

GENERAL MOTORS BUICK

4-CYLINDER MODELS

2.5L (151") - 1) On automatic transaxle, disconnect battery cables at battery. Drain cooling system. Remove air cleaner and heat tube. Disconnect engine wiring harness connector. Disconnect all vacuum lines. Remove accelerator and transaxle linkage at carburetor.

2) Remove upper radiator hose. If equipped, remove A/C compressor from mounting brackets and position aside, leaving refrigerant lines connected. Remove front engine strut assembly. Disconnect heater hoses at engine.

3) Remove transaxle-to-engine bolts, leaving upper 2 bolts installed. Remove front mount-to-cradle nuts. Remove forward exhaust pipe. Remove converter housing inspection cover and remove starter motor. Remove converter-to-flex plate bolts.

4) If equipped, remove power steering pump and bracket and position aside. Remove lower radiator hose. Remove 2 rear transaxle support bracket bolts. Remove fuel line at fuel pump. Position suitable jack and a block of wood under transaxle and raise engine and transaxle until front engine mount studs clear cradle.

5) Install engine lifting device and raise engine slightly. Remove 2 remaining transaxle-to-engine bolts. Slide engine forward and remove from vehicle.

6) On manual transaxle, disconnect battery cables at battery. Raise vehicle and support with safety stands. Remove front mount-to-cradle nuts. Remove forward exhaust pipe. Remove starter motor with wiring attached and position aside.

7) Remove clutch housing inspection cover. Lower vehicle. Remove air cleaner. Remove all clutch housing-to-engine bolts. Remove forward torque reaction rod from engine and radiator core support. If equipped, remove A/C compressor belt and compressor and position aside, leaving refrigerant lines connected.

8) Remove emission control hoses at canister. If equipped, remove power steering hose. Remove all vacuum lines and electrical connectors at solenoid. Remove heater blower motor. Disconnect accelerator cable at carburetor. Drain cooling system.

9) Disconnect heater hose at engine. Disconnect upper and lower radiator hoses. Disconnect engine wiring harness at firewall connector. Install engine lifting device. Lift engine, disconnect heater hose and fuel line at intake manifold. Remove engine from vehicle.

V6 MODELS

2.8L (173") - 1) Disconnect battery cables at battery. Remove air cleaner. Drain cooling system. Disconnect all vacuum lines to non-engine mounted components. On automatic transaxle, disconnect detent cable at carburetor lever.

2) On all models, disconnect accelerator linkage at carburetor. Disconnect engine wiring harness connector. On automatic transaxle, disconnect ground strap from engine at engine forward strut. On all models, disconnect radiator hoses from radiator and heater hoses from engine.

3) If equipped, remove power steering pump and bracket from engine. On automatic transaxle, raise vehicle. Remove exhaust crossover pipe. Disconnect fuel line at rubber hose connection at right side of engine. Remove right front engine mount-to-cradle nuts.

4) Disconnect battery cables at starter and transaxle housing. Remove transaxle housing inspection cover and remove converter-to-flex plate bolts. Remove transaxle case-to-engine block support bracket bolts. Lower vehicle. Position support stand under transaxle rear extension.

5) Remove engine strut bracket from radiator support and swing rearward. Remove transaxle housing-to-engine bolts, noting location of ground stud bolt. If equipped, remove A/C compressor from mounting bracket and position aside, leaving refrigerant lines connected. Install engine lifting device and remove engine from vehicle.

6) On manual transaxle, disconnect clutch cable from transaxle. Disconnect shift linkage from transaxle shift levers. Remove cables from transaxle bosses. Disconnect speedometer cable from transaxle. Install engine support fixture tool (J-22825 or equivalent) to rear of engine.

7) Raise engine until weight is removed from engine mounts. Remove all but 1 transaxle-to-engine attaching bolts. Unlock steering column and raise vehicle. Remove stabilizer-to-lower control arm nuts. Remove side, crossmember plate-to-side and crossmember assembly attaching bolts.

8) Remove plate on left side. Loosen plate bolts on right side. Remove exhaust crossover pipe. Remove front, rear and side powertrain mount-to-cradle nuts. Remove left front tire and wheel assembly. Remove front crossmember-to-right side member bolts.

9) Using axle puller tool (J-28468 or equivalent), remove both axle drive shafts from transaxle assembly. Remove left side cradle-to-body mount bolts. Swing side and crossmember assembly to left and secure outside of fenderwell.

10) Lower left side of engine and transaxle assembly by loosening engine support fixture tool. Position jack under transaxle. Remove last transaxle-to-engine attaching bolt and separate engine from transaxle. Lower vehicle. Install engine lifting device.

11) If equipped, remove A/C compressor from mounting bracket and position aside, leaving refrigerant lines connected. Disconnect forward strut bracket from radiator support and position aside. Remove engine from vehicle.

3.8L (231") & 4.1L (252") Exc. Riviera - 1) Mark hinges for reinstallation and remove hood. Disconnect battery and drain cooling system. Remove air cleaner. If equipped, remove A/C compressor from mounting bracket and position aside, leaving refrigerant lines connected. Remove fan, pulleys and belts.

2) Disconnect radiator and heater hoses at engine. Remove fan shroud assembly. If equipped, remove power steering pump and position aside, leaving hoses connected. Disconnect and plug fuel pump hoses at pump. Disconnect battery ground cable from engine.

Engine Removal

GENERAL MOTORS (Cont.)

BUICK (Cont.)

3) Disconnect all electrical wiring at engine. Disconnect all vacuum lines to non-engine mounted components. Disconnect accelerator cable and TV cable at carburetor. Disconnect engine-to-body ground strap at engine. Remove alternator. Raise vehicle on hoist and disconnect cable shield from engine.

4) Disconnect exhaust pipes at manifolds. On automatic transmission, remove converter housing inspection cover. Remove converter-to-flex plate bolts. Remove engine-to-transmission attaching bolts.

5) On manual transmission, transmission is removed with engine. Remove drive shaft, shift linkage, clutch equalizer shaft and transmission mount. On all models, remove motor mount through bolts and cruise control bracket (if equipped). Lower vehicle.

6) On automatic transmission, support transmission. On all models, install lifting device to engine. Raise engine and transmission alternately until engine clears motor mounts and can be disengaged from automatic transmission, then remove engine from vehicle.

3.8L (231") & 4.1L (252") Riviera – 1) Mark hinges for reinstallation and remove hood. Disconnect battery and drain cooling system. Remove air cleaner. Disconnect heater hoses at engine. Remove fan, pulleys and belts. Disconnect radiator hoses from engine.

2) Remove fan shroud. Disconnect transmission oil cooler lines at radiator and remove radiator. Discharge A/C system and remove A/C compressor. Disconnect all electrical wiring and vacuum lines at engine. Disconnect and plug fuel pump hoses at pump.

3) Disconnect accelerator cable at carburetor. Remove power steering pump from mounting bracket and position aside, leaving hoses connected. Remove alternator and disconnect engine-to-body ground strap(s) at engine. If equipped, disconnect turbo outlet exhaust pipe from turbocharger assembly.

4) Raise vehicle on hoist and remove starter motor. Drain crankcase. Remove converter housing inspection cover and remove converter-to-flex plate bolts. Remove lower engine-to-transmission attaching bolts. Remove right output shaft support bolts. Remove front motor mount bolts.

5) Lower vehicle and install final drive support chain (BT-6322 or equivalent). Remove remaining engine-to-transmission attaching bolts. Remove final drive-to-engine bracket bolts and remove bracket. Install engine lifting device and remove engine from vehicle.

V8 MODELS

4.3L (265") – 1) Disconnect battery cables at battery. Drain cooling system. Mark hinges for reinstallation and remove hood. Disconnect engine wiring harness and engine-to-body ground straps. Remove air cleaner. Disconnect radiator and heater hoses at engine.

2) If equipped, remove power steering pump and/or A/C compressor from mounting brackets and position aside, leaving hoses and/or refrigerant lines connected. Remove fan and pulley. Disconnect accelerator cable at engine. Disconnect all electrical wiring and vacuum lines at engine.

3) Raise vehicle on hoist and drain crankcase. Disconnect and plug fuel pump hoses at pump. Disconnect exhaust pipes at manifolds. Disconnect starter wiring. On automatic transmission, remove converter housing inspection cover and remove converter-to-flex plate bolts.

4) On manual transmission, disconnect clutch linkage. Remove clutch cross shaft, starter motor and clutch housing inspection cover. On all models, remove 4 lower transmission housing bolts. On automatic transmission, disconnect filler tube support.

5) On all models, remove front motor mount bolts. Lower vehicle. Using floor jack and block of wood, support transmission. Remove 2 remaining transmission housing bolts. Raise transmission slightly. Install engine lifting device and remove engine from vehicle.

5.0L (307") & 5.7L (350") Exc. Riviera – 1) Drain cooling system. Remove air cleaner and (if equipped) hot air pipe. On diesel model, install screened cover (J-26996 or equivalent). On all models, mark hinges for reinstallation and remove hood. Disconnect negative battery cable at battery or batteries.

2) Disconnect ground wire at inner fender panel. Disconnect engine ground strap. Disconnect radiator hoses. Disconnect oil cooler lines at radiator; heater hoses, vacuum lines, fuel hose from fuel line, all electrical wiring, accelerator cable and on diesel model, bellcrank linkage at engine.

3) On diesel model, remove power steering pump hoses at gear. On all other models, (if equipped), remove power steering pump from bracket and position aside, leaving hoses connected and disconnect power steering hose bracket from engine. On all models, (if equipped), remove A/C compressor with mounting brackets from engine and position aside, leaving refrigerant lines connected.

4) Remove upper radiator support and remove radiator. Raise vehicle on hoist. Disconnect exhaust pipes at manifolds. Remove converter housing inspection cover. Remove converter-to-flex plate bolts. Remove motor mount through bolts or nuts. Remove 3 (right side) engine-to-transmission attaching bolts.

5) On diesel model, disconnect starter wiring and remove starter motor. On all other models, remove starter motor with wiring attached and secure to frame with wire. Lower vehicle and install engine lifting device. Using floor jack and block of wood, raise transmission and remove 3 (left side) engine-to-transmission attaching bolts and remove engine from vehicle.

Riviera – 1) Disconnect negative battery cable at battery or batteries. Drain cooling system. Remove upper radiator support. Remove air cleaner and (if equipped) hot air pipe. On diesel model, install screened cover (J-26996 or equivalent). On all models, mark hinges for reinstallation and remove hood.

2) Disconnect engine ground strap. Disconnect radiator and heater hoses at engine. Remove fan and fan shroud. Disconnect oil cooler lines at radiator and on all models except diesel, remove radiator. On diesel model, disconnect electrical wiring at alternator and remove alternator with upper brace.

3) On all models, remove power steering pump with bracket from engine and position aside, leaving hoses connected. Remove A/C compressor with brackets from engine and position aside, leaving refrigerant lines connected. Disconnect and plug fuel pump hoses at pump.

GENERAL MOTORS (Cont.)

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4) Disconnect accelerator cable and TV cable at engine. Disconnect all electrical wiring and vacuum lines at engine. Disconnect left side exhaust pipe at manifold. If equipped, remove upper mount heat shield. Remove left side transmission mount through bolt.

5) Remove final drive-to-engine bracket bolts and remove bracket. Raise vehicle on hoist. Remove splash shield. Remove converter housing inspection cover. Disconnect right side exhaust pipe at manifold. Disconnect starter wiring and remove starter motor. Remove converter-to-flex plate bolts. Remove front motor mount attaching nuts.

6) On diesel model, lower vehicle partially and remove right front tire and wheel assembly. Remove right side exhaust manifold. Disconnect oil cooler lines at oil filter base and remove oil filter base. Raise vehicle to full height. On all models, use sharp tool to mark position of washers on right side output shaft support bracket.

7) Remove right side output shaft support bracket-to-engine block attaching bolts. Remove lower right side engine-to-transmission attaching bolts. Install final drive support chain (BT-6322 or equivalent). Lower vehicle and install engine lifting device.

8) On diesel model, move oil cooler lines rearward and remove radiator. Remove water control valve. On all models, use floor jack and block of wood to raise or lower transmission while removing remaining engine-to-transmission attaching bolts. Remove engine from vehicle.

BUICK TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Motor Mount-to-Crossmember Nuts	
4-Cylinder	41
Motor Mount-to-Frame Nuts	
4-Cylinder	45
V6 & V8 (Exc. Riviera)	35
V6 & V8 Riviera	50
Motor Mount-to-Engine Bolt	
4-Cylinder	35
V6	55
V8	75
Motor Mount Bracket-to-Engine Bolt	
V6 Skylark	92
Motor Mount Bracket-to-Support Bolt	
V8 Diesel	60
Motor Mount Through Bolt	55
Strut Bracket-to-Radiator Support & Strut Bracket-to-Engine Bolt	
V6 Skylark	35
Strut Bar-to-Bracket Bolt	
V6 Skylark	41
Engine-to-Transmission Bolt	35
Converter-to-Flex Plate Bolt	35
Right Side Output Shaft-to-Engine Bolt	
V6 & V8 Riviera	55
Transmission Mount-to-Frame Nut	
V6 & V8 Riviera	40
Crossmember-to-Frame Bolt	40
Rear Mount-to-Transmission Bolt	40
Rear Mount-to-Crossmember Nut	40

CADILLAC

V6 MODELS

4.1L (252") - 1) Mark hinges for reinstallation and remove hood. Disconnect battery cables at battery. Drain cooling system. Remove air cleaner. Disconnect electrical connectors at A/C compressor. Remove A/C compressor from mounting bracket and position aside, leaving refrigerant lines connected.

2) Remove fan, pulleys and belts. Disconnect radiator and heater hoses at engine. Remove radiator and fan shroud assembly. Remove power steering pump from mounting bracket and position aside, leaving hoses connected. Disconnect fuel pump hose and plug line.

3) Disconnect all electrical wiring and vacuum lines at engine. Disconnect accelerator cable and TV cable at carburetor. If equipped, disconnect cruise control servo cable at mounting bracket. Remove alternator. Disconnect engine wiring harness at engine.

4) Raise vehicle and support with safety stands. Remove starter motor. Disconnect exhaust pipes at manifolds. On Eldorado and Seville models, remove both frame brace front attaching bolts and position braces outward to gain access to final drive assembly.

5) Install drive axle boot seal protectors (J-28712 or equivalent). Remove right and left drive axle-to-output flange attaching screws and separate flanges of both output shafts

and drive axles to allow removal of final drive assembly with shafts attached.

6) Remove 2 screws securing battery cable retainer to right side output shaft support. Remove 2 screws securing output shaft support-to-engine block and tie support arm in upright position to output shaft with wire. Remove final drive dust shield.

7) Remove 5 final drive-to-transmission attaching screws. Remove final drive support bracket-to-engine block screws. Using puller tool (J-24319 or equivalent), separate steering linkage intermediate shaft from pitman arm and idler arm. Push linkage towards front of vehicle and position above frame crossmember.

8) Support final drive assembly with suitable jack. Slide final drive assembly forward, off transmission splined shaft, and remove final drive assembly with output shafts attached from vehicle.

NOTE - Do not use output shafts as "handles" to maneuver or support final drive assembly during removal as damage to splines and/or seals may occur.

9) On all models, remove converter housing inspection cover. Mark flex plate and converter for reassembly and remove converter-to-flex plate bolts. Remove engine-to-transmission attaching bolts. Remove motor mount through bolts and lower vehicle.