FORD

2120 TRACTOR

42212010



OPERATOR'S MANUAL

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CONTENTS

INTERNATIONAL SYMBOLS 3
SAFETY PRECAUTIONS 4–5
CONTROLS AND INSTRUMENTS 6–13
- SEAT, SEAT BELT AND ROPS 6
- LIGHTING 7
- INSTRUMENT PANEL 7–9
- THROTTLE CONTROLS 9
- BRAKE CONTROLS 10
- DIFFERENTIAL CONTROL 10
- TRANSMISSION AND PTO CONTROLS 10–12
- HYDRAULIC LIFT SYSTEM CONTROLS 12–13

OPERATION 14–29
- BREAK-IN PROCEDURES 14
- STARTING THE ENGINE 14–15
- STOPPING THE ENGINE 15
- OPERATING THE TRANSMISSION, FOUR-WHEEL DRIVE AND PTO 15–18
- TOWING THE TRACTOR 19
- OPERATING THE DIFFERENTIAL LOCK 19
- OPERATING THE HYDRAULIC LIFT SYSTEM 19–22
- DRIVING THE TRACTOR 22–24
- WHEEL TREAD SETTINGS 24–25
- TRACTOR WEIGHTING 26–27
- TIRE PRESSURES 28–29

LUBRICATION AND MAINTENANCE 30–53
- LUBRICATION AND MAINTENANCE CHART 30–31
  - TWO-WHEEL DRIVE 30
  - FOUR-WHEEL DRIVE 31
- FUEL AND LUBRICANTS 32–35
- FUEL AND LUBRICANT SERVICE PROCEDURES 35–40
- GENERAL MAINTENANCE 40–51
- TRACTOR STORAGE 51–52
- GENERAL TORQUE SPECIFICATION TABLE 53

SPECIFICATIONS 54–58
SAFETY AND INSTRUCTION DECALS 59–64
PREDELIVERY AND 50-HOUR SERVICE 65–67
OWNER ASSISTANCE 69

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SAFETY PRECAUTIONS

The following precautions are suggested to help prevent accidents.

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. Read and take the following precautions before operating this tractor to help prevent accidents. Equipment should be operated only by those who are responsible and instructed to do so.

THE TRACTOR

1. Read the Operator's Manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
2. Use an approved Rollbar and Seat Belt for safe operation. Overturning a tractor without a rollbar can result in death or injury. If your tractor is not equipped with a rollbar and seat belt, see your Ford New Holland Dealer.
3. Always use the seat belt. Do not use the seat belt if the rollbar has been removed from the tractor.
4. If a front end loader is to be installed, always use a FOPS canopy to avoid injury from falling objects.
5. Use the handholds and step plates when getting on and off the tractor to prevent falls. Keep steps and platform cleared of mud and debris.
6. Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.
7. Replace all missing, illegible, or damaged safety decals. See list of decals on page 59.
8. Keep safety decals clean of dirt and grime.

SERVICING THE TRACTOR

1. The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while system is hot. Always turn cap slowly to the first stop and allow the pressure to escape before removing the cap entirely.
2. Do not smoke while refueling the tractor. Keep any type of open flame away. Wait for engine to cool before refueling.
3. Keep the tractor and equipment, particularly brakes and steering, maintained in a reliable and satisfactory condition to ensure your safety and comply with legal requirements.
4. Keep open flame away from battery or cold weather starting aids to prevent fires or explosions. Use jumper cables according to instructions to prevent sparks which could cause explosion.
5. Stop the engine before performing any service on the tractor.
6. Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury.
   - **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
   - Stop engine and relieve pressure before connecting or disconnecting lines.
   - Tighten all connections before starting engine or pressurizing lines.

   If fluid is injected into the skin, obtain medical attention immediately or gangrene may result.
7. Do not modify or alter or permit anyone else to modify or alter this tractor or any of its components or any tractor function without first consulting a Ford New Holland Dealer.
8. The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle or any other part of the fuel injection system. Failure to follow these instructions can result in serious injury.
9. Continuous long term contact with used engine oil may cause skin cancer. Avoid prolonged contact with used engine oil. Wash skin promptly with soap and water.
10. Some components on your tractor, such as gaskets and friction surfaces (brake linings, clutch linings etc.), may contain asbestos. Breathing asbestos dust is dangerous to your health. You are therefore advised to have any maintenance or repair operations on such components carried out by an authorized Ford New Holland Dealer. If, however, service operations are to be undertaken on parts that contain asbestos, the essential precautions listed below must be observed:
    - Work out of doors or in a well ventilated area.
    - Dust found on the tractor or produced during work on the tractor should be removed by extraction not by blowing.
    - Dust waste should be dampened, placed in a sealed container and marked to ensure safe disposal.
    - If any cutting, drilling, etc., is attempted on materials containing asbestos, the item should be dampened and only hand tools or low speed power tools used.

OPERATING THE TRACTOR

1. Apply the parking brake, place the P.T.O.lever in the "OFF" position, the lift control lever in the down position, the remote control valve levers in the neutral position, and the transmission in neutral before starting the tractor.
2. Do not start the engine or operate controls while standing beside the tractor. Always sit in the tractor seat when starting the engine or operating controls.
3. Do not bypass the neutral start switches. Consult your Ford New Holland Dealer if your neutral start controls malfunction. Use jumper cables only in the recommended manner. Improper use can result in tractor runaway.
4. Avoid accidental contact with the gear shift levers while the engine is running. Unexpected tractor movement can result from such contact.
5. Do not get off the tractor while it is in motion.
6. Disengage PTO, shut off the engine and apply the parking brake before getting off the tractor.
7. Do not park the tractor on a steep incline.
8. Do not operate the tractor engine in an enclosed building without adequate ventilation. Exhaust fumes can cause death.
9. If power steering or engine ceases operating, stop the tractor immediately.
10. Pull only from the drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle or any point above the axle may cause the tractor to upset.

(cont.)

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SEAT, SEAT BELT AND ROPS

TRACTOR SEAT

Your Ford 2120 Tractor is equipped with a suspension seat as shown in Figure 1. The seat is adjustable to obtain the most comfortable position.

To move the seat fore and aft, move the seat release lever to the side and slide the seat fore or aft as desired, Figure 2.

To adjust the seat for flotation, turn the flotation adjusting bolt right for a firm ride, or left for a soft ride, Figure 2.

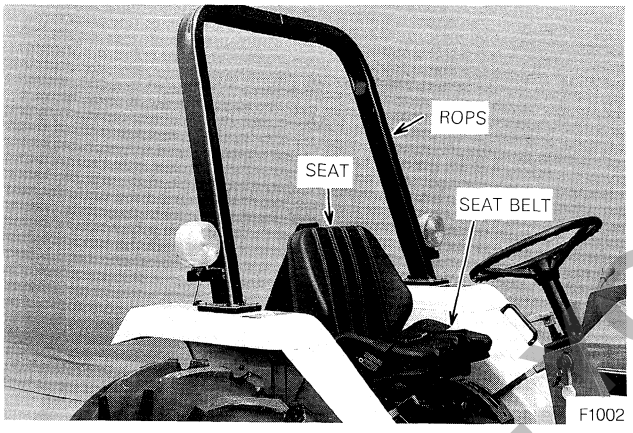


Figure 1 – Tractor Seat, ROPS and Seat Belt

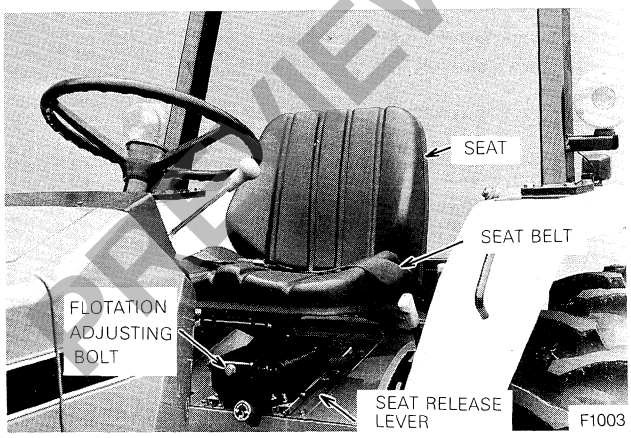


Figure 2 – Tractor Seat Adjustment

ROLLOVER PROTECTIVE STRUCTURE (ROPS)

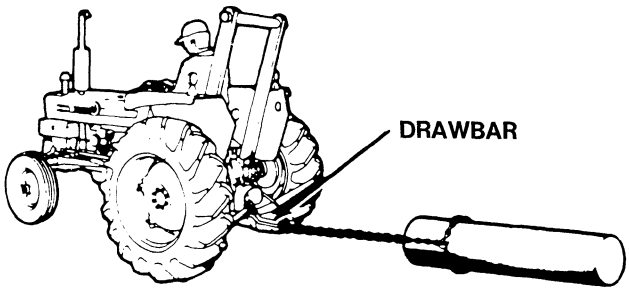
A Roll Over Protective Structure (ROPS) and seat belts are standard equipment for this tractor at time of factory assembly. If the ROPS was deleted by the original purchaser or has been removed, it is recommended that you equip your tractor with a Roll Over Protective Structure (ROPS) and seat belts. ROPS are effective in reducing injuries during tractor overturn accidents. Overturning tractor without a ROPS can result in serious injury or death.

Roll Over Protective Structure (ROPS), and seat belts are available from your Ford New Holland Dealer.

The safety offered by the roll bar and seat belt is minimized if your seat belt is not buckled. Always use your seat belt – they save lives.

WARNING: Always wear the seat belt when the tractor is equipped with a ROPS. DO NOT use the seat belt if the ROPS is removed from the tractor.

WARNING: DO NOT attach chains or ropes to the roll bar for pulling purposes since the tractor can tip backward. Always pull from the tractor drawbar. Be careful when driving through door openings or under low overhead objects. Make sure there is sufficient overhead clearance for the roll bar.



ADJUSTING THE SEAT BELT

To lengthen the belt, tip the buckle end down and pull on the buckle until the ends can be joined.

To shorten the belt, buckle it, then pull on the loose end until the belt is snug.

If the seat belt is to be cleaned, use soap and water. Do not use carbon tetrachloride, naphtha, etc., as these will weaken the webbing. For the same reason, do not bleach or redye the webbing. Replace seat belt if worn or damaged.

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BREAK-IN PROCEDURES

Your Ford Tractor will provide long and dependable service if given proper care during the 50-hour break-in period. During the first 50 hours of operation :

1. Avoid "lugging" the engine. Operating in too high a gear under heavy load may cause engine "lugging", which is indicated when the engine will not respond to a throttle increase.
2. Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. You will save fuel and minimize engine wear by selecting the correct gear ratio for a particular operation. Operating the tractor in low gear with a light load and high engine speed will waste fuel.
3. Avoid prolonged operation at either high or low engine speeds without a load on the engine.
4. Check the instruments frequently and keep the radiator and oil reservoirs filled to their recommended levels. Daily checks include :
   - Engine oil level
   - Radiator coolant
   - Air cleaner

STARTING THE ENGINE

A safety key switch on the tractor allows the starting motor to be used only when the main shift lever, shuttle shift lever (if equipped) and P.T.O. control lever are in neutral position. For safe operation the range selector lever should be in neutral position prior to starting the engine.

WARNING : Never attempt to start the engine while standing beside the tractor — always sit in the seat when starting the engine.

IMPORTANT : Do not engage the starting motor continuously for more than 30 seconds ; doing so may cause starting motor failure.

WARM WEATHER STARTING

To start a cold engine in warm weather or to start an engine that is warm :

1. Depress the clutch pedal fully and move the main shift lever, shuttle shift lever (if equipped), P.T.O. lever to the neutral positions and push engine stop control fully foreward.
2. Move the hand throttle forward to a near full open position.
3. Turn the key switch to the "START" position, Figure 20. When the engine starts, release the key. Check to be sure the warning lights go out. If the engine fails to start after cranking for approximately 10 seconds, refer to the following "COLD WEATHER STARTING" information.

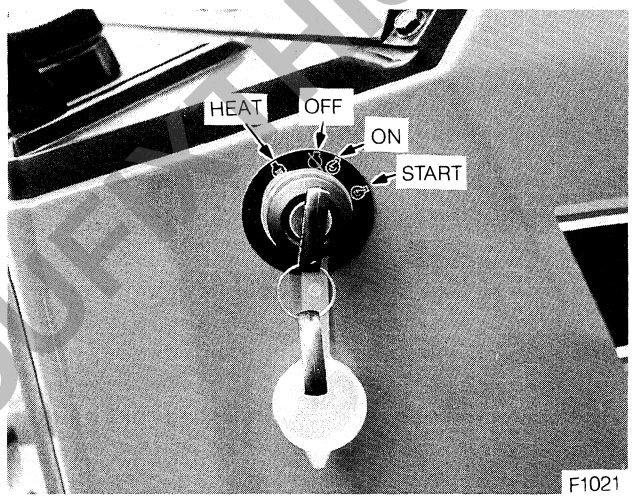


Figure 20 — Key Switch

COLD WEATHER STARTING

If the engine fails to start using the preceding warm weather starting procedure or when starting the engine in cold weather :

1. Depress the clutch pedal fully and move the transmission shift and P.T.O. levers to the off and neutral positions.
2. Move the hand throttle forward to the wide-open position.
3. Turn the key switch to "HEAT" to preheat the combustion chambers and wait until the cold-start aid indicator warning light goes out (approximately 4 seconds).
4. Turn the key switch to the "START" position. When the engine starts, release the key. Check to be sure the warning lights go out.

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ling wheel. Check lug nut torque daily until torque stabilizes.

- Refer to tractor weighting section before adding ballast to the tires.

FRONT WHEEL BEARINGS (TWO-WHEEL DRIVE)

The front wheels are carried on the wheel spindles by inner and outer tapered roller bearings. A grease retainer is provided at the inner end of the spindle, and a cover at the outer end, to retain the lubricant and to keep out dirt and other foreign material.

Front wheel bearings should be repacked every 600 hours as follows :

1. Apply the parking brake to hold the tractor securely.
2. Jack up one of the front wheels, remove the wheel and remove the cover, the cotter pin, and the nut, Figure 63. Remove the thrust washer, outer bearing, and then the hub.
3. Remove the grease retainer and the inner bearing from the inner end of the hub.
4. Thoroughly clean all parts in a suitable solvent and allow to dry naturally. Do not use compressed air. Inspect the bearing cone and roller assemblies for excessive discoloration or wear of the rollers; similarly, check the bearing cups.
5. Repack the cone and roller assembly with clean grease (See specifications.) Pack approximately 1/4-inch (6.35 mm) of grease in the space between the bearing cups in the hub, but do not pack the hub completely. Apply a film of grease on the surface of the spindle.
6. Reinstall the inner bearing and install the grease retainer in the rear of the hub.
7. Place the wheel assembly on the spindle and install the outer bearing, thrust washer, and castellated nut. Tighten the nut, at the same time turning the wheel, until a slight drag is felt. Back off the nut until nearest slot in the nut lines up with the hole in the spindle. Install a new cotter pin, then the cover, with a new gasket.

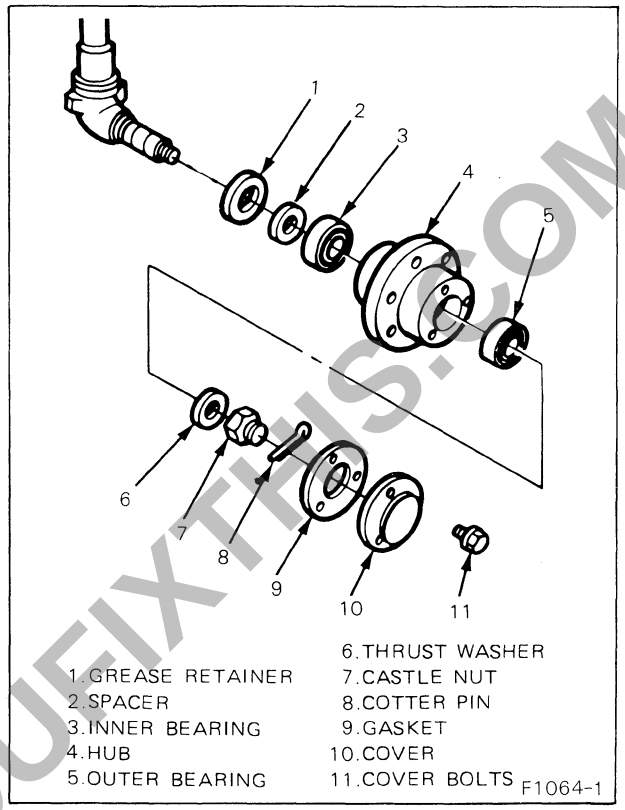


Figure 63 – Servicing Front Wheel Bearings – Two-Wheel Drive

FRONT WHEEL TOE-IN

Front wheel toe-in adjustments on your tractor were made at the factory. Normally, the wheels maintain their toe-in ; however, an occasional check should be made.

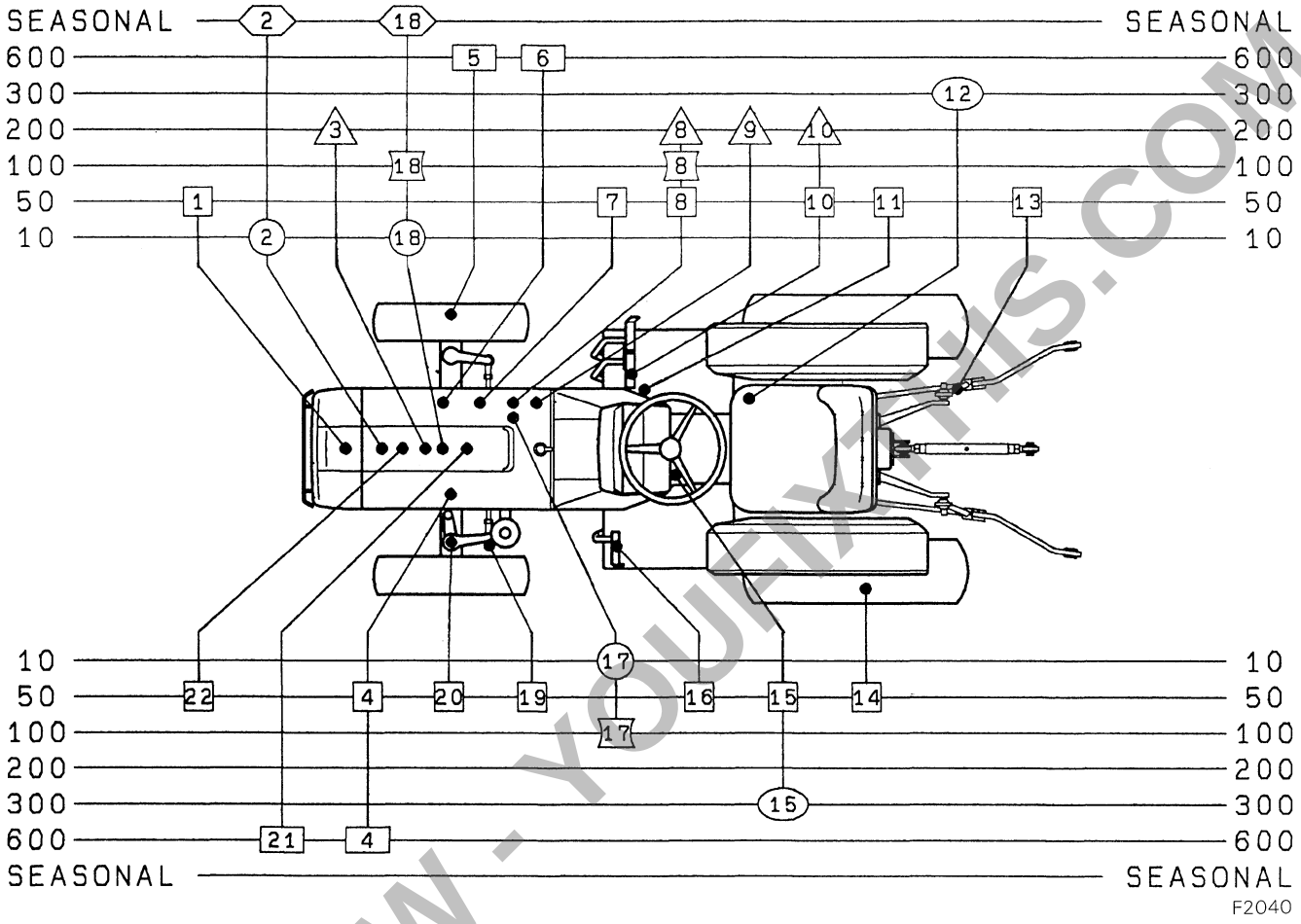
Checking Toe-In

1. With the front wheels in the straight-ahead position, mark the front of the wheels (not the tires) at wheel hub height Figure 64.

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LUBRICATION AND MAINTENANCE CHART – FORD 2120
TWO-WHEEL DRIVE



F2040

NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
2	Radiator Coolant	×					Every (10) Hours or Daily
17	Engine Oil Level	×					
18	Air Cleaner	×					
12	Hydraulic Filter				×		First 50 Houres
15	Transmission Oil Level	×					Every 50 Hours
4	Power Steering Oil Level	×					
14	Tires	×					
16	Clutch Pedal					×	
1	Battery	×					
8	Fuel Filter	DRAIN					
	Lubrication Fittings ;						
19	Steering Linkage			×			
20	Front Wheel Spindles (2)			×			
22	Pivot Shaft (2)			×			
16	Clutch Pedal			×			
10	Brake Pedal			×			
11	Pedal Shaft			×			
13	3-Point Linkage			×			
7	Power Steering Cylinder			×			

NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
17	Engine Oil				×		Every (100) Hours
8	Fuel Filter Element		×				
18	Air Cleaner Element		×				
8	Fuel Filter Element				×		Every 200 Hours
9	Engine Oil Filter				×		
3	Fan Belt	×				×	
10	Brakes					×	
15	Transmission Oil				×		Every (300) Hours
12	Hydraulic Filter				×		
6	Fuel Injectors	×				×	Every 600 Hours
4	Power Steering Oil				×		
5	Front Wheel Bearings			×			
21	Valve Clearance	×				×	
2	Radiator Coolant				×		Seasonal
18	Air Cleaner Element				×		

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ENGINE

Type ····· Diesel
Number of Cylinders ····· 4
Bore ····· 3.35 in. (8.5 cm)
Stroke ····· 3.94 in. (10.0 cm)
Displacement ····· 138.5 cu. in. (2269 cc)
Compression Ratio ····· 18 : 1
Firing Order ····· 1-3-4-2
Low Idle Speed ····· 900-1000 rpm
Maximum Speed
  High Idle ····· 2650-2700 rpm
  Rated ····· 2500 rpm
Valve Clearance (Cold Engine) :
  Intake ····· 0.012 in. (.3 mm)
  Exhaust ····· 0.012 in. (.3 mm)

CAPACITIES

Fuel Tank ····· 11.1 U.S. Gals.
9.2 Imp. Gals.
42.0 Liters
Cooling System ····· 8.5 U.S. Qts.
7.0 Imp. Qts.
8.0 Liters
Engine Crankcase :
  Less Filter ····· 7.9 U.S. Qts.
6.6 Imp. Qts.
7.5 Liters
  With Filter Change ····· 8.5 U.S. Qts.
7.0 Imp. Qts.
8.0 Liters
Rear Axle and Transmission ··· 34.9 U.S. Qts.
(Includes Hydraulics) ····· 29.0 Imp. Qts.
33.0 Liters
Power Steering ····· 1.9 U.S. Qts.
1.6 Imp. Qts.
1.8 Liters
Front Axle Differential Case ····· 4.2 U.S. Qts.
and Final Reduction 3.5 Imp. Qts.
4.4 Liters

COOLING SYSTEM

Type ····· Pressurized Liquid with Recirculating Bypass
Water Pump :
  Type ····· Centrifugal
  Drive ····· V-Belt

COOLING SYSTEM — Cont'd.

Water Pump Belt
  Deflection ····· 7/16 to 9/16 (10-15 mm) when 20-25 lbs. (9-11 kg) Thumb Force is Applied Midway Between Pulleys.
  Fan Diameter ····· 13.4 in. (34 cm)
Thermostat :
  Start to Open ····· 160°F (71°C)
  Fully Open ····· 185°F (85°C)
Radiator Cap ····· 12.8 psi (.88 bar)

ELECTRICAL SYSTEM

Alternator ····· 12-volt, Heavy Duty, 35 amps
Regulator (Alternator) ···· (IC Regulator built-in)
Battery ····· 12-Volt, 100 amp. Hour Rating with Negative Ground
Starting Motor ····· Solenoid, Pre-Engaged, Reduction

FUEL SYSTEM

Type of Fuel to Use	Temperature	Type
Diesel	Above 20°F (−6.7°C)	No. 2D Cetane Rating min. 40
	Below 20°F (−6.7°C)	No. 1D Cetane Rating min. 40

Injection Pump :
  Type ····· In-Line
  Timing ····· 20°BTDC

CLUTCH

Type ····· 12×4···10.8 in. (275 cm) TRANS
9.45 in. (24.0 cm) PTO
Dry Disc., Dual. Organic Face
····· 12×12···10.2 in(26.0 cm)
Dry Disc., Single, Organic Face

BRAKES

Type ····· Wet Disc
Disc 4 ····· 6.9 in × 5.6 in Diameter (17.5 cm × 14.3 cm)

STEERING

Type ····· Hydrostatic
Turns Lock-to-Lock ····· 4.0
Front Wheel Toe-In ····· 0-13/64 in. (0-5 mm)

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