

FORD MOTOR CO.

6 CYLINDER ENGINES

300" "E" MODELS

Remove engine cover, air cleaner, and carburetor. Position radiator shroud on fan, and remove exhaust inlet pipe to manifold nuts. Raise vehicle, remove fuel line from frame, alternator, splash shield, front engine support nuts, and starter. Raise engine slightly and position blocks under engine support. Remove oil pan attaching bolts, then remove oil pan and gasket from block.

300" "F" MODELS

Drain crankcase. Drain cooling system on F100/250 models and disconnect radiator hoses, transmission oil cooler lines, and remove radiator. Raise the vehicle on a hoist. Remove starter motor on F100/250 models. Remove front support insulator-to-bracket nuts and washers on both sides on engine of F100/250 models, then raise front of engine and position 1" thick wood blocks between insulators and support brackets. On all models, remove oil pan attaching bolts, and oil pump inlet tube attaching bolts. Remove inlet tube and screen assembly from oil pump and place in bottom of pan. Remove oil pan and gaskets.

V8 ENGINES

302" "U" MODELS

Remove air cleaner, air cleaner duct, oil level dipstick and tube. Drain the crankcase and remove oil pan attaching bolts. Remove oil pan, seals, and gasket from vehicle.

302" & 351-W" "E" MODELS

1) Disconnect battery, remove engine cover inside vehicle. Remove air cleaner and drain cooling system. Loosen power steering pump and remove belt (if equipped). Remove power steering pump from mount and position out of way. If equipped with air conditioning, remove compressor retainers and position compressor out of way.

2) Disconnect radiator upper hose, remove fan shroud bolts and oil filler tube. Remove oil dipstick-to-exhaust manifold bolt. Raise vehicle on hoist. Remove splash shield under alternator. Disconnect transmission cooler lines at radiator (if equipped). Disconnect lower radiator hose.

3) Disconnect fuel line at fuel pump. Remove engine mount nuts. Drain crankcase, disconnect muffler inlet pipe from exhaust manifolds. Remove automatic transmission dipstick and tube (if equipped), disconnect manual linkage at transmission. Remove center driveshaft support, remove driveshaft from transmission.

4) Position floor jack and wooden block under oil pan and raise engine assembly approximately 4". *NOTE — Keep engine centered in engine compartment to obtain this much height.* Insert wood blocks to support engine at highest possible point. Lower and remove jack, and remove oil pan attaching bolts. Lower oil pan, drop oil pump and pick-up tube into pan, remove oil pan from vehicle.

302" "F" MODELS

1) Remove oil level dipstick and bolts attaching fan shroud to radiator. Position shroud over fan. Remove front engine support-to-chassis bracket nuts and washers. Disconnect transmission oil cooler lines (if equipped) at radiator.

2) Raise engine using suitable jack and position wood blocks under engine supports. Drain crankcase and remove oil pan attaching bolts. Lower oil pan onto crossmember. Remove bolts attaching oil pump pick up tube, then lower tube and screen assembly into oil pan. Remove oil pan from vehicle.

360" & 390" "F" MODELS

Remove oil level dipstick and tube, then drain crankcase. Remove oil pan attaching bolts and lower oil pan to axle. Position crankshaft so that counterweight will clear oil pan. Remove oil pump and inlet tube attaching bolts. Place oil pump, inlet tube screen and intermediate drive shaft in oil pan. Remove oil pan from vehicle.

460" "F" MODELS

Disconnect battery ground cable. Disconnect radiator shroud and position over fan. Raise vehicle on a hoist and drain crankcase. Remove front motor mount through bolt on both sides of engine and use a suitable floor jack to raise engine enough to insert 1 1/4" wood blocks between mounts and brackets. Remove oil filter, oil pan attaching bolts and oil pan from vehicle. *NOTE — It may be necessary to rotate crankshaft to provide clearance between pan and crankshaft counterweights.*

460" "E" MODELS

1) Remove engine cover, disconnect battery and drain cooling system. Remove air cleaner assembly, then disconnect throttle and transmission linkage at carburetor. Disconnect power brake vacuum line. Disconnect fuel line, choke lines, and air cleaner adaptor from carburetor.

2) Disconnect radiator hoses, transmission oil cooler lines, then remove fan assembly, shroud, and radiator. Remove power steering pump and position to one side with hoses connected. Remove oil dipstick tube and engine mount attaching bolts. Remove oil filler tube and bracket.

3) Rotate air conditioning lines at rear of compressor down to clear dash or remove lines. Raise vehicle, drain crankcase, and remove oil filter. Remove muffler inlet pipe assembly. Disconnect manual and kickdown linkage from transmission. Remove propeller shaft and coupling shaft assembly, then remove transmission tube assembly.

4) Position floor jack and wooden block under oil pan and raise engine assembly approximately 4". *NOTE — Keep engine centered in engine compartment to obtain this much height.* Insert wood blocks to support engine at highest possible point. Lower and remove jack, and remove oil pan attaching bolts. Lower oil pan, drop oil pump and pick-up tube into pan, remove oil pan from vehicle.

Oil Pan Removal

FORD MOTOR CO. (Cont.)

TIGHTENING SPECIFICATIONS

Oil Pan Attaching Bolts	Ft. Lbs.
300"	10-15
302" & 351-W"	
$\frac{1}{4}$ "	7-9
$\frac{5}{16}$ "	8-11
360" & 390"	8-10
460"	
$\frac{1}{4}$ "	7-9
$\frac{5}{16}$ "	9-11

NOTE — Torque specifications for components other than oil pan attaching bolts may be found in Engine Removal Section.

GENERAL MOTORS

6 CYLINDER ENGINE

ALL MODELS

Drain crankcase. Disconnect battery ground cable, then remove radiator upper mounting panel and position a heavy piece of cardboard between the fan and radiator. Remove starter (manual transmission models) and flywheel underpan or converter housing underpan and splash shield. Remove front mount through bolts, raise engine approximately 3" and reinstall bolts through bracket. Lower engine so brackets (with bolts installed) rest on frame portion on motor mounts. Remove oil pan attaching bolts and remove oil pan from vehicle.

V8 ENGINES

ALL MODELS EXC. GMC MOTOR HOME

Raise vehicle on hoist and drain crankcase. Remove oil dipstick tube assembly from pan. Remove exhaust crossover pipe (if equipped) and converter housing under pan (automatic transmission only). Remove starter brace and inboard starter bolt, then swing starter aside. Remove oil pan attaching bolts and remove oil pan from vehicle.

GMC MOTOR HOME

Remove transmission and final drive. See *Engine Removal Section*. Drain crankcase. Disconnect relay tie rod from idler arm and relay lever. Disconnect steering shock absorber from crossmember bracket. Remove left hand lower venturi ring bracket and disconnect power steering pump. Remove front

support-to-engine bolts and support-to-mount bolts. Remove flywheel attaching bolts and flywheel. Raise engine approximately one inch and remove oil pan attaching bolts and oil pan from vehicle.

TIGHTENING SPECIFICATIONS

Oil Pan Attaching Bolts	INCH Lbs.
6 Cylinder Engine	
Pan-to-Block	
$\frac{1}{4}$ -20 Bolts	80
$\frac{5}{16}$ -18 Bolts.....	75
Pan-to-Front Cover	50
350" & 400" V8	
Pan-to-Block	
$\frac{1}{4}$ -20 Bolts	80
$\frac{5}{16}$ -18 Bolts.....	65
454" & 455" V8	
Pan-to-Block	
$\frac{1}{4}$ -20 Bolts	55
$\frac{5}{16}$ -18 Bolts.....	135

NOTE — Torque specifications for components other than oil pan attaching bolts may be found in Engine Removal Section.

INTERNATIONAL HARVESTER

NOTE — Oil pan removal information for International Harvester models was not available from manufacturer at time of publication.