

TRANSMISSION SERVICING - A/T

Article Text

1992 Mitsubishi Mirage

For Dan's Transmission Service 10 Jefferson Place Fort Walton Beach FL 32548

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Monday, April 01, 2002 09:07AM

ARTICLE BEGINNING

1991 TRANSMISSION SERVICING
Automatic Transmission

Mitsubishi: Eclipse, Galant, Mirage,
Montero, Pickup, Precis, 3000GT

IDENTIFICATION

MITSUBISHI AUTOMATIC TRANSMISSION APPLICATIONS

| Model | Transmission/Transaxle |
|-----------------------------|--------------------------------|
| Eclipse | |
| 1.8 & 2.0L | Model F4A22 Transaxle |
| 2.0L Turbo | Model F4A33 Transaxle |
| All-Wheel Drive (AWD) | Model W4A33 Transaxle |
| Galant | |
| AWD | Model W4A32 Transaxle |
| DOHC | Model F4A22 Transaxle |
| SOHC | Model KM175 or F4A22 Transaxle |
| Mirage | |
| 1.5L | Model F3A21 Transaxle |
| 1.6L | Model F4A21 Transaxle |
| Montero | Model V4AW2 Transmission |
| Pickup | Model R4AC1 Transmission |
| Precis | Model KM176 Transaxle |
| 3000GT | Model F4A33 Transaxle |

LUBRICATION

TRANSAXLE/TRANSMISSION SERVICE INTERVALS

Check fluid level every 12 months or 15,000 miles. Change fluid and filter every 30,000 miles. If vehicle is operated under severe condition, change fluid more often. If severe darkening of fluid and strong odor are noted, bands should also be adjusted (if equipped).

TRANSFER CASE SERVICE INTERVALS

On 4WD and AWD models, change transfer case fluid every 30,000 miles.

CHECKING FLUID LEVEL

TRANSAXLE/TRANSMISSION

1) Park vehicle on level area. Ensure oil is at normal operating temperature, parking brake is engaged, and engine is at idle. Move gear selector through each position, stopping briefly in each position.

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2) Place gear selector in Neutral, and clean area around dipstick tube. Ensure fluid level is between lower and upper marks, but never over upper mark, in HOT range. Add or drain fluid if necessary.

CAUTION: If severe darkening of fluid and strong odor are noted, change fluid and filter, and adjust bands.

TRANSFER CASE (3000GT)

Lubricant level should be approximately .5" (13 mm) below fill hole on side of transfer case.

TRANSFER CASE (ALL OTHERS)

Lubricant level should be to bottom of fill hole on side of transfer case.

RECOMMENDED FLUID

TRANSAXLE/TRANSMISSION

Use Chrysler Plus/Mitsubishi Plus ATF, Dexron and Dexron-II ATF.

TRANSFER CASES

Use SAE 75W-85 gear oil with API GL-4 rating or higher.

FLUID CAPACITY

TRANSAXLE/TRANSMISSION REFILL CAPACITIES

| Application | Refill Qts. (L) | Dry Fill Qts. (L) |
|---------------------|--------------------|----------------------|
| Mirage | 4.8 (4.5) | 13.0 (12.2) |
| Eclipse | | |
| F4A22 | 4.2 (4.0) | 6.4 (6.1) |
| F4A33 & W4A33 | 6.4 (6.1) | 8.0 (7.6) |
| Galant | | |
| 2WD | 4.8 (4.5) | 6.4 (6.1) |
| AWD | 4.8 (4.5) | 6.9 (6.5) |
| Montero | 5.8 (5.5) | 7.4 (7.0) |
| Pickup | 2.0 (1.9)(1) | 10.2 (9.7) |
| Precis | 4.8 (4.5) | 6.4 (6.1) |
| 3000GT | 4.8 (4.5) | 7.9 (7.5) |

(1) - Idle engine in Neutral, then add fluid to bring level between notches at "H" mark.

TRANSFER CASE REFILL CAPACITIES

Application Pts. (L)

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| | | |
|------------------|-------|-----------|
| Eclipse & Galant | | 1.3 (0.6) |
| Mirage | | N/A |
| Montero & Pickup | | 4.6 (2.2) |
| 3000GT | | .6 (.3) |

DRAINING & REFILLING

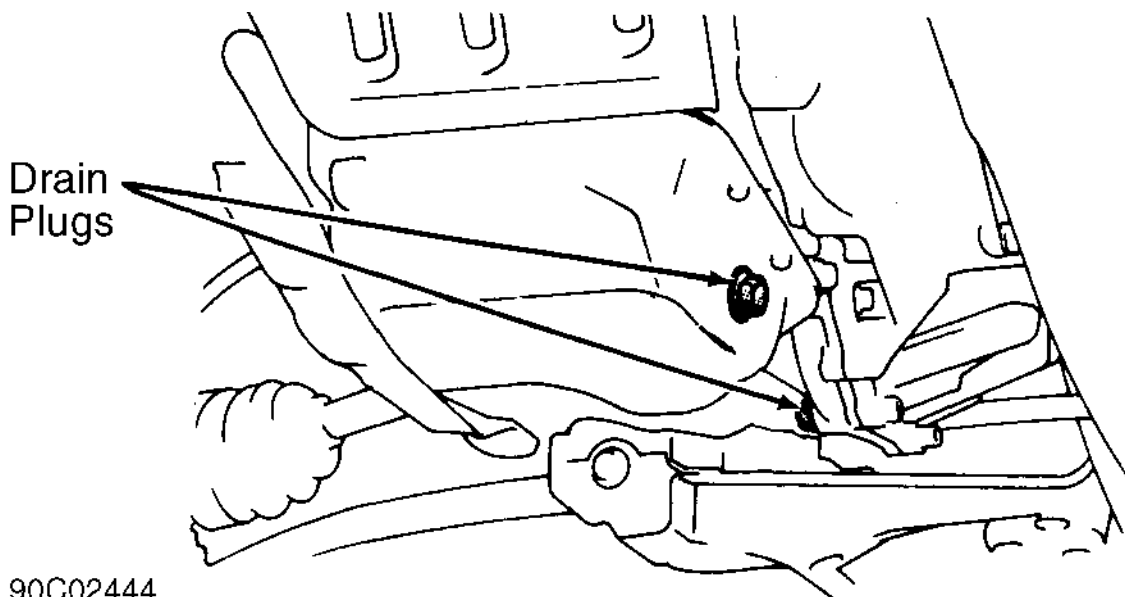
NOTE: Although manufacturer recommends changing only fluid, the oil filter/screen may also require replacement. If replacing oil filter/screen, note length and location of all bolts.

TRANSAXLE (EXCEPT MONTERO, PICKUP & RAM-50)

1) Remove drain plug(s), and drain fluid. See Fig. 1. Some applications may contain a drain plug located in housing below drive axle shaft, in oil pan. Remove oil pan. Remove oil filter/screen if necessary.

2) If oil filter/screen is replaced, tighten bolts to specification. See TORQUE SPECIFICATIONS table at end of article. Clean oil pan, replace gasket, and install oil pan. Tighten oil pan bolts and drain plug to specification. See TORQUE SPECIFICATIONS table. Ensure dipstick hole area is clean, and pour approximately 4.2 qts. (4.0L) of Dexron-II fluid into dipstick hole.

3) Operate engine at idle for 2 minutes. Shift transaxle to each position, ending in Neutral. Add sufficient fluid to reach lower mark. After reaching normal operating temperature, fluid should be between upper and lower marks of HOT range on dipstick.



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Fig. 1: Locating Drain Plugs

Courtesy of Mitsubishi Motor Sales of America.

TRANSMISSION (MONTERO & PICKUP)

1) Remove drain plug (if equipped) from transmission pan, and allow fluid to drain. On models without drain plug, remove oil pan must to drain fluid. Remove oil filter/screen if necessary.

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2) If oil filter/screen is replaced, tighten bolts to specification. See TORQUE SPECIFICATIONS table at end of article. Clean oil pan, replace gasket, and install oil pan. Tighten oil pan bolts and drain plug to specification. See TORQUE SPECIFICATIONS table. Fill transmission, through filler tube, with 5.3 qts. (5.0L) of Dexron-II ATF on Montero, or 2.0 qts. (1.9L) on all others. Start engine, and allow to idle for 2 minutes.

3) Shift transmission into each position, ending in Neutral. Check fluid level with engine running at idle, and add sufficient fluid to bring level to lower mark of dipstick if necessary. Recheck fluid level after transmission is at normal operating temperature.

TRANSFER CASE

Drain plug is located on bottom of transfer case. Change drain plug gasket whenever fluid is changed. On 3000GT, lubricant level should be approximately .5" (13 mm) below fill hole on side of transfer case. On all others models, lubricant level should be to bottom of fill hole on side of transfer case.

HYDRAULIC CONTROL PRESSURE ADJUSTMENTS

LINE PRESSURE CHECK (EXCEPT MONTERO & PICKUP)

1) Set parking brake. Place shift lever in Neutral position. Attach engine tachometer. Remove line pressure port plug located above front transaxle shaft, forward of governor pressure port plug. On Precis, line pressure port is located below bell housing, at front of transaxle oil pan. Using appropriate adapter, attach pressure gauge.

2) Start engine, and bring to operating temperature. With gear selector in Drive position, bring engine speed to 2500 RPM. Pull throttle control cable (if equipped) wide open at transaxle side.

3) Line pressure should be 98-100 psi (6.9-7.0 kg/cm²) on Mirage, or 124-127 psi (8.7-8.9 kg/cm²) on all others. If line pressure is not to specification, proceed to LINE PRESSURE ADJUSTMENT.

LINE PRESSURE ADJUSTMENT (EXCEPT MONTERO & PICKUP)

1) Drain transaxle fluid. Remove oil pan. Disconnect throttle control cable from throttle cam. Remove oil temperature sensor (if equipped). Disconnect solenoid connector. On some models, it may be necessary to push solenoid wire harness connector and grommet into transaxle case.

2) Remove oil filter screen and plate. Noting location and length of bolts, remove valve body. DO NOT drop internal parts. Adjust line pressure by turning regulator valve adjusting screw.

3) Turn adjusting screw counterclockwise to increase pressure or clockwise to decrease pressure. One complete turn of adjusting screw changes line pressure as follows.

- * 3.7 psi (.26 kg/cm²) on Mirage with F3A21 Transaxle
- * 5.4 psi (.39 kg/cm²) on Precis
- * 54 psi (3.8 kg/cm²) on all others

4) After adjustment, reverse removal procedure to install. Refill transaxle.

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LINE PRESSURE (MONTERO)

1) Remove plug from line pressure take-off port located behind transmission shift control lever. Install Hydraulic Pressure Meter (MD998330) with Adapter (MD998206).

2) Place vehicle on dynamometer. Apply parking brake and start engine. With brake applied, place transmission in Drive. Note pressure at idle. Pressure should be 74-85 psi (5.2-6.0 kg/cm²).

3) Raise engine RPM to stall speed (2100-2400 RPM). Note line pressure. Pressure should be 156-185 psi (11.0-13.0 kg/cm²).

4) Shift transmission into Reverse with brake applied. At idle, pressure should be 112-130 psi (7.9-9.1 kg/cm²). Raise engine RPM to stall speed (2100-2400 RPM). Note line pressure. Pressure should be 227-285 psi (16.0-20.0 kg/cm²). If readings are not to specification, use the following trouble shooting guide.

- * Hydraulic Pressure High In All Ranges
Check throttle cable adjustment. If adjustment is okay, check for throttle valve or regulator valve failure.
- * Hydraulic Pressure Low In All Ranges
Check throttle cable adjustment. If adjustment is okay, check for throttle valve, regulator valve, transmission oil pump or overdrive clutch failure.
- * Hydraulic Pressure Low In Drive Position
Check for fluid leaks in Drive hydraulic circuit. Check for forward clutch or overdrive clutch failure.
- * Hydraulic Pressure Low In Reverse Position
Check for fluid leaks in Reverse hydraulic circuit. Check for transmission No. 3 brake failure, forward clutch failure or overdrive clutch failure.

LINE PRESSURE (PICKUP)

1) Incorrect throttle pressure setting will cause incorrect line pressure readings even though line pressure adjustment is correct. Always inspect and correct throttle pressure adjustment before adjusting line pressure.

2) Approximate adjustment, measured from valve body to inner edge of adjusting nut, is 15/16". However, due to manufacturing tolerances, adjustment can be varied to obtain correct line pressure.

3) Adjusting screw may be turned with an Allen wrench. One complete turn of adjusting screw changes closed throttle line pressure approximately 1 2/3 psi. Turn adjusting screw counterclockwise to increase pressure or clockwise to decrease pressure.

THROTTLE PRESSURE (PICKUP)

1) Throttle pressures cannot be accurately tested. If a malfunction exists, adjustment should be measured.

2) Insert Gauge Pin (C-3763) between throttle lever cam and kickdown valve. Push in on tool to compress kickdown valve against its spring.

3) As force is being exerted to compress spring, turn throttle lever screw with Allen wrench until head of screw touches throttle lever tang with gauge pin, and throttle valve bottoms. Ensure

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adjustment is made with spring fully compressed and valve bottomed in valve body.

KICKDOWN BAND

PICKUP

1) Locate kickdown band adjusting screw on left side of transmission case. Loosen lock nut, and back off nut 5 turns. Ensure adjusting screw turns freely in transmission case.

2) Using torque wrench, tighten adjusting screw to 72 INCH lbs. (8 N.m). Back off adjusting screw 2 7/8 turns. Hold adjuster screw in this position, and tighten lock nut to 30 ft. lbs. (41 N.m).

LOW-REVERSE BAND

PICKUP

1) Raise vehicle, drain transmission, and remove oil pan. Loosen adjusting screw lock nut, and back off nut 5 turns. Ensure adjusting screw turns freely in lever.

2) Using torque wrench, tighten band adjusting screw to 30 INCH lbs. (3.5 N.m). Back off adjusting screw 6 turns. Hold adjusting screw in this position, and tighten lock nut to 25 ft. lbs. (34 N.m).

3) Reinstall oil pan using new gasket. Tighten pan bolts to 150 INCH lbs. (17 N.m). Refill with specified transmission fluid.

KICKDOWN SERVO

ECLIPSE, GALANT, MIRAGE, PRECIS & 3000GT

1) Remove all dirt and grease around kickdown servo switch. Remove snap ring and kickdown servo switch.

2) To prevent servo piston from turning, install Adapter (MD998915) and Kickdown Servo Wrench (MD998914) so tab of wrench engages with notch of piston. See Fig. 2.

CAUTION: DO NOT push servo piston inward while installing adapter and servo wrench. Install adapter in brake pressure port by hand ONLY. DO NOT use wrench to tighten adapter.

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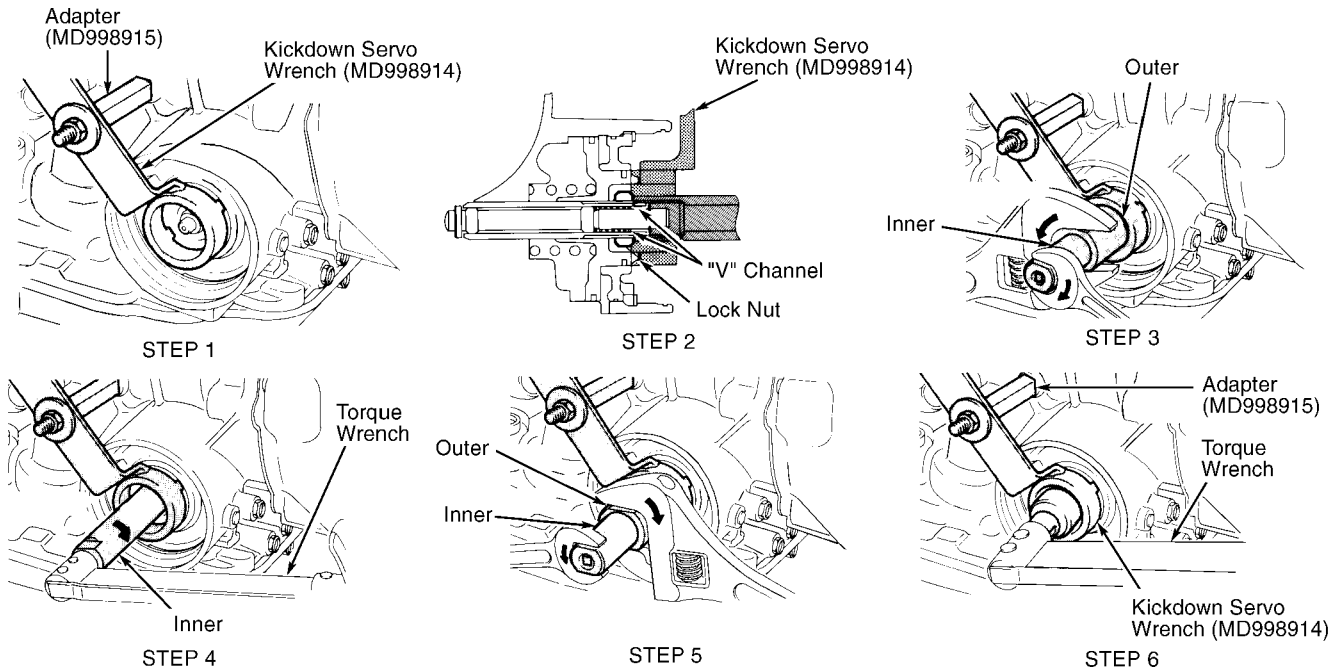


Fig. 2: Adjusting Kickdown Servo (Except Montero & Pickup)
Courtesy of Mitsubishi Motor Sales of America.

3) Loosen lock nut to "V" channel of adjuster rod. See Fig. 2. Tighten inner section of Kickdown Service Adjustment Assembly (MD998916) until it contacts lock nut.

4) Install outer section of kickdown service adjustment assembly on lock nut. Rotate outer section to left and inner section to right to contact lock nut with inner section.

5) Using an INCH lb. torque wrench on inner section, tighten inner section to 86 INCH lbs. (9.8 N.m), and then loosen inner section. Tighten inner section to 43 INCH lbs. (4.9 N.m).

CAUTION: Before tightening lock nut with torque wrench, tighten it by hand until it contacts piston. If torque wrench is used initially, lock nut and adjustment rod may rotate together.

6) Back off outer section 2-2 3/4 turns. Rotate outer section to right and inner section to left until inner section is free of lock nut. Tighten lock nut by hand until it contacts piston. Using torque wrench, tighten lock nut to 18-23 ft. lbs. (25-32 N.m).

7) Remove adapter and kickdown servo wrench. Install new "O" ring in groove around switch. Install switch and snap ring.

TRANSMISSION THROTTLE CONTROL

MIRAGE

1) On all other models, ensure throttle lever is in curb idle position. Engine must be at normal operating temperature.

2) On all models, raise cover "B" of throttle cable upward to expose nipple. See Fig. 3. Loosen lower cable bracket mounting bolt. Move lower cable bracket until distance between nipple and top of cover "A" on throttle cable is .02-.06" (.5-1.5 mm).

3) Tighten lower cable bracket mounting bolt to 108-126 INCH

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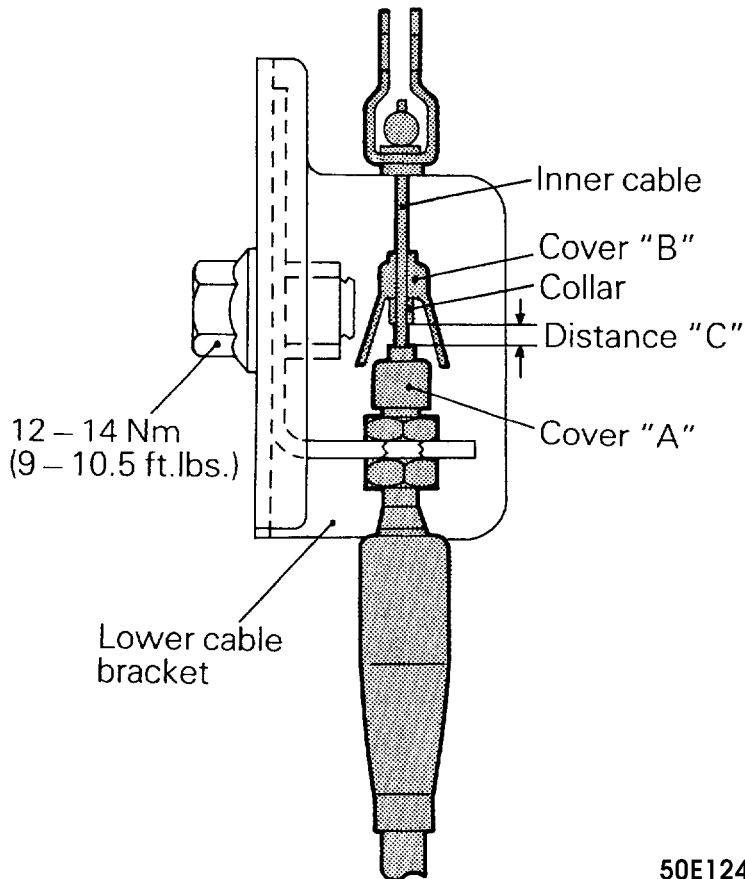
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lbs. (12-14 N.m). With throttle lever in wide open throttle position, pull cable upward to ensure some cable free play exists.



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Fig. 3: Adjusting Throttle Cable (Mirage)
Courtesy of Mitsubishi Motor Sales of America.

CAUTION: On Pickup, always adjust throttle control cable whenever idle is adjusted.

PICKUP

1) Ensure engine idle is adjusted correctly. Ensure throttle lever and throttle cable bracket are not bent. Pull lightly on inner throttle cable.

2) While in closed throttle position, measure gap between inner cable stopper and outer cable housing. Adjust cable as necessary to obtain a gap of .031-.059" (.79-1.50 mm). See Fig. 4 (STEP 1).

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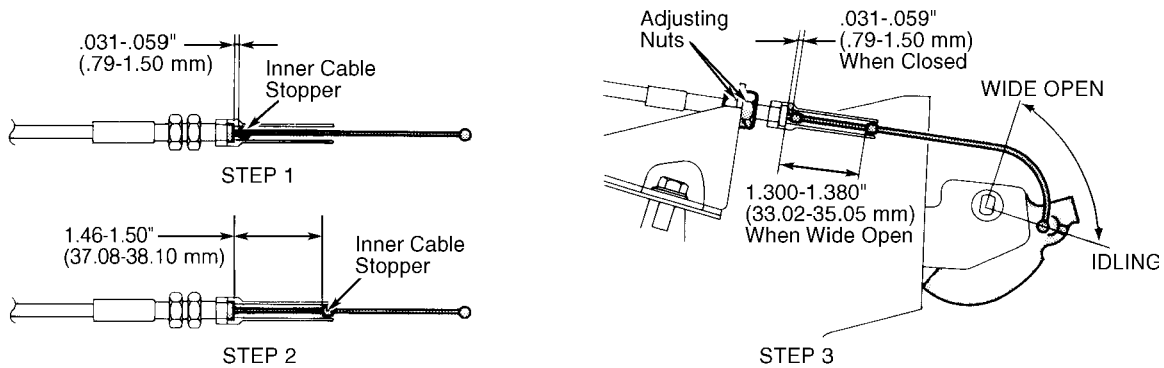
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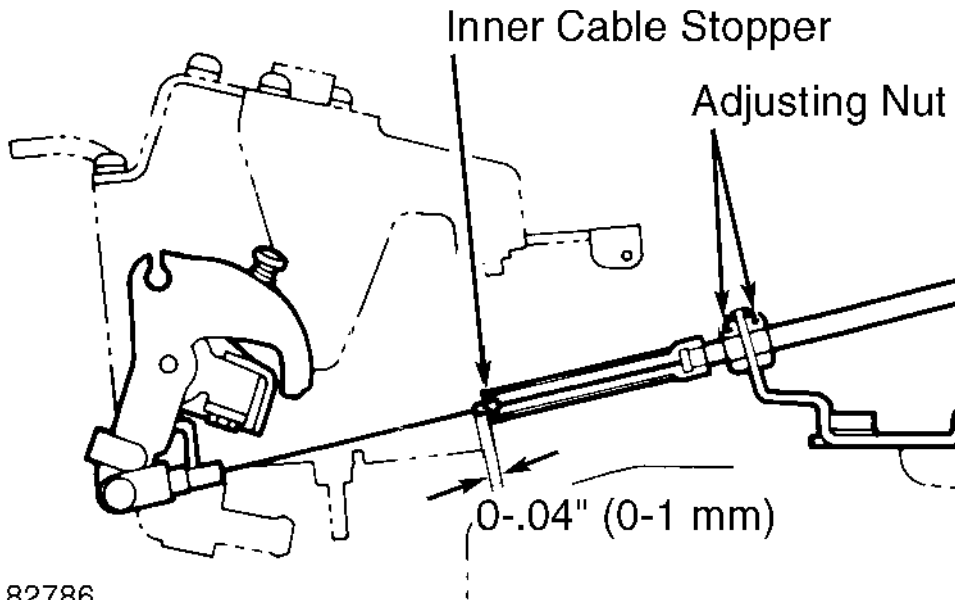
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Fig. 4: Adjusting Throttle Cable (Pickup)
Courtesy of Mitsubishi Motor Sales of America.

3) While holding throttle in wide open position, pull on inner throttle cable. Adjust bell crank as necessary to obtain a gap of $1.46-1.50"$ ($37.08-38.10$ mm) between inner cable stopper and outer cable. See Fig. 4 (STEP 2).

4) With throttle fully closed, recheck gap between inner cable stopper and outer cable housing. Gap should be $.031-.059"$ ($.79-1.50$ mm). See Fig. 4 (STEP 3). While holding throttle in wide open position, pull on inner throttle cable. Check for a gap of $1.30-1.38"$ ($33.02-35.05$ mm).

Montero Ensure throttle lever and throttle cable bracket are not bent. Ensure distance between inner cable stopper end and dust cover is $0-.04"$ ($0-1.0$ mm). See Fig. 5.



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Fig. 5: Adjusting Throttle Cable (Montero)
Courtesy of Mitsubishi Motor Sales of America.

SHIFT LINKAGE

MONTERO

Loosen swivel nut on transmission control rod. See Fig. 6. Ensure shift and transmission levers are both in Neutral. Tighten

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swivel nut.

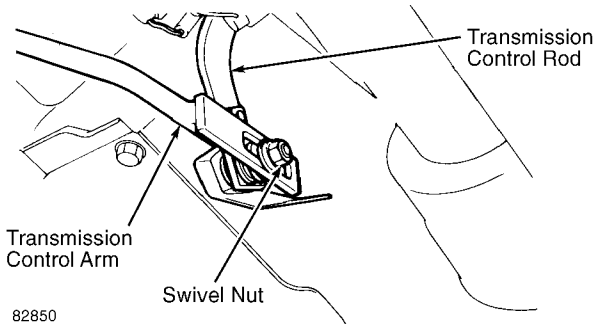


Fig. 6: Adjusting Shift Linkage (Montero)
Courtesy of Mitsubishi Motor Sales of America.

EXCEPT MONTERO

Adjust shift cable at transaxle/transmission end of cable. Place shift lever Neutral. Ensure shift lever and neutral safety switch are in Neutral position. If cable was replaced, ensure toothed washer is installed (if equipped). See Fig. 7. Turn adjuster at cable end so it fits into manual lever on transaxle/transmission, and no slack exists in cable. See Fig. 7.

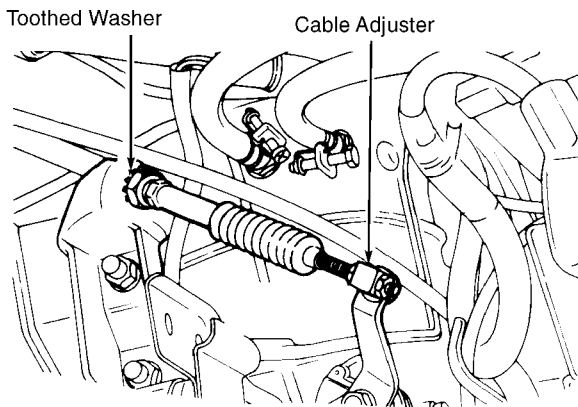


Fig. 7: Adjusting Shift Cable (Except Montero)
Courtesy of Mitsubishi Motor Sales of America.

SHIFT LEVER SLEEVE

NOTE: Pickup does not have shift lever sleeve.

EXCEPT PICKUP

To adjust shift lever sleeve, remove shift handle on top of shift lever. With lever in Neutral, turn sleeve so distance between sleeve and lever end is .60-.63" (15.2-16.0 mm). See Fig. 8. Ensure beveled side of sleeve faces toward push button (if equipped).

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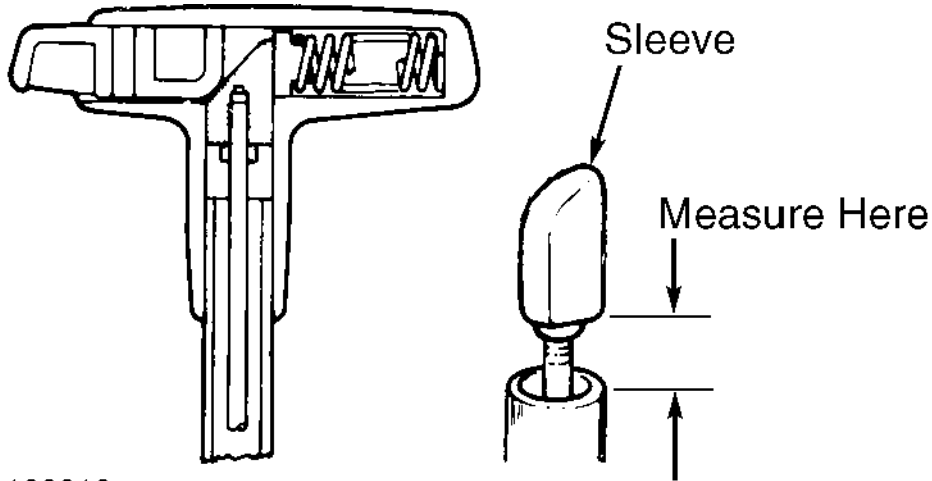
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Fig. 8: Adjusting Shift Lever Sleeve (Except Pickup)

Courtesy of Mitsubishi Motor Sales of America.

NEUTRAL SAFETY SWITCH

EXCEPT MONTERO & PICKUP

1) Place shift and manual control levers in Neutral. For adjustment, turn switch body in order to align small end of manual control lever with corresponding flange on switch body. Tighten switch mounting bolts to 84-108 INCH lbs. (10-12 N.m).

CAUTION: DO NOT drop switch body.

2) Loosen nut at end of transaxle control cable, and lightly pull in direction of switch. Tighten nut to 84-120 INCH lbs. (10-14 N.m). See Fig. 9.

3) Ensure selector lever is in Neutral. Ensure lever functions correctly at transaxle, in range corresponding to that indicated by selector lever.

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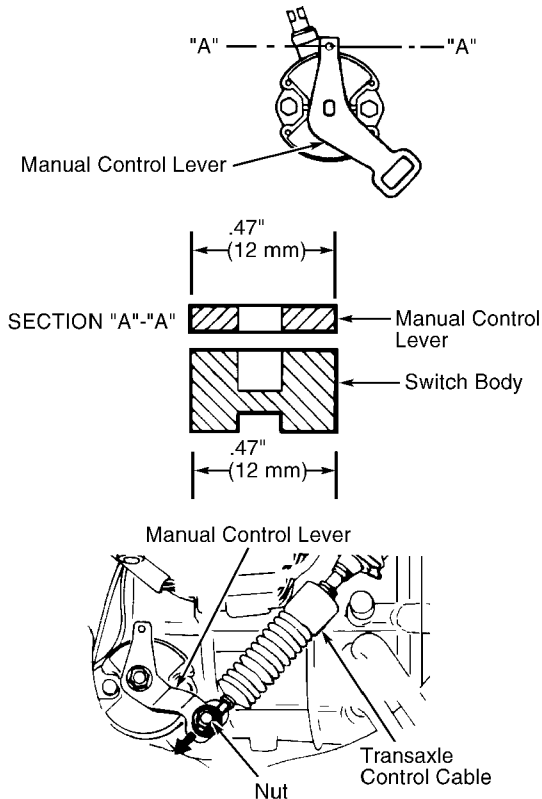
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Fig. 9: Adjusting Inhibitor (Neutral Safety) Switch (Except Montero, Pickup)
Courtesy of Mitsubishi Motor Sales of America.

MONTERO

1) Neutral safety switch is located under shift lever console. Set shift lever so pin at end of rod is positioned correctly. See Fig. 10.

2) Using an ohmmeter, check continuity between Black/Yellow wires when neutral safety switch is moved back and forth. Mark bracket.

3) Tighten neutral safety switch mounting screws so clearance between switch and selector lever is .1" (2.5 mm).

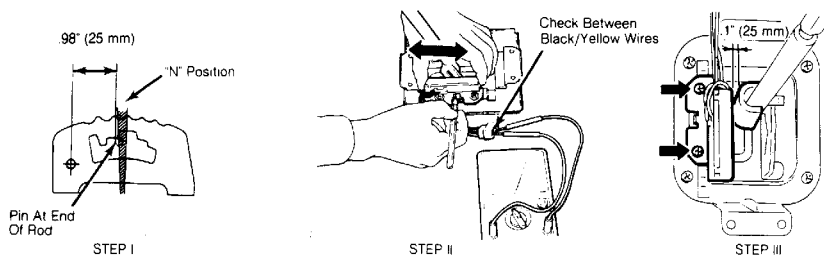


Fig. 10: Adjusting Neutral Safety Switch (Montero)
Courtesy of Mitsubishi Motor Sales of America.

PICKUP

Neutral safety switch is part of transmission-mounted neutral safety/back-up light switch assembly, and is non-adjustable.

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TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

| Application | Ft. Lbs. (N.m) |
|-------------------------------|-------------------|
| Drain Plug | |
| Transaxle/Transmission | |
| Montero | 13-17 (18-23) |
| All Other Models | 22-25 (30-35) |
| Transfer Case | 22-25 (30-35) |
| | INCH Lbs. (N.m) |
| Oil Filter/Screen Bolt | |
| Except Montero & Pickup | 48-60 (5.4-6.8) |
| Montero | 43-52 (4.9-5.9) |
| Pickup | 35 (4.0) |
| Oil Pan Bolt | |
| Eclipse & Montero | 36-42 (4.0-4.8) |
| Pickup | 156 (18) |
| All Other Models | 84-108 (9.5-12.2) |

END OF ARTICLE