

John Deere

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MODEL:

820 2 Cyl Diesel

S/n 8,203,100 & Up

**OPERATOR'S
MANUAL**



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JD-O-OMR2088

**820 Diesel Tractor
with V-4 Gasoline
Cranking Engine
(Serial No. 8203100-)**

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MANUAL PREVIEW

OPERATORS MANUAL

820 Diesel Tractor with V-4 Gasoline Cranking
Engine (Serial No. 8203100-)

OMR2088 (01JUL63) English

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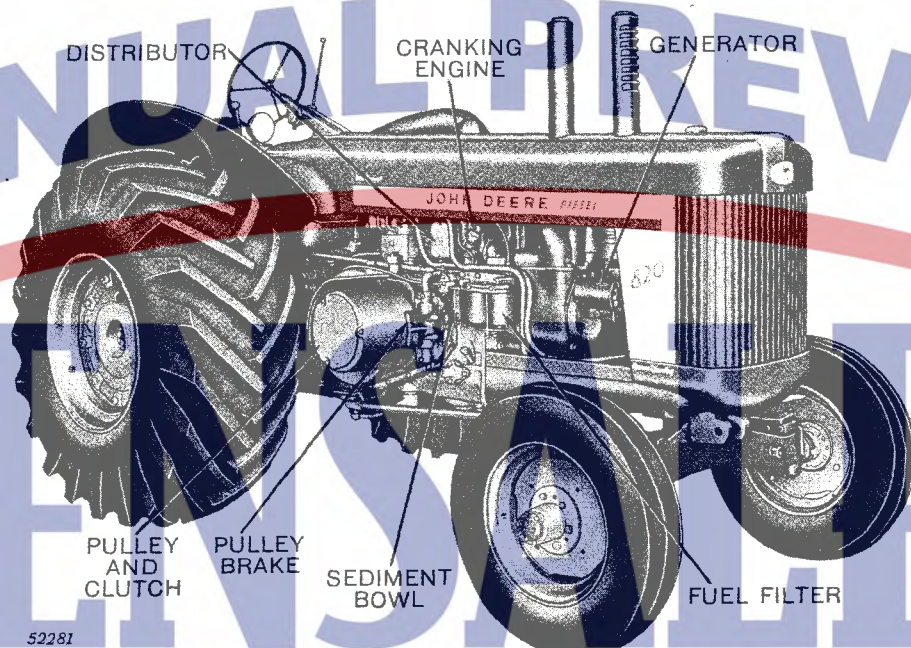
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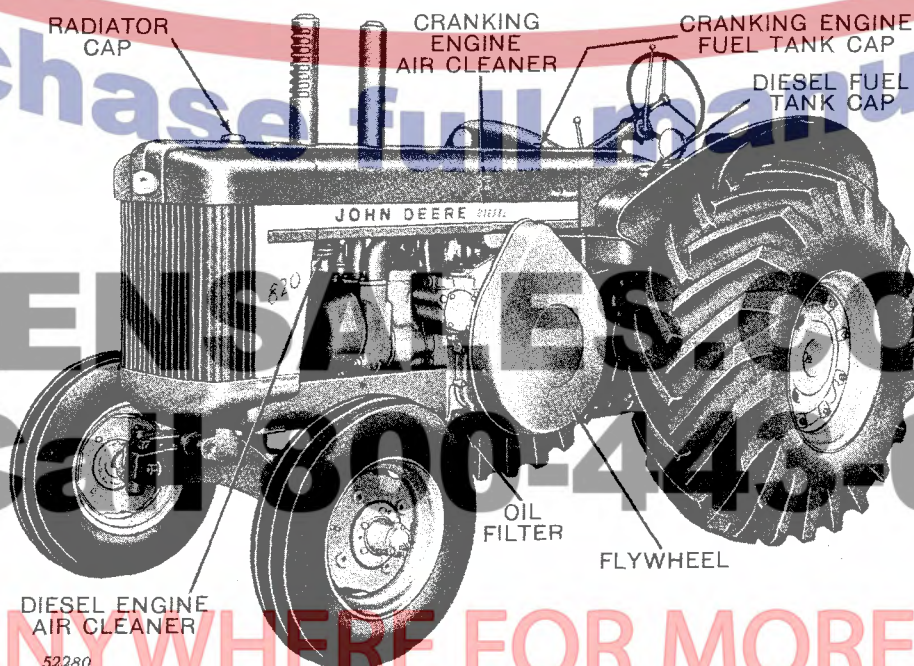
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This is Your New John Deere Tractor



**John Deere "820 Series Diesel Tractor—Pulley Side
(Serial No. 8203100-)**



**John Deere "820" Series Diesel Tractor—Flywheel Side
(Serial No. 8203100-)**

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SPECIFICATIONS

PERFORMANCE:

Capacity for Work:

Six 14-inch plow bottoms or an equivalent load in most soil conditions.

*Maximum Horsepower:

Belt.....
Drawbar.....

CAPACITIES (U. S. MEASUREMENTS):

Fuel Tank.....	32-1/2 Gals.
Gasoline Tank.....	1 Qt.
Crankcase (Diesel).....	3-1/2 Gals.
Transmission (Diesel).....	3-1/4 Gals.
Crankcase (Cranking Engine).....	1-1/2 Qts.
Transmission (Cranking Engine).....	1/2 Pt.
Power-Trol.....	3 Gals.
Power Shaft Clutch.....	3-3/4 Qts.
Remote Cylinder (Each).....	1-3/4 Qts.
Cooling System.....	8 Gals.
Power Steering Reservoir.....	5-1/2 Qts.

SPEEDS:

Gear	15-34 Tires
1st Regular.....	2-1/3 mph
1st Optional.....	1-3/4 mph
2nd.....	3-1/2 mph
3rd.....	4-1/2 mph
4th.....	5-1/3 mph
5th.....	6-3/4 mph
6th.....	12-1/4 mph
Reverse.....	2-2/3 mph

DIESEL ENGINE:

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

Bore and Stroke.....	6-1/8" x 8"
Compression Ratio.....	16 to 1
Displacement.....	471-1/2 cu. in.
Engine Speeds:	
Load.....	1125 rpm
Fast Idle.....	1270 rpm
Slow Idle.....	750 rpm

CRANKING ENGINE:

Type.....	Four-cylinder V-type valves-in-head.
Bore and Stroke.....	2" x 1-1/2"
Displacement.....	18.85 cu. in.
Engine Speeds:	
Load.....	4500 rpm
Slow Idle.....	4000 rpm
Fast Idle.....	5000 rpm

LUBRICATION SYSTEM:

Type..... Force-feed pressure system with full-flow oil filter.

FUEL SYSTEM:

Type..... Gravity to sediment bowl.
Transfer pump through filters.
Air Cleaners. Oil-wash type.

COOLING SYSTEM:

Type..... Pressure system. Centrifugal pump with temperature controlled by heavy-duty thermostat.

IGNITION SYSTEM (CRANKING ENGINE):

Type..... Battery-distributor
Distributor Point Gap..... .020"
Spark Plugs:
Size..... 14 mm.
Spark Plug Gap..... .025"

ELECTRICAL SYSTEM:

Battery Voltage..... 6 Volts
Generator Regulation..... Voltage Regulator
Battery..... Group 1

CLUTCH:

Type..... Hand-operated, eight 9-1/4" dry disks.

BELT PULLEY:

Diameter..... 12-7/32"
Width..... 9"
Belt Speed.... At 1125 rpm—3600 fpm
At 1000 rpm—3200 fpm
(ASAE-SAE Standard)

TRANSMISSION:

Type..... Six forward speeds and one in reverse. (1-3/4 mph 1st speed available as optional equipment.)
Gears..... Selective type, straight spur cut gears, forged and heat-treated.
Bearings... Shafts operate on six tapered roller bearings.

REAR WHEEL BRAKES:

Type..... Automotive-type, internal expanding.

*Not tested at Nebraska.

(Continued on next page.)

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by a control lever located on the pump housing.

CAUTION: Do not engage the Powr-Trol pump while the engine is running. Read operating instructions on page 43.

The Powr-Trol sliding shifter collar is spring loaded. To engage the Powr-Trol pump turn control lever to engaged position ("ON" at top), then start the Diesel engine. The pump can be disengaged while the Diesel engine is running at slow idle.

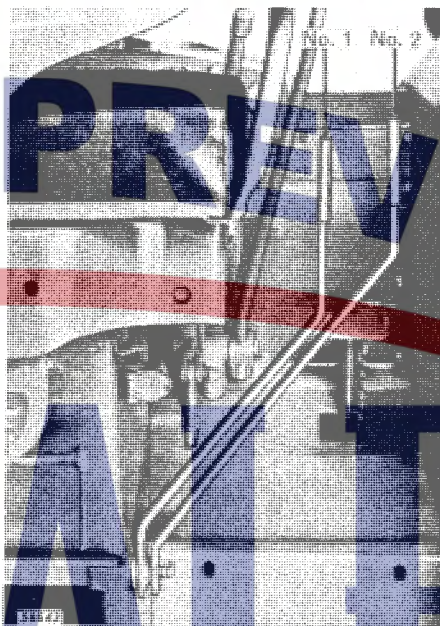


Powr-Trol Pump Control Lever

POWR-TROL OPERATING LEVERS.

Either single control valve or dual control valve Powr-Trol systems are used. One remote cylinder is used with the single control valve and either one or two cylinders with the dual control valve.

The levers at the right hand side of the seat operate the cylinders. On tractor equipped with the single con-



Powr-Trol Operating Levers

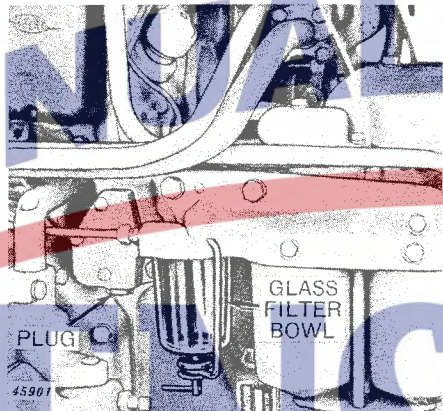
trol valve there is only one valve and one remote cylinder. The inner of the two operating levers (No. 1) operates the cylinder attached to the left-hand (No. 1) breakaway coupling.

When two cylinders are used the outer lever (No. 2) is used to operate the second cylinder attached to the right-hand (No. 2) breakaway coupling. Both levers can be used simultaneously to operate both cylinders at the same time. Each lever has five operating positions; neutral, slow raise, fast raise, slow drop and fast drop. Implements are raised by moving the lever forward and dropped by moving the lever to the rear. For further information, see page 29.

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FUEL SEDIMENT BOWL.

If glass bowl contains more than one-third water or foreign matter,



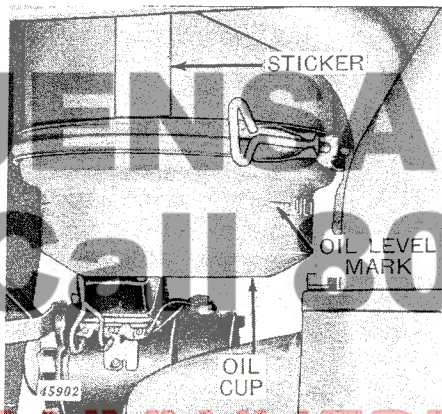
Fuel Sediment Bowl

it must be cleaned out as follows: Close fuel valve under fuel tank. Remove glass bowl and clean it thoroughly. Install bowl loosely using a good gasket.

Open the fuel valve and allow fuel to fill bowl. Then tighten bowl securely.

CHECKING DIESEL ENGINE AIR CLEANER.

Under normal conditions the air cleaner requires servicing about every 30 hours of operation. How-



Diesel Engine Air Cleaner

ever, it should be checked every 10 hours.

NOTE: If the tractor is operated in extremely dirty conditions or is operating at maximum load, it may be necessary to check and service the air cleaner at the end of 5 hours' run.

If screen at bottom of element is covered with lint or chaff to the extent that it might restrict the air flow, service the screen. See "30-Hour Service."

If there is 1/2-inch of dirt in the bottom of inner or outer oil cup or if the oil is too thick with suspended dirt to flow freely, service the air cleaner. See "30-Hour Service." If oil level is low and oil appears clean, add oil of correct weight to bring it up to the oil level mark. **Do not fill above oil level mark.**



Air Cleaner Cup and Screens



SAFETY FIRST. Stop engine before servicing air cleaner.

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clockwise), which **tightens** the clutch, will increase the measurement on the indicator rod. Turning the cam upward (clockwise), which **loosens** the clutch will decrease the measurement on the indicator rod.

After correct adjustment has been obtained, turn the locking screw outward, into one of the notches of the adjusting cam.

Replace clutch-adjusting hole plug and cap nut over indicator rod.

POWERSHAFT BRAKE ADJUSTMENT.

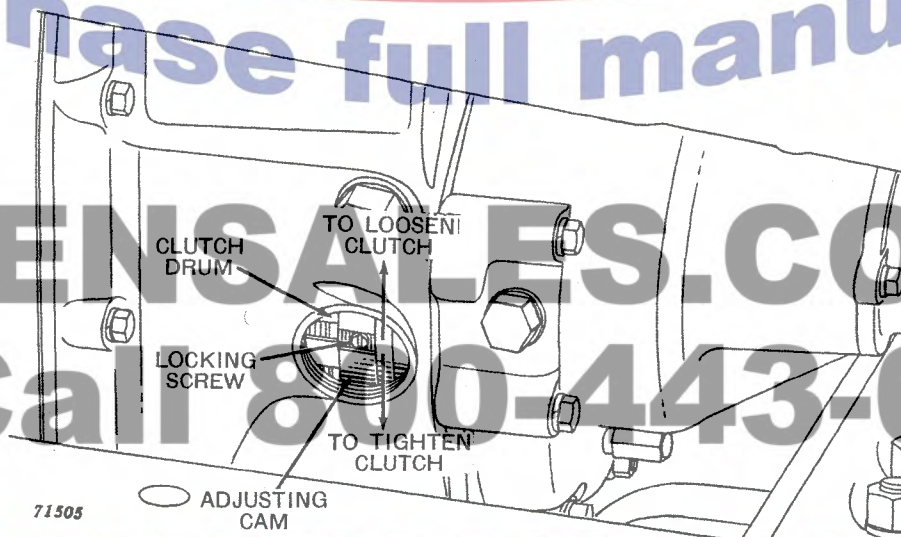
If the powershaft fails to stop when clutch is disengaged and lever latched, it will be necessary to adjust the powershaft brake. To do so, disconnect yoke on lower end of operating rod from fork shaft, loosen jam nut and turn yoke 1/2 turn at a time to lengthen operating rod,



Clutch Operating Rod and Yoke

until powershaft stops when clutch is disengaged and lever latched. After correct adjustment is made, tighten jam nut and connect yoke.

CAUTION: Always see that powershaft is disengaged and lever latched before dismounting from tractor.



Cam Locking Screw

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