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MANUAL PREVIEW

International Harvester

Operator's Manual
for **MCCORMICK-DEERING**

**M & MV
1939**

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Operator's Manual

IH-O-M 1939

M

Year and Serial Number

Data Plate, left side

Engine area

1939: FBK501
1940: FBK7240
1941: FBK25371
1942: FBK50988
1943: FBK60011
1944: FBK67424
1945: FBK88085
1946: FBK105564
1947: FBK122823
1948: FBK151708
1949: FBK180514
1950: FBK213579
1951: FBK247518
1952: FBK290923
Final: FBK298218

Paint Codes

Ag Farmall

Antique Red (to 1981)

991012r3 (aerosol)
991010r2 (quart)
b90882 (gallon)

Silver (Wheel Trim)

b17567 (aerosol)
b17565 (quart)
b17563 (gallon)

The M was also available in the MV high-clearance "vegetable version" and the MD diesel. The Farmall M was the row-crop version of the McCormick-Deering W-6. In the late 1950s, the M continued production at Doncaster after it had ceased at the Farmall Works, these are often referred to as a model BM.

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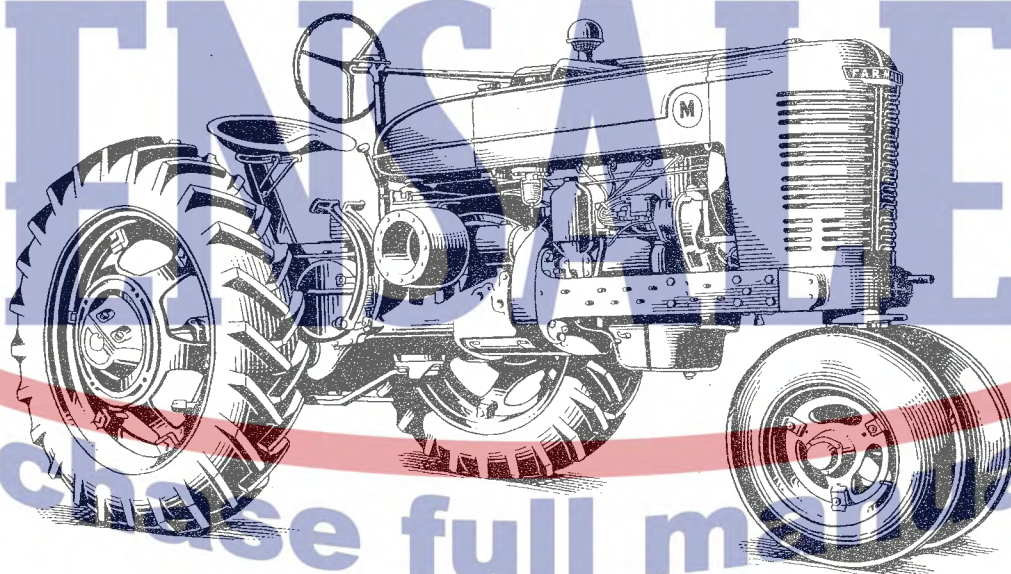
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Instruction Manual
Care and Operation
McCormick-Deering
Farmall-M
Tractor



Pneumatic Tires and Belt Pulley are special equipment.

Important

This book has been prepared and is furnished for the purpose of giving the user as much information as possible pertaining to the care and operation of this machine. The owner is urged to read and study this instruction book, and, if ordinary care is exercised, he will be assured of satisfactory service. A parts list containing "exploded" views illustrating all repair parts, will be furnished upon request.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 NORTH MICHIGAN AVE. CHICAGO, ILLINOIS, U.S.A.

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NOTE:- Page 16 is for Gasoline Operation.
 Pages 11 to 15 are for Distillate or Kerosene Operations.
 The balance of the book is for Gasoline, Distillate or Kerosene
 Operations, except as noted.

TO OWNERS:

This Tractor is designed and built to give good performance and maximum service. Quality materials and good workmanship are employed throughout the entire unit.

The suggestions and requirements for operating outlined in this book are essential to maintain satisfactory performance and economical service. The care and daily attention given the Tractor will largely determine its maintenance cost and success of operation.

Tractor Owners should use the extensive facilities offered by McCormick-Deering and International dealers when service is needed that requires the knowledge of an experienced service man. This is advisable as Dealers are kept informed on the best methods of servicing Tractors and are in a position to give satisfactory service.

BRAKE PEDAL LOCK

To lock brakes, lock both brake pedals together by engaging the pedal latch at back of pedal pads. Then push pedals down and engage the locking lever.

CAUTION! Always lock brake pedals together when traveling in high gear.

DRAW BAR AND HITCH

To raise or lower drawbar, loosen bolts "A", remove bolts "B" and put braces in desired position. Replace bolts "B" and tighten bolts "A".

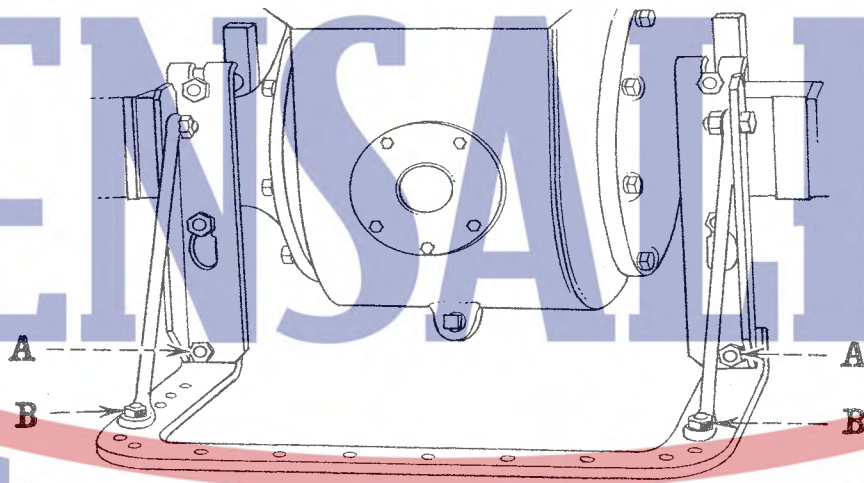


Illustration No. 7



Always use the draw bar braces. Never use chains.

The tractor exerts its pulling power by means of the draw bar. This is adjusted up and down to accommodate different hitches. Proper hitching will save both the tractor and the implement it is pulling from undue strains. The hitch should be made so that the center line of pull of the tractor will fall in line with, or be at least near the center line of draft of the plow or any other hitched-on implement; hitching to one side or the other of the line of draft will cause stresses and strains on both machines, frequently great enough to do permanent injury. Also make the hitch in such a way that the action of the draw bar pull will neither tend to raise the tractor front wheels from, nor thrust them to the ground as a result of too high or too low hitching.

WARNING!

*Do not attempt to pull when drawbar is removed.
Drawbar must be kept tight.*

All hitches for trailing implements must be attached to the drawbar.

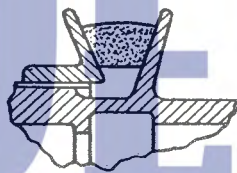
COOLING SYSTEM - Continued

TO ADJUST FAN BELT - Continued

- A - Fan belts should be examined frequently to be sure proper tension is maintained.
- B - "V" type belts do not need as much tension as the flat type belt.
- C - The proper tension is obtained when the belt can be depressed, without effort, by the thumb (between the two pulleys) approximately $\frac{3}{4}$ " to 1" depending on the length of belt between pulleys.
- D - After a new belt is broken in (approximately 50 hours of operation) examine tension and adjust if necessary.
- E - Care must be taken to have belt wide enough so that it will not draw down to the bottom of the "V" in pulley; this will wear out the belt.

Note: If pulley, on which belt bottoms in the groove, is of the adjustable type, movable flange should be adjusted for narrower groove until belt does not touch bottom when proper tension (as explained in paragraph "C" is obtained.

- F - Do not have "V" type belts too tight.
- G - When belt becomes grease soaked, or so badly worn that it no longer gives side surface on the crankshaft pulley, but sinks down to the bottom of "V" in pulley, it should be replaced, as it no longer gives sufficient surface contact to drive fan at the proper speed.

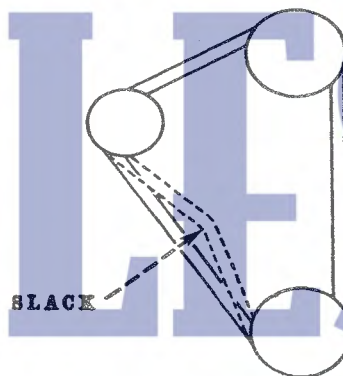


Section A-A
Flange type
belt adjustment

ALLOW SLACK
 $\frac{3}{4}$ " TO 1"
AT THIS POINT



Adjustment—two
pulley type.



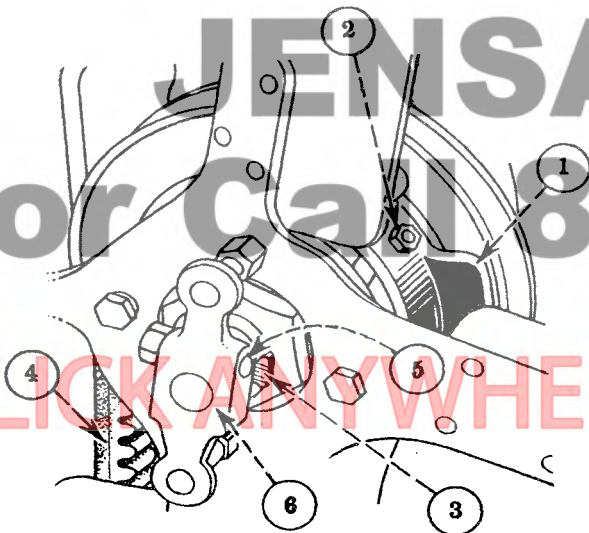
Adjustment—three
pulley type.

Illustration No. 16

WATER PUMP - PACKING

Due to wear after considerable service, the pump may leak. When this occurs, tighten up the packing nut (3) just enough to stop the leaking. (See Illustration No. 17.)

To install new packing, remove driver pin (5) and driver (6). Unscrew and remove packing nut (3). Place packing around shaft and reassemble packing nut, driver and driver pin.



Ref. No.	Description
1	Fan pulley flange.
2	Set screw in pulley flange.
3	Water pump packing nut.
4	Fan belt.
5	Driver pin.
6	Driver.

Illustration No. 17

VALVE CLEARANCE ADJUSTMENT

Check valves for clearance every 400 hours and adjust if necessary.

Clearance of .017" is necessary between end of valve levers and valve stems when valves are closed - when engine is warm.

To determine when valves are closed proceed as follows -

Crank the engine until No. 1 piston (the piston next to the radiator) is on the upper dead center of the compression stroke. The compression stroke can be determined by removing No. 1 spark plug and placing the thumb over the opening and having someone crank the engine until an outward pressure is felt. Continue cranking slowly until first notch on the fan drive pulley is in line with pointer on front crankcase cover. Both intake and exhaust valves should be closed at this time.

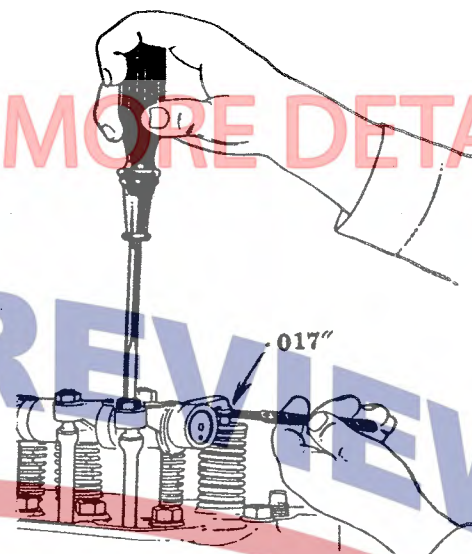


Illustration No. 18
Gauging valve levers
with a feeler gauge.

Check and adjust clearance of two valves for No. 1 cylinder.

Then crank engine through 1/2 of revolution and check and adjust clearance of two valves for No. 3 cylinder.

Continue this procedure turning engine 1/2 revolution at a time and measuring and adjusting clearances of each cylinder's valves in succession according to firing order of engine, which is 1, 3, 4, 2.

TO ADJUST VALVES

Remove valve housing.

Loosen lock nut.

Adjust screw in valve lever so gauge will snugly slip between end of valve lever and valve stem.

Tighten lock nut and recheck for clearance with gauge. (See Illustration No. 18).

Replace valve housing.

CARBONIZED CYLINDERS

In case the engine knocks continuously and does not develop the normal amount of power, it may be that the combustion chamber walls are coated with carbon. If the cylinders are carbonized, remove the cylinder head, scrape off the carbon from the head, piston head and combustion chamber. It is also advisable to regrind the valves at this time.

When replacing cylinder head, follow the instructions below under heading "Gaskets" regarding tightening of nuts as it is important to secure an even pressure on all studs.

GASKETS

Before putting on new gaskets, the surface for the joint must be thoroughly cleaned. When tightening up a joint after a new gasket has been inserted, screw up all the nuts fairly snug, then tighten uniformly, giving each nut a small part of a turn at a time. Continue this until all nuts are tight. Do not screw one nut down perfectly tight, and then go to the next, as you will not secure an even pressure on the gasket in this manner. After engine has been running a few minutes, tighten the nuts again.

Caution: - Be sure to adjust valve tappet clearance after the last tightening of cylinder head stud nuts. (See "Valve Adjustment").

CRANKSHAFT BEARINGS, PISTONS AND RINGS

We cannot impress too strongly the necessity of having an experienced mechanic do the work on replacement of crankshaft bearings, pistons and rings, grinding valves, adjusting the connecting rod bearings, etc.

SPECIFICATIONS

CAPACITIES (U.S. MEASURE)

Fuel tank	Approx. 22 gals.
Gasoline tank	Approx. 1 gal.
Water cooling system	Approx. 6 gals.
Crankcase pan	Approx. 8 qts.
† Transmission and differential case	Approx. 14 gals.
Steering gear compartment	Approx. 1 qt.

(† Also see Lubrication Chart)

ENGINE

Cylinders	4
Bore	3-7/8"
Stroke	5-1/4"
Engine speed (governed)	1450 r.p.m.
*Power take-off shaft speed	537 r.p.m.
Magneto (fixed spark) (clockwise rotation)	IHC Type H-4
Spark plug gap	.020" to .025"
Valve clearance (engine hot)	.017"
Carburetor (with Donaldson air cleaner)	IHC 1-1/4" Updraft

CLUTCH AND BELT PULLEY

Single-plate, dry disk (spring loaded)	11"
*Pulley speed	899 r.p.m.
*Belt speed (with 11" pulley)	2587 ft. per min.
*Pulley diameter	11"
*Pulley face	7-1/2"

* Special - furnished when ordered.

FOOT BRAKES

External contracting on drums.

TRANSMISSION (FIVE SPEEDS)

(Based on 51" Steel Wheels)

Speed (miles per hour)	1st..... 2-5/8
	2nd..... 3-1/2
	3rd..... 4-1/4
	4th..... 5-1/8
	5th (locked out except when using pneumatic tires)..... 16-3/8
	Reverse..... 3-1/8

WHEELS AND TREAD

Front wheels (regular) (dual - cast iron)	4" x 22 1/2"
Rear wheels (steel)	8" x 51"
Tread - front (fixed)	9-1/8"
Tread - rear (variable)	52" to 88"
Wheelbase	90"
Skid ring	2"
Lugs (spade)	4"
Wheels for pneumatic tires - Special As Ordered.	
Turning radius (with 52" rear wheel tread)	101 1/2"

GENERAL - DIMENSIONS

Length overall	126 3/4"
Width overall - Maximum (to outside edge of rear wheels)	96"
Width overall - Minimum (to outside edge of rear axle)	84 1/2"
Height overall (to top of steering wheel)	76"
Clearance under rear axle	23 1/4"
Clearance under frame	15-5/8"
Drawbar (quick attachable type) vertical adjustment above ground	10-5/16", 11-7/8", 13-5/16", 14-13/16" and 16-5/16".
Drawbar (quick attachable type) lateral adjustment	13" on each side of center hole.