SERVICE MANAGER'S PERSONAL COPY

VOL. 7 NO. 2 JAN. 15, 1933

The Tenth Series

A DETAILED presentation of the mechanical features of the Tenth Series cars will be given by the Service Supervisors at Service Meetings held by distributers throughout the country. The next few issues of the SERVICE LETTER will give you, in detail, instructions for servicing various units such as the new carburetor, the ignition system and the brakes. Where these instructions are of considerable length, we will use inserts to the SERVICE LETTER.

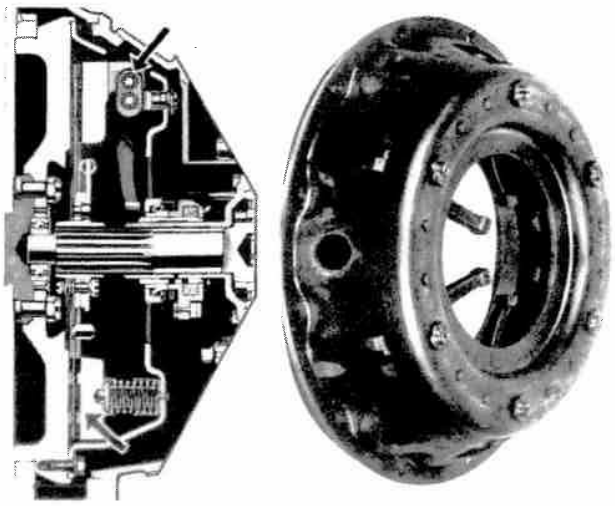
As you have already received Sales and Advertising Literature in which the principle sales features of the car are discussed and illustrated, we will cover only mechanical items in the SERVICE LETTER.

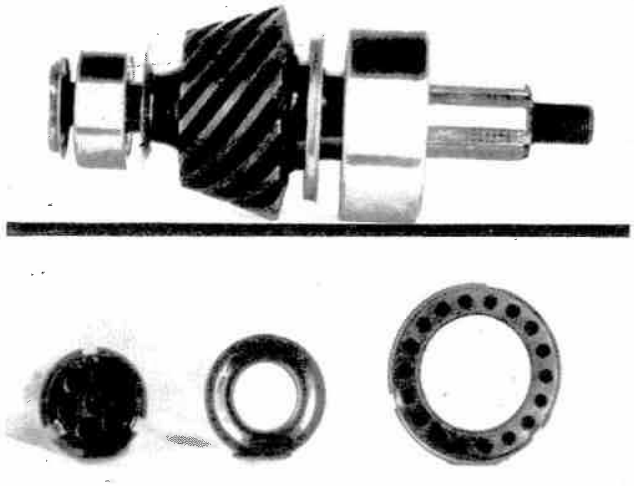
You will be particularly interested in the clutch as used on the 1001 and 1002. It is of the improved single driven member type. The clutch driven disc is of a special design and provides a spring action under the lining, which is responsible for extremely smooth clutch action. The clutch used on the Super Eight and the Packard 12 is of a heavier single plate type. The driven plate is one inch larger in diameter, twelve inches over-all. The spring pressure has been increased and to compensate for this, the throwout fingers are longer and are mounted on anti-friction bearings. This same type bearing is used on the clutch pedal and the combination has reduced the required pedal pressure for release from 45 to 25 pounds. With these changes, we anticipate that clutches will wear about three times as long as the previous design.

Another interesting change in design is the addition of a feature in connection with the pinion shaft mounting. This is a series of bearing filter washers. When assembled, the bearings, the strength of which has been considerably increased, are filled with oil and sealed with special felt washers through which the oil is filtered before it reaches the bearings, insuring the bearings of much longer life. Oil capacity in the differential has been increased to six pints.

You will notice in the specifications that on the Packard 12, a new type steering is used. It is of the worm and double roller type. The ratio is 18.6 to 1. Instructions for servicing this new steering have already been mailed out.

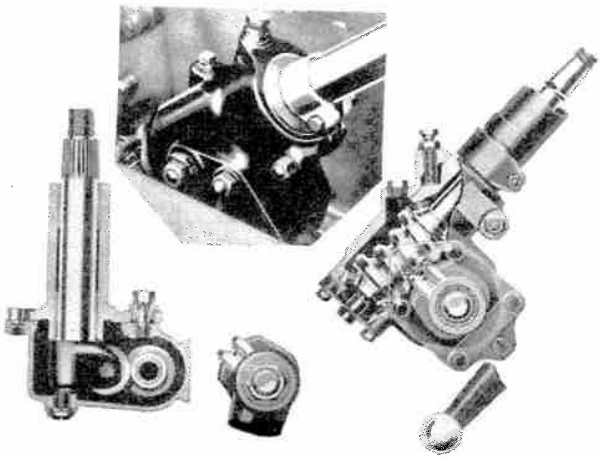
An improvement has been made in brake operation on the Packard Eight and the Super Eight by the use of Duo-Servo type brakes, using 14″ diameter drum. To develop a better balanced brake and to eliminate troublesome equalization, we have used on the left front brake shoes a lining which is less in width than that used on the



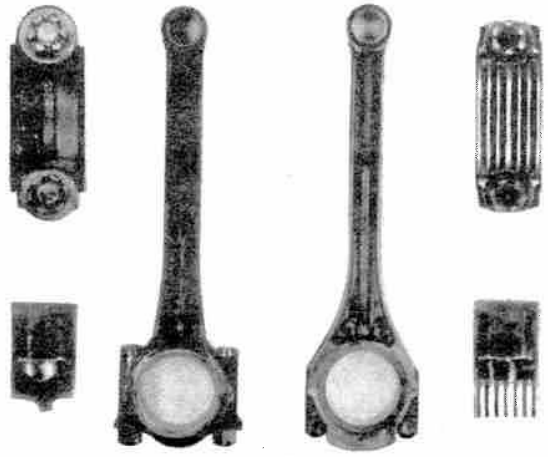


"EVERY OWNER A SALESMAN"

other three wheels. The increased lining thickness throughout provides approximately 65% increased service. The brakes have the same power when used with the car in reverse, as when going forward. The vacuum operated power cylinder greatly reduces the effort required to stop the car. An important feature of the new brakes is the provision made for the adjustment of brake action to suit the individual driver. This adjustment is made through a selector valve located on the instrument panel. It provides the driver with four different degrees of brake pedal pressure, by controlling through a valve the amount of vacuum used in the brake booster. Detailed instructions will be given in a separate article for servicing the brakes.



Another item of particular interest from a service standpoint is the new type connecting rod used in the Eight motors. You will notice that the construction at the bearing end of the rod is much heavier and that cooling fins have been added to the cap. These add greatly to the strength and promote rapid radiation of heat, which formerly tended to lessen the life of the babbitt. Connecting rod bolts have been redesigned with approximately 30% increase in strength.



You will find the improved chassis lubrication system on the entire line and you will be interested in studying the advertising booklet explaining the use of the new ventilating system. You should be familiar with this new construction.

Merchandising Lubrication

Each distributer and dealer has received a copy of the new book on "Merchandising Packard Service." One section of this book deals with lubrication and the proper method of selling this very important item to owners. The forms referred to are carried in the Service Literature Department and are available for immediate shipment except where imprinting is required. The following forms are used:

Lubrication Contract (D-38)—$2.00 a hundred.
Lubrication Record Card (D-38-A)—$0.50 a hundred.
Lubrication and Inspection Order (D-39)—$0.15 a pad.
Lubrication Follow-up Postal Cards—$0.02 apiece, plain or imprinted.
Lubrication Stickers (D-40)—$15.00 a thousand.
Lubrication Stickers (D-40-A) with imprinting — Price upon request.

We will be very glad to forward you a sample set of these forms and any additional information to that given in the book so that you can give immediate attention to getting this plan into operation in your Service Station.

You will be interested in reading what Clint Fiske, Distributer in Cleveland, has to say in connection with the selling of lubrication contracts. The results that he has obtained have been most satisfactory and he is convinced that this type of contract properly presented will answer many of the problems which we are now having in getting customers into our service stations at sufficiently frequent intervals so that we can assume responsibility for the satisfactory operation of Packard cars.

"The 10,000 mile lubrication service which includes certain adjustments and a surface mechanical inspection IS THE ONE BIG INSTRUMENT THAT WILL help the owner help himself.

"It likewise helps the service salesman because it is what the owner has always wanted but never knew how to order.

"The owner has the mystery removed from the responsibility of maintaining his car and the service station has its responsibilities clearly defined—at least owner and service meet on common ground.

"The owner pays you $4.20 per 1,000 miles and you thoroughly lubricate his car according to a regular form schedule—this includes oil change, battery test, chain adjustment, tightening the fan belt and adjusting clutch pedal.

"It also includes a surface mechanical inspection and a report of any work found necessary.

"You sell this lubrication service on a 10,000 mile basis for $42.00 to $46.50 according to the model.

"So that the owner will not take one treatment—you get $21.00 when the contract is signed and the balance when 6,000 miles are reached.

"You will call for and deliver the car—without extra charge.

"But the lubricating service will not sell itself. Remember, please, that $42.00 is a large amount of money to ask an owner—especially $21.00 in advance.

"Remember that the owner has never thought in terms of maintenance—few of them in fact want to spend anything for maintaining their cars.

"So the very first step in the sale of Lubrication Service is to get the idea across that aeroplanes, locomotives and machinery are all maintained on a scheduled inspection.

"Why is it that cars are on a strictly hit-and-miss basis?

"Just because owners have refused to care for their cars on a scheduled basis in the past, is no reason why we cannot persuade them to change.

"Get the owner to admit that his car must be lubricated and then show him the common sense method of handling it.

"Point out to him that it is for his protection—and that his repair bills are bound to be less—when his car is being lubricated and inspected on schedule.

"Preventative service of this kind not only costs less—over a period of time—but is more satisfactory to the owner and there will be fewer interruptions in the use of the car.

"It took us nine months to sell 300 owners the idea of scheduled lubrication service—about one a day—and we are going to continue to present it for their consideration until they all become maintenance-minded.

"We see to it that every new car owner clearly understands the benefits of our lubrication service within 30 days after the new car is delivered.

"Already 50 owners have—without solicitation—renewed this lubrication service after the first 10,000 miles had expired.

"Allow me to say that once the owner purchases the lubrication service his whole attitude changes.

"He no longer is in fear that the expected mechanical troubles are just around the corner.

"These are times when service departments must do the unusual thing to get business—and keep it. Service business will not just happen—you must keep everlastingly at it."

Tenth Series Starting Instructions

The starting instructions on Tenth Series cars are the same for the entire line. Aside from giving the owner these instructions in the Owner's Instruction Book, they are repeated, for convenience, on the outside of the envelope, which contains the Instruction Book and the Owner's Card.

So that the owner will always have starting instructions available, we have had made up a special sticker which is being applied to the inside of the glove compartment door on the right hand side of the dash. This sticker, aside from giving starting instructions, is provided with two spaces so that notations may be made as to the correct mileage at which the car should be lubricated and at which the crankcase oil should be changed. You will undoubtedly find ample use for these spaces and we believe that the sticker will be found a convenient addition to the car.

Use 1933 Plans

Have you had an opportunity of looking over the book on "Merchandising Packard Service?" Are you endeavoring to fit some of the suggestions and plans to the operation of your own Service Department? There is nothing in the book which has not been tried out. We know that these things will work. They won't work automatically, as they require careful installation and supervision.

1933 will call for more careful planning of Service Selling Efforts than we have ever used. Every effort must be made to make each dollar spent produce its return. This can be done only through supervision and the enthusiastic support of your entire department. Enthusiasm seems to be the only thing that doesn't grow up. It starts from the top and works down and it will take not only some good sound selling plan, but enthusiasm from your entire organization to put these across this year.

We are ready to help you promote any of the suggestions made in the book, or if we can be of any assistance in working out special plans which you may have in mind, please feel free to write us.

Salesmanship Training

The Sales Training Course applies as much to service selling as it does to new and used car selling. One complete assignment is devoted entirely to service. The importance of service—the service salesman—the handling of the customer—selling special services and keeping owners satisfied are some of the subjects covered. This book is not a separate part of the course and cannot be obtained separately. In the entire course, the service salesman will find:

Specific aid in your immediate work.

A keener appreciation of the importance of Packard Service—and how it is a commodity that must be sold.

A better understanding of your customer—his needs and desires.

Proved ideas and methods of handling the owner.

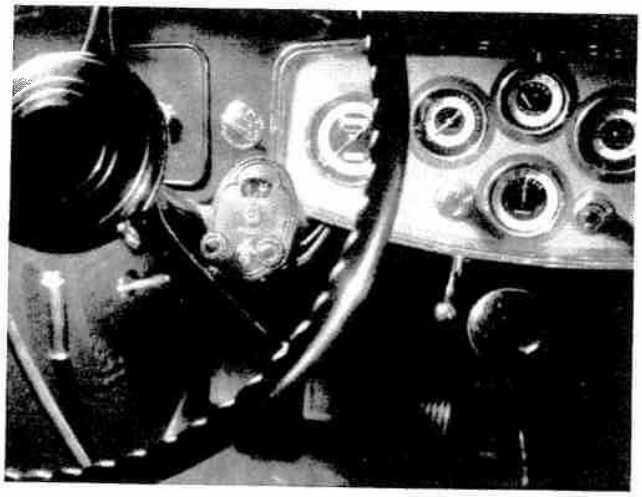
Information and suggestions from Packard Engineering Staff about the mechanical features of the Packard and their meaning to the owner.

Valuable knowledge of the problems and actions of the new car and used car salesman—so that you and they can cooperate more effectively to your mutual advantage.

Preparation for the job ahead.

Ask your Service Manager About It.

New Packard Radio

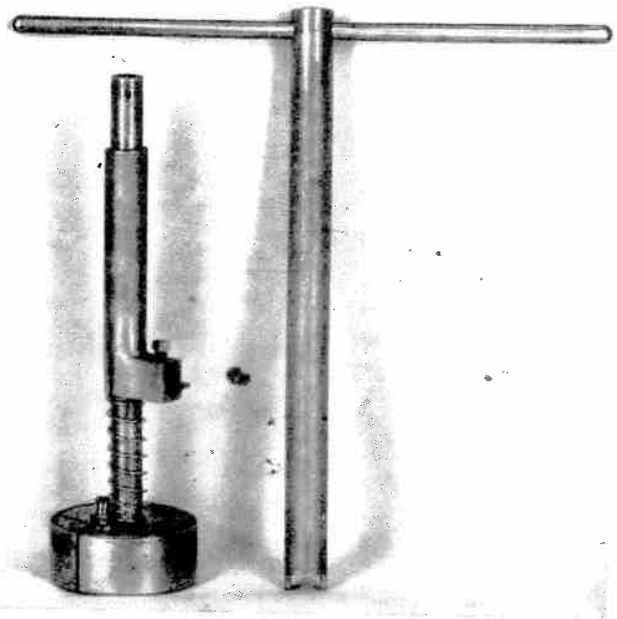


The Factory Accessory Department recently announced a new special Packard car radio.

This radio is being manufactured especially for us and incorporates several exclusive Packard features. We believe it represents the last word in automobile radio. You cannot appreciate the marvelous performance of it unless you actually hear and operate it yourself. We, therefore, suggest that you immediately order one to be installed in one of your Tenth Series cars. All Tenth Series hard roof closed bodies are equipped with roof antennae. Antennae for convertible and open bodies are available through the Factory Accessory Department at a nominal cost.

We will accept orders for factory installation on these new radios on sales orders for Tenth Series cars.

Some New Tools



The cylinder chamfering tool shown was designed by Charles Hass of Packard-New York and is used for chamfering the top of the cylinder between the valve and the cylinder bore. Additional information and blue prints will be supplied by the Special Tool Department at the Factory and these will be supplied under ST-906. The price will be supplied upon request.

Mr. Hambright, of Packard-Atlanta, submitted a design for a tool to hold a connecting rod while the piston pin is being installed. Prints for having this tool made will be supplied upon request.

An adapter has been designed for use on the standard Walker Jack for holding the motor while the transmission is being removed. This applies to Tenth Series cars where the rear motor supports are on the transmission case. It is, therefore, necessary to use a jack to hold the motor when the transmission is removed for any reason. The jack is listed under ST-858 and sells for $8.50. The adapter is carried under ST-1427 and sells for $3.50.

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

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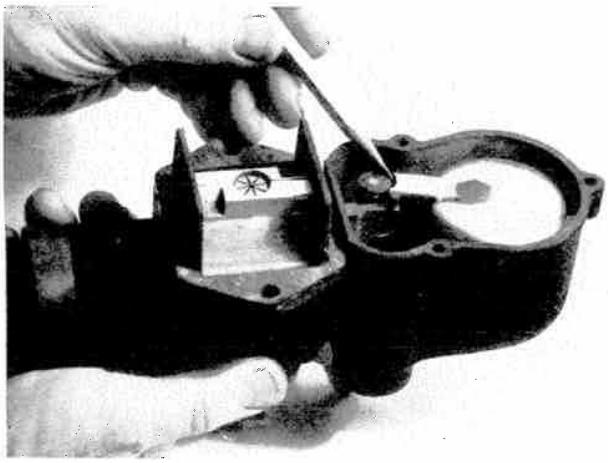
Tenth Series Service Film

The Service Film which introduces the new line of cars will be found of value for use in either Sales or Service Meetings. The film is treated from a service angle and shows many cutaway views and mechanical details. Additional films will be supplied on the detail construction and servicing of separate units.

An illustrated printed lecture is supplied with each film which will give those holding the meeting the correct information on the new cars as each detail is illustrated on the screen.

The Engineering Specifications, as supplied with this issue of the SERVICE LETTER, will supply the answers to many questions which will very likely be asked in the meeting. The film and lecture are $3.00.

Carburetor Needle Valve Operation



The illustration shows the needle valve operating mechanism of the Detroit Lubricator carburetor.

In some cases insufficient clearance was provided between the collar at the top of the needle valve, and the stamped arm which fastens to the float, with the result that the arm stuck againt the collar and provided the free movement of the valve. This might cause the motor to flood or run out of gasoline, depending upon the position at which the needle valve stuck.

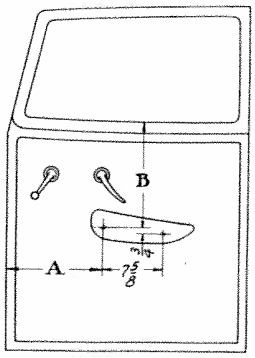
The remedy is to provide clearance between the arm and the collar at the point indicated.

Front Seat Arm Rests

Front seat arm rests are standard equipment on Twin Six bodies, and may be obtained through our Accessory Division for installation on the rest of the line. Order under PA2495 (a pair). Always specify body type and upholstery number.

The illustration shows the method of locating the arm rest for the various body types. The dimensions may vary according to the preferences of the individual customer.

The doors on the 1001 bodies have steel faced lock boards, so that the attachment is made with Parker Kalon screws, while the lock boards in the remainder of the line are of wood, and the attachment is made with conventional wood screws.



BODY MODELS	A	B
608	10 3/8 TO 12 3/8	13 1/4 TO 14 1/4
602 - 603	11 TO 13	13 5/8 TO 14 5/8
637-657-658-618 653-673-654-655 656-613-614-615 616-617-633-634 638-635-636	11 TO 13	11 3/4 TO 12 3/4

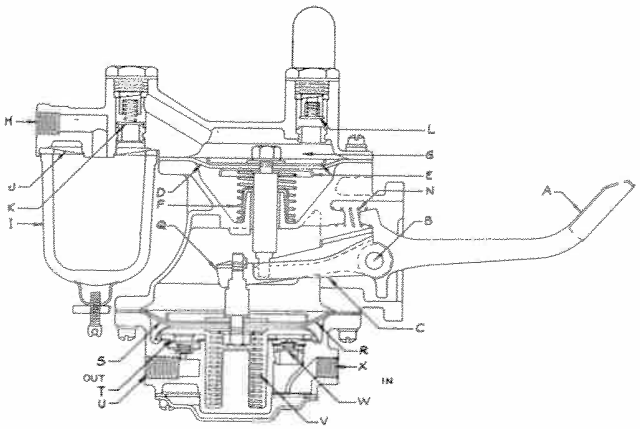
In making the installation on the metal lock board, two No. 29 (.136) holes are drilled, and Parker Kalon screws—piece No. 211205 are used, leaving the heads projecting $\frac{3}{16}$". For all other bodies use wood screws—piece No. 4932.

Place the arm rest in position with the screw heads projecting through the holes in the lock plates attached to the back of the arm rest and slide down into position. The lock plates have key hole shaped slots for this purpose.

When the arm rest is in position it is secured by the small hold-down strap on the under side of the rest. In attaching to the metal board, drill a No. 42 (.0935) hole and secure with Parker Kalon screw piece No. 211206. In attaching the strap to the wooden board, wood screw No. 4995 N. P. is used.

Vacuum Pump, Tenth Series

A description of the operation of the vacuum pump is given. In view of the fact that special fixtures are required for servicing the vacuum section, no instructions for this work will be required as it is intended that these units be serviced by the United Motor Service branches and AC service stations. It is not always advisable to send a customer to outside service stations for work on these accessory items. The best course is to either take the car to the accessory service station itself, or send the unit there for any necessary work. Do not get your customers into the habit of shopping around for various types of service.



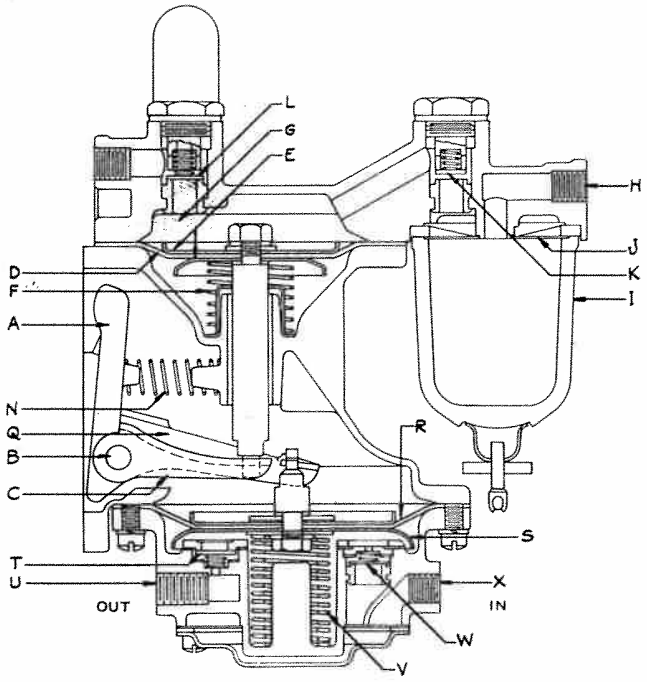
Fuel Section

The rotation of camshaft and eccentric actuates rocker arm (A) pivoted at (B) which pulls link (C) and in turn diaphragm (D) held between metal discs (E) downward

against spring pressure (F) thus creating a vacuum in pump chamber (G).

Fuel from the rear tank will enter at (H) into sediment bowl (I) and through strainer (J) and suction valve (K) into pump chamber (G). On the return stroke, spring pressure (F) pushes diaphragm (D) upward forcing fuel from chamber (G) through pressure valve (L) and outlet to the carburetor.

When the carburetor bowl is filled, the float in the float chamber will shut off the inlet needle valve, thus creating a pressure in pump chamber (G). This pressure will hold diaphragm (D) downward against the spring pressure (F) where it will remain inoperative until the carburetor requires further fuel and the needle valve opens. Spring (N) is merely for the purpose of keeping rocker arm (A) in constant contact with camshaft eccentric to eliminate noise.



Vacuum Section

The rotation of camshaft and eccentric actuates rocker arm (A) pivoted at (B) which pushes link (Q) and in turn diaphragm (R) downward expelling the air in chamber (S) through exhaust valve (T) and out opening (U) to the manifold. On the return stroke of rocker arm (A), spring (V) moves the diaphragm (R) upward, creating a suction in chamber (S) opening intake valve (W) drawing air through the inlet passage (X) from the windshield wiper. When the windshield wiper is not being used, the manifold vacuum holds diaphragm (R) downward against spring pressure (V) so that the diaphragm does not make a complete stroke for every stroke of the rocker arm (A). When the manifold vacuum is greater than the vacuum created by the pump, the air will flow from the windshield wiper through both valves of the pump, and the operation of the wiper will be the same as if the pump were not installed. However, when the intake manifold vacuum is low—that is, when the car is accelerating or operating at high speed—the vacuum created by the pump will be the greater and will operate the wiper.

Connecting Rods, Tenth Series

The babbitt in the Tenth Series connecting rods is only .020 inch thick. This, of course, will make it necessary for all service stations when fitting connecting rod bearings to scrape out as little babbitt as possible.

In taking up connecting rod bearings by filing off the lower cap, make sure not to file off any more than is absolutely necessary. If too much is filed off, it will make it necessary to scrape out an unnecessary amount of babbitt in order to get the bearing free.

We should make it a point never to scrape Tenth Series connecting rods unless it is absolutely necessary.

Changes in Front Door Window

1. Change in regulator mechanism, which operates front section of window, incorporating a stop for the window. Piece No. 211894—left; Piece No. 211895—right.
2. Change in plunger in upper mechanism on front half of window to incorporate pin on end of plunger to keep window from jumping out of socket at top. Piece No. 211409—2 used.
3. Change from fiber to bronze friction washers in lower mechanism on rear section of window to keep from sticking. Piece No. 211433—2 used; Piece No. 212151—2 used.

First remove window moulding. There are two methods for fastening moulding in on Tenth Series cars. Some models use the old method of holding moulding in by screws. Other models, the moulding merely snaps into place by two spring loaded plungers at top.

This type is removed by pulling moulding out at top and then lifting off two clips at bottom. Then loosen upholstering on lower half of door about ⅔ down. This will expose the mechanism.

To put in the new regulator, with the stop, remove four screws which hold the forward end of the lock board. You will notice, screwed to the board just below the main body of the regulator, an oval shaped plate cupped in the center and held by two wood screws. You will notice, coming through the plate in the center, a machine screw with a lock nut. Remove the lock nut and the two wood screws holding the plate and lift off the plate.

This machine screw is an adjustment for swinging the lower end of the regulator in and out in order to expose the proper length of shaft to attach the regulator handle. It should be adjusted so that the end of the shaft is 1¼ inches from the lock board after it is assembled. Swing out forward end of lock board and remove two nuts which hold main body of regulator to window frame and lift out regulator. Replace new one, reversing above procedure.

To install new plunger at upper hinge point of forward glass, open about half way; insert screwdriver at upper hinge point and pry down glass frame, pushing out at the same time until spring plunger jumps out of socket. Drill ⅛ inch hole through center of socket to allow pin on end of new plunger to enter. Hole is drilled over-size purposely.

Pull out old plunger and insert new one. This is a spring loaded plunger and the new one, being slightly longer, you will have to push the plunger up as far as possible with a screwdriver and snap upper section of forward window back into place.

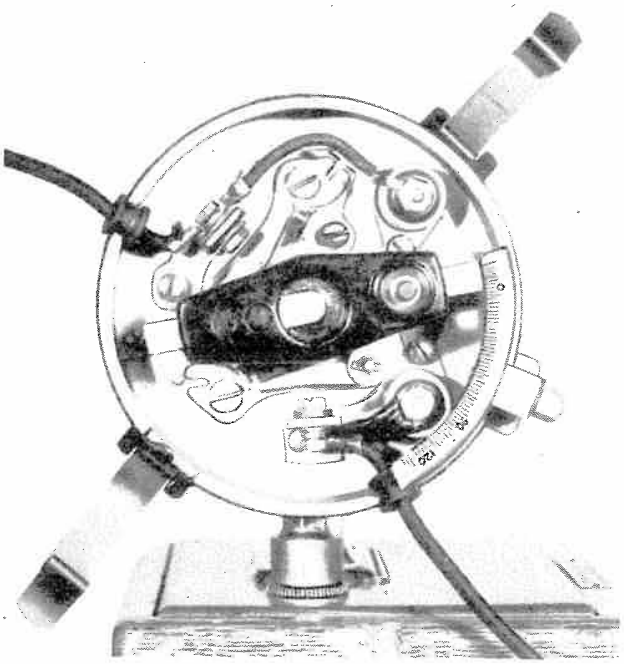
To change from fiber to bronze friction washers on the lower mechanism of the rear section of window, merely remove two nuts holding mechanism to frame and take out.

Remove spring tension adjusting nut and lock nut and replace fiber washers with bronze ones, and replace. There were two types of washers used, one with a stop lug and the other plain.

On the right hand side the washer with the lug goes on top with the lug down, and on the left at the bottom with the lug pointed up. This acts as a stop, keeping the window from being opened beyond the maximum limit.

Screw forward end of lock board back into place, being sure to check distance from lock board to end of regulator operating handle shaft 1¼ inches, and replace upholstery. Be sure and protect upholstery and finished parts while performing this operation to guard against scratching or tearing.

Synchronizing Distributors—1001-2-3-4



With this type of distributor a spark occurs every 45 degrees rotation of the distributor shaft. Two separate ignition coils are used which are operated through two separate sets of contact points so arranged that first one set opens and fires one coil. This set then closes and the other set opens firing the other coil. As a result better engine performance is obtained especially at high speed than with the average single coil distributor.

To synchronize distributor type No. 5033450 synchronizing tool ST907 can be used.

One set of contact points is stationary and the other set is mounted on a movable plate. The stationary contact set is adjusted first and the synchronizing is completed by adjustments to the movable set of points.

To set contact opening of the stationary set which is nearest the grease cup on the side of the distributor, turn the distributor shaft until the rubbing block of the breaker arm is on one lobe of the cam. Loosen the screw which holds the stationary contact point bracket and with a screwdriver inserted between the tip of the stationary contact plate and the two prongs of the breaker plate turn it so that the gap is .020". Tighten the lock screw which holds the contact plate and recheck.

Again turn the shaft until the rubbing block of the other contact arm is on a lobe of the cam. Loosen screw which holds this stationary contact plate in position and with a screwdriver turn the contact plate until the gap is .020". Then tighten the lock screw and recheck.

Turn the engine over until the rotor arm is under No. 1 terminal with the stationary contacts just ready to open. Clamp synchronizing tool to the edge of distributor so that the leading edge of the electrode on the rotor aligns with 0° on the scale.

With the synchronizing tool clamped in this position crank the engine until the rotor arm aligns with the 90° on the synchronizing scale.

Loosen two screws which hold the movable contact mounting plate in position and shift the plate so that the contacts are just opening. Tighten screw and crank engine over several times. Recheck contact point breaking with respect to the synchronizing tool.

Check contact gaps and if they have changed, readjust and synchronize both contacts again.

NOTE: When synchronizing a distributor on the engine be sure that all the back lash is out of the drive.

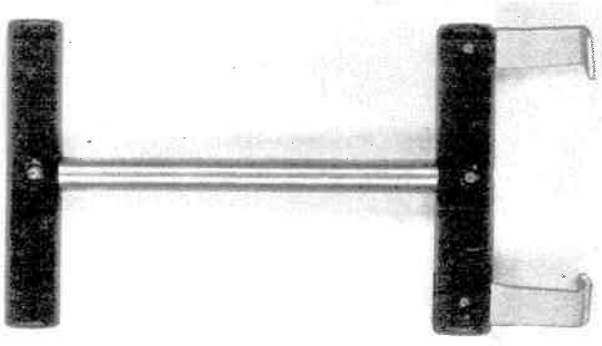
NOTE: For best and most accurate results always use an ammeter or test lamps connected in series with the primary ignition circuit at the distributor. When the light goes out or the ammeter hand returns to zero, the points are open.

The ignition settings for the Tenth Series are as follows:

	1001-2	*1003-4*	*1005-6*
Standard head	9 deg.	9 deg.	7 deg.
L.C. head	14 deg.	14 deg.	.....
H.C. head	7 deg.	4 deg.	.....

Battery Lifter, Tenth Series

You will find some difficulty in removing or replacing the battery on Tenth Series cars with the battery lifter designed for use on the 900. A new set of arms has been designed to be used with the 900 lifter and these are carried under ST-1428 at 45c a pair. A complete new lifter can be purchased under ST-841 at 75c each. A pair of arms is being sent to each distributer who has already ordered a battery lifter under ST-841.



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