720 Series
Diesel Tractor

JOHN DEERE

SERVICE MANUAL

720 Series
Diesel Tractor

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SERVICE MANUAL FOR JOHN DEERE DEALERS

720 SERIES DIESEL TRACTOR

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Group 10
STARTING AND STOPPING THE ENGINES

PRELIMINARY STEPS

(1) Set gear shift lever in neutral and pull the clutch lever back into disengaged position.

(2) In cold weather, set powershaft shift lever in disengaged position to relieve drag on engine caused by cold transmission oil. If powershaft is to be used, permit engine to warm up before engaging powershaft shift lever.

(3) Make sure fuel shut-off valve at sediment bowl (located under main fuel tank) is open.

(4) See that Diesel engine speed control lever is in the "stop" position (all the way to the rear with stop pin pulled out).

STARTING THE CRANKING ENGINE

(1) Open cranking engine fuel shut-off valve two or three turns by turning the lever counterclockwise (Figure 10-10-1).

(2) See that cranking engine throttle lever is to the right in "Start" position.

(3) Turn ignition switch to "I" position (Figure 10-10-1).

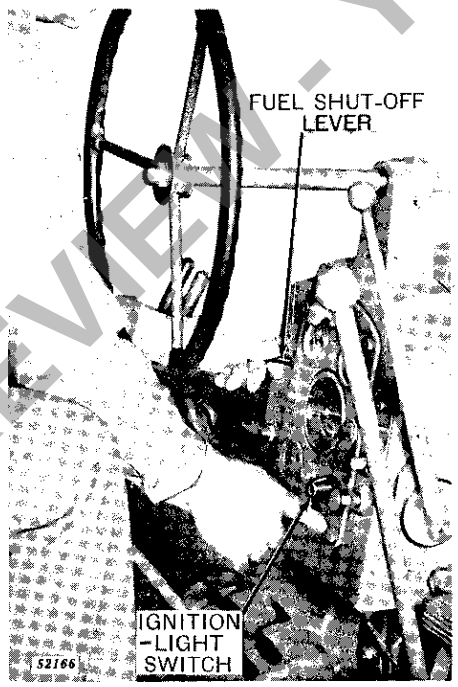


Figure 10-10-1—Operating Fuel Shut-Off Valve and Ignition Switch

NOTE: A red light, located to the left of the ignition switch, is connected to both the ignition and the cranking engine oiling systems. The light should come on when the ignition switch is turned to the "I" position; then, after the engine is started and oil pressure is present, the light should go out. If it does not, it is an indication that there is no oil pressure and the engine should be stopped and the cause determined.

(4) Hold choke lever to the left. The cranking engine will not continue to run with the choke in this position; therefore, when engine starts, release the choke lever. It is not always necessary to choke the engine.

(5) Push starter button to operate the cranking motor. Release button when engine begins to run (Figure 10-10-2).

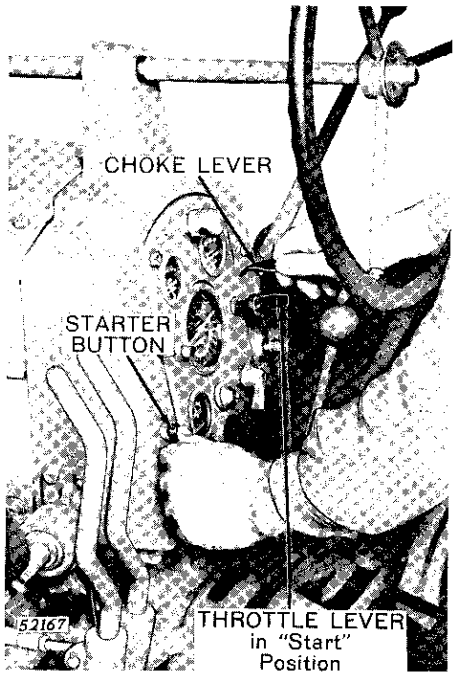


Figure 10-10-2—Operating the Choke Lever and Starter Button

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Group 15
SPECIFICATIONS

PERFORMANCE:

Capacity for Work:
Five 14-inch plow bottoms or the equivalent in most soil conditions.

***Maximum Horsepower:**

Belt	58.84
Drawbar	53.66

CAPACITIES (U. S. MEASUREMENTS):

Fuel Tank	20 Gals.
Gasoline Tank	1 Qt.
Crankcase (Diesel)	12 Qts.
Transmission (Diesel)	7-1/2 Gals.
Crankcase (Cranking Engine)	3 Pts.
Transmission (Cranking Engine)	1/2 Pt.
Powr-Trol	1-1/3 Gals.
Powershaft Clutch	2-1/4 Qts.
Remote Cylinder	1 Qt.
Cooling System	7 Gals.
First Reduction Gear Cover	1-1/2 Qts.
Power Steering Reservoir	5 Qts.

SPEEDS:

Gear	General-Purpose on 13.6-38 Tires	Standard on 15-30 Tires
1	1-1/3 mph	1-1/3 mph
2	2-1/4 mph	2-1/4 mph
3	3-1/2 mph	3-1/2 mph
4	4-1/3 mph	4-1/3 mph
5	5-3/4 mph	5-1/2 mph
6	11-1/4 mph	11 mph
Reverse	3-1/3 mph	3-1/4 mph

DIESEL ENGINE:

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

Engine Speeds:

Load	1125 rpm
Fast Idle	1250 rpm
Slow Idle	700 rpm
Bore and Stroke	6-1/8″ x 6-3/8″
Displacement	376 cu. in.
Compression Ratio	16 to 1

CRANKING ENGINE:

Type..... 4-cylinder V-type, valves-in-head.

Engine Speeds:

Load	4500 rpm
Slow Idle	4000 rpm
Fast Idle	5000 rpm
Bore and Stroke	2″ x 1-1/2″
Displacement	18.85 cu. in.

**Maximum h.p. corrected to 60° F. and 29.92 in. Hg. (Nebraska Test No. 594)*

LUBRICATION SYSTEM:

Type..... Full force-feed pressure system with full-flow oil filter.

FUEL SYSTEM:

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

COOLING SYSTEM:

Type..... Pressure system. Centrifugal pump with engine temperature controlled by heavy-duty automotive-type thermostat and by-pass.

IGNITION SYSTEM (CRANKING ENGINE):

Type	Battery-Distributor
Distributor Point Gap	0.020″
Spark Plugs:	
Size	14 mm.
Spark Plug Gap	0.025″

ELECTRICAL SYSTEM:

Battery Voltage	6 Volts
Generator Regulation	Voltage Regulator
Battery	Group 1

CLUTCH:

Type..... Hand-operated, six 10-inch dry disks.

BELT PULLEY:

Diameter	12-7/8″
Width	7-3/8″
Rpm (Load)	1125
Belt Speed	3790 fpm

TRANSMISSION:

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

BRAKES:

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

(Continued on next page)

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Group 10
PREDELIVERY AND 150-HOUR SERVICES

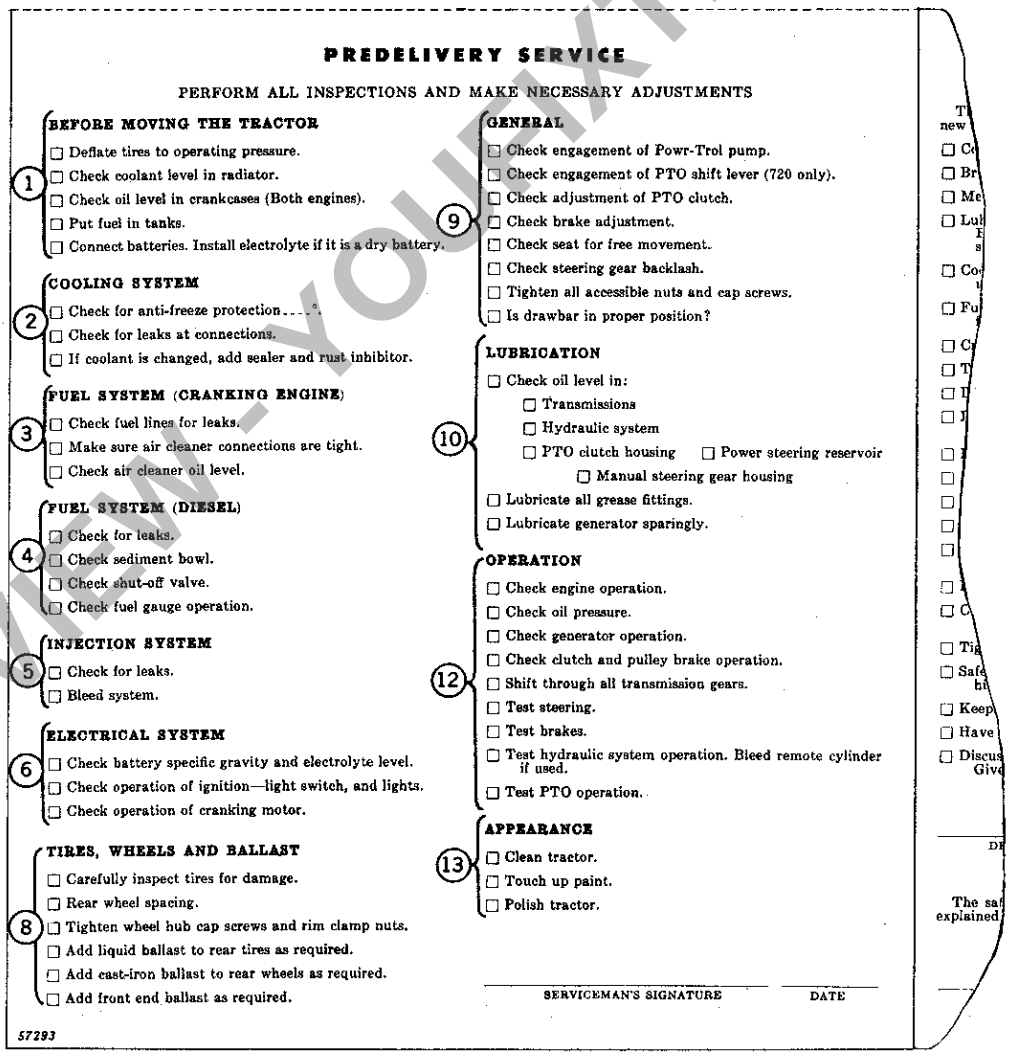
Due to similarity between Predelivery and 150-Hour Services, these two service intervals have been combined into one group. Figure 20-10-1 is a reproduction of the Predelivery Service check list and Figure 20-10-2 is a reproduction of the 150-Hour Service check list as they appear in the service policy. Detailed instructions follow the illustrations of these check lists. Note that each group of check points on the illustrations is numbered. For complete instructions regarding any item, refer to the like-numbered paragraph in detailed instructions which follow the illustrations.

» » » PREDELIVERY SERVICES « « «

By performing the services shown on the illustration below you can be certain that the tractor is delivered in tip-top condition, ready to perform the work for which it was built. You will save time and money by avoiding after-delivery complaints and service calls which will result if the tractor is not correctly adjusted when it leaves your shop. Above all you can be sure of a satisfied customer when he puts the tractor to work.

To perform the Predelivery Service, proceed as follows:

Remove service policy from Operator's Manual envelope. Insert carbon paper between pages A and B of the policy. Fill out the information about the owner and tractor identification. Have dealer sign policy and remove carbon paper. As each service item under the Predelivery Service is performed, check off that item.



PREDELIVERY SERVICE

PERFORM ALL INSPECTIONS AND MAKE NECESSARY ADJUSTMENTS

(1) **BEFORE MOVING THE TRACTOR**
- ☐ Deflate tires to operating pressure.
- ☐ Check coolant level in radiator.
- ☐ Check oil level in crankcases (Both engines).
- ☐ Put fuel in tanks.
- ☐ Connect batteries. Install electrolyte if it is a dry battery.

(2) **COOLING SYSTEM**
- ☐ Check for anti-freeze protection.....°.
- ☐ Check for leaks at connections.
- ☐ If coolant is changed, add sealer and rust inhibitor.

(3) **FUEL SYSTEM (CRANKING ENGINE)**
- ☐ Check fuel lines for leaks.
- ☐ Make sure air cleaner connections are tight.
- ☐ Check air cleaner oil level.

(4) **FUEL SYSTEM (DIESEL)**
- ☐ Check for leaks.
- ☐ Check sediment bowl.
- ☐ Check shut-off valve.
- ☐ Check fuel gauge operation.

(5) **INJECTION SYSTEM**
- ☐ Check for leaks.
- ☐ Bleed system.

(6) **ELECTRICAL SYSTEM**
- ☐ Check battery specific gravity and electrolyte level.
- ☐ Check operation of ignition—light switch, and lights.
- ☐ Check operation of cranking motor.

(8) **TIRES, WHEELS AND BALLAST**
- ☐ Carefully inspect tires for damage.
- ☐ Rear wheel spacing.
- ☐ Tighten wheel hub cap screws and rim clamp nuts.
- ☐ Add liquid ballast to rear tires as required.
- ☐ Add cast-iron ballast to rear wheels as required.
- ☐ Add front end ballast as required.

(9) **GENERAL**
- ☐ Check engagement of Powr-Trol pump.
- ☐ Check engagement of PTO shift lever (720 only).
- ☐ Check adjustment of PTO clutch.
- ☐ Check brake adjustment.
- ☐ Check seat for free movement.
- ☐ Check steering gear backlash.
- ☐ Tighten all accessible nuts and cap screws.
- ☐ Is drawbar in proper position?

(10) **LUBRICATION**
- ☐ Check oil level in:
  - ☐ Transmissions
  - ☐ Hydraulic system
  - ☐ PTO clutch housing ☐ Power steering reservoir
  - ☐ Manual steering gear housing
- ☐ Lubricate all grease fittings.
- ☐ Lubricate generator sparingly.

(12) **OPERATION**
- ☐ Check engine operation.
- ☐ Check oil pressure.
- ☐ Check generator operation.
- ☐ Check clutch and pulley brake operation.
- ☐ Shift through all transmission gears.
- ☐ Test steering.
- ☐ Test brakes.
- ☐ Test hydraulic system operation. Bleed remote cylinder if used.
- ☐ Test PTO operation.

(13) **APPEARANCE**
- ☐ Clean tractor.
- ☐ Touch up paint.
- ☐ Polish tractor.

SERVICEMAN'S SIGNATURE _____ DATE _____

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Figure 20-10-1—Predelivery Check List of Diesel Tractor Service Policy

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Group 35

DIESEL ENGINE TROUBLE SHOOTING

• LACK OF POWER •

Possible Cause	*Possible Remedy*
Speed control lever not in the full forward position.	Open throttle fully and check engine speed. See *Section 40.*
Poor injection nozzle operation.	Remove nozzles and check with a nozzle tester. See *Service Manual SM-2018, "Testing and Servicing Injection Pumps and Nozzles."*
Air cleaner dirty or obstructed.	Clean cup and removable screens. See *Section 40.*
Obstruction in fuel system.	Remove and check fuel filters and lines. Replace unserviceable filters or other parts. See *Sections 40 and 110.*
Low transfer pump pressure.	Adjust pressure to from 12 to 24 psi. See *Sections 40 and 110.*
Clutch slipping.	Adjust clutch. See *Section 120.*
Governor binds.	Relieve bind. See *Section 70.*
Dirt and oil restricting air intake passages.	Remove and clean air cleaner cup, screen assembly, air cleaner, and air intake stack.
Wrong type of fuel.	Make sure that diesel fuel is in tractor tank. See *Section 10* for types of fuel.
Incorrect injection pump rack setting.	With engine stopped and throttle wide open, rack should read 13. See *Section 40.*
Injection pumps inproperly timed.	Check and adjust timing. See *Section 40.*
Incorrect valve tappet clearance.	Adjust tappets. See *Section 40 or Group 10 of this Section.*
Incorrect camshaft timing.	Check and adjust. See *Section 40.*
Low operating temperature.	Check operation of thermostats as described in *Section 90.*
Unequal injection pump fuel delivery.	Remove pumps (see *Section 110*) and check them on a diesel test stand. See *Service Manual SM-2018, "Testing and Servicing Diesel Injection Pumps and Nozzles."*
Low engine speed.	Check and adjust. See *Section 40.* Check for loose rollpin in throttle assembly and dirt in throttle disk assembly of carburetor. See *Section 110.*

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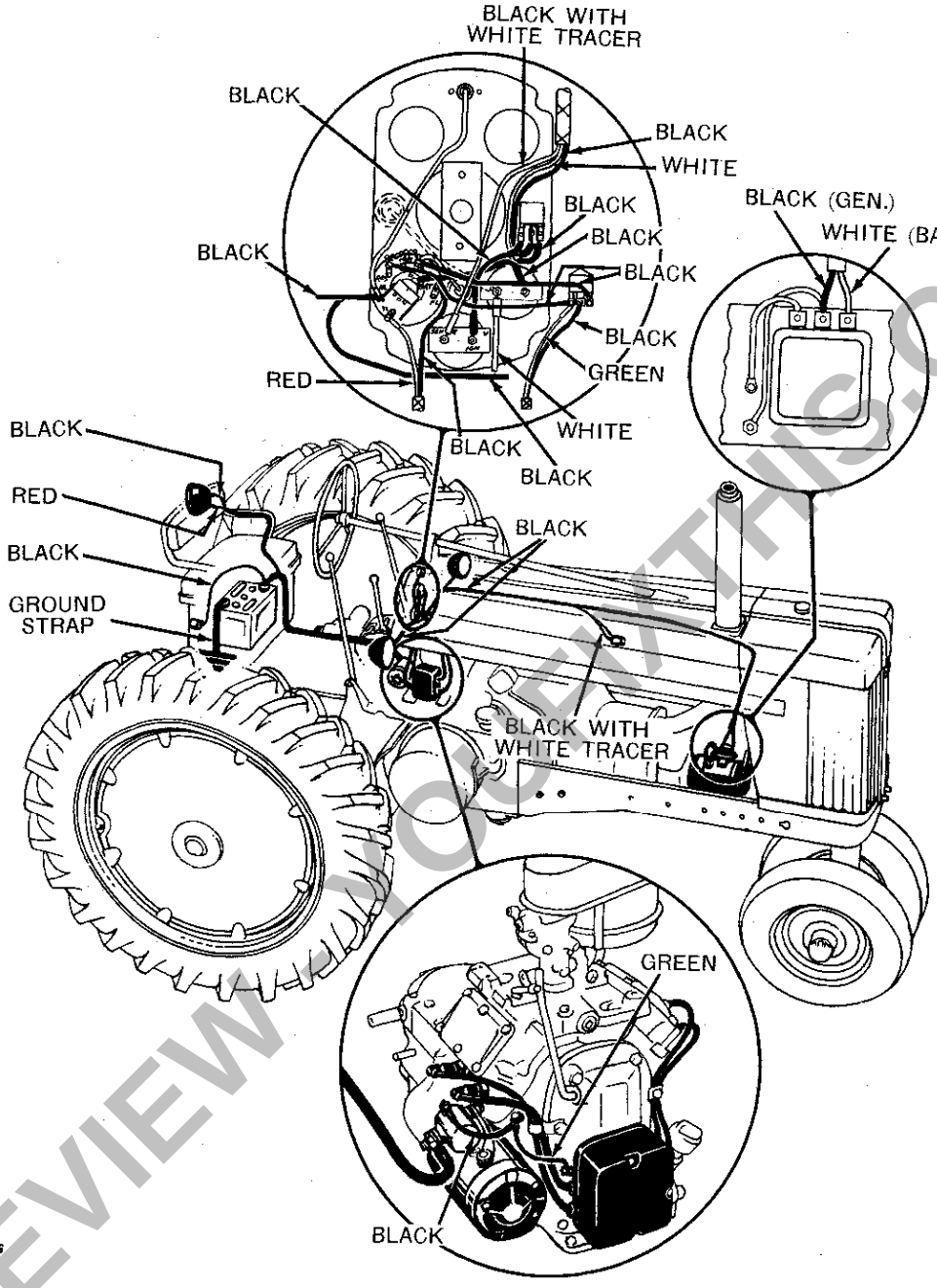


Figure 80-10-2—Wiring Diagram

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TO THE JOHN DEERE SERVICEMAN

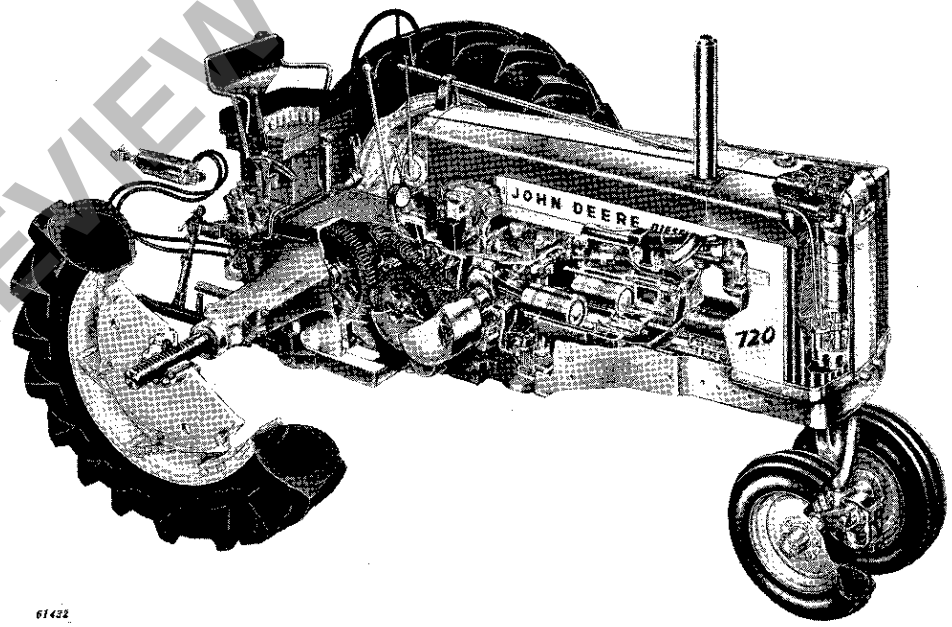
This Service Manual contains maintenance instructions for the John Deere "720" Series Diesel Tractor. Included are complete instructions for removal, disassembly, inspection, repair, assembly and installation of the major parts and assemblies of the tractor. In addition, the manual contains brief descriptions 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 efficiently, are explained in detail.

The manual also contains complete instructions for performing the predelivery, delivery, after-delivery and 150-hour services outlined in the Service Policy which accompanies each tractor. By using this information, you will be sure that the tractor is ready to perform efficiently and economically when it is delivered to its new owner and that it will be restored to peak efficiency when it is brought into your shop for after-delivery services. A section on "Tune-Up and Adjustment" contains instructions for performing the services necessary to help the tractor perform efficiently and economically after it has been in the field for some time.

The sections in this manual concerning the power steering mechanism, fuel injection pumps and nozzles, electrical equipment and Powr-Trol are limited mainly to removal and installation instructions. Full maintenance instructions for the power steering mechanism are given in *Service Manual SM-2016, "Power Steering for John Deere Tractors."* When additional information, concerning the fuel injection pumps and nozzles, is required, see *Service Manual SM-2018, "Testing and Servicing Fuel Injection Pumps and Nozzles."* Instructions for testing, repairing and adjusting the generator and electric cranking motor are given in *Service Manual SM-2000, "Tractors and Engines (General)."* For additional information concerning the Custom Powr-Trol mechanism, consult *Service Manual SM-2022, "Custom Powr-Trol."*

This manual is written specifically for "720" Series Diesel Tractors with Serial Numbers above 7214900. However, most of the information it contains applies equally to tractors with Serial Numbers below 7214900. Where procedures are completely different, the exceptions are noted and described. When variations are minor, the serviceman will be able to apply the information without difficulty.

This 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 training new Service Department personnel who are unfamiliar with John Deere Tractors.



61432

Cutaway View of John Deere "720" Series Diesel Tractor with Gasoline Cranking Engine

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• LUBRICATION CHART (STANDARD TRACTOR) •
(Grease Gun Points)

Service all fittings as indicated on the chart below with pressure gun grease or new engine oil, wiping off fittings beforehand. **CAUTION: Stop the engine before lubricating the tractor.**

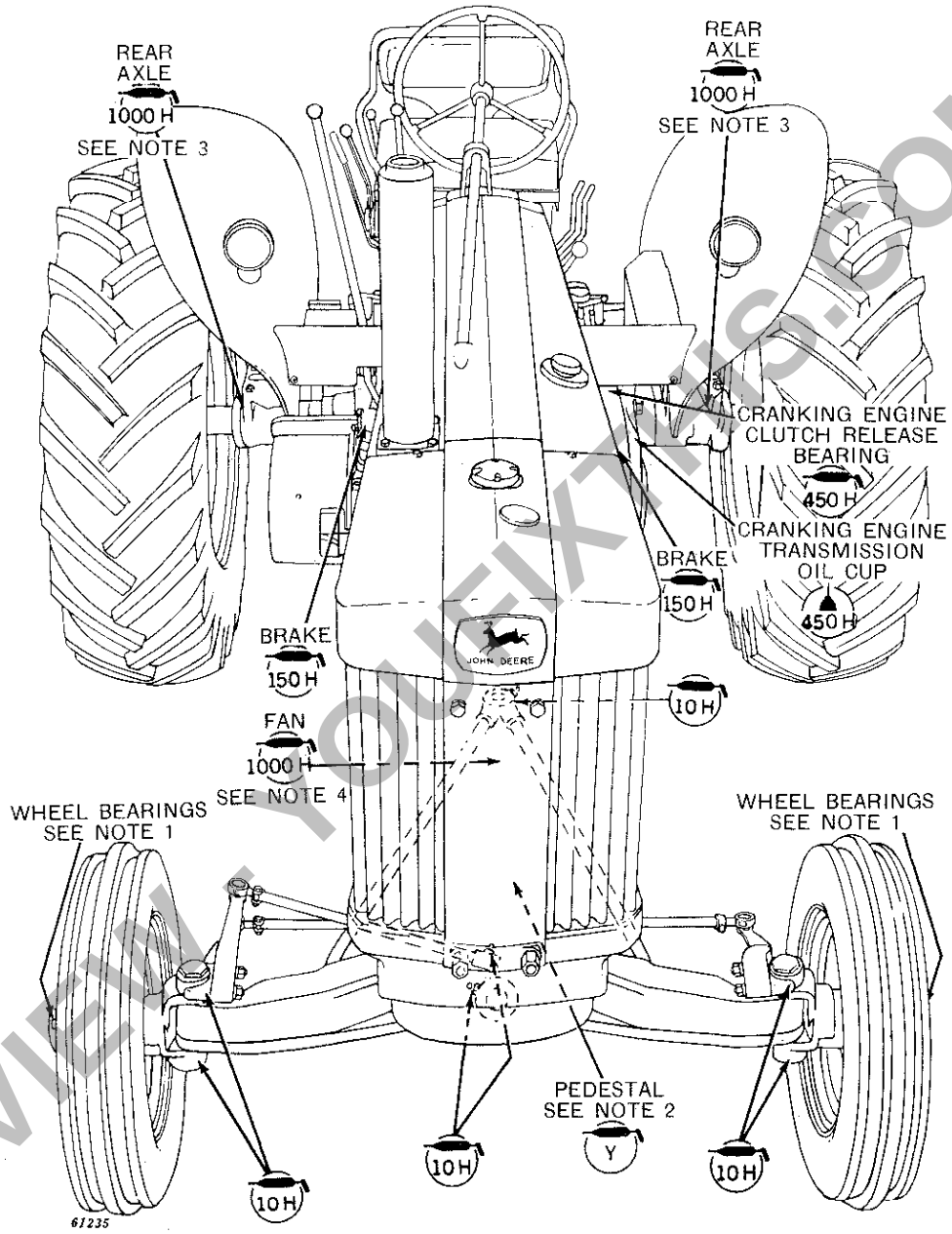
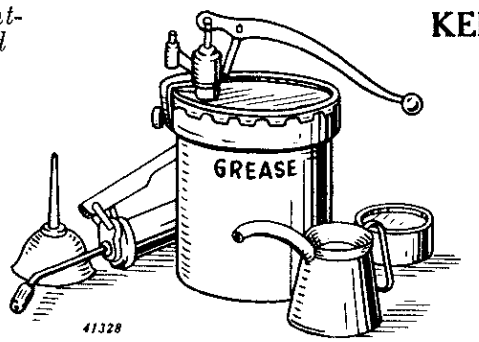


Figure 20-10-27—Lubrication Chart for Standard Tractor

For Universal Three-Point-Hitch lubrication points and "NOTES," see page 20-10-14.



KEEP LUBRICANTS CLEAN!

Use *only* high-grade lubricants which have been stored in clean containers. Wipe away all grease and dirt before removing filler caps or plugs.

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If, after replacing the breaker points, no spark occurs as the engine is motored with the cranking motor, then it will be necessary to test the coils and condensers, replacing any that are not up to specifications. See page 65-25-6 of this Manual and Service Manual SM-2000, *Tractors and Engines (General)*.

Installing and Timing Distributor.

If the distributor is removed from the engine, install and retime it as follows:

Remove timing inspection hole cover. Using a screwdriver or other suitable tool through the inspection hole, turn the engine in a counter-clockwise direction until the "V" mark "Spark No. 1" aligns with the timing mark on the housing (Figure 40-20-4). Install the distributor to the engine, being sure the gasket is in good condition. Do not tighten attaching screws. Rotate distributor in a clockwise direction as far as possible. Attach switch-to-distributor wire and turn on the ignition switch. While holding the end of No. 1 spark plug wire about 1/4-inch from the engine, carefully rotate distributor in a counter-clockwise direction until a spark occurs at the end of the spark plug wire. Tighten attaching screws securely. Since there is no automatic spark advance in the distributor, the "V" mark "Spark No. 1" will align with the timing mark on the housing when the timing is checked with a timing light while the engine is running.

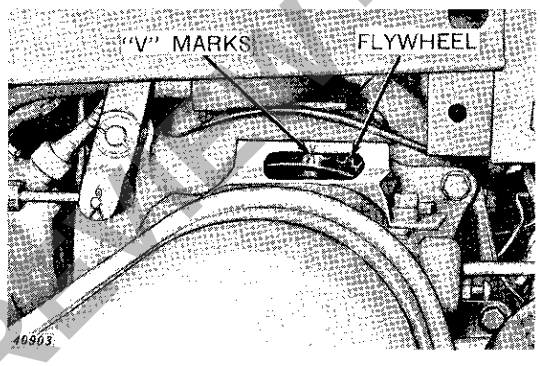


Figure 40-20-4—Timing Mark on Cranking Engine Flywheel

Attach spark plug cables to spark plugs using Figure 40-15-5 and 40-15-6 as guides to proper location of the cables. As viewed from the flywheel end of the engine (left-hand side of the tractor), No. 1 cable goes to the left-front spark plug, No. 2 to the right-front plug, No. 3 to the left-rear and No. 4 to the right-rear.

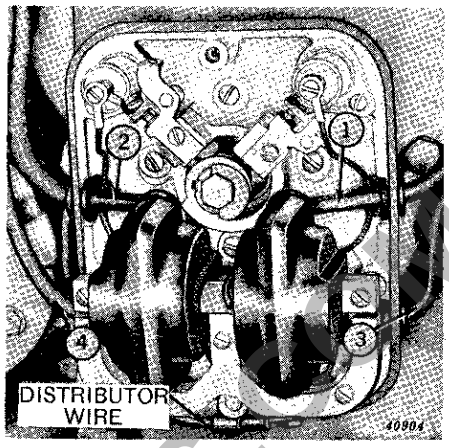


Figure 40-20-5—Identification of Distributor-to-Spark Plug Cables

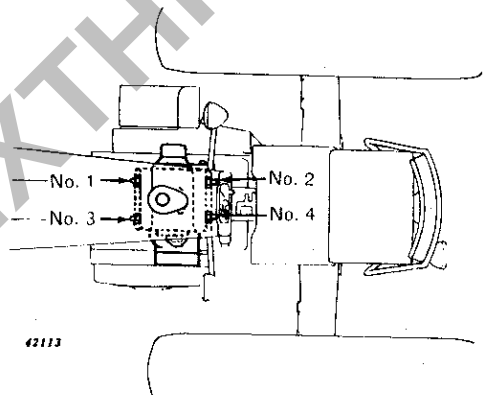


Figure 40-20-6—Cranking Engine Cylinder Numbers

TAPPET ADJUSTMENT

The tappets should be adjusted whenever there is an indication that they are out of adjustment, or at least once each year. To adjust the tappets correctly, it will be necessary to remove the cranking engine from the tractor. See *Section 65* for instructions for removal.

The tappet lever clearance is 0.008 to 0.010-inch for both intake and exhaust valves and the clearance for each valve is adjusted when the other valve for that cylinder is in the wide-open position. To adjust, remove the tappet lever cover. Turn the engine until one valve of a cylinder is wide open. Adjust the closed valve tappet lever clearance to 0.008 to 0.010-inch (Figure 40-20-7).

While the engine is removed from the tractor, check the compression as described on page 40-20-1. If compression is satisfactory, install the engine on the tractor before proceeding with the tune-up or make repairs as necessary. *See Section 65.*

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INSPECTION AND REPAIR

Flywheel and Clutch Parts

Check clutch release bearing (Figure 65-20-12).

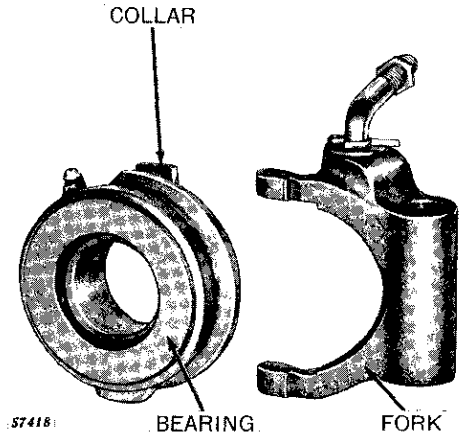


Figure 65-20-12—Release Bearing, Collar, and Fork

If the bearing is rough or otherwise damaged, install a new bearing.

Check clutch bearing fork. Fork can be removed by removing snap rings and sliding shaft out of case.

Inspect clutch disk assembly. If facings are excessively worn, loose on the disk, or if splines in the hub are worn, replace the worn parts.

Inspect adjusting disk for wear or being warped. If unfit for service, replace.

Inspect clutch contact surface on flywheel. If excessively worn or rough, replace the flywheel.

Inspect flywheel ring gear. If damaged, drive gear off flywheel. Heat new gear uniformly and install on flywheel, chamfered end of teeth toward engine. Seat gear solidly against flange on flywheel.

Linkage

Check all linkage parts for wear or damage and repair or replace as necessary.

Transmission

Check all bearings, gears, and shafts for wear or damage and replace if necessary.

Transmission drive shaft bushing, located in rear of transmission housing, can be replaced by driving out old part and installing new bushing, using a suitable driver.

Check the front and rear oil seals. If replacement is necessary, install new seals with lips facing inward.

If lining on transmission brake plate is worn, replace it (Figure 65-20-13).

Check pinion shifter fork. To remove, drive out shifter shaft (Figure 65-20-13).

Check all parts in over-running clutch mechanism.

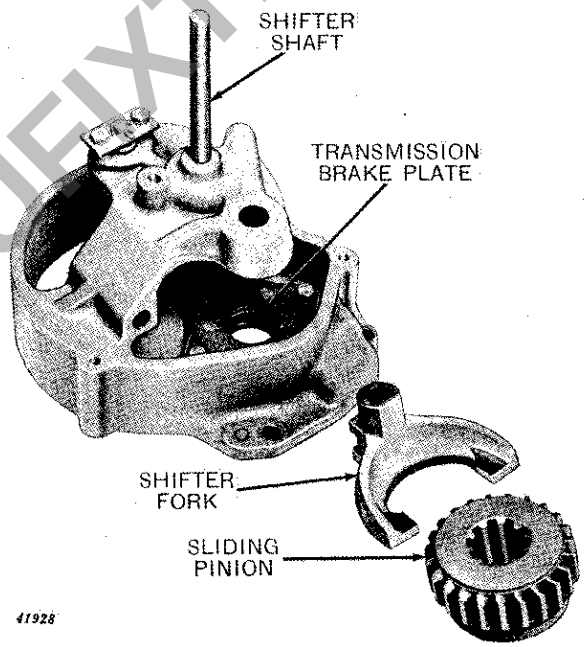


Figure 65-20-13—Transmission, Brake Plate, Shifter Fork, and Pinion

ASSEMBLY

Transmission and Clutch Shaft

NOTE: For aid in assembling transmission, refer to Figure 65-20-16.

Slide over-running clutch plate (L) and hub (N) on transmission drive shaft (J), install gear (M). Pull hub back about half-way out of gear. Install springs, plungers, and rollers.

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Section 80
ELECTRICAL SYSTEM

GROUP 5
GENERATOR AND VOLTAGE REGULATOR (Tractors with Gasoline Cranking Engine)

A 6-volt Delco-Remy generator with a voltage regulator is used. The Model Number of the generator is 1100027; the Model Number of the voltage regulator is 1118786.

Complete diagnosis, testing and maintenance instructions for the generator and the voltage regulator are contained in Service Manual SM-2000, "*Tractor and Engine (General).*"

To remove the generator, disconnect the wires from the voltage regulator, loosen the adjusting strap, and take out the machine bolts which secure the generator to its mounting bracket (Figure 80-5-1). Lift the generator off the tractor.

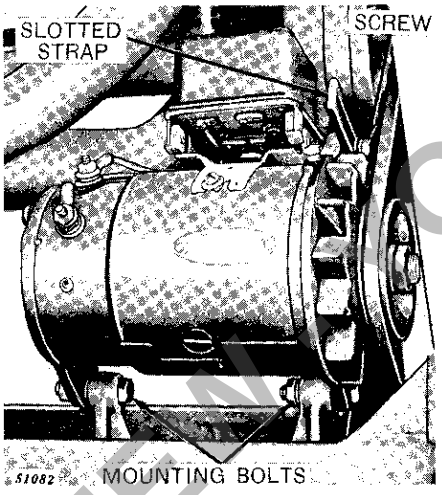


Figure 80-5-1—Generator Mounting Bolts and Belt-Adjusting Strap

When installing the generator, adjust the drive belt by moving the generator out or in until belt will move up and down one inch at the center between the fan and generator pulleys. Rotate generator drive pulley until all slack in the belt is on top before checking the slack. Connect the white wire to the front terminal on the voltage regulator. This terminal is marked "BAT." Connect the black wire to the center terminal marked "GEN." (Figure 80-10-1). After connecting the wires, momentarily connect a jumper lead between the "GEN." and "BAT." terminals of the regulator. This allows a momentary surge of current to flow through the generator which correctly polarizes it. Failure to do this may result in severe damage to the equipment since reversed polarity causes vibration, arcing, and burning of the relay points.

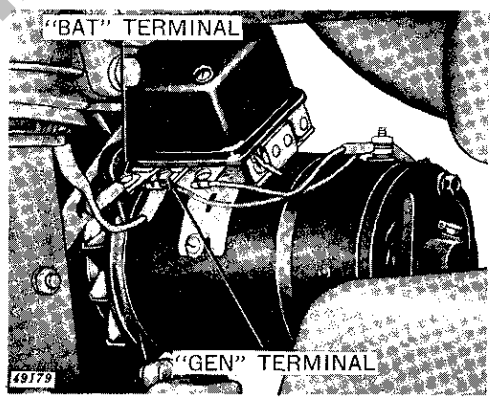


Figure 80-5-2—Voltage Regulator Terminals

The exploded views in Figures 80-5-3, 80-5-4, and 80-5-5 show construction details of the generator and voltage regulator. Use the following specifications in conjunction with the tests described in SM-2000, "*Tractors and Engines (General).*"

Regulator Unit

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Group 25

FUEL INJECTION PUMPS

DESCRIPTION

The two 13-millimeter fuel injection pumps are located in a compartment above the cylinders and are actuated through cam followers by the engine camshaft (Figure 110-25-1).

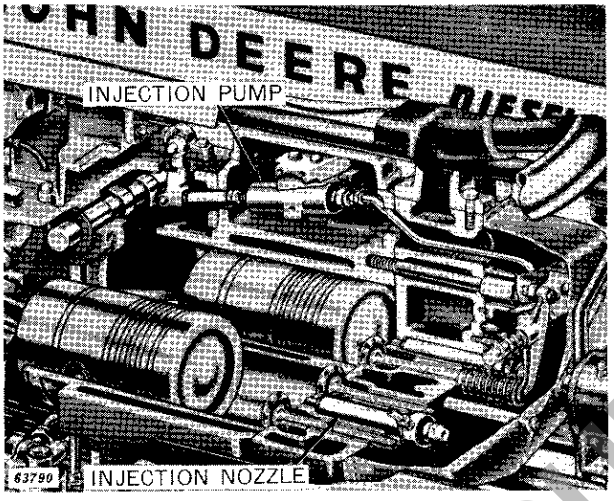


Figure 110-25-1—Fuel Injection System

The "720" Diesel Tractor may be equipped with either Bendix Scintilla or American Bosch pumps. Both operate in exactly the same manner; both are similar in appearance and construction. However, two pumps of different makes should never be installed in any one tractor. Where maintenance procedures are different, both are described and illustrated in this manual.

NOTE: This Group is limited to description, removal and installation of fuel pumps. For information concerning testing, disassembly and assembly of pumps, refer to Service Manual No. SM-2018, "Testing and Servicing Fuel Injection Pumps and Nozzles."

OPERATION

Diesel fuel is delivered to the plunger-type injection pumps from the transfer pump under a pressure of 12 to 24 psi. The injection pumps deliver the charge of fuel to the combustion chamber through the injection nozzles at 2400 to 2600 psi.

The pumps contain a plunger which travels back and forth in a cylinder or barrel. The plunger is operated through a cam follower, by a lobe on the engine camshaft. Rotating the plunger regulates the amount of fuel pumped to the injection nozzles. The plunger is rotated by means of a rack controlled by the tractor governor. For full description and operation of the pumps, see SM-2018.

INSPECTION PRIOR TO DISASSEMBLY

When doing any major service work on the diesel engine or fuel system, it is well to check the Diesel engine for crankcase dilution prior to disassembly in the following manner:

Remove tappet cover and the injection pump cover, and wipe the area dry. Start engine and, with engine at fast idle, make a careful inspection of the visible parts of the system.

Leakage occuring at any point in the fuel system within the pump compartment will be noticed at bottom of compartment "A," (Figure 110-25-2). There is always some lubricating oil in this area, but it is not difficult to distinguish between lubricating oil and Diesel fuel. If Diesel fuel is present at this point, check for:

1. Loose cap screws attaching pump to bracket, or defective pump-to-bracket gasket.

2. Loose cap screws attaching pump bracket to cylinder block.

3. Loose fuel line connections at pumps or delivery valve holder (R930R or R1082R). (Delivery valve holder could be tight and leaking could be due to a faulty delivery valve gasket.)

4. Gasket or gaskets between pump bracket and cylinder not holding. (Also examine surfaces of block and pump bracket.) If the fuel injection pump itself is leaking, due to worn or defective parts, there is a good possibility that the window in the pump body will be filled with a small puddle of fuel. (See "B," Figure 110-25-2). This pocket should otherwise contain only a light film of oil at the bottom. When examining the pump area, it is well to bear in mind that lubricating oil is metered up to the fuel pumps and, therefore, oil will be detected coming out of the drive end of the pumps.

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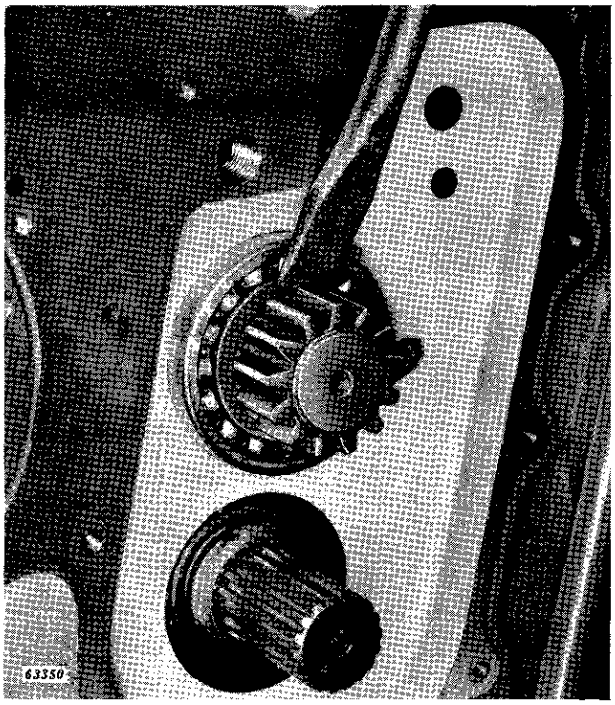


Figure 130-15-3—Removing Sliding Gear Shaft

Drive Gear and Shaft

Remove pulley brake mechanism, clutch and pulley, and first reduction gear cover. Refer to *Section 120* for instructions.

Pull first reduction gear (Figure 130-15-4) and powershaft idler gear (if tractor is equipped with powershaft).

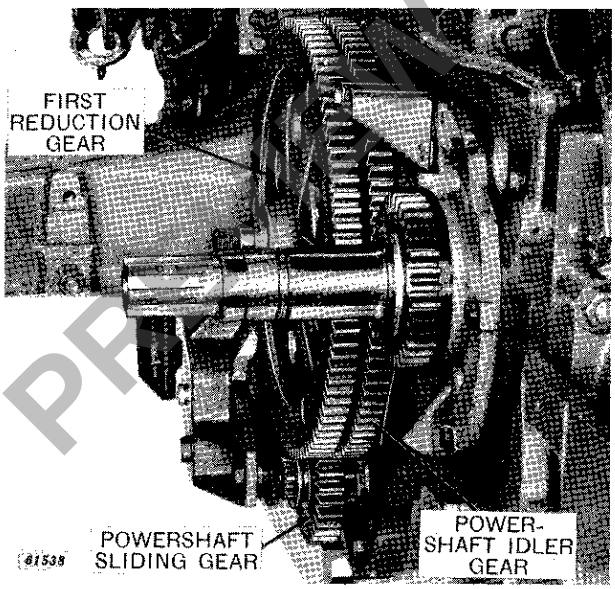


Figure 130-15-4—First Reduction Gear and Powershaft Idler Gear

The drive gear and shaft cannot be removed from tractors with Serial No. below 7215213 without first loosening the countershaft. On tractors with Serial No. 7215213 and Up, it is first necessary to partially remove the countershaft. Both procedures are given below.

Removing Drive Gear and Shaft from Tractors with Serial No. Below 7215213. Loosen countershaft lock nut (Figure 130-15-5) and back it off two or three turns.

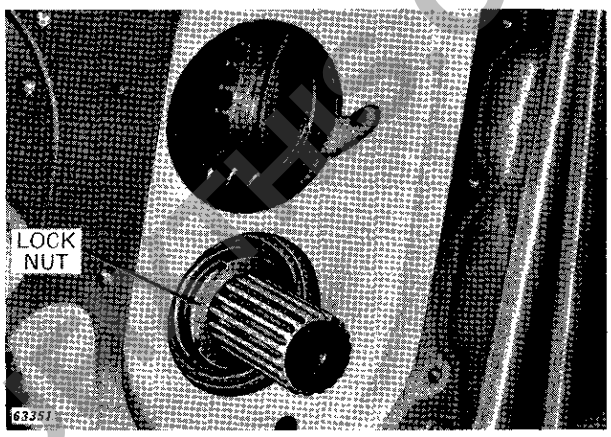


Figure 130-15-5—Countershaft Lock Nut

Remove right-hand countershaft bearing housing, being careful not to lose or damage adjusting shims (Figure 130-15-6). Drive countershaft to the right to loosen gears so spacer (Figure 130-15-7) can be removed.

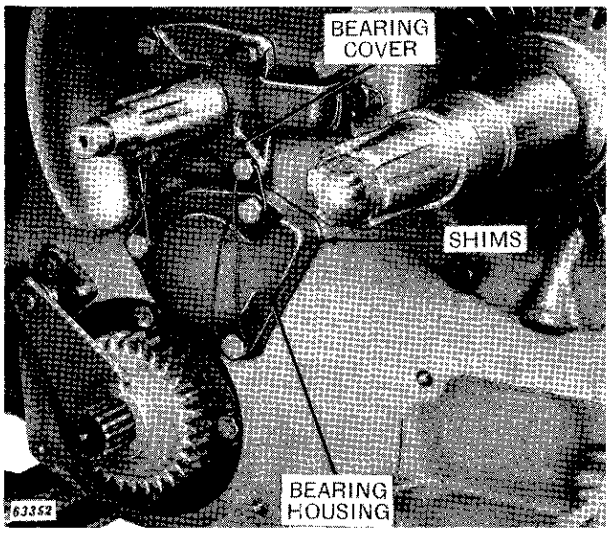


Figure 130-15-6—Right Countershaft Bearing Housing

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REMOVAL

Powr-Trol Rockshaft Housing

The differential can be removed without removing the Powr-Trol rockshaft housing. However, the handling problem will be simplified if it is removed. Furthermore, with the housing removed the differential and final drives can be inspected and any defects noted before removal.

Instructions for removing the rockshaft housing are given on page 180-10-1.

Rear Axle Housing

Support the transmission case and remove the rear axle housing in accordance with instructions on page 140-10-2.

Differential

Remove the left-hand differential bearing quill.

Differential assembly may now be removed, right-hand end first (Figure 140-5-3).

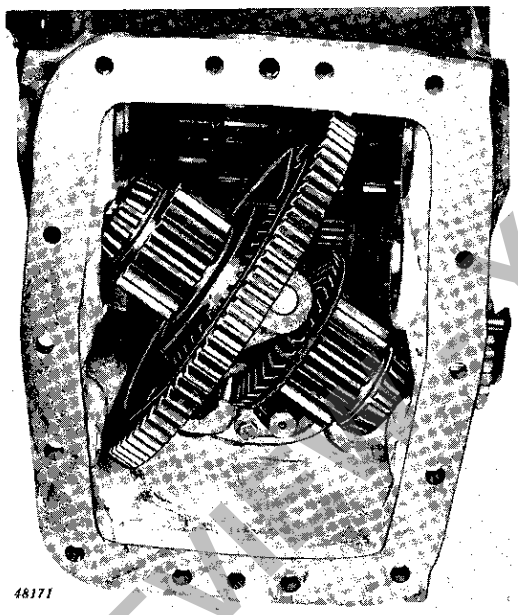


Figure 140-5-3—Removing Differential Assembly

DISASSEMBLY

Using a puller as shown in Figure 140-5-4, pull the bearings. Differential bevel gear and spur pinions can now be removed.

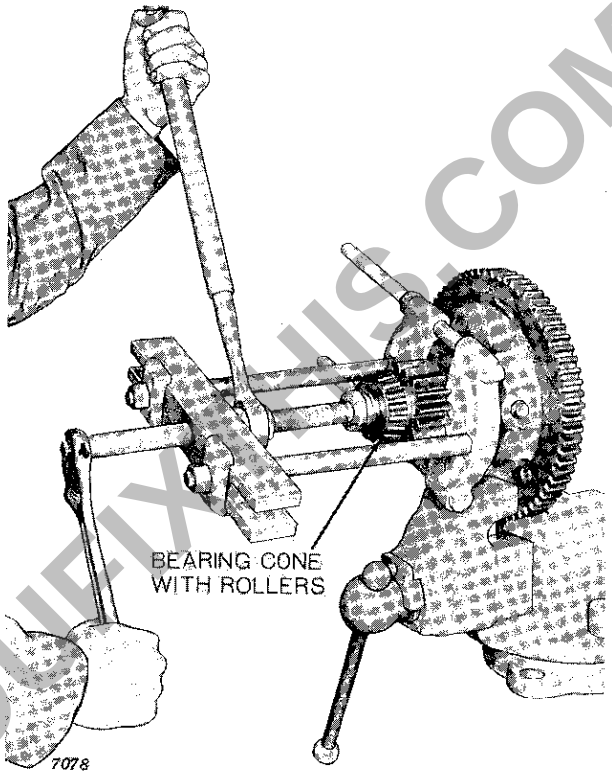


Figure 140-5-4—Removing Bearing

To remove differential bevel pinions, remove rivets and pull shafts out of pinions and differential spider.

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Group 15

TIRES AND WHEEL WEIGHTS

TIRE SIZES

Sizes of tires used on the "720" Series Diesel Tractor are listed in the inflation charts on the next page.

CARE OF TIRES

Proper maintenance of tires by servicemen while tractors are in the shop can prevent tire failure in the field. This maintenance consists of keeping tires free of petroleum products; taking weight off tires if tractor is to be standing for any length of time; keeping tires out of excessive heat and sunlight; and keeping tires away from any chemical solutions.

When a tire is in the shop, inspect it for cuts, bulges, nails and proper valve position. If the cut or bulge indicates injury, the tire must be repaired or replaced.

TIRE INFLATION

Proper tire inflation (Figure 160-15-1) is the basis of dependable tractor and tire performance. The life of rubber tires can be affected materially by both under-inflation and over-inflation. In addition to the deteriorating effect improperly inflated tires may have on the life of the tractor tire, this condition will affect steering, riding comfort and safe operation.

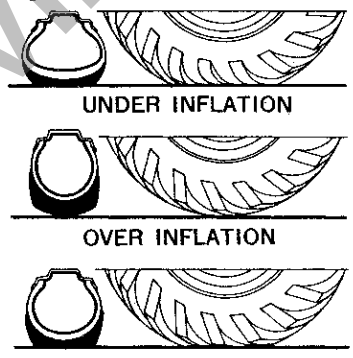


Figure 160-15-1—Effects of Tire Inflation

Effects of Under-Inflation.

Under-inflation is the greatest cause for loss of tire life expectancy. An under-inflated tire runs sluggishly, heats up quickly because of the greater flexing, and is subjected to more frequent bruising, buckling, fabric breaks and uneven wear. An under-inflated tire may slip on the rim, tearing out the valve stem and ruining the tube.

Effects of Over-Inflation.

Over-inflation reduces traction, increases wheel slippage, results in excessive tread wear and fuel consumption, and reduced drawbar pounds pull.

CHECKING TIRE PRESSURE

Air pressure in the tires should not be allowed to drop below or rise above recommendations shown in the chart above. A special low pressure gauge, with 1-pound graduations should be used to get accurate readings. This gauge should be checked occasionally for accuracy. It may get out of order and require a correction in reading.

A special air-water gauge should be used for testing tires filled with calcium chloride solution. When checking air pressure in tires which contain calcium chloride solution, be sure the valve stem is at the top. Always replace the valve caps and be sure they are tight to provide a positive air seal.

VALVE CORE AND CAP

The valve core is a spring-loaded check valve in the valve stem, permitting inflation or deflation of the tube. This check valve is not intended to hold air during operation. The valve cap is provided to seal the air in the tube. When valve cap is tightened down on stem the sealing washer inside the cap is pressed down tightly against top of stem, preventing air leakage. It is important, therefore, that valve caps be used at all times.

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