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## INTELLIGENT SERVICE

All service men coming in contact with Packard owners should make it a point to read the 120 Owner's Information Book.

If you will read one of these books you will find it quite different from the type we have been issuing for the past several years. It contains a great deal of service information, and goes into considerable detail regarding the construction and servicing of the 120.

We are convinced that the average owner in the 120 price class knows a great deal more about his car than the higher class clientele. A great many 120 owners will familiarize themselves with the Owner's Information Book, and unless the service men know what the book contains, and can talk intelligently about it, they will find themselves at a decided disadvantage.

We should all thoroughly understand such items as: Starting instructions, lubrication specifications, carburetor adjustment, brake adjustment, timing, and the other general service items with which many owners wish to become acquainted.

There are very few questions that might be asked concerning the operation and care of a 120 that cannot be answered if you carefully read the information book. We should all give the same answers. Many owners will merely glance through the book and come to you with their questions. We are listing below a few you will, undoubtedly, hear daily. Can you answer them correctly?

1. When and how should the air cleaner be cleaned?
2. Is it necessary to clean the cleaner on the oil filler?

3. How do you oil the clutch and brake pedal?
4. How is the clutch throwout bearing oiled?
5. Should kerosene ever be used in the motor oil, if so—when?
6. Is it safe to thin transmission oil with kerosene?
7. Where are the fuses?
8. Is there a spare fuse?
9. What do the square and round red dots on the tires mean?
10. Are there any special instructions regarding the tightening of the spring bolt?



Test your knowledge of the 120 by your answers to the above before reading the book. If you are in doubt on any one of them, look up the answer. If there are any you are unable to answer fully, read the book through. It may save you some embarrassing moments. It will help all of us to render better service which is another way of saying, more intelligent service.

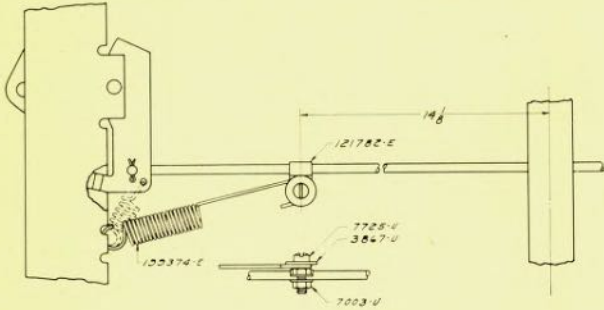


## FRONT SEAT ADJUSTMENT—120

The front seat locking mechanism on the 120 is held in position by a short spring on each side which pulls the locking fingers into the notches in the side plates.

In some cases these short springs have been overstressed by an excessive movement of the mechanism, and the illustration shows a simple method by which a new spring may be attached. The piece numbers of the parts required are shown.

It will probably be sufficient to install the new spring on one side only because this will supply enough pull to engage the locks.



## TIRE PRESSURE—120

In order to obtain a proper riding result, it is necessary that the tire pressure be held closely to the twenty-four pounds which we have recommended.

High tire pressures will result in a harsh, stiff and generally unsatisfactory ride. For this reason, particular attention should be taken to see that tire pressures are accurate in all demonstrators, and are at the proper point in all new car deliveries.

When loaded in freight cars here at the factory, the tires are inflated to thirty pounds in order to prevent movement in the blocks, and for this reason it will be necessary to check all cars before delivery.

## VALVE TAPPET ADJUSTMENT—120

The proper valve tappet clearance in the 120 motor is .007" for the intake and .010" for the exhaust.

The exhaust clearance represents an increase over our original recommendation of .009" because it was found that the smaller clearance was insufficient to guard against a riding valve with a hot motor.

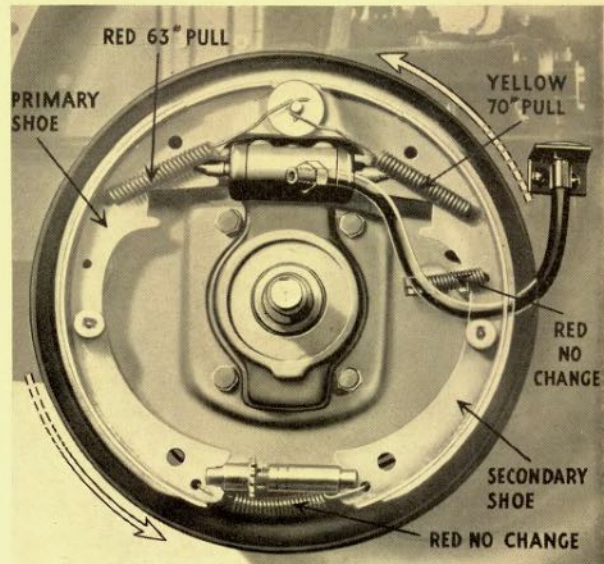
Even if complaints are received on noisy tappet adjustment, do not attempt to reduce the clearance below the specified limits. A riding valve will cause the lower end of the push rod to score where it contacts with the cam, and this in turn will greatly increase the valve mechanism noise.

## BRAKES—120

On some of the early 120's there was a back up brake snap such as we experienced in the 900.

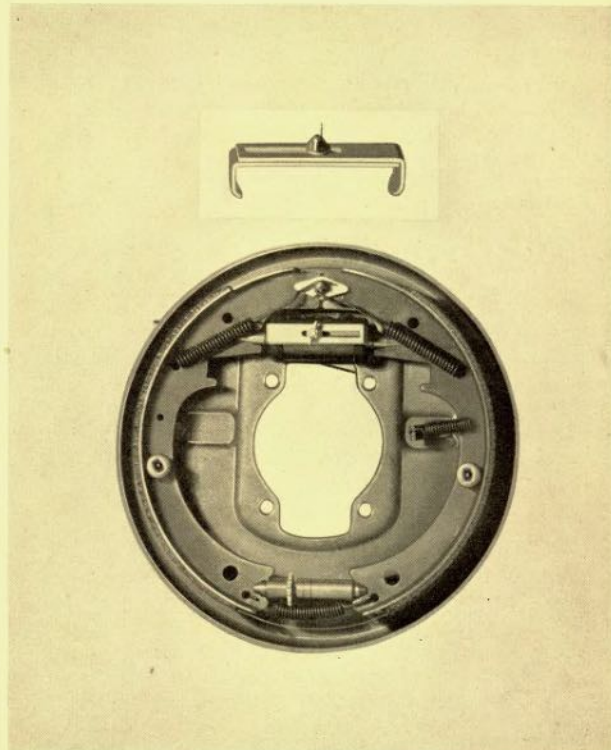
This was caused by the brake shoe return springs being too light. The majority were changed here at the factory. However, some cars got out in which this change was not made.

The original return springs were both alike, having a fifty-pound pull. The present primary shoe return



spring has a pull of sixty-three pounds and is painted red. The secondary shoe return spring has a pull of seventy pounds and is painted yellow. It is not necessary to change the springs unless the back-up noise exists. Piece No. 303837 primary shoe return spring. Piece No. 303836 secondary shoe return spring.

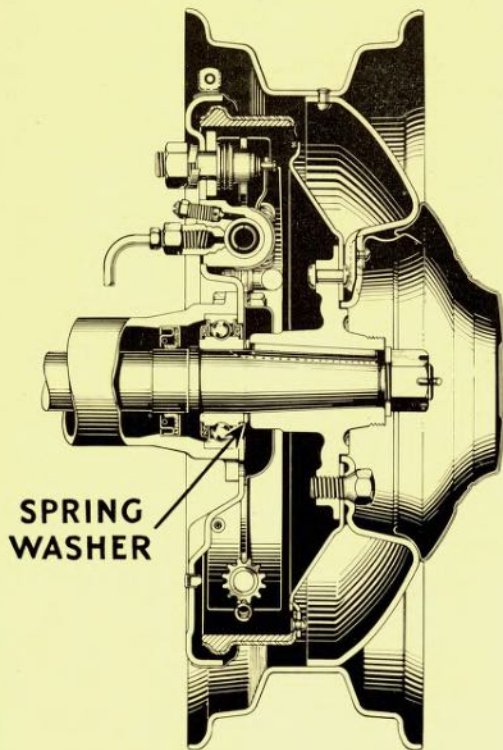
This set up applies to all four brakes, and it is very essential that the brake cylinder clamp shown, be used whenever it is necessary to disconnect the shoe retracting springs so that the pistons and cups will not fly out of the vacuum cylinder.



S. T. 5047



## REAR AXLE SHAFT BEARING—120



The rear axle shaft bearing is of the ball type, sealed on both sides to keep the lubricant in and the dirt out. The bearing before assembly may give you the impression of being loose, but when pressed on the axle shaft from the taper end, the inner race expands reducing the ball clearance to the required limits.

As a safety measure a spring washer has been provided, fitting between the wheel hub and the bearing. When the hub is tight on the taper, this washer is compressed, providing a pressure of about 2000 lbs., which helps to keep the bearing in its proper position against the shoulder on the axle shaft.

In service when the wheel hub is removed care should be taken not to lose the spring washer. When removing the wheel hub use a puller. If an attempt is made to loosen the hub by a heavy blow on the end of the axle shaft, you will probably drive the shaft through the bearing. When re-assembled you will then experience interference between the drum and brake.

Axle shaft bearing end float can be removed by installing the required thickness shim between the bearing outer race and axle housing.

NOTE—For suitable pullers see next page.

## NEWS FROM BOSTON

The many friends of Harold Parker will be pleased to learn that he has purchased the Dealership in Framingham. His former position, as Service Manager in Boston, has been ably filled by Ed. Wright who has been with the Boston organization for a number of years.

This is a case of congratulations both ways.

## SHOCK ABSORBER STABILIZER BAR—120

Noise in the rear shock absorbers of the 120 may be caused by the fact that the distance between the two rear shock absorber arms is greater than the length of the stabilizer bar.

When this is the case the shock absorber cross shafts are put under end pressure when the stabilizer bar bolts are tightened. Any tendency for the shock absorber arms to move independently will result in a twisting of the bar, and this in turn will cause an increased end thrust to develop in the cross shafts.

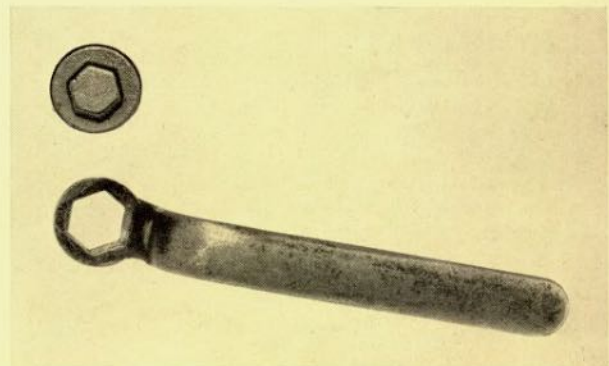
When checking the shock absorbers to make sure that they are full of oil the stabilizer bar will be disconnected. And when the bolts are removed for this or for any other reason, a check should be made to make sure that the length of the bar is equal to the distance between the arms.

If there is a space between the arms and the bar, it should be filled with shims or thin washers. This will usually correct a noise condition in the shock absorbers themselves.



## MOTOR OIL PAN DRAIN PLUG

From a service standpoint the standard stock drain plug of a steel stamping is not very satisfactory. The head is square and tapered which makes it difficult to use an ordinary monkey wrench, and there is no standard socket wrench to fit. A special service plug has been designed and is carried in stock. It has a hex head which the standard spark plug socket wrench fits. It can easily be removed without damage.



The plug is carried under piece No. 98378. The wrench under No. 190617. This wrench is standard equipment on Ninth, Tenth, Eleventh and Twelfth Series eight-cylinder cars. The list price of the new plug is 25c.



## SERVICING TRANSMISSION—120

After removing the change speed lever and cover from the transmission, it is very important that the direct drive and second speed clutch ring is not moved from its position.

This ring can be very easily slid off the gear, allowing the springs and balls to fall into the transmission case.

We have designed a clamp, known as S. T. 5014 Transmission Direct Drive and Second Speed Ring Clamp, to hold the springs, balls, and synchro-mesh gear in position while setting the clutch ring in place.

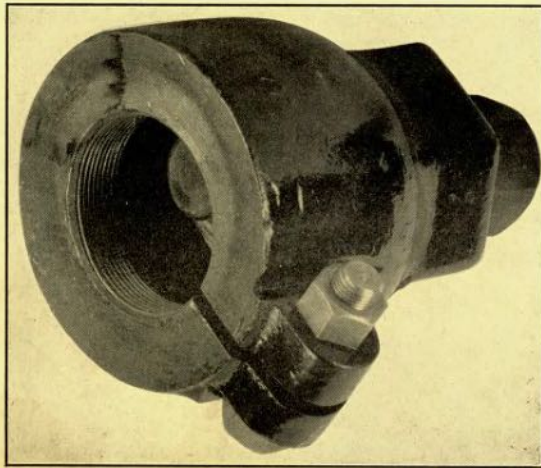


S. T. 5014

This tool has a spring tension so that when it is sprung over the gear it will stay in this position. It is a very simple matter to turn the gear and insert the balls and springs in their proper place. The clamp will hold them there until the collar is placed over the gear as in the picture.

This clamp is designed so that it can be used when the transmission is in the car or on the bench.

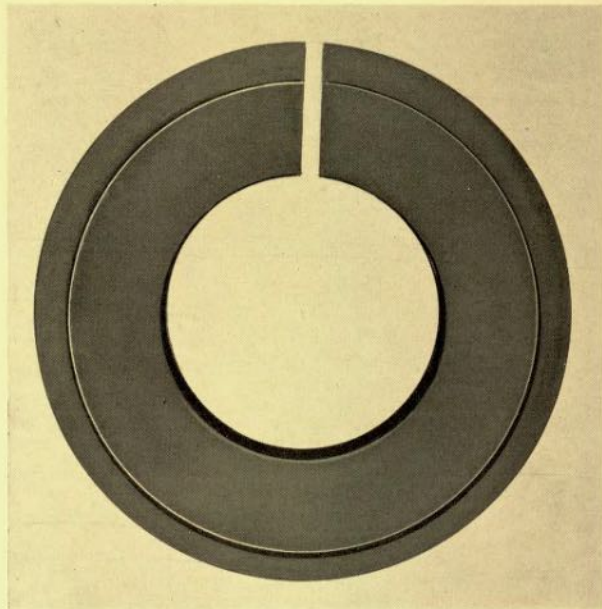
## REAR WHEEL PULLER SHELL AND REAR WHEEL PULLER SHELL SCREW



Shell—Part No. 176958      Screw—Part No. 61577

These two parts will make a complete wheel puller at a reasonable price. See Parts Price List for prices.

## REAR WHEEL PULLER ADAPTER



Tool No. S. T. 5040 (Used with S. T. 955)

This heavy duty wheel puller adapter is designed to fit the S. T. 955 Wheel Puller.

It is designed to screw up the full length of thread on the wheel and has clearance between the wheel bolts and the puller.

## PERSONAL NOTES

Mr. Brown, Branch Manager at Milwaukee, is congratulating Mr. C. H. Long on his appointment as Service Manager at Milwaukee. Mr. Long succeeds Mr. E. L. Wimmer who has been promoted to Service Supervisor of the Chicago Branch territory.

Mr. Wimmer has had a great deal of experience assisting Dealer organizations with service problems, and will be welcomed by Chicago's Dealers. Mr. Long has been with Packard some nine years. He has come up from the ranks, and we join in welcoming him to his new position.

