



## ALL FOR ONE!

By "A MAN WHO OWNS ONE"

The story of the Three Musketeers and their famous motto, "All for One and One for All," provides a perfect example of friendly cooperation . . . a kind of teamwork which has a definite place in every business.

While driving through New England, not long ago, I had an experience which indicated clearly the importance of cooperation in the Service Business. My car seemed to have lost its pep, and I drove into an eastern Packard Service Station to have the trouble corrected.

I was a bit irritated. Only a few days before I'd had the same trouble, and, at that time, my local service station informed me that the carburetor needed adjustment and the plugs should be cleaned and spaced. Naturally, I had these operations done before I left home. But the car didn't seem to run much better.

I explained all this to the service salesman in the eastern Packard Service Station. He checked the car over carefully and came to the conclusion that it was a question of poor timing. His explanation convinced me that this might easily have been the trouble right along. It made me feel rather sore. I don't like to pay for unnecessary work.

Now, some other serviceman might have used that opportunity to build himself up by condemning the other fellow. But this particu-

lar man had a more sensible conception of his duties. If he did feel that the other service department was to blame, he certainly didn't say so. Instead he backed them up like this:

"I'm sorry you feel that way, Mr. Owner. As I explained, the trouble is undoubtedly due to poor timing but that does *not* mean that the other work was not needed. You'll find that your car will run a lot better than it would have if your carburetor had not been adjusted and the plugs cleaned. Incidentally, whoever did the work knew his business. He has done a fine job."

This serviceman, I later realized, had the right idea. He would have gained absolutely nothing by agreeing with me and knocking the other fellow. Instead, much could have been lost. It certainly would not have improved my feeling toward him, or toward Packard, and it would have shaken my confidence in my local Service Department.

As I see it, it is every serviceman's job not only to diagnose and correct car troubles, but to back up the whole organization of which he is a part. That's the kind of attitude which keeps Packard owners sold on Packard cars *and Packard Service!* "All for One and One for All" is a motto which every serviceman would do well to adopt!

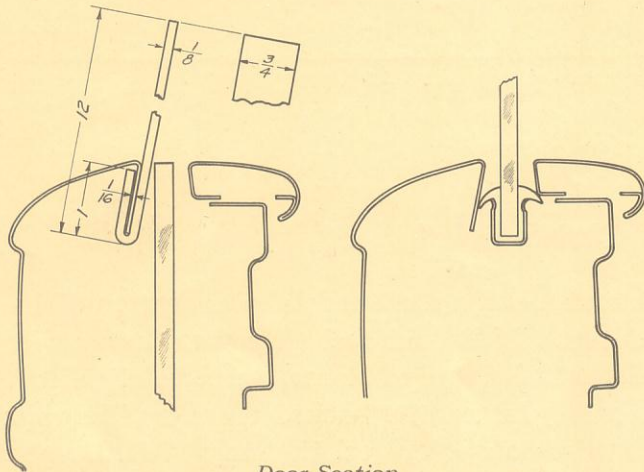


## WINDOW DRAFT ELIMINATION 120 - 120B

This condition can be remedied by making a few simple adjustments:

Check water drain holes in the bottom of doors, and where several are found, pack the lower channel with copper or lead wire wool, or a very coarse hair padding.

The run-up-and-down window channels are equipped with a rubber weatherstrip on the outside edge. This weatherstrip should contact the metal weatherstrip fastened to the door when the window is in fully raised position. If a correction is necessary, it should be made by bending the metal weatherstrip.



Door Section

To do this it is not necessary to disturb the door trim or glass. Make a 12-inch bending tool from a piece of strap iron  $\frac{3}{4}$ " wide,  $\frac{1}{8}$ " thick. Put a 1" lap bend on one end, leaving an opening about the thickness of the body metal. With the window in the lowest position, the tool can be inserted between the glass and the door and slipped over the ledge of the metal weatherstrip which then can be bent and shaped as required. In a few cases you may find that the channel rubber weatherstrip is short, leaving an opening at the ends. To close the opening, cut a piece of sponge rubber of suitable thickness and length and cement it to the door metal in a position which will seal the opening.

## STEERING GEAR CROSS SHAFT SHIM -- 120 - 120B

In the upper end of the front wheel support there is a shim used to adjust front wheel camber.

There are four of these shims obtainable: one with the hole directly in the center; one with  $\frac{1}{16}$ " offset; one with  $\frac{1}{8}$ " offset; and one with  $\frac{3}{16}$ " offset. Any one of these four may be used in production of a new car to obtain the proper camber.

Whenever it is necessary to remove the shim to change a front shock absorber, or for any other type of work, be sure the shim is marked before it is removed so that it will be assembled in the same position as it was when the car was built, thereby maintaining the original camber.

We have heard of cases where the shims were removed and when replaced were just revolved one half turn, which would cause reverse camber and, of course, a serious steering condition.

## INFORMATION BOOKS 120B

We have had some reports from the field to the effect that One Twenty cars were being shipped without the Information Book, registration postal card and Owner's Service Card. These reports evidently are coming from distributors and dealers who are not checking new cars as carefully as they ought to be checked before delivery to the owner.

The reason we say this is that for convenience, the factory is now placing the Instruction Book, registration postal card and Owner's Card in the new tool bag. The tool bag is placed in the tire compartment. Therefore, if you are checking to make certain that all of the tools are delivered to the owner, you will already have discovered the new location of your material and likewise if you are not checking the tools, you probably are not finding this material.

While we are on the subject may we again call your attention to the fact that the Owner's Service Card should be filled out and given to the owner at the time of delivery. The registration postal card should likewise be filled out at the time of delivery and promptly mailed to the factory. Unless car deliveries are registered by means of this postal card with the factory, no claims under the terms of the new car warranty are allowed.

## DISTRIBUTOR—PACKARD TWELVE

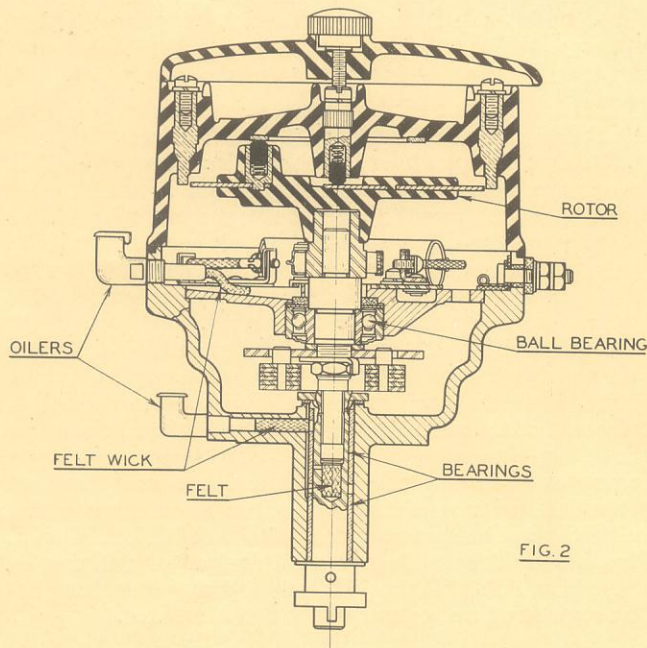
The distributor (IGO-4002A) used with the Packard Twelve is two independent ignition systems each firing one bank of cylinders all mounted in a single housing and using one drive shaft and breaker cam assembly. The unit has full automatic advance control through a centrifugal type governor.

The advance curve to which the automatic governor is set has been carefully worked out by the engineers of the car and distributor manufacturers so as to give the most efficient performance of the engine possible. Therefore, under no circumstances should the action of this governor be changed. Should it be necessary to replace any parts be sure only genuine factory parts are used. Also whenever any parts are replaced it will be necessary to calibrate the governor action to be sure it is in accordance with the standard curve.

The drive shaft and governor assembly is supported by two absorbent bronze bearings mounted in the shank of the distributor housing. These bearings are of special composition with ability to absorb 25% of their own volume of oil. This assures long bearing life. There is also a sealed ball bearing mounted in the breaker plate which supports the breaker cam assembly and rotor mounted on the upper end of the breaker cam assembly.

The breaker plate assembly mounted in the upper part of the distributor housing carries the two sets of breaker points with their condensers. The right-hand set of points as the distributor is mounted on the engine and viewed from the driver's seat is known as the fixed points and fires the right-hand bank of cylinders. The left-hand set of points is known as the adjustable set and fires the left-hand bank.

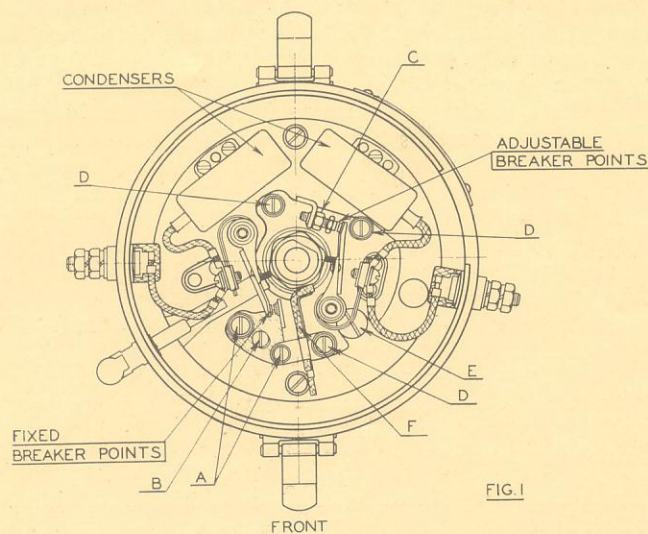




The maximum gap for the breaker points should be .020". This adjustment of the fixed points is obtained by loosening the two screws "A", Fig. 1, and moving the breaker point in or out by the eccentric screw "B". After obtaining the correct gap tighten screws "A". The gap adjustment of the adjustable points is obtained by loosening the point lock nut "C", Fig. 1, and screwing the point in or out as needed. After adjusting and the points are locked in place, recheck the point gaps to be sure they are exact to standard.

Whenever new points are installed or the old points adjusted, it is necessary that the two sets of points be synchronized so that the adjustable points fire  $26\frac{1}{2}^\circ$  after the fixed points and the fixed points will fire  $33\frac{1}{2}^\circ$  after the adjustable points. This is done by loosening the three screws "D" which hold the breaker sub plate on which the adjustable points are mounted and rotating the sub plate by the eccentric screw "E", Fig. 1. After obtaining correct synchronization, tighten the screws holding the sub plate and recheck.

Whenever new breaker points have been installed or the old points adjusted and synchronized it is impor-



tant for best performance of the engine that the distributor be retimed.

Lubrication of the distributor is provided by two hinged top oilers on the outside of the distributor housing. The lower oiler feeds through a felt wick to the upper drive shaft bearing and from the upper bearing runs down to the lower bearing. The upper oiler also feeds through a felt wick for lubrication of the ball bearing supporting the breaker cam assembly. These two oilers should be filled with light engine oil every two thousand miles. Also whenever the distributor is overhauled the felt in the lower end of the hole in the drive shaft which supports the lower end of the breaker cam assembly should be saturated with light engine oil. This will assure proper lubrication of the camshaft and proper advance through the action of the automatic governor. No lubrication should be given the breaker cam as the specially treated lubricating pad "F", Fig. 1, provides proper lubrication. However, when the distributor is overhauled this pad should be replaced with a new one.

Possibly a word in regard to Auto-Lite service will not be amiss. Official service stations are maintained in all the more important cities throughout the world. These stations specialize in electrical service and are kept informed of all the latest methods and changes relative to service by the factory. Their services are always at the disposal of any dealer who may be experiencing any difficulty. They will be glad to have you call upon them to render any assistance possible to maintain the highest performance of Packard cars.

## SPECIFICATIONS

**TYPE:** IGO-4002A. Rotation: L. H. from top.

**DRIVE:** Offset coupling.

**CONTROL:** Full automatic with centrifugal type governor.

**BREAKER POINTS:** Two sets with a six-lobe cam; maximum gap .020"; point is grounded; breaker arm spring tension, 18 to 20 oz.

**SYNCHRONIZATION:** Set adjustable points to fire  $26\frac{1}{2}^\circ$  (distributor) after fixed points; fixed points fire  $33\frac{1}{2}^\circ$  (distributor) after adjustable.

**CONDENSER:** Two mounted on the breaker plate; capacity—20 to 24 mfd.; grounded through mounting screw which must be tight.

**BEARINGS:** Two absorbent bronze for drive shaft; one ball bearing for breaker cam assembly.

**LUBRICATION:** Two oilers on outside of the housing fill with light engine oil every 2,000 miles; breaker arm pivot pins 1 drop only of light oil every 5,000 miles; saturate felt in drive shaft and replace breaker cam lubricating pad when unit is overhauled.

**ADVANCE:**  $0^\circ$  at 300 r.p.m.;  $.9^\circ$  at 400 r.p.m.;  $1.8^\circ$  at 500 r.p.m.;  $2.7^\circ$  at 600 r.p.m.;  $3.6^\circ$  at 700 r.p.m.;  $4.4^\circ$  at 800 r.p.m.;  $5.3^\circ$  at 900 r.p.m.;  $6.2^\circ$  at 1000 r.p.m.;  $7.1^\circ$  at 1100 r.p.m.;  $8^\circ$  at 1200 r.p.m. (These are distributor degrees and r.p.m.)

**TIMING:** Through adjustment of hold down arm.



## FRONT SEAT BACK—120-120B

Technical letter 1963 outlined a method of changing the angle of the front seat back on 1200 sedans by the use of wedges carried in parts stock under 228310 and two longer screws. The method is to loosen the two screws at the front and remove the two screws at the rear. The shims are pressed in position with the thick end toward the rear. This raises the entire seat assembly and throws the seat back forward about  $1\frac{1}{4}$  inches. When installing the shims, the rear screws that hold the seat frame to the shifting rails should be changed to flat head screws of the following dimensions:  $\frac{5}{16}$ " x 18 x  $2\frac{1}{2}$ ".

Shims of the same thickness installed in the One Twenty with the use of the longer screws will tilt the seat back forward the same amount.

## ADDITIONAL BUSINESS

The service manager in Rochester goes after additional business with the use of a one-cent United States postal card; a sample of one is shown below. These can be printed locally at very low cost.

**IMPORTANT MESSAGE!**  
**TO ALL PACKARD ONE-TWENTY OWNERS**

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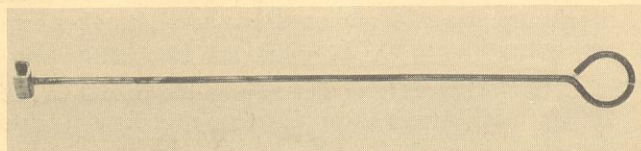
Would you like to add many miles to the life of your Packard One-Twenty motor?

Packard engineers have designed an oil puralator thru which the motor oil is filtered. This process removes the carbon particles and sludge, returning the oil to the crankcase fresh and clean ready to do a real lubricating job again.

Installation requires about one hour.  
Price \$6.50 Installed

**PACKARD ROCHESTER, INC.**  
1042 UNIVERSITY AVE.      PHONE: MONROE 1065

## RADIATOR DRAIN COCK WRENCH



Tool No. S.T. 5076, Price \$.67, Models 120-120B

The position of the radiator drain cock on the One Twenty makes it rather difficult to open and close. The wrench illustrated makes it an easy job.

## ELIMINATING TRUNK AND BUMPER GUARD INTERFERENCE—120B

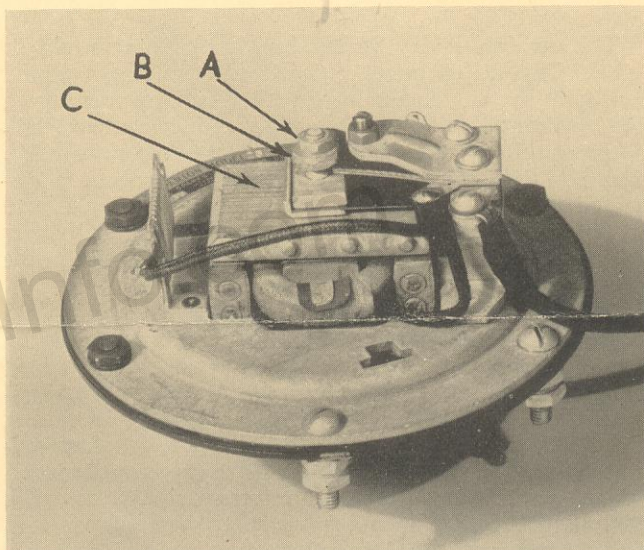
At the present time, the rear bumpers on all One Twenty-B rear trunk rack jobs, with the exception of the touring sedan, are equipped with bumper guards as standard equipment. When a rear rack trunk and hinge equipment is used it is necessary to replace the bumper guard on the right side with the bumper emblem, part 304466. This will eliminate interference with the trunk when it is tilted to the right to allow access to the spare tire compartment.

## HORN TONE ADJUSTMENT—ALL MODELS

Should the tone of the horns become unsatisfactory, the following procedure should be followed.

Remove motor cover, by removing screw found in its center, also V-shaped strap which secures motor cover to horn assembly. When horns are operated in pairs, it is very difficult to determine which horn is at fault. It is rarely found that both horns are out of adjustment at the same time, therefore, it is advisable to test and adjust horns individually.

A wire will be found connecting each horn to the relay through which electric energy is supplied to the horns. By removing one of these wires from the relay, only one horn is left operative. It is better to remove wire from the relay instead of at the horn. If it is removed from the horn and the loose end becomes grounded, a short circuit will occur when the steering column push button is operated to test the other horn. Horns should be adjusted with car motor running at a speed which will produce maximum generator output registered on instrument panel ammeter.



If the horn is rough and metallic in its tone, loosen lock nut "A" and turn adjusting nut "B" clockwise one-sixth of a turn or one flat on adjusting nut and lock in place with nut "A". Continue in this manner until tone is smooth and clear.

If the horn lacks volume, turn adjusting nut "B" in counter-clockwise direction. One should bear in mind when adjusting horns singly that there will not be as much sound output as when operated in pairs. This applies especially to the high-pitched horn.

After one horn has been adjusted, disconnect this horn from relay and connect the other horn to relay and proceed with the adjustment of this horn as before. When both horns have been adjusted individually, connect both to the relay and operate together. A smooth, harmonious note should be the result.

Caution:—Before replacing motor cover, be sure lock nut "A" and Adjusting nut "B" are securely locked together and that resistor or coil lead wires do not rest against armature "C".

SUGGESTIONS OR QUESTIONS FROM READERS ARE ALWAYS WELCOME. HOW CAN WE MAKE THE SERVICE LETTER OF MORE VALUE TO YOU? ADDRESS—NORM. LULL—EDITOR PACKARD SERVICE LETTER.