



Caterpillar

Operator's Manual

RD7 Diesel

S/n 9G1 to 9G2875

5E7501 to 5E7524

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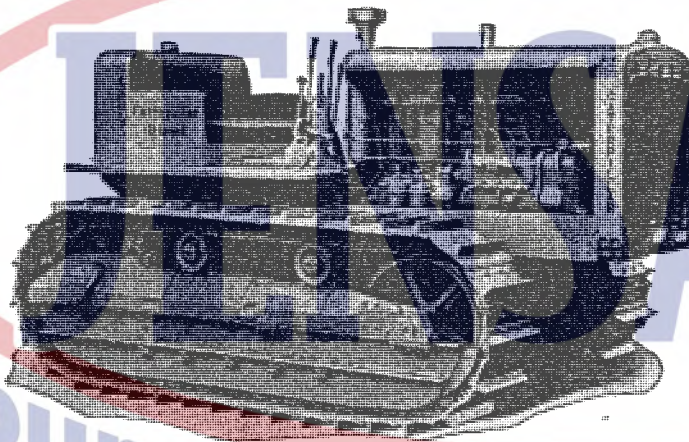
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MANUAL PREVIEW



"CATERPILLAR" DIESEL RD7
Caterpillar Tractor Co., Peoria, Ill.

Traction Wheels: Two self-laying tracks, 18x81 $\frac{7}{8}$ inches.
Tread Width: 74 and 60 in.; **Adjustment:** None.
Length: 150 $\frac{1}{4}$ in.; **Width:** 7 ft., 11 $\frac{1}{8}$ in. and 6 ft., 9 $\frac{5}{8}$ in.; **Height:** 81 $\frac{5}{8}$ in.; **Weight:** 21,130 and 20,410 lbs.; **Price:** \$4850 and \$4600 f.o.b. factory.
Turning Radius (Outside): 8 $\frac{2}{3}$ ft. and 7 $\frac{2}{3}$ ft.
Engine: Own, 5 $\frac{3}{4}$ x8 vertical, 4 cylinders, cast en bloc.
Lubrication: Pressure oiling system.
Starting Equipment: Own two-cylinder gasoline starting engine.
Lighting Equipment: Bosch generator.
Cooling System: Water, pump circulation, gear driven fan.
Bearings: Largely anti-friction ball and roller.
Transmission: Sliding gears, 1.6, 2.4, 3.4 and 4.7 m.p.h. forward; 1.9 m.p.h. reverse.
Final Drive: Spur gears, completely enclosed.
Belt Pulley: 13 $\frac{3}{8}$ x13; 753 r.p.m. and 2,630 feet per minute at governed engine speed.

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Lubricating Instructions

Detailed instructions regarding the lubrication of this tractor are given on the folded LUBRICATION CHART. Careful attention to these instructions and the proper selection of the lubricants to be used will add much to performance, reliability, economy and long life of your tractor.

It is important to use the correct lubricant for each application in the tractor—taking into account the current outside temperature and the temperature range which is likely to be encountered before refilling again.

All oil companies have adopted the S.A.E. (Society of Automotive Engineers) viscosity number system—which classifies oils in terms of viscosity or fluidity. The oils with the lower numbers are lighter, and flow more readily than do the oils with higher numbers. The S.A.E. number refers only to the viscosity of the oil, and has reference to no other characteristic or property.

In preparing to refill with fresh oil, any compartment should be drained when it is warm—it is best to drain after the tractor has run for some time. Most of the sediment will then be in suspension, and therefore will drain readily.

The following recommendations give the types and viscosities of lubricants best suited for use in your tractor for various operating temperatures.

Crankcase Lubricating Oils: Two types of lubricating oils should be used for the various services referred to below:

Lubricants known as Superior All-Purpose lubricants for “Caterpillar” Diesel Engines have been developed having such characteristics that they provide the most satisfactory service in “Caterpillar” Diesel Engines. Oils conforming to U. S. Army specifications 2-104 are also satisfactory. Your “Caterpillar” Distributor can give you brand names of these oils that are available in your territory.

Lubricant used in the starting engine crankcase, fuel injection pump housing, Diesel and starting engine air cleaners and some other compartments can be either Superior All-Purpose Lubricant or straight mineral crankcase lubricating oil whichever is most economical.

At temperatures above freezing, S.A.E. No. 20 oil should be used in the Diesel Engine crankcase, starting engine crankcase, fuel injection pump housing, Diesel and starting engine air cleaners, and some other compartments. At temperatures below

freezing S.A.E. No. 10 oil should be used to provide better circulation and to make cranking easier. In hot weather S.A.E. No. 30 may be used in the Diesel Engine crankcase, and should be used in both air cleaners as lighter oil may be carried on through the air cleaner and into the engine.

In sub-zero operation, when warm housing facilities are not available, it is advisable to dilute the oils with kerosene so they will be fluid enough to insure free circulation. However, evaporation of the kerosene from the oil in the engine crankcase under steady operation makes it necessary to add kerosene. This should be done before stopping; then operate the engine for a few minutes to mix the kerosene and oil.

Naturally, any precautions taken to house the machine or to cover it with a tarpaulin, or to warm it before starting, will cause more rapid oil distribution and contribute to quicker starting. The engine should always be allowed to idle at not less than half throttle for several minutes after starting to assure adequate lubrication before operating on normal load.

When the engine is not operating, the oil will drain back slowly into the crankcase from the oil cooler. Therefore, to obtain an accurate oil level gauge reading check the oil level while the engine is running. A guard protects the gauge from oil splash and assures the correct reading.

Transmission Oil: Use a pure mineral transmission oil that will flow freely and will not channel at existing operating temperatures. For temperatures above 32° F. (0° C.) use either S.A.E. Nos. 90 or 140 oil. Below freezing, 32° F. (0° C.) an oil of lower viscosity S.A.E. No. 80 will be required. In extremely cold weather the oil should be diluted with sufficient kerosene to provide fluidity.

Track Rollers, Track Carrier Rollers, Track Roller Frame Outer Bearings and Idlers: For temperatures above freezing, use "Chassis Lubricant." For temperatures below freezing, if fluid "Chassis Lubricants" are not available, S.A.E. No. 80 or No. 90 transmission oil may be used. In sub-zero weather, crankcase lubricating oils have proved to be very satisfactory.

"Chassis Lubricants" are stringy, tacky semi-fluid lubricants. These lubricants should be just fluid enough that they can be handled in the standard volume compressor at the prevailing atmospheric temperature. If they are too light, they may leak out of the bearings too rapidly.



- ② **FUEL INJECTION PUMP HOUSING**—Drain (1), wash, and refill to top of filler elbow with crankcase lubricating oil every 60 hours.



- ③ **DIESEL AIR CLEANER** — Wash cup and refill to circular mark with fresh crankcase lubricating oil every 5 to 60 hours, depending upon dust in air. Wash filter screens every 300 hours.

NOTE: Use the brush supplied in the tool equipment to remove dirt from fittings and to clean around air cleaners, breathers, and inspection covers when removing. Fitting in driving plate of flywheel clutch automatically limits amount of lubricant that can be put in the driving plate bearing. When resistance is felt to pumping action of grease gun, bearing is full. Lubricate all miscellaneous points, not equipped with fittings, with crankcase lubricating oil every 60 hours.

DO NOT LUBRICATE THE TRACKS

- ⑪ **FRONT IDLER**—Fill bearings with transmission lubricant every 10 hours.

- ⑫ **STARTING ENGINE CLUTCH AND PINION LEVERS** (later machines) (1) — Fill bearings with semi-fluid lubricant every 60 hours. **CLUTCH SHIFT COLLAR AND STARTER PINION** (2)—Fill oil cups with crankcase lubricating oil every 10 hours. **STARTER PINION SHAFT HOUSING** (3) — Drain housing, wash, and refill with transmission oil every 900 hours.



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