

1995 Hyundai Sonata

1995-96 AUTOMATIC TRANSMISSIONS Mitsubishi F4A33, W4A32 & W4A33 Overhaul

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APPLICATION

APPLICATION & LABOR TIMES

Vehicle	Transaxle Series
Hyundai	
Sonata 3.0L	F4A33
Mitsubishi	
Diamante	F4A33
Eclipse 2.0L Turbo	
AWD	W4A33
FWD	F4A33
Expo AWD	W4A32
3000GT	F4A33

IDENTIFICATION

Transaxle model can be identified on metal tag attached to center of firewall. For parts replacement, identification is stamped on transaxle case on top of transaxle converter housing. See **Fig. 1** .

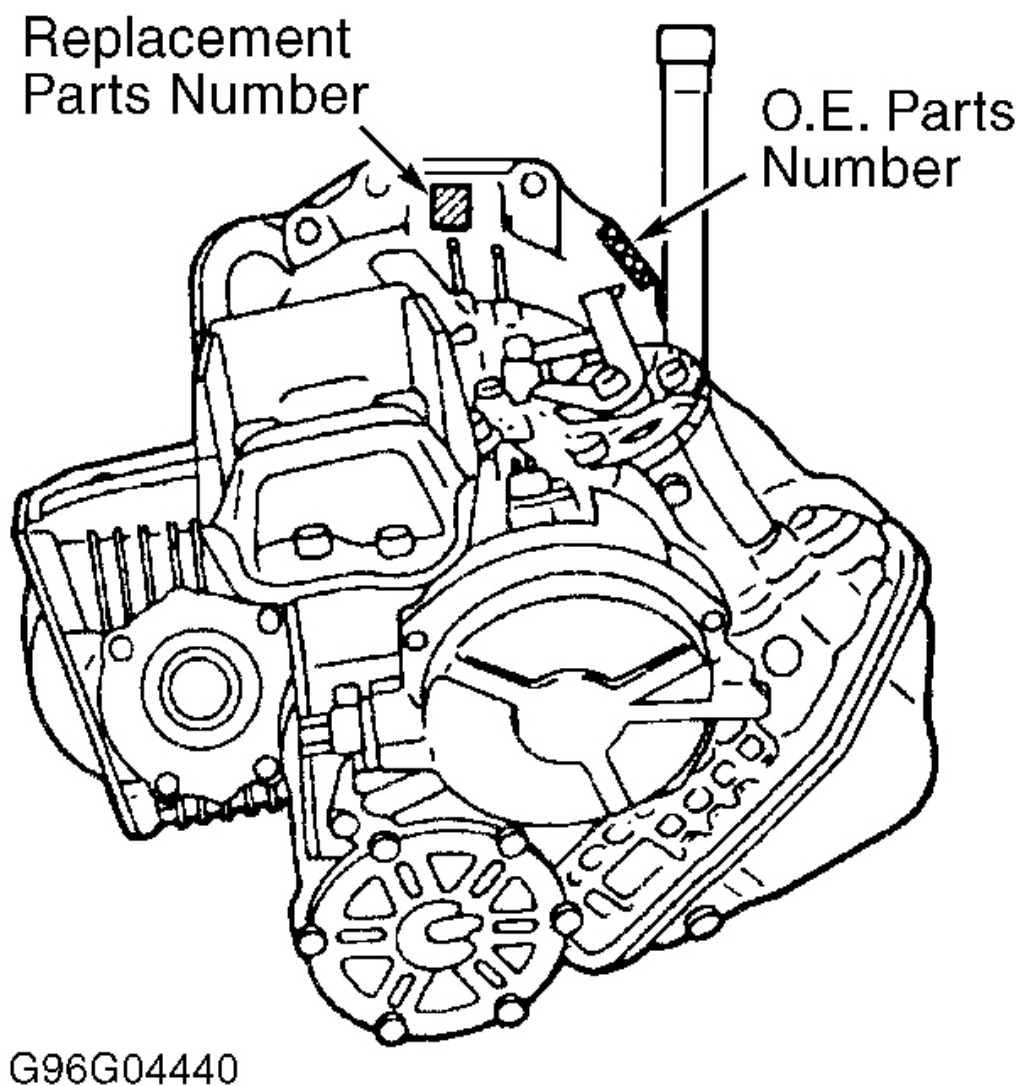


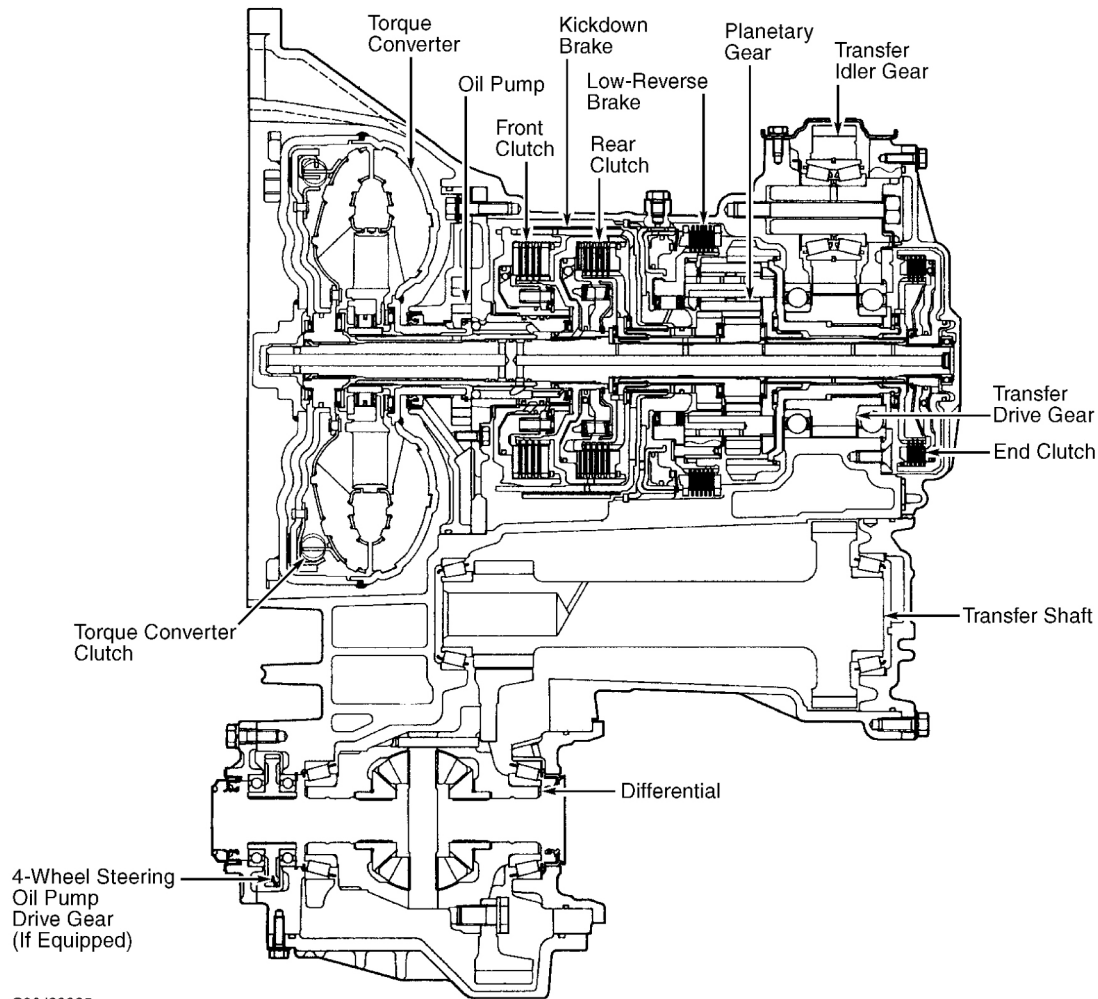
Fig. 1: Locating Transaxle Identification Numbers
Courtesy of CHRYSLER CORP.

DESCRIPTION

Transaxle is a electronically controlled 4-speed automatic. Transaxle uses hydraulically operated clutches actuated by solenoids that are controlled by the Transaxle Control Module (TCM). Transaxle consists of clutches, low-reverse brake, kickdown band, planetary gear sets and transfer case (W4A32 and W4A33). See [Fig. 2](#) or [Fig. 3](#) .

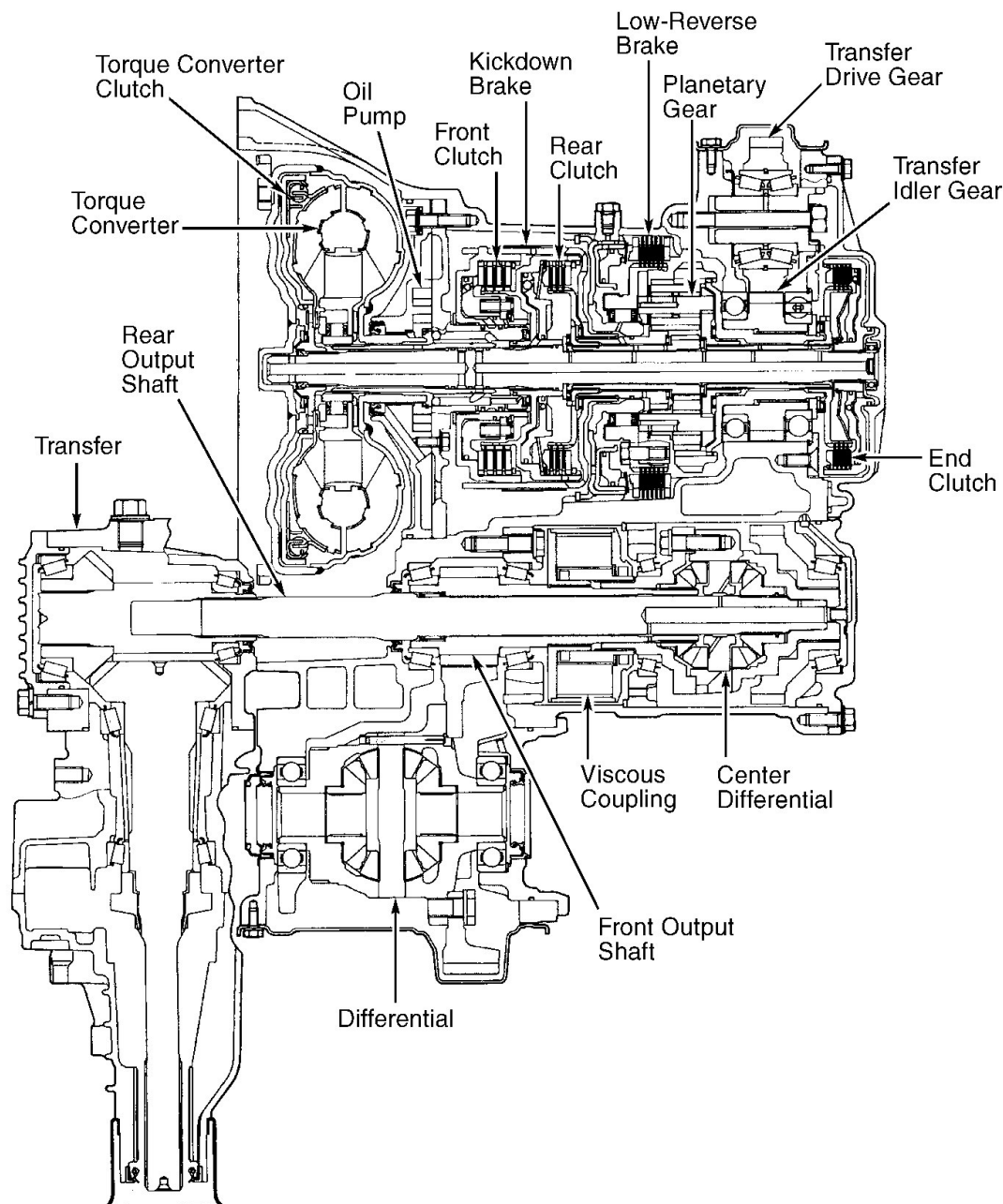
The TCM receives information from various inputs and controls solenoids on the valve body for different gear operation. Overdrive or 4th gear operation is controlled by a manually operated overdrive control switch. Transaxle will not shift into overdrive unless overdrive control switch is in ON position.

The TCM controller contains a self-diagnostic system, which stores a fault code if a transaxle fault exists. Fault code can be retrieved to determine the transaxle problem area. For information on electronic transaxle components, see **AUTO TRANS DIAGNOSIS - F4A20, F4A30 & W4A30** article.



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Fig. 2: Identifying Transaxle Components (F4A33)
Courtesy of CHRYSLER CORP.



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Fig. 3: Identifying Transaxle Components (W4A32 & W4A33)
Courtesy of CHRYSLER CORP.

LUBRICATION

NOTE: Manufacturer specifies the use of only Mopar ATF Plus-Type 7176 for use in this transaxle. This fluid should also be used during assembly. See appropriate

AUTOMATIC TRANSMISSION SERVICING article in TRANSMISSION SERVICING for additional information and draining and refilling procedures.

ON-VEHICLE SERVICE

Valve body can be serviced on vehicle. See **VALVE BODY** under REMOVAL & INSTALLATION.

TROUBLE SHOOTING

SYMPTOM DIAGNOSIS

Transaxle malfunctions may be caused by poor engine performance, improper adjustments or failure of hydraulic, mechanical or electronic components. Always begin by checking fluid level, fluid condition and shift cable adjustment. Perform road test to determine if problem has been corrected. If problem still exists, several tests must be performed on transaxle. See **TESTING** .

Abnormal Vibration During High Load In Low Gear

Check for defective Torque Converter Clutch Solenoid Valve (TCCSV) on valve body or wiring circuit, defective oil temperature sensor, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generators "A" and "B" or wiring circuit, defective torque converter, defective Transaxle Control Module (TCM), improper engine performance and malfunction in valve body.

Abnormal Vibration Or Shock When Transaxle Is Shifted Into Forward Or Reverse Gears

Check for defective front or rear clutch, defective low-reverse brake, defective or improperly adjusted kickdown band, defective or improperly adjusted park/neutral position switch, defective or improperly adjusted Throttle Position (TP) sensor, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective Transaxle Control Module (TCM), improper engine idle speed, improper shift cable adjustment and malfunction in valve body.

Clutch Slips In Drive & Torque Converter Stall Speed Is Excessive

Check for defective oil pump, defective one-way clutch, defective torque converter, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective Torque Converter Clutch Solenoid Valve (TCCSV) on valve body or wiring circuit, defective rear clutch, improper shift cable adjustment, low fluid level, low line pressure and malfunction in valve body.

Clutch Slips In Reverse & Torque Converter Stall Speed Is Excessive

Check for defective front clutch or retainer, defective low-reverse brake, defective torque converter, defective oil pump, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, improper shift cable adjustment, low fluid level, low line pressure, malfunction in valve body and 'O' ring for low-reverse brake circuit not installed between valve body and transaxle case.

Torque Converter Clutch Inoperative

Check for defective Torque Converter Clutch Solenoid Valve (TCCSV) on valve body or wiring circuit, defective oil temperature sensor, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generators "A" and "B" or wiring circuit, defective torque converter, defective Transaxle Control Module (TCM), malfunction in ignition signal system and malfunction in valve body.

Engine Stalls When Shifted From Neutral To Drive Or Reverse

Check for defective Torque Converter Clutch Solenoid Valve (TCCSV) on valve body or wiring circuit, improper engine idle speed or performance, defective torque converter and malfunction in valve body.

Engine Starts, Or Vehicle Moves Between Neutral & Reverse Or Neutral & Drive

Check for defective or improperly adjusted park/neutral position switch, improper shift cable adjustment and malfunction in valve body.

Excessive Creeping Or Idling Vibration

Check for defective or improperly adjusted accelerator switch, defective Transaxle Control Models (TCM) and improper engine idle speed.

Excessive Vibration During All Upshifts

Check for defective front clutch, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generator "A" or wiring circuit, defective Transaxle Control Model (TCM), improper engine performance, malfunction in ignition signal system and malfunction in valve body.

Excessive Vibration During D-2 Downshift

Check for defective low-reverse brake, defective kickdown band or piston, defective kickdown servo switch, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generator "A" or wiring circuit, defective Transaxle Control Module (TCM), improper engine performance, malfunction in ignition signal system and malfunction in valve body.

Excessive Vibration During 1-2 Or 3-4 Upshift

Check for defective end clutch, defective kickdown band or piston, defective kickdown servo switch, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generator "A" or wiring circuit, defective Transaxle Control Module (TCM), improper engine performance, improper kickdown servo adjustment, malfunction in ignition signal system and malfunction in valve body.

Excessive Vibration During 2-3 Or 4-3 Shift

Check for defective front clutch, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generator "A" or wiring circuit, defective Transaxle Control Module (TCM), improper engine performance, malfunction in ignition signal system and malfunction in valve body.

Excessive Vibration When Cold

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Check for improper engine performance and malfunction in valve body.

Overdrive Control Switch Will Not Operate

Check for defective overdrive control switch or wiring circuit and defective Transaxle Control Module (TCM).

Sudden Engine RPM Increase During Upshift

Check for low fluid level, defective end clutch, defective oil pump, defective front clutch or retainer, defective kickdown band, defective or improperly adjusted Throttle Position (TP) sensor, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective pulse generator "A" or wiring circuit, defective Transaxle Control Module (TCM), improper kickdown servo adjustment, low line pressure, malfunction in ignition signal system and malfunction in valve body.

Sudden Engine RPM Increase During 3-2 Shift With Excessive Vibration

Check for defective front clutch retainer, defective kickdown band, defective kickdown servo switch, defective oil pump, defective or improperly adjusted Throttle Position (TP) sensor, defective Pressure Control Solenoid Valve (PCSV) on valve body, defective pulse generator "A" or wiring circuit, defective Transaxle Control Module (TCM), improper kickdown servo adjustment, low fluid level, low line pressure, malfunction in ignition signal system and malfunction in valve body.

Torque Converter Stall Speed Is Low

Check for defective torque converter and improper engine performance.

Transaxle Remains In 3rd Gear

Check for defective contacts at ignition switch, defective Torque Converter Clutch Solenoid Valve (TCCSV) on valve body or wiring circuit, defective end clutch, defective front clutch retainer, defective front or rear clutch, defective kickdown band, defective kickdown servo switch, defective low-reverse brake, defective or improperly adjusted park/neutral position switch, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective pulse generator "B" or wiring circuit, defective Shift Control Solenoid Valve (SCSV) "A" or "B" on valve body or wiring circuit, defective Transaxle Control Module (TCM), improper shift cable adjustment, low fluid level, low line pressure, malfunction in valve body and "O" Ring for low-reverse brake circuit not installed between valve body and transaxle case.

Transaxle Shifts But Not Within Specified Range

Check for defective connection at ignition switch, defective or improperly adjusted Throttle Position (TP) sensor, defective pulse generator "B" or wiring circuit, defective Transaxle Control Module (TCM) and malfunction in valve body.

Transaxle Starts Off From 2nd Gear

Check for defective or improperly adjusted accelerator switch, defective or improperly adjusted park/neutral position switch, defective Transaxle Control Module (TCM), defective torque converter, improper engine performance, improper shift cable adjustment and malfunction in valve body.

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Transaxle Will Not Upshift From 2nd To 3rd Gear

Check for defective front clutch or retainer, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective Transaxle Control Module (TCM), defective or improperly adjusted park/neutral position switch, defective torque converter and malfunction in valve body.

Transaxle Will Not Upshift Into 4th Gear

Check for defective end clutch, defective front clutch retainer, defective or improperly adjusted park/neutral position switch, defective overdrive control switch, defective Transaxle Control Module (TCM), improper shift cable adjustment and malfunction in valve body.

Vehicle Moves In Park Or Neutral

Check for defective or improperly adjusted park/neutral position switch, defective parking mechanism, defective rear clutch, improper shift cable adjustment and malfunction in valve body.

Vehicle Will Not Hold In Park

Check for defective parking mechanism and improper shift cable adjustment.

Vehicle Will Not Move Forward

Check for defective oil pump, defective one-way clutch, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective rear clutch, defective torque converter, improper shift cable adjustment, low fluid level, low line pressure and malfunction in valve body.

Vehicle Will Not Move Forward Or Backward

Check for defective low-reverse brake, defective oil pump, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective torque converter, defective torque converter drive plate, improper shift cable adjustment, low fluid level, low line pressure and malfunction in valve body.

Vehicle Will Not Move In Reverse

Check for defective front clutch or retainer, defective low-reverse brake, defective oil pump, defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit, defective pulse generator "B" or wiring circuit, defective torque converter, improper shift cable adjustment, low fluid level, low line pressure, malfunction in valve body and "O" Ring for low-reverse brake circuit not installed between valve body and transaxle case.

CLUTCH, BRAKE & BAND APPLICATION CHART

Selector Lever Position	Elements In Use
"D" (Drive)	
1st Gear	Rear Clutch & One-Way Clutch
2nd Gear	Rear Clutch & Kickdown Band

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3rd Gear	Front Clutch, Rear Clutch & End Clutch
4th Gear	End Clutch & Kickdown Band
"2" (Second)	
1st Gear	Rear Clutch & One-Way Clutch
2nd Gear	Rear Clutch & Kickdown Band
"1" (Low)	
1st Gear	Rear Clutch & Low- Reverse Brake
"R" (Reverse)	Front Clutch & Low-Reverse Brake
"N" Or "P" (Neutral Or Park)	All Clutches, Brakes & Bands Released Or Ineffective

TESTING

NOTE: A road test can be performed to check transaxle shift points. Pressure test can be performed to check operation of transaxle internal components. Torque converter stall speed test can be performed to check torque converter operation.

ROAD TEST

NOTE: Perform road test to ensure transaxle shift points are at specified speeds. See [Fig. 4 -Fig. 7](#) . Shift point information is not available for Sonata 3.0L.

1. Ensure shift cable is properly adjusted, and fluid level and condition are okay. Add fluid and adjust shift cable if necessary. Road test vehicle, and check if shift points are at specified speeds. See [Fig. 4 -Fig. 7](#) .
2. If shift points are not as specified, check for stored fault codes. See MITSUBISHI F4A20, F4A30 & W4A30 SERIES ELECTRONIC CONTROLS article. If slippage occurs, determine which components are applied in each gear. See [CLUTCH, BRAKE & BAND APPLICATION CHART](#) . Perform hydraulic pressure test to check transaxle internal components. See [HYDRAULIC PRESSURE TEST](#) under TESTING.

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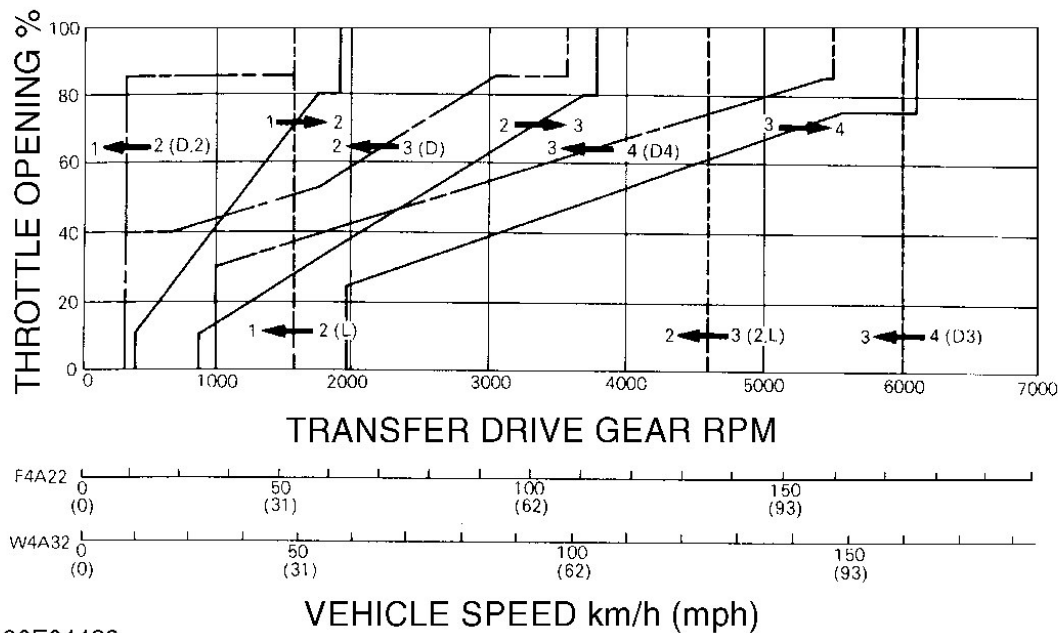


Fig. 4: Identifying Transaxle Shift Points (Expo)
Courtesy of CHRYSLER CORP.

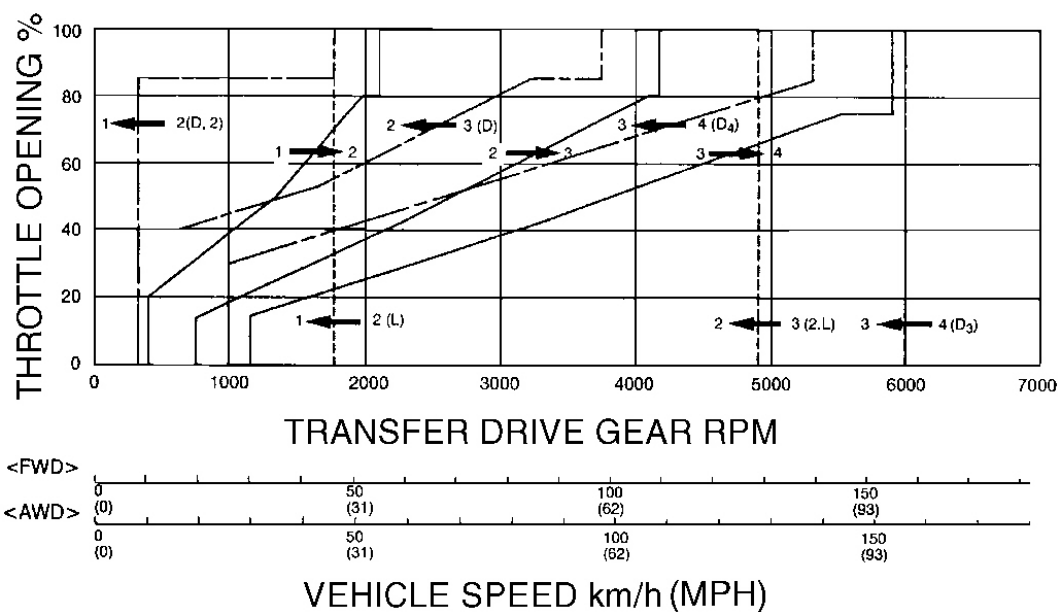
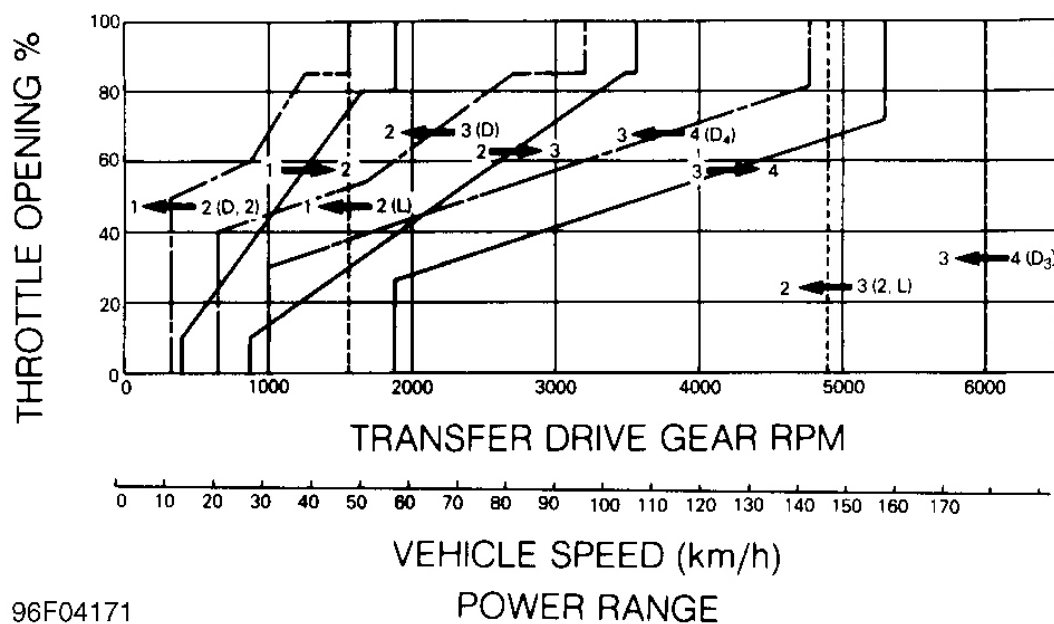


Fig. 5: Identifying Transaxle Shift Points (Eclipse)

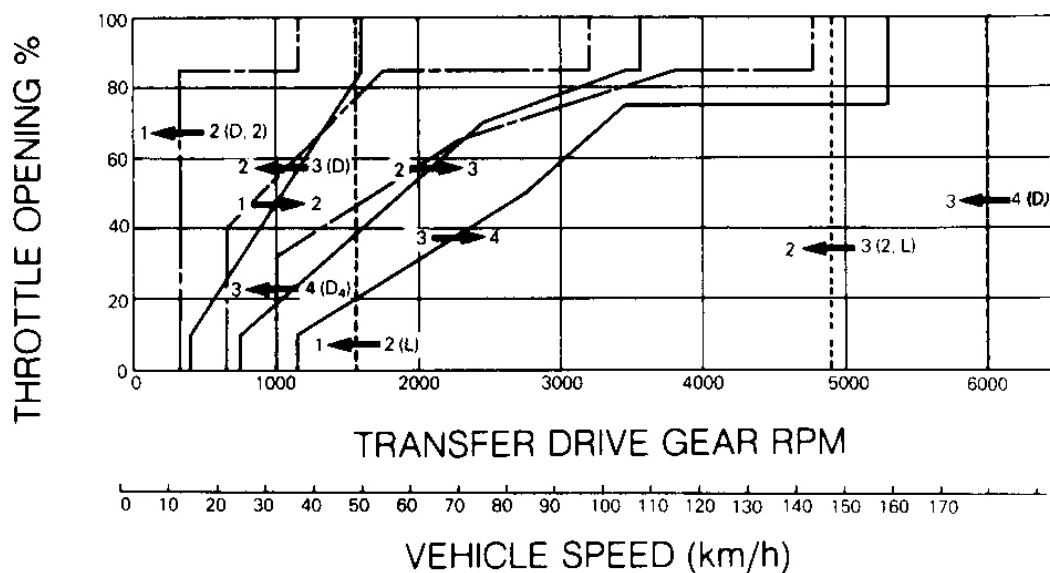
Courtesy of CHRYSLER CORP.

**Fig. 6: Identifying Transaxle Shift Points - Power Range (Diamante & 3000GT SOHC)**

Courtesy of CHRYSLER CORP.

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NOTE: Broken lines indicate downshift
and solid lines indicate upshift.

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Fig. 7: Identifying Transaxle Shift Points - Economy Range (Diamante & 3000GT SOHC)
Courtesy of CHRYSLER CORP.

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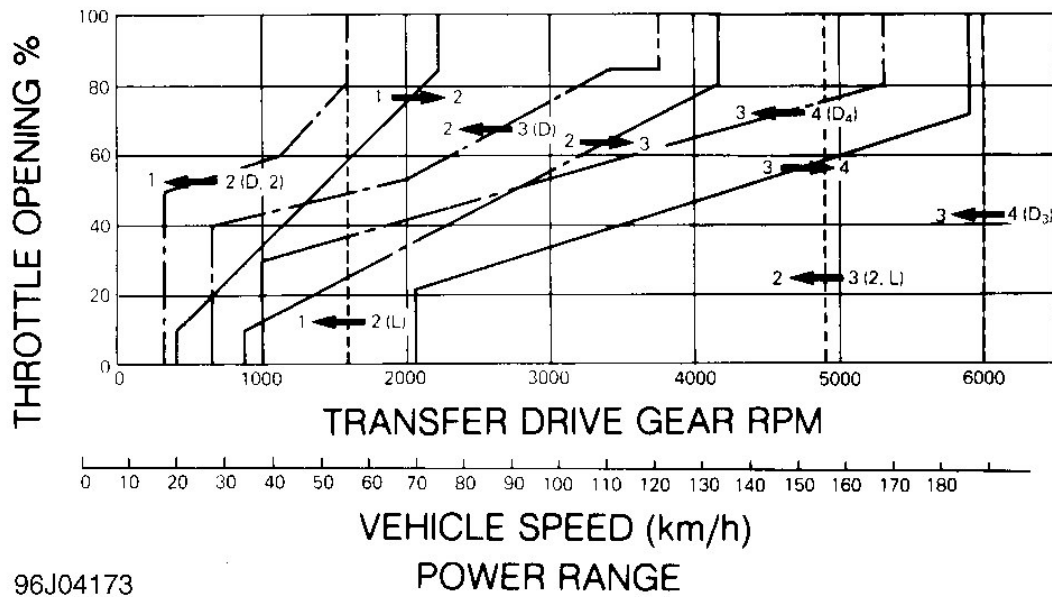
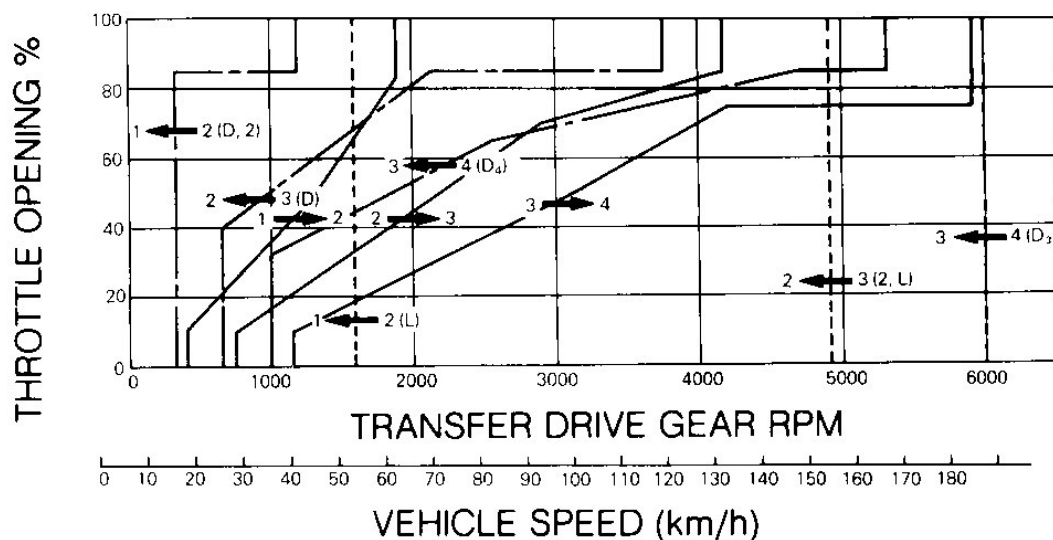


Fig. 8: Identifying Transaxle Shift Points - Power Range (Diamante & 3000GT DOHC)
Courtesy of CHRYSLER CORP.



NOTE: Broken lines indicate downshift
and solid lines indicate upshift.

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Fig. 9: Identifying Transaxle Shift Points - Economy Range (Diamante & 3000GT DOHC)
Courtesy of CHRYSLER CORP.

TORQUE CONVERTER STALL SPEED TEST

Stall Speed Test Procedure

1. Install tachometer. Ensure transaxle fluid level is correct. Start engine, and operate it until transaxle fluid is at normal operating temperature. Ensure engine operating temperature is approximately 180-190°F (80-90°C).
2. Block rear wheels. Apply parking and service brakes. Place transaxle in Drive, and open throttle to wide open position. Note maximum engine RPM. This is torque converter stall speed. Repeat procedure with transaxle in Reverse.

CAUTION: DO NOT open throttle to wide open position for more than 5 seconds, or transaxle damage may occur. If performing more than one torque converter stall speed test, operate engine at 1000 RPM in Neutral for at least 2 minutes to cool transaxle fluid before performing next stall speed test.

3. Stall speed should be within specification. See STALL SPEED SPECIFICATIONS table. Once stall speed is obtained, place transaxle in Neutral. Operate engine, allowing transaxle to cool. Stop engine and place transaxle in Park. Remove tachometer.

STALL SPEED SPECIFICATIONS

Application	Stall Speed Engine RPM
Eclipse	3300-3800
Expo	1800-3200
Diamante & 3000GT	
DOHC	2200-3200
SOHC	1800-2800
Sonata	2200-2500

NOTE: Use the following symptoms for trouble shooting results of stall speed tests.

Stall Speed Exceeds Specification

If stall speed exceeds specification in Drive, rear clutch or one-way clutch is slipping. If stall speed exceeds specification in Reverse, front clutch or low-reverse brake is slipping. Perform hydraulic pressure test to find problem area. See **HYDRAULIC PRESSURE TEST** under TESTING.

Stall Speed Is Less Than Specification In Drive & Reverse

If stall speed is less than specified, either engine performance is poor or torque converter is defective. If engine operates correctly, torque converter is defective.

HYDRAULIC PRESSURE TEST

1. Ensure transaxle is at normal operating temperature and fluid level is correct. Raise and support vehicle so drive wheels rotate freely. Install tachometer, and position it so driver can view it.
2. Note locations of hydraulic pressure taps on side of transaxle case and near oil pan. See **Fig. 11** . Remove plug, and install adapter and pressure gauge to each pressure tap.

CAUTION: A 400 psi (28 kg/cm squared) pressure gauge is required for checking certain pressures. See Fig. 10 to determine when this gauge should be used in accordance with hydraulic pressure specification.

3. Measure hydraulic pressure at various specified engine RPM and transaxle gears. See **Fig. 10** . Ensure pressure is within specification. If proper line pressure or reducing pressure cannot be obtained, check for proper adjustment. See **LINE PRESSURE** or REDUCING PRESSURE under ADJUSTMENTS.
4. If proper pressure cannot be obtained, check for probable defective components. See **Fig. 12** . Remove pressure gauge. Install and tighten plug to specification. See **TORQUE SPECIFICATIONS** table.

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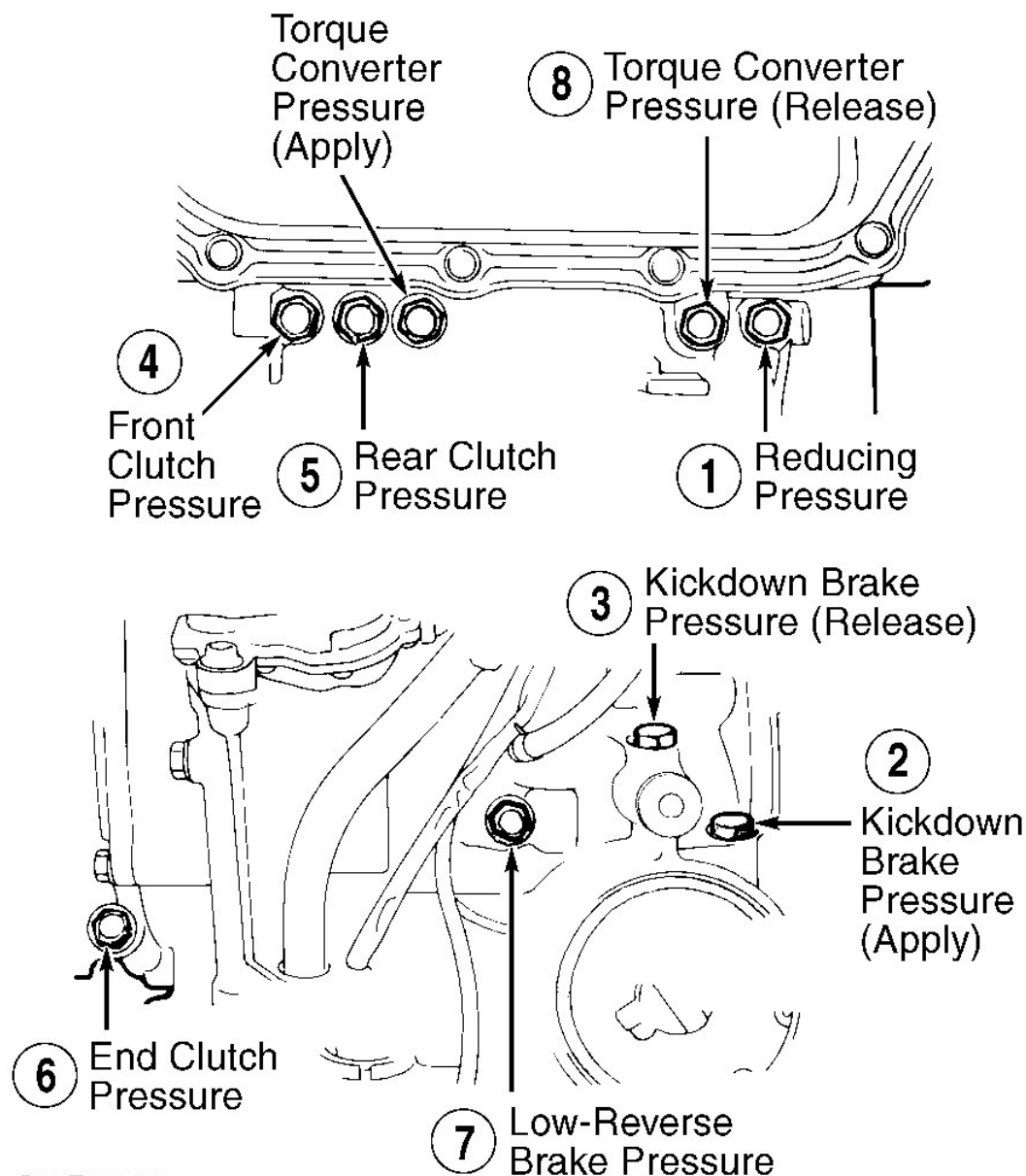
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No.	Conditions			Standard oil pressure kPa (psi)							
	Select lever position	Engine speed rpm	Shift position	① Reducing pressure	② Kickdown brake pressure (Apply)	③ Kickdown brake pressure (Release)	④ Front clutch pressure	⑤ Rear clutch pressure	⑥ End clutch pressure	⑦ Low-reverse brake pressure	⑧ Torque-converter pressure
1	N	Idling	Neutral	360-480 (51-68)	-	-	-	-	-	-	*
2	D	Idling	2nd gear	360-480 (51-68)	100-210 (14-30)	-	-	730-830 (104-118)	-	-	*
3	D (SW-ON)	Approx. 2,500	4th gear	360-480 (51-68)	830-900 (118-128)	-	-	-	830-900 (118-128)	-	450-650 (64-92)
4	D (SW-OFF)	Approx. 2,500	3rd gear	360-480 (51-68)	830-900 (118-128)	830-900 (118-128)	830-900 (118-128)	830-900 (118-128)	830-900 (118-128)	-	450-650 (64-92)
5	2	Approx. 2,500	2nd gear	360-480 (51-68)	830-900 (118-128)	-	-	830-900 (118-128)	-	-	450-650 (64-92)
6	L	Approx. 1,000	1st gear	360-480 (51-68)	-	-	-	830-900 (118-128)	-	300-450 (43-64)	*
7	R	Approx. 2,500	Reverse	360-480 (51-68)	-	1,640-2,240 (233-319)	1,640-2,240 (233-319)	-	-	1,640-2,240 (233-319)	450-650 (64-92)
		Approx. 1,000				①	①			①	

NOTE: - Must be 10 kPa (1.4 psi) or less.
 SW-ON - This indicates overdrive control switch must be in ON position.
 SW-OFF - This indicates overdrive control switch must be in OFF position.
 * - Hydraulic pressure is generated, but no standard value exists.
 ① - On all models, pressure should be 1000 kPa (142 psi) or more.

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Fig. 10: Testing Transaxle Hydraulic Pressures
 Courtesy of CHRYSLER CORP.

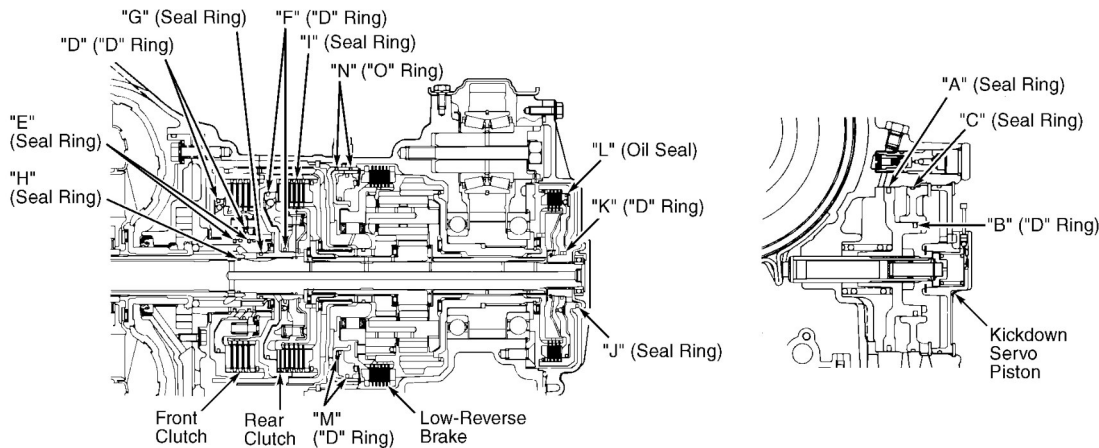


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Fig. 11: Identifying Transaxle Hydraulic Pressure Taps
 Courtesy of CHRYSLER CORP.

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Trouble symptom	Probable cause	Remedy
1. Line pressures are all low (or high). NOTE * "Line pressures" refers to oil pressure ②, ③, ④, ⑤, and ⑦. See Fig. 9	a. Clogging of oil filter b. Improper adjustment of oil pressure (line pressure of regulator valve) c. Functional malfunction of valve body assembly d. Looseness of valve body tightening part e. Improper oil pump discharge pressure	a. Visually inspect the oil filter; replace the oil filter if it is clogged. b. Measure line pressure ② (kickdown brake pressure); if the pressure is not the standard value, readjust the line pressure, or, if necessary, replace the valve body assembly. c. Replace the valve body assembly. d. Tighten the valve body tightening bolt and installation bolt. e. Check the side clearance of the oil pump gear; replace the oil pump assembly if necessary.
2. Improper reducing pressure	a. Clogging of the filter (L-shaped type) of the reducing-pressure circuit b. Improper adjustment of oil pressure c. Functional malfunction of the valve body assembly	a. Disassemble the valve body assembly and check the filter; replace the filter if it is clogged. b. Measure the ① reducing pressure; if it is not the standard value, readjust, or replace the valve body assembly. c. Replace the valve body assembly.
3. Improper kickdown brake pressure (Apply)	a. Malfunction of the seal ring ⑧, D-ring ⑨ or seal ring ⑩ of the sleeve of the kickdown servo piston b. Functional malfunction of the valve body assembly	a. Disassemble the kickdown servo and check whether the seal ring or D-ring is damaged. If it is cut or has scratches, replace the seal ring or D-ring. b. Replace the valve body assembly.
1. Improper kickdown brake pressure (Release)	a. Malfunction of the seal ring ⑧, D-ring ⑨ or seal ring ⑩ of the sleeve of the kickdown servo piston b. Functional malfunction of the valve body assembly	a. Disassemble the kickdown servo and check whether the seal ring or D-ring is damaged. If it is cut or has scratches, replace the seal ring or D-ring. b. Replace the valve body assembly.
5. Improper front clutch pressure	a. Malfunction of the seal ring ⑧, D-ring ⑨ or seal ring ⑩ of the sleeve of the kickdown servo piston b. Functional malfunction of the valve body assembly c. Wear of the front clutch piston or retainer, or malfunction of the D-ring ⑪ or seal ring ⑫	a. Disassemble the kickdown servo and check whether the seal ring or D-ring is damaged. If it is cut or has scratches, replace the seal ring or D-ring. b. Replace the valve body assembly. c. Disassemble the transaxle itself and check whether or not there is wear of the front clutch piston and retainer inner circumference, or damage of the D-ring and/or seal ring. If there is any wear or damage, replace the piston, retainer, D-ring and/or seal ring.
6. Improper rear clutch pressure	a. Malfunction of D-ring ⑬ of rear clutch piston, retainer seal ring ⑭ and seal rings ⑮ and ⑯ of input shaft b. Functional malfunction of the valve body assembly	a. Disassemble the rear clutch, check input shaft seal ring, retainer seal ring, piston D-ring, etc. and replace broken or damaged parts. b. Replace the valve body assembly.
7. Improper end clutch pressure	a. Malfunction of seal ring ⑰ or the D-ring ⑱ and/or oil seal ⑲ of end clutch b. Functional malfunction of the valve body assembly	a. Disassemble the end clutch and check the oil seal or D-ring of the piston, seal ring of the retainer, etc.; replace if there are cuts, scars, scratches or damage. b. Replace the valve body assembly.
8. Improper low-reverse brake pressure	a. O-ring between valve body and transaxle damaged or missing b. Functional malfunction of the valve body assembly c. Malfunction of the D-ring ⑲ of the low-reverse brake piston or the O-ring ⑲ of the retainer	a. Remove the valve body assembly and check to be sure that the O-ring at the upper surface of the upper valve body is not missing or damaged; install or replace the O-ring if necessary. b. Replace the valve body assembly. c. Disassemble the transaxle itself and check the D-ring and O-ring for damage; replace if there are cuts, scars, scratches or damage.
9. Improper torque converter pressure	a. Clogging or leaking of the oil cooler and/or piping b. Malfunction of the torque converter	a. Repair or replace, as necessary, the cooler and/or piping. b. Replace the torque converter.

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Fig. 12: Analyzing Hydraulic Pressure Test Results
Courtesy of CHRYSLER CORP.

ADJUSTMENTS

KICKDOWN SERVO

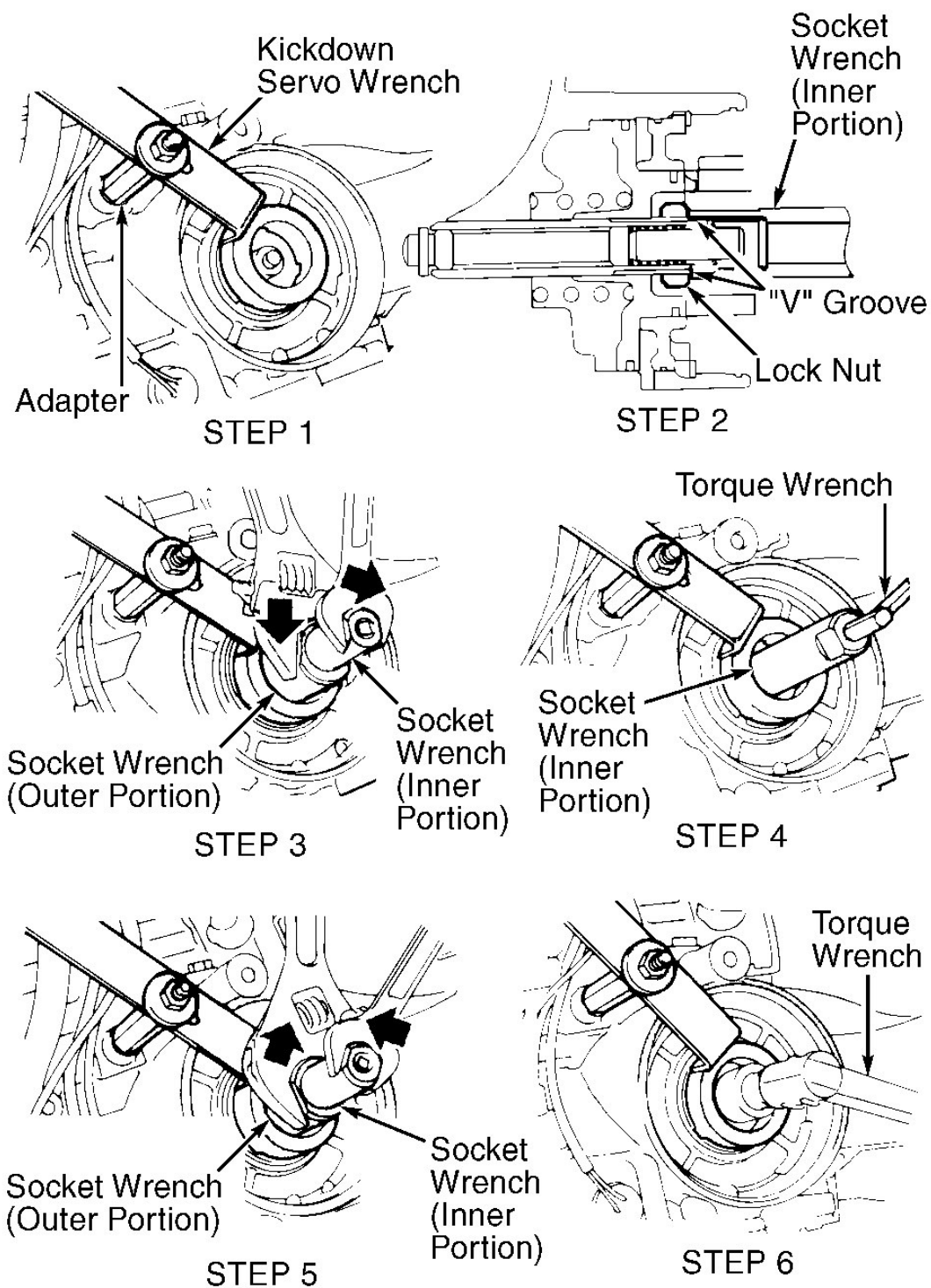
1. Ensure area around kickdown servo switch is clean. Remove snap ring and kickdown servo switch. To prevent rotation of kickdown servo piston, engage pawl of Kickdown Servo Wrench (MD998918) in notch on kickdown servo piston. See STEP 1 in **Fig. 13**.
2. Remove plug, and install adapter between kickdown servo wrench and transaxle case in low-reverse hydraulic pressure tap port. Tighten adapter by hand only.

CAUTION: DO NOT press kickdown servo piston inward with kickdown servo wrench. Tighten adapter on transaxle case by hand only to prevent damage to transaxle case.

3. Loosen lock nut located before "V" groove on adjusting rod. See STEP 2 in **Fig. 13**. Install and tighten inner portion of socket wrench until it contacts the lock nut. Engage outer portion of socket wrench with lock nut.
4. Rotate outer portion of socket wrench counterclockwise and inner portion of socket wrench clockwise to secure lock nut and inner portion of socket wrench. See STEP 3 in **Fig. 13**.
5. Attach INCH lb. torque wrench on inner portion of socket wrench. See STEP 4 in **Fig. 13**. Tighten inner portion of socket wrench to 86 INCH lbs. (10 N.m), and then loosen lock nut at least 2 turns.
6. Tighten inner portion of socket wrench to 43 INCH lbs. (5 N.m). Back off inner portion of socket wrench 2-2 1/4 revolutions. Engage outer portion of socket wrench with lock nut.
7. Rotate outer portion of socket wrench clockwise and inner portion of socket wrench counterclockwise to release lock nut and inner portion of socket wrench. See STEP 5 in **Fig. 13**.
8. Tighten lock nut by hand until it contacts kickdown servo piston. Using torque wrench, tighten lock nut to specification. See STEP 6 in **Fig. 13**. See TORQUE SPECIFICATIONS table.

CAUTION: Tighten lock nut by hand first to prevent lock nut and adjusting rod from rotating together.

9. Remove kickdown servo wrench and adapter. Install plug in low-reverse pressure tap and tighten to specification. See **TORQUE SPECIFICATIONS** table. Install kickdown servo switch and snap ring.



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Fig. 13: Adjusting Kickdown Servo

Courtesy of CHRYSLER CORP.

LINE PRESSURE

NOTE: Line pressure should be checked at kickdown brake pressure (apply) tap. See **Fig. 11** . Since valve body must be removed for adjustment, check line pressure before attempting to adjust line pressure.

1. Remove valve body. See **VALVE BODY** under REMOVAL & INSTALLATION. Note location of line pressure adjusting screw. See **Fig. 14** .
2. To adjust line pressure, rotate line pressure adjusting screw. Rotate line pressure adjusting screw clockwise to decrease line pressure and counterclockwise to increase line pressure.
3. Rotating line pressure adjusting screw one revolution will change line pressure approximately 5.4 psi (3.8 kPa). The standard adjusting value for line pressure should be 124-127 psi (870-890 kPa). Reinstall valve body. Fill transaxle with ATF, and recheck line pressure.

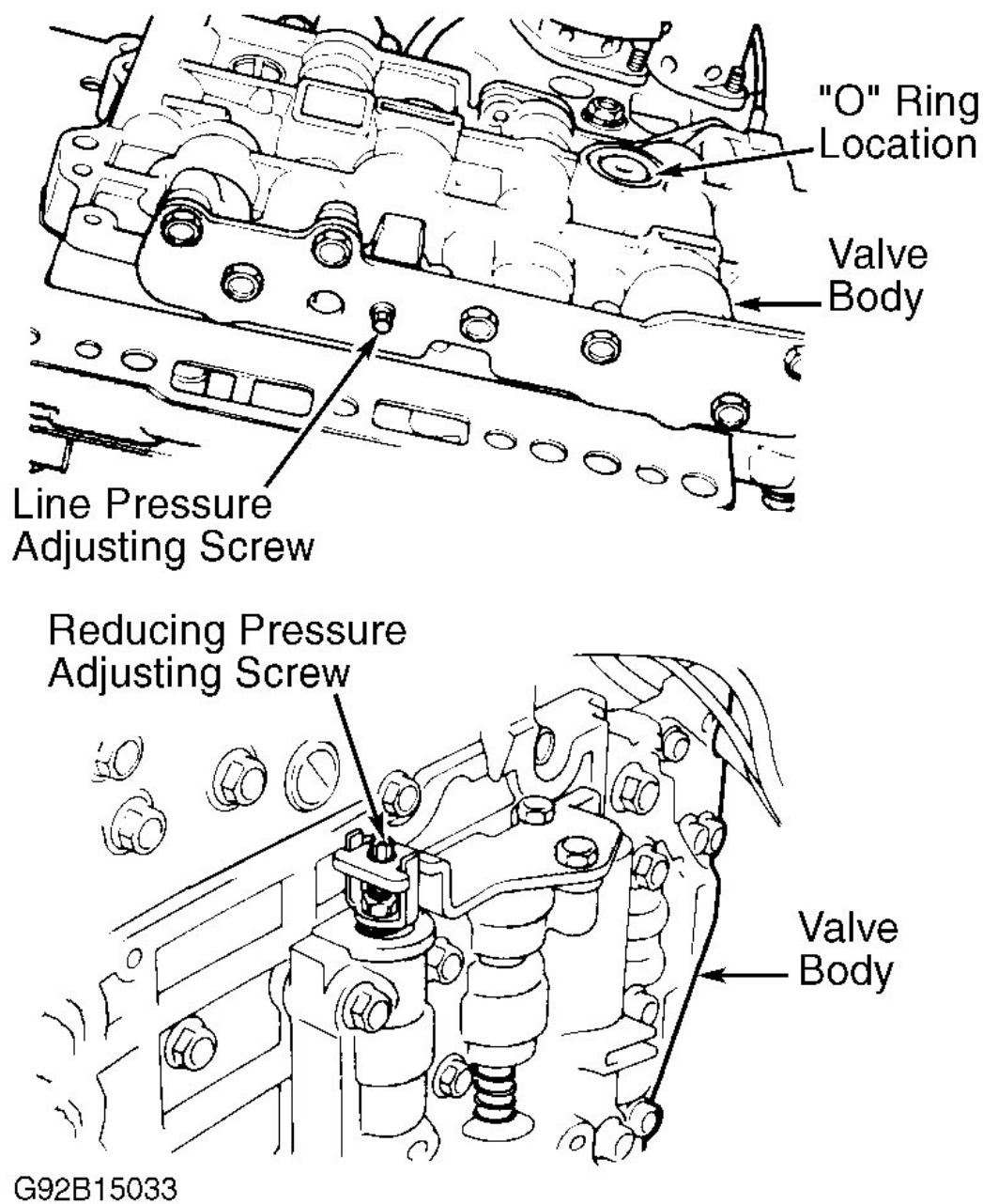


Fig. 14: Identifying "O" Ring, Line Pressure & Reducing Pressure Adjusting Screw
 Courtesy of CHRYSLER CORP.

REDUCING PRESSURE

NOTE: Check reducing pressure at reducing pressure tap. See [Fig. 11](#) . Valve body

does not need to be removed for adjustment.

1. Drain transaxle fluid. Remove oil pan and gasket. Reducing pressure adjusting screw is on bottom of valve body. See **Fig. 14** . To adjust reducing pressure, rotate reducing pressure adjusting screw. Rotate reducing pressure adjusting screw inward (clockwise) to decrease reducing pressure and outward (counterclockwise) to increase reducing pressure.
2. Rotating reducing pressure adjusting screw one revolution will change reducing pressure approximately 6.4 psi (45 kPa). The standard adjusting value for reducing pressure is 59-61 psi (415-435 kPa). Reinstall gasket and oil pan. Tighten oil pan bolts to specification. See **TORQUE SPECIFICATIONS** table. Fill transaxle with ATF, and recheck reducing pressure.

TORQUE CONVERTER

CAUTION: Torque converter is a welded assembly and is not serviceable. If a malfunction occurs or torque converter becomes contaminated with foreign material, it **MUST** be replaced. Torque converter cannot be flushed or repaired.

NOTE: For torque converter stall speed test, see **TORQUE CONVERTER STALL SPEED TEST** under **TESTING** .

REMOVAL & INSTALLATION

AXLE SHAFTS

See appropriate AXLE SHAFTS article in AXLE SHAFTS & TRANSFER CASES.

TRANSFER CASE

AWD

See appropriate TRANSFER CASE article in AXLE SHAFTS & TRANSFER CASES.

TRANSAXLE ASSEMBLY

See appropriate AUTOMATIC TRANSMISSION REMOVAL article in TRANSMISSION SERVICING.

VALVE BODY

Removal

Raise and support vehicle. Drain transaxle fluid. Remove retaining bolts, oil pan, gasket, oil filter and oil temperature sensor. Press solenoid valve wiring harness grommet and connector into transaxle case. Remove valve body bolts. Note bolt length and location for reassembly reference. See **Fig. 15** . Remove valve body.

CAUTION: DO NOT allow manual valve to fall from valve body during removal. Ensure "O" ring, located between valve body and transaxle case, is removed. See Fig. 14 .

Installation

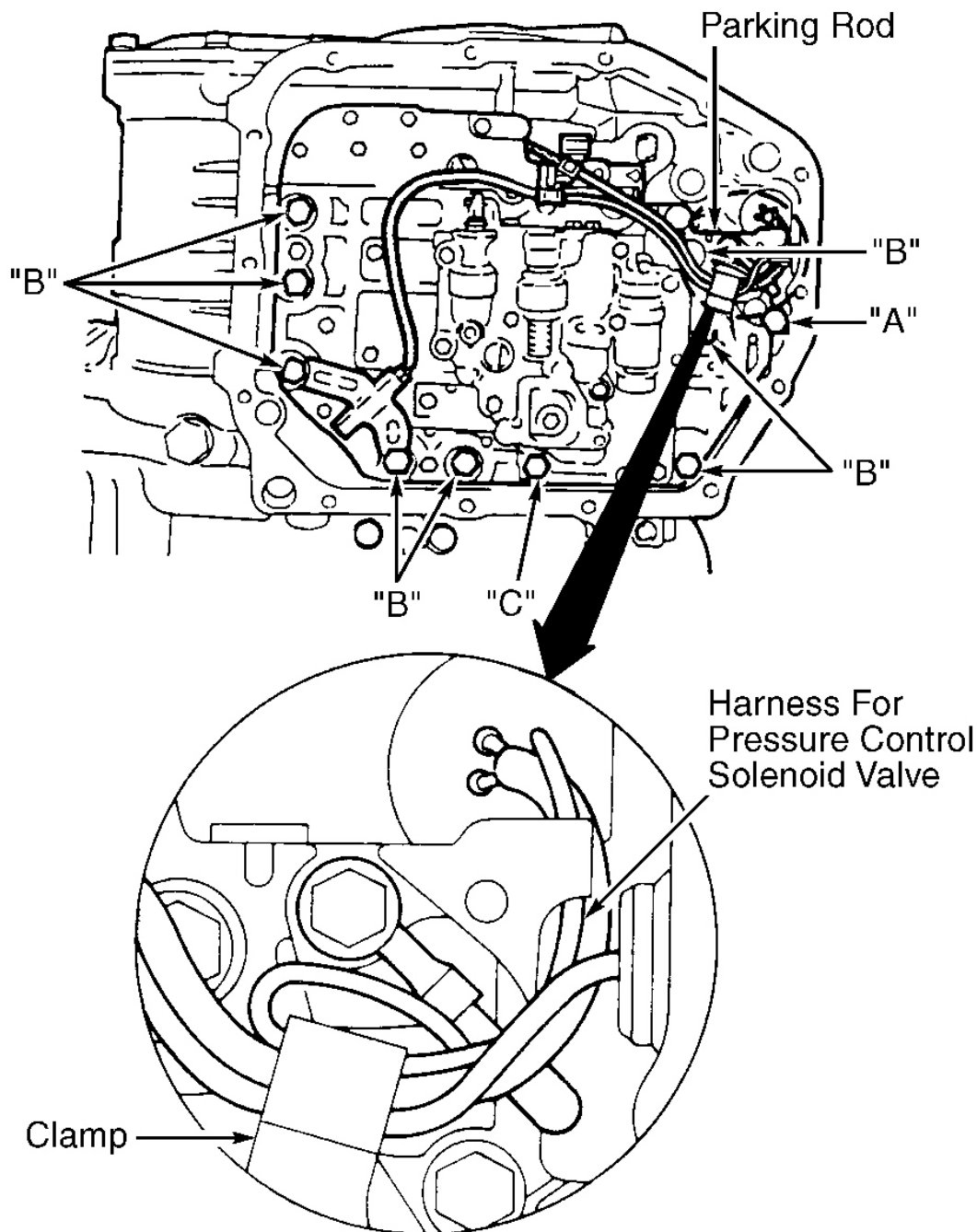
1. Always install NEW "O" ring between valve body and transaxle case and on solenoid valve wiring harness. Ensure "O" ring is seated on top of valve body. See Fig. 14 .
2. Install valve body. Ensure detent plate pin engages groove on manual valve. Install retaining bolts, ensuring proper length bolt is installed in designated area. See Fig. 15 . Tighten valve body bolts to specification. See TORQUE SPECIFICATIONS table. Install oil temperature sensor and solenoid valve wiring harness.

CAUTION: Position wiring so it does not contact detent plate. Ensure park rod is properly retained in the clamps. See Fig. 15 .

3. Install oil filter, magnet, gasket and oil pan. Tighten bolts to specification. See TORQUE SPECIFICATIONS table. Fill transaxle with ATF.

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BOLT LENGTH

"A" - .709" (18 mm)

"B" - .984" (25 mm)

"C" - 1.575" (40 mm)

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Fig. 15: Identifying Valve Body Bolt Length, Location & Wire Routing
Courtesy of CHRYSLER CORP.

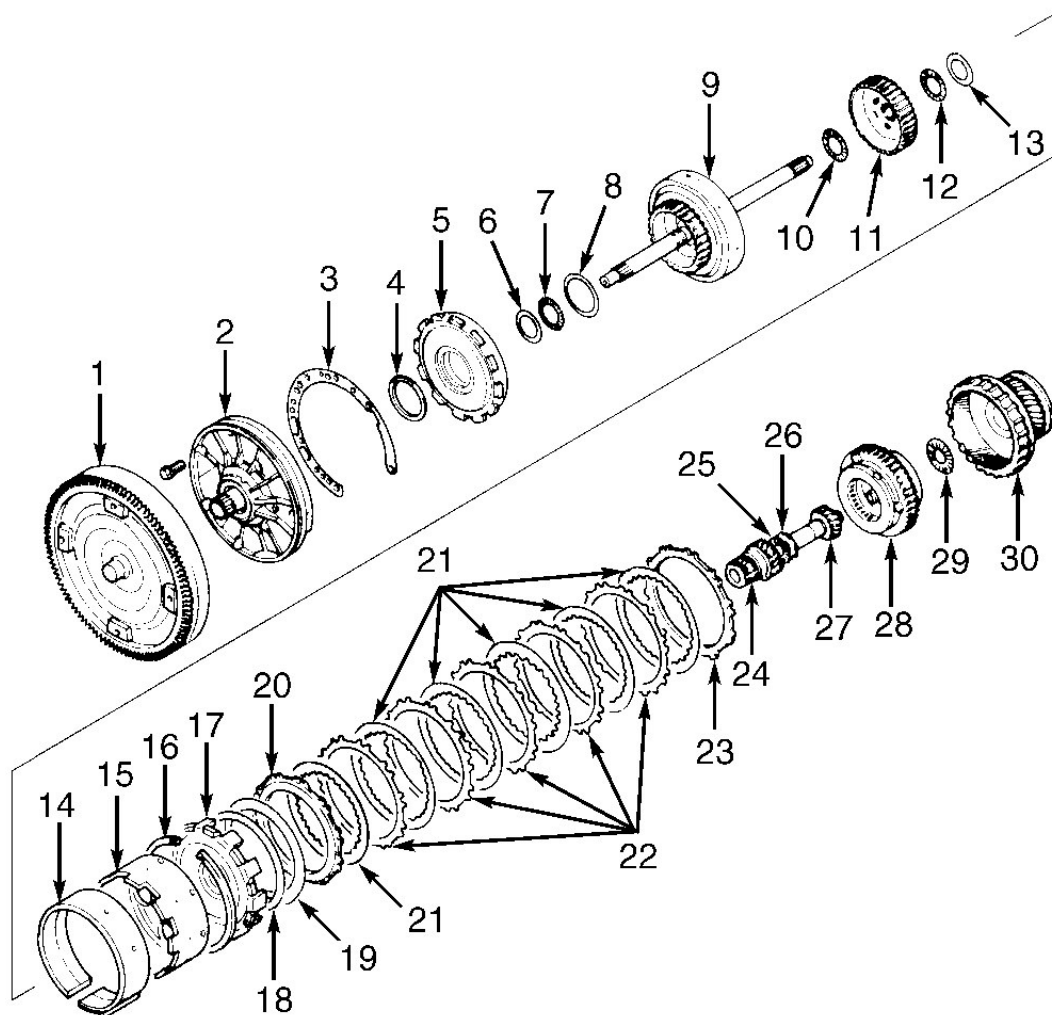
TRANSAXLE DISASSEMBLY

VALVE BODY & COMPONENTS

CAUTION: Note locations of all thrust bearings, thrust races and thrust washers for reassembly reference. See Fig. 16 and Fig. 17 .

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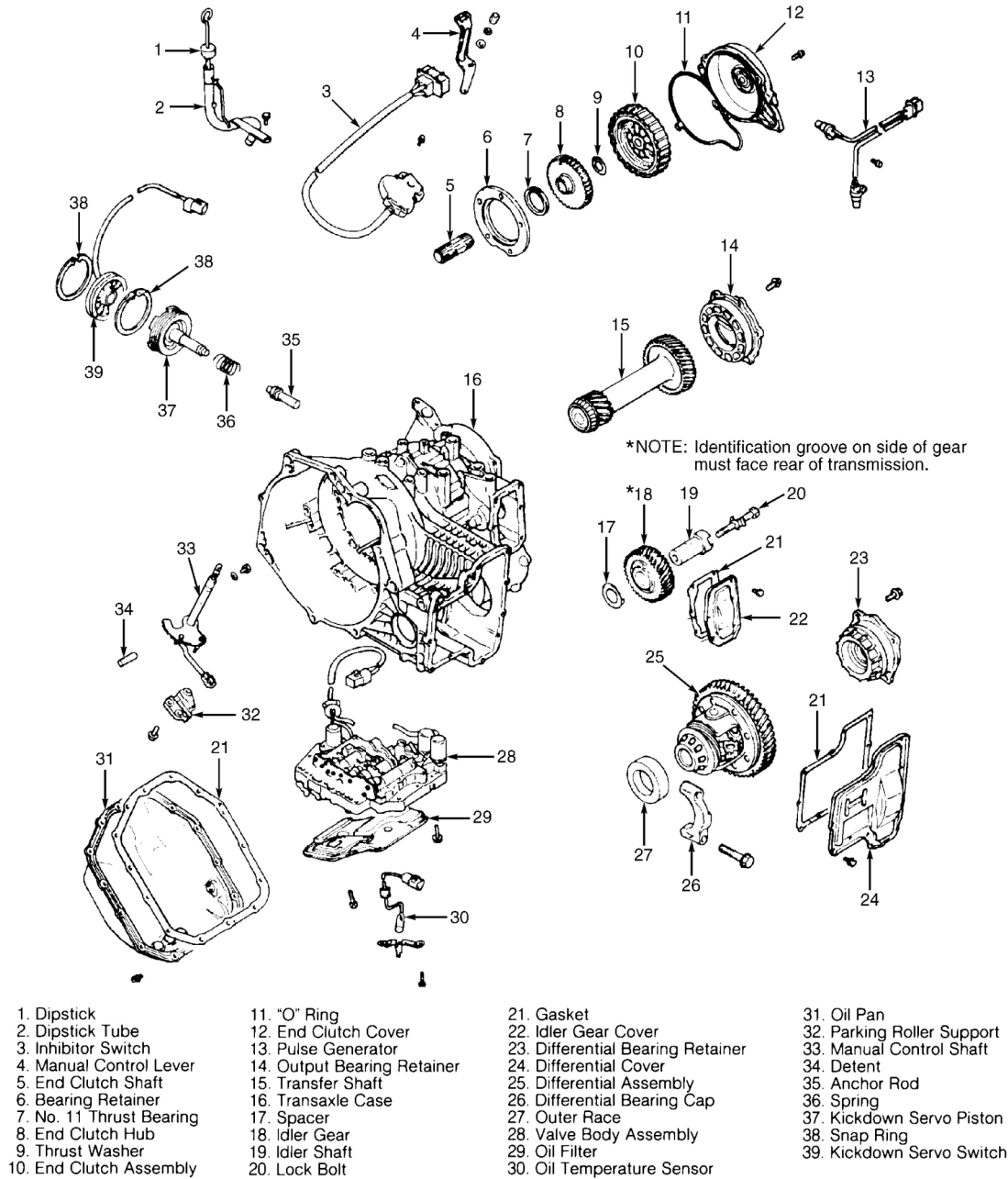
1995-96 AUTOMATIC TRANSMISSIONS Mitsubishi F4A33, W4A32 & W4A33 Overhaul



- | | |
|--------------------------|--------------------------------|
| 1. Torque Converter | 16. Snap Ring |
| 2. Oil Pump | 17. Center Support |
| 3. Gasket | 18. Wave Spring |
| 4. No. 1 Thrust Washer | 19. Return Spring |
| 5. Front Clutch Assembly | 20. Pressure Plate |
| 6. No. 3 Thrust Race | 21. Clutch Disc |
| 7. No. 4 Thrust Bearing | 22. Clutch Plate |
| 8. No. 2 Thrust Washer | 23. Reaction Plate |
| 9. Rear Clutch Assembly | 24. Reverse Sun Gear |
| 10. No. 5 Thrust Bearing | 25. No. 8 Thrust Bearing |
| 11. Rear Clutch Hub | 26. No. 9 Thrust Race |
| 12. No. 6 Thrust Race | 27. Forward Sun Gear |
| 13. No. 7 Thrust Bearing | 28. Planetary Carrier Assembly |
| 14. Kickdown Band | 29. No. 10 Thrust Bearing |
| 15. Kickdown Drum | 30. Output Flange |

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Fig. 16: Exploded View Of Transaxle Internal Components
Courtesy of CHRYSLER CORP.



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Fig. 17: Exploded View Of Transaxle Case & Components (F4A33)
Courtesy of CHRYSLER CORP.

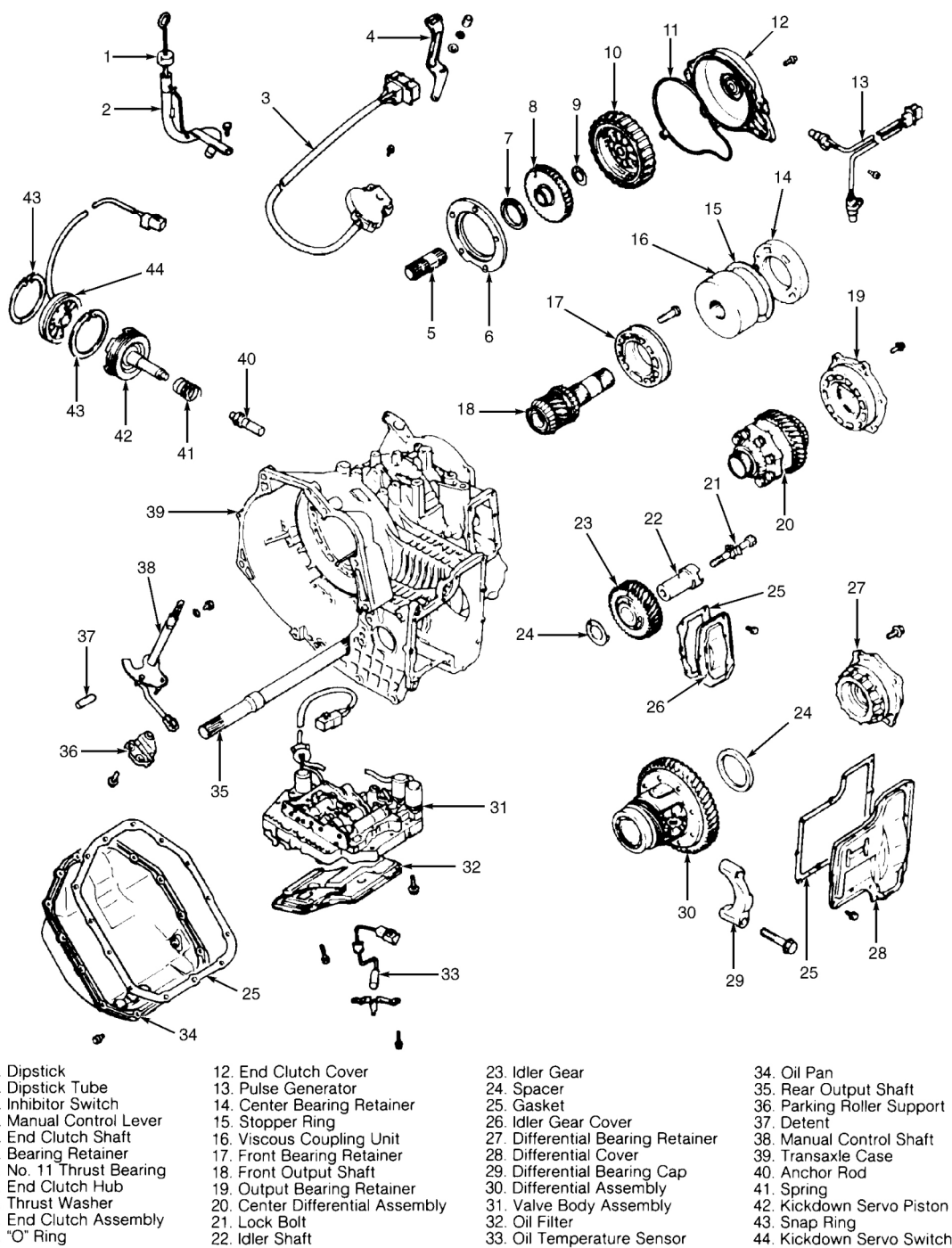
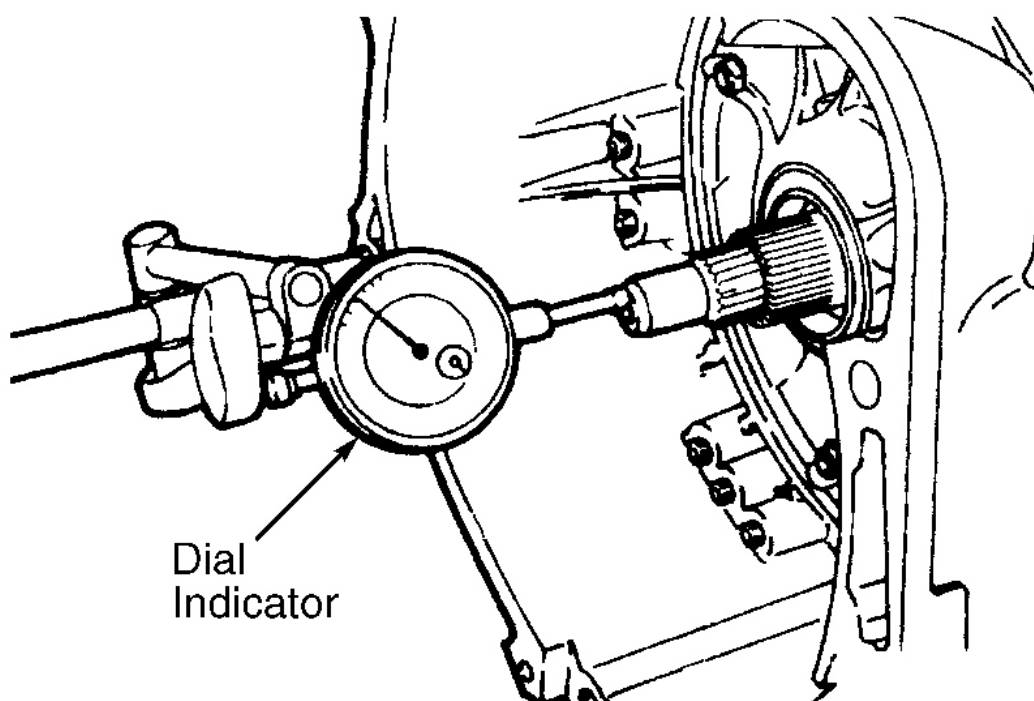


Fig. 18: Exploded View Of Transaxle Case & Components (W4A32 & W4A33)
Courtesy of CHRYSLER CORP.

1. Remove torque converter. Using dial indicator, check input shaft end play for reassembly reference. Record result. See **Fig. 19** . Remove dipstick and dipstick tube. Remove pulse generators. See **Fig. 20** . Remove manual control lever and park/neutral position switch . See **Fig. 17** or **Fig. 16** .

2. Remove retaining bolt, sleeve and speedometer driven gear assembly from transaxle case. Remove retaining bolts, oil pan, gasket and oil filter. Press solenoid valve wiring harness grommet and connector into transaxle case.
3. Remove valve body bolts. Note bolt length and location for reassembly reference. Remove valve body and oil temperature sensor.

CAUTION: DO NOT allow manual valve to fall from valve body during removal. Ensure "O" ring, located between valve body and transaxle case, is removed. See Fig. 14 .



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Fig. 19: Measuring Input Shaft End Play
Courtesy of CHRYSLER CORP.

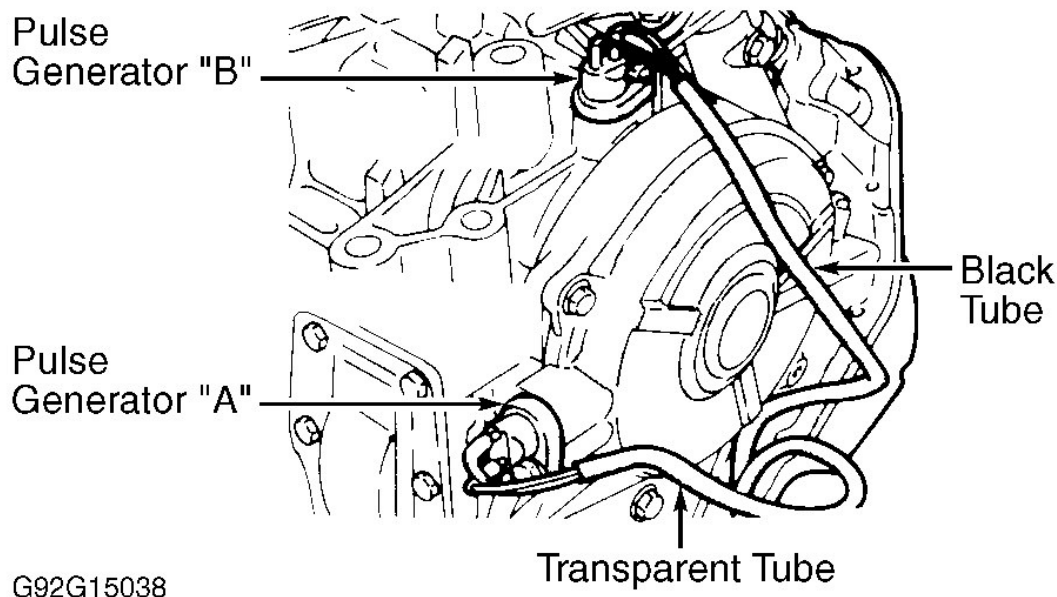


Fig. 20: Identifying Pulse Generators
 Courtesy of CHRYSLER CORP.

4. Remove parking roller support, located on bottom of transaxle case, above valve body area. See **Fig. 17** or **Fig. 16** . Remove manual control shaft retaining set screw, located near top of manual control shaft area, on transaxle case. Remove manual control shaft and detent.
5. Remove retaining bolts, differential cover, gasket and differential bearing cap. Remove retaining bolts and differential bearing retainer.
6. Remove differential assembly. Remove end clutch cover, "O" ring, end clutch assembly and thrust washer. Remove end clutch hub and No. 11 thrust bearing. Remove end clutch shaft.
7. Remove retaining bolts, idler gear cover and gasket. Bend lock tabs, and remove lock bolt for idler shaft. Using appropriate puller, pull idler shaft from transaxle case.
8. Remove idler gear and spacer. Remove oil pump retaining bolts. Install puller into threaded holes on oil pump. Pull oil pump and gasket from transaxle case.
9. Remove No. 1 thrust washer and No. 3 thrust race from rear of oil pump. See **Fig. 16** . Holding input shaft, remove front and rear clutch assembly. Remove No. 5 thrust bearing.
10. Remove rear clutch hub, No. 6 thrust race and No. 7 thrust bearing. Remove kickdown drum and kickdown band. Remove snap ring and kickdown servo switch. See **Fig. 17** or **Fig. 16** .
11. Using cup, adapter and compressor, depress kickdown servo piston. See **Fig. 21** . Remove snap ring. Remove compressor, adapter, cup, kickdown servo piston and anchor rod.
12. Remove plug and air exhaust plug. See **Fig. 22** . Remove snap ring from inside transaxle case, located above center support. Secure handle on center support, and remove center support. See **Fig. 23** .

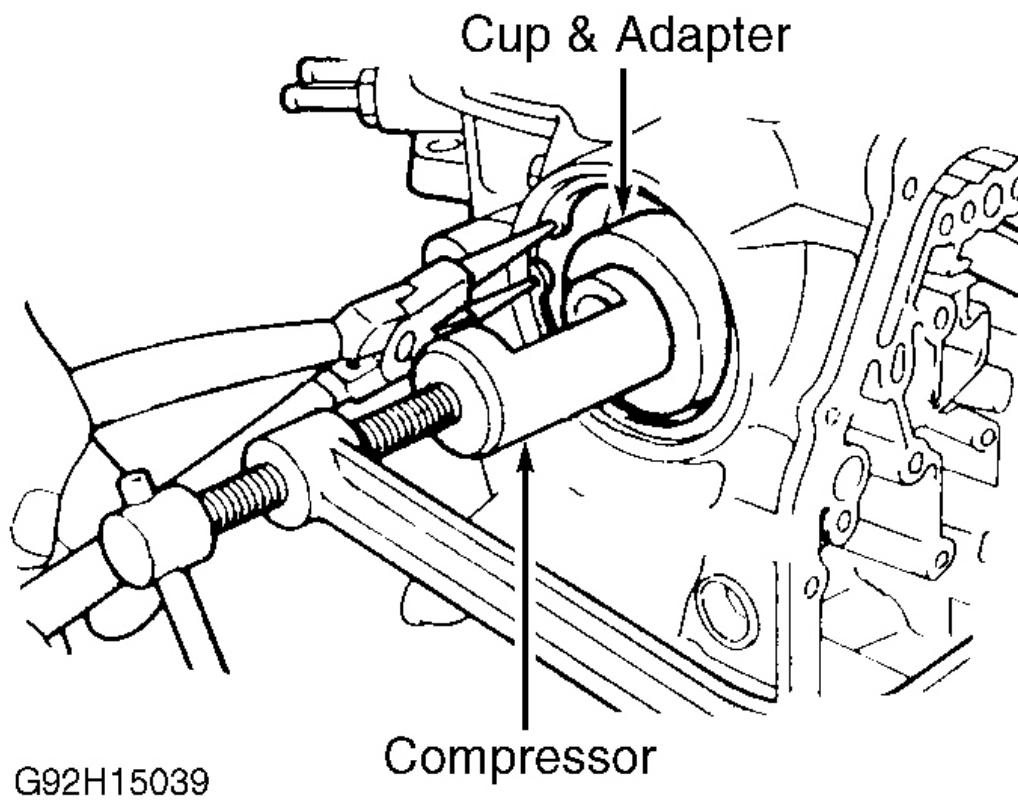


Fig. 21: Compressing Kickdown Servo Piston
Courtesy of CHRYSLER CORP.

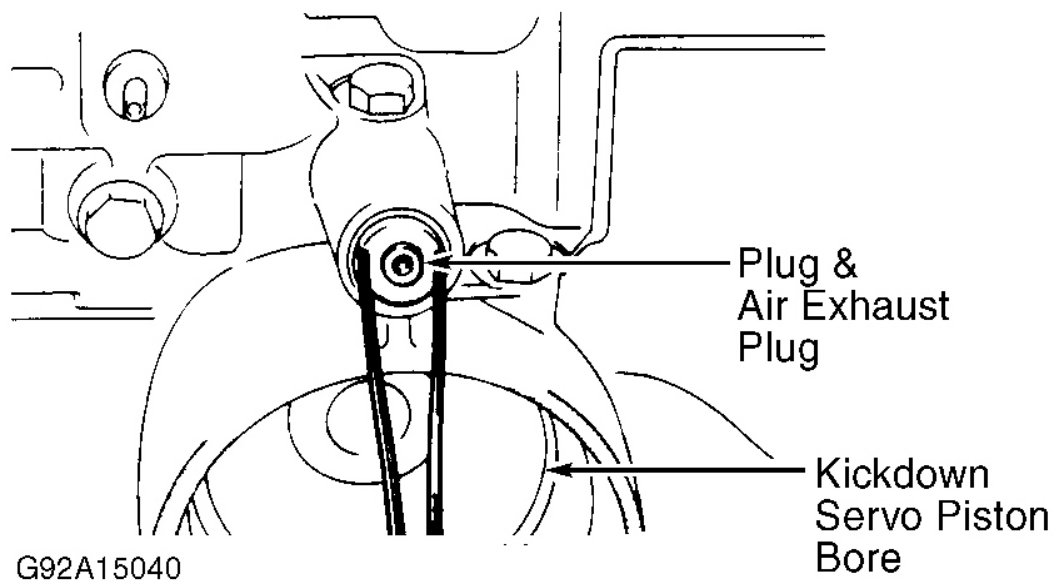
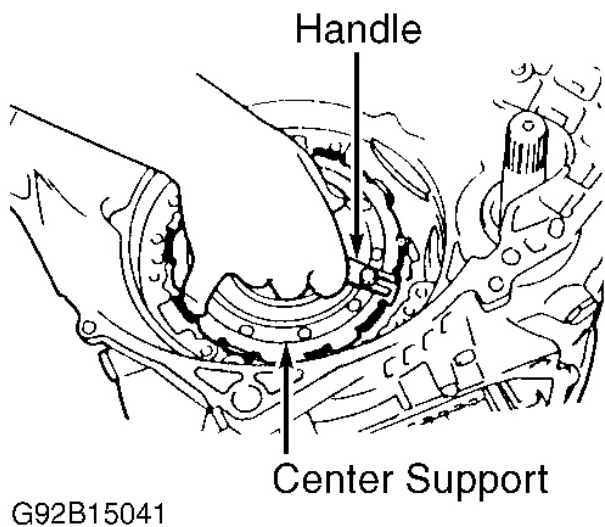


Fig. 22: Identifying Air Exhaust Plug
Courtesy of CHRYSLER CORP.



NOTE:

Two "O" rings on the center support must line up with the feed holes in the case.

Fig. 23: Removing & Installing Center Support
Courtesy of CHRYSLER CORP.

13. Remove reverse sun gear, forward sun gear and planetary carrier assembly. See **Fig. 16** . Remove wave

spring, return spring, pressure plate, clutch plates and clutch discs.

CAUTION: Note number of components and sequence of clutch plates and clutch discs installation for reassembly reference.

14. Remove retaining bolts and bearing retainer. Bearing retainer is located on transaxle case, near end clutch hub area.
15. Remove snap ring and output flange. See **Fig. 16** . Remove retaining bolts and output bearing retainer and outer bearing race. See **Fig. 17** or **Fig. 16** . On F4A33 models, remove transfer shaft. See **Fig. 17** . Remove bearing race and oil seal from transaxle case.
16. On W4A32 and W4A33 models, insert a .31" (8 mm) diameter rod, 7.87" (199.9 mm) long, through hole in center differential assembly. See **Fig. 24** . Tap on rod to remove rear output shaft.

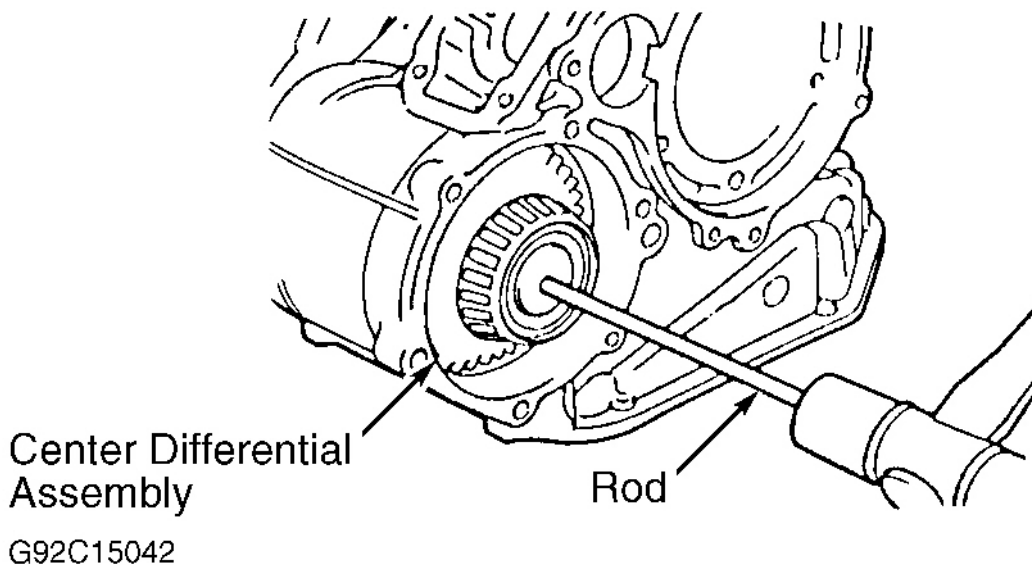


Fig. 24: Removing Rear Output Shaft (W4A32 & W4A33)
Courtesy of CHRYSLER CORP.

17. Thread puller into hole in end of center differential assembly. Remove center differential assembly. Install bolt in threaded areas on center bearing retainer. Hold bolts, and remove center bearing retainer from transaxle case. See **Fig. 18** .
18. Remove center bearing stopper bolt. See **Fig. 25** . Remove stopper ring. See **Fig. 18** . Place bearing puller across groove in viscous coupling unit, and remove viscous coupling unit. See **Fig. 26** . Remove bearing race and oil seal from transaxle case. Remove front output shaft.

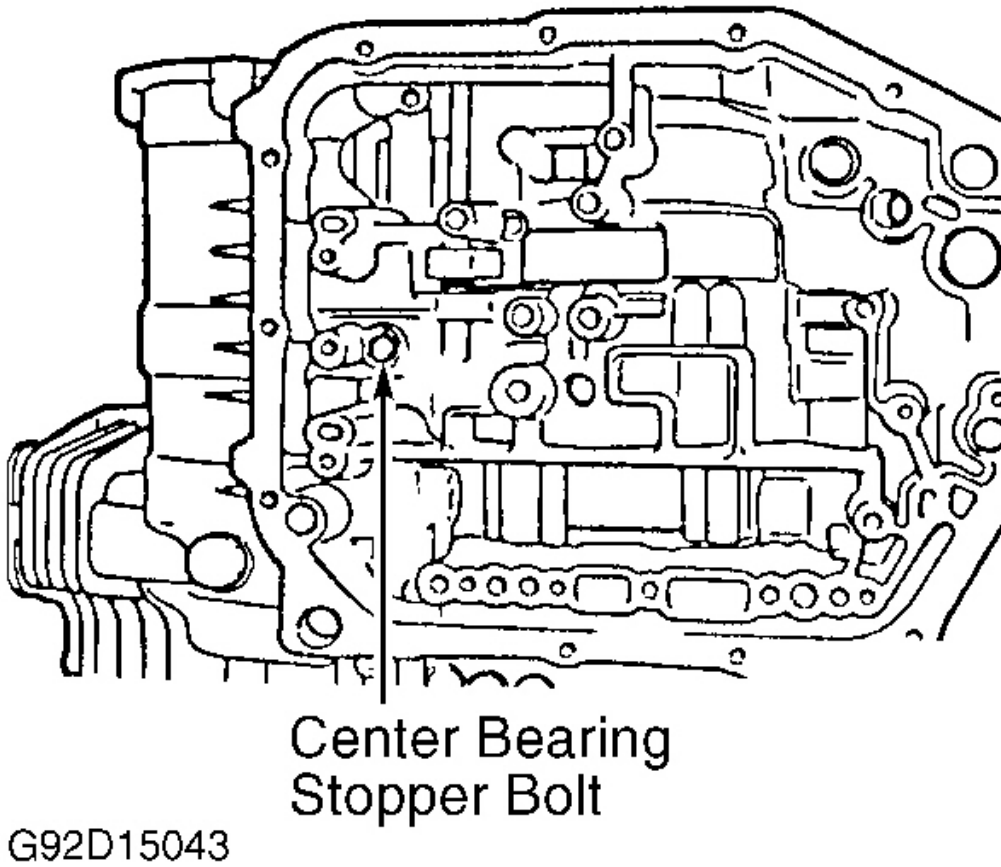


Fig. 25: Removing & Installing Center Bearing Stopper Bolt
Courtesy of CHRYSLER CORP.

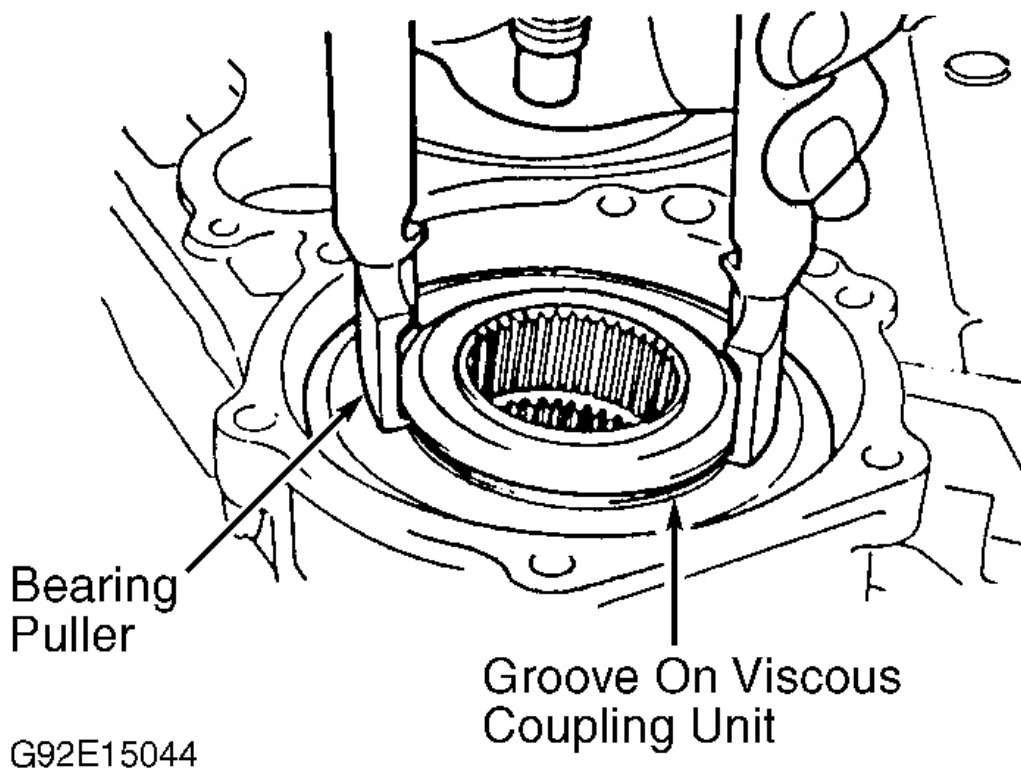


Fig. 26: Removing & Installing Viscous Coupling Module
Courtesy of CHRYSLER CORP.

COMPONENT DISASSEMBLY & REASSEMBLY

NOTE: Manufacturer specifies the use of only Mopar ATF Plus-Type 7176 for use in this transaxle. This fluid should also be used during assembly. See appropriate **TRANSMISSION SERVICING - A/T** article in **TRANSMISSION SERVICING** for additional information and draining and refilling procedures.

OIL PUMP

Disassembly

1. Remove "O" ring from outer diameter of oil pump housing. Place reference mark on oil pump housing and reaction shaft support. Remove retaining bolts, and separate reaction shaft support from oil pump housing. See **Fig. 27**.
2. Remove check ball. Place reference mark on drive and driven gears for direction of installation. Remove drive and driven gears. Remove snap ring and oil seal from inside oil pump housing. Remove seal rings

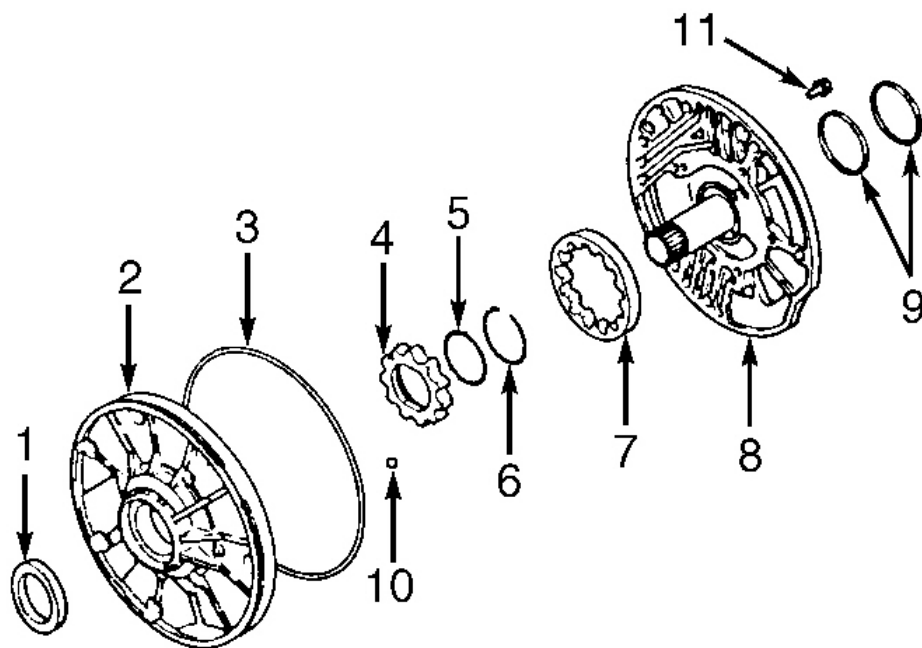
from reaction shaft support. Using hammer and punch, tap oil seal from front of oil pump housing.

Cleaning & Inspection

Clean and inspect components for damage. Inspect all machined surfaces for pitting or damage. Install drive and driven gears in oil pump housing. Place straightedge on oil pump housing, above gears. Using feeler gauge, measure gear end clearance between each gear and straightedge. Replace gears or oil pump assembly if gear end clearance is not .0012-.0020" (.03-.05 mm).

Reassembly

1. Lubricate drive and driven gears with ATF and install in oil pump housing. Ensure reference marks align. Install check ball in oil pump housing. See **Fig. 28** .
2. Install reaction shaft support on oil pump housing, and finger tighten retaining bolts. DO NOT tighten bolts to specification at this time. Install guide pin in hole of reaction shaft support and oil pump housing. See **Fig. 29** .
3. Install aligning band on outer diameter of reaction shaft support and oil pump housing, and tighten aligning band. Tighten reaction shaft retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
4. Ensure gears rotate freely in oil pump. Install NEW "O" ring on oil pump housing and lubricate with petroleum jelly. Install seal rings on reaction shaft support.



- | | |
|---------------------|---------------------------|
| 1. Oil Seal | 6. Snap Ring |
| 2. Oil Pump Housing | 7. Driven Gear |
| 3. "O" Ring | 8. Reaction Shaft Support |
| 4. Drive Gear | 9. Seal Ring |
| 5. Oil Seal | 10. Check Ball |
| | 11. Short Bolts (5) |

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Fig. 27: Exploded View Of Oil Pump & Components

Courtesy of CHRYSLER CORP.

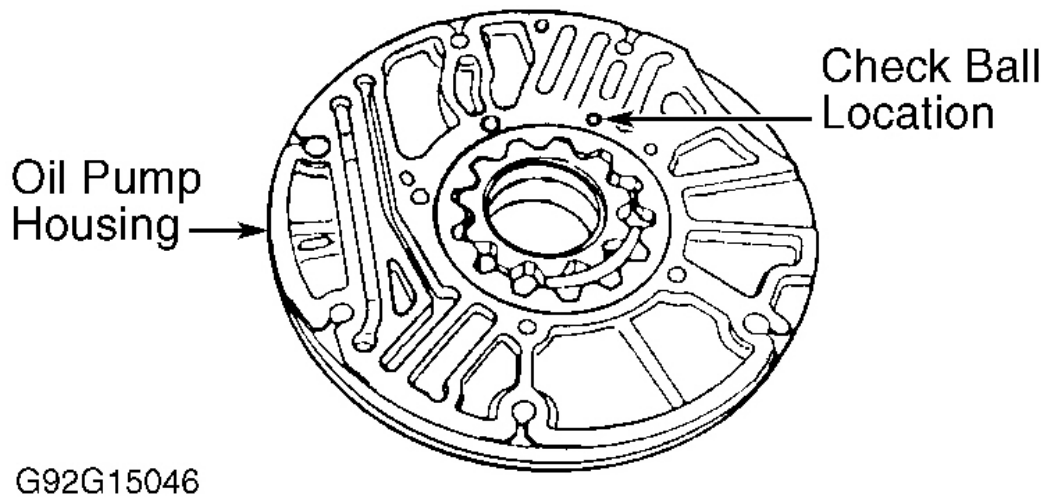


Fig. 28: Identifying Oil Pump Check Ball Location
Courtesy of CHRYSLER CORP.

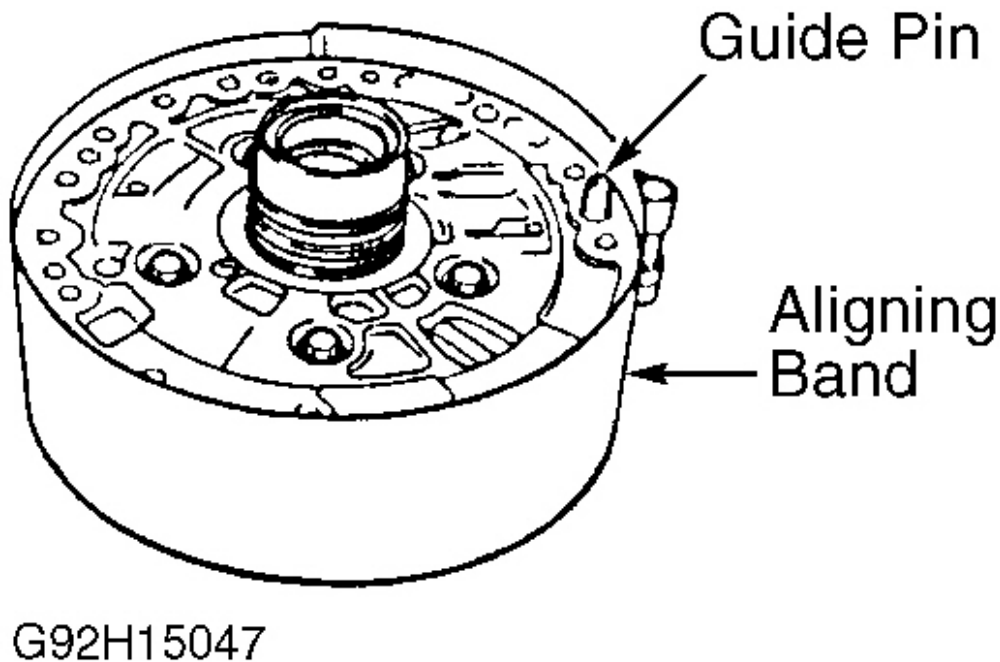


Fig. 29: Assembling Oil Pump Housing & Reaction Shaft Support
Courtesy of CHRYSLER CORP.

TRANSFER SHAFT (F4A33)

Disassembly & Reassembly

Using bearing puller, remove bearings from transfer shaft (if necessary). Using bearing installer and adapter, install bearing on front side (small gear end) of transfer shaft. Using bearing installer and adapter, install bearing on rear side (large gear end) of transfer shaft.

FRONT CLUTCH

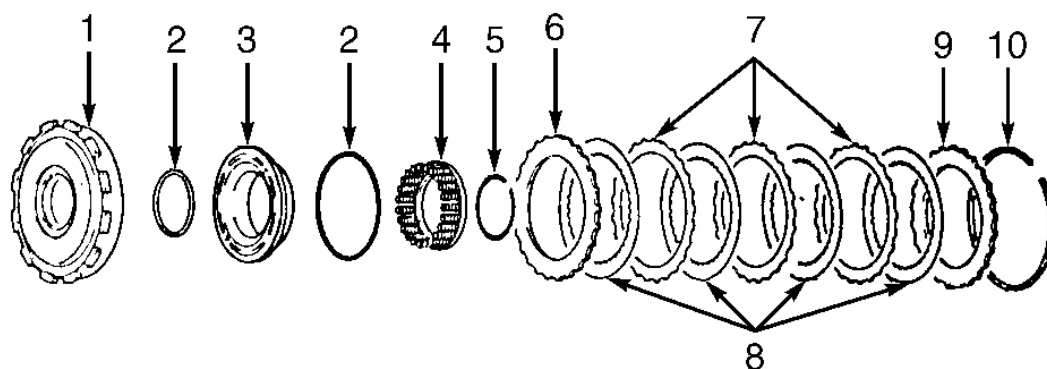
CAUTION: Note direction of clutch discs and clutch plates for reassembly reference. Also note number of each component, as some models may contain different number of clutch components. Components must be installed in correct sequence.

Disassembly

1. Remove retaining ring and reaction plate. See **Fig. 30** . Remove clutch discs and clutch plates. Note

direction of installation for reassembly reference. Remove pressure plate.

2. Using spring compressor and adapter, compress return spring. See **Fig. 31** . Remove snap ring. Release and remove spring compressor. Remove return spring, front clutch piston and "D" rings from front clutch retainer.



- | | |
|--------------------------|--------------------|
| 1. Front Clutch Retainer | 6. Pressure Plate |
| 2. "D" Ring | 7. Clutch Plate |
| 3. Front Clutch Piston | 8. Clutch Disc |
| 4. Return Spring | 9. Reaction Plate |
| 5. Snap Ring | 10. Retaining Ring |

NOTE: W4A32 contains 3 clutch disc
and 2 clutch plates.

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Fig. 30: Exploded View Of Front Clutch (F4A33 & W4A33 Shown; W4A32 Is Similar)
Courtesy of CHRYSLER CORP.

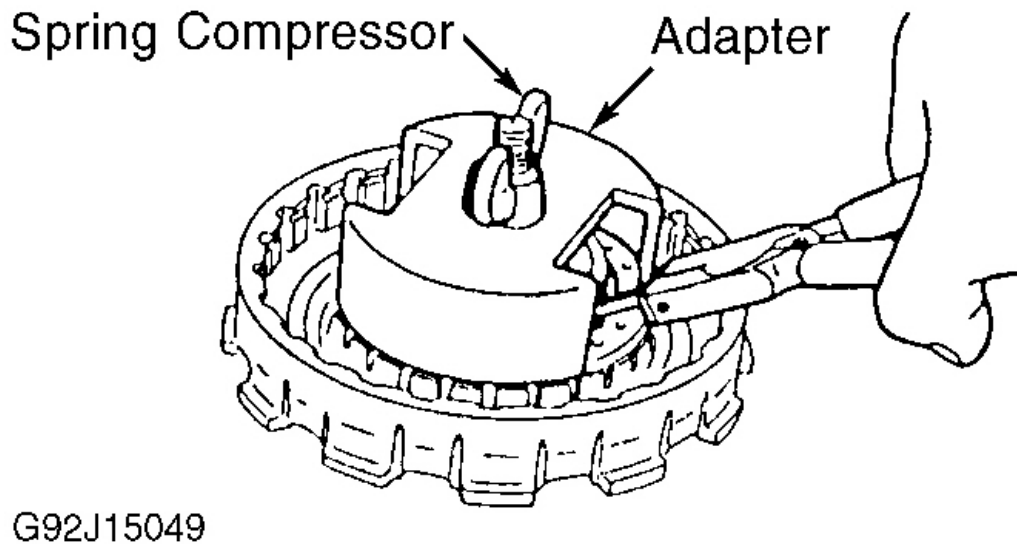


Fig. 31: Compressing Clutch Piston Return Spring (Front Clutch Application Shown; Rear Clutch Is Similar)

Courtesy of CHRYSLER CORP.

Cleaning & Inspection

Clean metal components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.

CAUTION: Clutch discs must be soaked in ATF for 2 hours before reassembly.

Reassembly

1. Install NEW "D" rings. Install front clutch piston and return spring in front clutch retainer. Using spring compressor and adapter, compress return spring and install snap ring. Install pressure plate, clutch discs, clutch plates and reaction plate.

CAUTION: Align missing tooth area on pressure plate, clutch plates and reaction plate before installing. See Fig. 32 . This aids in cooling of clutch plates. Ensure pressure plate, clutch plates and reaction plate are installed with beveled side toward front clutch retainer. See Fig. 33 .

2. Install retaining ring. To check front clutch clearance, hold entire circumference of reaction plate

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downward. Using feeler gauge, measure clearance between retaining ring and reaction plate.

- Front clutch clearance should be .028-.035" (.71-.89 mm) on W4A32 models and .031-.039" (.81-.99 mm) on all others. If front clutch clearance is not within specification, select different thickness retaining ring to obtain correct clearance. See FRONT & REAR CLUTCH RETAINING RING IDENTIFICATION table.

FRONT & REAR CLUTCH RETAINING RING IDENTIFICATION

Ring Thickness In. (mm)	Identification Mark	Part Number
F4A33 & W4A33		
.051 (1.3) ⁽¹⁾	None	MD731747
.055 (1.4) ⁽¹⁾	Blue	MD731748
.059 (1.5)	Brown	MD731749
.063 (1.6)	None	MD731750
.067 (1.7)	Blue	MD731751
.071 (1.8)	Brown	MD731752
.075 (1.9)	None	MD731753
.079 (2.0)	Blue	MD731754
.083 (2.1)	Brown	MD731755
.087 (2.2)	None	MD731756
.091 (2.3)	Blue	MD731757
.094 (2.4)	Brown	MD731758
W4A32		
.063 (1.6)	None	MD955630
.067 (1.7)	Brown	MD730930
.071 (1.8)	Blue	MD955631
.075 (1.9)	None	MD730931
.079 (2.0)	Brown	MD955632
.083 (2.1)	Blue	MD730932
.087 (2.2)	None	MD955633
.091 (2.3)	Brown	MD730933
.094 (2.4)	Blue	MD955634
.098 (2.5)	None	MD730934
.102 (2.6)	Brown	MD955635
.106 (2.7)	Blue	MD730935
.110 (2.8)	None	MD955636
.114 (2.9)	Brown	MD730936
.118 (3.0)	Blue	MD955637
(1) Retaining ring applies to rear clutch application only.		

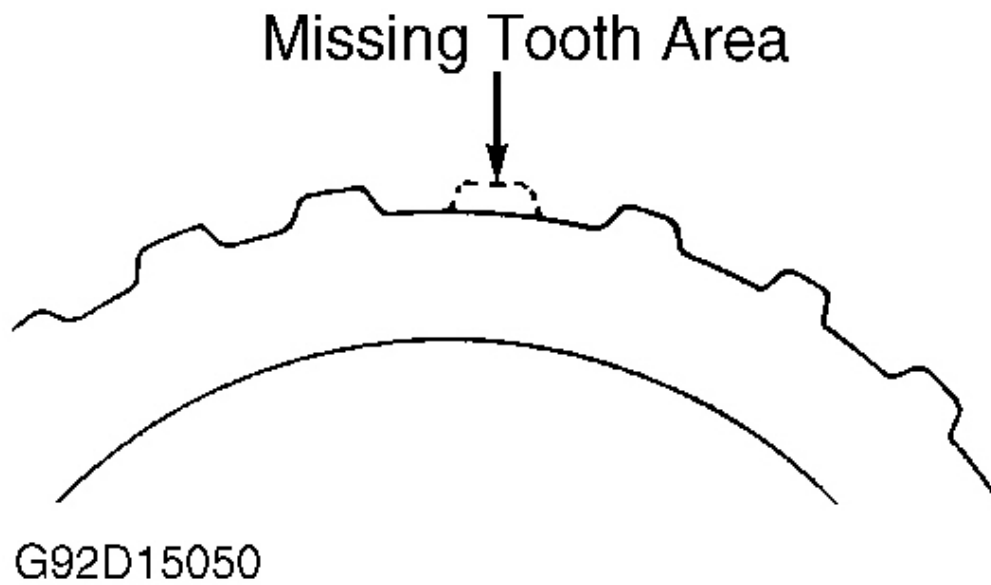
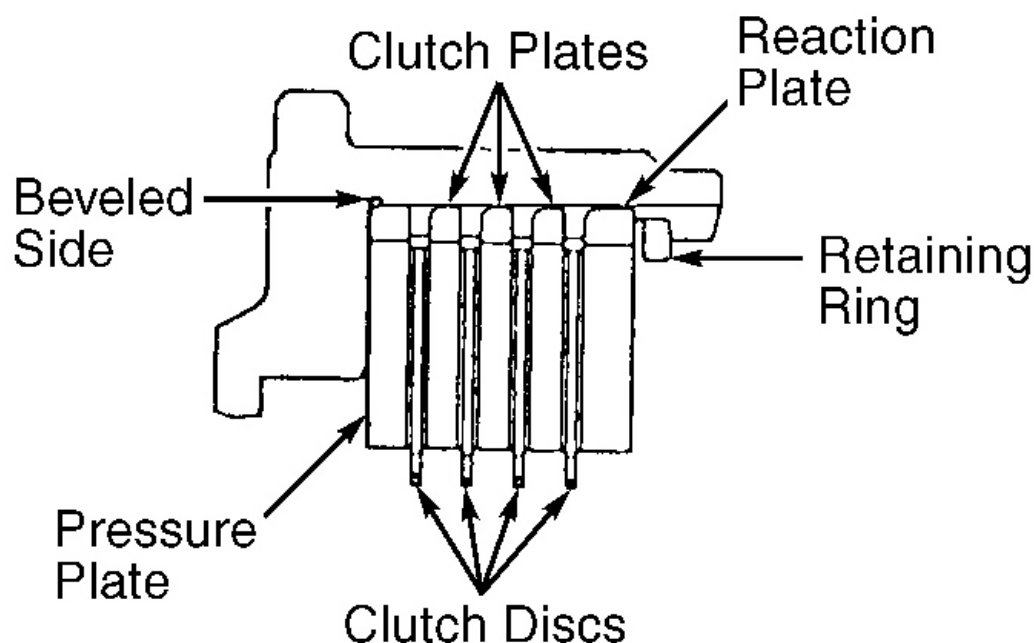


Fig. 32: Identifying Pressure Plate, Clutch Plate & Reaction Plate Missing Tooth Area
Courtesy of CHRYSLER CORP.



NOTE: W4A32 contains 3 clutch discs and 2 clutch plates.

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Fig. 33: Assembling Front Clutch Components
Courtesy of CHRYSLER CORP.

REAR CLUTCH

CAUTION: Note direction of clutch discs and clutch plates for reassembly reference. Also note number of each component, as some models may contain different number of clutch components. Components must be installed in correct sequence.

Disassembly

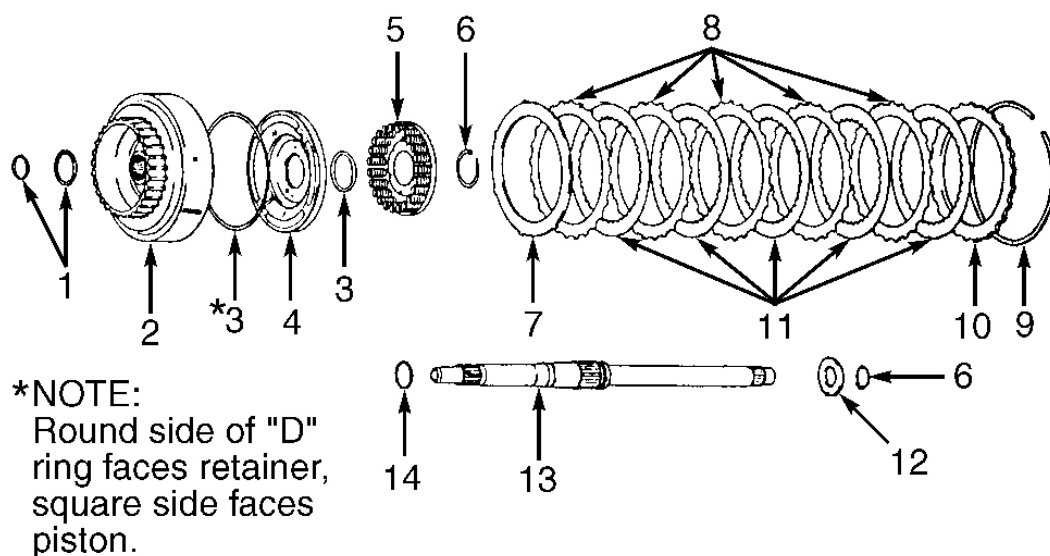
1. Note number of seal rings used on front of input shaft near rear clutch retainer. Some models may use more seal rings on input shaft. Remove seal ring from front of input shaft. See **Fig. 34**.
2. Remove input shaft. Remove "O" rings, snap ring and thrust race from input shaft. Remove seal ring from center of rear clutch retainer.
3. Remove retaining ring and reaction plate. Remove clutch discs and clutch plates. Note direction of

installation for reassembly reference.

4. Remove wave spring. Using spring compressor and adapter, compress return spring. See **Fig. 31**. Remove snap ring. Release and remove spring compressor. Remove return spring, rear clutch piston and "D" rings from rear clutch retainer.

Cleaning & Inspection

Clean metal components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



- | | |
|-------------------------|--------------------|
| 1. Seal Ring | 8. Clutch Plate |
| 2. Rear Clutch Retainer | 9. Retaining Ring |
| 3. "D" Ring | 10. Reaction Plate |
| 4. Clutch Piston | 11. Clutch Disc |
| 5. Return Spring | 12. Thrust Race |
| 6. Snap Ring | 13. Input Shaft |
| 7. Wave Spring | 14. "O" Ring |

NOTE: W4A32 contains 3 clutch discs and 2 clutch plates.
Also, a wave-type return spring is used.

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Fig. 34: Exploded View Of Rear Clutch (F4A33 & W4A33 Shown; W4A32 Is Similar)
Courtesy of CHRYSLER CORP.

CAUTION: Clutch discs must be soaked in ATF for 2 hours before reassembly.

Reassembly

1. Install NEW "D" rings. Install rear clutch piston and return spring in rear clutch retainer. Using spring compressor and adapter, compress return spring, and install snap ring. Install wave spring, clutch discs, clutch plates and reaction plate.

CAUTION: Align missing tooth area on clutch plates and reaction plate before installing. See Fig. 32 . This aids in cooling of clutch plates. On W4A32 models, ensure reaction plate is installed with beveled edge toward clutch piston.

2. Install retaining ring. To check rear clutch clearance, hold entire circumference of reaction plate downward. Using feeler gauge, measure clearance between retaining ring and reaction plate.
3. Rear clutch clearance should be .016-.024" (.41-.61 mm) on W4A32 models and .039-.047" (.99-1.19 mm) on all others. If rear clutch clearance is not within specification, select different thickness retaining ring to obtain correct clearance. See FRONT & REAR CLUTCH RETAINING RING IDENTIFICATION table.
4. Install NEW seal ring in rear clutch retainer. Install thrust race, snap ring and "O" ring on input shaft. Install input shaft in rear clutch retainer, aligning oil groove on input shaft with reference mark or oil hole on rear clutch retainer. See Fig. 35 . Install seal ring on input shaft.

CAUTION: Using a plastic hammer, tap on end clutch end of input shaft to ensure input shaft is fully seated into rear clutch retainer. Failing to perform this procedure may result in incorrect input shaft end play.

CAUTION: Ensure oil groove on input shaft aligns with reference mark or oil hole on rear clutch retainer. See Fig. 35 .

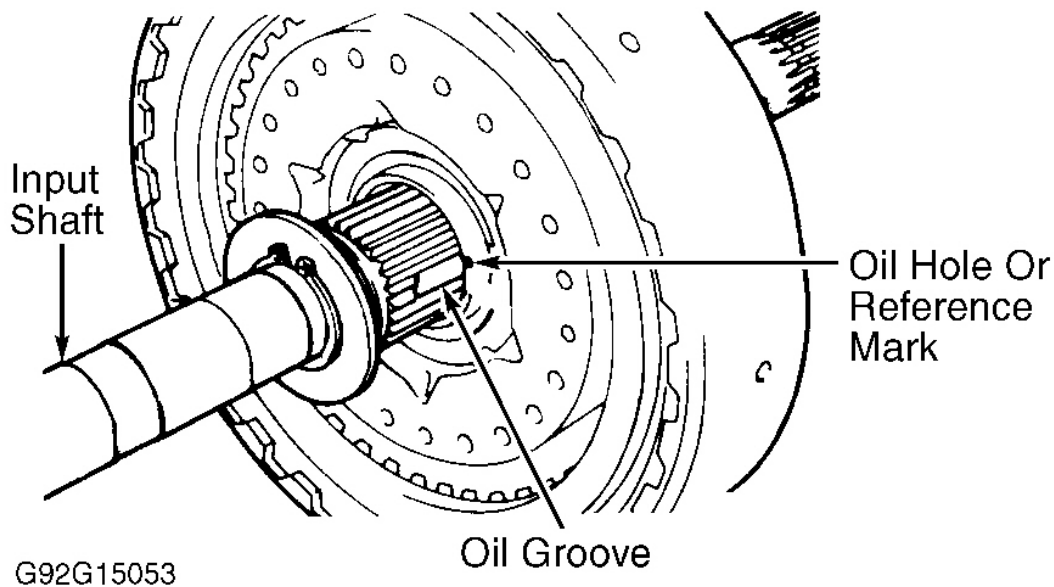


Fig. 35: Aligning Input Shaft & Rear Clutch Retainer
Courtesy of CHRYSLER CORP.

END CLUTCH

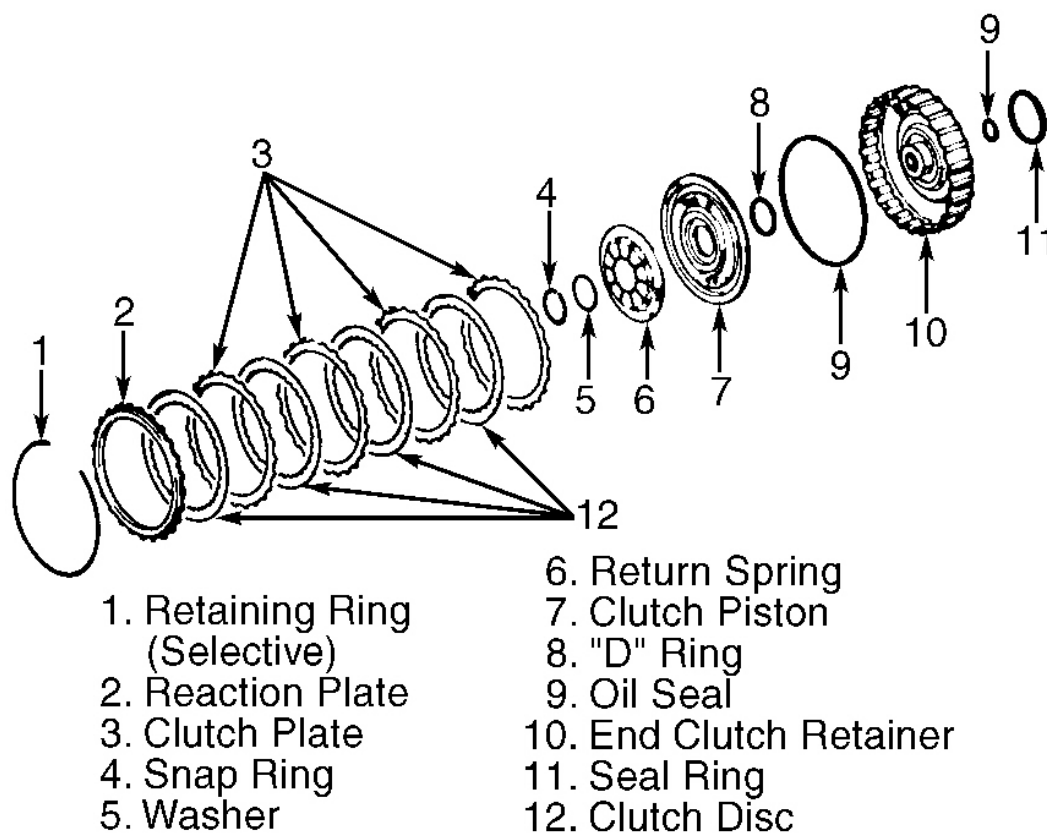
CAUTION: Note direction of clutch discs and clutch plates for reassembly reference. Also note number of each component, as some models may contain different number of clutch components. Components must be installed in correct sequence.

Disassembly

1. Remove seal ring from rear of end clutch retainer. Remove retaining ring, reaction plate, clutch discs and clutch plates. Note direction of installation for reassembly reference. See **Fig. 36** . Remove snap ring, washer and return spring.
2. Remove clutch piston from end clutch retainer. If necessary, place end clutch retainer on workbench with clutch piston facing downward, and apply low air pressure on oil passage on rear of end clutch retainer to remove clutch piston. Remove oil seal from clutch piston. Remove "D" ring and remaining oil seal. See **Fig. 36** .

Cleaning & Inspection

Clean metal components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



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Fig. 36: Exploded View Of End Clutch
 Courtesy of CHRYSLER CORP.

CAUTION: Clutch discs must be soaked in ATF for 2 hours before reassembly.

Reassembly

1. Install NEW oil seals and "D" ring. Install clutch piston in end clutch retainer. Install return spring and washer. Install snap ring on end clutch retainer. Using snap ring installer, press snap ring onto end clutch retainer until it seats in groove. Ensure snap ring is fully seated.
2. Install clutch discs, clutch plates and reaction plate. See **Fig. 36** . Install retaining ring. To check end clutch clearance, hold entire circumference of reaction plate downward. Using feeler gauge, measure clearance between retaining ring and reaction plate.
3. End clutch clearance should be .024-.033" (.61-.84 mm). If end clutch clearance is not within specification, select different thickness retaining ring to obtain correct clearance. See END CLUTCH RETAINING RING IDENTIFICATION table. Install seal ring on rear of end clutch retainer.

END CLUTCH RETAINING RING IDENTIFICATION

Ring Thickness In. (mm)	Identification Mark	Part Number
.047 (1.20)	Purple	MD757421
.051 (1.30)	Yellow	MD756034
.055 (1.40)	Brown	MD758167
.061 (1.55)	None	MD756035
.065 (1.65)	Gray	MD757424
.071 (1.80)	Green	MD756036
.077 (1.95)	Red	MD757544

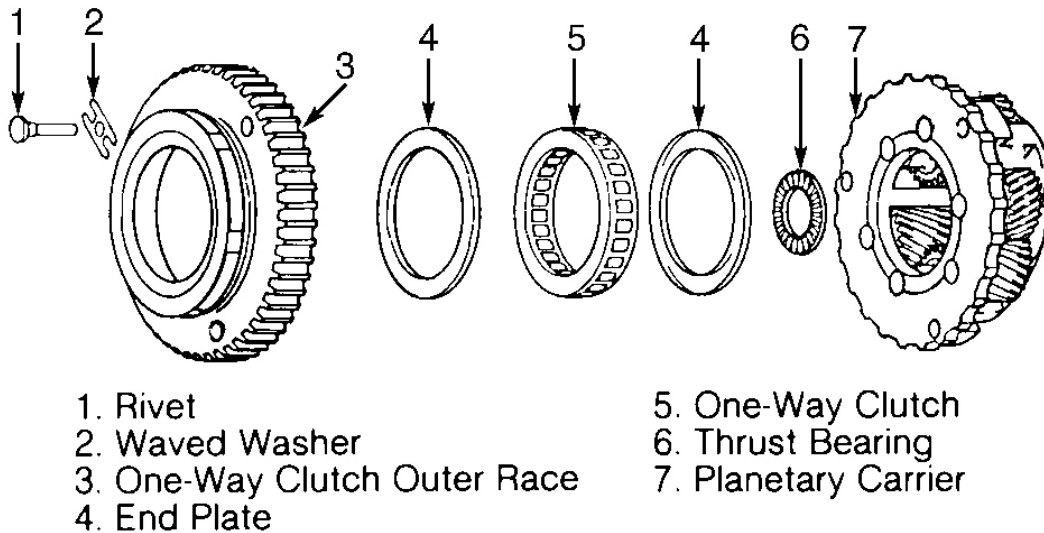
PLANETARY CARRIER ASSEMBLY

Disassembly

Remove thrust bearing. See **Fig. 37** . Position stopper plate on one-way clutch outer race so it does not contact rivet. Using punch and hammer, drive out rivet. See **Fig. 38** . Remove waved washer, one-way clutch outer race and end plate. See **Fig. 37** . Remove one-way clutch and end plate from planetary carrier.

Cleaning & Inspection

Clean components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



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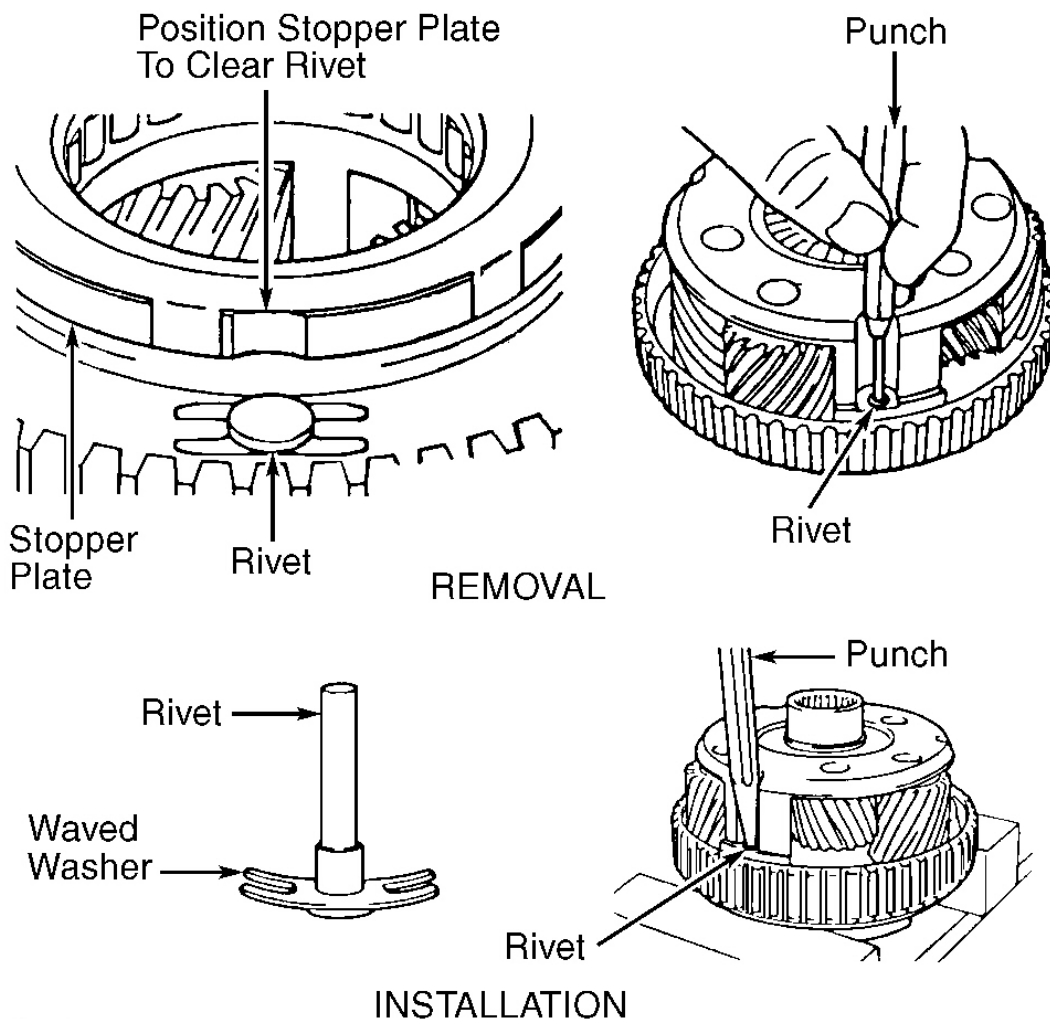
Fig. 37: Exploded View Of Planetary Carrier Assembly
Courtesy of CHRYSLER CORP.

Reassembly

1. Install end plate on one-way clutch outer race. Install one-way clutch so flange side is upward (away from one-way clutch outer race). See **Fig. 39**.
2. Install end plate. Install one-way clutch outer race on planetary carrier. Install waved washer on NEW rivet. Ensure concave side of wave washer faces away from rivet head. See **Fig. 38**.

CAUTION: DO NOT use old rivet. Always install NEW rivet.

3. Install waved washer and rivet in planetary carrier. Using press and punch with 60 degree angle tip, stake rivet. Apply 2425-2866 lbs. of pressure on press when staking rivet. Install thrust bearing.



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Fig. 38: Removing & Installing Planetary Carrier Assembly Rivet
Courtesy of CHRYSLER CORP.

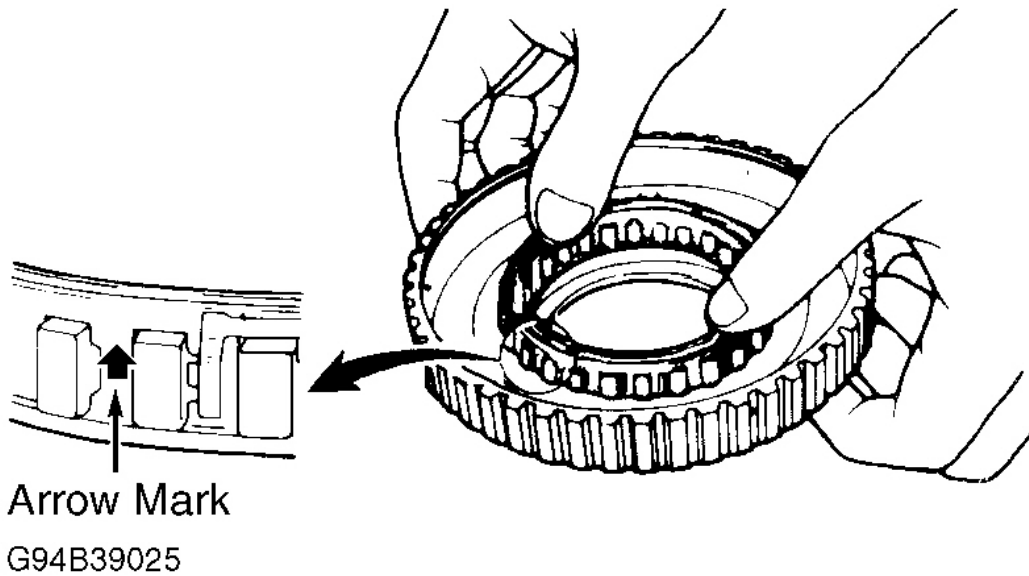


Fig. 39: Installing One-Way Clutch
Courtesy of CHRYSLER CORP.

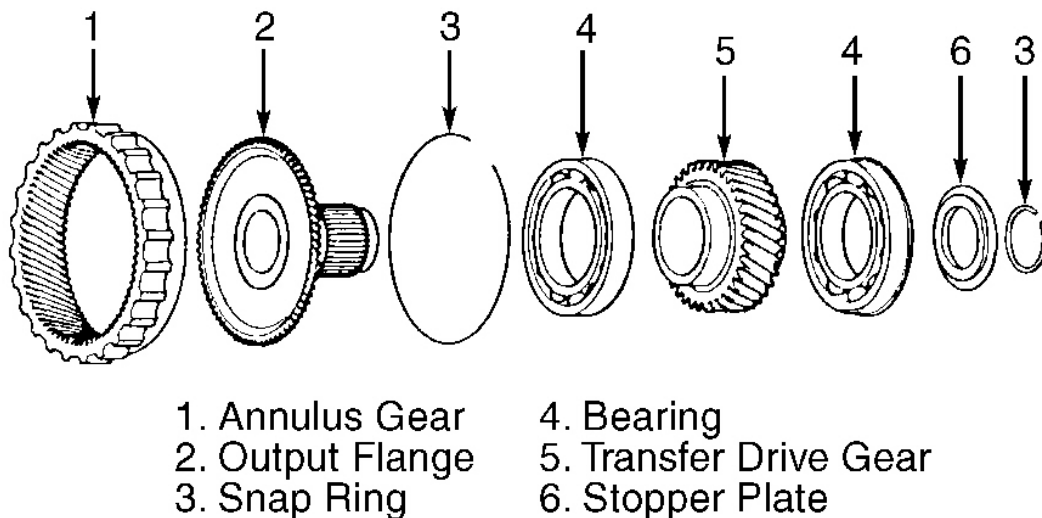
OUTPUT FLANGE & TRANSFER DRIVE GEAR

Disassembly

1. Remove snap ring and stopper plate from end of transfer drive gear. See **Fig. 40** . Place bearing remover between output flange and bearing. Using press, remove bearings and transfer drive gear as a unit from output flange.
2. Using press and bearing remover, remove bearings from transfer drive gear (if necessary). Remove snap ring and output flange from annulus gear. See **Fig. 40** .

Cleaning & Inspection

Clean components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



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Fig. 40: Exploded View Of Output Flange & Transfer Drive Gear
Courtesy of CHRYSLER CORP.

Reassembly

1. Install output flange and snap ring in annulus gear. See **Fig. 40** . Press NEW bearings on transfer drive gear. Using adapter, bearing installer and press, install transfer drive gear and bearings on output flange.
2. Install stopper plate. Using feeler gauge, measure output flange bearing end play between groove on output flange and stopper plate surface. See **Fig. 41** .
3. Output flange end play should be 0-.0035" (0-.089 mm). If output flange bearing end play is not within specification, select different thickness snap ring to obtain correct clearance. See OUTPUT FLANGE BEARING SNAP RING IDENTIFICATION table. Install snap ring.

OUTPUT FLANGE BEARING SNAP RING IDENTIFICATION

Ring Thickness In. (mm)	Identification Mark	Part Number
.069 (1.75)	Brown	MD733314
.072 (1.82)	None	MD722538
.074 (1.88)	Blue	MD721014
.076 (1.93)	Brown	MD721015
.079 (2.00)	None	MD721016
.081 (2.06)	Blue	MD721017
.083 (2.11)	Brown	MD722539
.086 (2.18)	None	MD733315

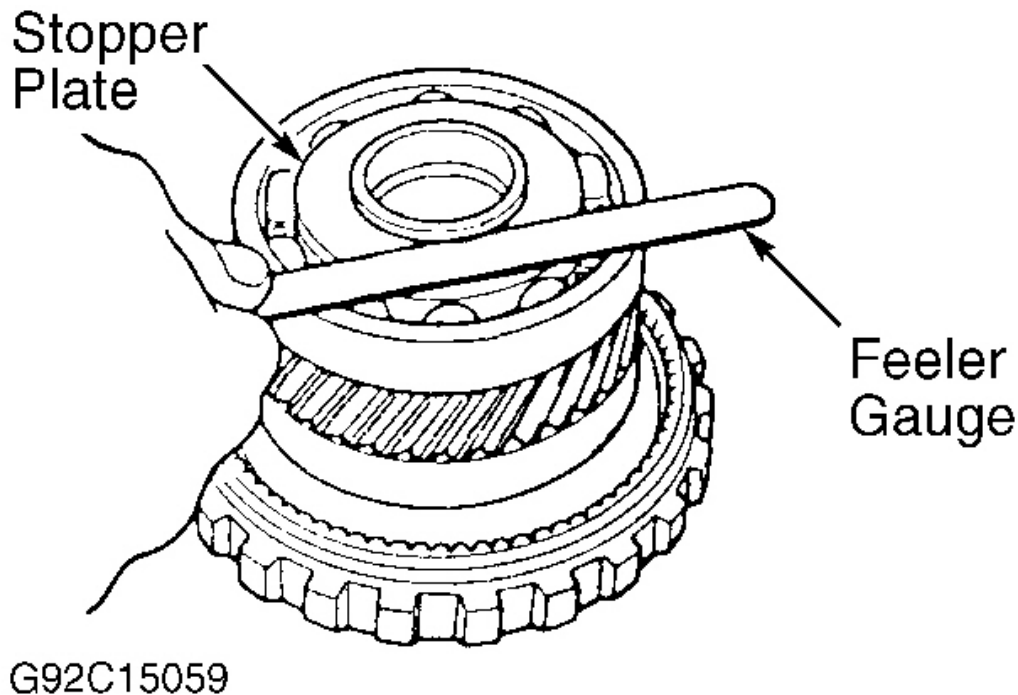


Fig. 41: Measuring Output Flange Bearing End Play
Courtesy of CHRYSLER CORP.

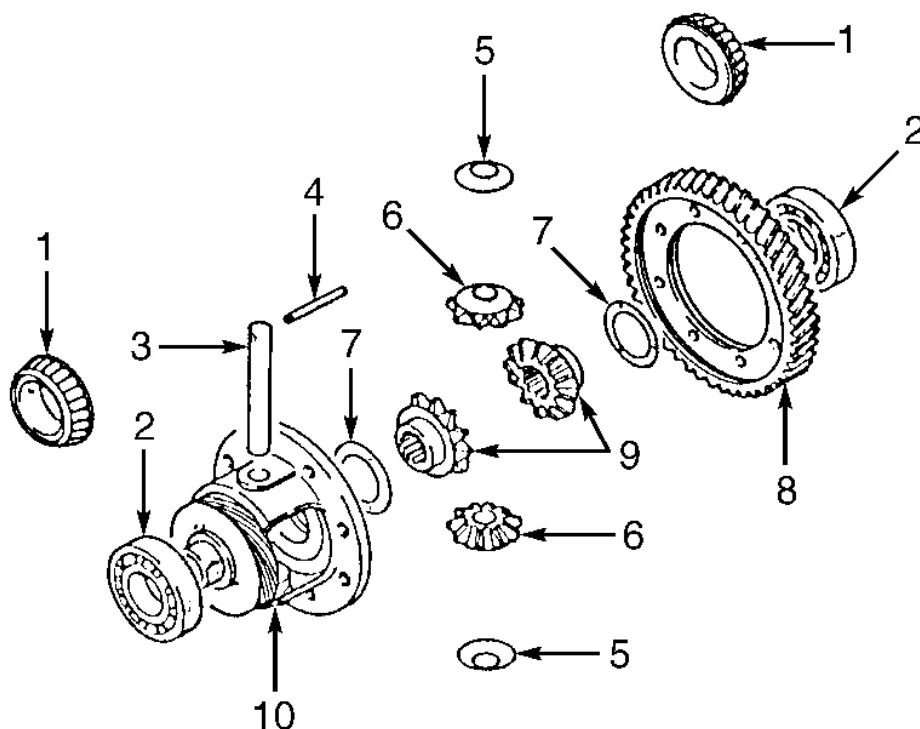
DIFFERENTIAL ASSEMBLY

Disassembly

1. Remove retaining bolts and ring gear. Remove tapered or ball bearings from differential case if replacement is required. See **Fig. 42**.
2. Using hammer and punch, drive roll pin toward ring gear side of differential case. Remove pinion shaft, pinion gears, thrust washers, side gears and spacers from differential case.

Cleaning & Inspection

Clean components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



1. Tapered Bearing (F4A33)
2. Ball Bearing (W4A32 & W4A33)
3. Pinion Shaft
4. Roll Pin
5. Thrust Washer

6. Pinion Gear
7. Spacer
8. Ring Gear
9. Side Gear
10. Differential Case

92F15060

Fig. 42: Exploded View Of Differential Assembly
 Courtesy of CHRYSLER CORP.

Reassembly

1. Place spacer on side gear. Install side gear in differential case. Install thrust washers on pinion gears. Place pinion gears in differential case.
2. Rotate side gears and pinion gears until they align with pinion shaft opening. Install pinion shaft. Position dial indicator so stem rests against side gear. See **Fig. 43** . Rotate pinion gear, and note side gear-to-pinion gear backlash. Check backlash on both side gears.
3. Side gear-to-pinion gear backlash should be .0010-.0059" (.025-.150 mm). If side gear-to-pinion gear backlash is not within specification, select different thickness side gear spacer. See SIDE GEAR SPACER IDENTIFICATION table.

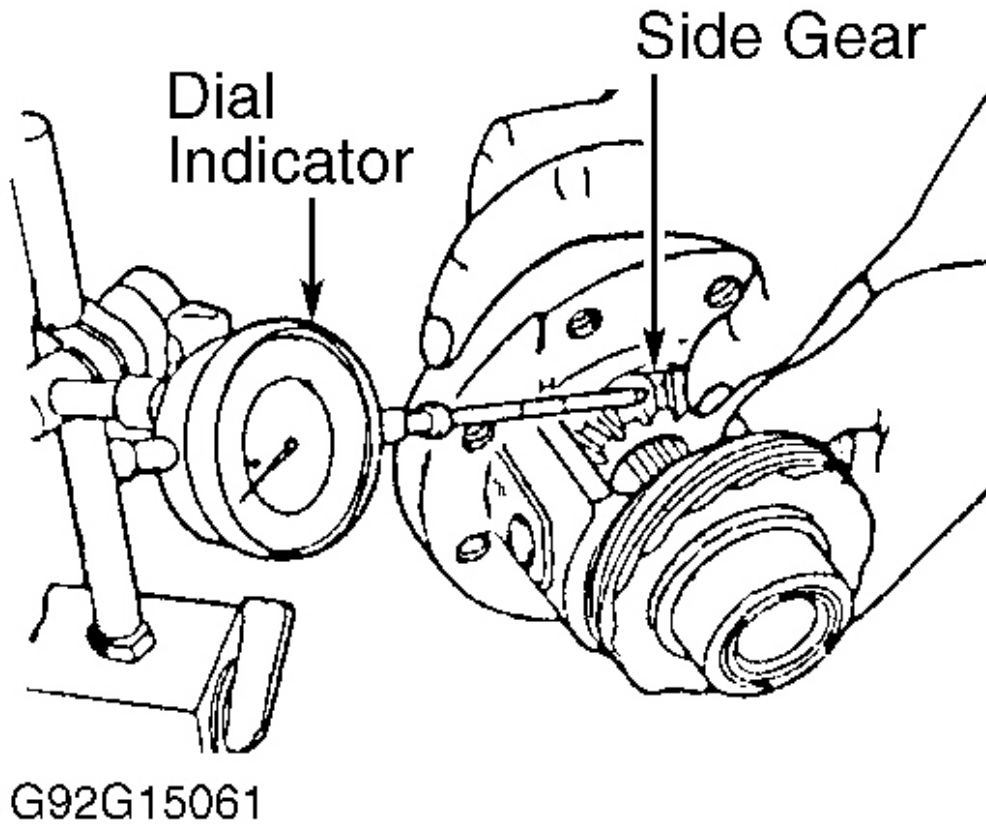


Fig. 43: Checking Side Gear-To-Pinion Gear Backlash
Courtesy of CHRYSLER CORP.

SIDE GEAR SPACER IDENTIFICATION

Spacer Thickness In. (mm)	Part Number
.0295-.0323 (.749-.820)	MD722986
.0327-.0362 (.830-.919)	MD722985
.0366-.0394 (.930-1.001)	MD722984
.0398-.0425 (1.011-1.080)	MD722983
.0429-.0457 (1.090-1.161)	MD722982

- Once proper spacers are installed, install NEW roll pin from ring gear side of differential case.

CAUTION: Always install NEW roll pin. DO NOT reuse roll pin. Ensure roll pin is positioned below surface of differential case.

5. Press tapered or ball bearings on differential case (if removed). Install ring gear on differential case.

CAUTION: On F4A33 and W4A33 models, coat ring gear retaining bolts with ATF. On W4A32 models, coat retaining bolts with thread sealant.

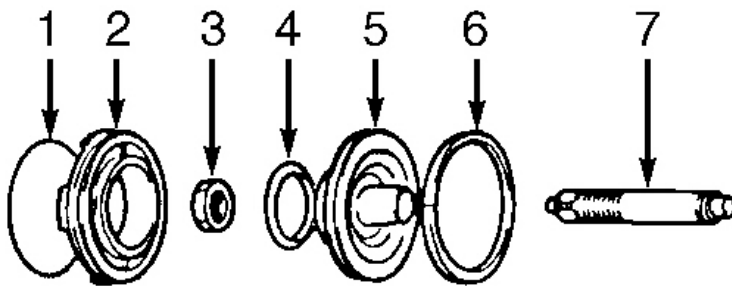
6. Install and tighten ring gear retaining bolts to specification in a crisscross pattern. See **TORQUE SPECIFICATIONS**.

CAUTION: Ensure ring gear retaining bolts are tightened to specification in a crisscross pattern to prevent damage to ring gear and differential case.

KICKDOWN SERVO

Disassembly & Reassembly

Remove "O" ring, kickdown servo, "D" ring and seal ring. See **Fig. 44**. Remove lock nut. Separate servo rod from kickdown servo piston. To reassemble, reverse disassembly procedure using NEW "O" ring, seal ring and "D" ring. Tighten lock nut to specification. See **TORQUE SPECIFICATIONS**.



- 1. "O" Ring
- 2. Kickdown Servo
- 3. Lock Nut
- 4. "D" Ring

- 5. Kickdown Servo Piston
- 6. Seal Ring
- 7. Servo Rod

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Fig. 44: Exploded View Of Kickdown Servo
Courtesy of CHRYSLER CORP.

LOW-REVERSE BRAKE

Disassembly & Reassembly

Remove low-reverse brake piston from center support. See **Fig. 45** . Remove "D" rings from low-reverse brake piston. To reassemble, reverse disassembly procedure using NEW "D" rings.

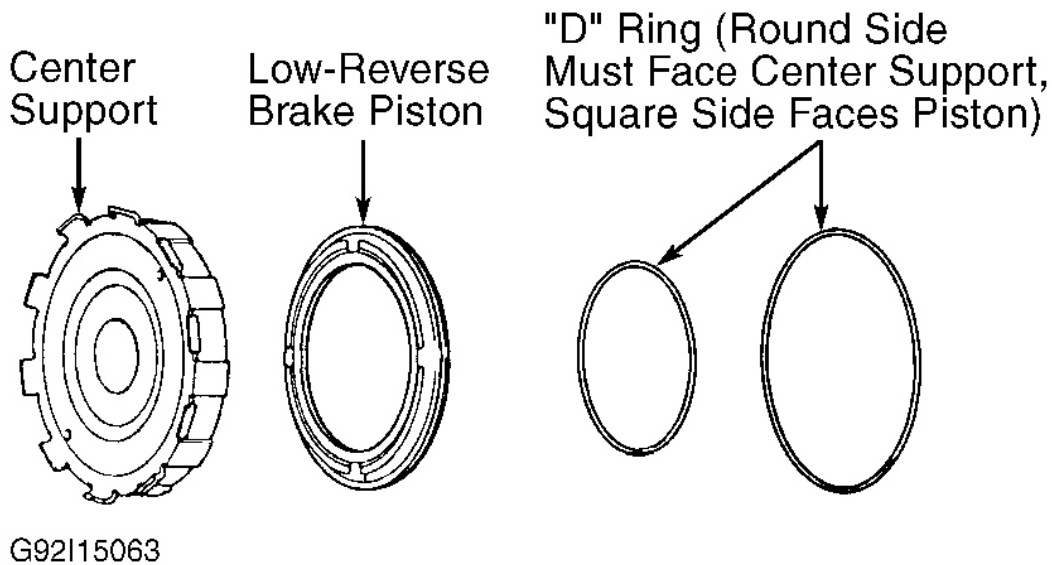


Fig. 45: Exploded View Of Low-Reverse Brake
Courtesy of CHRYSLER CORP.

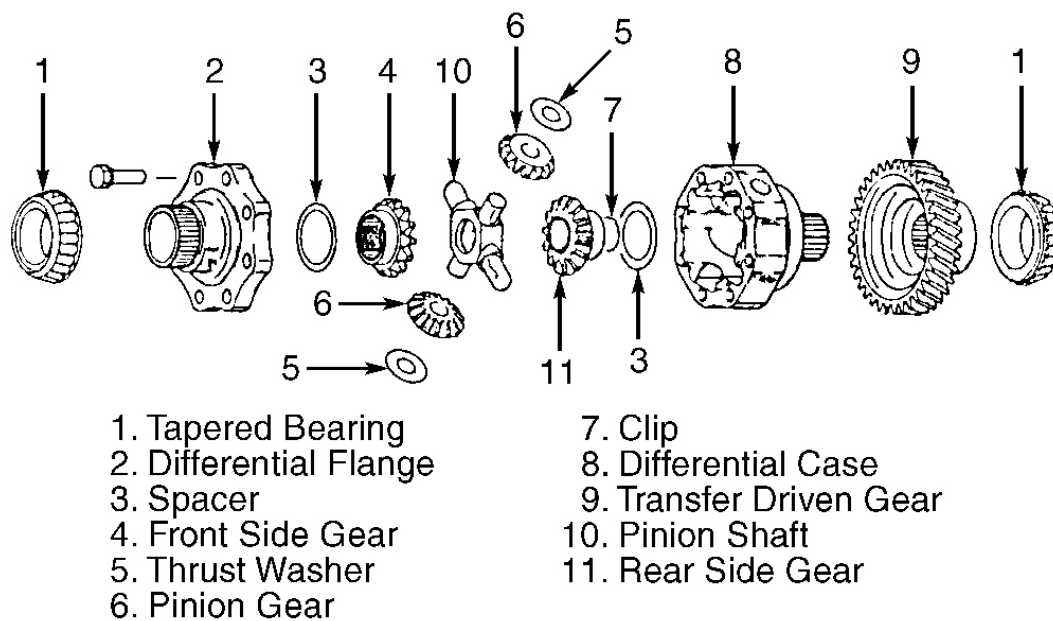
CENTER DIFFERENTIAL ASSEMBLY (W4A32 & W4A33)

Disassembly

1. Install bearing remover between transfer driven gear and differential case. See **Fig. 46** . Using press, press differential case from transfer driven gear. Tapered bearing is removed along with transfer driven gear.
2. Using press and bearing remover, remove tapered bearings from transfer driven gear, and differential case if replacement is required. Remove retaining bolts. Separate differential flange from differential case. See **Fig. 46** . Remove spacers, front and rear side gears, pinion shaft, pinion gears, thrust washers and clip from differential case.

Cleaning & Inspection

Clean components with solvent and dry with compressed air. Inspect components for damage. Replace damaged components.



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Fig. 46: Exploded View Of Center Differential Assembly (W4A32 & W4A33)
Courtesy of CHRYSLER CORP.

Reassembly

1. Install spacer, rear side gear, pinion gears, thrust washer and pinion shaft in differential case. See **Fig. 46** . Different thickness spacer for rear side gear may be required to obtain smooth and even rotation of pinion gears.
2. To check rear side gear for proper thickness spacer, press downward on pinion shaft, and rotate pinion gears. See **Fig. 47** . Pinion gears should rotate smoothly and evenly without binding if proper thickness spacer is installed.
3. If pinion gears do not rotate smoothly and evenly, remove components, and install proper thickness spacer on rear side gear. See **CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION** .
4. Reinstall rear side gear, clip, pinion gears, thrust washer and pinion shaft in differential case. Install front side gear, spacer, differential flange and retaining bolts.
5. Tighten retaining bolts to specification in a crisscross pattern. See **TORQUE SPECIFICATIONS** . To check front side gear for proper thickness spacer, insert front output shaft into front side gear and, rotate front side gear. See **Fig. 47** .
6. Front side gear should rotate smoothly and evenly without binding if proper thickness spacer is installed. If front side gear does not rotate smoothly and evenly, install proper thickness spacer. See **CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION** table.

CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION

Spacer		
--------	--	--

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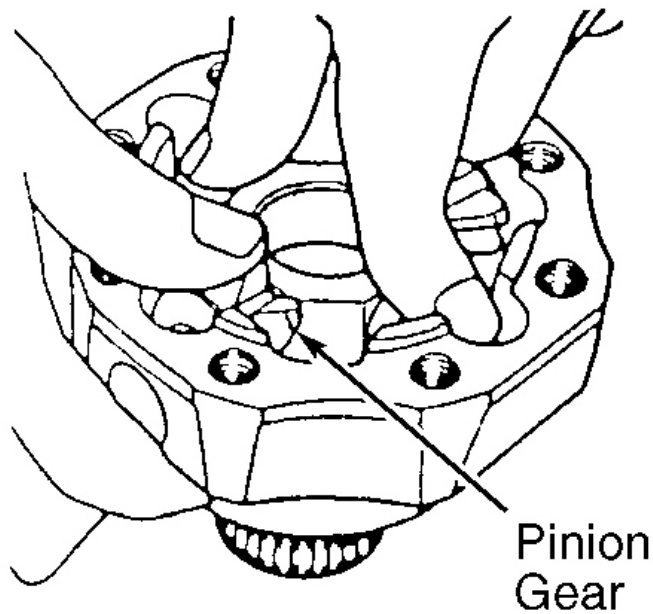
1995-96 AUTOMATIC TRANSMISSIONS Mitsubishi F4A33, W4A32 & W4A33 Overhaul

Thickness In. (mm)	Identification Mark	Part Number
Front Side Gear		
.0209- .0236 (.531- .599)	28	MD727928
.0284- .0299 (.721- .759)	30	MD727930
.0335- .0362 (.851- .919)	32	MD727932
.0398- .0425 (1.011- 1.080)	34	MD727934
.0461- .0489 (1.171- 1.242)	41	MD727941
Rear Side Gear		
.0232- .0260 (.589- .660)	73	MD724973
.0295- .0323 (.749- .820)	46	MD724946
.0366- .0394 (.930- 1.001)	81	MD724981
.0429- .0457 (1.090- 1.161)	43	MD724943
.0492- .0520 (1.249- 1.321)	72	MD724972

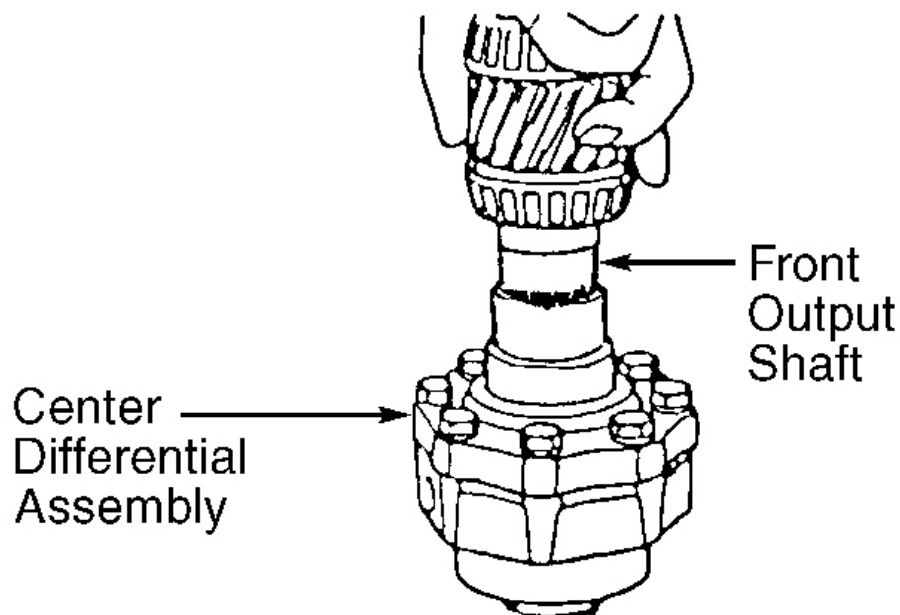
7. Once proper spacers are installed, remove differential flange retaining bolts. Apply thread sealant to bolt

threads. Install retaining bolts and tighten in a crisscross pattern to specification. See **TORQUE SPECIFICATIONS** .

8. Using press, bearing installer and adapter, press tapered bearing on differential flange (if removed). Using press, bearing installer and adapter, press tapered bearing on transfer driven gear (if removed). Press transfer driven gear on differential case.



CHECKING REAR SIDE GEAR SPACER



CHECKING FRONT SIDE GEAR SPACER

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Fig. 47: Checking Center Differential Gear Rotation For Spacer Selection
Courtesy of CHRYSLER CORP.

FRONT OUTPUT SHAFT (W4A32 & W4A33)

Disassembly & Reassembly

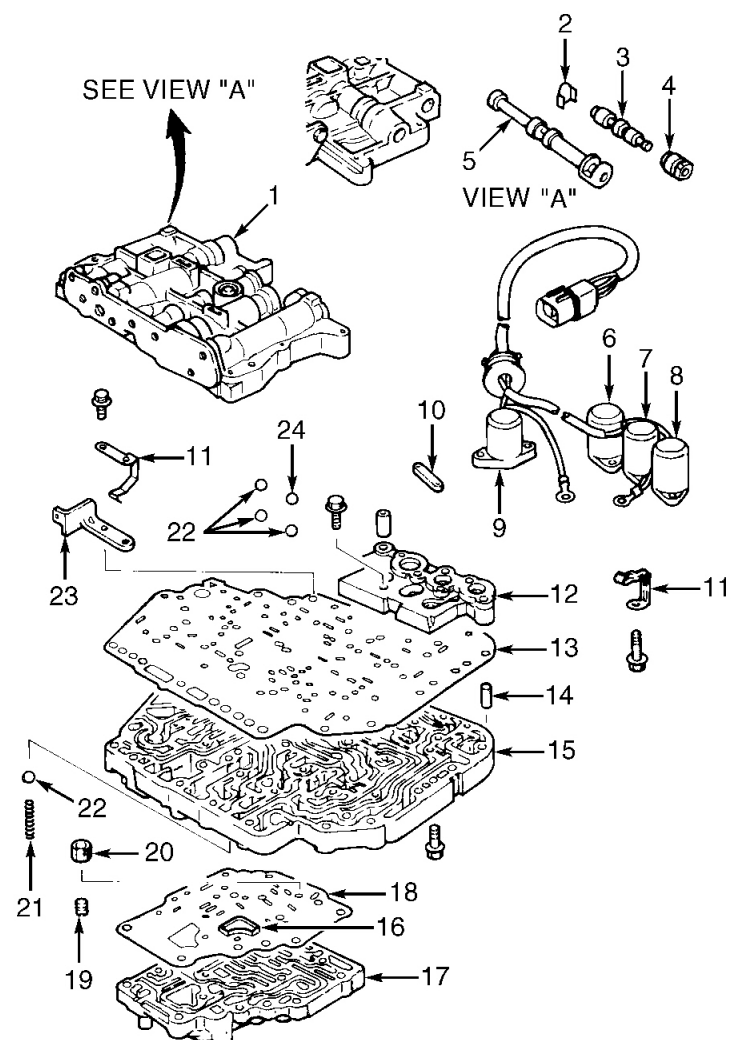
Using press and bearing remover, remove tapered bearings from output shaft if replacement is required. To reassemble, using press, bearing installer and adapters, install tapered bearing on long end of front output shaft. Use bearing installer and adapter to install tapered bearing on short end of front output shaft.

VALVE BODY

CAUTION: When disassembling valve body, place valve body components in order, and mark spring locations for reassembly reference. DO NOT use force to remove components from valve body. Valve body assembly consists of upper and lower valve bodies and intermediate plate. See Fig. 48 .

Disassembly

1. Remove manual valve, all solenoid valves, clip and valve stopper. See Fig. 48 . Remove N-D control valve and N-D control sleeve.
2. Separate lower valve body and lower separator plate from intermediate plate. Remove nut and jet. Remove relief spring, steel balls and oil filter from intermediate plate. See Fig. 49 . Separate upper valve body from intermediate plate. Note location of steel balls, Teflon ball and N-D plate.
3. Remove steel balls, Teflon ball and N-D plate from upper valve body. Remove block and upper separator plate. Remove remaining components from upper and lower valve bodies. See Fig. 50 and Fig. 51 .



- | | |
|---|---------------------------|
| 1. Upper Valve Body | 12. Block |
| 2. N-D Plate | 13. Upper Separator Plate |
| 3. N-D Control Valve | 14. Pin |
| 4. N-D Control Sleeve | 15. Intermediate Plate |
| 5. Manual Valve | 16. Oil Filter |
| 6. Torque Converter Clutch Solenoid Valve (If Equipped) | 17. Lower Valve Body |
| 7. Shift Control Solenoid Valve "A" | 18. Lower Separator Plate |
| 8. Shift Control Solenoid Valve "B" | 19. Jet |
| 9. Pressure Control Solenoid Valve | 20. Nut |
| 10. N-D Plate | 21. Relief Spring |
| 11. Clip | 22. Steel Ball |
| | 23. Valve Stopper |
| | 24. Teflon Ball |

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Fig. 48: Identifying Valve Bodies & Intermediate Plate
Courtesy of CHRYSLER CORP.

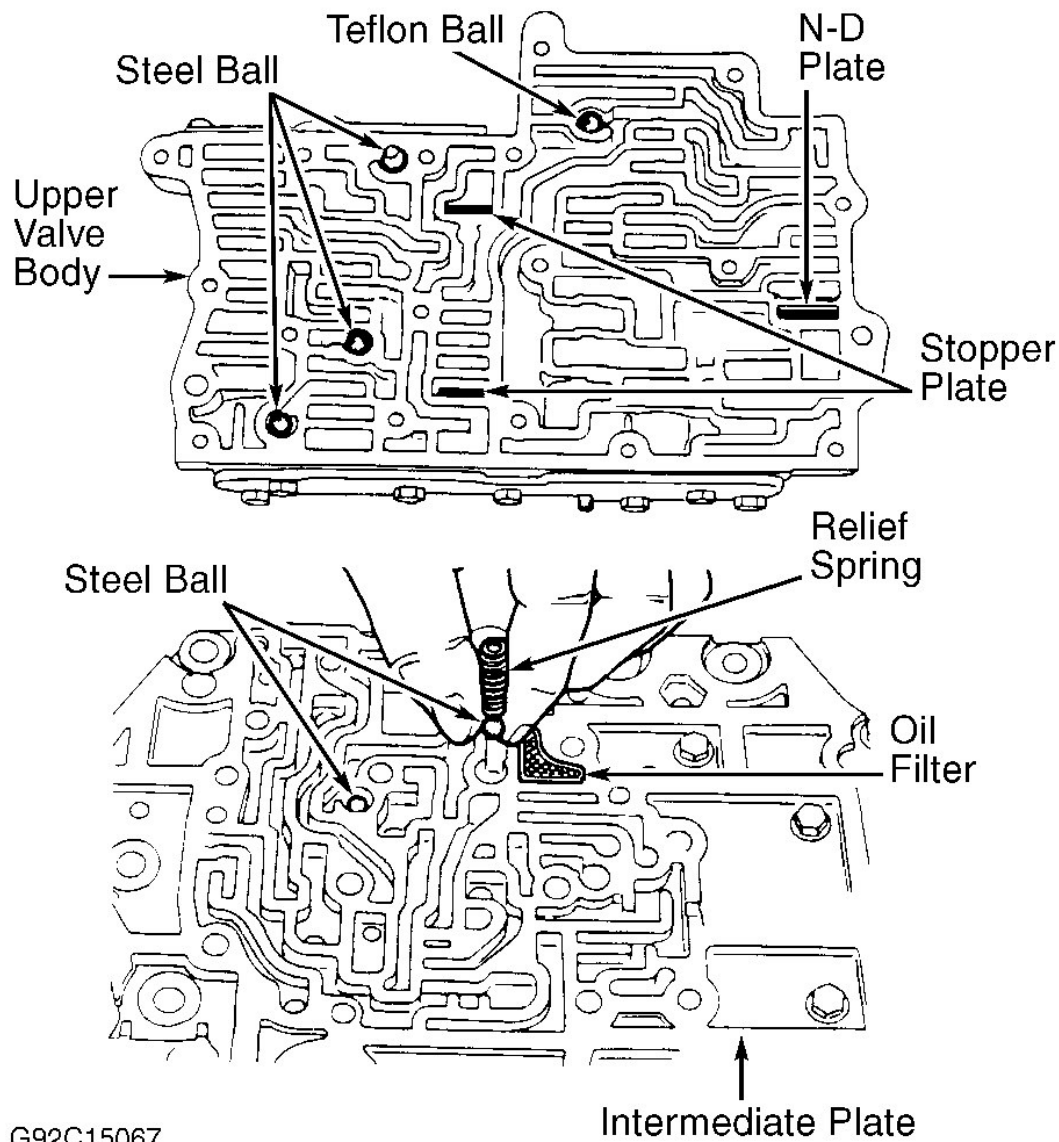
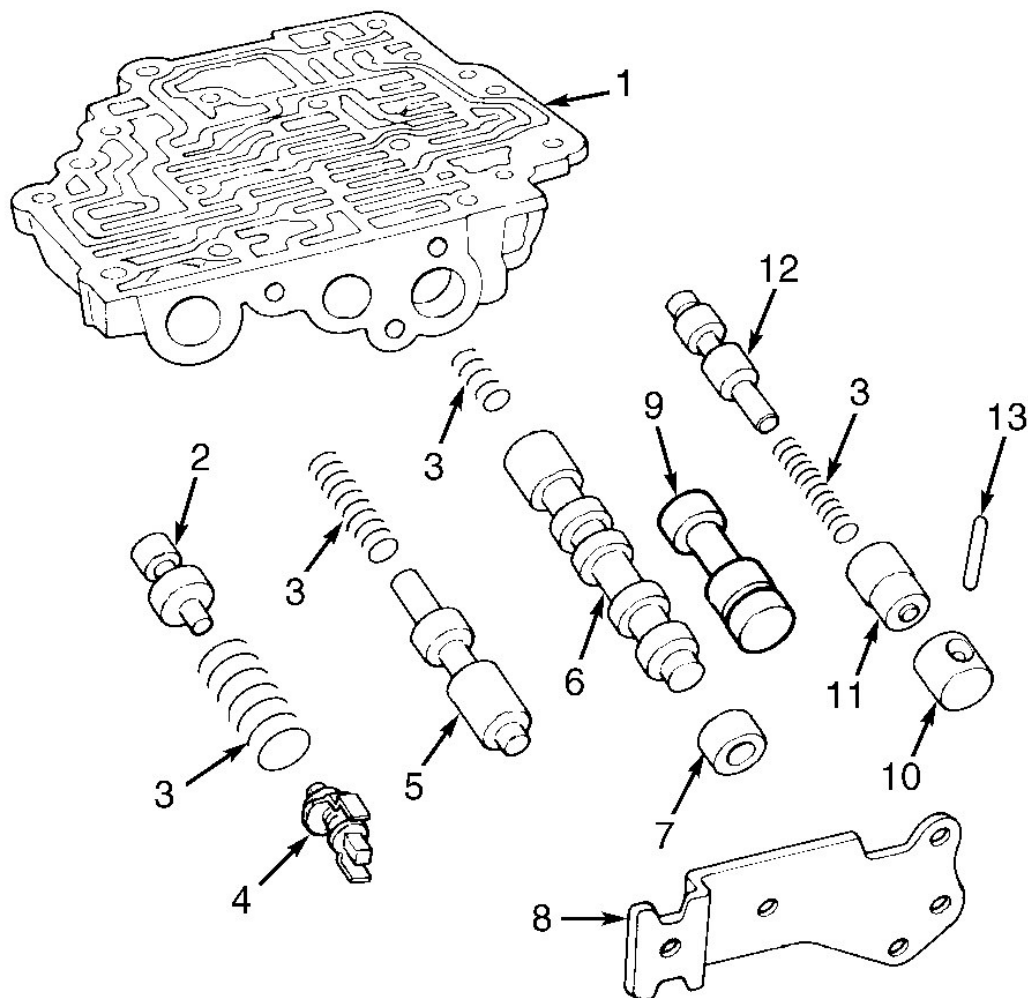


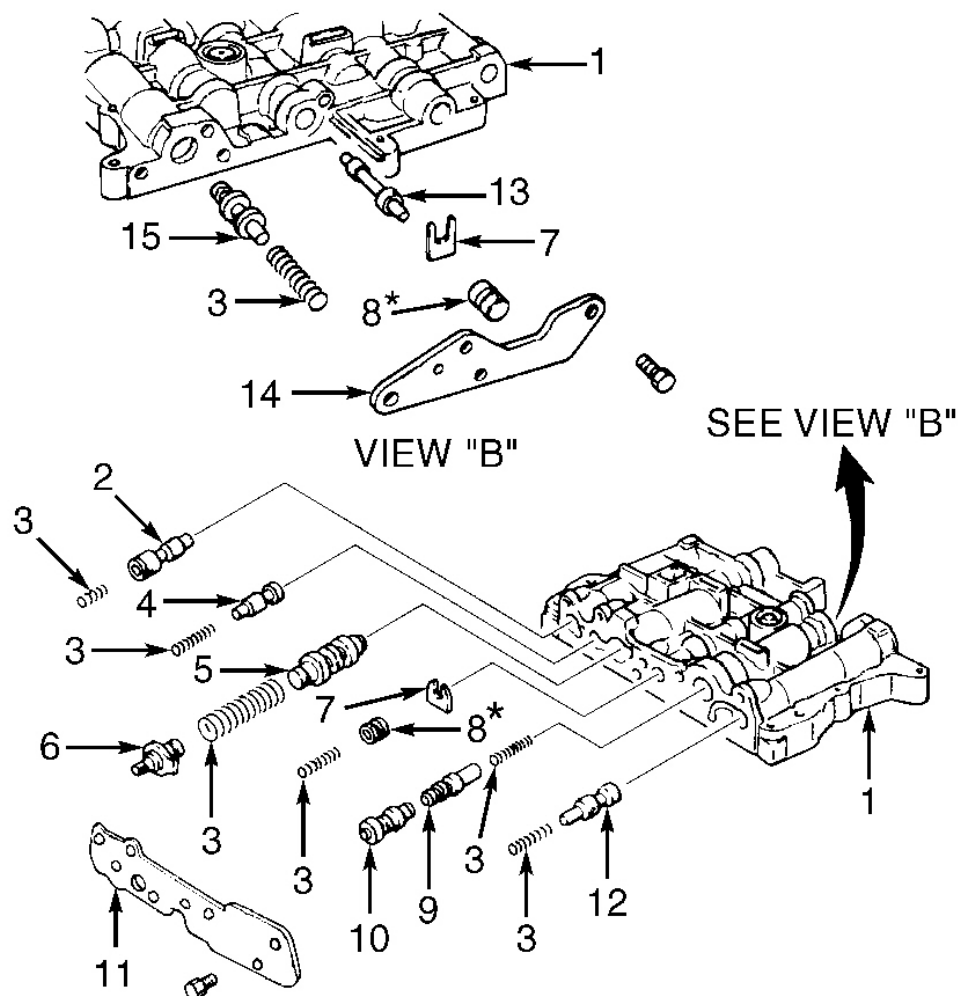
Fig. 49: Identifying Balls, N-D Plate, Oil Filter & Relief Spring
 Courtesy of CHRYSLER CORP.



- | | |
|--|----------------------|
| 1. Lower Valve Body | 7. Sleeve |
| 2. Reducing Valve | 8. End Cover |
| 3. Spring | 9. Plug |
| 4. Reducing Pressure Adjusting Screw | 10. Stopper |
| 5. N-R Control Valve | 11. End Clutch Plug |
| 6. Torque Converter Clutch Valve (If Equipped) | 12. End Clutch Valve |
| | 13. Pin |

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Fig. 50: Exploded View Of Lower Valve Body Components
 Courtesy of CHRYSLER CORP.



- | | |
|-----------------------------------|-----------------------------------|
| 1. Upper Valve Body | 8. Shift Control Plug |
| 2. Pressure Control Valve | 9. Rear Clutch Exhaust Valve "B" |
| 3. Spring | 10. Rear Clutch Exhaust Valve "A" |
| 4. Torque Converter Control Valve | 11. Front End Cover |
| 5. Regulator Valve | 12. 2-3/4-3 Shift Valve |
| 6. Line Pressure Adjusting Screw | 13. Shift Control Valve |
| 7. Stopper Plate | 14. Rear End Cover |
| | 15. 1-2 Shift Valve |

*NOTE: Flat end faces stopper plate and tapered end faces rear end cover.

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Fig. 51: Exploded View Of Upper Valve Body Components
 Courtesy of CHRYSLER CORP.

Cleaning & Inspection

1. Clean components with solvent and dry with compressed air. DO NOT use shop towels to dry components. Ensure all components slide freely in housing bores, and bores are not scored. Inspect machined surfaces for nicks, burrs or distortion.
2. Inspect valve and plugs for burrs or scratches. Ensure all fluid passages are open. Inspect transfer plate and separator plates for distortion. Inspect steel balls, Teflon ball and seats for damage.

Reassembly

1. Lubricate all components and fluid passages with ATF. Install upper and lower valve body components in original location. See **Fig. 50** and **Fig. 51** . To verify proper valve body spring application, see **VALVE BODY SPRING SPECIFICATIONS** .

CAUTION: Ensure shift control plug is installed into valve body so tapered end with hole in center faces outward (towards rear end cover). See **Fig. 51** .

2. Install upper separator plate and block on intermediate plate. See **Fig. 48** . Install steel balls, Teflon ball and N-D plate in upper valve body. See **Fig. 49** . Install guide pins in upper valve body. See **Fig. 52** . Install intermediate plate and upper separator plate on upper valve body.
3. Install valve body bolts to retain upper valve body on intermediate plate. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Remove guide pins.

VALVE BODY SPRING SPECIFICATIONS

Application	Outside Diameter In. (mm)	Length In. (mm)
End Clutch Valve Spring	.260 (6.60)	.961 (24.41)
Line Relief Spring	.276 (7.01)	.681 (17.30)
N-R Control Valve Spring	.362 (9.20)	1.264 (32.10)
Pressure Control Valve Spring	.299 (7.59)	.839 (21.31)
Rear Clutch Exhaust Valve Spring	.268 (6.81)	1.079 (27.41)
Reducing Valve Spring	.350 (8.89)	1.161 (29.49)
Regulator Valve Spring	.590 (14.99)	2.050 (52.07)
Shift Control Valve Spring	.224 (5.69)	1.055 (26.80)
Torque Converter Clutch Valve Spring	.354 (8.99)	.890 (22.61)
Torque Converter Control Valve Spring	.244 (6.20)	.559 (14.20)

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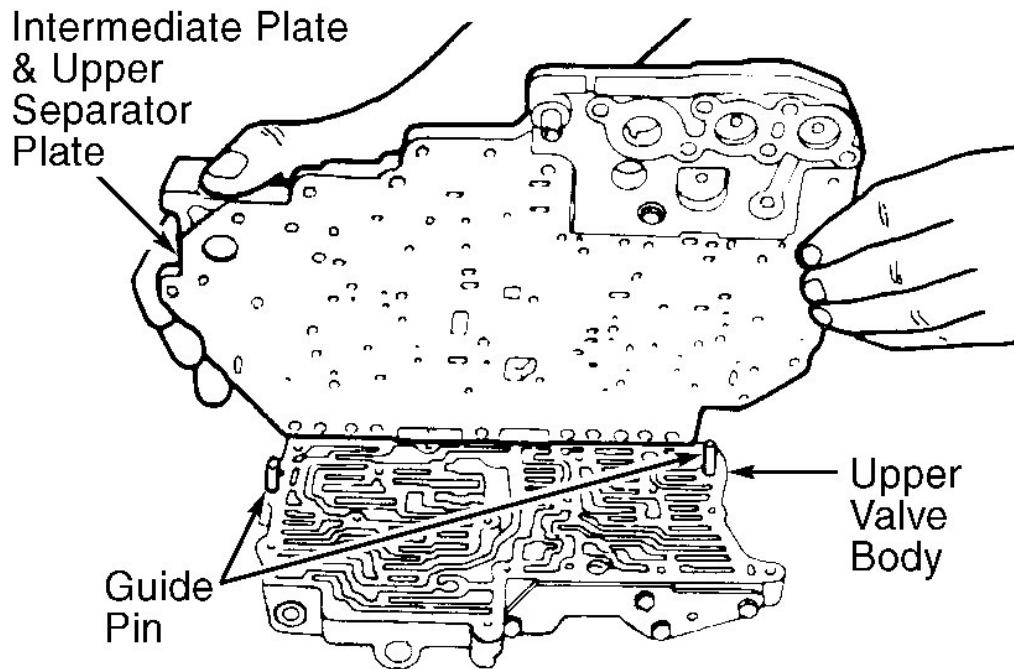
1995-96 AUTOMATIC TRANSMISSIONS Mitsubishi F4A33, W4A32 & W4A33 Overhaul

1-2 Shift Valve Spring	.299 (7.59)	1.047 (26.59)
2-3 Shift Valve Spring	.276 (7.01)	1.083 (27.51)

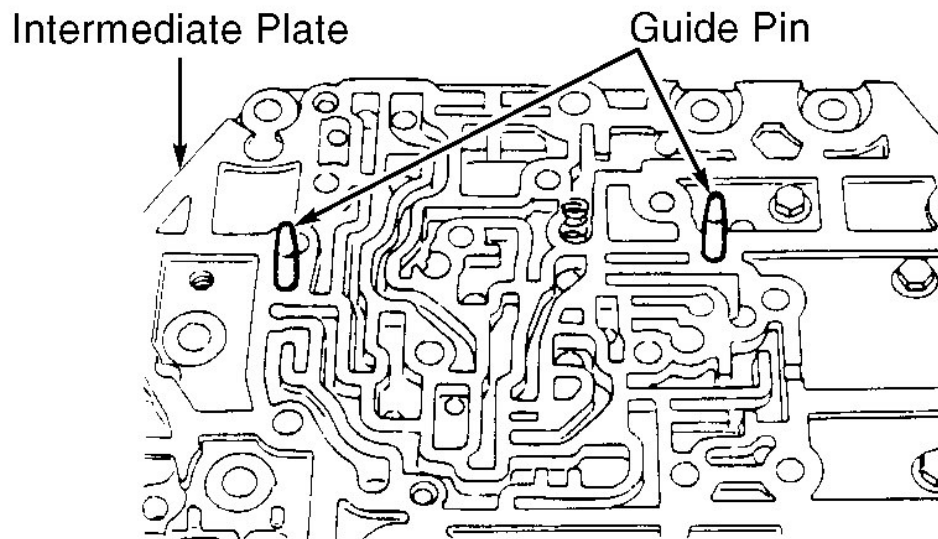
4. Install steel balls, relief spring and oil filter in intermediate plate. See **Fig. 49** . Install guide pins in intermediate plate. See **Fig. 52** . Install lower separator plate on intermediate plate.
5. Install lower valve body on intermediate plate. Install valve body bolts to retain lower valve body on intermediate plate. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Remove guide pins.
6. To reassemble remaining components, reverse disassembly procedure. Ensure all solenoids valves are installed in proper location. See **Fig. 48** . Solenoid valves can be identified by wire color. See **SOLENOID VALVE IDENTIFICATION** table.

SOLENOID VALVE IDENTIFICATION

Solenoid	Wire Color
Pressure Control Solenoid Valve	
All Others	Blue
3000GT	Blue/Yellow
Shift Control Solenoid Valve "A"	
All Others	Orange
3000GT	Green
Shift Control Solenoid Valve "B"	
All Others	Yellow
3000GT	Orange
Torque Converter Clutch Solenoid Valve	Red



INSTALLING GUIDE PINS IN UPPER VALVE BODY



INSTALLING GUIDE PINS IN INTERMEDIATE PLATE

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Fig. 52: Installing Guide Pins
Courtesy of CHRYSLER CORP.

TRANSAXLE REASSEMBLY

NOTE: Manufacturer specifies the use of only Mopar ATF Plus-Type 7176 for use in this transaxle. This fluid should also be used during assembly.

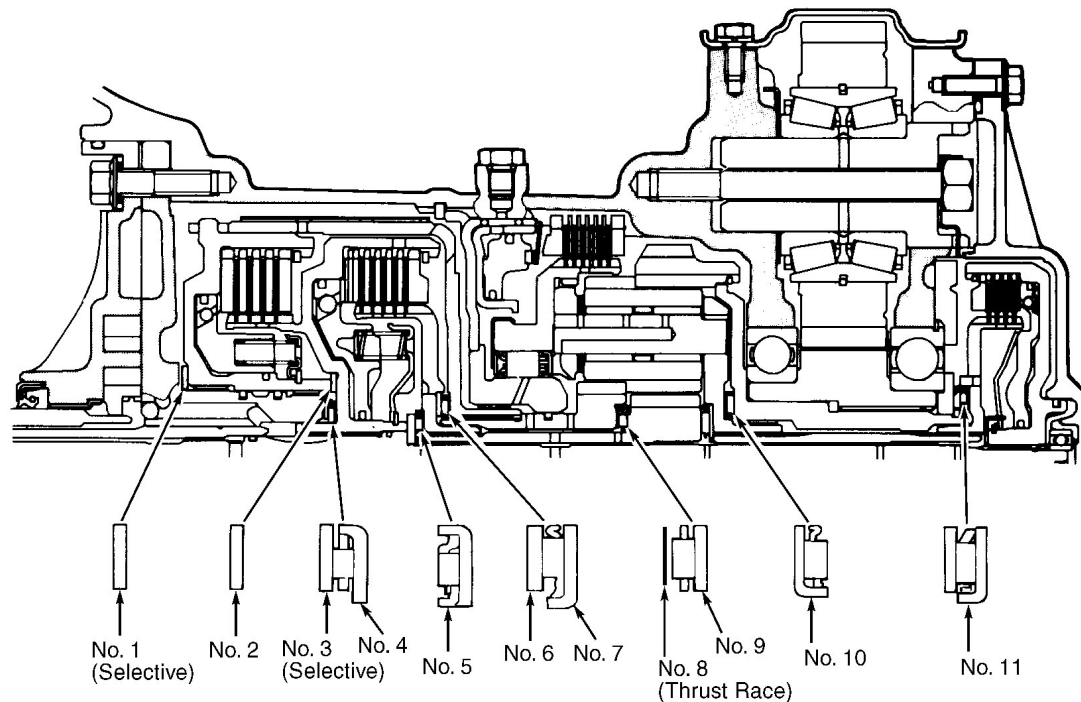
VALVE BODY & INTERNAL COMPONENTS

NOTE: Lubricate all components with ATF. Apply petroleum jelly on "O" rings and seal rings. Use petroleum jelly to hold thrust bearings, thrust races and thrust washers in position. Ensure thrust bearings, thrust races and thrust washers are installed in original location and proper direction. See Fig. 53 .

1. Using appropriate oil seal installer, install NEW drive shaft oil seals. On W4A32 and W4A33 models, align drive shaft oil seal with transaxle case positioning boss. Ensure drive shaft oil seal flange pieces are toward top of transaxle when installed.
2. On all models, use handle and bearing race installer to install bearing race in transaxle case. On F4A33 models, proceed to step 9).
3. On W4A32 and W4A33 models, use oil seal installer to install rear output shaft oil seal. Install front output shaft. Place a piece of solder, .06" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of front bearing retainer. See Fig. 54 . Install outer race.

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IDENTIFICATION OF THRUST BEARINGS, THRUST RACES & THRUST WASHERS mm (in.)

Outer diameter	Inner diameter	Thickness	Part No.	Code No.	Outer diameter	Inner diameter	Thickness	Part No.	Code No.
70 (2.76)	55.7 (2.193)	1.4 (.055)	*1	#1	48.1 (1.906)	34.4 (1.354)	-	MD707271	#4
70 (2.76)	55.7 (2.193)	1.8 (.071)	*2		42.6 (1.677)	28 (1.10)	-	MD720753	#5
70 (2.76)	55.7 (2.193)	2.2 (.087)	*3		54 (2.13)	38.7 (1.524)	1.6 (.063)	MD704936	#6
70 (2.76)	55.7 (2.193)	2.6 (.102)	*4		52 (2.05)	36.4 (1.433)	-	MD720010	#7
66 (2.60)	54 (2.1)	1.8 (.071)	MD731212	#2	45 (1.77)	28 (1.10)	-	MD735062	#8
48.9 (1.925)	37 (1.46)	1.0 (.039)	MD997854 (incl. *1)	#3	46 (1.81)	31 (1.22)	0.8 (.031)	MD735063	#9
48.9 (1.925)	37 (1.46)	1.2 (.047)	MD997847 (incl. *1)		52 (2.05)	36.4 (1.433)	-	MD720010	#10
48.9 (1.925)	37 (1.46)	1.4 (.055)	MD997848 (incl. *2)		58 (2.29)	44 (1.73)	-	MD724206	#11
48.9 (1.925)	37 (1.46)	1.6 (.063)	MD997849 (incl. *2)						
48.9 (1.925)	37 (1.46)	1.8 (.071)	MD997850 (incl. *3)						
48.9 (1.925)	37 (1.46)	2.0 (.079)	MD997851 (incl. *3)						
48.9 (1.925)	37 (1.46)	2.2 (.087)	MD997852 (incl. *4)						
48.9 (1.925)	37 (1.46)	2.4 (.094)	MD997853 (incl. *4)						

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Fig. 53: Identifying Thrust Bearing, Thrust Race & Thrust Washer Locations
Courtesy of CHRYSLER CORP.

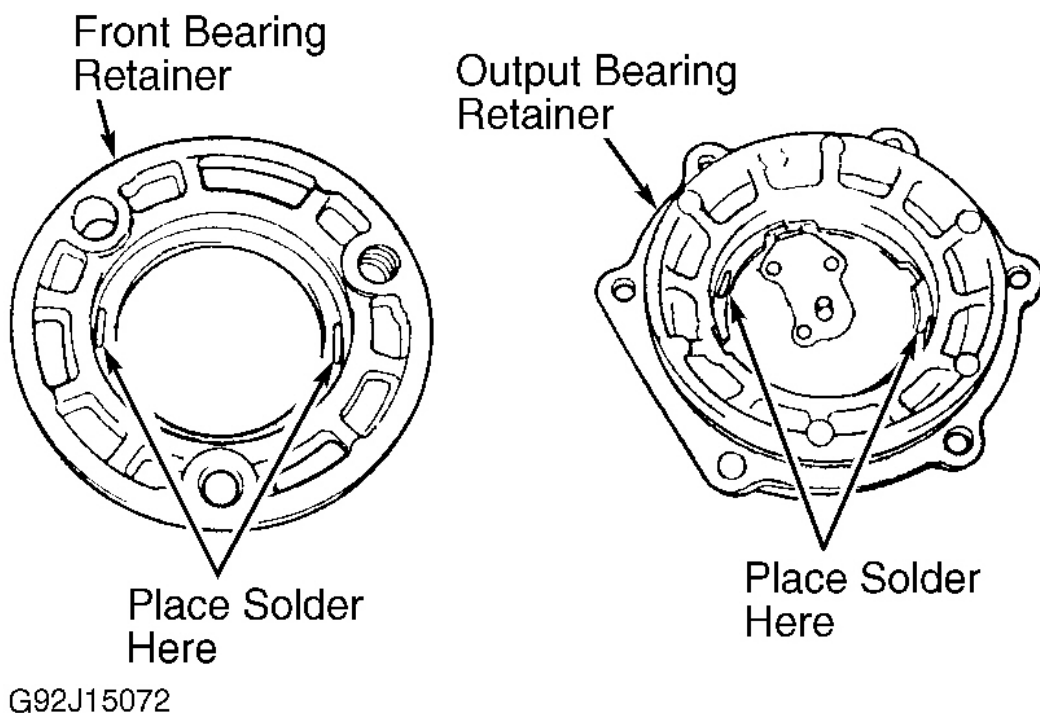


Fig. 54: Installing Solder In Front Bearing Retainer & Output Bearing Retainer
 Courtesy of CHRYSLER CORP.

4. Install front bearing retainer. Install and tighten front bearing retainer bolts to specification. See **TORQUE SPECIFICATIONS** . Remove retaining bolts and front bearing retainer.
5. Remove outer race from front bearing retainer. Remove solder, and measure thickness of solder. Using measurement of solder, determine proper thickness spacer so front output shaft bearing preload will be .002-.005" (.05-.13 mm). See FRONT OUTPUT SHAFT BEARING SPACER IDENTIFICATION table.

NOTE: If solder does not flatten, it may be necessary to use a larger diameter solder.

FRONT OUTPUT SHAFT BEARING SPACER IDENTIFICATION

Spacer Thickness In. (mm)	Identification Mark	Part Number
.0457 (1.160)	16	MD736929
.0469 (1.191)	19	MD736751
.0480 (1.220)	22	MD736931
.0492 (1.250)	25	MD726166
.0504 (1.280)	28	MD718517

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.0516 (1.310)	31	MD718518
.0528 (1.341)	34	MD718519
.0539 (1.369)	37	MD718520
.0551 (1.400)	40	MD718521
.0563 (1.430)	43	MD718522
.0575 (1.461)	46	MD718523
.0587 (1.491)	49	MD718524
.0598 (1.519)	52	MD718525
.0610 (1.549)	55	MD718526
.0622 (1.580)	58	MD718527
.0634 (1.610)	61	MD718528
.0646 (1.641)	64	MD718529
.0657 (1.669)	67	MD718530
.0669 (1.690)	70	MD718531
.0681 (1.730)	73	MD721959
.0693 (1.760)	76	MD721960

6. Install proper spacer and outer race in front bearing retainer. Install front bearing retainer. Apply thread sealant to front bearing retainer bolts. Install and tighten front bearing retainer bolts to specification.

CAUTION: Ensure thread sealant is applied to front bearing retainer bolts.

7. Using bearing puller installed in grooves, install viscous coupling unit. See **Fig. 26** . Install stopper ring. See **Fig. 18** . Using handle and bearing race installer, install bearing race in center bearing retainer. Install center bearing stopper bolt. See **Fig. 25** . Tighten center bearing stopper bolt to specification.
8. Install center bearing retainer in transaxle case so shoulder on center bearing stopper bolt engages notch on center bearing retainer. See **Fig. 55** . Thread puller into hole in end of center differential assembly and install center differential assembly.

CAUTION: Ensure shoulder on center bearing stopper bolt engages notch on center bearing retainer. See Fig. 53 .

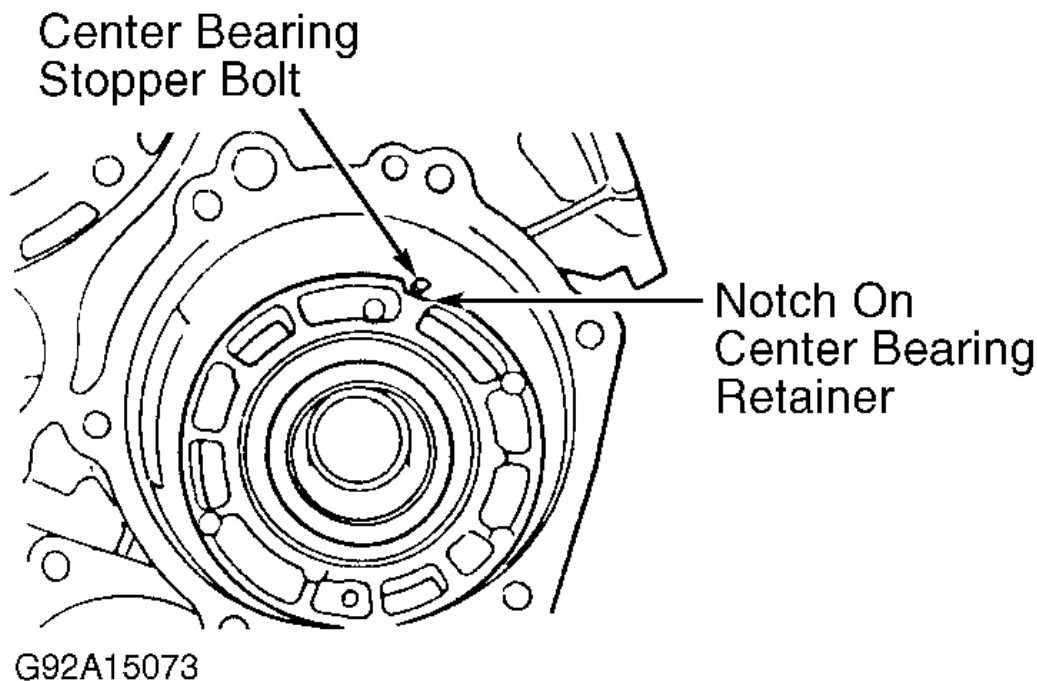


Fig. 55: Installing Center Bearing Retainer
 Courtesy of CHRYSLER CORP.

9. On F4A33 models, install transfer shaft in transaxle case. On all models, place a piece of solder, .060" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of output bearing retainer. See **Fig. 54** . Install outer race.
10. Install output bearing retainer without "O" ring. Install and tighten output bearing retainer bolts to specification. See **TORQUE SPECIFICATIONS** . Remove retaining bolts and output bearing retainer.
11. Remove outer race from output bearing retainer. Remove solder and measure thickness of solder. Using measurement of solder, determine proper thickness spacer so transfer shaft or center differential bearing preload will be .003-.005" (.07-.13 mm). See TRANSFER SHAFT OR CENTER DIFFERENTIAL BEARING SPACER ID table.

NOTE: If solder does not flatten, it may be necessary to use larger diameter solder.

TRANSFER SHAFT OR CENTER DIFFERENTIAL BEARING SPACER ID

Spacer Thickness In. (mm)	Identification Mark	Part Number
.0244 (.620)	62	MD737444
.0256 (.650)	65	MD737445

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.0268 (.681)	68	MD737446
.0280 (.711)	71	MD737447
.0291 (.739)	74	MD728802
.0303 (.770)	77	MD728803
.0315 (.800)	80	MD728804
.0327 (.831)	83	MD728805
.0339 (.861)	86	MD728806
.0350 (.889)	89	MD728807
.0362 (.919)	92	MD728808
.0374 (.950)	95	MD728809
.0386 (.980)	98	MD728810
.0398 (1.010)	01	MD728811
.0409 (1.039)	04	MD728812
.0421 (1.069)	07	MD728813
.0433 (1.100)	10	MD728814
.0445 (1.130)	13	MD728815
.0457 (1.161)	16	MD728816
.0469 (1.191)	19	MD728817
.0480 (1.220)	22	MD728818
.0492 (1.250)	25	MD728819
.0504 (1.280)	28	MD728820
.0516 (1.311)	31	MD728821

12. Install proper spacer and outer race in output bearing retainer. Install NEW "O" ring on output bearing retainer. Lubricate "O" ring with ATF.
13. Install output bearing retainer. Install and tighten output bearing retainer bolts to specification. See **TORQUE SPECIFICATIONS** . Install output flange in transaxle case. Install snap ring in bearing outer circumference.
14. Install bearing retainer and NEW retaining bolts. Tighten retaining bolts to specification. Stake heads of bearing retainer bolts against bearing retainer.

CAUTION: Always install NEW retaining bolts for bearing retainer. Ensure retaining bolts are staked against bearing retainer.

15. Coat No. 10 thrust bearing with petroleum jelly and install on rear of planetary carrier assembly. See **Fig. 16** . Install planetary carrier assembly in transaxle case.
16. Assemble forward sun gear, No. 9 thrust race, No. 8 thrust bearing and reverse sun gear. See **Fig. 56** . Install forward and reverse sun gear assembly in planetary carrier assembly.

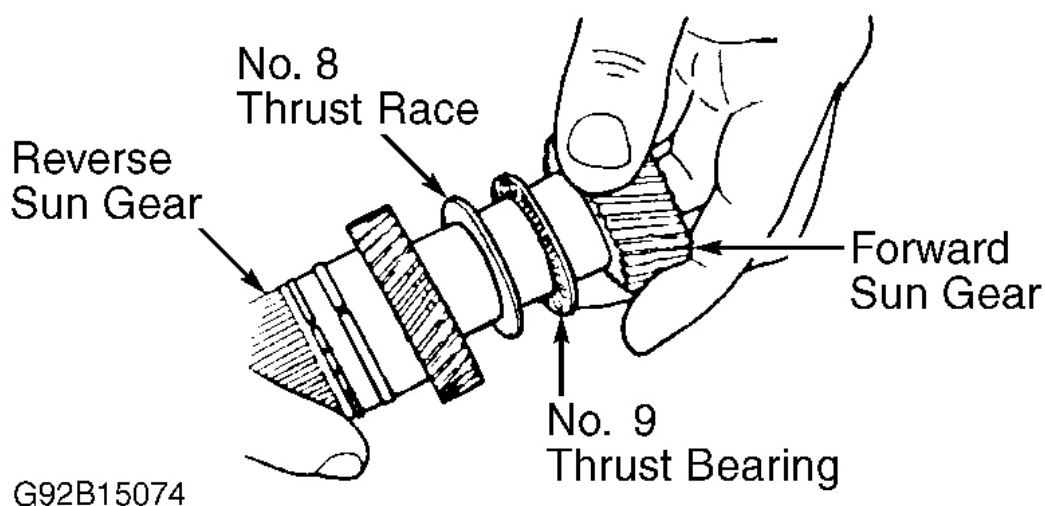


Fig. 56: Assembling Forward & Reverse Sun Gear
Courtesy of CHRYSLER CORP.

17. Ensure clutch discs have been soaked in ATF for at least 2 hours. Install reaction plate, clutch discs, clutch plates and pressure plate in transaxle case. See **Fig. 16** . Install return spring with raised side away from pressure plate. See **Fig. 57** .
18. Coat wave spring with petroleum jelly and install on center support. Using handle, install center support and 2 "O" rings in transaxle case.

CAUTION: Ensure center support aligns with oil hole and wave spring is aligned.

19. Install snap ring to retain center support in transaxle case. Using feeler gauge, measure low-reverse brake clearance. See **Fig. 58** . Low-reverse brake clearance should be .039-.047" (.99-1.19 mm) .
20. If low-reverse brake clearance is not within specification, select different thickness pressure plate to obtain correct clearance. See PRESSURE PLATE IDENTIFICATION table.

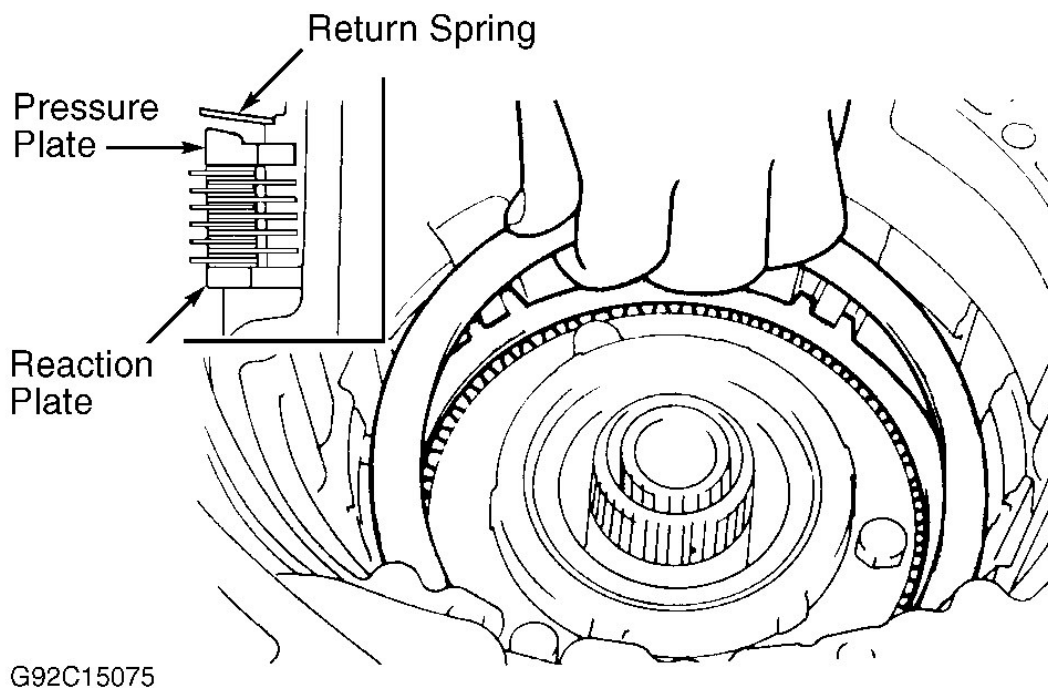


Fig. 57: Installing Pressure Plate & Return Spring
Courtesy of CHRYSLER CORP.

PRESSURE PLATE IDENTIFICATION

Plate Thickness In. (mm)	Identification Mark	Part Number
F4A33 & W4A33		
.232 (5.89)	A	MD731736
.236 (5.99)	0	MD731737
.240 (6.10)	1	MD731738
.244 (6.20)	2	MD731739
.248 (6.30)	3	MD731740
.252 (6.40)	4	MD731588
.256 (6.50)	5	MD731741
.260	6	MD731742

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(6.60)		
.264 (6.71)	7	MD731743
.268 (6.81)	8	MD731744
.272 (6.91)	9	MD731745
W4A32		
.220 (5.59)	Y	MD731720
.224 (5.69)	Z	MD731721
.228 (5.79)	8	MD727801
.232 (5.89)	9	MD731000
.236 (5.99)	0	MD727802
.240 (6.10)	1	MD731001
.244 (6.20)	2	MD727803
.248 (6.30)	3	MD731002
.252 (6.40)	4	MD727804
.256 (6.50)	5	MD731003
.260 (6.60)	6	MD727805
.264 (6.71)	7	MD731004
.268 (6.81)	X	MD731005
.272 (6.91)	A	MD734766
.276 (7.01)	B	MD734767

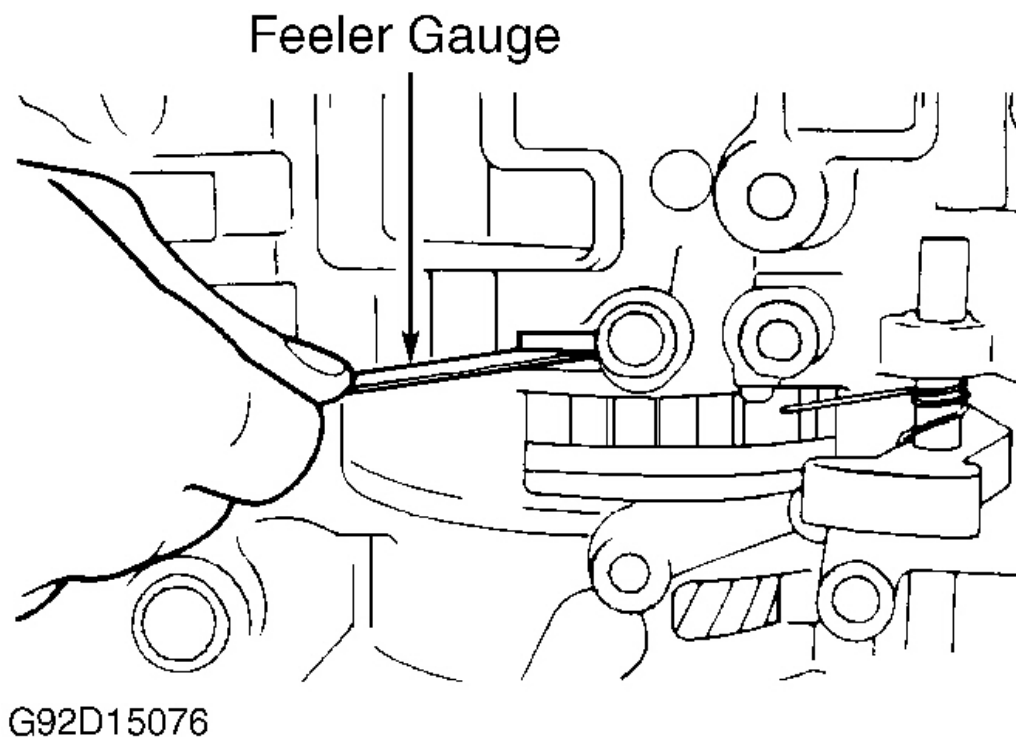


Fig. 58: Measuring Low-Reverse Brake Clearance
 Courtesy of CHRYSLER CORP.

21. Install air exhaust plug and plug. See **Fig. 22** . Tighten plug to specification. See **TORQUE SPECIFICATIONS** . Install anchor rod, spring and kickdown servo piston.

CAUTION: Ensure ends of seal rings on kickdown servo piston DO NOT align with oil supply passages in kickdown servo bore on transaxle case.

22. Using cup, adapter and compressor, depress kickdown servo piston. See **Fig. 21** . Install snap ring. Remove cup, adapter and compressor. Install kickdown band with arrow on kickdown band pointing toward oil pump end of transaxle.
23. Install No. 4 thrust bearing and No. 2 thrust washer on rear clutch assembly. See **Fig. 16** . Assemble front and rear clutch assembly. Install No. 5 thrust bearing in rear clutch hub. See **Fig. 17** . Install rear clutch hub in rear clutch. Install No. 6 thrust race on end of rear clutch hub.
24. Install No. 7 thrust bearing in kickdown drum. See **Fig. 17** . Install front and rear clutch assembly in kickdown drum. Install front and rear clutch assembly with kickdown drum in transaxle case.
25. Coat No. 1 thrust washer and No. 3 thrust race with petroleum jelly and install on rear of oil pump. See **Fig. 15** . Install NEW gasket and install oil pump in transaxle case. Install and tighten oil pump retaining

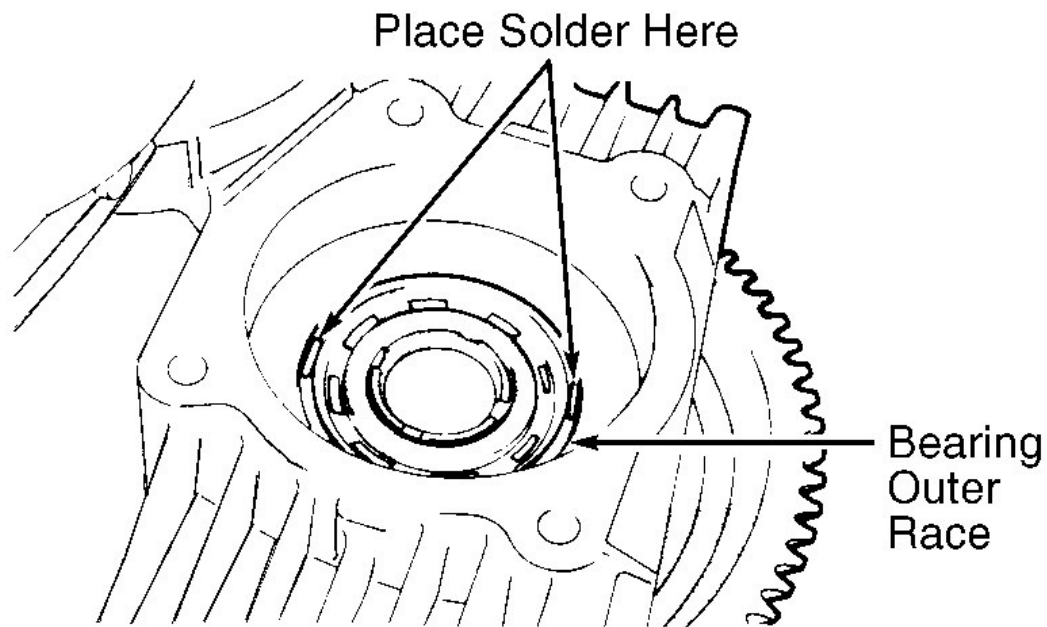
bolts to specification. See **TORQUE SPECIFICATIONS** .

26. Using dial indicator, check input shaft end play. See **Fig. 19** . Input shaft end play should be .012-.039" (.3-1.0 mm). If input shaft end play is not within specification, replace No. 1 thrust washer and No. 3 thrust race as a set to obtain correct end play. See NO. 1 THRUST WASHER & NO. 3 THRUST RACE SPECIFICATIONS.

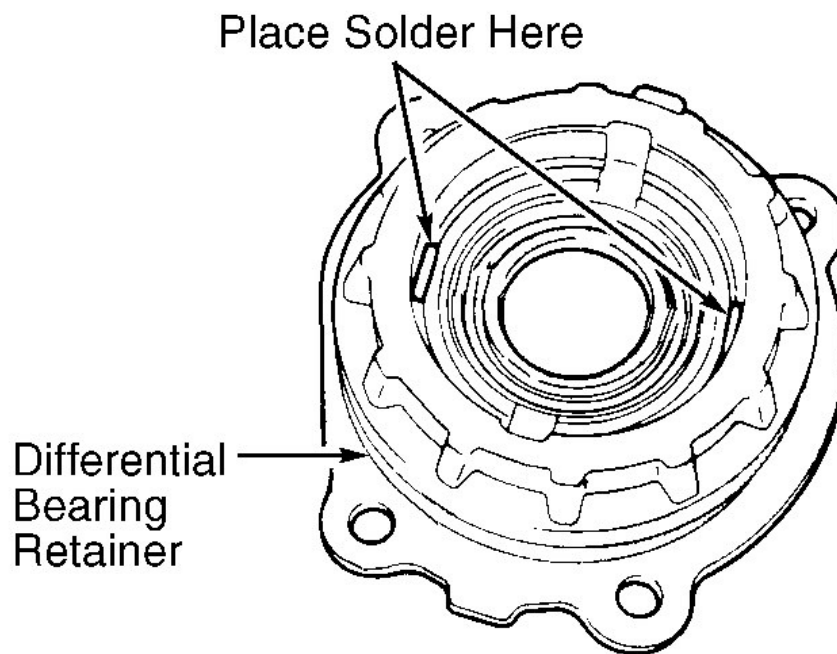
NO. 1 THRUST WASHER & NO. 3 THRUST RACE SPECIFICATIONS

Thickness In. (mm)	Part Number
.040-.055 (1.01-1.40)	MD997854
.047-.055 (1.19-1.40)	MD997847
.055-.071 (1.40-1.80)	MD997848
.063-.071 (1.60-1.80)	MD997849
.071-.087 (1.80-2.21)	MD997850
.079-.087 (2.01-2.21)	MD997851
.087-.102 (2.21-2.59)	MD997852
.095-1.02 (2.41-2.59)	MD997853

27. Install spacer, idler gear, bearing and idler shaft. See **Fig. 17** or **Fig. 18** . Ensure idle gear is installed so identification groove on end of idler gear faces rear of transaxle (away from oil pump).
28. Install NEW lock plate on lock bolt for idler gear shaft. Install lock bolt and tighten to specification. Bend lock tabs over on lock plate.
29. Install NEW idler gear cover gasket. Install idler gear cover and retaining bolts. Tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** . Install end clutch shaft with long splined area toward transaxle.
30. Install thrust washer on end clutch assembly. Install end clutch hub in end clutch assembly. See **Fig. 17** or **Fig. 18** . Coat No. 11 thrust bearing with petroleum jelly and install on end clutch hub.
31. Install end clutch assembly. Install NEW "O" ring and end clutch cover. Install and tighten end clutch cover retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
32. On W4A32 and W4A33 models, install bearing outer race on differential assembly. Place a piece of solder, .060" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of bearing outer race. See **Fig. 59** .
33. On F4A33 models, place a piece of solder, .060" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of differential bearing retainer. See **Fig. 59** . Install outer race.



W4A32 & W4A33 MODELS



F4A33 MODELS

92E15077

Fig. 59: Installing Solder On Outer Race Or In Differential Bearing Retainer

Courtesy of CHRYSLER CORP.

34. On all models, install differential bearing retainer without "O" ring. Install and tighten differential bearing retainer bolts to specification. See **TORQUE SPECIFICATIONS** . Remove retaining bolts and differential bearing retainer.
35. On F4A33 models, remove outer race from differential bearing retainer. On all models, remove solder and measure thickness of the solder. Using measurement of solder, determine proper thickness spacer so differential assembly end play. End play should be .0030-.0053" (.076-.135 mm). If end play is not within specifications, replace differential assembly spacer. SEE DIFFERENTIAL ASSEMBLY SPACER IDENTIFICATION table.

NOTE: If solder does not flatten, it may be necessary to use a larger diameter solder.

DIFFERENTIAL ASSEMBLY SPACER IDENTIFICATION

Spacer Thickness In. (mm)	Identification Mark	Part Number
F4A33		
Eclipse		
.0279 (.710)	71	MD754475
.0291 (.740)	74	MD727660
.0303 (.770)	77	MD754476
.0315 (.800)	80	MD727661
.0327 (.831)	83	MD720937
.0339 (.861)	86	MD720938
.0350 (.889)	89	MD720939
.0362 (.919)	92	MD720940
.0374 (.950)	95	MD720941
.0386 (.980)	98	MD720942
.0409 (1.039)	04	MD720944
.0421 (1.069)	07	MD720945
.0445 (1.130)	D	MD700270
.0457 (1.161)	K	MD710455
.0469 (1.190)	L	MD710456
.0480 (1.219)	G	MD700271
.0492 (1.250)	M	MD710457

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.0504 (1.280)	N	MD710458
.0516 (1.311)	E	MD706574
.0528 (1.341)	O	MD710459
.0539 (1.369)	P	MD710460
3000GT		
.0280 (.711)	71	MD754446
.0291 (.741)	74	MD754447
.0303 (.771)	77	MD754448
.0315 (.801)	80	MD754449
.0327 (.831)	83	MD740846
.0339 (.861)	86	MD740847
.0350 (.889)	89	MD740848
.0362 (.919)	92	MD740849
.0374 (.950)	95	MD740850
.0386 (.980)	98	MD740851
.0398 (1.011)	01	MD740852
.0409 (1.039)	04	MD740853
.0421 (1.069)	07	MD740854
.0433 (1.100)	10	MD740855
.0445 (1.130)	13	MD740856
.0457 (1.161)	16	MD740857
.0469 (1.191)	19	MD740858
.0480 (1.219)	22	MD740859
.0492 (1.250)	25	MD740860
.0504 (1.280)	28	MD740861
.0516 (1.311)	31	MD740862
.0528 (1.341)	34	MD740863

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.0539 (1.369)	37	MD740864
W4A32 & W4A33		
.0398 (1.011)	01	MD720943
.0433 (1.100)	J	MD710454
.0469 (1.191)	L	MD710456
.0504 (1.280)	N	MD710458

36. Install proper spacer. Install NEW "O" ring on differential bearing retainer. Lubricate "O" ring with ATF. Install differential bearing retainer. Install and tighten differential bearing retainer bolts to specification. See [TORQUE SPECIFICATIONS](#).
37. Install differential bearing cap. Position "S" mark on bearing cap at short bolt location and "L" mark at long bolt location. Install and tighten retaining bolts to specification.
38. Install NEW gasket and differential cover. Install and tighten retaining bolts to specification. Install detent in transaxle case. Detent fits in opening in transaxle case, near manual control shaft.
39. Install NEW "O" ring on manual control shaft and lubricate with ATF. Install manual control shaft. Install manual control shaft retaining set screw, located near top of manual control shaft area on transaxle case. Tighten set screw to specification.
40. Install parking roller support and retaining bolts. Tighten retaining bolts to specification. Install oil temperature sensor in transaxle case.
41. Install NEW "O" ring on solenoid valve wiring harness and in groove on top of valve body. See [Fig. 13](#). Install solenoid valve wiring harness connector from inside transaxle case, and install grommet.
42. Install valve body. Ensure detent plate pin engages with groove on manual valve. Install retaining bolts, ensuring proper length bolt is installed in designated area. See [Fig. 15](#). Tighten valve body bolts to specification. See [TORQUE SPECIFICATIONS](#).

CAUTION: Position wiring so it does not contact detent plate. Ensure parking rod is properly retained in clamps. See [Fig. 15](#).

43. Install oil filter, magnet, gasket, oil pan, park/neutral position switch, manual control lever and speedometer gear assembly. Tighten bolts to specification.
44. Note color of tubes on pulse generators. Install pulse generators in proper location according to color of tubes. See [Fig. 20](#). Tighten bolts to specification.

CAUTION: Ensure pulse generators are installed in correct location. See [Fig. 20](#).

45. Install dipstick tube and dipstick. Adjust kickdown servo. See [KICKDOWN SERVO](#) under ADJUSTMENTS. Install kickdown servo switch and snap ring.

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46. On W4A32 and W4A33 models, coat seal for rear output shaft with ATF. Install rear output shaft. Using soft-faced hammer, lightly tap on rear output shaft to ensure shaft is fully seated. On all models, coat hub on torque converter with ATF and install torque converter. Ensure torque converter is fully seated.

CAUTION: If transaxle failure existed, ensure oil cooler is flushed.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Air Exhaust Plug	22-25 (30-34)
Bearing Retainer Bolt	13-14 (18-19)
Differential Bearing Cap Bolt	43-58 (58-79)
Differential Bearing Retainer Bolt	22-28 (30-38)
Differential Flange-To-Differential Case Bolt	51-57 (69-77)
Front Bearing Retainer Bolt	32-39 (43-53)
Idler Gear Lock Bolt	22-32 (30-43)
Kickdown Servo Lock Nut	18-23 (24-31)
Manual Control Lever Bolt	12-15 (16-20)
Oil Pump-To-Transaxle Case Bolt	14-16 (19-22)
Output Bearing Retainer Bolt	15-19 (20-26)
Parking Roller Support Bolt	15-19 (20-26)
Ring Gear Bolt	94-101 (127-137)
	INCH Lbs. (N.m)
Center Bearing Stopper Bolt	36-48 (4.1-5.4)
Differential Cover Bolt	89-102 (10.1-11.5)
End Clutch Cover Bolt	89-102 (10.1-11.5)
Hydraulic Pressure Tap Plug	36-48 (4.1-5.4)
Idler Gear Cover Bolt	89-102 (10.1-11.5)
Inhibitor Switch Bolt	89-102 (10.1-11.5)
Manual Control Shaft Set Screw	72-84 (8.1-9.5)
Oil Filter Bolt	48-60 (5.4-6.8)
Oil Pan Bolt	89-102 (10.1-11.5)
Pulse Generator Bolt	89-102 (10.1-11.5)
Reaction Shaft Support Bolt	84-108 (9.5-12.2)
Speedometer Gear Assembly Bolt	36-48 (4.1-5.4)
Valve Body Bolt	
Valve Body-To-Transaxle Case Bolt	89-102 (10.1-11.5)
Upper & Lower Valve Body Bolt	36-48 (4.1-5.4)

TRANSAXLE SPECIFICATIONS

TRANSAXLE SPECIFICATIONS

Application	In. (mm)
Differential Assembly End Play & Preload	.0030-.0053 (.076-.135)
Differential Side Gear-To-Pinion Gear Backlash	.0010-.0059 (.025-.150)
End Clutch Clearance	.024-.033 (.61-.84)
Front Clutch Clearance	
F4A33 & W4A33	.032-.039 (.81-.99)
W4A32	.028-.035 (.71-.89)
Front Output Shaft Bearing Preload	.002-.005 (.05-.13)
Input Shaft End Play	.012-.039 (.30-.99)
Low-Reverse Brake Clearance	.039-.047 (.99-1.19)
Oil Pump Gear End Clearance	.001-.002 (.03-.05)
Output Flange End Play	0-.0035 (0-.089)
Rear Clutch Clearance	
F4A33 & W4A33	.039-.047 (.99-1.19)
W4A32	.016-.024 (.41-.61)
Transfer Shaft Or Center Differential Bearing Preload	.003-.005 (.07-.13)