



Model 50 Series Tractors



JOHN DEERE

SERVICE MANUAL Model 50 Series Tractors

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ENGLISH



**SERVICE MANUAL FOR
JOHN DEERE DEALERS**

MODEL  SERIES TRACTOR

TABLE OF CONTENTS

	<i>Page</i>
INDEX	1-2
	<i>Section</i>
Description and Specifications	10
Preparing the Tractor for Delivery to the Customer	20
Tractor Tune-Up and Adjustments	40
Engine	60
Governor and Fanshaft Assembly	70
Ignition and Electrical Systems	80
Cooling System	90
Engine Lubrication System	100
Fuel System	110
Pulley, Clutch, and Pulley Brake	120
Transmission and Transmission-Driven Power Shaft	130
Engine-Driven Power Shaft	135
Differential and Final Drive	140
Brakes	150
Wheels and Tires	160
Steering Mechanism and Front Axle	170
Powr-Trol	180

INTRODUCTION

This Unit of the Service Manual contains maintenance instructions for the Model "50" Tractor. Included are complete instructions for removal, disassembly, inspection, repair, assembly, and installation of all parts and assemblies.

In addition, the manual contains a brief description of the more complicated systems of the tractor and tells how they operate. Dimensions of many new wearing parts are given as an aid in determining when parts replacement is necessary. Tests and adjustments required to keep the tractor operating at full efficiency are explained in detail. Full instructions on preparing a new tractor for delivery to the customer are included.

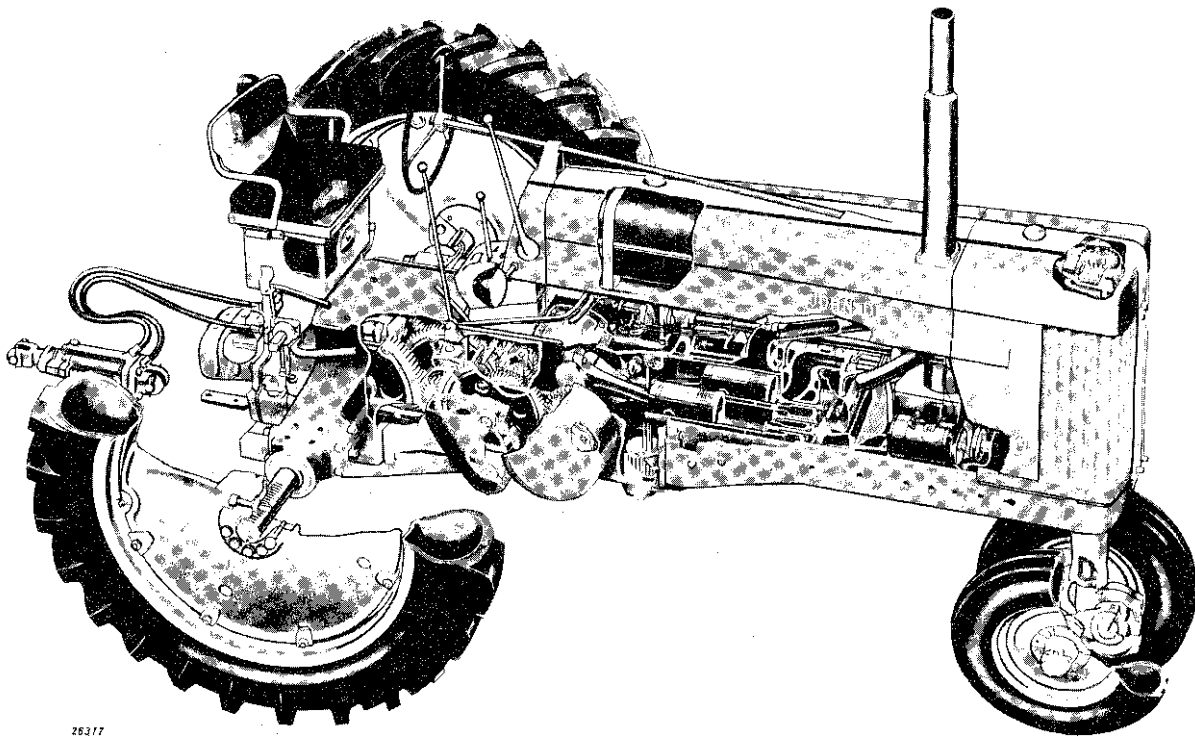
Complete instructions for testing, repairing, and adjusting the carburetor, generator, starter, and distributor are given in the "*Tractors and Engines (General)*" Unit of the Service Manual. For additional information concerning Powr-Trol mecha-

nism, consult "Hydraulic Equipment, Tractors (Waterloo)" Unit of the Service Manual.

If tractor design changes or improved methods of maintenance are found, new pages with the latest information will be supplied for your Service Manual. When these pages are sent to you, insert them in your manual immediately. Keep your book up-to-date at all times and you will profit by the suggestions given.

The Service Manual was planned and written for the Service Department; its place is in the shop. Use the manual whenever in doubt about correct maintenance procedures. Use it as a text book for new Service Department personnel who are unfamiliar with John Deere Tractors.

Daily use of the Service Manual as a guide for any and all service problems will reduce error and costly delay to the minimum and assure you the best in finished service work.



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Cut-Away View of John Deere Model "50" Tractor

INDEX

A	<i>Page</i>	D	<i>Page</i>
Air Cleaner	110-15-1	Description of Model "60" Tractor	10-5-1
Air Cleaner Bracket	110-15-1	Differential	140-5-1
Axle, Front, Wide Adj.-Tread	170-15-1	Differential Adjustment	140-5-5
B		Distributor	80-5-1
Batteries	80-20-1	Distributor Adjustment	80-5-1
Bevel Gear, Fan Shaft	70-15-2, 70-15-4	Distributor, Timing	40-5-4
Bevel Pinion, Governor	70-5-3, 70-15-4	Drive Gear and Shaft, Transmission	130-15-1
Brakes	150-5-1	Drive Gear, Oil Pump	60-25-1
Brakes, Adjusting	150-5-5	E	
Brake, Pulley	120-5-1, 120-10-1	Engine	60-5-1
Brake Shoes	150-5-3	Engine Specifications	60-30-1
Bearings, Camshaft	60-25-1	F	
Bearings, Main	60-20-1	Fan Shaft	70-5-1, 70-15-1
C		Fast Idle Speed Adjustment	40-5-8
Camshaft	60-25-1	Felt Washers, Rear Axle Housing	140-10-1
Cam Followers	60-25-1	Filter, Fuel	40-5-6, 110-10-1
Cam Follower Guides	60-25-1	Filter, Oil	100-15-1
Camshaft, Timing	60-20-5	Final Drive	140-10-1
Carburetors	110-5-1	Final Drive Adjustment	140-10-4
Carburetor Adjustment	40-5-8	First Reduction Gear Cover	120-10-1
Carburetor Control Linkage	110-5-2	Flywheel	60-20-1
Case, Governor	70-5-4	Followers, Cam	60-25-1
Choke Adjustment	40-5-9	Front Wheels	40-5-11, 160-5-1
Cleaning, Radiator	40-5-6	Front Wheel Adjustment	160-5-3, 160-5-4
Clutch	120-5-1	Front Wheel, Single	160-5-3
Clutch Adjustment	120-5-5	Fuel Filter	40-5-6, 110-10-1
Clutch Facings	120-5-1, 120-5-3	Fuel System	110-5-1
Clutch Operating Parts	120-10-1	Fuel Tanks	110-10-1
Clutch, Power Shaft	135-10-1	Fuel Valve, Three-Way	110-10-1
Clutch, Power Shaft, Adj.	135-10-6, 135-10-7	G	
Coil	80-5-1	Gauge, Oil Pressure	100-20-1
Compression Test	40-5-2	Generator	80-15-1
Connecting Rods	60-15-1	Governor	70-5-1, 70-10-1
Countershaft Adjustment	130-15-2	Governor Shaft	70-5-2
Countershaft, Transmission	130-15-1	Guide, Cam Follower	60-25-1
Cover, Reduction Gear	120-10-1	I	
Crankcase Ventilation	60-5-2	Ignition System	80-5-1
Cranking Motor	80-10-1	J	
Crankshaft	60-20-1	Journals, Crankshaft	60-20-4
Crankshaft End Play	60-20-6	K	
Crankshaft Journals	60-15-5	Knee, Front Axle	170-15-2
Current-Voltage Regulator	80-15-1	Knuckle, Front Axle	170-15-4
Cylinder Block	60-15-1	Knuckle, Roll-O-Matic	170-10-2
Cylinder Head	60-10-1		
Cylinder Measurements	60-15-3		

L	<i>Page</i>	<i>Page</i>		
Lights	80-20-1	Relief Valve, Powr-Trol	40-5-12	
Linkage, Speed Control	40-5-8	Rings, Piston	60-15-2	
Lock, Roll-O-Matic	170-10-1	Rockshaft Housing	180-10-1	
Lubrication System	100-5-1	Roll-O-Matic	160-5-1, 170-10-1	
M				
Main Bearings	60-20-1	S		
Main Bearing Measurements	60-30-3	Shaft, Governor	70-5-2	
Manifold	60-10-1	Shifters	130-10-2	
Motor, Cranking	80-10-1	Shifter Adjustment	130-10-4	
O			Shifter Lever, Power Shaft	130-20-1
Oil Pressure Adjustment	40-5-9, 100-20-1	Shifter Shafts	130-10-2	
Oil Filter	100-15-1	Shutter	90-15-1	
Oil Pressure Gauge	100-20-1	Single Front Wheel	160-5-3	
Oil Pump, Engine	100-5-1	Sliding Gear Shaft	130-15-1	
Oil Pump, Power Shaft	135-10-2	Slow Idle Speed Adjustment	40-5-8	
P			Spark Plugs	80-5-2
Pedal, Brake	150-5-3	Speed Control Lever, Adjustment	40-5-8	
Pedestal	170-5-1	Spindle, Front Wheel, Roll-O-Matic	170-10-3	
Pistons	60-15-1	Spindle, Wheel, Adj. Front End	170-15-4	
Piston Measurements	60-15-2	Steering Shaft	170-5-1	
Piston Pins	60-15-2	Steering Shaft and Worn End Play Adj.	170-5-6	
Piston Rings	60-15-2	Steering Shaft Backlash Adj.	170-5-6	
Power Shaft Clutch	40-5-10, 135-10-1	Steering Spindle	170-5-2	
Power Shaft Clutch Adj.	135-10-6, 135-10-7	Steering Spindle End Play Adj.	170-5-5	
Power Shaft, Engine-Driven	135-5-1	T		
Power Shaft, Trans.-Driven	135-5-1	Tappet Adjustment	60-10-6	
Powr-Trol Adjustment	40-5-12	Tappet Clearance	40-5-5	
Powr-Trol Cracking Pressure	40-5-12	Thermostat	90-15-1	
Powr-Trol Pump	180-5-1	Throttle Control Linkage	110-5-2	
Powr-Trol Relief Valve	40-5-12	Timing Distributor	40-5-4	
Powr-Trol Valve Housing	180-10-1	Timing Light	40-5-4	
Preparing the Tractor for Delivery	20-5-1	Tires	160-15-1	
Pressure Regulator, Oil	100-20-1	Toe-In Adjustment	170-15-6	
Pulley	120-5-1	Tractor, Model "50," Description	10-5-1	
Pulley Brake	40-5-10, 120-5-1, 120-10-1	Tractor, Model "50," Specifications	10-10-1	
Pulley Brake Adjustment	40-5-10, 120-10-3	Transmission	130-5-1	
Pump, Oil, Engine	100-5-1	Tread Adjustment	160-10-1	
Pump, Oil, Power Shaft	135-10-2	Tune-Up	40-5-1	
Pump, Powr-Trol	180-5-1	V		
Pump, Ventilator	70-5-1, 70-15-1	Valves	60-10-4	
Pump, Water	90-10-1	Valve Timing	40-5-5	
R			Valve, Fuel, Three-Way	110-10-1
Radiator	90-5-1	Valve Housing, Powr-Trol	180-10-1	
Radiator, Cleaning	40-5-6	Ventilator Pump	70-5-1, 70-15-1	
Radiator, Core	90-5-2	W		
Rear Axles	140-10-1	Water Pump	90-10-1	
Rear Wheels	160-10-1	Wheels, Front	160-5-1	
Rear Wheel Tread Adjustment	160-10-1	Wheels, Rear	160-10-1	
Reduction Gear Cover	120-10-1	Wheel Weights	160-15-2	
Regulator, Current-Voltage	80-15-1	Wide Adjustable-Tread Front Axle	170-15-1	
		Wiring Diagram	80-20-1	
		Worm, Steering Shaft	170-5-1	

Section 10

Description and Specifications

Group 5

DESCRIPTION

The John Deere Model "50" Tractor is a general purpose tractor with sufficient power to pull two 14-inch plow bottoms or the equivalent under normal conditions. The tractor has six forward speeds and one reverse speed.

The features of the tractor are described briefly in the paragraphs which follow. Full descriptions of each of the components or assemblies are contained in the various Sections throughout this manual.

Serial Numbers.

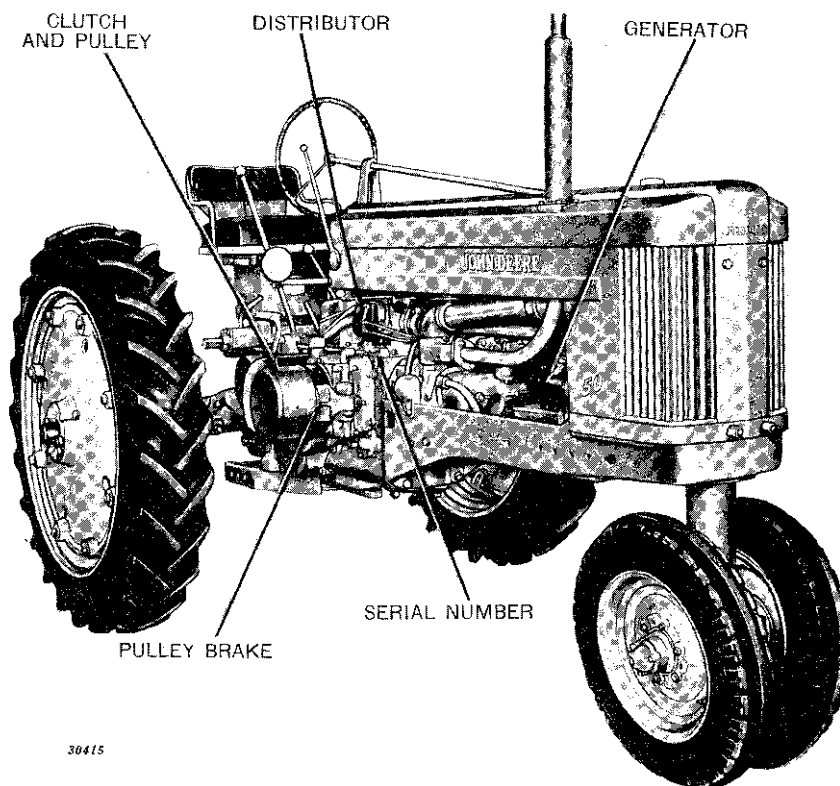
Each tractor bears a serial number located on top of the main case just under the distributor (Figure 10-5-1).

The distributor and the Powr-Trol valve housing also bear serial numbers.

Engine.

The tractor is powered by a two-cylinder, cast-in-block, valve-in-head engine with a displacement of 190.4 cubic inches. Rotation is counterclockwise when viewed from the fly-wheel side.

The engine has aluminum alloy, sleeve-type main bearings and replaceable, precision-type connecting rod bearings. All bearings and other parts of the engine are pressure lubricated by a full force feed pressure system with a full flow oil filter. The system includes a replaceable Purolator filter element. The crankcase is ventilated by a pump located on the rear end of the fan shaft. Engine speeds are controlled by a fly-ball type governor driven by the camshaft.



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Figure 10-5-1—John Deere Model "50" Tractor—Pulley Side

Fuel System.

Both gasoline and All-Fuel tractors are available.

These tractors are equipped with a dual-induction carbureting system using a gravity-fed, natural-draft, dual intake carburetor and individually ported valves. Some early All-Fuel tractors used a natural-draft, single intake carburetor. The All-Fuel tractor has two fuel tanks—a large tank for fuel and a small auxiliary tank for gasoline which is used when starting the All-Fuel engine.

An oil-wash air cleaner assures clean air for the engine.

Ignition.

The tractor has a battery-distributor type ignition system with automatic spark advance. A 12-volt battery, generator, starter and lights are standard equipment. The lights consist of two front lights which can be made bright or dim, and a rear combination white and red warning light.

Cooling System.

The engine is water cooled. The cooling system includes a centrifugal-type water pump and a thermostatically controlled shutter.

Clutch.

A dry disk, hand-operated clutch is enclosed within the belt pulley. The clutch contains four 7-inch dry disks. It is engaged by the clutch lever and rotates at crankshaft speed. When the clutch is disengaged, an adjustable pulley brake prevents pulley rotation.

Transmission and Differential.

The transmission lies crosswise in the main case. Shifting through the entire range of six forward speeds and one reverse speed is accomplished by one shift lever.

The differential is of the conventional type with a ring gear and spider driven directly by a pinion in the transmission.

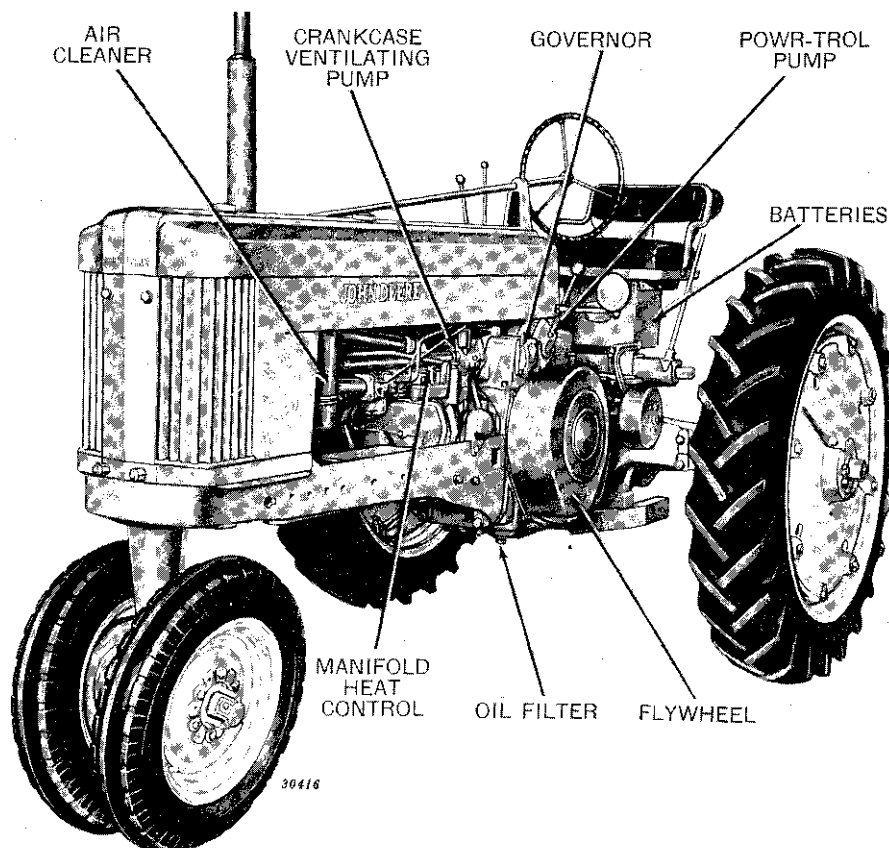


Figure 10-5-2—John Deere Model "50" Tractor—Flywheel Side

Brakes.

Two individually operated foot brakes are provided to stop the tractor or hold it on inclines. Each brake has two internal-expanding brake shoes and a drum with a shaft and gear which meshes with the final drive gear.

Front Wheel Assemblies.

The tractor may be equipped with a variety of front wheel assemblies. These include the Roll-O-Matic, standard dual front wheel, wide adjustable front axle, single front wheel, and 38-inch fixed tread. The wide adjustable front axle provides a tread range from 56 to 80 inches in 4-inch steps.

Rear Wheels.

Rear wheel tread adjustment is made by a pinion located in the wheel hub which engages a rack on the axle. Extreme adjustments are made by changing the position of the rim and tire on the wheel.

The tractor may be equipped with *regular-length*

rear axles or *long* rear axles. With regular axles and 38-inch tires the tread range is 56 to 88 inches. With long axles and 38-inch tires the tread range is 62-1/2 to 97-3/4 inches. If the tractor has long axles and 42-inch tires the tread can be adjusted from 56 to 104 inches.

Power-Take-Off Shaft.

Two types of power take-off shaft are available: the conventional transmission-driven type, and optional, engine-driven "live" type with self-contained clutch permitting operation of P.T.O. equipment independently of tractor ground travel. Both types of shaft conform to A.S.A.E. standards.

Hydraulic System.

The tractor may be equipped with Powr-Trol which raises, lowers, or sets integral implements at any desired depths. An implement-mounted remote cylinder may be used with Powr-Trol. The gear type hydraulic pump is mounted on the rear of the governor case and is driven through an idler gear by the camshaft.

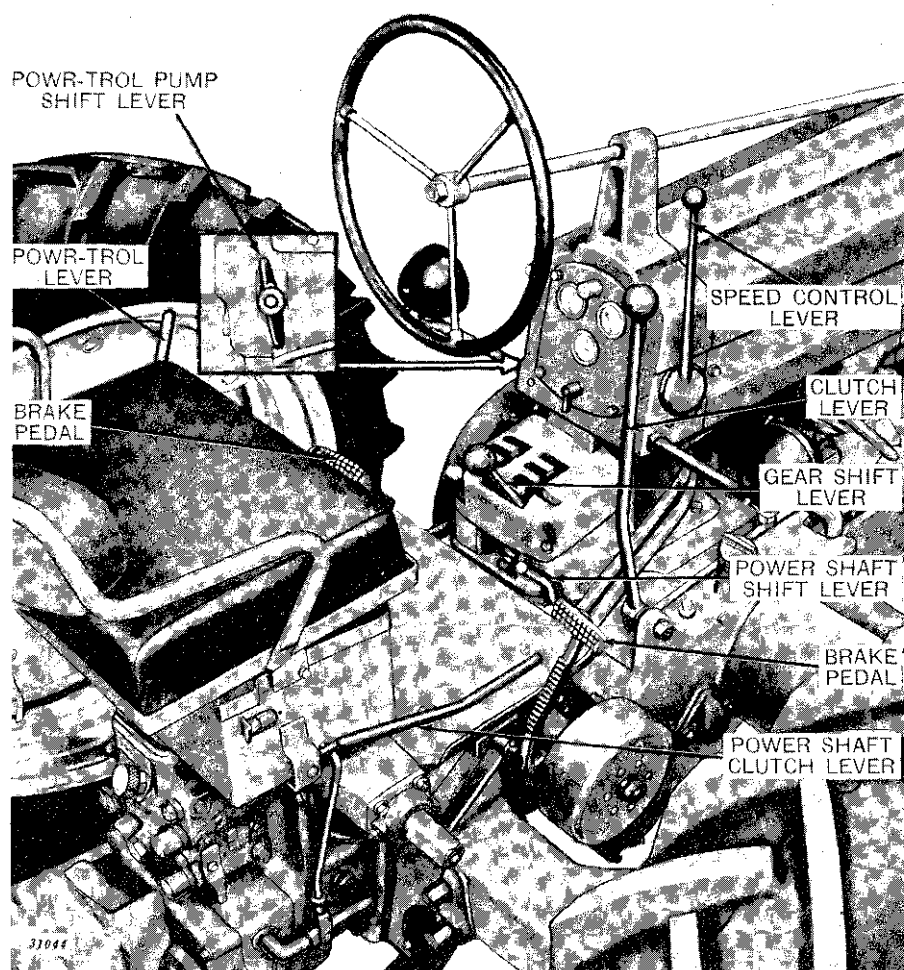


Figure 10-5-3—Operating Controls

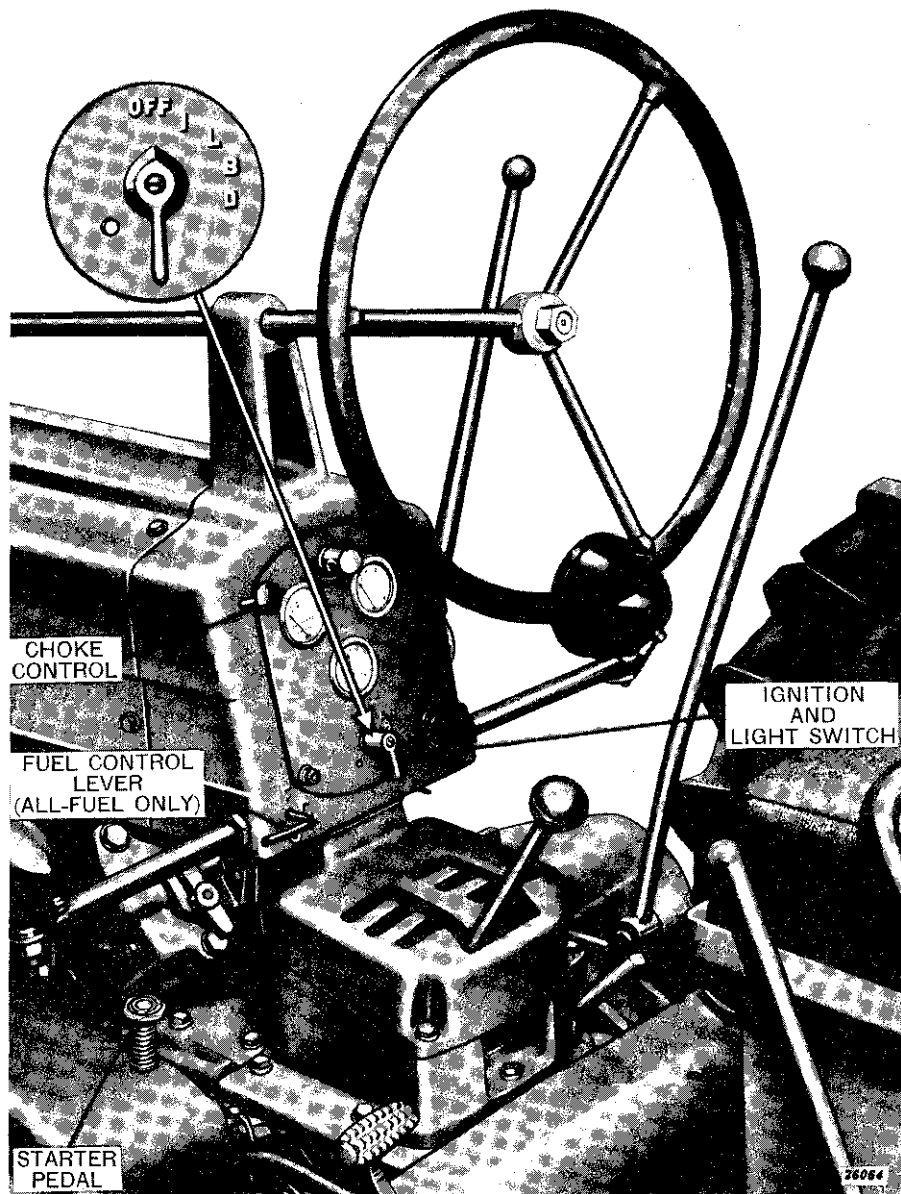


Figure 10-5-4—Starting Controls

Group 10 SPECIFICATIONS

PERFORMANCE:

Capacity for Work:

Two 14-inch plow bottoms or a two-bottom bedder under normal conditions.

Maximum Belt Horsepower:

*Gasoline 30.97
 **All-Fuel 00.00

Maximum Drawbar Horsepower:

*Gasoline 27.49
 **All Fuel 00.00

CAPACITIES (U. S. MEASUREMENTS):

Gasoline Tank:
 Gasoline Tractor 15-1/2 Gals.
 All-Fuel Tractor 2 Gals.
Fuel Tank (All-Fuel) 15-1/2 Gals.
 Crankcase 7 Qts.
 Transmission 4-1/2 Gals.
 Powr-Trol 6 Qts.
 Power Shaft Clutch 1-3/4 Qts.
 Remote Cylinder 1 Qt.
 Cooling System 7 Gals.

SPEEDS:

Gear	10-38 Tires	9-42 Tires
1	1-1/2 mph	1-3/4 mph
2	2-1/2 mph	2-3/4 mph
3	3-1/2 mph	3-3/4 mph
4	4-1/2 mph	4-3/4 mph
5	5-3/4 mph	6 mph
6	10 mph	10-3/4 mph
Reverse	2-1/2 mph	2-3/4 mph

ENGINE:

Type Two-cylinder, cast-in-block, valves-in-head.

Engine Speeds:

Load 1250 rpm
 Idle 1375 rpm

Bore and Stroke 4-11/16" x 5-1/2"

Displacement 190.4 cubic inches

Compression-Ratio:

Gasoline 6.1 to 1
 All-Fuel 4.65 to 1

*Sea level (calculated): Maximum h.p. based on 60° F. and 29.92 in. hg. (Nebraska Test No. 486).

**All-Fuel Tractor not tested at Nebraska.

LUBRICATION SYSTEM:

Type Full force-feed pressure system with purolator oil filter element.

FUEL SYSTEM:

Type Gravity feed.
 Carburetor Natural-draft duplex type
 Early All-Fuel Natural-draft type
 Air Cleaner Oil-wash type

COOLING SYSTEM:

Type Centrifugal pump and thermostatically controlled shutter.

IGNITION SYSTEM:

Type Battery-Distributor
 Distributor Point Gap015"
Spark Plugs:
 Size 18 mm.
 Spark Plug Gap030"

ELECTRICAL SYSTEM:

Battery Voltage 12 Volts
 Generator Regulation Current Voltage Regulator.
 Battery Group 1

CLUTCH:

Type Hand-operated, four 7-inch dry disks.

BELT PULLEY:

Diameter 9-11/16"
 Width 7-1/4"
 Rpm (Load) 1250
 Belt Speed 3170 fpm

TRANSMISSION:

Type Six speeds forward and one in reverse.
 Gears Selective-type, straight spur-cut gears, forged and heat-treated.
 Bearings Shafts operate on three roller bearings, four tapered roller bearings, and five ball bearings.

(Continued on next page)

REAR AXLES:

Diameter..... Regular..... 2-7/8"
 Long..... 3-1/8"
 Bearings..... Four tapered roller bearings.
 Types Available..... Regular and long

REAR WHEEL BRAKES:

Type..... Two automotive-type internal-expanding rear wheel brakes.

REAR WHEELS AND TIRES:

Regular Rear Axle..... 10-38, 4-ply tires on cast disk wheels (recommended for average field conditions). 11-38, 4- or 6-ply tires also available.
 Long Rear Axle..... 9-42, 6-ply tires on cast disk wheels. 11-42, 6-ply, 10-38, 4-ply and 11-38, 4- or 6-ply tires also available.

FRONT WHEELS AND TIRES:

Double and Adjustable Type:
 Reversible for added clearance.
 Bearings..... Four tapered roller bearings.
 Tires..... 5.50 x 16", 4-ply.
 Single Type:
 Bearings..... Two tapered roller bearings.
 Tires..... 6.50 x 16", 4- or 6-ply. 9.00 x 10", 8-ply.

	Double Front Wheel*	Single Front Wheel (42" Rear Wheel)	Adjustable Tread Front Axle (42" Rear Wheel)
POWER TAKE-OFF:			
Shaft Diameter.....	1-3/8"	1-3/8"	1-3/8"
Shaft rpm:			
Transmission Driven.....	541	541	541
Direct Engine Driven.....	532	532	532
Splined End Ahead of Hitch.....	14"	14"	14"
Splined Shaft Above Ground:			
Transmission Driven.....	21-1/16"	22-3/4"	22-3/4"
Direct Engine Driven.....	22-5/8"	24-5/16"	24-5/16"
DIMENSIONS:			
Wheel-Base.....	90"	90-1/4"	96-3/8"
Over-All Height.....	82-3/16"	82-3/4"	83-3/4"
Height to Radiator Cap.....	59-7/8"	60-7/16"	61-7/16"
Width Over Axles.....	86-5/8"	95-15/16"	95-15/16"
Tread Adjustments.....	56-88"***	56-104"	56-104"
Clearance.....	24-1/4"	26"	Front 24" Rear 26"
Turning Radius.....	8' 7-1/2"	10' 5"	17' 0"
SHIPPING WEIGHT	4435 lbs.	4465 lbs.	4875 lbs.

(Weights are for Tractor dry and with wheel equipment as shown under "Front Wheels" and "Rear Wheels")

*Available with 2-piece pedestal—double front wheel—single front wheel or adjustable tread front axle.
 **Available with long axles providing tread of 62-1/2" to 97-3/4".

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