

TRANSMISSION SERVICING - A/T

1998 Toyota Supra

1997-98 TRANSMISSION SERVICING
Automatic Transmission

1997: Paseo, Previa
1997-98: Avalon, Camry, Celica, Corolla, Land Cruiser, RAV4,
Supra, T100, Tacoma, Tercel, 4Runner
1998: Sienna

IDENTIFICATION

AUTOMATIC TRANSMISSION APPLICATIONS

Model	Transmission/Transaxle
Avalon	A541E
Camry	
2.2L 4-Cyl.	A140E
3.0L V6	A541E
Celica	
1.8L 4-Cyl. (1997 Only)	A246E
2.2L 4-Cyl.	A140E
Corolla	
1.6L 4-Cyl.	A131L
1.8L 4-Cyl.	A245E
Land Cruiser	(1) A343F
Paseo (1997 Only)	A244E
Previo (1997 Only)	
2WD	A340E
All-Trac 4WD	A340F
RAV4	
2WD (1997 Only)	A241E
2WD (1998 Only)	A247E
4WD	A540H
Sienna	(1) A540E
Supra	(2) A340E
Tacoma	
2WD	
2.4L 4-Cyl.	A43D
2.7L 4-Cyl. (1998 Only)	A340E
3.4L V6	A340E
4WD	
2.7L 4-Cyl.	A340F
3.4L V6	A340F
Tercel	
3-Speed	A132L
4-Speed	A242L
T100	
2WD	A340E
4WD	A340F
4Runner	
2WD	A340E
4WD	A340F

(1) - Equipped with separate transmission oil cooler.

(2) - Transmission in turbo models contains a different electronic control system than the non-turbo models.

LUBRICATION

SERVICE INTERVALS

Avalon, Camry, Celica 2.2L, Corolla 1.6L & Tercel With
3-Speed

Check transmission fluid level and transmission/differential fluid level every 15,000 miles or 24 months. Transmission/differential fluid reservoir is independent from the transmission. Under normal operating conditions service interval is not available for transmission fluid and differential fluid. Under severe conditions such as trailer towing, police, taxi, local delivery service or operating under dusty conditions, replace transmission fluid and differential fluid every 15,000 miles or 12 months.

Celica 1.8L, Corolla 1.8L, Paseo, RAV4, Sienna & Tercel With
4-Speed

Check transmission fluid level every 15,000 miles or 24 months. Differential fluid reservoir is incorporated with the transmission. Under normal operating conditions service interval is not available for transmission fluid. Under severe conditions such as trailer towing, police, taxi, local delivery service or operating under dusty conditions, replace transmission fluid every 15,000 miles or 12 months.

Land Cruiser, Previa, Supra, Tacoma, T100 & 4Runner

Check transmission fluid level every 15,000 miles or 24 months. Under normal operating conditions service interval is not available for transmission fluid. Under severe conditions such as trailer towing, police, taxi, local delivery service or operating under dusty conditions, replace transmission fluid every 15,000 miles or 12 months.

CHECKING FLUID LEVEL

NOTE: When checking fluid level for the transmission, if vehicle has been operating in heavy traffic, towing a trailer or at high speeds in hot weather, wait 30 minutes before checking the fluid level.

NOTE: Some models have a transmission/differential unit. On these models the differential lubrication is separate from the transmission fluid. It must be checked and filled separately.

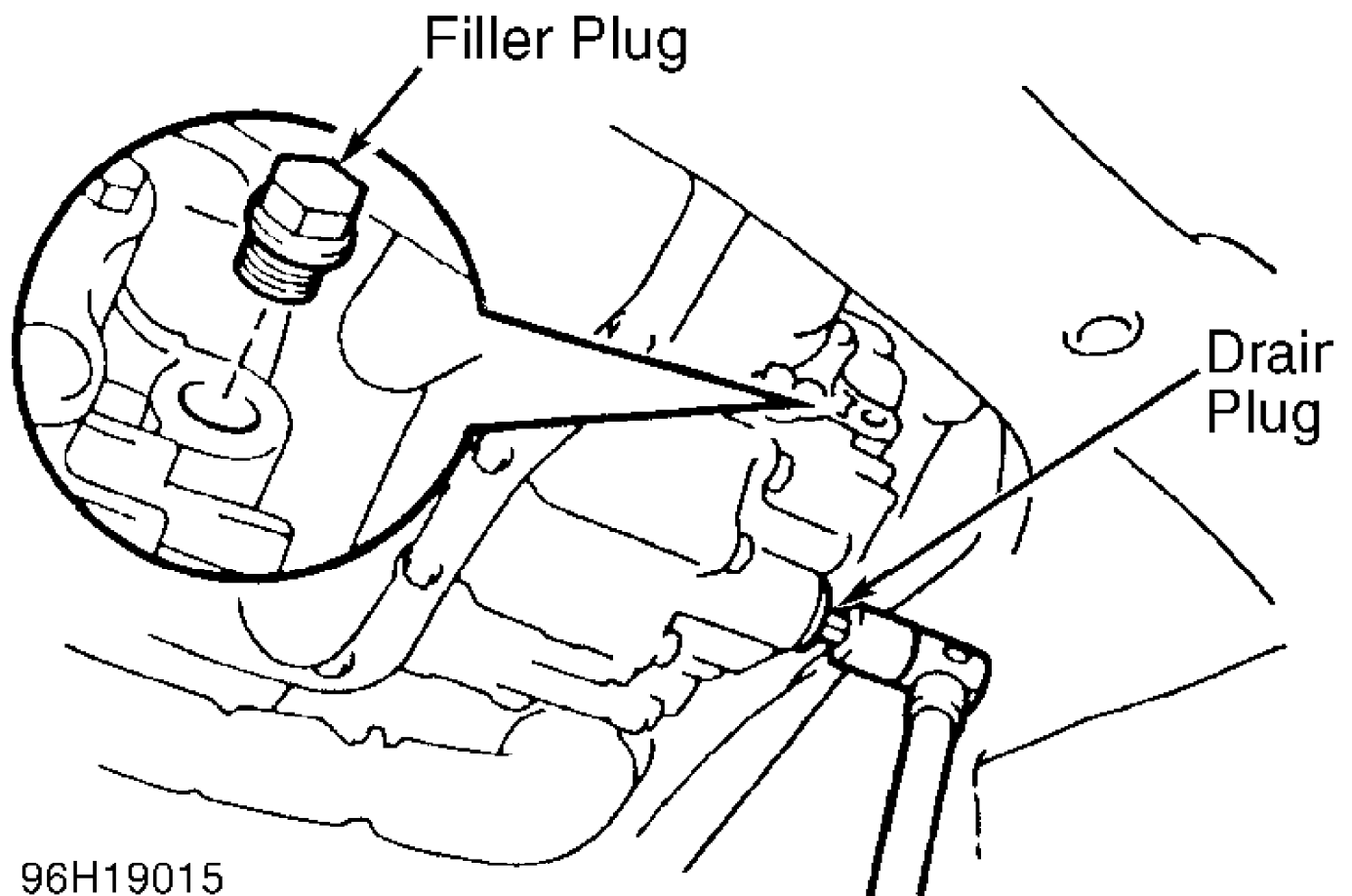
Transmission

1) Drive vehicle until engine and transmission reach normal operating temperature. Park vehicle on level surface and apply parking brake. With engine idling and brakes applied, move gearshift from Park through Low and back to Park.

2) Check fluid level on transmission dipstick. Fluid level should be in HOT range marked on dipstick. Add proper type of fluid if necessary. See RECOMMENDED FLUID. DO NOT overfill transmission.

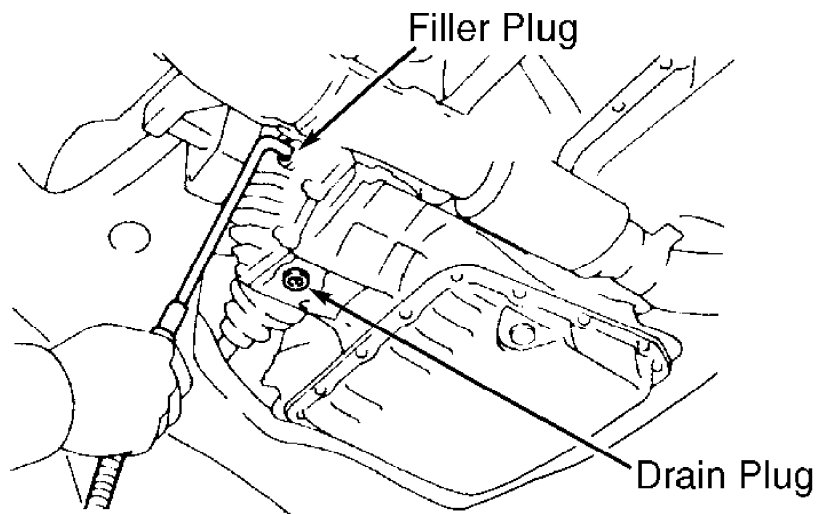
Transmission/Differential (Avalon, Camry, Celica 2.2L,
Corolla 1.6L & Tercel 3-Speed)

Remove filler plug. See Figs. 1-3. Fluid should be level with bottom edge of filler plug hole. If fluid is low, fill with proper type fluid until fluid is level with filler plug opening. See RECOMMENDED FLUID. Reinstall filler plug.



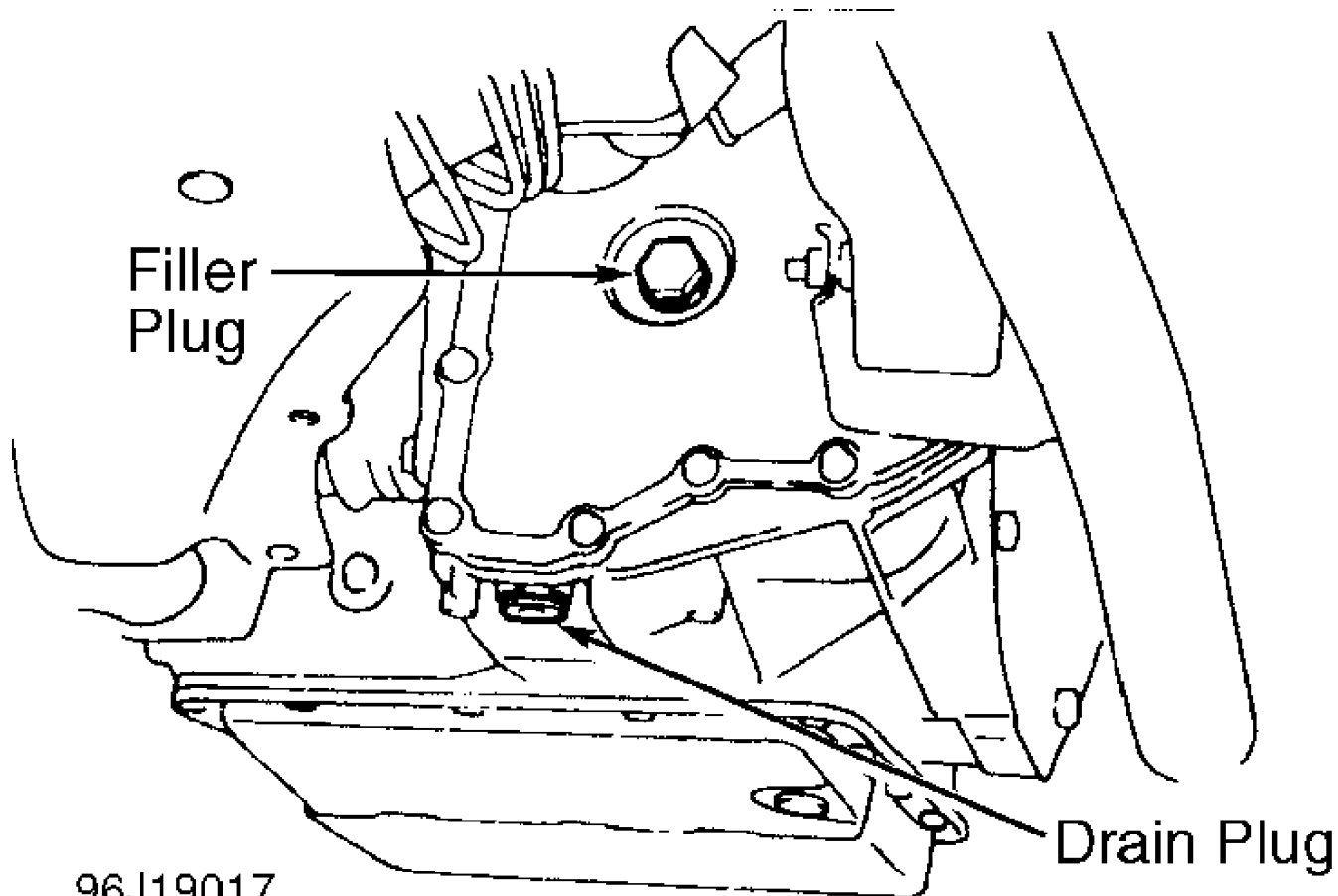
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Fig. 1: Identifying Transmission/Differential Drain & Filler Plugs - Avalon & Camry 3.0L V6
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 2: Identifying Transmission/Differential Drain & Filler Plugs - Camry 2.2L 4-Cyl. & Celica 2.2L (5S-FE)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 3: Identifying Transmission/Differential Drain & Filler Plugs - Corolla 1.6L (4A-FE) & Tercel 3-Speed
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Transfer Case (Land Cruiser, Previa, Tacoma, T100 & 4Runner)

Remove filler plug located on rear of transfer case. Fluid should be level with bottom edge of filler plug hole. If fluid is low, fill with proper type fluid until fluid is level with filler plug opening. See RECOMMENDED FLUID. Reinstall filler plug.

Transfer Case (RAV4)

Park vehicle on level surface and apply parking brake. Check fluid level on transfer case dipstick. Fluid level should be in the LOW to HIGH range. Add proper type of fluid if necessary. See RECOMMENDED FLUID. DO NOT overfill transfer case.

RECOMMENDED FLUID

For recommend fluid, see FLUID APPLICATION table. For fluid capacity, see TRANSMISSION REFILL CAPACITIES table under FLUID CAPACITIES.

FLUID APPLICATION

Application	Fluid Type
Transmission	
RAV4 4WD	Type "T" ATF
Supra	

Non-Turbo	Type "T"-IV ATF
Turbo	Type "T"-II ATF
All Others	Dexron-II Or Dexron-III ATF
Transmission/Differential	
Avalon, Camry, Celica 2.2L,	
Corolla 1.6L & Tercel 3-Speed	Dexron-II Or Dexron-III ATF
Transfer Case	
Land Cruiser, Previa, RAV4	
Tacoma, T100 & 4Runner	SAE 75W-90 GL-4 Or GL-5 Gear Oil

FLUID CAPACITIES

TRANSMISSION REFILL CAPACITIES (1)

Application	Refill Qts. (L)	Dry-Fill Qts. (L)
Avalon	3.7 (3.5)	7.1 (6.7)
Camry		
1997		
2.2L 4-Cyl.	2.6 (2.5)	5.9 (5.6)
3.0L V6 (1997)	3.7 (3.5)	7.1 (6.7)
1998		
2.2L 4-Cyl.	2.6 (2.5)	5.9 (5.6)
3.0L V6 (1998)	4.1 (3.9)	(2)
Celica		
1.8L	3.3 (3.1)	8.0 (7.6)
2.2L	2.6 (2.5)	5.9 (5.6)
Corolla		
1.6L	2.6 (2.5)	5.8 (5.5)
1.8L	3.3 (3.1)	8.0 (7.6)
Land Cruiser	2.0 (1.9)	12.4 (11.7)
Paseo	3.3 (3.1)	7.6 (7.2)
Prevvia	1.7 (1.6)	7.6 (7.2)
RAV4		
1997		
2WD	3.5 (3.3)	8.5 (8.0)
4WD	3.5 (3.3)	7.4 (7.0)
1998		
2WD	3.3 (3.1)	(2)
4WD	3.5 (3.3)	7.4 (7.0)
Sienna	3.7 (3.5)	(2)
Supra		
1997		
Non-Turbo	1.7 (1.6)	7.6 (7.2)
Turbo	2.0 (1.9)	8.7 (8.2)
1998	2.0 (1.9)	(2)
Tacoma		
2WD		
2.4L 4-Cyl.	2.5 (2.4)	6.9 (6.5)
3.4L V6	1.7 (1.6)	7.6 (7.2)
4WD	2.1 (2.0)	10.7 (10.1)
Tercel		
3-Speed	2.6 (2.5)	5.8 (5.5)
4-Speed	3.3 (3.1)	7.6 (7.2)
T100		
2WD	1.7 (1.6)	7.6 (7.2)
4WD	2.1 (2.0)	8.0 (7.6)
4Runner		
2WD	1.7 (1.6)	7.6 (7.2)
4WD	2.1 (2.0)	9.3 (8.8)

- (1) - Approximate capacity is listed.
 (2) - Information not available from manufacturer.

TRANSMISSION DIFFERENTIAL REFILL CAPACITIES (1)

Application	Qts. (L)
Avalon	1.0 (0.9)
Camry	
2.2L 4-Cyl.	1.7 (1.6)
3.0L V6	1.0 (0.9)
Celica 2.2L	1.7 (1.6)
Corolla 1.6L	1.5 (1.4)
Tercel 3-Speed	1.5 (1.4)

- (1) - Approximate capacity is listed.
-

TRANSFER CASE REFILL CAPACITIES (1)

Application	Qts. (L)
Land Cruiser	1.8 (1.7)
Previa	1.4 (1.3)
RAV4	0.8 (0.7)
Tacoma	1.1 (1.0)
T100	1.2 (1.1)
4Runner	1.1 (1.0)

- (1) - Approximate capacity is listed.
-

DRAINING & REFILLING

NOTE: All transmissions contain a transmission oil strainer mounted on the valve body. Manufacturer does list transmission oil strainer replacement when servicing the transmission. If servicing transmission oil strainer, oil pan removal is required.

Transmission

1) Remove transmission oil pan drain plug from transmission oil pan. Allow fluid to fully drain. If replacing transmission oil strainer, remove transmission oil pan and gasket.

CAUTION: When removing transmission oil strainer, note bolt size and length for reassembly reference.

2) Remove bolts, transmission oil strainer and gasket (if equipped). Thoroughly clean transmission oil pan. Using NEW gasket (if equipped), install transmission oil strainer. Install and tighten bolts to specification. See TORQUE SPECIFICATIONS.

3) Using NEW gasket, install transmission oil pan (if removed). Install and tighten bolts to specification See TORQUE SPECIFICATIONS. Fill transmission through dipstick tube to specified capacity using recommended fluid. See RECOMMENDED FLUID.

4) Ensure vehicle is on a level surface. Apply parking brake. Start engine and apply brakes. Move gearshift from Park through Low and back to Park.

5) Check fluid level on transmission dipstick. Add proper type fluid so fluid level is at the COOL range marked on the dipstick. Operate vehicle to normal operating temperature and recheck. See

CHECKING FLUID LEVEL.

Transmission Differential (Avalon, Camry, Celica 2.2L, Corolla 1.6L & Tercel 3-Speed)

1) Remove oil filler and drain plugs from differential. See Figs. 1-3. Allow fluid to drain. Reinstall drain plug.

2) Fill differential through oil filler plug hole to specified capacity using recommended fluid. See RECOMMENDED FLUID. Ensure fluid is level with bottom edge of filler plug hole. Reinstall filler plug.

Transfer Case (Land Cruiser, Previa, Tacoma, T100 & 4Runner)

1) Remove filler plug located on rear of transfer case. Remove drain plug from bottom of transfer case. Allow fluid to drain. Reinstall drain plug.

2) Fill transfer case through oil filler plug hole to specified capacity using recommended fluid. See RECOMMENDED FLUID. Ensure fluid is level with bottom edge of filler plug hole. Reinstall filler plug.

Transfer Case (RAV4)

1) Remove drain plug from bottom of transfer case. Allow fluid to drain. Reinstall drain plug. Fill transfer case through transfer case oil dipstick tube to specified capacity using recommended fluid. See RECOMMENDED FLUID.

2) Check fluid level on transfer case dipstick. Fluid level should be in the LOW to HIGH range. Add fluid if necessary. DO NOT overfill transfer case.

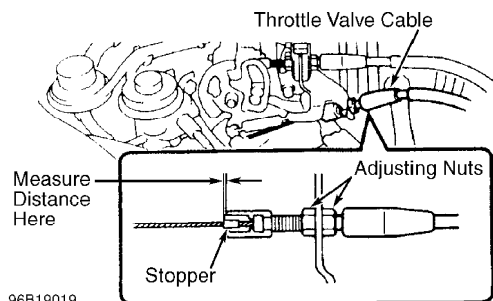
ADJUSTMENTS

THROTTLE VALVE CABLE

Avalon, Camry, Celica, Corolla 1.8L, Land Cruiser, Paseo, Previa, RAV4, Sienna, 1997 Supra Non-Turbo, Tacoma Except 2.4L, T100 & 4Runner

1) Ensure accelerator pedal is in released position and throttle valve is fully closed. Check that no slack exists in throttle valve cable at the throttle body. Measure distance between outer cable and the stopper on throttle valve cable. See Fig. 4.

2) Distance should be 0-.04" (0-1.0 mm). If distance is not within specification, loosen adjusting nuts on throttle valve cable. Tighten or loosen adjusting nuts until proper distance is obtained. Tighten adjusting nuts. Recheck distance once adjusting nuts are tightened.



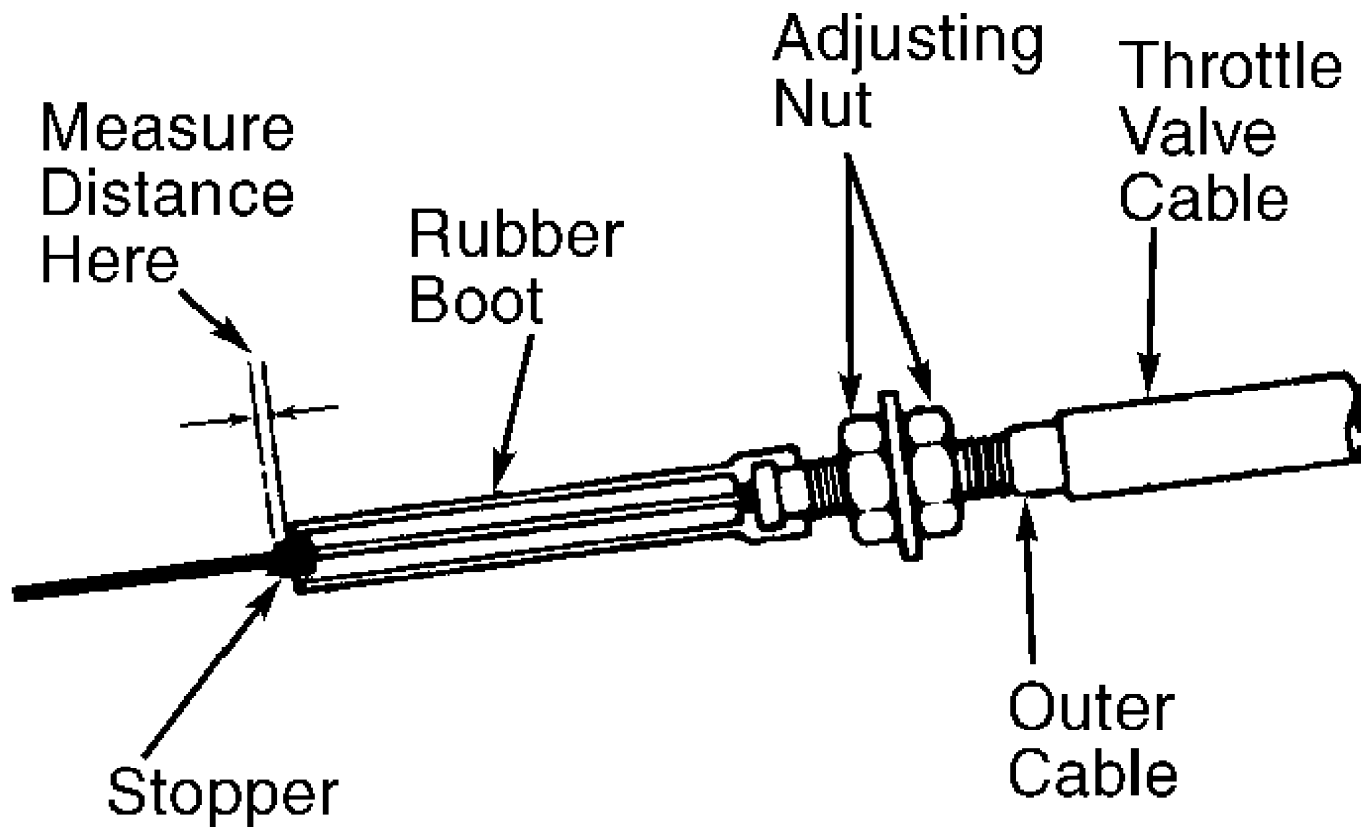
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Fig. 4: Measuring Distance On Typical Throttle Valve Cable (Avalon, Camry, Celica, Corolla 1.8L, Land Cruiser, Paseo, Previa, RAV4, 1997 Supra Non-Turbo, Tacoma Except 2.4L, T100 & 4Runner)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Corolla 1.6L, Tacoma 2.4L 4-Cyl. & Tercel

1) Fully depress accelerator pedal and ensure throttle valve is fully open. If throttle valve is fully open, go to step 2). If throttle valve is not fully open, adjust throttle linkage or cable so throttle valve is fully open and then go to step 2).

2) Ensure accelerator pedal is fully depressed. Loosen adjusting nuts on throttle valve cable. Adjust outer cable so distance between end of rubber boot and stopper on throttle valve cable is 0-.04" (0-1.0 mm). See Fig. 5. Tighten adjusting nuts. Recheck distance once adjusting nuts are tightened.



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Fig. 5: Measuring Distance On Throttle Valve Cable (Corolla 1.6L, Tacoma 2.4L 4-Cyl. & Tercel)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

GEARSHIFT LINKAGE

Land Cruiser

1) Apply parking brake. Loosen control rod nut on control rod at control shaft lever on side of transmission. See Fig. 6. Rotate control shaft lever fully counterclockwise toward rear of vehicle to the Park position.

2) Rotate control shaft lever clockwise 2 notches to Neutral position. Ensure gearshift is in Neutral. While holding control shaft lever lightly counterclockwise back toward the Reverse position, tighten control rod nut.

3) Start engine. Ensure vehicle moves forward when shifting gearshift from Neutral to Drive, and in reverse when shifting to Reverse.

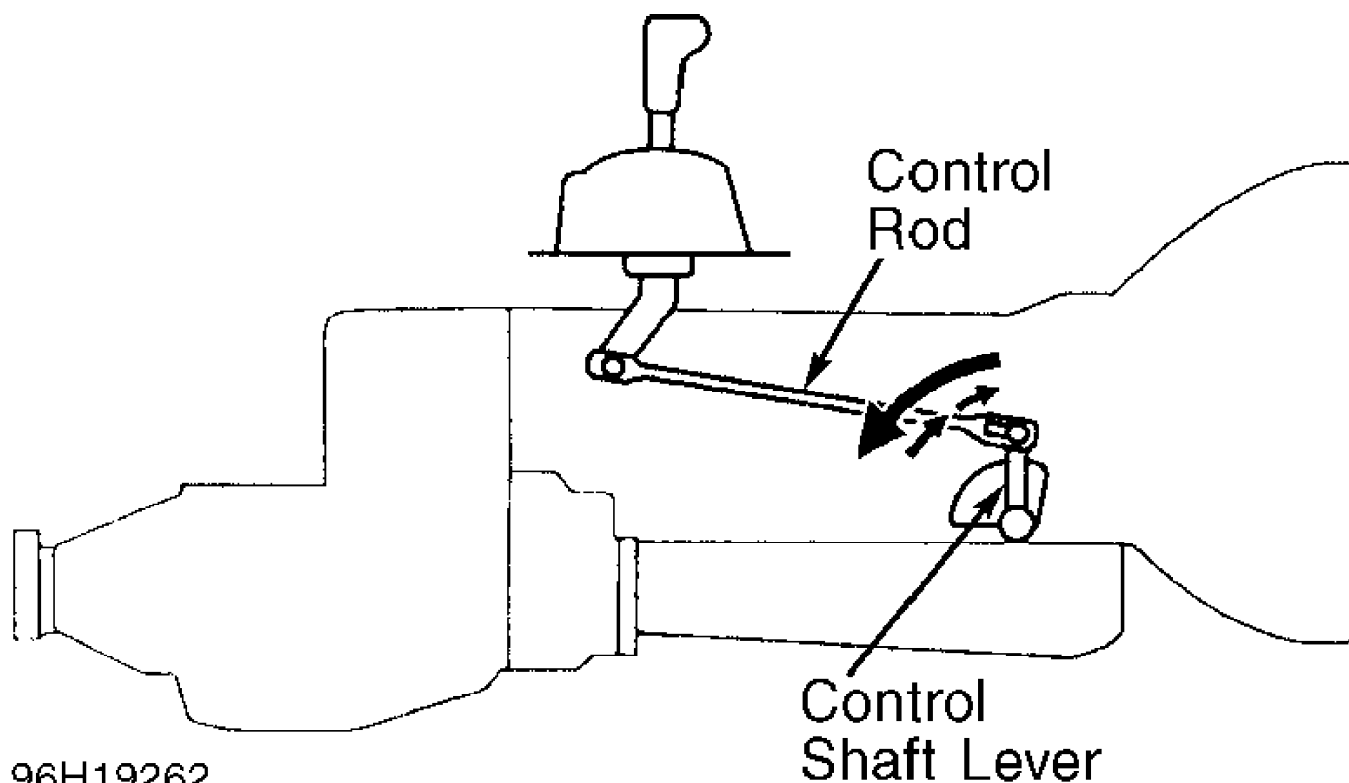


Fig. 6: Adjusting Shift Linkage (Land Cruiser)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

Supra, Tacoma With Floor Shift & 4Runner

1) Apply parking brake. Loosen nut for control rod at the gearshift. See Fig. 7. Pull control rod fully backward toward rear of vehicle to the Park position.

2) Push control rod forward 2 notches to the Neutral position. Ensure gearshift is in Neutral. Tighten nut for control rod at gearshift.

3) Start engine. Ensure vehicle moves forward when shifting gearshift from Neutral to Drive, and in reverse when shifting to Reverse.

T100

1) Apply parking brake. Remove control rod nut from control rod at bottom of steering column. See Fig. 8. Push control rod fully downward to the Park position.

2) Pull control rod upward 2 notches to the Neutral position. While holding gearshift lightly toward the Reverse position, tighten control rod nut.

3) Start engine. Ensure vehicle moves forward when shifting gearshift from Neutral to Drive, and in reverse when shifting to Reverse.

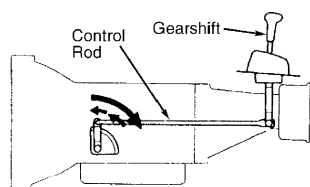
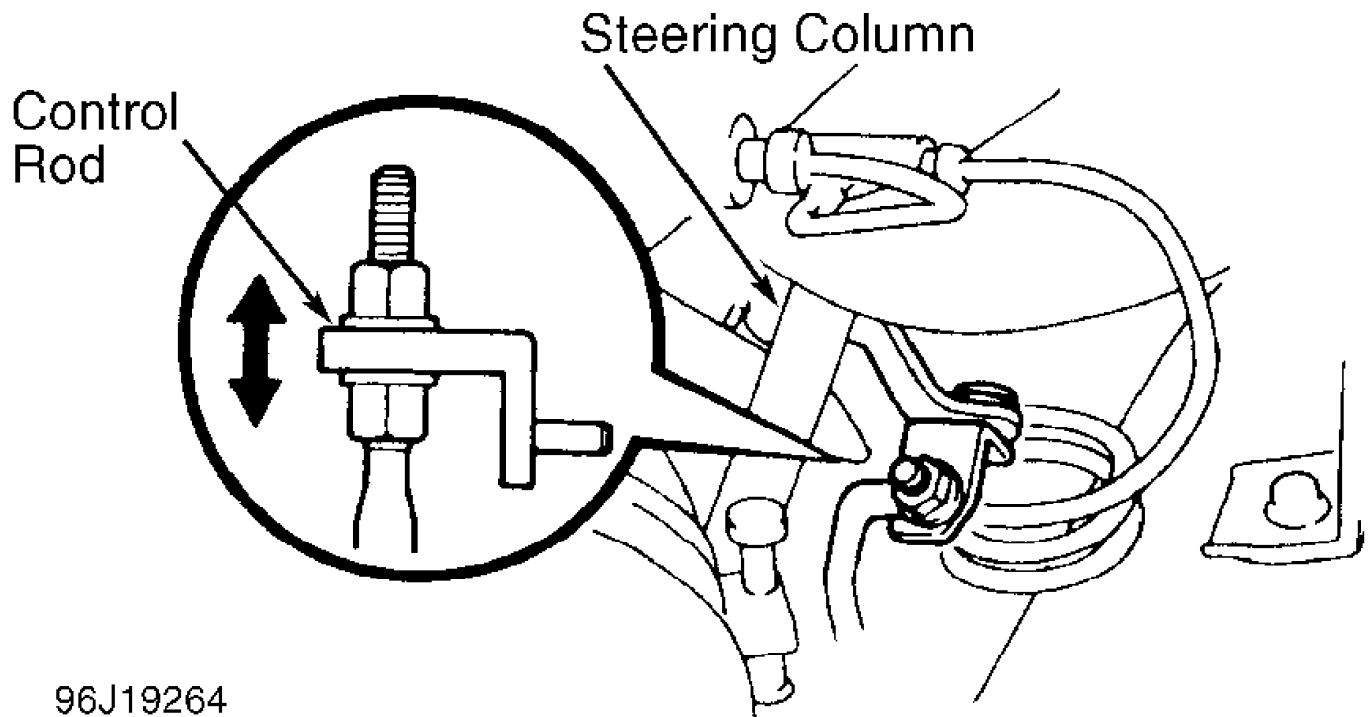


Fig. 7: Adjusting Typical Shift Linkage For Floor Shifts
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 8: Adjusting Typical Shift Linkage For Column Shifts
Courtesy of Toyota Motor Sales, U.S.A., Inc.

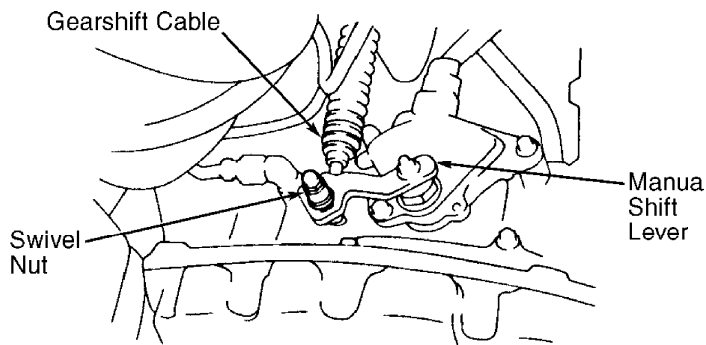
GEARSHIFT CABLE

Avalon, Camry, Celica, Corolla, Paseo, Previa, RAV4, Tercel

1) Apply parking brake. Loosen swivel nut on manual shift lever on side of transmission. See Fig. 9. Rotate manual shift lever counterclockwise (downward) toward the oil pan to the Park position.

2) Rotate manual shift lever clockwise (upward) 2 notches to Neutral position. Ensure gearshift is in Neutral. While holding manual shift lever slightly counterclockwise to Reverse position, tighten swivel nut.

3) Start engine. Ensure vehicle moves forward when shifting gearshift from Neutral to Drive, and moves in reverse when shifting to Reverse.



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Fig. 9: Adjusting Typical Gearshift Cable
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Sienna

Place shift lever in PARK. Turn ignition switch to LOCK.

Loosen bolts attaching cable housing. Adjust housing so brake pedal button touches pedal plate cushion. Tighten bolts to 72 INCH Lbs. (11 Nm). Ensure shift lever will move out of PARK position only when ignition is not in LOCK position and brake pedal is depressed.

Tacoma With Column Shift

1) Apply parking brake. Loosen swivel nut on manual shift lever on side of transmission. Rotate manual shift lever fully forward toward front of engine to Park position.

2) Rotate manual shift lever back toward rear of vehicle 2 notches to Neutral position. Ensure gearshift is in Neutral. While holding manual shift lever lightly toward the Reverse position, tighten swivel nut.

3) Start engine. Ensure vehicle moves forward when shifting gearshift from Neutral to Drive, and moves in reverse when shifting to Reverse.

PARK/NEUTRAL SWITCH

NOTE: Park/neutral switch may also be referred to as Park/Neutral Position (PNP) switch.

1) Loosen park/neutral switch retaining bolt(s). Position gearshift in Neutral. Align neutral line on park/neutral switch with groove on the shaft. See Fig. 10.

2) Hold park/neutral switch in this position and tighten retaining bolt to specification. Ensure vehicle only starts with gearshift in Park or Neutral.

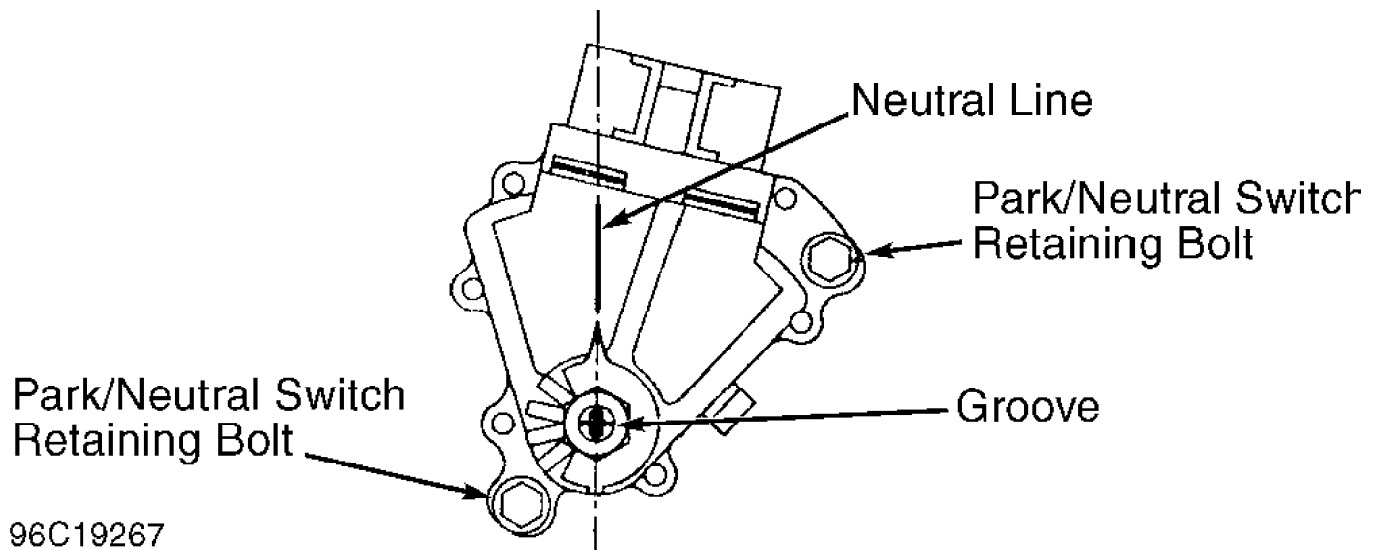


Fig. 10: Adjusting Park/Neutral Switch (Typical)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Transmission Oil Pan Drain Plug	
Avalon & Camry	36 (49)
Celica	
1.8L	13 (18)

2.2L	36 (49)
Corolla	
1.6L	36 (49)
1.8L	13 (18)
Land Cruiser	15 (20)
Paseo	13 (18)
Previa	15 (20)
RAV4	
2WD	13 (18)
4WD	36 (49)
Sienna	36 (49)
Supra	
Non-Turbo	15 (20)
Turbo	13 (18)
Tacoma	15 (20)
Tercel	
3-Speed	36 (49)
4-Speed	13 (18)
T100	15 (20)
4Runner	15 (20)

INCH Lbs. (N.m)

Park/Neutral Switch Retaining Bolt

Land Cruiser	115 (13.0)
Previa & Supra	115 (13.0)
Tacoma	
2WD 2.4L 4-Cyl.	48 (5.4)
All Others	115 (13.0)
T100 & 4Runner	115 (13.0)
All Others	48 (5.4)
Transmission Oil Pan Bolt	
Avalon & Camry	43 (4.9)
Celica	
1.8L	47 (5.3)
2.2L	43 (4.9)
Corolla	
1.6L	43 (4.9)
1.8L	47 (5.3)
Land Cruiser	65 (7.4)
Paseo	43 (4.9)
Previa	65 (7.4)
RAV4	43 (4.9)
Sienna	70 (7.9)
Supra	65 (7.4)
Tacoma	
2WD	
2.4L 4-Cyl.	48 (5.4)
All Others	65 (7.4)
4WD	65 (7.4)
Tercel	43 (4.9)
T100	65 (7.4)
4Runner	65 (7.4)

Transmission Oil Strainer Bolt

Avalon	97 (11.0)
Camry	
2.2L 4-Cyl.	89 (10.0)
3.0L V6	97 (11.0)
Celica, Corolla, Land Cruiser & Paseo	89 (10.0)
Previa	89 (10.0)
RAV4	
2WD	89 (10.0)
4WD	97 (11.0)

Sienna	97 (11.0)
Supra	89 (10.0)
Tacoma	
2WD	
2.4L 4-Cyl.	48 (5.4)
All Others	89 (10.0)
4WD	61 (6.9)
Tercel	89 (10.0)
T100	
1997	
2WD	48 (5.4)
4WD	61 (6.9)
1998	89 (10.0)
4Runner	89 (10.0)
