

# **Farmall collection Sample File.**

## **This single sample file contains samples for**

**Farmall 460 560 Operators Manual - 72 pages**

**Farmall A B Tractor Service Manuals - 64 pages**

**Farmall F12, F14 Owners Manual - 51 pages**

**Farmall F12, F14, F20, F30 Service - 49 pages**

**Farmall F12, F14 Parts Catalog - 297 pages**

**Farmall M MV MD MDV Parts\_Catalog TC-28 Parts - 425 pages**

**Farmall M MV MD MDV workshop manual - 137 pages**

**Farmall M MV Ops Owners Manual - 109 pages**

**Farmall Super A Special Attachments - 16 pages**

**Farmall Super A, Super AV Ops - 81 pages**

# *Operator's Manual*



**McCORMICK®  
FARMALL®**

**460, 560,**

**and**

**INTERNATIONAL®**

**560**

**Tractors**

INTERNATIONAL HARVESTER COMPANY

180 North Michigan Ave.

Chicago 1, Illinois, U.S.A.

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*A Careful Operator*  
**IS THE BEST INSURANCE**  
**AGAINST AN ACCIDENT**

*—National Safety Council.*

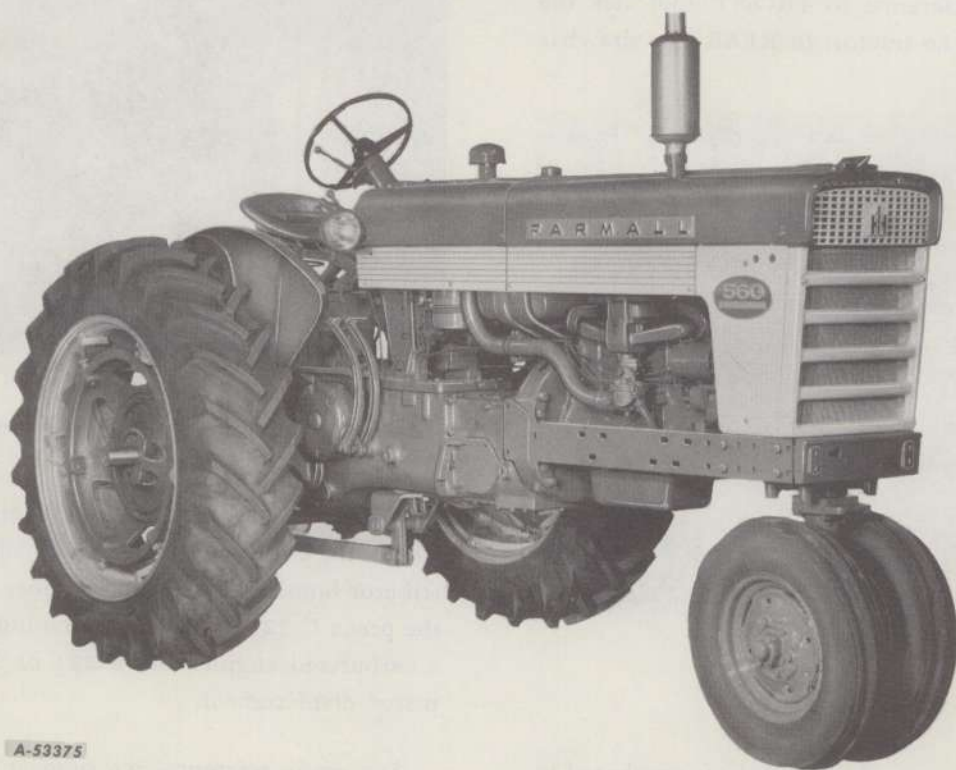
# DESCRIPTION



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Illust. 4

Left front view of the Farmall 460 Tractor.

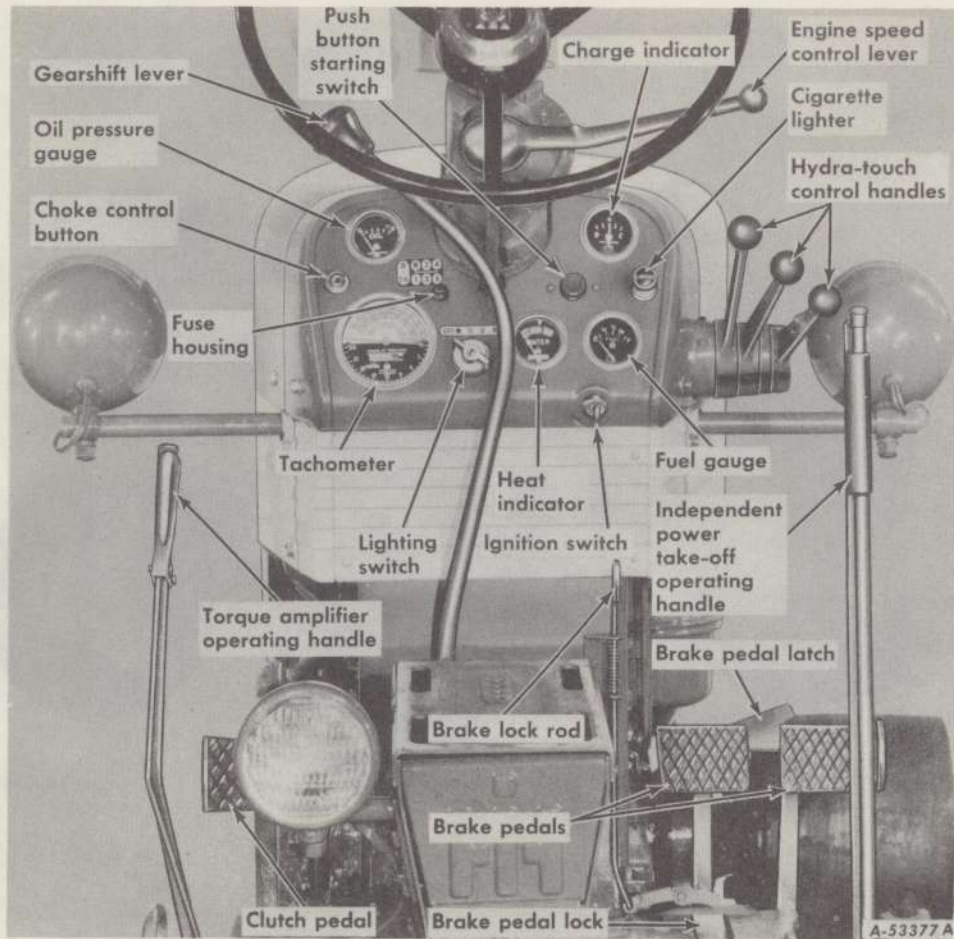


A-53375

Illust. 4A

Right front view of the Farmall 560 Tractor.

## INSTRUMENTS AND CONTROLS



Illust. 6

Instruments and controls on the Farmall 460 and 560 Tractors.

### Choke Control Button

The choke control button makes it possible to regulate the carburetor choke while sitting in the tractor seat. Pulling out on the choke control button closes the carburetor choke for starting the engine; pushing it in opens the choke.

### Fuel Gauge

With the ignition switch turned on, the fuel gauge indicates the level of the fuel in the fuel tank.

### Push Button Starting Switch

Pushing the button in completes the electrical circuit between the battery and the cranking motor

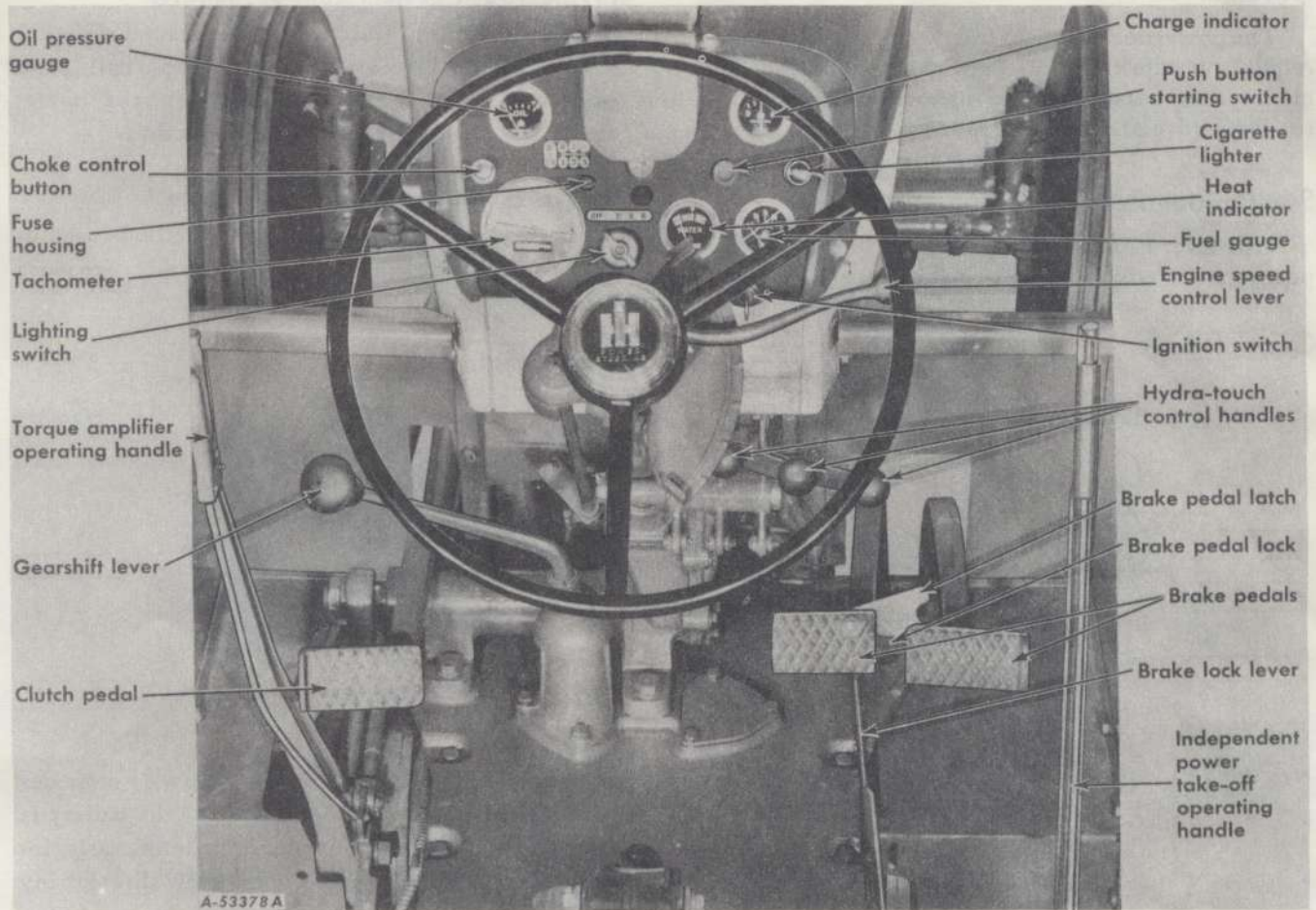
solenoid and causes the cranking motor pinion to engage the flywheel ring gear, thereby cranking the engine. Refer to page 13 for starting the engine.

### Ignition Switch

A key-type lock ignition switch is located near the right side of the instrument panel. Turn the key clockwise to a horizontal position to turn on the ignition. The key cannot be removed when in this position.

**Note:** When the engine is not operating or the engine has stalled and the operator leaves the tractor, the key must be turned to the **off** position to prevent battery discharge.

## INSTRUMENTS AND CONTROLS



Illust. 7

Instruments and controls on the International 560 Tractor.

### Lighting Switch

The switch has four positions: "Off" position; "D" position for dim headlights, instrument lights, and a red taillight; "B" position for bright headlights, instrument lights, and a red taillight; and "R" position for bright headlights, instrument lights, and a white rear light. The red taillight should always be used when traveling on the highway at night or during times of poor visibility. The white rear light is for field use only and should not be used on the highway.

### Cigarette Lighter

Push the lighter in to make electrical contact. When it pops back it is ready for use.

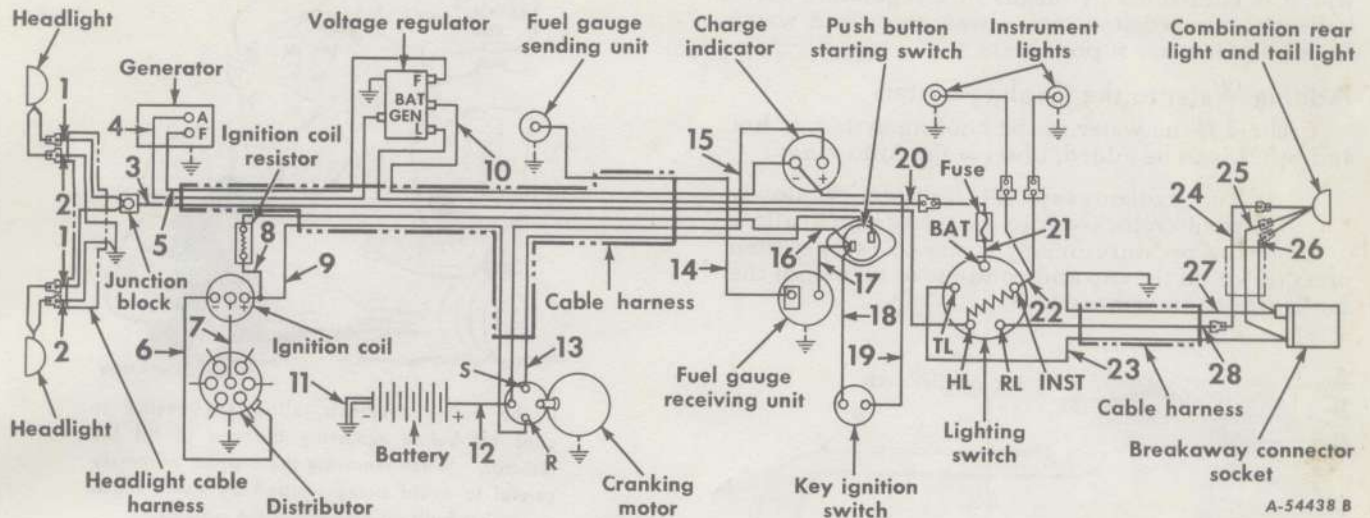
### Engine Speed Control Lever

This lever controls the speed of the engine and, when set in a given position, will maintain a uniform engine speed even though the engine load may vary.

When the lever is set at the top indicator point (LO), the engine speed is fully retarded. When the lever is at the lower indicator point, the engine speed is fully advanced.

Minimum idle speed (hand throttle) is 400 to 450 r.p.m. with the engine speed control lever fully retarded. Never operate the engine at more than the regular governed speed. Excessive speeds are harmful. For engine speeds, see "Specifications."

# STARTING AND LIGHTING EQUIPMENT



Illust. 45  
Schematic wiring diagram  
for International 560 Tractor.

| Ref. No. | Description  | Ref. No. | Description  |
|----------|--|----------|--|
| 1        | Cable—headlight to junction block (black).   | 16       | Cable—push button starting switch to coil resistor (black).                        |
| 2        | Cable—headlight to ground (pink).  | 17       | Cable—fuel gauge receiving unit to push button starting switch.                    |
| 3        | Cable—lighting switch to junction block (violet).  | 18       | Cable—push button starting switch to ignition switch.                              |
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| 10       | Cable—charge indicator to regulator "BAT" terminal (gray).                                   | 25       | Cable—combination rear light to break-away connector socket (black).               |
| 11       | Strap—battery to ground (ground on steering shaft housing support right rear mounting bolt). | 26       | Cable—combination rear light to break-away connector ground terminal, long (pink). |
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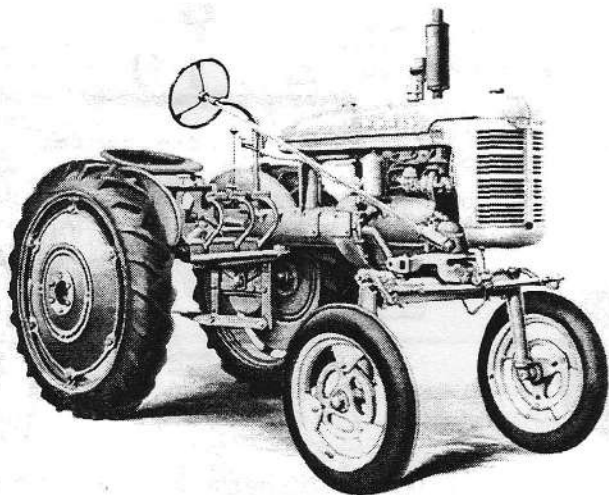
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## BRIEF DESCRIPTIONS

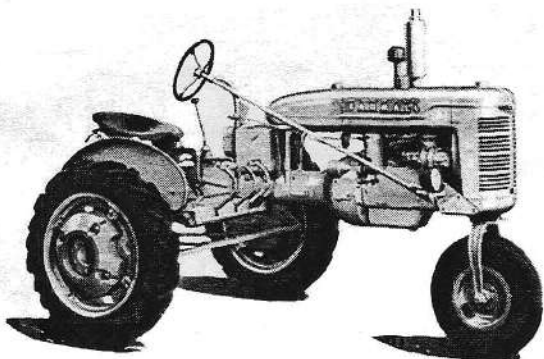


Illust. 2. The Farmall-AV high clearance tractor.

sugar cane, in which cultivation is continued until the plants have reached considerable height. The AV follows the basic design of the Farmall-A, principal modification being  $5\frac{1}{2}$  extra inches of crop clearance, adjustable tread front axle, and slightly higher field and road speeds as a result of the larger diameter of the rear wheels.

### Farmalls B and BN Tractors

The Farmalls B and BN are three-wheel type tractors. The Farmall-B rear wheel tread is adjustable from 64 to 92 inches by 4-inch intervals. The Farmall-B rear wheel tread adapts it for two-row cultivation at row spacings of from 32 to 46 inches, such as cotton, corn and other crops of wide row spacings. Both Farmalls B and BN are adaptable for cultivation of up to 6 rows of the narrow spaced row crops. The Farmall-BN has a narrow rear wheel tread adjustable by 4-inch intervals from 56 to 84 inches. This narrow tread Farmall is adaptable for two-row cultivation of a variety of crops in row spacings from 28 to 42

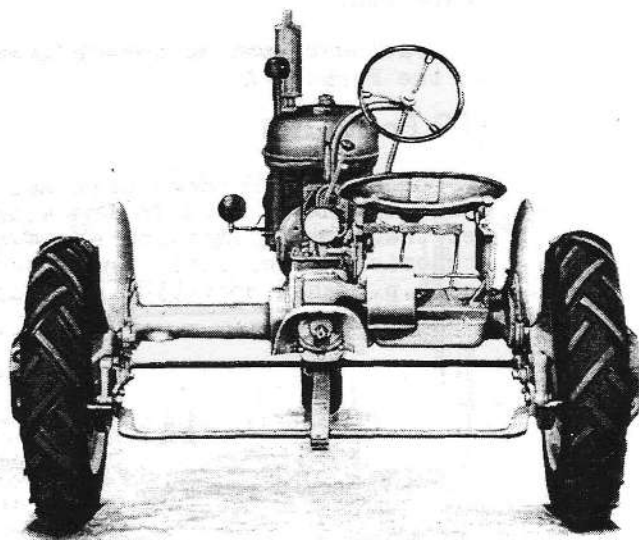


Illust. 3. The Farmall-B with electric lights and rear wheel weights.

inches, especially 28-inch row-spaced beans and other vegetable crops. Potato growers also find the Farmall-BN well suited to their requirements.

The Farmalls B and BN are also Culti-Vision tractors, in which the operator has full view of the cultivating operation on the right side of the tractor where the operator's seat and platform are located. Row-crop cultivation may be accomplished at speeds of  $1\frac{1}{2}$  to nearly 5 miles per hour. Like the Farmall-A they will operate on approximately one gallon of fuel per hour, depending upon the nature of the work.

The use of these tractors is not restricted to the small row crop farm. Many are used as auxiliary tractors on the larger farms because of their wide range of utility made possible by the number of machines built to hitch directly to them, their ease of handling in the field and their economical power for haying, power take-off, belt work, and many other of the lighter jobs. Tractor traveling speeds are the same as on the Farmall-A.

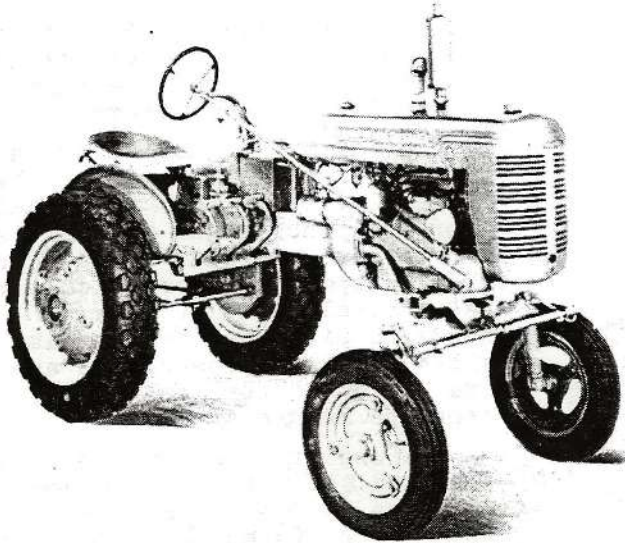


Illust. 4. Rear view of the Farmall-B equipped with electric lights, belt pulley, power take-off, swinging drawbar and wheel weights.

### International A Tractor

The International A industrial tractor is a 4-wheel tractor. The rear wheel tread is adjustable from 40 to 68 inches by 4-inch intervals. The front axle tread is adjustable from 44 to 64 inches by 4-inch intervals. This small tractor of the industrial line is similar to the Farmall-A with the exception of the front axle which is a heavy duty adjustable tread type. Speeds and axle clearances are the same as the Farmall-A.

# FARMALLS A & B AND U-2 POWER UNIT



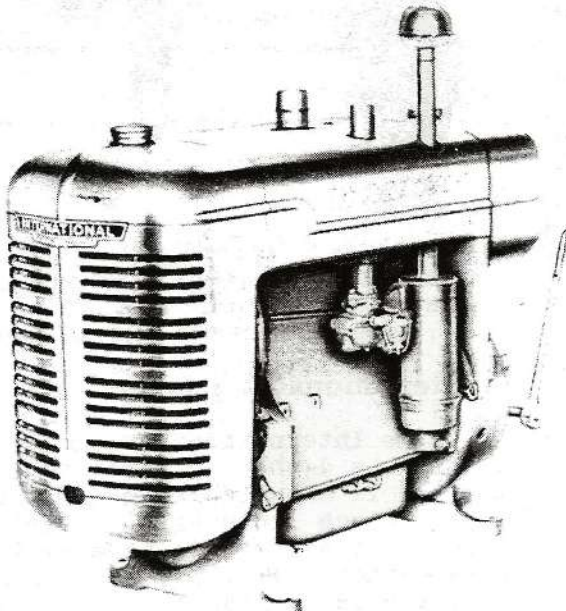
Illust. 5. International A equipped with electric starter and lights.

The economical operation and ease of handling makes the International A an ideal tractor for light hauling jobs, highway mowing, sidewalk snow plowing, sweeping, and many other jobs within its power range.

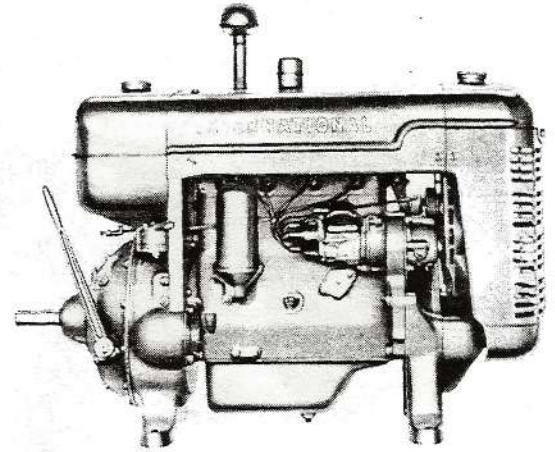
Tractor traveling speeds are the same as the Farmall-A.

## U-2 Power Unit

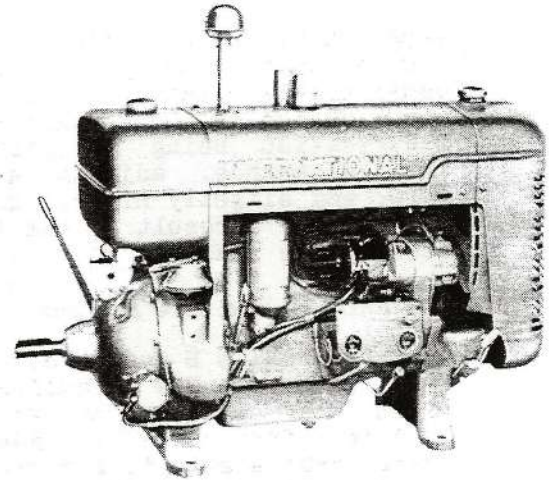
The Model U-2 power unit has the same basic engine as used in the A and B series tractors. This makes a compact, economical power unit which develops 22 net h.p. when operating on gasoline at



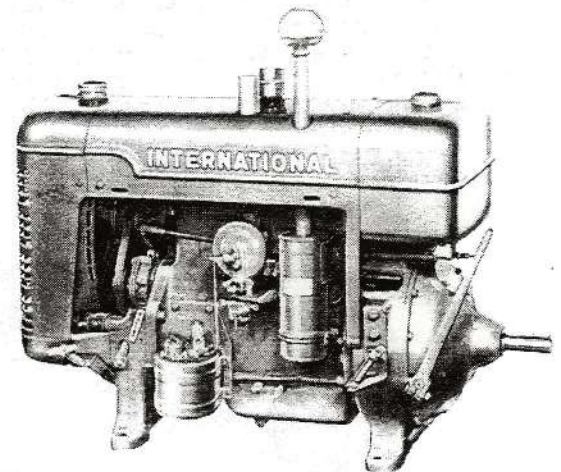
Illust. 6. International Model U-2 equipped as a complete, closed-type, independent portable power unit.



Illust. 7. Right side view U-2 power unit.

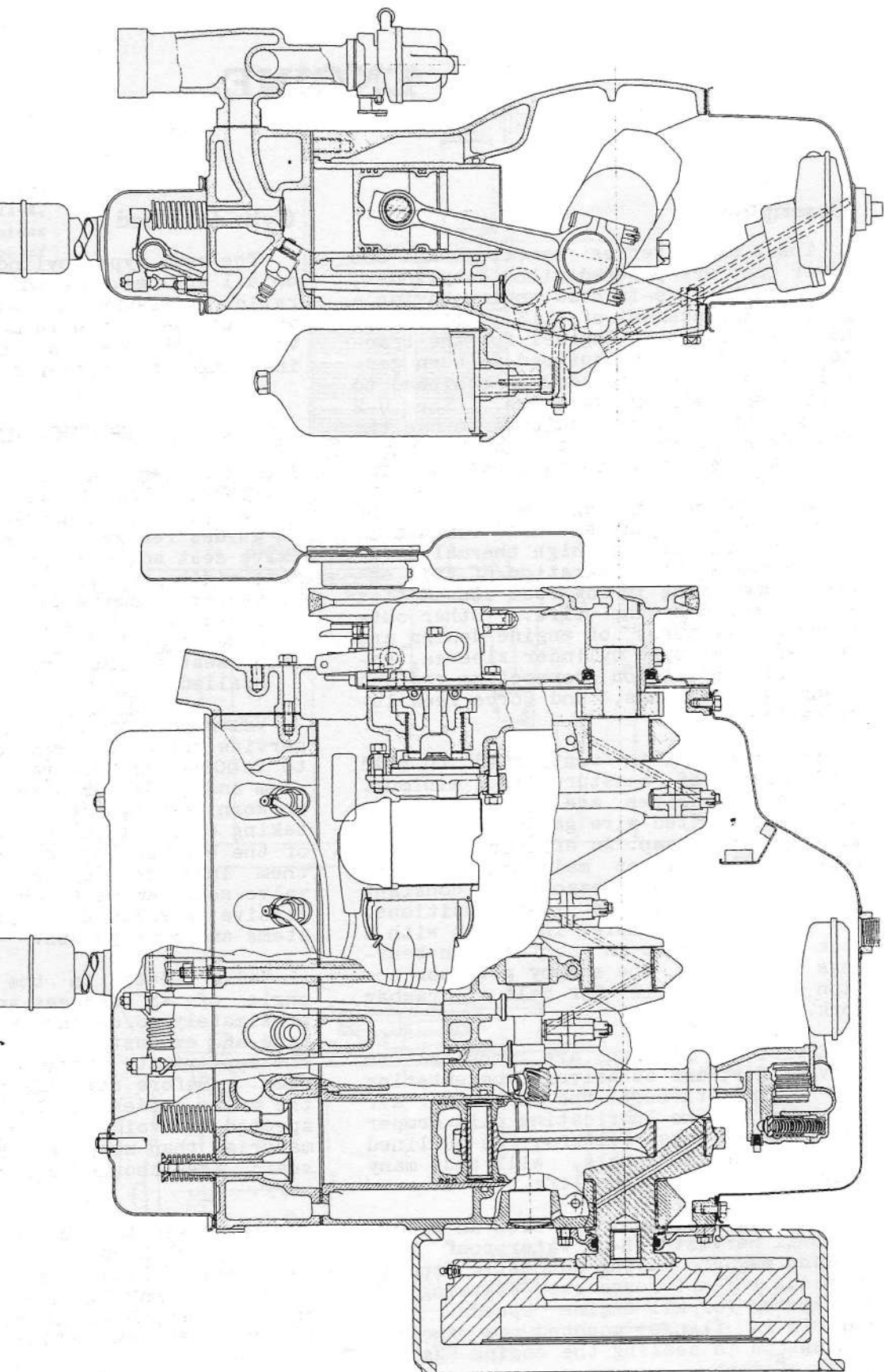


Illust. 8. The U-2 power unit with combination gas and gasoline fuel equipment, instrument panel, and automatic safety shut-off.



Illust. 9. Left side of U-2 power unit with combination gas and gasoline carburetor.

# FARMALLS A & B AND U-2 POWER UNIT



Illust. 17. Sectional views of engine.

# FARMALLS A & B AND U-2 POWER UNIT

held in proper position by woodruff keys. The magneto and governor pinion together with the governor weights can be removed from the case bushing in which the complete mechanism revolves. This assembly is held back in place by a bumper spring

and pin contacting the governor stop pin in the governor housing. When performing pressing operation on crankshaft pinion or camshaft gear be sure that no pressure is placed on ends of gear teeth because this may damage the teeth.

## IGNITION SYSTEM

### SPECIFICATIONS

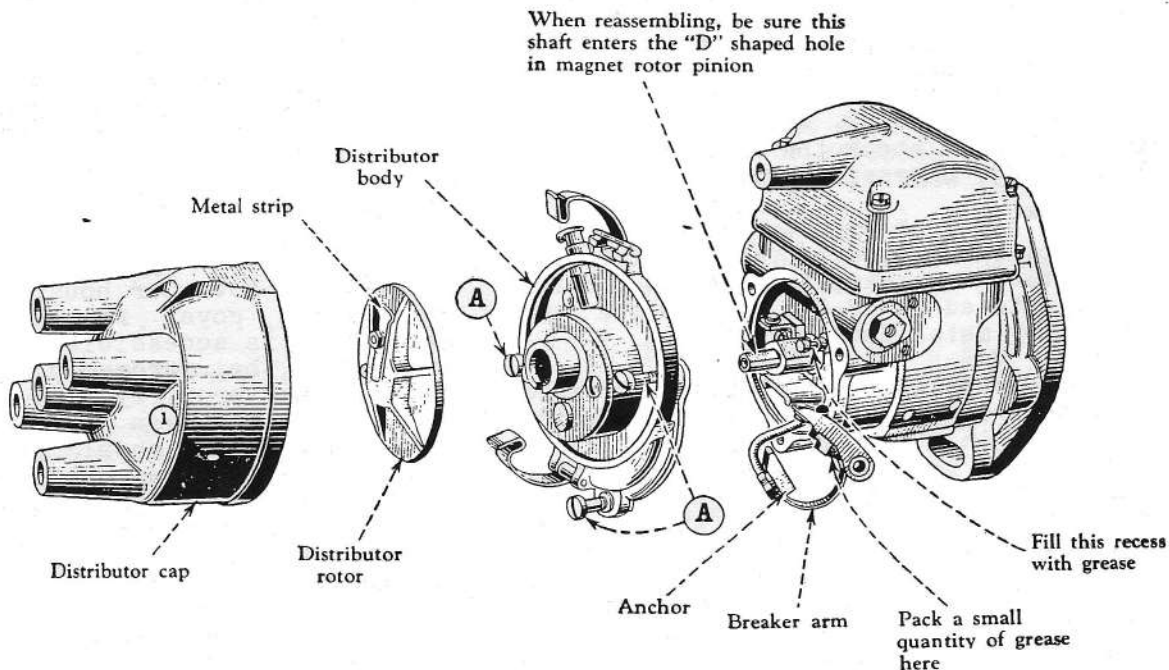
|                                      |                |
|--------------------------------------|----------------|
| Magneto, manufacturer and model..... | IH: H-4        |
| Rotation.....                        | Clockwise      |
| Breaker point gap, in.....           | .013           |
| Impulse coupling trips.....          | TDC            |
| Spark advance, degrees.....          | 35             |
| Magneto gear, helical, no. teeth...  | 33             |
| Drive gear.....                      | Camshaft       |
| Spark plug, size.....                | 18 mm, 7/8 hex |
| Spark plug gap, in.....              | .028 - .032    |
| Firing order.....                    | 1-3-4-2        |

### Magneto

The magneto used is an International Harvester Model H-4. It has a fixed spark, runs clockwise (facing drive end) and is flange mounted to the crankcase. It includes an impulse coupling for

starting purposes, which retards the spark timing 35 degrees. The impulse coupling trips at top dead center of the piston travel. The magneto runs at the same speed as the engine crankshaft.

In greasing breaker mechanism and checking points it is important to keep the breaker arm chamber clean, because oil on the breaker points will cause arcing and rapid point wear. Overlubrication of the distributor bearing oil cup may cause a dirty breaker point chamber. If the chamber is clean, no further attention is necessary other than checking the clearance of the points; but if the chamber is dirty, all parts must be thoroughly cleaned. After cleaning, the points should be dressed, the point clearance checked, and the breaker arm regreased.



Illust. 21. Magneto parts that need to be removed to gain access to breaker points.

# COOLING SYSTEM

## SPECIFICATIONS

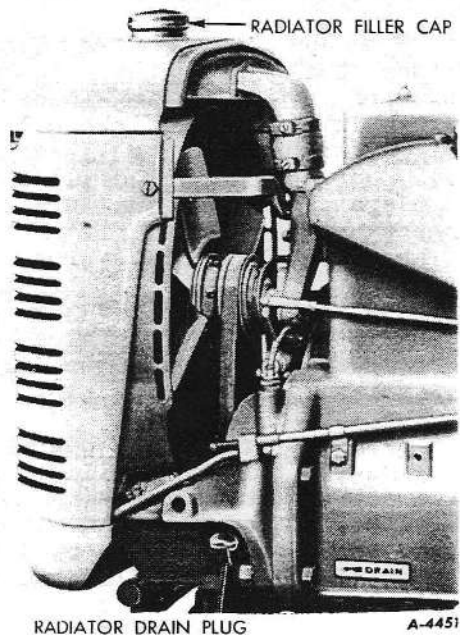
Type, circulation..... Thermosiphon  
Radiator type..... IH flat tube  
Fan drive type..... V-belt to crankshaft  
Fan diameter, in..... 16  
Fan blades, no..... 4  
Fan-to-engine ratio, rpm..... 1.52 to 1  
Cooling system capacity, gals..... 3-3/8  
Radiator shutter: Furnished with distillate and kerosene burning engines; available for other engines if desired.

## Description

Cooling water is circulated through the engine block, cylinder head and radiator by thermosiphon method. As the engine warms up the water is heated, expands and circulates down through the radiator where the water is cooled before again circulating through the engine (Illust. 25).

## Radiator

The radiator is an IH flat-tube type enclosed in a grille and fan shroud. The grille is quickly removed for cleaning by removing 3 fastener screws. Two 7/16-inch studs and pads secure the radiator at the bottom and a brace secures the top of the radiator to the engine. Upper and lower hose connections complete



Illust. 25. Front end of tractor or power unit showing radiator and fan.

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



Illust. 26. Method of checking fan belt tension.

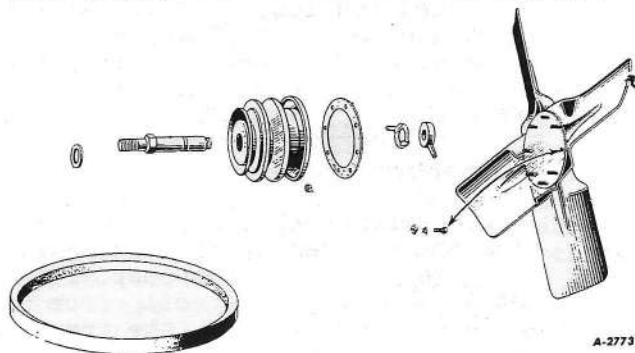
the mounting. A single drain plug in the water inlet elbow drains the entire system.

## Fan

The fan is mounted by its spindle in a slot in the fan bracket and water outlet on the cylinder head. Adjustment of the fan belt is made by moving the fan spindle up or down in its mounting slot. See Illust. 26 for correct fan belt tension. The fan pulley has a double groove, one for the fan V-belt, the other for the generator V-belt, when used.

Two types of fan assemblies are used on this series engine, those using hub number 28318-D and 70210-D, the fan assembly using 70210-D hub, being optional from serial number 101117 and up. Complete assemblies will interchange, but simple parts will not interchange between assemblies.

Lubrication of either type fan hub is accomplished by removal of oil retaining plug and filling the hub 1/4 full of the same weight oil as used in the engine.



Illust. 27. Exploded view of fan assembly.



# OWNER'S MANUAL

**McCORMICK-DEERING**

**Farmall F-14**

**Tractor**

This manual contains information which will be valuable to you during the entire life of your tractor. Rely on your manual for operating and maintenance information . . . and rely on your International Harvester dealer when in need of skilled mechanical service or genuine IHC service parts. A complete list of parts for this tractor will be supplied on request.

**INTERNATIONAL HARVESTER COMPANY**

180 NORTH MICHIGAN AVE.

CHICAGO, ILLINOIS, U.S.A.

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| Cold Weather Operation . . . . .                                | 17,18             |
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TRACTOR MAINTENANCE

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| Fuel Tanks . . . . .             | 25       |
| Magneto . . . . .                | 27 to 32 |
| Oil Filter Care . . . . .        | 24       |
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| Spark plugs and Cables . . . . . | 26       |
| Storing Tractor . . . . .        | 34,35    |
| Wiring . . . . .                 | 26       |

NOTE:- Pages 11 to 15 are for Gasoline Operation.  
 Pages 5 to 10 are for Distillate Operation.  
 Page 4 is for both Gasoline and Distillate Operations.  
 The balance of the book is for both Gasoline and Distillate Operation, 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.

## DISTILLATE OPERATION

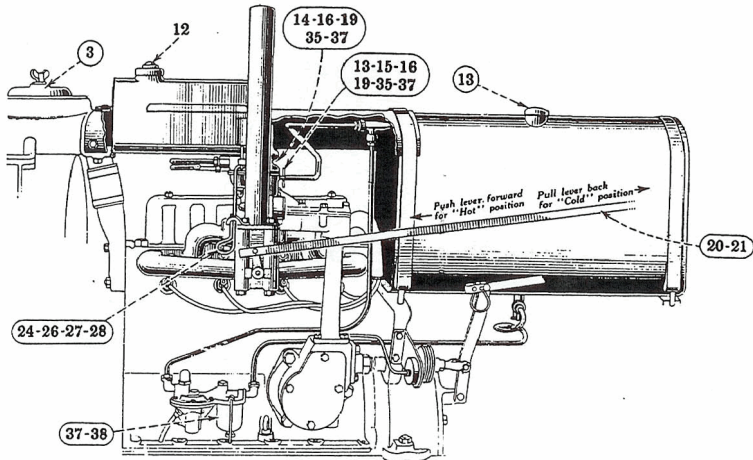


Illustration No. 3

Distillate Engine (Left Side) showing Fuel Tanks, Governor, Manifold, etc.  
 Paragraphs are numbered to correspond with numbers on the illustrations.

## PREPARATIONS FOR STARTING - Continued

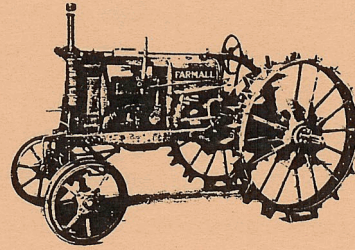
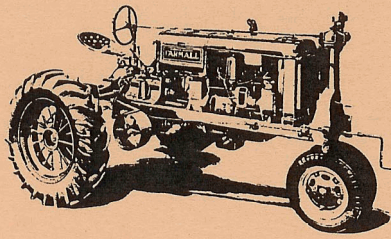
## FUEL SYSTEM

Para. Illust.

- 11 3 Distillate tank capacity is approximately 13 U.S. gallons.  
 Gasoline tank capacity approximately 1 U.S. gallon.
- 12 3 Fill gasoline tank with clean gasoline.  
*Gasoline is necessary only when starting and warming up the engine.*
- 13 3 Fill fuel tank with clean distillate, with distillate shut-off  
 valve closed.  
*Carefully strain all fuel and be sure it is free from foreign  
 substance.*  
*The fuel and gasoline tanks have air vents in caps. Keep these vents open.*  
*NOTE: Distillate fuels should conform to International Harvester  
 Company specifications.*
- 14 3 Open gasoline shut-off valve.
- 15 3 Do not open distillate valve until engine is thoroughly warmed up.
- 16 3 Do not have both distillate and gasoline valves open at the same  
 time.

## BEFORE STARTING ENGINE

- 17 5 Place transmission gear shift lever in neutral position.
- 18 4 Advance engine speed control hand lever about one third (pull out  
 to advance).  
*NOTE: This lever should not be fully advanced until engine has  
 been run a few minutes; this will insure thorough distribution of  
 the lubricating oil.*
- 19 3 Gasoline shut-off valve should be open and distillate valve closed  
 for starting.



# Service Manual for International Harvester Models

F12

O12

W12

F14

O14

W14

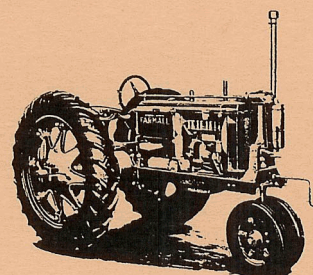
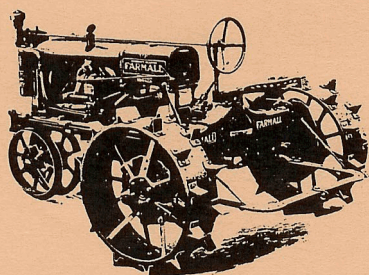
F20

1020

W30

F30

W40



# SHOP MANUAL

## INTERNATIONAL HARVESTER

### MODELS F12-F14-O12-O14-W12-W14-F20-F30-1020-W30-W40

#### LOCATION OF SERIAL NUMBERS

**ENGINE.** Engine serial number is stamped on engine name plate or side of crankcase.

**TRACTOR.** Models F12, F14, 1020 and W40 tractor serial number plate is located on hood sheet. Models O12, O14, W12 and W14 tractor serial number plate is located on fuel tank front support. Models F20 and F30 tractor serial number plate is located on tool box. Model W30 tractor serial number plate is located on fuel tank rear support.

#### IDENTIFICATION

| Tractor Models | Production      |      | Versions Built | Tractor Models | Production      |      | Versions Built |
|----------------|-----------------|------|----------------|----------------|-----------------|------|----------------|
|                | Serial No.      | Year |                |                | Serial No.      | Year |                |
| F12            | FS81837-117517  | 1937 | 1, 2, 3, 4     | F30†           | FB18684-up      | 1937 | 1, 3           |
| F12            | FS117518-123942 | 1938 | 1, 2, 3, 4     | 1020†          | KC210235-212424 | 1937 | 1              |
| F14            | FS124000-139606 | 1938 | 1, 2, 3, 4     | 1020†          | KC212425-214885 | 1938 | 1              |
| F14*           | FS139607-155902 | 1939 | 1, 2, 3, 4     | 1020†          | KC214886-215973 | 1939 | 1              |
| O12-O14        |                 |      | 1              | W30†           | WB15095-15105   | 1937 | 1              |
| W12            | WS2768-3798     | 1937 | 1              | W30†           | WB15970-23833   | 1937 | 1              |
| W12            | WS3799-4133     | 1938 | 1              | W30†           | WB23834-29921   | 1938 | 1              |
| W14            | WS4134-4609     | 1938 | 1              | W30†           | WB29922-32481   | 1939 | 1              |
| W14            | WS4610-5296     | 1939 | 1              | W30†           | WB32482-up      | 1940 | 1              |
| F20†           | FA68749-105596  | 1937 | 1, 2, 3        | W40†           | WKC5120-7664    | 1937 | 1              |
| F20†           | FA105597-130864 | 1938 | 1, 2, 3        | W40†           | WKC7665-up      | 1938 | 1              |
| F20†           | FA130865-148810 | 1939 | 1, 2, 3        |                |                 |      |                |

- |                        |                          |
|------------------------|--------------------------|
| 1. Non-adjustable axle | 2. Adjustable axle       |
| 3. Dual wheel tricycle | 4. Single wheel tricycle |

\*Name plates bearing FS155402 to 155902 were assigned field change-over packages for converting F12 to F14 tractors.

†On models F20, F30, 1020, W30 and W40, the coded suffix letters of serial number are explained below.

- |         |   |
|---------|---|
| CNW     | Cane tractor narrow tread wide front axle             |
| D       | With engine serial number . . . distillate            |
| F       | Fairway tractor (Narrow tread type)                   |
| H       | Differential lock                                     |
| HA      | High altitude piston                                  |
| M       | Modified (F20-F30 use suffix "S")                     |
| N or NT | Narrow tread  |
| NW      | Wide front axle narrow tread                          |
| P       | Pneumatic tires                                       |
| S       | Special attachment (On F20-F30 "S" denotes Modified)  |
| SL      | Lower low gear  |
| SP      | 4 Speed transmission (W30 after 45106 use suffix "T") |
| U       | Special transmission                                  |
| W       | Regular tractor with wide front axle                  |

## INDEX (By Starting Paragraph)

|                             | F12  | 012  | W12  | F20  | 1020 | F30  | W30  | W40  |
|-----------------------------|------|------|------|------|------|------|------|------|
|                             | F14  | 014  | W14  |      |      |      |      |      |
| BELT PULLEY .....           | 165  | 165  | 165  | 167  | 169  | 168  | 169  | 169  |
| BRAKES .....                | 160  | 160  | 160  | 160  | 163  | 160  | 163  | 163  |
| CARBURETOR .....            | 62   | 62   | 62   | 61   | 62   | 61   | 61   | 61   |
| CLUTCH                      |      |      |      |      |      |      |      |      |
| Adjustment (Spring L.)..... | 84   | 84   | 84   | 83   | 83   | 83   | 83   | 83   |
| Adjustment (O.C.) .....     | ...  | 86   | ...  | ...  | ...  | ...  | ...  | ...  |
| Remove & Reinstall.....     | 87   | 88   | 88   | 87   | 89   | 87   | 89   | 89   |
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| Camshaft .....              | 40   | 40   | 40   | 40   | 40   | 40   | 40   | 40   |
| Con. rods & brgs.....       | 49   | 49   | 49   | 50   | 50   | 50   | 50   | 50   |
| Crankshaft .....            | 51   | 51   | 51   | 52   | 52   | 52   | 52   | 53   |
| Cylinder head .....         | 24   | 24   | 24   | 25   | 25   | 25   | 25   | 26   |
| Cylinder sleeves .....      | 44   | 44   | 44   | 44   | 44   | 44   | 44   | 44   |
| Engine removal .....        | 20   | 21   | 21   | 22   | 23   | 22   | 23   | 23   |
| Flywheel .....              | 55   | 55   | 55   | 56   | 56   | 56   | 56   | 55   |
| Ignition timing .....       | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   |
| Main bearings .....         | 51   | 51   | 51   | 52   | 52   | 52   | 52   | 53   |
| Oil pump .....              | 57   | 57   | 57   | 58   | 58   | 58   | 58   | 59   |
| Pistons .....               | 43   | 43   | 43   | 43   | 43   | 43   | 43   | 43   |
| Piston pins .....           | 47   | 47   | 47   | 48   | 48   | 48   | 48   | 47   |
| Piston removal .....        | 41   | 41   | 41   | 42   | 42   | 42   | 42   | 41   |
| Piston rings .....          | 45   | 45   | 45   | 45   | 45   | 45   | 45   | 45   |
| Rear oil seal.....          | 54   | 54   | 54   | 54   | 54   | 54   | 54   | 54   |
| Rod bearings .....          | 49   | 49   | 49   | 50   | 50   | 50   | 50   | 50   |
| Timing gear cover.....      | 38   | 38   | 38   | 38   | 38   | 38   | 38   | 38   |
| Timing gears .....          | 39   | 39   | 39   | 39   | 39   | 39   | 39   | 39   |
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| Bevel gears, adjust.....    | 140  | 140  | 140  | 140  | 140  | 140  | 140  | 140  |
| Bevel gears, renew.....     | 141A | 141A | 141A | 141B | 141C | 141B | 141C | 141C |
| Bull gears .....            | 150  | 150  | 150  | 152  | 145  | 152  | 145  | 145  |
| Bull pinions .....          | 142  | 142  | 142  | 151  | 146  | 151  | 146  | 146  |
| Countershaft .....          | ...  | ...  | ...  | 151  | ...  | 151  | ...  | ...  |
| Differential .....          | 142  | 142  | 142  | 143  | 145  | 143  | 145  | 145  |
| Wheel axle .....            | 150  | 150  | 150  | 152  | 153  | 152  | 153  | 153  |
| FRONT AXLE .....            | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| GOVERNOR .....              | 66   | 66   | 66   | 68   | 68   | 68   | 68   | 71   |
| OILING SYSTEM .....         | 57   | 57   | 57   | 58   | 58   | 58   | 58   | 59   |
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| Belt pulley shaft.....      | ...  | ...  | ...  | ...  | 122  | ...  | 127  | 133  |
| Drive pinion .....          | ...  | ...  | ...  | ...  | ...  | ...  | ...  | 136  |
| Countershaft .....          | 109  | 109  | 109  | ...  | ...  | ...  | ...  | 137  |
| P.T.O. drive shaft.....     | 108  | 108  | 108  | 117  | ...  | 117  | ...  | ...  |
| Remove & Reinstall.....     | ...  | ...  | ...  | 111  | 120  | 111  | 120  | 120  |
| Reverse idler .....         | 107  | 107  | 107  | 115  | 125A | 115  | 131  | 139  |
| Shifter rails & forks.....  | 103  | 103  | 103  | 113  | 123  | 113  | 128  | 134  |
| Spline shaft .....          | 104  | 104  | 104  | 114  | 124  | 114  | 129  | 135  |
| Transmission shaft .....    | 105  | 105  | 105  | 116  | ...  | 116  | ...  | ...  |

# CONDENSED SERVICE DATA

| Tractor Model Or Series   | 12 & 14                                     | F20    | F30    | 1020   | W30    | W40   |
|---------------------------|---|--------|--------|--------|--------|-------|
| <b>GENERAL</b>            |   |        |        |        |        |       |
| Engine Make               | Own   | Own    | Own    | Own    | Own    | Own   |
| Cylinders                 | 4   | 4      | 4      | 4      | 4      | 6     |
| Bore—Inches               | 3   | 3¾     | 4¼     | 4¼     | 4¼     | 3¾    |
| Stroke—Inches             | 4   | 5      | 5      | 5      | 5      | 4½    |
| Displacement—Cubic Inches | 113   | 221    | 284    | 284    | 284    | 298   |
| Pistons Removed From?     | Above                                       | Below  | Below  | Below  | Below  | Above |
| Main Bearings Adjustable? | No  | No (1) | No (1) | No (1) | No (1) |       |
| Rod Bearings Adjustable?  | No  | Yes    | Yes    | Yes    | Yes    | Yes   |
| Cylinder Sleeves          | Wet   | Wet    | Wet    | Wet    | Wet    | Wet   |
| Forward Speeds            | 3   | 4      | 4      | 3      | 4 (2)  | 4 (2) |
| Main Bearings, Number of  | 3   | 2 (1)  | 2 (1)  | 2 (1)  | 2 (1)  | 7     |
| Generator Make            | Refer to nameplate on actual generator unit |        |        |        |        |       |
| Starter Make              | Refer to nameplate on actual starter unit   |        |        |        |        |       |

**TUNE UP**

|                          |  |            |            |            |            |                  |
|--------------------------|--|------------|------------|------------|------------|------------------|
| Firing Order             | 1, 3, 4, 2   | 1, 3, 4, 2 | 1, 3, 4, 2 | 1, 3, 4, 2 | 1, 3, 4, 2 | 1, 5, 3, 6, 2, 4 |
| Valve Tappet Gap         | .013H  | .015H      | .017H      | .011H      | .017H      | .016H            |
| Valve Seat Angle         | 45°  | 45°        | 45°        | 45°        | 45°        | 45°              |
| Ignition Magneto Make    | Own  | Own        | Own        | Own        | Own        | Own              |
| Ignition Magneto Model   | F4   | F4         | F4         | F4         | F4         | F6               |
| Breaker Gap              | .013   | .013       | .013       | .013       | .013       | .020             |
| Magneto Impulse Trips    | TC   | TC         | TC         | TC         | TC         | TC               |
| Magneto Lag Angle        | 35° (3)  | 35° (3)    | 35° (3)    | 35° (3)    | 35° (3)    | 35° (3)          |
| Magneto Running Timing   | 35° B  | 35° B      | 35° B      | 35° B      | 35° B      | 35° B            |
| Flywheel Mark Indicating |  |            |            |            |            |                  |
| Top Center               | DC   | DC         | DC         | DC         | DC         | (9)              |
| Spark Plug Gap           | .025   | .025       | .025       | .025       | .025       | .025             |
| Carburetor Make          | IH   | Zenith     | Zenith     | IH         | Zenith     | Zenith           |
| Model                    | A10  | K5         | K5         | R          | K5         | 50AY 12          |
| Float Setting            |  | 1 49/64    | 1 49/64    | 29/64      | 1 49/64    | 1 25/32          |
| Fuel Level               | ¾  |            |            |            |            |                  |
| Calibration              | Refer to Standard Units section or table 5 in this section |            |            |            |            |                  |
| Engine Load rpm          | (5)  | 1200       | 1150       | 1000       | 1200       | 1750             |
| Engine No Load rpm       | (6)  | 1290       | 1265       | 1130       | 1300       | 1900             |
| Engine Low Idle rpm      | 350  | 375        | 375        | 375        | 375        | 350              |
| Belt Pulley Load rpm     | (7)  | 654        | 682        | 645        | 704        | 645              |
| PTO rpm                  | (8)  | 505        | 534        | 543        | 563        | 553              |
| Oil Pressure, psi        | 30-40  | Splash     | Splash     | Splash     | Splash     | 30-40            |

**Sizes—Capacities—Clearances**

|                                 |        |        |        |        |        |        |
|---------------------------------|--------|--------|--------|--------|--------|--------|
| (Clearance in Thousandths)      |        |        |        |        |        |        |
| Crankshaft Journal Diameter     | 2.1245 | (1)    | (1)    | (1)    | (1)    | 2.701  |
| Crankpin Diameter               | 1.7495 | 2.2495 | 2.6245 | 2.6245 | 2.6245 | 2.2475 |
| Camshaft Journal Diameter—Front | 1.8115 | 1.9975 | 1.9975 | 1.9975 | 1.9975 | 2.1095 |
| No. 2                           | 1.5775 | 1.9125 | 1.9125 | 1.9125 | 1.9125 | 2.0895 |
| No. 3                           | 1.4995 | 1.4975 | 1.4975 | 1.4975 | 1.4975 | 2.0695 |
| No. 4                           |        |        |        |        |        | 1.500  |
| Piston Pin Diameter             | .9193  | 1.2987 | 1.2987 | 1.2987 | 1.2987 | 1.109  |
| Valve Stem Diameter             | .341   | .372   | .433   | .372   | .433   | .3725  |
| Compression Ring Width          | 1/8    | 3/16   | 3/16   | 1/4    | 3/16   | 1/8    |
| Oil Ring Width                  | 3/16   | 3/16   | 3/16   | 1/4    | 3/16   | 3/16   |
| Main Brgs., Diam. Clearance     | 2-3½   | (1)    | (1)    | (1)    | (1)    | 2-4    |
| Rod Brgs., Diam. Clearance      | 1½-3   | 3      | 3      | 3      | 3      | 1½-3½  |
| Piston Skirt Clearance          | 4½-5½  | 4-5    | 5½     | 4½     | 5½     | 4½-5½  |
| Crankshaft End Play             | 4-8    | (1)    | (1)    | (1)    | (1)    | 4-8    |
| Camshaft Brg. Diam. Clearance   | 1-3½   | 1½-3½  | 1½-3½  | 1½-3½  | 1½-3½  | 2-3½   |
| Cooling System—Gals.            | 3½     | 7¼     | 10     | 10     | 11     | 12     |
| Crankcase Oil—Qts.              | 5½     | 7      | 7      | 7      | 7      | 9      |
| Transmission—Qts.               | 16     | 32     | 28     | 24     | 32     | 60     |
| Final Drive, Each—Qts.          |        | 2      | 2      |        |        |        |
| Main Fuel Tank—Gals.            | (10)   | 13     | 21     | 15     | 22     | 31     |
| Aux. Fuel Tank—Gal.             | 1      | ¾      | 1      | ¾      | 1¼     | 1¼     |

- (1) Ball Bearings are used.
- (2) Three forward speeds on W30 prior to serial 15106; three forward speeds on W40 prior to serial 8100.
- (3) 0° in spark retard position.
- (5) F12, 1400; F14, 1650; O12, 1400-2000; O14, 2000; W12, 1700; W14, 1650.
- (6) F12, 1550; F14, 1800; O12, 2120; O14, 2130; W12, 1830; W14, 1800.
- (7) F12, F14, 798; O12, 748-1068; O14, 1068; W12, 787; W14, 764.
- (8) F12, 538; F14, 550; O12, 538-769; O14, 769; W12, 567; W14, 550.
- (9) First notch on crankshaft pulley.
- (10) F12, 12; F14, 13; O12, O14, W12 and W14, 11.

# FRONT SYSTEM AND STEERING

## AXLE MAIN MEMBER

### All Models So Equipped

1. On models F12 and F14, the front axle is mounted on an extension bolted to the forward end of the main frame. Front axle extension contains two pivot bushings which require final sizing after installation to provide 0.003-0.005 clearance. Renewal of these bushings requires removal of axle main member from tractor.

On all other models except F12 and F14, the axle main member pivots in a bolster which is bolted to front end of frame.

## STEERING KNUCKLES

### All Models So Equipped

2. Procedure for removing knuckles from axle main member is self evident. Steering knuckle bushings require final sizing after installation to provide 0.003-0.005 clearance. On some models, the wheel bearing dust deflectors are sweated to knuckle in production but may be satisfactorily installed in service without use of solder by heating to permit installing same on knuckle.

## WHEEL FORK AND LOWER BOLSTER

### Models F12-F14

3. The single front wheel is mounted in a fork and the double wheels on a lower bolster. In either case the fork

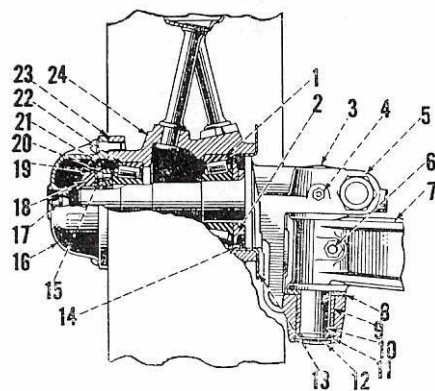


Fig. IH3—Models O12, O14, W12 and W14 steering knuckle. Model 1020 is similar.

- |                     |                    |
|---------------------|--------------------|
| 1. Bearing          | 13. Felt retainer  |
| 2. Bearing spacer   | 14. Felt washer    |
| 3. Expansion plug   | 15. Lock pin       |
| 4. Lubricator       | 16. Hub cap        |
| 5. Steering knuckle | 17. Lubricator     |
| 6. Retaining pin    | 18. Lock nut       |
| 7. Front axle       | 19. Nut lock       |
| 8. Thrust washer    | 20. Adjusting lock |
| 9. Bushing          | 21. Knuckle nut    |
| 10. Knuckle pivot   | 22. Bearing        |
| 11. Pivot washer    | 23. Gasket         |
| 12. Expansion plug  | 24. Front wheel    |

or lower bolster is bolted to the front bolster shaft. Renewal of horizontal axle, on double wheel type, requires renewal of lower bolster and axle as a unit. Procedure for removal of the fork or lower bolster is self evident after an examination of the unit.

### Models F20-F30

4. The double wheels are mounted on a horizontal axle which is combined with the steering worm wheel shaft and is supported by the lower portion of the front bolster. End play of front bolster shaft (14—Fig. IH6) is non-adjustable, with vertical thrust taken on a ball thrust bearing (17) located on lower end of bolster shaft. The upper portion of the bolster shaft rotates in a pre-sized bushing (7) which can be renewed when bolster is off tractor and bolster shaft removed.

5. **R & R AND OVERHAUL.** To remove bolster unit, disconnect steering shaft from steering gear worm shaft at coupling (18). Disconnect counter-shaft brake cables from brake cable lever (13) on bolster shaft. Support front end of tractor and remove bolts retaining bolster to front frame.

To remove bolster shaft from bolster, first remove bolster unit from tractor. Remove steering gear housing

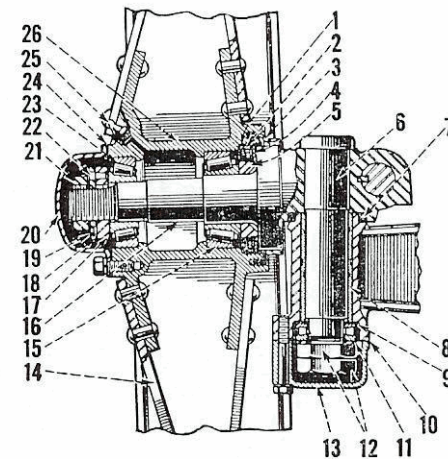


Fig. IH4—Model W40 steering knuckle. Models F20, F30 and W30 are similar.

- |                    |                      |
|--------------------|----------------------|
| 1. Felt retainer   | 14. Front wheel      |
| 2. Oil seal        | 15. Bearing          |
| 3. Dust shield     | 16. Steering knuckle |
| 4. Felt washer     | 17. Knuckle nut      |
| 5. Bearing spacer  | 18. Adjusting lock   |
| 6. Knuckle pivot   | 19. Nut lock         |
| 7. Felt washer     | 20. Hub cap          |
| 8. Bushing         | 21. Locking pin      |
| 9. Thrust bearing  | 22. Lock pin         |
| 10. Gasket         | 23. Bearing          |
| 11. Pivot washer   | 24. Gasket           |
| 12. Pivot lock nut | 25. Lubricator       |
| 13. Axle cap       | 26. Wheel hub        |

(1) and worm wheel (3). Remove lock bolt from cultivator shifter lever (11). Bolster shaft can now be removed from Bolster. Bolster shaft bushing (7), can be renewed at this time by driving same downward. When installing new bushing, check to be certain hole in bushing is properly aligned with grease hole in bolster. Renew thrust bearing (17) if worn.

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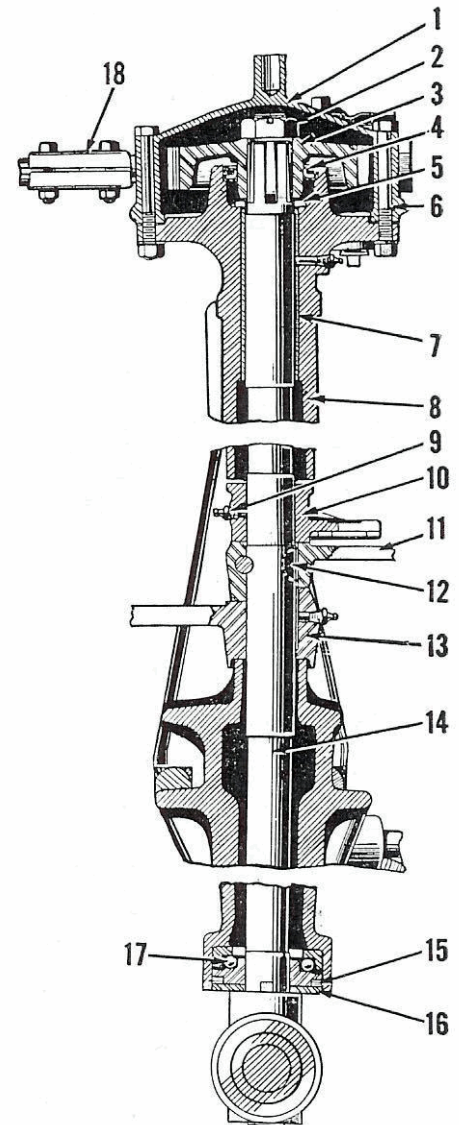


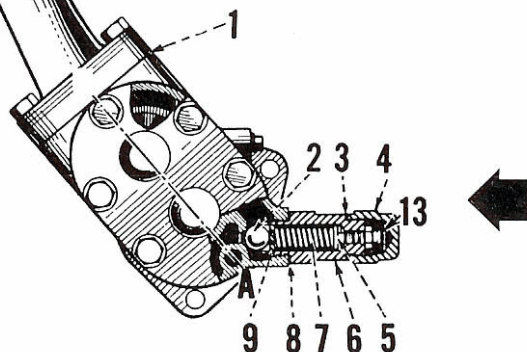
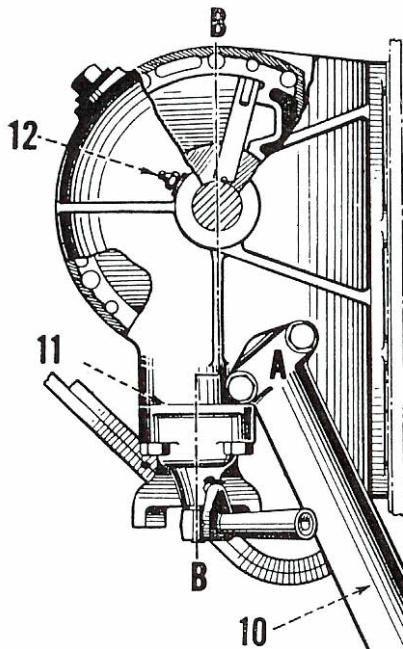
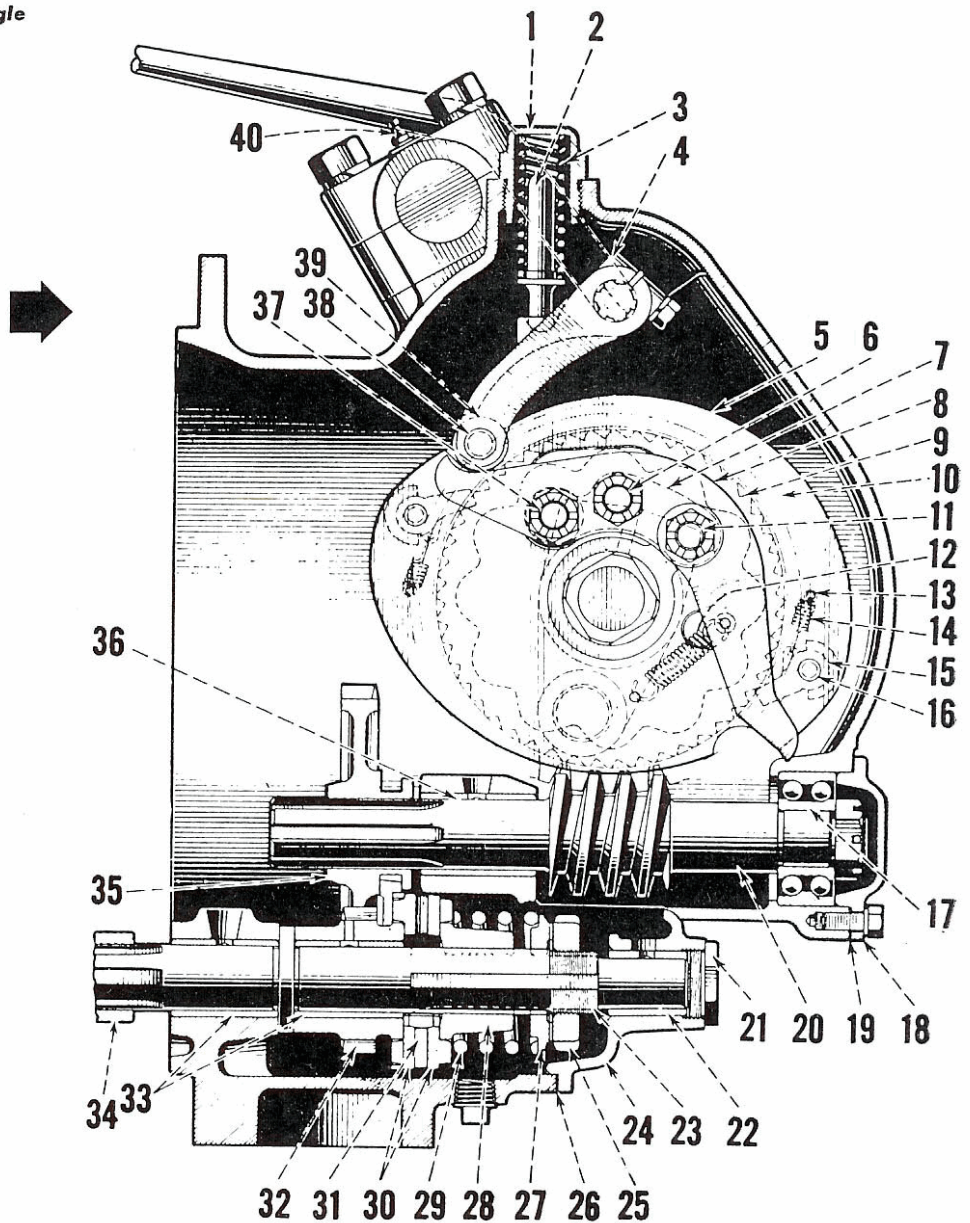
Fig. IH6—Model F20 bolster and steering gear assembly. Model F30 is similar.

- |                   |                             |
|-------------------|-----------------------------|
| 1. Gear housing   | 11. Cultivator shifter      |
| 2. Worm wheel nut | 12. Woodruff key            |
| 3. Worm wheel     | 13. Brake cable lever       |
| 4. Oil seal       | 14. Bolster shaft           |
| 5. Thrust washer  | 15. Felt washer             |
| 6. Bushing        | 16. Felt retainer washer    |
| 7. Front bolster  | 17. Thrust bearing          |
| 8. Lubricator     | 18. Steering shaft coupling |
| 9. Spacer         |                             |



Fig. IH176—Model F30 power lift "single and double lifts" side view.

1. Trip roller arm spring housing
2. Push rod
3. Spring
4. Trip roller arm
5. Clutch ratchet plate
6. Clutch dog support pin
7. Clutch dog roller brace
8. Ratchet clutch dog
9. Ratchet ring
10. Worm wheel
11. Clutch dog pivot pin
12. Clutch dog spring
13. Ratchet pawl spring pin
14. Ratchet pawl spring
15. Ratchet pawl
16. Ratchet pawl pin
17. Worm shaft ball bearing
18. Bearing retainer
19. Gasket
20. Worm shaft
21. Drive shaft cap plug
22. Bushing
23. Drive shaft
24. Drive shaft bushing
25. Slip clutch nut
26. Gasket
27. Washer
28. Slip clutch collar
29. Slip clutch spring
30. Slip clutch ratchet
31. Slip clutch ratchet
32. Drive gear
33. Drive gear bushing
34. Drive shaft coupling sleeve
35. Worm shaft sliding gear
36. Worm shaft bushing
37. Clutch dog roller pin
38. Trip roller pin
39. Trip roller
40. Lubricator



181. Service information for the units shown on this page is not available. The sectional views, however, should aid in disassembly and reassembly of the units.

Fig. IH177 — Models F12 & F14 hydraulic power lift relief valve.

1. Gasket
2. Relief valve ball
3. Gasket
4. Relief valve cap
5. Washer
6. Relief valve body
7. Relief valve spring
8. Gasket
9. Relief valve
10. Suction and discharge manifold
11. Gasket
12. Pump shaft lubricator
13. Adjusting screw

# TC-9-B

MODELS  
F-12 and F-14  
FARMALL

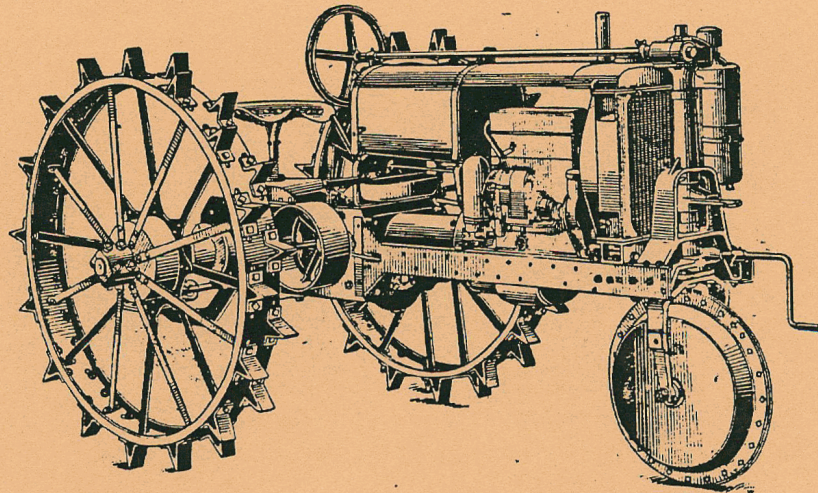
*THIS PARTS CATALOG SUPERSEDES TC-9-A, WHICH SHOULD BE DESTROYED*

## Parts Catalog

### McCormick-Deering

# FARMALL TRACTORS

## Models F-12 and F-14



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**INTERNATIONAL HARVESTER COMPANY**  
(INCORPORATED)

306 So. MICHIGAN AVE.

CHICAGO, U. S. A.

ENGINE (I H C)



24475 D



24476 D



24477 D



24505 D



24507 D



24516 D



24517 D



24524 DX



24536 D



24537 D



24538 D



24539 D



24540 D



24541 D



24544 DA



24545 D



24546 D



24547 D



24478 D



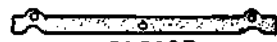
24482 DX



24498 D



24548 D



24549 D



24497 D



24499 D



24500 D



24503 DC



24535 DBX



24543 DA



24484 D



24474 D



24506 DA



24510 D



24515 D



24530 D



24480 DX



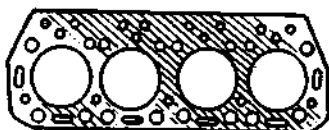
24518 D



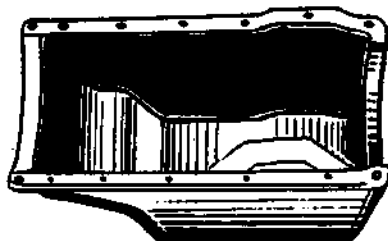
24514 DA



24525 D



24543 DB



24496 DFX

Don't order parts from the illustrations only; refer to the list also.

| IHC<br>Part No.               | NAME OR DESCRIPTION  | Tractor<br>Serial Number               | No.<br>Used |
|-------------------------------|--|--|-------------|
| <b>ENGINE (IHC)—Continued</b> |  |  |             |
| 5623 DX                       | Piston with pin, 24414 DB and retainers, 35651 H<br>(8000 ft. altitude—special) (not Kerosene) FS 600 to FS 608; FS 3035 to FS 123942            |  | 4           |
| 5623 DY                       | Piston, complete with rings, 24416 DA, 35493 D and 32030 DA<br>(8000 ft. altitude—special) (not Kerosene) FS 600 to FS 608; FS 3035 to FS 123942 |  | 4           |
| 5643 DX                       | Cylinder head with studs and valve guide (F-14)  | FS 124000 up                           | 1           |
| 5643 DY                       | Cylinder head, complete with valves and springs (F-14)   | FS 124000 up                           | 1           |
| 5680 DX                       | Piston with pin, 24414 DB and retainers, 35651 H (F-14) (not Kerosene)   |  |             |
|                               |  | FS 138323 up (†)                       | 4           |
|                               | Kerosene or Distillate 5000 ft. altitude—special (F-14)  | FS 124000 up                           | 4           |
| 5680 DY                       | Piston, complete with rings, 24416 DA, 35493 D and 32030 DA (F-14)<br>(not Kerosene)   | FS 138323 up (†)                       | 4           |
|                               | Kerosene or Distillate 5000 ft. altitude—special (F-14)  | FS 124000 up                           | 4           |
| 5694 DX                       | Piston with pin, 24414 DB and retainer, 35651 H (8000 ft. altitude—special) (not Kerosene) (F-14)  | FS 124000 up                           | 4           |
| 5694 DY                       | Piston, complete with rings, 24416 DA, 35493 D and 32030 DA<br>(8000 ft. altitude—special) (not Kerosene) (F-14)                                 | FS 124000 up                           | 4           |
| 9327 D                        | Crankcase rear oil seal retainer, upper (3095 DA will work)  | FS 3035 up                             | 1           |
| 9327 DX                       | Crankcase rear oil seal retainer, upper and lower<br>(will work for 3095 D)  | FS 600 to FS 608                       | 1           |
| 9328 D                        | Crankcase rear oil seal retainer, lower (3094 D will work)   |  | 1           |
| 10962 D                       | Rocker adjusting screw nut (order 38763 H)   |  | 8           |
| 11422 D                       | Ignition conduit support stud (in cylinder head)<br>(special tractors FS 600 to FS 608; regular FS 3035 up)                                      |  | 18          |
| 12215 D                       | Crankcase water inlet elbow stud (order 3/8 x 1/8" hex. head cap screw)<br>(not Bosch Electric Lighting)   | FS 600 to FS 608; FS 3035 to FS 128924 | 2           |
| 13083 D                       | Governor shaft bore plug, 3/4"   |  | 1           |
| 13711 D                       | Camshaft gear key  |  | 1           |
|                               | Crankshaft pinion key  |  | 1           |
| 14186 DA                      | Clutch pilot bearing lubricator (in flywheel)  | FS 600 to FS 608                       | 1           |
| 15229 D                       | Bell housing shim (as required)  |  | x           |
| 16021 DA                      | Crankshaft bearing cap stud nut  | FS 3035 to FS 41590                    | 6           |
| 16026 D                       | Camshaft nut   | FS 600 to FS 608                       | 1           |
| 16067 D                       | Rocker adjusting screw   |  | 8           |
| 20290 D                       | Crankshaft front oil seal (order 30932 DX), FS 600 to FS 608; FS 3035 to FS 41590  |  | 1           |
| 24400 DX                      | Crankshaft with wick, 24408 D  | FS 600 to FS 608                       | 1           |
| 24401 D                       | Crankshaft pinion (33 teeth)   |  | 1           |
| 24402 D                       | Crankshaft pinion nut  |  | 1           |
| 24403 D                       | Crankshaft pinion nut lock   |  | 1           |
| 24404 D                       | Crankshaft pinion washer   | FS 600 to FS 608; FS 3035 to FS 41590  | 1           |
| 24405 D                       | Starting crank pin   |  | 1           |
| 24406 D                       | Flywheel bolt  | FS 600 to FS 608; FS 3035 to FS 23655  | 6           |
| 24407 D                       | Flywheel cap screw lock  |  | 3           |
| 24408 D                       | Clutch shaft bearing wick  | FS 600 to FS 608                       | 1           |
| 24409 DAX                     | Connecting rod, complete   | FS 600 to FS 608; FS 3035 to FS 41590  | 4           |
| 24410 DX                      | Connecting rod bearing (2 halves)  | FS 600 to FS 608; FS 3035 to FS 41590  | 4           |
| 24412 DX                      | Connecting rod bolt with nut, 24413 D  |  | 8           |
| 24413 D                       | Connecting rod bolt nut  |  | 8           |
| 24414 DB                      | Piston pin   |  | 4           |
| 24415 D                       | Piston pin bushing   |  | 4           |
| 24416 DA                      | Piston ring, compression (will work for 24731 D)   | below FS 80064<br>FS 80064 up          | 16<br>12    |
| 24417 DA                      | Piston ring, oil control (Perfect Circle 85)   | FS 600 to FS 608; FS 3035 to FS 12785  | 4           |
| 24418 D                       | Bell housing dowel   |  | 2           |

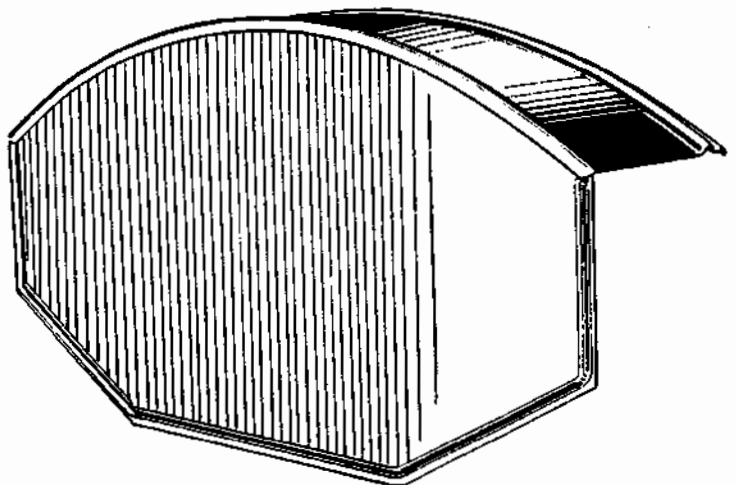
(†) Not Tractors FS 140000 to FS 143000; FS 145000 to FS 146000.

## REAR WHEEL FENDERS (Special)

| I H C<br>Part No.                   | NAME OR DESCRIPTION   | No.<br>Used |
|-------------------------------------|---|-------------|
| <b>23764DA</b>                      | Rear wheel fender with stiffeners, 23769 D and side sheet ..... | 2           |
| <b>23764DAX</b>                     | Rear wheel fender, complete with braces .....                   | 2           |
| <b>23767D</b>                       | Fender brace, L.H. ....   | 2           |
| <b>23768D</b>                       | Fender brace, R.H. ....   | 2           |
| <b>23769D</b>                       | Fender stiffener .....  | 4           |
| $\frac{1}{2} \times 1\frac{1}{2}$ " | Machine bolt—fender brace .....                                 | 8           |
| $\frac{1}{2} \times 1\frac{1}{4}$ " | Machine bolt—fender brace .....                                 | 8           |



**23767 D**  
**23768 D**



**23764 DA**



**23769 D**

*Don't order parts from the illustrations only; refer to the list also.*

**TC-28H**

**M c C O R M I C K**

(AND M c C O R M I C K - D E E R I N G)

**PARTS CATALOG**

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**F A R M A L L  
T R A C T O R S**

**M and MD**

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**INTERNATIONAL HARVESTER COMPANY**

180 North Michigan Avenue

Chicago 1, Illinois, U.S.A.

# The Importance of ADEQUATE PARTS and SERVICE

The wise purchaser of a new machine gives consideration to the following factors:

1. *Original quality*
2. *Availability of service parts*
3. *Availability of adequate service facilities*

In many cases the machine becomes the only means of performing certain tasks that must be done in a limited period of time. Wear and even breakage of parts are to be expected due to operating conditions. However, the user can still be assured of getting his work done on time if service parts and adequate service facilities are available.

Foresighted International Harvester dealers make every effort to provide good service and maintain a completely adequate stock of service parts.

## INSTRUCTIONS FOR ORDERING PARTS

- (a) All parts orders should be sent to the parts depot. Give complete address, state the county and railroad station (when shipping point is different than post office), also whether shipment is to go by parcel post, express, truck, or freight.
- (b) When ordering parts, give the IH part number, including suffix or prefix letters. To facilitate identification of these parts, "Serial Numbers" assigned to machines, if any, should be furnished.
- (c) Parts should be ordered on the standard parts order blank. The parts should be arranged in sequence by part numbers to facilitate service on orders at the parts depot.
- (d) Claims for shortage or error in the handling of an order for parts must be made within 30 days following receipt of shipment.

*All illustrations and descriptive matter in this publication apply to International Harvester products sold under the International, McCormick, or McCormick-International trade name.*

*It is the policy of International Harvester Company to improve its products whenever it is possible and practical to do so.*

*We reserve the right to make changes or add improvements in the design or construction of parts at any time without incurring the obligation to install such changes on products previously delivered.*

## GROUP INDEX

**CARBURETED ENGINE**

**DIESEL ENGINE**

**ELECTRICAL SYSTEM**

**CHASSIS**

**HYDRAULIC SYSTEM**

**ATTACHMENTS**

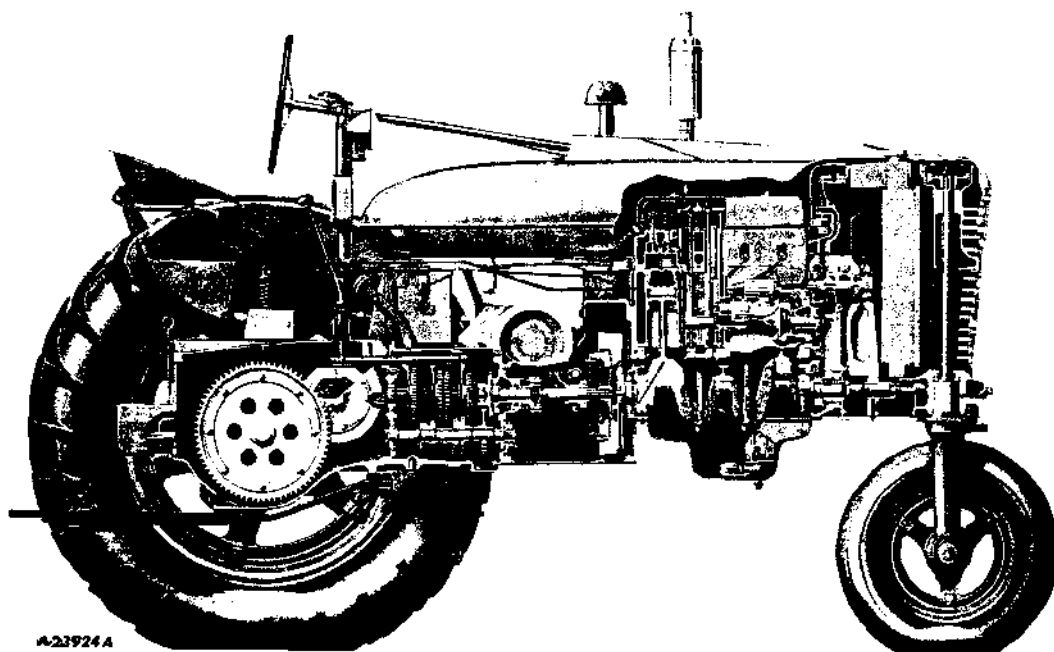
**DETAILS OF ASSEMBLY**

**SUFFIX  
LETTER CODE**

**NUMERICAL INDEX**

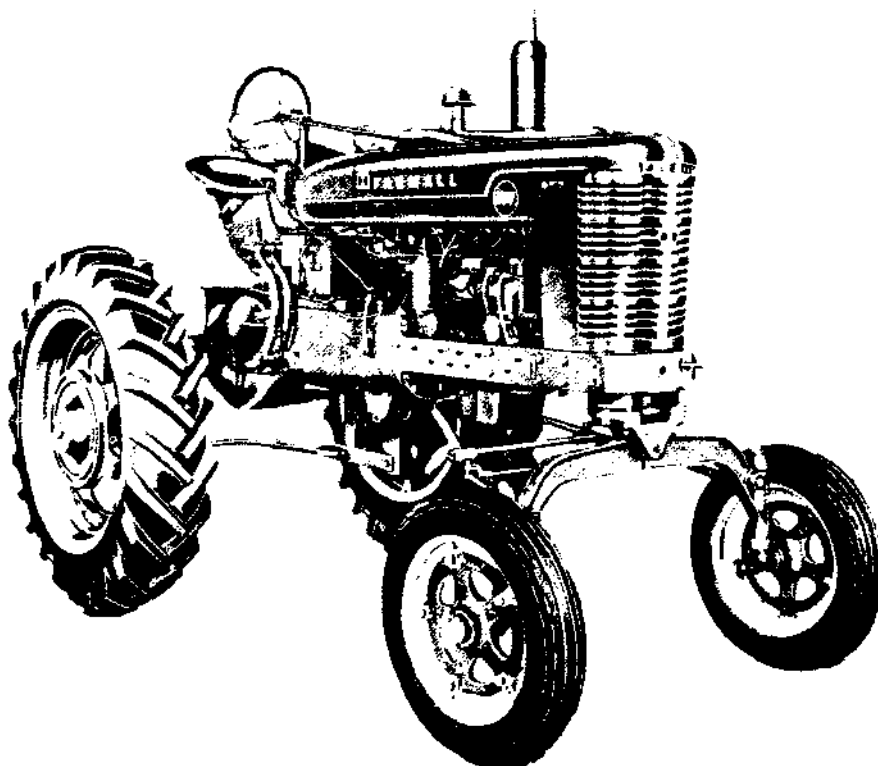
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A-23924 A

Cut-away view of the Farmall-M tractor showing the internal working parts.



A-23926 A

The Farmall-MV high-clearance tractor.

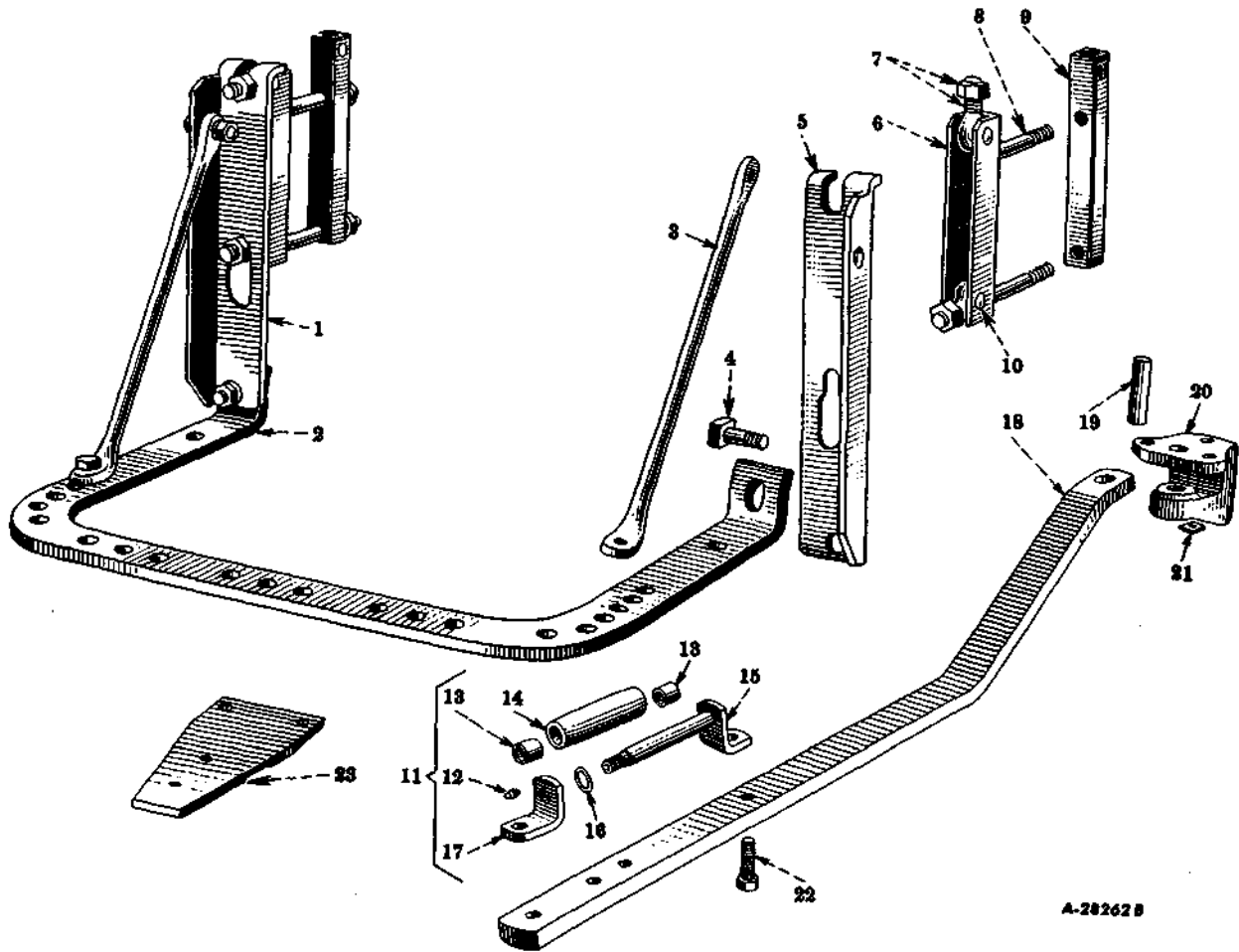




TC-28

CHASSIS

DRAWBAR (Standard) AND SWINGING DRAWBAR (Special)  
"M" and "MD"



A-282628

| REF. NO. | PART NUMBER | DESCRIPTION  | SERIAL NUMBER    | NO. REQ'D |
|----------|-------------|--|------------------|-----------|
|          | 69 045 DC   | DRAWBAR UNIT, COMPLETE (REFERENCE NO. 1 TO 10 INCLUSIVE) |                  | 1         |
| 1        | 51 719 D    | DRAWBAR ANGLE, L.H.                                      | FBK 501 to 21090 | 1         |
| 1        | 57 231 DA   | DRAWBAR ANGLE, L.H.                                      | FBK 21091 up     | 1         |
| 2        | 57 230 DB   | DRAWBAR (STANDARD) (WILL WORK FOR 41 (20 DB))            |                  | 1         |
| 3        | 41 119 D    | DRAWBAR BRACE  | FBK 501 to 21090 | 1         |
|          | 271 611     | CAP SCREW, 3/4 x 2" N.C. HEX HEAD                        |                  | 2         |
|          | 271 612     | CAP SCREW, 3/4 x 2-1/4" N.C. HEX HEAD                    |                  | 2         |
|          | 114 821     | HEX NUT, 3/4" N.C.                                       |                  | 4         |
|          | 103 326     | LOCKWASHER, 3/4"   |                  | 4         |



TC-28

CHASSIS

| REF. NO.   | PART NUMBER | DESCRIPTION  | SERIAL NUMBER    | NO. REQ'D |
|--|-------------|--|------------------|-----------|
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| 3  | 57 233 DA   | DRAWBAR BRACE  | FBK 21091 UP     | 2         |
|  | 179 952     | CAP SCREW, 3/4 x 2" N.C. HEX HEAD  |                  | 2         |
|  | 271 613     | CAP SCREW, 3/4 x 2-1/2" N.C. HEX HEAD  |                  | 2         |
|  | 220 081     | HEX NUT, 3/4" N.C.   |                  | 4         |
|  | 103 326     | LOCKWASHER, 3/4"   |                  | 4         |
| 4  | 41 111 D    | DRAWBAR PIVOT BOLT   |                  | 2         |
|  | 220 081     | HEX NUT, 3/4" N.C.   |                  | 2         |
|  | 103 326     | LOCKWASHER, 3/4"   |                  | 2         |
| 5  | 51 720 D    | DRAWBAR ANGLE, R.H.  | FBK 501 TO 21090 | 1         |
| 5  | 57 323 DA   | DRAWBAR ANGLE, R.H.  | FBK 21091 UP     | 1         |
| 6  | 51 718 DXB  | DRAWBAR ATTACHING CHANNEL, COMPLETE  |                  | 2         |
| 7  | 48 291 DAX  | DRAWBAR EYE BOLT WITH NUT, 353 025 RI AND WASHER, Q 1 552  |                  | 4         |
|  | 353 025 RI  | NUT, HEX, 3/4" N.C., HEAVY   |                  | 4         |
|  | Q 1 552     | WASHER, PLAIN, 25/32" I.D. x 1-1/4" O.D. x No. 10 GA.  |                  | 4         |
| 8  | 45 269 D    | DRAWBAR ATTACHING BOLT   |                  | 4         |
|  | 218 200     | HEX NUT, 7/8" N.F.   |                  | 4         |
|  | 103 327     | LOCKWASHER, 7/8"   |                  | 4         |
| 9  | 51 717 DA   | DRAWBAR ATTACHING CLAMP  |                  | 2         |
| 10   | 41 112 D    | DRAWBAR EYE BOLT PIN   |                  | 4         |
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|  | 49 204 DE   | SWINGING DRAWBAR ATTACHMENT  |                  | 1         |
| 11   | 356 563 R92 | SWINGING DRAWBAR ROLLER, COMPLETE  |                  | 1         |
| 12   | 109 461     | LUBRICATION FITTING, 1/8" STRAIGHT (OPTIONAL WITH 119 512) (NOTE A)                                      |                  | 1         |
| 12   | 119 512     | LUBRICATION FITTING, 1/8" STRAIGHT (OPTIONAL WITH 109 461) (NOTE A)                                      |                  | 1         |
| 13   | 356 564 RI  | SWINGING DRAWBAR ROLLER BUSHING (NOTE A)   |                  |           |
| 13   | 368 513 RI  | SWINGING DRAWBAR ROLLER BEARING (NYLON) (SUPPLIED WITH PACKAGE 368 517 R91) (NOTE B)                     |                  | 2         |
| 14   | 356 562 R11 | SWINGING DRAWBAR ROLLER WITH 2 BUSHINGS, 356 564 RI (ORDER 368 517 R91)                                  |                  | 1         |
| 14   | 356 562 R2  | SWINGING DRAWBAR ROLLER WITH 2 BEARINGS, 368 513 RI (NYLON) (SUPPLIED WITH PACKAGE 368 517 R91) (NOTE B) |                  | 2         |
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|  |             | NOTE B - USED ON SWINGING DRAWBAR WITHOUT LUBRICATION FITTING FOR ROLLER.                                |                  |           |

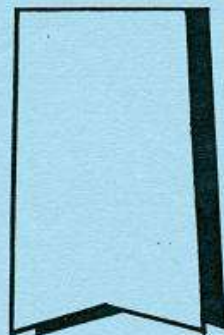


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(Rev. No. 5 3-60)



# Service

# Manual

Farmalls M, MD, and 6 Series  
Tractors, Crawler Tractors  
And Power Units

GSS-5033

**INTERNATIONAL HARVESTER**

AGRICULTURAL EQUIPMENT DIVISION

401 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS, 60611, U.S.A.

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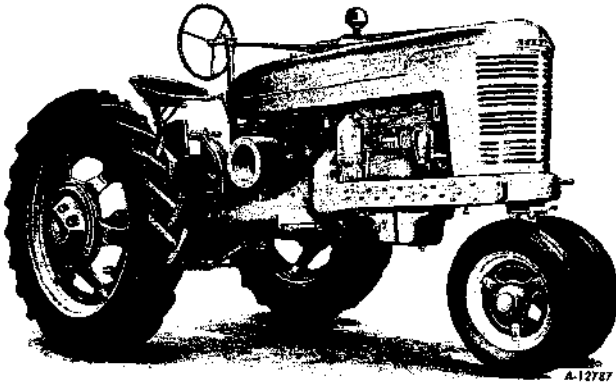
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## BRIEF DESCRIPTIONS

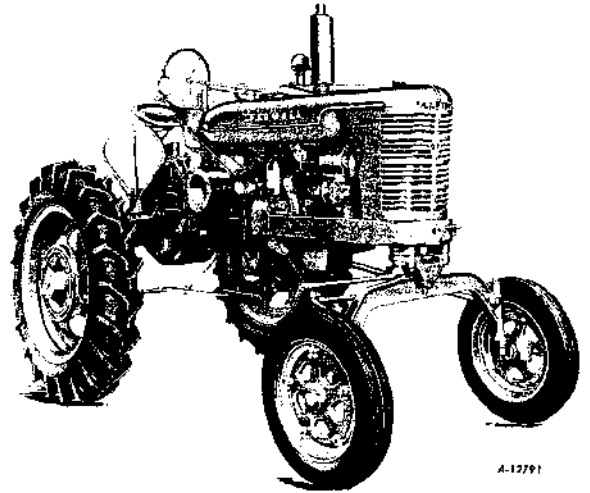


Illust. 4A--The Farmall-M with belt pulley attachment. The tires are 11-38 inch rear, 6.00-16 inch front. Regular steel wheel equipment: 51 inch diameter rear wheels with 8 inch rims and 4 inch spade lugs, and 22-1/2 inch diameter front wheels with 4 inch rims and 2 inch high skid rings.

### Farmalls M and MD

Farmalls M and MD are the largest of the Farmall tractors. This size Farmall will pull three 14-inch plow bottoms under most soil conditions. It will pull a 9 or 10-foot tandem disk harrow, or other implements of similar draft requirements. It will handle four-row planters and cultivators, three and four-row middlebusters and listers, and two-row corn pickers. With belt pulley, it operates the larger threshers, shellers, hammer mills and other belt driven machines. With power take-off attachment it will pull and operate a tractor binder, two-row potato digger, and the Farmall mower. The Farmall-MD is powered with the IH Diesel engine. The Farmall-M is powered with the IH carbureted engine, high compression for gasoline or medium compression for distillate-gasoline.

Field speeds for the Farmalls M and MD are approximately 2-5/8, 3-1/2, 4-3/8 and 5-1/4 miles per hour. Where tractors are mounted on pneumatic tires the road speed (5th) is approximately 16 miles per hour. Tractors mounted on steel wheels have the road speed (5th) locked out. This assortment of transmission speeds, together with variable speed engine governor makes it possible to select the most economical speed for the job to be done. Rear wheel treads are variable from 52 to 88 inches to meet a wide range of row crop spacings.



Illust. 4B--The Farmall-MDV tractor, equipped with muffer, electric lights and starter and belt pulley attachments.

### Farmalls MV and MDV

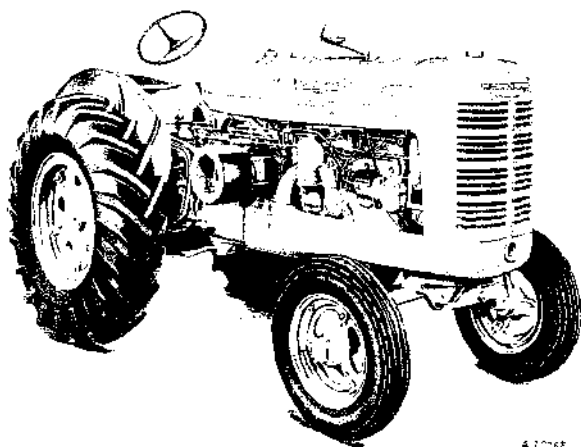
Farmalls MV and MDV are high clearance tractors for work in crops planted in high beds. They are especially adapted for use in sugar cane where cultivation is continued until the plants have reached considerable height above the beds. These four-wheel tractors have high arched front axles with 30-1/2 inches of clearance. Rear axle and final drive housings give 10-27/32 inches more clearance than the Farmall-M. Roller chains running in oil are used for the final drives. Wheel treads are adjustable for a wide variety of conditions. Power is ample for operating the No. 2 cane plow or two-row cane cultivator and other direct connected tools. The letter "D" in the model symbol MDV indicates the Diesel engine, while the Farmall-MV is equipped with the carbureted engine.

### W-6 and WD-6 Standard Tractors

W-6 and WD-6 are medium size standard four-wheel farm tractors. They will furnish ample power to pull three 14-inch stubble plows, drive a 28-inch thresher, pull a 10-foot field cultivator or tools of similar power requirement. Both power take-off and belt pulley output are similar to the Farmall-M. Field and road speeds



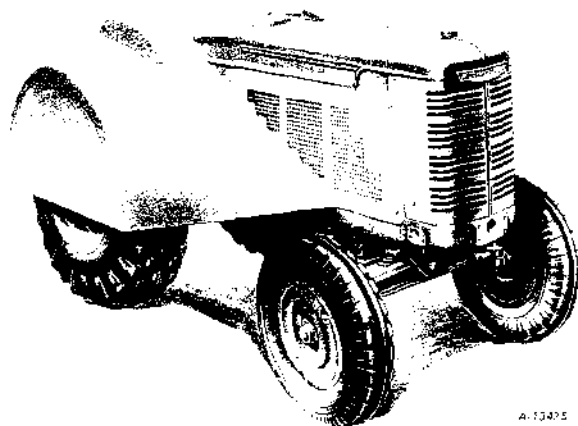
## BRIEF DESCRIPTIONS



A-10768

Illust. 5A--The McCormick-Deering WD-6 Diesel standard tractor, equipped with 11 inch belt pulley and pneumatic tires, 14-30 rear, 6.00-16 front.

are also comparable to Farmall-M. Tractors equipped with steel wheels have the fifth or road speed locked out of operation. The WD-6 tractor is powered with the IH Diesel engine. The W-6 tractor is powered with the IH carbureted engine, high compression for gasoline or medium compression for distillate-gasoline.



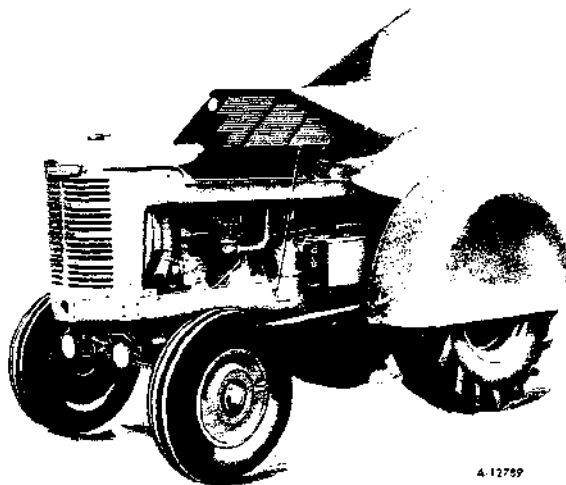
A-13425

Illust. 5B--The McCormick-Deering O-6 orchard and grove tractor with 6.00-16 front and 13-28 rear tires. All regular equipment shown except the steering wheel cowl.

### O-6 Orchard and Grove Tractor

The O-6 tractor is a modification of the W-6 and is adapted to the needs of the larger fruit grower. It will pull a three-bottom plow covering 9 to 13 acres a day, tandem disk 30 to 40 acres per

day, or harrow (spring tooth) up to 30 acres. An A.S.A.E. standard power take-off is available for operating the mechanisms of sprayers and dusters. Belt pulley attachment is also available. A hand-operated over-center engine clutch is used in place of the foot operated spring-loaded type of the W-6. The overall height of this tractor is low and the regular turning radius is short (11-1/2 feet); extra short turning radius is provided by means of foot operated steering brakes. A low, low speed and reverse add to the desirable features of the O-6 for orchard work. Streamlining of the fenders and hood avoid damage to the trees or fruit. The O-6 is powered with the IH carbureted engine, high compression for gasoline or medium compression for distillate-gasoline.



A-12759

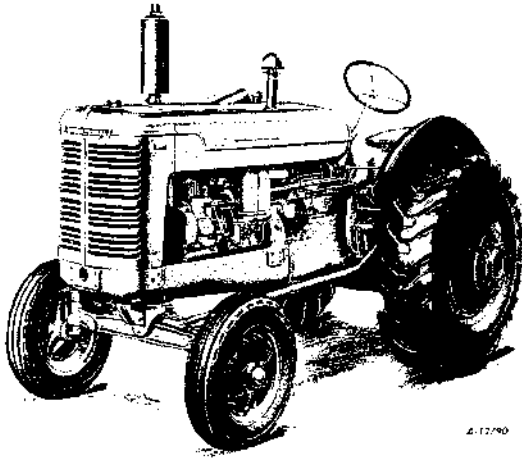
Illust. 5C--If operating conditions do not require the hood side you simply pull out the hinge pin and remove it from the tractor. The engine cover can likewise be removed in a jiffy.

### OS-6 and ODS-6 Orchard Tractors

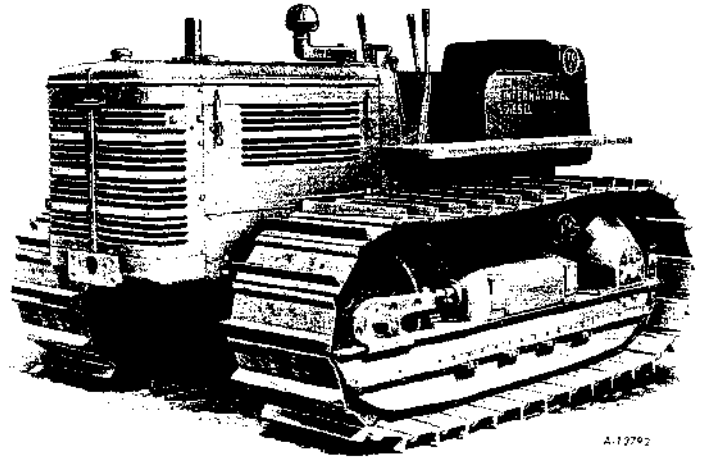
These tractors have the same basic chassis as the O-6 except for the fender equipment. In place of the streamlined hood side sheets, cowl and rear fenders they have the simpler type of fenders as used on the W-6 standard tractor.

The OS-6 tractor is powered with the same IH carbureted engine as the O-6. The ODS-6 tractor is powered with the IH Diesel engine.

## FARMALL M'S, "6" SERIES TRACTORS, CRAWLERS, AND POWER UNITS



Illustr. 6A--International ID-6 Diesel tractor with front and rear wheel weights, muffler attachment, and belt pulley attachment.



Illustr. 6B--International TD-6 crawler tractor equipped with hood side doors.

### I-6 and ID-6 Industrial Tractors

These are next to the largest size of the industrial wheel type tractors. I-6 and ID-6 tractors are used in a wide variety of construction, maintenance, materials handling, and transportation work. They power a list of equipment which includes maintainers; front-end shovels and loaders; road rollers; disk harrows and mixers for mixed-in-place roads; roll-over scrapers; snow plows; sweepers; cranes and hoists; winches; trailer-trains; rock crushers and many other mounted and pull-behind items; also power take-off driven or belt driven types requiring 30 to 40 horsepower as prime mover.

The basic design of these industrial tractors is similar to the standard W-6 and WD-6, except that they have slightly higher working speeds than the "W" type; a foot accelerator is also used making the operation more flexible over the wide range of speeds which the industrial type of operation demands. The drawbar is equipped with a spring mounted pintle hook.

The ID-6 tractor is powered with the IH Diesel engine. The I-6 is powered with the IH carbureted engine equipped with either high compression or medium compression components for smooth economical operation on high octane or low octane fuels respectively.

### T-6 and TD-6 Tractors

These are the smallest of the IH crawler tractor line. They are used on the farm, in the mills, in the timber and by road builders where the going is tough and where maximum traction and high drawbar efficiency is essential. Ample power is provided to pull four 14-inch or three 16-inch stubble plows in most soil conditions, a 10-foot tandem disk harrow or farm tools with similar power requirement. For belt work the available power is comparable to other tractors in this "6" series.

For the industrial user, power is available for operating bulldozers 6 to 7 feet; bullgraders 7-1/2 to 8-1/2 feet; front end shovel 1/2 yard; small logging arches and fire line plows.

Two rear power take-off attachments are available to drive mechanisms of pull-behind machines of both farm and industrial type. One attachment turns at 862 r.p.m., driven directly from the transmission countershaft. A reduced speed power take-off attachment turns at 540 r.p.m., also driven from the countershaft, incorporating a set of reduction gears. A front power take-off coupling is also available for driving front mounted winches.

The T-6 is powered with the IH carbureted engine, the TD-6 has the IH Diesel engine.

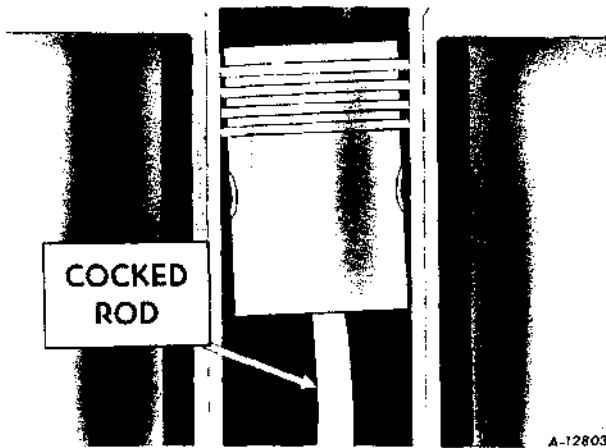
## CARBURETED ENGINE

### Piston Pins

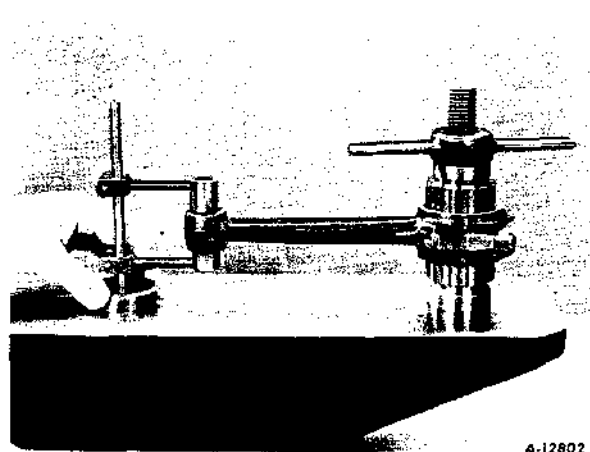
Piston pins are full floating type retained in the piston by snap rings. The piston pins are a hand press fit. An oversize pin (.005 inch) is available.

The piston bore and connecting rod bushing should be reamed or honed to give the clearance listed in specifications. After installing new piston pins the connecting rods must be checked for proper alignment.

## CONNECTING RODS AND BEARINGS



Illust. 15A--Bent connecting rods prevent rings from making proper contact with cylinder walls.



Illust. 15B--Fixture and method of checking connecting rod alignment.

### Specifications

|  |                             |
|--|-----------------------------|
| Rod type .....                                     | Heat treated, forged I-beam |
| Distance between bearing and bushing centers ..... | 10 in.                      |
| Crank bearing .....                                | Replaceable precision type  |
| Material .....                                     | Steel backed babbit         |
| Length .....                                       | 1-23/32 in.                 |
| Shaft diameter .....                               | 2.4975 to 2.4985 in.        |
| Side clearance on shaft ....                       | .008 to .012 in.            |
| Diameter running clearance .                       | .002 to .003 in.            |
| Piston pin bushing .....                           | Replaceable                 |
| Material .....                                     | Bronze                      |
| Length .....                                       | 1-1/2 in.                   |
| Pin diameter .....                                 | 1.3125 to 1.3128 in.        |
| Diameter running clearance .                       | .0003 to .0005 in.          |
| Number of bolts per rod .....                      | 2                           |
| Bolt size .....                                    | 7/16 in.                    |
| Nut tension .....                                  | 55 ft.-lb.                  |
| Bearing cap, angle of split .....                  | 45°                         |

Connecting rods are stamped with the cylinder number on both the cap and rod, number one starting at the front (timing gear end) of the engine. The numbered sides of the rod and cap are installed toward the camshaft. The connecting rod bearing running clearance may be checked by placing a .003 inch brass shim (1/4 x 1-5/16 inches) lengthwise between the lower bearing surface and the crankshaft. If the clearance is not excessive, there should be a slight drag when turning the crankshaft with the spark plugs removed.

Bearings are not adjustable; when clearance is excessive the bearings must be replaced. Under no conditions should any attempt be made to file rods or caps to tighten bearings. Connecting rod bearings are available in .003 inch undersize for use on crankshafts with a slight amount of wear, and for the reground "exchange" crankshafts a .030 inch undersize bearing is used.

When installing connecting rod bearings be sure the bearing backs and rod surfaces are absolutely clean, smooth, and free from oil. Bearings have a nib or projection which prevents turning, and must be assembled with the nib engaging the milled notch in the rod and cap. Be sure oil passages in the crankshaft are clean. A rifle barrel brush and air blow gun are useful in thoroughly cleaning such passages. Piston and rod assemblies are removeable through the top of the cylinder bore.

Proper alignment of the connecting rod bearing in relation to the piston pin and piston skirt is most important. Cocked or twisted rods will prevent the piston and rings from contacting the cylinder wall squarely, which will result in oil being pumped up past the rings. When rods are badly misaligned, a knock may develop caused by the rod striking the

## FARMALL M'S, "6" SERIES TRACTORS, CRAWLERS, AND POWER UNITS

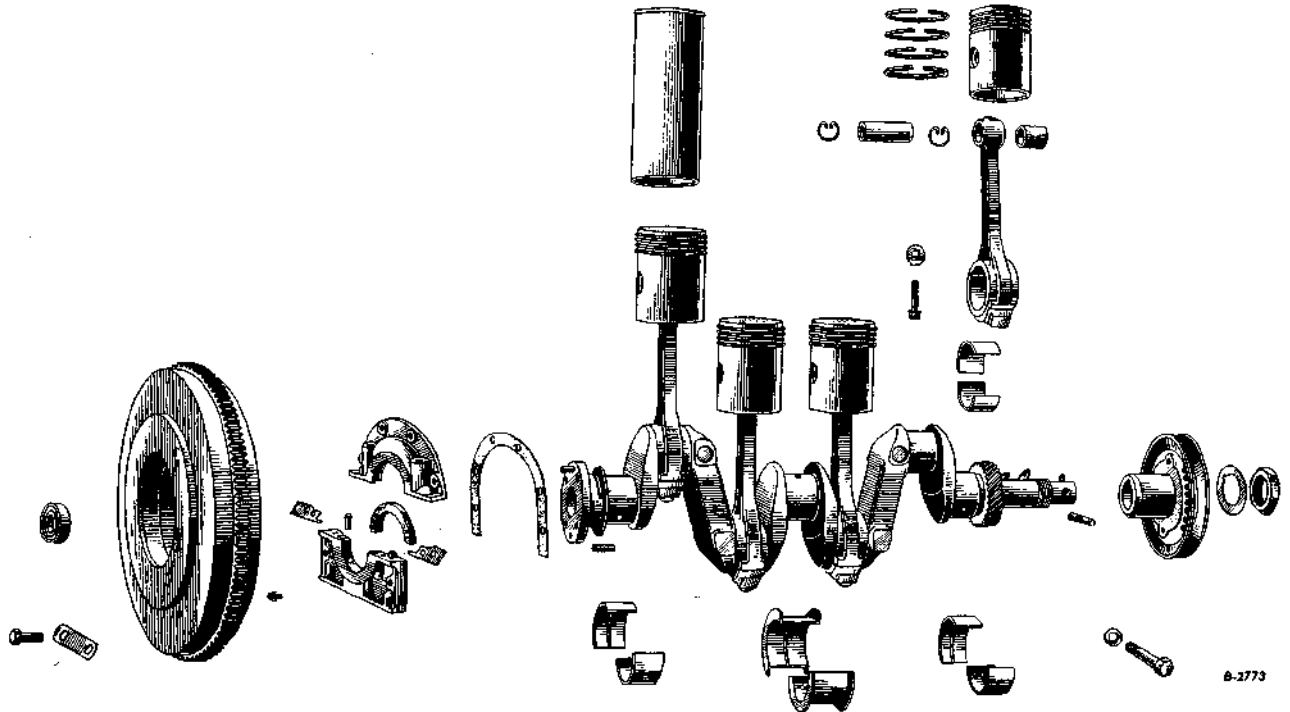
piston boss. This indicates the rod is offset toward the front or rear. Many cases of excessive oil consumption have developed after new rings, pins or new piston and sleeve assemblies have been installed, because of neglect to check and correct the alignment of connecting rods.

Misalignment of connecting rods may

be caused by engine overloads, detonation, or in the replacement of piston pins, where bushings may be reamed out of parallel with the rod bearing.

The use of a good torque indicating wrench will prevent distortion of connecting rod bearings and also prevent placing undue strain on connecting rod bolts.

## CRANKSHAFT AND BEARINGS



Illust. 16A--Exploded views of crankshaft, connecting rods, pistons, sleeve and rear oil seal.

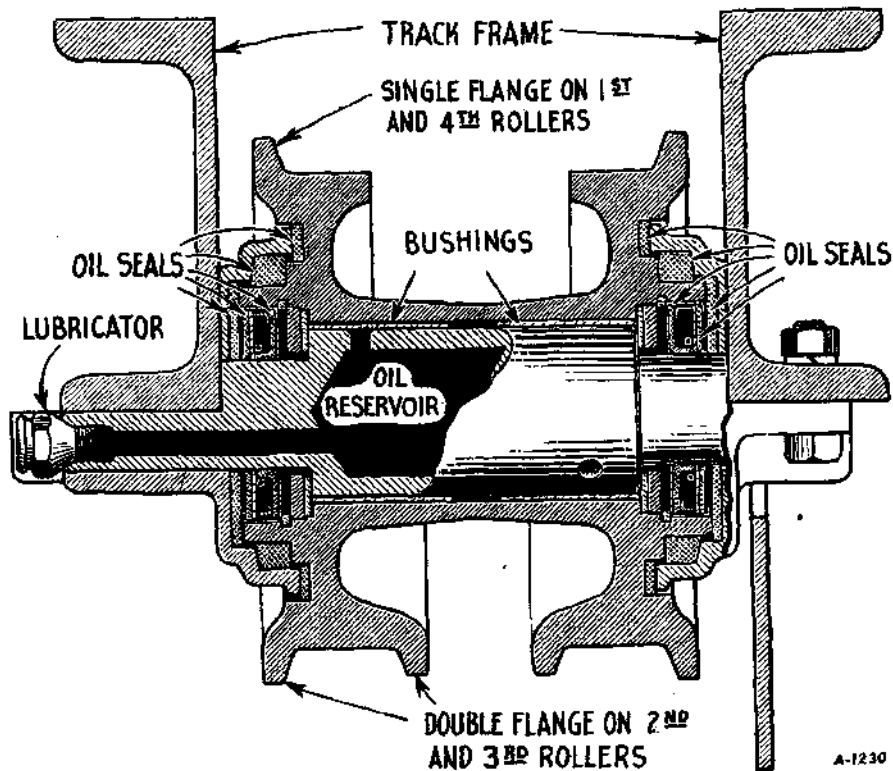
### Specifications

|                                  |   |
|----------------------------------|---|
| Crankshaft .....                 | SAE 1045 forging steel with 0.3% chrome |
| Length, over-all .....           | 31-3/8 in.                              |
| Weight .....                     | 74 lb.                                  |
| Bearing surfaces .....           | Tocco hardened                          |
| Main bearings .....              | 3                                       |
| Type ...                         | Precision type, steel-backed babbitt    |
| Diameter .....                   | 2.7475 to 2.7485 in.                    |
| Length, front bearing .....      | 1.9/16 in.                              |
| Length, center bearing .....     | 2-1/4 in.                               |
| Length, rear bearing .....       | 1-9/16 in.                              |
| End thrust taken on .....        | Center bearing                          |
| End clearance .....              | .004 to .008 in.                        |
| Running diameter clearance .     | .002 to .003 in.                        |
| Bearing cap bolt, diameter ..... | 9/16 in.                                |
| Bearing bolt tension .....       | 100 ft.-lb.                             |
| Flywheel bolt, diameter .....    | 1/2 in.                                 |
| Flywheel bolt tension .....      | 65 ft.-lb.                              |

Crankshafts of the Farmall-M and "6" series engines have Tocco hardened bearing journals and are drilled for pressure lubrication of connecting rod bearings. Each main bearing cap is numbered to correspond with a number stamped on the camshaft side of the crankcase. The precision type bearings are not adjustable; when running clearances become excessive, replacement is necessary.

Main bearing running clearance may be checked by placing a .003 inch brass shim (1/4 x 1-1/2 inches) lengthwise between the lower bearing and crankshaft surfaces. If clearance is not excessive, there should be a slight drag when turning the crankshaft, with spark plugs removed. Check the end clearance with a feeler gauge at the front side of the center bearing on

## CHASSIS



Illust. 119A--Track roller.

### TRACK ROLLER

Four track rollers on each side carry the weight of the crawler tractor. The rollers are welded and heat treated steel forgings fitted with bronze bushings. They rotate on heat treated and hardened steel shafts. Repair bushings are furnished reamed to size. It is only necessary to press them into place.

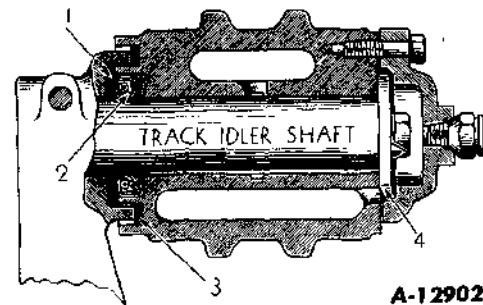
To effectively seal out dirt, each end of the roller is fitted with three individual felt washers and a spring loaded double leather seal with lips turned out. The rollers are gravity lubricated from the oil well within the steel shaft.

Illust. 119A shows construction of the track rollers. The first and the fourth rollers have flanges on the outside only. The second and third rollers have double flanges to guide the track and relieve side thrust.

### TRACK IDLER

The upper section of the track chain, between the sprocket and the front idler, is supported by one grey iron idler with

chilled outer faces (increased hardness). It is mounted on a bracket extending upward from the track frame. This idler revolves on a heat treated replaceable steel shaft which is locked in the bracket with a bolt. A felt washer and spring loaded leather seal with the lip turned away from the idler provide a dustproof seal (illust. 119B).



Illust. 119B--T-6 and TD-6 track idler. (1) Inner felt washer. (2) Oil seal. (3) Outer felt washer. (4) Thrust washer.

# OWNER'S MANUAL

The Farmall logo consists of a dark, trapezoidal shape with a white border. Inside, the word "FARMALL" is written in large, white, bold, sans-serif capital letters. Below the trapezoid are three horizontal white lines.

**FARMALL**

A circular logo with a white border containing the letter "M" in a bold, white, sans-serif font.

**M**

A circular logo with a white border containing the letters "MV" in a bold, white, sans-serif font.

**MV**

This manual contains information which will be valuable to you during the entire life of your tractor. Rely on your manual for operating and maintenance information . . . and rely on your International Harvester dealer when in need of skilled mechanical service or genuine IHC service parts. A complete list of parts for this tractor will be supplied on request.

**INTERNATIONAL HARVESTER COMPANY**

180 NORTH MICHIGAN AVE.

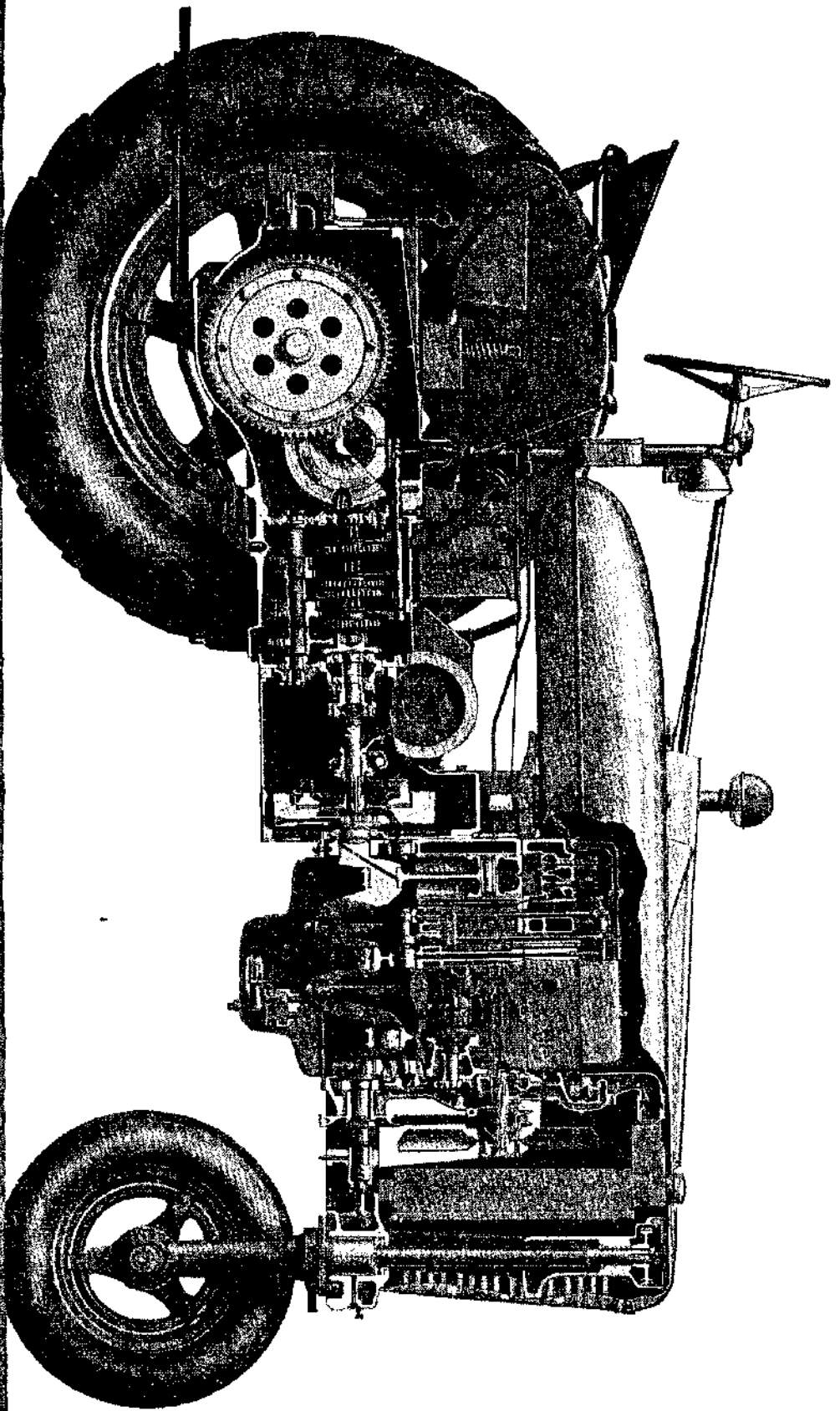
CHICAGO 1, ILLINOIS, U.S.A.

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Cut-away view of the Farmall-M showing the internal working parts. The pneumatic tires, belt pulley, power take-off, swinging drawbar and the electric starting and lighting shown in this illustration are special features.



# BEFORE STARTING A NEW TRACTOR

## Lubrication

(1) Lubricate entire tractor, using the "Lubrication Chart" (pages 26 to 33) as a guide.

(2) Check the oil levels of engine crankcase, air cleaner, transmission case and steering gear case to see that they are filled to the correct levels with the proper grades of oil for the prevailing temperature (*refer to specifications of lubricants on the "Lubrication Chart"*).

(3) Tractors shipped to destinations in the United States of America, Canada, and Mexico are filled with oil in all parts before leaving the factory. However, lubricant compartment should be checked for proper levels *as outlined in paragraph 2 above*.

### TRACTORS PACKED FOR EXPORT

All oil is drained from the engine crankcase, air cleaner, and all gear cases on tractors packed for export.

(4) Engines shipped to destinations in the United States of America, Canada and Mexico are filled with a light engine oil before leaving the factory. For further information, refer to the "Lubrication Chart."

(5) Before starting a new engine, remove the spark plugs and put about

one teaspoonful of crankcase oil into each cylinder; replace the spark plugs and crank the engine to distribute the oil over the cylinder walls. This assures positive lubrication of the cylinders and pistons immediately after starting and eliminates the possibility of scoring. Procedure outlined is necessary only for a new engine, or an engine that has been idle for a long time.

## Steel Wheels

On new tractors, or on new wheel and lug installations, it is advisable to check and tighten the rear wheel bolts a couple of times at short intervals to be sure that the lugs seat properly.

## Pneumatic Tires

Before moving tractor, check air pressure in pneumatic tires and inflate or deflate to correct pressures as shown in chart *on page 55*.

## Starting and Lighting Attachment

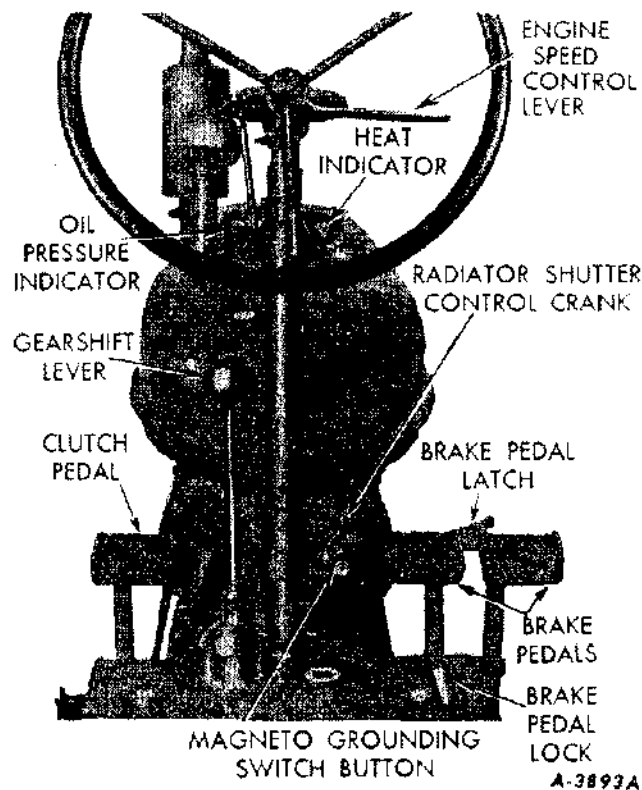
If the tractor is equipped with electric starting or starting and lighting attachment, check to see that the cables on the batteries, generator, starting motor, etc., are properly connected. For more information, see "Starting and Lighting Attachments" section of this manual.

## IMPORTANT

Farmall-M and MV tractors are equipped with distillate, kerosene, or high-compression gasoline engines. Before attempting to use a fuel for which your tractor is not designed, consult your International Harvester dealer or the nearest IHC branch for full details.

To obtain best results, use the fuel for which the engine is designed, and follow operating instructions given for that fuel.

## OPERATION OF A DISTILLATE-GASOLINE ENGINE ON DISTILLATE—Continued



**Illust. 5**  
Instruments and Controls.

### Engine Speed Control Lever

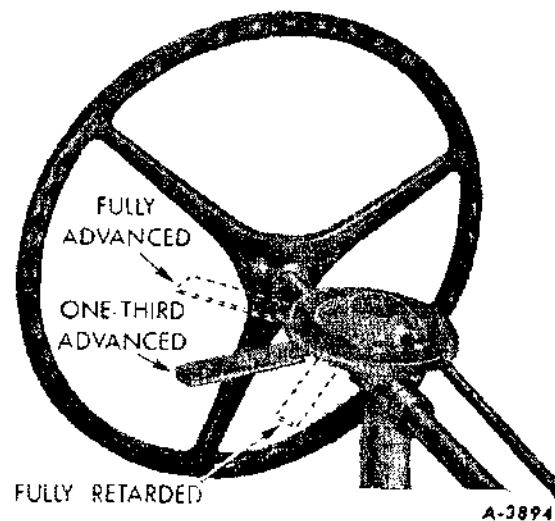
The engine speed control lever enables you to adjust the speed of the engine to the load that is to be handled. After you have selected the desired engine speed, the governor will automatically maintain this engine speed under variable loads. Retarding of the engine speed control lever will decrease the load which the tractor can handle.

The rated or maximum full load governed speed is 1450 rpm; maximum idle speed is approximately 1595 rpm; minimum speed (hand throttle) is approximately 425 rpm.

### Governor

The governor is set at the factory and should require no adjustment. Consult

your International Harvester dealer if the governor does not function properly.



**Illust. 6**  
View Showing Various Positions of the Engine Speed Control Lever.

## VARIABLE TREAD FRONT WHEEL—PNEUMATIC TIRE EQUIPMENT—Continued

Four treads can be obtained with variable tread front wheels, as shown in Illustration 78.

### How to Adjust

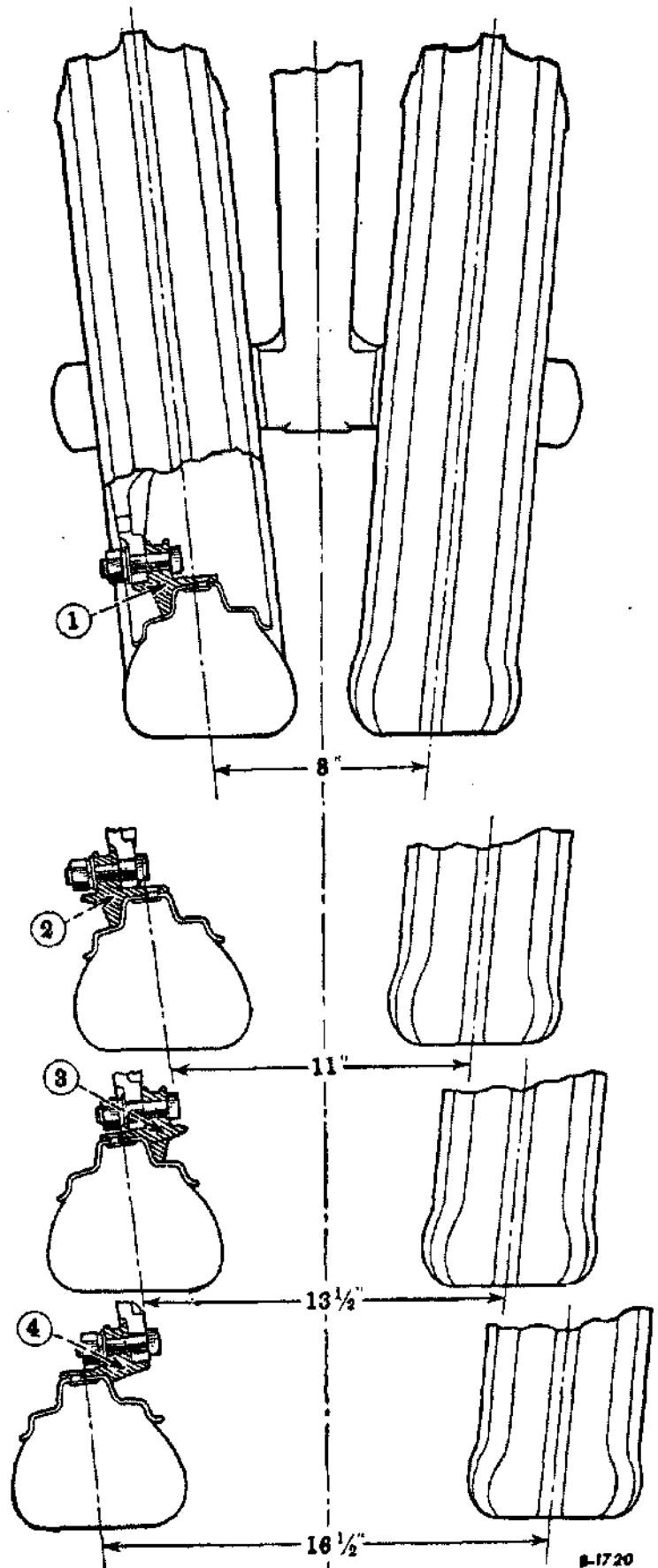
**NOTE:** Rim bolts must be tightened securely.

(1) To obtain the narrow or 8-inch tread, assemble the rims to the inside of the hubs, with the lugs turned in (*position No. 1*).

(2) To obtain the 11-inch tread, assemble the rims to the outside of the hubs, with the lugs turned in (*position No. 2*).

(3) To obtain the 13½-inch tread, assemble the rims to the inside of the hubs, with the lugs turned out (*position No. 3*).

(4) To obtain the 16½-inch tread, assemble the rims to the outside of the hubs, with the lugs turned out (*position No. 4*).



Illust. 78

## DUAL PNEUMATIC TIRE REAR WHEELS

www.HHedcoSoftware.com

*(For Farmall-M only)*

*(57129 D—For 6.00 by 44-inch Tire)*

*(57130 D—For 7.00 by 44-inch Tire)*

**(Two Required per Tractor)**

*(Tires and Tubes not Included)*

Adjustable-tread dual rear wheels for Farmall-M are desirable in operations where the tractor is required to ride ridges.

### How to Adjust

The dual tires can be spaced for 9, 9 $\frac{5}{8}$ , 11 $\frac{5}{8}$ , or 13 $\frac{5}{8}$ -inch treads by placing the tire rims to the outer or inner sides of the mounting brackets, and by reversing the rims.



**Illust. 79**

## DUAL PNEUMATIC TIRE REAR WHEEL RIM ATTACHMENT

*(For Farmall-M Tractors equipped with Pneumatic Tire Rear Wheels)*

*(57134 D—For 6.00 by 44-inch Tire)*

*(57135 D—For 7.00 by 44-inch Tire)*

*(Tires and Tubes not Included)*

## ATTACHED CLAMP RIM ATTACHMENT

*(For Farmall-M Tractors equipped with Pneumatic Tire Rear Wheels)*

*56497 D—8.00T by 40-inch Attached Clamp Rim Attachment (Goodyear)*

*57210 D—8.00T by 40-inch Attached Clamp Rim Attachment (Firestone)*

This attachment is used to increase the diameter of the rear wheels from 38 inches to 40 inches to give greater

clearance. It is especially needed in vegetable production.

# Operator's Manual



**McCORMICK  
FARMALL  
SUPER A  
and  
SUPER AV**

INTERNATIONAL HARVESTER COMPANY

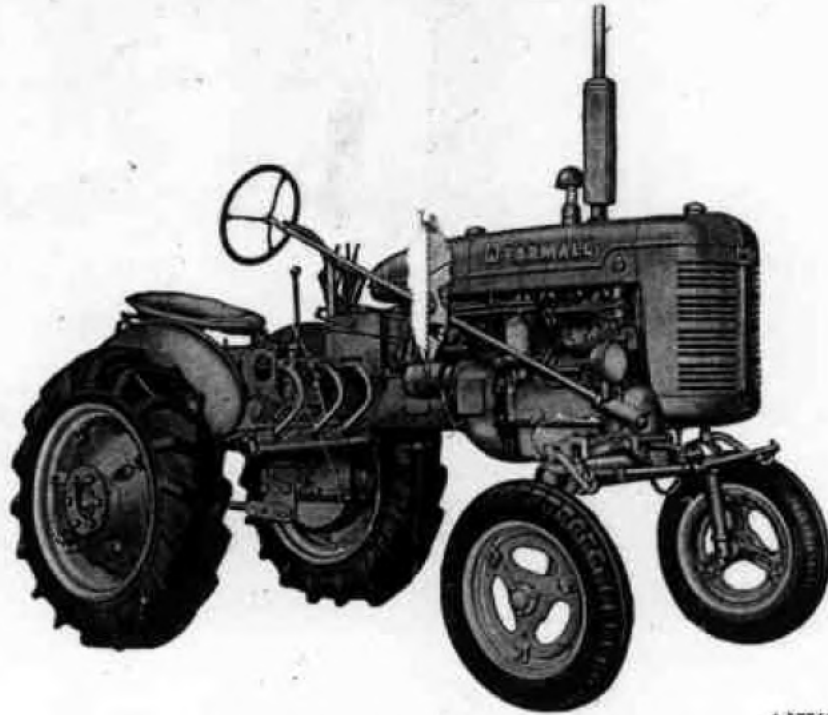
180 North Michigan Ave.

Chicago 1, Illinois, U.S.A.

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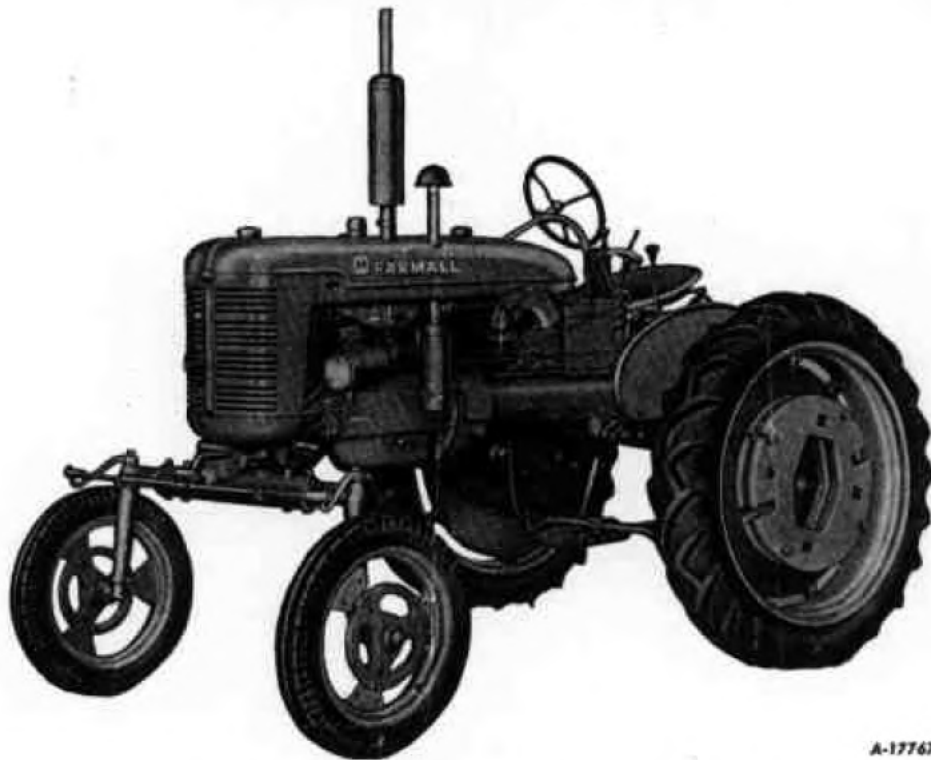
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## DESCRIPTION



A-17766

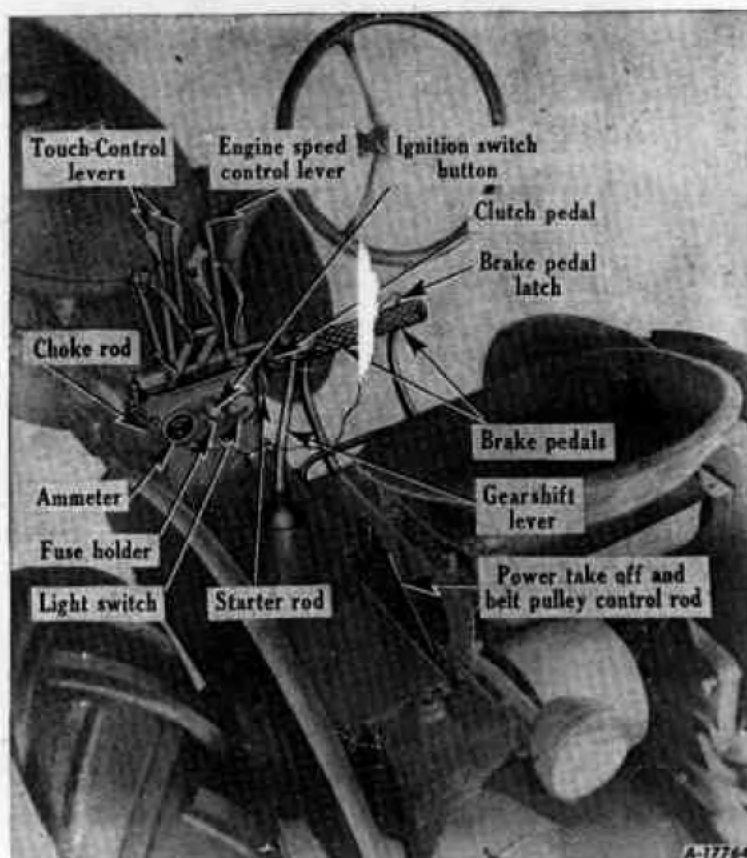
Illust. 3—Right Front View of the Farmall Super-A.



A-17767

Illust. 3A—Left Front View of the Farmall Super-AV.

## FARMALL SUPER-A AND SUPER-AV



Illust. 4—Location of Controls.

### Instruments and Controls

There is a variety of special equipment available for use with the Farmall Super-A and Super-AV. The instructions for operating and maintaining the special equipment have been included in the instructions for operating and maintaining the tractor. Disregard the instructions for special equipment that is not on your tractor.

#### Brake Pedals

These pedals are used to stop the tractor, to hold the tractor in a stationary position, or to assist in making sharp turns as outlined below:

To stop the tractor, depress both pedals at the same time. Before driving the tractor in high gear always latch the pedals together.

To hold the tractor in a stationary position, latch the pedals together, depress and lock them in this depressed position by using the brake pedal lock.

To assist in making a sharp turn, the pedals must be operated individually, de-

pressing the pedal on the side toward which the turn is to be made.

The brake pedal latch, *Illusts. 4 and 17*, is used to latch both brake pedals together, causing the brakes to operate simultaneously.

The brake pedal lock, *Illust. 17*, is used to lock the brake pedals in the depressed position which prevents the tractor from moving.

#### Clutch Pedal

This pedal, when depressed all the way, disengages the engine from the transmission.



## SPECIFICATIONS

### Wheels and Tread

|  |           |                                |
|--|-----------|--------------------------------|
| Front wheels, pneumatic tire size.....                       | † 4.00—15 | † 4.00—19                      |
| Rear wheels, pneumatic tire size.....                        | † 9—24    | † 9—36                         |
| Tread, front (nonadjustable axle).....                       | 43 in.    | .....                          |
| Tread, front (adjustable axle—4 in. intervals).....          | 44 to 64  | 44 to 68                       |
| Tread, rear (adjustable wheels and rim—4 in. intervals)..... | 40 to 68  | 48 to 68                       |
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| Super-A   | Super-AV                       |
|-----------|--------------------------------|
| † 4.00—15 | † 4.00—19                      |
| † 9—24    | † 9—36                         |
| 43 in.    | .....                          |
| 44 to 64  | 44 to 68                       |
| 40 to 68  | 48 to 68                       |
| 71        | 71 <sup>5</sup> / <sub>8</sub> |

† Other pneumatic tire sizes available.

### General—Dimensions

|   |  |  |
|---|--|--|
| Length overall.....   | 106 <sup>1</sup> / <sub>8</sub> in.  | 115 in.  |
| Width overall: Minimum (to outside edge of rear tires)..... | 55 <sup>7</sup> / <sub>8</sub> in.   | 60 <sup>5</sup> / <sub>8</sub> in.   |
| Maximum (to outside edge of rear tires).....                | 78 in.   | 77 <sup>3</sup> / <sub>4</sub> in.   |
| Height overall (to top of steering wheel).....              | 64 <sup>1</sup> / <sub>4</sub> in.   | 69 <sup>1</sup> / <sub>4</sub> in.   |
| Height to top of exhaust muffler.....                       | 81 <sup>1</sup> / <sub>4</sub> in.   | 88 <sup>1</sup> / <sub>2</sub> in.   |
| Ground clearance for crops under front axle.....            | 21 <sup>5</sup> / <sub>8</sub> in.   | 27 in.   |
| Ground clearance for crops under rear axle.....             | 21 <sup>5</sup> / <sub>8</sub> in.   | 27 <sup>1</sup> / <sub>2</sub> in.   |
| Drawbar height above ground (adjustable).....               | 11 <sup>1</sup> / <sub>4</sub> , 13 <sup>1</sup> / <sub>8</sub> , 14 <sup>7</sup> / <sub>8</sub><br>and 16 <sup>7</sup> / <sub>8</sub> in. | 11 <sup>7</sup> / <sub>8</sub> , 14 <sup>1</sup> / <sub>8</sub> , 15 <sup>3</sup> / <sub>8</sub><br>and 17 <sup>7</sup> / <sub>8</sub> in. |
| Drawbar lateral swing to each side of center hole.....      | 9 <sup>3</sup> / <sub>8</sub> in.  | 9 <sup>3</sup> / <sub>8</sub> in.  |
| Minimum turning radius (wheels in minimum tread)            |  |  |
| Without brake applied.....                                  | 9 <sup>1</sup> / <sub>2</sub> ft.  | 9 <sup>1</sup> / <sub>4</sub> ft.  |
| With brake applied.....                                     | 8 <sup>1</sup> / <sub>2</sub> ft.  | 8 <sup>3</sup> / <sub>4</sub> ft.  |

|  |  |
|--|--|
| 106 <sup>1</sup> / <sub>8</sub> in.  | 115 in.  |
| 55 <sup>7</sup> / <sub>8</sub> in.   | 60 <sup>5</sup> / <sub>8</sub> in.   |
| 78 in.   | 77 <sup>3</sup> / <sub>4</sub> in.   |
| 64 <sup>1</sup> / <sub>4</sub> in.   | 69 <sup>1</sup> / <sub>4</sub> in.   |
| 81 <sup>1</sup> / <sub>4</sub> in.   | 88 <sup>1</sup> / <sub>2</sub> in.   |
| 21 <sup>5</sup> / <sub>8</sub> in.   | 27 in.   |
| 21 <sup>5</sup> / <sub>8</sub> in.   | 27 <sup>1</sup> / <sub>2</sub> in.   |
| 11 <sup>1</sup> / <sub>4</sub> , 13 <sup>1</sup> / <sub>8</sub> , 14 <sup>7</sup> / <sub>8</sub><br>and 16 <sup>7</sup> / <sub>8</sub> in. | 11 <sup>7</sup> / <sub>8</sub> , 14 <sup>1</sup> / <sub>8</sub> , 15 <sup>3</sup> / <sub>8</sub><br>and 17 <sup>7</sup> / <sub>8</sub> in. |
| 9 <sup>3</sup> / <sub>8</sub> in.  | 9 <sup>3</sup> / <sub>8</sub> in.  |
|  |  |
| 9 <sup>1</sup> / <sub>2</sub> ft.  | 9 <sup>1</sup> / <sub>4</sub> ft.  |
| 8 <sup>1</sup> / <sub>2</sub> ft.  | 8 <sup>3</sup> / <sub>4</sub> ft.  |



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