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## Winter Service

Many of the headaches and troubles of winter operation can be avoided by proper preparation of customers' cars for cold weather operation. Every Dealer should make an effort to get all of his customers' cars into his service department for this important seasonal service.

The preparation of new cars for delivery should be watched even more carefully in cold weather to prevent the owner from having his new car fail to start or develop trouble that could have been avoided.

Probably the most important item of winter service is the battery inspection. A new car should never be delivered to the customer unless the battery is fully charged.

The best way to minimize the possibility of the customer having battery trouble is to check his battery every time his car is in the Dealer's service department. It is a matter of very few minutes' work to check the gravity of the battery electrolyte with a hydrometer. If the battery is low, the customer should be informed and the battery charged.

When this system is followed the cost of testing every battery will be more than repaid in the revenue from battery charging and the building of customer satisfaction.

Winter servicing should include a careful check of the cooling system to be sure that all hose connections are tight and that all hoses are in good condition. This inspection should also include all heater hose and connections. It is very easy to miss the hose clamps under the car on the underseat heater. If an alcohol based antifreeze is used, there is danger of fire if one of the connections or hose should leak on the cylinder head. Alcohol, being highly inflammable, can be easily ignited by a spark plug or leaking ignition wire. Check the fan belt and if frayed or cracked it should be renewed.

Distributor points and spark plugs should be carefully checked and cleaned and adjusted or renewed, whichever is necessary. A weak spark will prevent easy starting during cold weather.

The fuel system should be cleaned thoroughly to remove water from the gasoline tank, lines, fuel pump, and carburetor. The customer should be advised to keep his tank as full as possible at all times to reduce the area on which condensation forms during changes in temperature.

Proper lubricants should be installed in the various units which require seasonal changes. The viscosity of these lubricants varies with the minimum temperatures in different localities and the Factory recommendations given in the Owner's Manual and the specifications published in the Service Counselor should be followed.

#### "Snow" Tires

Tire chains can be used satisfactorily on Packard cars equipped with tires not larger than 7.60 inches. On cars equipped with the 8.20 inch tires, chains should be used only in emergencies. The tire clearance at the lower inner edge of the fender and at the wheelhouse is not great enough to prevent interference when making sharp turns or when driving on rough roads.

Our surveys indicate that very few car owners ever have occasion to use tire chains, and in view of the new body styling and the limited tire space available, we have only one solution to offer at the present time for the comparatively few owners who still find use for chains.

The major tire companies now make a special "snow" tire. Customers may wish to consider buying two tires for the rear wheels with the new "snow" type of tread for winter use.

It is also possible and at less cost to have two old tires retreaded with these special "snow" treads.

Packard Dealers should obtain additional information and prices for customers.

# Sluggish Windshield Wipers

Early 22nd Series

Have you encountered cases of sluggish windshield wiper operation even though the wiper operating mechanism was in proper adjustment? If so, were the wiper motor vacuum hoses removed and their condition checked?

Early 22nd Series vehicles are equipped with hoses which incorporate an outer hose around a smaller inner hose with a singleply fabric wrapping between the two. These hoses are not bonded together and either of the following conditions may exist to restrict the vacuum passages thereby retarding the operation of the wiper motor. (1) The inner hose may have been cut or slit by the end of the metal vacuum tube when the hose was assembled to the tube and part of the inner hose may have been pushed into the tube. (2) The inner hose, not being bonded to the outer hose, may have collapsed and the walls of the hose may have drawn together.

The hoses used on later 22nd Series cars also incorporate an inner and an outer hose. However, the two hoses are bonded together and the wrapped fabric between the two is of two-ply construction. No installation trouble or premature failure should be experienced with these later type hoses.

The vacuum hoses being shipped from the Factory are of the later type and may be ordered under the numbers listed in the 22nd Series Parts List.

#### Engine Installation Precaution

Custom Eight

Custom Eight engines are supplied with oil filters as standard equipment. One important function of this equipment is to reduce the possibility of dirt getting into the hydraulic valve lifters.

The oil filter tank should be thoroughly cleaned and a new filter cartridge installed when a 356 Custom Eight engine is installed by a Dealer.

This precaution is essential to reduce the possibility of trouble caused by dirt in the lifters.

#### **Universal Joint Shafts**

22nd Series

The Factory recently began using universal joint shaft assemblies from an alternate source of supply (Spicer Manufacturing Corporation). At the present time, these "Spicer" assemblies are being installed only on overdrive equipped vehicles.

The "Spicer" shaft assembly is readily identified by (1) the lubricator fitting in each journal cross, (2) snap rings used to retain all journal cross bearings, and (3) the nearly square universal joint flanges and flange yokes. Figure 1 shows the sleeve yoke or slip joint end of a "Spicer" shaft assembly.



Figure 1

The "Spicer" shaft assembly is disassembled and assembled in practically the same manner as is the "Mechanics" shaft assembly. However, the cross bearing lubrication specifications differ. The "Mechanics" universal joints should be disassembled and the cross bearings repacked with pressure gun grease at 30,000 mile intervals. The "Spicer" cross bearings should be lubricated with S.A.E. 140 oil each time the chassis is lubricated. Chassis grease is specified for the slip joint of both assemblies.

Chassis grease should not be used to lubricate the "Spicer" cross bearings. As you will note in figure 1, the journal cross has a chamber in its center with drilled passages leading to a reservoir in each trunnion arm. The lubricating oil is forced by centrifugal action from the central chamber to the reservoirs and then to the needle bearings. If chassis grease is used as a lubricant, the passages may become clogged or restricted which may result in bearing failure.



Figure 2

To lubricate these bearings, an adapter with a slender nozzle, similar to those shown in figure 2, is required to reach the fitting in the journal cross. The joints are properly filled when oil emerges past the gasket at the inner end of the needle bearing shells.

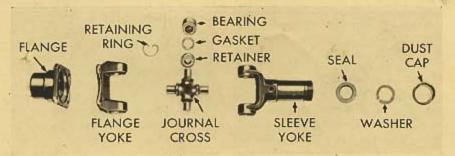


Figure 3

The adapters illustrated are "Alemite" products and may be purchased locally from an "Alemite" equipment dealer. The longer of the two adapters carries the "Alemite" part number 6239. The short adapter, which incorporates a built-in relief valve and jaws which snap onto the fittings, carries the "Alemite" part number 6274.

Figure 3 identifies various detail parts of a "Spicer" shaft assembly. The complete replacement parts list is as follows:

Part No.	Description No.	Req
418797	Universal Joint Shaft Assembly	1
418798	Universal Joint Shaft Flange	2
418800	Bolt	8
5506	Lockwasher	2 8 8
7006	Nut	8
309525	Differential Driving Pinion Universal Joint	
	Flange Dust Seal	1
410528	Universal Joint Shaft Tube Assembly	1
410524	Universal Joint Shaft Sleeve Yoke Assembly	1
216548	Lubricator Connector	1
410522	Universal Joint Shaft Seal	1
410521	Universal Joint Shaft Seal Retaining Washer	1
410523	Universal Joint Shaft Dust Cap	1
410527	Universal Joint Shaft Journal Cross Assembly .	2 2
302739	Universal Joint Shaft Journal Cross Lubricator .	2
410531	Universal Joint Shaft Trunnion Gasket Retainer .	8
410519	Universal Joint Shaft Trunnion Gasket	8
410530	Universal Joint Shaft Journal Cross Bearing Assembly	8
410525	Universal Joint Shaft Bearing Race Retaining Ring.	
410535	Universal Joint Shaft Bearing and Flange Yoke .	8 2
410529	Universal Joint Shaft Repair Kit	2
	Includes: 1—410527 Journal Cross	
	1—302739 Lubricator	
	4-410531 Trunnion Gasket Retainer	
	4-410519 Trunnion Gasket	
	4-410530 Journal Cross Bearing Assembly	
	4-410525 Bearing Race Retaining Ring	

### New Speedometer Reset Cable

22nd Series

A change has been made in the length of the odometer reset cable on 22nd Series speedometers. These later speedometers are interchangeable with the early type by the addition of a knob and set screw.

The original speedometers were equipped with 12 inch cables which were brought over the top of the speedometer case, then down to the edge of the instrument panel. These cables also were fitted with a small diameter reset knob.

Later production and all service speedometers are fitted with cables having a length of 7½ inches.

When these are installed the cable is brought down to the edge of the instrument panel without passing over the speedometer case. When this cable is used a reset knob retained by a set screw is used.

These knobs and screws are carried in Service stock under the following numbers:

> 403930—Knob 403931—Set Screw

#### Window Breakage—Body Types 2250-51-70-71-76-77

As a result of Product Reports concerning window glass breakage in Limousine and Seven-Passenger Sedan rear doors and rear quarter windows, a dust seal with improved cushioning is being installed on the window finishing mouldings, and a change has been made in the specifications for rear quarter window glass.

The new inner dust seals and the new rear quarter window glass are now being installed in production and are also available for installation in service. They are carried under the following piece numbers:

> Rear door inner dust seal -415836

> Rear quarter window glass -415842

Before installing a replacement door window glass, a check should be made for any non-standard conditions. The operation of the window regulator, the condition of the dust seals and runways, and the presence of any obstruction in the window parts should be noted and corrected.

After the glass is installed it should be aligned in the door so the forward edge of the glass will have full contact with the front runway. In this position the top edge of the glass tilts slightly toward the front. In no case should the top of the glass tilt toward the rear.

To obtain correct window alignment, loosen the four regulator plate retaining screws on the door inner panel, and remove the sheet metal locating screw. Work the regulator to bring the glass to its "down" position so the top of the glass is flush with the opening in the door. Press down on the top forward end of the glass to align the glass while tightening the regulator plate retaining screws.

Check for satisfactory window operation and then install the regulator plate locating screw.

When installing a locating screw in a replacement regulator plate, use the existing hole in the inner panel as a guide and drill through the regulator plate flange. When installing a locating screw in a regulator plate in which a previously drilled hole will not line up with the hole in the inner panel, it may be necessary to drill for a larger screw. If use of a larger screw is not practical, a new hole may be drilled through the panel and the regulator plate flange.

When rear door window glass breakage is encountered in Limousines or Seven-Passenger Sedans which have the earlier type dust seal, it is recommended that a new inner dust seal be installed. Instructions for installation are as follows:

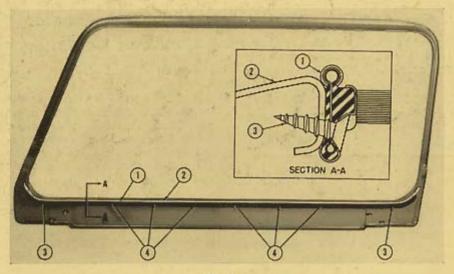


Figure 1

Remove the old dust seal from the finishing moulding.

Place the new dust seal in position on the outer flange of the moulding so the seal follows the contour of the moulding as shown in figure 1, with the crimped edge of the stainless steel bead (1) resting on the radius of the moulding flange (2). Using a No. 44 (.0860"), or 54-inch drill, drill through the seal and the flange about 3 inches from each end of the seal and install a No. 4 x 38-inch

cross recess head sheet metal screw (3) in each hole. Drill for and install 6 additional No. 4 x 3/8-inch cross recess head screws (4) at equal spaces along the dust seal. Tighten the screws sufficiently to bury the heads well into the surface of the seal, so the heads will not contact the window glass after the installation is complete.

Install the moulding and check the position of the ends of the dust seal, making sure the flattened end (1, figure 2) fits between the



Figure 2

moulding (2) and the window runway (3). If the bead of the dust seal crowds the runway as indicated by the dotted lines, tap the bead with a wooden block and hammer to let the runway return to its normal position.

When glass breakage is encountered in Limousine or Seven-Passenger Sedan rear quarter windows, it is recommended that the new type glass be installed.

#### **Your Service Staff**

This is another in a series published to acquaint members of the Packard Field Organization with individual members of the Factory Service Department.



C. R. Todd—usually called Russ has been with Packard since 1937, having had wide previous experience with General Motors and Chrysler in field and factory parts and service assignments. During the war was with the Rolls Royce Aircraft Division developing, writing and illustrating production inspection procedures. Returned to car division in 1945 to aid in the development and installation of the Standardized Zone Warehouse Central Inventory Control and Packard Parts Control Plan.

Basically educated as an engineer, he rounded out his training by specializing in statistical methods and accounting.

Hobbies — color photography, model building, and cabinet work.

M. J. Ulaga—the other half of the combination that guides the field warehousing and distribution of parts and accessories virtually grew up in this activity. Having been with Packard since 1924, his experience has included all phases of Factory warehousing, dealer and zone parts analysis, special auditing assignments and assisting in the development of procedures.

His business methods training, along with his diplomatic determination of accomplishing the things to be done has been an asset in his present position.

Having played professional baseball, his hobbies now include second-guessing the major league managers. No statistics are available as to his batting average.