

THE NEW McCULLOCH

180 Supercharger

FOR FORD V-8 ENGINES



WILL GIVE YOU:

124 HORSEPOWER (38% INCREASE) • BETTER GASOLINE MILEAGE •

SMOOTHER PERFORMANCE • LONGER ENGINE LIFE

1937 INSTALLATION INSTRUCTIONS

Instructions for installing the McCulloch Ford V8 Supercharger on 1937 Ford V8 passenger cars.

IMPORTANT: Although the McCulloch Ford V8 Supercharger can be installed easily and quickly, it is extremely important that these instructions be carefully followed in order to save time and effort and to insure maximum performance and trouble free operation.

1. Remove carburetor, fan, generator, right radiator rod, fuel pump and breather assembly, conduit assemblies, distributor, crank shaft pulley, valley cover, two front motor support bolts and water pumps (car must be jacked up to remove these), care being taken to remove bolts "C" and "D" in the water pump inlet holes shown in Figure 2.
2. Place valley cover on bench or other convenient work place, as the entire supercharger unit must be installed on the valley cover before it is placed on the engine.
3. Drill an 11/16" diameter hole into the valley cover at the location designated by "C" shown in Figure 1.
4. Install the two special screw plugs furnished in vacuum holes "A" and "B" (Fig. 1) in valley cover. Place bolt in hole "H" (Fig. 1).
5. Place Supercharger unit on bench and force short piece of Synthetic Rubber Tubing over end of drain elbow on lower part of gear case. A few drops of oil will allow it to slide on freely.
6. Place new carburetor gasket over the three studs on valley cover. Place manifold riser in position over these studs, but do not fasten. Try one of the fibre spacers on the flange of the riser to determine its proper position, since these spacers will only fit one way. Pick up the Supercharger and slide it from the front into position on the valley cover. The rubber tube on the supercharger must enter the 11/16" hole drilled in operation No. 3. Replace flat washer, lock washer, and nut on the stud and tighten firmly. Select enough of the fibre spacers to fill up the gap between the manifold riser and supercharger outlet flanges. The proper amount must be used to prevent strains in the supercharger unit when tightening the three outlet bolts. Tighten the three nuts on lower manifold riser flange.
7. Install triple crank shaft pulley furnished. Tighten the starting crank screw as firmly as possible with 24" socket wrench, with car in high gear and brake set.

8. Remove single pulleys from water pumps and replace with triple pulleys. This is done by placing pump assembly on arbor press, with pulley up, and applying pressure on shaft. Suitable blocking is necessary to allow impeller to clear arbor press table. Do not try to remove single groove pulleys by striking shaft with hammer. This will ruin the water pump seals. Triple pulleys must be pressed on so that the end of the shaft is flush with pulley hub.
9. Replace water pumps; lower the motor on-to supports; replace bolts and lower radiator hoses.
10. Remove studs "A" and "B" (Fig. 2). From the four studs furnished use one 4-1/4" long to replace stud "B" and one 4" long for "A". Remove bolt "E" from gear cover in Figure 2. Place wedge socket over this hole and fasten with longer 5/16" screw furnished. Now replace distributor after it has been thoroughly checked. Unpack the idler assembly (do not remove wire compressing spring). Start the long tapered bar into the square hole of the wedge socket. At the same time slide the idler support bracket over the two studs which have just been inserted. Replace the two nuts at points "A" and "B". Tighten "A" first. Line up idler with water pump pulley and tighten nut "B".
11. Install the three new belts furnished around crank and water pump pulleys.
12. Place the two brass plates on cylinder block covering the heat transfer holes leading to valley cover. These are directly in the center on both sides of cylinder block. Place valley cover gasket over dowels. Place valley cover and supercharger assembly over motor, keeping rear end tilted up sufficiently to allow front supercharger pulley to pass under belts and engage same. Bring assembly down on dowels. Tighten all valley cover bolts. Cut and remove wire compressing idler spring.
13. Cut off front legs on both conduit assemblies and replace conduits on engine.
14. Remove the two studs "E" and "F" (Fig. 1) directly in center of left cylinder bank and replace with the two 3-5/8" long studs furnished. Place generator bracket over studs and fasten securely.
15. Remove 1/4" pipe plug "G" (Fig. 1) in rear of left cylinder bank and replace with special fitting furnished. Connect the 1/4" oil line supplied and pass over bell housing to right side of motor. Connect to fitting on bottom of Supercharger case.
16. Slide generator belt over rear pulley of Supercharger, place generator on bracket and engage belt. Adjust belt by swinging generator out at the same time observing top and bottom clearance of belt and fasten tightly, allowing about one inch vertical movement in belt. Connect generator wire.

17. Insert the 3/16" T fitting into the aluminum housing near the carburetor flange. Install the 3/16" vacuum lines from the distributor and windshield wiper to this fitting.
18. Install the carburetor and new air cleaner furnished.
19. Install the new gasoline line with the fittings supplied.
20. Two extensions are furnished for the choke and throttle rods. Cut the rods approximately 8" from the ball socket and thread the cut ends with a 3/16" - 24 die for a distance of 1-1/2". Now install the four 3/16" nuts on the four threaded ends. Screw on the extensions and after snapping the ball socket connections on the choke and throttle levers of the carburetor, adjust the length of the rods by means of the extension tubes. Now tighten the four lock nuts.
21. Snap on the long foot accelerator rod supplied. It may be necessary to bend the foot accelerator arm slightly to adjust.
22. Install the new right water hose. Attach the special hose nipple assembly to the left water hose in the same manner as for hot water heater installations, near the top of the radiator end of the hose. Fasten the shorter of the small hoses to this nipple. Fasten the larger hose to the radiator and head and force the other end of the small hose over the pipe nipple on the supercharger housing.
23. Install short nipple, furnished, in tapped hose just forward of right cylinder head water outlet; connect hose to right side of Supercharger case and this nipple. On some of the late cast iron cylinder heads this hole is not drilled. If this is the case, it is necessary to drill a 37/64" hole and to tap with a 3/8" pipe tap.
24. Install the new fan furnished with each Supercharger, making sure that the clearance between radiator and fan at the top is not less than 1/2". It is important that this clearance be at least 1/2" as the blades of the fan will be deflected forward somewhat at high speed. If necessary, new holes should be drilled in the bracket holding the top of the radiator core to the grille, or the present holes may be filed so that the core can be tipped far enough forward to provide sufficient clearance.
25. Refill cooling system and start motor; run just above idling for a few minutes.

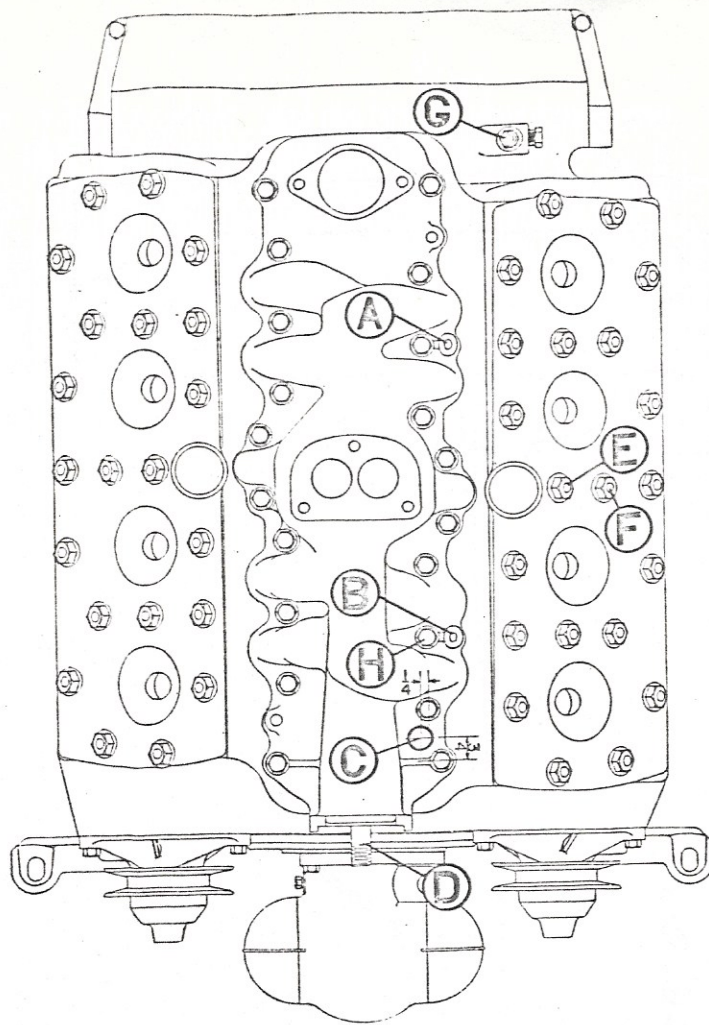


FIGURE 1

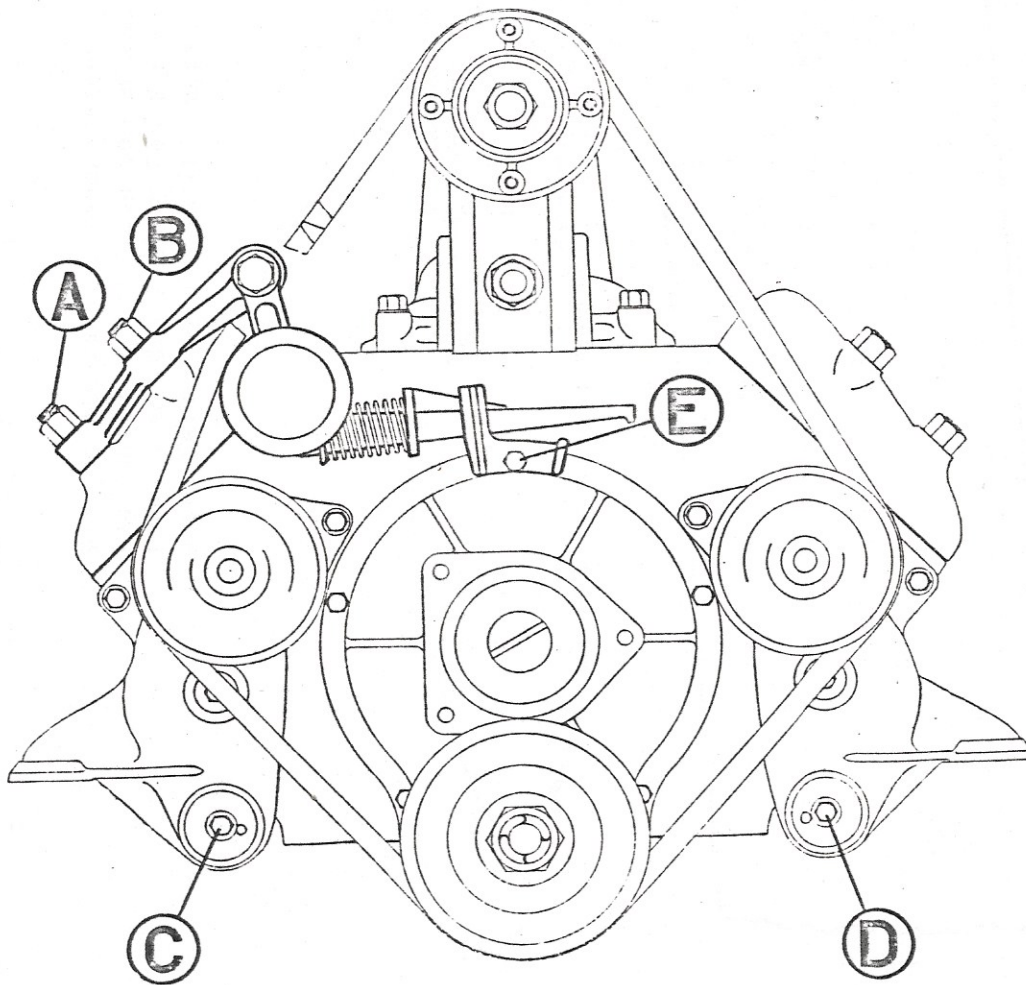
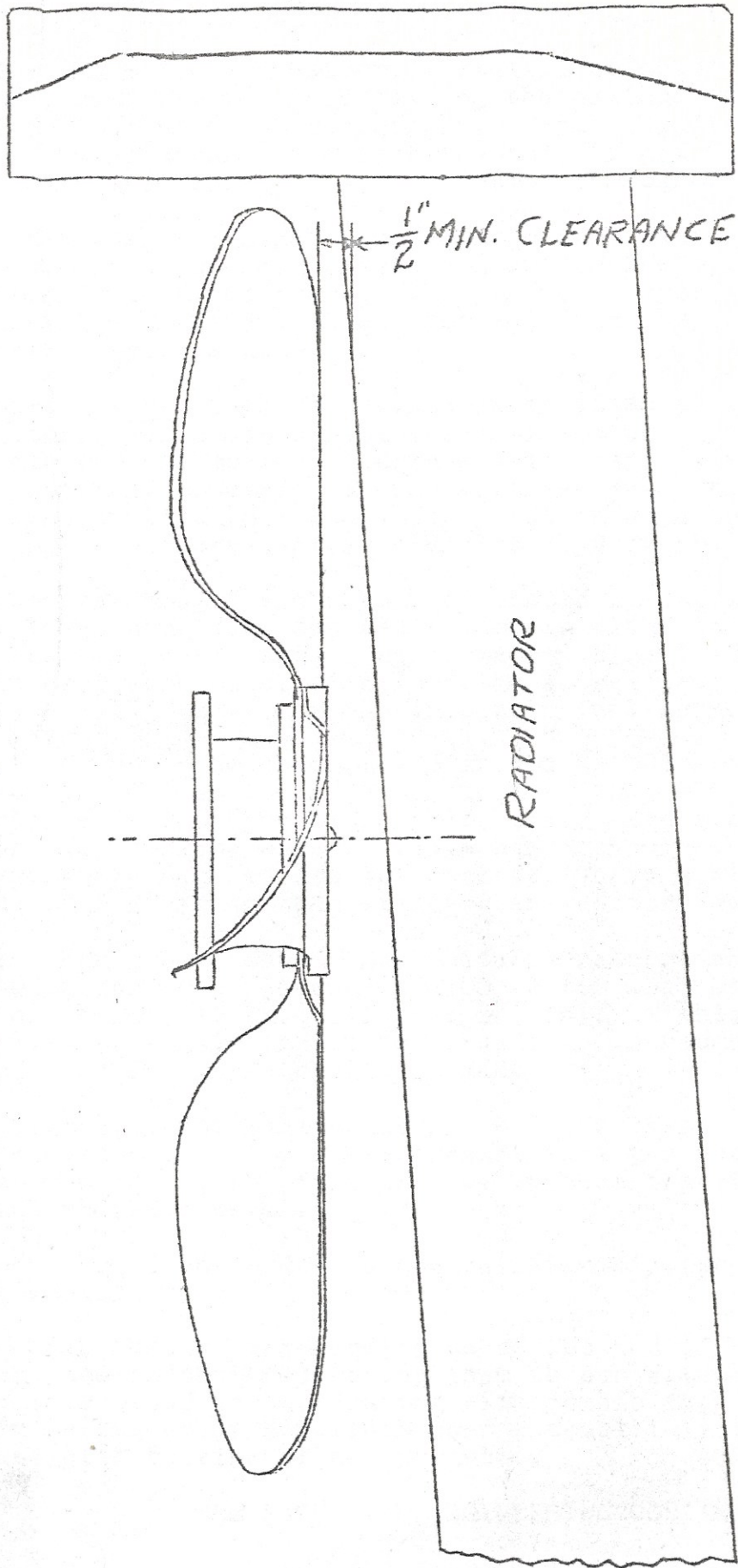


FIGURE 2

CAUTION!

Minimum clearance between radiator and fan must be 1/2". Move top of radiator forward and drill new holes for the two upper fastening screws if necessary.



A FEW TUNE-UP SUGGESTIONS WHICH WILL IMPROVE THE PERFORMANCE
OF YOUR SUPERCHARGED FORD V8

Herein we are offering a few suggestions that will no doubt be of material assistance to you in obtaining the maximum in performance with your McCulloch Supercharger. Naturally, to obtain the best of performance, we assume the car, if not new has been checked over and placed in A-1 condition throughout.

By this we mean that the carbon has been removed from pistons and cylinder heads. That the head gaskets have been inspected for defects and replaced if necessary. That the fuel pump, carburetor and distributor have been checked and found to come up to standard Ford specifications.

For best performance we recommend a maximum spark advance of 16°. This is accomplished by loosening the small screw on the side of the distributor and moving it downward two marks. This setting differs somewhat on every car and must be found on the individual installation through trial. Too great an advance will cause "pinging" and consequently power loss and overheating.

The fuel pump pressure should be checked and should be two lbs. Carburetor float level should be checked to comply with standard Ford recommendations. If maximum performance is desired, 47 jets should be used with Model 48 carburetor at sea level. For higher altitudes 45 jets will maintain better fuel economy.

Compression pressure should be checked and should be 105 lbs. at cranking speed for the 6.3 compression ratio in the 1936 V8. In the 1937 V8 with a 6.12 compression ratio, the compression should be 100 lbs. at cranking speed. Valve seats should be checked and if extremely high speeds are desired, valve springs having a pressure of 25% higher than standard are recommended.

The ignition coil should be checked on a suitable machine and should fire the plugs under a pressure of 100 to 110 lbs. at 5000 R.P.M. engine speed. If the coil does not fulfill this requirement, it will seriously impair top speed. A thorough check of the condenser for leaks should be made.

On our tests we find that the back pressure in the exhaust pipe is extremely high due to the small exhaust tube for each bank and the construction of the muffler. We suggest that two separate pipes and mufflers be used.

Standard spark plugs used on Ford V8's are satisfactory for the supercharged engine.

At all times remember that we are here to serve you and if some special conditions are encountered--bring them to our attention --we are vitally interested in cooperating with you to the fullest extent in having every McCulloch user a completely satisfied and enthusiastic booster of our product.

THE McCULLOCH ENGINEERING COMPANY