

GENERAL MOTORS (Cont.)

CHEVROLET

4 CYLINDER MODELS (EXC. CHEVETTE)

1) Raise vehicle, position on safety stands and drain crankcase. Support front of engine so that weight is off front mounts. Remove front crossmember and both front crossmember braces. Disconnect steering idler arm at frame side rails. **NOTE** — If equipped with air conditioning, disconnect idler arm at relay rod. Mark position of pitman arm on steering gear shaft, and remove pitman arm. **CAUTION** — Do not turn steering gear shaft with pitman arm removed, as wheel alignment will change.

2) Remove flywheel cover or converter underpan. Remove oil pan screws and remove oil pan. Remove pickup screen bolt. Remove pickup screen to baffle support bolts and remove baffle support. Remove bolt securing oil drainback to baffle and remove baffle.

4 CYLINDER MODELS (CHEVETTE)

1) Remove heater housing assembly from front of dash and rest housing on top of engine. Remove motor mount nuts. Pull back motor mount wire restraints. Remove radiator upper support. On vehicles with air conditioning, remove upper fan shroud. Disconnect fuel line from charcoal canister. Raise vehicle and drain crankcase oil. Remove flywheel splash shield.

2) On vehicles with manual transmission, remove rack and pinion mounting bolts and move rack and pinion aside. Loosen rear catalytic converter-to-exhaust pipe clamp bolts. Using suitable adapter (J-26436), raise engine. Remove oil pan bolts and lower pan about 1". Rotate front of pan to right and rear to left. Tilt front of pan down 45° and remove pan from vehicle.

6 CYLINDER MODELS

1) Disconnect battery and remove radiator upper mounting panel. Place a piece of heavy cardboard between fan and radiator and raise vehicle. Drain engine oil. On vehicles with manual transmission, remove starter. Remove either flywheel underpan or converter housing underpan and splash shield.

2) Remove through bolts from engine front mounts and, using a jacking device, raise engine about 3". Install through bolts in engine mount and tighten nuts just enough to prevent bolts from slipping out. Lower engine until through bolts rest on frame mounted portion of engine mounts. Remove jack, then remove oil pan.

V8 MODELS

Corvette — Disconnect battery cables and remove dipstick and tube. Raise vehicle, position on safety stands and drain

crankcase. Disconnect steering linkage idler at frame and position out of way. Remove oil pan retaining bolts and remove oil pan.

Monza — Disconnect battery, raise vehicle and drain crankcase. Disconnect exhaust crossover pipe at manifold flanges. Remove converter housing under pan and splash shield. Scribe marks for crossmember braces at frame. Support weight of engine at front and remove crossmember and braces. Disconnect steering idler at frame and starter brace at starter. Disconnect electrical leads at starter and remove starter. Remove oil pan retaining bolts and remove oil pan.

All Remaining Models — 1) Disconnect battery ground cable and remove distributor cap to prevent damage when engine is raised. Remove fan shroud retaining bolts. On models equipped with 454", place a heavy piece of cardboard between fan and radiator. Disconnect exhaust or crossover pipes at manifold flanges. On Chevelle models with 454" engine and manual transmission, remove flywheel shield and starter. Rotate crankshaft until timing mark on damper is at 6 o'clock position.

2) On all 400" engines and 454" engines with manual transmission (except Chevelle), disconnect starter brace at starter. Remove inner starter bolt and loosen starter outer bolt. Starter can now be swung out to gain additional clearance for oil pan removal. Remove front motor mount through bolts. Raise engine until 2" thick wood blocks (Chevrolet and Nova) or 3" wood blocks (Chevelle and Monte Carlo) can be inserted under engine mounts. Lower engine on blocks. On Chevelle models with 454" engine and manual transmission, remove rear transmission mount-to-crossmember nut and raise rear of transmission. Remove oil pan retaining bolts and remove oil pan.

CHEVROLET TIGHTENING SPECIFICATIONS

Application	In. Lbs.
Oil Pan-to-Crankcase	
4 Cyl. (Exc. Chevette).....	15 Ft. Lbs.
4 Cyl. (Chevette).....	45-60
6 Cyl. & V8	⊙80
Oil Pan-to-Front Cover	
6 Cyl.	45
454" V8	55

⊙ — 5/16" bolts on V8 engines should be torqued to 265 INCH Lbs.

OLDSMOBILE

4 CYLINDER MODELS

1) Raise vehicle and drain crankcase oil. Support front of engine to remove weight from front engine mounts. Remove front frame crossmember and both front crossmember braces.

Disconnect steering idler arm at frame side rail. On vehicles with air conditioning, disconnect idler arm at relay rod. Mark relationship of steering linkage pitman arm to pitman shaft and remove arm. **NOTE** — Do not rotate steering gear while steering arm is disconnected as this will change steering wheel alignment.

Oil Pan Removal

GENERAL MOTORS (Cont.)

OLDSMOBILE (Cont.)

2) Remove flywheel cover or converter underpan. Remove oil pan bolts, tap oil pan and remove from vehicle. To remove oil pan baffle, remove pick-up screen-to-support and screen-to-baffle bolts and remove support from baffle. Remove bolt securing oil drain back tube to baffle, then rotate baffle 90° towards left side of vehicle and remove baffle from pick-up screen.

6 CYLINDER MODELS

1) Disconnect negative battery cable, fuel line at fuel pump and electrical leads at starter. Remove upper radiator support and bracket to upper hose. Remove front motor mount bracket to engine bolts. Raise vehicle, position on safety stands and drain crankcase. Disconnect shift linkage on automatic transmission equipped vehicles. Disconnect exhaust pipe at manifold flange. Remove flywheel or converter housing cover and starter.

2) Rotate engine until timing mark on harmonic balancer is at 6 o'clock position. Raise engine by using a suitable lifting tool (BT-7317 and BT-6501) positioned under harmonic balancer. Remove right engine mount and bracket from frame to gain additional clearance for removal of oil pan. Remove oil pan retaining bolts and raise engine just high enough to remove oil pan. **CAUTION** — Avoid lifting engine too high as damage to components mounted on cowl may occur.

V6 MODELS

Raise vehicle, position on safety stands and drain crankcase. Remove flywheel inspection cover and exhaust crossover pipe. Remove oil pan retaining screws and remove oil pan.

V8 MODELS

Omega W/350" — 1) Disconnect battery ground cable. Remove tie bars between radiator and shroud. Remove air cleaner and disconnect downshift linkage at manifold. Raise vehicle, position on safety stands and drain crankcase. Remove shift linkage bolt and swing linkage out of way. Disconnect exhaust crossover pipe at manifold flanges. Remove front mount through bolts and remove lower flywheel housing cover.

2) Disconnect idler arm from frame and pull steering linkage down out of way. Raise engine by using a suitable lifting tool (BT-6501) positioned under harmonic balancer. Remove oil pan bolts and remove oil pan. It may be necessary to rotate crankshaft to gain clearance between crankshaft counterweights and oil pan.

All Remaining Models W/260", 350" & 455" (Exc. Toronado) — 1) — Remove distributor cap and turn engine over until rotor is at number one firing position. Disconnect battery cable and remove dipstick. Remove upper radiator support and shroud bolts. Raise vehicle, position on safety stands and drain crankcase.

2) Remove flywheel or converter housing cover and starter. Disconnect exhaust or crossover pipes at manifold flanges. Disconnect front engine mounts and raise engine using a suitable lifting tool (BT-6501) positioned under harmonic balancer. Remove oil pan retaining bolts and remove oil pan.

Toronado — Engine must be removed before oil pan can be removed. See appropriate article in ENGINE REMOVAL Section.

OLDSMOBILE TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Oil Pan Bolts	
4 Cylinder Models	15
6 Cylinder Models	
Oil Pan-to-Cylinder Block.....	80 INCH Lbs.
Oil Pan-to-Front Cover.....	45 INCH Lbs.
V6 Models	14
V8 Models	
350" Omega	14
All Others	10

PONTIAC

4 CYLINDER MODELS

1) Raise vehicle, position on safety stands and drain crankcase. Support front of engine so that weight is off front mounts. Remove front crossmember and both front crossmember braces. Disconnect steering idler arm at frame side rails. **NOTE** — If equipped with air conditioning, disconnect idler arm at relay rod. Mark position of pitman arm on steering gear shaft, and remove pitman arm. **CAUTION** — Do not turn steering gear shaft with pitman arm removed, as wheel alignment will change.

2) Remove flywheel or converter housing cover. Remove oil pan screws and remove oil pan. Remove pickup screen bolt. Remove pickup screen to baffle support bolts and remove baffle support. Remove bolt securing oil drainback to baffle and remove baffle.

6 CYLINDER MODELS

1) Disconnect battery cable and remove upper radiator shield assembly. Raise vehicle, position of safety stands and drain crankcase. Disconnect exhaust pipe at manifold flange. Remove starter without disconnecting electrical leads and position off to one side. Remove flywheel or converter housing inspection cover.

2) Install a suitable lifting tool and adapter (J-23515-1) to frame and front of engine. Raise engine enough to take weight off front motor mounts. Remove both front motor mount through bolts. **NOTE** — On Ventura models it may be necessary to add washers between tool adapter and harmonic balancer to gain enough clearance between adapter and frame. Remove right front engine mount and bracket from frame. Remove oil pan bolts and raise engine just enough to remove oil pan.

GENERAL MOTORS (Cont.)

PONTIAC (Cont.)

V6 MODELS

Raise vehicle and drain crankcase oil. Remove flywheel cover and exhaust crossover pipe. Remove oil pan.

V8 MODELS

All Models W/260" – 1) Remove distributor cap and turn engine over until rotor is at number one firing position. Disconnect battery cable and remove dipstick. Remove upper radiator support and remove fan shroud bolts. Raise vehicle, position on safety stands and drain crankcase.

2) Remove flywheel or converter housing cover and starter. Disconnect exhaust crossover pipe at manifold flanges. Disconnect front engine mounts and raise engine using a suitable lifting tool (BT-6501) positioned under harmonic balancer. Remove oil pan retaining bolts and remove oil pan.

Ventura W/350" – 1) Disconnect battery cable. If equipped with air conditioning, loosen compressor bolts and tilt compressor inward as far as possible. Remove fan. Raise vehicle, position on safety stands and drain crankcase. Disconnect exhaust pipe crossover at exhaust manifold flanges and hanger at transmission.

2) Remove front motor mount through bolts. Attach a suitable lifting tool (J-23515) to engine and crossmember and raise engine approximately 2" to 3". Remove flywheel or converter housing cover. Remove oil pan retaining bolts and remove oil pan.

All Models W/350" (Exc. Ventura), 400" & 455" – 1) Disconnect battery cable and remove engine fan. Inspect hoses and wiring harness routings for adequate clearances to avoid stretching or binding during engine lifting operation. Remove air conditioning compressor and secure away from engine on Le Mans and Grand Prix models with VIR. Remove distributor cap, raise vehicle and drain crankcase oil.

2) Disconnect exhaust pipes at manifolds. Remove starter motor, bracket and flywheel inspection cover. Rotate crankshaft until number one cylinder is at bottom dead center. Attach suitable lifting device to engine and remove front motor mount through bolts. Remove oil pan bolts and raise front of engine until pan can be removed. **CAUTION – Support engine with wood blocks while engine is raised off mounts.**

PONTIAC TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Oil Pan Bolts	
4 Cyl. Models	15
6 Cyl. Models	80 INCH Lbs.
V6 Models	15
V8 Models	
260"	10
350" (Ventura Only)	14
350" (Exc. Ventura), 400" & 455"	
Front Bolts	12
Rear Bolts (Through Reinforcement Straps)	18