

# TRANSMISSION REMOVAL & INSTALLATION - AT

## 1998 Toyota Supra

1997-98 TRANSMISSION SERVICING  
Toyota Transmission Removal & Installation

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

### MANUAL

NOTE: For manual transmission/transaxle removal and installation procedures, see appropriate CLUTCHES article.

### AUTOMATIC

WARNING: Ensure negative battery cable is disconnected at least 90 seconds before working on vehicle to prevent air bag deployment.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle.

Removal (Avalon)

1) Disconnect negative battery cable. Remove battery, battery tray, air cleaner assembly and air cleaner case. Disconnect throttle valve cable from throttle body. Remove cruise control actuator with mounting bracket.

2) Raise and support vehicle. Disconnect necessary electrical connectors and ground cables for transaxle removal. Disconnect shift cable and oil cooler lines at transaxle. Remove shift cable clamp bracket from transaxle.

3) Remove front (radiator side) engine mount shock absorber-to-lower frame assembly bolts. Remove front (radiator side) engine mount-to-lower frame assembly bolts/nuts. Remove starter.

4) Remove front (radiator side) exhaust manifold brace from rear of exhaust manifolds. Brace fits between rear of exhaust manifold and front of transaxle.

5) Remove upper transaxle-to-cylinder block bolts. Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

6) Remove front wheels. Remove front exhaust pipe located between exhaust manifolds and rear exhaust pipe. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

7) Disconnect shift control cable from mounting bracket. Remove rear (firewall side) engine mount-to-lower frame assembly bolts/nuts. Remove transaxle mount-to-transaxle bolts at driver's side end of transaxle.

8) Remove stabilizer bar mount bracket-to-lower frame assembly bolts. Remove steering gear assembly-to-lower frame assembly bolts/nuts. Support lower frame assembly with floor jack. Lower frame assembly is located below the engine and transaxle.

9) Disconnect power steering reservoir pipe mounting brackets from lower frame assembly. Remove bolts for each fender liner from lower frame assembly. Remove lower frame assembly mounting brackets. Lower frame assembly mounting brackets are located on the front and

rear of lower frame assembly attaching the lower frame assembly to the body. Remove lower frame assembly.

10) Support transaxle with transmission jack. Remove torque converter cover from front of transaxle. Remove torque converter bolts. Remove remaining exhaust manifold support brace. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

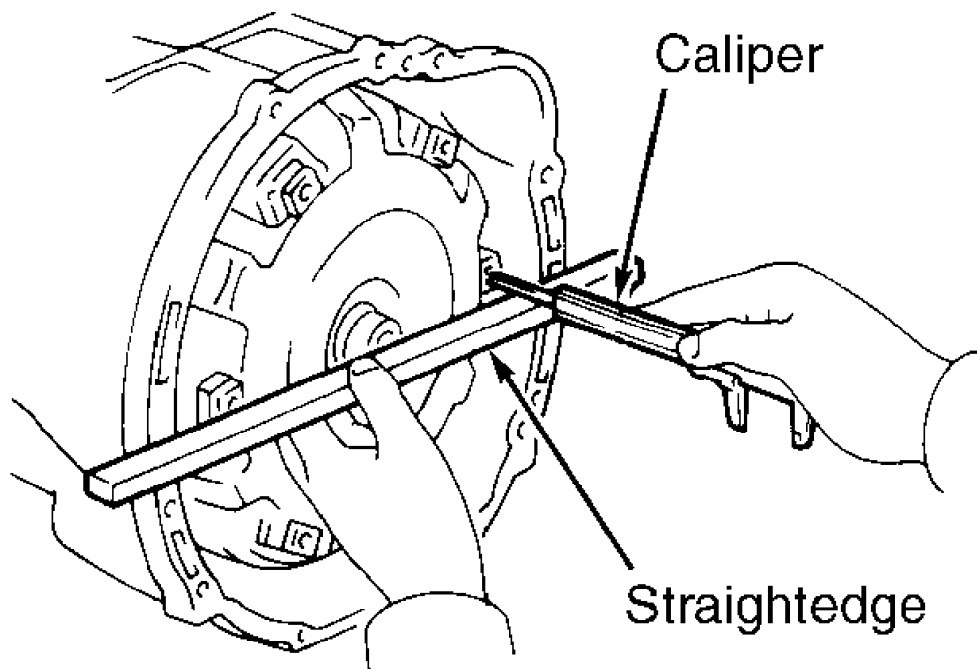
1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .539" (13.70 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Dark Green (1997 models) or Black (1998 models) torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.



**96D19268**

Fig. 1: Measuring Typical Torque Converter Depth  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Removal (Camry 2.2L 4-Cyl.)

1) Disconnect negative battery cable. Remove battery and

battery tray. Remove air cleaner assembly and air cleaner case. Disconnect throttle valve cable from throttle body. Remove cover from cruise control actuator (if equipped). Disconnect electrical connector at cruise control actuator.

2) Raise and support vehicle. Disconnect necessary electrical connectors and ground cables for transaxle removal. Disconnect shift cable and oil cooler lines at transaxle. Remove starter.

3) Remove front (radiator side) engine mount-to-lower frame assembly bolts/nuts. Remove bolts and separate power steering pipe from lower frame assembly.

4) Remove the 3 upper transaxle-to-cylinder block bolts. Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

5) Remove front exhaust pipe located between exhaust manifold and rear exhaust pipe. Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

6) Remove rear (firewall side) engine mount-to-lower frame assembly nuts. Remove transaxle mount-to-transaxle bolts at driver's side end of transaxle.

7) Remove stabilizer bar mount bracket-to-lower frame assembly bolts. Remove steering gear assembly-to-lower frame assembly bolts/nuts. Support lower frame assembly with floor jack. Lower frame assembly is located below the engine and transaxle.

8) Remove bolts for each fender liner from lower frame assembly. Remove lower frame assembly mounting brackets. Lower frame assembly mounting brackets are located on the front and rear of lower frame assembly attaching the lower frame assembly to the body. Remove lower frame assembly.

9) Remove stiffener plates located on each side of cylinder block. Stiffener plate fits between side of cylinder block and front of transaxle. Support transaxle with transmission jack.

10) Remove torque converter cover from front of transaxle. Remove Black torque converter bolt first and then the remaining torque converter bolts. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .510" (13.00 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Black torque converter bolt is installed first before installing the remaining torque converter bolts. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Camry 3.0L V6)

1) Disconnect negative battery cable. Remove battery, air cleaner assembly and air cleaner case. Disconnect throttle valve cable

from throttle body. Remove cruise control actuator with mounting bracket from the body.

2) Raise and support vehicle. Disconnect necessary electrical connectors and ground cables for transaxle removal. Disconnect shift cable and oil cooler lines at transaxle. Remove shift cable clamp bracket from transaxle.

3) Remove front (radiator side) engine mount shock absorber-to-lower frame assembly bolts. Remove front (radiator side) engine mount-to-lower frame assembly bolts/nuts. Remove starter.

4) Remove the 5 upper transaxle-to-cylinder block bolts. Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

5) Remove front wheels. Remove front exhaust pipe located between exhaust manifolds and rear exhaust pipe. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

6) Remove rear (firewall side) engine mount-to-lower frame assembly bolts/nuts. Remove transaxle mount-to-transaxle bolts at driver's side end of transaxle.

7) Remove stabilizer bar mount bracket-to-lower frame assembly bolts. Remove steering gear assembly-to-lower frame assembly bolts/nuts. Support lower frame assembly with floor jack. Lower frame assembly is located below the engine and transaxle.

8) Remove bolts for each fender liner from lower frame assembly. Remove lower frame assembly mounting brackets. Lower frame assembly mounting brackets are located on the front and rear of lower frame assembly attaching the lower frame assembly to the body. Remove lower frame assembly.

9) Support transaxle with transmission jack. Remove torque converter cover from front of transaxle. Remove torque converter bolts. Remove exhaust manifold support brace from rear of exhaust manifold. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .539" (13.70 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Black torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Use NEW gaskets when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Celica 1.8L 7A-FE)

1) Disconnect negative battery cable. Remove transaxle oil dipstick and battery. Disconnect throttle cable valve from throttle body. Remove air cleaner assembly. Remove transaxle-to-mount nut from

top of transaxle at driver's side end of transaxle.

2) Remove throttle valve cable mounting bracket and wiring harness clamp bolts from top of transaxle. Remove upper mounting bolt from starter. Remove the 2 upper transaxle-to-cylinder block bolts located at top of transaxle.

3) Remove transaxle oil dipstick tube and "O" ring from transaxle. Raise and support vehicle. Remove lower engine covers. Disconnect necessary electrical connectors and ground cables for transaxle removal. Disconnect oil cooler lines for transaxle.

4) Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

5) Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

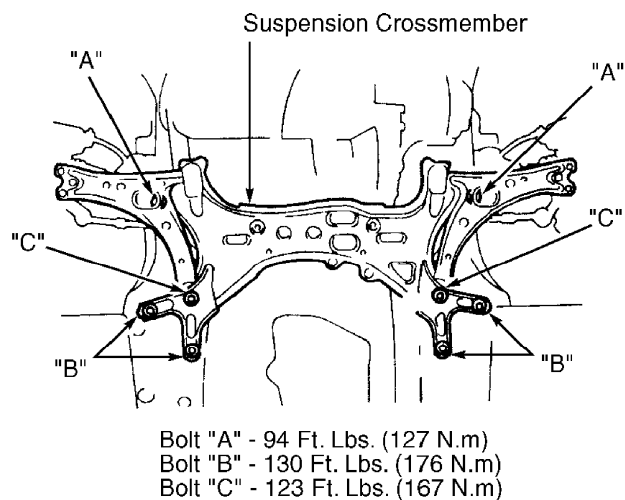
6) Support transaxle with transmission jack. Remove rear (firewall side) engine mount through-bolt. Remove front exhaust pipe-to-front exhaust pipe support bracket bolts. Front exhaust pipe is located between exhaust manifold and rear exhaust pipe. Remove front exhaust pipe support bracket located between front exhaust pipe and front suspension crossmember.

7) Remove steering gear assembly-to-suspension crossmember bolts. Remove front exhaust pipe. Remove shift cable brackets and the A/C pipe from suspension crossmember. Suspension crossmember is located below the engine and fits between both lower control arms. See Fig. 2.

8) Remove engine mount crossmember located below the oil pan. Engine mount crossmember holds the front and rear engine mounts, and is bolted to the body and suspension crossmember.

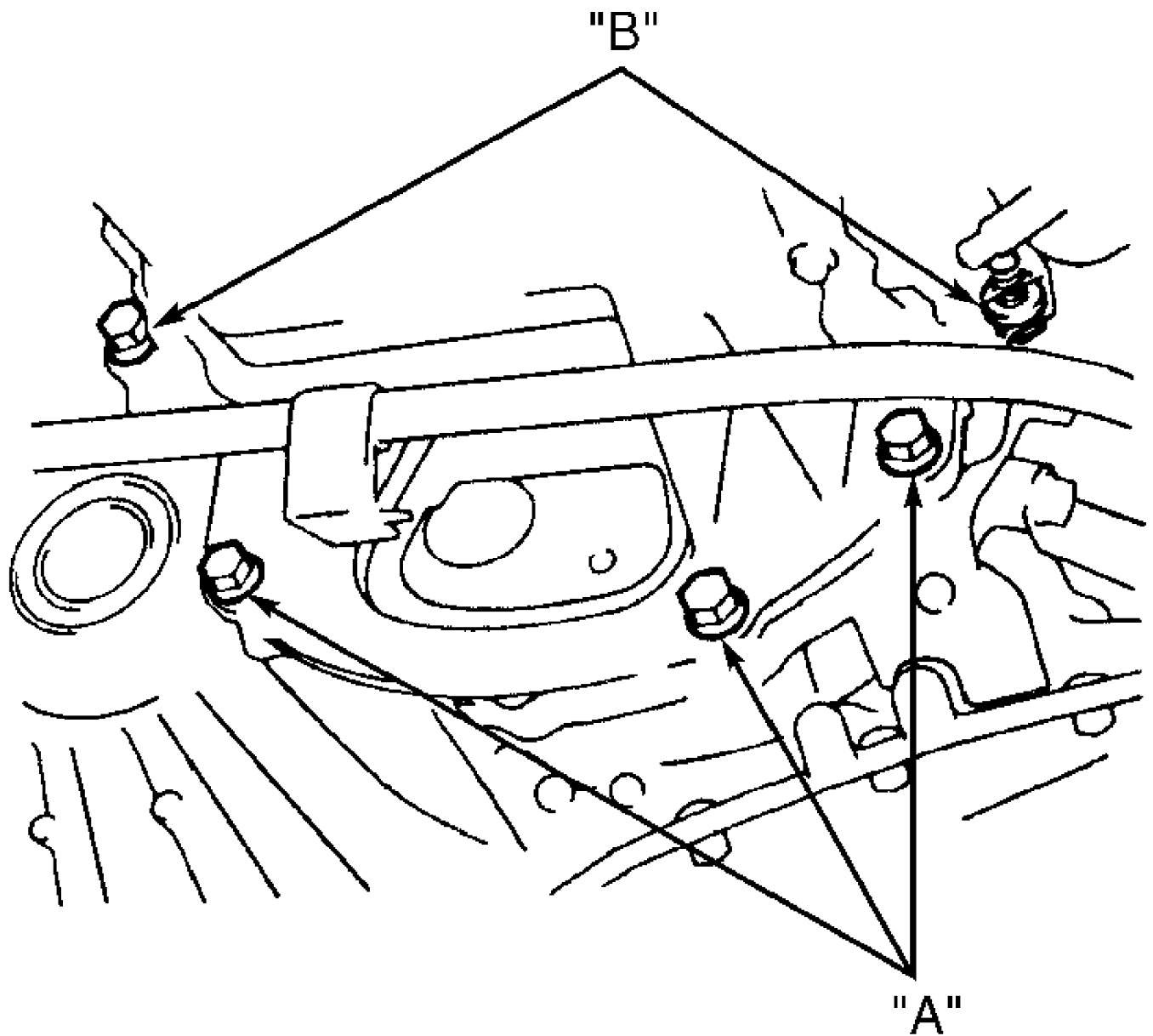
9) Support suspension crossmember with floor jack. Remove suspension crossmember bolts. See Fig. 2. Remove suspension crossmember. Remove starter. Disconnect shift cable and electrical connectors at transaxle.

10) Remove torque converter cover from front of transaxle. Remove torque converter bolts. Remove transaxle-to-mount bolts from top of transaxle at driver's side end of transaxle. Remove the 5 lower transaxle-to-cylinder block bolts. See Fig. 3. Lower transaxle from vehicle.



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Fig. 2: Identifying Suspension Crossmember, Bolt Locations & Bolt Tightening Specifications (Celica 1.8L 7A-FE)  
Courtesy of Toyota Motor Sales, U.S.A., Inc.



Bolt "A" - 17 Ft. Lbs. (23 N.m)  
Bolt "B" - 34 Ft. Lbs. (46 N.m)

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Fig. 3: Identifying Lower Transaxle Bolts & Bolt Tightening  
Specifications (Celica 1.8L 7A-FE)  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .898" (22.80 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. Tighten lower transaxle bolts to specification. See Fig. 3.

5) When installing suspension crossmember, ensure all bolts and nuts are tightened to specification. See Fig. 2.

6) When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Gray torque converter bolt is installed first before installing the remaining torque converter bolts.

7) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Celica 2.2L 5S-FE)

1) Disconnect negative battery cable. Remove battery. Disconnect throttle valve cable from throttle body. Remove cruise control actuator (if equipped). Remove air cleaner assembly.

2) Remove transaxle-to-mount bolts/nuts from top of transaxle at driver's side end of transaxle. Remove starter. Disconnect necessary ground cables and electrical connectors at transaxle.

3) Remove the 3 upper transaxle-to-cylinder block bolts located at top of transaxle. Disconnect oil cooler lines for transaxle. Raise and support vehicle. Remove lower engine covers.

4) Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

5) Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

6) Support transaxle with transmission jack. Disconnect shift cable at transaxle. Remove rear (firewall side) engine mount through-bolt. Remove front exhaust pipe-to-front exhaust pipe support bracket bolts. Front exhaust pipe is located between exhaust manifold and rear exhaust pipe.

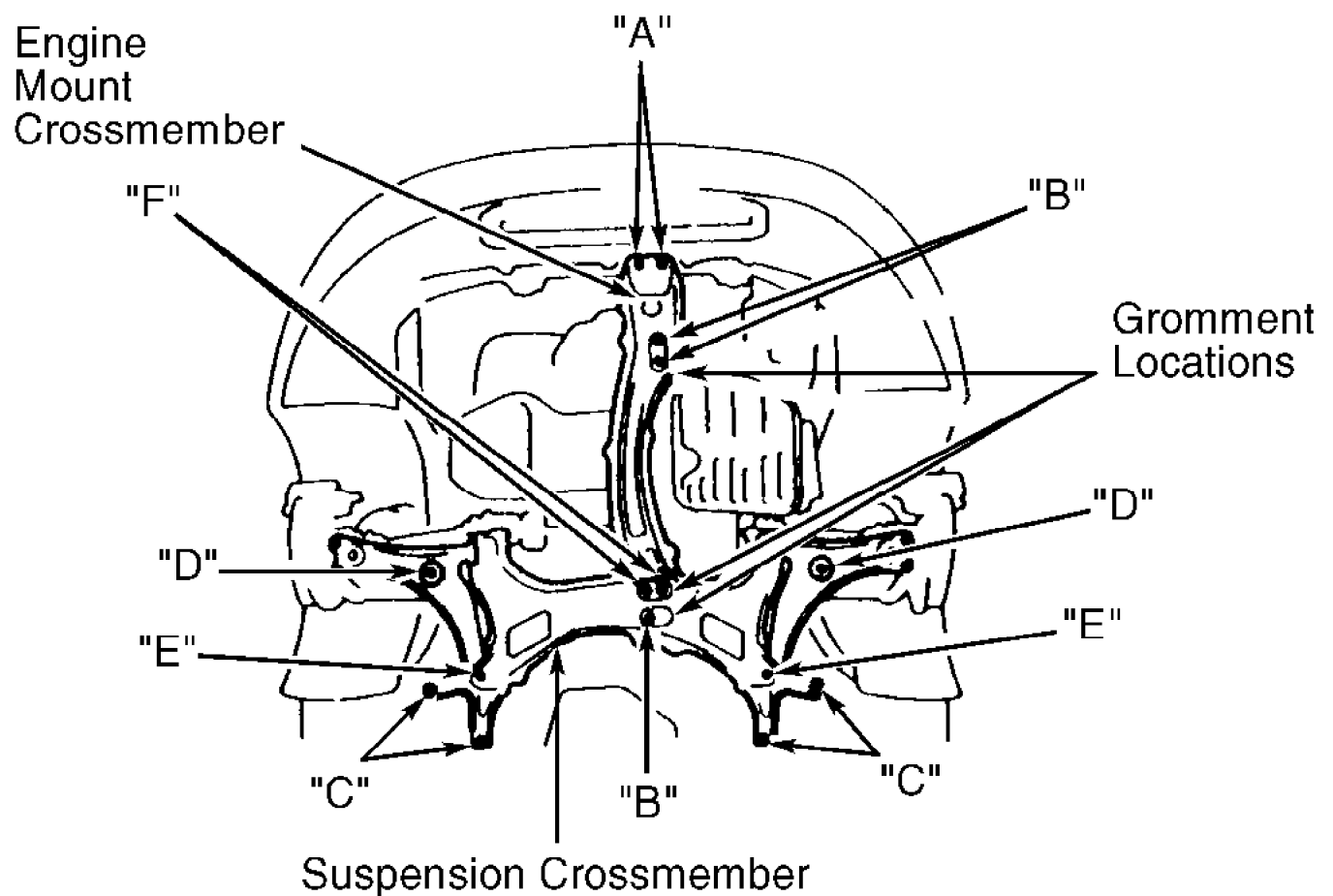
7) Remove front exhaust pipe support bracket located between front exhaust pipe and front suspension crossmember. Remove front exhaust pipe.

8) Remove shift cable brackets and A/C pipe from suspension crossmember. Suspension crossmember is located below the engine and fits between both lower control arms. See Fig. 4. Remove steering gear assembly-to-suspension crossmember bolts.

9) Support suspension crossmember with floor jack. Remove grommets, engine mount crossmember and suspension crossmember. See Fig. 4.

10) Remove intake manifold brace located at bottom of intake manifold and stiffener plate. Remove stiffener plate. Stiffener plate wraps around rear of oil pan and fits between sides of cylinder block and front of transaxle.

11) Remove torque converter bolts. Remove 3 lower transaxle-to-cylinder block bolts. Lower transaxle from vehicle.



Bolt "A" - 35 Ft. Lbs. (26 N.m)  
 Bolt "B" - 59 Ft. Lbs. (80 N.m)  
 Bolt "C" - 130 Ft. Lbs. (176 N.m)  
 Bolt "D" - 94 Ft. Lbs. (127 N.m)  
 Bolt "E" - 123 Ft. Lbs. (167 N.m)  
 Nut "F" - 59 Ft. Lbs. (80 N.m)

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Fig. 4: Identifying Engine Mount Crossmember, Suspension Crossmember & Bolt Tightening Specifications (Celica 2.2L 5S-FE)  
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .512" (13.00



mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Gray torque converter bolt is installed first before installing the remaining torque converter bolts.

5) When installing suspension crossmember and engine mount crossmember, ensure all bolts and nuts are installed before tightening to specification. See Fig. 4.

6) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Corolla)

1) Disconnect negative battery cable. Remove battery and battery tray. Remove transaxle oil dipstick. Remove coolant reservoir tank for access to transaxle (if necessary). Disconnect throttle valve cable from throttle body. On 1.8L (7A-FE), remove air cleaner assembly.

2) On all models, remove transaxle mount assembly and brace located on top of transaxle at driver's side end of transaxle. Remove throttle valve cable mounting bracket and wiring harness clamp bolts from top of transaxle. Remove upper mounting bolt from starter. Remove the 2 upper transaxle-to-cylinder block bolts located at top of transaxle.

3) Raise and support vehicle. Remove lower engine covers. Disconnect necessary electrical connectors and ground cables for transaxle removal.

4) Support engine with hoist. Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

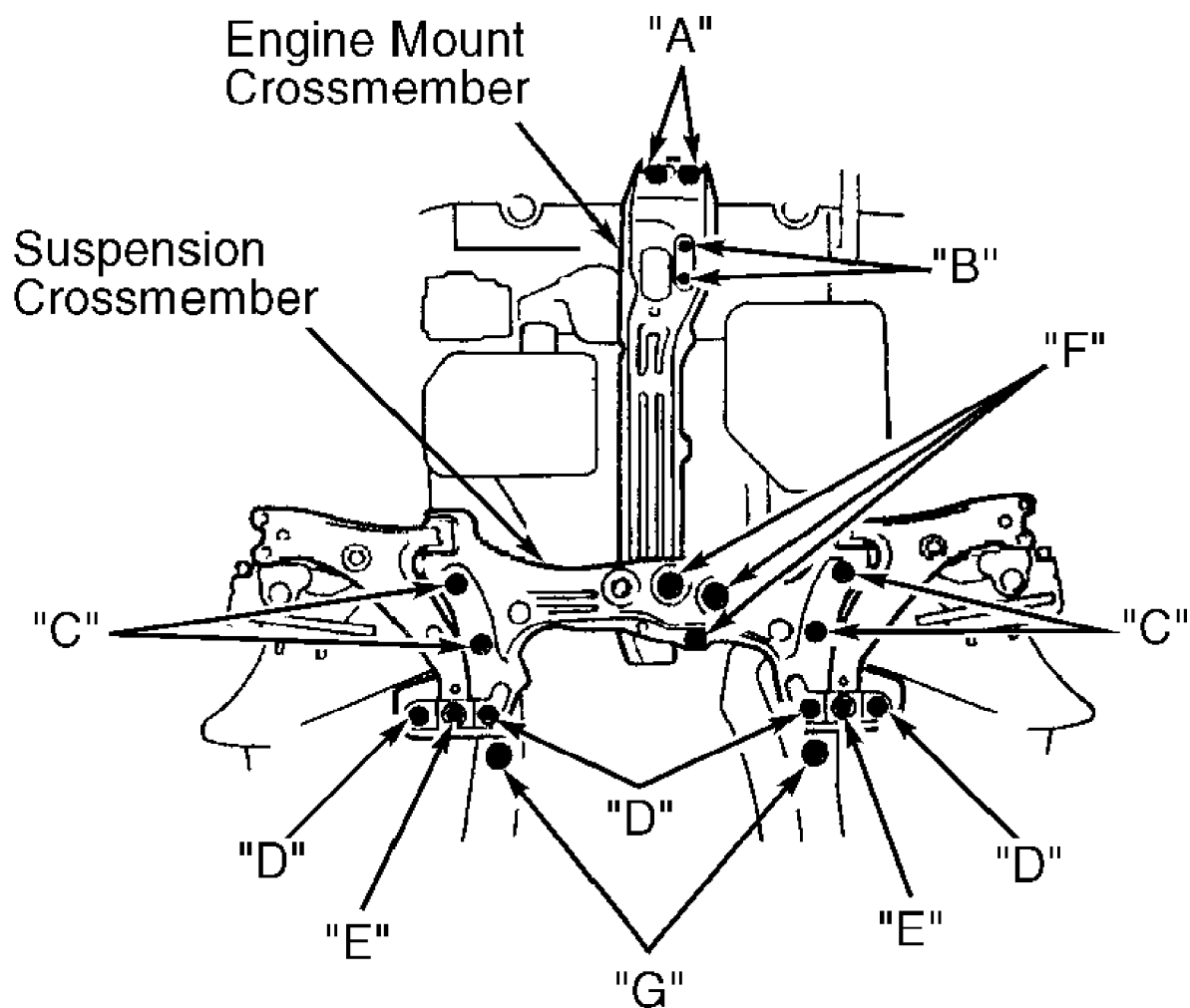
5) Support transaxle with transmission jack. Remove front exhaust pipe-to-front exhaust pipe support bracket bolts. Remove front exhaust pipe support bracket located between front exhaust pipe and front suspension crossmember. Front exhaust pipe is located between exhaust manifold and rear exhaust pipe.

6) Remove front exhaust pipe. Support suspension crossmember with floor jack. Suspension crossmember is located below the engine and fits between both lower control arms. See Fig. 5.

7) Remove grommets, engine mount crossmember and suspension crossmember. See Fig. 5. Remove starter. Disconnect shift cable and electrical connectors at transaxle. Disconnect oil cooler lines as necessary.

8) Remove transaxle oil dipstick tube from transaxle. On 1.6L (4A-FE), remove bolts and stiffener plate. Stiffener plate wraps around rear of oil pan and fits between sides of cylinder block and front of transaxle.

9) On all models, remove torque converter cover from front of transaxle. Remove torque converter bolts. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.



Bolt "A" - 45 Ft. Lbs. (61 N.m)  
 Bolt "B" - 47 Ft. Lbs. (64 N.m)  
 Bolt "C" - 167 Ft. Lbs. (225 N.m)  
 Bolt "D" - 109 Ft. Lbs. (148 N.m)  
 Bolt "E" - 129 Ft. Lbs. (175 N.m)  
 Nut "F" - 42 Ft. Lbs. (57 N.m)  
 Bolt "G" (1.8L 7A-FE) - 37 Ft. Lbs. (51 N.m)

**NOTE: Always install NEW bolt "E".**

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Fig. 5: Identifying Engine Mount Crossmember, Suspension Crossmember & Bolt Tightening Specifications (Corolla)  
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

Installation

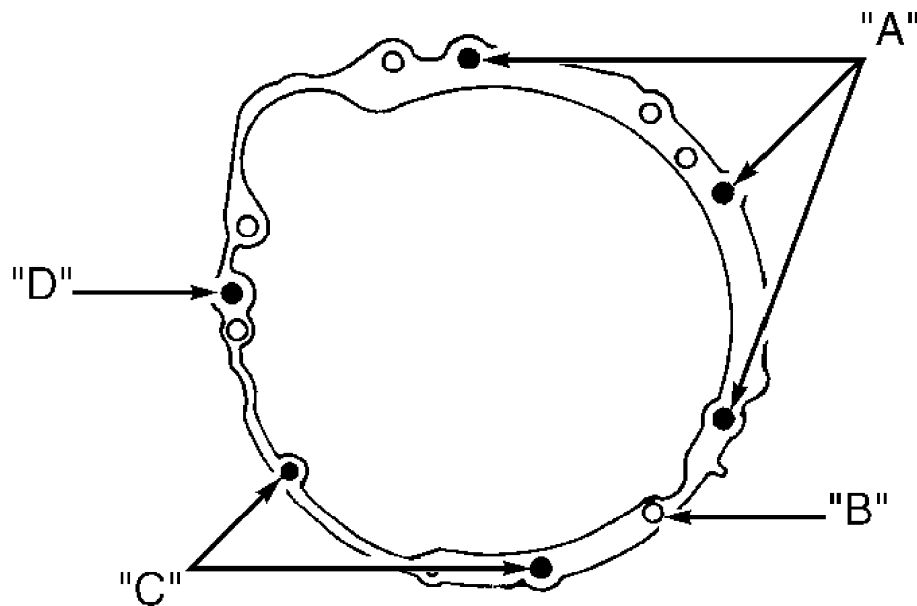
1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth on models with 1.6L (4A-FE) should be more than .906" (23.00 mm) for 1997 models or more than .528" (13.4 mm) for 1998 models. Torque converter depth on models with 1.8L (7A-FE) should be more than .898" (22.80 mm) for 1997 models or more than .528" (13.4 mm) for 1998 models. On all models, if torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. On 1.8L (7A-FE), for transaxle-to-cylinder block bolt tightening specifications, see Fig. 6.

5) On all models, when installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.



Bolt "A" - 47 Ft. Lbs. (64 N.m)  
Bolt "B" - 18 Ft. Lbs. (24 N.m)  
Bolt "C" - 17 Ft. Lbs. (23 N.m)  
Bolt "D" - 34 Ft. Lbs. (46 N.m)

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Fig. 6: Identifying Transaxle-To-Cylinder Block Bolt Tightening Specifications (Corolla 1.8L 7A-FE)  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

1) Disconnect negative battery cable. Remove battery and battery tray. Remove fan shroud bolts from top of radiator to prevent damage to cooling fan.

2) Remove throttle valve cable from mounting bracket and throttle linkage. Remove upper starter bolt. Disconnect transfer case shift linkage at transfer case. Disconnect transmission shift linkage at control rod on transmission. Remove knob from transfer case shift lever.

3) Remove screws from each side of center console located around transmission and transfer case shift levers. Remove center console. Remove shift boot from transfer case shift lever.

4) Remove bolts and center console box located between the seats. Disconnect electrical connectors at transmission shift lever assembly for removal of transmission shift lever assembly.

5) Remove bolts and transmission shift lever assembly from top of transmission. Remove bolts, transfer case shift lever assembly and cushions. Cushions are located between transfer case shift lever assembly and the transfer case.

6) Raise and support vehicle. Disconnect necessary electrical connectors and hoses for transmission and transfer case removal. Place reference marks on drive shaft flanges for reassembly reference. Remove bolts and all drive shafts.

7) Remove transmission oil dipstick, dipstick tube and "O" ring. Loosen oil cooler lines at side of transmission. Remove stabilizer bar-to-frame mounting bracket bolts at each end of stabilizer bar. Remove lower engine cover.

8) Remove plug on front of transmission for access to torque converter bolts. Remove torque converter bolts. Remove support brackets and front exhaust pipe with front catalytic converter and gasket. Front exhaust pipe fits between exhaust manifolds and rear catalytic converter and exhaust pipe.

**CAUTION:** When lowering rear of transmission, use care not to damage cooling fan, brake booster and brake line.

9) Remove starter. Support transmission with transmission jack. Remove transmission crossmember located below the transmission. Lower rear of transmission. Separate wiring harness from transmission and transfer case.

10) Remove oil cooler line mounting bolts from torque converter housing. Disconnect oil cooler lines from side of transmission. Remove transmission-to-cylinder block bolts. Lower transmission with transfer case from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than .618" (15.70 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Gray torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables, shift linkages and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Land Cruiser 1998)

1) Disconnect negative battery cable. Remove battery and battery tray. Remove serpentine belt, fan and fan clutch, fan shroud and radiator. Remove transmission dipstick. Remove dipstick tube upper bolt. Disconnect 2 bleeder hoses.

2) Remove knob from transfer case shift lever. Remove upper console panel. Remove 4 boots to transfer shift lever boot and remove shift lever boot. Raise and support vehicle. Remove 2 lower engine covers. Remove exhaust pipes as necessary. Place reference marks on drive shaft flanges for reassembly reference. Remove bolts and all drive shafts.

3) Remove dipstick tube lower bolt. Remove dipstick tube and "O" ring. Remove nut and plate washer, and disconnect transmission shift control rod. Remove clip, plate washer and collar, and disconnect transfer shift lever rod assembly. Disconnect all necessary electrical connectors for transmission and transfer case removal. Remove 2 bolts and cover from front of transmission for access to torque converter bolts. Remove torque converter bolts. Remove oil cooler pipe union nuts and pipe bracket bolt from transmission.

4) Support transmission with transmission jack. Remove 8 bolts and 2 nuts from crossmember and remove crossmember. Lower rear of transmission. Remove transmission wire clamp bolt. Remove 10 transmission-to-cylinder block bolts. Lower transmission with transfer case from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than .673" (17.10 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Install NEW "O" ring on dipstick tube. Use NEW gaskets and NEW nuts when installing front exhaust pipe. Fill cooling system and check for leaks. Adjust shift linkages and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Paseo)

1) Disconnect negative battery cable. Remove transaxle oil dipstick. Disconnect throttle valve cable from throttle body. Remove air cleaner assembly along with air intake duct to air cleaner.

2) Remove upper bolt from starter. Remove the 2 upper transaxle-to-cylinder block bolts located at top of transaxle. Raise and support vehicle. Remove lower engine covers.

3) Support engine with hoist. Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

4) Disconnect necessary electrical connectors, ground cables,

speedometer cable, control cables and oil cooler lines for transaxle removal. Remove the 2 vertical bottom bolts from front (radiator side) transaxle mount.

5) Remove intake manifold brace for access to starter. Remove starter. Support transaxle with transmission jack.

6) Remove stabilizer bar and mounts for access to transaxle (if necessary). Remove transaxle bracket-to-rear (firewall side) transaxle mount assembly. Remove rear (firewall side) engine mount assembly (if necessary) for transaxle removal.

7) Remove plug from front of transaxle for access to torque converter bolts. Remove torque converter bolts. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

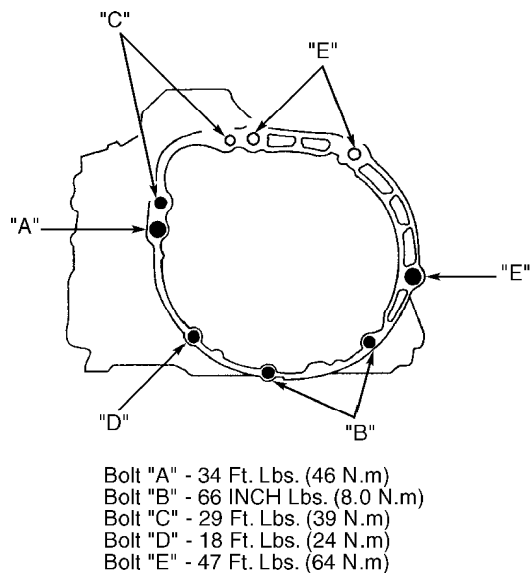
1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .528" (13.40 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS Tighten transaxle-to-cylinder block bolts to specification as indicated, see Fig. 7.

5) When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Gray torque converter bolt is installed first (if equipped) before installing the remaining torque converter bolts. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.



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Fig. 7: Identifying Transaxle-To-Cylinder Block Bolt Tightening Specifications (Paseo)

Courtesy of Toyota Motor Sales, U.S.A., Inc.

Removal (Previas)

1) Disconnect negative battery cable. Remove transmission oil dipstick. Disconnect throttle valve cable from throttle body. Raise and support vehicle.

2) Remove transmission oil dipstick tube and "O" ring. Place reference marks flanges on drive shaft(s) for reassembly reference. Remove drive shaft(s). Disconnect shift cable and necessary electrical connectors for transmission removal.

3) Remove starter. On 4WD models, remove front drive shaft bracket. This is the bracket that the front drive shaft center bearing assembly was bolted on.

4) On 2WD models, remove lower stiffener plate located between side of cylinder block and front of transmission. On 4WD models, remove transmission-to-cylinder block through-bolt located near bottom of transmission.

5) On all models, remove upper stiffener plate located just above the starter opening. Upper stiffener plate fits between cylinder block and front of transmission. Remove torque converter bolts.

6) Remove transmission oil cooler pipes and brackets as necessary. Remove exhaust pipe support bracket located between transmission and exhaust pipe. Support transmission with transmission jack.

7) Remove bolts/nuts from rear transmission mount. Remove transmission-to-cylinder block bolts. Lower transmission from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (RAV4 2WD)

1) Disconnect negative battery cable. Disconnect throttle valve cable from throttle body. Remove coolant reservoir tank. Remove air cleaner assembly. Remove ground cable.

2) Remove starter. Remove the 3 upper transaxle-to-cylinder block bolts located at top of transaxle. Raise and support vehicle. Remove lower engine covers.

3) Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

4) Remove transaxle-to-mount bolts/nuts from top of transaxle at driver's side end of transaxle.

5) Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

6) Remove front exhaust pipe located between exhaust manifold and rear exhaust pipe. Support transaxle with transmission jack. Disconnect shift cable, necessary electrical connectors and oil cooler hoses at transaxle.

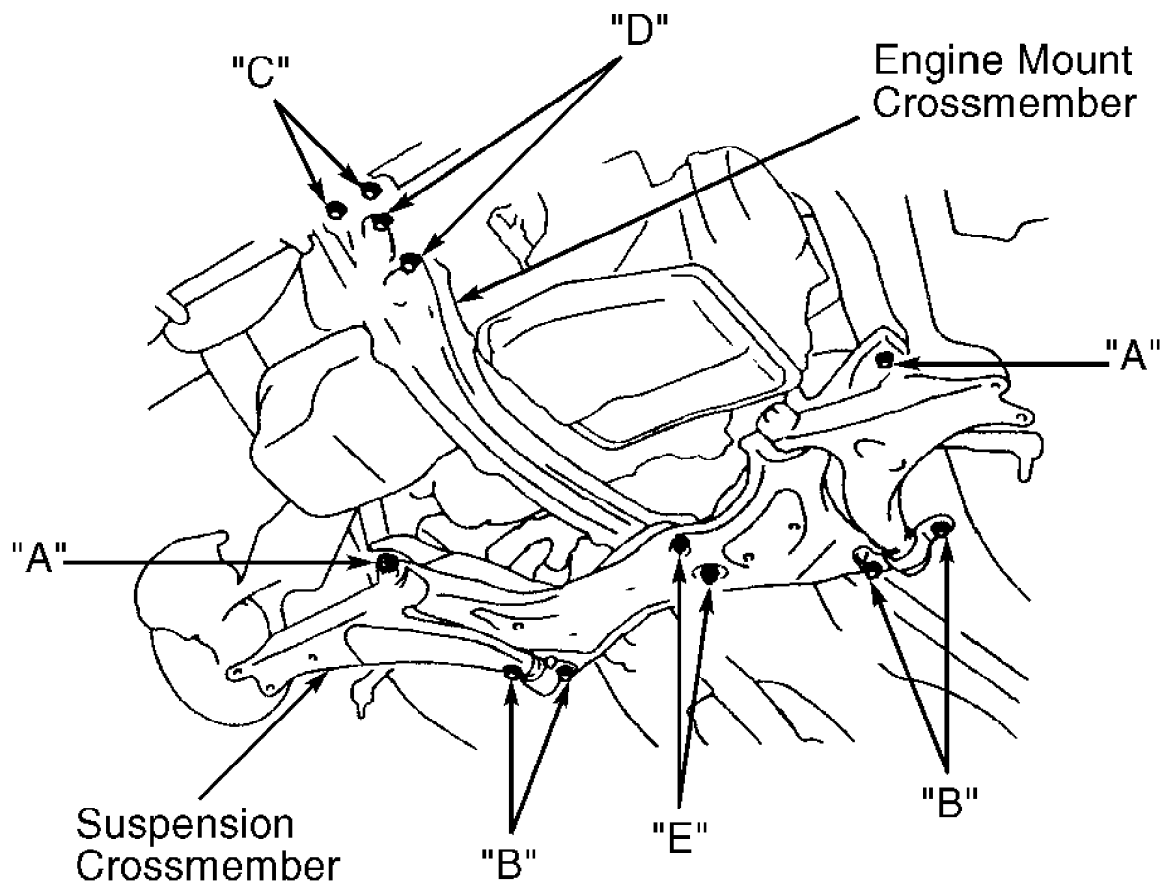
7) Remove shift cable brackets from suspension crossmember.

Suspension crossmember is located below the engine and fits between both lower control arms. See Fig. 8. Remove steering gear assembly-to-suspension crossmember bolts.

8) Support suspension crossmember with floor jack. Remove bolts/nuts, engine mount crossmember and suspension crossmember with stabilizer bar. See Fig. 8.

9) Remove bolts and stiffener plate. Stiffener plate fits between side of cylinder block and front of transaxle. Remove torque converter cover from front of transaxle. Remove torque converter bolts.

10) Remove the 2 cylinder block-to-transaxle bolts. These bolts are located on cylinder block side and thread into the transaxle. Lower transaxle from vehicle.



Bolt "A" - 152 Ft. lbs. (206 N.m)  
Bolt "B" - 101 Ft. Lbs. (137 N.m)  
Bolt "C" - 26 Ft. Lbs. (35 N.m)  
Bolt "D" - 53 Ft. Lbs. (72 N.m)  
Nut "E" - 54 Ft. Lbs. (73 N.m)

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Fig. 8: Identifying Engine Mount Crossmember, Suspension Crossmember & Bolt Tightening Specifications (RAV4 2WD)  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Installation



1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .502" (12.75 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Gray torque converter bolt is installed first before installing the remaining torque converter bolts.

5) When installing suspension crossmember and engine mount crossmember, ensure all bolts and nuts are installed before tightening to specification. See Fig. 8.

6) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (RAV4 4WD)

1) Manufacturer recommends removing engine and transaxle as an assembly and then remove transaxle from engine. See 2.0L 4-CYLINDER article in ENGINES for engine removal.

2) With engine and transaxle removed, remove starter. Remove bolts and stiffener plate. Stiffener plate fits between side of cylinder block and front of transaxle.

3) Remove torque converter cover from front of transaxle. Remove torque converter bolts. Remove bolts and center stiffener plate. Center stiffener plate fits between top of transaxle and cylinder block.

4) Remove the 2 transfer case-to-cylinder block bolts. Remove transaxle-to-cylinder block bolts. Separate transaxle from engine.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .539" (13.70 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Dark Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Once engine and transaxle are installed, adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Sienna)

1) Disconnect negative battery cable. Remove hood. Remove wiper arms. Remove hood-to-cowl top seal. Remove cowl panel hole

cover. Remove clips and left and right side cowl top ventilator louvers. Disconnect washer hoses. Remove 2 washer nozzles from cowl top ventilator louvers. Remove 11 bolts and outer front cowl top panel.

NOTE: Wiper/washer components and output front cowl top panel must be removed for clearance during transaxle removal and installation.

2) Remove battery, battery tray, air cleaner assembly and air cleaner case. Disconnect throttle valve cable from throttle body. Remove cruise control actuator with mounting bracket from the body.

3) Raise and support vehicle. Disconnect necessary electrical connectors and ground cables for transaxle removal. Remove starter. Disconnect shift cable and oil cooler lines at transaxle. Remove shift cable clamp bracket from transaxle.

4) Remove front (radiator side) engine mount shock absorber-to-lower frame assembly bolts. Remove front (radiator side) engine mount-to-lower frame assembly bolts/nuts.

5) Remove front (radiator side) exhaust manifold brace from rear of exhaust manifolds. Brace fits between rear of exhaust manifold and front of transaxle.

6) Remove the 5 upper transaxle-to-cylinder block bolts. Support engine with hoist. Steering gear assembly must be supported in place during transaxle removal. Secure steering gear assembly to the engine hoist using an attaching strap placed at each end of steering gear assembly.

7) Remove front wheels. Remove engine undercover. Remove front exhaust pipe located between exhaust manifolds and rear exhaust pipe. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

8) Disconnect shift control cable from mounting bracket. Remove rear (firewall side) engine mount-to-lower frame assembly bolts/nuts. Remove transaxle mount-to-transaxle bolts/nuts at driver's side end of transaxle.

9) Remove stabilizer bar mount bracket-to-lower frame assembly bolts. Remove steering gear assembly-to-lower frame assembly bolts/nuts. Support lower frame assembly with floor jack. Lower frame assembly is located below the engine and transaxle.

10) Disconnect power steering reservoir pipe mounting brackets from lower frame assembly. Remove lower frame assembly mounting brackets. Lower frame assembly mounting brackets are located on the front and rear of lower frame assembly attaching the lower frame assembly to the body. Remove lower frame assembly.

11) Support transaxle with transmission jack. Remove torque converter bracket and cover bolts and nuts from front of transaxle. Remove torque converter bolts. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth should be more than .539" (13.70 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all

bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Black torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Use NEW gaskets and NEW nuts when installing front exhaust pipe. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Supra)

1) Disconnect negative battery cable. Remove transmission oil dipstick, dipstick tube and "O" ring. Disconnect throttle valve cable from throttle body.

2) Raise and support vehicle. Remove lower engine cover. Remove exhaust pipes and heat insulators as necessary for access to transmission. Remove floor crossmember brace located between each side of the body and is directly below the drive shaft.

CAUTION: When removing drive shaft, DO NOT remove the bolts that hold the drive shaft on the flange. Remove only the bolts that fasten the flange on drive shaft to the flange on rear differential.

3) Place reference marks drive shaft flanges for reassembly reference. Remove drive shaft. Disconnect necessary electrical connectors and oil cooler pipes for transmission removal. Remove shift control rod located between gearshift and the shift lever on side of transmission.

4) Remove starter. On Turbo models, remove intercooler pipe located below the radiator. On all models, support transmission with transmission jack. Remove transmission crossmember located below the transmission. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Lower transmission from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, place straightedge on torque converter bolt mounting lugs on torque converter with straightedge extending out over cylinder block mounting surface on transmission.

3) Using feeler gauge, measure distance between straightedge and cylinder block mounting surface on transmission. The distance should be less than .0040" (.100 mm). If distance is more than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Adjust shift linkage and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Tacoma 2WD 2.4L 4-Cyl.)

1) Manufacturer recommends removing engine and transmission as an assembly and then remove transmission from engine. See 2.4L & 2.7L 4-CYLINDER article in ENGINES for engine removal.

2) With engine and transmission removed, remove starter. Remove bolts and stiffener plates. Stiffener plate fits between each side of cylinder block and front of transmission.

3) Remove torque converter cover from front of transmission. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Separate transmission from engine.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Once engine and transmission are installed, adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Tacoma 2WD 2.7L 4-Cyl. & 3.4L V6)

1) Manufacturer recommends removing engine and transmission as an assembly and then remove transmission from engine. See 2.4L & 2.7L 4-CYLINDER article or 3.4L V6 article in ENGINES for engine removal.

2) With engine and transmission removed, remove transmission oil dipstick, dipstick tube and "O" ring. Remove oil cooler pipes and brackets from engine and transmission. Disconnect necessary wiring connectors from transmission.

3) Remove torque converter cover from front of transmission. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Separate transmission from engine.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than .707" (17.95 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Once engine and transmission are installed, adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Tacoma 4WD)

1) Disconnect negative battery cable. Remove transmission oil dipstick. Disconnect throttle valve cable from throttle body.

2) Raise and support vehicle. Remove lower engine cover. Remove fan shroud from radiator. Remove rear console box, located between the seats. Remove screws from front console, located near transfer case and transmission shift levers.

3) Remove front console with transfer case shift lever knob.

Disconnect electrical connectors for removal of transmission shift lever assembly. Disconnect shift linkage at transmission shift lever assembly. Remove transmission shift lever assembly.

4) Remove snap ring and transfer case shift lever from transfer case. Remove transmission oil dipstick tube and "O" ring. Place reference marks on drive shaft flanges for reassembly reference. Remove drive shafts.

5) Remove exhaust pipes as necessary for access to transmission and transfer case. Disconnect speedometer cable and necessary electrical connectors for transmission and transfer case removal. Remove transmission oil cooler pipes and brackets as necessary.

6) Remove starter and stabilizer bar. Remove torque converter cover from front of transmission. Remove torque converter bolts. Front differential assembly rear mount must be removed for transmission removal. Rear mount is located on front differential assembly, just behind the drive shaft flange.

7) Support front differential assembly with jack. Remove front differential assembly rear mount-to-crossmember nut. Slightly raise front differential assembly. Remove the 2 front differential assembly rear mount bolts.

8) Support transmission with transmission jack. Remove transmission mount-to-transmission crossmember bolts. Remove transmission crossmember, located below transmission and transfer case. Remove transmission-to-cylinder block bolts. Lower transmission with transfer case from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm) on 2.7L 4-cylinder or .707" (17.95 mm) on 3.4L V6. If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Ensure the Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Apply grease to transfer case shift lever before installing. Use NEW gasket when installing exhaust pipe. Adjust all cables, shift linkages and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (Tercel)

1) Disconnect negative battery cable. Remove battery. Disconnect throttle valve cable from throttle body. Remove air cleaner assembly along with air intake duct to air cleaner.

2) Remove starter. Remove the 2 upper transaxle-to-cylinder block bolts, located at top of transaxle. Raise and support vehicle. Remove lower engine covers.

3) Support engine with hoist. Remove front wheels. Drain transaxle fluid. Remove axle shafts from transaxle. See FWD AXLE SHAFTS article in DRIVE AXLES.

4) Disconnect necessary electrical connectors, ground cables, speedometer cable, control cables and oil cooler lines for transaxle

removal. Remove exhaust pipe as necessary for access to transaxle.

5) Support transaxle with transmission jack. Remove the 2 vertical bottom bolts from front (radiator side) transaxle mount.

6) Remove through-bolt and rear (firewall side) engine mount assembly for transaxle removal. Remove plug from front of transaxle for access to torque converter bolts. Remove torque converter bolts. Remove remaining transaxle-to-cylinder block bolts. Lower transaxle from vehicle.

#### Installation

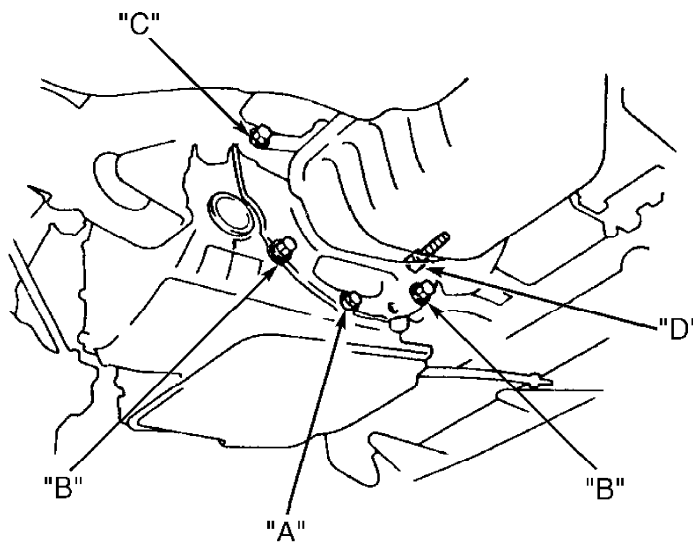
1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transaxle. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transaxle. See Fig. 1.

3) Torque converter depth on 3-speed transaxle should be more than .512" (13.00 mm). Torque converter depth on 4-speed transaxle should be more than .538" (13.40 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. Tighten the lower transaxle-to-cylinder block bolts to specification as indicated. See Figs. 9 and 10.

5) When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. Adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.



Bolt "A" - 65 INCH Lbs. (7.4 N.m)

Bolt "B" - 18 Ft. Lbs. (24 N.m)

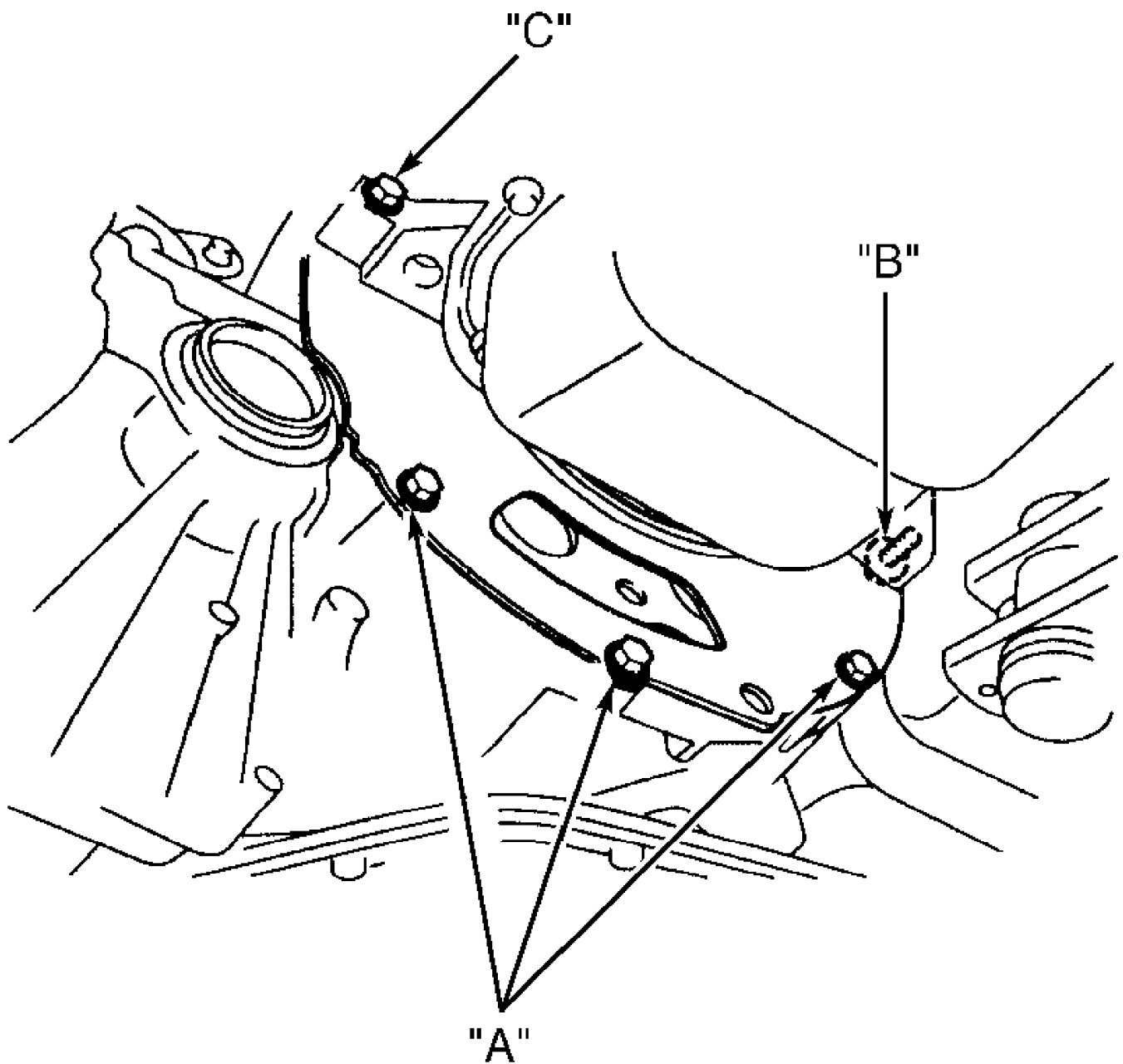
Bolt "C" - 34 Ft. Lbs. (46 N.m)

Bolt "D" - 47 Ft. Lbs. (64 N.m)

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Fig. 9: Identifying Transaxle-To-Cylinder Block Bolt Tightening Specifications (Tercel 3-Speed)

Courtesy of Toyota Motor Sales, U.S.A., Inc.



Bolt "A" - 65 INCH Lbs. (7.4 N.m)  
Bolt "B" - 47 Ft. Lbs. (64 N.m)  
Bolt "C" - 34 Ft. Lbs. (46 N.m)

96A19281

Fig. 10: Identifying Transaxle-To-Cylinder Block Bolt Tightening Specifications (Tercel 4-Speed)  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Removal (T100 2WD)

1) Manufacturer recommends removing engine and transmission as an assembly and then separating transmission from engine. See 2.4L & 2.7L 4-CYLINDER article or 3.4L V6 article in ENGINES for engine removal.

2) With engine and transmission removed, remove starter if not previously removed. Remove torque converter cover from front of transmission. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Separate transmission from engine.

#### Installation

1) Before installing transaxle, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm) for 2.7L 4-cylinder or .707" (17.95 mm) for 3.4L V6. If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing.

5) Once engine and transmission are installed, adjust all cables and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (T100 4WD)

1) Disconnect negative battery cable. Remove knob from transfer case shift lever. Remove screws and boot from transfer case shift lever. Remove snap ring and transfer case shift lever from transfer case.

2) Disconnect throttle valve cable from throttle body. Raise and support vehicle. Remove lower engine cover. Remove transmission oil dipstick, dipstick tube and "O" ring.

3) Place reference marks on drive shaft flanges for reassembly reference. Remove drive shafts. Remove front exhaust pipe located between exhaust manifold and catalytic converter.

4) Disconnect speedometer cable and necessary electrical connectors for transmission and transfer case removal. Disconnect shift linkage at side of transmission. Remove shift linkage cross shaft located between frame and shift lever on transmission.

5) Remove starter. Remove transmission oil cooler pipes and brackets as necessary. Remove stiffener plates located on each side of cylinder block. Stiffener plate fits between side of cylinder block and front of transmission.

6) Remove stabilizer bar. Support transmission with floor jack. Remove bolts and dynamic damper transmission crossmember. Dynamic damper is located on driver's side of transmission crossmember, next to transmission mount bolts and is fastened to bottom of transmission crossmember using 2 bolts.

7) Remove transmission mount-to-transmission crossmember bolts. Remove transmission crossmember located below transmission and transfer case.

8) Remove torque converter cover from front of transmission. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Lower transmission with transfer case from vehicle.

#### Installation



1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than .707" (17.95 mm). If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing.

5) Apply grease to transfer case shift lever before installing. Use NEW gasket when installing front exhaust pipe. Adjust all cables, shift linkages and fill with ATF. See appropriate TRANSMISSION SERVICING article.

#### Removal (4Runner 2WD)

1) Disconnect negative battery cable. Remove transmission oil dipstick, dipstick tube and "O" ring. Disconnect throttle valve cable from throttle body.

2) Raise and support vehicle. Remove lower engine cover. Disconnect shift linkage for transmission at gearshift. Remove front exhaust pipe, located between exhaust manifold and catalytic converter on rear exhaust pipe.

3) Place reference marks on drive shaft flange for reassembly reference. Remove drive shaft. Disconnect necessary electrical connectors for transmission removal. Remove transmission oil cooler pipes and brackets as necessary.

4) Support transmission with floor jack. Remove transmission crossmember, located below transmission. Remove starter.

5) Remove cover from front of transmission for access to torque converter bolts. On 3.4L, note location of Green torque converter bolt for reassembly reference. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Lower transmission from vehicle.

#### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm) for 2.7L 4-cylinder or .707" (17.95 mm) for 3.4L V6. If torque converter depth is less than specified, check for improperly seated torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. On 3.4L V6, ensure the Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Use NEW gasket when installing front exhaust pipe. Adjust all cables, shift linkages and fill with ATF. See appropriate

## TRANSMISSION SERVICING article.

### Removal (4Runner 4WD)

1) Disconnect negative battery cable. Remove rear console upper panel and disconnect electrical connectors. Rear console upper panel is located on the top of the console, near emergency brake lever.

2) Remove heater control knobs from instrument panel. Using screwdriver, pry heater control plate from center finish panel on instrument panel. Center finish panel is the panel that fits around the radio and air outlet ducts, located at center of instrument panel.

3) Remove screws and disconnect electrical connectors from center finish panel from instrument panel. Remove center finish panel.

4) On models without 2-4 selector button on side of transfer case shift lever, unscrew knob from transfer case shift lever. On models with 2-4 selector button on side of transfer case shift lever, remove screw from knob on transfer case shift lever. Remove knob from transfer case shift lever and lay aside with wire attached.

5) On all models, remove upper console panel which contains boot for transfer case shift lever and is located on center console. On models with 2-4 selector button on side of transfer case shift lever, disconnect electrical connector for 2-4 selector button and remove knob on transfer case shift lever.

6) On all models, remove screws, clips and front console box, located around transmission shift lever assembly and transfer case shift lever. Raise and support vehicle. Disconnect shift linkage at transmission shift lever.

7) Disconnect electrical connectors for removal of transmission shift lever assembly. Remove transmission shift lever assembly. Remove snap ring and transfer case shift lever.

8) Remove transmission oil dipstick, dipstick tube and "O" ring. Remove lower engine covers. Place reference marks on drive shaft flanges for reassembly reference. Remove drive shafts.

9) Remove front exhaust pipe, located between exhaust manifold and catalytic converter on rear exhaust pipe. Disconnect and necessary electrical connectors for transmission and transfer case removal. Separate wiring harness from transmission and transfer case.

10) Remove starter. Remove transmission oil cooler pipes and brackets as necessary. On 3.4L V6, it may be necessary to remove stabilizer bar.

11) On all models, support transmission with floor jack. Remove rear transmission mount-to-transmission crossmember bolts. Remove transmission crossmember, located below transmission and transfer case.

12) Remove torque converter cover from front of transmission. On 3.4L, note location of Green torque converter bolt for re-installation reference. Remove torque converter bolts. Remove transmission-to-cylinder block bolts. Lower transmission with transfer case from vehicle.

### Installation

1) Before installing transmission, use dial indicator to check drive plate runout. Drive plate runout should be checked right next to the starter ring gear on the drive plate. Replace drive plate if runout exceeds .0079" (.200 mm).

2) Install torque converter on transmission. To ensure torque converter is fully seated, torque converter depth should be checked. Using straightedge and caliper, measure torque converter depth from torque converter bolt lug on torque converter to the surface on transmission. See Fig. 1.

3) Torque converter depth should be more than 1.250" (31.75 mm) for 2.7L 4-cylinder or .707" (17.95 mm) for 3.4L V6. If torque converter depth is less than specified, check for improperly seated

torque converter.

4) To install, reverse removal procedure. Tighten all bolts/nuts to specification. See TORQUE SPECIFICATIONS. When installing torque converter bolts, apply Loctite to torque converter bolt threads before installing. On 3.4L V6, ensure the Green torque converter bolt is installed first before installing the remaining torque converter bolts.

5) Apply grease to transfer case shift lever before installing. Use NEW gasket when installing front exhaust pipe. Adjust all cables, shift linkages and fill with ATF. See appropriate TRANSMISSION SERVICING article.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS (AVALON)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Front Exhaust Pipe Support Bracket Bolt	
California .....	25 (34)
Except California .....	15 (20)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut .....	41 (56)
Front (Radiator Side) Engine Mount Shock	
Absorber-To-Lower Frame Assembly Bolt .....	35 (47)
Front (Radiator Side) Engine Mount-To-Lower Frame Assembly Bolt	
Green Bolt .....	49 (66)
Silver Bolt .....	32 (44)
Lower Frame Assembly Mounting Bracket-To-Body Bolt/Nut	
Large Bolt .....	134 (182)
Small Bolt .....	24 (33)
Nut .....	27 (37)
Rear (Firewall Side) Engine Mount-To-Lower	
Frame Assembly Bolt/Nut .....	49 (66)
Stabilizer Bar Mount Bracket-To-Lower Frame Assembly Bolt ..	14 (19)
Starter Bolt .....	29 (39)
Steering Gear Assembly-To-Lower Frame Assembly Bolt/Nut ..	134 (182)
Torque Converter Bolt .....	30 (41)
Transaxle Mount-To-Transaxle Bolt .....	47 (64)
Transaxle-To-Cylinder Block Bolt	
10-mm .....	34 (46)
12-mm .....	47 (64)
Wheel Lug Nut .....	76 (103)

### TORQUE SPECIFICATIONS (CAMRY)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Front Exhaust Pipe Support Bracket Bolt	
California .....	25 (34)
Except California .....	15 (20)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut .....	41 (56)
Front (Radiator Side) Engine Mount Shock	
Absorber-To-Lower Frame Assembly Bolt	
3.0L V6 .....	35 (47)
Front (Radiator Side) Engine Mount-To-Lower	
Frame Assembly Bolt/Nut	
2.2L 4-Cyl. ....	59 (80)

3.0L V6	
Toyota Motor Corporation .....	59 (80)
Toyota Motor Manufacturing	
Green Bolt .....	49 (66)
Silver Bolt .....	32 (44)
Lower Frame Assembly Bracket-To-Body Bolt/Nut	
Large Bolt .....	134 (182)
Small Bolt .....	24 (33)
Nut .....	27 (37)
Rear (Firewall Side) Engine Mount-To-Lower	
Frame Assembly Nut .....	59 (80)
Stabilizer Bar Mount Bracket-To-Lower Frame Assembly Bolt ..	14 (19)
Starter Bolt .....	29 (39)
Steering Gear Assembly-To-Lower Frame Assembly Bolt/Nut ..	134 (182)
Stiffener Plate Bolt (2.2L 4-Cyl.)	
Front .....	31 (42)
Rear .....	29 (39)
Torque Converter Bolt .....	20 (27)
Transaxle Mount-To-Transaxle Bolt	
2.2L 4-Cyl. ....	38 (52)
3.0L V6 .....	47 (64)
Transaxle-To-Cylinder Block Bolt	
10-mm .....	34 (46)
12-mm .....	47 (64)
Wheel Lug Nut .....	76 (103)

#### TORQUE SPECIFICATIONS (CELICA)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt	
1.8L (7A-FE) .....	47 (64)
2.2L (5S-FE) .....	61 (83)
Engine Mount Crossmember Bolt/Nut	
2.2L (5S-FE) .....	(1)
Engine Mount Crossmember-To-Body Bolt	
1.8L (7A-FE) .....	26 (35)
Front (Exhaust Manifold Side) Engine Mount-To-Suspension	
Crossmember Bolt/Nut	
1.8L (7A-FE) .....	59 (80)
Front Exhaust Pipe Support Bracket-To-Suspension	
Crossmember Bolt/Nut .....	14 (19)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut .....	32 (43)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Front Exhaust Pipe	
Support Bracket Bolt .....	18 (24)
Intake Manifold Brace Bolt/Nut	
2.2L (5S-FE)	
Bolt .....	15 (20)
Nut .....	32 (43)
Rear (Firewall Side) Engine Mount Through-Bolt .....	64 (87)
Rear (Firewall Side) Engine Mount-To-Suspension	
Crossmember Bolt/Nut	
1.8L (7A-FE) .....	59 (80)
Starter Bolt .....	29 (39)
Steering Gear Assembly-To-Suspension Crossmember Bolt .....	94 (127)
Stiffener Plate	
2.2L (5S-FE)	
12-mm Bolt .....	15 (20)
14-mm Nut .....	32 (43)
Suspension Crossmember Bolt/Nut	
1.8L (7A-FE) .....	(2)

2.2L (5S-FE) .....	(1)
Torque Converter Bolt .....	18 (24)
Transaxle-To-Cylinder Block Bolt	
1.8L (7A-FE)	
Large Bolts (2) At Top Of Transaxle .....	47 (64)
Lower Bolts (5) At Bottom Of Transaxle .....	(3)
2.2L (5S-FE)	
Large Bolts (3) At Top Of Transaxle .....	47 (64)
Lower Bolts (3) At Bottom Of Transaxle	
10-mm .....	34 (46)
12-mm .....	47 (64)
Transaxle-To-Mount Bolt/Nut .....	47 (64)
Wheel Lug Nut .....	76 (103)

(1) - For bolt/nut tightening specifications, see Fig. 4.

(2) - For bolt tightening specifications, see Fig. 2.

(3) - For bolt tightening specifications, see Fig. 3.

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#### TORQUE SPECIFICATIONS (COROLLA)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	47 (64)
Engine Mount Crossmember Bolt/Nut .....	(1)
Front Exhaust Pipe Support Bracket-To-Suspension	
Crossmember Bolt/Nut .....	14 (19)
Front Exhaust Pipe-To-Front Exhaust Pipe	
Support Bracket Bolt .....	14 (19)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt .....	32 (43)
Starter Bolt .....	29 (39)
Stiffener Plate Bolt	
1.6L (4A-FE) .....	17 (23)
Suspension Crossmember Bolt/Nut .....	(1)
Torque Converter Bolt	
1.6L (4A-FE)	
1997 .....	13 (18)
1998 .....	18 (24)
1.8L (7A-FE) .....	18 (24)
Transaxle Mount Assembly Bolt	
1.6L (4A-FE) .....	47 (64)
1.8L (7A-FE) .....	41 (56)
Transaxle Mount Assembly Brace Bolt .....	15 (20)
Transaxle-To-Cylinder Block Bolt	
1.6L (4A-FE) .....	47 (64)
1.8L (7A-FE) .....	(2)
Wheel Lug Nut .....	76 (103)

(1) - For bolt/nut tightening specifications, see Fig. 5.

(2) - For bolt tightening specifications, see Fig. 6.

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#### TORQUE SPECIFICATIONS (LAND CRUISER - 1997)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	72 (98)
Drive Shaft Flange Bolt/Nut	
Front Drive Shaft .....	54 (73)
Rear Drive Shaft .....	65 (88)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Catalytic Converter Bolt/Nut ....	29 (39)

Front Exhaust Support Bracket Bolt .....	14 (19)
Oil Cooler Line Bolt .....	25 (34)
Stabilizer Bar-To-Frame Mounting Bracket Bolt .....	13 (18)
Starter Bolt .....	29 (39)
Torque Converter Bolt .....	40 (54)
Transfer Case Shift Lever Assembly Bolt .....	13 (18)
Transmission Crossmember Bolt/Nut	
Bolt .....	45 (61)
Nut .....	54 (73)
Transmission-To-Cylinder Block Bolt .....	53 (72)

INCH Lbs. (N.m)

Transmission Shift Lever Assembly Bolt .....	48 (5.4)
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#### TORQUE SPECIFICATIONS (LAND CRUISER - 1998)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt	
First Step .....	36 (49)
Second Step .....	Turn Additional 90 Degrees
Drive Shaft Flange Bolt/Nut	
Front Drive Shaft .....	59 (80)
Rear Drive Shaft .....	78 (106)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Catalytic Converter Bolt/Nut ....	30 (40)
Oil Cooler Pipe Nut .....	51 (69)
Oxygen Sensor Bolt .....	14 (19)
Radiator Bracket Bolt/Nut .....	15 (20)
Torque Converter Bolt .....	36 (48)
Torque Converter Cover Bolt .....	13 (18)
Transmission Crossmember Bolt/Nut	
Bolt .....	37 (50)
Nut .....	54 (73)
Transmission-To-Cylinder Block Bolt .....	53 (72)

INCH Lbs. (N.m)

Dipstick Tube Bolt .....	102 (11.5)
Fan Shroud Bolt .....	44 (5.0)
Oil Cooler Pipe Bolt .....	102 (11.5)
Transmission Shift Control Rod Nut .....	115 (13)
Transmission Shift Lever Boot Bolt .....	48 (5.4)

#### TORQUE SPECIFICATIONS (PASEO)

Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Front (Radiator Side) Transaxle Mount Bolt .....	35 (47)
Intake Manifold Brace Bolt/Nut .....	15 (20)
Rear (Firewall) Engine Mount Assy.-To-Body Bolt	
Outside Small Bolts (2) .....	58 (79)
Center Large Bolts (3) .....	67 (91)
Stabilizer Bar Mounting Bracket-To-Frame Bolt .....	14 (19)
Stabilizer Bar-To-Lower Control Arm Bolt .....	13 (18)
Starter Bolt .....	29 (39)
Torque Converter Bolt .....	13 (18)
Transaxle Bracket-To-Rear (Firewall Side) Engine	
Mount Assembly Bolt .....	47 (64)

Transaxle-To-Cylinder Block Bolt .....	(1)
Wheel Lug Nut .....	76 (103)

(1) - For bolt tightening specifications, see Fig. 7.

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#### TORQUE SPECIFICATIONS (PREVIA)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	54 (73)
Drive Shaft Center Bearing Assembly-To-Body Bolt	
4WD Front Drive Shaft .....	27 (37)
Drive Shaft Flange Bolt/Nut	
2WD .....	54 (73)
4WD	
Front Drive Shaft .....	31 (42)
Rear Drive Shaft .....	54 (73)
Exhaust Pipe Support Bracket Bolt	
Exhaust Pipe Side .....	32 (43)
Transmission Side .....	37 (51)
Front Drive Shaft Bracket Bolt (4WD)	
Lower Bolt .....	41 (56)
Upper Bolt Nearest Starter .....	30 (41)
Lower Stiffener Plate Bolt (2WD) .....	27 (37)
Rear Transmission Mount Bolt/Nut .....	50 (68)
Starter	
Bolt .....	30 (41)
Nut .....	41 (56)
Torque Converter Bolt .....	30 (41)
Transmission-To-Cylinder Block Bolt .....	53 (72)
Upper Stiffener Plate Bolt .....	27 (37)

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#### TORQUE SPECIFICATIONS (RAV4)

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Application	Ft. Lbs. (N.m)
Center Stiffener Plate Bolt (4WD) .....	27 (37)
Cylinder Block-To-Transaxle Bolt (2WD)	
Lower Bolt (Large Bolt) .....	34 (46)
Upper Bolt (Small Bolt) .....	18 (24)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Engine Mount Crossmember Bolt/Nut (2WD) .....	(1)
Front Exhaust Pipe-To-Exhaust Manifold Nut (2WD) .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut	
2WD .....	35 (47)
Starter Bolt .....	29 (39)
Steering Gear Assembly-To-Suspension	
Crossmember Bolt (2WD) .....	83 (113)
Stiffener Plate Bolt .....	27 (37)
Suspension Crossmember Bolt/Nut (2WD) .....	(1)
Torque Converter Bolt .....	20 (27)
Transaxle-To-Cylinder Block Bolt	
2WD .....	47 (64)
4WD	
12-mm .....	34 (46)
14-mm .....	47 (64)
Transaxle-To-Mount Bolt/Nut (2WD) .....	47 (64)
Transfer Case-To-Cylinder Block Bolt (4WD) .....	27 (37)
Wheel Lug Nut .....	76 (103)

(1) - For bolt/nut tightening specifications, see Fig. 8.

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TORQUE SPECIFICATIONS (SIENNA)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Front Exhaust Pipe Support Bracket Bolt .....	15 (20)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut .....	41 (56)
Front (Radiator Side) Engine Mount Shock Absorber-To-Lower Frame Assembly Bolt .....	35 (47)
Front (Radiator Side) Engine Mount-To-Lower Frame Assembly Bolt/Nut Green Bolt .....	49 (66)
Silver Bolt .....	32 (44)
Lower Frame Assembly Bracket-To-Body Bolt/Nut Front Bolt .....	134 (182)
Front Nut .....	27 (37)
Rear Large Bolt .....	134 (182)
Rear Small Bolt .....	24 (33)
Rear Nut .....	27 (37)
Rear (Firewall Side) Engine Mount-To-Lower Frame Assembly Bolt/Nut .....	49 (66)
Stabilizer Bar Mount Bracket-To-Lower Frame Assembly Bolt ..	14 (19)
Starter Bolt .....	29 (39)
Steering Gear Assembly-To-Lower Frame Assembly Bolt/Nut ..	134 (182)
Torque Converter Bolt .....	30 (41)
Torque Converter Bracket & Hole Cover Bolts .....	(1)
Nuts .....	15 (20)
Transaxle Mount-To-Frame Nut .....	59 (80)
Transaxle-To-Cylinder Block Bolt Upper Bolts (5) .....	49 (66)
Lower Bolts (3) Bolt At 9-O'Clock Position .....	36 (48)
Except Bolt At 9-O'Clock Position .....	27 (37)
Wheel Lug Nut .....	76 (103)
Wiper Arm Nut .....	15 (20)

(1) - Tighten bolts to 71 INCH Lbs. (8.0 N.m) .

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TORQUE SPECIFICATIONS (SUPRA)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt .....	61 (83)
Drive Shaft Center Bearing Assembly-To-Body Bolt .....	36 (49)
Drive Shaft Flange Bolt/Nut Non-Turbo .....	58 (77)
Turbo .....	41 (56)
Starter Bolt .....	27 (37)
Torque Converter Bolt Non-Turbo .....	30 (41)
Turbo .....	40 (54)
Transmission Crossmember Bolt .....	18 (24)
Transmission-To-Cylinder Block Bolt 14-mm (4 Bottom Bolts) .....	27 (37)
17-mm .....	53 (72)

INCH Lbs. (N.m)

Floor Crossmember Brace Bolt .....	115 (13.0)
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#### TORQUE SPECIFICATIONS (TACOMA)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt	
2.4L 4-Cyl. & 2.7L 4-Cyl. ....	54 (73)
3.4L V6 ....	61 (83)
Drive Shaft Center Bearing Assembly-To-Crossmember Bolt ....	27 (37)
Drive Shaft Flange Bolt/Nut ....	54 (73)
Front Differential Assembly Rear Mount Bolt (4WD) ....	80 (109)
Front Differential Assembly Rear Mount	
To-Crossmember Nut (4WD) ....	64 (87)
Stabilizer Bar Link-To-Lower Control Arm Nut (4WD) ....	51 (69)
Stabilizer Bar Mounting Bracket-To-Frame Bolt (4WD) ....	19 (26)
Starter Bolt ....	29 (39)
Stiffener Plate Bolt	
2WD 2.4L 4-Cyl. ....	27 (37)
Transmission Crossmember Bolt/Nut (4WD) ....	48 (65)
Transmission-To-Cylinder Block Bolt ....	53 (72)
Transmission Mount-To-Transmission Crossmember Bolt (4WD) ..	14 (19)
Torque Converter Bolt ....	30 (41)

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#### TORQUE SPECIFICATIONS (TERCEL)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt ....	65 (88)
Exhaust Pipe Bolt ....	46 (62)
Front (Radiator Side) Transaxle Mount Bolt ....	36 (49)
Rear (Firewall) Engine Mount Assy.-To-Body Bolt	
Outside Small Bolts (2) ....	59 (80)
Center Large Bolts (3) ....	68 (92)
Rear (Firewall) Engine Mount Through-Bolt ....	48 (65)
Starter Bolt ....	29 (39)
Torque Converter Bolt ....	20 (27)
Transaxle-To-Cylinder Block Bolt	
Upper Bolt ....	47 (64)
Lower Bolt ....	(1)
Wheel Lug Nut ....	76 (103)

(1) - For bolt tightening specifications, see Figs. 9 and 10.

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#### TORQUE SPECIFICATIONS (T100)

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Application	Ft. Lbs. (N.m)
Drive Plate-To-Crankshaft Bolt ....	61 (83)
Drive Shaft Center Bearing Assembly	
To-Crossmember Bolt (4WD) ....	27 (37)
Drive Shaft Flange Bolt/Nut (4WD)	
Front Drive Shaft ....	54 (73)
Rear Drive Shaft ....	56 (76)
Stabilizer Bar-To-Lower Control Bolt/Nut (4WD) ....	18 (25)
Stabilizer Bar Mounting Bracket-To-Frame Bolt (4WD) ....	22 (30)
Starter Bolt ....	29 (39)
Stiffener Plate Bolt ....	27 (37)
Transmission Crossmember Bolt (4WD) ....	70 (95)
Transmission-To-Cylinder Block Bolt ....	53 (72)
Transmission Mount-To-Transmission Crossmember Bolt 4WD ....	13 (18)

Torque Converter Bolt .....	30 (41)
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TORQUE SPECIFICATIONS (4RUNNER)

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Application	Ft. Lbs. (N.m)
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Drive Plate-To-Crankshaft Bolt	
2.7L 4-Cyl. ....	55 (74)
3.4L V6 .....	61 (83)
Drive Shaft Flange Bolt/Nut .....	55 (74)
Front Exhaust Pipe-To-Exhaust Manifold Nut .....	46 (62)
Front Exhaust Pipe-To-Rear Exhaust Pipe Bolt/Nut .....	36 (48)
Rear Transmission Mount-To-Transmission Bolt .....	48 (65)
Rear Transmission Mount-To-Transmission Crossmember Bolt	
2WD .....	14 (19)
4WD .....	13 (18)
Stabilizer Bar Mounting Bracket-To-Frame Bolt	
3.4L V6 .....	18 (25)
Stabilizer Bar-To-Lower Control Arm Nut	
3.4L V6 .....	51 (69)
Starter Bolt .....	29 (39)
Torque Converter Bolt .....	30 (41)
Transmission Crossmember-To-Frame Through-Bolt .....	48 (65)
Transmission-To-Cylinder Block Bolt .....	52 (71)

INCH Lbs. (N.m)

Transmission Shift Lever Assembly Bolt (4WD) .....	52 (5.9)
Transmission Shift Lever Control Rod Nut (2WD) .....	113 (10.0)

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