

Studebaker

# SERVICE BULLETIN

JULY

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1953

## COMMANDER SIX STRIPPED ENGINE PART NO. 532915 INSTALLATION DATA REVISED

Please record this article on page 107 of your 2R Series Trucks Shop Manual and on page 143 of your 1950 Passenger Car Shop Manual.

The manila tag accompanying the first shipments of Part No. 532915 stripped engine assemblies for 7A-17A cars inclusive, 2R6, 2R11, 2R14, 2R16A, 2R16B, 2R17A, 2R17B, J5, K15, and M16 trucks read as follows:

When used for cars previous to Model 16A and trucks with engines before Engine 4R-101 use the attached Oil Level Gage and use Oil Pan #525160.

To improve the installation, it has been decided to recommend that an oil strainer support assembly, Part No. 525053, also be ordered and installed.

The manila instruction tag on Part No. 532915 stripped engines now shipped, therefore, reads as follows:

When used for cars previous to Model 16A and trucks with engines before engine #4R101, use the attached Oil Level Gage. Use Oil Pan #525160 and Oil Strainer Support Assembly #525053.

## CLIMATIZER AND DEFROSTER BLOWER MOTORS -- ALL MODELS

Please record this article on the Service Bulletin Reference page at the end of the Climatizer section of your 1953 Passenger Car Shop Manual and also on page 37 of your 2R Series Trucks Shop Manual.

Redmond Company, Incorporated, have supplied us with Climatizer and defroster blower motors since 1939. They have recently decided to end this phase of their manufacturing activities. It is now necessary to revise our specifications for current production and for service units.

Parts depots will continue to carry replace-

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It's a DRY DUSTY SUMMER  
in many places - - - -  
Be Sure to  
SERVICE AIR CLEANERS  
REGULARLY

ment heater blower motors. On 1953 models, it will be necessary to identify the make of motor to be replaced. The name of the manufacturer is clearly marked on the end of the motor. Install new motor of same style, ordered from table below:

Part No.	Part Name and Make	Body Model	Style
532872	Blower Motor only (Redmond)	14G,4H	All
534238	Blower Motor only (Delco General Industries)	14G,4H	All

# 5 Forgotten Steps in Spark Plug

*This is a reprint, by permission, of an article that appeared in the May, 1953 issue of Motor magazine. Please record it on the Service Bulletin Reference page at the end of the Electrical System section of your 1953 Passenger Car Shop Manual and also on page 73 of your 2R Series Trucks Shop Manual.*

SPARK PLUG SERVICE has become a routine operation and, because of this, many shopmen often overlook steps that have become very important with the modern high compression engine. Flowing the dirt away from the spark plug well, cleaning shell threads, filing sparking surfaces, pressure testing and comparing with new plug performance, cleaning gasket seats, and tightening plugs with a torque wrench are among the steps many shops tend to ignore.

Today's high compression, high output engines tend to aggravate spark plug fouling during continued part throttle operation. When full throttle operation follows, it brings about high compression pressures and high temperatures, both of which put a greater load on the plugs.

Fouling due to carbon, lead deposits or other causes is a symptom that may show up when the car owner first takes to the road after a prolonged period of slow or city type driving. A bad carbon condition may show up as intermittent or steady missing at high speeds or on long pulls. Lead oxide deposits and other types of fouling often result in poor acceleration, reduced top speed and a generally rough idle. In severe cases, this condition may prevent the proper shifting of some types of automatic transmissions.

Knowledge of the type of driving your customers do will enable you to recognize the

possibility of these conditions arising in their cars and put you in a better position to diagnose this trouble when and if it occurs. Better and more frequent spark plug maintenance is the best solution.

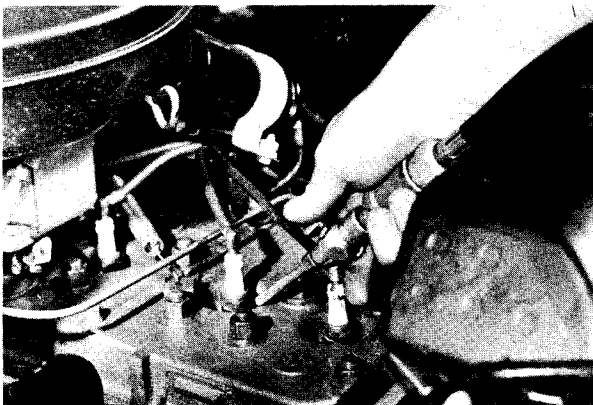
Maintenance of peak spark plug performance requires inspection, cleaning and re-gapping at regular intervals of 3-5,000 miles, or approximately every 100 hr. of engine operation. Under certain conditions, such as heavy city driving and occasional fast running, plugs should be serviced at shorter intervals.

When plugs are removed, first examine the gaskets and firing ends. Properly installed gaskets have flat, clean surfaces. The various deposits found on firing ends are familiar to most shopmen. Rusty brown, grayish tan or white powdery deposits with minor electrode erosion can be considered normal, but black or gray hard carbon and red, brown or yellow lead oxide deposits indicate probable fouling. Deposits of this type are often found below the powdery surface deposits.

Before blasting the plugs with abrasive, remove as much of the deposits as possible with a suitable petroleum solvent and then dry thoroughly. When blasting, wobble the plugs so as to do a good cleaning job.

Clean the shell threads with a hand or power driven wire brush and file sparking surfaces with a point file to obtain bright, clean and parallel surfaces. When pressure testing plugs, use a new plug of the same type to determine the pressure range in which the cleaned plug should fire.

One of the most important and yet frequently



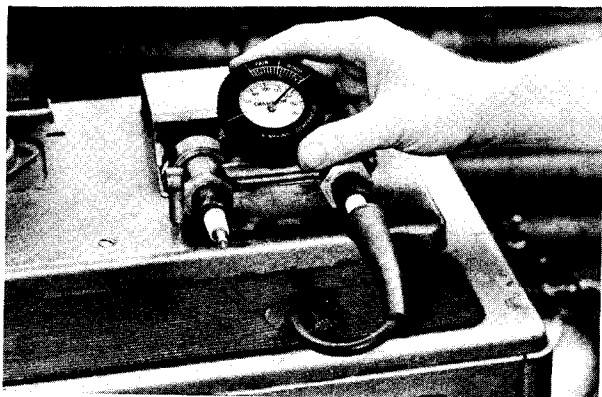
- 1 After loosening plugs two turns, blow dirt away from base with compressed air or soda straw



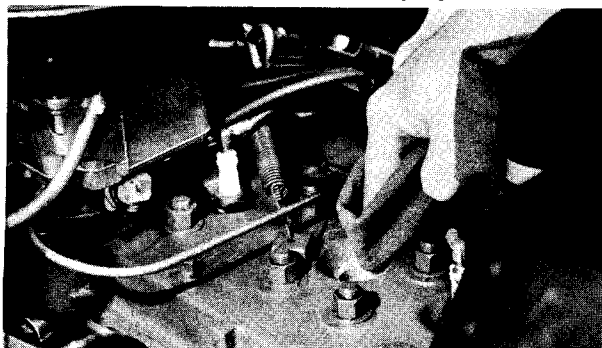
- 2 Clean shell threads with a wire brush. If power brush is used, wire should not be more than .005 in. in diameter

# Service

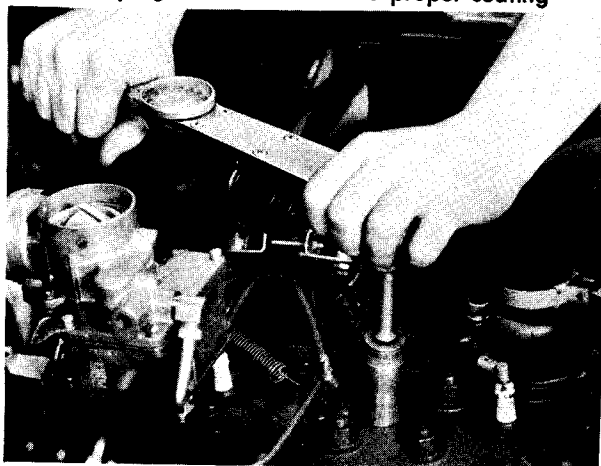
Overlooked steps in spark plug service is tightening the plugs with a torque wrench to the prescribed tension. A good average on 10 mm. plugs is 14 lb.-ft. on cast iron heads and 11 lb.-ft. on aluminum types. The 14 mm. recommendations are 30 lb.-ft. on cast iron heads and 27 on aluminum, and on the 18 mm. type, 34 lb.-ft. on cast iron and 32 on aluminum.



**3** Pressure test plugs and use new plugs to establish range in which cleaned plugs should fire



**4** Clean gasket seats before installing plugs in order to assure proper seating



**5** Use a torque wrench to install plugs to recommended tensions. Too great a tension may alter point settings. Too little fails to compress gaskets and reduces heat radiation

## FOR PROMPT COMPLETION OF CLAIMS SEND BILL OF LADING COVERING MATERIALS

We review below a part of the general article in Service Bulletin No. 255, page 1, concerning proper procedure to follow in submitting claims.

We particularly stress at this time the mailing of copies of Bills of Lading (Form No. H214), since omission of this important item will cause delay in the processing of a dealer's claim.

**"2. BILL OF LADING** Use as many sets of Bill of Lading form as necessary, numbering sheets 1, 2, 3, etc. Do not show consignment instructions on other than Sheet No. 1.

*NOTE.--Consign all claim material either to Dept. 983, Claims Receiving, The Studebaker Corporation, South Bend, Indiana, or, in the case of Warranty Claims, correctly addressed to your Parts Depot.*

**a. Description** On the Bill of Lading, show a recognizable description (including your number) of each package. Specify boxes, cartons, pallets, loose articles.

**b. Mailing** Original Bill of Lading copy should be attached to the claim form and mailed promptly to General Service Department, The Studebaker Corporation, 635 South Main Street, South Bend 27, Indiana."

*NOTE.--Export dealers should follow procedure in Service Letter No. P-500.*

## TRUNK LID LOCK - 14G, 4H

Looseness or loss of trunk lid locks on 1953 Passenger Car models may be due to the following causes:

1. Lock retaining clip not properly in place.
2. Retaining clip not present due to absence of retaining slot in lock housing.
3. Retaining slot out of position, allowing lock housing to be loose in the trunk lid.

To correct looseness of the lock housing due to the retaining clip not being in place, move the U-clip retainer into its fully seated position on the lock housing.

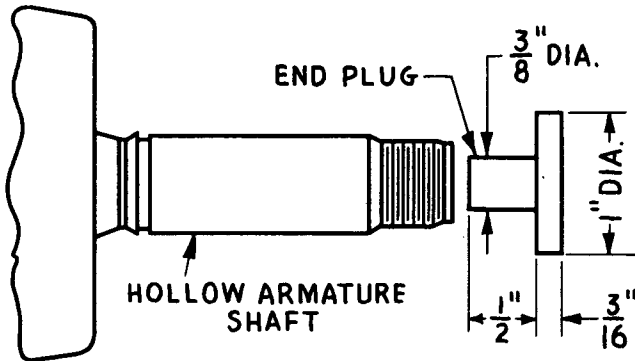
Where no retaining slot is present or where the slot is off position, replace only the lock and housing assembly. The correct retaining slot position is 1/16" to 3/32" measured from

the inner edge of the lock housing flange to the edge of the retaining slot.

Where the complete lock has been lost, it is necessary to replace it with a trunk lid lock-and-housing assembly Part No. 297875, housing gasket Part No. 297881, and lock retainer Part No. 297880. In addition, it will also be necessary to install a compartment door and trunk lid lock kit, Part No. 298143 (14G models) or Part No. 298142 (4H models).

This kit consists of:

- 1 Lock, compartment door.
- 1 Cylinder, trunk lid lock.
- 2 Keys.



**DAMAGE TO HOLLOW ARMATURE SHAFTS**

Please record this article on the Service Bulletin Reference page at the end of the Electrical System section of your 1953 Passenger Car Shop Manual and also on page 73 of your 2R Series Trucks Shop Manual.

The following article is reprinted from a recent Delco-Remy Field Service Bulletin.

Field reports show that some armature damage has resulted from pounding on the drive end of hollow shafts during disassembly or assembly of the pulley or the drive end frame. Pounding can result in the following damage:

1. Armature laminations may become loose on the shaft as the result of the sudden end thrust. This allows the laminations to shift endwise during rotation, damaging the insulation between the lamination and commutator. This will cause armature failure due to shorting between the leads. Also, shifting of the lamination will produce a vibration in the generator which eventually causes the leads to break.
2. The end of the shaft may be expanded enough to prevent assembling the bearing or commutator end frame.

3. The threads on the end of the shaft can be damaged, preventing assembly of the nut which holds the pulley in place.
4. The shaft may be forced through the end of the commutator end frame and the bushing driven out of place.
5. The ball bearing in the drive end may become brinelled or dented causing bearing failure.

Therefore, care must be taken when disassembling or assembling the generator to avoid pounding on the end of the shaft. Always use a gear puller to remove the pulley or the end frame. To prevent damage to the shaft when using a puller, insert a plug in the end of the shaft. A plug as illustrated above, or some other suitable plug, may be used.

**HIGHER TENSION ON ARMS KEEPS WIPER BLADES ON GLASS - 14G, 4H**

In cases where the windshield wiper blade tends to lift from the glass at higher car speeds, the condition is aggravated somewhat by the degree of curvature and slant of the windshield. It may be helpful to install wiper arms having higher tension such as are now installed in production. The original production-type arms had 6 1/2-7 1/2 oz. tension, while the new arms have 7 3/4 - 8 3/4 oz. tension. The new production-type arms may be ordered through Studebaker parts department for service installation.

The new parts are:

Part No.	Part Name	Model Application
290288-9x2	Windshield Wiper Arm Assembly, R & L	14G & 4H: W-F-Y Bodies
290288-9x3	Windshield Wiper Arm Assembly, R & L	14G & 4H: C-K Bodies

**SPARE WHEEL HOLD-DOWN BOLT - 14G, 4H - C & K BODIES**

Occasionally on a 1953 Champion 5-passenger coupe or Hard-top model, the smaller size of the wheel and tire assembly permits the spare wheel hold-down bolt to be screwed down to the end of the thread, where it may seize.

A new bolt with greater thread length should be installed in place of the original bolt where this condition is found. The new bolt is Part No. 306020G. This bolt has a thread length of 1 5/8" whereas the original bolt was threaded for 1 1/4" of its length.

It is possible that where the bolt threads were found too short in service and the bolt seized against the mounting nut, the latter may have become loosened in the bracket. In such cases it will be necessary to refasten the nut to the bracket by tack welding.

### METERING RODS FOR 1953 CHAMPION MODEL CARTER CARBURETORS

Please record this article on the Service Bulletin Reference page at the end of the Gasoline System section of your 1953 Passenger Car Shop Manual.

Following is a list of the metering rods for 1953 Champion models. This includes the special rods for high altitude and export use:

Part No.	Part Name	Application
534140	Metering Rod, Standard	Sea Level - 4000 ft.
*534358	Metering Rod, 1st Size Lean	4000 ft. - 8000 ft.
*534359	Metering Rod, 2nd Size Lean	8000 ft. - 12,000 ft.
*534360	Metering Rod, 3rd Size Lean	12,000 ft. and above

\* These three metering rods sold for export as a set under Part No. 534361.

### REAR BRAKE DRAG DUE TO PINCHED PARKING BRAKE CABLE - 14G, 4H

Please record this article on the Service Bulletin Reference page at the end of the Brake section of your 1953 Passenger Car Shop Manual.

In cases where rear brake drag is found, it is possible that the rear brake cable is pinched under the spacer tube at the parking brake equalizer bar. To free the cable, loosen the nut and reposition the cable so that it is not pinched by the spacer tube and retighten nut.

To prevent this as a result of production installation, the rear cable spacer tube is no longer used and a Part No. 369-05 adjusting rod plate washer is used instead of the original Part No. 370-05 washer. This change entered production at South Bend with Serial Nos. 1234564 (14G) and 8317667 (4H).

The Part No. 520257 spacer tube will continue to be furnished through parts depots for service use on passenger car models prior to 1953 14G and 4H models.

### POINTS TO SEAL TO PREVENT LEAKS IN COWL SECTION - 14G, 4H - C & K BODIES

It is possible that sealing compound at (1) right or left front fender-to-cowl upper rear attaching bolt or (2) the right cowl ventilator control shaft bracket screws may be disturbed and cause water leaks into the front compartment. To correct:

1. **Front Fender-to-Cowl Upper Rear Attaching Bolt** Loosen the bolt and pry the flange away from the cowl. Press Dum-Dum sealer around the bolt and between the flange and cowl. Tighten bolt securely.
2. **Right Cowl Ventilator Control Shaft Bracket Screws** Tightening the bracket mounting bolts and nuts usually is all that will be required to seal this area. If there is further evidence of a leak, loosen bolts and nuts and apply sealer around the bracket and bolts. Tighten securely in place to make a water tight seal between screws, bracket and cowl.

### SOME CONSIDERATIONS OF OVERHEATING IN PRESSURIZED COOLING SYSTEMS

Please record this article on the Service Bulletin Reference page at the end of the Cooling System section of your 1953 Passenger Car Shop Manual. This is a reprint of Passenger Car Service Letter No. 897 which may now be discarded.

Under conditions of very high outdoor (ambient) temperatures, in the neighborhood of 100°F., for example, combined with sustained high road speeds, there is a possibility that pressurized cooling systems may overheat or show indications of overheating on the temperature gage if either the pressure cap or pressurized system is not operating properly or the heat indicator gage is improperly calibrated.

1. **Heat Indicator Reads Too High** When the indicator needle shows to the right of the white "normal heat range" outline, the driver is warned that the engine may be overheating. If the gage is not properly calibrated to the pressurized system, the gage may indicate overheating when there is actually neither boiling nor coolant loss present. To check, turn the pressure cap to the stop and hold it there a moment until pressure is relieved. Remove the cap and check coolant level. If the coolant

level is normal (within two or three inches of the top of the radiator filler), it may be taken as evidence that the instrument panel heat indicator gage requires recalibration as outlined below.

To correct, install two 5-ohm resistors (Part No. 533130) in series on the receiving terminal of the heat indicator gage. See Fig. 1.

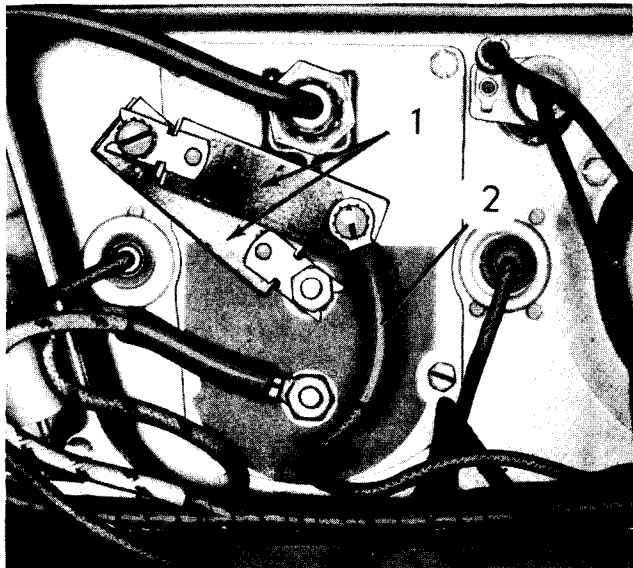


FIG. 1 • 1. 5-OHM RESISTOR (PART NO. 533130)  
2. BLACK WIRE TO CYLINDER HEAD UNIT

THE BLACK WIRE (2) IS REMOVED FROM ITS TERMINAL ON THE BACK OF THE HEAT INDICATOR GAGE. THE SPADE TERMINAL OF A 5-OHM RESISTOR (1) IS SECURED ON THIS TERMINAL. A SECOND 5-OHM RESISTOR (1) IS CONNECTED TO THE FIRST AS SHOWN AND THE BLACK WIRE (2) IS THEN ATTACHED TO THE SCREW TERMINAL OF THE SECOND RESISTOR. (PICTURE SHOWS INSTALLATION ON A CHAMPION MODEL: IT IS DONE IN THE SAME WAY ON COMMANDER MODELS.)

The receiving terminal is the terminal with the black wire connected to it; this wire leads to the sending terminal of the cylinder head heat indicator unit.

The resistors have the effect of recalibrating the gage. In production, the gage is being recalibrated so that the needle will appear in the normal operating range block and will not climb higher (further to the right) until the coolant temperature actually reaches such a point that the engine is overheating.

AFTER INSTALLATION OF THE RESISTORS, BE SURE TO ROAD TEST THE CAR AT FAIRLY HIGH SPEEDS UNDER HIGH OUTDOOR TEMPERATURES AND LONG ENOUGH SO AS TO MAKE SURE THE RESISTORS PROPERLY CALIBRATE THE GAGE READING, AND COOLING IS SATISFACTORY.

2. **Coolant Loss From Pressurized System** Any pressurized cooling system must be "tight." That is, the coolant must circulate within the system without leaking out and, conversely, no air may be allowed to leak into the system. Any opening in the system, in other words, will render the system ineffective, lower the boiling point of the coolant, and may result in loss of coolant.

Two causes of coolant loss under high outdoor temperatures coupled with high speed are: a) air leaks into the system and b) inoperative pressure cap.

- a) **Air Leaks into the System** To determine presence of air in the cooling system, run the engine at fairly high rpm with radiator cap removed and check for air bubbles in top radiator tank coolant. If no air bubbles are detected, it is probable that the pressure cap is not sealing properly and should be replaced. When replacing the pressure cap, examine the seat in radiator filler neck for irregularities in the surface, smooth up seat surface if nec-

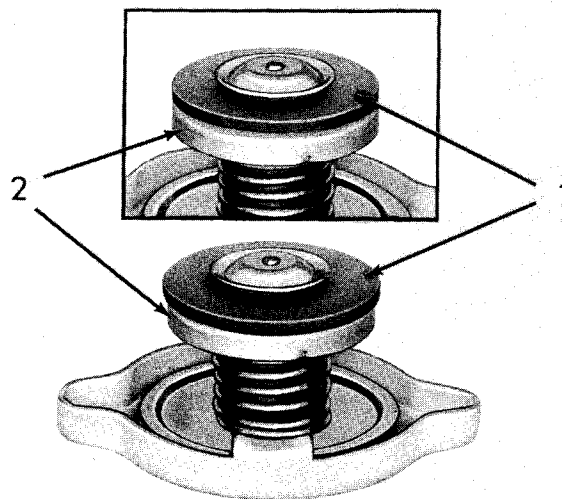


FIG. 2 • 1. RUBBER GASKET 2. BRASS SPRING SEAT

THE RUBBER GASKET (1) OF THE PRESSURE CAP AT THE TOP OF THIS PICTURE IS THE RIGHT SIZE. IT DOES NOT PROTRUDE OVER THE EDGE OF THE BRASS SPRING SEAT (2). IN THE PRESSURE CAP AT THE BOTTOM OF THE PICTURE, THE GASKET (1) IS OVER-SIZE AND EXTENDS BEYOND THE EDGE OF THE SPRING SEAT (2). THIS PRESSURE CAP SHOULD BE DISCARDED.

essary. Examine the new radiator cap to be sure that the rubber gasket does not extend beyond the edge of the brass spring seat (see Fig. 2). Use only caps in which the rubber gasket is

slightly smaller than the pressure seat.

If air bubbles are found in the top radiator tank, determine the origin of the air leaks. The three most common causes are: (1) Leakage past the cylinder head gasket as a result of the cylinder heads being improperly torqued (46 - 50 ft-lbs torque is recommended), or the result of a damaged cylinder head gasket. (2) Water pump leaking air around the mounting gasket as a result of being improperly tightened, or damaged water pump gasket. In a few instances an ineffective water pump seal, which permits the entrance of air into the cooling system at high speed, may be the cause. To correct, replace the water pump. (3) Air leaks at hose connections. Examine hoses for cracks or fractures. Check for tightness. Replace hose or tighten clamps as necessary.

If overheating is found in an individual car where there are no air leaks present, and the pressure cap has been proven satisfactory, it may be the result of the lower radiator hose collapsing. The lower radiator hose is supported internally with a coil spring, and the coil spring may have slipped down out of position, permitting a portion of the hose to collapse from suction at high speeds. If this condition is found, the lower radiator hose should be replaced.

If any of the above items have been found and corrected, the car should be road tested at fairly high speeds for a sufficient period to make sure that the water loss and overheating have been eliminated. If, after the water loss has been eliminated, the indicator reads too high, follow instructions in Item 1 to correct.

- b) **Inoperative Radiator Pressure Cap** If the pressure cap does not open when the prescribed 7 lb. pressure builds up in the system, the excess pressure will bulge the upper tank, open the seams, or blow off the radiator hoses. This causes loss of coolant, resulting in overheating.

To correct this condition it may be necessary to repair or replace the ra-

diator. If the hose is blown off, re-install or replace. Install a new pressure cap and inspect it carefully to be sure that the rubber gasket at the bottom does not extend beyond the edge of the brass seat between the spring and the rubber gasket. See Fig. 2. It is when this gasket is of greater diameter than the brass spring seat that the rubber gasket seals against the walls of the radiator filler neck and prevents the pressure cap from opening at the desired 7 lb. pressure in the cooling system.

**CAUTION:** DO NOT OVERFILL THE RADIATOR. In a pressurized cooling system it is essential that there be room for expansion of heated coolant. Fill until coolant level is about one inch below the bottom of the filler tube.

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## TRUCK SERVICE ITEMS

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### OPTIONAL REAR AXLE RATIO 4.11:1 FOR 2R11 MODEL TRUCKS

*Please record this article on page 177 of your 2R Series Trucks Shop Manual.*

A 4.11:1 optional equipment rear axle ratio is now available on new 2R11 model trucks and also may be purchased to replace a rear axle or differential on 2R11 trucks (without overdrive) now in service.

The parts are:

Part No.	Part Name
*682041X2	Rear Axle Assembly - 4.11:1 Ratio
682047	Differential Case with Bevel Gear and Pinion Assembly
682046	Bevel Gear and Matching Pinion

\* Not to be used with overdrive transmission.

When the new ratio is used to replace one now in service, the speedometer drive gear and pinion must be replaced. For passenger car type 6-ply tire sizes 6.00 x 16, 6.50 x 16, and 7.00 x 16, use speedometer pinion, Part No. 682017, having 17 teeth. For truck type 7.00 x 16 6-ply tires use Part No. 682015 speedometer pinion having 16 teeth. In each case, a 6-tooth drive gear, Part No. 682068, is used.

