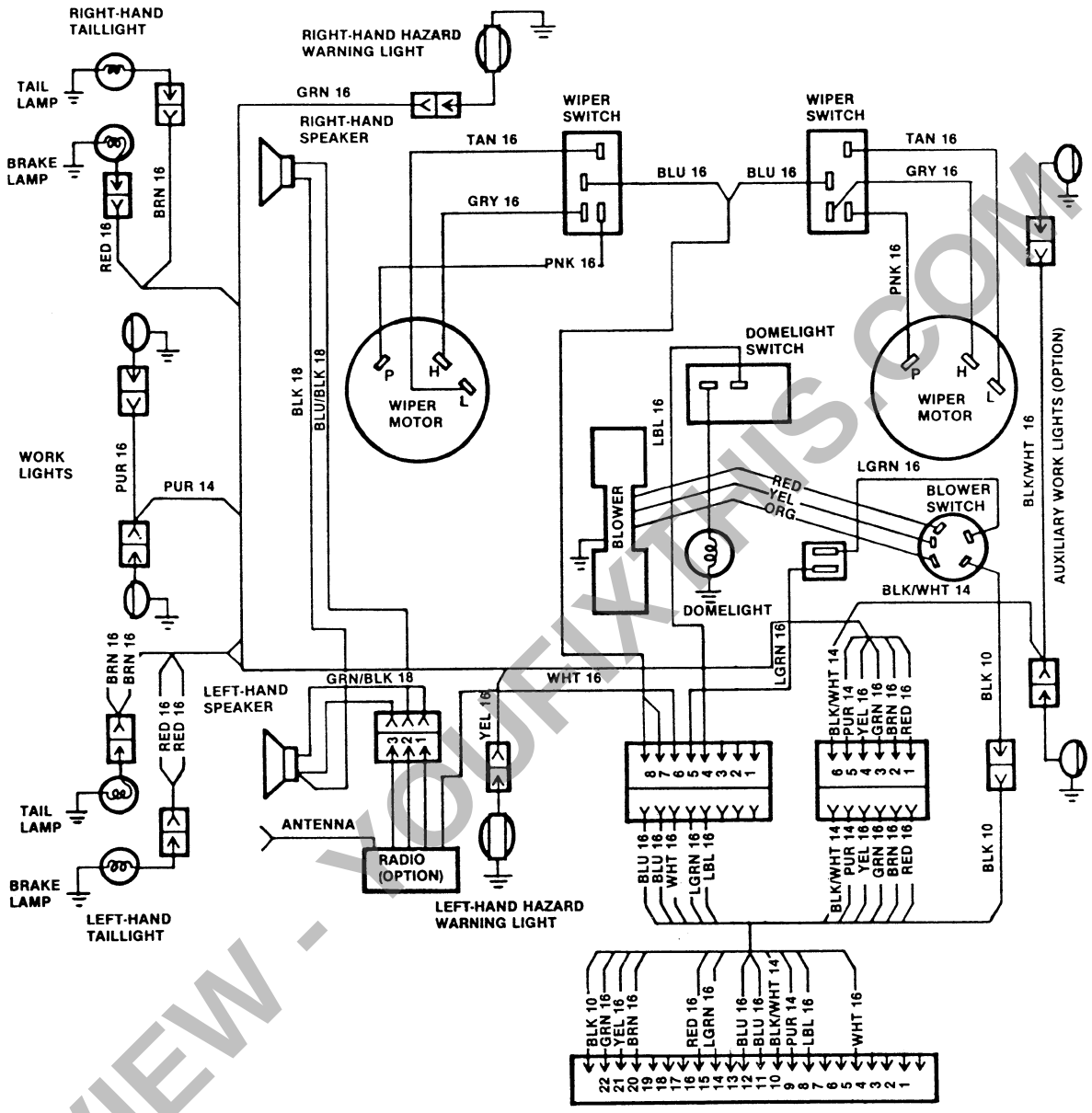
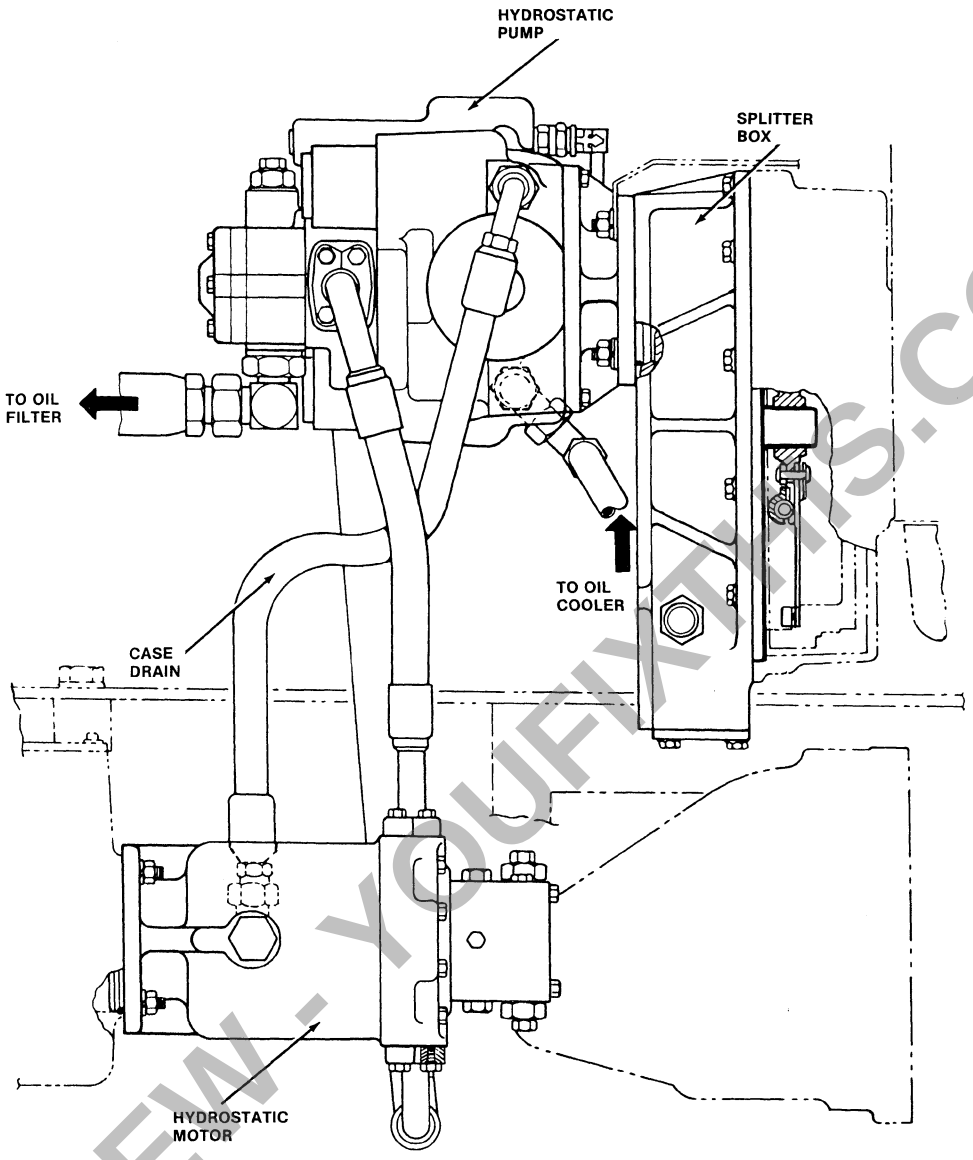


Roof Wiring Schematic

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Hydrostatic System Schematic

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SECTION 7
SPECIFICATIONS

AIR CLEANER

Type ..... Dual element dry type with dump valve, air intake restriction gauge

AIR CONDITIONER

Charge ..... 2.5 kg (5 lb 8 oz)

Oil Level ..... 200 ml (7 oz)

AXLES

Type ..... Hypoid differential with outboard drop axle final drive

Differential Ratio 4.10:1/Cummins
4.56:1/Ford Engine

Lubrication SAE80W90 GL5

Oil Capacity
Differential ..... 2.3 L (2.4 qt US)
Drop Axle ..... 1.7 L (1.8 qt US)

Drop Axle Ratio 3.18:1

BRAKES

Type ..... 305 mm (12") disc and caliper self-adjsting, driveline mounted

Meets or Exceeds ..... ASAE S 365T (SAEJ1041)

Caliper ..... Single Piston, floating hydraulically actuated by pedal
Parkbrake ..... Integral with road brake, self-adjusting, actuated by over-center lever

CAB

Type ..... Independent module type with rollover protective structure (ROPS ASAE S383)

Seat Belt SAEJ141, SAEJ385

CAPACITIES

Cooling System ..... Ford - 24 L (6.3 US gal) — Cummins - 22 L (22.6 qt US)

Differentials (Each) ..... 2.3 L (2.4 qt US)

Drop Axles (Each) ..... 1.7 L (1.8 qt US)

Engines Crankcase (With Filter) ..... Ford-14 L (15 qt. US) — Cummins 10 L (11 qt. US)

Fuel Tanks ..... 148 L (39 gal US)

Hydraulic/Hydrostatic System ..... 32 L (8.5 gal US)

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SECTION 3
LUBRICATION

Service intervals recommended in this manual are based on operation under average conditions. When operating the tractor in severe heat, dust or humidity, service the tractor more frequently.

LUBRICATION AND MAINTENANCE CHART

	AS REQUIRED	DAILY 10 HOURS	WEEKLY 50 HOURS	100 HOURS	150 HOURS	200 HOURS	300 HOURS	400 HOURS	YEARLY 1000 HOURS	1200 HOURS OR 2 YEARS	LUBRICANT[6]	NO. OF POINTS	LUBRICATION POINT[7]
Check engine oil level		X									A		
Check hydraulic/hydrostatic reservoir sight glass level		X									E		
Check radiator sight glass level		X											
Add errosion/corrosion control additive							X						
Check PTO clutch/splitter box sight glass level		X									E		
Clean radiator, grill and oil cooler	X	X											
Check batteries						X							
Check air-conditioner compressor belt tension						X							
Check transmission oil level						X					C		
Check differential oil level						X[8]					D		
Check drop axle oil level						X					D		
Check brake fluid level						X					F		
Check PTO dropbox oil level						X					C		
Lubricate main drivelines						X					B	9	1
Lubricate steering cylinder pins				X							B	4	2
Lubricate frame pivots				X							B	2	3
Lubricate oscillating cradle pivots				X							B	2	4
Drain water separator		X											

1 Lubricate more frequently under continuous use.
2 Change oil and filter after the first 50 hours of operation and every 200 hours thereafter.
3 Change oil after the first 50 hours of oepration and every 400 hours thereafter.
4 Torque wheel bolts after the first half hour of operation and every 50 hours until 400 hours and every 200 hours thereafter.
5 Torque clamp bolts every 10 hours until 50 hours, every 50 hours until 400 hours, and every 400 thereafter.
6 See Table 2, Lubricant Brand Equivalency Chart.
7 See Lubrication Points illustrations, following.
8 After first 100 hours of use, drain, flush and replace the oil and additive in the Dana Powr-lok® differential. See pages 48 and 56.

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SECTION 5
TROUBLESHOOTING

Engine

	No fuel/lift pump lever UP	Low idle speed	Overloaded engine/tractor	Loose belt	Linkage maladjusted	Improper coolant/oil	Incorrect/dirty fuel	Defective radiator/thermostat	Cold start malfunctioning	Low/defective battery	Fuel filter/lines plugged	Plugged air cleaner	Plugged radiator	Collapsed hose	Defective gauge	Defective/worn water pump	Air in fuel system	Leaking fuel lines	Improper injection pump timing	Worn/defective fuel pump	Worn/plugged/defective injectors	Incorrect valve adjustment	Defective turbocharger	Low compression/worn parts	Faulty fuel shutoff solenoid/wiring
Cranks, doesn't start	•										•							•	•	•	•				•
Hard to start/won't start			•				•		•	•		•					•		•		•	•			•
Starts then stalls		•	•				•										•			•					
Misfires							•										•	•	•		•	•		•	
Running hot			•	•		•		•					•	•	•	•			•						
Running too cold								•							•										
Low oil pressure						•									•									•	
Rough idle for warm engine		•															•		•	•	•				
Surges at idle		•									•						•			•					
Fuel knock			•				•										•		•		•				
Won't reach rated speed			•		•		•								•				•						
Low power			•		•	•	•				•	•					•		•		•	•	•		
Excessive smoke under load								•				•					•		•		•		•		

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3. The hydrostatic system will DYNAMICALLY BRAKE the tractor drivetrain. Move the FNR lever slowly towards neutral for stopping. The tractor may creep if it is stopped on an incline, even with the FNR lever in neutral. Use the parkbrake at all times when the tractor is stopped. Dynamic braking provided by the hydrostatic system can and should be used by the operator to slow down and stop the tractor.

Engine Starting

Exhaust Fumes

WARNING: NEVER IDLE THE ENGINE IN A CLOSED AREA. EXHAUST GASES, PARTICULARLY CARBON MONOXIDE, MAY BUILD UP. THESE GASES ARE HARMFUL AND POTENTIALLY LETHAL.

CARBON MONOXIDE IS COLORLESS AND ODORLESS, BUT CAN BE PRESENT WITH ALL OTHER EXHAUST FUMES.

Engine Starting Procedure

1. Be sure that the parking brake is engaged.
2. Be sure that the PTO is disengaged.
3. Place the hydrostatic speed control lever in neutral, Figure 2-4.
4. The seat pedestal must be locked in position.
5. Move the throttle to the slow idle position. In cold weather, move the throttle lever to about ¼ throttle position.

CAUTION: BE SURE EVERYONE IS CLEAR OF THE TRACTOR BEFORE STARTING THE ENGINE.

6. Insert the key and turn the ignition switch to the "ON" position. Check the warning lights and gauges.

   NOTE: If the engine has not been operated for an extended period, disconnect the engine fuel solenoid and crank the engine for 30 seconds. Let the starter cool for two minutes and crank the engine again. Repeat this until the engine oil pressure light goes out. Connect the fuel solenoid and start the engine.

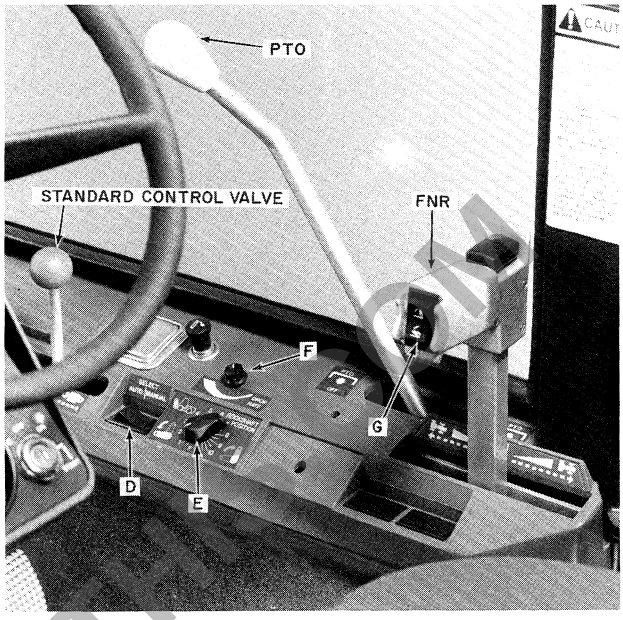


FIGURE 2-4

7. Turn the ignition switch to crank the engine. Release the switch as soon as the engine starts.

   IMPORTANT: If the switch is released before the engine starts, wait until the starter motor stops turning before engaging the starter again.

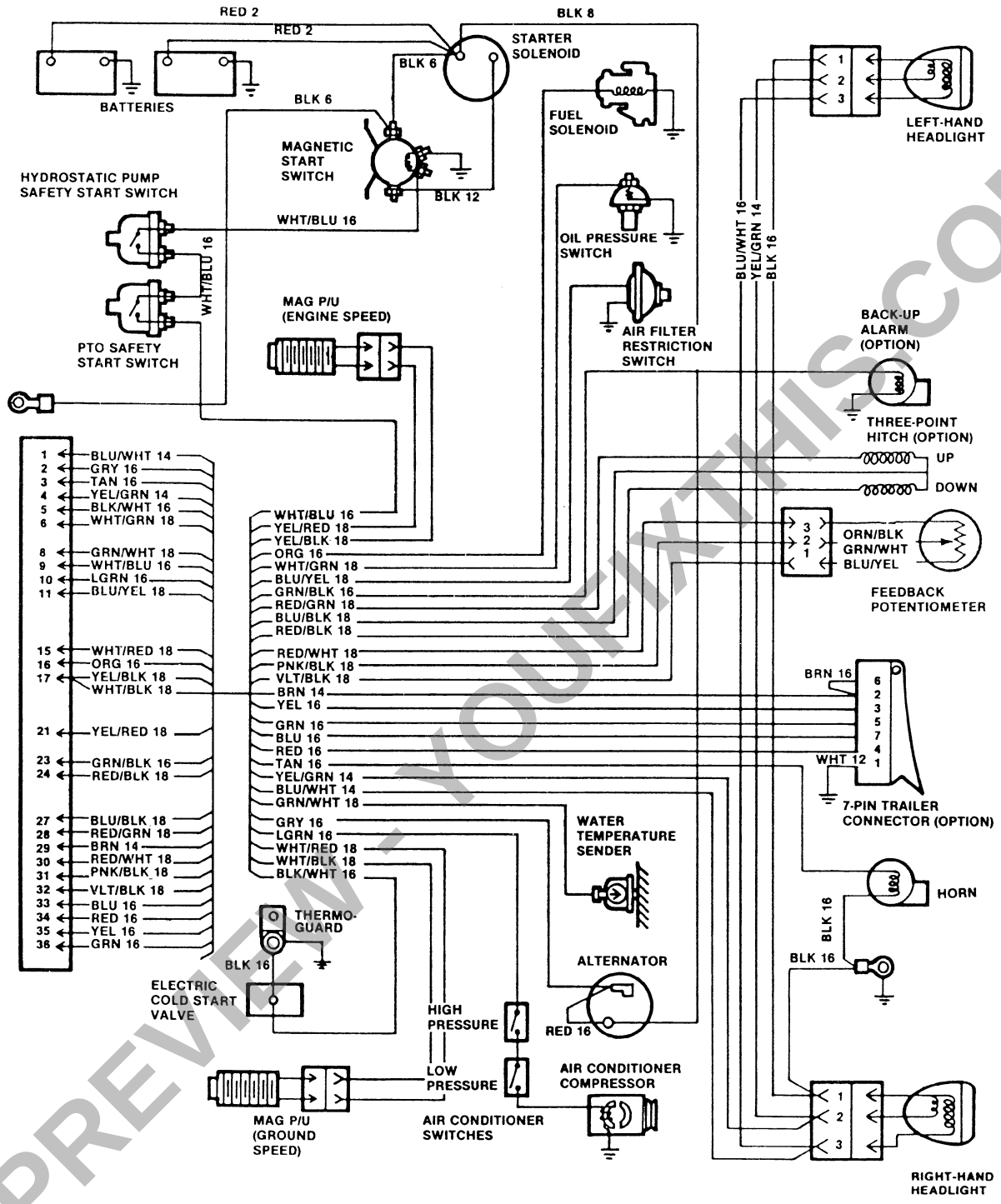
   Never crank the engine for more than 30 seconds at one time. Allow two minutes for the starter motor to cool before attempting to start the engine again.

8. When the engine starts, move the throttle lever to the low idle position. Maintain a low engine idle speed.
9. Check the engine oil pressure gauge.

   ATTENTION: If the engine oil pressure does not rise within 15 seconds after the engine starts, stop the engine immediately. Determine the cause of low engine oil pressure and correct the problem before restarting the engine.

10. Allow the engine to idle at slow idle for three to five minutes or until the engine coolant temperature gauge needle has begun to move.

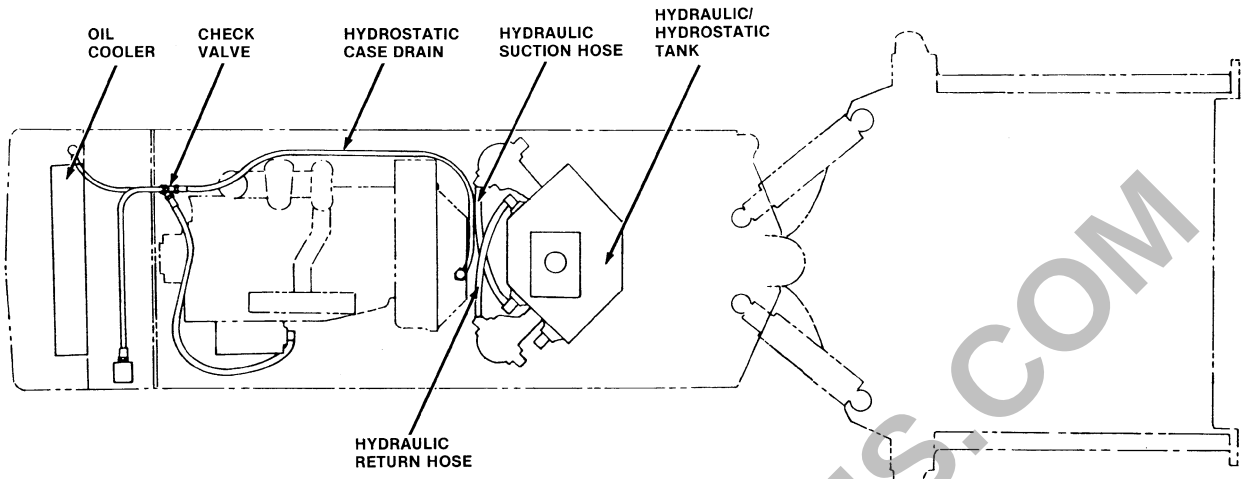
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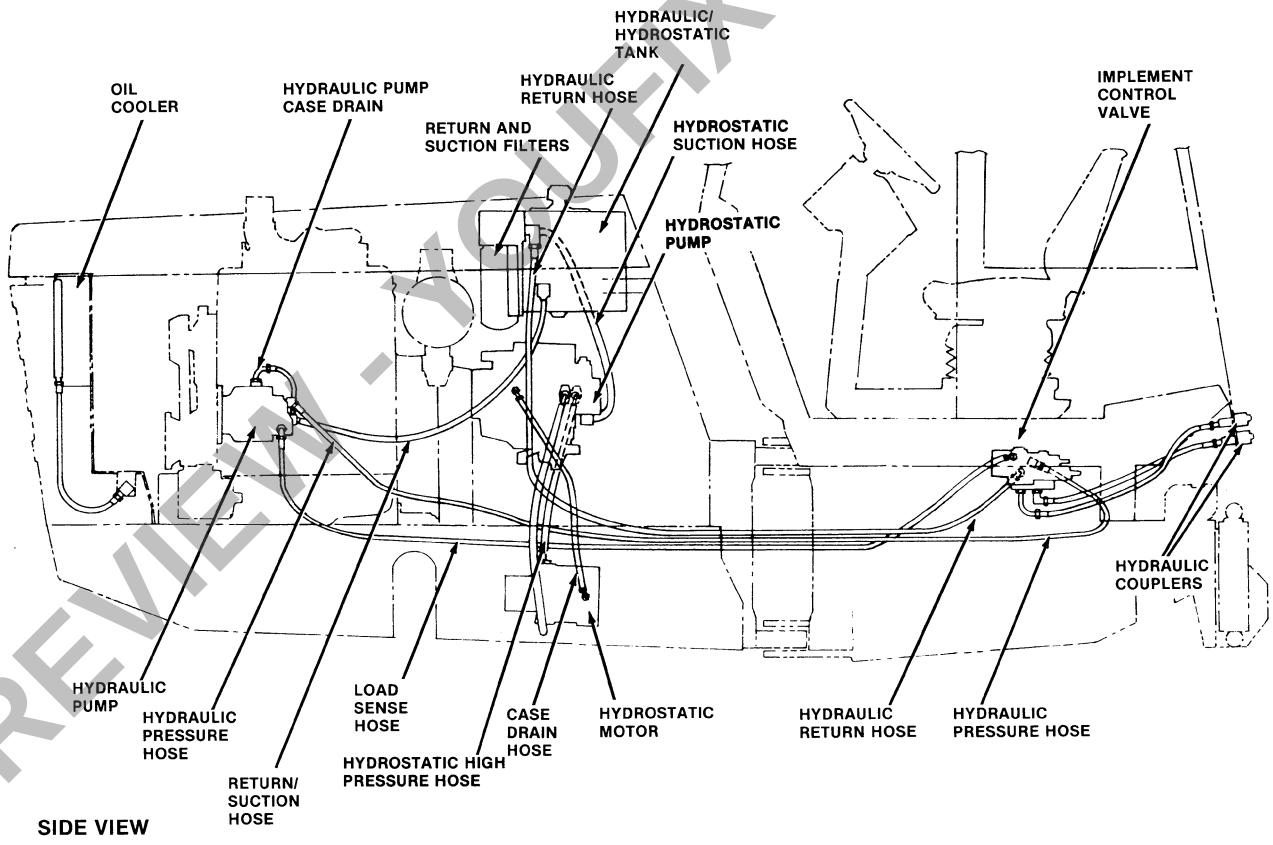
Engine Wiring Schematic

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TOP VIEW



SIDE VIEW

Hydraulic System Schematic - with Cummins Engine

NOTE: The Ford engine 276 II has the hydraulic pump on the splitter gear box.

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PTO Dropbox (Single Spd.) ..... 2 L (2 qt US)
PTO Dropbox (Dual Spd.) ..... 2 L (2 qt US)
PTO Clutch/Splitter Box ..... 3.0 L (3 qt US)
Transmission ..... 8.7 L (9 qt US)
PTO Transfer Case ..... 1.5 L (1.6 qt US)

CLUTCH (PTO)

Type ..... 152 mm (6:) 7 Plate Wet Type with safety start switch

COOLING SYSTEM

Capacity ..... Cummins 24 L (6.3 gal)
Radiator ..... 3426 cm^3 (1531 in^2)
Fan ..... Ford — 508 mm (20″) dia., 6 blade suction type, belt driven
Pressure Cap ..... 48 kPa (7 PSI)

DIMENSIONS

Wheelbase ..... 2185 mm (86″)
Overall Length ..... Cummins 4039 mm (159″)
Ford 4140 mm (163″)
Overall Height ..... Cummins 2893 (112″)
Ford 2896 mm (114″)
Cab Width ..... 1150 mm (44.85″)
Ground Clearances (With 16.9 x 28 R1 Tires)
Drop Axle Bottom ..... 533 mm (21″)
Differential ..... 660 mm (26″)
Articulation Pins ..... 22 mm (24.5″)

CAB END DRAWBAR

Type ..... Swinging clevis of 38 x 76 mm (1.5 x 3″) steel, replaceable hardened bushings
Height ..... 415 mm (16″) top main member
Maximum Permissable
Vertical Static Load ..... 907 kg (2000 lb)

ELECTRICAL

Type ..... 12V 85 A alternator, negative ground
Batteries ..... Two 12V, maintenance free cranking performance of 630 A on Cummins engine and one 850A battery on Ford
Lamps ..... Two 60W headlamps, two 60W worklights, two taillights, two amber hazard lights
Electrical Trailer Connector ..... Seven Conductor SAE J560 B
Fuses and Circuit Breakers ..... See Table

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	AS REQUIRED	DAILY 10 HOURS	WEEKLY 50 HOURS	100 HOURS	150 HOURS	200 HOURS	300 HOURS	400 HOURS	YEARLY 1000 HOURS	1200 HOURS OR 2 YEARS	LUBRICANT[6]	NO. OF POINTS	LUBRICATION POINT[7]
Lubricate three-point hitch and rockshaft						X[1]					B	4	5
Lubricate PTO drivelines						X[1]					B	7	6
Lubricate window and door hinges		X									B	6	7
Clean air cleaner filters		X											
Check air cleaner tube connections			X										
Check air intake filters		X											
Change engine oil and filter			X[2]			X					A		
Change fuel and water separator filters						X							
Check alternator/fan/water pump belt		X				X							
Change hydraulic/hydrostatic oil filters						X							
Change coolant and add coolant additive									X	X			
Change transmission oil			X[3]					X			C		
Change drop axle oil			X[3]					X			D	4	
Change PTO clutch/splitter box oil			X[3]					X			E		
Change PTO dropbox oil			X[3]					X			C		
Change hydraulic/hydrosatic oil									X		E		
Adjust parkbrake	X												
Check and/or adjust PTO clutch control	X		X										
Drain contamination from fuel tanks					X								
Check wheel bolt torque						X[4]							
						X[5]							
Torque axle mounting bolts						X							
Check and/or change air intake filters								X					
Check air-conditioner moisture and level indicator	X												
Check PTO transfer case oil						X							
Change PTO transfer case oil			X[3]								E		

1 Lubricate more frequently under continuous use.
2 Change oil and filter after the first 50 hours of operation and every 200 hours thereafter.
3 Change oil after the first 50 hours of operation and every 400 hours thereafter.
4 Torque wheel bolts after the first half hour of operation and every 50 hours until 400 hours and every 200 hours thereafter.
5 Torque clamp bolts every 10 hours until 50 hours, every 50 hours until 400 hours, and every 400 thereafter.
6 See Table 2, Lubricant Brand Equivalency Chart.
7 See Lubrication Points illustrations, following.
8 After first 100 hours of use, drain, flush and replace the oil and additive in the Dana Powr-lok® differential. See pages 48 and 56.

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Three-Point Hitch

	No electrical power	Faulty switch	Blown fuse	Faulty ground/connection	Improper flow control adjustment	Faulty hitch controller	Faulty hydraulic valve	Hydraulic oil contaminated	Faulty wiring/connections	Improper pump setting	Faulty feedback potentiometer	Faulty command potentiometer
Doesn't move	•	•	•	•		•	•	•	•			
Doesn't raise		•			•	•	•	•	•	•		
Doesn't lower		•			•	•	•	•	•			
Raises too slowly					•		•			•		
Raises too fast					•		•					
Lowers too slowly					•		•					
Lowers too fast					•		•		•			
Doesn't respond to raise switch		•				•	•	•	•	•		
Doesn't respond to return switch		•				•		•	•			
Doesn't hold position						•	•				•	•
Works in manual mode only		•				•					•	•

Environmental System

	Plugged air filter(s)	Faulty blower	Plugged evaporator fins	Incorrect temperature setting	Low refrigerant level	Faulty expansion valve	Low engine temperature	Heater line restriction	Inadequate recirculation	Leaking drip tray
Inadequate air flow	•	•	•							
Inadequate cooling				•	•	•			•	•
Inadequate heating				•			•	•	•	
Moisture in cab									•	•

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ATTENTION: During cold weather, allow the hydrostatic system oil to warm before operating any of the related controls. If the tractor is equipped with an oil tank heater (as on all 256/276 and 276 II with Cummins engine), plug it in when the tractor is parked in -18° C (0° F) weather.

Failure to properly warm the oil during cold weather will cause damage to the system. Also, this insures adequate lubrication to the turbocharger bearings so they are not damaged.

11. Operate the engine at low load and low RPM until the engine coolant is 66° C (150° F) or higher. Check all the gauges during the warm-up period.

Cold Weather Starting

Figure 2-5



CAUTION: STARTING FLUID IS HIGHLY FLAMMABLE. DO NOT USE NEAR FIRE, SPARKS OR FLAMES. BE SURE ALL OPERATORS READ CAUTIONARY INFORMATION ON CONTAINERS.

IMPORTANT: Never use starting fluid when the engine is running. Use only one starting fluid charge per engine crank cycle of 30 seconds. Never hold button longer than five seconds. Damage to electric valve solenoid may result.

To prevent cranking motor damage, never crank engine for more than 30 seconds. If engine does not start within 30 seconds, wait two minutes before recranking to cool the cranking motor.

1. Fasten seat belt.
2. Put the FNR lever in neutral and the PTO off.
3. Place the transmission in neutral.
4. Engage the parkbrake.
5. Turn the keyswitch is ON to activate the electrical accessories.

   Observe the warning lamps to be sure they are functioning.
6. Place the throttle at idle.
7. Turn the keyswitch to START to crank the engine and release it when the engine starts.

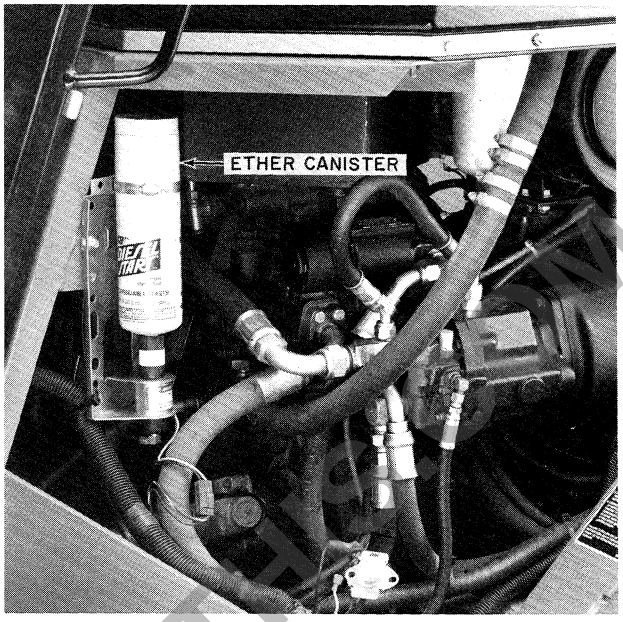


FIGURE 2-5

8. If the engine does not start with 15 seconds of cranking, depress the cold start switch for two seconds and release it to inject the starting fluid. If the engine does not start after 30 seconds, stop and wait two minutes before cranking it again.

   NOTE: Thermoguard prevents starting fluid injection if the engine temperature is above 20° C (68° F).
9. With the engine started and the FNR lever in neutral, allow the engine to warm up before putting it into service.
10. Place the transmission range in neutral and push the FNR lever ahead to circulate the oil in the hydrostatic system.
11. Once the oil has been warmed, return the FNR lever to neutral.

IMPORTANT: If the warning lamps do not extinguish within 15 seconds of the engine starting, stop the tractor immediately and investigate the problem.

NOTE: If the engine fails to start after three attempts, it will be necessary to use the block heater or other means to warm the engine.

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