

# Engine Removal

## FORD

### 6-CYLINDER ENGINES

**NOTE** — Procedures are for engine removal without transmission attached.

#### ALL "E" MODELS

1) Open hood and door, remove engine cover. Drain coolant, remove air cleaner and disconnect battery. Remove front bumper, then remove grille and lower gravel deflector as an assembly. Disconnect radiator hoses at engine and remove A/C compressor.

2) Remove alternator splash shield, disconnect transmission oil cooler lines at radiator (if equipped), remove radiator and shroud. Disconnect heater hoses and alternator wiring at alternator. Remove power steering pump drive belt, then remove power steering pump (with support) from engine. Disconnect and plug fuel line at fuel pump.

3) Disconnect distributor wiring, brake booster hose, and accelerator cable and bracket from engine. Disconnect automatic transmission kickdown (if equipped) at bell crank. Remove exhaust manifold heat deflector and inlet pipe-to-manifold nuts. Disconnect both ends of transmission vacuum line at intake manifold and junction.

4) Remove upper transmission-to-engine bolts. If so equipped, remove automatic transmission dipstick tube support at intake manifold. Raise vehicle on hoist, drain crankcase and remove oil filter. Disconnect and remove starter and flywheel inspection cover. Remove four converter nuts (if automatic transmission), then remove front engine support nuts. Remove remainder of transmission-to-engine bolts. Lower vehicle, install suitable lift chain and remove engine from vehicle.

#### ALL "F" MODELS

1) Drain cooling system and crankcase. Remove hood and mark hinge positions for reassembly. Disconnect battery cables, radiator and heater hoses and fuel line from fuel pump. Remove radiator, fan and water pump pulley. Disconnect accelerator cable at carburetor and remove retracting spring. Disconnect engine wiring, transmission kickdown rod at bellcrank assembly (automatic transmissions only). Disconnect engine ground strap and exhaust pipes at manifolds. On vehicles with power brakes, disconnect vacuum line at intake manifold.

2) Remove alternator mounting bolts and position alternator to one side leaving wires attached. If equipped with power steering, remove pump from mounting brackets and place to one side leaving lines attached.

3) Raise vehicle on hoist. Remove starter, automatic transmission fluid filler tube bracket and engine rear plate upper right bolt. On vehicles with manual transmission, remove flywheel housing lower retaining bolts and disconnect clutch retracting spring.

4) On vehicles with automatic transmission, remove converter housing access cover, flywheel to converter nuts and then secure converter assembly in housing. Remove transmission oil

cooler lines from clip at engine and converter housing to engine lower retaining bolts.

5) Remove insulator-to-intermediate support bracket nut from each front engine mount. On F100/F350 and Bronco models, remove the insulator-to-intermediate support bracket nut from each engine front support. Lower vehicle and support transmission with a floor jack. Remove remaining flywheel or converter-to-engine bolts. Attach a suitable lifting device to engine, raise engine slightly and pull from transmission, then remove engine from vehicle.

### V8 ENGINES

#### ALL "F" MODELS

1) Drain cooling system and crankcase. Disconnect radiator hoses, transmission oil cooler lines (if equipped), then remove fan shroud, radiator, fan, spacer and pulley. Disconnect battery and alternator ground wires at cylinder block. Remove air cleaner and intake duct assembly. Remove alternator attaching bolts and position to one side. Disconnect fuel line at fuel tank line, vacuum lines, heater hoses, electrical wiring and ground straps to cylinder block. Remove A/C compressor and vent hose from crankcase and carbon canister hose.

2) Disconnect accelerator rod and transmission shift rod from carburetor, then remove retracting spring (if equipped). Remove flywheel housing-to-engine upper bolts. Remove starter, then disconnect exhaust pipes from manifolds. Disconnect motor mounts from brackets at frame and remove remaining flywheel housing-to-engine bolts. If equipped with automatic transmission, remove converter inspection plate and converter-to-flywheel attaching bolts.

3) Lower vehicle and support transmission with suitable floor jack. Install suitable lifting brackets on front of left cylinder head and rear of right cylinder head. Attach lifting sling and carefully raise engine and pull it from transmission. Lift engine from vehicle taking care that rear cover plate is not bent or other components damaged.

#### ALL "E" MODELS

1) Remove engine cover, open hood and disconnect battery. Drain cooling system, remove grille assembly and upper grille support bracket. Remove hood lock support and condenser upper mounting brackets. Remove condenser and disconnect lines at air conditioning compressor. Disconnect heater hoses, radiator hoses, and oil cooler lines (if equipped).

2) Remove radiator, fan shroud and fan assembly. Disconnect alternator lead wires at alternator, loosen adjusting bolt and pivot alternator toward engine. Remove air cleaner assembly, duct and valve assembly, and exhaust manifold shroud. Disconnect throttle and transmission linkage at carburetor, then remove accelerator cable bracket from engine.

3) Disconnect fuel, choke, and vacuum lines to carburetor, then remove carburetor. Raise vehicle on hoist. Drain crankcase and remove oil filter. Disconnect exhaust pipes at exhaust manifolds. Disconnect automatic transmission fill tube

## FORD (Cont.)

at cylinder head. Remove engine mount attaching bolts and starter. Remove clutch housing-to-engine bolts on manual transmission models.

4) On models with automatic transmission, remove converter inspection cover and remove converter-to-flex plate attaching nuts. Remove adapter plate-to-converter housing bolts and converter housing-to-engine lower bolts.

5) Remove ground cable-to-cylinder block. Lower vehicle and support transmission using a floor jack. Loosen power steering pump bracket and remove front bracket bolts. Disconnect vacuum line at rear of intake manifold, and engine wire loom. Remove speed control servo and accelerator cable bracket from intake manifold and position to one side.

6) Disconnect air conditioning compressor wire. Install lifting brackets to intake manifold and connect a lifting hoist.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Front Mount-to-Engine	
6-Cyl. "F" Models & Bronco .....	60-80
6-Cyl. "E" Models .....	50-70
V8 .....	50-70
Rear Mount-to-Engine	
6-Cyl. "F" Models & Bronco.....	40-60
6-Cyl. "E" Models .....	50-70
V8 .....	55-65
Converter Housing-to-Engine	
C-4 Transmission .....	28-38
C-6 Transmission .....	40-50
Converter-to-Flywheel .....	20-30
Flywheel Housing-to-Engine	
New Process 435 4-Speed Transmission .....	33-45
Ford 3.03 3-Speed & Warner T-8 4-Speed Transmission .....	40-50