

1966-73 CADILLAC ELDORADO & OLDSMOBILE TORONADO FRONT

Cadillac Eldorado (1966-73)
Oldsmobile Toronado (1966-73)

DESCRIPTION

Front suspension is torsion bar with control arms, stabilizer bar and tubular shock absorbers. Front end of each torsion bar is attached to lower control arm. Rear of each torsion bar is mounted at torsion bar crossmember with an adjustable arm for car height adjustment. Steering knuckle is suspended by conventional ball joints. Ball joints may be replaced as an assembly or separately. Front wheel bearings do not require adjustment. Rear suspension is two conventional single-leaf spring mounted on a dead axle (used on Eldorado and 1966-69 Toronado). 1970-72 Toronado uses a link-type with coil springs. Rear wheel bearings are adjustable.

ADJUSTMENT

Caster & Camber — See *Alignment Specifications & Adjustment* in **WHEEL ALIGNMENT** Section.

Rear Wheel Bearings — See *Wheel Bearing Adjustment* in **WHEEL ALIGNMENT** Section.

FRONT HUB & BEARING ASSEMBLY (DRUM BRAKES)

Removal, Toronado (1966-69) & Eldorado (1966-68) — Raise vehicle, remove wheel and drum assembly. Back off brake shoe adjustment, if necessary, to remove drum. Remove drive axle nut and position access slot in hub assembly so each attaching bolt can be removed. Push aside adjuster lever to remove one of the bolts. Attach slide hammer to hub, hold adjuster lever aside for clearance and remove hub and bearing assembly.

Installation — Reverse removal procedure, being sure to lubricate outside diameter of bearing with extreme pressure chassis lubricant.

FRONT HUB & BEARING ASSEMBLY (DISC BRAKES)

Removal & Installation, Toronado & Eldorado (1966-70) — Hub, backing plate and knuckle are removed as an assembly. See *Steering Knuckle & Seal for removal and installation*.

Removal, Toronado & Eldorado (1971-73) — Raise vehicle and place jack stand under lower control arms. Remove hub nut, washer and wheel mounting nuts. Remove wheel and tire. Remove 2/3 of brake fluid from reservoir of master cylinder. Using suitable tool (J-22269 C-Clamp) back disc pads away from disc surface and remove disc pads. Remove caliper-to-knuckle mounting bolts, lift caliper from disc and wire up out of way. Do not hang from brake hose. Mark hub and disc for reinstallation and remove disc.

Toronado — Remove disc, using above procedure. Install suitable spacers (J-22237) and suitable tool (J-21579) on hub. Install suitable adaptor (J-22208-2) on slide hammer and screw adaptor into tool on hub (J-21579). Remove three bolts attaching bearing retainer to knuckle. Using slide hammer, remove bearing assembly.

Eldorado — Remove disc using above procedure. Remove upper ball joint cotter pin and loosen nut. Remove nut and brake hose clip from stud and reinstall nut. Strike steering knuckle in area of ball joint until joint is loose. Place a short length of rubber hose over lower control arm torsion bar connector to avoid damage to tri-pot joint seal lip when hub and knuckle are removed. Remove tie-rod end cotter pin and nut and disconnect tie rod from steering knuckle, using suitable puller (J-24319). Separate lower ball joint from suspension, using same puller. Detach upper ball joint from steering knuckle. Remove hub and knuckle as assembly.

Installation — To install, reverse removal procedures, torquing nuts and bolts to specifications.

STEERING KNUCKLE "O" RING SEAL

Removal (1967-72) — Remove front hub and bearing assembly as previously described. Remove upper ball joint cotter key and nut. Remove brake line hose clip from ball joint stud. **NOTE** — *Do not loosen ball joint stud.* Bend lock plate on brake shoe anchor pin bolt away from bolt and remove bolt to remove backing plate from steering knuckle. Remove "O" ring seal between backing plate and steering knuckle.

Installation — Reverse removal procedure.

STEERING KNUCKLE & SEAL

Removal (Eldorado) — Remove hub and knuckle assembly, as previously described. Pry seal from knuckle.

Removal (Toronado) — Remove hub and bearing assembly, as previously described. Remove upper ball joint nut and brake hose clip. **NOTE** — *Do not loosen ball joint.* Place suitable support block (J-22193) under drive axle, to protect constant velocity joint seal. Loosen upper ball joint from knuckle. Using suitable tool (BT-7101), remove tie rod end.

Remove nut from lower ball joint. Place suitable spacer plate (J-22292-3) between lower ball joint seal and steering knuckle. Remove lower ball joint, using suitable tools (J-22292-1&2). Remove knuckle and pry seal out.

Installation — Install hub bearings, bearing cups, and seals in reverse of removal procedures. Lubricate seal and install in knuckle, using suitable tool (J-23115, Eldorado; BT-6904, Toronado). Install lower ball joint stud into knuckle and attach nut. Do not torque. Install tie rod end stud into knuckle and attach nut. Do not torque. Install upper ball joint stud into knuckle, attach brake hose clip. Install nut and torque to specifications. Torque tie rod and lower ball joint nuts to specifications. **CAUTION** — *Cotter pin on upper ball joint must be bent up and flat, to prevent interference with or damage to constant velocity joint seal.* Install hub assembly in reverse of removal procedures.

KNUCKLE SEAL (ON CAR — TORONADO ONLY)

Removal (Right Side) — Raise and support vehicle under lower control arms. Remove drive axle cotter pin, nut, and washer. Remove oil filter. Remove inner constant velocity joint attaching bolts. Discard bolts. Push inner constant velocity joint outward enough to disengage from right hand final drive output shaft and move rearward. Unbolt right side output shaft from engine, then remove shaft. Remove drive axle assembly. **CAUTION** — *Avoid turning constant velocity joints to extremes. Ensure seals are not damaged against shock absorbers or stabilizer bar.* Pry seal from knuckle.

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Installation (Right Side) — Lubricate inner lips of seal and install in knuckle, using suitable tool (BT-6904). Carefully place right side drive axle assembly into lower control arm and position outer race splines into knuckle. Lubricate final drive output shaft seal, install right side output shaft into final drive and loosely attach support bolts to engine. *NOTE* — *When attaching right hand output shaft, do not let it hang.* Assemble support bolts loosely. Center shaft in position by moving side to side and up and down. Torque support bolts. Move right side drive axle assembly toward front of vehicle and align with output shaft. Install new attaching bolts and torque to specifications. Install oil filter and drive axle nut and washer. Torque nut to specification. Install new cotter pin.

Removal (Left Side) — Raise and support vehicle under lower control arms. Remove wheel and tire assembly. Remove drive axle cotter pin, nut, and washer. Remove tie rod end, using suitable tool (BT-7101). Detach brake hose from clip on upper ball joint, then break joint free from knuckle. Insert suitable removal tools (J-22292 series) and remove lower ball joint. Remove and support knuckle. Pry out seal.

Installation (Left Side) — Lubricate inner lip of seal and install, using suitable tool (BT-6904). Insert lower control arm into knuckle. Do not torque nut. Center left side drive axle assembly into splines of hub and insert upper ball joint stud. Place brake hose clip on stud and install nut. Do not torque. Install tie rod end stud and torque nut to specification. Torque upper and lower ball joint nuts to specifications. *CAUTION* — *Upper ball joint cotter pin must be crimped toward upper control arm to prevent interference with outer constant velocity joint seal.*

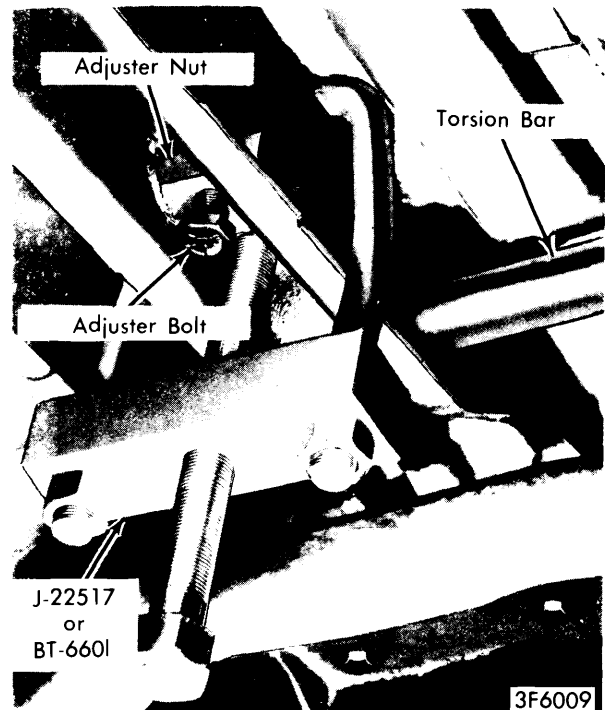
TORSION BAR AND/OR CROSSMEMBER (TORONADO)

NOTE — *Torsion bar must be installed on same side of vehicle from which it was removed. Service replacement bars are tagged with a sticker which designate the front end, and are coded as follows:*

Application	Code
Right Hand — Std.	RE
Left Hand — Std.	LE
Right Hand — H.D.	RF
Left Hand — H.D.	LF

Removal — Raise vehicle on two-post hoist and position floor stands under frame torque boxes. Disconnect parking brake cable at equalizer and guide at crossmember support. Detach connectors from rear cables and pull center cable through support. Install suitable removal tool (BT-6601) on crossmember. Turn center screw of tool until seated in dimple of torsion bar adjusting arm. Remove torsion bar adjusting bolt and nut. Count number of turns required to remove (record this number). Further turn tool center screw until torsion bar is completely relaxed. Remove tool. Repeat procedure on other torsion bar. Remove bolts and retainer from torsion bar crossmember at frame. Free torsion bars and adjusting arms. Disconnect hangers at mufflers and tail pipes. Move torsion bar crossmember sideways, as far as possible (it may be necessary to insert block between body and frame). Move crossmember upward and outward until opposite end clears crossmember frame bracket.

Installation — Reverse removal procedures, torquing nuts and bolts to specifications.



REMOVING TORSION BAR

TORSION BAR (ELDORADO)

Removal — Raise front of vehicle until front wheels are hanging in full rebound position, remove torsion bar adjusting lock nuts, and install suitable torsion bar removal tool (J-22517) and "U" bolt on crossmember. *NOTE* — *If J-22517 is not used, it could result in "U" bolt being bent.* Install lock nuts on "U" bolt, making certain that base is pushed up by lock nuts until flush with last thread on "U" bolt. Tighten center bolt until torsion bar adjusting arm is raised high enough to permit removal of adjuster nut. Remove adjuster nut. Loosen tool center bolt. Repeat procedure on other end of crossmember, then remove tool. Remove parking brake cable from guide at right side. Unbolt torsion bar crossmember at both ends. Move crossmember to opposite side from which torsion bar is to be removed. Lower end of crossmember from frame, then drive crossmember rearward until torsion bar is free. *NOTE* — *If additional slack is required in brake cable, loosen at equalizer.* Remove torsion bar. *NOTE* — *Installation will be easier if one torsion bar is always left in place.*

Installation — Lubricate three inches of each end of torsion bar with extreme pressure chassis lubricant, then install torsion bar by reversing removal procedures. Tighten to specifications. Check riding height and wheel alignment.

UPPER CONTROL ARM

Removal — Raise vehicle and remove wheel. Remove upper shock attaching bolt. Remove cotter pin and nut on upper ball joint. Disconnect brake hose clip. Unbolt and remove caliper assembly from disc; suspend out of way. Disengage upper ball joint from steering knuckle. Remove two control arm bolts and remove control arm by guiding shock absorber through access hole in arm.

Front & Rear Suspension

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Installation — Reverse removal procedures, noting the following: When installing bolts into cam assemblies, both bolt holes should be mounted downward. **NOTE** — *Cotter pin on upper ball joint must be bent upward to prevent damage to constant velocity seal.* Check alignment.

LOWER CONTROL ARM

Removal — Raise and support vehicle. Remove wheel and tire assembly. Loosen hub nut. Remove torsion bar, as previously described. Remove hub nut and washer. Detach brake hose clips from frame. Unscrew upper ball joint nut, detach brake hose clip, and loosen ball joint stud from steering knuckle. Disconnect shock absorber at lower mount. Detach tie rod end at steering knuckle. Disconnect stabilizer bar, nut, and link bolt. Using suitable puller (J-24319), remove lower control arm from knuckle. Disengage hub, knuckle, and disc, as assembly, from drive axle and secure to upper control arm. Unbolt and remove lower control arm.

Installation — Reverse removal procedures and check riding height. **NOTE** — *Upper joint cotter pin must be bent upward to avoid damage to constant velocity joint seal.*

LOWER BALL JOINT

Removal — On Eldorado, remove lower control arm, as previously described. On Toronado, remove steering knuckle, as previously described. On bench, drill or chisel rivet heads from control arm and remove ball joint.

Installation — Install in reverse of removal procedures, using proper service nuts and bolts, supplied in kit. On Toronado, check clearance between ball joint nut and drive axle: it may be necessary to grind nut (not more than 1/16").

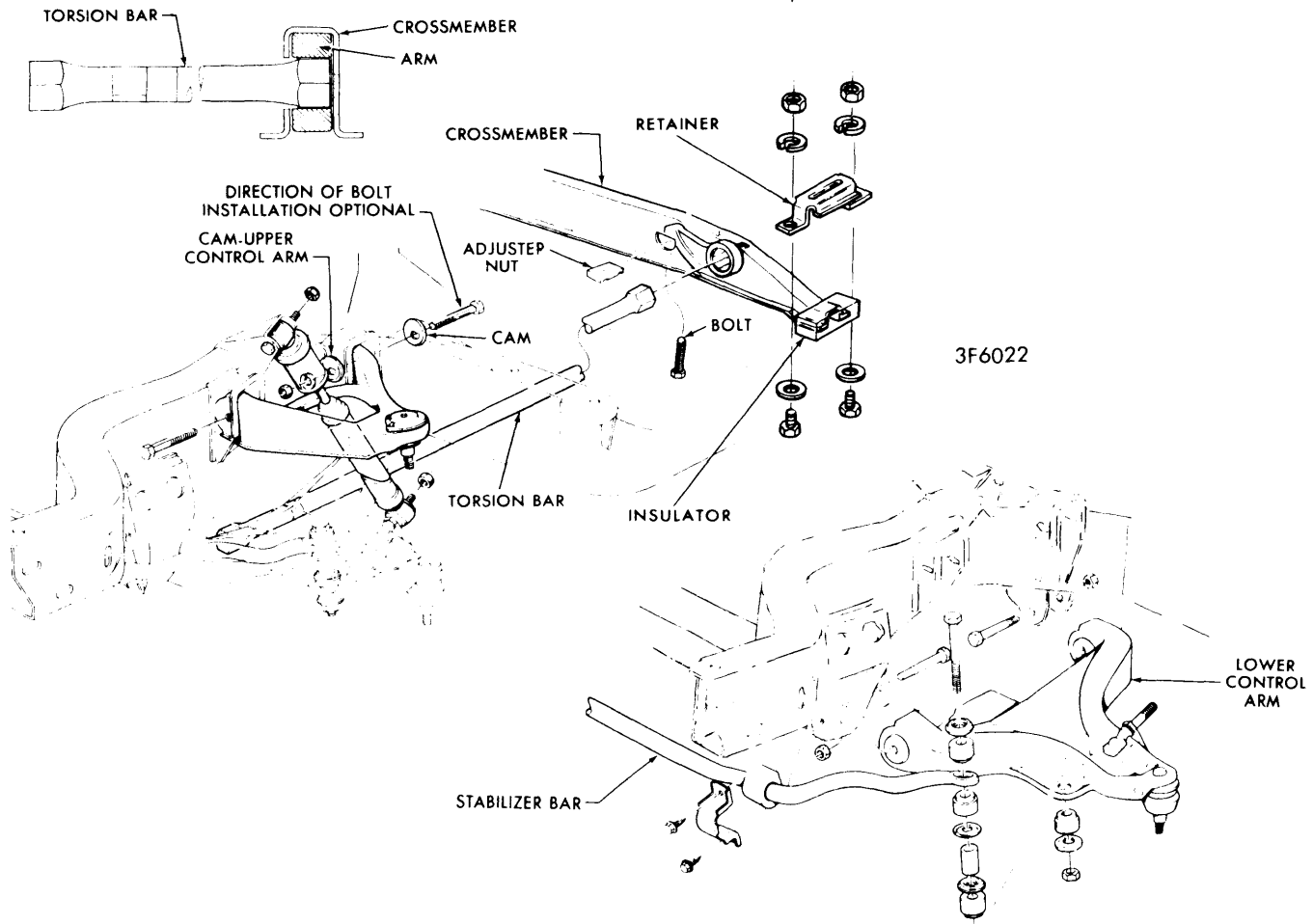
UPPER BALL JOINT

Removal (Eldorado) — Remove upper control arm, as previously described. On bench, grind off rivet heads, then drive ball joint from control arm.

Removal (Toronado) — Raise and support vehicle under lower control arms. Remove wheel and tire assembly. Remove nut and brake hose clip from upper ball joint. Using hammer and brass drift, disengage ball joint from spindle. Raise control arm and drill rivets from ball joint. Remove ball joint.

Installation (Eldorado) — Reverse removal procedures, torquing nuts to specifications. Remove service plug, pack ball joint with suitable grease.

Installation (Toronado) — Remove service plug and install grease fitting before replacing. Install ball joint (insert bolts from top). Reverse removal procedures, torquing nuts and bolts to specifications.



FRONT SUSPENSION (TYPICAL)

1966-73 CADILLAC ELDORADO & OLDSMOBILE TORONADO FRONT (Cont.)

TORSION BAR CROSSMEMBER

Removal — 1) Raise car and place support under front frame horns. Disconnect parking brake cable at equalizer and remove.

2) Relax torsion bars. See *Torsion Bar above*. Slide both torsion bars forward until they bottom in lower control arm nut.

3) Remove left intermediate exhaust pipe. Remove bolts from torsion bar crossmember to frame, then move torsion bar crossmember rearward until bars are free and adjuster arms can be removed.

4) Remove bolts from lower control arm rear bushings. Pry lower control arms down and pull rearward on torsion bars until bars are out of lower control arm anchors.

5) Raise crossmember and remove rubber cushions from frame horns. Move crossmember to right until clear of frame, and remove.

Installation — Reverse removal procedure, being sure to lubricate three inches of each end of torsion bars with extreme pressure chassis lubricant. Tighten to specifications.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.	
	Eldorado	Toronado
Drive Axle Nut (1966-70)	105	①150
(1971).....	110	①150
(1972-73).....	①150	①150
Hub-to-Knuckle (1966-70).....	.65	.65
(1971-72).....	.65	.35
Brake Shoe Anchor Bolt.....	135	135
Stabilizer Bracket (1966-70).....	14	14
(1971-72).....	30	30
(1973).....	35	30
Stabilizer Link (1966-70).....	14	14
(1971-73).....	15	15
Torsion Bar Crossmember (1966-70).....	40	40
(1971).....	15	30
(1972).....	30	25
(1973).....	12	15
Shock Absorber (1966-70).....	.75	.75
(1971).....	.75	.80
(1972).....	.75	.90
(1973).....	.75	.90
Upper Control Arm (1966-70).....	.75	.95
(1970).....	.75	.80
(1971).....	.95	.90
(1972).....	.95	110
(1973).....	.80	.90
Lower Control Arm (1966-70).....	.75	.80
(1971).....	.95	.90
(1972).....	.80	.90
(1973).....	.95	110
Ball Joint Stud Nut (1966-70).....	.40	.85
(1971).....	.85	.50
(1972-73)②.....	.60	.50
(1972-73)③.....	.80	.85
Tie Rod-to-Knuckle (1966-70).....	.45	.50
(1971).....	.30	.35
(1972-73).....	.40	.35
Inner C.V. Joint-to-Output Shaft.....	.65	.65

① — Nuts must be tightened to insert cotter key.

② — Upper.

③ — Lower.