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MANUAL PREVIEW

Minneapolis Moline

Operator's Manual

Motrac

Crawler

Operator's Manual

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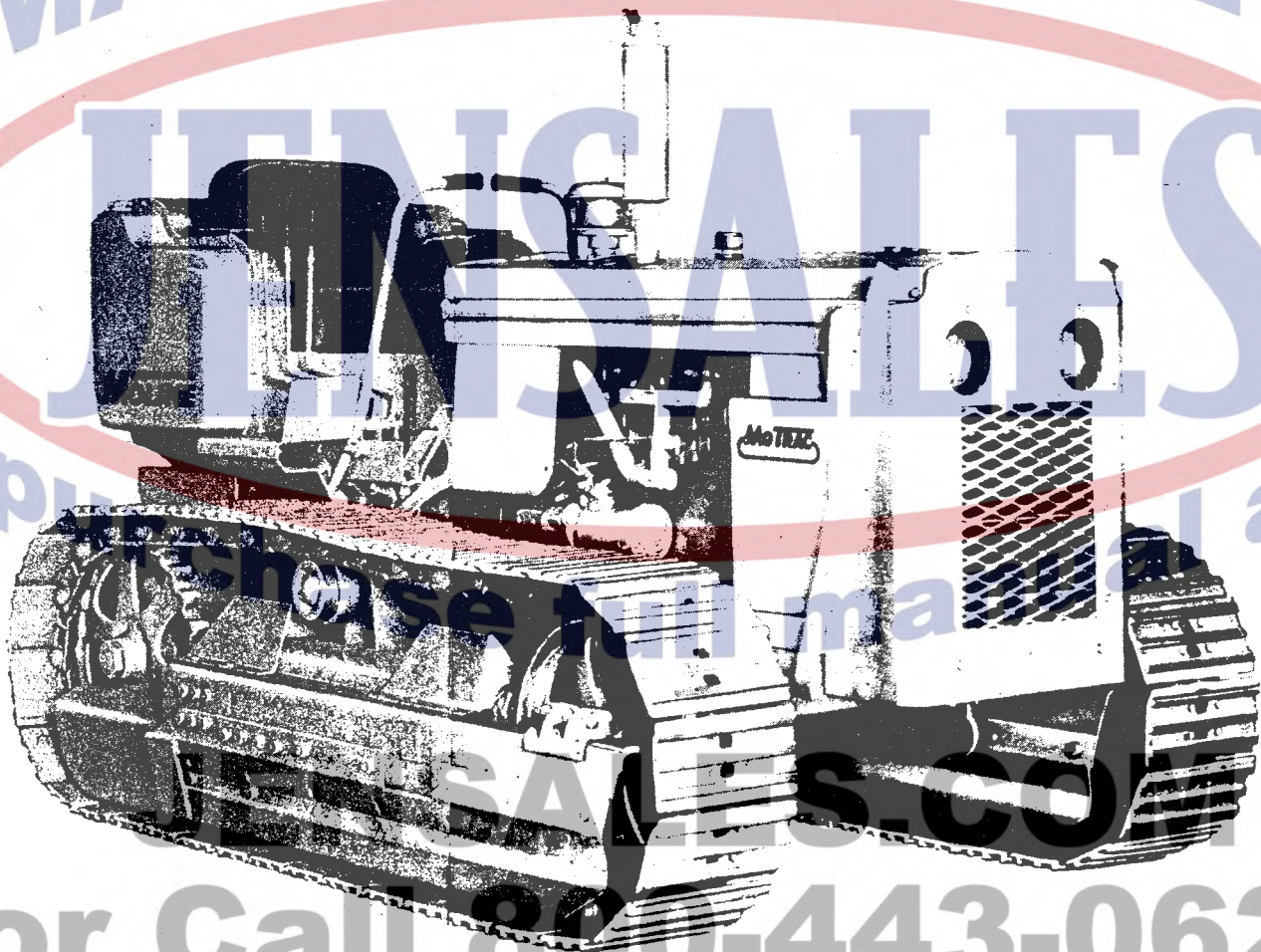
MM-O-MOTRAC

S-277

OPERATOR'S

MANUAL

MoTRAC
CRAWLER



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MINNEAPOLIS
MOLINE

HOPKINS, MINNESOTA U. S. A.

SPECIFICATIONS

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ENGINE - GASOLINE AND DIESEL

GENERAL:

Make Minneapolis-Moline
Bore and Stroke 3-5/8" x 5"
Number of cylinders 4
Engine displacement (cu. in.) 206
Normal governed speed (full load) 2000 RPM
Standard fuel equipment for regular grade gasoline
..... for diesel fuel

CRANKSHAFT AND CONNECTING RODS:

Material Drop forged steel, heat-treated with tocco-hardened journals
Bearings Precision type-Trimetal

PISTON:

Material Aluminum alloy
Rings 3 compression; 1 oil
Piston pin Full floating

CYLINDER HEAD & VALVE MECHANISM:

Type Valve in head
Valve inserts Exhaust valves
Valve rotators (gasoline engine only) Exhaust valves, positive type
Tappets Cylindrical type
Camshaft drive Helical gear

OILING SYSTEM:

Oil pump Gear type
Oil filter Full flow; Spin-On Element, capacity 1 quart
Base pan capacity 6 quarts
Lubrication Force feed
Crankcase ventilation Breather on valve cover

BATTERY 12 volts

CARBURETOR - Gasoline 1" SAE flange

FUEL PUMP - Gasoline Electric, 12 volt

INJECTION PUMP - Diesel Single plunger type

GOVERNOR - Gasoline On crankshaft-ball & cam type

COOLING SYSTEM:

Water pump Centrifugal type, dual "V" belt drive, with ball bearings permanently lubricated
Fan Dia. 19" -Mounted on water pump shaft

TRACK AND TRACK FRAME: figures shown are in inches

Number track rollers 5
Shoes per track 37
Width - track shoes 14
Length of track on ground 74-1/2
Total ground contact area (sq. in.) 2086
Size - track pins 1-1/8 O.D. x 6-1/8
Size - track bushings 1-11/16 x 4-1/4

FINAL DRIVE:

Drive sprocket shaft Tapered roller bearing mounted
Bull gears One piece forged steel. Mounted on tapered involute splined shafts

BASIC TRANSMISSION:

Design Two shaft; sliding gear, - 5 forward speeds - 1 rev.
Gears Heat treated alloy steel

TORQUE CONVERTER:

Location Between engine and gear shift transmission
Pump capacity 15.5 gal. per min.
Torque multiplication 2.57 to 1
Oil heat exchanger Oil cooling tubes located in radiator bottom tank and air to oil cooler

REVERSE SHUTTLE:

Location Ahead of transmission
Type Hydraulic actuated, multi-disc, wet type clutched, planetary gear
Size 6-3/4 in.
Control Foot operated

STEERING CLUTCHES: (One for each track)

Location Differential shaft
Type Multi-disc
Size 8 in. O.D. x 5 in. I.D.
Control Independent R.H. and L.H. handles
(located in front of operator)

STEERING BRAKES: (One for each track)

Location Differential shaft
Type Dual disc
Size 7 in. O.D. x 4 in. I.D.
Control Same handles as for steering clutches

BRAKES: (Same as steering brakes)

Control One master brake pedal located on R.H. side next to foot accelerator - foot operated,
with master stop or park control pedal

HYDRAULIC EQUIPMENT

Reservoir capacity 9 gal.
Location (reservoir) Behind seat
Hydraulic control valve Three spool
Control Hand levers on R.H. side near seat
Hydraulic pump Capacity rated @ 1550 rpm - approx. 25 gpm.

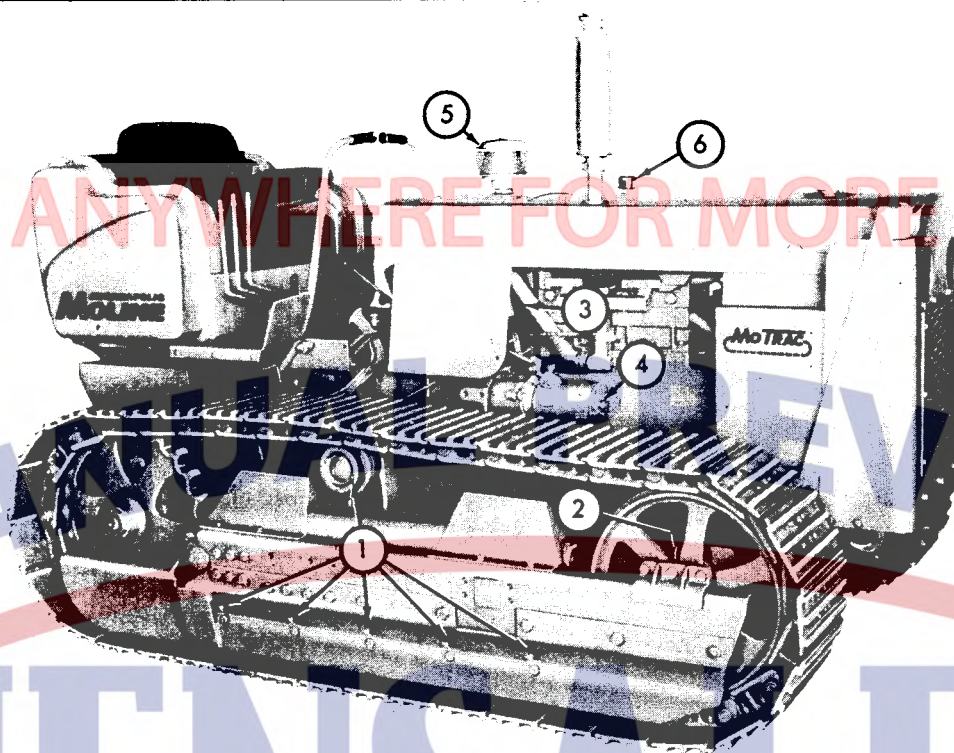


Fig. 1

- | | |
|----------------------|----------------------------|
| 1. Track rollers | 4. Starting motor oil plug |
| 2. Front track idler | 5. Pre-cleaner |
| 3. Air cleaner | 6. Crankcase breather |

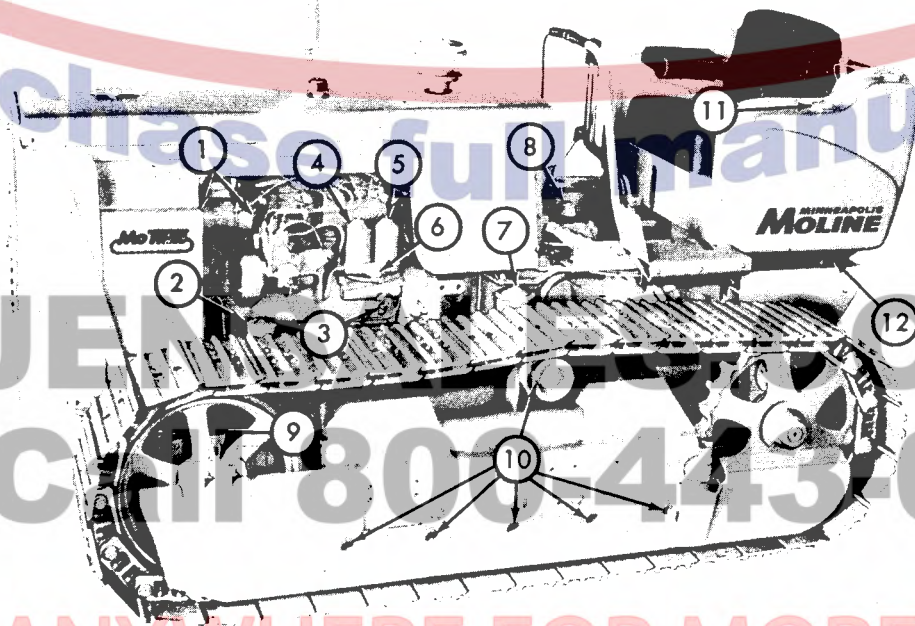


Fig. 2

- | | |
|-----------------------------------|----------------------------------|
| 1. Generator oil cups | 7. Converter-shuttle filter |
| 2. Crankcase oil filter | 8. Transmission filler plug-vent |
| 3. Crankcase dipstick | 9. Front track idler |
| 4. Final fuel filter (diesel) | 10. Track rollers |
| 5. Secondary fuel filter (diesel) | 11. Fuel gage |
| 6. Fuel strainer screen (diesel) | 12. Fuel shut-off valve |

LUBRICATION

CRANKCASE

New Motracs are shipped from the factory with a special run-in oil in the crankcase. Drain this oil and change the oil filter after the first 50 hours of operation. Refill the crankcase with 7 quarts of oil of the recommended American Petroleum Institute (API) classification. Crankcase capacity is 6 quarts. Add 1 extra quart when the filter is changed.

For general service (normal operation) use oil with an API classification "For Service MM" for gasoline tractors, and "For Service DM" for diesel tractors. For severe requirements, use oil with an API classification "For Service MS" for gasoline tractors, and "For Service DS" for diesel tractors.

We recommend the following oil viscosities according to the average temperature:

Temperature	SAE Weight	Multi-Viscosity
Above 80° F.	30	10W-30
32° to 80° F.	20	10W-30
0° to 32° F.	10W	10W-30
Below 0° F.	5W	5W-20

Change the crankcase oil in diesel tractors every 100 hours of operation; in gasoline tractors every 200 hours of operation. Change the oil more frequently if the Motrac is operated in extremely dusty conditions, or is subjected to short running periods during cold weather.

CRANKCASE OIL FILTER

Change the oil filter every other oil change (200 hours of operation for diesel tractors; 400 hours of operation for gasoline tractors). When installing a new filter, apply a slight amount of engine oil to the filter seal ring. Add 1 extra quart of oil to the crankcase when the filter is changed. Start the engine and check for leaks around the filter base.

CRANKCASE BREATHER

Service the crankcase breather every 60 hours of operation. Clean the entire cap assembly in solvent, shake it dry, and lightly saturate the element with engine oil.

AIR CLEANER AND PRE-CLEANER

Clean the pre-cleaner whenever it becomes filled with dirt to the mark indicated on the container.

Service the air cleaner oil cup once daily when operating under normal conditions; twice daily when operating in extremely dusty conditions.

To service the air cleaner, remove the 4 cap screws securing the cover to the hood. Loosen the lower hose clamp on the hose nearest the air cleaner. Lift the air cleaner and cover assembly out of the compartment. Remove the oil cup and clean it thoroughly. Refill the oil cup to the level mark with clean engine oil, the same grade and weight as used in the crankcase. Tighten the hose clamp securely when reinstalling the air cleaner.

NOTE: DO NOT OVER-FILL THE OIL CUP. TO OBTAIN THE BEST PERFORMANCE FROM THE AIR CLEANER, KEEP THE OIL LEVEL UP TO THE LEVEL MARK.

GENERATOR

Place 8 to 10 drops of light engine oil in the oil cups each 60 hours of operation.

STARTING MOTOR

Remove the pipe plug and place 8 to 10 drops of light engine oil in the opening each 300 hours of operation.

DISTRIBUTOR (Gasoline)

Apply a trace of ball bearing lubricant to the breaker cam every 300 hours of operation. Place 2 drops of light engine oil on the felt each 300 hours of operation. Check the distributor reservoir oil level and keep it up to the plug opening (light engine oil).

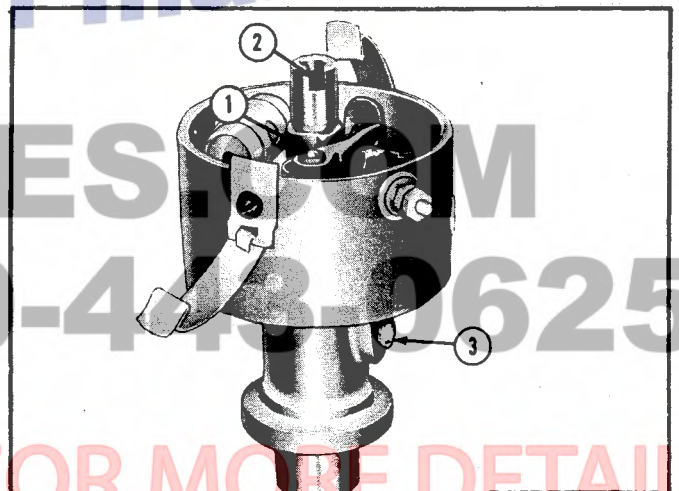


Fig. 3

1. Breaker cam
2. Felt - inside shaft
3. Reservoir oil level plug