

# FORD



## Operator's Manual

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Tractors

2810, 2910, 3910, 4610 II



Reprinted

42281040

## **DEAR CUSTOMER – PLEASE READ CAREFULLY**

The warranty coverage that is extended to your Ford Tractor is explained in the Warranty and Limitation of Liability, Ford Tractor form. Your dealer will provide you with a copy of the warranty and retain a copy which you have signed. After you read the warranty, ask your dealer to explain any points that you may not understand.

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. If you have any questions regarding tractor modifications contact Ford New Holland, Inc., 2500 East Maple Road, Troy, Michigan 48084

A Roll Over Protective Structure (ROPS) and seat belt were standard equipment for the 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 belt. ROPS safety cabs are effective in reducing injuries during tractor overturn accidents. Overturning a tractor without a ROPS or safety cab can result in serious injury or death.

Roll Over Protective Structure (ROPS) safety cabs and seat belts are available for your Ford tractor. If your tractor is not equipped with a ROPS or safety cab and seat belt see your Ford New Holland Dealer.

Your safety and the safety of those around you depends upon the care and good judgment you use while operating this equipment. Read the safety precautions carefully.

For a complete list of the pre-delivery service checks performed by your dealer, refer to PRE-DELIVERY SERVICE on the upper portion of the following two pages. The first copy is your record of the service performed and the second copy, which is to be removed from the manual, is your dealer's record. **MAKE SURE THAT YOU AND THE DEALER SIGN BOTH COPIES.**

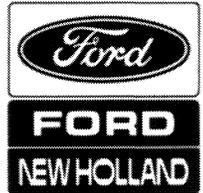
After you have operated your tractor for fifty hours, take the manual and your tractor to your dealer. He will then perform the factory recommended 50-HOUR SERVICE as listed on the lower portion of the following two pages – without charge – except for lubricants, hydraulic oil, or filters replaced as part of normal maintenance. **MAKE SURE THAT YOU AND THE DEALER SIGN BOTH COPIES.**

## **PARTS AND SERVICE CATALOGUES AVAILABLE!**

Ford New Holland is pleased to announce to owners of Ford tractors and equipment the availability of numerous parts and service catalogues.

To obtain these catalogues merely fill out the order form available from your local authorised Ford New Holland Dealer. Mail with your remittance to Helm Inc. Your order will be processed promptly.

# FORD 4610 FOUR CYLINDER ORCHARD TRACTOR OPERATOR'S MANUAL SUPPLEMENT



## GENERAL INFORMATION

This supplement contains information on the Ford 4610 Orchard Tractor equipped with a four cylinder engine. Use this supplement in conjunction with your Ford 2810, 2910, 3910 and 4610 Tractor Operator's Manual, SE 4216.

Read this supplement and your Ford Tractor Operator's Manual thoroughly before operating your new tractor and keep them both in a convenient location for future reference.

## COLD WEATHER STARTING

In cold weather with the four cylinder engine cold without thermostart option:

- When starting a cold engine at temperatures below 40°F (4°C), open the hand throttle fully and depress the excess fuel button on the injection pump (1), Figure 1.

**NOTE:** *The excess fuel button will pop out when the engine starts. If the engine starts and then stops, depress the excess fuel button again before attempting to restart the engine.*

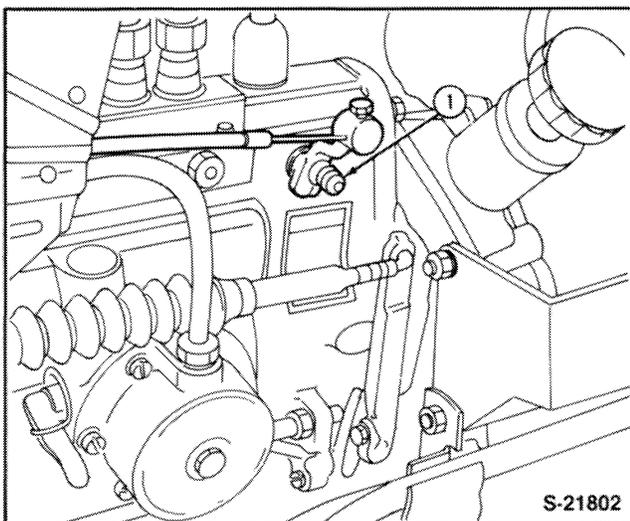


Figure 1

### Fuel Injection Pump

1. Excess Fuel Button

- Depress the clutch and turn the key-start switch fully clockwise to position (5), Figure 2. Operate the starting motor for a maximum of 60 seconds or until the engine starts, then allow the key to return to position (3).
- Return the throttle to the idle position making sure that all warning lights are off and all gauges read normal.

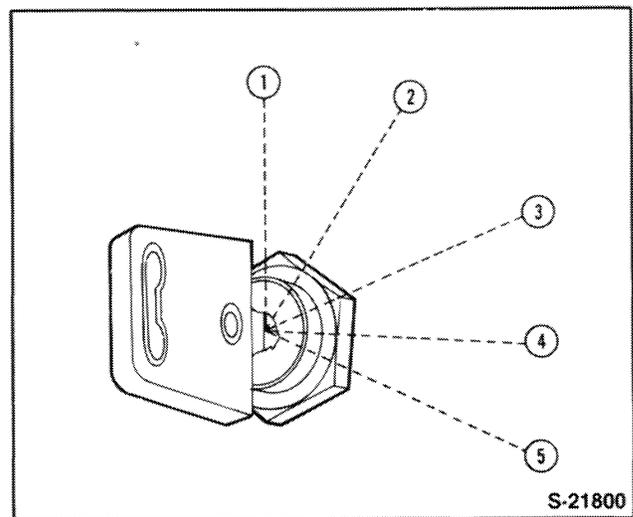


Figure 2

### Key-Start Switch

- |  |                            |
|--|----------------------------|
| 1. Electrical Equipment "OFF"          | 4. Thermostart Heater "ON" |
| 2. Accessories "ON"                    | 5. Starter Operates        |
| 3. Warning Lights and Accessories "ON" |                            |

In cold weather with the engine cold and with thermostart installed:



**WARNING:** *Do not use ether with thermostart. If, in an emergency, it is necessary to use ether with thermostart installed, disconnect the terminal wire from the glow plug on the rear of the intake manifold and insulate the free end of the wire.*

**NOTE:** *The excess fuel button will pop out when the engine starts. If the engine starts and then stops, depress the excess fuel button again before attempting to restart the engine.*

Depress the clutch and turn the key-start switch to the heat position (4), Figure 2. Hold for 30 seconds then turn the key fully clockwise to start position (5). Crank the engine until it starts but do not operate the starter motor for more than 60 seconds. If the engine fails to start, repeat the procedure, operating the thermostart for 30 seconds and the starting motor for up to 60 seconds. If the engine still fails to start, allow the battery to recover for 4 to 5 minutes, then repeat the procedure.

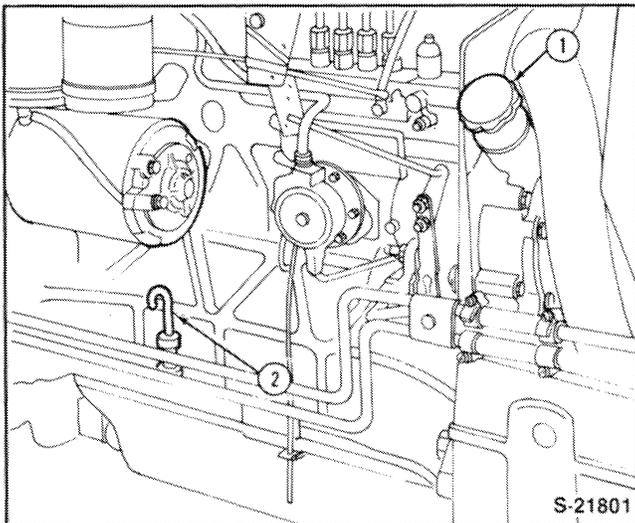
When the engine starts, return the throttle to the idle position making sure that all warning lights are off and all gauges read normal.

**LUBRICATION AND MAINTENANCE**

Follow the lubrication and maintenance chart in Operator's Manual SE 4216, with the following exceptions.

**EVERY 10 HOURS  
Engine Oil Level (Figure 3)**

Before checking the oil level, stop the engine and wait for a short period to allow the oil to drain back into the sump. Check the oil level with the dipstick (2). If necessary, remove the filler cap (1) and add fresh oil of the recommended grade. See Section "C" of the Operator's Manual for the recommended grade of oil.

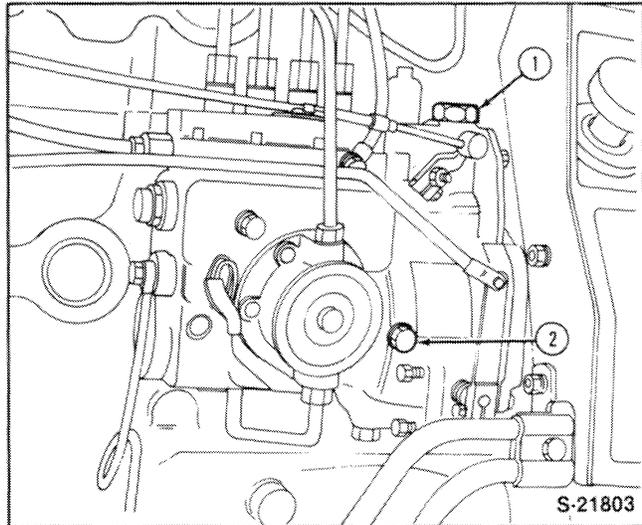


**Figure 3  
Engine Oil Level**

- 1. Filler Cap
- 2. Dipstick

**EVERY 50 HOURS  
Fuel Injection Pump Oil Level (Figure 4)**

Remove the level plug (2) to check the pump oil level. If necessary, remove the filler plug (1) and fill with clean engine oil.



**Figure 4  
Fuel Injection Pump**

- 1. Filler Plug
- 2. Level Plug

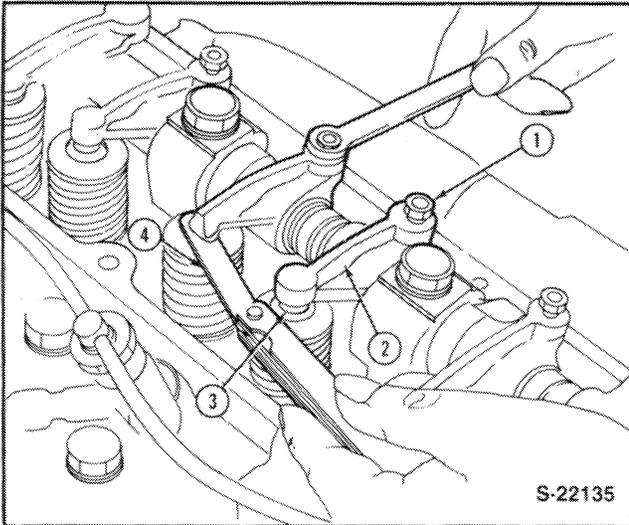
**EVERY 300 HOURS  
Engine Oil Change**

Warm the engine to operating temperature. Stop the engine, remove the drain plug (2), Figure 5, and catch the oil in a suitable container. Remove and discard the oil filter (1), Figure 5. Clean the face of the block and install a new filter. Do not overtighten the new filter. Refill the engine with clean oil through the filler tube (1), Figure 6. Run the engine for a few minutes to circulate the oil. Allow the oil to drain back to the sump before checking the level with the dipstick (2), Figure 6.

**FUEL INJECTION PUMP OIL CHANGE (Figure 7)**

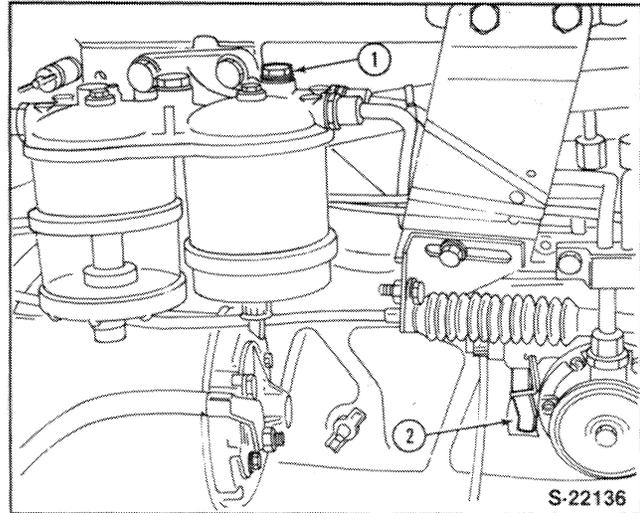
Drain the oil by removing the filler plug (1), level plug (2) and drain plug (3). Install the drain plug and fill the pump with clean engine oil until it flows from the level plug opening. Install the filler plug and level plug. See Section "C" of Operator's Manual for recommended grade of oil. Same as engine oil.





**Figure 8**  
**Valve Tappets**

- |                    |                 |
|--------------------|-----------------|
| 1. Adjusting Screw | 3. Valve Stem   |
| 2. Rocker Arm      | 4. Feeler Gauge |



**Figure 9**  
**Bleeding the Fuel System**

- |                       |                                 |
|-----------------------|---------------------------------|
| 1. Filter Bleed Screw | 2. Injection Pump Priming Lever |
|-----------------------|---------------------------------|

**BLEEDING THE FUEL SYSTEM (Figure 9)**



**WARNING:** 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 the engine or pressurizing lines.

If any fluid is injected into the skin obtain medical attention immediately or gangrene may result.

Loosen the filter bleed screw (1) and actuate the injection pump priming lever (2) until fuel free of air bubbles is discharged from the bleed screw opening. Tighten the bleed screw.

The injection pump is self-bleeding. Crank the engine with the stop control in and the throttle open until the engine starts.

**EVERY 2400 HOURS OR TWO YEARS**  
**Radiator Coolant**

- Open the drain cock (1), Figure 10, and drain the radiator. Remove the radiator cap to facilitate draining.



**WARNING:** The cooling system is pressurized. Take care when removing the radiator cap when the engine is hot.

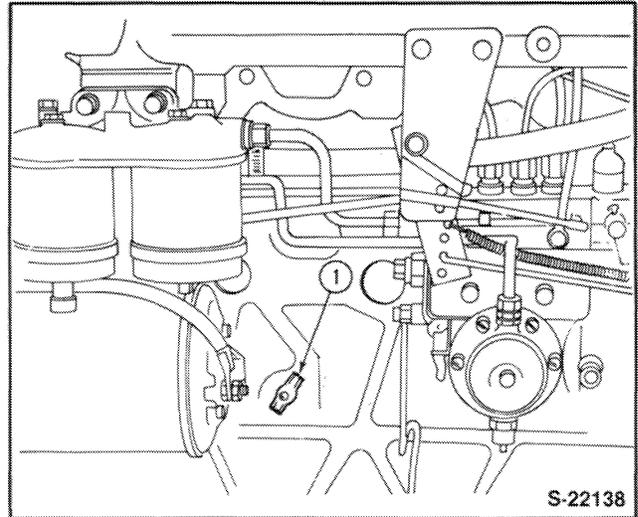
**IMPORTANT:** See operation 44 in your Operator's Manual before working on the cooling system.



**WARNING:** Inhibitor solution is irritating to eyes and skin. Contains buffered potassium hydroxide - pH 9.5.

- Avoid contact with eyes or prolonged and repeated skin contact.
- In case of contact, wash eyes, flush with water for 15 minutes and obtain medical attention.
- Wear protective eyewear when using.
- Wash skin with soap and water after use.
- Keep out of reach of children.
- Read and follow instructions on container.

- Open the drain cock (1), Figure 11, and drain the engine block. When completely drained, close both the radiator and engine drain cocks and fill with clean water. Operate the engine until normal operating temperature is reached and again drain the system.
- Fill the cooling system by initially adding 24 fluid ounces (710 ml) of chemical inhibitor, Ford Part No. FW-15 (Ford specification ESN-M99B169-A). Complete the filling by adding a pre-mixed solution of 50% Ford anti-freeze and 50% clean water. Always fill the radiator slowly to avoid air pockets. Operate the engine until normal operating temperature is reached to fully circulate and mix the inhibitor. See "Specifications" for coolant capacity and inhibitor maintenance schedule this supplement.



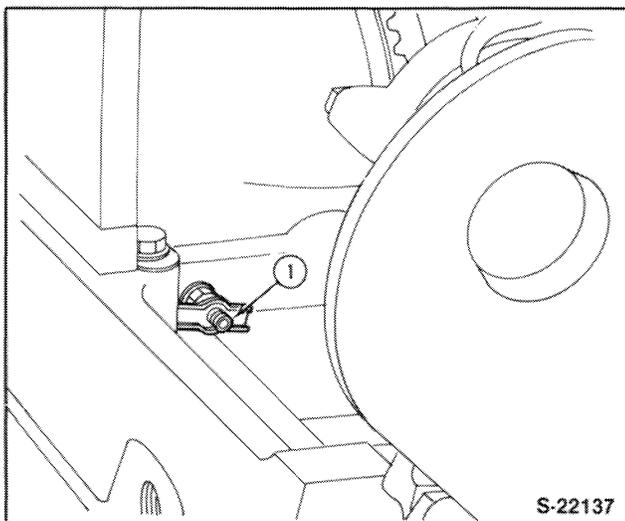
**Figure 11**  
**Engine Block Drain**

1. Drain Cock

**GENERAL MAINTENANCE (Figure 12)**  
**Idle Speed Adjustment**

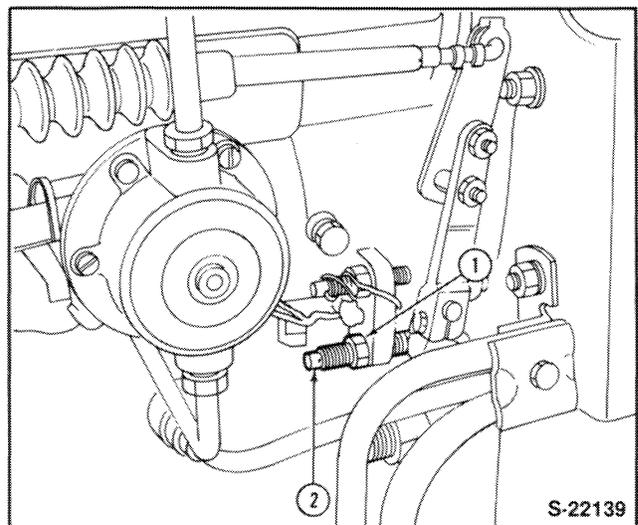
Loosen the locknut (1) and turn screw (2) to adjust the engine idle speed.

**IMPORTANT:** *The maximum no-load speed must be set by an authorized Ford New Holland Dealer.*



**Figure 10**  
**Radiator Drain**

1. Drain Cock



**Figure 12**  
**Idle Speed Adjustment**

1. Locknut
2. Idle Speed Adjustment Screw

## SPECIFICATIONS

### FOUR CYLINDER ENGINE

No. of Cylinders.....	4
Bore .....	4.4 in. (111.8 mm)
Stroke .....	4.2 in. (106.7 mm)
Displacement .....	256 cu. in. (4186 cu. cm)
Compression Ratio .....	16.3:1
Firing Order.....	1-3-4-2
Firing Idle Speed .....	600-850 rpm
Rated Speed .....	2100 rpm
Maximum No-Load Speed .	2240 rpm
Tappet Clearance (Cold)	
Intake.....	.014-.016 (.36-.41 mm)
Exhaust .....	.017-.019 (.43-.48 mm)

### COOLING SYSTEM

Pressure Cap .....

7 psi (0.5 bar)
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### COOLING SYSTEM INHIBITOR MAINTENANCE SCHEDULE

At the first 50 hours only

- add 6 fluid ounces or three-eighths of a bottle of inhibitor to the radiator.

At each regular 300 hour service

- add 4 fluid ounces or a quarter bottle of inhibitor to the radiator.

At each 2400 hour service, or every 2 years, whichever occurs first

- drain the cylinder block and radiator, then flush the system by filling with clean water, running the engine to operating temperature and draining again. Then add one and a half bottle or 24 fluid ounces of inhibitor to the radiator and refill with a pre-mixed solution of 50% Ford anti-freeze and 50% clean water.

### FUEL SYSTEM

Injection Pump Type .....

In-Line
---------

### CAPACITIES

Cooling System .....	27.0 U.S. Pints
	22.4 Imp. Pts.
	8.5 Litres
Engine Oil (Less Filter) ....	16.0 U.S. Pts.
	13.2 Imp. Pts.
	7.6 Litres
Engine Oil (With Filter) ....	18.0 U.S. Pts.
	15.0 Imp. Pts.
	8.5 Litres





# FOREWORD

This Manual has been prepared to assist you in the correct procedure for running-in, operation and maintenance of your new Ford Tractor. The Manual also covers various derivative models such as Vineyard, Narrow, Narrow Orchard, S.U. and L.C.G. tractors. These tractors carry the same model numbers as the All-purpose versions from which they derive.

The Narrow and Vineyard tractors are of reduced width for operation between rows of crops such as fruit trees and vines. The Vineyard tractor, due to the considerable width reduction, has a unique seat and some modified controls.

The Narrow Orchard tractor is identical to the Narrow tractor except for modified mudguards, lower and wider front axle and unique wheels and tyres as standard fitments. The two latter items affect some dimensional specifications of the tractor. Except where these differences occur, Narrow Orchard tractors are not specifically mentioned.

The Ford 4610 S.U. tractor (Special Utility) has category I three-point linkage and a swept back front axle, as fitted to Ford 3910 tractors. Dimensionally, the tractor is the same as a Ford 3910 all-purpose.

L.C.G. tractors have a low centre of gravity, achieved by means of shorter front wheel steering spindles and smaller rear wheels. Again, except where dimensional specifications differ, these models are not specifically mentioned.

Read this Manual carefully and keep it in a convenient place for future reference. If at any time you require advice concerning your tractor, do not hesitate to contact your authorised Ford New Holland dealer. He has factory trained personnel, genuine Ford parts and the necessary equipment to carry out your service requirements.

A vehicle identification plate is located under the tractor hood or low down on the right-hand side of the instrument console. If your tractor is equipped with four wheel drive transmission, then a similar plate is affixed to the rear of the front axle casing. For convenience, the numbers shown on the plates should be recorded in the panels below and quoted to your Ford New Holland dealer should the tractor require service.

 <b>Ford New Holland Limited</b> MADE IN ENGLAND	
TRACTOR NUMBER	
MODEL	UNIT
ENGINE	
TRANSMISSION	REAR AXLE
HYDRAULIC PUMP	HYDRAULIC LIFT

Vehicle Identification Plate

AXLE TYPE	SERIAL NUMBER	
REF. NUMBER	TOTAL RATIO	
INPUT ROT.	DIFF. TYPE	
OIL SPECIFIC	LIT.	LOCATION
		<b>DIFF.</b>
		<b>EPIC.</b>

Front Axle Identification Plate

*Ford New Holland policy is one of continuous improvement, and the right to change prices, specification or equipment at any time without notice is reserved.*

*All data given in this book is subject to production variations. Dimensions and weights are approximate only and the illustrations do not necessarily show tractors in standard condition. For exact information about any particular tractor please consult your Ford New Holland dealer.*

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