



Massey Harris Massey Ferguson

Service Manual

**MF205, MF205-4,
MF210, MF210-4,
MF220 & MF220-4
Compact**

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Service Manual

MH-S-MF205+



MF COMPACT TRACTORS

SERVICE MANUAL

(MF 205/205-4, 210/210-4 and 220/220-4)

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PART 1

IMPORTANT PROCEDURES AND DATA

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SERVICE PROCEDURE RECOMMENDATIONS

The service repair procedures recommended within the various parts in this Manual are usually written assuming that the assembly to be repaired has been removed from Tractor. However, much of the servicing can be performed without complete removal of assembly . . . it will require judgment of serviceman to determine necessity of removal, while taking into consideration, degree and extent of servicing required.

Following important points should be remembered and practiced.

TROUBLE-SHOOT AND CLEAN TRACTOR BEFORE DISASSEMBLY. If possible, make a complete diagnosis to determine extent of repair which should be performed. Take all precautions as necessary to prevent dirt or other foreign material from entering hydraulic, fuel and air system.

DO NOT MIX PARTS. Be alert during disassembly to detect presence of special parts which should not be interchanged.

INSPECT PARTS DURING DISASSEMBLY AND CLEAN THOROUGHLY.

LABEL PARTS AND PROTECT PRECISION OR MACHINED SURFACES.

DO NOT SUBSTITUTE PARTS. THE USE OF NON-RECOMMENDED SUBSTITUTE REPLACEMENT PARTS MAY BE A SOURCE OF ADDED TROUBLE. Do not assume that if parts look alike, they are the same.

The majority of parts have special properties known only by the manufacturer. They are the result of particular requirements established by extensive research and testing of complete Tractor through combined efforts of MF's engineering research and MF's service department field experience. There is a continual program to further improve existing parts.

Many of these improvements cannot be detected by visual examination between old and new items. Therefore, it is extremely important that only genuine MF replacement parts be used to repair an MF Tractor.

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PART 3

FRONT AXLE AND WHEELS (Four-Wheel Drive)

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GENERAL INFORMATION

The front drive axle assembly, Fig. 1, is basically the same for all models. The minor differences are mainly in width, size and strength. Although, some models of MF 205-4 and MF 210-4 may have some differences in the type of steering universal joint used. Fig. 1, shows a double knuckle type of universal joint and, Fig. 2, shows a constant velocity ball type. Where service procedures differ pertaining to these in the following test, it will be so noted.

The small models utilize a single piece differential housing and the larger models utilize a two piece differential housing. The main difference between the two housing types is that on the single piece housings the pinion is mounted in the main housing and on the two piece housings the pinion is mounted in its own housing which is bolted to the main housing.

Disassembly and reassembly procedures therefore, are slightly different between the two housing types especially in the toe/heel tooth contact adjustment. On single piece housing this adjustment is made by shims located between the pinion gear and front bearing. On two piece housings this adjustment is made by shims located between the main housing and the pinion shaft housing.

SERVICING

To service the steering pinion and quadrant gear assembly it is necessary to completely remove the instrument panel and steering wheel assembly. To facilitate this, removal of fuel tank is recommended. Proceed as follows:

1. Shut-off fuel, disconnect fuel line and disconnect battery cables.
2. Disconnect all instruments and controls to instrument panel.
3. Remove all bolts and nuts retaining fuel tank and instrument panel.
4. Remove the four bolts, 1, Fig. 2, retaining the steering wheel shaft housing to the pinion and quadrant gear housing cover.
5. The next step in the procedure involves separation of steering pinion from the steering wheel shaft universal joint. This is done at the lower end of the universal joint. Proceed as follows:
 - a. Push up rubber dust protector, 2, to gain access to snap ring which secures stepped pin.
 - b. Displace snap ring, 3, for access to stepped pin.
 - c. Using a suitable punch drive stepped pin, 4, out from small end. (Fig. 3 illustrates.)
 - d. When stepped pin is out, complete steering wheel and instrument panel assembly may now be lifted out.

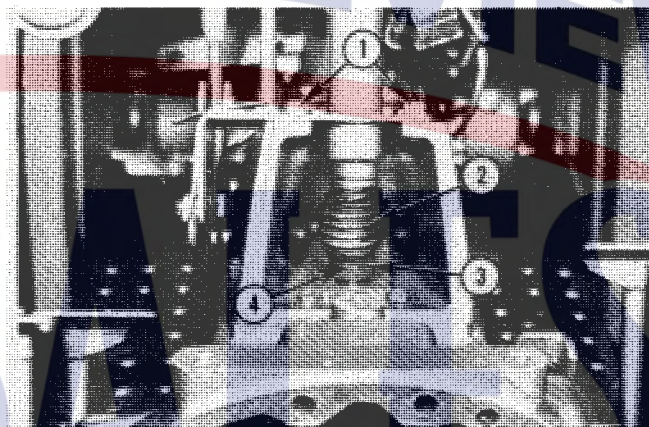


FIG. 2



FIG. 3

6. Remove the six bolts holding the pinion gear and quadrant gear top cover in place and remove cover, Fig. 4.



FIG. 4



PART 5

ENGINE

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GENERAL INFORMATION

The engines used in these Tractors incorporate the same basic design. Fig. 1 illustrates the model S-148 engine used in the MF 220/220-4 Tractor. The main physical difference in these engines is the cylinder bore and piston stroke. (Refer to specifications for more complete detail).

These engines are two cylinder, four cycle, diesel fueled indirect injection and incorporate overhead valves.

Glow plugs located in the precombustion swirl chambers of the head provide an aid for cold starting. The cylinder head is a one piece alloy iron casting as is the engine block and no cylinder sleeves are used. The pistons are aluminium alloy casting. The crankshaft is supported by three bearings. Thrust bearings are located on the center main bearing cap and some models have additional thrust bearings located on the center main bearing casting web.

The engine is liquid cooled and pressure lubricated.

This Part of the Manual is written in the practical sequence to gain access to every part of the engine, as may be seen by referring to the contents to this Part. To avoid duplication, you may be directed to refer to preceding data when a specific operation is preceded by one or more others.



PART 6

CLUTCH, FLYWHEEL, RING GEAR AND REAR OIL SEAL

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