

Studebaker

SERVICE BULLETIN

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ENGINE OIL VISCOSITY RECOMMENDATIONS

Please record on page 140 of your 1947 Shop Manual.

The following engine oil viscosity recommendations for passenger cars and trucks supersede those issued in 1947 Shop Manual, 2R Series Truck Operator's Guide, and 1948 Champion, Commander, and Land Cruiser Owner's Guides:

Lowest Temperature Anticipated	Viscosity Recommended
+32° F. (0° C.)	S. A. E. 30
+10° F. (-12.2° C.)	S. A. E. 20
-10° F. (-23.3° C.)	S. A. E. 10-10W or 10W

DETERGENT ENGINE OILS DISCOLOR SOON BUT ARE STILL GOOD LUBRICANTS

Many owners and service men have been alarmed to notice an engine oil showing discoloration soon after its installation in the crankcase.

In most of the samples sent to us for laboratory analysis, it has been found that these oils contain chemical detergents which have been added to the oil by the refinery to give the oil a cleansing property as well as a lubricating ability.

The detergent additives with which such oils are treated have a dispersing action which tends to keep normal carbon formations in suspension and thus deter their accumulation or deposit on internal engine parts in the form of "varnish".

Since the carbon particles are kept floating in the oil, the color of the oil quite often changes to a gray or darker shade and gives somewhat the appearance of "dirty" oil when seen on the oil level gage.

As long as the oil maintains a good body and keeps its "slick" or "slippery" quality, it will do its job of lubricating.

Several types of oil are refined in the petroleum industry for various types of operation. The General Committee of the Division of

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Marketing of the American Petroleum Industry defines these types as follows:

"REGULAR TYPE - This term designates motor oil generally suitable for use in internal combustion engines under moderate operating conditions.

"PREMIUM TYPE - This term designates motor oil having the oxidation stability and bearing corrosion preventive properties necessary to make it generally suitable for use in internal combustion engines where operating conditions are more severe than regular duty.

"HEAVY-DUTY TYPE - This term designates motor oil having the oxidation stability, bearing corrosion preventive properties, and detergent dispersant characteristics necessary to make it generally suitable for use in both high speed Diesel and gasoline engines under heavy-duty service conditions."

As indicated in the above definitions, any engine oil sold by reputable refineries which is labeled "Heavy-Duty" will contain detergent additives and can therefore be expected to show discoloration shortly after installation. This discoloration is normal and does not indicate defective or unsafe lubricating oil. Likewise, oils sold as "Premium Oil" contain mild anti-

corrosion additives and may show similar discoloration without indicating unsafe oil.

Oil labeled or sold as "Regular" grade, however, does not contain any detergents; therefore, oil labeled "Regular" should be changed when it appears "dirty" or black on the oil level gage.

To acquaint owners with the early discoloration of engine oil containing detergent additives, the following paragraph is being placed in the next printing of the Owner's Guides:

"Most of the higher priced motor oils sold today contain chemical detergents which hold extremely small particles of carbon or other foreign matter in suspension. Many of the particles are so small that they flow through the oil filters with the oil and remain in suspension. For this reason, oil which is perfectly good for lubrication purposes may be discolored when seen on the oil level gage. With such oils the need for an oil change should be governed by the mileage the oil has been used and the dust conditions prevalent during that mileage. As long as the oil retains a 'slick' quality and good body, it is generally satisfactory.

"Under average driving conditions oil should be changed at 2500 to 3000 mile (4023 to 4828 km.) intervals."

CLUTCH RELEASE SHAFT GREASE RETAINER

Please record on p. 140 of your 1947 Shop Manual.

To eliminate the necessity of lubricating the right end of the clutch release shaft with an oil can, a grease retainer has been installed in production of passenger cars and trucks effective with the following engine numbers: 7G-398272 (LHC) and 398332 (RHC); 15A-H-286990 (LHC) and H-297427 (RHC); 1R-3851 (LHC) and 1R-4388 (RHC); 2R-1191 (LHC) and 2R-2070 (RHC); 3R-4877 (LHC) and 3R-5041 (RHC).

Service Installation

On cars and trucks with engine numbers before those listed above, a service installation can be made to seal the end of the shaft by installation of a clutch release shaft grease retainer. The service grease retainer is installed on the right side of the clutch release shaft.

The retainer is a simple cup which is driven into the housing over the end of the shaft.

Installation Procedure

Place car or truck on a lift. Clean the

right side of the clutch housing and the end of the clutch release shaft with dirt solvent and compressed air. If the vehicle is equipped with a Climatizer, disconnect the large air hose from the filter box. On 2R5, 2R10, and 2R15 model trucks, it is also necessary to loosen the starter motor and remove the pressed steel cover.

Fill the grease retainer approximately 1/2 to 1/3 full with Lubriplate. Place the retainer over the end of the clutch release shaft and drive it in place with a hammer until the shoulder of the retainer is flush with the clutch housing.

Care should be used in starting the retainer to avoid bending it out of shape. In some cases, the retainer may be hammered in place with the use of a long bar slipped between the front fender and the frame. In other cases, a hammer alone will be needed.

Parts Required

The only part required is the proper grease retainer, which is available on order through your parts depot.

Part No. 525312 is for 6G,7G,M5,M15,M15A,2R5,2R10,2R15; Part No. 525313 is for 14A,15A,M16,2R16, and 2R17.

OPERATION OF OIL BATH AIR CLEANER

In the article "Air Cleaner Maintenance" in Service Bulletin No. 212, p. 1, the operation of the wet type (oil bath) air cleaner was erroneously described in that it was stated that the air flow from outside was through the mesh filter down to the oil pool and then up to the carburetor air horn.

The actual air flow is first downward to the oil pool where the larger particles of foreign matter are removed from the air by the oil, then upward through the mesh filter where secondary air cleaning takes place and then back down through the carburetor air horn and into the engine.

Please make a note referring to this article in the margin of page 1, Service Bulletin No. 212, beside the next to last paragraph.

HILL HOLDER REPAIR KIT AVAILABLE FOR SERVICE

Please record this article on page 28 of your 1947 Shop Manual.

Heretofore it has been necessary to replace damaged or inoperative Hill Holder units. It is now possible to service these units in such cases where replacing the ball cage assembly, head chamber gasket, or camshaft plug gasket

and sealing washer will return the Hill Holder unit to normal operation.

These parts are now available as a kit, Part No. 525335, which can be procured from your nearest parts depot.

The repair kit consists of the following parts:

Qty.	Part Name	Wagner Electric Part No.
1	Ball Cage Assembly	FC4537
1	Head Chamber Gasket	FC4540
1	Camshaft Plug Gasket	FC4546
1	Camshaft Sealing Washer	FC4544

RUST PREVENTIVE MUST BE REMOVED FROM PARTS ASSEMBLIES

Stripped engine assemblies and individual metal parts shipped to dealers parts stocks are coated with a rust preventive compound to protect the surfaces from corrosion until they are to be installed.

This compound is not soluble in engine oils and therefore must be removed from all surfaces of stripped engines where it is applied, such as cylinder bore walls, piston heads, cylinder block top and sides, tops of valves, etc. The pistons, valves, and so forth should not be moved or the engine rotated at all until after the compound is removed. The accompanying illustration shows the gumming that results from failure to remove rust preventive compound before running the engine. Individual parts



coated with this material are easily cleaned before installation in an assembly by careful cleaning with kerosene or a similar parts cleaning solvent and blowing dry with compressed air. Be sure any oil channels or other interior passages are fully cleaned and swabbed.

In removing the rust preventive compound from a new stripped engine it is extremely important that none of the loosened compound be allowed to fall down into such places as the tops of piston rings, into valve ports, etc.

The safest procedure to follow in removing the compound from stripped engine assemblies is to lay the engine on its side so that none of the compound will be carried down past the piston rings during the application of solvent.

TRUCK SERVICE ITEMS

M15 TRUCK CAB FOR SALE

A cab for an M15 truck is offered for sale by C. C. Brigham, Bradford, Pennsylvania.

This cab is Part No. 652805, finished in prime and without instruments. It is ready for shipment in the original crate in which it left the factory.

Any dealer interested in purchasing such a cab is asked to write Mr. Brigham for price and other information.

THROTTLE CONTROL BELL CRANK - 2R16, 2R17

Should a loss of power condition be experienced on early production 2R16 and 2R17 trucks, the throttle should be examined to see that the throttle valve will open completely when the foot accelerator is depressed.

The possibility exists that the bell crank may move upward in the coil-to-cylinder bracket resulting in a loss of throttle rod travel. This condition can be corrected by drilling a 7/64" hole 1/4" below the center of the original cotter pin hole in the bell crank and installing an additional cotter pin in the new location.

THROTTLE CONTROL BELL CRANK AND CYLINDER HEAD CAP SCREW INTERFERENCE - 2R5, 2R10, 2R15, (LHC)

In a few cases it has been found that the rear cylinder head cap screw in the coil bracket interferes with the throttle control bell crank which passes through the bracket.

To correct this condition, drill a 7/64" hole 1/8" lower than the cotter pin hole originally placed in the bell crank and install the cotter pin in the new hole. This

will raise the bell crank so that it clears the top of the cylinder head cap screw.

Do not attempt to gain clearance by bending the bell crank. To do so may result in binding of the bell crank in the bracket.

CHANGES IN TIE RODS AND TIE ROD ENDS - 2R Series Trucks

2R15 Model Trucks - Change in Tie Rod

A heavier tie rod entered production beginning with Serial No. R15-3300. The outside diameter of the rod was changed from 7/8" to 1". The tie rod ends remain the same. The new tie rod, Part No. 678617, can be substituted for the old tie rod, Part No. 678124. The parts affected are as follows:

Part No.	Part Name	No. Per Truck
678617	Rod w/clamps, steering knuckle tie	1
678619	Clamp, steering knuckle tie rod	2
2-0628	Bolt, clamping, 3/8"-24X1-3/4"	2
252-06	Nut, hex. - 3/8"-24	2
380-06	Washer, lock - 3/8"	2

The Parts and Accessories Division will carry the old tie rod clamp, Part No. 665309 for trucks in service prior to this change.

2R16 and 2R17 Model Trucks - Tie Rod and Tie Rod End

A change was also made on 2R16 and 2R17 model trucks starting with Serial Nos. R16-3924 and R17-1915. The tie rod is now threaded on the inside of the tube and the tie rod ends are changed to conform. The new parts are as follows:

Part No.	Part Name	No. Per Truck
678594	Rod w/clamps, steering knuckle tie	1
678592	End Complete, right, tie rod	1
678593	End Complete, left, tie rod	1
678610	Clamp, tie rod end	2
678609	Cover, tie rod end ball stud	2
678820	Nut, ball stud, hex. 7/16"-24	2
380-07	Washer, lock 7/16"	2

The above parts are available on order through your local parts depots.

REAR WHEEL GREASE SEAL - 2R10

There seems to be some misunderstanding in the field regarding the number of grease seals used in the rear hub assembly of the 2R10 model trucks. This axle is so designed that only one seal is required.

The seal used in production consists of an inner metal washer, a felt washer and outer retaining metal washer. To eliminate the need to carry these three individual parts in

dealer stocks, however, a self-contained leather seal, Part No. 677318, has been released for service. This seal has been released for service and should be used whenever it is necessary to replace the seal in a 2R10 model truck.

FRONT SPRING SHACKLE KIT - M15A, M16

For cases of severe operating conditions which cause the front spring shackles on M15A, and M16 trucks to wear at abnormally low mileages, a kit has been released for the service installation of a front spring shackle of the type used on the 2R Series trucks.

This type of shackle affords longer shackle life as a result of the mushroom type construction of the rubber bushings and the use of pure gum rubber in place of compounded rubber.

The front spring shackle kit, Part No. 678565, is available on order through your nearest parts depot. It contains the following parts:

Part No.	Part Name	No. in Kit
677250	Front Spring Shackle Assembly	2
677251	Front Spring Shackle Side Plate	2
252-09	Front Spring Shackle Pin Nut	4
384-09	Front Spring Shackle Pin Lock Washer	4
677272	Front Spring Shackle Bushing	8

Checks Before Installation

The bushing should have a snug fit in the spring eye. If the bushing is loose, it indicates that the eye has become oversize and it will be impossible to obtain the proper compression on the bushing. If this condition exists, the main leaf should be replaced.

SERVICE EQUIPMENT

PROB-O-PHONE AIDS ACCURATE DIAGNOSIS

A stethoscope-type sound locating and detecting instrument is illustrated and described in the catalog insert sheet which accompanies this issue of the Service Bulletin.

The Prob-o-phone consists of a metal probing finger which leads to an amplifying diaphragm encased in a plastic housing. Sound amplified by the diaphragm travels up a tube to the two ear pieces which permit mechanics to hear only the sounds picked up by the probing finger and thus locate their source accurately without the distraction of other noises and without attempting to compensate for "telegraphing" of sounds.

Prob-o-phone is sold by the Star Development Company, 1713 Hildreth Street, South Bend 15, Indiana. Orders should be placed directly with that company.