

SERVICE C

PARTS • ACCESSORIES • PRODUCT

PACKARD MOTOR CAR COMPANY



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Christmas Greeting

AS the old year draws to a close we want to thank everyone in any way connected with the Packard Service Family for their efforts during the past year in helping all of us make Packard Service a little more intelligent, a little better trained and a bit more satisfying to the customer than ever before.

May your Christmas Day be filled with happiness and may the New Year bring Health and Prosperity to all of you.

— The Factory Service Department

| | | |
|-------------|-----------------|-----------------|
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1953 Torque Specifications

Quality workmanship demands not only that the mechanic install the correct parts properly but that the nuts and bolts be pulled down to within specified limits with a torque measuring wrench.

Failure to pull nuts and bolts down evenly and to within specified limits is a common cause of leaks and in some cases, parts failure.

The torque set forth in this chart occasionally varies on the same bolt and thread size, for example: $\frac{3}{8}$ -16 may show three different torque specifications. The difference in specifications means that the bolt or stud material is made from a different steel, or heavy torque is not required because of the particular location. In such cases the chart will be marked with an asterisk (*) which indicates anything other than the standard torque.

The following torque data is submitted as a handy guide to the field.

| Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. | Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. |
|--|--------------------|-----------------|-----------------|---|----------------------------|-----------------|-----------------|
| BODY | | | | CONTROLS | | | |
| Body hold down bolt (all models)..... | $\frac{3}{8}$ -16* | 20-23 | | All control rods, nuts and jam nuts..... | $\frac{7}{16}$ -32 | | 20-30 |
| BRAKES | | | | All control shafts bracket screws..... | $\frac{1}{4}$ -28 | | 90-100 |
| Master cylinder screw..... | $\frac{3}{8}$ -24 | 25-30 | | Kickdown spring stop nut..... | $\frac{3}{16}$ -18 | 20-25* | |
| Master cylinder to pedal connecting rod nut..... | $\frac{7}{16}$ -20 | 25-30* | | ELECTRICAL | | | |
| Support plate (front) screw nut..... | $\frac{1}{2}$ -20 | 65-75 | | Wiring harness to gasoline tank gauge cable terminal screw... .. | $\frac{7}{16}$ -32 | | 15-20 |
| Support plate (rear) screw nut..... | $\frac{3}{8}$ -24 | 45-50* | | EXHAUST | | | |
| Support plate (front) screw nut..... | $\frac{3}{16}$ -20 | 45-50* | | Muffler support "U" bolt..... | $\frac{3}{16}$ -18 | 12-15* | |
| Shoe anchor pin nut..... | $\frac{3}{8}$ -18 | 85-90 | | Pipe to manifold screw..... | $\frac{3}{8}$ -16 | 18-20 | |
| Cylinder screw (wheel)..... | $\frac{5}{16}$ -18 | 15-18 | | Pipe-clamp "U" bolt nut..... | $\frac{3}{16}$ -18 | 12-15* | |
| Tube rear axle junction vent screw..... | $\frac{7}{16}$ -20 | 30-45* | | Muffler support to insulator bolt..... | $\frac{3}{8}$ -16 | 25-30 | |
| Brake (power) unit assembly to toe board bolt nut..... | $\frac{3}{16}$ -24 | 15-18 | | FRONT SUSPENSION | | | |
| Brake (power) pedal to dash bracket bolt nut..... | $\frac{1}{4}$ -20 | | 90-100 | Support arm bracket bolt nut.... | $\frac{7}{16}$ -20 | 55-60 | |
| Brake (power) vacuum tank strap bolt nut..... | $\frac{1}{4}$ -20 | | 90-100 | Support pivot clamping bolt.... | $\frac{3}{8}$ -24 | 25-30 | |
| BUMPERS | | | | Support pivot pin (upper) bushing assembly (rear)..... | $1\frac{1}{16}$ -11 | 90-100 | |
| Guard to impact bar bolt nut.... | $\frac{7}{16}$ -14 | 40-45* | | Support pivot pin (lower) bushing..... | $1\frac{1}{4}$ -11-Special | 145-155 | |
| Impact bar nut (Marsden)..... | $\frac{1}{4}$ -20 | 45-50 | | Support pivot pin (lower) nut .. | $\frac{3}{8}$ -11-Special | 85-95 | |
| Guard cross bar extension nut... .. | $\frac{1}{4}$ -28 | | 40-45* | Support arm (lower) bushing (inner)..... | $1\frac{1}{4}$ -11-Special | 145-155 | |
| Impact bar (upper) to impact bar (lower) bolt nut..... | $\frac{3}{16}$ -24 | 15-18 | | Support arm (lower) bushing (inner) locknut..... | $\frac{3}{8}$ -18 | 70-75 | |
| Impact bar (upper) to guard bolt nut..... | $\frac{3}{16}$ -24 | 15-18 | | Support arm (upper) bushing (inner) locknut..... | $\frac{3}{8}$ -18 | 70-75 | |
| CLUTCH | | | | Front wheel bearing nut should be tightened to..... | | 20 | |
| Release lever ball nut..... | $\frac{7}{16}$ -20 | 45-50* | | Nut should then be backed off 1 hex on all models except 2613-33..... | $\frac{3}{4}$ -16 | | |
| Relay shaft bearing retainer—screw..... | $\frac{1}{4}$ -28 | | 90-100 | Front wheel bearing nut (inner) should be tightened to..... | | 20 | |
| Relay shaft (outer) clamp bolt... .. | $\frac{3}{8}$ -24 | 25-30 | | Nut should then be backed off to 2 to 3 holes measured on the locking washer on models 2613 and 33..... | $\frac{3}{8}$ -14 | | |
| Relay shaft to release lever link nut..... | $\frac{5}{16}$ -24 | 15-18 | | Support (upper) arm bushing... .. | $1\frac{1}{8}$ -11 | 115-125 | |
| Pedal booster spring bracket bolt..... | $\frac{3}{8}$ -16 | 25-30 | | Support arm (upper) shaft bolt... .. | $\frac{9}{16}$ -18 | 110-125 | |
| Pedal to relay shaft lever link... .. | $\frac{3}{16}$ -24 | 15-18 | | Support pivot pin (upper) bushing assembly (front)..... | $1\frac{1}{16}$ -11 | 90-100 | |
| Relay lever pivot screw..... | $\frac{3}{16}$ -18 | 15-18 | | | | | |
| Relay lever frame pivot bracket screw..... | $\frac{3}{8}$ -24 | 25-30 | | | | | |
| Relay pivot screw..... | $\frac{1}{4}$ -28 | | 90-100 | | | | |
| Relay lever to release lever rod nut (locknut)..... | $\frac{7}{16}$ -24 | 15-18 | | | | | |
| Pedal to relay shaft lever link locknut..... | $\frac{5}{16}$ -24 | 15-18 | | | | | |

| Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. | Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. |
|---|-------------|-----------------|-----------------|--|-------------|-----------------|-----------------|
| GASOLINE | | | | MOTOR MOUNTS | | | |
| Tank drain plug..... | 1/4 Pipe | 10-15 | | Mount (front) to bracket nut.... | 3/8-24 | 25-30 | |
| Tank gage terminal screw..... | #8-32 | | 15-20 | Mount (front) to cylinder bracket (right and left)..... | 3/8-16 | 25-30 | |
| Tank support strap tee bolt..... | 3/8-16 | | 30-40* | Mount (rear) to transmission bolt..... | 1/2-13 | 65-75 | |
| MOTOR | | | | Mount (rear) to bracket (old style)..... | 3/16-20 | 35-40* | |
| Camshaft sprocket nut..... | 1"-14 | 140-160 | | Mount (rear) to bracket (new style)..... | 3/16-20 | 55-60 | |
| Camshaft thrust plate screw..... | 3/16-18 | 15-18 | | RADIATOR | | | |
| Carburetor assembly stud nut.... | 3/16-24 | 15-18 | | Core cradle to frame screw..... | 3/8-24 | 25-30 | |
| Carburetor air cleaner and silencer support bracket screw.... | 3/8-16 | 25-30 | | Hose clamp screw..... | Special | | 20-25 |
| Connecting rod bolt nut..... | 7/16-28 | 60-65* | | Core to cradle—screw..... | 1/2-20 | | 90-100 |
| Crankshaft bearing cap screw.... | 1/2-13 | 90-95* | | REAR AXLE | | | |
| Cylinder head to water outlet flange screw..... | 3/8-16 | 25-30 | | Case assembly to carrier cap stop set screw..... | 1/2-20 | | 25-35 |
| Cylinder to manifold stud..... | 3/8-16 | 25-30 | | Case assembly to carrier cap stop set screw lock nut..... | 1/2-20 | 35-45 | |
| Cylinder head stud nut..... | 7/16-20 | 60-62* | | Case oil plugs (filler and drain).... | 3/8-18 | 25-30* | |
| Distributor retaining screw..... | 3/16-18 | 15-18 | | Differential carrier cap screw.... | 1/2-20 | 65-75 | |
| Distributor primary wire terminal screw..... | #10-32 | | 15-20 | Differential driving gear idler locking plate screw—2613.... | 3/16-18 | 15-18 | |
| Cylinder head temperature sending unit terminal screw..... | #8-32 | | 15-20 | Differential driving gear idler shaft nut..... | 3/16-18 | 70-75 | |
| Cylinder oil pressure gage sending unit terminal screw..... | #8-32 | | 15-20 | Differential driving gear screw.... | 3/8-24 | 50-55* | |
| Cylinder oil passage pipe plugs. | 1/8-18 | 10-12 | | Differential driving gear screw.... | 7/16-20 | 75-80* | |
| | Pipe | | | Differential carrier to case nut.... | 3/8-24 | 45-50* | |
| Fan screw..... | 1/4-28 | | 90-100 | Shaft nut..... | 7/8-14 | 200-270 | |
| Flywheel assembly screw..... | 7/16-20 | 55-60 | | SHOCK ABSORBERS | | | |
| Flywheel housing screw..... | 7/16-14 | 55-60 | | Shock absorber assembly stud nut..... | 1/2-24 | 12-18* | |
| Front end plate screw..... | 3/16-18 | 15-18 | | SPRING | | | |
| Fuel pump assembly screw..... | 3/8-16 | 25-30 | | Bushing bolt and shackle lock nut..... | 1/2-20 | 65-75 | |
| Gear cover screw..... | 3/16-18 | 15-18 | | Bushing bolt and shackle lock nut..... | 9/16-18 | 70-75 | |
| Gear cover screw nut..... | 3/16-18 | 15-18 | | Clip nut..... | 1/2-20 | 45-52* | |
| Generator adjusting strap screw. | 3/8-16 | 25-30 | | STABILIZER | | | |
| Generator adjusting strap to generator screw..... | 3/16-18 | 15-18 | | Stabilizer (lateral) rod nut..... | 1/2-20 | 65-70 | |
| Generator bracket screw..... | 3/16-18 | 15-18 | | Stabilizer (rear lateral) to spring seat arm bolt..... | 3/8-24 | 45-55* | |
| Generator bracket to generator screw..... | 3/16-24 | 15-18 | | Stabilizer (rear roll) grommet nut..... | 3/8-24 | 12-18* | |
| Ignition coil primary terminal nut..... | #10-32 | | 20-30 | Stabilizer (rear roll) rod bearing bracket bolt..... | 3/8-24 | 25-30 | |
| Ignition spark plug..... | 14 mm. | 25-35 | | STEERING | | | |
| Exhaust and intake manifold assembly screw..... | 3/8-16 | 25-30 | | Connecting rod idler lever support screw..... | 3/8-24 | 25-30 | |
| Intake manifold to carburetor stud..... | 5/16-18 | 15-18 | | Gear assembly to frame bolt.... | 7/16-14 | 55-60 | |
| Manifold exhaust and intake screw..... | 3/8-16 | 25-30 | | Linkage taper ball joint nut (power steering)..... | 1/2-20 | 50-55* | |
| Oil filter assembly screw..... | 3/16-18 | 15-18 | | Linkage (power) cylinder assembly to frame bracket bolt..... | 7/16-20 | 55-60 | |
| Oil pan screw..... | 3/16-18 | 15-18 | | Linkage clamp bolt..... | 3/16-24 | 15-18 | |
| Oil pan assembly stud nut..... | 7/16-24 | 15-18 | | Connecting rod idler lever bushing nut..... | 3/8-11 | 110-125 | |
| Oil pan assembly stud..... | 3/16-18 | 15-18 | | Wheel to post nut..... | 3/4-20 | 50-55* | |
| Oil pan assembly screw and lock-washer..... | 3/16-18 | 15-18 | | Direction signal switch lever hub nut..... | 1/4-20 | | 50-55 |
| Oil pan drain plug..... | 3/8-18 | 25-30* | | Connecting rod idler lever bushing retaining nut..... | 3/16-20 | 55-60 | |
| Oil pump assembly screw..... | 3/8-16 | 25-30 | | Directional signal switch lever.... | 1/4-20 | | 12-15* |
| Oil pump cover screw..... | 1/4-20 | | 90-100 | | | | |
| Oil strainer to cylinder screw.... | 5/16-18 | 15-18 | | | | | |
| Starter motor assembly screw.... | 7/16-14 | 55-60 | | | | | |
| Valve cover screw..... | 3/16-18 | | 25-35* | | | | |
| Vibration damper assembly screw..... | 3/4-16 | 130-150 | | | | | |
| Water pump assembly screw.... | 3/8-16 | 25-30 | | | | | |
| Water pump cover screw nut.... | 3/16-24 | 15-18 | | | | | |
| Water pump cover screw..... | 3/16-24 | 15-18 | | | | | |
| Water pump body assembly plug | 3/8-18 | 10-12 | | | | | |

| Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. | Function | Thread Size | Torque Ft. Lbs. | Torque In. Lbs. |
|--|----------------|-----------------|-----------------|--|-------------|-----------------|-----------------|
| STEERING—Cont. | | | | ULTRAMATIC—Cont. | | | |
| Steering (power) pump bracket strap to cylinder head bolt..... | 5/16-18 | 15-18 | | Control valve body (upper) to case screw..... | 5/16-18 | | 108* |
| Linkage control valve to Pitman arm ball stud nut..... | 1/2-20 | 45-50* | | Control valve body plug..... | 5/8-18 | 10-12 | |
| Steering (power) pump adjustment nut..... | 3/8-16 | 25-30 | | Pipe | | | |
| Steering (power) pump bracket to pump bolt..... | 3/8-16 | 25-30 | | Control valve body separator screw..... | 1/4-20 | | 60* |
| Steering (power) pump driving pulley bolt..... | 7/16-20 | 55-60 | | Control valve detent lever set screw nut..... | 1/16-24 | 15-18 | |
| Steering (power) pump pulley bolt..... | 5/16-18 | 15-18 | | Control valve lever (inner) set screw nut..... | 5/16-24 | 15-18 | |
| TRANSMISSION—Std. & O.D. | | | | Control valve link screw..... | 10-32 | | 20-30 |
| Shifter forks interlock bracket screw..... | 3/8-24 | 25-30 | | Control valve link nut..... | 10-32 | | 20-30 |
| Overdrive driving shaft nut..... | 3/4-16 | 200-225 | | Converter clutch pressure plate screw..... | 5/16-18 | 20-25* | |
| Overdrive support insulator (to case) nut..... | 5/16-24 | 15-18 | | Converter clutch housing screw.. | 3/8-16 | 25-30 | |
| Overdrive unit assembly to transmission case screw..... | 3/8-16 | 25-30 | | Converter oil drain plug..... | 1/2-27 | 8-10 | |
| Overdrive unit case to adaptor screw..... | 3/8-16 | 25-30 | | Pipe | | | |
| Overdrive unit case oil plugs .. | 3/4 Pipe | 18-20 | | Converter outlet valve assembly.. | 3/4-16 | 50* | |
| Assembly to flywheel housing screw..... | 1/2-13 | 65-75 | | Converter pump screw..... | 5/16-18 | 20-25* | |
| Driving shaft nut..... | 3/4-16 | 200-225 | | Converter pump shaft screw..... | 5/16-24 | 20-25* | |
| Driving shaft bearing rear cover stud..... | 7/16-24 | 55-60 | | Converter reactor shaft screw.... | 5/16-24 | 20-25* | |
| ULTRAMATIC TRANSMISSION | | | | Converter (first) turbine screw .. | 5/16-24 | 20-25* | |
| Bell housing assembly screw ... | 7/16-14 | 55-60 | | Converter (second) turbine screw .. | 1/4-20 | 12-15* | |
| Bell housing assembly plug..... | 5/8-18 | 10-12 | | Front oil pump assembly screw .. | 1/4-28 | | 90-100 |
| | Pipe | | | Governor assembly screw..... | 1/4-28 | | 70-75* |
| Bell housing assembly plug..... | 5/8-27 | 8-10 | | Governor adaptor screw..... | 1/4-20 | | 90-100 |
| | Pipe | | | Governor pressure take-off plug.. | 1/8-27 | 8-10 | |
| Brake band adjusting screw .. | 5/8-18 | | | Pipe | | | |
| Tighten with a torque load of 20 lbs. ft. Back off 1.75 turns. | | | | Oil cooler hose assembly..... | 5/8-18 | 30 | |
| Tighten jam nut. | | | | Oil filler tube assembly plug.... | 3/4-14 | 18-20 | |
| Brake band adjusting screw jam nut..... | 5/8-18 | 25-30* | | Pipe | | | |
| Brake piston cover screw..... | 10-24 | | 20-30 | Oil cooler assembly elbow (pipe thread)..... | 1/4-18 | 20-25* | |
| Brake piston cover screw..... | 5/16-18 | 15-18 | | Oil cooler tube assembly nut..... | 5/8-18 | 20-25 | |
| Brake piston cover screw..... | 1/2-27 | 8-10 | | Oil pan screw..... | 5/16-18 | 10-12* | |
| Control assembly screw..... | 5/16-18 | | 108* | Oil pan drain plug..... | 5/8-18 | 25-30* | |
| Control valve starter safety switch | 3/4-16 | 50 | | Oil strainer assembly screw..... | 5/16-18 | 15-18 | |
| Control conv. relief valve retainer screw..... | 5/16-18 | | 108* | Planetary cage (rear) screw .. | 5/16-24 | 15-18 | |
| Control oil pump selector valve cover screw..... | 10-24 | | 20-30 | Reaction clutch housing assembly lock nut..... | 1/4-28 | | 90-100 |
| Control direct drive valve cover screw..... | 10-24 | | 20-30 | Reaction clutch housing assembly screw..... | 5/16-18 | 15-18 | |
| Control throttle valve spring seat screw..... | 10-24 | | 20-30 | Rear housing assembly screw.... | 5/16-18 | 15-18 | |
| Control timing valve cover screw | 10-24 | | 20-30 | Rear oil pump body assembly screw..... | 5/16-18 | 15-18 | |
| Control valve body (upper to lower) screw..... | 1/4-20 x 1 1/8 | | 60* | Rear oil pump body cover plate retaining screw..... | 1/4-20 | | 90-100 |
| Control valve body (upper to lower) screw..... | 1/4-20 x 1 1/8 | | 60* | Speedometer pinion adaptor screw..... | 1/4-20 | | 90-100 |
| Control valve body (upper to lower) screw..... | 1/4-20 | | 60* | Universal joint flange nut..... | 3/4-16 | 200-225 | |
| Control valve body (upper to lower) screw..... | 1/4-20 x 1 1/8 | | 60* | UNIVERSAL JOINT | | | |
| | | | | Shaft assembly to flange "U" bolt nut..... | 5/16-24 | 18-22* | |
| | | | | Flange nut..... | 3/4-16 | 200-225 | |
| | | | | Shaft trunnion bearing bracket support bolt nut..... | 5/16-24 | 15-18 | |
| | | | | Shaft assembly to front flange bolt..... | 5/16-20 | 50-60 | |
| | | | | Shaft assembly to front flange bolt..... | 3/8-24 | 40-50 | |
| | | | | WHEELS | | | |
| | | | | Wheel bolts..... | 5/16-18 | 85-95 | |