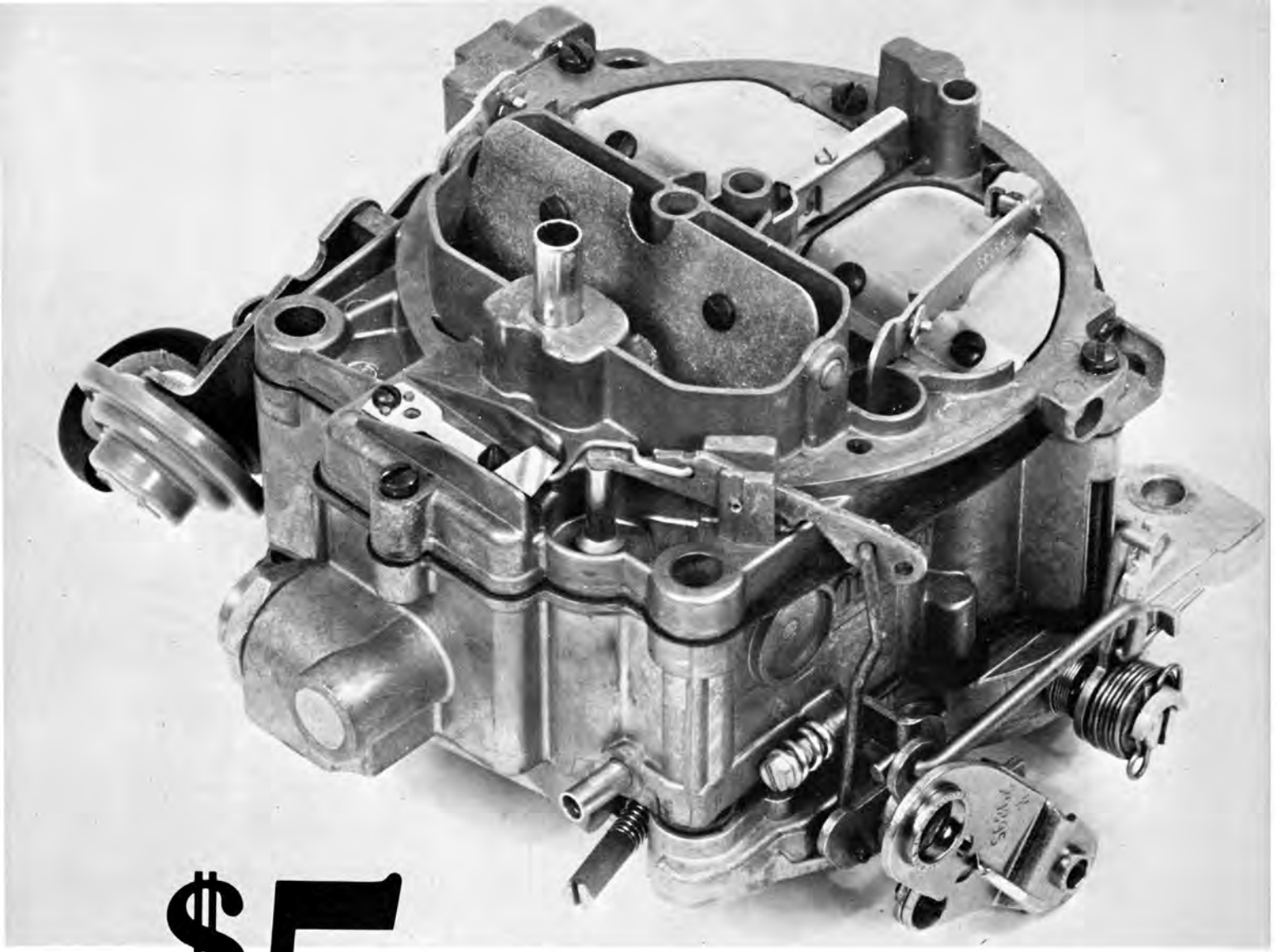


$5 QUADRAJET MODIFICATIONS

FOR LESS THAN $5 AND FEWER THAN 30 MINUTES, YOU CAN TRIM AS MUCH AS 0.2-SECOND FROM ALMOST ANY QUADRAJETTED ET!

By Don S. Jamison

From the time of its introduction, the Rochester Quadrajet has had all the "right things" to be qualified as a combination street/strip performance carburetor: relatively small primary throttle bores, super-large secondary openings, a centrally located fuel bowl chamber (designed to hamper fuel slosh and uneven mixture distribution during hard cornering and acceleration), a pressure-balanced float needle valve and several attending members of a collection of specific features that aimed the total carburetor package at the high rpm/high fuel demand engine. But either through the inability of the average enthusiast to understand his new toy or the lack of true flexibility of the Quadrajet to cope with the usual variety of performance engine characteristics, something happened along the line, and many engine tinkerers turned to the Holley series, and the QJ became the choice exception and not the rule.

However, a few die-hards kept plugging, and their findings bear looking into. And pleasantly enough, the fundamental changes require very little coinage and almost no time. It's all a budget operation, and you can thank Paul Althouse (Paul's Automotive, Monrovia, Calif.) for his willingness to divulge the following. Stick or automatic, any type of car stands to benefit.

First, removal of the unit is a must. Drain all remaining fuel from the chamber and disassemble the major parts (cover, base, center section, etc.). A quick dip in a suitable

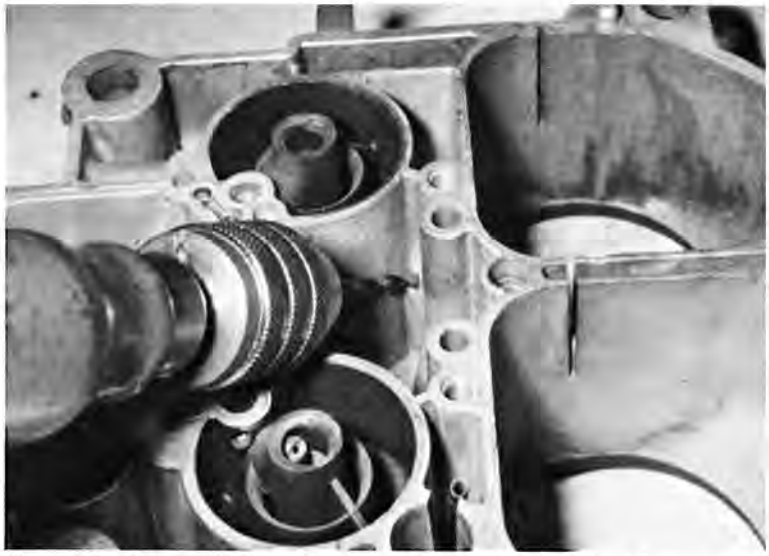
solvent, a little air to dry things out, and you're ready to modify. Reference to the supporting pictures should aid in removing any confusion you might have in location areas and/or metered holes, etc.

Remove the needle member from the needle/seat combination and measure the bore diameter of the needle carrier (the seat piece). This particular bore size sometimes varies slightly from unit to unit, but the important step here is simply the enlargement of the existing stock seat hole to a diameter that is 0.012-0.020-inch oversize (larger than stock). Stock bores normally run 0.125-0.130-inch. To complete the job here, drop a small steel ball (ball bearing, etc.) into the drilling hole and tap the ball so that a slight bevel is stamped into the seat. This will insure proper seating seal of the needle once it is placed back into the seat, even though most all Quadrajet inlet needles are soft-nosed. Don't forget to remove the "seating ball"after you've made the bevel impression on the seat! Fuel volume (inlet) will be thus improved during times when the engine is really cranking some rpm and normal delivery rates would be inadequate to maintain correct fuel bowl level within the carburetor. This change alone is often responsible for as much as 0.2-second improvement in quarter-mile elapsed times. Might try it.

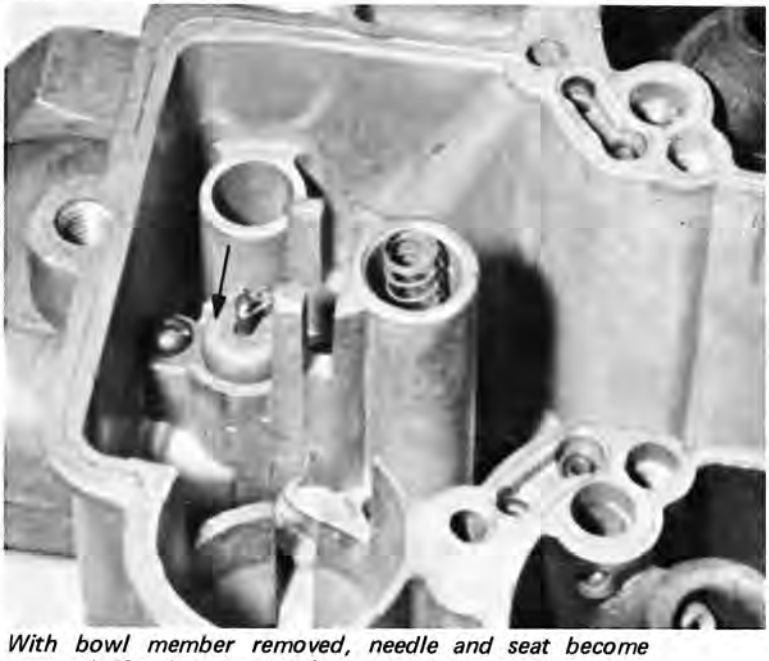
Next, set the float level "as high as you can without permitting the fuel to 'dump' whenever you get on the engine hard". Again, and in keeping with the needle passage bore increase, adequate fuel supply is a problem with the stock Quadrajet, so nudging the float level to a slightly higher than stock setting is necessary. Primary jetting normally comes stock with No. 71 drill-size jets. These should be increased about 2-3 drill sizes (out to a No. 73 or 74), and since Rochester QJ jets do not have a built-in bevel (attack angle) on the inlet side of the jet passage, you can drill out the openings without fear of disturbing design flow rates (a problem in Holley jetting alterations). Secondary butterfly opening should be retarded slightly instead of quickened (a common modification error) so that inlet air flow is not interrupted during hard acceleration, causing a slight pause in engine rpm stack as the secondary system overtakes the primary system. (Check the photos for adjusting screw location.) This is particularly critical for automatic gearbox cars.

Fuel bowl capacity can also be increased by the removal of the two vertical separators that lie on either side of the rear of the stock bowl chamber. Use of a No. 22 drill and a series of holes up and down these sections will facilitate removal of the entire members. . . and the corresponding boost in fuel chamber capacity. Make absolutely certain that you re-wash the entire carburetor (and blow out passages with compressed air) so that any residual metal shavings and grit will be removed from critical areas before the unit is placed back in service.

During reassembly, it's wise to check mating surfaces of the lid, center section, and base so that proper gasket seal can be maintained (and tetraethyl lead deposit "weeping" around these junctions avoided later). And any nicks or burrs should be touched up before final assembly of the major sections. Return of the finished unit to the car should include use of a fresh base gasket and cleaned manifold base and carburetor base gasket surfaces. Tighten the flange nuts (or cap screws) evenly and recheck for tightness after the engine has been heated a couple of times and the base gasket has been thermally compressed. Of course, the usual linkage and air/fuel adjustments apply to suit your driving habits or wishes. But the beauty of it all is the fact that you're less than $5 into the carburetor, little removed from fuel economy with which you can live, and in a position to see a few tenths drop from that tough-to-lower elapsed time card. The results are amazing!



Removal of rear dividers is accomplished by a series of holes drilled into separator ribs. Be sure to emerse-wash the unit to remove all bits of material when the "machine work" is finished.



With bowl member removed, needle and seat become exposed. If unit has needle/seat "dust" cover, remove it as shown.

Adjustment of secondary air valves involves turning spring-loaded screw at right-front corner of carburetor top. Opening rate should correspond to pattern mentioned in story.