Massey Harris
Massey Ferguson

Operator's Manual

MF406 Industrial
Tractor Loader

Operator's® Manual

MH-O-MF406 TL

We are pleased

to add your name

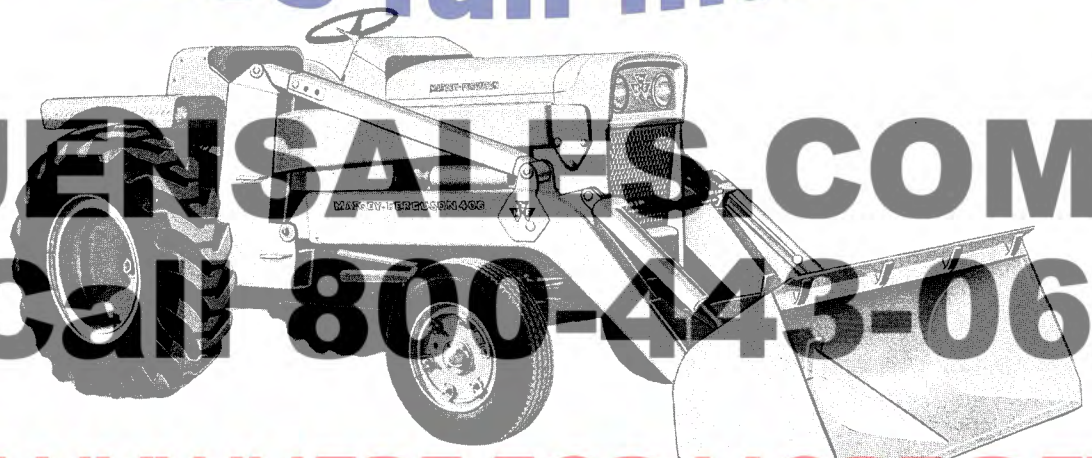
to our list of owners of this new Massey-Ferguson machine. We hope that it will give you the utmost satisfaction in your field work.

This machine is one of a full line of farm and industrial machinery manufactured by Massey-Ferguson, including the great tractor line with the genuine Ferguson system and the world-famous Massey-Ferguson Loader with the 220 Backhoe.

The world-wide preference for Massey-Ferguson products is the result of internationally recognized leadership in engineering, plus precision of manufacture, in every one of our 17 factories in Canada, United States, Great Britain, France, Germany, Australia and South Africa.

We are proud of the wonderful reputation earned by the products of these factories for efficiency and dependability.

Your dealer who serves you is one of over 10,000 business men in the great M-F dealer organization who are pledged to uphold the Massey-Ferguson tradition of service to customers.



MASSEY-FERGUSON INDUSTRIAL DIVISION

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Periodic Maintenance

Proper maintenance, including periodic inspection and regular lubrication with the correct lubricant, is essential to the long life and trouble-free operation of your new Massey-Ferguson 406 Tractor. Form the habit of performing scheduled maintenance by using the accumulated hours recorded on the tachometer. Always keep your tractor in "top-notch" condition by servicing it as recommended. Take any major repair items to your local Massey-Ferguson Industrial Dealer, he has the proper "know-how" and tools to render the type of service which will keep your tractor in the best possible condition. This section of your manual is devoted entirely to maintenance and should be referred to as a quick reference when periodic servicing is performed.

LUBRICATION

Care should always be exercised when handling all types of lubricants. Open containers invite and collect dirt which may cause very serious damage to the lubricated parts. Secure a good grade of pressure gun lubricant from a reliable supplier to be used in the pressure-type grease fittings. Always wipe off a grease fitting before lubrication to prevent the entrance of dirt.

The points listed below should be lubricated periodically. The number in the boxes beside each point indicate the hours of operation after which these points should be serviced. The parts and time intervals are marked in the illustrations for your convenience.

PRESSURE-TYPE GREASE FITTINGS

NOTE: Clean fittings, lubricate, and remove excess grease.

Lubrication Point	*No. of Fittings*
Front Axle Pivot Pin	1
Steering Drag Link, Upper	1
Steering Drag Link, Lower	1
Front Axle Spindles	1 each side
Steering Tie Rods	1 each side
Front Axle Brace Pivot	1
Brake and Reversing Pedals Shaft	2
Rear Axle Bearings	1 each side
Dump Cylinder Rod Crossheads	1 each side
Guide Link Pins	2 each side
Loader Control Lever Shaft	2
Revers-O-Matic Control Linkage	2

Lubrication Chart

1. Transmission and Differential Filler
2. Revers-O-Matic Linkage
3. Rear Guide Link Pin
4. Brake and Revers-O-Matic Pedal Shaft
5. Loader Control Lever Shaft
6. Generator
7. Forward Guide Link Pin
8. Dump Cylinder Rod Crosshead
9. Rear Wheel Bearing
10. Lift Arm Pivot Pin
11. Upper Drag Link
12. Front Axle Brace
13. Steering Cylinder Cross Pin
14. Steering Tie Rod
15. Lower Drag Link
16. Front Wheel Bearing
17. Front Axle Spindle
18. Front Axle Pivot

TACHOMETER

Located in the upper left side of the instrument panel. The instrument is a combination tachometer, and hour meter. The upper scale indicates engine RPM, and the window at the center of the dial indicates the total accumulated hours of operation at an average speed of 1,580 RPM. It should be noted, however, that engine speeds lower than 1,580 RPM will accumulate hours slower than clock hours while engine speeds higher than 1,580 RPM will accumulate hours faster than clock hours.

REVERS-O-MATIC TEMPERATURE GAUGE

Located on lower left side of the instrument panel. The gauge indicates the Revers-O-Matic and torque converter oil temperature. The tractor should not be operated with the oil temperature pointer in the red zone.

GEAR SHIFT LEVER

Located in front of the tractor seat on the top center of the transmission housing. The five forward gears are indicated by characters on a plate secured to the lower right side of the instrument panel.

FOOT ACCELERATOR

Located at right rear of cockpit for easy access is used for instant acceleration when operating loader with tractor stationary.

REVERSING ACCELERATOR PEDALS

Located on the right side of the cockpit.

After the operating gear is selected, the pedals are used to control both the direction of travel and the speed of travel. As the forward or reverse pedal is depressed it first energizes one of the clutches and then accelerates the engine. When shifting to Forward or Reverse, allow the engine to come to idle **before** depressing the opposite pedal. When tractor is in forward or reverse motion bring the tractor to a stop by using the brakes.

NOTE: Use hand throttle for accessory operation only. The hand throttle should be set in the low idle position when using the reversing-accelerator pedal.

INDIVIDUAL BRAKE PEDALS

Located on the left side of the cockpit and adjacent to each other. Foot pressure on either the right or left pedal brakes the respective right or left wheel for turning.

Bring Tractor to a Complete Stop Before Applying Opposite Pedal with Hand Throttle in Low Idle at all Times

PARKING LATCH

Located on the left side of the cockpit, the parking brake latch is mounted on the same axis bar used for the control levers. By raising the latch and depressing the left brake pedal a ratchet intersects a lug on the left brake for parking. The latch is released on the next application of the left brake pedal.

LOADER CONTROL LEVERS

Located just under right side of instrument panel. Lever on right side operates the lift arms, by pulling back on lever the arms raise. Pushing forward on the lever lowers the load. The left lever operates the bucket dump and roll-back.

BREAK-IN PERIOD

Your M-F 406 Tractor has been carefully designed and developed to furnish you many thousands of hours of working satisfaction. The "406" has been manufactured and produced using the ultimate in modern machining methods and production techniques for economical and trouble-free life under all conditions; yet, like all engines, it must be broken in carefully.

1. Keep your tractor on light work for the first 50-hour period. However, during each 10-hour interval during this period, operate tractor under full load for five or ten minutes.
2. Use low transmission speeds when pulling heavy loads while the engine is new.
3. Change crankcase break-in oil after first 50 hours of operation.

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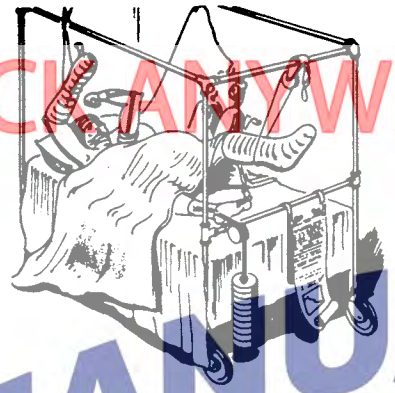


Avoid Accidents by Being a Careful Operator

at low engine RPM's. Continuous operation of the tractor with the battery discharging will result in the battery running down. Also, operating with the ammeter indicating an excessive charging rate will cause the battery to overheat. When either of the above conditions exist, have your MF Dealer check the electrical system.

The water temperature gauge should read approximately 160° for normal operating conditions.

The Revers-O-Matic oil temperature is controlled by a heat exchanger built into the radiator, consequently a high temperature of the Revers-O-Matic oil will also affect the water temperature. If the Revers-O-Matic oil temperature gauge reaches the "red zone," the next lower speed gear of the tractor should be used.

CAUTION: When removing the pressure-type radiator cap, slowly and carefully turn to the first notch. This will relieve the pressure, thus preventing injury from escaping steam.

SELECTING CORRECT GEAR

The correct working gear can only be obtained by an intelligent selection by the operator. The basic factors involved in this selection are:

1. Type of equipment used.
2. Working conditions encountered.
3. Load subjected to the tractor.
4. The ground speed to effectively perform the operation.

Also, a factor to keep in mind while operating your "406" is: Power is transmitted from the engine to the Revers-O-Matic drive through a torque converter. The torque converter multiplies torque but only during heavy pull down loads. When loads are light the converter transmits the engine power directly at almost engine speeds and there is no torque multiplication. The net result is an action like a transmission with variable and automatic speed ratios. The need for shifting gears, although present, is greatly reduced.

Always keep in mind that; operating tractor under heavy load maximum torque occurs at 1100 to 1200 R.P.M. and continuous operation near the maximum torque will cause the hydraulic oil to over heat. Therefore, the proper gear speed selection is important.

A CHECK FOR OVERLOADING

The Revers-O-Matic oil temperature gauge is a good check for overloading. If the gauge reads below the red mark, the operating temperature is normal. If the gauge registers at the red mark or above, overloading is indicated and the tractor should be shifted to the next lower gear. Continuous overloading must be avoided.

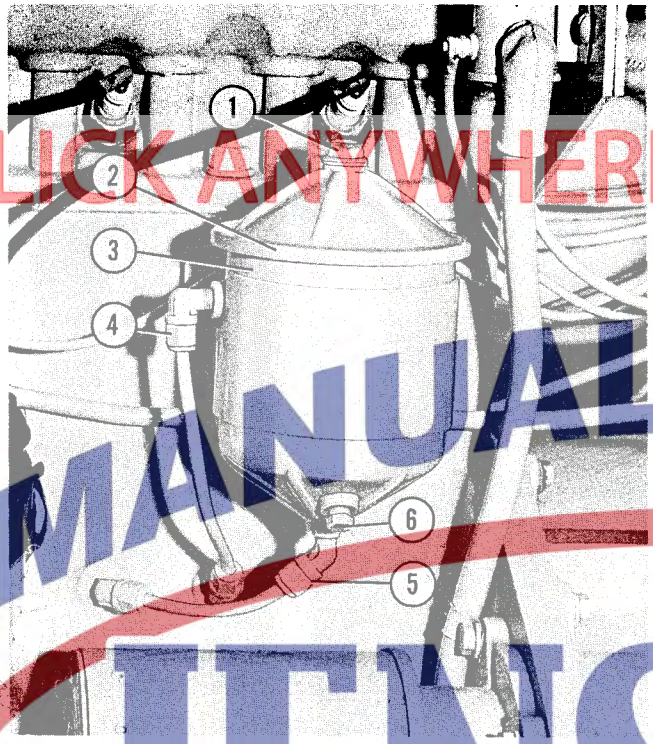
STOPPING THE TRACTOR

When you desire to stop the motion of the tractor, release the accelerating clutch pedal which at the same time reduces the engine speed. Apply pressure on both brake pedals as needed in order to stop the tractor.

Turn the ignition switch to "off" position and lock brake parking latch. Move gearshift to neutral position.

NOTE: At the end of the working day, turn the fuel shut-off valve to the "off" position.

Always Stop Tractor Before Dismounting



Oil Filter

1. Filter cover nut
2. Filter cover
3. Filter body
4. Oil inlet tube
5. Oil outlet tube
6. Oil filter drain plug

oil filter is to remove sludge, grit, carbon, metal particles, etc., from the oil system. This is a continual process which is performed while the engine is operating. As the filter element becomes loaded or saturated with foreign material from the oil, it ceases to function and filter properly, therefore it should be removed and replaced at recommended intervals.

CHANGING ENGINE OIL AND FILTER ELEMENT

The oil in the crankcase as delivered is break-in oil and it should be drained and the crankcase refilled with proper lubricant after the first 50 hours of operation. Thereafter, the oil should be changed every 100 hours. Adverse working conditions such as severe dust or extremely cold weather may necessitate more frequent changes. Flushing the crankcase with oils or solutions, other than a good winter grade oil, is not recommended. If flushing is necessary, use 3 quarts of 10W oil and run at a fast idle for a few minutes. Drain immediately and fill with the correct seasonal grade of engine oil.

The use of detergent type lubricants is recommended as a cleaner engine results which will operate longer without service difficulties. Therefore, it is recommended that service MM oils be used in normal operating conditions. Service MS oils, while satisfactory for all conditions, are not specifically recommended except under unfavorable or severe operating conditions. See Lubrication Section on page 2 for viscosity recommendations.

NOTE: It is essential that the crankcase be drained when the engine is warm as much of the foreign material will be in suspension and will flow out with the oil.

The filter element should be replaced with a clean, new MF Filter and the case wiped out at every other oil change. To change the filter element, unscrew the nut holding the top on the filter, lift out old cartridge, clean out bottom and wall of filter, place new cartridge in filter, and replace cover. After cover is replaced, start the engine and check cover of filter for oil leaks. The filter cartridge should be changed at a time when the engine oil is being changed.

NOTE: When a new filter element is installed, one quart extra oil should be added to allow for element absorption.

COOLING SYSTEM

The cooling system of your Tractor consists of a radiator, pressure-type radiator cap, fan, water pump, thermostat, hoses and 23 quarts of coolant. The coolant conducts heat from around the wet sleeves and circulates through the radiator, where the heat is transferred by the copper fins to the air passing through the radiator. The cooling system incorporates a recirculating passage which allows faster and more even warm-ups by bypassing a metered amount of the coolant through the water pump back into the block before the thermostat opens.

RADIATOR AND PRESSURE-TYPE CAP

Located on top of the radiator is a pressure-type cap which permits 4 pounds per square inch of pressure to build up within the cooling system. This raises the boiling point of the coolant 18° to 24°. It is essential that the pressure cap be used and installed tightly at all times.

CAUTION: Remove radiator cap slowly and carefully by turning to the first notch. This relieves the pressure, preventing injury from escaping steam and scalding water.

The radiator is a copper tube and fin-type, with coolant entering the top and passing down through the tubes to the bottom and recirculating back through the engine. For efficient cooling, the fins must be kept clean of all lint, dust and other foreign material. A clogged condition is sometimes only apparent by looking through the fins and can be remedied by blowing out with water or air pressure.