

GREASES, OILS, AND CLEANING FLUIDS

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1. GENERAL

1.1 Scope

1.11 This section lists greases, oils and cleaning fluids for power applications. Container sizes listed are those stocked by Distributing Houses or standard with the manufacturer and generally available. Local arrangements may sometimes be made for delivery in bulk or in sizes other than those listed by consulting with Western Electric Distributing Houses.

1.12 The term kerosene engine used herein does not refer to a diesel engine even though the particular diesel may be burning kerosene as fuel.

1.13 This section is not authority for substitution of a lubricant if Installation Handbook Sections call for a specific lubricant. If the sections call for a lubricant under a group number (such as 260-300 P Grease) any of the products listed herein under that group may be used.

1.14 This section includes information from the following BSP's:

065-330-102	Greases
065-330-110	Oils

1.2 Precautions

1.21 Skin may be injured if frequently subjected to solvents such as gasoline, kerosene, or petroleum spirits. Use soap instead of solvents for cleaning the hands. Solvent is most active where confined, such as under a wrist watch or on clothing next to the skin. Avoid the use of solvents in confined places as prolonged breathing of fumes from any solvent may cause serious effects.

1.22 Observe precautions in handling and storage of lubricants and solvents or cleaning fluids as covered in Handbook 30.

1.3 Definitions

1.31 Viscosity of an oil is the resistance it offers to relative motion of its parts. Saybolt viscosity is measured by observing the number of seconds required for a standard volume of oil to flow through a standard tube at 100° F or

210° F. For example, a Saybolt viscosity of 130-170 S 210 indicates that a standard volume of oil at 210° F. took from 130 to 170 seconds to flow through the standard tube. Oils tested at 210° F. are of higher viscosity than those tested at 100° F. At the same test temperature an oil rated at a larger number of seconds than another oil has the higher viscosity. Saybolt viscosity numbers may be translated into S.A.E. viscosity numbers. The higher the S.A.E. number the greater the viscosity of the oil.

1.32 Grease is a mineral oil that has been thickened by adding soap. An alkali, usually lime or soda, is mixed with a fat to form the soap stock. Mineral oil is added to this soap base. As the percentage of mineral oil is increased, the grease becomes softer and is given a higher penetration number.

1.4 Ordering Information

1.41 In general, the order should be worded in terms of the group name. Do not include viscosity or penetration ratings in parentheses. Example: (Quantity) lb. grease, pump, water.

1.42 Where a particular item under the group name is desired or where only one item is listed, word the order in accordance with the individual item.

1.43 A (#) sign is used to indicate those items available from Regional Distributing Houses. Refer to Handbook 250 for ordering information.

2. LIST OF GREASES (In order from heavier to lighter)

GREASE, WATER PUMP (150-200P)

Esso Standard Div. Of Humble Oil and Refining Co. - Esso Multipurpose Grease H (1, 5, or 35 lb.)
Sinclair Refining Co. - Litholine Multipurpose Grease (1 lb.)
Socony-Mobil Oil Co. - Mobilgrease MP (1 or 5 lb.)
Shell Oil Co. - Retinax P Grease (1 or 5 lb.)

GREASE, ANDOK C (195 P)

Replaced by 260-300 P except on high temperature applications (150F or higher) and where listed in individual sections).
Esso Standard Division of Humble Oil and Refining Company - (1 or 25 lb.)

GREASE (260-300 P)

For ball bearings and grease cups of 1/10 HP and larger machines.

→ #KS-7471 Ball Bearing Grease (1 lb.)

#GREASE, FISKE LUBRIPLATE (300-330 P)

For worm gears and worm wheels of ringing machines.

Fiske Bros. Refining Co., Newark - No. 930AA (1 3/4 oz. tube), R-3288

#PETROLATUM (RM-647651)

→ For lubricating blades of knife switches, etc., where specified.

3. LIST OF OILS (In order of viscosity from heavier to lighter)

OIL (190-230 S 210)

For rocking, guide, and low-speed bearings where noncreeping characteristics are desirable, operator's chairs, and for gasoline or kerosene engine pressure fittings.

#KS-6432 Cylinder Stock Oil (1 pt. can)

OIL, EXTREME PRESSURE - SAE 140 (150-200 S 210)

For gear cases of mercury-type interrupters when specified.

Western Electric Co. Purchase Contract Houghton Hypoid Gear Lubricant SAE 140 (25, 100 or 420 lb.) from Western Electric Co. or Telephone Co. usual place of supply.

Quaker State Oil Refining Co. - Super Quadrolube Gear Lubricant 140 (40, 100 or 400 lb.)

Tidewater Associated Oil Co. - Western Division - Veedol Super Film Al40 (1, 5, 10, 15, or 55 gal., or 100 lb.)

Tidewater Associated Oil Co. - Eastern Division - Tycol Apreslube 95 (100 or 400 lb.)

→ Esso Standard Division of Humble Oil and Refining Company - Pen-O-Led EP 6 (35, 100 or 400 lb.)

Gulf Oil Corp. - Transgear Lubricant EP SAE 140 (5, 14 or 55 gal.)

→ Texaco, Inc. - Meropa Lubricant No. 6 (55 gal., 35 or 100 lb.)

Shell Oil Co. - Spirax 140 EP (5 or 55 gal.)

Socony-Mobil Oil Co. - Mobilube GX 140 (100 or 400 lb.)

Sun Oil Co. - H.V. Cylinder Oil (55 gal.)

Sinclair Refining Co. - Opaline Gear Lubricant CX (5 or 10 gal. or 100 lb.)

OIL (130-170 S 210)

For speed reducers and similar gears:

→ Texaco, Inc. - Cylinder Oil 650T (5 gal. or 55 gal.)

Tidewater Oil Co. - Tycol Apacyl 91 (5 or 55 gal.)

Shell Oil Co. - Valvata 79 (5 or 55 gal.) This oil has pour-point of 10F and is recommended where room temperature may at times be abnormally low.

Esso Standard Division of Humble Oil and Refining Company - Cylisso 150 (5 or 55 gal.)

Gulf Oil Corp. - Senate Cylinder Oil B (5 gal.)

→ Gulf Oil Corp. - Senate Oil 155 (5 or 55 gal.)

→ Standard Oil (Ind.) Division of American Oil Company - Standard Worm Gear Oil (5 gal., barrel, or half barrel)

Sinclair Refining Co. - Valve Oil Dark (55 gal.)

Sun Oil Co. - Occident Cylinder Oil (55 gal.)

Socony-Mobil Oil Co. - Mobile 600 Super Cylinder Oil (1, 5, 30, or 55 gal.)

OIL (80-100 S 210) or SAE 50OIL (68-75 S 210) or SAE 40OIL (58-65 S 210) or SAE 30OIL (50-55 S 210) or SAE 20OIL (44-47 S 210) or SAE 10

The five listings above are for gasoline and kerosene engine crankcases, overrunning clutches and gear cases of mercury-type interrupters, when specified.

Western Electric Co. Purchase Contract Motor Vehicle Engine Oil of the premium grade obtainable in 55 gal. containers from W.E. Co. or telephone company's usual place of supply. In an emergency, where Western Electric contract oil is not available, any premium grade oil of correct SAE rating from local supplier may be used if approved by the telephone company.

OIL, LUBRICATING DIESEL

SAE 50, 30, 20, 10, or 10W. Some oils are not available in all grades. All grades are available in 5 and 55 gal. containers.

The following list of oil suppliers and brand name oils is intended only as a guide in the selection of oils. In general, one or more of the following oils will be available anywhere in the United States. These and additional suppliers and oils are listed by the Internal Combustion Engine Institute, Chicago, Illinois, in the booklet, Lubricating Oils for Industrial and Heavy Duty Automotive Engines. There are three types of oils listed in the booklet. The first type meets the requirements of MIL-L-2104A, the second type meets the requirements of MIL-L-2104A, SUPPLEMENT 1 (S-1), and the third type meets the requirements of the Superior Lubricants Series 3. Diesel Lubricating Oils are listed in three groups headed GROUP 1, GROUP 2, and GROUP 3.

GROUP 1 (MIL-L-2104A)

For use in diesel engines using Water White Kerosene or D-1 Diesel Fuel as covered in Section 065-320-301.

GROUP 1 (MIL-L-2104A) (Cont'd.)

Esso Standard Division of Humble Oil and Refining Co.- Essolube HD

Gulf Oil Corp. - Gulflube Motor Oil HD

Shell Oil Co.- Shell Rotella Oil

Sinclair Refining Co.- Sinclair Tenol

Socony Mobil Oil Co. Inc. - Mobil DTE Oil D Series

Standard Oil Co. of Calif - RPM DELO Multiservice Oil

Standard Oil (Ind.) Division of American Oil Co. - American HD-M Motor Oil

Sun Oil Co.- Sunoco Ocnus HD (MIL)

Texaco, Inc. - Ursa Oil HD

Tidewater Oil Co. (Eastern Division) - Veedol HD-M

Tidewater Oil Co. (Western Division) - Veedol HD-S-1

GROUP 2 (MIL-L-2104A, SUPPLEMENT 1(S-1))

For use in diesel engines using Water White Kerosene or D-1 or D-2 Diesel Fuel as covered in Section 065-320-301.

Esso Standard - Essolube HDX

Shell Oil Co. - Shell Rotella Oil

Sinclair Refining Co. - Sinclair Super Tenol

Socony Mobil Oil Co., Inc. - Mobil DTE Oil S-100 Series.

Standard Oil Co. of Calif. - RPM DELO Special Lubricating Oil

Standard Oil (Ind) Division of American Oil Co. - American S-1 Motor Oil

Sun Oil Co. - Sunoco Ocnus HD (2200 Series Oil)

Texaco, Inc - Ursa Oil Sup One

Tidewater Oil Co. - (Eastern Division)- Veedol HD S-1

Tidewater Oil Co. (Western Division) - Veedol HD S-1

GROUP 3 (SERIES 3)

For use in KS-15899, and KS-15954 Diesel Engine Alternators only, regardless of the grade of fuel used.

Esso Standard Division of Humble Oil and Refining Co. - Estor D-3.

Shell Oil Co. - Shell Rimula Oil

Sinclair Refining Co. - Sinclair Tenol Extra S-3, Hyvis HD Extra S-3.

Socony Mobil Oil Co., Inc. - Delvac Oil S-200 Series.

Standard Oil Co. of Calif. - RPM DELO Supercharged-3 Lubrication Oil

Standard Oil (Ind.) Division of American Oil Co. - American S-3 Motor Oil

Sun Oil Co. - Sunoco Ocnus HD, Series 3

Texaco, Inc. - Ursa Oil Super Duty

Tidewater Oil Co. - (Eastern Division)- Veedol Adelbus S-3; Veedol HD S-3

Tidewater Oil Co. (Western Division) - Veedol HD S-3

OIL (220-260 S 100)

For motors, generators, centrifugal exhausters, and gear cases of friction roll drives. When KS-16326 L1 oil is specified, do not substitute. ←

#KS-16326 Oil (Medium Light) (2 oz. bottle)

Sinclair Refining Co. - Sintur lite C (5 or 55 gal.) ←

Esso Standard Division of Humble Oil Refining Co. - Teresso 47 (5 or 53 gal.)

Socony-Mobil Oil Co. - DTE Medium (5, 30, or 55 gal.)

OIL, MINERAL, FOR COUNTERCELLS

American Fluoride Corp. - Gulf Mineral Seal (1 pt.)

OIL, MINERAL, MEDIUM (185-210 S 100)

#KS-7470 Lubricating Oil (4 oz. bottle)

OIL, MINERAL, LIGHT (90-110 S100)

#KS-6232 Light Mineral Oil (4 oz. bottle)

#OIL, HYDRAULIC

A special oil for use in the hydraulic pump of the portable hydraulic shear and the knockout punch.

R-3157 (1 qt.)

OIL, LUBRICANT, GRAPHITE

For general nonpower applications; use only as specified and do not substitute.

#KS-2832 (2 oz. bottle) (50% oil dag)

#KS-7506 (2 oz. bottle) (25% oil dag)

#KS-8559 (2 oz. bottle)

4. LIST OF CLEANERS AND SOLVENTSCARBON TETRACHLORIDE

Use no longer recommended.

#TRICHLOROETHANE (R-3429)

For cleaning relay contacts, etc. Use only as directed.

TRICHLOROETHYLENE

No longer authorized for use. ←

KEROSENE - Commercial

For cleaning engine radiators. (Kerosene engine fuel must be of the "water white" grade) (1 gal., 5 gal. or 55 gal.)

SPIRITS, PETROLEUM

For general cleaning.

#KS-7860 Petroleum Spirits 1 gal.
(Item 1) or 1 pint (Item 2).
Esso Standard Oil Co. - Varsol
Sinclair Refining Co. - Sinclair
Solvent
Socony-Mobil Oil Co. - Sovasol No. 5
Standard Oil Co. of Calif. - Standard
Stoddard Solvent
Standard Oil Co. (Ind.) - Stanisol
Sun Oil Co. - Sun Spirits
Gulf Oil Corp. - Gulf Standard Solvent

➔ Arrowed lines indicate new
or changed information.

Manager, Product Engineering

Reason for Reissue:

- (1) To remove crankcase flushing oils.
- (2) To change information on diesel lubricating oils and to add Group 3 oils.
- (3) To make corrections throughout the section.

Replaces section 1A dated 2-21-63.

MACHINE AND EQUIPMENT FINISHING

1. GENERAL

1.1 Scope

1.11 This section covers refinishing and touch-up of machines and equipment. For care of paint brushes see Handbook 28.

1.2 Precautions

1.21 Observe precautions on handling and storing of paints as covered in Handbook 30. Keep paint cans covered when not in use.

1.22 Fumes from cleaning fluids and paints have an adverse effect on commutator films of dc machines. All mixing and thinning of paint and cleaning of paint brushes should be done outside the power room. Wherever possible the equipment to be painted or touched up should be moved out of the power room for painting.

1.3 Description

1.31 A can of touch up paint is furnished with most engine-alternators.

1.32 Paragraph 2.2 also lists KS-8662 Gray Enamel and R-2974 Federal Gray Enamel. These should be suitable for touch-up of finishes on power equipment other than G.E. Co. machines.

1.321 Use KS-8662 Gray Enamel to match a light gray finish (525, etc.).

1.322 Used R-2974 Federal Gray Enamel to match a dark finish (586, etc.).

1.323 Either of these enamels can be thinned with petroleum spirits.

2. INSTALLING EQUIPMENT

2.1 Tools

<u>Code</u>	<u>Description</u>
R-2628	Brush, Wire
R-1265	Brush, Flat, 2" Stiff
R-1445	Brush, Flat, 1" Stiff
R-1060	Knife, Putty

2.2 Supplies

KS-14666 Cloth, Cleaning
KS-8662 Enamel, Gray (1/2 pt. or 1 qt.)
R-2974 Enamel, Gray, Federal (1/4 pt.)
Purchase Sandpaper No. 00, 1/2 and 2
Locally
KS-7860 Petroleum Spirits

3. METHODS

3.1 Protection of Other Surfaces

3.11 Surrounding surfaces should be covered with heavy paper or canvas to keep paint from being splashed on them.

3.12 It is particularly important to completely cover the surfaces of commutators of dc machines wherever possible in the immediate vicinity of the painting operation. This can be done by winding a piece of paper around the commutator under the brushes. This cover should not be removed until the paint is dry.

3.2 Preparation of Paint

3.21 Open the can and remove any skin on the surface of the paint before stirring. Stir with a mixing paddle until the paint appears to be thoroughly mixed.

3.3 Preparation of Surface

3.31 The surface to be refinished or touched up shall be free from loose particles, rust, oil and grease, moisture and dust. Remove any large particles with the putty knife or sandpaper. Sandpaper to remove small particles of paint and rust. Wipe off dirt, oil and grease, and loose particles with a clean cloth moistened with petroleum spirits. Wipe dry with a clean dry cloth.

3.4 Painting

3.41 Retouch marred surfaces with one or more coats of paint as required. If a large number of spots need to be touched up it is recommended that the entire surface be repainted. One pint of paint is usually adequate to cover a large charging set. During the same time the finish is drying try to prevent dust from settling on the surface. Refrain from sweeping and if possible keep the room closed to prevent stirring up the air. As a precaution a paper screen may be made and supported just over the machine to keep dust and foreign matter away from the finish.

Manager, Product Engineering

Reason for Reissue:

1. To remove R-3279 Enamel, Glyptal, Med Gray