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MANUAL PREVIEW

Allis Chalmers

Operator's Manual

HD16DC

With Torque Converter

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AC-O-HD16DC

Operator's Manual

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10-HOUR SERVICES

- **CRANKCASE OIL LEVEL GAGE ROD** — Fig. A — Check oil level and add oil if necessary to raise level to "FULL" mark on gage rod.
- **AIR PRE-CLEANER** — Fig. E — Empty the dirt from the pre-cleaner shell when the dirt level reaches half-way up on the inspection glass. Remove the cap, lift the shell from the body, and clean the shell thoroughly. Reinstall the shell, gasket, cap, and tighten the wing nut. Make certain that the gasket is in good condition and properly installed.
- **AIR CLEANER** — Fig. S — Remove the oil cup from the bottom of the air cleaner and inspect the condition and quantity of oil. Keep the oil level even with the top of cone in center of baffle. DO NOT OVERFILL. The oil must be changed if it is discolored or there is a layer of dirt in the cup or on the baffle. Empty the oil from the cup and wash the cup and removable filtering screens with clean solvent or fuel. Fill the oil cup to the proper level with the same viscosity engine oil as used in the engine crankcase. CAUTION: DO NOT USE OIL THAT FOAMS. Refer to "AIR CLEANER" in OPERATORS MANUAL for detailed information.

- **RADIATOR FILLER CAP** — Not Shown — Remove the radiator cap and check the level of the coolant. Keep the coolant level within approximately 1½ inches of the top of the radiator by the addition of clean soft water or anti-freeze solution. Refer to "ENGINE COOLING SYSTEM" in OPERATORS MANUAL for detailed information.

CAUTION: Do not remove the pressure type radiator cap from the radiator while the coolant is above 212° F., as the coolant will break into a boil and will splash onto the person removing the cap.

- **GOVERNOR OIL LEVEL COCK** — Fig. C — Open the oil level cock to check oil level. Add oil as necessary until oil flows from level cock. Tighten oil level cock. CAUTION: DO NOT OVERFILL.
- **BATTERIES** — Fig. I — 6 Points each battery. Inspect electrolyte level and add clean distilled water to keep level ¾ inch above plates. Keep tops of batteries clean and terminals free from corrosion. Test the batteries with a hydrometer every 100 hours. Refer to "ELECTRICAL SYSTEM" in OPERATORS MANUAL for detailed information.

- **FIRST STAGE AND SECOND STAGE FUEL FILTERS** — Fig. A — Open the drain cock in the first stage fuel filter and the second stage fuel filter shell daily (or as often as conditions warrant) and allow any water or sediment to drain; close the drain cocks when clean fuel runs out. Perform this service before the start of the day's operation in warm weather or shortly after the end of the day's operation in freezing weather.

- **FUEL TANK DRAIN COCK** — Fig. F — Open the drain cock before the engine is started in warm weather or shortly after the end of the day's operation in freezing weather and allow water and sediment to drain. Close the drain cock when clean fuel runs out.

- **FUEL TANK FILLER CAP** — Not Shown — Fill the tank at the end of each operating period to keep condensation in the tank to a minimum.

- **FUEL INJECTION PUMP BREATHER AND OIL DRAIN COCK** — Fig. C — Open the oil drain cock and allow the oil to drain. Close the oil drain cock. Fill with 1 qt. of new engine oil through the breather opening. Wash and clean the pump breather. Saturate the breather with clean engine oil and install the breather.

- **TORQUE CONVERTER BEARINGS** — Fig. H — 2 Lube Points. Lubricate with pressure gun lubricant. CAUTION: Use hand type lubricating gun only.

- **ENGINE CLUTCH SHIFTER SLEEVE BEARING** — Fig. H — 1 Lube Point. When the engine clutch operating lever is used excessively, lubricate the clutch shifter sleeve bearing after every 10 hours of operation. Under normal operating conditions, lubricate the bearing after every 100 hours of operation. Lubricate with pressure gun lubricant. CAUTION: Use hand type lubricating gun only.

- **STEERING CLUTCH THROWOUT BEARING GREASE TUBES** — Fig. K — 2 Lube Points. Lubricate with pressure gun lubricant. Do not over-lubricate.

100-HOUR SERVICES

- **CRANKCASE OIL FILLER PIPE AND DRAIN PLUGS** — Fig. A — Change oil. Operating conditions may necessitate this service at shorter intervals. Remove both drain access covers from the bottom of the crankcase guard to reach the oil drain plugs. Remove the rear drain plug (Fig. N) from the oil pan and allow the oil to drain, then remove the front drain plug (Fig. T). Install and tighten both drain plugs, making certain the drain plug gaskets are in good condition. Install the drain access covers in position on the crankcase guard. Fill the crankcase with 7½ gallons of new oil following the procedure given under "ENGINE LUBRICATION SYSTEM," Paragraph C, Steps 5 and 6 in OPERATORS MANUAL.

- **ENGINE LUBRICATING OIL FILTERS** — Fig. D — Remove the old elements, clean the shells, and install new element kits. Refer to "ENGINE LUBRICATION SYSTEM" in OPERATORS MANUAL for detailed instructions.

- **GOVERNOR BREATHER AND OIL DRAIN PLUG** — Fig. C — Remove oil drain plug and allow oil to drain. Install and tighten oil drain plug. Open the oil level cock and remove the governor breather. Fill the governor with new engine oil through the breather opening until oil flows from the oil level cock. Tighten the oil level cock. CAP. ¼ Pt. Wash and clean the governor breather. Saturate the breather with clean engine oil and install the breather.

- **STEERING HYDRAULIC OIL RESERVOIR** — Fig. B — Remove the oil filler plug and open the oil level cock. Add oil as necessary until it flows from the oil level cock. Install the filler plug and close the oil level cock.

- **FINAL DRIVE FILLER AND OIL LEVEL PLUGS** — Fig. J — 1 Plug each side. Check oil level and add oil as necessary to raise level even with filler plug opening.

- **TRANSMISSION OIL LEVEL GAGE ROD AND OIL FILLER PIPE** — Fig. K — Remove the gage rod cap and check oil level. Add oil as necessary to raise level even with "FULL" mark on gage rod. Reinstall gage rod cap.

200-HOUR SERVICES

- **FAN BEARINGS** — Fig. G — 1 Lube Point. Lubricate with pressure gun lubricant.

- **GENERATOR DRIVE BEARINGS** — Fig. G — 1 Lube Point. Lubricate with pressure gun lubricant.

- **GENERATOR OIL CUPS** — Fig. G — 2 oil cups. Lubricate with 10 drops of light engine oil in each oil cup.

- **TRACK RELEASE HOUSINGS** — Fig. M — Remove oil level plug in each housing and add oil if necessary. Change oil if it becomes contaminated with dirt or water. CAP. 4½ Gal. each.

400-HOUR SERVICE

- **DRIVE SHAFT UNIVERSAL JOINTS** — Fig. L — 2 Lube Points. Remove the front floor plate to reach the lube fittings. Lubricate after every 400 hours of operation when operating under severe conditions; under normal operating conditions, lubricate after every 1000 hours of operation. Lubricate with pressure gun lubricant.

1000-HOUR SERVICES

- **TRUCK WHEELS** — Fig. R — 7 Truck wheels on each side of the HD16DC and 16FC models. The HD16GC model has 8 truck wheels on each side. Lubricate with the specified truck wheel grease. A lubricator and special nozzle are included in the tool equipment shipped with each tractor. This lubricator and special nozzle MUST be used to inject grease into the truck wheels, track idlers, and track support rollers as the use of "high pressure" lubricating equipment will damage the seal boots which are a part of the positive seal assemblies. Pump the hand lubricator slowly when servicing.

Service each wheel as follows:

1. Wash the outer end of the wheel shaft and the special nozzle of the lubricator so that no dirt will enter with the grease.
2. Remove the plug and copper gasket from the end of the shaft.
3. Insert the special nozzle of the lubricator into the shaft as far as it will go and hold it in that position.
4. Pump grease into the wheel until clean grease is forced out the end of the shaft around the special nozzle. This will indicate that the wheel is full of clean grease.
5. Remove the special nozzle and install the shaft plug and gasket. Tighten the shaft plug securely.

- **TRACK IDLERS** — Fig. M — 1 Idler each side. Lubricate with the specified truck wheel grease. Use the same lubricator and special nozzle as used for lubricating the truck wheels. Refer to Fig. R. Follow steps 1 through 5 under "Truck Wheels" and lubricate the track idlers in the same manner.

- **TRACK SUPPORT ROLLERS** — Fig. M — 2 Rollers each side. Lubricate with the specified truck wheel grease. Use the same lubricator and special nozzle as used for lubricating the truck wheels. Refer to Fig. R. Follow steps 1 through 5 under "Truck Wheels" and lubricate the track support rollers in the same manner.

- **TRANSMISSION OIL DRAIN PLUG** — Fig. O — Change oil. Climatic or operating conditions may require this service at shorter intervals. Remove the drain plug and allow the oil to drain. Reinstall and tighten the drain plug. Fill the transmission through the oil filler pipe (Fig. K) to the "FULL" mark on the oil level gage rod (Fig. K). Use the specified lubricant. CAP. 8 Gal.

- **FINAL DRIVE OIL DRAIN PLUGS** — Fig. Q — 1 Plug each side. Change oil. Climatic or operating conditions may require this service at shorter intervals. Remove each drain plug and allow oil to drain. Reinstall and tighten each drain plug. Fill each final drive through oil filler plug opening to level even with opening. Use the specified lubricant. CAP. 5½ Gal. each.

- **STEERING CLUTCH CONTROL VALVE HOUSING** — Fig. F — Change oil. Remove the oil drain plug, open the two air vent cocks (one in the control housing cover and one in the hydraulic pump return oil line elbow) and allow the oil to drain.

Refill with the specified oil as follows:

1. Install the oil drain plug (Fig. F) in the control housing.
2. Remove the oil filler plug (Fig. B) from the steering hydraulic oil reservoir. Fill the steering hydraulic system until oil (free of bubbles) flows from the vent cocks (Figs. F and P). Close the air vent cocks and continue filling the hydraulic oil reservoir until oil flows from the oil level cock. Close the oil level cock and install the oil filler plug.
3. Operate the engine at low idle speed for a short period of time. Stop the engine and add oil to the steering hydraulic oil reservoir as necessary to obtain the proper level.

PERIODIC SERVICES

- ▲ **FIRST STAGE AND SECOND STAGE FUEL FILTERS** — Fig. A — Install a new element in each filter when fuel pressure drops below normal range (30 to 60 P.S.I.) due to filters clogging. Do not attempt to clean clogged filter elements. Refer to "FUEL SYSTEM" in OPERATORS MANUAL for detailed information.

- ▲ **FUEL RETURN LINE FILTER** — Fig. D — Remove this filter, disassemble, clean, and reinstall. Do not enlarge the hole in the restricting plug.

- ▲ **STEERING HYDRAULIC OIL RESERVOIR BREATHER** — Fig. B — This breather provides a means of venting the hydraulic system. When visual inspection indicates cleaning is necessary, remove the breather, wash in clean solvent or fuel oil, dry with compressed air, and reinstall.

- ▲ **ENGINE COOLING SYSTEM** — Drain and flush periodically. Keep the cooling system filled with clean soft water or rain water. In freezing weather use a permanent type (glycol base) anti-freeze solution.

To drain the system, remove the radiator cap and remove the water drain access cover from the bottom of the crankcase guard. Reaching through the opening in the guard, open the cooling system drain cock (Fig. T). Open the cylinder block drain cock and the torque converter fluid heat exchanger drain cock (Fig. D). Also, open the thermostat housing vent cock (Fig. D). NOTE: Make certain that coolant flows freely from all drain cocks and that the system drains completely.

To fill the cooling system, close the 3 drain cocks which were opened above, to drain the system, and install the water drain access cover on the bottom of the crankcase guard. Fill the system through the radiator filler cap opening until the coolant flows from the thermostat vent cock (Fig. D), then close the vent cock and complete the filling until the coolant is approximately 1½ inches below the bottom of the radiator filler tube. Install the radiator filler cap. Refer to "ENGINE COOLING SYSTEM" in OPERATORS MANUAL for detailed information.

- ▲ **ENGINE AIR INTAKE SYSTEM** — Check all capscrews, hose clamps, etc. and tighten if necessary. Also make certain all gaskets are properly installed and are in good condition to avoid air leaks. Refer to "ENGINE AIR PRE-CLEANER AND AIR CLEANER" in OPERATORS MANUAL for detailed information.

- ▲ **TORQUE CONVERTER SEAL DRAIN BREATHER** — Remove this breather and clean when visual inspection indicates this service is necessary.

PERIODIC ADJUSTMENTS

ENGINE CLUTCH ADJUSTMENT — Check the pounds pull required on the clutch operating lever to engage the engine clutch. Keep the clutch adjusted so that a pull of 25 to 30 pounds (30 pounds maximum) is required on the operating lever for its engagement (engine stopped). As the clutch wears, the pull on the clutch operating lever diminishes. When the pull on the lever diminishes to 15 pounds, the clutch MUST be adjusted. Refer to "ENGINE CLUTCH" in the OPERATORS MANUAL for detailed information.

STEERING CLUTCH LINKAGE ADJUSTMENT — Check the adjustment of each clutch. Keep the clutches adjusted so that each steering lever has 2¾" free travel when measured at the top of the lever. Readjustment MUST be made when the free travel has decreased to 1¾". Refer to "STEERING CLUTCHES" in OPERATORS MANUAL for detailed information.

BRAKE ADJUSTMENT — Check the adjustment of each brake. Keep the brakes adjusted so that each brake pedal has 3" free travel before application begins. Refer to "STEERING BRAKES" in OPERATORS MANUAL for detailed information.

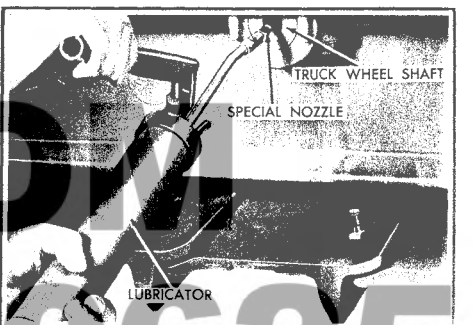
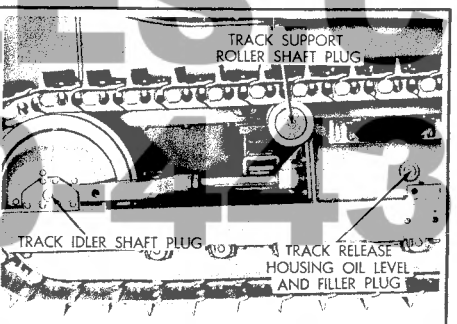
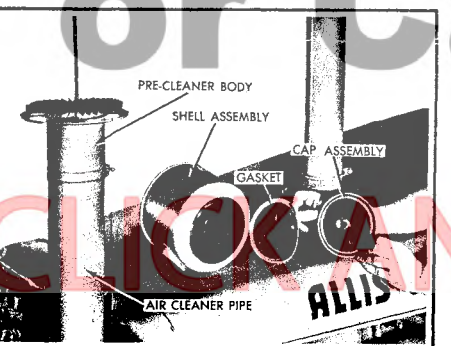
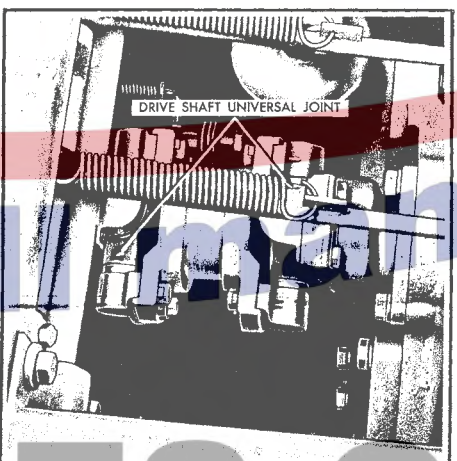
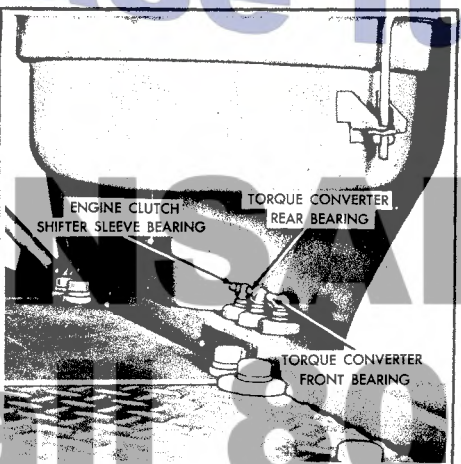
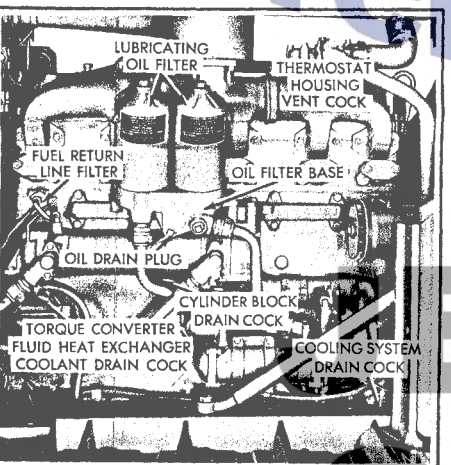
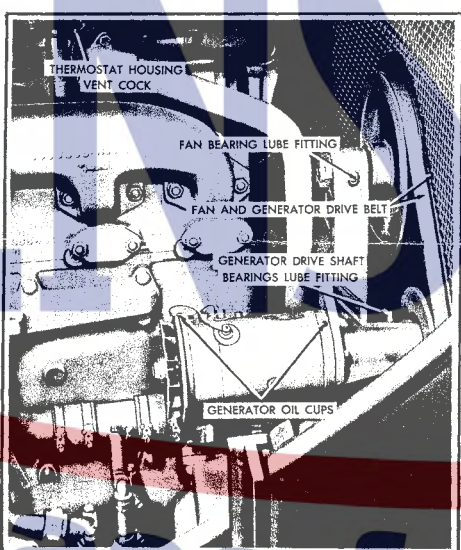
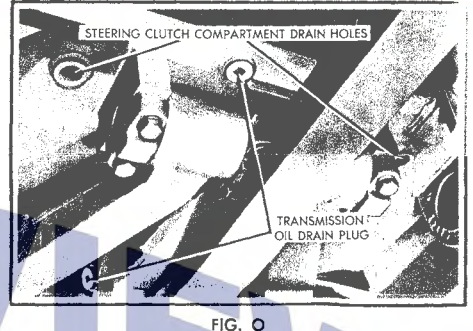
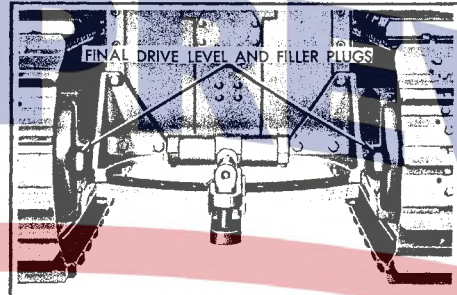
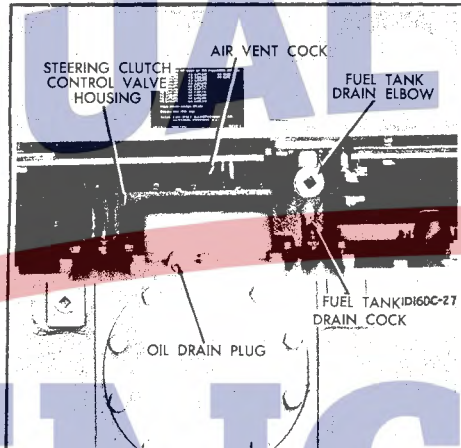
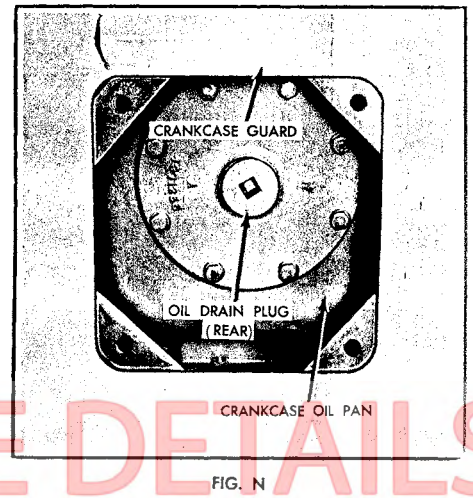
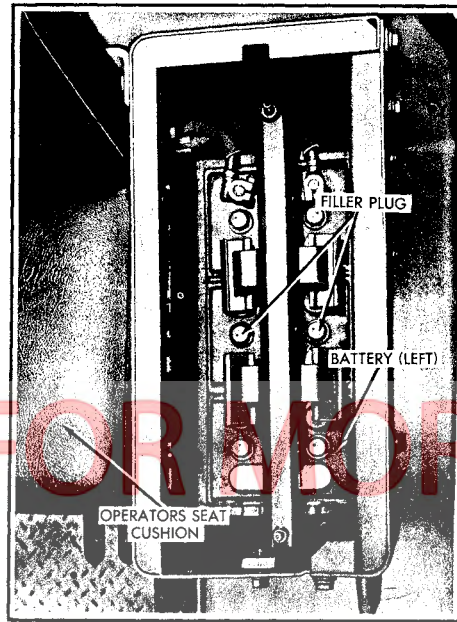
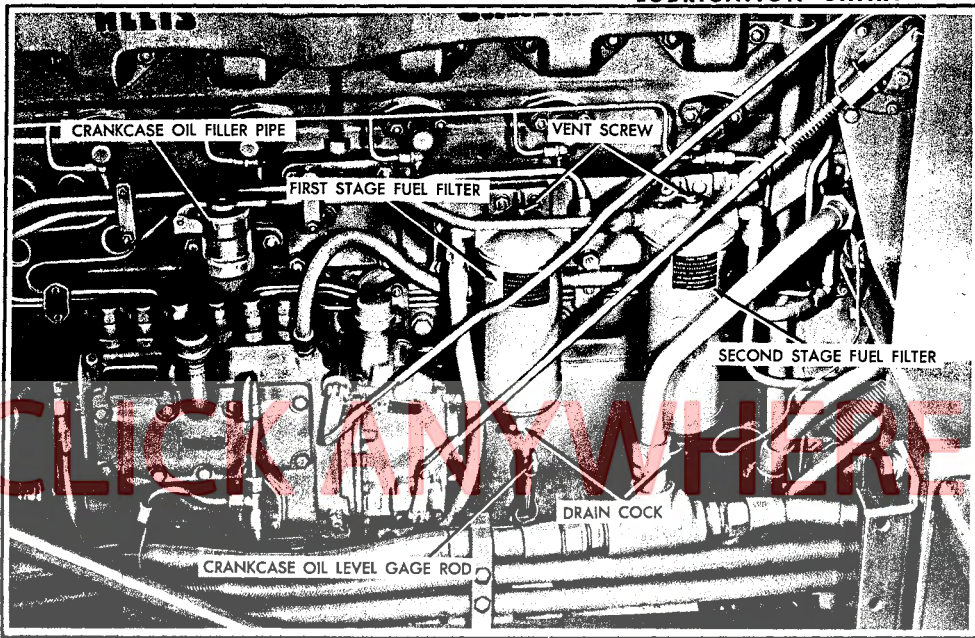
TRACK ADJUSTMENT — Check the adjustment of each track. Keep the tracks adjusted so that the upper part of each track can be lifted 1½" to 2" above the support rollers with the use of a pry bar. Refer to "TRACK AND TRACK IDLER ADJUSTMENT" in OPERATORS MANUAL for detailed information.

FAN AND GENERATOR DRIVE BELTS — The belts are correctly adjusted when the straight left side of the belts can be pressed inward approximately 1" at a point halfway between the fan and the crankshaft pulleys. Adjust belts when slippage is evident. Refer to "COOLING SYSTEM" in OPERATORS MANUAL for detailed information.

VALVE LASH — Remove the rocker arm covers periodically and check and adjust the valve lash. Refer to "VALVE ADJUSTMENT" in OPERATORS MANUAL for detailed information.

FUEL NOZZLES — Remove after the first 50 to 75 hours of operation, test, and adjust if necessary. Thereafter, remove the nozzles after each 2000 hours of operation, test, and adjust if necessary. Refer to "FUEL SYSTEM" in OPERATORS MANUAL for detailed information.

MODEL HD16DC TRACTOR WITH TORQUE CONVERTER LUBRICATION CHART



ALLIS-CHALMERS MFG. CO
MILWAUKEE WISCONSIN, U. S. A.

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GENERAL DESCRIPTION

The Model "HD 16 DC" Tractor with Torque Converter is a 32,800 pound track-type tractor powered with a 6-cylinder, 4 cycle "DIESEL" Engine.

Power from the engine is transmitted through a single plate, over-center type engine clutch to the torque converter, which automatically multiplies the engine torque to meet the varying load requirements. The power is transmitted from the torque converter to the transmission through a drive shaft universal joint assembly. From the transmission the power is transmitted to the bevel gear, and from the bevel gear through the steering clutches to the final drives and the track drive sprockets.

The transmission provides 3 forward and 2 reverse speed ranges. At rated engine speed of 1800 R.P.M. (governed full load), the torque converter in combination with the transmission provides forward speeds in first gear up to 2.5 M.P.H., in second gear up to 4.3 M.P.H., in third gear up to 7.2 M.P.H., and reverse speeds in first reverse gear up to 3.2 M.P.H. and in second reverse gear up to 5.5 M.P.H.

Hydraulic steering clutch controls, mechanical self-energizing brakes, wide and adjustable operator's seat, and unobstructed view of the front of both tracks, assures easy, positive control of the tractor at all times.

The standard model tractor is equipped with 24 volt electric starting and lighting equipment, pusher type cooling fan, muffler, full width crankcase guard, front pull hook, bumper, and wrap-around type radiator guard. The truck wheels, track idlers, and support rollers have positive type seals and are protected by guards.

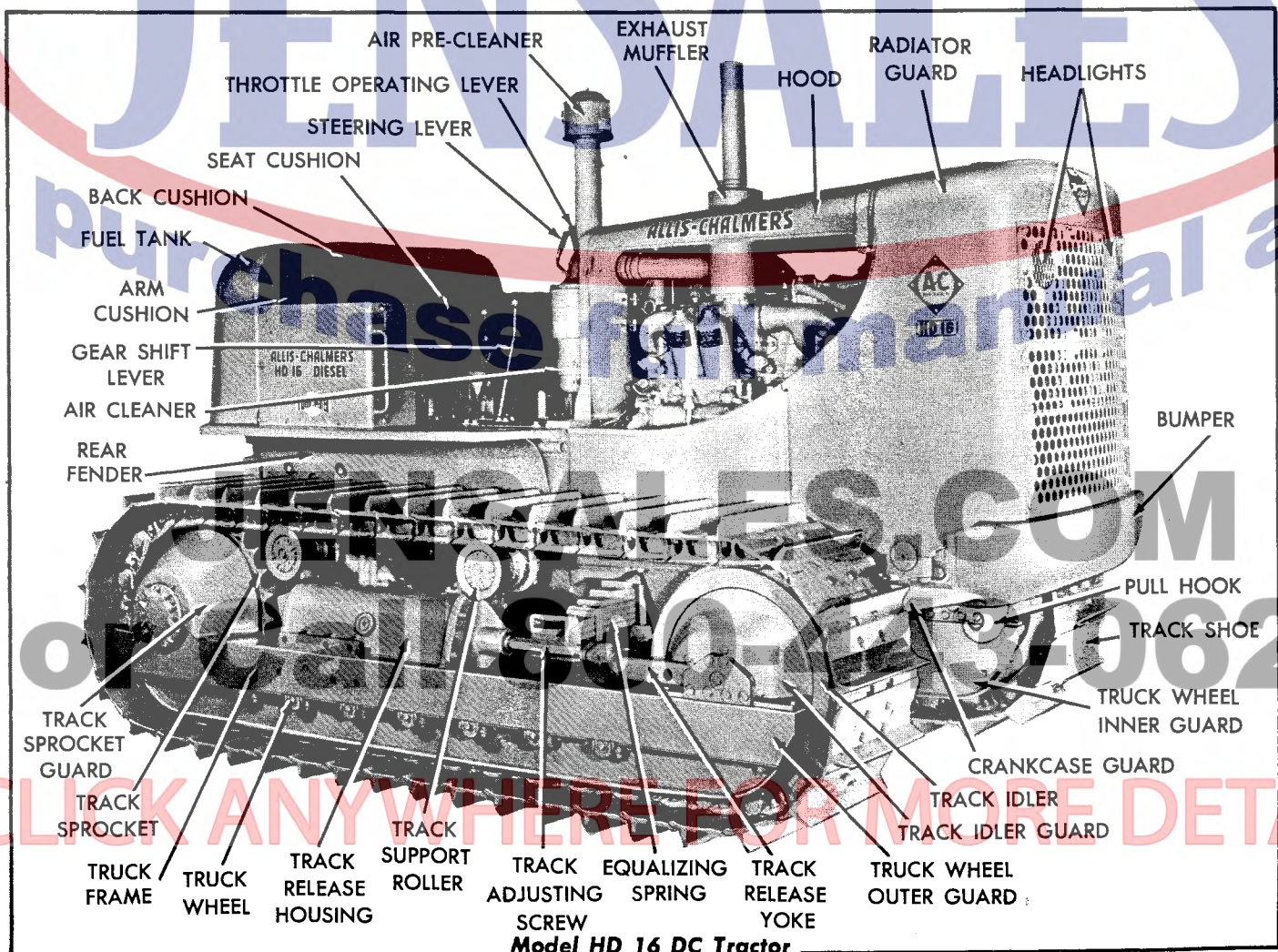


FIG. 1