

# Studebaker SERVICE BULLETIN



## *the Factory Service School*

**I**N this modern training school — up-to-the-minute in equipment and methods — many automobile mechanics, including some of the finest in the business, have increased their knowledge and skill. The Factory Service School offers a great opportunity for Studebaker service men to receive training which will be profitable to them and to their employers.

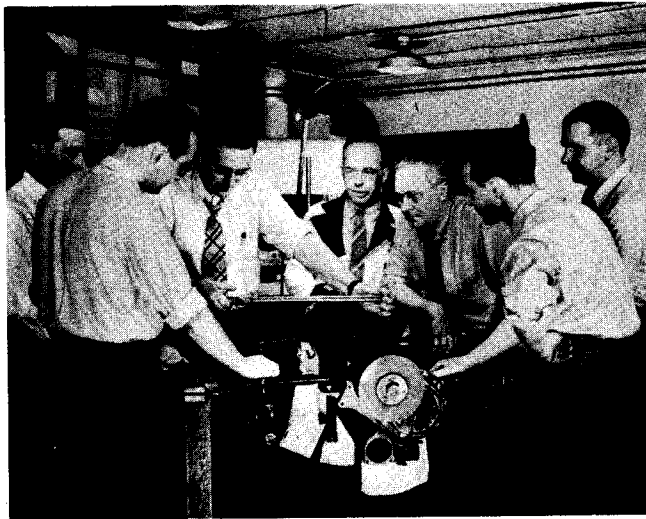
In the belief that Studebaker dealers like to be reminded of things that work toward the improvement of their businesses, we want to do a little shouting from the housetops about the Factory Service School.

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There are some particularly timely reasons why it is to the advantage of Studebaker dealers to make use of the training facilities of the school now. In the first place, many dealers were forced by the manpower shortage to add inexperienced men to their service staffs. If these men are to stay on, they will probably need not only some special training on Studebaker service, but in general service subjects as well. The Factory Service School is ideally suited to their needs.

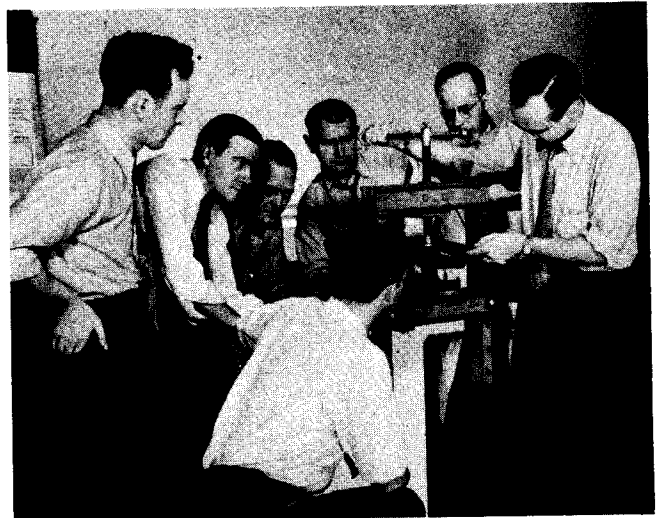


**PRACTICAL EXPERIENCE** is gained as students assemble the internal parts of an engine under guidance of popular instructor W. F. (Phil) Phillips.

Second, many dealers have already reported the addition of returned veterans to their service staffs. Most of these men have an admirable background of mechanical knowledge built up through working with military vehicles. It may be found, however, that training in truck and passenger car service, or at least refresher courses on these subjects, would be desirable. Again, in this case, specific Studebaker product-

training may be necessary. The factory school is the most obvious place to get quickly such added background.

A third class of mechanics that might have special need of the school's facilities are former dealer-employees who have returned to their old jobs from military or other pursuits. Refresher courses would not be amiss for them.



**ACCURACY** is the keyword here as students assemble a water pump.

The number of Studebaker dealer service personnel who have pleasant and valued recollections of the school from personal experience makes a very considerable group. There was, for instance, that gigantic session on 1941 models, attended by 576 "students." Less spectacular, but just as valuable, has been the instruction given to thousands of mechanics in small groups the year 'round for many years.

Now, however, the service school is looking ahead, to even greater achievements as are also Studebaker dealers. Under the able leadership



**"TEACHER" LOOKS ON** to see that students use right tools and proven methods in the assembly of a clutch pressure plate.

of its "Principal," W. F. Phillips, it has great plans for being of service to Studebaker service men in the period that will start with the production of new model cars, and which has already begun in the commercial car field.

Making use of the school's facilities has a lot of values for the dealer. Specifically, it helps his service employees meet knotty problems actually encountered in the shop. It steps up the quality of workmanship and increases the speed of the mechanic by removing complexities which would otherwise hinder him. It increases his earnings and yours. Of course, it helps mechanics familiarize themselves with changes in model and new service methods.

It is, moreover, a fine advertisement to be able to say that "Hometown Motor Company is staffed by mechanics trained at the factory."

The service school offers comprehensive mechanical instruction, but does not teach sheet metal work, painting, welding, tire repairs and kindred subjects. The schedule of mechanical subjects includes:



**TEAR 'EM DOWN, BUILD 'EM UP** — students get the feel of disassembly and assembly procedure in servicing conventional and overdrive transmissions.



**FACTORY TRAINING** is what these students are getting in the correct manner of servicing springs, and removing and replacing spring covers.

Engine	Rear Axle
Cooling System	Electrical
Clutch	Carburetion
Transmission	Brakes

Springs and Shock Absorbers  
Front Suspension, Steering and Wheels  
Propeller Shaft and Universal Joints

The school is open the year 'round. There are no definite dates for classes. The length of time required to complete the desired training depends upon the individual. The student may con-



**EACH STEP DEMONSTRATED,** discussed, and practiced before the next one is tackled. In this picture, the students are ready to take their turn at wheel balancing.



**IT'S FUN TO LEARN** when you raise your own questions. This picture shows Phillips answering a student's query about the universal joint.



**TRAINING AIDS** in creating customer satisfaction. This picture shows a class on rear axle overhaul.



**"PRINCIPAL" EXPLAINS PRINCIPLES** as Mr. Phillips gives a step by step discussion of the finer points of motor analysis and tune up.



**CHARTS AND DIAGRAMS** play an important part in the Factory Service School. Here is a class in carburetion.



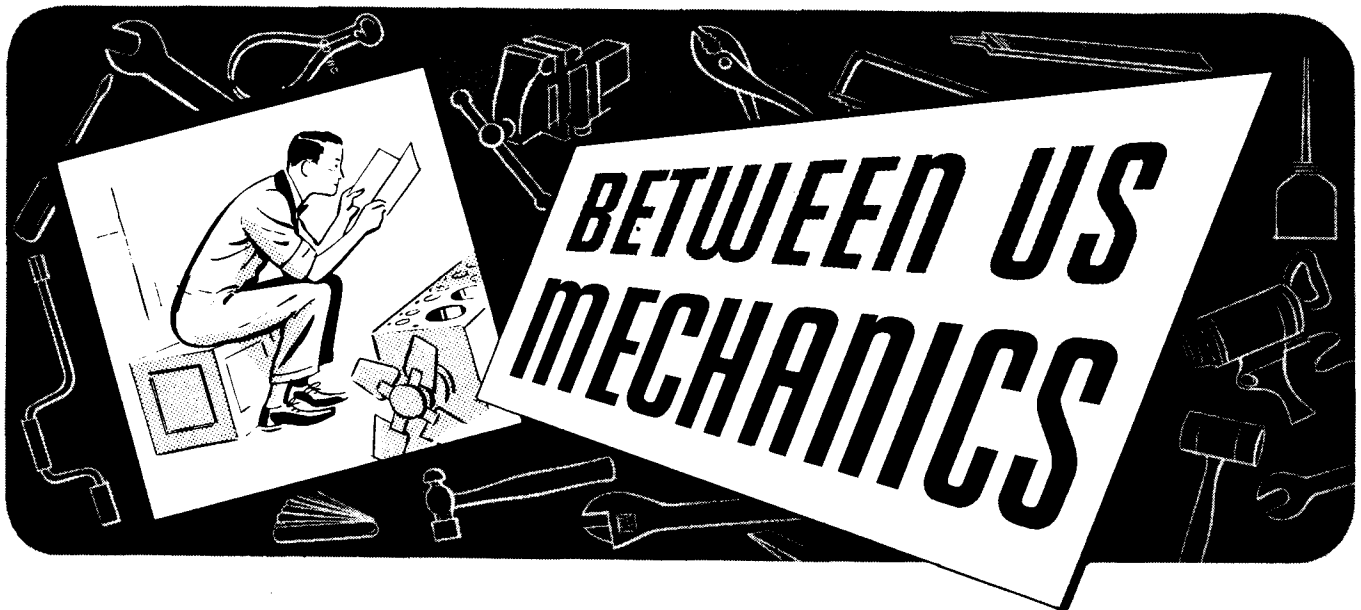
**BRAKE ADJUSTMENT** made easy. In this picture, students are learning to use a brake adjusting tool.

fine his study to a particular unit or cover several subjects, as he wishes. Classes are purposely kept small to enable service school instructors to give all students the benefit of individual attention.

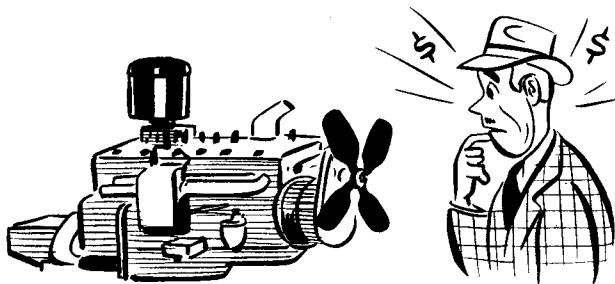
There is no charge for tuition. The only expense to the dealer is for transportation, room, and board of the student while attending. Except for groups organized in factory branch territories, dealers who contemplate sending one or more men to the Factory Service School *should write to the General Service Department requesting a choice of dates, and stating the length of time the employee will attend.* The usual du-

ties of the employee should also be mentioned. *We will promptly inform the dealer of the available open dates.*

If a student attends the school for a week's training period or more, a Certificate of Attendance, on which is inscribed the name of the dealer and the student, will be sent to the dealer. An individual attendance card is also presented to the student. Many dealers have made excellent advertising use of the Certificate of Attendance by framing it and placing it in the Dealer's Service Department. Naturally, customers like to feel that factory trained mechanics are working on their cars.



### **SERVICE ADJUSTMENTS WHICH SHOULD BE MADE ON NEW AND REBUILT ENGINE ASSEMBLY INSTALLATIONS**



When a Studebaker owner purchases a new engine assembly, complete or stripped, it represents an important investment to him. Likewise, a completely rebuilt job represents to the

owner a considerable outlay of cash. It follows, therefore, that to invite the owner to return with the car within thirty days so that the new engine may be looked over and certain adjustments made, is not only good for the engine but will build customer good will.

As a reminder, we are listing some of the more important items which should be checked. You may want to add others.

Check for water, oil, or gas leakage.

Check hose connections, water pump, radiator, gas connections.

Check oil pan and valve cover plates.

Adjustment of fan belt.

- Adjustment of valve tappets.
- Adjustment of carburetor and choke.
- Clean and lubricate carburetor air cleaner.
- Adjustment of ignition timing.
- Check condition of oil filter (if so equipped).
- Tighten oil filter cover.
- Tighten cylinder head screws with torque wrench, and check for internal water leaks.
- Tighten manifold nuts.
- Check engine oil pressure.

If this policy is followed on all new and re-built engine assembly installations, future difficulty will be minimized and owner satisfaction will be safeguarded.

**STUDEBAKER COOLING SYSTEM  
RUST INHIBITOR**

It is extremely important that cooling systems receive protection against rust and scale formation the year 'round. Many prepared anti-freeze solutions contain a rust inhibitor which affords proper protection against corrosive damage during the winter months. Whenever the anti-freeze is drained in the spring, an inhibitor should be installed because the cooling system must also receive similar protection during the spring, summer and fall months.



Studebaker Cooling System Rust Inhibitor also contains a special ingredient which preserves rubber hose connections and which is entirely harmless to all metals in the cooling system.

Service men should explain to customers the advantages derived from using this inhibitor in the cooling system and persuade them to make an immediate purchase of the required amount.

If your stock on hand is not adequate, it may be replenished by ordering from the Studebaker Corporation, Parts and Accessories Division, South Bend 27, Indiana, and Branches.

	List Price	Dealer Net Price
AC-1334 Studebaker Cooling System Rust Inhibitor—8 oz. bottle	\$ .60	\$ .36
8 ounce bottles are packed twelve to the case, although broken lots will be supplied if so ordered.		

**SYNTHETIC TIRES AND TUBES**

Since the characteristics of synthetic rubbers differ considerably from those of natural rubber, it is important that all dealers, as well as operators of passenger and commercial cars, learn to recognize and accept these differences in synthetic tires. The following information outlines important service and repair procedures and highlights several precautionary measures.

Synthetic rubber tire treads are not as resistant to cuts and tears as natural rubber, especially when the tread is hot. For this reason synthetic tires *require more frequent inspection for cuts so that repairs can be made before serious damage is done to the casing.*

The temperature of a tire is affected by the load carried, running speed, temperature of the pavement, the atmospheric temperature and inflation pressure, especially if the tire is under-inflated. Since excessive heat is particularly destructive to synthetic tires, overloading or excessive speeds should be avoided.

**AN ATTRACTIVE DISPLAY OF STUDEBAKER COOLING SYSTEM RUST INHIBITOR IN YOUR ACCESSORIES DEPARTMENT WILL SUGGEST NEEDED PROTECTION TO YOUR CUSTOMERS AND INCREASE PROFITS FOR YOU.**

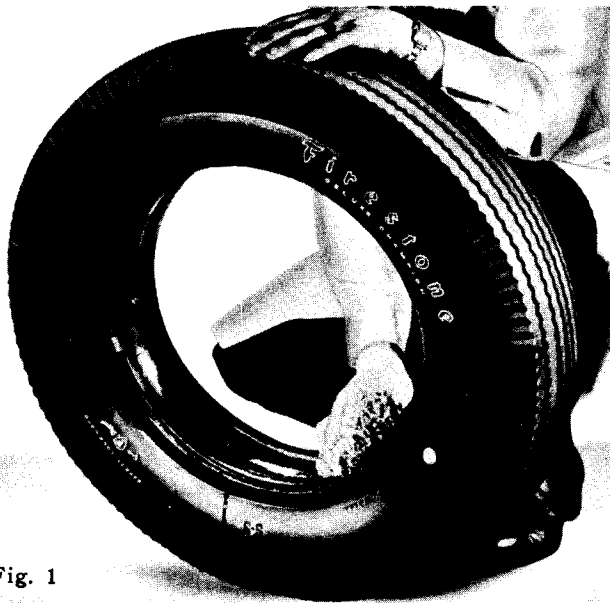


Fig. 1

### How to Install Synthetic Tubes

The installation of synthetic tubes requires special attention.

1. Inspect inside of tire and remove any dirt or other foreign materials.
2. Insert the deflated tube in tire and inflate just enough to round it out, placing valve at balance mark.

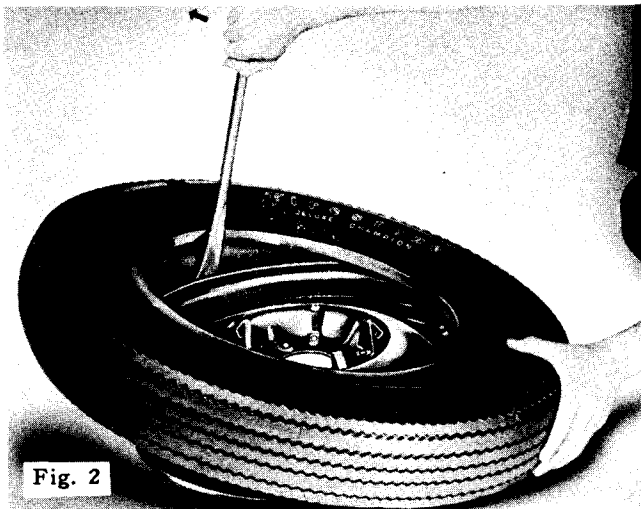


Fig. 2

3. Make a solution of water and Firestone Tube Mounting Compound or other high grade soap, and work it into a heavy suds.
4. Dip a cloth or sponge in the suds and swab thoroughly all around the base of the tube, between the tube and beads of tire, and on the face of the beads. (See Figure 1.) The soap acts as a lubricant and reduces the fric-

tion as the tube passes over the beads down into the well of the rim when inflated.

5. Lay wheel flat with valve hole up.
6. Start to mount tire with valve pointing toward valve hole.
7. Apply the first bead by pushing a portion of it into the well of the rim and then working the remaining part over the flange with a tire tool. (See Figure 2.)

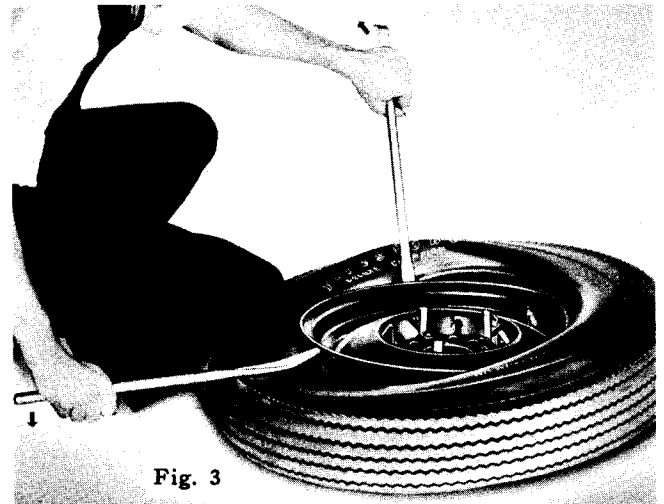


Fig. 3

8. Spread the tire and place valve stem through the hole in rim. The use of a valve fishing tool or valve extension will aid in pulling the valve into position.
9. Apply the second bead by forcing the portion of the tire *opposite* the valve down into the well of the rim and with tire tools work the remainder of the bead over the flange, alternating from right to left to prevent the tire from creeping on the rim. (See Figure 3.)
10. Make certain that the beads are out of the well and in position to seat properly against the flange, then pull the valve out so as to hold the base snugly against the rim.
11. While holding the valve in this position, inflate the tube until both tire beads are seated, with the centering ribs (when marked on the tire) showing evenly above the rim flange.
12. Deflate the tube completely to allow it to adjust its position in the tire and to prevent it from being pinched under the tire beads.
13. Re-inflate to recommended pressure for use.

### Vulcanized Repair of Synthetic Tubes

There are two types of synthetic rubber used in the manufacture of tubes. Passenger car tubes are made of GRS which can be identified by a red stripe on the rim area and/or the letter "S" near the size marking. Commercial car tubes are made of either GRS or GRI, the latter being identified by a blue stripe on the rim area and/or the letter "I."



Fig. 4

GRI synthetic tubes are repaired exactly the same as natural rubber. Inner tubes made of GRS synthetic rubber tear more readily than natural rubber tubes, therefore, extreme care must be used in making repairs.

Following are detailed instructions for repairing GRS tubes as issued by the Firestone Tire and Rubber Co.:

1. Trim the edges of the injury, such as shown in Figure 4, on a 45° bevel with a single cut of a pair of sharp shears. Remove all corners and sharp edges, rounding out the ends to eliminate sharp corners and prevent tearing.

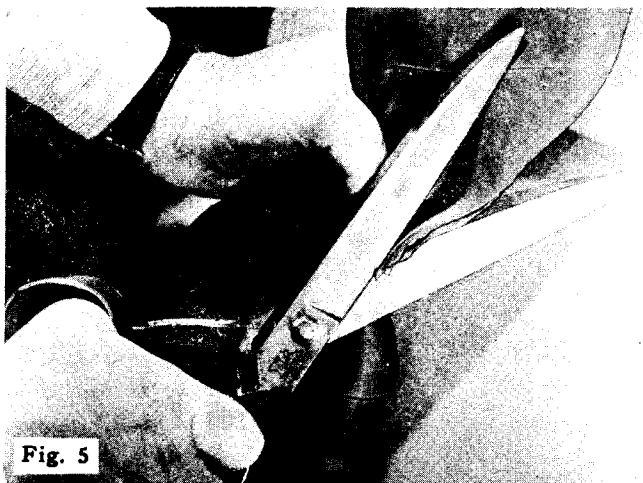


Fig. 5

An easy way to do this is to hold the edges of the injury together as shown in Figure 5, turning the scissors at the start and finish so as to round out the edges of the injury. (See Figure 6.)

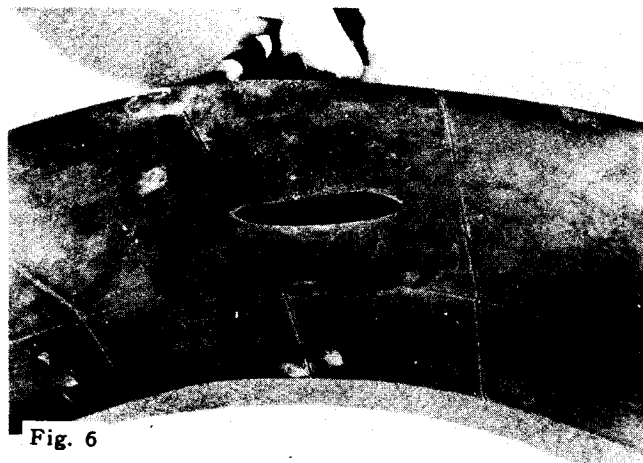


Fig. 6

2. Roughen the surface of the tube around the injury with a wire brush for at least 1" in all directions. *Buffing must be done radially (not circumferentially) and deep scratches must be avoided.*
3. Wash the buffed area, as well as the inside of the tube surrounding the injury, with Firestone Rubber Solvent, using a clean cloth (See Figure 7.) Apply one coat of Firestone Tube Vulcanizing Cement inside and out. Allow to dry.



Fig. 7

4. Cut a piece of Firestone Combination Tube Gum for application inside the tube. This piece should be 1/2" larger in all directions than the injury. Dip the combination gum in Firestone Rubber Solvent and insert under the injury on the inside of the tube, leaving



the tan gum (uncured) side exposed. (See Figure 9.) Roll the patch *firmly into place* under the injury after the solvent has evaporated. Care must be taken to obtain thorough adhesion.

5. Cut a strip of Firestone Tube Repair Gum 1/4" wide and roll thoroughly into the injury until it is slightly higher than the adjacent tube. (See "B" in Figure 9, and Figure 10.) Cut another piece of Firestone Tube Repair Gum large enough to extend at least 3/4" beyond the injury in all directions. (See Figure 11.) The outside patch and the inside patch must be different widths to avoid concentration of flexing.



6. Roll the outside patch thoroughly into place. (See "C" in Figure 9.) Be sure to obtain thorough adhesion. Dust repaired area with cornstarch, soapstone or talc. Cure for 10 minutes at 298° for tubes of 1/16 gage (passenger tubes). This temperature is the same

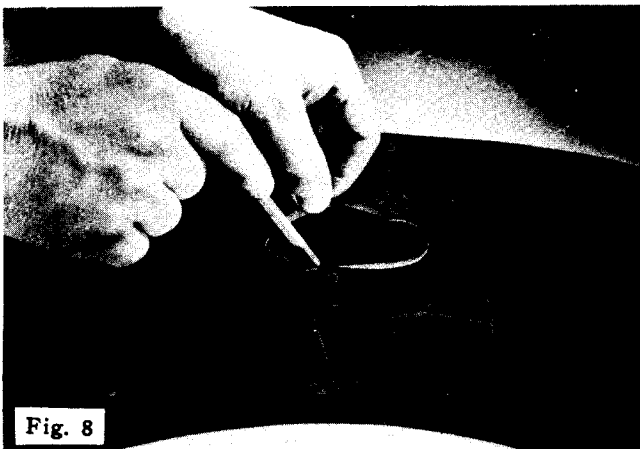


Fig. 8



Fig. 9

as that used for vulcanizing natural rubber tubes and the same vulcanizing equipment can be used. Add 5 minutes for each 1/32 increase in gage. To prevent repair failure, curing must be done on a unit which has a closely controlled, uniform temperature.



Fig. 10



Fig. 11

*The above information has been published in booklet form and the booklet is now being placed in the package compartment of each commercial car as it leaves the factory. Likewise, when passenger car production is resumed, the same procedure will be followed on passenger car models. Any dealer wishing to obtain additional copies of this booklet may do so by writing to the General Service Department, Studebaker Corporation, South Bend 27, Indiana.*

**KEEP DRILLED HOLE IN OIL PRESSURE RELIEF VALVE OPEN**

Since timing gears are lubricated by the oil by-passed by the oil pressure relief valve in addition to a metered quantity through a drilled

hole in the valve, it is important that the valve be kept clean and in proper operating condition. If the small hole in the oil pressure relief valve becomes plugged, the timing gears will not receive sufficient lubrication, at lower speeds, and premature failure will result.

It has come to our attention that in some instances mechanics have deliberately plugged the hole in an effort to increase pressure. Under no circumstances should this be done, for it will not accomplish its intended purpose but will only result in premature failure of important functional parts.



At least once a year the valve should be removed, carefully checked, and cleaned with cleaning solution. The hole in the valve should be cleaned and all carbon deposits removed with a fine wire.

The oil pressure relief valve on the Champion and Commander cannot be adjusted. To adjust the President valve, loosen the lock nut and turn the adjusting screw to the right to raise the pressure, and to the left to lower it. See Shop Manual for specifications.

### STUDEBAKER PERFECT CIRCLE CUSTOM MADE PISTON RING SETS

The Parts and Accessories Division mailed all Studebaker dealers the booklet shown in the accompanying illustration. Their letter, dated April 20, 1945, which accompanied the booklet\* read as follows:

"Engineering research has proved conclusively that no one combination of piston rings will give maximum results in all engines. Experience has also proved that specially designed service ring combinations do a better job than the original production type rings in engines

where cylinder bores are worn or tapered up to certain limits. Because of this, Studebaker engineers have collaborated with Perfect Circle in developing exclusively for Studebaker vehicles the replacement piston ring sets described in the attached booklet.

Special tools to assist mechanics in making ring installations are described on the inside rear cover page, and may be purchased from the sources indicated.

Read this booklet carefully — grasp this opportunity for rendering increased service to your owners by giving them improved engine performance and conserving oil and gasoline. A special order form is provided for your convenience in placing your initial order with your Studebaker Parts Depot."

\*Sent to Export dealers with circular letter No. 10528-P.

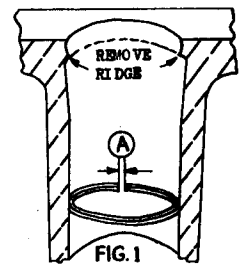
Each ring set contains the same installation information as is included with this article. These instructions should be carefully and completely followed.

Orders for the special tools illustrated in the booklet should be placed as soon as possible so that the tools will be on hand when the first set of rings are received.

We suggest that the booklet, after it has been read by all Service Department employees who would be affected, be filed with the Service Bulletins, preferably the Parts Department copy. If additional copies are needed, please let us know and we shall arrange to send them to you.

### For Satisfactory Piston Ring Installations

1. REMOVE CYLINDER RIDGES—Failure to remove ridges at the top of worn cylinders often results in broken top rings and cracked or broken piston lands. Ridges should be removed BEFORE pistons are taken out because lands are easily damaged when rings are forced



past an abrupt ridge. The ridge remover must never cut more than 1/32" beyond the ridge, (onto the ring travel area).

2. **SELECT PROPER SIZE RINGS**—Always check the joint clearance of the new rings in the lower, unworn portion of the cylinder. (Fig. 1A.) It should not have less than .005" nor more than .025" joint clearance. For oversize cylinders use the following table.



**HOW TO SELECT CORRECT OVSERIZE**

Cylinder Size at "A"	Ring Size	Special Fitting
Std. - .010"	Std.	None
.011" - .019"	.020	File Fit All Rings
.020" - .024"	.020	None
.025" - .029"	.030	File Fit All Rings
.030" - .034"	.030	None

3. **CLEAN ALL RING GROOVES THOROUGHLY**—Remove all carbon from the grooves with the broken end of a ring removed from the groove. Clean drain holes in the oil ring grooves.

4. **ALIGN CONNECTING RODS**—A cocked rod can score pistons and will shorten the life of any ring job. Before piston rings are installed on pistons, the connecting rods should be checked for alignment, and straightened, if necessary.

5. **REPLACE LOOSE INTAKE VALVES AND GUIDES**—Oil or carbon on the under side of intake valves indicates that oil is being drawn into the cylinders past the guides and cannot be stopped by any kind of piston rings. New valves and guides should be installed.

6. **CHECK MANIFOLD HEAT CONTROL VALVE**—When a manifold heat control valve sticks in a closed position, the engine naturally over-heats and often causes scuffed cylinders, pistons and rings. Play safe — check the valve — it **MUST** operate freely.

7. **CHECK RING SIDE CLEARANCE**—All rings must be free in the grooves. Top rings must have at least .002 and not more than .006 side clearance, (Fig. 2). Oil rings can have a minimum of .0015 clearance.

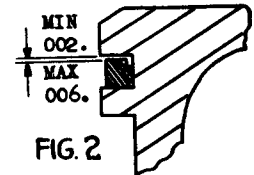


FIG. 2

8. **INSTALL RINGS CAREFULLY**—A new ring permanently distorted by careless installation is no better than an old ring.

9. **CLEAN ALL PARTS THOROUGHLY — DIRT IS ENGINE ENEMY NO. 1**—A clean bench, clean gasoline, clean tools, and clean wiping rags are necessary pieces of equipment. Good work is often ruined by dirty work.

10. **REPLACE ALL GASKETS**—Gaskets are not expensive if they are installed when the engine is down. But they are very expensive if you have to dismantle the engine just to stop water or oil leak.

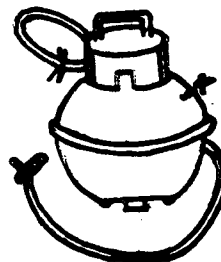


FIG. 3

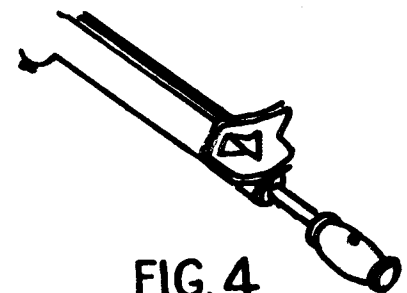


FIG. 4

11. **CHECK BEARING CLEARANCE**—Worn main and rod bearings flood cylinders, making it difficult if not impossible for any piston ring to control oil consumption. Check them for proper clearance, preferably under pressure with a reliable oil leak detector, (Fig. 3).

12. **AVOID OVERHEATING — FLUSH THE COOLING SYSTEM**—When a cylinder block is drained and allowed to stand several hours, the lime and rust deposits inside the water passages dry out and flake off. Flush the cooling system thoroughly after every engine overhaul.



13. **PREVENT CYLINDER DISTORTION**—Cylinder distortion is often caused by unequal tightening of cylinder head stud nuts or cap screws. Always use an indicating **TORQUE WRENCH**, (Fig. 4) and tighten stud nuts or cap screws to recommended tensions.



### 1941 COMMANDER BODY WANTED

Studebaker Panamericana, S. A., Ave Juarez 64-411-13, Mexico D.F., Mexico, is anxious to obtain a body for a 1941 Commander chassis. A four door sedan body is preferred, but any body style will be acceptable. Anyone knowing where such a body may be obtained please communicate direct with Studebaker Panamericana at the above address.

### 1942 PRESIDENT ENGINE — FOR SALE

Mr. Virgil Snider, Pres., Snider Auto Service, Inc., 3757 North Illinois Street, Indianapolis 8, Indiana, reports that he has available for sale one 1942 President engine including carburetor, generator, starter and clutch. According to Mr. Snider the car in which this engine was used has been driven 27,000 miles and the engine is in A-1 condition.

Anyone interested in this engine, please communicate direct with Mr. Snider at the above address.



### SEND IN YOUR PET IDEA AND COLLECT \$5.00

Your pet idea, shop hint or time saver may be worth \$5.00 to you. Send it in. If printed in the Service Bulletin, we'll mail our check for \$5.00. Send in as many ideas as you like — possibly each one will eventually be worth \$5.00 to you.

### GOVERNOR FOR GOVERNOR-CONTROLLED OVERDRIVE TRANSMISSION 1942 PRESIDENT (8C) AFTER SERIAL 7147625 SUBSTITUTED

The governor part No. 516572 as used on some of the 8C overdrive transmissions is no longer available. Therefore, a similar Bendix governor will be substituted. Both governors have the same characteristics, but the one used in production has a stamped housing, whereas the substitute has a die casting and the terminal connection is different.

An overdrive control governor kit No. 519045 is now available at the Parts and Accessories Division, South Bend, or through your parts depot.

When installing this kit it will be necessary to cut off the eye-type terminal and put in its place the terminal and connector furnished.

## *Refresher Questions and Answers*

The following questions and answers are designed to serve as a "refresher" for those who wish to keep alive in their minds certain important service information. In addition, they will enable you to review knowledge previously gained and fix it more firmly in your mind.

1. Q. When disassembling a Champion water pump, should the fan hub or impeller be removed first?  
A. After removing the bearing retaining clip, the impeller only should be removed when disassembling the pump as the majority of pump repairs can be made without removing the fan hub. When fan hubs are removed they must be replaced by a new hub.
2. Q. What clearance should be allowed between the pump impeller and the housing when reassembling a Champion water pump?  
A.  $1/32''$  clearance should be allowed between the impeller and the housing when pressing the impeller onto the shaft. This may be measured by using a piece of shim stock  $1/32''$  thick.
3. Q. How can the cooling system thermostat be checked for proper operation?  
A. The cooling system thermostat can be checked for proper operation with an accurate thermometer and a pan of heated water. The thermostat and thermometer should be placed in the pan of water and the water gradually heated until the thermostat starts to open. The thermometer reading at this point is the temperature at which the thermostat starts to operate. When the thermostat has obtained its wide open position the temperature should be again checked. This will give you the range of the degrees of fahrenheit at which the thermostat operates.
4. Q. How should clearance between crankshaft and main bearing be checked?  
A. By placing a paper or brass shim stock between the bearing cap and the shaft and tightening the cap screws securely. If the shaft turns freely, bearing clearance is greater than the thickness of the paper. Continue to increase the thickness of the paper until a slight resistance is felt when rotating the crankshaft. The shims should then be measured to determine the clearance of the bearing.
5. Q. How are valve tappet push rods lubricated on 1942 Studebaker engines?  
A. Full pressure lubrication is supplied to all valve tappets through drilled passages in the crankcase.
6. Q. Do all 1942 Studebaker engines have the same type connecting rod bearings?  
A. No. The President engine has babbitt-lined steel-back interchangeable bearings, whereas the Champion and Commander have babbitted bearings bonded to the steel connecting rod.
7. Q. How are cylinder walls lubricated?  
A. The cylinder walls of Studebaker engines obtain positive lubrication through a small drilled hole in the upper half of the connecting rod bearings. A jet of oil is forced directly against the cylinder walls and piston pin through this hole.
8. Q. Can the Champion oil pump be removed from the engine as an assembly?  
A. No. The pump must be disassembled to remove it from the engine.
9. Q. Can the President oil pump be removed without removing the oil pan?  
A. No. The oil pan must be removed before the oil pump can be taken off as the pump is inside the crankcase.

## HOW WELL DO YOU REMEMBER?



This is your opportunity to review and check your knowledge of Service Bulletin No. 164. Check the completion of each statement which you believe to be the correct one. Then check your answer by referring to the Bulletin reference given.

1. Front universal joints equipped with external lubrication fittings may be lubricated with: a. standard chassis lubrication gun . b. chassis lubrication gun equipped with extension coupling model 6247 . c. wheel bearing lubricator . (See page 3 — S. B. No. 164.)
2. It is preferable to check alignment of the fan, generator, and crankshaft pulleys by: a. using a straight edge . b. measuring distance between fan pulley and cylinder block . c. visual inspection . (See page 4 — S. B. No. 164.)
3. The determining factor in what repair kit to use when reconditioning Champion water pumps is: a. the model of the car . b. the type of water pump now on the car . c. the length of the water pump shaft . (See page 4 — S. B. No. 164.)
4. Brinelling or wearing of the cylinder head gasket surface of the cylinder block around the combustion chamber is usually the result of: a. not keeping the cylinder head tight . b. free fitting cylinder head studs . c. excessive tightening of cylinder head studs .
5. To obtain proper tension wrench reading when threads become rusted and filled with dirt: a. clean out threads . b. lubricate threads with oil . c. add 25% to tension wrench reading . (See page 7 — S. B. No. 164.)
6. When cylinder block internal water manifolds on President model cars become rusted causing unequal distribution of coolant, they should be: a. replaced . b. repaired . c. cleaned . (See page 8 — S. B. No. 164.)
7. When installing cam shaft gears, a pusher should always be used to prevent: a. damage to valve push rods . b. damage to cam shaft bearings . c. loosening of welch plug at camshaft rear bearing, causing an oil leak . (See page 10 — S. B. No. 164.)
8. Fan belts should not be adjusted too tightly because it will result in: a. breakage . b. undue strain on fan and generator bearings . c. squeaks . (See page 10 — S. B. No. 164.)
9. When a self locking valve tappet adjusting screw will not stay in adjustment, the recommended correction is: a. replace adjusting screw . b. replace the valve . c. replace push rod . (See page 10 — S. B. No. 164.)

### SHOP MEETING ATTENDANCE RECORD

SERVICE MANAGER:

As you know, we have always advocated the holding of shop meetings for discussion of the contents of each Service Bulletin as received, in order to be better assured that all service personnel are thoroughly familiar with the information it contains. It has now been suggested that we furnish an attendance record as a part of the bulletin. Starting with this issue, we shall print on the last page of each Bulletin a convenient form where the names of all attending the current meeting may be made a matter of record. It is our hope that dealers will make use of this record.

#### ATTENDANCE RECORD

Name	Department		Signature	Date	19