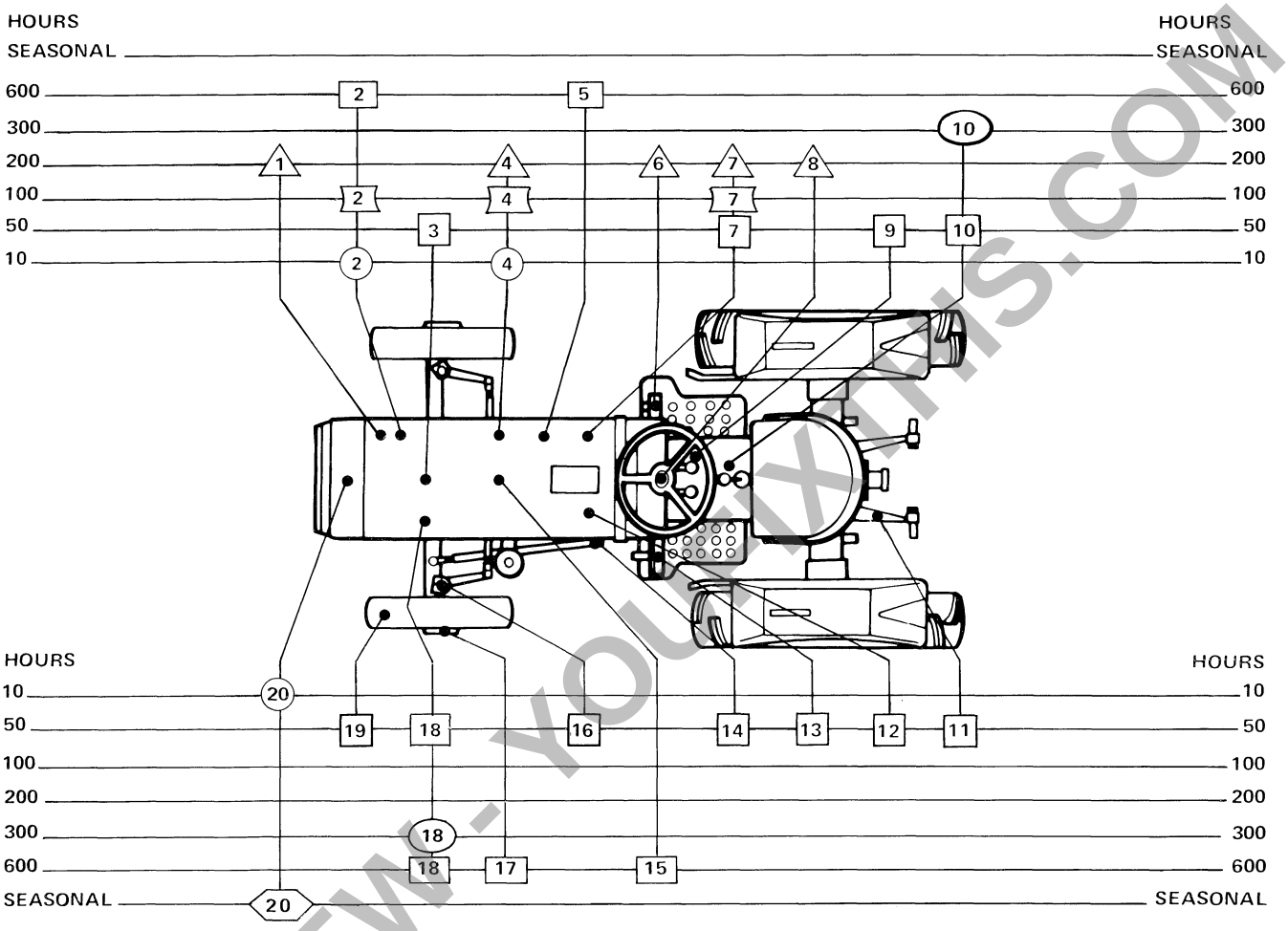
LUBRICATION AND MAINTENANCE CHART — FORD 1100 TWO-WHEEL DRIVE



NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
4	Engine Oil Level	X					Every (10) Hours
20	Radiator Coolant	X					
2	Air Cleaner	X					
18	Hydraulic Filter	X	X				First 50 Hours
10	Transmission and Rear Axle Oil Level	X					Every [50] Hours
7	Fuel Filter	D	R	A	I	N	
12	Battery	X					
19	Tires	X					
13	Clutch Pedal	X				X	
—	Lubrication Fittings						
14	Steering Linkage			X			
3	Pivot Shaft			X			
16	Front Wheel Spindles			X			
11	3 Point Linkage			X			
9	Pedal Shaft	X		X			

NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
7	Fuel Filter		X				Every [100] Hours
2	Air Cleaner		X				
4	Engine Oil				X		
7	Fuel Filter				X		Every △200 Hours
1	Fan Belt	X				X	
4	Engine Oil Filter				X		
6	Brakes					X	
8	Steering Free-Play					X	
18	Hydraulic Filter		X				Every (300) Hours
10	Transmission and Rear Axle Oil			X			
17	Front Wheel Bearings	X		X			Every [600] Hours
5	Fuel Injectors	X					
2	Air Cleaner (Disassemble)		X				
15	Valve Clearance	X					
18	Hydraulic Filter				X		
20	Radiator Coolant				X		Seasonal

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GENERAL TORQUE SPECIFICATION TABLE (Revised 2-74)

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SEE Grade No.		2				5				8 *			
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary													
Bolt Size		Torque Foot Pounds		Torque Newton-Meters		Torque Foot Pounds		Torque Newton-Meters		Torque Foot Pounds		Torque Newton Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	25	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128 7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1-1/8	25.58	–		–		800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1-1/4	31.75	–		–		1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1-3/8	34.93	–		–		1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1-1/2	38.10	–		–		1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

* Thick nuts must be used with Grade 8 bolts.

METRIC BOLT TORQUE SPECIFICATIONS

Size of screw	Grade No	Coarse thread Pitch (mm)	Coarse thread Foot Pounds	Coarse thread Newton-Meters	Fine thread Pitch (mm)	Fine thread Foot Pounds	Fine thread Newton-Meters
M6	4T (4)	1.0	3.6–5.8	4 9–7.9	–	–	–
	7T (7)		5 8–9.4	7 9–12.7		–	–
	8T (8) (11)		7.2–10	9.8–13.6		–	–
M8	4T	1.25	7.2–14	9 8–19	1.0	12–17	16.3–23
	7T		17–22	23–29.8		19–27	25.7–36.6
	8T		20–26	27.1–35.2		22–31	29.8–42
M10	4T	1.5	20–25	27.1–33.9	1 25	20–29	27.1–39.3
	7T		34–40	46 1–54 2		35–47	47.4–63.7
	8T		38–46	51.5–62.3		40–52	54.2–70.5
M12	4T	1.75	28–34	37.9–46.1	1.25	31–41	42–55.6
	7T		51–59	69 1–79 9		56–68	75.9–92.1
	8T		57–66	77.2–89.4		62–75	84–101.6
M14	4T	2 0	49–56	66.4–75.9	1.5	52–64	70.5–86.7
	7T		81–93	109.8–126		90–106	122–143.6
	8T		96–109	130.1–147 7		107–124	145–168
M16	4T	2.0	67–77	90.8–104.3	1.5	69–83	93.5–112.5
	7T		116–130	157.2–176 2		120–138	162.6–187
	8T		129–145	174.8–196.5		140–158	189.7–214.1
M18	4T	2 0	88–100	119 2–136	1.5	100–117	136–158.5
	7T		150–168	203 3–227.6		177–199	239.8–269.6
	8T		175–194	237 1–262.9		202–231	273.7–313
M20	4T	2.5	108–130	146.3–176.2	1.5	132–150	178.9–203.3
	7T		186–205	252–277.8		206–242	279.1–327.9
	8T		213–249	288.6–337.4		246–289	333.3–391.6

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ENGINE

Type	Diesel
Number of Cylinders	2
Bore	2.95 in. (7.5 cm)
Stroke	3.15 in. (8.0 cm)
Displacement	43.1 cu. in. (706 cc)
Compression Ratio	23:1
Firing Order	2-1
Low Idle Speed	750-850 rpm
Maximum Speed:	
High Idle	2750-2800
Rated	2600
Valve Clearance (Cold Engine):	
Intake	0.012 in. (.30 mm)
Exhaust	0.012 in. (.30 mm)

CAPACITIES

Fuel Tank	3.7 U.S. Gals. 3.1 Imp. Gals. 14 Liters
Cooling System	3.2 U.S. Qts. 2.7 Imp. Qts. 3.0 Liters
Engine Crankcase:	
Less Filter	3.2 U.S. Qts. 2.8 Imp. Qts. 3.0 Liters
With Filter Change	3.5 U.S. Qts. 2.9 Imp. Qts. 3.3 Liters
Rear Axle and Transmission (Includes Hydraulics)	20 U.S. Qts. 16.7 Imp. Qts. 18.9 Liters
Front Axle Differential Case	1.6 U.S. Qts. 1.3 Imp. Qts. 1.5 Liters
Front Axle Final Reduction Gear Case	0.21 U.S. Qts. 0.17 Imp. Qts. 0.2 Liters

COOLING SYSTEM

Type	Pressurized Liquid with Recirculating Bypass
Water Pump:	
Type	Axial-flow
Drive	V-Belt
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	10.23 in. (26.0 cm)
Thermostat:	
Starts to Open	159.8°F (71°C)
Fully Open	185°F (85°C)
Radiator Cap	13 psi (.9 bar)

COOLING SYSTEM — Cont'd.

ELECTRICAL SYSTEM

Alternator	12-volt, Heavy Duty, 20 amps
Regulator (Alternator)	Mechanical
Battery	12-volt, 65 amp. Hour Rating with Negative Ground
Starting Motor	Solenoid, Pre-Engaged

FUEL SYSTEM

Type of Fuel to Use	Temperature	Type
Diesel	Above 20°F (−6.7°C)	No. 2D Cetane Rating 45
	Below 20°F (−6.7°C)	No. 1D Cetane Rating 50

Injection Pump:	
Type	In-Line
Timing	24° BTDC

CLUTCH

Type	6.3 in. (16.0 cm) Dry Disc., Organic Face
Pedal Free-Travel	3/4-1-3/16 in (19-30 mm)

BRAKES

Type	Drum (Expanding Shoe)
Drum	4.33 in. Diameter (11.0 cm)

STEERING

Type	Manual or Hydraulic power asist
Turns Lock-to-Lock	Manual—2.3
Steering Wheel Free-Play	0.78-1.38 in. (20-35mm)
Front Wheel Toe-In	0-13/64 in (0-5 mm)
Turning Radius (Without Brake)	6.6 ft. (201 cm) Two Wheel Drive 7.5 ft. (230 cm) Four Wheel Drive

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LUBRICANT STORAGE

Your Ford Tractor is equipped with lubricant filters to protect vital points from damage caused by dirt which may enter under normal operating conditions. Precautions must, however, be taken by you to prevent lubricant contamination by dirt or water during storage. Service intervals in this section are based on the assumption that only new oil, of the type specified, is used.

Barrels of lubricant should be kept under cover, preferably in a clean, dry place, and should be clearly marked to indicate the lubricant which they contain.

When a barrel is kept in an exposed location, it should be tilted to allow any moisture to run away from the filler cap. Always use a clean container when transferring oil from a barrel to the tractor and make sure that any cap or bung, which has been removed, is installed as soon as possible.

FUEL AND LUBRICANT SERVICE PROCEDURES

ENGINE

Checking Oil Level: Check the engine oil level daily or every 10 hours.

1. With the tractor standing level, and after the engine has been stopped for a period of time, check the oil level with the dipstick, Figure 26.

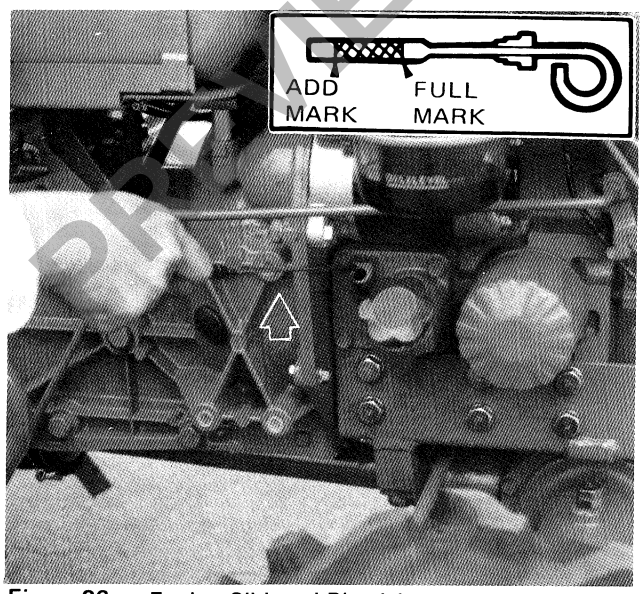


Figure 26 — Engine Oil Level Dipstick

2. If the oil level is low, remove the filler cap, Figure 27, and add oil to the engine through the filler hole to bring the oil level between the marks on the dipstick. Be careful not to overfill.
3. Install the oil filler cap.

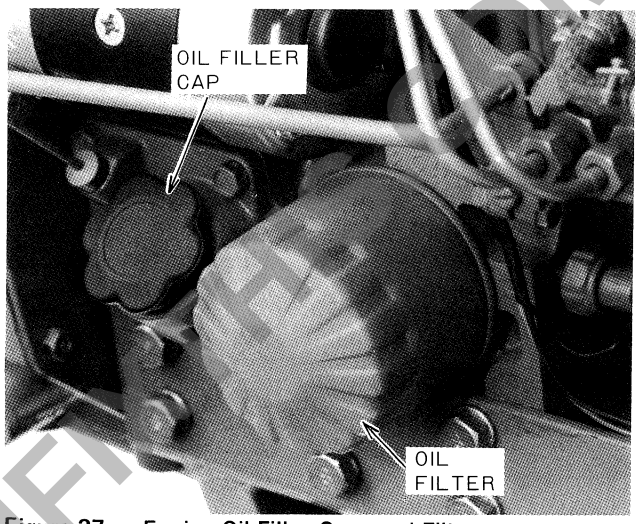


Figure 27 — Engine Oil Filler Cap, and Filter

Changing Oil and Filter. Change the engine oil every 100 hours and the engine oil filter every 200 hours.

NOTE: More frequent engine oil and filter changes are recommended if the tractor is operated for extended periods of time at maximum rated power and speed. Under such conditions, or other types of continued severe operating conditions, the engine oil should be changed at 70 hour intervals and the filter at 140 hour intervals.

1. With the engine off, but at normal operating temperature, drain and discard the engine oil by removing the drain plug. Reinstall the plug after the oil has drained and discard the oil.
2. Unscrew the oil filter, Figure 27, catching the used oil in a suitable container placed below the filter. Discard the filter.
3. Coat the gasket on the new filter with a film of oil. Screw the filter into place until the gasket contacts its mating surface, then turn the filter approximately 3/4 of a turn by hand. Do not over-tighten.
4. Add new oil of the type specified, page 23. Start the engine and check the filter for leaks after adding the oil. Be sure the oil level is at the proper level.

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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." "Lugging" 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 starter switch on the tractor allows the starting motor to be used only when the clutch pedal is fully depressed. For safe operation the transmission gear shift lever must always be in neutral and the PTO lever in the off position prior to starting the engine.

CAUTION: 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 shift lever to the neutral position.
2. Move the hand throttle forward to a near full open position.
3. Turn the starter switch to the "start" position, Figure 12. 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.

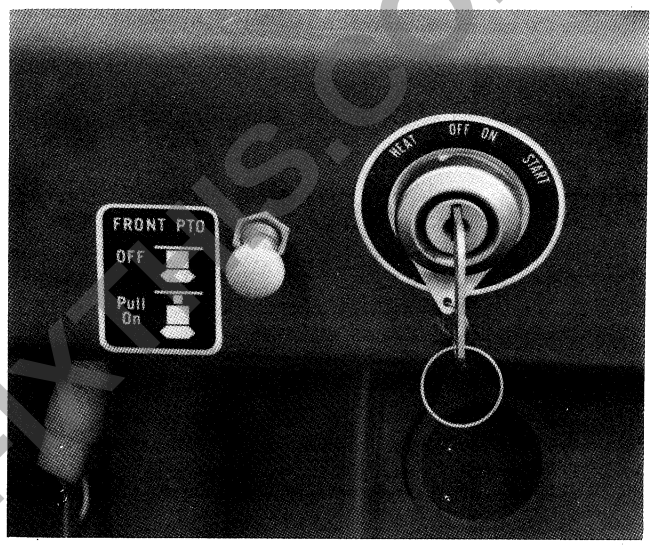


Figure 12 — Starter Switch

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 shift lever to the neutral position.
2 Move the hand throttle forward to the full-open position.
3. Turn the starter switch to "heat" to preheat the precombustion chamber and wait until the cold-start aid indicator on the instrument panel shows red (approximately 30 seconds).
4. Turn the starter switch to the "start" position. When the engine starts, release the key. Check to be sure the warning lights go out.

NOTE: A coolant immersion heater which provides easier starting in temperatures below 0°F (−17.7°C) by warming the engine oil and coolant, is available as a dealer installed option.

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The light switch must be in the "ON" positions before the flasher will operate.

For your protection, use the flasher warning lamp when traveling on public roads, day or night.

LIGHT SWITCH

The light switch, shown in Figure 4, is a push-pull type switch. Its positions are:

Full in .... Off
Full out .....Headlights, and Tail Lamp

INSTRUMENT PANEL

STARTER SWITCH

The starter switch is shown in Figure 4. Turning the key to the left will activate the cold-start aid. Turning the key to the right to the "on" position will activate the warning lights and instruments. Turning the key further right to the "start" position will start the engine. Upon release, the key will spring return to the "on" position.

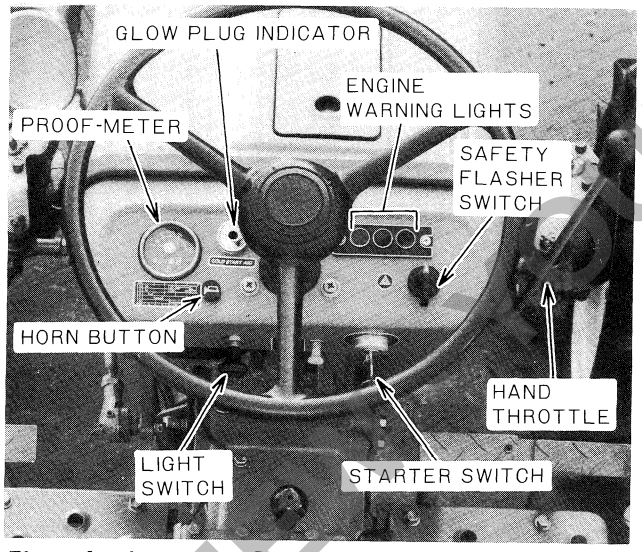


Figure 4 — Instrument Panel

The starting circuit can only be activated when the clutch is fully depressed. Always check to make certain the transmission gear shift lever and PTO lever are in neutral before attempting to start the engine. Refer to page 11 for complete starting instructions.

IMPORTANT: The starter switch must remain in the ON position while operating the engine. The warning lights and battery charging system will not function with the switch in the OFF position.

FUEL GAUGE

The fuel gauge is shown in Figure 5. The amount of fuel in the gauge indicates the amount of fuel in the tank.

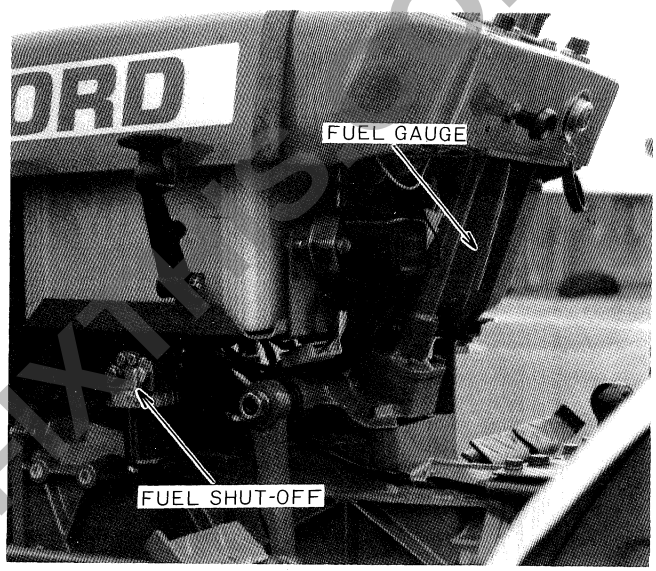


Figure 5 — Fuel Gauge and Fuel Shutoff Valve

FUEL SHUTOFF VALVE

The fuel shutoff valve is shown in Figure 5. To open the fuel shutoff valve, move the handle so that it points straight up and down To close the fuel shutoff valve, move the handle to the horizontal position. Always shut off valve when servicing any portion of fuel system.

WARNING LIGHTS

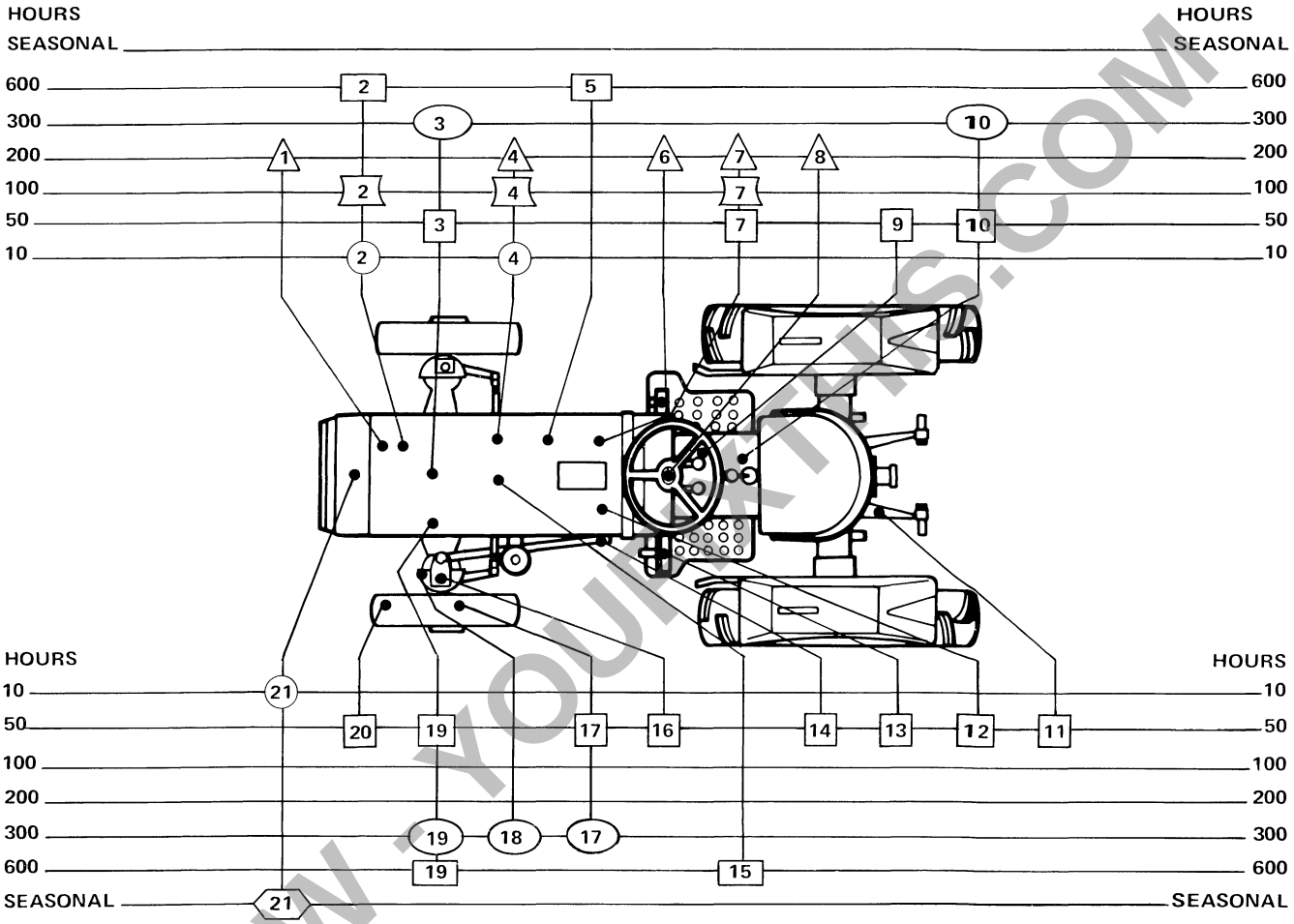
The engine temperature, oil pressure and charge indicator warning lights are located as shown in Figure 4. When the starter switch is turned "on" the oil pressure and charge lights come on. After the engine has been started, the lights should go out within a few seconds. If they do not go out·

- Engine oil pressure warning light: Stop the engine immediately and investigate the cause. It is important to remember that this light indicates oil pressure only. The operator must regularly check the crankcase for proper oil level.

- Charge indicator warning light This is an indication that the charging system is not operating

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LUBRICATION AND MAINTENANCE CHART — FORD 1100 FOUR-WHEEL DRIVE



NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
4	Engine Oil Level	X					Every (10) Hours
21	Radiator Coolant	X					
2	Air Cleaner	X					
19	Hydraulic Filter	X	X				First 50 Hours
10	Transmission and Rear Axle Oil Lever	X					Every [50] Hours
3	Front Diff Oil Level	X					
17	Front Axle Oil Level	X					
7	Fuel Filter	D	R	A	I	N	
12	Battery	X					
20	Tires	X					
13	Cl. tch Pedal	X		X			
—	Lubrication Fittings						
14	Steering Linkage			X			
16	King Pin			X			
11	3 Point Linkage			X			
9	Pedal Shaft	X		X			

NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
7	Fuel Filter		X				Every [100] Hours
2	Air Cleaner		X				
4	Engine Oil				X		
7	Fuel Filter				X		Every 200 Hours
1	Fan Belt	X				X	
4	Engine Oil Filter				X		
6	Brakes					X	
8	Steering Free-Play					X	
19	Hydraulic Filter		X				Every (300) Hours
10	Transmission and Rear Axle Oil				X		
3	Front Diff Oil				X		
17	Front Axle Oil				X		
18	Dust Seal	X			X		
5	Fuel Injectors	X					Every [600] Hours
2	Air Cleaner (Disassemble)		X				
15	Valve Clearance	X					
19	Hydraulic Filter				X		
21	Radiator Coolant				X		

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SPECIFICATIONS

POWER TAKE-OFF

Type ..... Transmission
Shaft ..... 1-3/8 in. (3.49 cm)
6 Spline SAE STD
Engine Speed for 540 rpm
PTO Operation ..... 2605 rpm
Horsepower PTO
Observed 11.0

HYDRAULIC LIFT SYSTEM

Type ..... Live Category 1
3-point Linkage
Pump Type ..... Gear
Pump Capacity ..... 2.9 gpm @
1849 psi at 2600 rpm
(2.4 Imp. Gals. @
127 bar @ 2600 rpm)
System Relief Valve
Setting ..... 1849 psi (127 bar)

CAST IRON WEIGHTS

(3) Front End Weights ..... 33 lbs.
(15 kg) each
(4) Front Wheel Weights
(Two Wheel Drive Only) ..... 33 lbs.
(15 kg) per wheel
(4) Rear Wheel Weights ..... 44 lbs.
(20 kg) each

Draw Bars
Fixed Type ..... Standard

TIRES

Front:
Standard (AG) ..... (Two Wheel Drive)
4.00-12, F2, 4 Ply
(Four Wheel Drive)
5-12 R1, 4 Ply
Optional (TURF) ..... (Two Wheel Drive)
18 x 7.00-8, 2 Ply
(Four Wheel Drive)
23 x 8.50-12, 2 Ply

Rear:
Standard (AG) ..... (Two & Four Wheel Drive)
7-16, R1, 4 Ply
Optional ..... (Two Wheel & Four Wheel Drive)
(TURF) 8-16, R3, 4 Ply

WHEEL BOLT TORQUES

Front Wheel
Disc-to-Hub ..... (Two & Four Wheel Drive)
43-54 lbs. ft.
(58-73 Nm)
Rear Wheel
Disc-to-Axle ..... 69-87 lbs. ft.
(93-117 Nm)

LUBRICANTS

TRACTOR COMPONENT	FORD SPECIFICATION NUMBER	FORD PART NO.
Engine Oil	M2C-121 (Meets M2C-121-B API Grade CD and MIL-L-2104C)	1QM-2C121-AMV (Case-24 Qts. 15W-40) 1QM-2C121-A10 (Case 24Qts. SAE 10W) 1QM-2C121-A30 (Case-24 Qts. SAE 30W)
Transmission, Rear Axle and Hydraulic System Oil	M2C-134-A	1QM-2C-53-A (1Gal.) 5GM-2C-53-A (5Gal.)
Front Wheel Bearings and Lubrication Fittings	M1C-137-A	1TM-1C-137-A (1 Tube)
Front Axles	M2C-105-A	E0AZ-19580-B (1Gal.) E0AZ-19580-E (5Gal.)

NOTE: Should the recommended engine oil not be readily available, use a commercial oil as shown in the following chart.

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