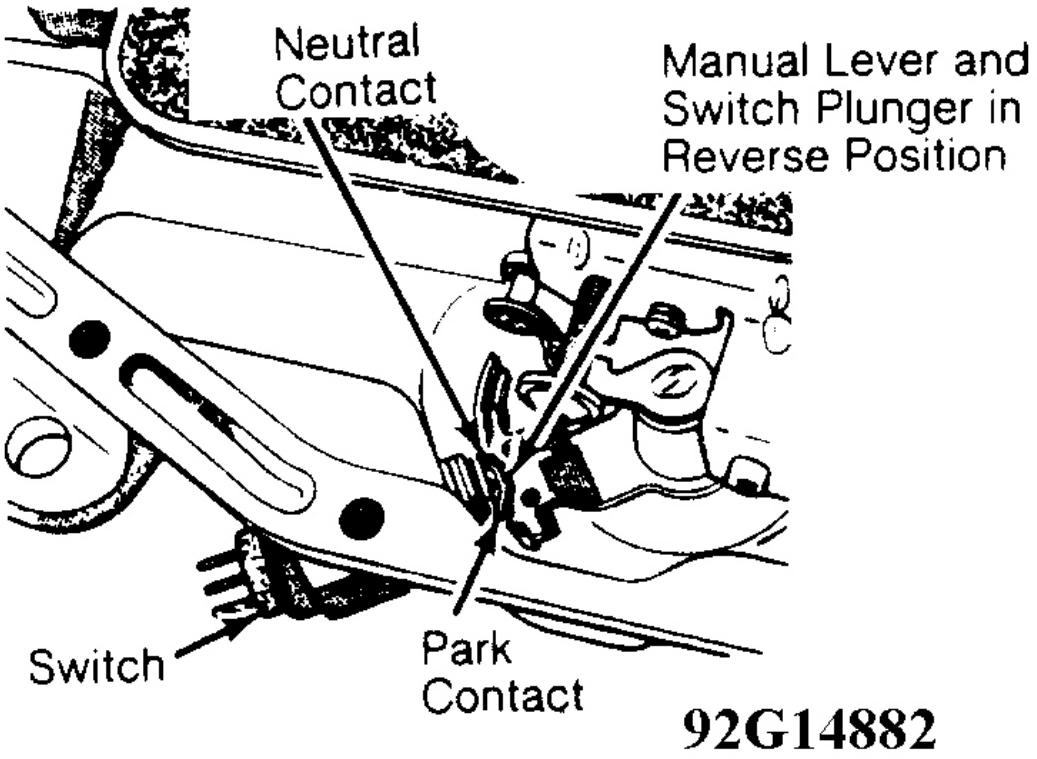

Fig. 3: Testing Neutral Start Switch
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

VALVE BODY & ACCUMULATOR PISTON

Removal

1. Raise and support vehicle. Drain transmission fluid and remove oil pan. Loosen clamp bolts and remove throttle and shift levers. Remove neutral start switch from transmission case. Disconnect electronic lock-up solenoid wire from connector at rear of transmission case.
2. Remove 10 bolts securing valve body to transmission case. Hold valve body in position while removing bolts. Lower valve body out of case while pulling forward. It may be necessary to rotate drive shaft to disengage parking gear and sprag. Remove accumulator piston and spring from transmission case and inspect. Replace manual lever shaft seal at this time (if necessary).

Installation

1. Ensure neutral start switch is not installed in transmission case. Place valve body manual lever in manual low position to move parking rod to rear position.

2. Engage park sprag with parking gear, and insert parking rod into case past the sprag as valve body is installed. Install accumulator piston in transmission case and position spring between piston and valve body. Position valve body in case and install retaining bolts finger tight.
3. Install neutral start switch and move manual lever to Neutral position. Snug bolts evenly, then tighten to 106 INCH lbs. (12 N.m). Connect lock-up solenoid wire to connector at rear of transmission case. Install gear selector lever and tighten clamp bolt. Ensure lever shaft does not bind in transmission case. If necessary, loosen valve body and realign.
4. Ensure throttle shaft seal is in place, then install flat washer and throttle lever and tighten clamp bolt. Connect throttle and gear selector linkage, and adjust as required. Install oil pan with NEW gasket and refill fluid to proper level.

TROUBLESHOOTING

HARSH ENGAGEMENT FROM NEUTRAL TO "D" OR "R"

Engine idle speed too high, valve body leakage or malfunction, hydraulic pressure high, faulty rear clutch or lock-up clutch.

DELAYED ENGAGEMENT FROM NEUTRAL TO "D" OR "R"

Hydraulic pressure too low, valve body leakage or malfunction, low-reverse servo, band or linkage malfunction, low fluid level, incorrect gearshift linkage adjustment, oil filter clogged, faulty oil pump, input shaft seal ring leaking, aerated fluid, engine idle speed too low, reaction shaft seal rings leaking, faulty front clutch or rear clutch.

RUN-A-WAY UPSHIFT

Hydraulic pressure too low, valve body leakage or malfunction, low fluid level, oil filter clogged, incorrect throttle linkage adjustment, aerated fluid, reaction shaft support seal rings leaking, kickdown servo circuit malfunction, or faulty front clutch or overrunning clutch.

NO UPSHIFT

Hydraulic pressure too low, valve body malfunction, low fluid level, incorrect throttle linkage adjustment, governor support seal rings leaking, reaction shaft support seal rings leaking, kickdown servo circuit malfunction, faulty front clutch or overrunning clutch, or governor malfunction.

NO KICKDOWN OR NORMAL DOWNSHIFT

Valve body malfunction, incorrect throttle linkage adjustment, reaction shaft support seal rings leaking, governor malfunction, or kickdown servo band malfunction.

SHIFTS ERRATICALLY

Hydraulic pressure too low, valve body malfunction, low fluid level, incorrect gearshift linkage adjustment, oil filter clogged, faulty oil pump, faulty front clutch, throttle linkage misadjusted, governor support seal rings

broken or worn, reaction shaft support seal rings leaking, governor malfunction, or kickdown servo malfunction.

SLIPS IN DRIVE

Hydraulic pressure too low, valve body malfunction, low fluid level, incorrect gearshift linkage adjustment, oil filter clogged, faulty oil pump, input shaft seal rings leaking, aerated fluid, incorrect throttle linkage adjustment, overrunning clutch not holding, worn, broken or seized, or faulty rear clutch.

SLIPS IN REVERSE

Hydraulic pressure too low, low-reverse band out of adjustment, valve body malfunction, low-reverse servo or band malfunction, worn or broken reaction support seal rings, low fluid level, incorrect gearshift linkage adjustment, aerated fluid, faulty oil pump, or faulty front clutch.

HARSH UPSHIFT

Hydraulic pressure incorrect, throttle linkage misadjusted, or kickdown band out of adjustment.

DELAYED UPSHIFT

Incorrect throttle linkage adjustment, kickdown band out of adjustment, governor malfunction, reaction shaft support seal rings leaking, or worn or faulty front clutch.

NO LOCK-UP

Faulty oil pump, governor valve sticking, valve body malfunction, faulty torque converter, failed TCU, or lock-up solenoid or lock-up valve malfunction.

STAYS IN LOCK-UP

Switch valve, lock-up valve, lock-up timing valve malfunction, or governor valve sticking.

TESTING

ROAD TEST

1. Warm engine and transmission to normal operating temperature, approximately 150-200°F (65-93°C). Ensure fluid level, fluid condition, and control linkage adjustments have been checked and are correct.
2. Transmission operation should be checked in each gear range for any variation in shifting. Check for slipping or engine speed flare-up. Note whether shifts are harsh or spongy. See **Fig. 4** .

Lever Position	Over-Drive	Start Safety	Parking Sprag	Transmission						Overdrive		
				Clutches				Bands		Clutches		
				Front	Rear	Over Running	Lock-Up	K/D Front	Reverse/ Rear	OD	Over Running	Direct
"P" – PARK		X	X									
"R" – REVERSE	2.21			X					X			X
"D" – DRIVE												
First	2.74				X	X					X	X
Second	1.54				X			X			X	X
Third	1.00			X	X		X				X	X
OD	.69			X	X		X			X		
"2" – SECOND												
First	2.74				X	X					X	X
Second	1.54				X			X			X	X
"1" – LOW	2.74				X	X			X		X	X

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Fig. 4: Identifying Components in Use
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

HYDRAULIC PRESSURE TESTS

Preparation

Prior to performing pressure tests ensure fluid level, fluid condition, and control linkage adjustments have been checked and are correct. Fluid must be at normal operating temperature of 150-200°F (65-93°C). Install an engine tachometer that can be seen from under car. Raise vehicle on hoist which allows rear wheels to turn. Disconnect throttle rod and shift rod levers. After pressure tests are completed, reinstall port plugs and tighten to 10 ft. lbs. (14 N.m).

Line Pressure Test

1. Attach gauges to line pressure and rear servo pressure ports. See **Fig. 5** . Operate engine at 1000 RPM for following tests.
2. Move gear selector lever to "1" or "L" range, all the way forward. Read pressures on both gauges as throttle lever on transmission is moved from full forward position to full rearward position.
3. Line pressure should be 54-60 psi (3.8-4.2 kg/cm^2) with throttle lever forward, and gradually increase as lever is moved rearward to 90-96 psi (6.3-6.7 kg/cm^2).
4. Rear servo pressure should read within 3 psi (1.5 kg/cm^2) of line pressure. This tests pump output, pressure regulation, and condition of rear clutch and rear servo hydraulic circuits.

Lubrication Pressure Test

1. Attach gauges to line pressure and tee into rear cooler line fitting. Move gear selector lever to the "2" range position. Operate engine at 1000 RPM for following test.
2. Read pressure on both gauges as throttle lever is moved from full forward position to full rearward position. Line pressure should read 54-60 psi (3.8-4.2 kg/cm^2) with throttle lever forward, and gradually

increase as lever is moved rearward to 90-96 psi (6.3-6.7 kg/cm^2).

3. Lubrication pressure should be 5-15 psi (.4-1.1 kg/cm^2) with lever forward, and 10-30 psi (.7-2.1 kg/cm^2) with lever rearward. This tests pump output, pressure regulation, condition of rear clutch, and lubrication hydraulic circuits.

Front Servo Release Pressure Test

1. Attach gauges to line pressure and front servo release pressure ports. See **Fig. 5** . Operate engine at 1600 RPM for following test. Move gear selector lever to "D" range.
2. Read pressure on both gauges as throttle lever is moved from full forward to full rearward position. Front servo release is pressurized only in direct drive and should be within 3 psi (1.5 kg/cm^2) of line pressure until upshift point.
3. This tests pump output, pressure regulation, condition of rear clutch, front clutch, and lock-up clutch hydraulic circuits.

Rear Servo Apply Pressure Test

1. Attach 300 psi gauge to rear servo apply port. See **Fig. 5** . Operate engine at 1600 RPM for following test.
2. Move gear selector lever to "R" range position. Rear servo pressure should read 145-175 psi (10.2-12.3 kg/cm^2) with throttle lever forward, and increase as throttle lever is moved rearward to 230-280 psi (16.2-19.7 kg/cm^2).
3. This tests pump output, pressure regulation, condition of front clutch, and rear servo hydraulic circuits. Move gear selector lever to "D" range and ensure rear servo pressure drops to 0 psi. This tests for leakage into rear servo, which can cause reverse band burn out.

Test Result Indications

1. If proper line pressure, minimum to maximum, exists in any one test, pump and pressure regulator are working properly.
2. Low pressure in "D", "2", and "1" or "L" but correct in "R": indicates rear clutch circuit leakage. Low pressure in "D" and "R" but correct in "2": indicates front clutch circuit leakage. Low pressure in "R" and "1" or "L", but correct in "2": indicates rear servo circuit leakage. Low line pressure in all positions indicates a defective pump, clogged transmission filter, or a stuck pressure regulator valve.

Governor Pressure Test

Governor pressure should respond smoothly to changes in MPH and should return to 0-1.5 psi (0-.1 kg/cm^2) when vehicle is stopped. High pressure (above 2 psi or .1 kg/cm^2) when vehicle is stopped will prevent transmission from down shifting.

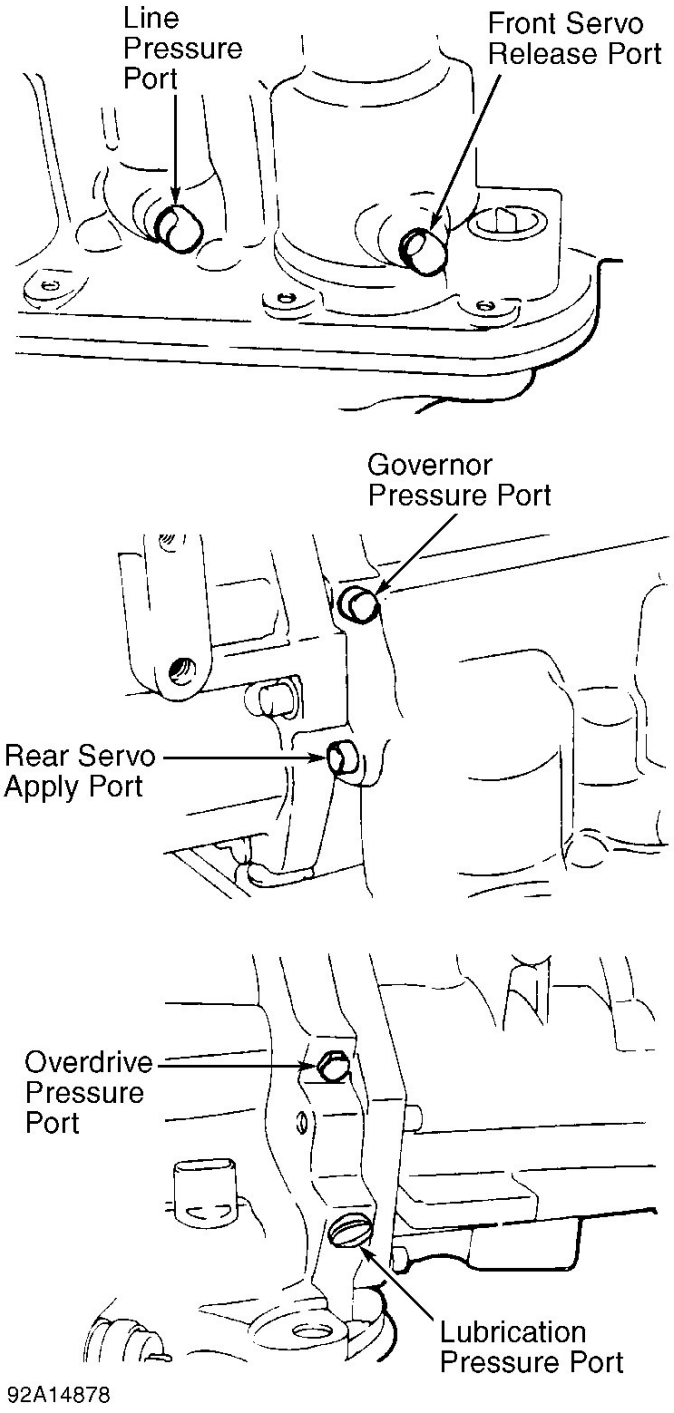


Fig. 5: Locating Pressure Test Ports
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

AIR PRESSURE TESTS

A no drive condition may exist even with correct fluid pressure, due to inoperative clutches or bands. Inoperative components may be located by using air pressure instead of fluid pressure. Front and rear clutches, kickdown servo and low-reverse servo may be tested by applying 30 psi (2.1 kg/cm^2) air pressure to their respective passages after valve body assembly has been removed.

Front Clutch

Apply air pressure into front clutch apply passage and listen for a dull thud, which indicates front clutch is operating. Hold air pressure on for a few seconds and inspect system for excessive oil leaks. See **Fig. 6** .

Rear Clutch

Apply air pressure into rear clutch apply passage and listen for a dull thud, which indicates rear clutch is operating. Inspect for excessive oil leaks. If dull thud cannot be heard in clutches, place finger tips on clutch housing and apply air pressure again. Movement of piston should be felt as clutch is applied. See **Fig. 6** .

Front Servo (Kickdown Servo)

Apply air pressure into front servo apply passage. See **Fig. 6** . Operation of servo is indicated by tightening of front band. Spring tension on servo pistons should release band.

Rear Servo (Low-Reverse Servo)

Apply air pressure into rear servo apply passage. Operation of servo is indicated by tightening of rear band. See **Fig. 6** . Spring tension on servo piston should release band. If clutches and servos operate properly, no upshift or erratic shift conditions indicate malfunctions exist in valve body.

Overdrive Clutch

Apply air pressure into overdrive apply passage and listen for dull thud, which indicates overdrive clutch is operating. See **Fig. 6** .

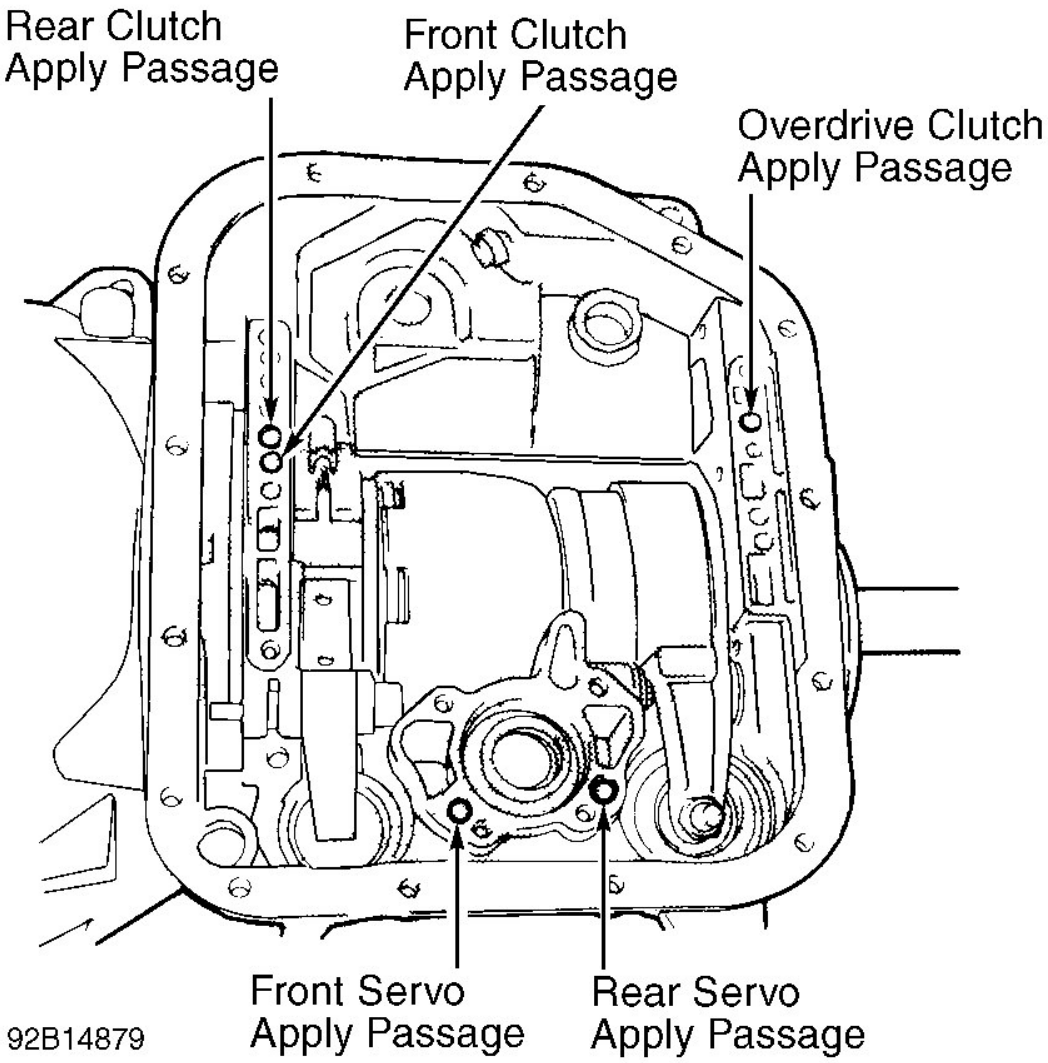


Fig. 6: Identifying Air Pressure Test Locations
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

STALL TEST

CAUTION: DO NOT let anyone stand in front of vehicle during test.

Stall Test Procedure

1. Check engine and transmission fluid levels at normal operating temperatures (150-200°F or 65-93°C) and adjust if necessary.

2. Both parking brake and service brake must be fully applied and front wheels blocked while performing this test. **DO NOT** hold throttle open longer than necessary to obtain maximum engine speed reading, and never longer than 5 seconds at a time.
3. If more than one stall test is required, operate engine at approximately 1000 RPM in Neutral for 20 seconds to cool fluid between tests. Stall speed for vehicles equipped with 2.4L engines should be 2000-2300 RPM. Vehicles equipped with 3.0L engines should have stall speed of 2300-2600 RPM.

Stall Test Results

1. If stall speed exceeds maximum specification by more than 200 RPM, transmission clutch slippage is indicated. Follow hydraulic pressure test or air pressure test procedures to isolate the cause of the slippage. Refer to procedures in either **HYDRAULIC PRESSURE TESTS** or **AIR PRESSURE TESTS** .
2. Low stall speeds, with a properly tuned engine, indicates torque converter stator clutch problems. Road testing will be necessary to identify and isolate the exact problem.
3. If stall speeds are 250-350 RPM below specification and vehicle operates properly at highway speeds with poor through-gear acceleration, stator overrunning clutch is slipping. This applies to lock-up and non lock-up torque converters.
4. If stall speed and acceleration are normal, but excessively high throttle opening is required to maintain highway speeds, stator clutch has seized. Any stator defects require torque converter replacement.

ELECTRICAL COMPONENT TESTING

NOTE: Overdrive Relay, Overdrive Switch and Transmission Control Unit testing procedures not available from manufacturer. Test circuit wiring and solenoids (as necessary). See Fig. 28 .

OIL TEMPERATURE SENSOR

1. Remove oil temperature sensor from transmission. Fill a metal container with enough transmission fluid to place sensor into fluid up to threaded portion of sensor. Heat transmission fluid. Install a thermometer into transmission fluid.
2. Use an ohmmeter to check resistance of sensor. Connect one ohmmeter lead to oil temperature sensor terminal. Connect other ohmmeter lead to body of sensor. As fluid temperature rises, check resistance of sensor.
3. At 257°F (125°C) or less, continuity should not exist. At 289°-304°F (143°-151°C), continuity should exist. Sensor is okay if continuity and temperature values are as described. Replace sensor if necessary. Install sensor into transmission and check fluid level. Refill transmission as necessary.

OVERDRIVE & LOCK-UP SOLENOIDS

1. Inspect solenoid assembly for cut or broken wires, melted or distorted coils, or cut "O" rings. Shake solenoid to verify plunger travels freely. Check orifice in solenoid nozzle and drilled crosshole at solenoid bore in transfer plate for dirt or foreign material.
2. Test solenoid operation by holding solenoid nozzle pointing up and applying 12 volts between center

terminal and 2 outside terminals of solenoid valve connector. Listen for operation noise. See **Fig. 7** . To test overdrive and lock-up circuit wiring, see **WIRING DIAGRAMS** .

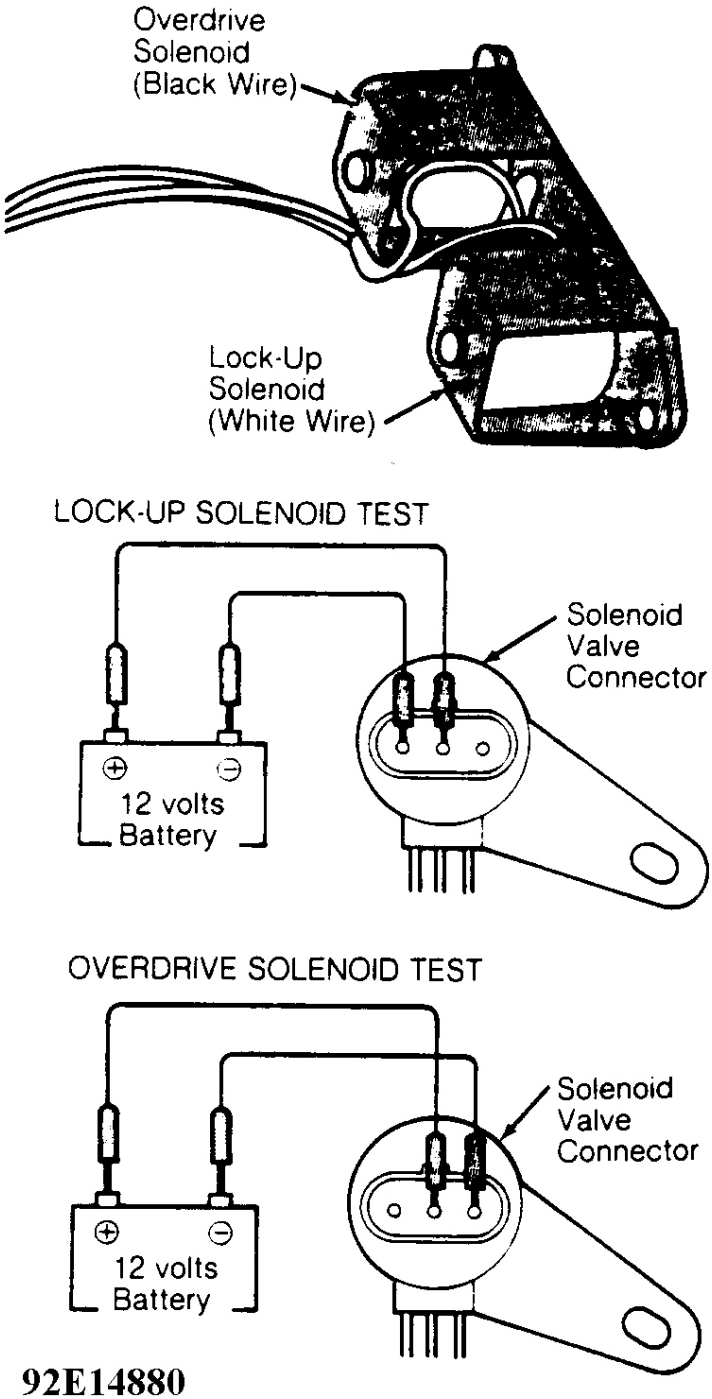


Fig. 7: Checking Overdrive & Lock-Up Solenoids
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

TORQUE CONVERTER

Torque converter is a sealed unit and cannot be disassembled for service. Replace unit if damaged or contaminated.

REMOVAL & INSTALLATION

NOTE: For transmission removal procedure, see the appropriate TRANSMISSION REMOVAL & INSTALLATION - A/T article in the AUTO TRANS SERVICING section.

- For Pickup see, **TRANSMISSION REMOVAL & INSTALLATION - A/T**
- For Ram-50 see, **TRANSMISSION REMOVAL & INSTALLATION - A/T**

TRANSMISSION DISASSEMBLY

1. Prior to transmission disassembly, remove torque converter and measure input shaft end play. End play specifications are .011-.080" (.28-2.03 mm), and are adjusted by replacing thrust washer located between input and intermediate shafts. Record indicator reading for reassembly reference.
2. Remove oil pan and gasket. Remove throttle and gear selector levers, then neutral start switch. Disconnect lock-up solenoid wire from connector at rear of transmission case. Remove valve body. Remove accumulator piston and spring.
3. Remove 7 bolts securing Overdrive (OD) unit to transmission and pull OD unit off intermediate shaft. A bearing and selective spacer may be on overdrive piston, on sliding hub, or intermediate shaft.
4. Tighten front band adjusting screw to hold front clutch retainer, and remove oil pump assembly. Loosen front band adjuster, remove band strut and slide band out of transmission case. Slide front clutch assembly out of transmission case.
5. Slide input shaft and rear clutch assembly out of case. Use caution not to lose thrust washer located between input shaft and intermediate shaft. While supporting intermediate shaft and driving shell, carefully slide planetary gear assemblies forward and out of case.
6. Remove OD piston, then remove 6 OD piston retainer bolts. Remove snap ring and spacer from inside low-reverse drum. Remove OD piston retainer and gasket. Loosen 5 overrunning clutch retainer bolts, and remove bolts when overrunning clutch retainer comes out of transmission case.
7. Loosen rear band adjusting screw. Remove band, low-reverse drum, and overrunning clutch. Using an engine valve spring compressor, compress kickdown servo spring. Remove snap ring and kickdown servo assembly. Using same spring compressor, remove low-reverse servo assembly.

COMPONENT DISASSEMBLY & REASSEMBLY

OIL PUMP & REACTION SHAFT SUPPORT

NOTE: Due to lock-up torque converter, oil pump must be within clearance limits. Oil pump bushing should always be replaced during overhaul.

Disassembly

Remove bolts from rear side of reaction shaft support and lift support off pump. Remove "O" ring from pump housing. See **Fig. 8** . Using a blunt punch, drive oil seal out of pump housing.

Inspection

1. Inspect interlocking seal rings on reaction shaft support for wear or broken locks. Ensure rings turn freely in grooves.
2. Inspect front clutch piston retainer to reaction shaft support No. 1 thrust washer for wear. Washer thickness should be .061-.063" (1.55-1.59 mm). Replace washer (if necessary).
3. Inspect machined surfaces on pump housing and reaction shaft support for nicks and burrs. Inspect pump housing and reaction shaft support bushings for wear or scoring. Replace bushings (if necessary). See **Fig. 8** .
4. Inspect pump gears for pitting or scoring. With gears cleaned and installed in pump housing, place a straightedge across face of gears and pump body. Using a feeler gauge, measure clearance between straightedge and face of gears. Clearance limits are .0004-.0024" (.010-.060 mm).
5. Measure rotor tip clearance between inner and outer rotor teeth. Clearance limits are .0044-.0096" (.112-.244 mm). Clearance between outer gear and its bore in oil pump housing should be .0035-.0075" (.090-.190 mm).

Reassembly

1. Using a pump aligning tool, assemble gears in pump housing. Assemble pump housing and reaction shaft support. Install support to pump housing bolts and snug.
2. Rotate pump gears to ensure free movement. Tighten support-to-pump housing bolts to 15 ft. lbs. (20 N.m). Install NEW oil seal in opening of pump housing with lip of seal facing inward.

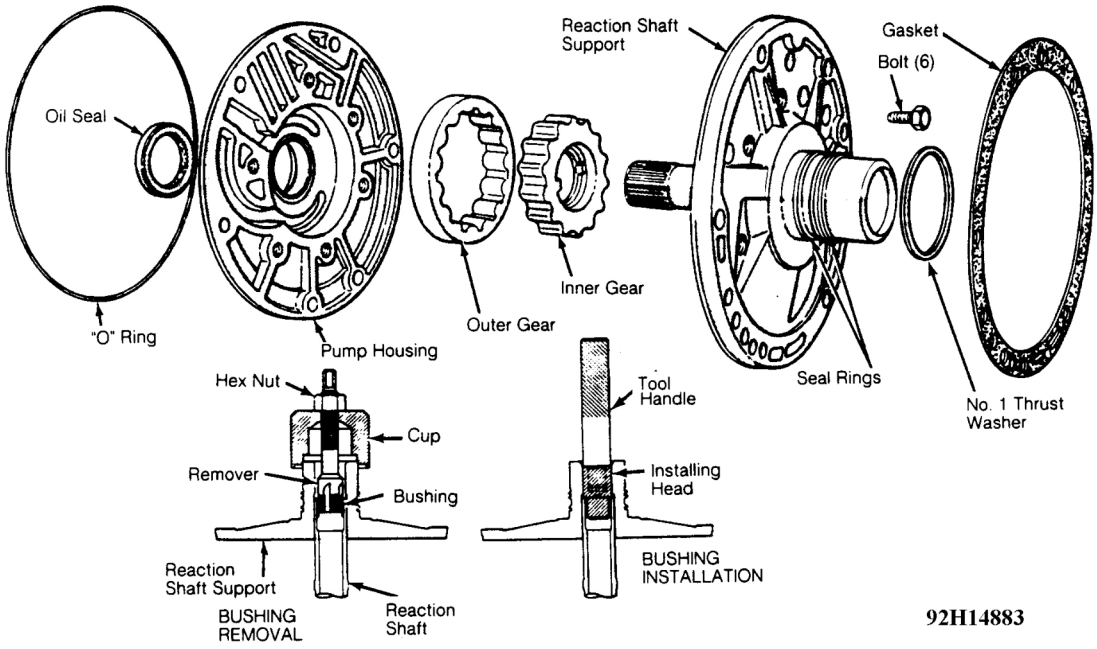


Fig. 8: Exploded View of Oil Pump Assembly
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

FRONT CLUTCH

Disassembly

1. Remove large waved snap ring securing pressure plate in clutch piston retainer. Lift pressure plate and clutch plates out of clutch piston retainer.
2. Compress piston spring and remove snap ring. Remove spring retainer and spring. Invert clutch retainer assembly to remove piston. Remove seals from piston and clutch retainer hub.

Inspection

1. Inspect plates and discs for flatness. Plates and discs must not be warped or cone-shaped. Inspect facing material on all driving discs. Replace discs that are charred, glazed, heavily pitted or show signs of flaking.
2. Inspect driving disc splines for wear or damage. Inspect steel plate and pressure plate surfaces for burning, scoring, or damaged driving lugs. Inspect steel plate lug grooves in clutch retainer for smooth surfaces. Inspect band contacting surface on clutch retainer for scoring.

CAUTION: Band contacting surface of clutch retainer should be protected from damage during disassembly and handling.

3. Ensure check ball in clutch retainer moves freely. Inspect piston seal surfaces in clutch retainer for nicks or deep scratches. Light scratches will not interfere with sealing of seals.

4. Inspect clutch retainer inner bore surface for wear from reaction shaft support seal rings. Inspect clutch retainer bushing for wear or scoring. Replace bushing if necessary.

Reassembly

1. Lubricate and install inner seal on hub of clutch retainer. See **Fig. 9** . Ensure lip of seal faces down and is properly seated in groove.
2. Install outer seal on clutch piston with lip of seal toward bottom of clutch retainer. Lubricate outer edges of seals for easier installation. Place piston assembly in clutch retainer and carefully seat piston in bottom of retainer.
3. Place spring on piston hub, and position spring retainer and snap ring on spring. Compress spring and seat snap ring in hub groove. Lubricate all clutch plates, and install steel plates and clutch plates alternately.
4. Install pressure plate and snap ring, ensuring snap ring is properly seated. Using a feeler gauge, measure maximum clearance between waved snap ring and pressure plate. Clutch plate clearance should be .073-.128" (1.85-3.25 mm).

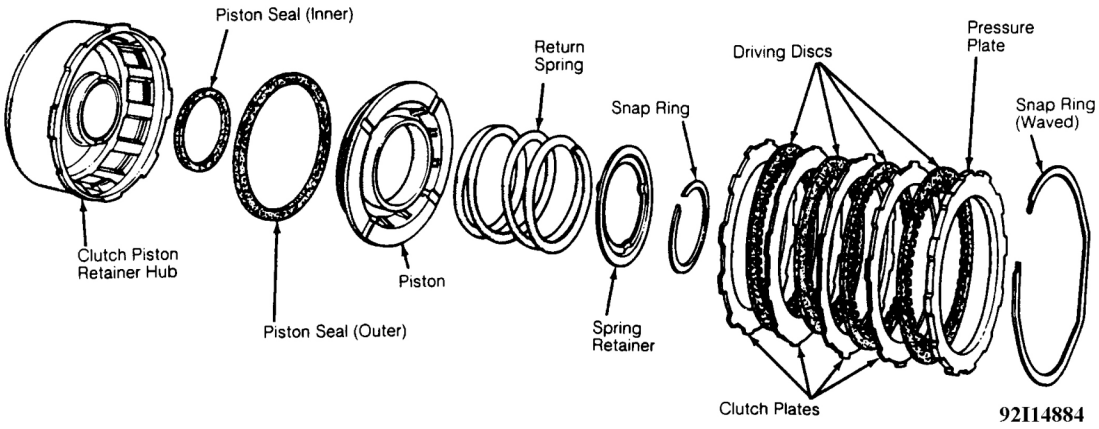


Fig. 9: Exploded View of Front Clutch Assembly
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

REAR CLUTCH

Disassembly

1. Remove large selective snap ring securing pressure plate in clutch piston retainer. Lift pressure plate, clutch plates, and inner pressure plate out of piston retainer. See **Fig. 10** .
2. Carefully pry one end of wave spring out of its groove in clutch piston retainer. Remove wave spring and clutch piston spring. Invert clutch piston retainer assembly to remove piston. Remove inner and outer seals from piston. If necessary, remove snap ring and press input shaft from clutch piston retainer.

Inspection

1. Inspect facing material on all driving discs. Replace discs that are charred, glazed, heavily pitted or show signs of flaking. Inspect driving disc splines for wear or damage. Inspect steel plate and pressure plate

surfaces for burning, scoring or damaged driving lugs. Replace if necessary.

2. Inspect plates and discs for flatness. Plates and discs must not be warped or cone-shaped. Inspect steel plate lug grooves in clutch piston retainer for smooth surfaces. Plates must travel freely in grooves. Ensure check ball in clutch piston retainer moves freely.
3. Inspect seal ring surfaces in clutch piston retainer for nicks or deep scratches. Light scratches will not interfere with sealing of seals. Inspect piston spring and wave spring for distortion or breakage.
4. Inspect seal rings on input shaft for wear. Remove seal rings only if replacement is required. Inspect rear clutch to front clutch No. 2 thrust washer for wear. Washer thickness should be .061-.063" (1.55-1.60 mm). Replace washer (if necessary).

Reassembly

1. If removed, press input shaft into clutch piston retainer and install snap ring. Lubricate and install inner and outer seals on clutch piston. Ensure lips of seals face toward input shaft.
2. Place piston assembly in clutch piston retainer. With a twisting motion, seat piston in bottom of clutch piston retainer. Install clutch piston spring on top of piston in retainer.
3. Install wave spring in retainer groove, ensuring wave spring is fully seated. Install inner pressure plate in clutch piston retainer with raised portion of plate resting on spring. Lubricate all clutch discs, and install lined discs and steel plates alternately. Install outer pressure plate and selective snap ring.
4. Compress outer pressure plate and measure clearance between snap ring and outer pressure plate. Clearance should be .025-.048" (.64-1.22 mm). Low limit clearance is desirable.
5. If necessary, clearance may be adjusted by the use of outer snap rings (selective) of various thicknesses. Snap rings are available in thicknesses of .060, .076, and .098" (1.52, 1.93, and 2.49 mm). Apply grease to No. 2 thrust washer, and install over input shaft.

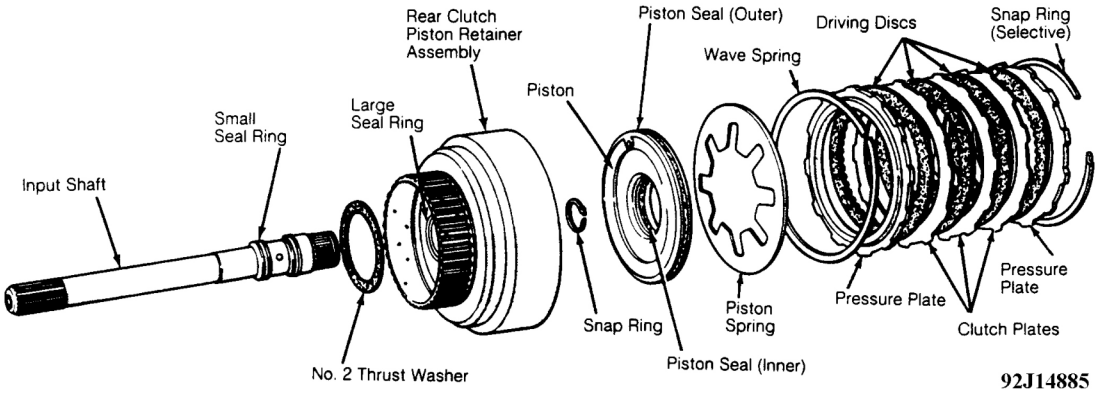


Fig. 10: Exploded View of Rear Clutch Assembly
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

PLANETARY GEAR TRAIN

NOTE: Measure end play of planetary gear assemblies, sun gear and driving shell before removing from intermediate shaft. Clearance should be .005-.048" (.13-1.22 mm), and is measured as shown in the illustration. See Fig. 11 .

Disassembly

1. Remove selective No. 3 thrust washer from forward end of intermediate shaft. Remove selective snap ring from forward end of intermediate shaft.
2. Slide front planetary gear assembly off of intermediate shaft. Remove snap ring and No. 4 thrust washer from forward hub of front planetary gear assembly. Slide front annulus gear and support off planetary gear assembly.
3. Remove No. 5 thrust washer from front side of planetary gear assembly. Remove No. 6 thrust washer from rear side of planetary gear assembly. Slide sun gear, driving shell, and rear planetary gear assembly off of intermediate shaft. Lift sun gear and driving shell off rear planetary gear assembly.
4. Remove snap ring and No. 8 thrust plate from sun gear at rear side of driving shell. Slide sun gear out of driving shell and remove spacer and No. 7 thrust plate.
5. Remove No. 9 thrust washer from forward side of rear planetary gear assembly, and remove planetary gear assembly from rear annulus gear. Remove No. 10 thrust washer from rear side of planetary gear assembly.

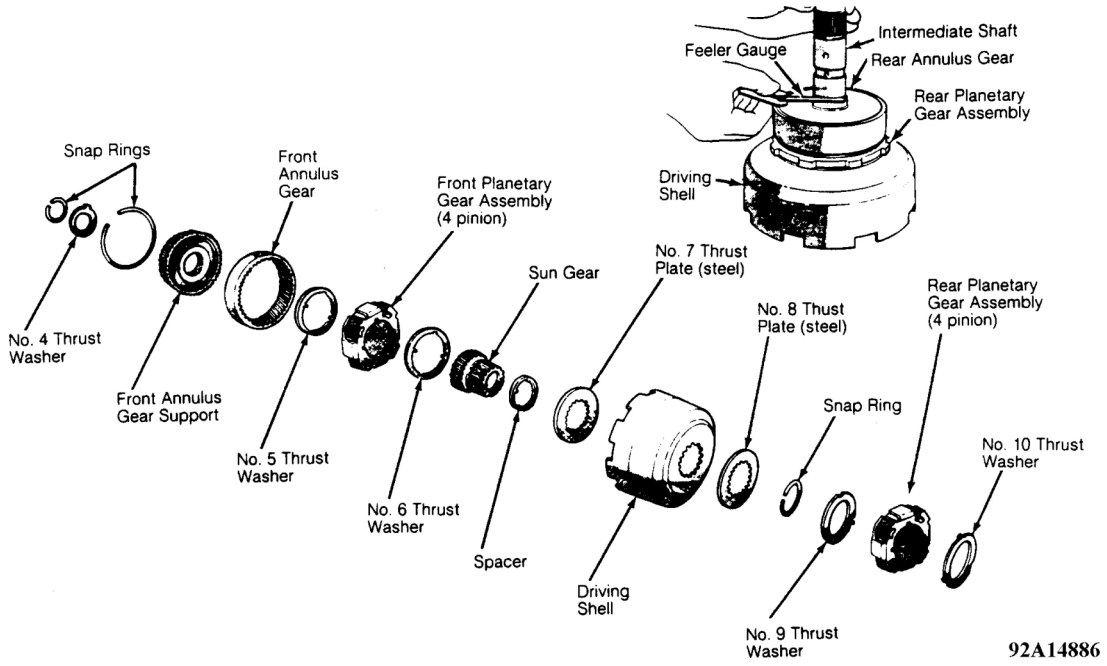


Fig. 11: Exploded View of Planetary Gear Train
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

Inspection

1. Inspect bearing surfaces on intermediate shaft for nicks, burrs, scores or other damage. Ensure all oil passages in shaft are clean and open.
2. Inspect sun gear bushings for wear or damage. Replace sun gear as an assembly (if necessary). Inspect thrust washers for wear or damage and replace (if necessary). See **THRUST WASHER SPECIFICATIONS** table.

THRUST WASHER SPECIFICATIONS

Thrust Washer Application	Thickness In. (mm)	Thrust Washer No.
Front Annulus	.121-.125 (3.07-3.18)	4
Front Carrier	.048-.050 (1.22-1.27)	5, 6
Intermediate Shaft (Selective)	.052-.054 (1.32-1.37) .068-.070 (1.73-1.78) .083-.086 (2.11-2.18)	3
Reaction Shaft Support	.061-.063 (1.55-1.59)	1
Rear Carrier	.048-.050 (1.22-1.27)	9, 10
Rear Clutch Retainer	.061-.063 (1.55-1.59)	2

3. Inspect planetary carrier for cracks or damage. Inspect pinions for broken or worn gear teeth and for broken pinion shaft welds. Inspect annulus gear and driving gear teeth for damage. Replace distorted lock rings.

Reassembly

1. Place rear annulus gear support in annulus gear and install snap ring. Position No. 10 thrust washer on rear side of rear planetary gear assembly and install in rear annulus gear.
2. Install No. 9 thrust washer on front side of rear planetary assembly. Insert intermediate shaft in rear opening of rear annulus gear. Ensure shaft splines are fully engaged in splines of annulus gear support.
3. Install No. 7 thrust plate and spacer on one end of sun gear. Insert sun gear through front side of driving shell and install No. 8 thrust plate and snap ring. See **THRUST PLATE SPECIFICATIONS** .

THRUST PLATE SPECIFICATIONS

Thrust Plate Application	Thickness In. (mm)	Thrust Plate No.
Input Shaft	.024-.026 (.61-.66)	None
Overdrive Clutch Piston (Selective)	.108-.110 (2.74-2.79) .123-.125 (3.12-3.18) .138-.140 (3.51-3.56) .153-.155 (3.89-3.94) .168-.170 (4.27-4.32) .183-.185 (4.65-4.70) .198-.200 (5.03-5.08) .213-.215 (5.41-5.46) .228-.230 (5.79-5.84) .243-.245 (6.17-6.22)	None
Sun Gear Drive Shell	.050-.052 (1.27-1.32)	7, 8

4. Carefully slide driving shell and sun gear assembly on intermediate shaft. Place front annulus gear support in annulus gear and install snap ring. Position No. 5 thrust washer on front side of front planetary

gear assembly.

5. Position front planetary gear assembly in front annulus gear. Place No. 4 thrust washer over planetary gear assembly hub. Install snap ring. Position No. 6 thrust washer on rear side of planetary gear assembly, and install planetary and annulus gear assembly on intermediate shaft.
6. With all components properly positioned, install selective snap ring and No. 3 thrust washer on front end of intermediate shaft. Remeasure end play of gear assembly as shown. See **Fig. 11** . Snap rings are available in thicknesses of .042, .064, and .084" (1.07, 1.63, and 2.13 mm). End play clearance should be .005-.048" (.13-1.22 mm).

OVERRUNNING CLUTCH

Inspection & Reassembly

1. Inspect clutch rollers for smooth, round surfaces with no flat spots or chipped edges. Inspect roller contacting surfaces in cam and race for signs of stress.
2. Insert retainer in cam, ensuring roller and spring **DO NOT** separate. Assemble cam with inner race of low-reverse drum. Check rotation direction. See **Fig. 12** .

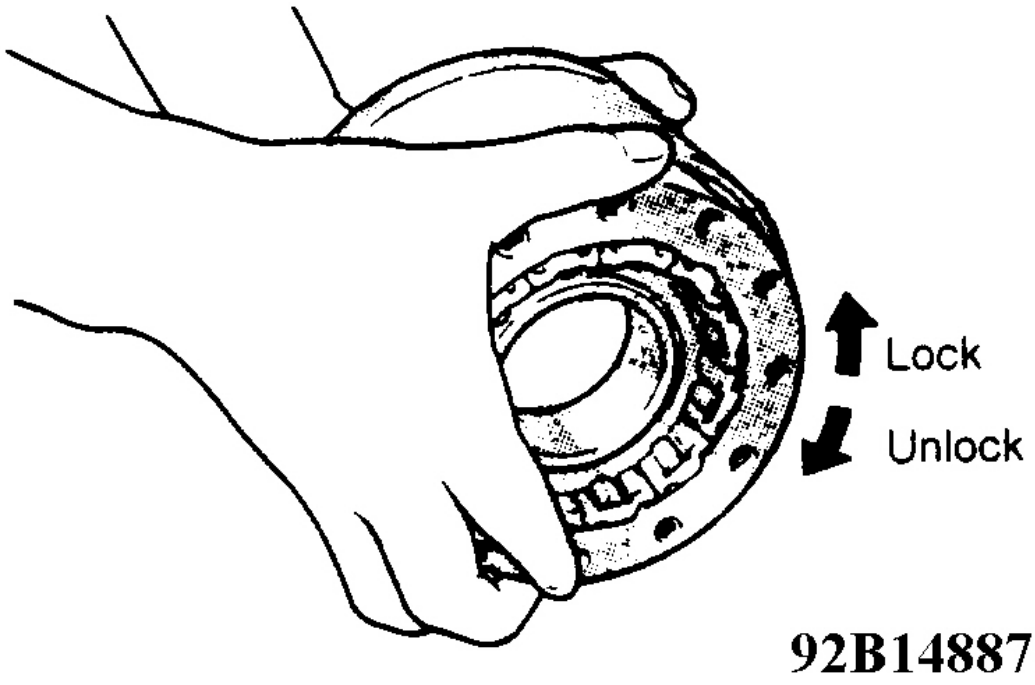


Fig. 12: Checking Overrunning Clutch Rotation
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

KICKDOWN SERVO & BAND

Disassembly, Inspection & Reassembly

1. Remove snap ring from piston and remove piston rod. Inspect piston and guide seal rings for wear and free rotation. **DO NOT** remove seal rings unless replacement is required. Inspect piston for cracks, scores, and wear.
2. Inspect piston bore in transmission case for scores or damage. Inspect fit of guide on piston rod and inspect piston spring. Inspect band lining material for wear or loose bonding. Check lining for Black burn marks, glazing, uneven wear pattern and flaking.
3. If lining is worn so grooves are not visible at any portion, replace band. Lubricate and insert piston and piston rod, and secure with snap ring. See **Fig. 13** .

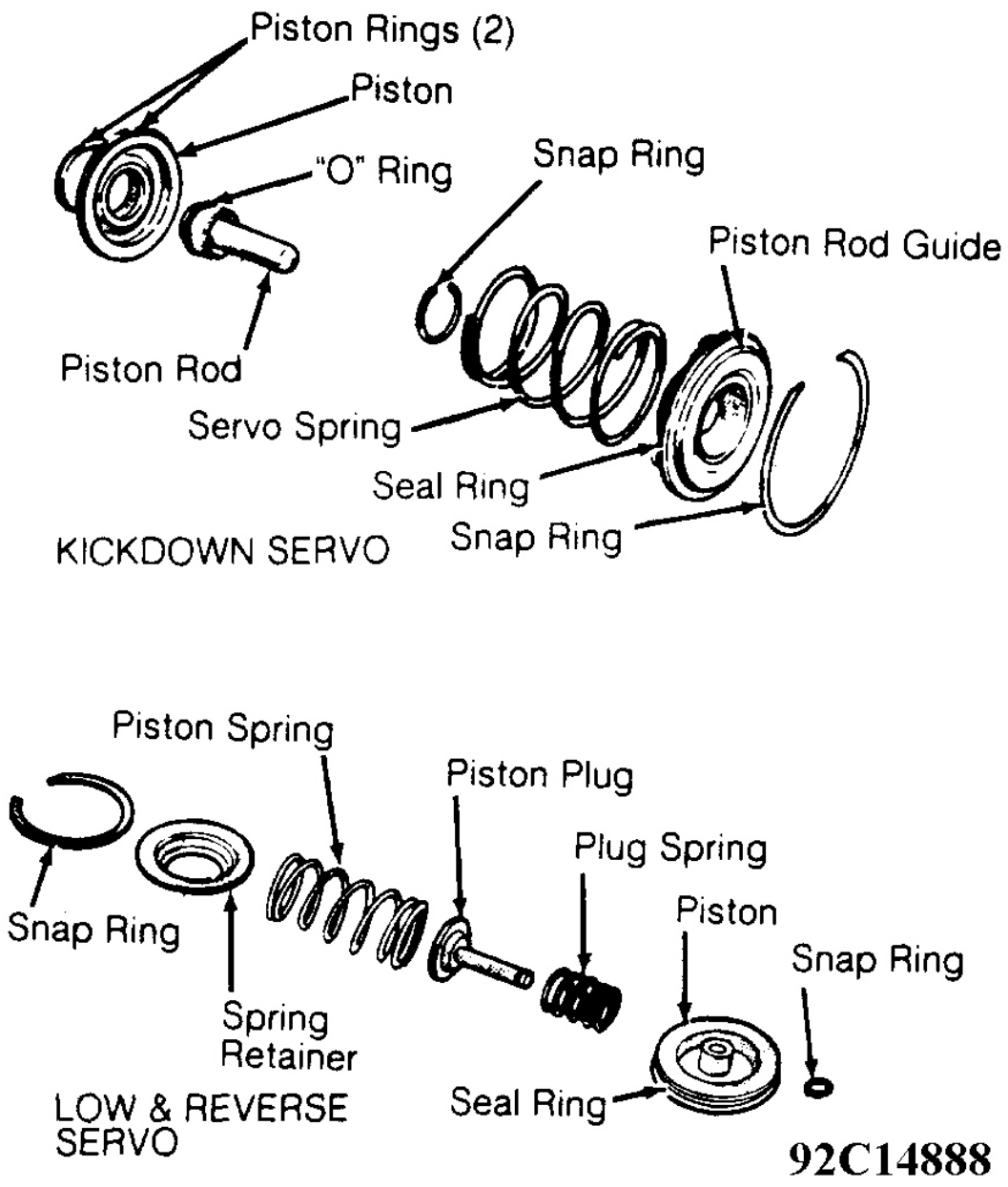


Fig. 13: Exploded View of Servo Assemblies
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

LOW & REVERSE SERVO

Follow service procedures given for **KICKDOWN SERVO & BAND** . Lubricate and assemble as shown in **Fig. 13** .

VALVE BODY

NOTE: DO NOT clamp any portion of valve body or transfer plate in a vise. Any slight distortion of the aluminum body or transfer plate will result in sticking valves, excessive leakage, or both. Mark springs for reassembly identification. Slide valves and plugs carefully. DO NOT force valves or plugs in or out.

Disassembly

1. Remove filter screws and filter. Remove "E" clip and park control rod from manual lever. Remove detent ball and spring. Remove throttle lever and manual valve. See **Fig. 14** . Remove solenoid connector mounting screw.
2. Remove spring retainer, line pressure adjusting screw assembly, and line pressure and switch valve regulator springs. See **Fig. 15** . Remove 3-4 accumulator housing, plug, lock-up valve spring and 3-4 shift valve spring. Remove lock-up valve and 3-4 shift valve.

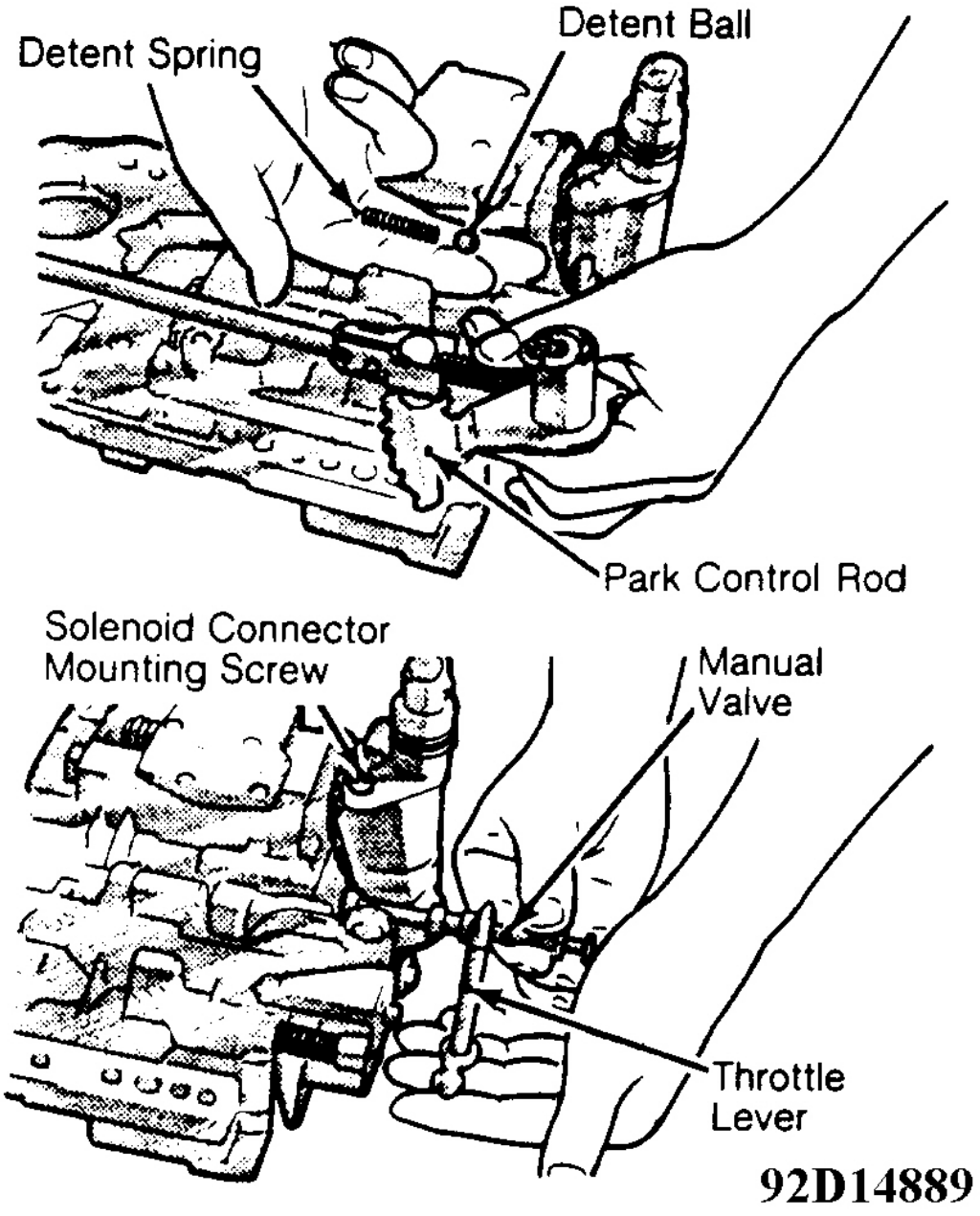


Fig. 14: Removing Manual Detent Ball, Spring & Valve
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA

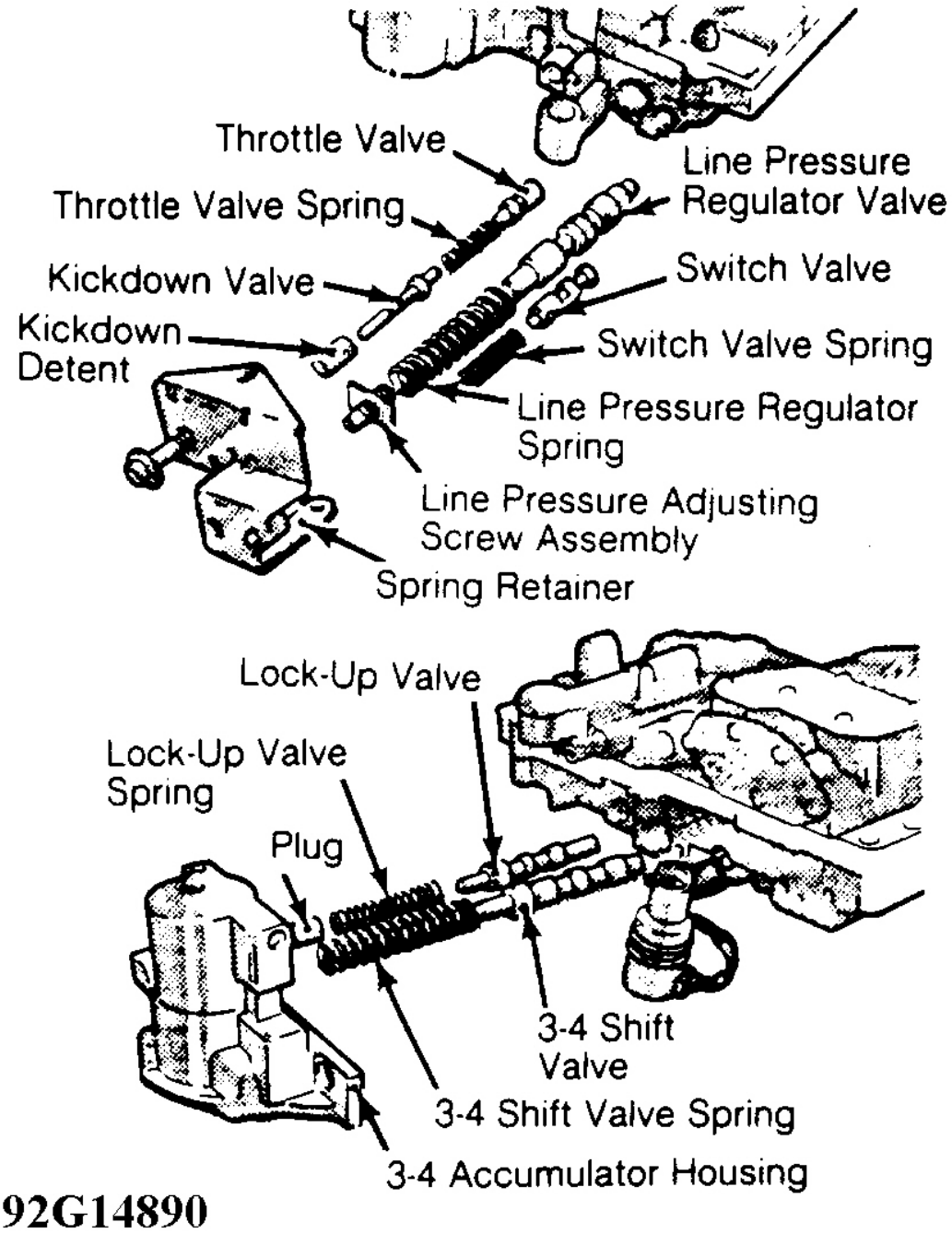


Fig. 15: Disassembling Valve Body Assembly
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA

3. Remove 3-4 accumulator cover, piston, and spring. Remove solenoid valve and gasket. Remove lower valve body and separating plate. Remove spring retainer, then remove lock-up timing valve and spring.

Remove 3-4 shuttle valve "E" clip. See **Fig. 16** .

4. Remove end cover plate and take out 3-4 timing valve and spring and 3-4 shuttle valve and spring. Invert upper valve body and remove transfer plate. Remove 7 check balls from upper valve body. Remove end plate, regulator valve line pressure plug, sleeve, regulator valve throttle pressure plug and spring. See **Fig. 16** .
5. Remove end plate, 2-3 shift valve and spring, 1-2 shift valve and spring, and 1-2 shift control valve and spring. Remove shuttle valve "E" clip, shuttle valve secondary spring and spring guides (2). Remove upper cover.
6. Remove governor plug end plate, shuttle valve throttle plug, shuttle valve primary spring and shuttle valve. Remove 1-2 shift valve governor plug and 2-3 shift valve governor plug.
7. Remove separator plate from transfer plate. Remove pressure regulator filter screen and plate from the separator plate. Remove 2 check balls from transfer plate. See **Fig. 16** .

Inspection & Reassembly

1. Allow parts to soak a few minutes in a suitable clean solvent, wash, and blow dry with compressed air. Ensure all passages are clean and free of obstructions.
2. Inspect throttle valve operating levers and shafts for wear or damage. If a lever is loose on its shaft, lever and shaft assembly should be replaced. **DO NOT** attempt to straighten bent levers. Inspect all mating surfaces for burrs, nicks, and scratches.
3. Using a straightedge, check mating surfaces for warpage or distortion. Ensure all metering holes in steel plate and valve body are open. Using a pen light, inspect bores in valve body for scores, scratches, pits and irregularities.
4. Ensure orifice in 1-2 shift control valve bore is open by inserting a 1/32" drill through it. Inspect all valve springs for distortion or collapsed coils.
5. Inspect all valves and plugs for nicks, burrs, and scores. Inspect all valves and plugs for freedom of movement in bores. To reassemble valve body, reverse disassembly procedure. Snug valve body bolts down evenly and tighten to 106 INCH lbs. (12 N.m). Tighten valve body screws to 35 INCH lbs. (4 N.m).

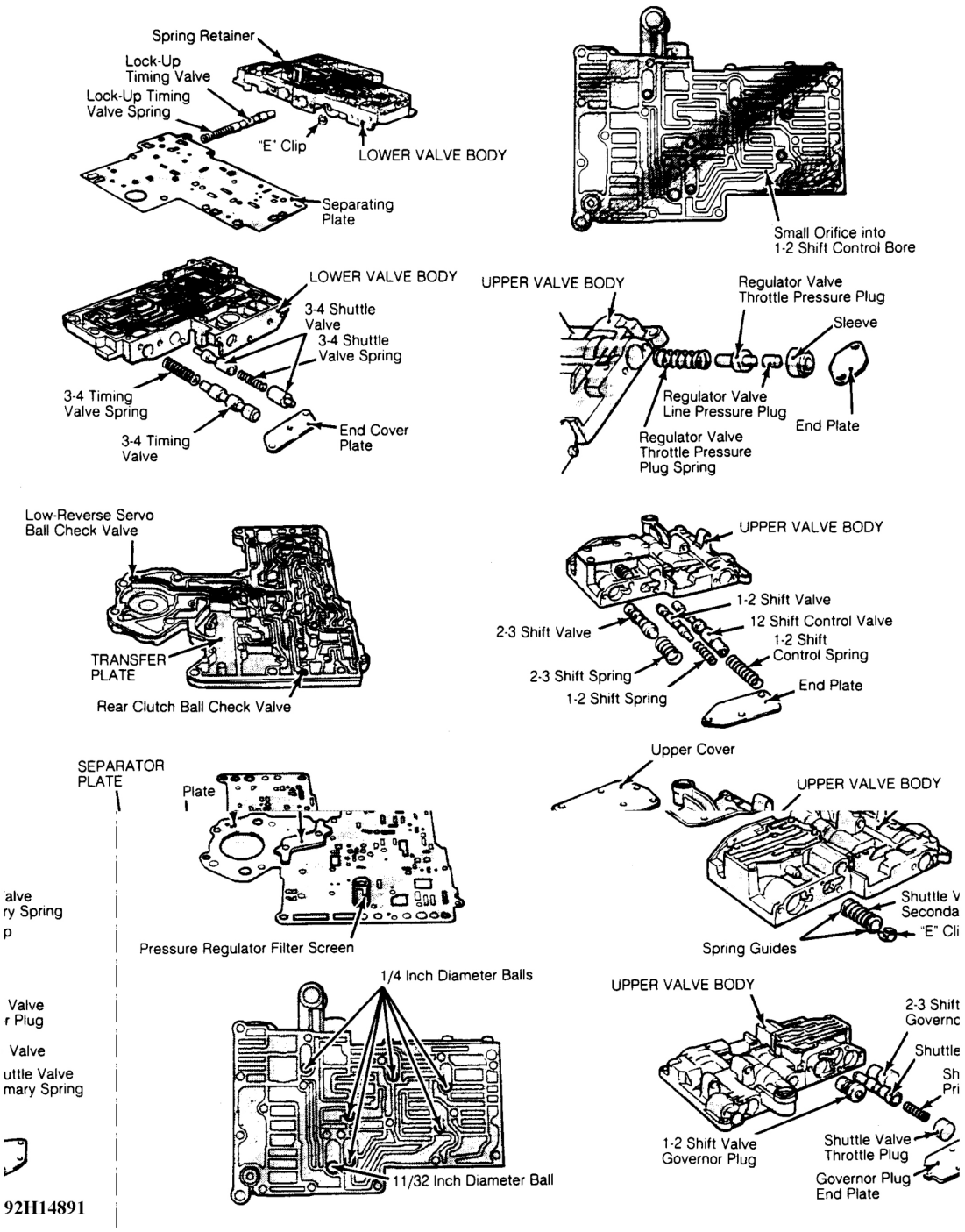


Fig. 16: Exploded View of Valve Body Components
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

OVERDRIVE UNIT

Disassembly

1. Remove OD clutch wire retaining ring, then remove alternating plates and discs. Remove wave ring and flat snap ring that are in same groove. See **Fig. 17** .
2. Remove snap ring access cover. See **Fig. 17** . Insert Alignment Tool (C-6277-2) into sun gear. After seating alignment tool, invert case on alignment tool. See **Fig. 18** . Expand output shaft front bearing snap ring and carefully lift case off gear train.
3. Remove governor retaining snap ring. Remove governor and shaft key. Remove output shaft front bearing snap ring from OD case.

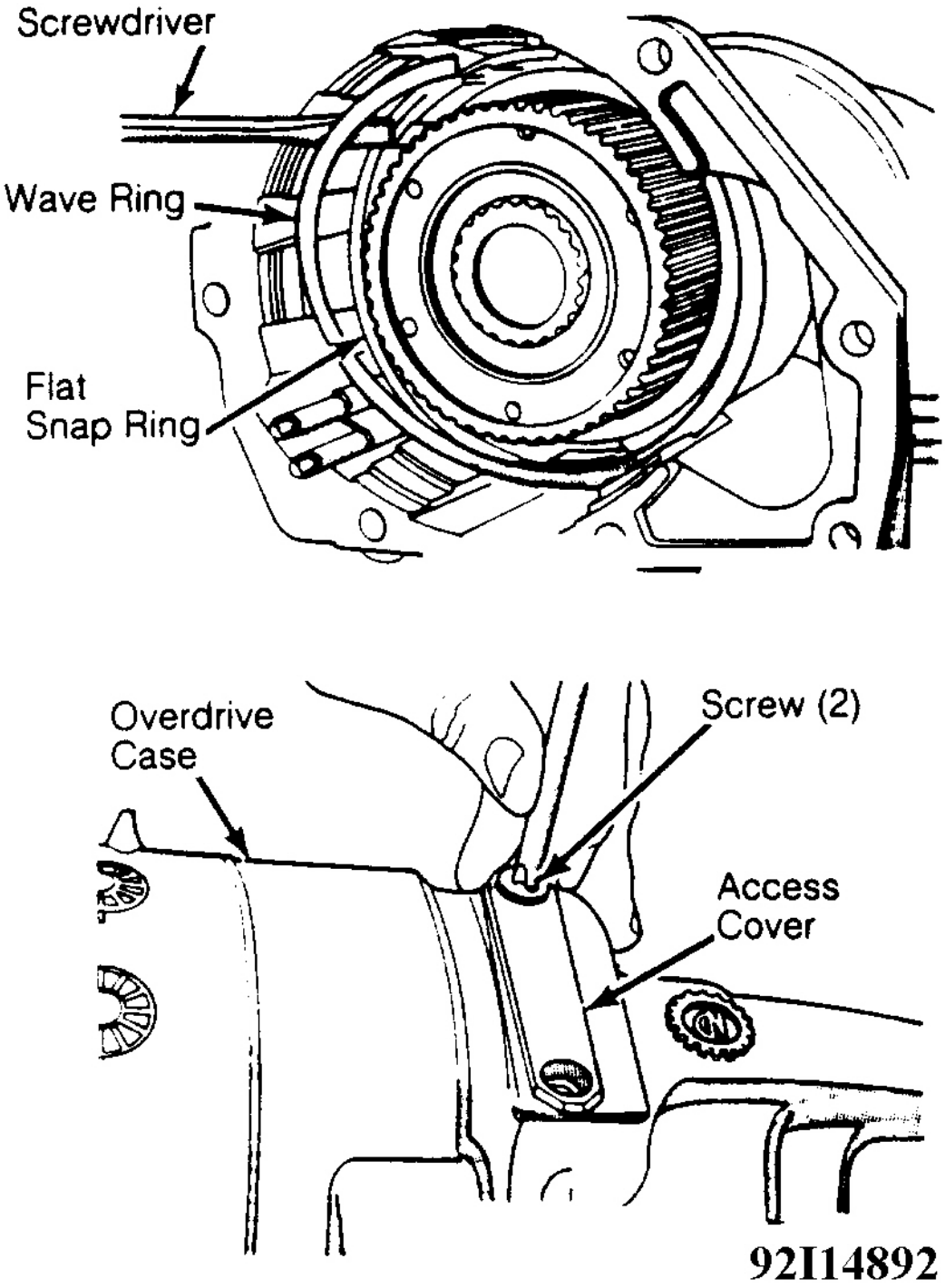
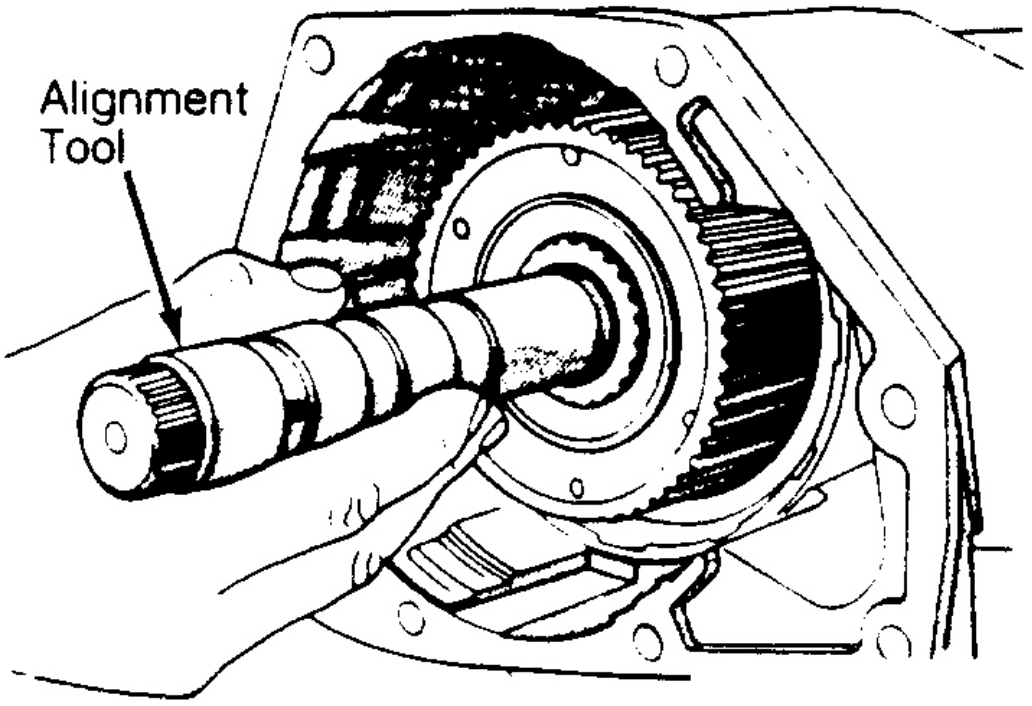


Fig. 17: Disassembling Overdrive Unit
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.



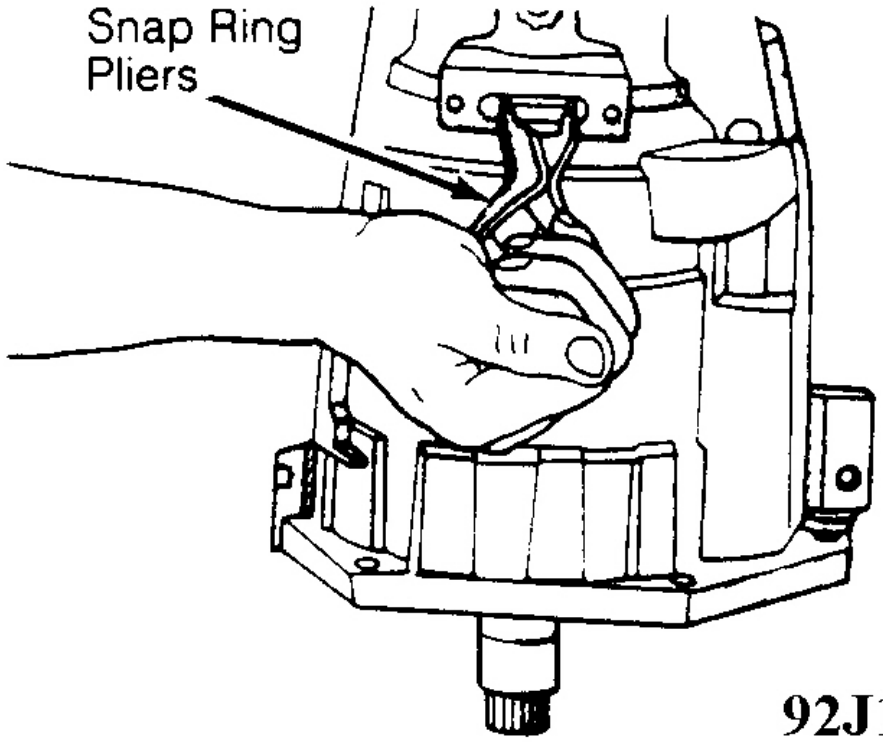


Fig. 18: Removing Overdrive Case
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

4. Remove governor support snap ring and remove governor support with slip-fit pressure tubes out of transmission case. Using locking snap ring pliers, remove output shaft rear bearing snap ring.
5. Tap OD case downward on bench to remove rear bearing. To remove parking mechanism, first remove reaction plug snap ring. Compress snap ring just enough to allow removal. See **Fig. 19** .
6. To remove parking pawl components, remove retaining bolt and lightly tap OD case on bench. Parking pawl components will drop out. Using a press, Alignment Tool (C-6227-1), and a fixture that will support the output shaft flange, compress the direct clutch spring. See **Fig. 20** .

NOTE: The direct clutch spring exerts over 800 pounds of force on the sliding hub. Spring tension must be released slowly and completely.

7. Remove large load-retaining snap ring and small load-retaining safety ring. Remove sliding hub with direct clutch. Remove direct clutch spring, sun gear, needle bearing and planet carrier.
8. To remove overrunning clutch, invert assembly and with expanding snap ring pliers, reach into inner splines of the clutch. Remove overrunning clutch intact with a quick counterclockwise twist. See **Fig. 21** .
9. Mark direct clutch drum and annulus for reassembly. Remove 2 wire retaining rings securing direct clutch drum to annulus. Slide drum from annulus gear assembly.
10. Mark output shaft and annulus gear assembly for exact reassembly. To remove annulus gear (one snap ring secures it to output shaft), a light tap with a soft mallet will pop it off the shaft. Remove output shaft front bearing.

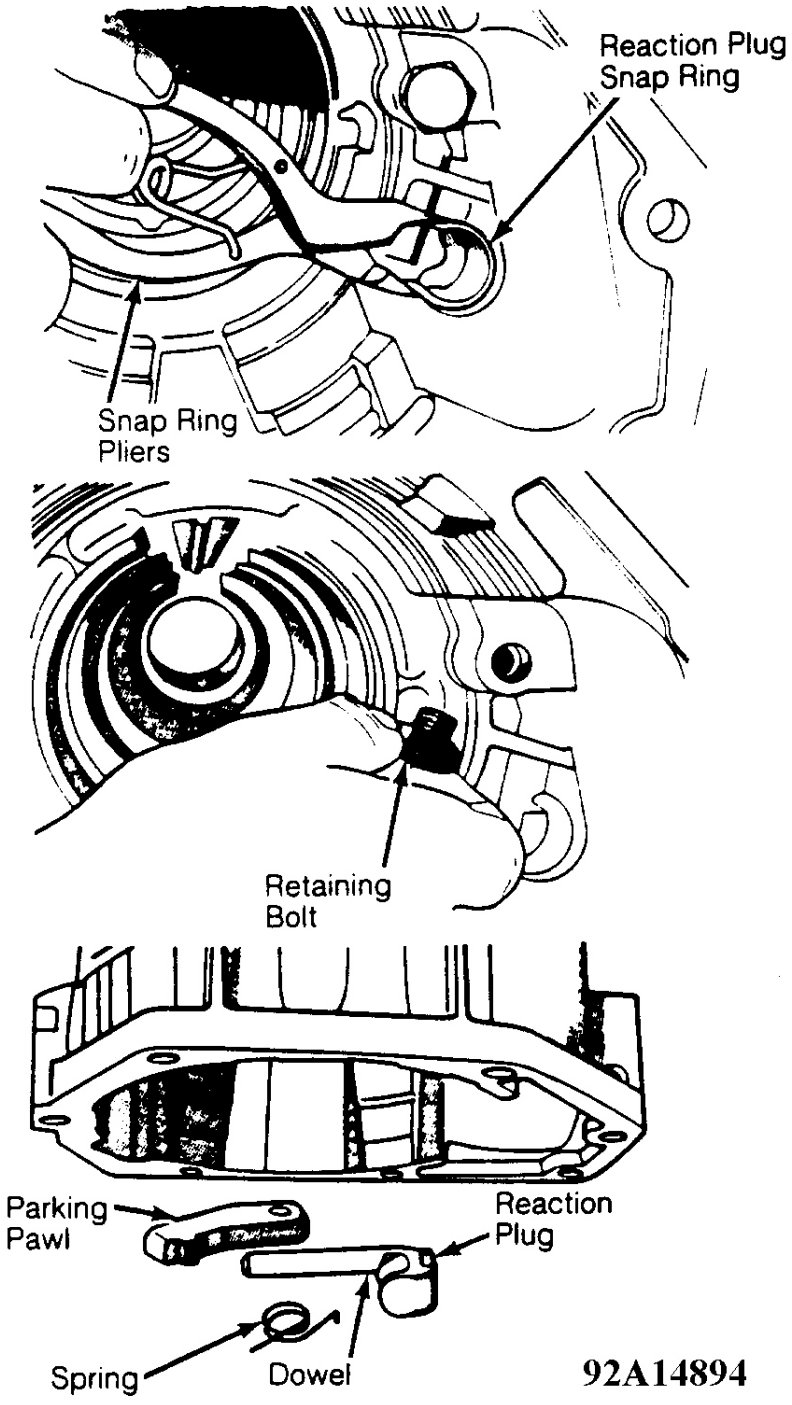


Fig. 19: Disassembling Parking Mechanism
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

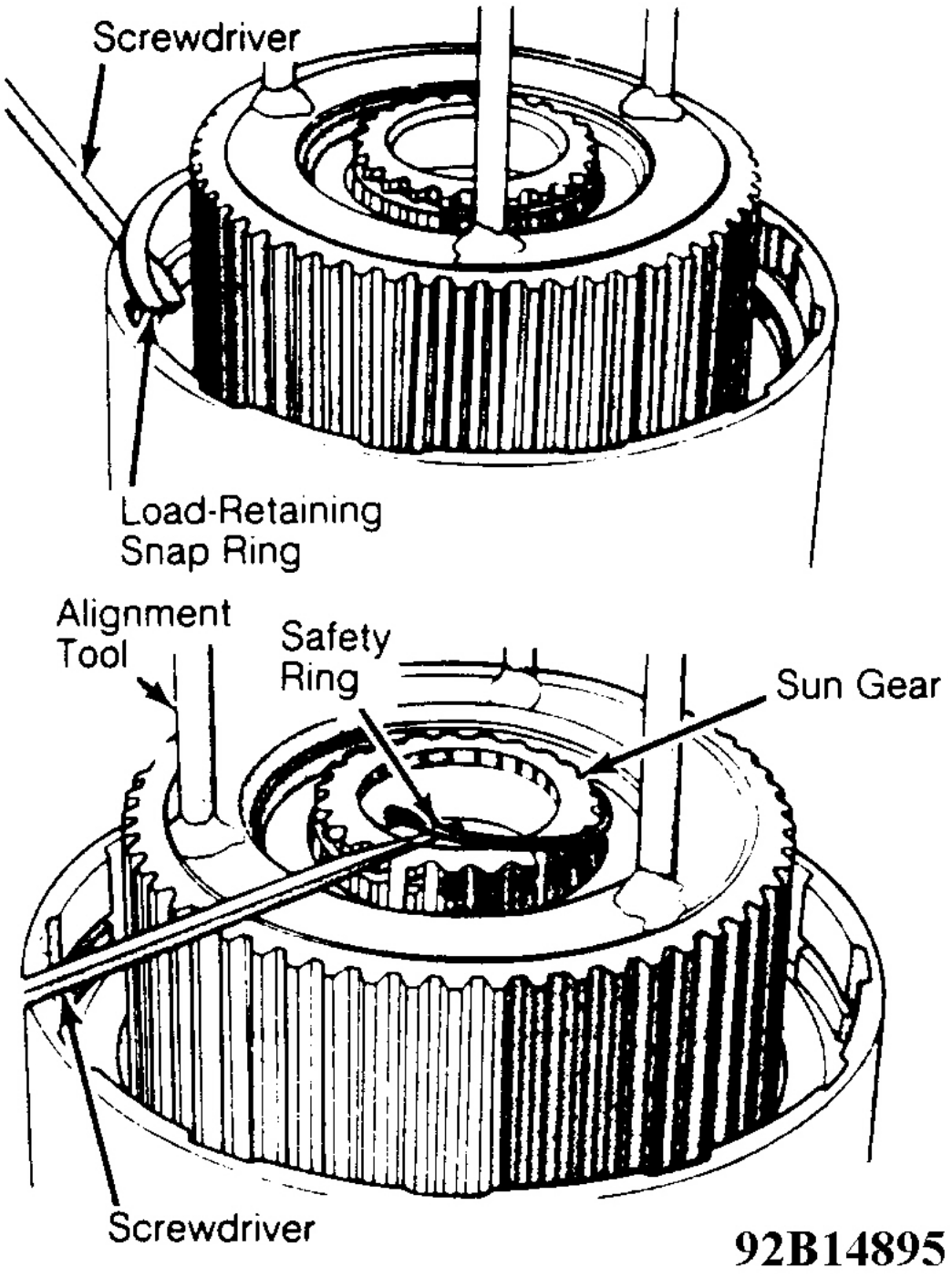


Fig. 20: Disassembling Direct Clutch
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

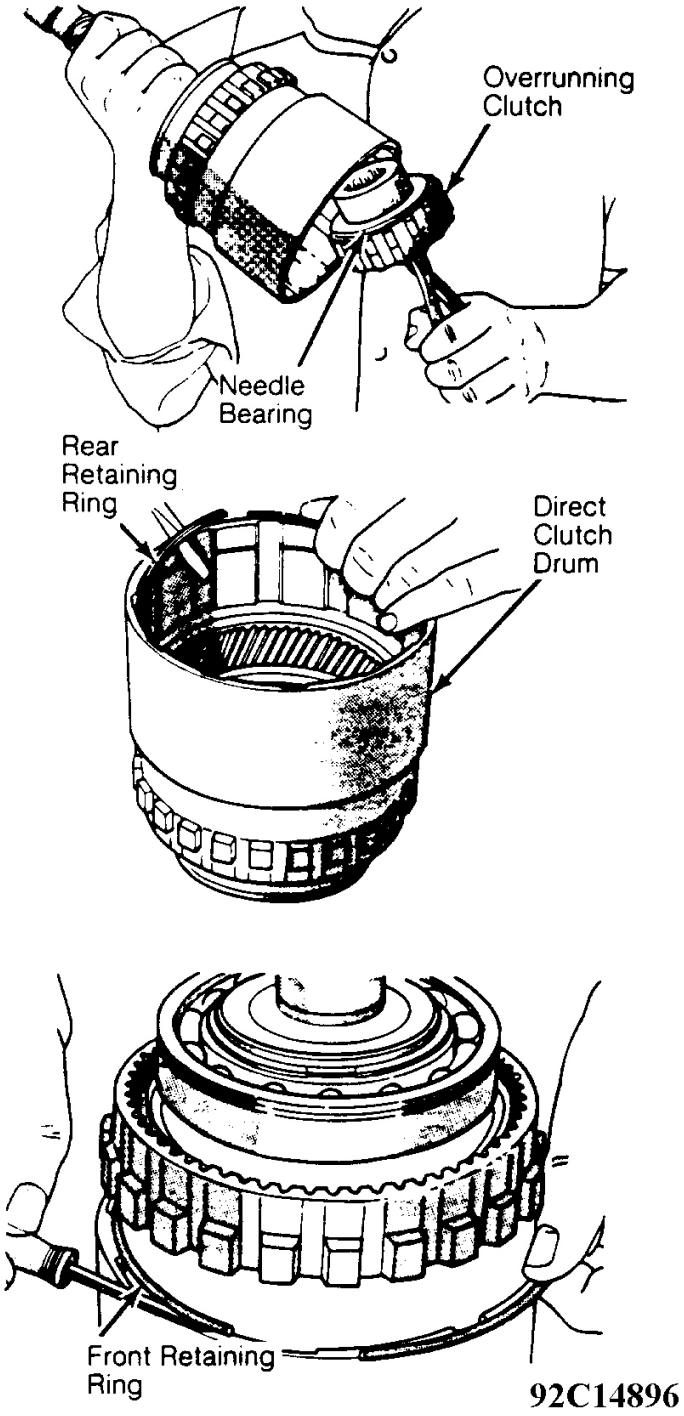
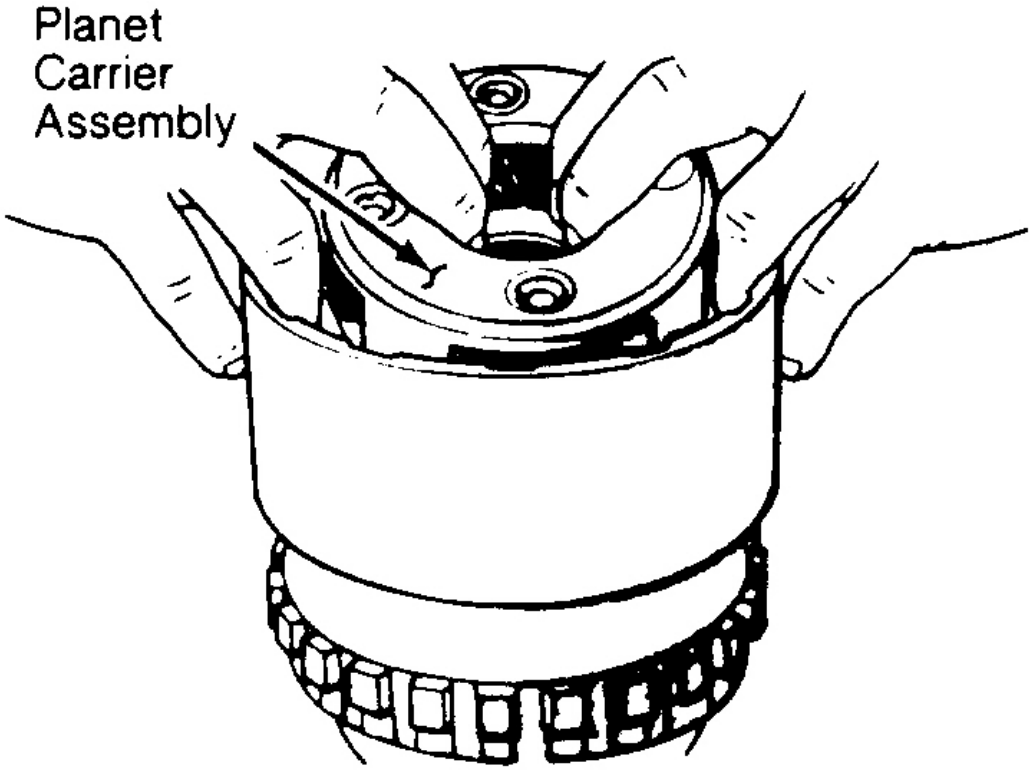


Fig. 21: Disassembling Direct Clutch Drum
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

Inspection & Reassembly

1. Clean all parts and dry with compressed air. Inspect all components for signs of wear or damage. Insert output shaft, while aligning mating marks, through back of annulus and secure with snap ring.
2. Set direct clutch drum face down and align mating marks. Insert annulus lugs in slots inside drum. Install rear retaining ring first. Invert assembly and install front wire retaining ring to secure drum.
3. Hold overrunning clutch upside down with expanding snap ring pliers. Position needle bearing against back face of clutch. Hold shaft assembly upside down and with an upward, counterclockwise twisting motion, install overrunning clutch.
4. Carefully set planetary carrier assembly into annulus gear and align splines using Alignment Tool (C-6227-2). See **Fig. 22** . Set needle bearing in place, remove Alignment Tool (C-6227-2), and install sun gear.
5. Set spring on sun gear and place sliding hub on spring. Reinstall alignment tool, and install direct clutch plates and discs alternately on hub. Using a press and Alignment Tool (C-6227-1), compress spring. As spring is compressed, slide clutch plates into grooves and down the hub.
6. Install large load-retaining snap ring and ensure proper seating. Install safety ring and slowly release press. Install governor and snap ring. Install dowel, parking pawl, and spring into OD case. Install retaining bolt and tighten to 20 ft. lbs. (27 N.m). Position reaction plug and install snap ring. See **Fig. 19** .
7. Install output shaft rear bearing in OD case. Snap ring groove in bearing should go toward front of case. Install governor support and snap ring. Install output shaft front bearing snap ring in OD case.
8. With alignment tool in gear train, invert gear train and slip case over shaft. Expand snap ring and slip case down until snap ring locks in bearing groove.
9. Install snap ring access cover and gasket. Install flat snap ring and wave ring in OD case. Install OD clutch plates and discs alternately, with the thickest plate (pressure plate) installed last. Position OD unit vertically in a vise.
10. To determine proper intermediate shaft spacer thickness, insert Spacer (C-6312) through sun gear. Ensure tool bottoms against carrier spline shoulder. Position Plate (C-6311) across face of OD case. See **Fig. 23** .
11. Using Dial Caliper Tool (C-4962) positioned over Plate (C-6311), measure distance to top of Spacer (C-6312). Using this measurement, refer to **INTERMEDIATE SHAFT SPACER** , and select proper intermediate shaft spacer.



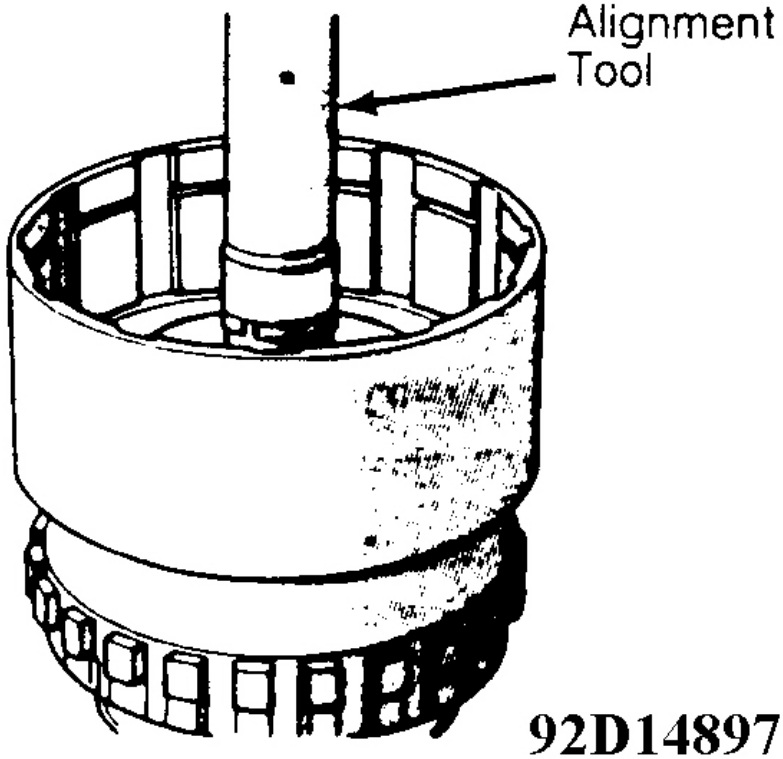


Fig. 22: Installing Planetary Carrier
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

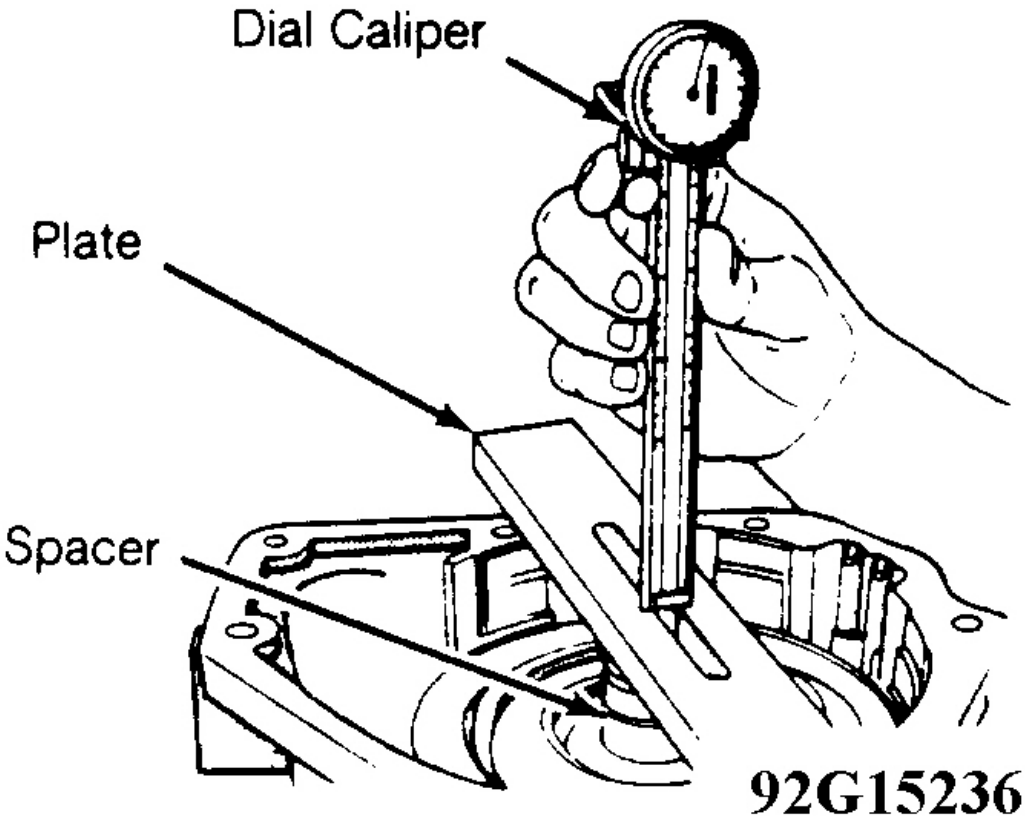


Fig. 23: Determining Intermediate Shaft Spacer Thickness
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

INTERMEDIATE SHAFT SPACER

Measurement In.	Spacer Part No.	Spacer Thickness In. (mm)
.7336-.7505	4431916	.158-.159 (4.01-4.04)
.7506-.7675	4431917	.175-.176 (4.45-4.47)
.7676-.7855	4431918	.193-.194 (4.90-4.93)
.7856-.8011	4431919	.211-.212 (5.36-5.38)

12. To determine OD piston shim thickness, position Plate (C-6311) across OD case face. Using dial caliper tool positioned over Plate (C-6311), measure distance to sliding hub bearing seat. See **Fig. 24** .
13. This measurement should be taken at 4 locations 90 degrees apart. Add all measurements together and

divide by 4. Using this measurement, refer to **OVERDRIVE PISTON SHIM** to select proper thickness shim.

CAUTION: DO NOT include straightedge thickness in measured value.

OVERDRIVE PISTON SHIM

Measurement In.	Spacer Part No.	Spacer Thickness In. (mm)
1.7500-1.7649	4431730	.108-.110 (2.74-2.79)
1.7650-1.7799	4431585	.123-.125 (3.12-3.18)
1.7800-1.7949	4431731	.138-.140 (3.51-3.56)
1.7950-1.8099	4431586	.153-.155 (3.89-3.94)
1.8100-1.8249	4431732	.168-.170 (4.27-4.32)
1.8250-1.8399	4431587	.183-.185 (4.65-4.70)
1.8400-1.8549	4431733	.198-.200 (5.03-5.08)
1.8550-1.8699	4431588	.213-.215 (5.41-5.46)
1.8700-1.8849	4431734	.228-.230 (5.79-5.84)
1.8850-1.8999	4431590	.243-.245 (6.17-6.22)

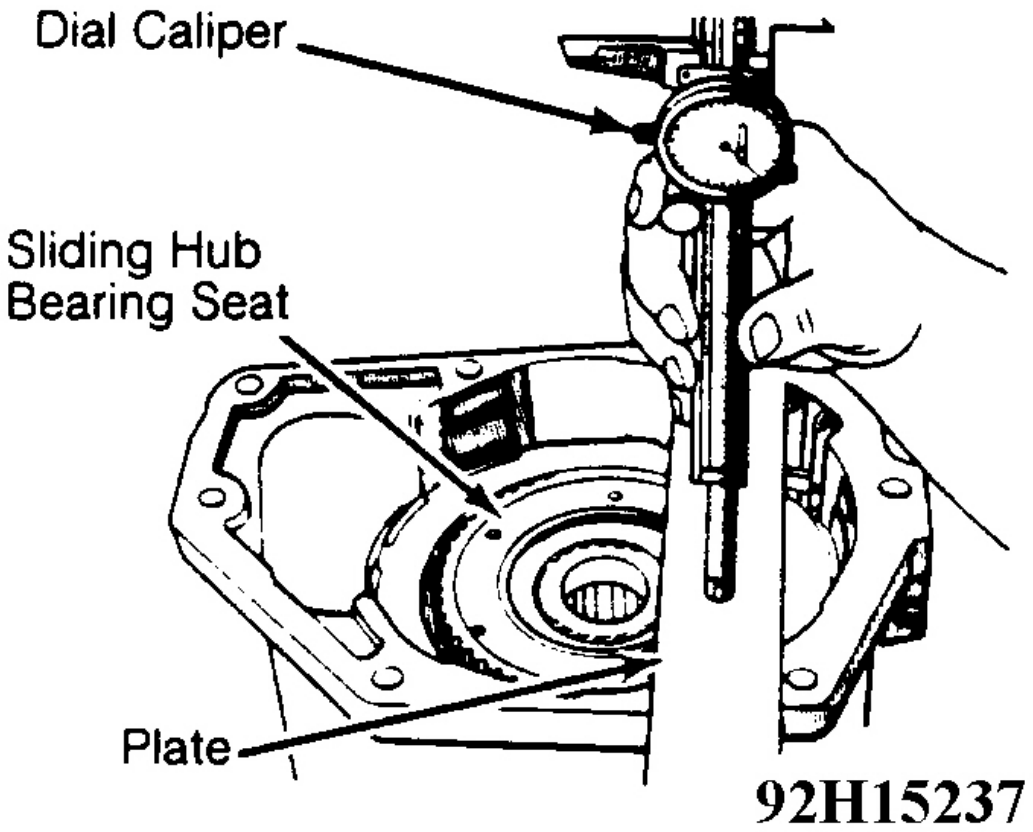


Fig. 24: Determining Overdrive Piston Shim Thickness
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

GOVERNOR

Disassembly

Remove 4 governor body bolts. Separate governor drive and governor body, and remove filter screen. See **Fig. 25** . Remove valve from governor body. Remove snap ring and outer weight. Remove snap ring from inside the outer weight, and remove inner weight and spring.

Inspection

1. Inspect all parts for burrs and wear. Inspect inner weight for free movement in outer weight. Inspect outer weight for free movement in governor body. Inspect valve for free movement in governor body.
2. Clean governor screen. Inspect seal rings for wear. Inspect governor weight spring for distortion. Inspect lugs on support gear for damage. Thoroughly clean all governor parts and test for free movement before reassembly.

Reassembly

1. Assemble governor body and filter screen to governor drive and hand tighten bolts. Ensure oil passage of governor body aligns with passage in governor drive. Position governor body assembly on output shaft. Align key groove, slide assembly into place and install snap ring.
2. Tighten governor body-to-support bolts to 97 INCH lbs. (11 N.m). Assemble governor weights and spring and secure with snap ring. Position weight assembly in governor body and install snap ring. Install governor valve and valve shaft, then install snap ring. Inspect valve weight assembly for free movement after installation.

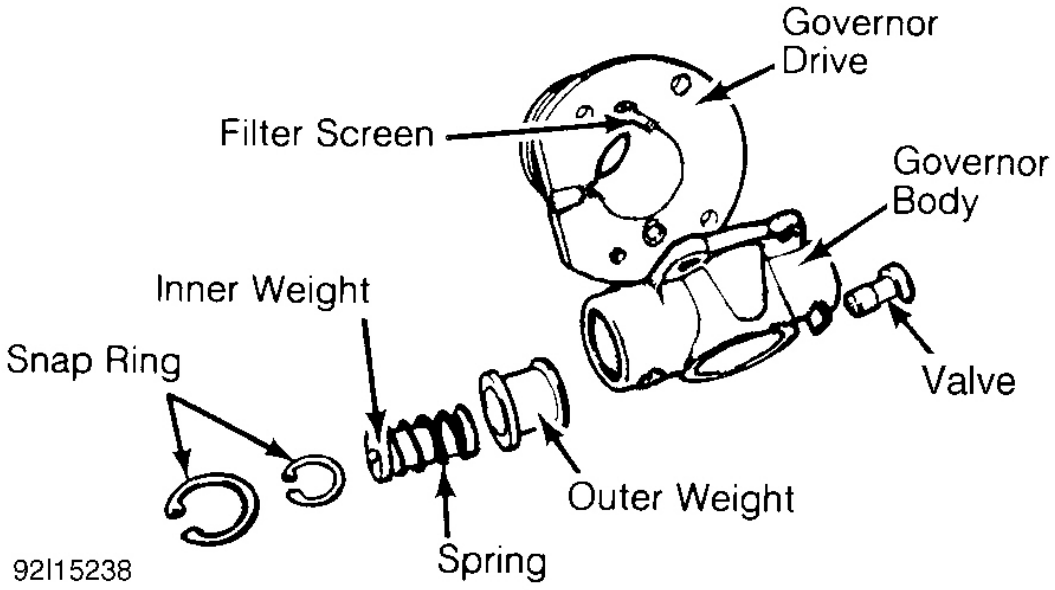


Fig. 25: Exploded View of Governor Assembly
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

TRANSMISSION REASSEMBLY

NOTE: Use only ATF to lubricate transmission parts during reassembly. Always use NEW gaskets during reassembly operations. If parts do not assemble freely, correct problem before proceeding with reassembly operations.

1. Install kickdown, low-reverse servo assemblies, and snap rings in transmission case. Insert low-reverse lever pin from rear of transmission case, and install lever and link. See **Fig. 26** .

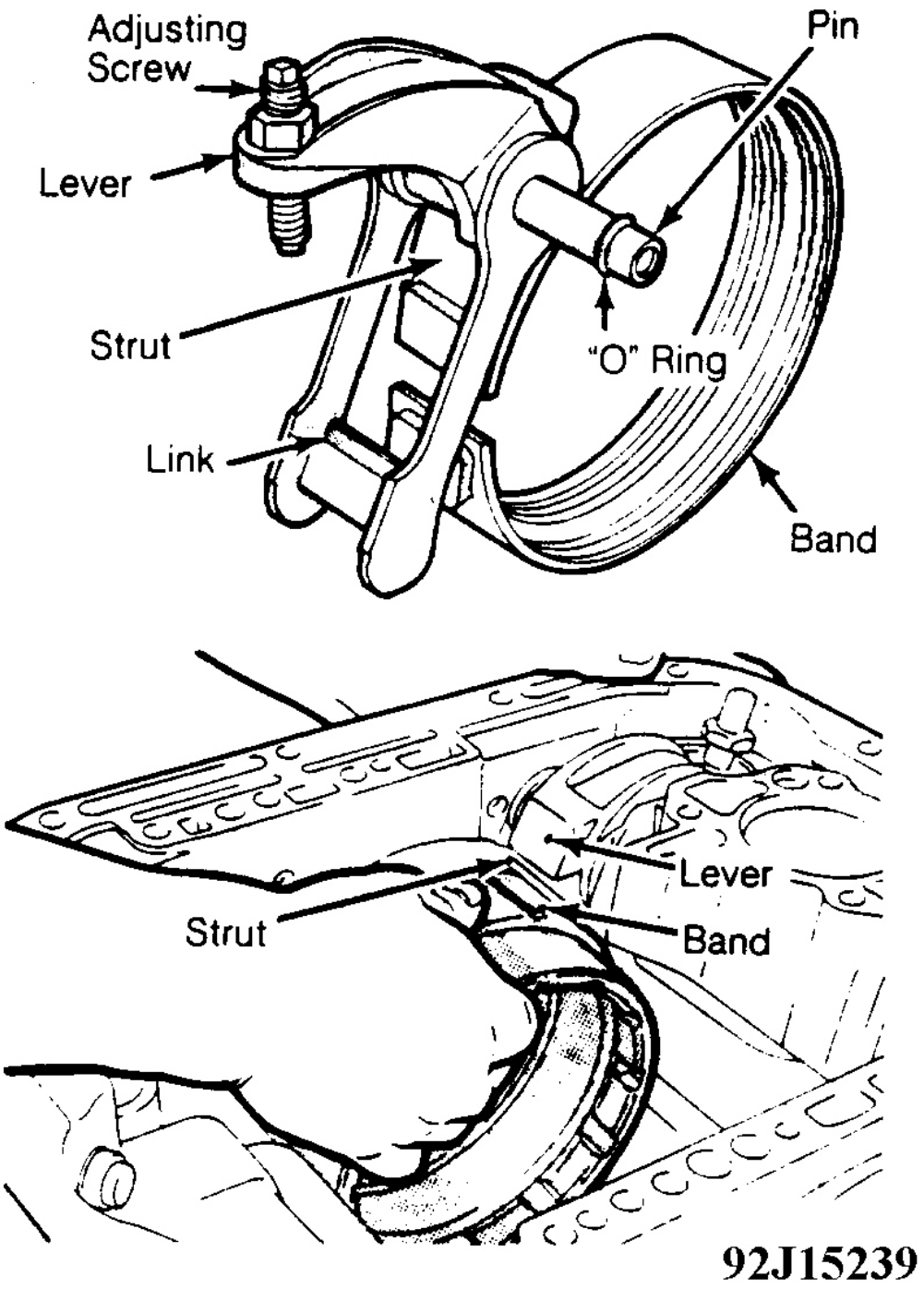


Fig. 26: Installing Low-Reverse Band
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

2. Position low-reverse band in case, connect link to band, then install strut. Band adjusting screw should be

loose. Install overrunning clutch assembly inside low-reverse band. Ensure hole that does not intersect with threads of overrunning clutch cam is in 7 o'clock position when viewed from rear of transmission case. Install 5 transmission case bolts from rear. Tighten bolts to 97 INCH lbs. (11 N.m).

3. Install overdrive piston retainer and gasket. Ensure proper positioning of governor tube installation hole. Tighten 6 bolts uniformly to 97 INCH lbs. (11 N.m). Install spacer and snap ring on overdrive piston retainer from inside low-reverse drum. Claws on spacer should be toward the front.
4. Install OD piston with OD piston retainer guide hole positioned so projection on OD piston can fit into it. While supporting assembly in case, insert intermediate shaft through rear support. Carefully work assembly rearward, engaging rear planetary carrier lugs into low-reverse drum slots. Use caution not to damage ground surfaces on intermediate shaft.

NOTE: Front and rear clutches, front band, oil pump and reaction shaft support are easier to install with transmission in an upright position.

5. Apply light coat of grease to selective thrust washer and install on front end of intermediate shaft. Apply grease to input shaft thrust plate and install over input shaft.
6. If input shaft end play was not .011-.080" (.28-2.03 mm) when measured before disassembly, replace thrust washer with one of proper thickness. See **THRUST WASHER SPECIFICATIONS** under PLANETARY GEAR TRAIN for available thicknesses.
7. Align front clutch plate inner splines and position assembly on rear clutch. Ensure front clutch plate splines are fully engaged on rear clutch.
8. Align rear clutch plate inner splines and lower clutch assemblies into transmission case. Carefully work clutch assemblies in a circular motion to engage rear clutch splines over splines of front annulus gear. Ensure front clutch drive lugs are fully engaged in slots in driving shell.
9. Slide kickdown band over front clutch assembly. Install band strut and screw in adjuster just enough to hold strut and anchor in place. Install No. 1 thrust washer on reaction shaft support hub. With NEW seals in place, install pump assembly in transmission case.
10. Rotate input and intermediate shafts to ensure no binding exists. Tighten oil pump bolts to 15 ft. lbs. (20 N.m). Check shaft again for free rotation.
11. To adjust low-reverse band, tighten band adjusting screw to 31 INCH lbs. (3.5 N.m). Back off adjusting screw 6 turns. Tighten adjusting screw lock nut to 30 ft. lbs. (41 N.m).
12. To adjust kickdown band, tighten band adjusting screw to 71 INCH lbs. (8 N.m). For 3.0L 4WD vehicles, back off adjusting screw 1 7/8 turns. On all other vehicles, back off adjusting screw 2 7/8 turns. Tighten adjusting screw lock nut to 30 ft. lbs. (41 N.m).
13. Position NEW gasket on rear of OD case and install selected spacer on intermediate shaft. Position selected shim over OD piston on main portion of transmission.
14. Install sliding hub bearing over intermediate shaft, against sliding hub. Ensure shoulder on inside diameter of bearing is facing forward. Carefully lift OD unit and slide onto intermediate shaft. Extreme care must be used. **DO NOT** tilt OD unit, as this could cause carrier and overrunning splines to rotate out of alignment.
15. Align slip-fit governor tubes and push OD unit forward until touching transmission case. Install 7 bolts and tighten in a crisscross pattern to 25 ft. lbs. (34 N.m).
16. Measure input shaft end play and adjust as necessary. Install valve body assembly. See **VALVE BODY & ACCUMULATOR PISTON** under ON-VEHICLE SERVICE.

17. Install torque converter. Ensure proper installation depth. Using a straightedge, measure from face of transmission case to surface of torque converter front cover lug. Distance should be at least 1/2". See **Fig. 27** .

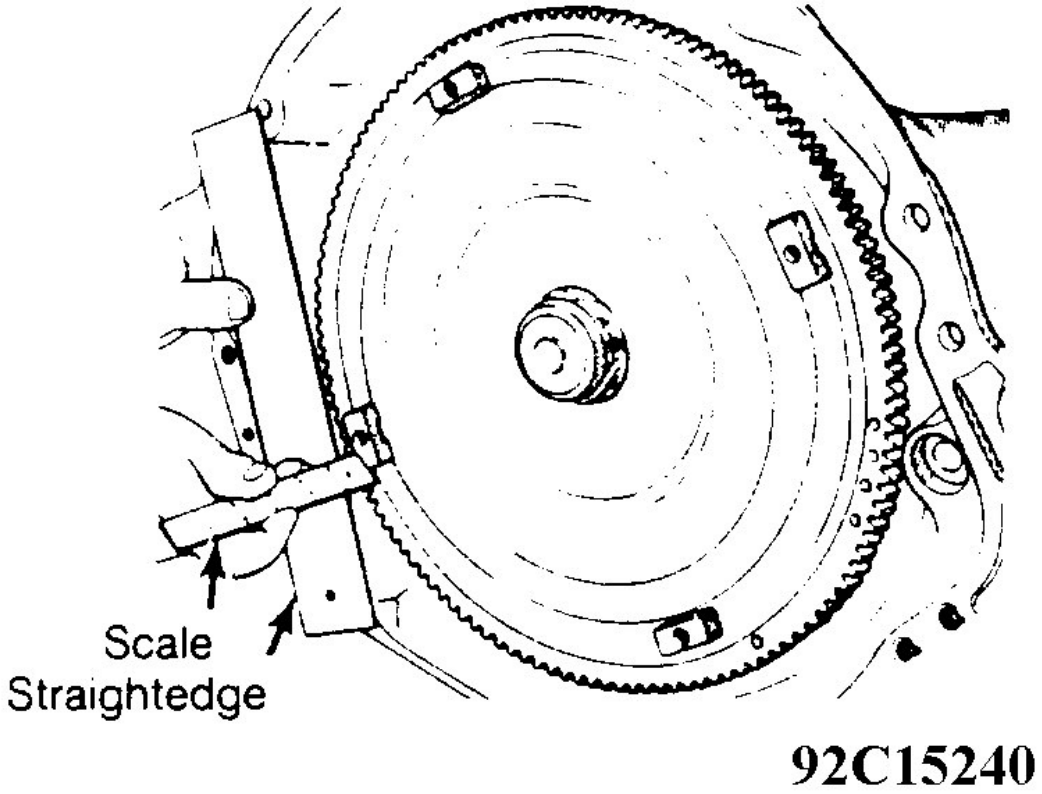


Fig. 27: Measuring Converter Installed Depth
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Kickdown Band Adjusting Screw Lock Nut	30 (41)
Kickdown Lever Shaft Plug	13 (17)
Lock-Up Solenoid Wiring Connector	13 (17)
Low-Reverse Band Adjusting Screw Lock Nut	25 (34)
Neutral Starting Switch	25 (34)
Oil Pan Bolts	13 (17)
Oil Pump-To-Transmission Case Bolts	15 (20)

Overdrive-To-Transmission Case Bolts	25 (34)
Pressure Test Port Plugs	10 (14)
Reaction Shaft Support-To-Oil Pump Bolts	15 (20)
Shaft Retaining Plug	20 (27)
	INCH Lbs. (N.m)
Governor Body Bolts	97 (11)
Overrunning Clutch Cam Bolts	97 (11)
Piston Retainer Bolts	97 (11)
Speedometer Sleeve Clamp Screw	97 (11)
Transmission Case Bolts	97 (11)
Valve Body Screws	35 (4)
Valve Body-To-Transmission Case Bolts	106 (12)

WIRING DIAGRAMS

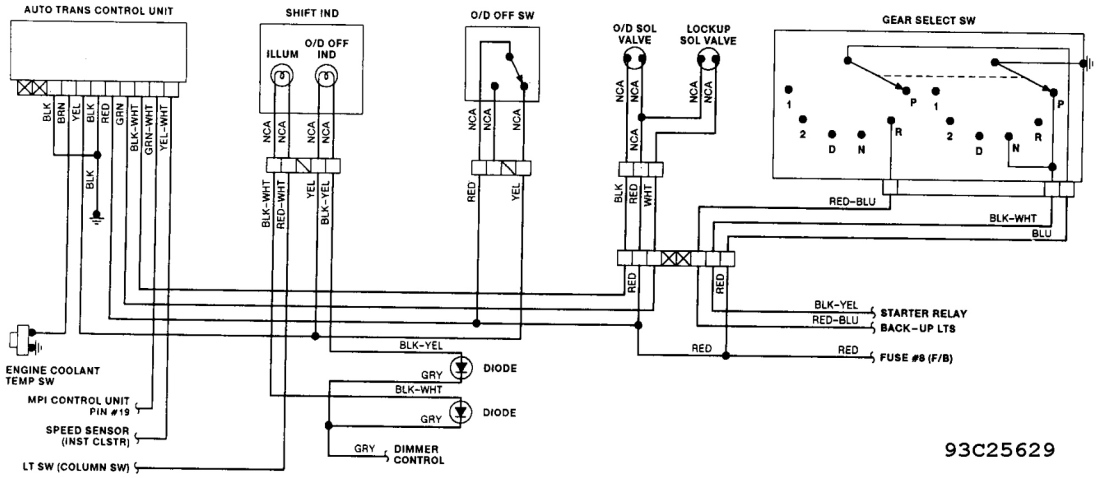


Fig. 28: R4AC1 & V4AC1 Wiring Diagram (Pickup & Ram-50, 1990-92)

Fig. 29: R4AC1 Wiring Diagram (Pickup & Ram-50, 1993-94)

