

# Engine Removal

## GENERAL MOTORS (Cont.)

### CADILLAC

**CAUTION** — Do not loosen fittings on fuel injection system until pressure is first bled from system by opening Schrader fitting on fuel rail near pressure regulator. When opening fitting, place rags or container near fitting to catch any fuel spillage.

**NOTE** — For Cadillac V6 Engine Removal, See Buick V6 Engine Removal in This Section.

#### ALL MODELS, EXC. ELDORADO & SEVILLE

1) Remove hood and mark hinges for installation. Disconnect battery, remove air cleaner and inlet resonator assembly, and drain cooling system. Remove retaining screws for each wheel housing strut-to-radiator cover and position struts to side. Remove radiator hoses, radiator cover and fan.

2) Disconnect wiring harness and all electrical connections to engine. Disconnect Cruise Control servo from left cylinder head and brake hose from brake pipe. Disconnect throttle linkage and vapor canister hose. Detach power steering pump and air conditioning compressor without disconnecting hoses and position to one side.

3) Disconnect spark plug wires from right side of engine. Disconnect vacuum lines, heater hoses at right cylinder head. Loosen tie struts and swing to one side. Remove two upper transmission-to-engine bolts.

4) Raise vehicle and position on safety stands. Remove nuts securing front engine mounts to frame. Remove starter, converter inspection cover and bolts securing converter to flex plate. Remove remaining bolts securing engine to transmission. Disconnect exhaust pipes at exhaust manifolds.

5) Disconnect fuel line and vapor return line (if equipped with air conditioning) from fuel pump. Lower vehicle and support transmission with a jack. Move right side lifting bracket to a position so it straddles intake passage for number one cylinder. On engines with fuel injection, install suitable lifting bracket (J-25511). Attach suitable hoist to engine, pull engine forward to separate engine and transmission and remove engine.

#### ELDORADO & SEVILLE

1) Mark hinges for installation and remove hood. Disconnect battery, remove air cleaner and drain cooling system. Remove heater hoses and vacuum lines from engine. Disconnect wiring harness, speedometer and throttle cables, other wiring and ground strap.

2) Raise vehicle and secure on safety stands. Remove exhaust pipe flange bolts and disconnect left exhaust pipe from "Y" pipe. Remove from car. Disconnect transmission shift linkage and fuel lines. Remove drive axle to output shaft bolts on both sides. Remove nuts from engine and transmission mounts. Lower vehicle.

3) Remove fan shroud and radiator hoses, transmission cooler lines, radiator, fan and A/C belt. Move compressor to fender well, disconnect and cap power steering lines. Install suitable lifting bracket (J-25511) and move engine forward and up to clear firewall. Remove engine, transmission, and final drive as a unit.

### CADILLAC

#### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
All Models (Exc. Eldorado and Seville)	
Front Mount to Engine Nut .....	21
Front Mount Stud to Frame Nut .....	30
Rear Mount to Crossmember .....	45
Crossmember to Frame Bolt .....	20
Rear Mount to Transmission Bolt .....	30
Transmission to Engine Bolts .....	35
Eldorado & Seville	
Engine Mount Bracket-to-Block .....	65
Engine Mount Bracket-to-Mount .....	30
Engine Mount-to-Frame .....	65
Transmission Mount Bracket .....	40
Transmission Mount Bracket-to-Mount .....	40
Transmission Mount-to-Frame .....	40
Engine Mount Through Bolt .....	30

### CHEVROLET

#### 4 CYLINDER MODELS

1) Disconnect battery cables, all water, vacuum and emission control hoses. Disconnect all wires at sending units, switches and solenoids. Remove radiator panel or shroud, radiator, fan and spacer. Position power steering pump and/or air conditioning compressor (if equipped) out of way without disconnecting hoses.

2) Raise vehicle and disconnect exhaust pipe at manifold. Remove flywheel inspection cover or converter underpan. If equipped with automatic transmission, remove converter-to-flex plate bolts and install converter safety strap. Remove converter housing or clutch housing bolts. Loosen engine front mounts at frame.

3) Lower vehicle and position jack under transmission for support. Using a suitable hoist, raise engine enough to take weight off of engine. Remove front engine mount bolts. Pull engine forward to separate from transmission and remove engine.

#### V6 MODELS

1) Mark hinges and remove hood. Disconnect battery, remove air cleaner and drain cooling system.

2) Remove fan shroud, pulley and fan. Disconnect all electrical wiring, water and vacuum hoses, and fuel inlet line at fuel pump.

## GENERAL MOTORS (Cont.)

### CHEVROLET (Cont.)

3) Disconnect accelerator linkage and exhaust pipes at manifold. Position power steering pump and/or air conditioning compressor (if equipped) out of way without disconnecting hoses.

4) Raise vehicle and disconnect starter cable. Remove starter, exhaust pipes and flywheel-to-converter bolts. Scribe a mark on the flywheel and converter for reassembly reference. Remove transmission-to-engine bolts (manual transmission is removed with engine). Remove motor mount through bolts.

5) Lower vehicle and support transmission. Attach lifting device to engine, raise engine and transmission alternately until engine can be disengaged from transmission, remove engine.

### V8 MODELS

1) Mark hinges and remove hood. Disconnect battery, remove air cleaner and drain cooling system. Remove fan shroud and radiator. Disconnect all electrical wiring, vacuum and water hoses. Disconnect accelerator linkage at intake manifold and fuel line at fuel pump. Disconnect fuel vapor storage canister hose (if equipped).

2) Disconnect vacuum line to power brake unit at manifold. Remove power steering pump (if equipped) and set aside. Raise vehicle and disconnect exhaust pipes at manifolds. Disconnect (if equipped) converter bracket at transmission rear mount. Remove starter, and as applicable, flywheel splash shield or converter housing cover.

3) On vehicles with automatic transmission, remove converter to flywheel attaching bolt. Remove mount through bolts.

Remove bell housing bolts. Lower vehicle and raise transmission using a floor jack. Attach engine lifting device and raise engine. Remove motor mount to engine brackets and remove engine assembly.

CHEVROLET TIGHTENING SPECIFICATIONS MONZA & CHEVETTE	
Application	Ft. Lbs.
Converter-to-Flywheel .....	35
Flywheel Housing-to-Engine .....	25
Crossmember-to-Frame .....	40
Crossmember-to-Transmission	
Center Nut .....	33
End Nut .....	21
ALL OTHER MODELS	
Application	Ft. Lbs.
Motor Mount-to-Engine	
4 Cylinder .....	35
V6 .....	60
All Other Models .....	30-40
Motor Mount-to-Frame	
4 Cylinder .....	45
V6 .....	25-35
All Other Models .....	25-35
Motor Mount Through Bolts	
V6 .....	45
All Other Models .....	65-80
Converter Housing-to-Engine .....	35
Clutch Housing-to-Engine .....	25
Rear Mount-to-Transmission .....	30-35
Rear Mount-to-Crossmember .....	40
Crossmember-to-Frame .....	25

## OLDSMOBILE

### 4 CYLINDER MODELS

1) Mark hinges and remove hood. Disconnect battery, drain cooling system and remove all water and vacuum hoses from engine. Disconnect electrical wiring and remove air cleaner. Remove shroud and fan assembly. Disconnect fuel lines, hoses and linkage from carburetor.

2) If equipped, remove power steering pump and A/C compressor without disconnecting hoses. Position to one side to clear engine. Raise vehicle on hoist and disconnect exhaust pipe from manifold. Drain crankcase.

3) With manual transmissions only, disconnect clutch linkage and remove cross shaft. Remove bell housing bolts, starter wiring and motor mount bolts.

4) With automatic transmissions only, remove converter cover and remaining bolts. Disconnect transmission filler tube support and starter wiring. Slide converter to rear and remove motor mount bolts.

5) On all models, lower vehicle and use jack and block of wood to support transmission. Install lifting device and raise engine slightly to remove front engine mounts. Tilt engine up in front to remove from vehicle.

### V6 MODELS

**NOTE** — Manual transmission and engine are removed as an assembly.

1) Remove hood and mark hinges for installation. Disconnect battery, remove air cleaner and drain cooling system. Disconnect all electrical leads at engine. Disconnect engine-to-body ground strap. Remove air conditioning compressor, without disconnecting lines, and position off to side.

2) Remove fan blade, pulleys and belts. Disconnect radiator and heater hoses from engine. Remove fan shroud assembly. Remove power steering pump, without disconnecting lines, and position off to side. Remove fuel pump hose and all vacuum lines at engine.

# Engine Removal

## GENERAL MOTORS (Cont.)

### OLDSMOBILE (Cont.)

3) Disconnect throttle cable and downshift cable at carburetor. Raise vehicle and disconnect starter cables and cable shield from engine. Disconnect exhaust pipes from manifolds. Remove lower flywheel cover or converter cover.

4) Scribe a mark on the converter and flywheel for reassembly alignment. Remove flywheel to converter attaching bolts. If equipped with automatic transmission, remove transmission to engine bolts. On manual transmission models, remove drive shaft, shift linkage, clutch equalizer shaft and transmission mount.

5) On all models, remove motor mount fasteners. Lower vehicle and support automatic transmission. Attach a suitable hoist to engine and raise enough to take weight off front engine mounts. Remove front mount through bolts. Separate automatic transmission from engine and remove engine. Remove engine and manual transmission as an assembly.

### 305" V8 MODELS

1) Remove hood and mark hinges for installation. Disconnect battery cables at battery. Remove air cleaner and drain cooling system. Disconnect radiator and heater hoses. Remove radiator and fan shroud. Disconnect all electrical wires from engine. Disconnect accelerator linkage at intake manifold.

2) Disconnect fuel line from fuel pump. Disconnect all vacuum lines. Remove air conditioning compressor and/or power steering pump, without disconnecting lines, and position out of way. Raise vehicle and disconnect exhaust pipe at manifold, and (if equipped), converter bracket at rear transmission mount.

3) Remove starter. Remove flywheel splash shield or converter housing cover as applicable. On automatic transmission models, remove converter to flywheel bolt. On all models, remove mount through bolts. Lower vehicle and raise transmission using a floor jack. Remove motor mount to engine brackets and remove engine.

### 260", 307" & 350" V8 MODELS

**Except Toronado** — 1) Drain cooling system. Remove air cleaner and hot air pipe. Remove hood and mark hinges for installation. Disconnect negative battery cable at battery and ground wire at inner fender panel. Disconnect engine ground strap.

2) Disconnect radiator hoses, automatic transmission cooler lines, heater hoses, vacuum hoses, fuel hose from fuel line, wiring and throttle cable. Remove power steering pump and/or air conditioning compressor, without disconnecting lines, and position off to side.

3) Remove upper radiator support and radiator. Raise vehicle and disconnect exhaust pipes at manifolds. Remove torque converter cover and three bolts holding converter to flywheel. Remove engine mount bolts or nuts.

4) Remove three (right side) bolts securing engine to transmission. Remove starter with wires attached and secure to frame. Lower vehicle and attach lifting device to engine. Raise transmission and remove three (left side) engine to transmission bolts. Remove engine assembly.

**Toronado** — 1) Remove hood and mark hinges for installation. Disconnect battery, remove air cleaner and drain cooling system. Disconnect radiator venturi shroud strap (if equipped), remove seal clips and slide seal towards radiator to gain clearance. Disconnect engine ground strap and upper and lower radiator hoses at engine. Disconnect transmission cooler lines at radiator.

2) Disconnect heater hoses, upper radiator baffle and radiator. Remove radiator fan shroud and venturi components (if equipped). Remove power steering pump and mount and/or air conditioning compressor and mount from engine, without disconnecting lines and position out of way. Disconnect fuel lines at fuel pump. Disconnect accelerator linkage, all vacuum hoses and electrical connections at engine. Disconnect left exhaust pipe at manifold.

3) Raise vehicle and position on safety stands. Loosen but DO NOT remove upper left bolt securing converter cover. Disconnect right exhaust pipe at manifold. Disconnect starter cable and remove starter. Remove remaining converter cover bolts and pivot cover out of slot at upper left bolt. Scribe mark aligning converter to flex plate and remove converter bolts. Remove front engine mount nuts.

4) Scribe a mark around washers at right output shaft support bracket and remove bracket. Remove through bolt on left side securing final drive to engine. Remove lower right transmission-to-engine bolt. Attach a suitable support (BT-6322) to final drive. Lower vehicle and attach a suitable hoist to engine. Remove remaining transmission-to-engine bolts. Remove engine from compartment. It may be necessary to raise or lower transmission with a jack and wood block to separate engine and transmission.

### OLDSMOBILE TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
<b>Motor Mount-to-Block</b>	
4 Cylinder .....	35
305" .....	75
Toronado .....	45-50
All Other Models .....	60-75
<b>Motor Mount-to-Frame</b>	
4 Cylinder .....	41
305" .....	35
Toronado .....	75
All Other Models .....	35-50
<b>Motor Mount Through Bolt</b>	
305" .....	55
All Other Models .....	35-45
Converter Housing-to-Engine .....	30-35
Clutch Housing-to-Engine .....	25-30
Rear Mount-to-Transmission .....	30-40
Rear Mount-to-Crossmember .....	45
Crossmember-to-Frame .....	40-50