LIGHTING

FLASHER WARNING LAMP

Your Ford tractor is equipped with flasher warning lamps, Figure 3. The switch, Figure 4 for the warning lamps is located on the instrument panel.

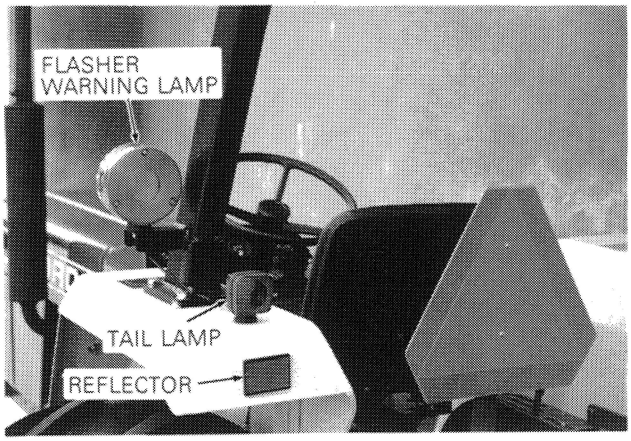


Figure 3 — Flasher Warning and Tail Lamp

The light switch must be turned to one of the "ON" positions before the flasher will operate.

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

LIGHT SWITCH

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

Turning counter-clockwise . . . . . "OFF"
Turning clockwise . . . .Headights and Tail Lamps "ON"

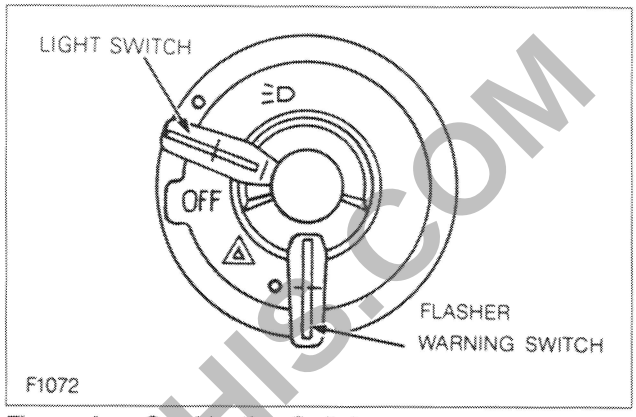


Figure 4 — Combination Switch

INSTRUMENT PANEL

KEY SWITCH

The key switch is shown in Figure 5. 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.
The starting circuit can only be activated when the main shift lever and P.T.O. lever are in neutral. Always check to make certain the transmission main shift lever and P.T.O. lever are in neutral before attempting to start the engine. Refer to page 13 for complete starting instructions.

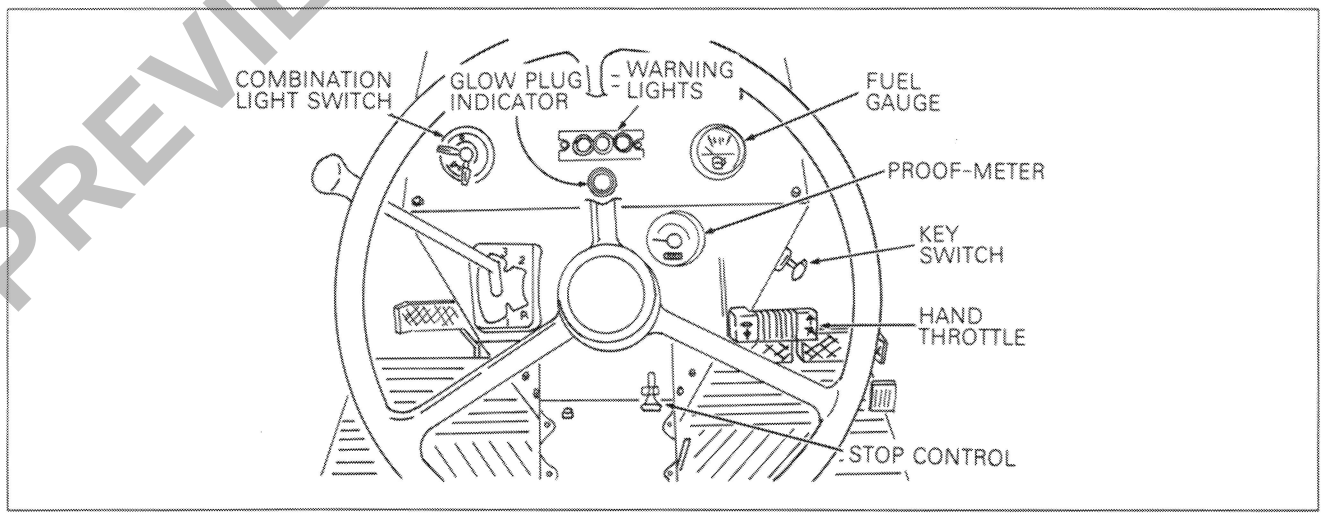


Figure 5 — Instrument Panel

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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 key switch on the tractor allows the starting motor to be used only when the main shift lever is in neutral position and the P.T.O. control lever is in "OFF" 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 to the neutral position and P.T.O. lever to the "OFF" position, then push the engine stop control fully forward.
2. Move the hand throttle forward to 1/4 to 1/3 open position.
3. Turn the key switch to the "START" position, Figure **19**. 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.

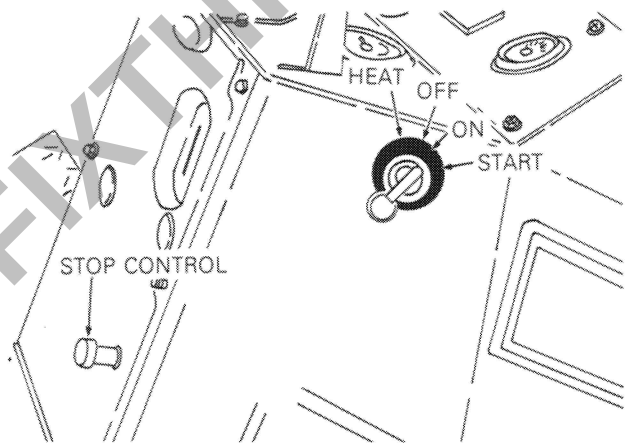


Figure 19 — Key Switch and Stop Control

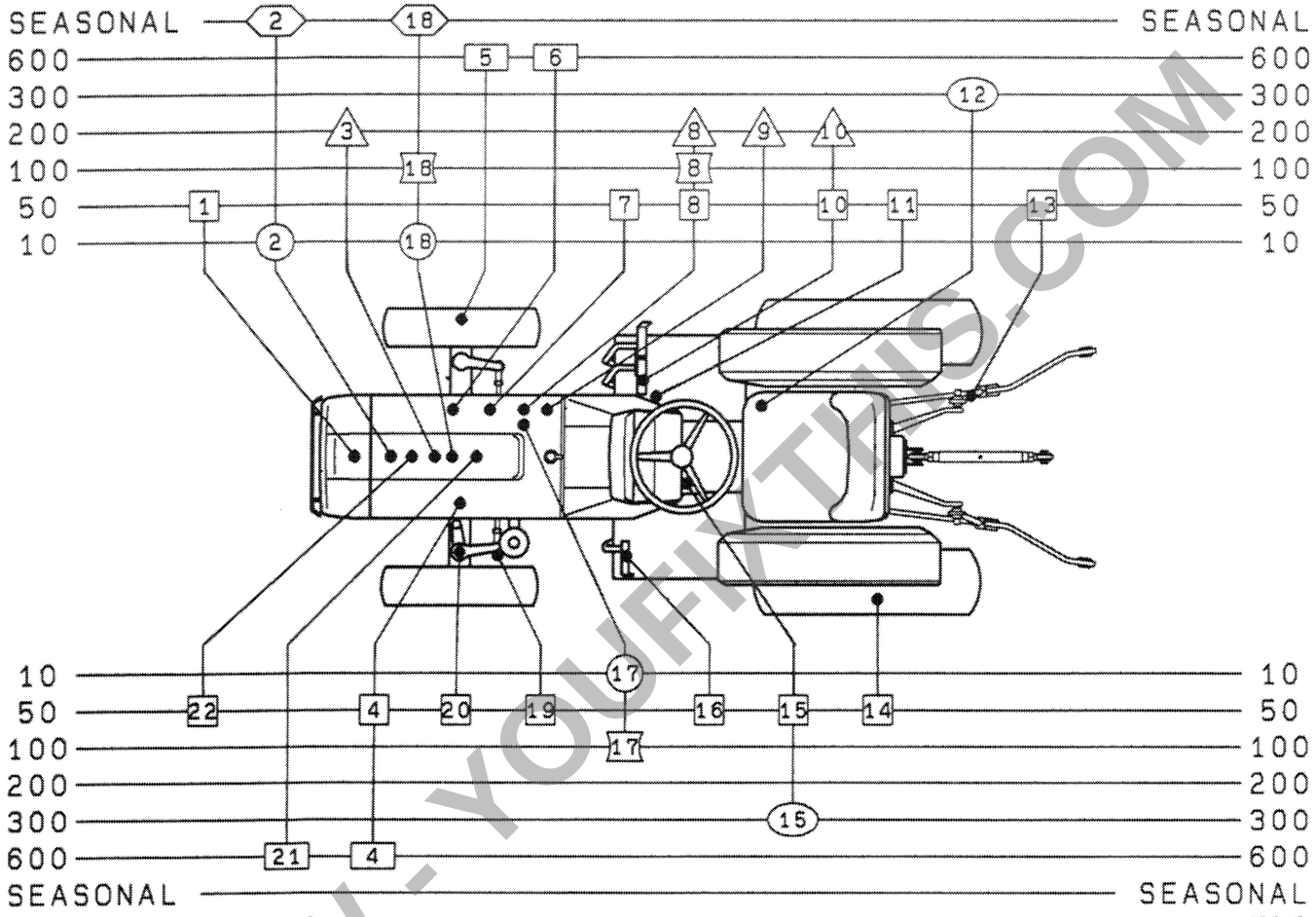
COLD WEATHER STARTING

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 levers to the neutral position and P.T.O. lever to the "OFF" position, then push the engine stop control fully forward.
2. Move the hand throttle forward to 1/4 to 1/3 open position.
3. Turn the key switch to "HEAT" to preheat the combustion chambers and wait until the cold-start aid indicator glows red. (approximately 20 seconds).
4. Turn the key switch to the "START" position. When the engine starts, release the key. Check to be sure the warning light go out.

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LUBRICATION AND MAINTENANCE CHART – FORD 3415
TWO-WHEEL DRIVE



F204C

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 Hours
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	3.31 in. (8.4 cm)

COOLING SYSTEM — Con'd.

Water Pump Belt Deflection	7/16 to 9/16 (10-15 mm) when 20-25 lbs. (9-11 kg)

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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 55.
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, 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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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 36.

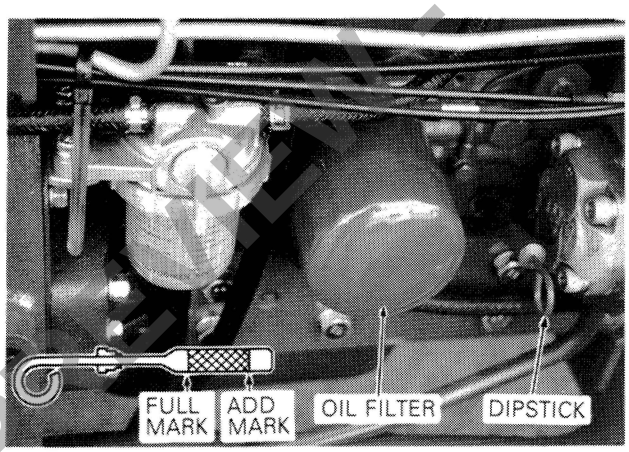


Figure 36 — Engine Oil Level Dipstick and Filter

2. If the oil level is low, remove the filler cap, Figure 37 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.

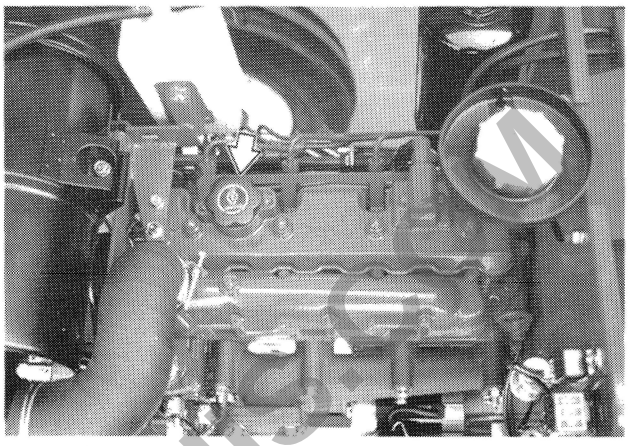


Figure 37 — Engine Oil Filler Cap

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

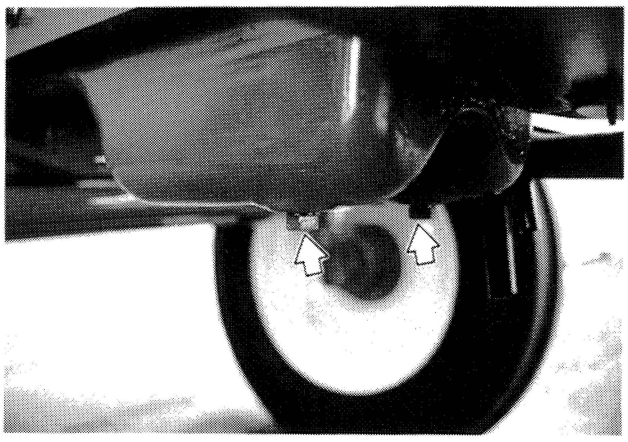


Figure 38 — Engine Oil Drain Plugs

NOTE: Oil intervals should be adjusted according to sulfur-content of diesel fuel. The use of fuel with a sulfur content over 1.3 % is not recommended.

Sulfur Content, %	Oil Change Interval
Below 0.5	Normal
0.5 – 1.0	1/2 Normal
Over 1.0	1/4 Normal

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