W9/WR9 Tractors

Operators Manual

1004217R2

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This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about your safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death. SB001

IF THIS MACHINE IS USED BY AN EMPLOYEE, IS LOANED, OR IS RENTED, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE TWO INSTRUCTIONS BELOW.

BEFORE THE OPERATOR STARTS THE ENGINE:

1. GIVE INSTRUCTIONS TO THE OPERATOR ON SAFE AND CORRECT USE OF THE MACHINE.
2. MAKE SURE THE OPERATOR READS AND UNDERSTANDS THE OPERATOR'S MANUAL FOR THIS MACHINE.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THE OPERATOR'S MANUAL.
2. READ ALL SAFETY DECALS ON THE MACHINE.
3. CLEAR THE AREA OF OTHER PERSONS.

LEARN AND PRACTICE SAFE USE OF MACHINE CONTROLS IN A SAFE, CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.

It is your responsibility to observe pertinent laws and regulations and to follow manufacturer's instructions on machine operation and maintenance.

See your Authorized Case dealer for additional operator's manuals, parts catalogs, and service manuals.

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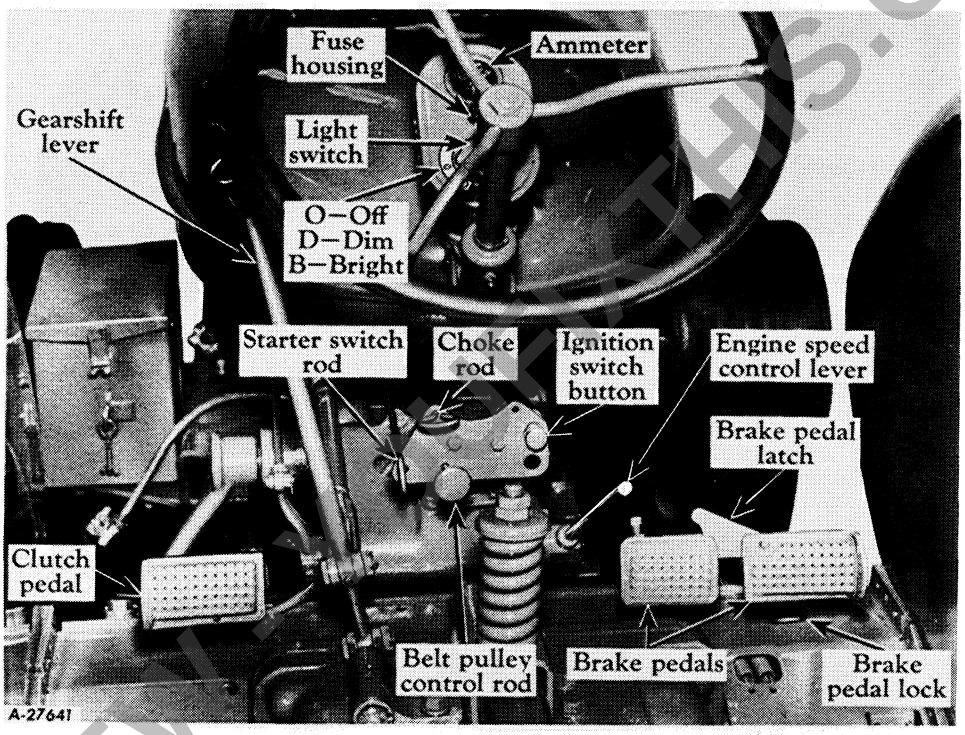
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DESCRIPTION

INSTRUMENTS AND CONTROLS

A variety of special equipment is available for use with the W-9 and WR-9 tractors. 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 not on your tractor.



Illust. 4
Location of controls (W-9 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, operate the pedals individually, depressing the pedal on the side toward which the turn is to be made.

The brake pedal latch *(Illusts. 4, 5, and 17)* is used to latch both brake pedals together, causing the brakes to operate simultaneously.

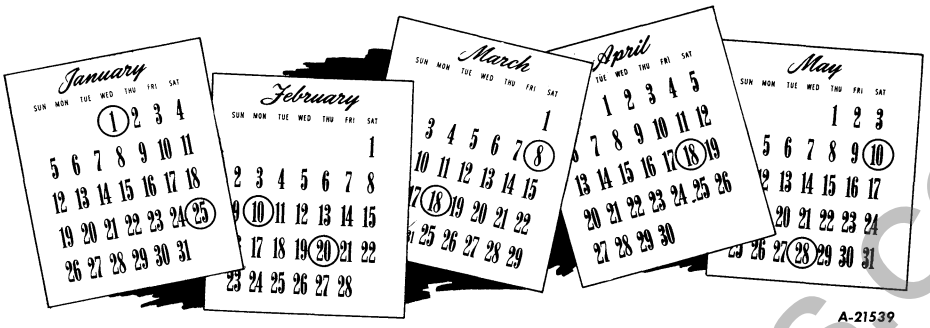
CAUTION: Always latch the brake pedals together when driving the tractor in high gear (5th speed). To latch the pedals together, engage the latch "B" (located in back of right pedal, *Illust. 17)* in the slot in back of the left pedal. When brake pedals are not latched together, the latch should rest in the slot in back of the right brake pedal.

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MAINTENANCE



Periodic Inspections

To keep your tractor performing efficiently, it is advisable to systematically inspect the following points at intervals as outlined below.

AFTER EVERY 10 HOURS OF OPERATION

Air cleaner cap	Remove dirt or chaff. *See page 37.* (When unusual dust or dirt conditions are encountered during operation, it may be necessary to service more frequently.)
Lubrication points	See "Lubrication Guide."
Air cleaner oil cup	Remove, clean and refill. *See page 37.*
Cooling system	Check level of coolant in radiator. *See page 35.*

AFTER EVERY 60 HOURS OF OPERATION

Air cleaner, complete	Remove and clean. *See page 37.* (When unusual dust or dirt conditions are encountered during operation, it may be necessary to service more frequently.)
Flexible rubber connection between air cleaner and carburetor	Inspect for loose fit or damage.
Fan belt and generator belt	Check tension; replace when necessary. *See pages 36 and 47.*
Radiator fins	Clean spaces. *See page 35.*
Lubrication points	See "Lubrication Guide."

AFTER EVERY 120 HOURS OF OPERATION

Lubricating oil filter	Replace filter element. *See page 21.*
Engine crankcase	Drain and change oil.
Storage battery	Check liquid level and specific gravity. *See pages 56 to 58.*
Lubrication points	See "Lubrication Guide."

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Oil Pump

The gear-type oil pump in the crankcase has a screen attached to the oil intake to stop large dirt particles from entering the oiling system. This screen should be cleaned whenever the oil pan is removed. The oil intake floats on top of the oil in the crankcase and draws the oil from the surface, thereby eliminating the possibility of mixing water or sediment with the oil.

Crankcase Breather

The crankcase breather, located in the push rod chamber on the right side of the crankcase, has a double copper crimp element. Clean the element after every 250 hours of operation or more often when operating under unusual dust or dirt conditions. Replace with a new element if necessary.

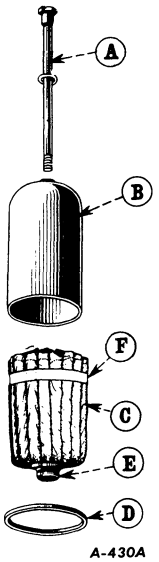
To clean or replace the element, remove the two cap screws holding the push rod chamber side plate to the crankcase and lift out the side plate and breather pipe assembly. Remove the breather baffle and plate in the back of the push rod chamber side plate, remove the element, and clean in kerosene. Reassemble in the reverse order. Be sure the side plate gasket is in place and in good condition.

Oil Filter

The life of your engine depends upon clean oil being circulated to all bearings. Every good tractor operator knows that dirt and other injurious materials eventually get into the crankcase of the engine and that in the normal course of engine operation the lubricating oil undergoes changes which produce sludge, acids, gums, varnish, and other harmful by-products.

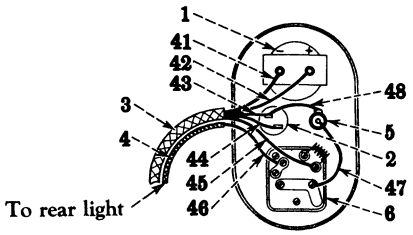
The purpose of the oil filter is to separate and remove the dirt and other foreign substances from the oil to prevent these injurious materials from being circulated to the engine. This filter is so efficient it will keep the circulating oil free of harmful materials for 120 hours of operation, at which time the crankcase oil should be changed and the inexpensive filter element replaced. *Refer to pages 28 and 29* for the recommended oil to use for the prevailing temperature. By following the simple, common-sense procedure for keeping dirt and oil impurities away from precision-made engine parts, you will safeguard your tractor engine against undue wear and the operating troubles and upkeep expense which are a natural result of that condition.

Note: To avoid delays, we recommend that you carry extra filter elements on hand so that replacement can be made at the proper time.

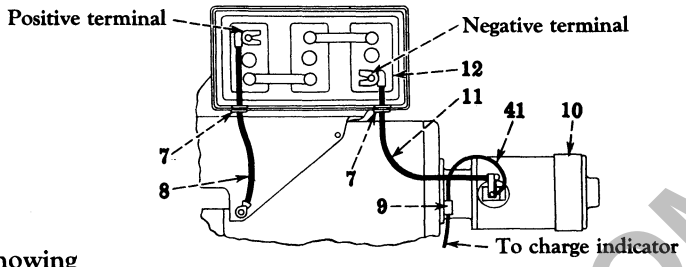


Illust. 20
Oil filter disassembled.

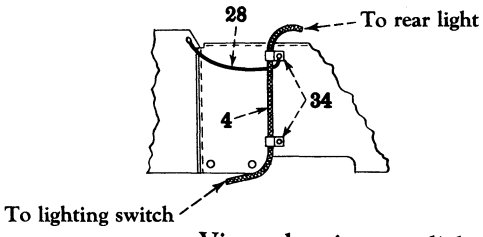
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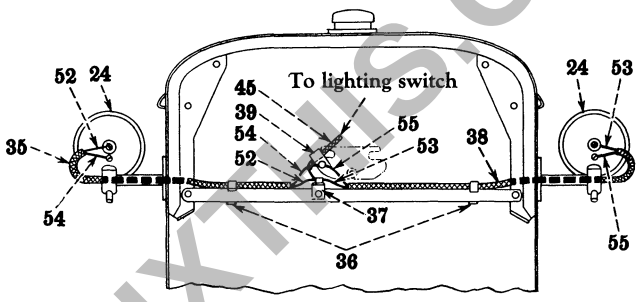
Rear view of instrument panel showing charge indicator, fuse holder, ignition switch, and lighting switch connections.



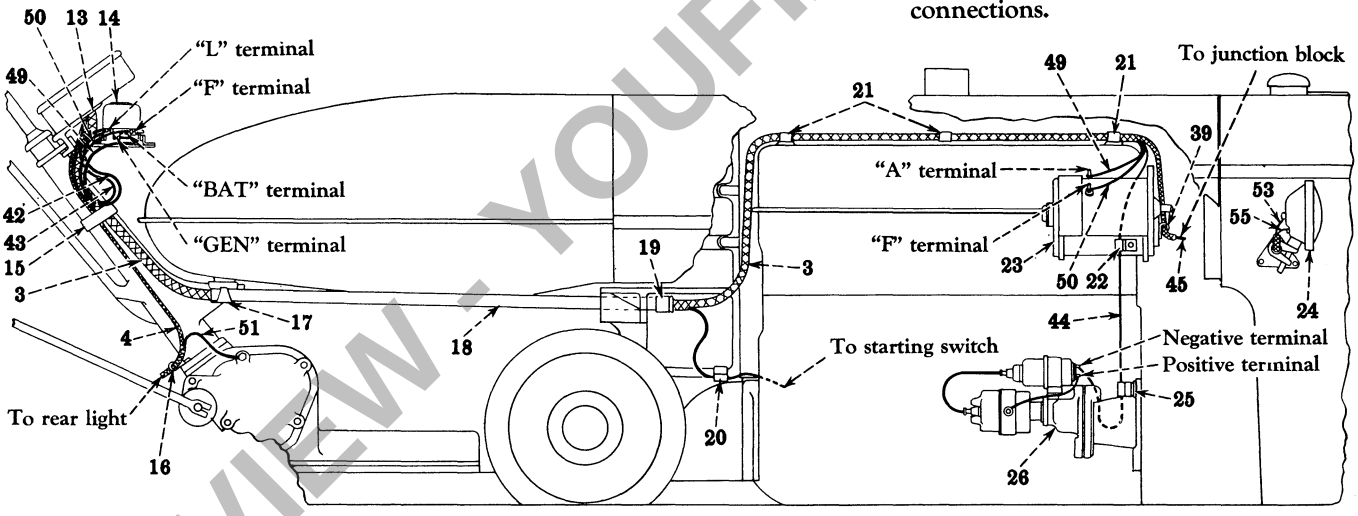
View showing battery and cranking motor connections.



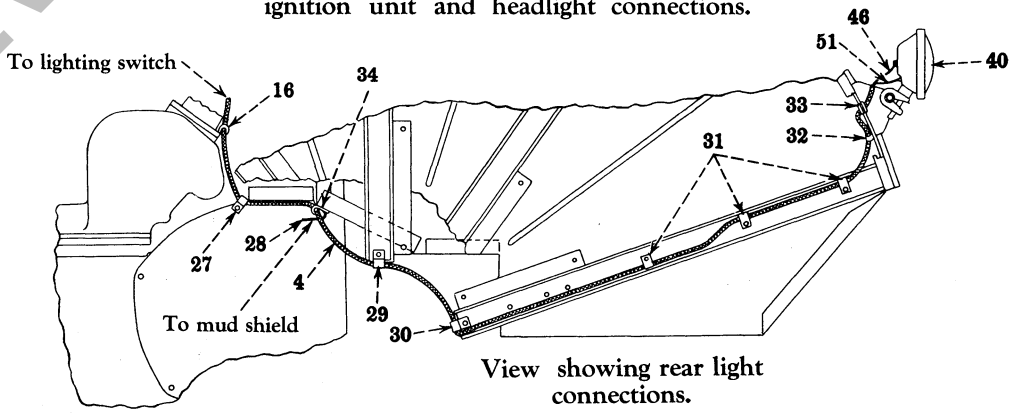
View showing rear light connections.



View showing headlight connections.



Right side view showing generator, battery ignition unit and headlight connections.



View showing rear light connections.

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Illust. 48
Wiring diagram for starting and lighting on WR-9 tractor with battery ignition.

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TROUBLE SHOOTING

POSSIBLE CAUSE	POSSIBLE REMEDY
Hard to Start	
No gasoline in starting tank or carburetor	Fill tank with gasoline, open fuel shut-off valve. Check fuel lines, fuel strainer and carburetor.
Distillate in starting fuel or carburetor	Drain the carburetor and use gasoline for starting; *refer to page 13.*
Gasoline strainer or fuel lines clogged	Clean fuel strainer. Check fuel lines and carburetor.
Impulse coupling inoperative (tractors with magneto)	Flush with kerosene; *refer to page 42.*
Water in gasoline	Drain fuel tank and carburetor. Use new fuel and dry the spark plugs; or see your dealer.
Water in cylinders	Check cylinder head gasket or look for clogged drain hole in exhaust manifold or muffler.
Choked improperly. Flooded engine	Follow starting instructions *on page 10.*
Defective ignition or loose wiring	Check wiring, plugs, battery ignition unit or magneto, etc.; *refer to pages 38 to 54.*
Defective battery or cranking motor	Check and service; *refer to pages 50 to 58, or replace.*
Spark plugs dirty or improper gap	Clean, adjust gap to .023", or replace plugs.
Magneto grounded (tractors with magneto)	Pull out on ignition switch. Check for other possible ground; also refer to "Magneto" *on page 42.*
Engine speed control not advanced	Advance lever one-third for starting.
Lack of compression	Check cylinder head gasket; see your dealer.
Flywheel ring gear teeth broken	See your dealer.
Too heavy viscosity lubricating oil	Drain and refill with proper lubricant. Refer to lubricant specifications *on pages 28 and 29.*
Gears engaged	Put gearshift in neutral.
Internal seizure	See your dealer.
Engine Operates Irregularly or Knocks	
Engine incorrectly timed	Retime. See "Timing the Distributor to the Engine" *on page 41,* or "Timing the Magneto to the Engine" *on page 44.*
Spark plugs dirty; wrong gap or wrong type	Clean, reset gap to .023", or replace.
Poor or weak spark	Check battery ignition unit or magneto to see if spark is good from coil. Check breaker points and breaker point opening, spark plugs, and wiring; *see page 38.*
Carburetor setting incorrect	Adjust as per "Carburetor"; *see page 32.*
Poor grade fuel or water in fuel	Drain and use a good grade of clean fuel.
Engine overheating	Check cooling system and fan belt; adjust radiator shutter if used; see "Engine Overheats" *on page 68.*
Operating a cold engine on distillate	Warm up engine on gasoline before changing over to distillate fuel.
Engine valves at fault	Check valve clearance, or see your dealer.
Air leaks around intake manifold	Check gasket and tighten nuts.
Engine smokes	Check air cleaner oil level. Check fuel delivery at carburetor. Check for worn piston and rings, or see your dealer.
Excessive carbon in engine	See your dealer.
Loose piston pin or bearings	See your dealer.
Broken rings or loose pistons	See your dealer.
Worn connecting rod and main bearings	See your dealer.
Governor sticking or needs adjustment	See your dealer.

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SPECIAL EQUIPMENT

The tractor is used for so many different types of work and is called on to operate under so many different conditions that a considerable variety of special equipment is necessary to adapt it to the varied requirements of the user.

The tractor, as regularly supplied, is equipped to perform straight drawbar work. Beyond that the special equipment requirements are so diverse that is it impractical to include any such equipment regularly on the tractor. In many cases you would be paying for equipment you do not need or want.

These special attachments can be installed on the tractor at any time, and once installed become a permanent part of your tractor.

Below is an index of the special equipment available. The instructions for operating and maintaining these attachments have been incorporated into the instructions for operating and maintaining the tractor. Supplemental information will be found in the following pages. You are urged to read and study this information in order to assure satisfactory service.

Special equipment must not be ordered from this manual. To order attachments, consult your International Harvester dealer, giving the tractor and engine serial numbers.

Types of Equipment	Attachment Number		Page No.
	W-9 Tractor	WR-9 Tractor	
Air Pipe Extension	63 873 D	63 873 D	74
Belt Pulley	59 168 DB	59 168 DB	76, 77
Collector Pre-Cleaner	59 321 D	59 321 D	74
Combination Rear Light and Tail Light	353 268 R92	353 268 R91	78
Drawbar, Swinging	58 742 D	58 742 D	80
Exhaust Muffler	50 918 D	50 918 D	75
Exhaust Pipe Extension	54 127 D	54 127 D	75
Hour Meter	356 735 R91	356 735 R91	74
Low Boiling Point Thermostat and Heat Indicator	64 072 D	64 072 D	74
Mud Scraper	.....	70 049 D	81
Piston, 5000 Ft. Altitude (Gasoline)	60 802 DB	.....	76
Piston, 5000 Ft. Altitude (Distillate)	60 147 DB	.....	76
Piston, 8000 Ft. Altitude (Gasoline)	60 147 DB	.....	76
Piston, 8000 Ft. Altitude (Distillate)	60 149 DB	.....	76
Power Take-Off	70 276 D	70 277 D	79
Pre-Screener	353 413 R91	353 413 R91	75

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SPECIFICATIONS

Capacities	W-9 Tractor	WR-9 Tractor
Cooling system	10 gal.	10 gal.
Fuel tank	36 gal.	36 gal.
Gasoline starting tank (with distillate or kerosene engine)	7/8 gal.	7/8 gal.
Crankcase pan	11 qt.	11 qt.
†Transmission and differential case	10 gal.	10 gal.
Steering gear housing	1 qt.	1 qt.
Air cleaner oil cup	3-3/4 pt.	3 3/4 pt.

† Also see the "Lubrication Guide."

Engine		
Cylinders	4	4
Bore	4.4 in.	4.4 in.
Stroke	5.5 in.	5.5 in.
Engine Speeds: Minimum speed (governed)	400 to 450 r.p.m.	400 to 450 r.p.m.
Maximum idle speed (no load)	1,650 r.p.m.	1,650 r.p.m.
Maximum (full load)	1500 r.p.m.	1500 r.p.m.
Battery ignition unit (counterclockwise rotation with automatic spark advance)	IH	IH
Magneto (when so equipped) (fixed spark, counter-clockwise rotation)	IH Type H-4	IH Type H-4
Spark plug gap	.023 in.	.023 in.
Valve clearance (engine hot)	.017 in.	.017 in.
Carburetor	IH 1-3/8 in. updraft	IH 1-3/8 in. updraft

Clutch		
Single-plate, dry-disc, spring-loaded	12 in.	. . . . .
Over-center-type (hand-controlled)	. . . . .	12 in.

Fuse and Headlight Lamps		
Fuse (cartridge-type) (No. 106 653)	SFE-20	SFE-20
Headlight lamp (No. 142 309 - Trade No. 1133)	6-8 volt 32-candlepower	6-8 volt 32-candlepower

Belt Pulley		
Pulley speeds: Low idle (no load)	200 r.p.m.	200 r.p.m.
Fast idle (no load)	778 r.p.m.	778 r.p.m.
Maximum (full load)	707 r.p.m.	707 r.p.m.
Belt speed (with 14-in. pulley) (at full-load engine speed)	2,593 ft. per min.	2,593 ft. per min.
Pulley diameter	14 in.	14 in.
Pulley face	8-1/2 in.	8-1/2 in.

Power Take-Off		
Power take-off shaft speeds: Maximum (full load)	538 r.p.m.	538 r.p.m.
Low idle (no load)	152 r.p.m.	152 r.p.m.
Fast idle (no load)	592 r.p.m.	592 r.p.m.

Foot Brakes		
External-contracting-band type, operated either individually or interlocked.		

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