

## GENERAL MOTORS (Cont.)

### CADILLAC (Cont.)

**NOTE** — Observe clearance at cylinder heads to throttle linkage and A/C heater case; damage by contact in these areas could occur.

**Eldorado (350" EFI)** — Remove final drive assembly with output shafts attached. Remove starter and drain crankcase. Remove oil pan bolts and oil pan.

**Seville (350" EFI)** — Remove wheel house struts from both fenders. Remove radiator cover, raise vehicle and drain crankcase. Remove front engine mount through bolts. Remove exhaust crossover pipe, starter and torque converter cover. Remove oil pan bolts and raise engine as far as necessary to remove oil pan by placing screw jack under crankshaft pulley.

#### V8 DIESEL MODELS

**Fleetwood & Deville** — Remove drive and vacuum pump. Disconnect battery cables. Remove fan screws, leaving fan in housing. Raise vehicle and drain crankcase. Remove flywheel

cover and oil cooler lines. Disconnect exhaust crossover pipe and remove starter, ground strap and front engine mount through bolts. Remove oil pan bolts and oil pan.

**Eldorado & Seville** — Remove final drive assembly with output shafts attached. Remove starter and drain crankcase. Place screw jack under crankshaft pulley and raise engine as far as necessary, observing fan shroud clearance. Remove oil pan bolts and remove oil pan.

**NOTE** — Do not use output shafts as "handles"; use transmission jack.

CADILLAC	
TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs.
V6 Engines .....	14
V8 Engines .....	10

## CHEVROLET

#### 4 CYLINDER MODELS

**Chevette (Exc. 200 Auto. Trans.) — 1)** Disconnect negative battery cable and drain radiator. Remove upper radiator support, upper shroud half (if equipped) and radiator hoses. Disconnect cooler lines (if equipped) and remove radiator. Remove air conditioning condenser (if equipped) from radiator support and lay on top of engine. Remove heater core housing and engine mount bolts.

**Chevette (200 Auto. Trans.)** — Disconnect negative battery cable. Remove air cleaner and heater housing unit. Pull back motor mount wire restraints and remove mount bolts. Remove upper radiator support or fan shroud as applicable. Raise vehicle and drain crankcase. Remove flywheel splash shield and rack and pinion assembly. Loosen cover-to-rear exhaust pipe clamp bolts. Install engine lifting tool and raise engine. Remove oil pan bolts and oil pan.

**Monza** — Disconnect negative battery cable. Raise vehicle and drain crankcase. Remove rear section of crossmember. Disconnect exhaust pipe at manifold flange and loosen hanger bracket. Remove starter and flywheel housing inspection cover. Disconnect steering linkage. Remove oil pan bolts and pan.

**Citation** — Raise vehicle and drain crankcase. Remove front engine mount cradle nuts. Disconnect exhaust pipe at manifold and rear transaxle mount. Disconnect starter and remove flywheel housing inspection cover. Remove upper alternator bracket. Raise engine with hoist (J-22825-40). Remove lower alternator bracket and engine support bracket. Remove oil pan bolts and pan.

**NOTE** — Upon reinstallation of oil pan, timing gear cover bolts should be installed last. Cover bolts are installed at an angle and holes align after other pan bolts are snugged.

#### V6 MODELS

**Citation** — Disconnect negative battery cable. Raise vehicle and drain crankcase. Remove crossover pipe. Remove transaxle converter-starter shield or clutch housing cover, as applicable. Remove starter. If equipped with manual transaxle,

remove engine mount nuts and raise engine  $\frac{3}{4}$ ". Remove front cover retaining bolts and oil pan bolts. Remove oil pan.

**All Models (229")** — Disconnect negative battery cable. Remove upper fan shroud. Raise vehicle and drain crankcase. Remove crossover bolts and lower crossover pipe. Remove torque converter cover. Remove starter bolts and swing starter aside. Remove left engine mount through bolt and loosen right engine mount through bolt. Raise engine and reinstall left through bolt without tightening. Remove oil pan bolts and oil pan.

CHEVROLET	
TIGHTENING SPECIFICATIONS	
Application	Ft. Lbs.
4 Cylinder	
98" .....	4.5
151" .....	
Oil Pan Bolts .....	6
Timing Cover-to-Oil Pan Bolts .....	7
V6 Models	
173" .....	
6 mm Bolts .....	6-9
8 mm Bolts .....	14-22
229" .....	
$\frac{1}{4}$ " Bolts .....	7
$\frac{5}{16}$ " Bolts .....	14
231" .....	14
V8 Models	
$\frac{1}{4}$ " Bolts .....	7
$\frac{5}{16}$ " Bolts .....	14
Diesel .....	10

**All Models (231")** — Raise vehicle and drain crankcase. Remove flex plate cover and crossover pipe. Remove oil pan bolts and oil pan.

# Oil Pan Removal

## GENERAL MOTORS (Cont.)

### CHEVROLET (Cont.)

#### V8 MODELS (Except Diesel)

**Corvette** — Disconnect negative battery cable. Raise vehicle and drain crankcase. Disconnect idler arm and lower steering linkage. Remove flywheel splash shield. Disconnect exhaust pipe from manifold and converter and lower. Remove oil pan bolts and oil pan.

**All Other Models** — 1) Disconnect negative battery cable. Remove air cleaner, snorkel and upper fan shroud (one piece shroud on Camaro with heavy duty radiator). Remove distributor cap and move aside, on Camaro only. Raise vehicle and drain crankcase. Remove exhaust crossover pipe at manifold and converter. Remove torque converter cover. On manual transmissions, remove starter and flywheel cover.

2) Remove engine mount through bolts, oil pan bolts, and lower pan. Raise engine and reinstall through bolts to hold engine. Remove oil pan, rotating crankshaft to clear pan.

#### V8 DIESEL MODELS

Disconnect battery cables. Remove air cleaner, drive and vacuum pump and fan shroud. Raise vehicle and drain crankcase. Remove flywheel cover and starter. Remove engine mount through bolts and raise engine. Loosen left mount and remove right mount. Remove oil pan bolts and pan.

**NOTE** — Mounts should be reinstalled and engine lowered to frame for extended work.

## OLDSMOBILE

#### 4 CYLINDER MODELS

**Omega** — Raise vehicle and drain crankcase. Remove front engine mount cradle nuts. Disconnect exhaust pipe at manifold and rear transaxle mount. Disconnect starter and remove flywheel housing inspection cover. Remove upper alternator bracket. Raise engine with suitable hoist (J-22825-40). Remove lower alternator bracket and engine support bracket. Remove oil pan bolts and oil pan.

**NOTE** — Upon reinstallation of oil pan, timing gear cover bolts should be installed last. Cover bolts are installed at an angle and holes align after other pan bolts are snugged.

**Starfire** — Disconnect negative battery cable. Raise vehicle and drain crankcase. Remove rear section of frame crossmember. Disconnect exhaust pipe at manifold and loosen hanger bracket. Remove starter and set to one side. Remove flywheel inspection cover. Disconnect steering linkage at steering gear and idler arm support. Remove oil pan bolts and oil pan.

#### V6 MODELS

**Omega** — Disconnect negative battery cable. Raise vehicle and drain crankcase. Remove crossover pipe. Remove transaxle converter-starter shield or clutch housing cover, as required. Remove starter. If equipped with manual transaxle, remove engine mount nuts and raise engine  $\frac{3}{4}$ ". Remove front cover retaining bolts and oil pan bolts. Remove oil pan.

**Starfire & Cutlass** — Raise vehicle and drain crankcase. Remove crossover pipe and flywheel cover. Remove oil pan bolts and pan.

**All Other Models** — Disconnect battery cables and fan shroud to radiator screws. Remove air cleaner and disconnect throttle and transmission linkage at intake manifold. Raise vehicle and drain crankcase. Remove flywheel cover and shift linkage. Disconnect exhaust crossover pipe and front engine mount bolts. Disconnect idler arm at frame and swing down. Raise engine, remove oil pan bolts and pan.

#### V8 MODELS (Except Diesel)

**All Models (305")** — Disconnect battery cables and remove air cleaner and upper fan shroud. Remove dipstick and tube (Cutlass only). Raise vehicle and drain crankcase. Remove crossover pipe and torque converter cover. Remove engine mount bolts, oil pan bolts and lower oil pan to clear crankshaft throws. Raise engine and install mount bolts without tightening. Remove oil pan.

**All Models (260", 307" & 350", Exc. Toronado)** — Remove distributor cap and align rotor to number 1 firing position. Disconnect battery and remove dipstick. Remove upper radiator support and shroud. Raise vehicle and drain crankcase. Remove flywheel cover. Disconnect exhaust and crossover pipes. Remove crossover pipe (Cutlass only). Remove starter and engine mounts from block. Lift front of engine as far as possible using engine lifting tool (BT-6501). Remove oil pan bolts and oil pan.

**Toronado (307" & 350")** — Disconnect negative battery cable. Remove final drive-to-transmission bolts. Raise and support vehicle on safety stands. Disconnect frame braces. Disconnect idler arm and pitman arm at relay rod with suitable tool (J-24319-01). Disconnect drive axles at output shafts and battery cable bracket at output shaft support. Disconnect output shaft support at engine block. Remove final drive-to-transmission bolts and remove final drive with transmission jack. Remove splash shield and starter. Drain crankcase and remove oil pan bolts and oil pan.

#### V8 DIESEL MODELS

**Toronado** — Disconnect negative battery cable. Remove final drive-to-transmission bolts. Raise and support vehicle on safety stands. Disconnect frame braces. Disconnect idler and pitman arm at relay rod with suitable tool (J-24319-01). Disconnect drive axles at output shafts and battery cable bracket at output shaft support. Disconnect output shaft support at engine block. Remove final drive-to-transmission bolts and remove final drive with transmission jack. Remove splash shield and starter. Drain crankcase and remove oil pan bolts and oil pan.

Application	Ft. Lbs.
4 Cylinder	
Oil Pan Bolts .....	6
Timing Cover-to-Oil Pan Bolts .....	7
V6 Models	
173"	
6 mm Bolts .....	6-9
8 mm Bolts .....	14-22
231" .....	14
V8 Models	
305"	
$\frac{1}{4}$ " Bolts .....	7
$\frac{5}{16}$ " Bolts .....	22
All Others .....	10