AUTO TRANS OVERHAUL - F4A33, W4A32 & W4A33
Article Text
1992 Mitsubishi Mirage
For Dan's Transmission Service 10 Jefferson Place Fort Walton Beach FL 32548

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ARTICLE BEGINNING

AUTOMATIC TRANSMISSIONS
Mitsubishi F4A33, W4A32 & W4A33

APPLICATION

TRANSMISSION APPLICATIONS

Model	Transaxle
Colt Vista AWD (1992-94)	W4A32
Diamante (1992-94)	F4A33
Eclipse	
2.0L Turbo	
AWD	W4A33
2WD	F4A33
Expo AWD (1992-94)	W4A32
Galant	
DOHC (1993-94)	F4A33
AWD (1991-94)	W4A32
Laser	
AWD	W4A33
Turbo	F4A33
Stealth	F4A33
Summit Wagon AWD (1992-94)	W4A32
Talon	
AWD	W4A33
Turbo	F4A33
3000 GT	F4A33

IDENTIFICATION

Transaxle model can be identified on metal tag attached to center of firewall. No other information is available from manufacturer.

DESCRIPTION

Transaxle 4-speed automatic transaxle is electronically controlled. Transaxle uses hydraulically operated clutches controlled by the Transaxle Control Unit (TCU). Transaxle consists of clutches, brake, kickdown band, planetary gear sets and transfer case (W4A32 and W4A33). See Figs. 1 and 2.

The TCU 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.

On all models except Colt Vista and Summit Wagon, a power/economy switch, located on center console, is used to change shift patterns. The pre-stored shift pattern is controlled by the TCU. The TCU controller contains a self-diagnostic system, storing fault

codes if a transaxle fault exists. A fault code can be retrieved to determine the problem area. For electronic transaxle component information, see the AUTO TRANS DIAGNOSIS - F4A33, W4A32 & W4A33 article.

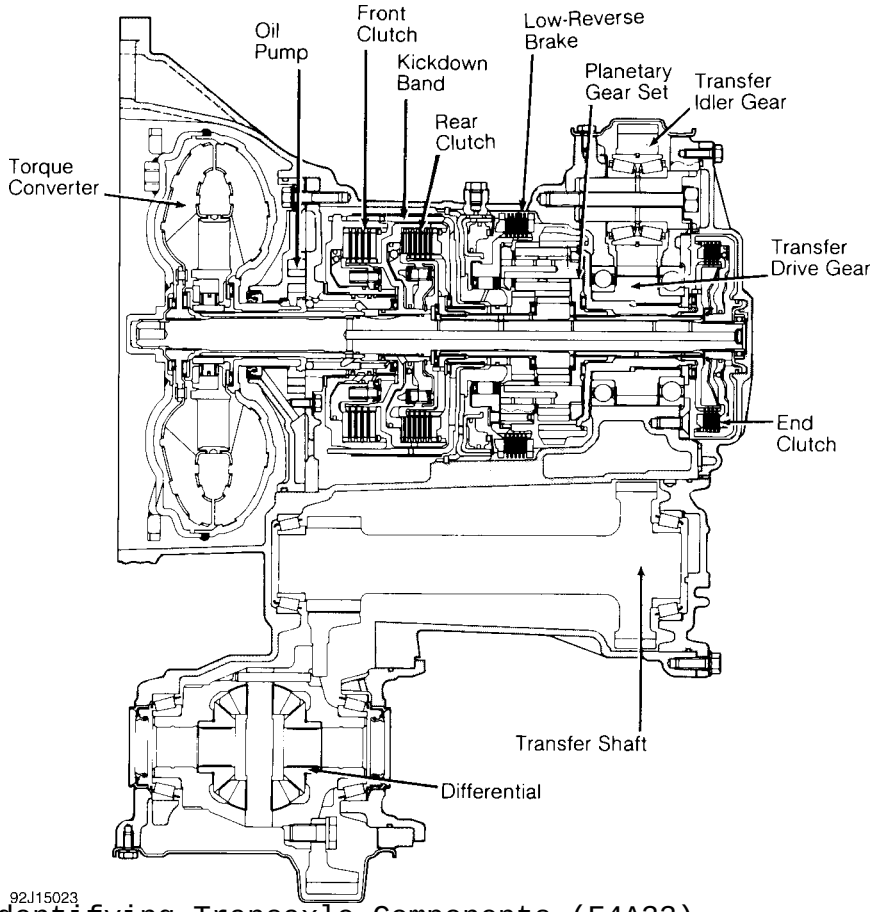

Fig. 1: Identifying Transaxle Components (F4A33)
Courtesy of Mitsubishi Motor Sales of America.

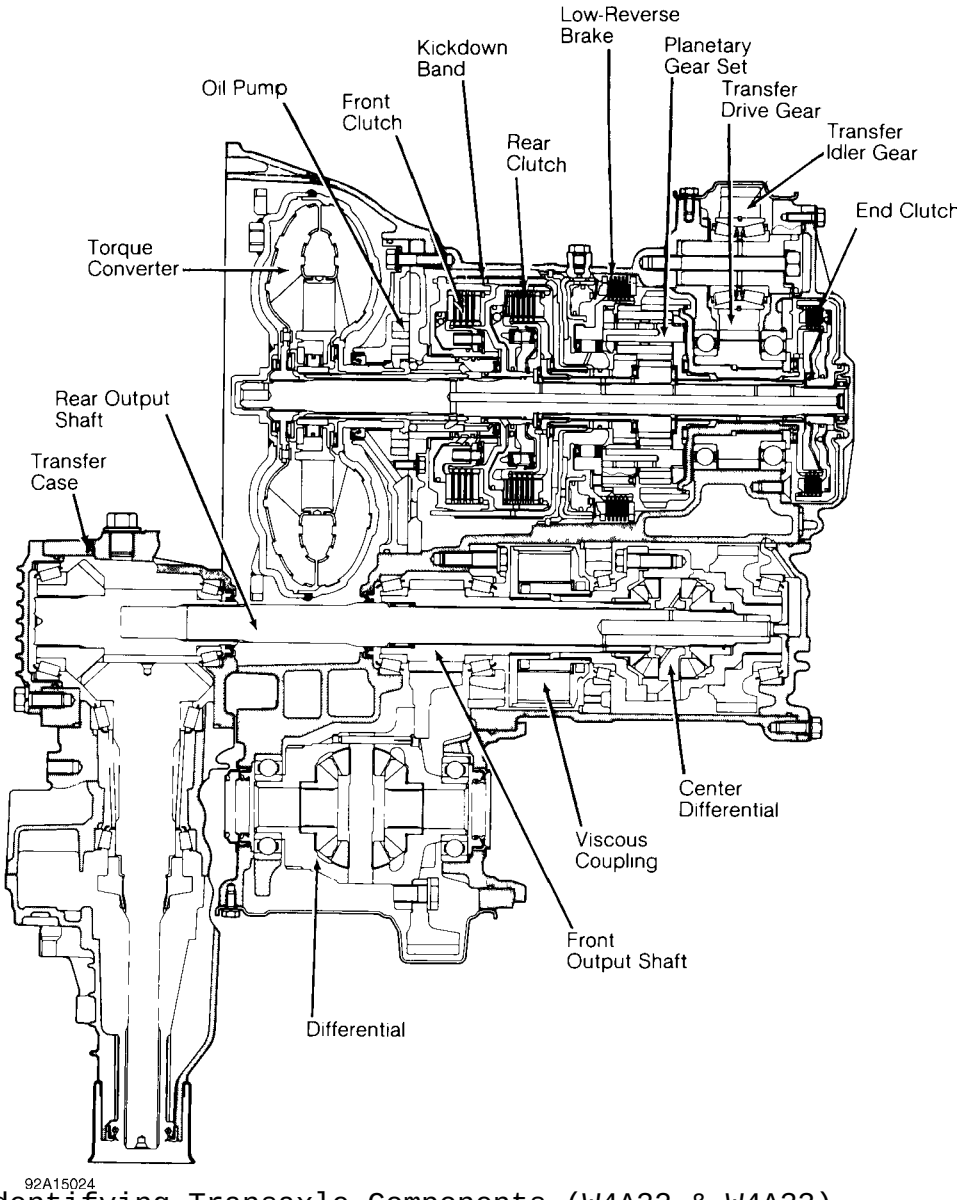

Fig. 2: Identifying Transaxle Components (W4A32 & W4A33)
Courtesy of Mitsubishi Motor Sales of America.

LUBRICATION

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

TROUBLESHOOTING

TRANSAXLE

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

* Defective Damper Clutch Control Solenoid Valve (DCCSV) on valve body or wiring circuit
* Defective oil temperature sensor
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generators "A" and "B" or wiring circuit
* Defective torque converter
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Malfunction in valve body

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

* Defective front or rear clutch
* Defective low-reverse brake
* Defective or improperly adjusted accelerator switch
* Defective or improperly adjusted inhibitor switch
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective Transaxle Control Unit (TCU)
* Improper engine idle speed
* Improper shift cable adjustment
* Malfunction in valve body

Clutch Slips In Drive & Torque Converter Stall Speed Is Excessive

* Defective oil pump
* Defective one-way clutch
* Defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit
* Defective rear clutch
* Improper shift cable adjustment
* Low fluid level
* Low line pressure
* Malfunction in valve body

Clutch Slips In Reverse & Torque Converter Stall Speed Is Excessive

* Defective front clutch or retainer
* Defective low-reverse brake
* 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
* "O" Ring for low-reverse brake circuit not installed between valve body and transaxle case

Damper Clutch Inoperative

* Defective accelerator switch or wiring
* Defective Damper Clutch Control Solenoid Valve (DCCSV) on valve body or wiring circuit
* Defective oil temperature sensor
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generators "A" and "B" or wiring circuit
* Defective torque converter
* Defective Transaxle Control Unit (TCU)
* Malfunction in ignition signal system
* Malfunction in valve body

Engine Stalls When Shifted From Neutral To Drive Or Reverse

* Defective Damper Clutch Control Solenoid Valve (DCCSV) on valve body or wiring circuit
* Improper engine idle speed or performance
* Malfunction in valve body

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

* Defective or improperly adjusted inhibitor switch
* Improper shift cable adjustment
* Malfunction in valve body

Excessive Creeping Or Idling Vibration

* Defective or improperly adjusted accelerator switch
* Defective Transaxle Control Unit (TCU)
* Improper engine idle speed

Excessive Vibration During All Upshifts

* Defective front clutch
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Malfunction in ignition signal system
* Malfunction in valve body

Excessive Vibration During D-2 Downshift

* Defective low-reverse brake
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Malfunction in ignition signal system
* Malfunction in valve body

Excessive Vibration During 1-2 Or 3-4 Upshift

* Defective end clutch
* Defective kickdown band or piston
* Defective kickdown servo switch
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Improper kickdown servo adjustment
* Malfunction in ignition signal system
* Malfunction in valve body

Excessive Vibration During 2-3 Or 4-3 Shift

* Defective front clutch
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Malfunction in ignition signal system
* Malfunction in valve body

Excessive Vibration When Cold

* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Malfunction in valve body

Overdrive Control Switch Will Not Operate

* Defective overdrive control switch or wiring circuit
* Defective Transaxle Control Unit (TCU)

Sudden Engine RPM Increase During Upshift

* Defective end clutch
* Defective front clutch or retainer
* Defective kickdown band
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper kickdown servo adjustment
* Low line pressure
* Malfunction in ignition signal system
* Malfunction in valve body

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

* Defective front clutch retainer

* Defective kickdown band
* Defective kickdown servo switch
* Defective oil pump
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective Pressure Control Solenoid Valve (PCSV) on valve body
* Defective pulse generator "A" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper kickdown servo adjustment
* Low fluid level
* Low line pressure
* Malfunction in ignition signal system
* Malfunction in valve body

Torque Converter Stall Speed Is Low

* Defective torque converter
* Improper engine performance

Transaxle Remains In 3rd Gear

* Defective contacts at ignition switch
* Defective Damper Clutch Control Solenoid Valve (DCCSV) 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 inhibitor switch
* Defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit
* Defective pulse generators "A" and "B" or wiring circuit
* Defective Shift Control Solenoid Valve (SCSV) "A" or "B" on valve body or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper shift cable adjustment
* Low fluid level
* Low line pressure
* Malfunction in valve body
* "O" Ring for low-reverse brake circuit not installed between valve body and transaxle case

Transaxle Shifts But Not Within Specified Range

* Defective connection at ignition switch
* Defective or improperly adjusted Throttle Position Sensor (TPS)
* Defective pulse generator "B" or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Malfunction in valve body

Transaxle Starts Off From 2nd Gear

* Defective or improperly adjusted accelerator switch
* Defective or improperly adjusted inhibitor switch
* Defective Transaxle Control Unit (TCU)
* Improper engine performance
* Improper shift cable adjustment
* Malfunction in valve body

Transaxle Will Not Upshift From 2nd To 3rd Gear

* Defective front clutch or retainer
* Defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Malfunction in valve body

Transaxle Will Not Upshift Into 4th Gear

* Defective end clutch
* Defective front clutch retainer
* Defective or improperly adjusted inhibitor switch
* Defective overdrive control switch
* Defective Pressure Control Solenoid Valve (PCSV) on valve body or wiring circuit
* Defective Transaxle Control Unit (TCU)
* Improper shift cable adjustment

Vehicle Moves In Park Or Neutral

* Defective or improperly adjusted inhibitor switch
* Defective parking mechanism
* Improper shift cable adjustment
* Malfunction in valve body

Vehicle Will Not Hold In Park

* Defective or improperly adjusted inhibitor switch
* Defective parking mechanism
* Improper shift cable adjustment

Vehicle Will Not Move Forward

* 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
* Malfunction in valve body

Vehicle Will Not Move Forward Or Backward

* 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
* Malfunction in valve body

Vehicle Will Not Move In Reverse

* 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
* "O" Ring for low-reverse brake circuit not installed between valve body and transaxle case

ELECTRONIC TESTING

NOTE: For electronic component testing, refer to the AUTO TRANS DIAGNOSIS - F4A33, W4A32 & W4A33 article.

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 Figs. 3-6. Broken lines in shift point charts indicate downshifts, and solid lines indicate upshifts.

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 Figs. 3 through 6.

2) If shift points are not as specified, check for stored fault codes. See the AUTO TRANS DIAGNOSIS - F4A33, W4A32 & W4A33 article. If slippage occurs, determine which components are applied in each gear. See the CLUTCH, BRAKE & BAND APPLICATION CHART table. Perform hydraulic pressure test to check transaxle internal components. See HYDRAULIC PRESSURE TEST under TESTING.

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
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

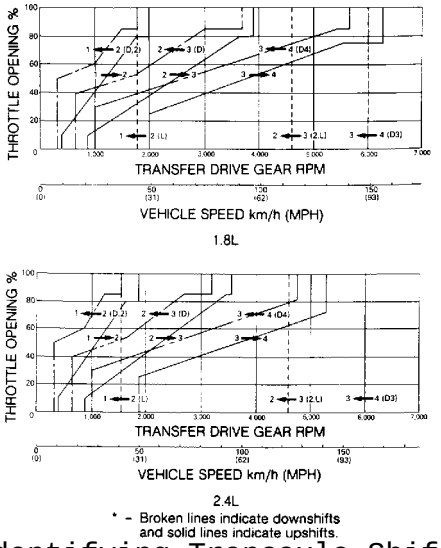

Fig. 3: Identifying Transaxle Shift Points (Expo)
Courtesy of Mitsubishi Motor Sales of America.

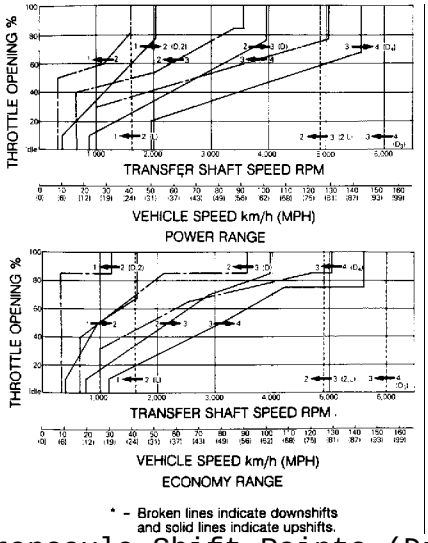

Fig. 4: Transaxle Shift Points (Diamante, Eclipse & Galant)
Courtesy of Mitsubishi Motor Sales of America.

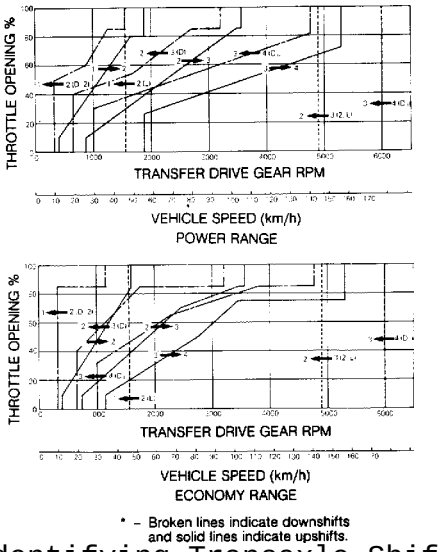

Fig. 5: Identifying Transaxle Shift Points (3000 GT SOHC)
Courtesy of Mitsubishi Motor Sales of America.

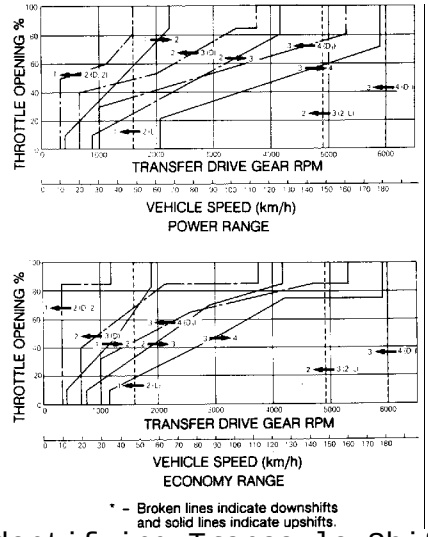

Fig. 6: Identifying Transaxle Shift Points (3000 GT DOHC)
Courtesy of Mitsubishi Motor Sales of America.

TORQUE CONVERTER STALL SPEED TEST

Stall Speed Test Procedure

1) Install tachometer. Ensure transmission fluid level is correct. Start engine, and operate it until transmission fluid is at normal operating temperature. Ensure engine operating temperature is about 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 may be damaged. If performing more than one torque converter stall speed test, operate engine at 1000 RPM in Neutral for at least 2 minutes to cool transmission fluid before performing next stall speed test.

3) Stall speed should be within specification. Refer to the 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
Diamante, Eclipse & Galant	1800-3200
Expo	1800-2800
3000 GT	
DOHC	2200-3200
SOHC	1800-2800

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

Stall Speed Exceeds Specification

If stall speed exceeds specification in Drive, the rear clutch or the 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. Refer to the 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. 8. Remove plug, and install Adapter (MD998332) and Pressure Gauge (C-3292 or C-3293) to each pressure tap.

CAUTION: A 400-psi (28 kg/cm^2)) pressure gauge is required for checking certain pressures. See Fig. 7 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. 7. Ensure pressure is within specification.

4) If proper line pressure or reducing pressure cannot be obtained, check for proper adjustment. Refer to LINE PRESSURE or REDUCING PRESSURE under ADJUSTMENTS. If proper pressure cannot be obtained, check for probable defective components. See Fig. 9.

5) Remove pressure gauge. Install and tighten plug to specification. See the TORQUE SPECIFICATIONS table at end of article.

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. 7: Testing Transaxle Hydraulic Pressures
Courtesy of Mitsubishi Motor Sales of America.

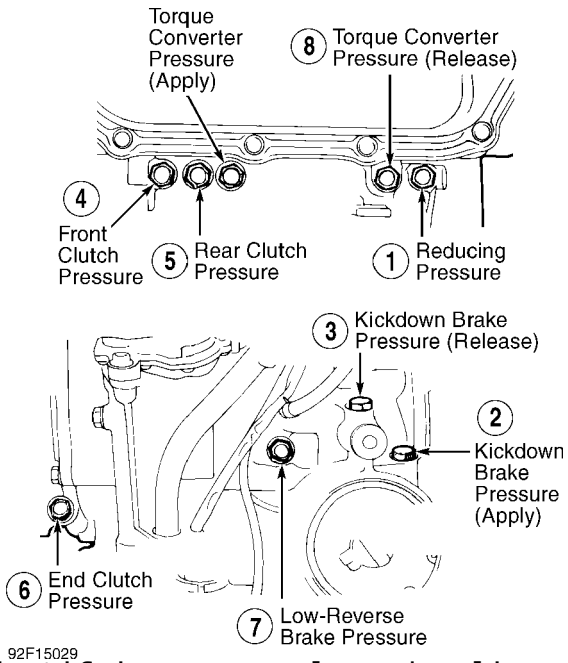

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Fig. 8: Identifying Transaxle Hydraulic Pressure Taps
Courtesy of Mitsubishi Motor Sales of America.

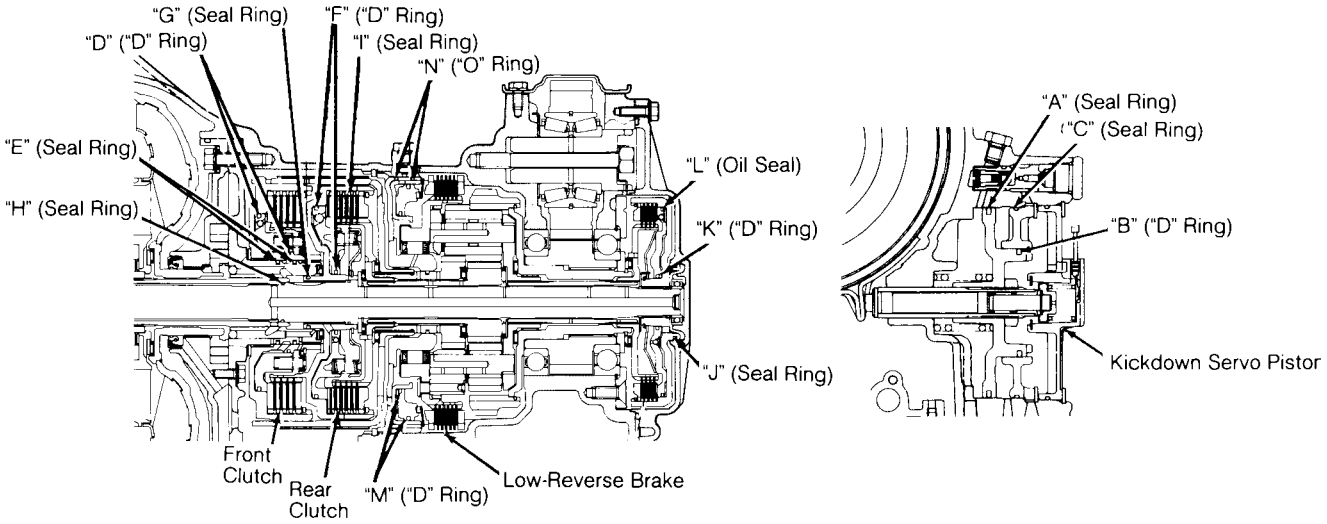

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Fig. 9: Analyzing Hydraulic Pressure Test Results
Courtesy of Mitsubishi Motor Sales of America.

ADJUSTMENTS

KICKDOWN SERVO ADJUSTMENT (WITH MITSUBISHI TOOL)

1) Ensure area around kickdown servo switch is clean. Remove snap ring and kickdown servo switch. See Figs. 18 and 19. 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. 10.

2) Remove plug, and install Adapter (MD998915) 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. 10. Install and tighten inner portion of Socket Wrench (MD998916) 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. 10.

5) Attach INCH-pound torque wrench on inner portion of socket wrench. See STEP 4 in Fig. 10. Tighten inner portion of socket wrench to 86 INCH lbs. (10 N.m), and then loosen lock nut at least 2 turns.

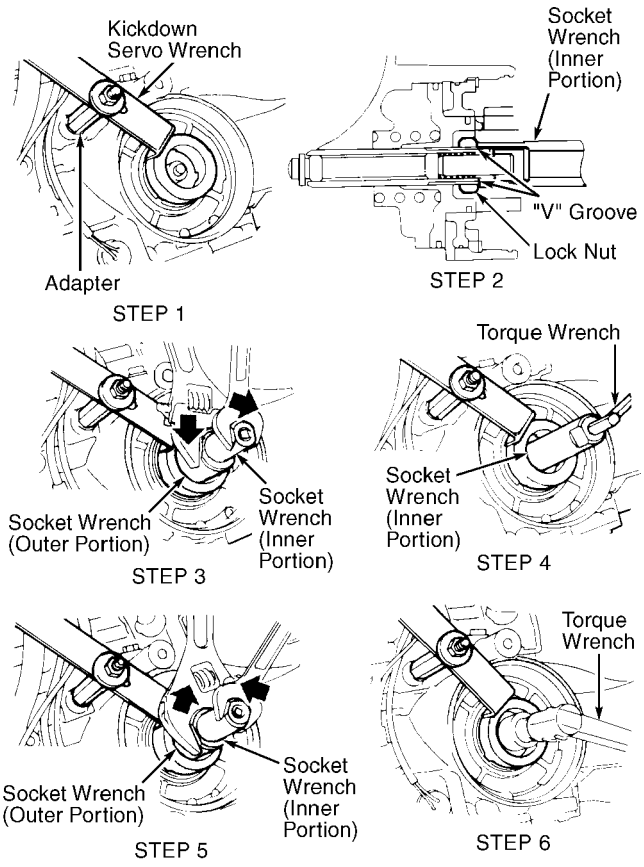
6) Tighten inner portion of socket wrench to 43 INCH lbs. (5 N.m). Back off inner portion of socket wrench 2-2 1/4 revolutions. Engage outer portion of socket wrench with lock nut.

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. 10.

8) Tighten lock nut by hand until it contacts kickdown servo piston. Using torque wrench, tighten lock nut. See STEP 6 in Fig. 10. Also, refer to the TORQUE SPECIFICATIONS table at end of article.

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. Refer to the TORQUE SPECIFICATIONS table. Install the kickdown servo switch and the snap ring.



92A15032
Fig. 10: Adjusting Kickdown Servo
Courtesy of Mitsubishi Motor Sales of America.

KICKDOWN SERVO ADJUSTMENT (WITH AFTERMARKET TOOL)

Adjustment Procedure

1) Ensure case area around servo cover is clean. Remove servo cover snap ring and servo cover. Select the correct Spanner Socket Support Guide to fit the servo bore from the 4 sizes available. See Fig. 11.

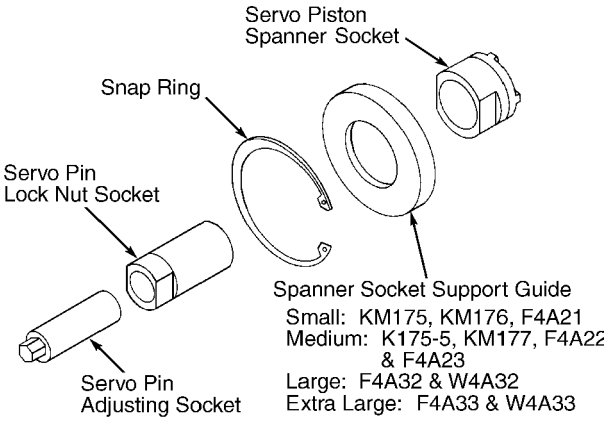


Fig. 11: Identifying KM Band Adjusting Tool Components

NOTE: The following procedure may be performed using KM Band Adjusting Tool Kit available from ZOOM Technology.

2) Insert the Servo Piston Spanner Socket into the counterbored side of the Spanner Socket Support Guide. Insert these components into the servo bore. Slowly by hand, rotate the Servo Piston Spanner Socket until the lugs engage the cutouts on the servo piston. The tool is fully seated when the snap ring groove is completely exposed.

3) Install the snap ring in the exposed groove. If necessary, rotate the Servo Piston Spanner Socket to allow ease of installation of a 1 1/2" wrench to the socket. This should be done prior to loosening the servo pin lock nut.

4) Insert the Servo Pin Lock Nut Socket into the Servo Piston Spanner Socket. Turn the socket by hand until it has engaged the lock nut. Insert the Servo Pin Adjusting Socket into the Servo Pin Lock Nut Socket and rotate by hand until it engages the servo pin. See Fig. 12.

5) Using a 1 1/2" wrench or adjustable wrench, hold the Servo Piston Spanner Socket stationary.

CAUTION: DO NOT use pliers or a pipe wrench to hold the Servo Piston Spanner Socket stationary. This may cause injury to the user or damage to the tool.

6) Using a 1 1/16" wrench, on the Servo Pin Lock Nut Socket, loosen the servo pin lock nut by turning it counter clockwise. See Fig. 13. With one hand, push firmly inward on the Servo Pin Adjusting Socket. Using 2 fingers, turn the Servo Pin Lock Nut Socket counter clockwise until it contacts the bottom of the Servo Pin Adjusting Socket.

7) Using an INCH Lb. torque wrench and a shallow 1/2" 6-point socket, torque the Servo Pin Adjusting Socket to 86 INCH Lbs. Loosen the Servo Pin Adjusting Socket 2 or 3 turns and repeat the tightening procedure to 86 INCH Lbs. Loosen again and apply a final torque of 43 INCH Lbs. to the Servo Pin Adjusting Socket. See Fig. 14.

8) Using a 1/2" wrench, loosen the Servo Pin Adjusting Socket 2-2 1/4 complete turns. Hold the Servo Pin Adjusting Socket stationary and rotate the Servo Pin Lock Nut Socket clockwise until the servo pin lock nut firmly contacts the servo piston. Remove the Servo Pin Adjusting Socket.

9) Using a 1 1/2" wrench, hold the Servo Pin Spanner Socket stationary. Use a 1 1/16" wrench to tighten the servo lock pin nut with the Servo Pin Lock Nut Socket. Tighten the nut to approximately 18 ft. lbs. See Fig. 13.

10) Remove the snap ring and all remaining band adjusting tool components. Install the servo cover and snap ring. Ensure the sharp edge of the snap ring faces outward.

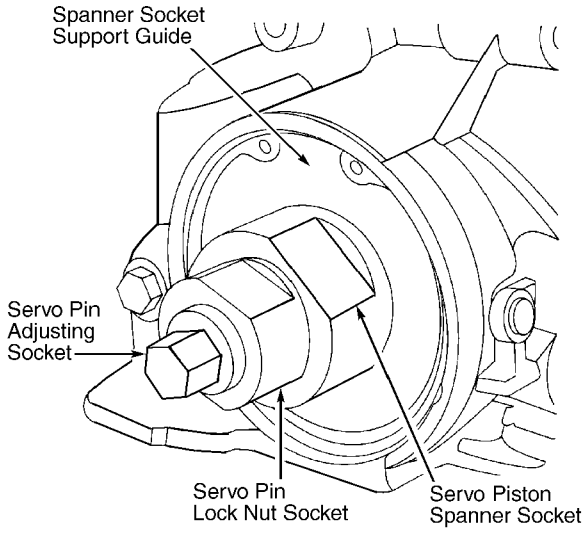


Fig. 12: KM Band Adjusting Tool Installation

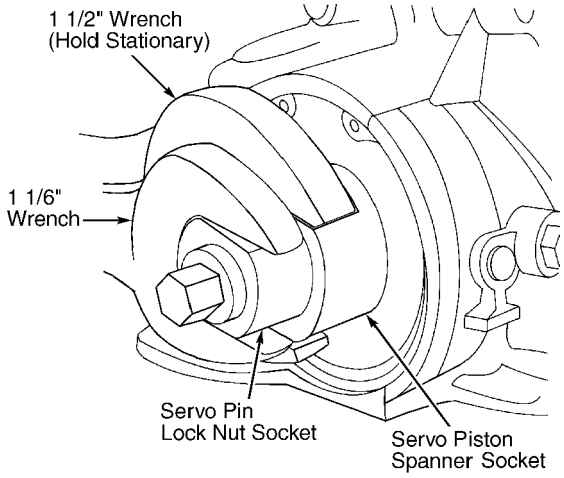


Fig. 13: Loosening Or Tightening Servo Pin Lock Nut

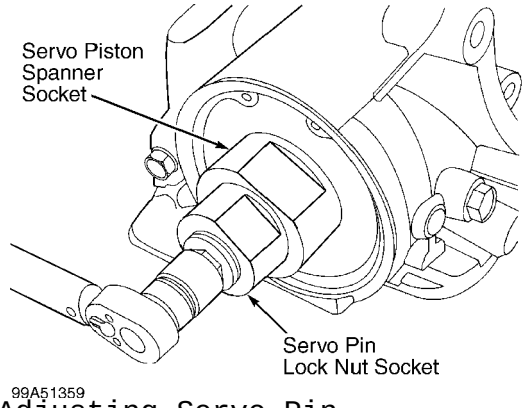


Fig. 14: Adjusting Servo Pin

LINE PRESSURE

NOTE: Line pressure should be checked at kickdown brake pressure (apply) tap. See Fig. 8. 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. 15.

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 Mopar ATF Plus-Type 7176, and check line pressure.

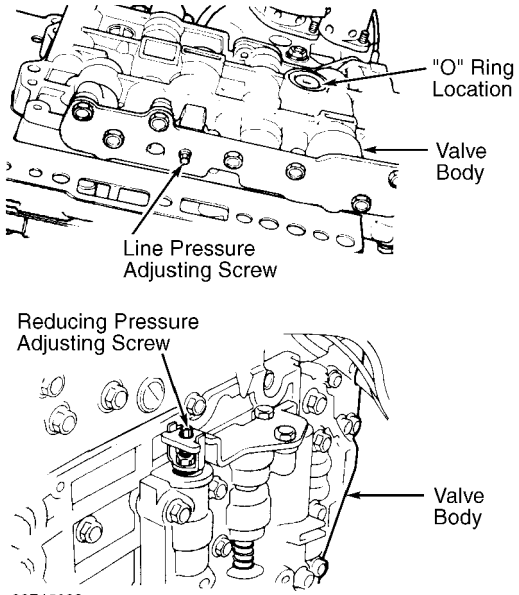


Fig. 15: "O" Ring, Line Pressure & Reducing Pressure Adjusting Screw
Courtesy of Mitsubishi Motor Sales of America.

REDUCING PRESSURE

NOTE: Check reducing pressure at reducing pressure tap. See Fig. 8. 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. 15.
2) To adjust reducing pressure, rotate reducing pressure adjusting screw. Rotate reducing pressure adjusting screw inward (clockwise) to decrease reducing pressure and outward (counter-clockwise) to increase reducing pressure.
3) Rotating reducing pressure adjusting screw one revolution will change reducing pressure approximately 6.4 psi (45 kPa) on Laser and Talon and 12 psi (86 kPa) on all others. The standard adjusting value for reducing pressure is 59-61 psi (415-435 kPa).

4) Reinstall gasket and oil pan. Tighten oil pan bolts to specification. See TORQUE SPECIFICATIONS table at end of article. Fill transaxle with Mopar ATF Plus-Type 7176, and check 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, refer to the TORQUE CONVERTER STALL SPEED TEST under TESTING.

ON-VEHICLE SERVICE

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

REMOVAL & INSTALLATION

AXLE SHAFTS

See the appropriate AXLE SHAFTS article in the DRIVE AXLE section.

* For 1992-94 Colt Vista AWD, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.
* For 1992-94 Diamante, see AXLE SHAFTS - FRONT
* For Eclipse, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.
* For 1992-94 Expo AWD, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.
* For 1993-94 Galant, see AXLE SHAFTS - FRONT
* For Laser, see AXLE SHAFTS - FRONT, DRIVE AXLE - REAR and DRIVE SHAFT & UNIVERSAL JOINTS - AWD MODELS articles
* For Stealth, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.

* For Summit Wagon AWD, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.
* For Talon, see AXLE SHAFTS - FRONT, DRIVE AXLE - REAR and DRIVE SHAFT & UNIVERSAL JOINTS - AWD MODELS articles
* For 3000 GT, see AXLE SHAFTS - FRONT article, DRIVE AXLE - REAR article and DRIVE AXLE - REAR INTEGRAL article.

TRANSFER CASE

AWD models, see the TRANSFER CASE - CHRYSLER AWD article in the TRANSFER CASES section.

TRANSAXLE ASSEMBLY

See the appropriate TRANSMISSION REMOVAL & INSTALLATION - A/T article in the AUTOMATIC TRANS SERVICING section.

VALVE BODY

Removal

1) 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.

2) Remove valve body bolts. Note bolt length and location for reassembly reference. See Fig. 16. 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. 15.

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. 15.

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. 16.

3) Tighten valve body bolts to specification. Refer to the TORQUE SPECIFICATIONS table at end of article. 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. 16.

4) Install oil filter, magnet, gasket and oil pan. Tighten bolts to specification. See TORQUE SPECIFICATIONS table. Fill transaxle with Mopar ATF Plus-Type 7176.

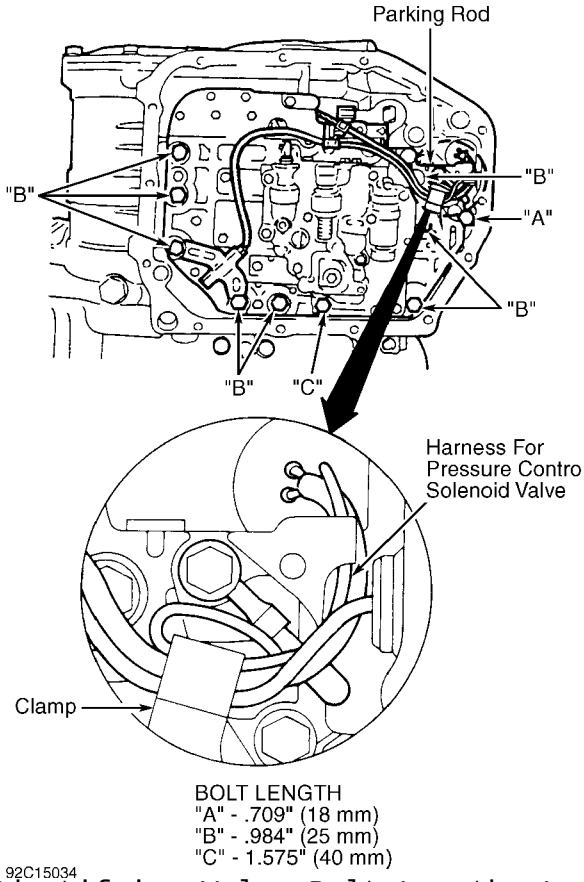
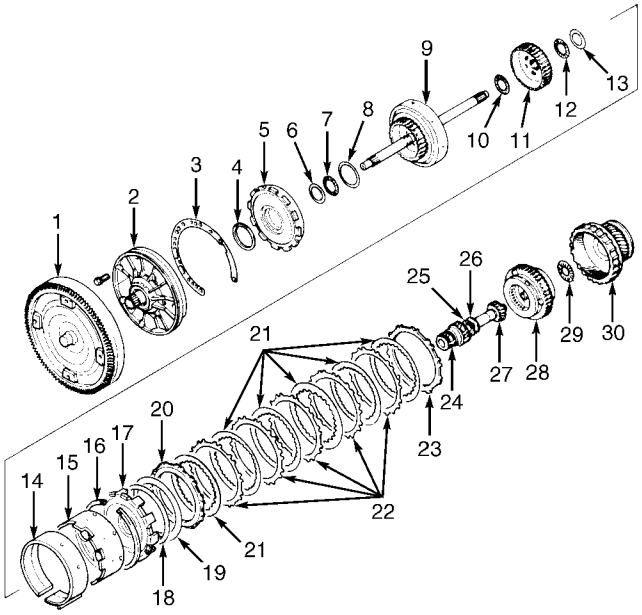


Fig. 16: Identifying Valve Bolt Length, Location & Wire Routing
Courtesy of Mitsubishi Motor Sales of America.

TRANSAXLE DISASSEMBLY

VALVE BODY & COMPONENTS

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



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

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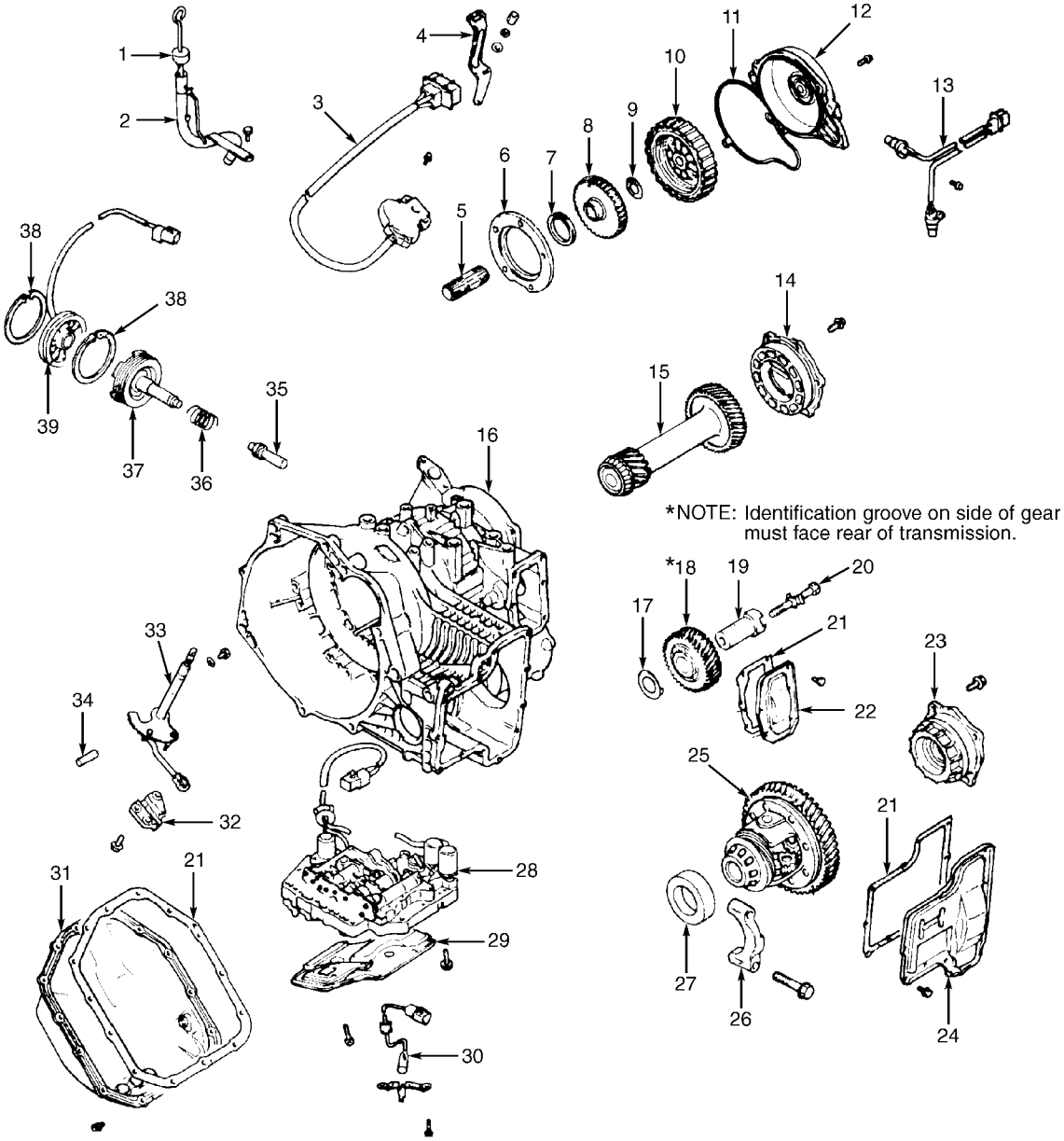
Fig. 17: Exploded View of Transaxle Internal Components
Courtesy of Mitsubishi Motor Sales of America.



1. Dipstick
2. Dipstick Tube
3. Inhibitor Switch
4. Manual Control Lever
5. End Clutch Shaft
6. Bearing Retainer
7. No. 11 Thrust Bearing
8. End Clutch Hub
9. Thrust Washer
10. End Clutch Assembly
11. "O" Ring
12. End Clutch Cover
13. Pulse Generator
14. Output Bearing Retainer
15. Transfer Shaft
16. Transaxle Case
17. Spacer
18. Idler Gear
19. Idler Shaft
20. Lock Bolt
21. Gasket
22. Idler Gear Cover
23. Differential Bearing Retainer
24. Differential Cover
25. Differential Assembly
26. Differential Bearing Cap
27. Outer Race
28. Valve Body Assembly
29. Oil Filter
30. Oil Temperature Sensor
31. Oil Pan
32. Parking Roller Support
33. Manual Control Shaft
34. Detent
35. Anchor Rod
36. Spring
37. Kickdown Servo Piston
38. Snap Ring
39. Kickdown Servo Switch

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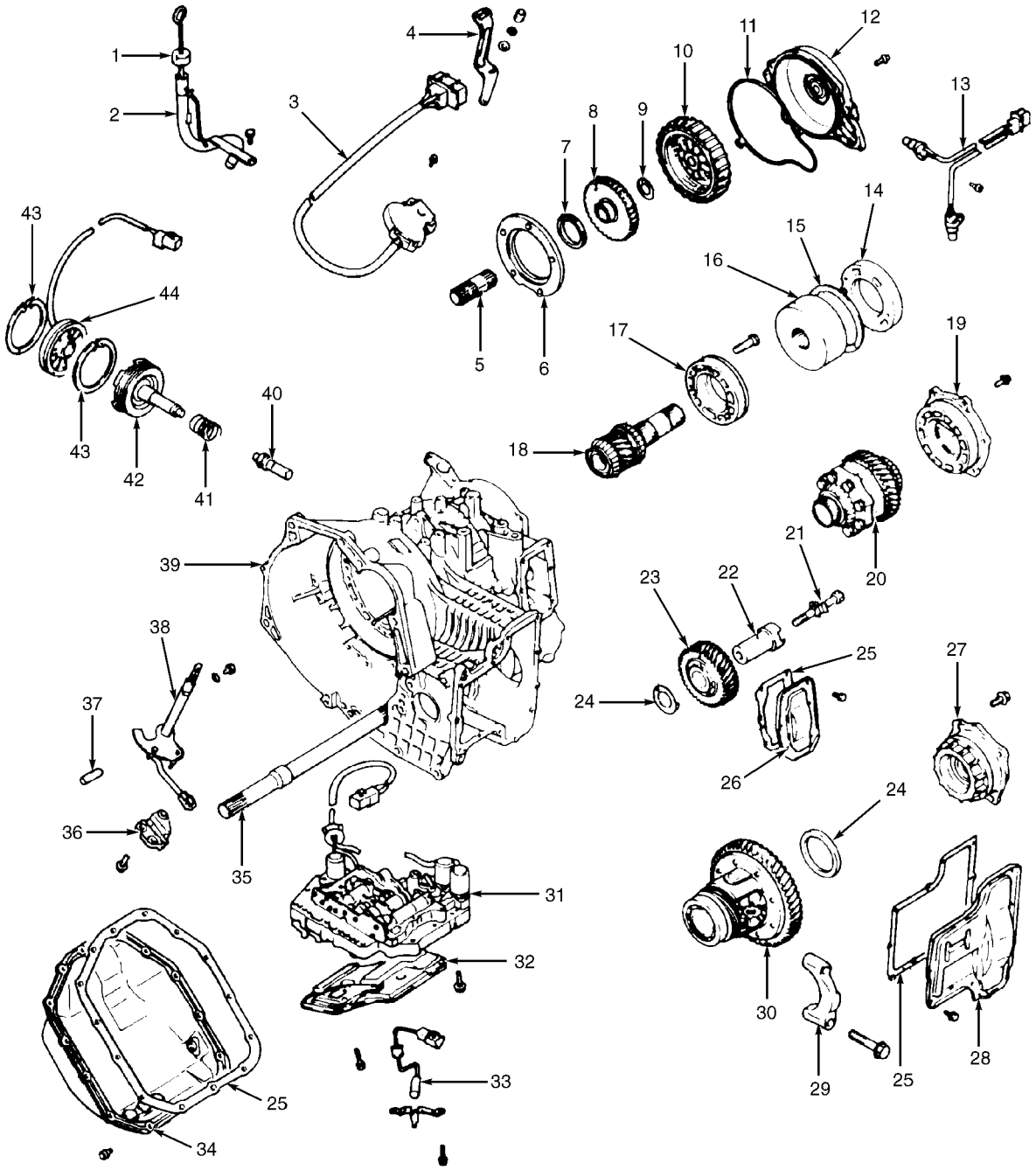
Fig. 18: Exploded View of Transaxle Case & Components (F4A33)
Courtesy of Mitsubishi Motor Sales of America.



1. Dipstick
2. Dipstick Tube
3. Inhibitor Switch
4. Manual Control Lever
5. End Clutch Shaft
6. Bearing Retainer
7. No. 11 Thrust Bearing
8. End Clutch Hub
9. Thrust Washer
10. End Clutch Assembly
11. "O" Ring
12. End Clutch Cover
13. Pulse Generator
14. Center Bearing Retainer
15. Stopper Ring
16. Viscous Coupling Unit
17. Front Bearing Retainer
18. Front Output Shaft
19. Output Bearing Retainer
20. Center Differential Assembly
21. Lock Bolt
22. Idler Shaft
23. Idler Gear
24. Spacer
25. Gasket
26. Idler Gear Cover
27. Differential Bearing Retainer
28. Differential Cover
29. Differential Bearing Cap
30. Differential Assembly
31. Valve Body Assembly
32. Oil Filter
33. Oil Temperature Sensor
34. Oil Pan
35. Rear Output Shaft
36. Parking Roller Support
37. Detent
38. Manual Control Shaft
39. Transaxle Case
40. Anchor Rod
41. Spring
42. Kickdown Servo Piston
43. Snap Ring
44. Kickdown Servo Switch

92F15037
Fig. 19: Exploded View of Transaxle Case & Components (W4A32 & W4A33)
Courtesy of Mitsubishi Motor Sales of America.

1) Remove torque converter. Using dial indicator, check input shaft end play for reassembly reference. Remove dipstick and dipstick tube. Remove pulse generators. See Fig. 20. Remove manual control

lever and inhibitor switch. See Figs. 18 and 19.

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. 15.

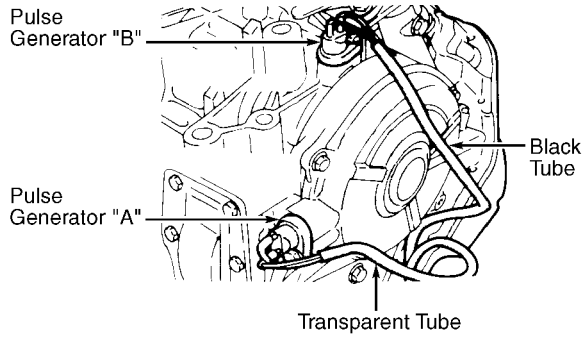


Fig. 20: Identifying Pulse Generators
Courtesy of Mitsubishi Motor Sales of America.

4) Remove parking roller support, located on bottom of transaxle case, above valve body area. See Figs. 18 and 19. Remove manual control shaft retaining set screw, located near top of manual control shaft area, on transaxle case. Remove manual control shaft and detent. See Figs. 18 and 19.

5) Remove retaining bolts, differential cover, gasket and differential bearing cap. Remove retaining bolts and differential bearing retainer. See Figs. 18 and 19.

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. See Figs. 18 and 19. Remove end clutch shaft.

7) Remove retaining bolts, idler gear cover and gasket. Bend lock tabs, and remove lock bolt for idler shaft. See Figs. 18 and 19. Using Puller (MD998904), pull idler shaft from transaxle case.

8) Remove idler gear and spacer. Remove oil pump retaining bolts. Install Puller (MD998333) 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. 17. Holding input shaft, remove front and rear clutch assembly. Remove No. 10 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 Figs. 18 and 19.

11) Using Cup (MD998812), Adapter (MD998830) and Compressor (MD998303), 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 (MD998905) on center support, and remove center support.

See Fig. 23.

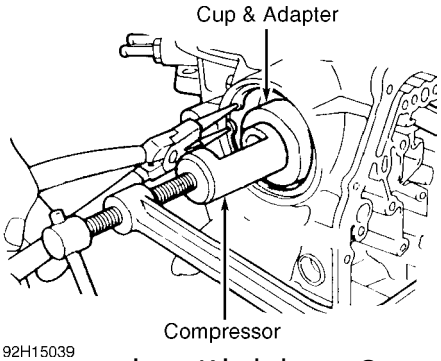


Fig. 21: Compressing Kickdown Servo Piston
Courtesy of Mitsubishi Motor Sales of America.

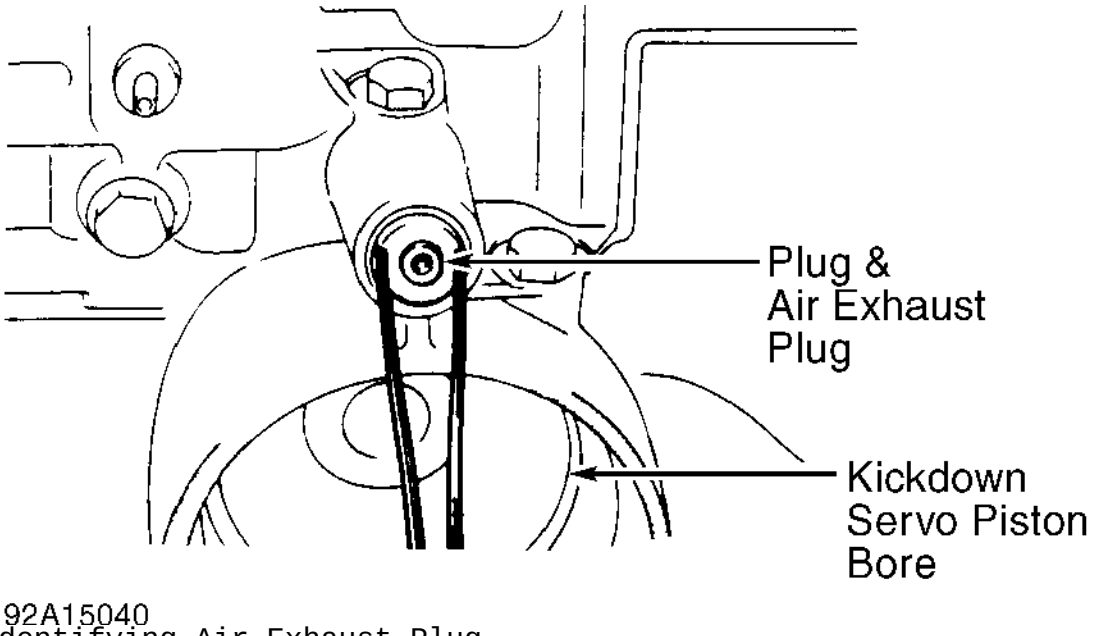
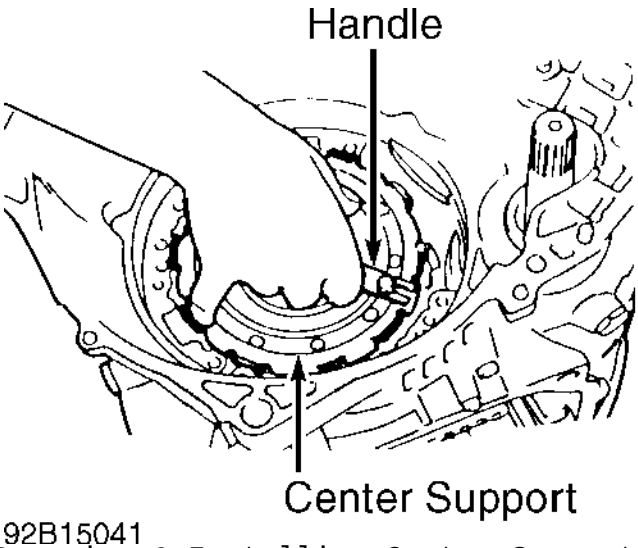


Fig. 22: Identifying Air Exhaust Plug
Courtesy of Mitsubishi Motor Sales of America.



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 Mitsubishi Motor Sales of America.

13) Remove reverse sun gear, forward sun gear and planetary carrier assembly. See Fig. 17. Remove wave spring, return spring, pressure plate, clutch plates and clutch discs.

CAUTION: Note number of components and sequence of clutchplates 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. See Figs. 18 and 19.

15) Remove snap ring and output flange. See Fig. 17. Remove retaining bolts and output bearing retainer and outer bearing race. See Figs. 18 and 19. On F4A33 models, remove transfer shaft. See Fig. 18. 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.

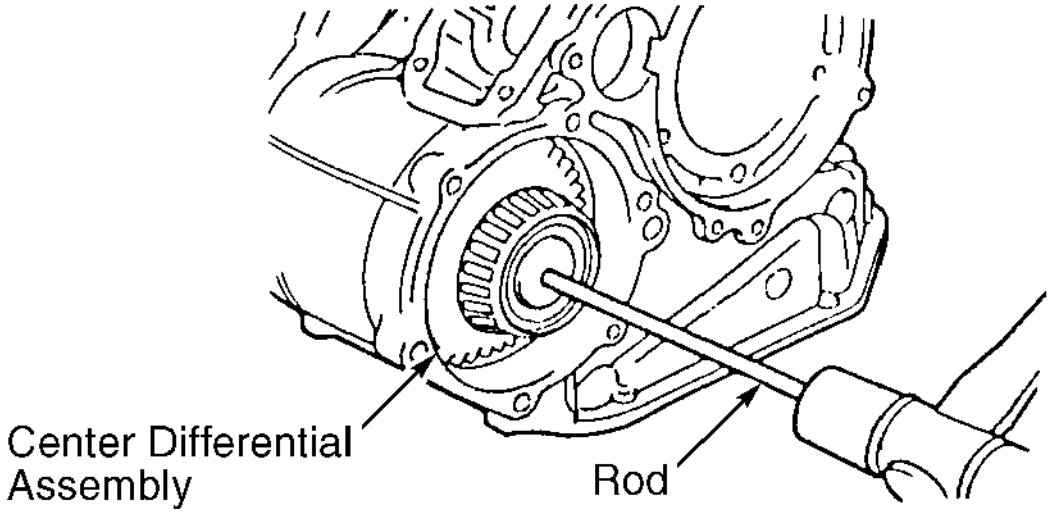


Fig. 24: Removing Rear Output Shaft (W4A32 & W4A33)
Courtesy of Mitsubishi Motor Sales of America.

17) Thread Puller (MD998833) 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. 19.

18) Remove center bearing stopper bolt. See Fig. 25. Remove stopper ring. See Fig. 19. 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.

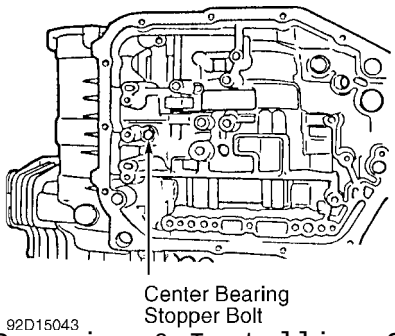


Fig. 25: Removing & Installing Center Bearing Stopper Bolt
Courtesy of Mitsubishi Motor Sales of America.

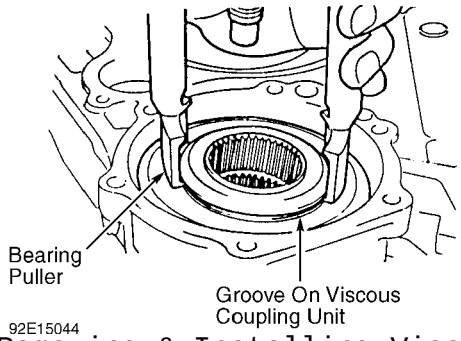


Fig. 26: Removing & Installing Viscous Coupling Unit
Courtesy of Mitsubishi Motor Sales of America.

COMPONENT DISASSEMBLY & REASSEMBLY

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.

3) 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

1) Clean and inspect components for damage. Inspect all machined surfaces for pitting or damage.

2) 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 .001-.002" (.03-.05 mm).

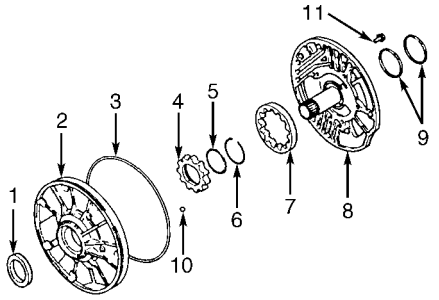
Reassembly

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 (MD998336) in hole of reaction shaft support and oil pump housing. See Fig. 29.

3) Install Aligning Band (MD998335) on outer diameter of reaction shaft support and oil pump housing, and tighten aligning band. Tighten reaction shaft retaining bolts to specification. See the TORQUE SPECIFICATIONS table at end of article.

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

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Fig. 27: Exploded View of Oil Pump & Components
Courtesy of Mitsubishi Motor Sales of America.

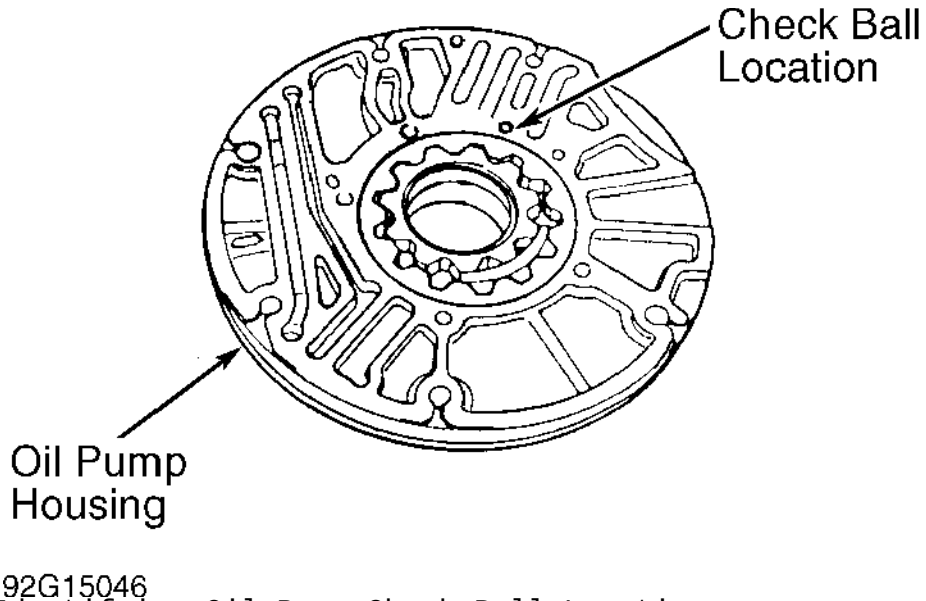

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Fig. 28: Identifying Oil Pump Check Ball Location
Courtesy of Mitsubishi Motor Sales of America.

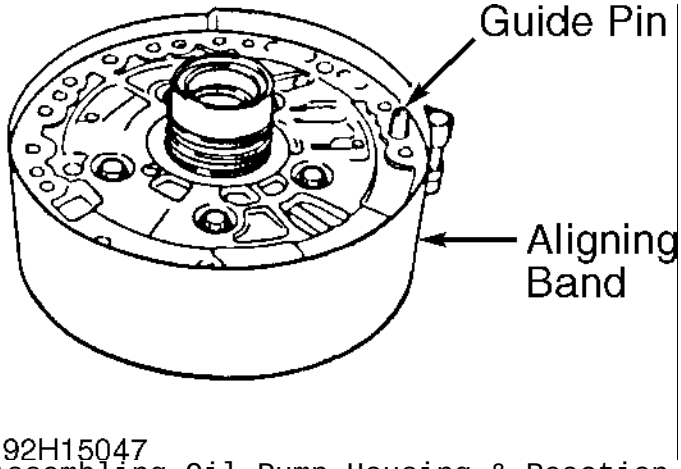


Fig. 29: Assembling Oil Pump Housing & Reaction Shaft Support
Courtesy of Mitsubishi Motor Sales of America.

TRANSFER SHAFT (F4A33)

Disassembly & Reassembly

1) Using bearing puller, remove bearings from transfer shaft (if necessary). Use Bearing Installer (MD998812) and Adapter (998822), install bearing on front side (small gear end) of transfer shaft.

2) Use Bearing Installer (MD998812) and Adapter (998825), install bearing on rear side (large gear end) of transfer shaft.

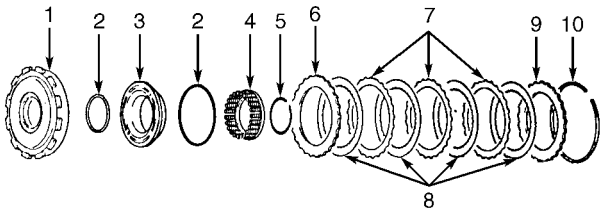
FRONT CLUTCH

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 (MD998337) and Adapter (MD998907), 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
2. "D" Ring
3. Front Clutch Piston
4. Return Spring
5. Snap Ring
6. Pressure Plate
7. Clutch Plate
8. Clutch Disc
9. Reaction Plate
10. Retaining Ring

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

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Fig. 30: Front Clutch (F4A33 & W4A33 Shown; W4A32 Is Similar)
Courtesy of Mitsubishi Motor Sales of America.

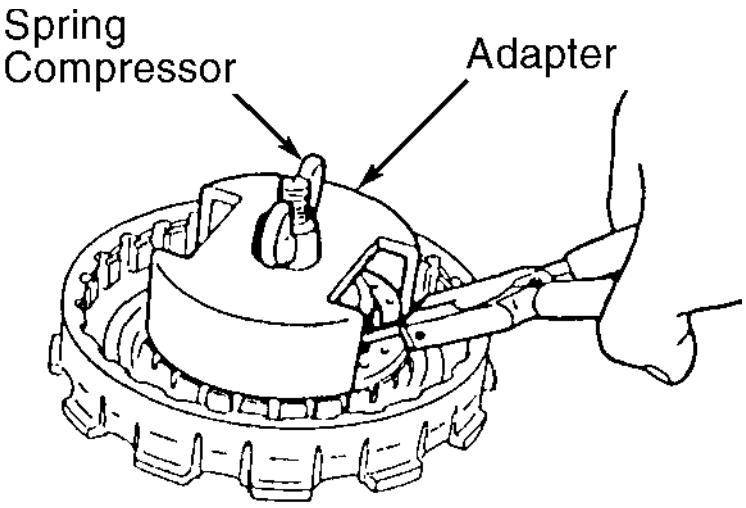

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Fig. 31: Clutch Piston Return Spring (Front Clutch Shown)
Courtesy of Mitsubishi Motor Sales of America.

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

3) Front clutch clearance should be .028-.035" (.71-.89 mm) on W4A32 models and .032-.039" (.81-.99 mm) on all others. If front clutch clearance is not within specification, select different thickness retaining ring to obtain correct clearance. Refer to the FRONT & REAR CLUTCH RETAINING RING ID 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 (1.7)	Blue	MD955631
.075 (1.9)	None	MD730931
.079 (2.0)	Brown	MD955632
.083 (1.7)	Blue	MD730932
.087 (1.7)	None	MD955633
.091 (1.7)	Brown	MD730933
.094 (2.4)	Blue	MD955634
.098 (2.5)	None	MD730934
.102 (2.6)	Brown	MD955635
.106 (2.7)	Blue	MD730935
.110 (1.7)	None	MD955636
.114 (2.9)	Brown	MD730936
.118 (1.7)	Blue	MD955637

(1) - Retaining ring applies to rear clutch application only.

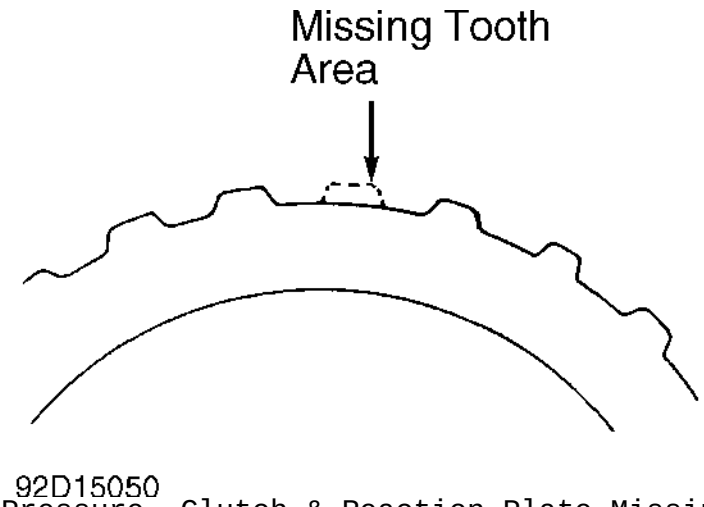


Fig. 32: Pressure, Clutch & Reaction Plate Missing Tooth Area
Courtesy of Mitsubishi Motor Sales of America.

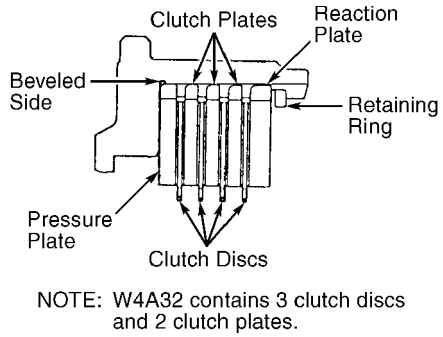


Fig. 33: Assembling Front Clutch Components
Courtesy of Mitsubishi Motor Sales of America.

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.

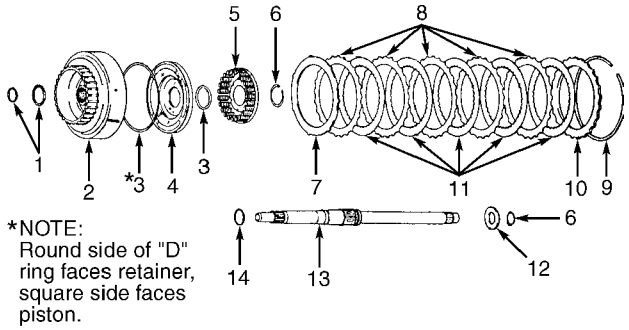
2) Remove input shaft. Remove "O" rings, snap ring and thrust race from input shaft. Remove seal ring from center of rear clutch retainer. See Fig. 34.

3) Remove retaining ring and reaction plate. See Fig. 34. Remove clutch discs and clutch plates. Note direction of installation for reassembly reference.

4) Remove wave spring. Using Spring Compressor (MD998337) and Adapter (MD998907), 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
2. Rear Clutch Retainer
3. "D" Ring
4. Clutch Piston
5. Return Spring
6. Snap Ring
7. Wave Spring
8. Clutch Plate
9. Retaining Ring
10. Reaction Plate
11. Clutch Disc
12. Thrust Race
13. Input Shaft
14. "O" Ring

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

92F15052

Fig. 34: Rear Clutch (F4A33 & W4A33 Shown; W4A32 Is Similar)
Courtesy of Mitsubishi Motor Sales of America.

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.

CAUTION: 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.

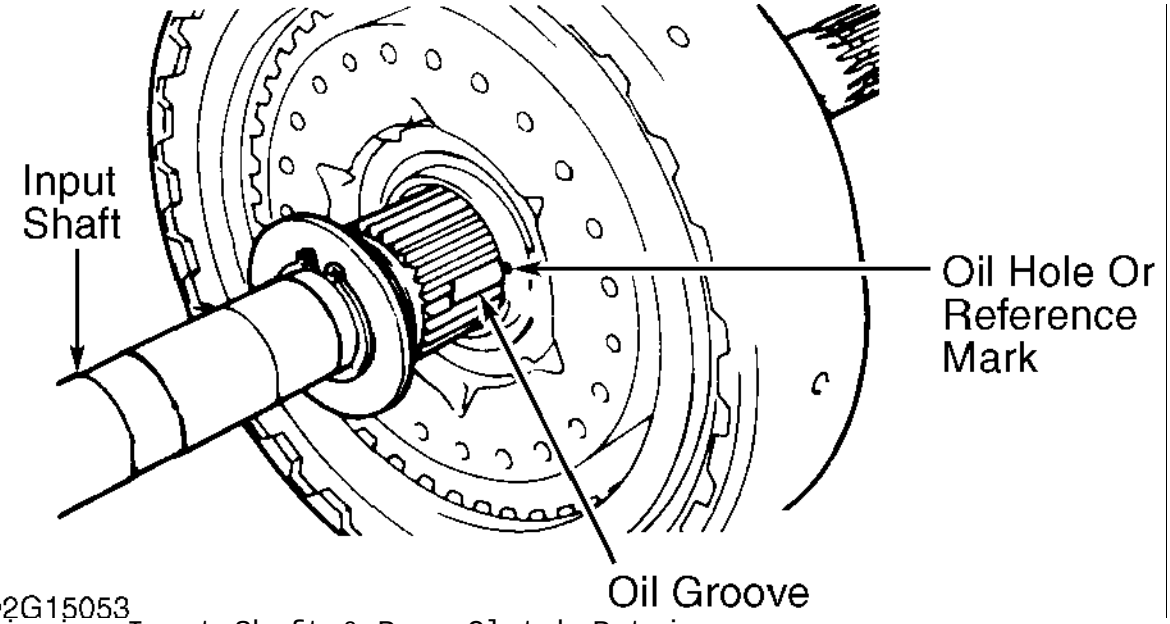


Fig. 35: Aligning Input Shaft & Rear Clutch Retainer
Courtesy of Mitsubishi Motor Sales of America.

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

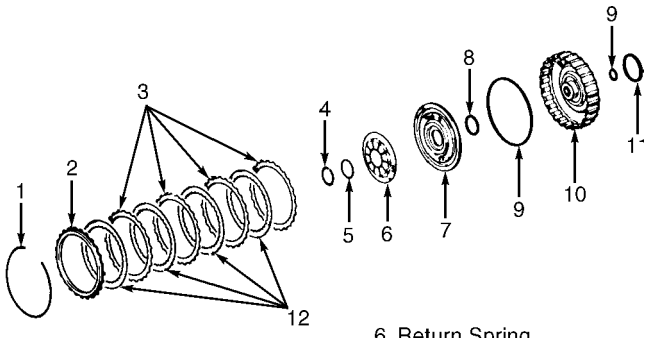
1) Remove seal ring from rear of end clutch retainer. Remove retaining ring, reaction plate, clutch discs and clutch plates. Note direction of installation for reassembly reference. See Fig. 36.

2) Remove snap ring, washer and return spring. 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.

3) 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.



1. Retaining Ring (Selective)
2. Reaction Plate
3. Clutch Plate
4. Snap Ring
5. Washer
6. Return Spring
7. Clutch Piston
8. "D" Ring
9. Oil Seal
10. End Clutch Retainer
11. Seal Ring
12. Clutch Disc

Fig. 36: Exploded View of End Clutch
Courtesy of Mitsubishi Motor Sales of America.

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.

2) Install snap ring on end clutch retainer. Using Snap Ring Installer (MD998919), press snap ring onto end clutch retainer until it seats in groove. Ensure snap ring is fully seated.

3) 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.

4) 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
.041 (1.04)	White	MD715800
.051 (1.30)	Yellow	MD715801
.061 (1.55)	None	MD715802
.071 (1.80)	Green	MD715803
.081 (2.05)	Pink	(1)

(1) - Part number is MD715804 (Laser and Talon)/MD720849 (all others).

PLANETARY CARRIER ASSEMBLY

Disassembly

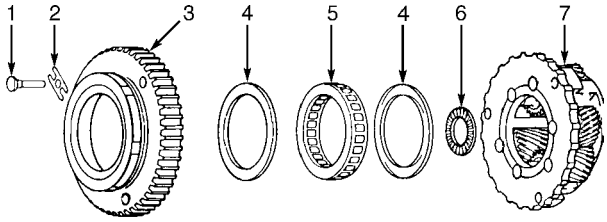
1) Remove thrust bearing. See Fig. 37. Position stopper plate

on one-way clutch outer race so it does not contact rivet. Using punch and hammer, drive out rivet. See Fig. 38.

2) 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.



1. Rivet
2. Waved Washer
3. One-Way Clutch Outer Race
4. End Plate
5. One-Way Clutch
6. Thrust Bearing
7. Planetary Carrier

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Fig. 37: Exploded View of Planetary Carrier Assembly
Courtesy of Mitsubishi Motor Sales of America.

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 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° angle tip, stake rivet. Apply 2425-2866 lbs. of pressure on press when staking rivet. Install thrust bearing.

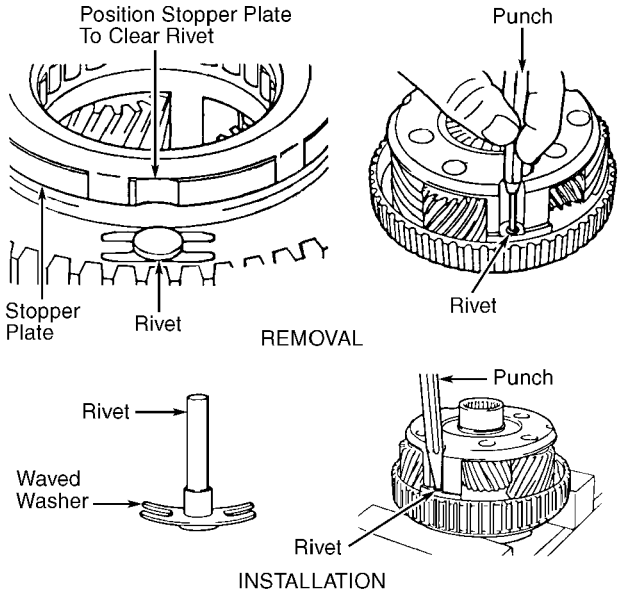


Fig. 38: Removing & Installing Planetary Carrier Assembly Rivet
Courtesy of Mitsubishi Motor Sales of America.

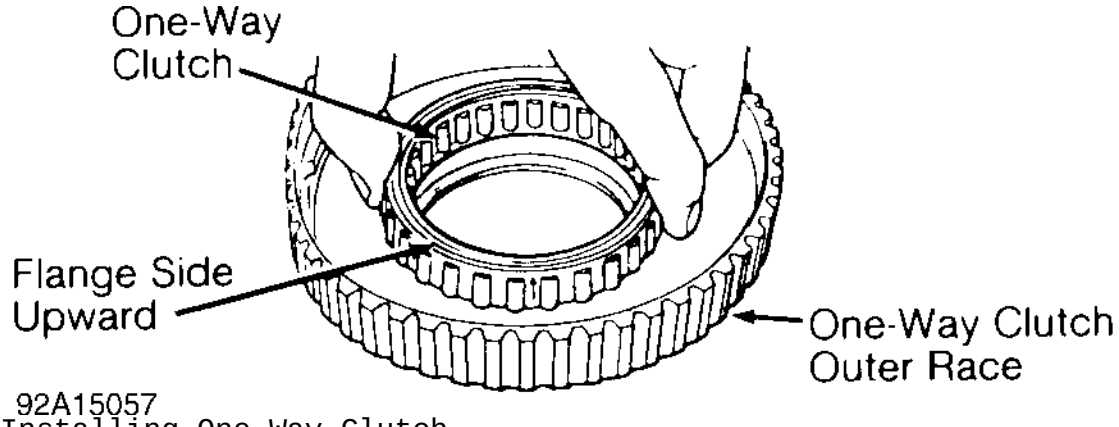


Fig. 39: Installing One-Way Clutch
Courtesy of Mitsubishi Motor Sales of America.

OUTPUT FLANGE & TRANSFER DRIVE GEAR

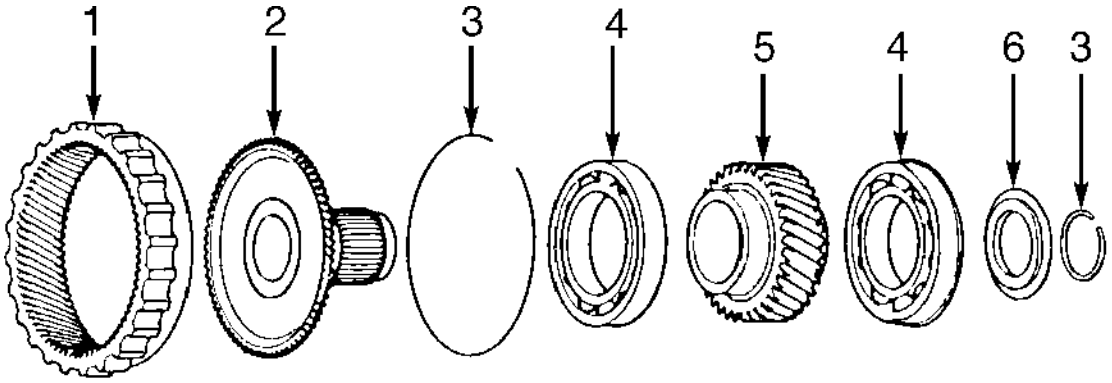
Disassembly

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.



1. Annulus Gear
2. Output Flange
3. Snap Ring
4. Bearing
5. Transfer Drive Gear
6. Stopper Plate

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Fig. 40: Exploded View of Output Flange & Transfer Drive Gear
Courtesy of Mitsubishi Motor Sales of America.

Reassembly

1) Install output flange and snap ring in annulus gear. See Fig. 40. Press NEW bearings on transfer drive gear. Using Adapter (MD998825), Bearing Installer (MD998812) 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

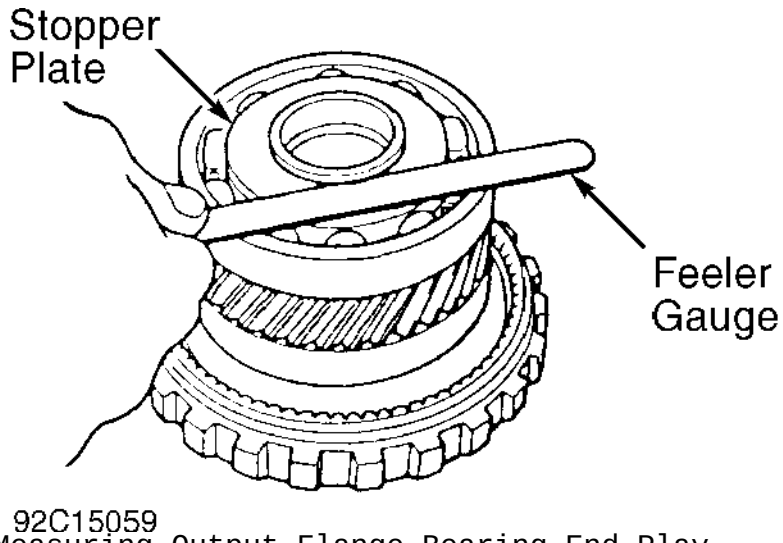


Fig. 41: Measuring Output Flange Bearing End Play
Courtesy of Mitsubishi Motor Sales of America.

DIFFERENTIAL ASSEMBLY

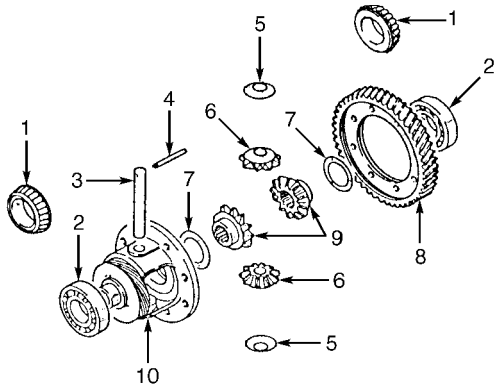
Disassembly

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

Fig. 42: Exploded View of Differential Assembly
Courtesy of Mitsubishi Motor Sales of America.

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 the SIDE GEAR SPACER IDENTIFICATION table.

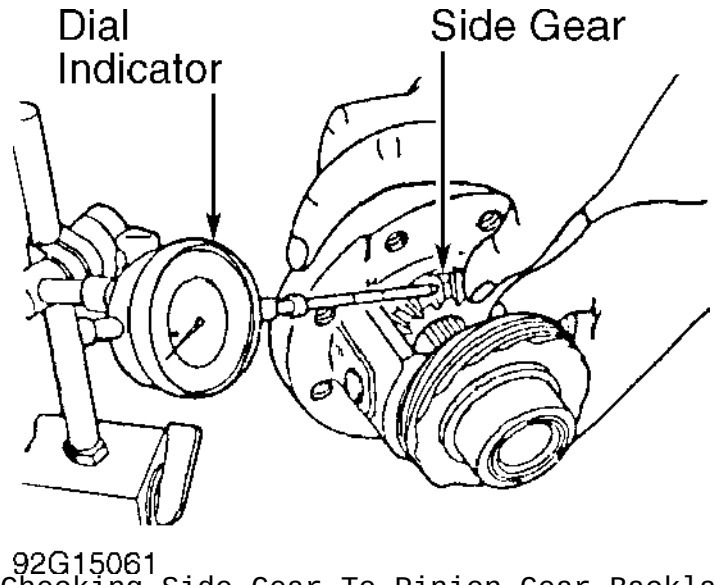


Fig. 43: Checking Side Gear-To-Pinion Gear Backlash
Courtesy of Mitsubishi Motor Sales of America.

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

4) 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 the TORQUE SPECIFICATIONS table at end of article.

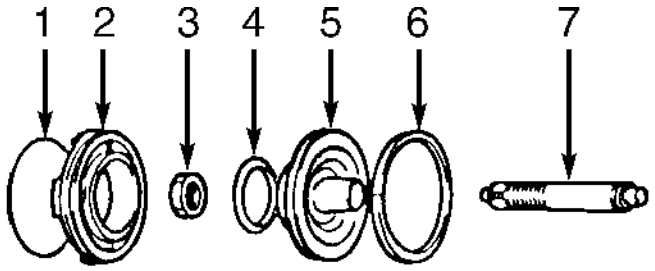
CAUTION: Ensure ring gear retaining bolts are tightened to specification in a crisscross to prevent damage to ring gear and differential case.

KICKDOWN SERVO

Disassembly & Reassembly

1) Remove "O" ring, kickdown servo, "D" ring and seal ring. See Fig. 44. Remove lock nut. Separate servo rod from kickdown servo piston.

2) To reassemble, reverse disassembly procedure using NEW "O" ring, seal ring and "D" ring. Tighten lock nut to specification. See the TORQUE SPECIFICATIONS table at end of article.



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 Mitsubishi Motor Sales of America.

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.

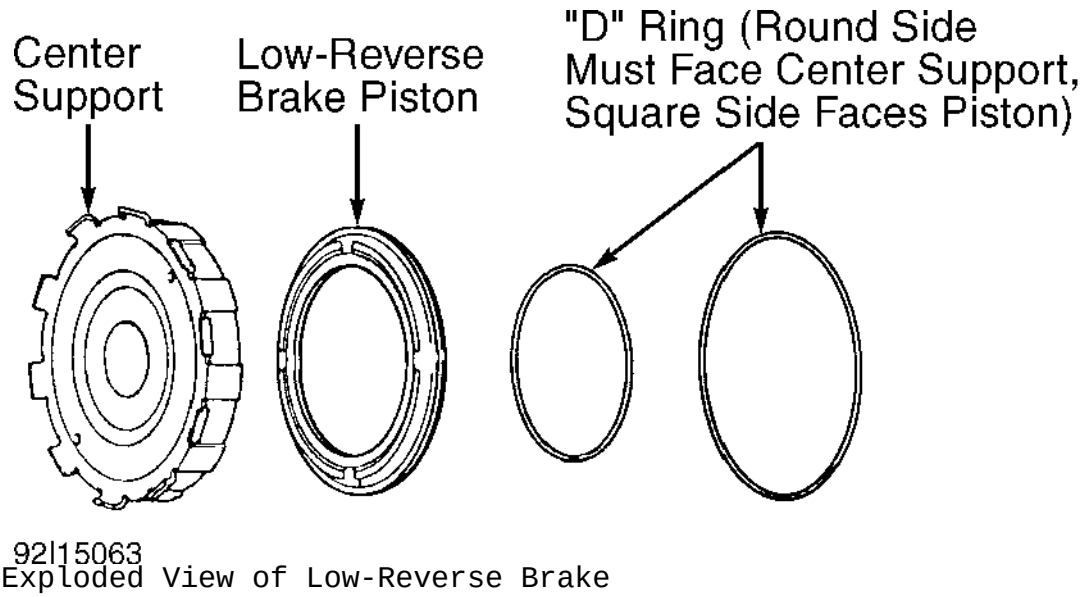


Fig. 45: Exploded View of Low-Reverse Brake
Courtesy of Mitsubishi Motor Sales of America.

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 and separate differential flange from differential case. See Fig. 46.

3) 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.

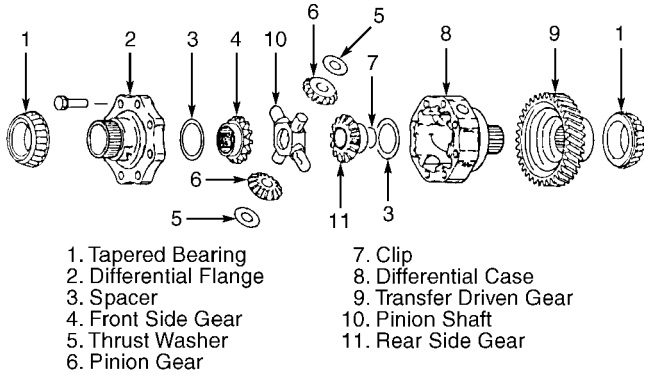


Fig. 46: Center Differential Assembly (W4A32 & W4A33)
Courtesy of Mitsubishi Motor Sales of America.

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 the CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION table.

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 the TORQUE SPECIFICATIONS table at end of article. 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 the CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION table.

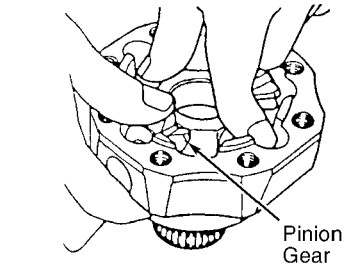
CENTER DIFFERENTIAL SIDE GEAR SPACER SELECTION

Spacer 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

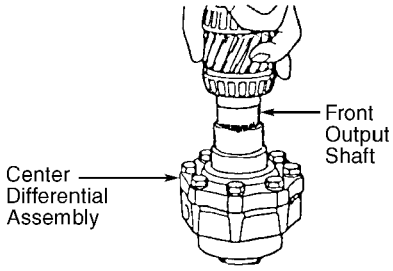
7) Once proper spacers are installed, remove differential flange retaining bolts. Apply thread sealant to bolt threads.

8) Install retaining bolts and tighten in a crisscross pattern to specification. See the TORQUE SPECIFICATIONS table.

9) Using press, Bearing Installer (MD998812) and Adapter (MD998827), press tapered bearing on differential flange (if removed). Using press, bearing installer and Adapter (MD998825), 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: Center Differential Gear Rotation for Spacer Selection
Courtesy of Mitsubishi Motor Sales of America.

FRONT OUTPUT SHAFT (W4A32 & W4A33)

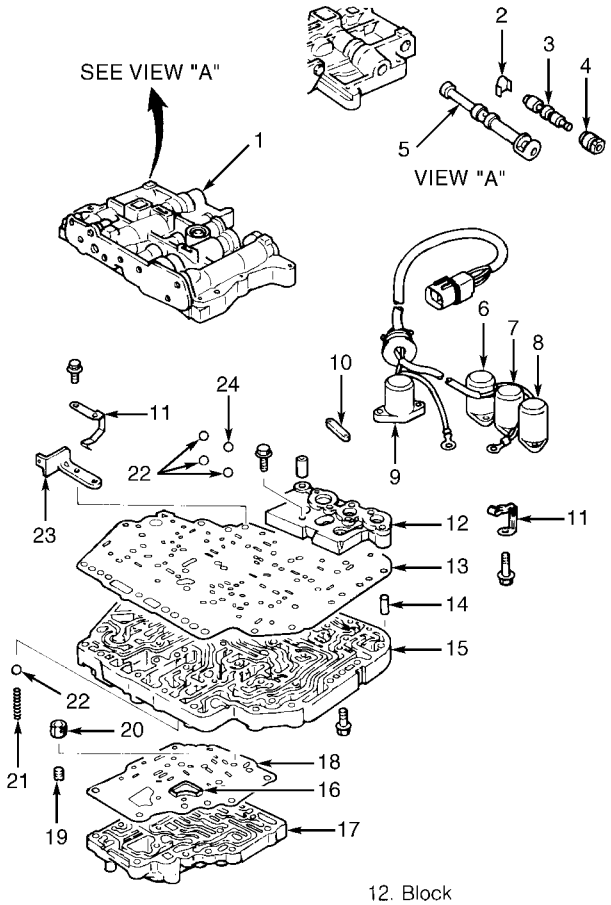
Disassembly & Reassembly

1) Using press and Bearing Remover (P-334), remove tapered bearings from output shaft if replacement is required.

2) To reassemble, install tapered bearing on long end of front output shaft using press, Bearing Installer (MD998812) and Adapters (MD998813 and MD998822). Use bearing installer and Adapter (MD998822) 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.



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

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Fig. 48: Identifying Valve Bodies & Intermediate Plate
Courtesy of Mitsubishi Motor Sales of America.

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. See Fig. 48. 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. See Fig. 49.

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 Figs. 50 and 51.

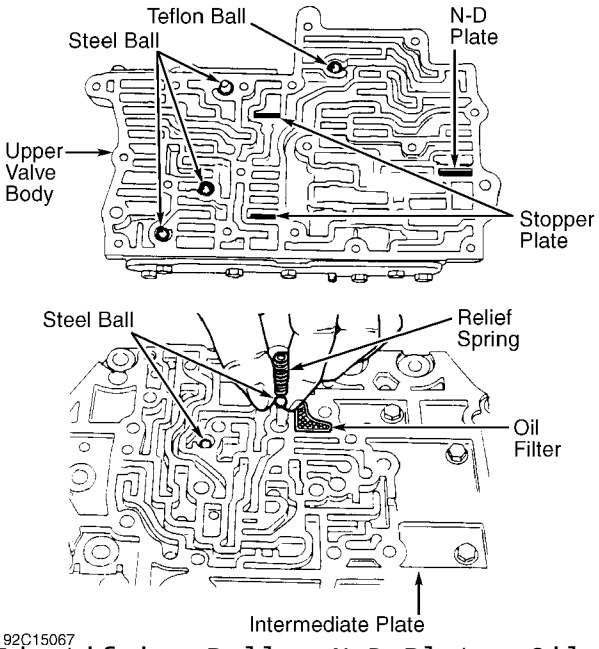
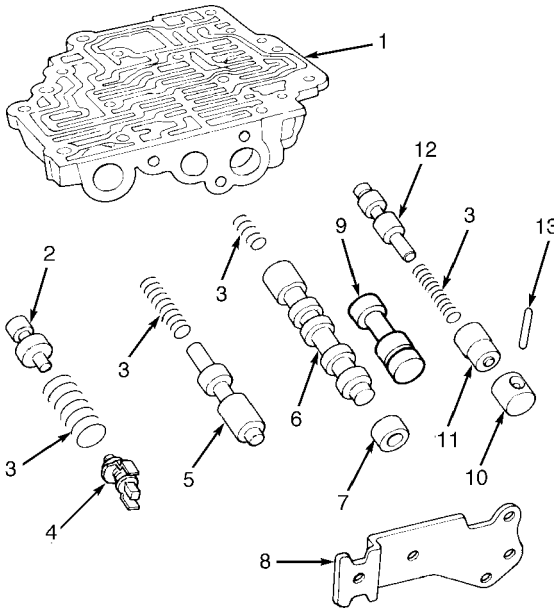


Fig. 49: Identifying Balls, N-D Plate, Oil Filter & Relief Spring
Courtesy of Mitsubishi Motor Sales of America.



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

Fig. 50: Exploded View of Lower Valve Body Components
Courtesy of Mitsubishi Motor Sales of America.

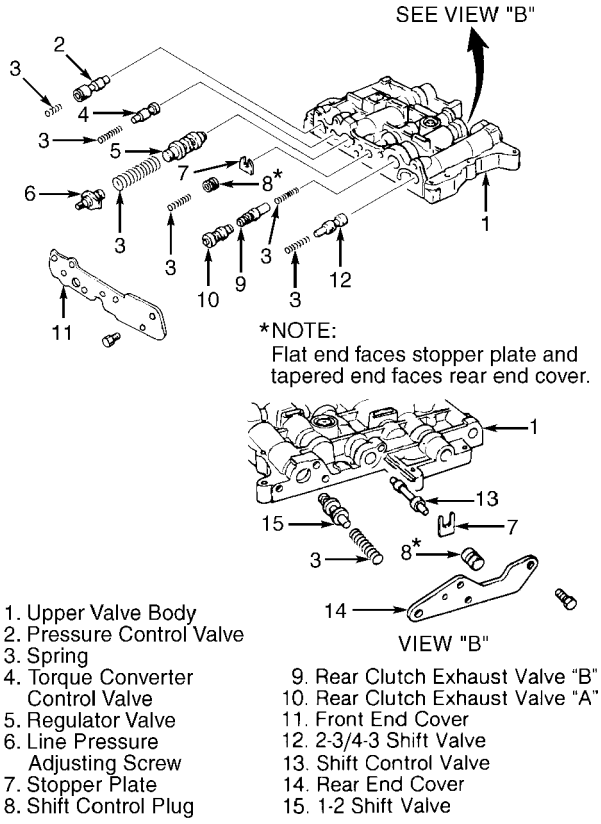


Fig. 51: Exploded View of Upper Valve Body Components
Courtesy of Mitsubishi Motor Sales of America.

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 Figs. 50 and 51. To verify proper valve body spring application, see VALVE BODY SPRING SPECIFICATIONS table.

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 (MD998266) 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. Refer to the TORQUE SPECIFICATIONS table at end of article. Remove guide pins.

VALVE BODY SPRING SPECIFICATIONS

Application	Outside Diameter In. (mm)	Length In. (mm)
Damper Clutch Control Valve Spring	.244 (6.20)	.559 (14.20)
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 (9.19)	1.264 (32.11)
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 Valve Spring	.354 (8.99)	.890 (22.61)
1-2 Shift Valve Spring	.299 (7.59)	1.047 (26.59)
2-3 Shift Valve Spring	.276 (7.01)	1.083 (27.51)

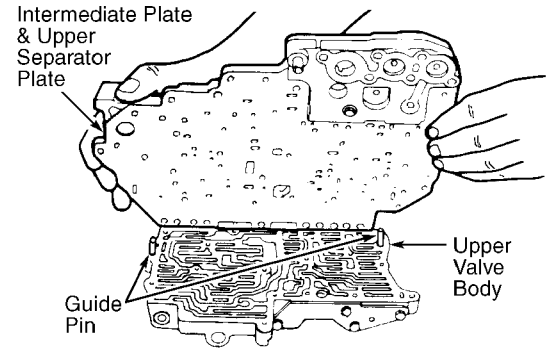
4) Install steel balls, relief spring and oil filter in intermediate plate. See Fig. 49. Install Guide Pins (MD998266) in intermediate plate. See Fig. 52. Install lower separator plate on intermediate plate.

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 the TORQUE SPECIFICATIONS table. Remove guide pins.

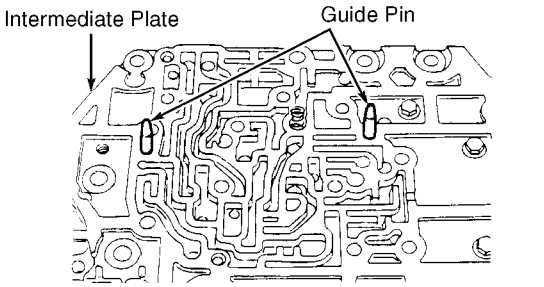
6) To reassemble remaining components, reverse disassembly procedure. Ensure all solenoids valves are installed in proper location. See Fig. 48. Solenoid valves can be identified by wire color. See SOLENOID VALVE IDENTIFICATION table.

SOLENOID VALVE IDENTIFICATION

Solenoid	Wire Color
Damper Clutch Control Solenoid Valve	Red
Pressure Control Solenoid Valve	Blue
Shift Control Solenoid Valve "A"	Orange
Shift Control Solenoid Valve "B"	Yellow



INSTALLING GUIDE PINS IN UPPER VALVE BODY



INSTALLING GUIDE PINS IN INTERMEDIATE PLATE

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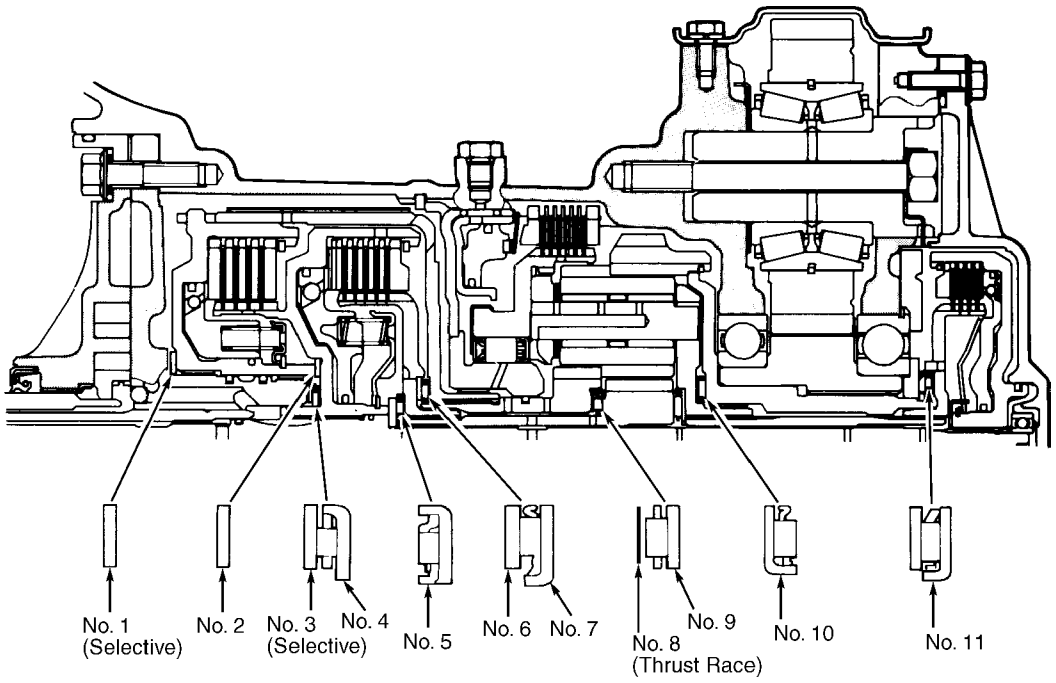
Fig. 52: Installing Guide Pins
Courtesy of Mitsubishi Motor Sales of America.

TRANSAXLE REASSEMBLY

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.



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 (23)	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)						

92I15071

Fig. 53: Thrust Bearing, Thrust Race & Thrust Washer Locations
Courtesy of Mitsubishi Motor Sales of America.

1) Install NEW drive shaft oil seals. Use Oil Seal Installer (MD998325) on F4A33 models. Use Oil Seal Installer (MD998325) for rear oil seal and (MD998803) for front oil seal on W4A32 and W4A33 models.

CAUTION: 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 (MD990938) and Bearing Race

Installer (MD990934) to install bearing race in transaxle case. On F4A33 models, proceed to step 10).

3) On W4A32 and W4A33 models, use Oil Seal Installer (MD998200) 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.

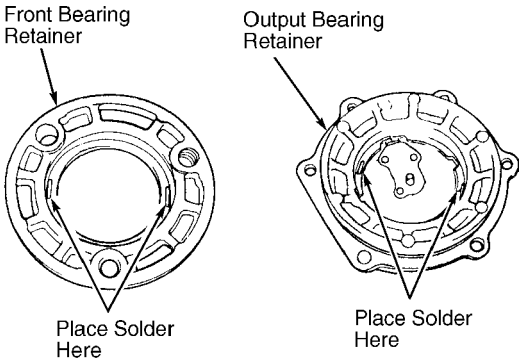


Fig. 54: Solder In Front Bearing Retainer & Output Bearing Retainer
Courtesy of Mitsubishi Motor Sales of America.

4) Install front bearing retainer. Install and tighten front bearing retainer bolts to specification. See the TORQUE SPECIFICATIONS table at end of article. 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). Refer to specifications in the FRONT OUTPUT SHAFT BEARING SPACER ID 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
.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. See the TORQUE SPECIFICATIONS table.

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. 19. Using Handle (MD990938) and Bearing Race Installer (MD990936), install bearing race in center bearing retainer.

8) Install center bearing stopper bolt. See Fig. 25. Tighten center bearing stopper retaining bolt to specification. Refer to the TORQUE SPECIFICATIONS table. Install center bearing retainer in transaxle case so shoulder on center bearing stopper bolt engages notch on center bearing retainer. See Fig. 55.

CAUTION: Ensure shoulder on center bearing stopper bolt engages notch on center bearing retainer. See Fig. 55.

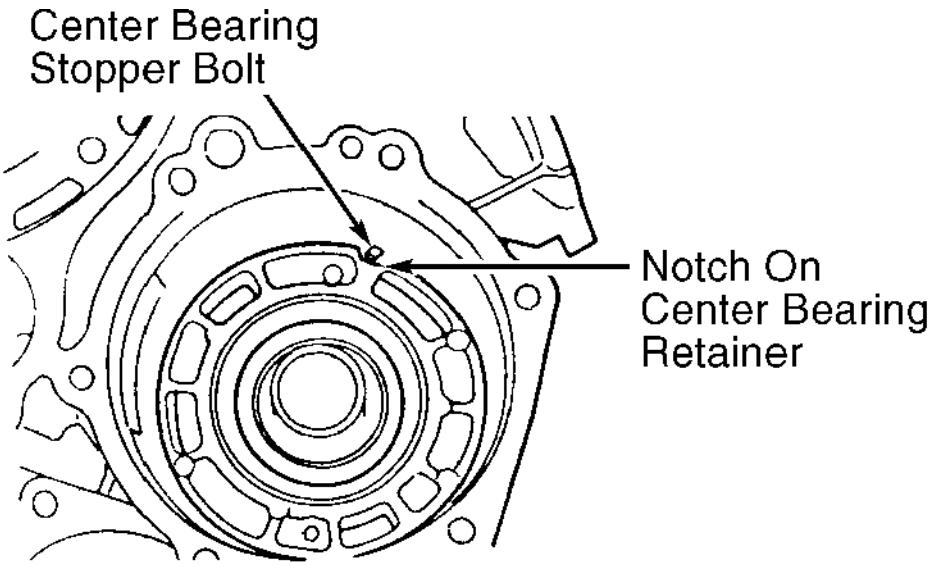


Fig. 55: Installing Center Bearing Retainer
Courtesy of Mitsubishi Motor Sales of America.

9) Thread Puller (MD998833) into hole in end of center differential assembly and install center differential assembly.

10) On F4A33 models, install transfer shaft in transaxle case. On all models, place a piece of solder, .06" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of output bearing retainer. See

Fig. 54. Install outer race.

11) Install output bearing retainer without "O" ring. Install and tighten output bearing retainer bolts to specification. See the TORQUE SPECIFICATIONS table. Remove retaining bolts and output bearing retainer.

12) 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 the TRANSFER SHAFT OR CENTER DIFFERENTIAL BEARING SPACER ID table.

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

TRANSFER SHAFT OR CENTER DIFFERENTIAL BEARING SPACER IDENTIFICATION

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

13) Install proper spacer and outer race in output bearing retainer. Install NEW "O" ring on output bearing retainer. Lubricate "O" ring with ATF.

14) Install the output bearing retainer. Install and tighten the output bearing retaining bolts to specification. Refer to the TORQUE SPECIFICATIONS table.

15) Install output flange in transaxle case. Install snap ring in bearing outer circumference. Install bearing retainer and NEW retaining bolts. Tighten retaining bolts to specification. Refer to the TORQUE SPECIFICATIONS table. 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.

16) Coat No. 10 thrust bearing with petroleum jelly and install on rear of planetary carrier assembly. See Fig. 17. Install planetary carrier assembly in transaxle case.

17) 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.

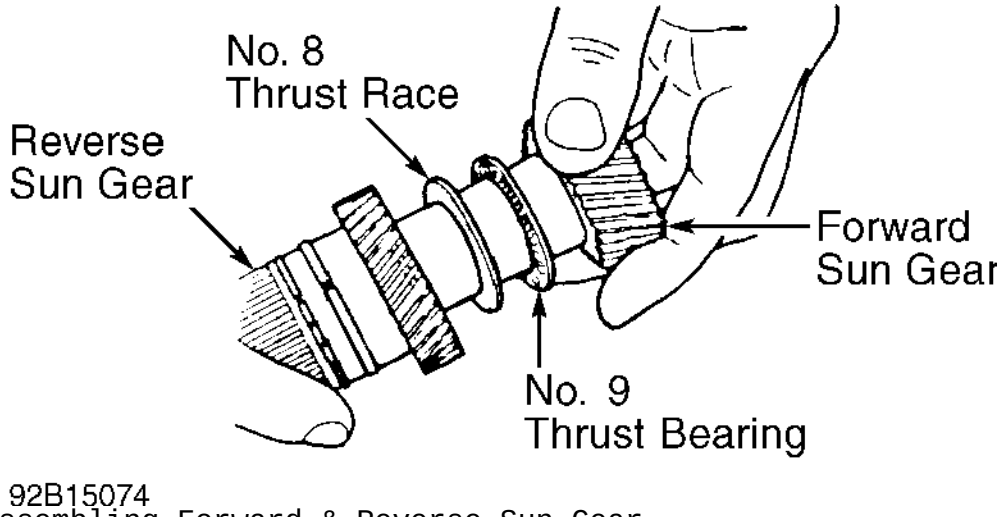


Fig. 56: Assembling Forward & Reverse Sun Gear
Courtesy of Mitsubishi Motor Sales of America.

18) 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. 17. Install return spring with raised side away from pressure plate. See Fig. 57.

CAUTION: Clutch discs must be soaked in ATF for 2 hours before installing. Ensure return spring is installed with raised side away from pressure plate. See Fig. 57.

19) 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.

20) 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).

21) If low-reverse brake clearance is not within specification, select different thickness pressure plate to obtain correct clearance. See the PRESSURE PLATE IDENTIFICATION table.

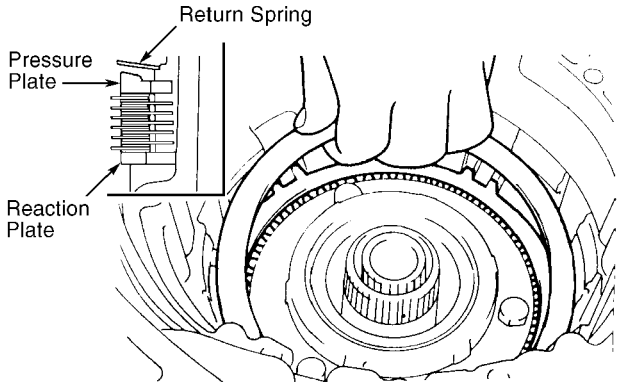


Fig. 57: Installing Pressure Plate & Return Spring
Courtesy of Mitsubishi Motor Sales of America.

PRESSURE PLATE IDENTIFICATION

Plate Thickness In. (mm)	Identification Mark	Part Number
F4A33 & W4A33		
.232 (5.89)	A	MD731736
.236 (5.99)	0	MD731737
.240 (6.01)	1	MD731738
.244 (6.20)	2	MD731739
.248 (6.30)	3	MD731740
.252 (6.40)	4	MD731588
.256 (6.50)	5	MD731741
.260 (6.60)	6	MD731742
.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 (6.01)	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

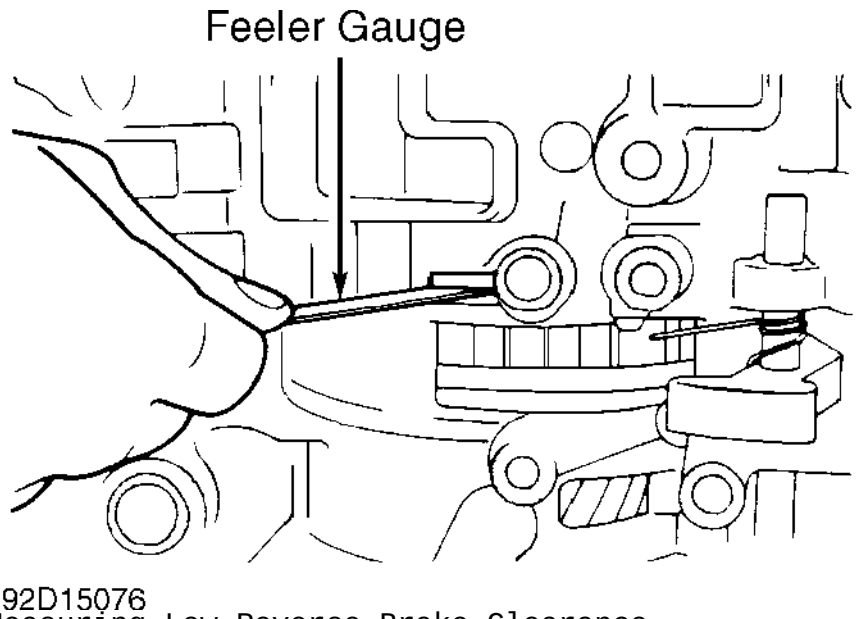


Fig. 58: Measuring Low-Reverse Brake Clearance
Courtesy of Mitsubishi Motor Sales of America.

22) Install air exhaust plug and plug. See Fig. 22. Tighten plug to specification. See the TORQUE SPECIFICATIONS table at end of article. 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.

23) Using Cup (MD998812), Adapter (MD998830) and Compressor (MD998303), 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.

CAUTION: Ensure kickdown band is installed with arrow on kickdown band pointing toward oil pump end of transaxle.

24) Install No. 4 thrust bearing and No. 2 thrust washer on rear clutch assembly. See Fig. 17. Assemble front and rear clutch assembly.

25) 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.

26) 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.

27) Coat No. 1 thrust washer and No. 3 thrust race with petroleum jelly and install on rear of oil pump. See Fig. 17.

28) Install gasket and oil pump in transaxle case. Install and tighten oil pump retaining bolts to specification. Refer to the TORQUE SPECIFICATIONS table.

29) Using dial indicator, check input shaft end play. Input shaft end play should be .012-.039" (.30-.99 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 the correct end play. Refer to the NO. 1 THRUST WASHER & NO. 3 THRUST RACE SPECIFICATIONS table.

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

30) Install spacer, idler gear, bearing and idler shaft. See Figs. 18 and 19. Ensured idle gear is installed so identification groove on end of idler gear faces rear of transaxle (away from oil pump).

CAUTION: Idler gear must be installed with identification groove toward rear of transaxle.

31) Install a new lock plate on lock bolt for idler gear shaft. Install lock bolt and tighten to specification. Refer to the TORQUE SPECIFICATIONS table. Bend lock tabs over on lock plate.

32) Install gasket, idler gear cover and retaining bolts. Tighten retaining bolts to specification. See TORQUE SPECIFICATIONS table. Install end clutch shaft with long splined area toward transaxle.

CAUTION: End clutch shaft must be installed with long splined area toward transaxle.

33) Install thrust washer on end clutch assembly. Install end clutch hub in end clutch assembly. See Figs. 18 and 19. Coat No. 11 thrust bearing with petroleum jelly and install on end clutch hub.

34) Install end clutch assembly. Install NEW "O" ring and end clutch cover. Install and tighten end clutch cover retaining bolts to specification. See the TORQUE SPECIFICATIONS table.

35) On W4A32 and W4A33 models, install bearing outer race on differential assembly. Place a piece of solder, .06" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of bearing outer race. See Fig. 59.

36) On F4A33 models, place a piece of solder, .06" (1.5 mm) diameter by .40" (10.1 mm) long, on each side of differential bearing retainer. See Fig. 59. Install outer race.

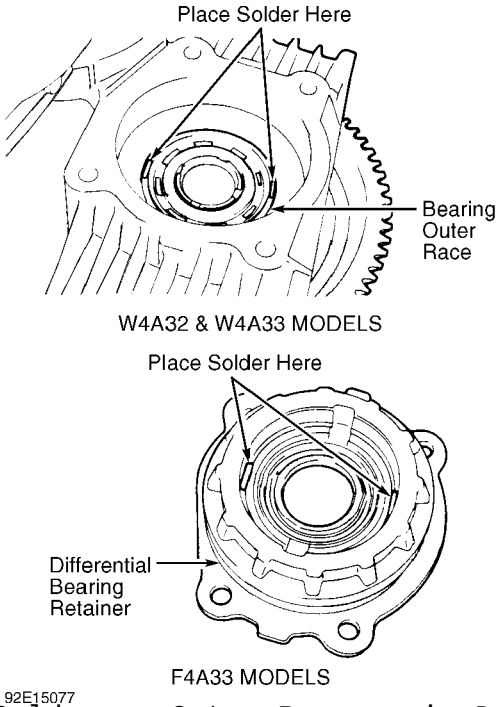


Fig. 59: Solder on Outer Race or in Differential Bearing Retainer
Courtesy of Mitsubishi Motor Sales of America.

37) On all models, install differential bearing retainer without "O" ring. Install and tighten differential bearing retainer bolts to specification. See the TORQUE SPECIFICATIONS table. Remove retaining bolts and differential bearing retainer.

38) 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 and preload are within specification. See the DIFFERENTIAL ASSEMBLY SPACER ID and the DIFFERENTIAL ASSEMBLY END PLAY & PRELOAD SPECIFICATIONS tables.

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

DIFFERENTIAL ASSEMBLY END PLAY & PRELOAD SPECIFICATIONS

Application	In. (mm)
F4A33	.0030-.0053 (.076-.135)
W4A32 & W4A33	.0018-.0065 (.046-.165)

DIFFERENTIAL ASSEMBLY SPACER IDENTIFICATION

Spacer Thickness In. (mm)	Identification Mark	Part Number
W4A32 & W4A33		
.0398 (1.011)	01	MD720943
.0433 (1.100)	J	MD710454
.0469 (1.191)	L	MD710456
.0504 (1.280)	N	MD710458

F4A331

Diamante, Eclipse & Gallant

.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
.0480 (1.219)	G	MD700271
.0492 (1.250)	M	MD710457
.0516 (1.311)	E	MD706574
.0528 (1.341)	O	MD710459
.0539 (1.369)	P	MD710460

3000 GT

1991 Models

.0327 (.831)	83	MD720937
.0339 (.861)	86	MD720938
.0350 (.889)	89	MD720939
.0362 (.919)	92	MD720940
.0374 (.950)	95	MD720941
.0386 (.980)	98	MD720942
.0398 (1.011)	01	MD720943
.0409 (1.039)	04	MD720944
.0421 (1.069)	07	MD720945
.0433 (1.100)	J	MD710454
.0445 (1.130)	D	MD700270
.0457 (1.161)	K	MD710455
.0469 (1.191)	L	MD710456
.0480 (1.219)	G	MD700271
.0492 (1.250)	M	MD710457
.0504 (1.280)	N	MD710458
.0516 (1.311)	E	MD706574
.0528 (1.341)	O	MD710459
.0539 (1.369)	P	MD710460

1992 Models

.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
.0539 (1.369)	.....	37	..... MD740864

39) 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 table.

40) 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. Refer to the TORQUE SPECIFICATIONS table.

CAUTION: Ensure "S" mark on differential bearing cap is at short bolt location and "L" mark is at long bolt location.

41) Install gasket and differential cover. Install and tighten retaining bolts to specification. See TORQUE SPECIFICATIONS table. Install detent in transaxle case. Detent fits in opening in transaxle case, near manual control shaft.

42) 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. See TORQUE SPECIFICATIONS table.

43) Install parking roller support and retaining bolts. Tighten retaining bolts to specification. See TORQUE SPECIFICATIONS table. Install oil temperature sensor in transaxle case.

44) Install NEW "O" ring on solenoid valve wiring harness and in groove on top of valve body. See Fig. 15. Install solenoid valve wiring harness connector from inside transaxle case, and install grommet.

45) Install valve body. Ensure detent plate pin engages with groove on manual valve. Install retaining bolts; ensure proper length bolt is installed in designated area. See Fig. 16. Tighten valve body bolts to specification. See TORQUE SPECIFICATIONS table.

CAUTION: Position wiring so it does not contact detent plate. Ensure parking rod is properly retained in clamps. See Fig. 16.

46) Install oil filter, magnet, gasket, oil pan, inhibitor switch, manual control lever and speedometer gear assembly. Tighten bolts to specification. See TORQUE SPECIFICATIONS table.

47) Note color of tubes on pulse generators. Install pulse generators in proper location according to the color of the tubes. See Fig. 20. Tighten retaining bolts to specification. See the TORQUE SPECIFICATIONS table.

CAUTION: Ensure pulse generators are installed in correct location. See Fig. 20.

48) Install dipstick tube and dipstick. Adjust kickdown

servo. See KICKDOWN SERVO under ADJUSTMENTS. Install kickdown servo switch and snap ring.

49) 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.

50) On all models, coat hub on torque converter with ATF and installtorque 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	44-57 (60-77)
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	23-31 (31-42)
Kickdown Servo Lock Nut	18-23 (24-31)
Manual Control Lever Bolt	13-15 (18-20)
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	90-102 (10.1-11.5)
End Clutch Cover Bolt	90-102 (10.1-11.5)
Hydraulic Pressure Tap Plug	36-48 (4.1-5.4)
Idler Gear Cover Bolt	90-102 (10.1-11.5)
Inhibitor Switch Bolt	90-102 (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	48-60 (5.4-6.8)
Pulse Generator Bolt	90-102 (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	90-102 (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	
F4A33	.0030-.0053 (.076-.135)
W4A32 & W4A33	.0018-.0065 (.046-.165)
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)

END OF ARTICLE