FORD

OPERATOR'S MANUAL

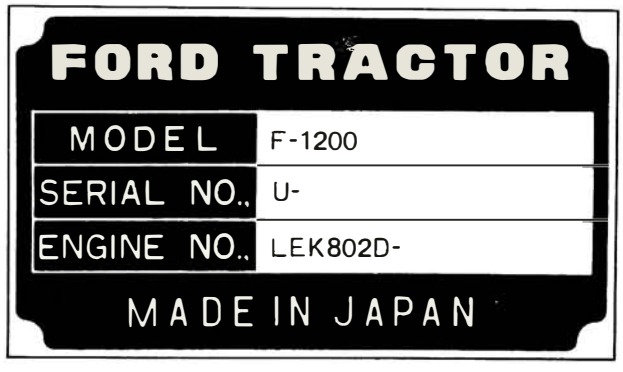
1200

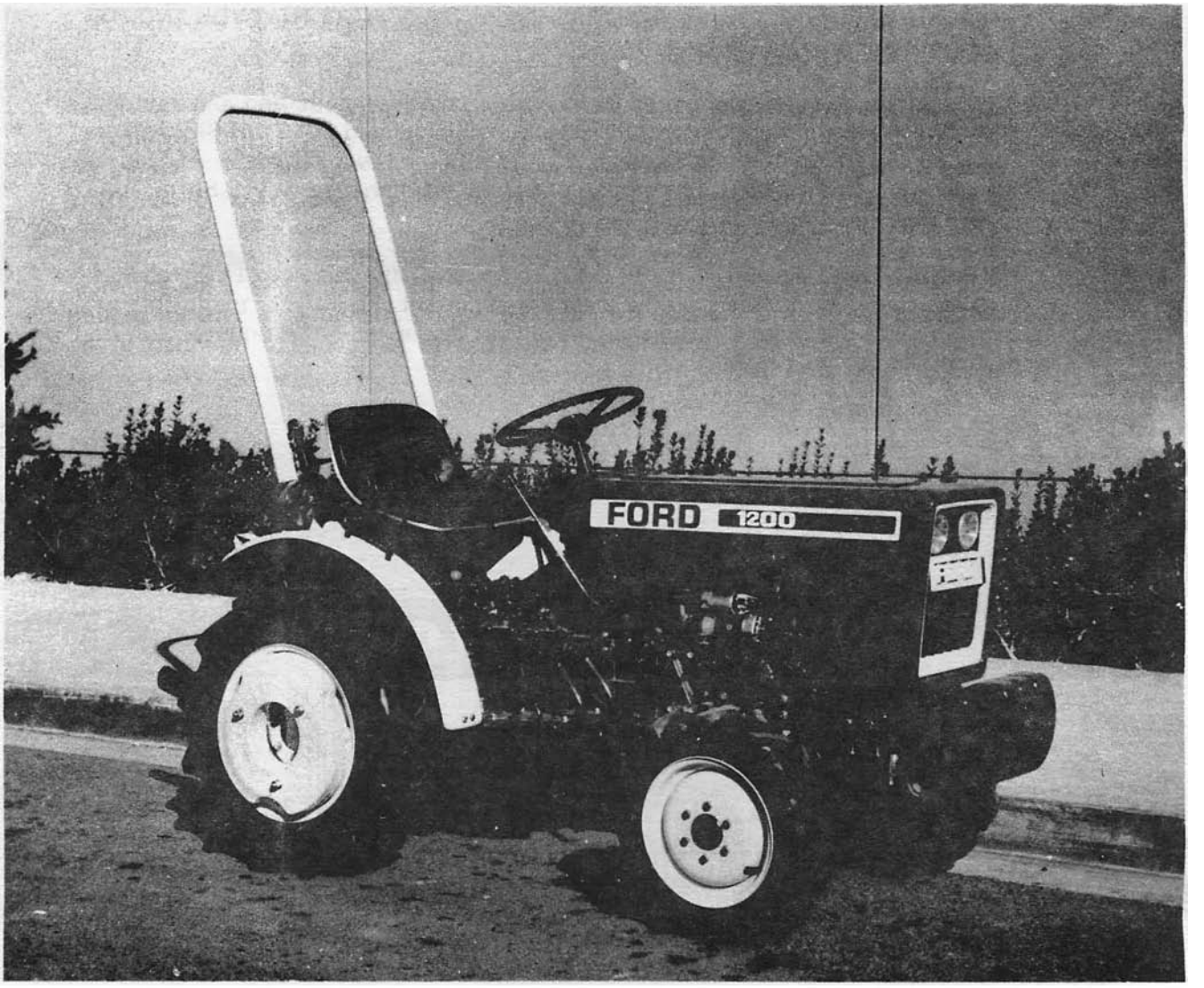
PLEASE READ CAREFULLY:

For a complete list of the pre-delivery service checks performed by your dealer, refer to PRE-DELIVERY SERVICE on the upper portion of page 45 and 49. The copy on page 45 is your record of the service performed, and the copy on page 49, 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 this manual and your tractor to your dealer. He will then perform the factory recommended 50-HOUR SERVICE as listed on the lower portions of pages 45 and 49 — without charge — except for lubricant, oil, or filters replaced as part of normal maintenance. MAKE SURE THAT YOU AND THE DEALER SIGN BOTH COPIES.

A VEHICLE IDENTIFICATION PLATE is located on the left-hand side of the transmission housing. The numbers on the plate are important should your tractor require future service. For your convenience, have your dealer record the numbers in the appropriate spaces below.




FORD
1200

CONTENTS

INTERNATIONAL SYMBOLS

As a guide to the operation of your tractor, various international symbols have been utilized on the instruments and controls. The symbols are shown below with an indication of their meaning.


Engine speed


Hours recorded


Engine water temperature


Lights


Horn


Engine oil pressure


Safety Flasher


Axle connect


Axle disconnect


Continuously variable


Increase

Decrease


Alternator charge


Power take-off (on)


Power take-off (off)


"Tortoise," slow or minimum setting


"Hare," fast or maximum setting


Caution


Control lever operating direction


Rock shaft (raised)


Rock shaft (lowered)


Remote cylinder (extended)


Remote cylinder (retracted)


Differential lock

SAFETY PRECAUTIONS

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 Tractor Equipment Dealer.
3. Always use the seat belt when the rollbar is installed. Do not use the seat belt if the rollbar is removed from the tractor.
4. Use the handholds and step plates when mounting and dismounting the tractor to prevent falls. Keep steps and platform cleared of mud and debris.
5. Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.

SERVICING THE TRACTOR

6. 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.
7. Do not smoke while refueling the tractor. Keep any type of open flame away. Wait for engine to cool before refueling.
8. Keep the tractor in good operating condition for your safety. An improperly maintained tractor can be hazardous.
9. 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.
10. Stop the engine before performing any service on the tractor.
11. 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 Tractor-Equipment Dealer.

OPERATING THE TRACTOR

12. Apply the parking brake, place the PTO lever in the "OFF" position, the lift control lever in the down position, and the transmission in neutral before starting the tractor.
13. 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.
14. Do not bypass the safety start switch. Consult your Ford Tractor-Equipment Dealer if your safety start controls malfunction. Use jumper cables only in recommended manner, improper use can result in tractor runaway.
15. Do not get off the tractor while it is in motion.
16. Shut off the engine and apply the parking brake before getting off the tractor.
17. Do not park the tractor on a steep incline.
18. Do not operate the tractor engine in an enclosed building without adequate ventilation. Exhaust fumes can cause death.
19. If engine ceases operating, stop the tractor immediately.
20. 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.
21. If the front end of the tractor tends to rise when heavy implements are attached to the three-point hitch, install front end or front wheel weights. Do not operate the tractor with a light front end.
22. Do not leave equipment in the raised position.
23. Use the Flasher Lights and SMV signs when traveling on public roads both day and night.
24. Be sure the lights are adjusted to prevent binding an on-coming vehicle operator.

DRIVING THE TRACTOR

25. Watch where you are going especially at row ends, on roads, around trees and any low hanging obstacle.
26. To avoid upsets drive the tractor with care and at speeds compatible with safety, especially when operating over rough ground, crossing ditches, slopes, and when turning.
27. Lock tractor brake pedals together when transporting on roads to provide two wheel braking.
28. Keep the tractor in the same gear when going downhill as used when going uphill. Do not coast or free wheel down hills.
29. Any towed vehicle whose total weight exceeds that of the towing tractor must be equipped with brakes for safe operation.
30. When the tractor is stuck or tires frozen to the ground, back out to prevent upset.

OPERATING THE PTO

31. When operating PTO driven equipment, shut off the engine and wait until the PTO stops before getting off the tractor and disconnecting the equipment.
32. Do not wear loose clothing when operating the power take-off, or when near rotating equipment.
33. When operating stationary PTO driven equipment, always apply the tractor parking brake and block the rear wheels front and back.
34. To avoid injury, do not clear, adjust, unclog or service PTO driven equipment when the tractor engine is running.
35. Make sure the PTO master shield is installed at all times and always replace the PTO shaft cap when the PTO is not in use.

Whenever you see this symbol  it means:

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

SEAT, LIGHT, AND ENGINE CONTROLS

TRACTOR SEAT

Your Ford 1200 Tractor is equipped with a molded cushion seat as shown in Figure 1. The seat is adjustable to obtain the most comfortable position. It can be moved closer to or farther from the steering wheel by loosening the attaching bolts, and repositioning the seat as desired (Figure 2). Two additional inches of adjustment can be obtained by removing the bolts and relocating in alternate holes in seat attachment plate.

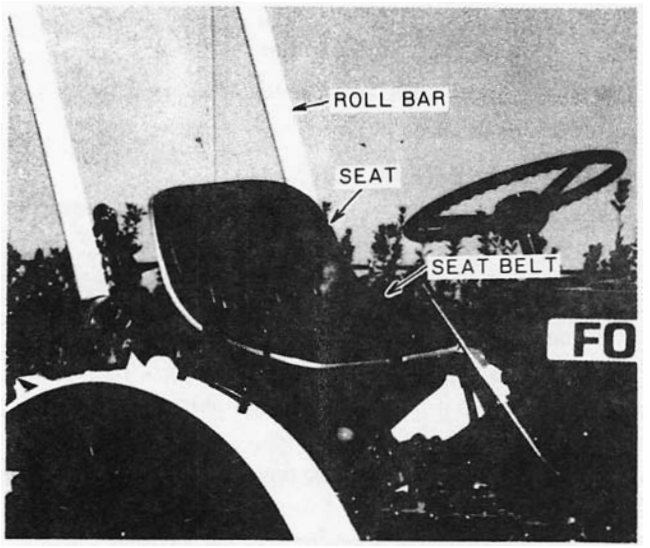


Figure 1 — Tractor Seat, Roll Bar and Seat Belt

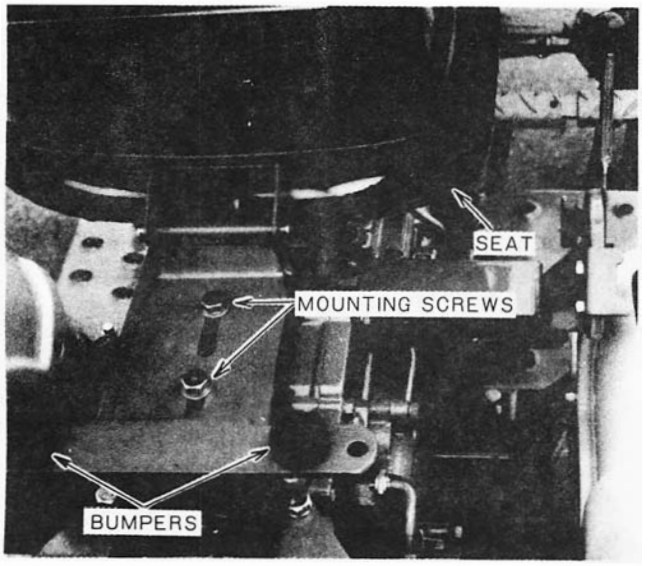


Figure 2 — Tractor Seat Adjustment

SAFETY ROLL BAR AND SEAT BELT

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.

CAUTION: Never attach chains, ropes, or cables to the roll bar for pulling purposes; this is very dangerous, as the tractor will 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 clearance for the roll bar to clear the structure or object.

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, naptha, etc., as these will weaken the webbing. For the same reason, do not bleach or redye the webbing. Replace seatbelt if worn or damaged.

LIGHTING

FLASHER WARNING LAMP

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

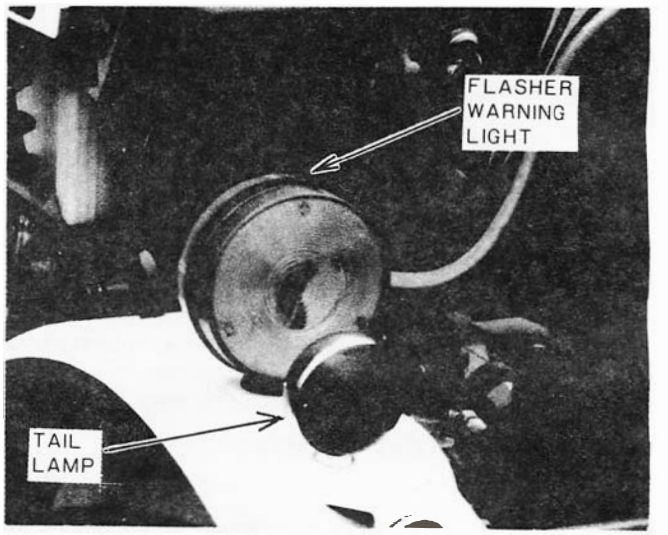


Figure 3 — Flasher Warning Lamp and Tail Lamp

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.

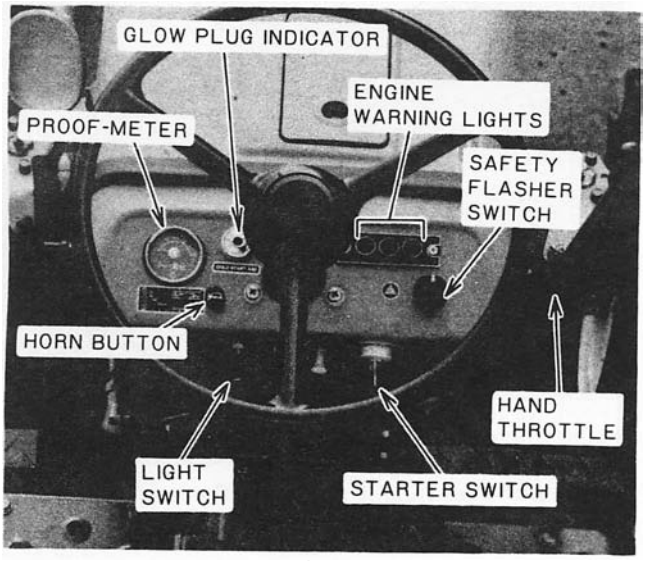


Figure 4 — Instrument Panel

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.

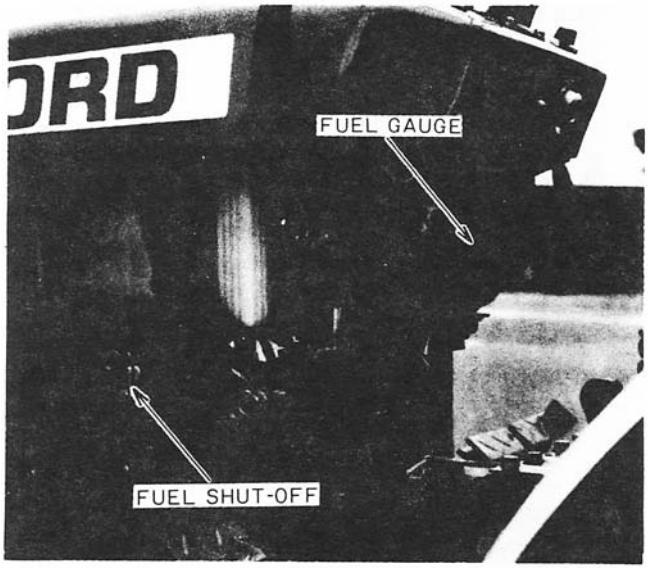


Figure 5 — Fuel Gauge and Fuel Shutoff Valve

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

normally. Investigate the cause as soon as possible, otherwise the battery may become fully discharged.

- Coolant temperature warning light: The warning light is not on under normal operating condition. If the light comes on, stop the engine and investigate. Regularly check the radiator for proper coolant level.

CAUTION: When engine is at operating temperature always relieve pressure in the cooling system before removing the radiator cap.

PROOF-METER

The Proof-Meter is located on the left side of the instrument panel, Figure 4. The Proof-Meter indicates:

- The hours and portions of hours your tractor has operated, based on an average engine speed of 2000 rpm. Engine speeds below 2000 rpm accumulate engine hours at a slower rate than clock hours. Engine speeds above 2000 rpm accumulate engine hours faster than clock hours. Use the Proof-Meter as a guide to determine hourly service and maintenance intervals.

- Engine revolutions per minute are indicated on a scale as shown in Figure 4. Use the engine revolutions per minute scale when operating PTO-driven equipment. PTO-driven equipment must be operated at an engine speed not to exceed 2605 rpm as shown by the yellow line on the rpm scale. Additional information on PTO operation can be found on page 12. Ground speeds are indicated on a decal attached to the instrument panel. The decal shows ground speeds for 3rd, 5th, 7th. 10th and R[illegible] gears, with engine speeds from 1350-2700 rpm. Additional ground speed information can be found on page 41.

THROTTLE CONTROLS

HAND THROTTLE AND ENGINE STOP CONTROL

The hand throttle is shown in Figure 4. Push the throttle forward to increase engine rpm. Pull the throttle rearward to decrease engine rpm. Pull the throttle full rearward to stop the engine.

FOOT THROTTLE

The foot throttle, shown in Figure 6, can be used separately, or in conjunction with the hand throttle. With the hand throttle control lever set at a selected engine rpm, the foot throttle can be used to increase engine rpm to its maximum speed. Upon release of the foot throttle, the engine speed will return to the rpm at which the hand throttle has been set or idle if the hand throttle is not at a pre-set position.

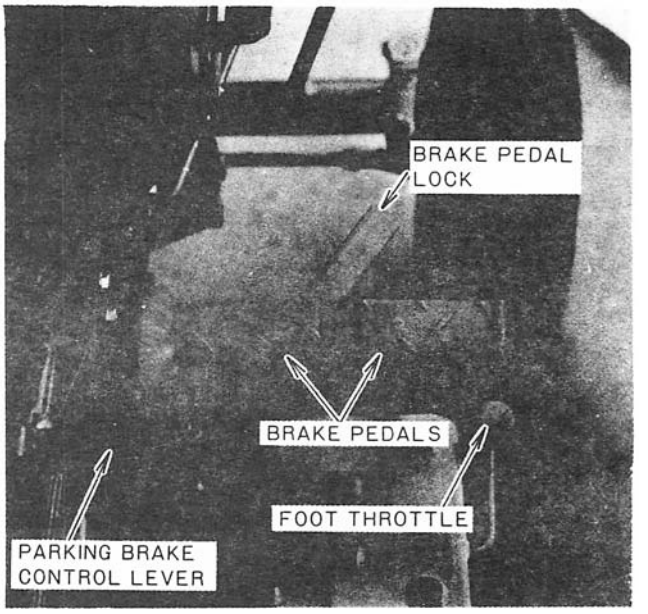


Figure 6 — Foot Throttle and Brake Controls

BRAKE CONTROLS

BRAKE PEDALS

The brake pedals are shown in Figure 6. The right brake pedal is used to brake the right rear wheel. The left pedal is used to brake the left rear wheel. Depress both pedals simultaneously *to stop the* tractor.

To assist in making sharp turns at slow speeds, depress the right or left brake pedals as required.

CAUTION: When operating the tractor at high speeds, never attempt to make sharp turns by using the brakes.

BRAKE PEDAL LOCK

The brake pedal lock, shown in Figure 6, is used to secure the brake pedals together. Lock the pedals together whenever the tractor is operated at high speeds and at any time the tractor is used on the highway.

PARKING BRAKE CONTROL

The parking brake control, shown in Figure 6, is used for locking the brake pedals in the applied position. The parking brake should be applied whenever the tractor is parked.

To apply the brake:

- Lock the brake pedals together with the brake pedal lock.
- Depress both brake pedals.
- Push forward on the parking brake lever. The pawl on the control will engage the teeth on the left-hand brake pedal and will retain the pedals in the applied position.

To release the parking brake:

- Depress the brake pedals to release the pawl.
- Unlock the brake pedals if operating conditions require independent rear wheel braking action.

DIFFERENTIAL CONTROL

DIFFERENTIAL LOCK PEDAL

The differential lock pedal is shown in Figure 7.

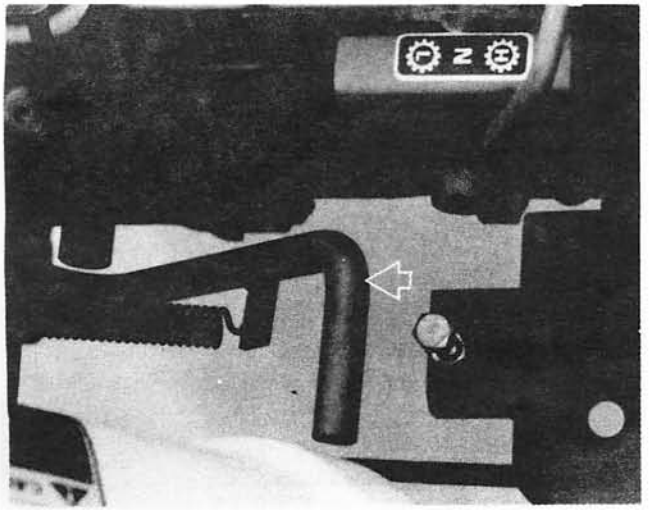


Figure 7 — Differential Lock

Depressing the pedal locks the rear axle shafts together, providing additional traction in wet or loose soil. Refer to page 14 for differential lock operating information.

CAUTION: Tractor is very difficult to steer with the differential-locked.

TRANSMISSION AND PTO CONTROLS

TRANSMISSION GEARSHIFT LEVERS

The transmission main shift lever and range selector lever are shown in Figure 8. A diagram showing the shift pattern is cast into the transmission cover.

Five forward and one reverse speed are provided for each of the two ranges. This provides a total of 10 forward and 2 reverse speeds.

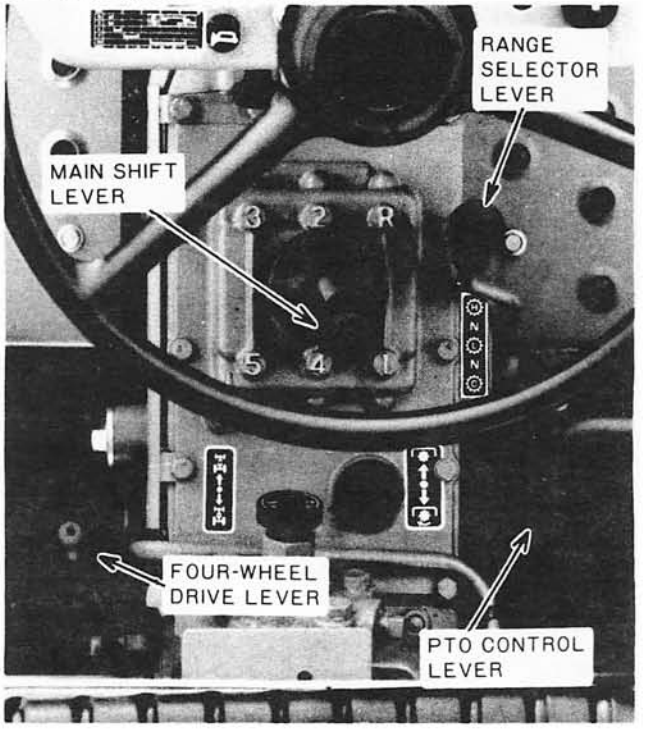


Figure 8 — Transmission and PTO Controls

CREEPER RANGE (ACCESSORY)

A creeper range accessory with a 5.5:1 ratio is available which provides an additional 5 forward and 1 reverse speeds or a total of 15 forward and 3 reverse speeds. The control is located on the right side of transmission housing as part of the range selector lever. Moving the lever full rearward past low range engages (L) the creeper range (C), Figure 8.

FOUR-WHEEL DRIVE

The shift lever for the four-wheel drive is located on the top left-hand front of the rear-axle center housing, Figure 8.

Full forward on the lever disengages the four-wheel drive (OFF). Full rearward engages the four-wheel drive (ON).

CLUTCH PEDAL

The foot-operated clutch pedal. Figure 9. must be completely depressed to start the tractor or to stop forward travel and PTO shaft rotation. Always fully depress the pedal when changing gear ratios, four-wheel drive and creeper range.

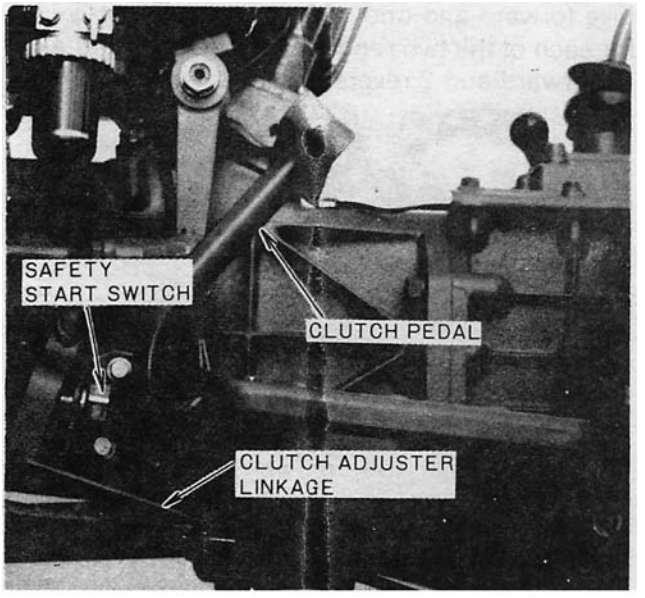


Figure 9 — Clutch Control

TRANSMISSION PTO CONTROL LEVER

The transmission PTO control lever is shown in Figure 8. The lever engages and disengages the PTO. If the tractor engine is running, always depress the clutch pedal fully before moving the lever. Move the lever rearward or up to engage the PTO and forward or down to disengage the PTO.

HYDRAULIC LIFT SYSTEM CONTROLS

HYDRAULIC LIFT CONTROL LEVER

The hydraulic lift control lever is shown in Figure 10. The lever is located at the right hand side of the seat. To lower the lift arms, push the lever forward. The adjustable stop is provided for returning the lever to a pre-set position in the quadrant. To raise the lift arms, pull lever rearward. The flow control valve must be opened before hydraulic lift control will function.

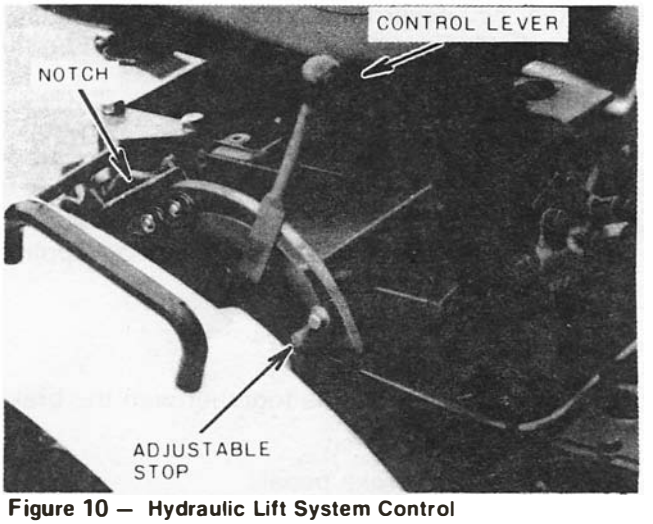


Figure 10 — Hydraulic Lift System Control

FLOW CONTROL VALVE

The flow control valve is shown in Figure 11. Turning the valve "in" (clockwise) will decrease the lowering speed of the lower links. and turning the valve "out" (counterclockwise) will increase the lowering speed of the lower links. Refer to "FLOW CONTROL," page 15, for additional information on operating the flow control valve.

AUXILIARY SERVICE PORT

The auxiliary service port, Figure 11, may be utilized to supply oil to an externally mounted hydraulic cylinder. Oil will be supplied to the cylinder when the lift control lever is placed in the notch at the upper part the quadrant, Figure 10.

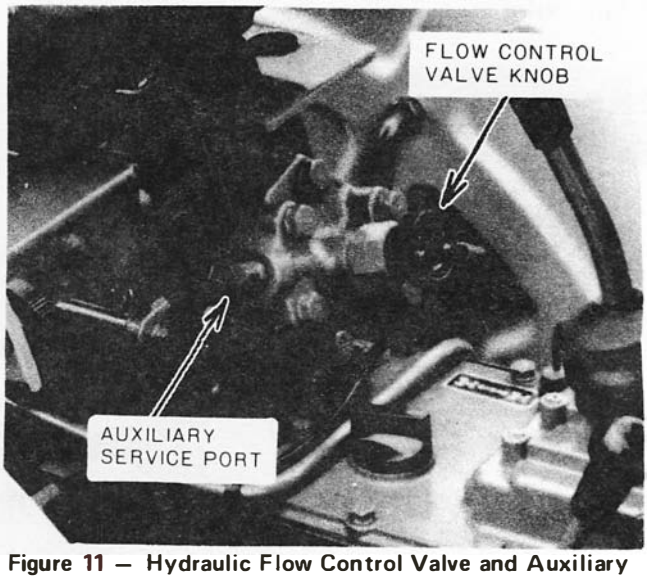


Figure 11 — Hydraulic Flow Control Valve and Auxiliary Service Port

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.

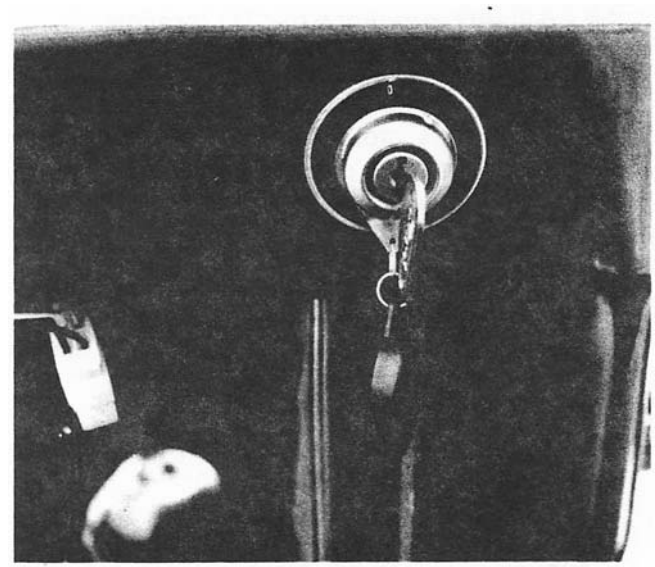


Figure 12 — Starter Switch

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.

STARTING THE TRACTOR WITH JUMPER CABLES

If it is necessary to use jumper cables to start the engine, proceed with the following instructions.

Connect one end of the jumper cable to the tractor battery positive (+) terminal and the other to the auxiliary battery positive (+) terminal.

Connect the other cable first to the auxiliary battery negative (−) terminal, and the other end to the battery's ground strap. (Not the battery terminal) Follow the starting procedures after the jumper cables are connected.

Idle the engine and turn on all electrical equipment (lights, etc.), then disconnect the cables in reverse order of the connecting procedure above. This will help protect the alternator from damage due to extreme load changes.

NOTE: Reversed battery polarity will damage the voltage regulator and alternator.

CAUTION: Batteries contain sulfuric acid and produce explosive gasses. Follow the instructions below to prevent personal injury.

- Wear eye and skin protection.
- Keep sparks and flame away
- Always have adequate ventilation while charging or using the battery.
- Follow the battery manufacturer's instructions which are shown on the battery.

STOPPING THE ENGINE

Pull the hand throttle fully rearward past idle position to stop the engine, then turn the starter switch, Figure 12. to the "Off" position.

IMPORTANT: Failure to turn the starter switch to the "Off" position after the engine stops will allow the warning lights to remain on, causing the battery to discharge.

OPERATING THE TRANSMISSION, FOUR-WHEEL DRIVE AND PTO

The transmission operates through the use of a clutch pedal, a main shift lever, and a range selector lever. Figure 13 illustrates the pedal and levers involved. Ground speeds for the various gear ratios can be found on page 41. Figure 14 shows the combinations of main shift lever and range selector lever positions to obtain the 10 forward and two reverse speeds.

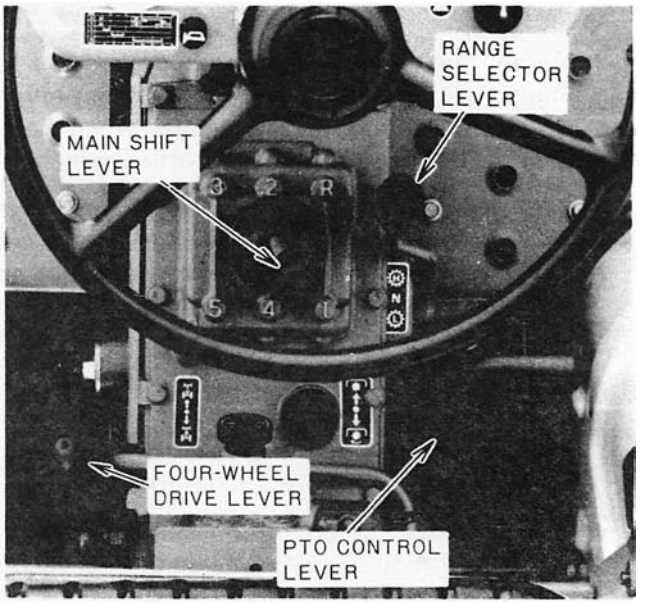


Figure 13 — Transmission Controls and Shift Pattern

SPEED	RANGE	MAIN
1	L	1
2		2
3		3
4		4
5		5
6	H	1
7		2
8		3
9		4
10		5
R[1]	L	R
R[2]	H	R

Figure 14 — Speed Range Combinations

When in motion, always depress the clutch pedal fully and bring the tractor to a complete stop before moving either gearshift lever. Do not attempt to change gears while the tractor is in motion.

IMPORTANT: Avoid using the clutch pedal as a "footrest" (riding the clutch). Prolonged operation in this manner can cause damage to the clutch components.

To change from one gear ratio to another, or to change ranges:

1. Depress the clutch pedal completely.
2. Bring the tractor to a complete stop.
3. Shift to the desired gear and or range.

The four-wheel drive is engaged and disengaged through the use of the lever on the top left hand front of the rear-axle center housing, Figure 8.

To engage the four-wheel drive, depress the clutch pedal fully and move the four-wheel drive lever full rearward. To disengage, move the lever full forward.

CAUTION: Do not operate the tractor in front-wheel drive while driving on roads or at high speeds.

POWER TAKE-OFF

The power take-off (PTO) on your tractor transfers engine power directly to mounted or pull-type PTO equipment. The standard PTO speed is 540 ± 10 rpm. Most PTO equipment is designed to operate efficiently at this speed. This speed is obtained when engine rpm is set at 2605 rpm, as indicated by the PTO symbol on the Proof-Meter rpm scale.

CAUTION: Do not exceed 2605 rpm engine speed when operating PTO-driven equipment.

The transmission PTO is controlled through a lever shown in Figure 13. The transmission PTO can be engaged, operated, and disengaged as described under "POWER TAKE-OFF OPERATION."

PTO SHIELD AND CAP

The PTO shield, shown in Figure 15, is standard equipment. The shield is to be used with both mounted and pull-type equipment.

The PTO cap should always be installed when the PTO is not in use.

WARNING

- KEEP HANDS, FEET AND CLOTHING AWAY FROM PTO AND OTHER MOVING PARTS.
- DISENGAGE PTO AND SHUT OFF ENGINE BEFORE SERVICING TRACTOR OR IMPLEMENTS AND ATTACHING OR DETACHING IMPLEMENTS. KEEP SAFETY SHIELD IN PLACE
- PULL ONLY FROM DRAWBAR PULLING FROM ANY OTHER POINT MAY CAUSE TIPPING

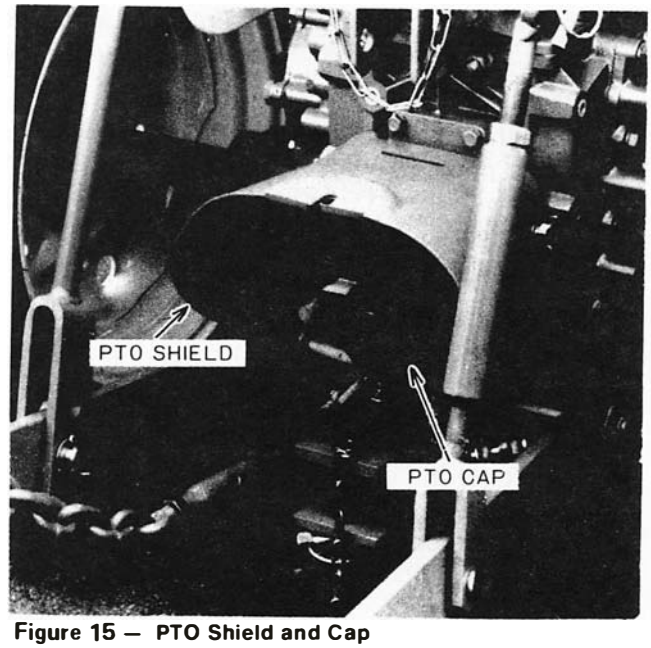


Figure 15 — PTO Shield and Cap

POWER TAKE-OFF OPERATION

WARNING: To reduce the possibility of personal injury and damage to the equipment, comply with the following before attaching or detaching PTO equipment, and before working on or clearing PTO equipment.

1. Stop the engine, set the parking brake, remove the PTO shaft cap, and attach the mounted or drawn equipment. Make sure the equipment-driven shaft is properly aligned and locked to the tractor PTO drive shaft and that the PTO shield is installed on the tractor.

IMPORTANT: A drawbar extension may be required on some pull type PTO equipment for proper operation.

- Depress the clutch pedal completely and move the transmission gearshift lever to the neutral position.
- Set parking brake.
- Disengage the PTO with the PTO control lever, Figure 13.
- Shut off the tractor engine.
- Wait until the PTO shaft stops turning.

2. With the PTO disengaged, start the engine. In the case of mounted equipment. raise and lower the equipment to make sure proper clearances exist.
3. With the transmission in neutral, depress the clutch pedal completely, then engage the PTO by moving the PTO control lever, Figure 13, up or rearward.

   NOTE: Failure to move the PTO lever through its full range may result in damage to the PTO.
4. Check the PTO-driven equipment for proper operation by gradually releasing the clutch pedal and increasing engine rpm.
5. After determining that the equipment is operating properly, depress the clutch pedal and shift to the desired operating gear. Release the pedal gradually to start the PTO and tractor in motion.
6. Control the PTO speed with the throttle, never exceeding 2605 rpm. If the tractor movement is too fast for the PTO load, stop the tractor and shift to a lower gear.
7. Disengage the PTO with the PTO control lever when making sharp turns with pull-type equipment and with mounted equipment in the fully raised position.
8. Disconnect the PTO-driven shaft at the tractor PTO shaft before traveling on highways or for any great distance.
9. Reinstall the PTO shaft cap when the PTO-driven equipment is disconnected from the tractor or when the PTO is not being used.

TOWING THE TRACTOR

To tow your tractor, place the transmission gearshift levers in neutral. Do not exceed 8 mph (13 kph). Do not tow your tractor to start it.

If the tractor is to be moved any great distance, use a solid tow bar and pull the tractor at a speed not to exceed 8 mph (13 kph).

CAUTION: For safety reasons, towing the tractor on the highway is not recommended. Also. for safety reasons. never attempt to start the engine by towing.

OPERATING THE DIFFERENTIAL LOCK

The differential lock is engaged by depressing the pedal located on the right side of the rear axle center housing, Figure 16. Depressing the pedal locks both final drive pinion gear shafts together, preventing one wheel from rotating independently of the other. The lock should be used to obtain additional traction from the opposite wheel whenever one wheel begins to slip in wet or loose soil.

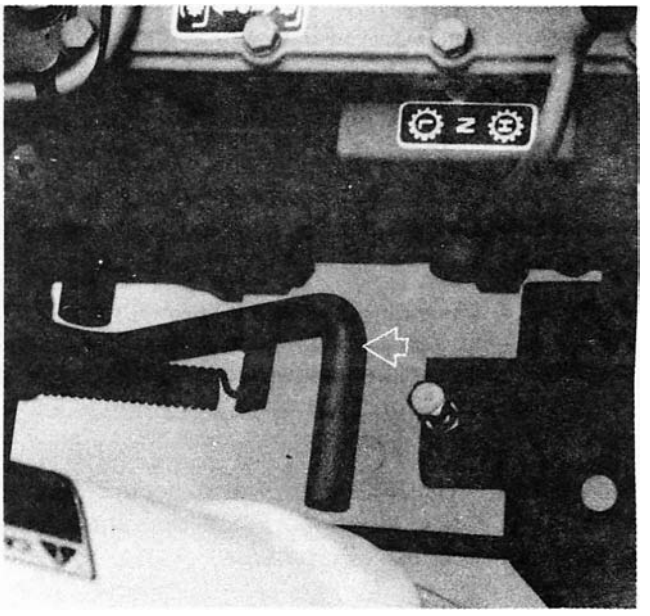


Figure 16 — Differential Lock Pedal

Do not engage the differential lock when driving the tractor on the highway or when ground speed is above 5 mph (8 kph).

CAUTION: Do not engage the differential lock when turning the tractor. If the lock is engaged when turning, a loss of steering control will result.

To operate the differential lock, depress and hold down the pedal until the lock is positively engaged.

It is best to engage the differential lock while the wheels are turning slowly to minimize shock loads to the drive line. If a wheel spins at high speed, as on ice, reduce engine speed to idle before engaging the lock, or damage may occur. The differential lock is released by releasing the pedal.

NOTE: In some instances the lock may remain engaged after the pedal is released. This may occur if one rear wheel tends to turn at a faster speed than the other. Should this happen, the lock may be disengaged by either of two ways:

- Decrease the drawbar pull by raising or disengaging the implement so that neither wheel tends to slip.

— Or —

- Rapidly apply and release a light braking load to the rear wheel.

OPERATING THE HYDRAULIC LIFT SYSTEM

The hydraulic lift system provides accurate, smooth, and instant hydraulic power for raising a variety of compatable equipment whenever the engine is running. The position control feature of the system maintains the selected height or depth of three point linkage equipment in relation to the tractor. When the hydraulic lift control lever is moved to a higher or lower setting in the quadrant, the system repositions the equipment to a higher or lower position and maintains the selected position. Figure 17

CAUTION: Make sure area is clear of people before lowering equipment.

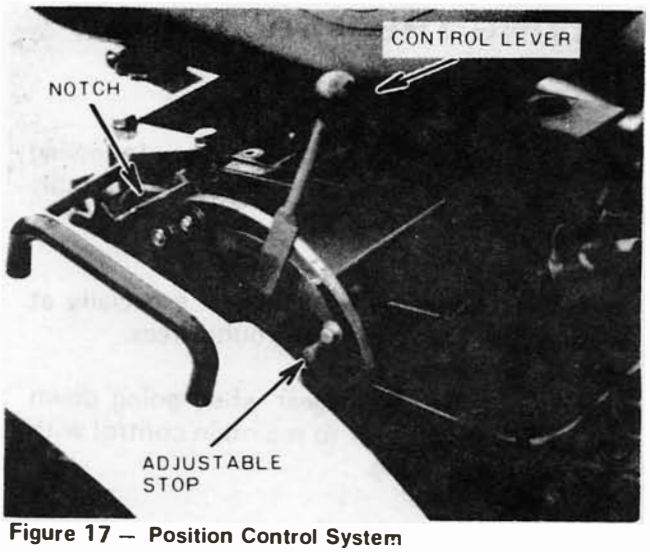


Figure 17 — Position Control System

FLOW CONTROL VALVE

The flow control valve, Figure 18, provides an adjustment to regulate the flow of oil from the lift cylinder, thus slowing or increasing the rate of drop of the lower links. To adjust the rate of flow, either turn the flow control valve "in" (clockwise) to decrease the rate of drop or "out" (counterclockwise) to increase the rate of drop. The flow control valve must be opened before hydraulic lift control will function.

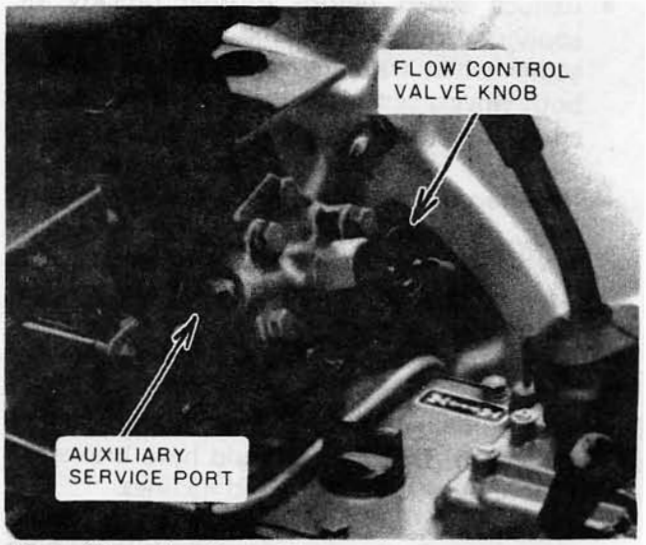


Figure 18 — Flow Control Valve

DRIVING THE TRACTOR

CAUTION: Observe the following precautions when driving the tractor.

- Watch where you are going — especially at row ends, on roads, and around trees.
- Keep the tractor in gear when going down hill. Use a low gear to maintain control with minimum braking.
- If the tractor is stuck, back out to prevent upsetting the unit.
- Always use the drawbar for pull-type work. Do not pull from any other part of the tractor since it may tip backward.
- Keep the lights adjusted so they do not blind the operator of an oncoming vehicle.
- Engage the clutch slowly when driving out of a ditch, gully, or up a steep hillside. Disengage the clutch promptly should the front wheels rise off the ground.
- Reduce speed before turning quickly or applying brakes. Lock the brake pedals together when traveling at high speeds. Brake both wheels simultaneously when making an emergency stop.
- Never apply the differential lock when turning.
- Use extreme caution and avoid hard applications of the tractor brakes when pulling heavy towed loads at road speeds.
- Towed loads that weigh more than twice the weight of the tractor should have brakes. If not, reduce speed and avoid inclines.
- Always sit in the driver's seat while starting or driving the tractor.
- Always use a slow moving vehicle (SMV) emblem and turn on flasher lights when traveling on public roads.

WHEEL TREAD SETTINGS

FRONT WHEEL TREAD SETTINGS

The front wheel tread width is set at 34.6 in. (88 cm) and cannot be adjusted. Turf tire tread setting is 38.6 in. (98 cm).

CAUTION: Never attempt to widen the tread setting by reversing front wheels on a four-wheel drive system.

NOTE: After changing the front wheel tread setting, the wheel disc to hub bolts should be torqued to 43-54 lbs.ft. (58-73 N.m)

REAR WHEEL TREAD SETTINGS

The rear wheels on the Ford 1200 are adjustable front 35.4 to 41.3 in (90-105 cm) on the standard nonadjustable rear wheels by switching the rear wheels from side to side. Adjustable rear wheels are available as an option. The optional wheels can be adjusted from 35.4 to 46 inches (90-116.8 cm) Tread width settings are made on the adjustable rear wheels by changing the position of the rim with respect to the wheel disc, by changing the position of the wheel disc with respect to the axle, and by interchanging the rear rims. These various positions are shown in Figure 19.

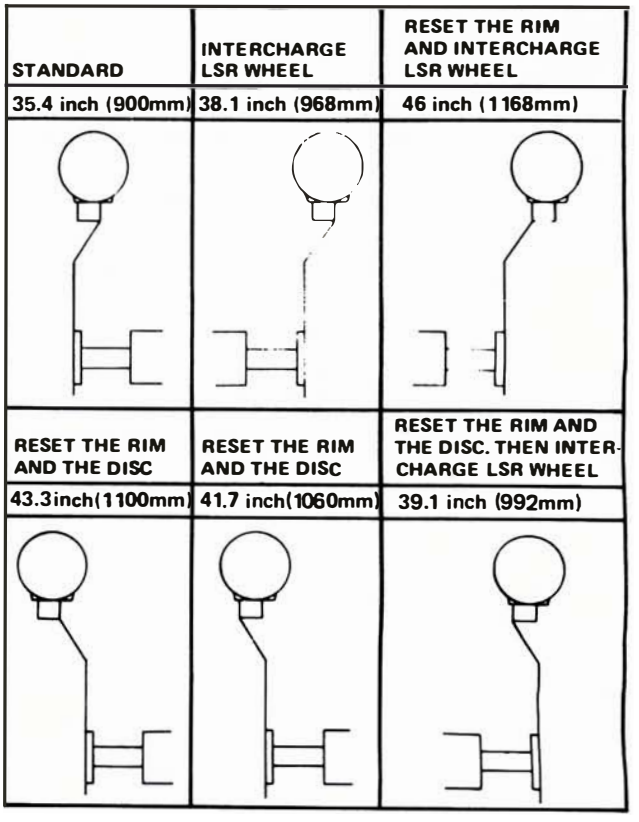


Figure 19 — Rear Wheel Tread Settings

Turf tire tread setting are 35.4-41.3 in. (90-105 cm) by switching the rear wheels from side to side.

NOTE: After changing the rear wheel tread setting, the wheel rim-to-disc nuts should be torqued to 180-217 lbs. ft. (244-294 Nm) and the disc-to-axle nuts should be torqued to 137-159 lbs. ft. (186-215 Nm).

TRACTOR WEIGHTING

To obtain sufficient traction for maximum performance in heavy draft operations and to counterbalance rear-mounted equipment, weight should be added to the tractor in the form of liquid ballast, cast iron weights, as shown in Figures 20 through 21, or a combination of both. Only enough weight should be added to provide good traction and stability.

Adding more weight than is needed results in unnecessary soil compaction and increased rolling resistance thus higher fuel consumption.

NOTE: When adding weight, adhere to the tire load capacities. Refer to "Tire Pressure" and the "Tire Inflation Versus Permissible Load" table on page 18.

WEIGHTING LIMITATIONS

The weighting limitations that follow are limitations only; they do not imply that the tractor should be weighted to obtain the weights shown. Use only enough weight to obtain good performance, and do not exceed the tire load capacities.

TOTAL VEHICLE WEIGHT

Do not add weight exceeding the following:

Front End 99 lbs.
No weights on front wheels.
Rear Wheels 264 lbs. plus chloride.

LIQUID BALLAST (OPTIONAL)

It is a common practice to add weight to the tractor by filling the rear tires with liquid. A calcium chloride ($CaC1^2$) and water solution is recommended due to its low freezing point and greater density (weight per gallon) than water. Never exceed total recommended weight for the tractor. Because special equipment is required to fill the tires, we recommend that you consult your Ford Tractor-Equipment Dealer. Tires should never be filled beyond 75% (tire filled to the valve stem when the valve stem is at its highest point at the top of the wheel).

CAST IRON WEIGHTS (OPTIONAL)

Cast iron weights are a factory installed option or are available as accessories from your Ford Tractor-Equipment Dealer. Weights can be mounted on the front end of the tractor, and on the rear wheels as shown in Figure 20 and 21.

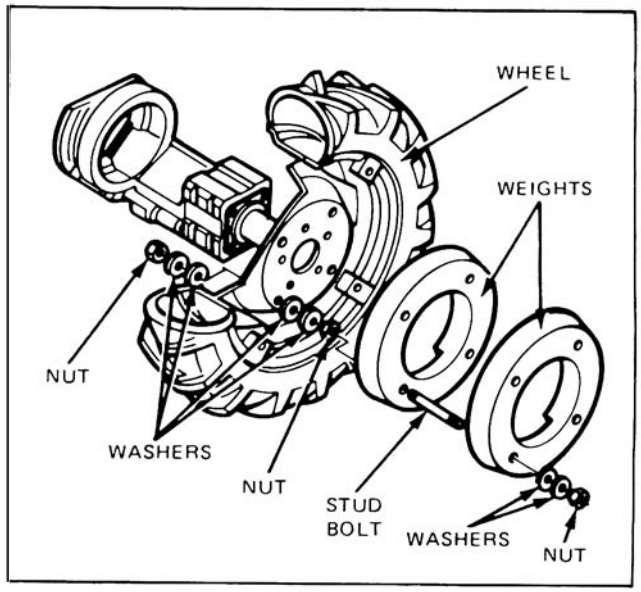


Figure 20 — Rear Wheel Weights

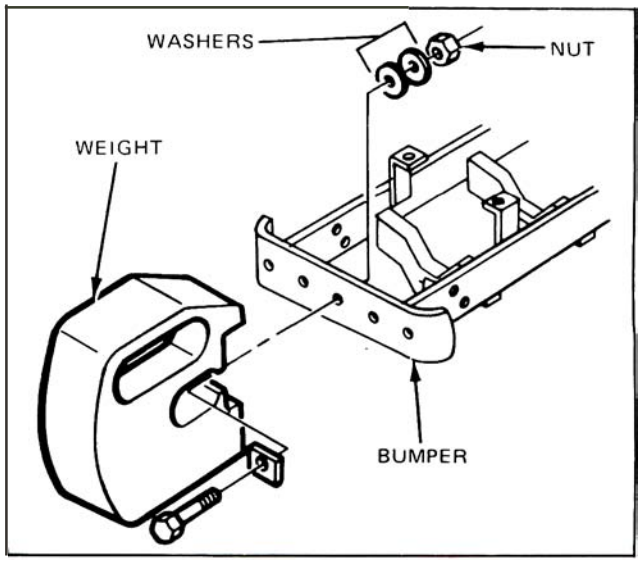


Figure 21 — Front End Weights

TIRE PRESSURE

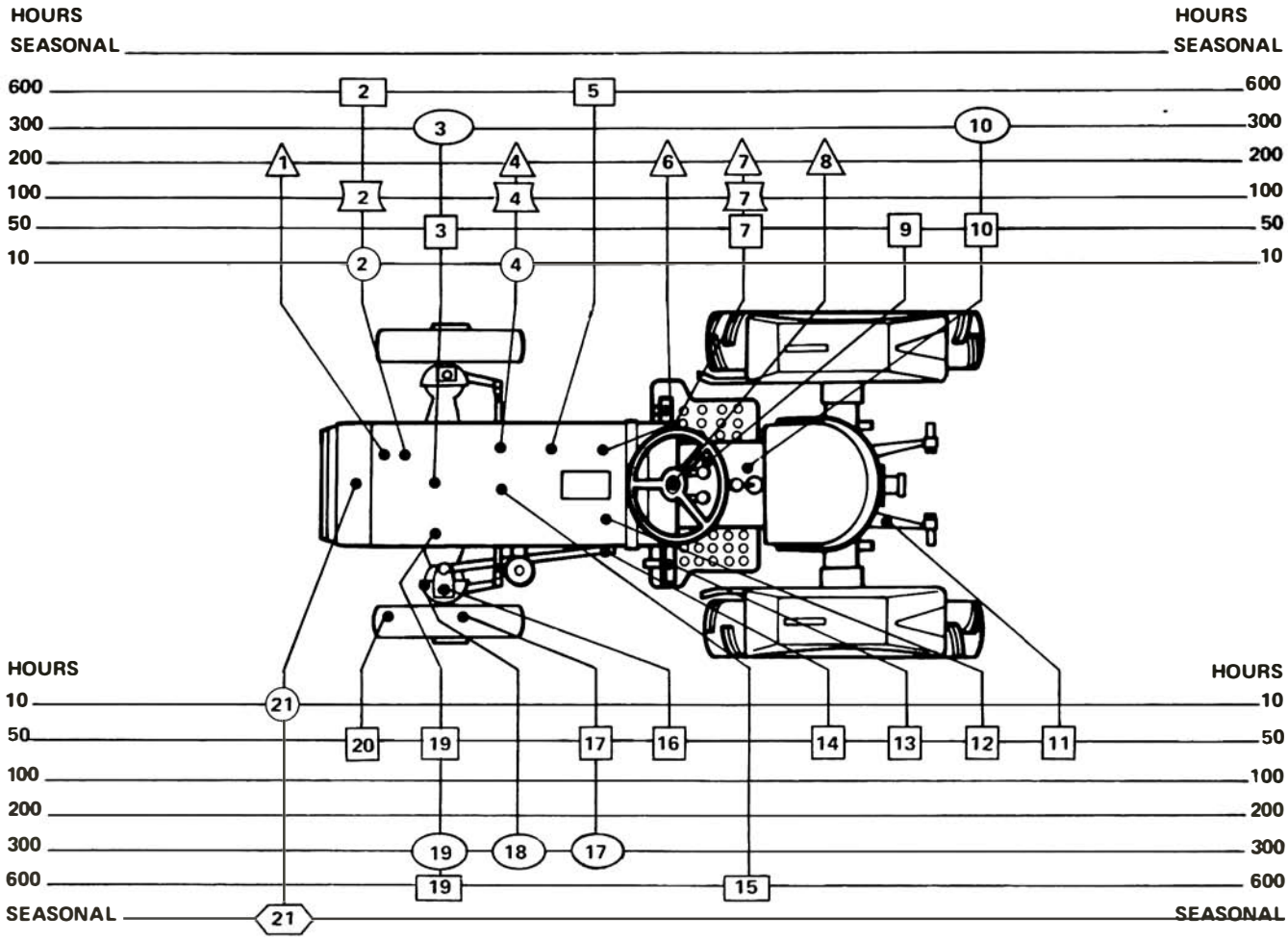
Tire pressure must be considered when adding weight to the tractor. The following "TIRE INFLATION vs. PERMISSIBLE LOAD" table lists the tire sizes available and shows the maximum load the tires can carry for a given air pressure. Note that the load capacities decrease as inflation pressures decrease, and also that a specific tire pressure is recommended for certain size tires.

TIRE INFLATION vs. PERMISSIBLE LOAD

	INFLATION PRESSURES – psi (bar)									
FRONT TIRE SIZE	**6 (.41)**	**8 (.55)**	**10 (.69)**	**12 (.83)**	**14 (.96)**	**16 (1.1)**	**20 (1.4)**	**24 (1.7)**	**28 (1.9)**	**32 (2.2)**
	MAXIMUM PERMISSIBLE LOAD – lbs. (kg)									
6 x 12	–	280 (125)	310 (140)	350 (160)	385 (175)	430 (195)	485 (220)	540 (245)	595 (270)	–
23 x 8.50-12	520 (236)	620 (281)	705 (320)	–	–	–	–	–	–	–
	INFLATION PRESSURES – psi (bar)									
REAR TIRE SIZE	**12 (.83)**	**14 (.96)**	**16 (1.1)**	**18 (1.2)**	**20 (1.4)**	**22 (1.5)**	**24 (1.7)**	**26 (1.8)**		
	MAXIMUM PERMISSIBLE LOAD – lbs (kg)									
8 x 16	715 (325)	770 (350)	840 (380)	905 (410)	970 (440)	1015 (460)	1045 (475)			
8x 16 R3	715 (324)	785 (356)	850 (386)	910 (413)	970 (440)	1025 (465)	1080 (490)	–		

NOTE: Do not exceed the maximum load. Also, do not under-inflate or over-inflate the tires.

LUBRICATION AND MAINTENANCE CHART – FORD 1200 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	Clutch 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		

FUEL AND LUBRICANTS

DIESEL FUEL

Type of fuel to use:

When operating in temperatures above 20°F. (−6.7°C), use diesel fuel oil No. 2 (No. 2D) with a minimum cetane rating of 45. When operating in temperatures below 20°F. (−6.7°C), use diesel fuel oil No. 1 (No. 1D) with a minimum cetane rating of 50.

Fuel represents a major portion of your tractor operating costs; therefore, it is important to use it efficiently. Do not let low price tempt you to use inferior diesel fuel. The initial savings is a false economy when you consider the damage poor fuel can do to your tractor fuel system.

NOTE: Use only fuel designated for diesel engines. Some heating fuels contain harmful chemicals that, if used, can seriously affect tractor efficiency and performance. Refer to the "Engine Oil Recommendations" on page 21 for additional fuel information.

FUEL STORAGE

WARNING: Gasoline or alcohol should never be added to diesel fuel. This practice can create an extreme fire hazzard.

Extremely small clearances exist between the fuel delivering elements of the fuel injection pump and the fuel delivering elements of the injectors. Therefore, it is of vital importance that precautions be taken to make sure the fuel is kept free of dirt and water, Figure 22.

Diesel fuel should be stored in black iron tanks or containers. Do not store diesel fuel in a galvanized tank, as the zinc coating will react with the fuel and form undesirable compounds that may interfere with the proper operation of the fuel injection pump and injectors.

The most satisfactory arrangement is a bulk storage installation with either a tank and pump, Figure 23, or a gravity feed installation located high enough for the tractor tank to be filled direct. The tank should slope downward at the rear to allow sediment to settle away from the take-off point. Whenever the tank is refilled, allow the fuel to settle for 12 hours before using.

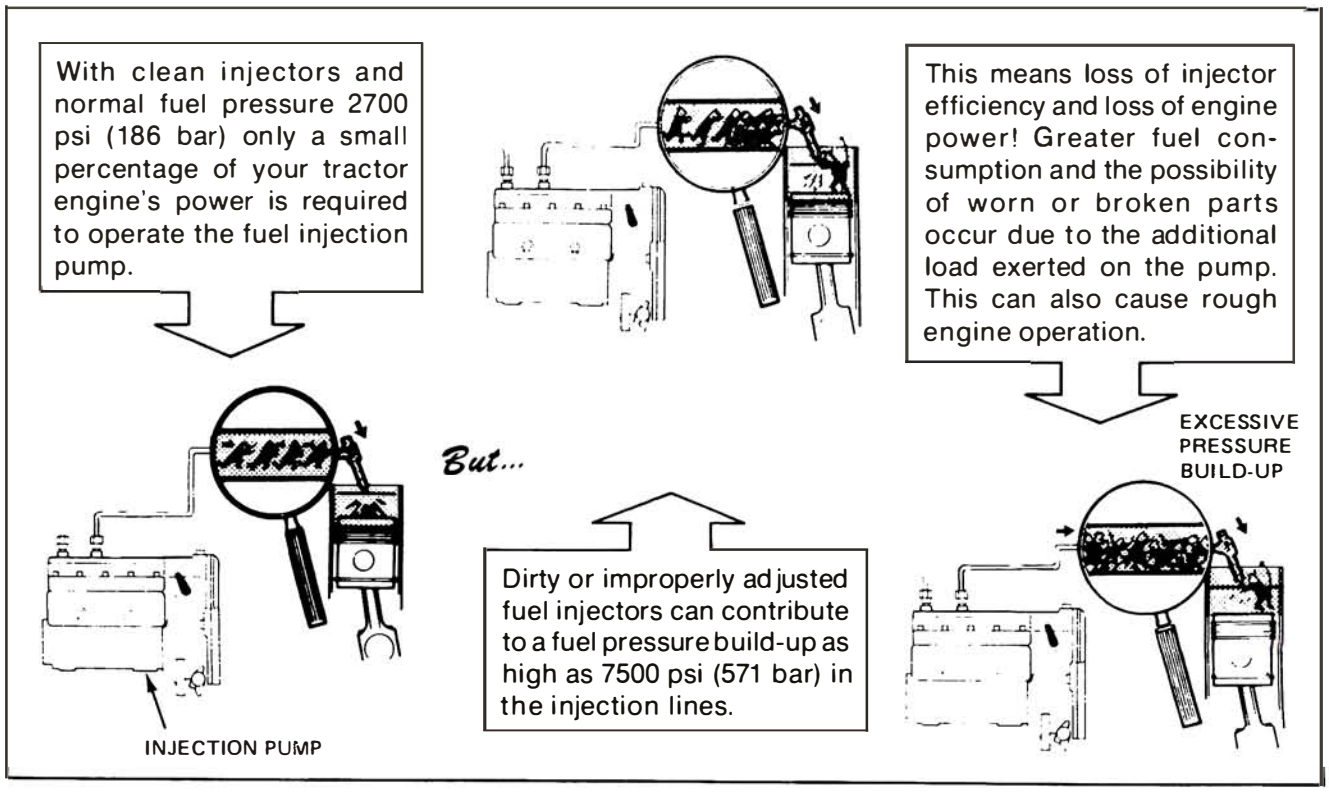


Figure 22 — Dirt vs. Injectors

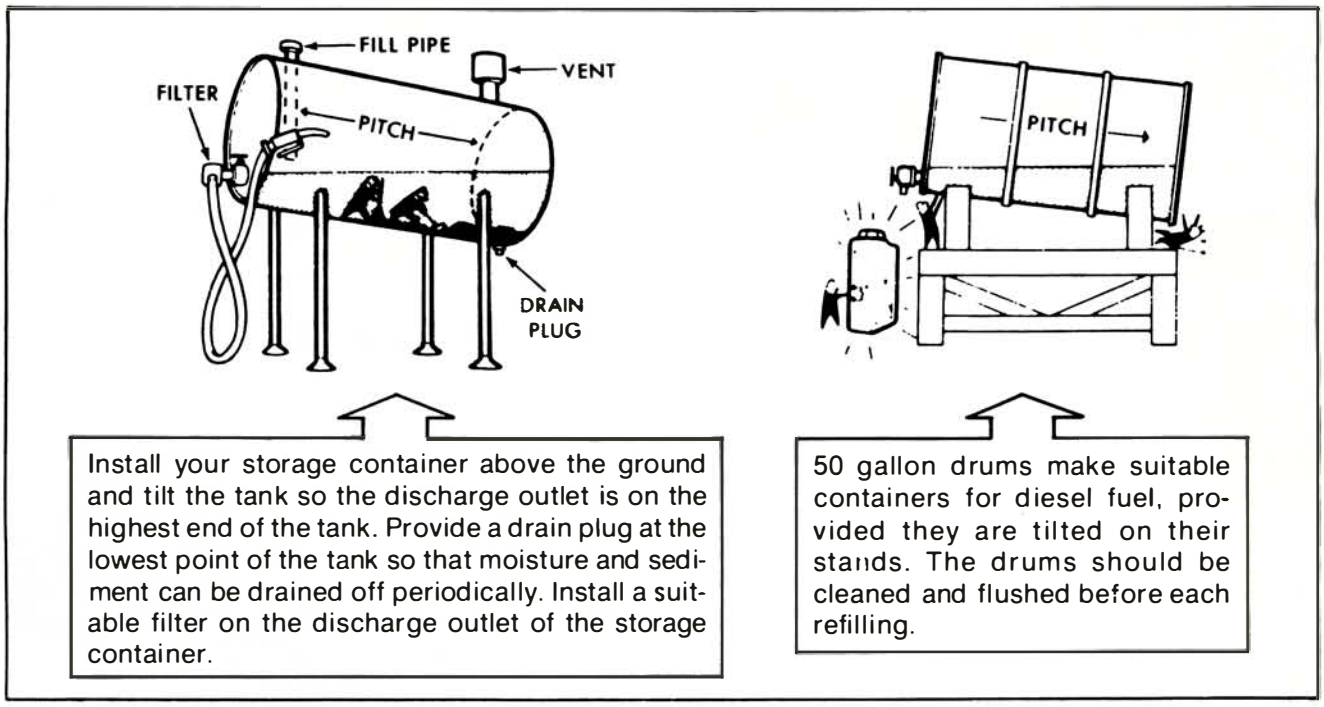


Figure 23 — Diesel Fuel Storage

A drain valve should be positioned at the lowest point in the tank so the moisture and sediment can

be drained periodically. A fuel outlet filter should be used, as shown in Figure 23. Use the largest tank feasible and keep it as full as possible to minimize condensation.

If bulk storage is not possible and the fuel is stored in barrels, keep them in a clean, dry place. The barrel in use should be fitted with a fuel outlet filter and a drain tap, and should be supported so it slopes downward 1/2 inch per foot length away from the tap.

After use, install the cap at the top of the barrel and clean up fuel which may have been spilled. Diesel fuel will not evaporate and thus will collect dust and dirt.

REFUELING THE TRACTOR

If there is no filter on the outlet of the storage tank, filter the fuel through a 100-mesh screen or finer when filling the tractor fuel tank. Keep the tractor tank as full as possible to minimize condensation.

NOTE: It is a good practice to fill the tractor fuel tank with fuel at the end of each day, as this will reduce overnight condensation. Also, any fuel which may have been spilled should be cleaned up.

CAUTION: Don't remove the fuel tank cap while the engine is running or hot. Don't smoke while refueling.

LUBRICANTS

Type of lubricant to use:

Engine Oil M2C-121-A
(Meets M2C-121-B, API Grade CD and MIL-L-2104-C)

Service Grade CD
SAE 10W30, 10W40 for year around use
or
SAE10W in severe cold below 32° F (0°C)
SAE 20W for winter use 32 to 50° F (0°C–10°C)
SAE 30W for summer use above 50° F (10°C)

Transmission, Rear Axle and Hydraulic System
Oil M2C-134-A

Front Axles M2C-105-A

All Lubrication Fittings M1C-137-A

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 24.

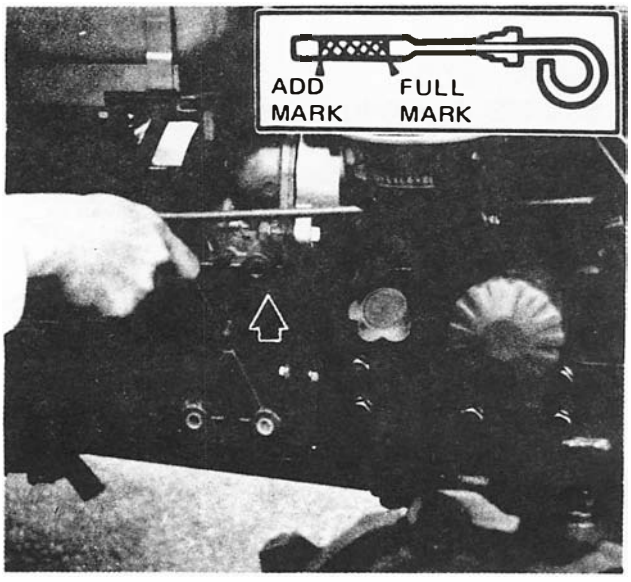


Figure 24 – Engine Oil Level Dipstick

2. If the oil level is low, remove the filler cap, Figure 25, 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.

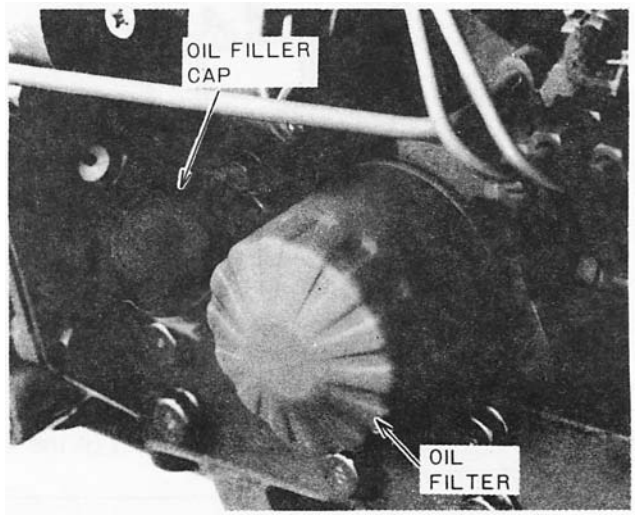


Figure 25 – Engine Oil Filler Cap and Filter

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 25, 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 21. Start the engine and check the filter for leaks after adding the oil. Be sure the oil level is at the proper level.

FUEL FILTER

Draining the Filter: Drain the diesel fuel filter when condensation is evident.

Cleaning the Fuel Filter: Clean the fuel filter every 100 hours by rinsing in container of clean diesel fuel.

1. Be sure there is adequate fuel in the fuel tank; close the fuel shut-off valve. Figure 26, then remove the fuel sediment bowl.

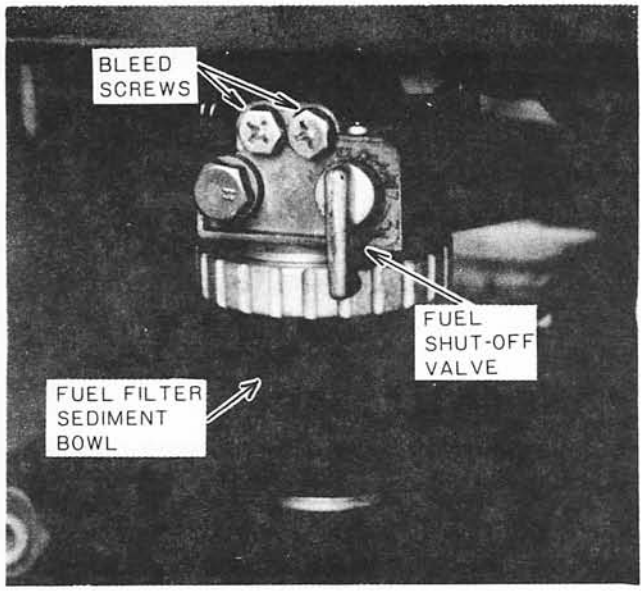


Figure 26 — Fuel Filter

2. Open the fuel shut-off valve until all water has been removed and only fuel flows from the filter.
3. Install the fuel sediment bowl and bleed the system as outlined under "Bleeding the Fuel System."

Changing the Fuel Filter: Change the diesel fuel filter every 200 hours.

1. Close the shut-off valve, Figure 26.
2. Remove the sediment bowl.
3. Discard the old element and install a new element.
4. Install and securely tighten the sediment bowl.
5. Open the fuel shut-off valve so fuel will flow to the filter.
6. Bleed the fuel filter and injection pump as covered under "Bleeding the Fuel System."

BLEEDING THE FUEL SYSTEM

Bleed the fuel system after it has been drained:

- If a new filter element has been installed,
- If the tractor has run out of fuel,
- If the lines leading to or from the filter have been disconnected,
- If the injection pump has been removed and reinstalled.

Bleed the fuel system as follows:

1. Be sure there is adequate fuel in the fuel tank.
2. Open the fuel shut-off valve.
3. Open the bleed screws at the top of the fuel filter (Figure 26) and let the air bubbles escape from the screws while cranking the engine. Then tighten bleed screws.
4. Open the bleed cock (Figure 27) and let the air bubbles escape while cranking the engine close bleed cock.
5. Push the hand throttle to the high speed position. Turn the engine over for a few seconds to bleed the high pressure fuel tube.

   NOTE: If the tractor does not start after completing the above bleeding procedure, the fuel lines to each injector may have to be loosened while cranking the engine to complete bleeding of the system. Tighten lines at injectors after completing bleeding.

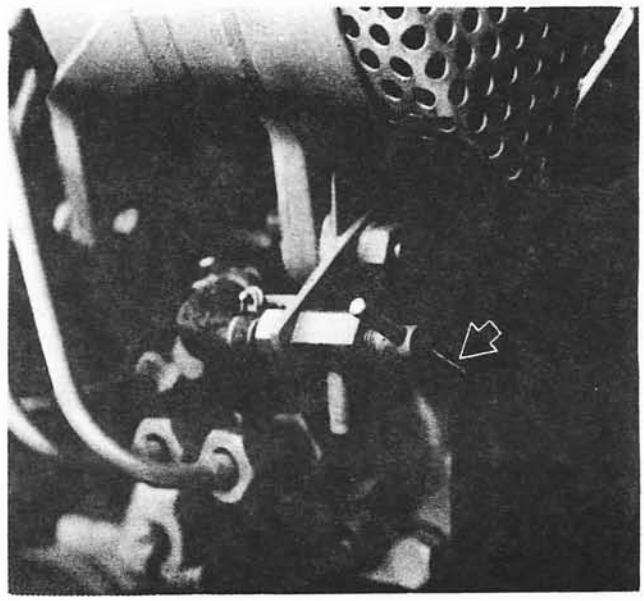


Figure 27 — Fuel System Bleed Cock

AIR CLEANER

Checking Dirt Level: Check the dirt level in the dust pan daily or every 10 hours (Figure 28).

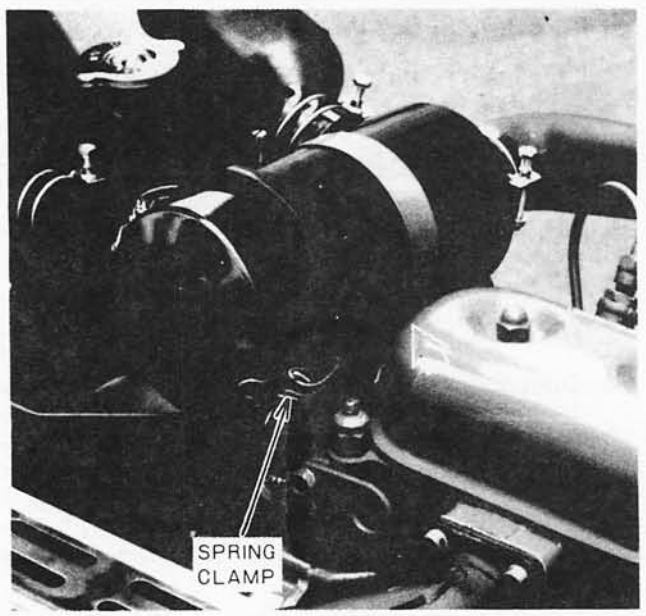


Figure 28 — Air Cleaner — Assembled

Clean the element every 100 hours of service.

1. Loosen spring clamps and remove dust cap (Figure 28).
2. Remove seal and dust pan from dust cap and clean dust cap, seal and dust pan using a damp lint free cloth, Figure 29.

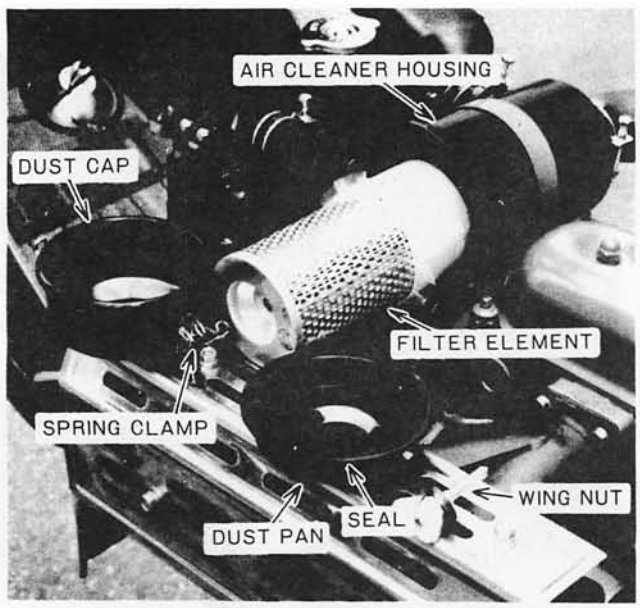


Figure 29 — Air Cleaner — Disassembled

3. Remove wing nut holding filter element and remove filter element from body.
4. Pat sides of element with palm of hand to remove dust trapped in the pleats.

   IMPORTANT: Tapping element against hard surface or with hard objects may dent or break element end cap seals.
5. Using low air pressure (not over 30 psi, 2.1 bar), blow out remaining dust from inside out opposite normal air flow through the element.

   IMPORTANT: Be careful not to rupture the filter element. Maintain a reasonable distance between the air nozzle and the filter element when directing air up and down the clean air side of the element pleats.
6. Clean the fins and inside of the air cleaner body with a dry cloth.
7. Check with a light inside element for leaks in paper or bonding of paper to end plate. Replace element if any leaks are found.
8. Reassemble the air cleaner.

WASHING ELEMENT

1. Washing may be necessary to remove soot or oil material.
2. Agitate the element in warm water containing a small amount of non sudsing type detergent.

   IMPORTANT: Do not use water hotter than the hand can stand, as the element will be damaged. Never wash the element with fuel oil, gas or solvent. Do not oil the element.
3. Rinse the element with clean water. Shake excess water from the element and allow it to air dry.

   IMPORTANT: Do not dry element with compressed air, as the air will rupture a wet element. Also, do not install a wet element as the tractor engine will not start with a wet element installed.
4. After drying, check for damage by holding a light bulb inside the element. If an even, fine pattern of light is seen, the element is clean and undamaged. A bright spot of light indicates the element is damaged, and a new element must be installed.

   Change the element after six cleanings or once a year.

TRANSMISSION, REAR AXLE AND HYDRAULIC SYSTEM

Checking Oil Level: Check the oil level every 50 hours.

1. With the tractor standing level and the engine off, check the oil level with the dipstick, Figure 30.

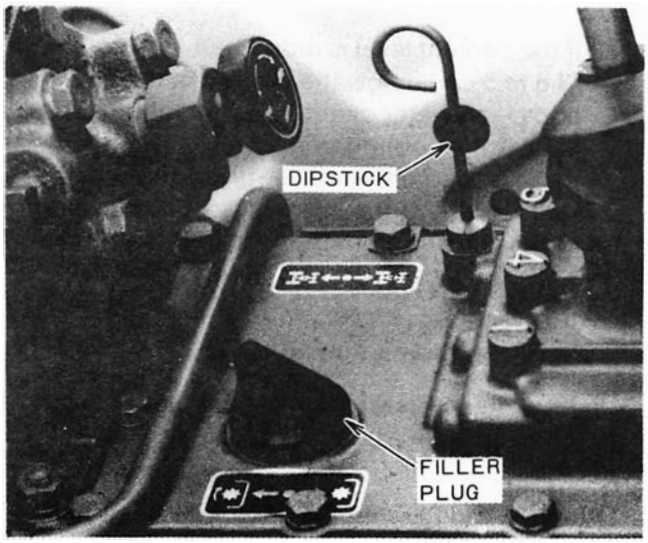


Figure 30 — Transmission, Rear Axle and Hydraulic System Oil Level Dipstick and Filler Plug

2. The oil is at the correct level when the oil level is between the mark and the lower end of the dipstick. If low, add new oil of the type specified, page 21. Do not fill beyond the mark on the stick, as the transmission will be overfilled.
3. Install the filler plug and dipstick.

Changing Oil: Change the oil every 300 hours.

1. With the oil at normal operating temperature, drain and discard the oil by removing the transmission, rear axle center housing and rear axle drain plugs, Figure 31. Reinstall the plugs after the oil has drained. Discard the oil.
2. Check and if necessary the hydraulic oil filter.
3. Remove the filler plug and dipstick, Figure 30, and fill with new oil of the type specified, page 21.
4. The transmission is filled to the correct level when the oil level is between the mark and the lower end of the dipstick. Do not fill beyond the mark on the stick, as the transmission will be overfilled.
5. Install the dipstick and filler plug.

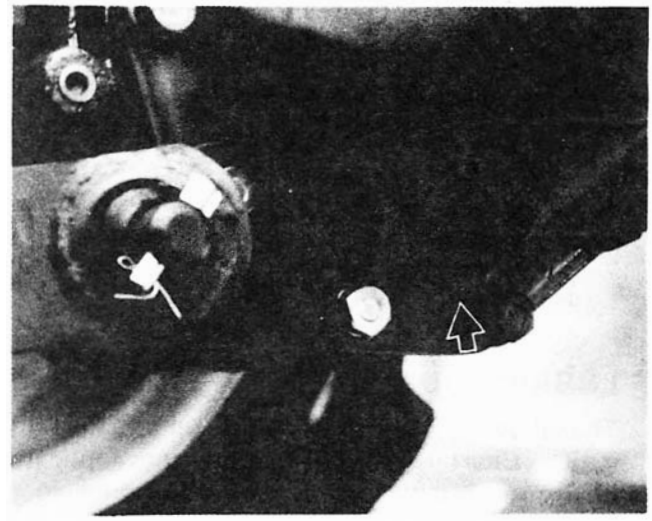


Figure 31 — Transmission, Rear Axle Center Housing and Rear Axle Oil Drain Plugs

IMPORTANT: The transmission, rear axle and hydraulic system operate from a common oil pump. Special attention must be given to maintaining clean oil.

HYDRAULIC SYSTEM FILTER

Check condition of the filter after first 50 hours. Clean or replace filter if necessary. Clean the filter every 300 hours and change it every 600 hours of service. The filter is located by the pump on the front left side of the engine.

1. Remove the attaching bolt from the cover and filter, Figure 32.
2. Remove the filter and check the O-ring. Replace if damaged.

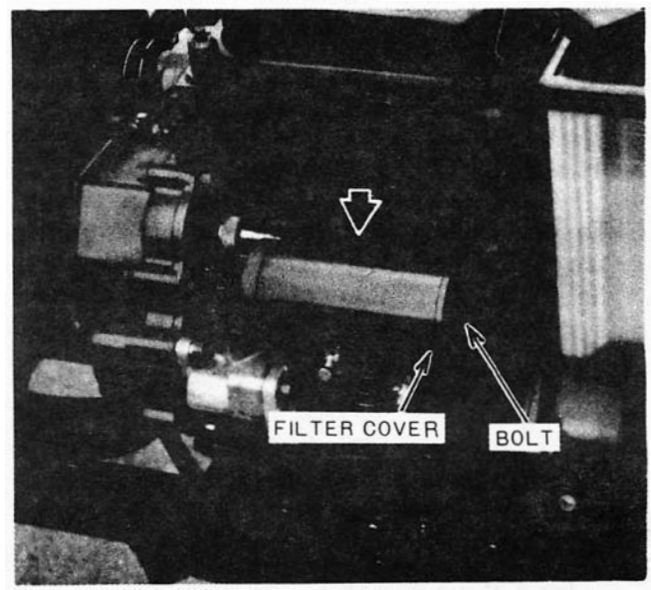


Figure 32 — Hydraulic Oil Filter

IMPORTANT: Be careful of the rubber gaskets on each end of the filter.

3. Check the O-ring in the filter cover and replace if damaged.

4. Remove the oil filter and install a new one.

5. Assemble the unit reversing the above procedure.

LUBRICATION FITTINGS

The following lubrication points (refer to the Lubrication Chart, page 19) require the application of a good quality grease every 50 hours. In extremely dirty conditions, lubrication should be made more often. Refer to page 21 for the type of grease that should be used.

- Steering linkage
- Pivot shaft
- Pedal shaft
- 3-point linkage
- Front-wheel drive king pins (if so equipped)

1. Wipe away all old grease and dirt from the lubrication fittings to prevent dirt or foreign material from entering the fittings when new grease is applied.
2. Use a high pressure grease gun to force in the new grease until clean grease oozes from the assembly being lubricated.
3. Wipe away any excess grease.

GENERAL MAINTENANCE

COOLING SYSTEM

The cooling system in your Ford Tractor has been filled with one year life antifreeze.

To obtain maximum efficiency and service life from the engine, it must operate at the correct temperature. This is dependent on the cooling system. The system should be kept filled with a 50/50 solution of permanent antifreeze and clear water.

Checking Coolant Level: Check the coolant level daily or every 10 hours. This check should be made when the engine is cold.

1. Remove the radiator cap and visually check the level of the coolant.

CAUTION: The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. Always cover the cap with a thick cloth and turn the cap slowly counterclockwise to the first stop. Allow all pressure to escape before removing the cap completely.

2. If the coolant level is more than 1-1/2 to 2 inches (3.8 to 5 cm) below the bottom of the filler neck, add clean water or antifreeze solution as necessary. If the cooling system already contains antifreeze, add only antifreeze solution of the correct water/antifreeze mixture. Plain water will dilute the solution and weaken its protection.

   IMPORTANT: Alcohol-type antifreeze is not recommended. Do not mix alcohol-type solution with permanent antifreeze.

3. Keep the radiator screen clear of chaff or dirt to allow free passage of air (Figure 35).

Draining and Flushing the Cooling System: Drain and flush the radiator and engine block every 12 months. Refill with a 50/50 mixture of long life (Ford) antifreeze, or equivalent, and clear water.

To Drain the System:

1. Remove the radiator cap and open the drain valve at both the radiator and the engine block. The radiator drain valve is located on the bottom right side of the radiator (Figure 33). The engine block drain valve is located on the left side of the engine. See Figure 34.

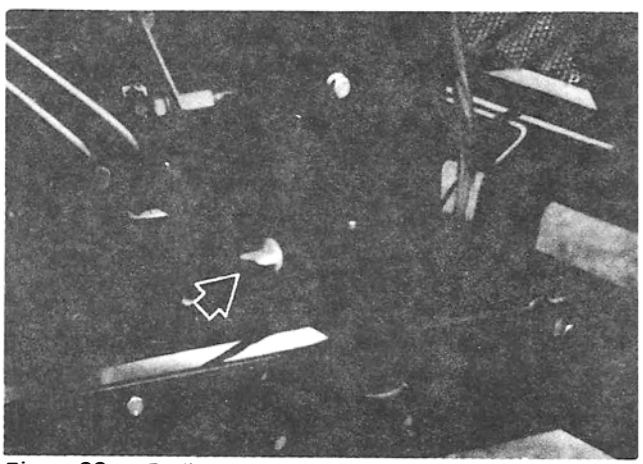


Figure 33 — Radiator Drain Valve

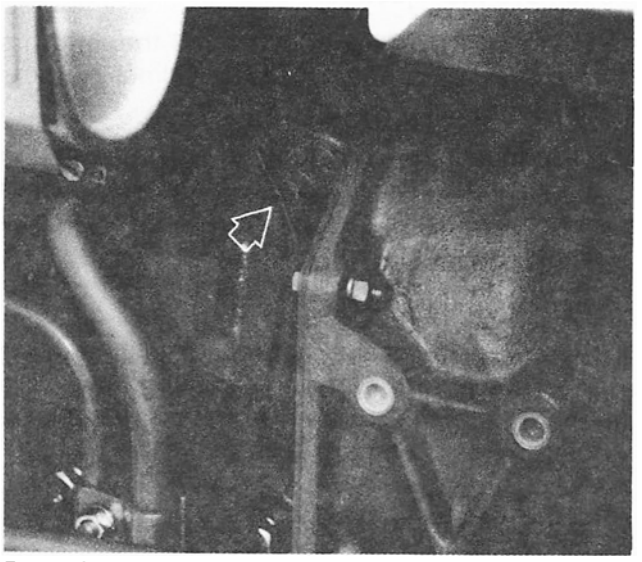


Figure 34 — Engine Block Drain Valve

2. After the coolant has drained, place a water hose in the radiator filler neck and run water through the system with the engine running. Make sure water is flowing from engine block drain valve before starting engine. When the water flowing from the drain valve is free of discoloration and sediment, stop the engine and remove the hose. Allow all water to drain from the system through drain valves.
3. Close the two drain valves and slowly refill the system with a 50/50 solution of permanent antifreeze and clear water. Fill until the coolant level is approximately 1-1/2 to 2 inches (3.8 to 5 cm) below the bottom of the filler neck. Do not fill beyond this level.

   IMPORTANT: Bleed coolant system to make sure that no air pockets remain.
4. Clean the radiator cap and cap seal. Install the cap.
5. Clean the radiator front screen (Figure 35).
6. Run the engine until normal operating temperature is reached, then stop the engine and recheck the coolant level. Add coolant as required.

IMPORTANT: Never run the engine when the cooling system is empty, and do not add cold water or cold antifreeze solution if the engine is hot.

Thermostat: The thermostat is located in the coolant outlet connection in the front of the cylinder head (Figure 36).

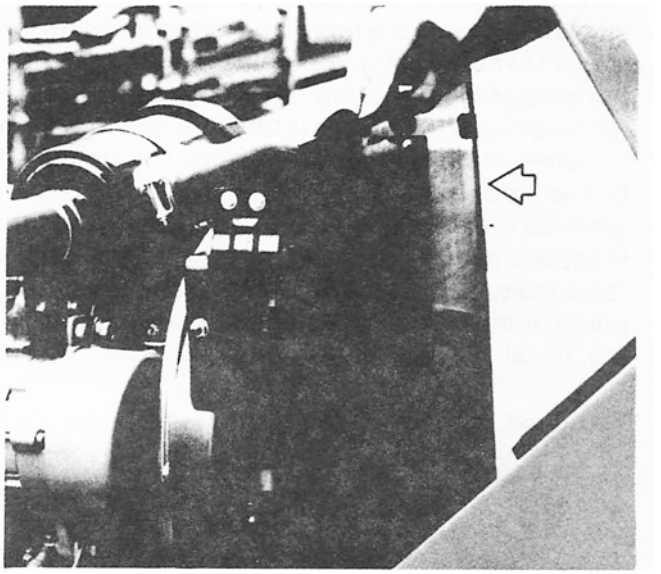


Figure 35 — Radiator Screen

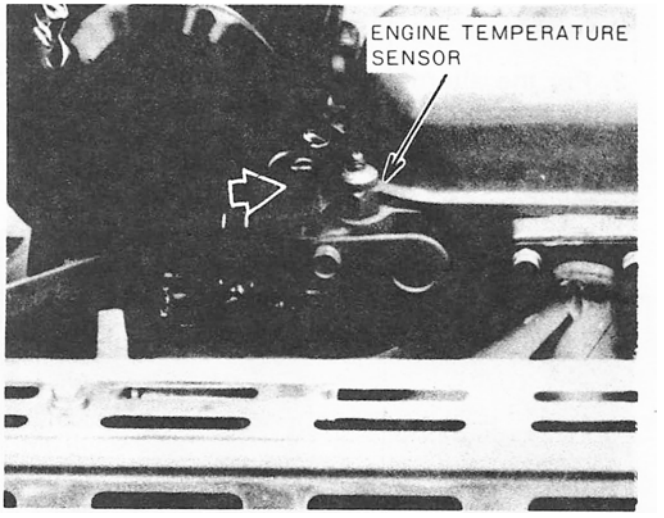


Figure 36 — Thermostat Housing

When the engine is cold, the thermostat, which is a heat sensitive valve, shuts off the flow of coolant to the radiator, thus allowing rapid engine warm up. A recirculating bypass allows the coolant to circulate within the engine whenever the thermostat shuts off flow to the radiator.

IMPORTANT: Do not remove the thermostat in an attempt to improve the cooling. This will cause the engine to run below normal working temperatures, resulting in excessive engine wear.

If it ever becomes necessary to install a new thermostat, it should be positioned in the recess of the water outlet connection so that the heat element (spring end) will be in the cylinder head of the engine.

Fan Belt: A belt-driven fan at the front of the engine draws air through the fins of the radiator to cool the coolant in the radiator. A slipping fan belt will lower the efficiency of the fan, resulting in the engine running too hot. If the belt is too tight, it will shorten the alternator bearing life. A correctly tightened belt will deflect 7/16 to 9/16 inch (10 to 15 mm) when 20 to 25 pounds (9 to 11 kg) thumb pressure is applied midway between the belt pulleys. Check the condition and tension of the fan belt every 200 hours. If the belt shows signs of cracking or fraying, install a new belt.

To Adjust Belt Tension:

1. Loosen the alternator mounting bolts, Figure 37.

CAUTION: Never attempt to loosen or tighten the bolts when the engine is running.

2. Pry the alternator away from the engine and tighten the mounting bolts.
3. Recheck belt deflection.

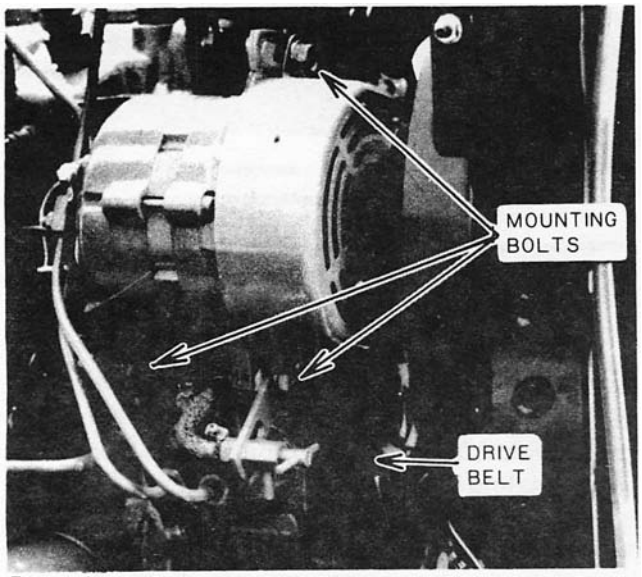


Figure 37 — Alternator Mounting Bolts

FUEL INJECTOR REMOVAL AND INSTALLATION

The injectors should be cleaned, tested, and adjusted every 600 hours. Do not disassemble or adjust the injectors yourself. Remove them from the tractor engine and have them serviced by your Ford Tractor-Equipment Dealer.

To remove the injectors:

1. Clean all loose dirt from around the injectors and lines. Disconnect the leak-off lines from the injectors. See Figure 38.
2. Disconnect the injection pump lines at the pump and injectors. Cover the ends of the lines and the injector inlet and leak-off ports to prevent the entry of dirt.
3. Remove the injectors.
4. Remove and discard the copper injector sealing washers from the injector locating bores. If a spare set of injectors is not immediately available, cover the bores to prevent the entry of dirt.

After the injectors have been serviced, install them as follows:

1. Install a new copper sealing washer in each injector locating bore. Install the injectors and tighten the retaining nut to 43-51 lbs. ft. (58-69 N.m).

   IMPORTANT: Do not overtighten the retaining nuts. Overtightening may distort the injector.
2. Install the injector lines. Finger tighten the fittings at the injectors until after bleeding the fuel system. Tighten the fittings at the injection pump to 18-22 lbs. ft. (24-30 N.m).
3. Install the leak-off line, Figure 38. Tighten the leak-off line bolts to 22-30 lbs. ft. (30-41 N.m).
4. Bleed the fuel system as covered under "Bleeding the Fuel System," page 23.

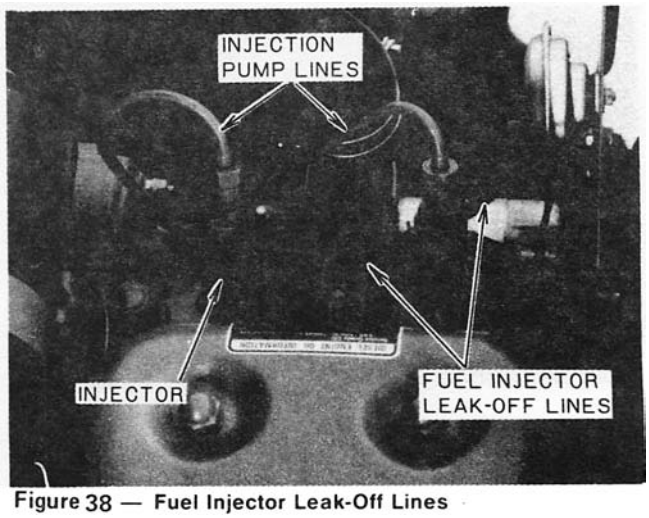


Figure 38 — Fuel Injector Leak-Off Lines

ENGINE SPEED ADJUSTMENT

The adjustments for idle and maximum no-load speed settings should be adjusted according to the following procedures:

1. Move the throttle lever rearward until a resistance is felt. This is the idle position.
2. Start the engine and adjust the turnbuckle to obtain an engine speeds of 750-850 rpm.
3. The maximum no-load speed of 2850-2900 rpm is adjusted by the stop bolt, Figure 39.

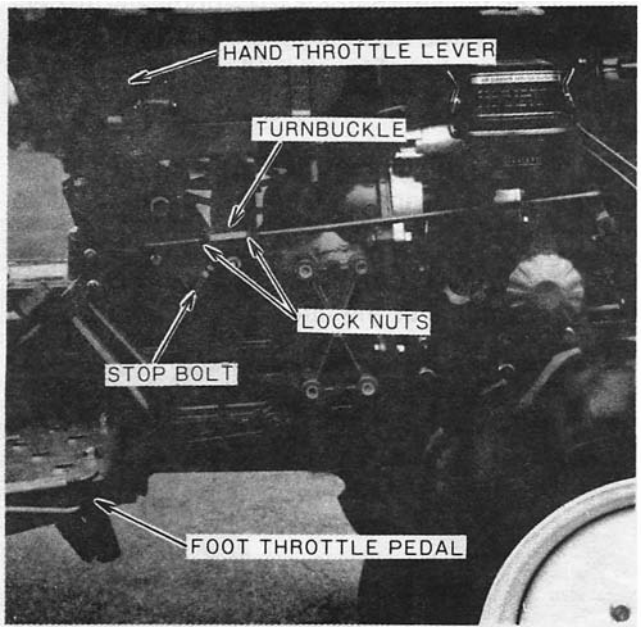


Figure 39 — Idle and Throttle Stop Adjustment

VALVE CLEARANCE (LASH)

Correct valve clearance is one of the most important factors of good engine performance. Excessive clearance will cause the engine to operate excessively noisy, and insufficient clearance will cause poor performance. Because of this, it is extremely important that care be used when adjusting valve clearance.

Checking and Adjusting Valve Clearance: Check and adjust the valves every 600 hours. The clearance check and adjustment should be made with the engine cold.

1. Remove the valve rocker arm cover.
2. With the engine idling, check the clearance of each valve with a step-type feeler gauge, Figure 40.

   The setting should be:
   Intake .012 (.3 mm)
   Exhaust .012 (.3 mm)
3. If the clearance is incorrect on any valve, turn the adjusting screw at the push rod end of the valve rocker arm either into or out of the arm while checking for correct clearance with the step-type feeler gauge.
4. Install the rocker arm cover. Use a new gasket if the old one is damaged. Tighten the cover bolts evenly.

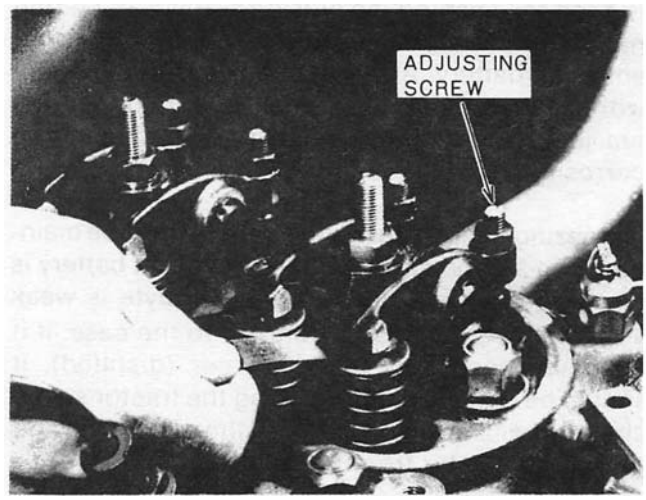


Figure 40 — Checking Valve Clearance

MAINTENANCE AND INSPECTION OF THE ROPS

After the first 20 hours of operation and after every 500 hours of operation or six months, whichever comes first, do the following:

1. Check the torque of the ROPS mounting bolts. If necessary, tighten the bolts to the correct torque. See bolt torques Page 37.
2. Check the operators seat and the mounting parts for the seat belt. Tighten the bolts to the correct torque. Replace parts that have wear or damage.

POSSIBLE DAMAGE TO THE ROPS

If the machine has rolled over or the ROPS has been in some other type of accident (such as hitting an overhead object during transport) you must replace the ROPS to get the original protection.

After an accident, check for damage to (1) the ROPS, (2) the operator's seat, (3) the seat belt and the seat belt mountings. Before you operate the machine, replace all damaged parts.

IMPORTANT: Do not try to weld or straight the ROPS.

BATTERY

Keep the battery connections tight and free of corrosion. An ammonia or baking soda-water solution is good for washing the outside surface and terminals of the battery. Make sure the solution does not enter the battery. After cleaning, wash the battery with clean water. Apply a small amount of petroleum jelly to the terminals to protect them from corrosion.

In freezing temperatures, the battery must be maintained in a good state of charge. When a battery is discharged or run down, the electrolyte is weak and may freeze, causing damage to the case. If it becomes necessary to add water (distilled), it should be done just before using the tractor so the charging will mix the water with the electrolyte and prevent the water from freezing.

Determine the battery charge by checking the specific gravity of the electrolyte.

Checking Electrolyte Level: Check the electrolyte level in the battery every 50 hours.

CAUTION: When the alternator is charging, an explosive gas is produced inside the battery. Therefore, always check the electrolyte level with the engine stopped. Do not use an exposed flame and do not smoke when checking the battery electrolyte level.

1. Clean the top of the battery, then remove the vent plugs.
2. If the electrolyte level is low, add distilled water. The level is correct when the liquid is 1/4 inch (6.35 mm) above the plates.

   NOTE: Keep distilled water in a clean, well-covered, nonmetallic container.
3. Install the vent plug after making sure the vent holes are not blocked. At below freezing temperatures, be sure to run the engine for a period of time, after adding water, so the battery will charge and prevent the water from freezing.

ALTERNATOR

The alternator, Figure 41, is belt-driven from the engine crankshaft pulley. It is important that belt slippage does not occur, otherwise, the charging rate will be affected. Details of belt adjustment are given on page 28.

Other than belt adjustment, the only maintenance required on the alternator is to periodically inspect the terminals and keep them clean and tight. The alternator cooling fan should also be cleaned periodically.

When working on or checking the alternator, comply with the following precautions to prevent alternator damage.

- DO NOT, under any circumstances, short the FIELD terminal of the alternator to ground.

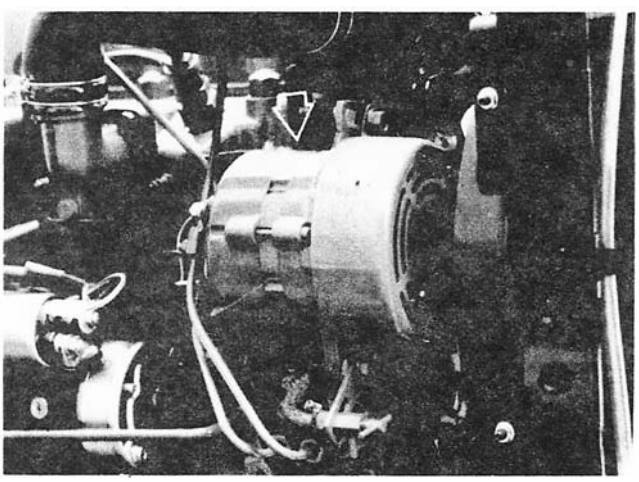


Figure 41 — Alternator

- DO NOT disconnect the voltage regulator while the alternator is operating.
- DO NOT disconnect the alternator output lead or battery cables while the alternator is operating.
- DO NOT remove the alternator from the tractor without first disconnecting the negative (−) battery cable. If the battery is to be removed, disconnect the negative cable first.

- If a battery is being installed, MAKE CERTAIN that the positive (+) cable is connected first and that the negative terminal is connected to ground. Reverse polarity will destroy the rectifier diodes in the alternator.

VOLTAGE REGULATOR

The voltage regulator (Figure 42) automatically controls the alternator charging rate. No attempt should be made to adjust the setting of the regulator.

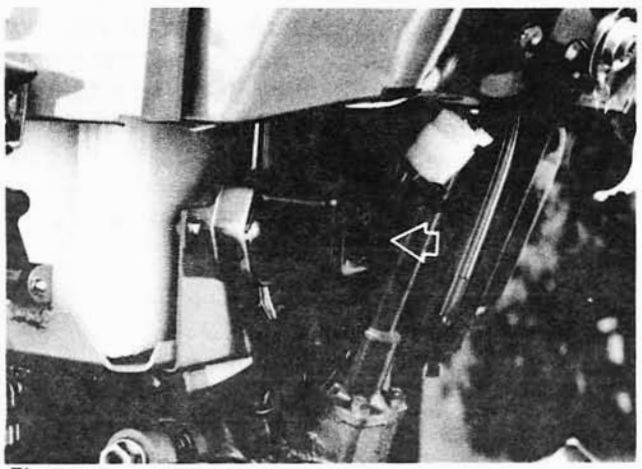


Figure 42 — Voltage Regulator

If the charge indicator warning light indicates that the alternator is not charging the battery, check the fan belt and the wiring connections. If these are satisfactory and the warning light continues to indicate no charge, consult your Ford Tractor-Equipment Dealer.

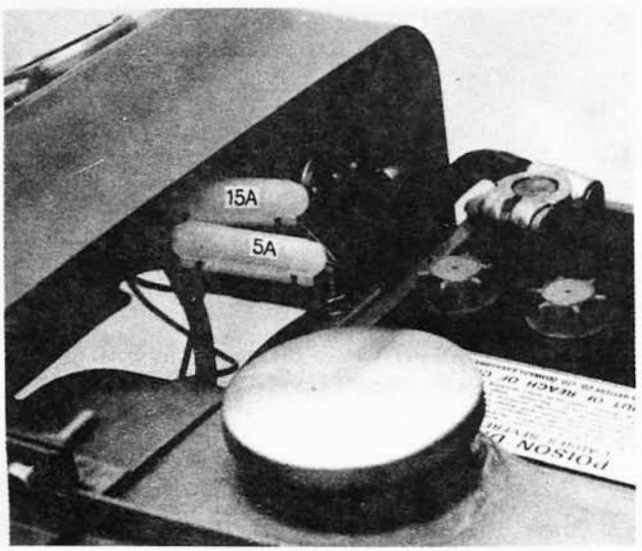


Figure 43 — Fuses

FUSES

The fuses are shown in Figure 43. The plastic fuse cover is easily removed by pulling it off. Always replace blown fuses with the specified fuse.

HEADLAMPS

Should a headlamp failure occur, the bulb must be replaced. To change the bulb:

1. Raise the hood.
2. Turn socket to align index tab and remove socket from housing, Figure 44.
3. To remove bulb, push bulb in, twist and pull out.
4. Install new bulb in socket and install socket with bulb in housing.

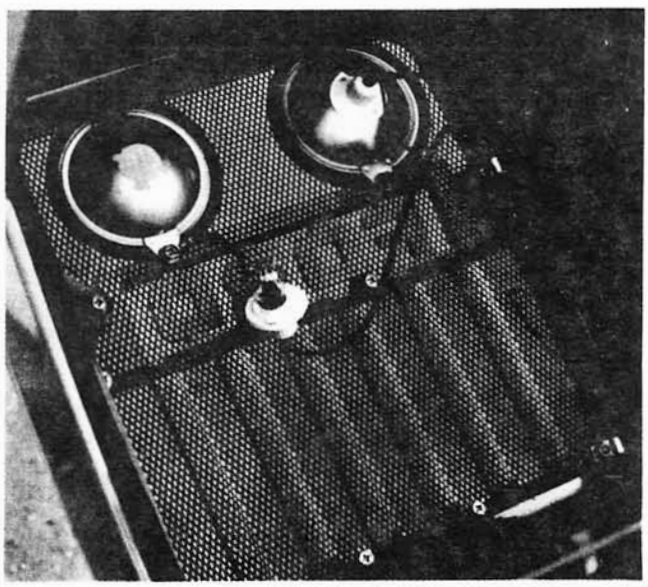


Figure 44 — Headlamp Removal

TAIL LAMP AND FLASHER WARNING LAMP

To replace a tail lamp bulb or flasher warning lamp bulb:

1. Remove the lens, then remove the bulb.
2. Install a new bulb and reinstall the lens/and or rim assembly.

INSTRUMENT LIGHTS

To change an instrument bulb:

1. Remove the two screws securing the instrument panel lens cover to the instrument panel and pull the light holder up out of the instrument panel.
2. Replace bulb.
3. Position light holder to instrument panel and position lens cover over bulbs.
4. Secure cover with two screws.

TIRES

Check tire pressure every 50 hours, or weekly. Refer to the "Tire Inflation Vs. Permissible Load" table on page 18 for the air pressure that should be used.

NOTE: If the rear wheels are weighted with liquid ballast, a special tire gauge should be used because the calcium chloride and water will cause corrosion in the standard-type gauge.

When checking tire pressure, inspect the tire for damaged side walls and tread cuts. Neglected damage will lead to early tire failure.

CAUTION: Inflating or servicing tires can be dangerous. To avoid possible in jury, follow the safety precautions below:

- Use a clip-on tire chuck with a remote hose and gauge which allows the operator to stand clear of the tire while inflating it.
- Do not inflate a rear tractor tire over 35 PSI (2.4 bar).
- Do not inflate a tire unless the rim is mounted on the tractor or is secured so that it will not move if the tire or rim should suddenly fail.
- Do not re-inflate a tire that has been run flat or seriously under inflated until the tire has been inspected for damage by a qualified person.
- Do not weld, braze, otherwise repair, or use a damaged rim.

STEERING WHEEL FREE PLAY ADJUSTMENT

Steering wheel play in the direction of rotation should be between .78-1.38 in. (20-35 mm) as shown in Figure 45. If the play exceeds the specified limit, 2 in. (50 mm), then adjustment is necessary.

1. Make sure that all link bolts are tightened properly. If severe wear is apparent, install new parts.
2. Loosen the adjuster locknut on the right side of the steering gear box and turn the adjuster screw, see Figure 46. Turning the screw clockwise will decrease the free play while turning the adjuster screw counterclockwise will increase the steering wheel free play.

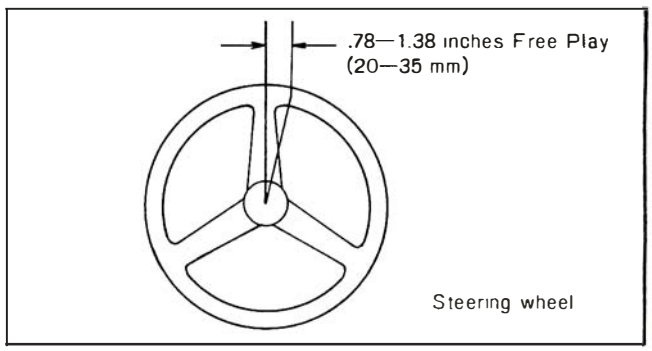


Figure 45 — Steering Wheel Free Play

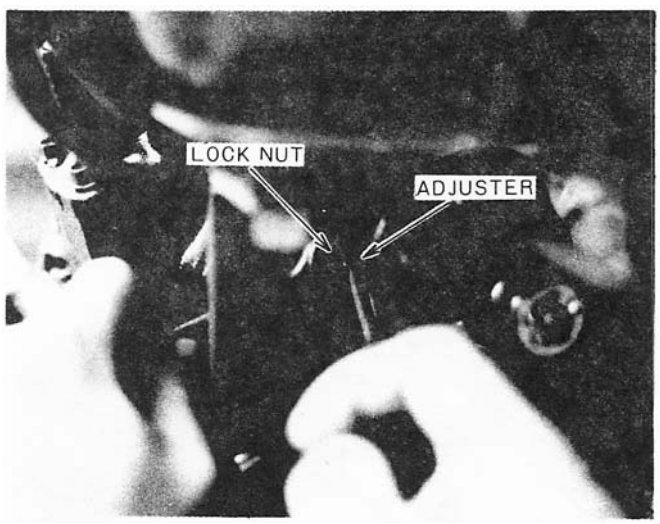


Figure 46 — Steering Wheel Free Play Adjustment

3. Once the adjustment is made, tighten the adjuster locknut securely.

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 47). Determine the straight-ahead position by turning the steering wheel from lock to lock and then halfway back.
2. Measure and record the distance between the front of the wheels at the marks, then push the tractor forward or backward until marks are at wheel hub height on the rear of the wheel.
3. Measure and record the distance between the rear of the wheels at the marks.
4. The difference between the dimensions recorded in Steps 2 and 3 should give zero to 13/64-inch (0-5 mm) toe-in. The distance between the wheels should be zero to 13/64-inch (0-5 mm) greater when the marks are at the rear than at the front.
5. If the toe-in is not correct, adjust as outlined in the following procedure.

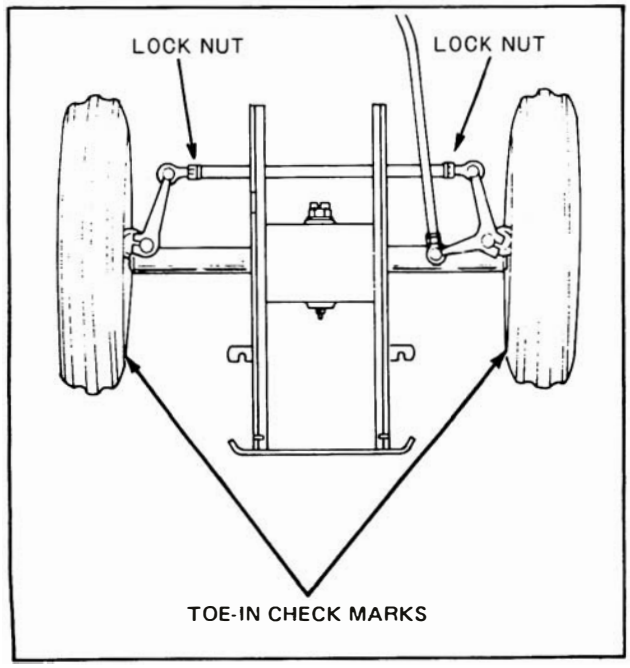


Figure 47 — Checking Toe-In

Adjusting Toe-In

1. Loosen the tie rod lock nut.
2. Adjust the tie rod tube assembly as required to give zero to 13/64-inch (0-5 mm) toe-in.
3. After the correct toe-in is obtained, tighten the tie rod lock nut.

BRAKE ADJUSTMENT

Whenever the brake pedal travel becomes excessive, or if the travel of one pedal is unequal to that of the other, adjustment of each pedal should be made in the following manner:

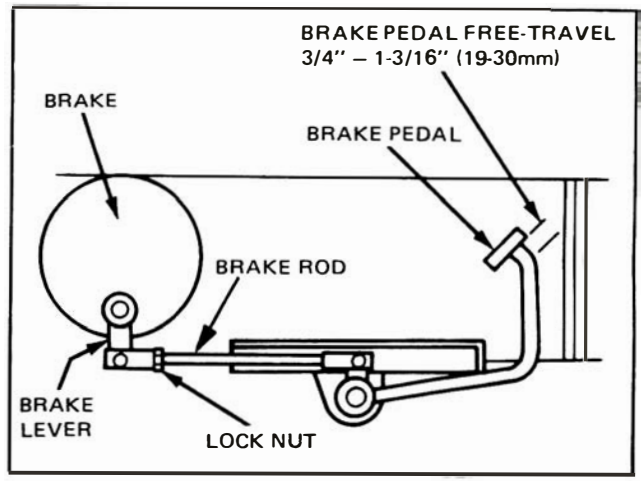


Figure 48 — Brake Pedal Adjustment

1. Jack the tractor up until both rear wheels are free to turn. Support with safety stands.
2. Loosen the lock-nut, Figure 48, and rotate the brake rod as necessary until there is 3/4-1-3/16 inch (19-30 mm) of pedal free play. Lengthening the rod increases free play while shortening the rod decreases free play.
3. Test drive the tractor to make sure the braking action of both rear wheels is equal. Readjust as necessary.

CLUTCH PEDAL ADJUSTMENT

To obtain maximum clutch life, it is essential that the clutch pedal free travel be checked every 50 hours so as to maintain free travel at 3/4 — 1-3/16 inches (19-30 mm), Figure 49.

1. Remove the cotter pin and clevis pin.
2. Turn the clevis to increase or decrease pedal travel as required.

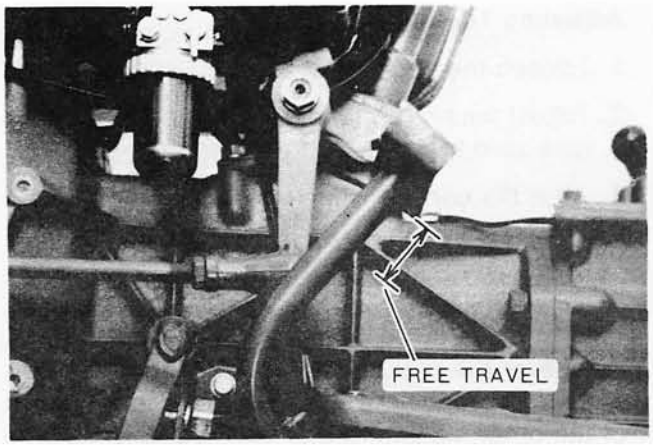


Figure 49 — Clutch Pedal Free Travel Adjustment

FOUR-WHEEL DRIVE

Upper King Pins

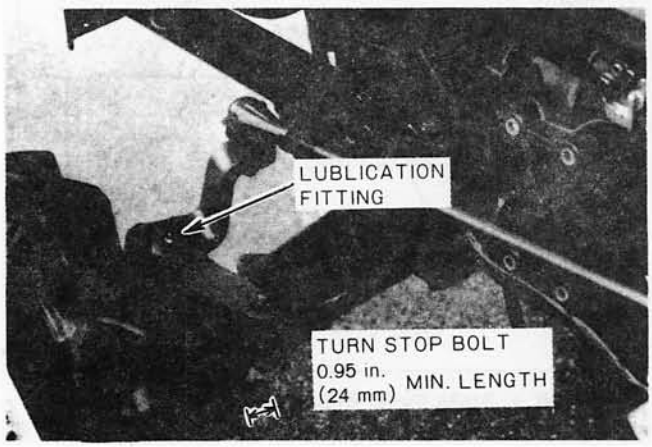


Figure 50 — King Pin Lubrication Point

Grease the upper king pins, Figure 50, after every 50 hours of operation under normal conditions. In extremely dirty conditions, lubrication should be made more often. Use a good quality, multi-purpose, lithium base grease, (See Specifications.)

FRONT AXLE DIFFERENTIAL CASE

Checking Oil Level: Check the oil level in the front axle differential case every 50 hours. A fill plug, Figure 51, is located on the front center of axle housing. The oil level is correct when the level is to the bottom of the check plug.

Changing Oil: Drain the front axle differential case every 300 hours by removing the drain plug, Figure 51. Replenish with a high-quality, extreme pressure gear lubricant with an anti-foam additive. Refer to the following chart for recommended viscosity grades.

TEMPERATURE	VISCOSITY GRADE
Under 86°F. (30°C.)	SAE 80
Over 86°F. (30 C.)	SAE 90 or 140

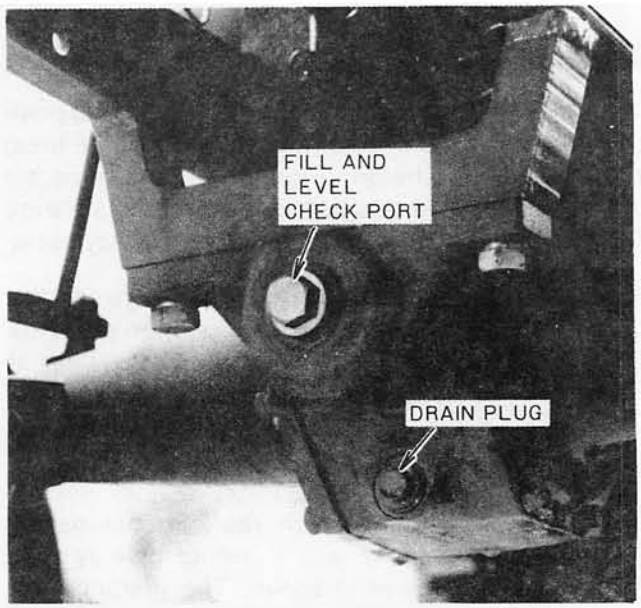


Figure 51 — Front Axle Differential Fill and Drain Plugs

FINAL REDUCTION GEAR CASES

Checking Oil Level: Check the oil level in each final reduction gear case after every 50 hours of operation by removing the fill and level plug, Figure 52, on each gear case. The oil should be level with the bottom of the plug opening.

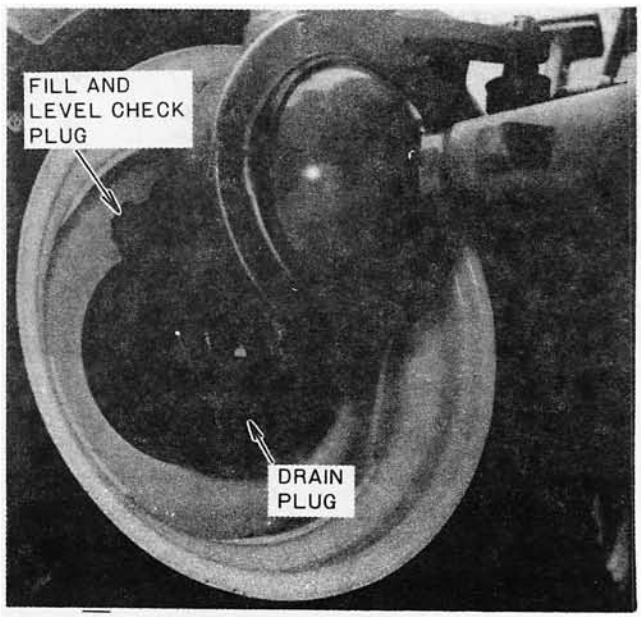


Figure 52 — Final Reduction Gear Case Fill and Drain Plugs

Changing Oil: Drain each final reduction gear case after every 300 hours of operation by removing the drain plug, Figure 52, on each gear case. Replenish with a high-quality, extreme pressure gear lubricant with an anti-foam additive. Refer to the following chart for recommended viscosity grades.

TEMPERATURE	VISCOSITY GRADE
Under 86°F. (30°C.)	SAE 80
Over 86°F. (30°C.)	SAE 90 or 140

The front-wheel drive king pin seals should be checked every 300 hours. See your Ford Tractor-Equipment Dealer.

TRACTOR STORAGE

Tractors that are to be stored for an extended period should be protected during storage. The following is a suggested list of operations to be carried out.

1. Thoroughly clean the tractor. Use touch-up paint where necessary to prevent rust.
2. Check the tractor for worn or damaged parts. Install new parts as required.
3. Raise the lift arms hydraulically to their fully raised position so the lift piston is in a fully extended position. This fills the cylinder with oil and will protect the cylinder wall surfaces from corrosion.
4. Lubricate the tractor. Drain and refill the transmission, hydraulic system and the rear axle with new oil. Drain the engine oil and refill with new lubricating oil. Also clean the air cleaner.
5. If the tractor is stored or removed from operation for an extended period, special precautions should be taken to protect the fuel injection pump and the injector nozzles against corrosion and gumming during the storage period.
   - Before storing, the fuel system should be flushed with a special oil, a quantity of which will remain in the system when the engine is shut down for storage.
   - Special diesel fuel system flushing oils are available from most oil companies. If special flushing oil is not readily obtainable, mix one U.S. pint (0.833 Imp. pt.) (.473 litres) of SAE 10 non-detergent engine oil with 10 U.S. quarts (8.33 Imp. qts.) (9.46 liters) of No. 2 diesel fuel.
   - Drain the fuel tank and pour two U.S. gallons (1.67 Imp. gals.) (7.57 liters) of the special flushing oil (or lubricating mixture) in the fuel tank.
   - Run the engine for 10 minutes to ensure complete distribution of the special oil through the injection pump and fuel injectors. There is no need to remove the injector nozzles.
   - Fill the fuel tank with No. 1 diesel fuel.

     IMPORTANT: Do not use No. 2 diesel fuel for winter storage because of wax separation and settling at low temperatures.
6. Drain the radiator and engine block. Flush the system, close the drain valves, and fill with 50/50 solution of permanent antifreeze and clear water.
7. Remove the battery and clean it thoroughly. Be sure that it is fully charged, and that the electrolyte is at the proper level. Place it in storage in a cool, dry place above freezing temperature. The battery should be charged periodically during storage.
8. Place blocking under the tractor axles to remove the weight from the tires.
9. Cover the exhaust pipe opening (if no rain cap is installed).
10. Place pedal spacer between clutch pedal and foot plate to separate clutch disc from flywheel (Figure 53).

Tractors that have been placed in storage should be completely serviced in the following manner before using:

1. Inflate the tires to the recommended pressures, and remove the blocking.

2. Check the oil level in the engine crankcase, transmission (includes hydraulic and rear axle) and front-wheel drive axle.
3. Install a fully-charged battery and remove the exhaust opening cover, if no rain cap is installed.
4. Check the cooling system, 50/50 solution of antifreeze and clear water.
5. Remove pedal spacer from between clutch pedal and foot plate.
6. Start the engine and allow it to idle a few minutes. Be sure the engine is receiving lubrication and that each control is functioning correctly.
7. Drive the tractor without a load and check to be sure it is operating satisfactorily.

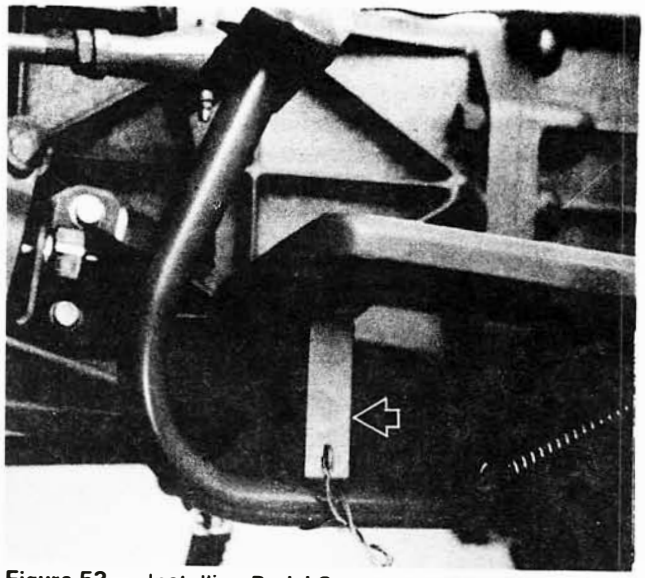


Figure 53 — Installing Pedal Spacer

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													
		Torque				Torque				Torque			
Bolt Size		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters		Foot Pounds		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			Fine thread		
		Pitch (mm)	Foot Pounds	Newton-Meters	Pitch (mm)	Foot Pounds	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

SPECIFICATIONS

The specifications on the following pages are provided for your information. For additional information, see your Ford Tractor-Equipment Dealer.

Properly Maintained Equipment is Safe Equipment

"Ford Motor Company, whose policy is one of continuous improvement, reserves the right to make changes in design and specifications at any time without notice and without obligation to modify units previously built."

ENGINE

Type	Diesel
Number of Cylinders	2
Bore	3.15 in. (8.0 cm)
Stroke	3.15 in. (8.0 cm)
Displacement	49.1 cu. in. (804 cc)
Compression Ratio	23:1
Firing Order	2-1
Low Idle Speed	750-850 rpm
Maximum Speed:	
High Idle	2850-2900
Rated	2700
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	3.4 U.S. Qts. 2.9 Imp. Qts. 3.2 Liters
Engine Crankcase:	
Less Filter	3.7 U.S. Qts. 3.1 Imp. Qts. 3.5 Liters
With Filter Change	3.8 U.S. Qts. 3.2 Imp. Qts. 3.6 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	11.4 in. (29 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	7.1 in. (18.0 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)	7.5 ft. (230 cm) Four Wheel Drive

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 @
2133 psi at 2700 rpm
(3.3 Imp. Gals. @
127 bar @ 2700 rpm)
System Relief Valve
Setting ..... 1849 psi (127 bar)

CAST IRON WEIGHTS

(3) Front End Weights ..... 33 lbs.
(15 kg) each
(4) Rear Wheel Weights ..... 44 lbs.
(20 kg) each

Draw Bars
Fixed Type ..... Standard

TIRES

Front:
Standard (AG) ..... (Four Wheel Drive)
6-12 R1, 4 Ply

Optional (TURF) ..... (Four Wheel Drive)
23 x 8.50-12, 2 Ply

Rear:
Standard (AG) ..... 8-16, R1, 4 Ply

Optional (TURF) 8-16, R3, 4 Ply

WHEEL BOLT TORQUES

Front Wheel
Disc-to-Hub ..... 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.)
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.

Temperature	Viscosity Grade and API Class
Year Around	SAE 10W30, 10W40 (CD)
Below 32° F (0° C)	SAE 10W (CD or CC/CD)
32 to 50° F (8–10° C)	SAE 20W (CD or CC/CD)
Above 50° F (10° C)	SAE 30W (CD or CC/CD)

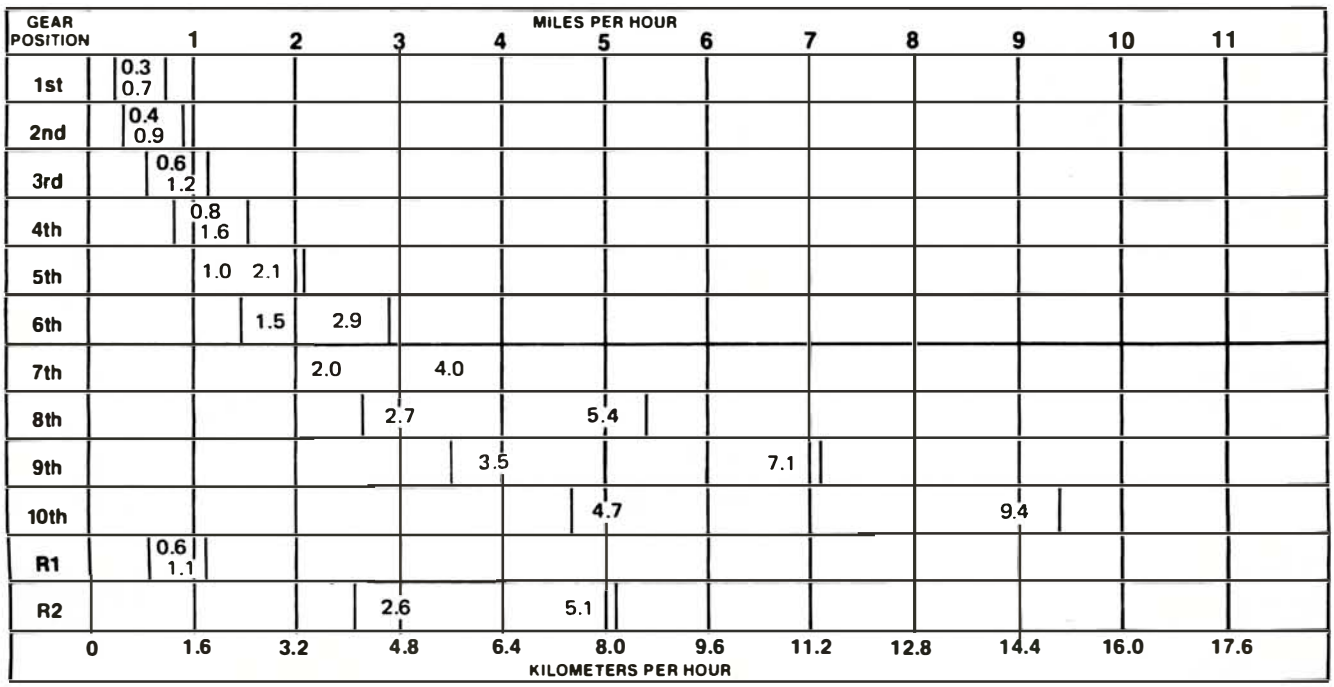
GENERAL DIMENSIONS

	Four Wheel Drive
Length	94.9 in. (241 cm)
Height:	
Top of Steering Wheel	49.6 in. (126 cm)
Top of ROPS	79.5 in. (202 cm)

GENERAL DIMENSIONS — Cont'd.

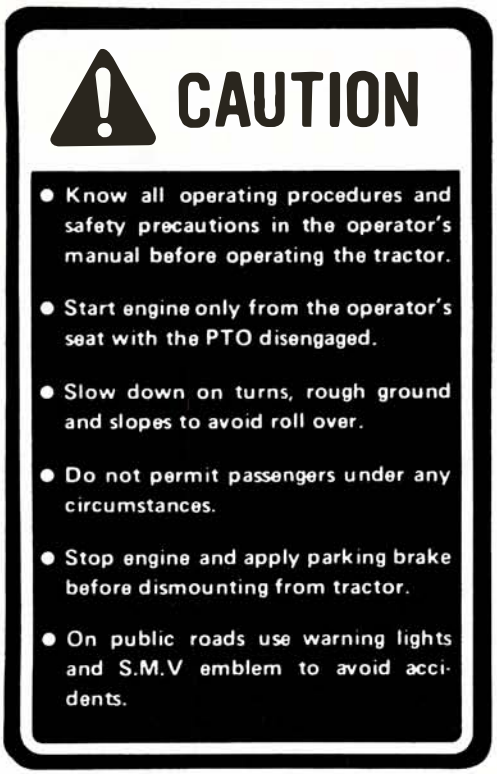
	Four Wheel Drive
Top of Vertical Exhaust	71.7 in. (182 cm)
Width	42.7 in. (108.5 cm)
Minimum Ground Clearance	10.4 in. (26.3 cm)
Adjustable Width:	
Front	34.6 in. (88 cm)
Rear	35.4-41.3 in. (90-105 cm)
Weight (Less Options)	1288 lbs. (580 kg)
Wheelbase	48 in. (122 cm)

FORD GROUND SPEEDS
From 1350 to 2700 RPM Engine Speeds with 8 x 16 Rear Tires



SAFETY AND INSTRUCTION DECALS

In the event that decals become damaged or illegible, they should be replaced with new decals at their original position.



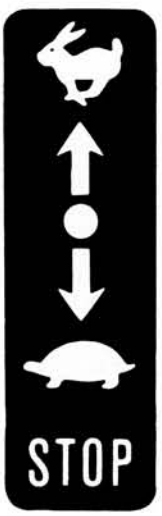
CAUTION – Know all operating procedures.
PART NO. – SBA-390191340.
LOCATION – Center of R.H. fender

WARNING – Keep hands, feet and clothing away from PTO and other moving parts.
PART NO. – SBA-390191360.
LOCATION – Top of PTO shaft.

Flasher Warning Light Switch
PART NO. – SBA-390191390.
LOCATION – Safety flasher switch, right of instrument panel.

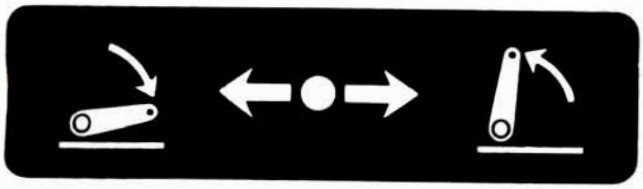
Starter Switch
PART NO. – SBA-390190030.
LOCATION – Starter Switch, right side of instrument panel.

WARNING – Keep hands and clothing away from rotating fan.
PART NO. – SBA-390191350.
LOCATION – Rear of radiator.

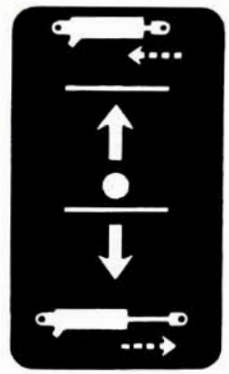


Hand Throttle Lever
PART NO. – SBA-390430090.
LOCATION – Hand throttle lever, rear of hood right side.

PTO Control Lever
PART NO. – SBA-390170650.
LOCATION – On the change lever case right side.



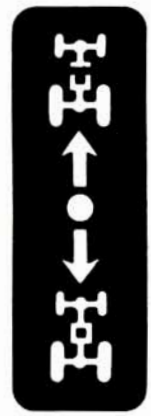
Hydraulic Lift Control Lever
PART NO. – SBA-390370280.
LOCATION – Center of R.H. fender.



Remote Control Lever (Optional)
PART NO. – SBA-390370300.
LOCATION – Front of quadrant bracket.

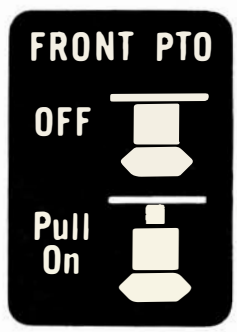
Range Selector Lever
PART NO. – SBA-390170660.
LOCATION – Right side of transmission housing.

Creeper Range Selector Lever (Optional)
PART NO. – SBA-390170670.
LOCATION – Right side of transmission housing.



Four-Wheel Drive Control Lever
PART NO. – SBA-390170630.
LOCATION – On the change lever cace left side.

Flow Control Valve
PART NO. – SBA-390370290.
LOCATION – Top of flow control knob.



Front PTO Switch (Optional)
PART NO. – SBA-390191380.
LOCATION – Left side of instrument panel.

Cold Start Aid
PART NO. – SBA-390191370.
LOCATION – Glow plug indicator left side of instrument panel.

WATCH YOUR PROOF METER HOURS

LUBRICATION AND MAINTENANCE SERVICE INTERVALS

LUBRICATION AND MAINTENANCE ITEM	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVAL
Radiator	●					Every 10 Hours or Daily
Engine Oil Level	●					
Air Cleaner	●					
Transmission Oil Level	●					Every 50 Hours
Front Diff Oil Level	●					
Front Axle Oil Level	●					
Tires	●					
Clutch Pedal					●	
Battery	●					
Lubrication Fittings						
Steering linkage			●			
Front wheel spindles			●			
3-point linkage			●			
Engine Oil				●		Every 100 Hours
Fuel Filter	●					
Air Cleaner	●					
Fuel Filter				●		Every 200 Hours
Engine Oil Filter				●		
Fan Belt					●	
Brakes					●	
Steering Free-Play					●	
Front Axle Oil				●		Every 300 Hours
Front Diff Oil				●		
Transmission–Rear Axle Oil				●		
Fuel Injectors	●					Every 600 Hours
Hydraulic Filter					●	
Radiator Coolant				●		Seasonal
Air Cleaner Element				●		

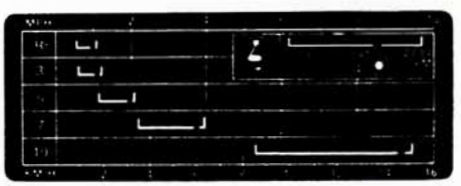
Refer to your Operator's Manual for additional information

Watch your proof meter hours-lubrication and maintenance service intervals.
PART NO. – SBA-390191310.
LOCATION – On the fuel tank.

DIESEL ENGINE OIL INFORMATION

Service Grade CD
SAE 10W30, 10W40 for year around use
or
SAE 10W in severe cold below 32 F
SAE 20W for winter use 32 to 50 F
SAE 30W for summer use above 50 F
Change interval every 100 hours

Diesel Engine Oil Information
PART NO. – SBA-190196490.
LOCATION – On the engine cylinder head cover.



Ground Speed Diagram
PART NO. – SBA-390171030.
LOCATION – Proof-meter, left side of instrument panel.

PRE-DELIVERY SERVICE

CHECK AND ADJUST AS REQUIRED

INOPERATIVE SERVICE CHECKS:

1. Tire pressure ☐
2. Air cleaner for dust and dirt removal and hose connections ☐
3. Radiator coolant level ☐
4. Fan belt tension ☐
5. Battery cleanliness. vent openings. electrolyte level. and charge ☐
6. Engine oil level ☐
7. Transmission and rear axle oil level ☐
8. Front Axle and Front Diff oil level (4WD) ☐
9. Starter safety switch operation ☐
10. Hydraulic Lift control adjustment ☐
11. Upper link. and hitch ☐
12. Brake adjustment and pedal equalization ☐
13. Operation of brake pedal lock ☐
14. Rear wheel disc and hub bolts for tightness ☐
15. Front wheel disc and hub nuts for tightness (2WD) ☐
16. Front wheel disc and hub bolts for tightness (4WD) ☐
17. Front wheel toe-in ☐
18. Fuel level ☐
19. Sheet metal and paint condition ☐
20. Check lift rod leveling crank for proper operation ☐
21. Drain diesel fuel filter ☐

OPERATIVE SERVICE CHECKS:

All operating checks are to be performed with the tractor at normal operating temperature.

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments. and fuel shut-off ☐
4. Starting and starter safety switch ☐
5. P.T.O. engagement and disengagement:
   - Clutch pedal and P.T.O. lever ☐
6. Hydraulic System:
   - Check hydraulic control and linkage for proper operation ☐
   - Flow control operation ☐
7. 4-wheel drive lever operation ☐
8. Low speed (creeper) lever ☐

TRACTOR MODEL NO. _____ **INSPECTION PERFORMED WARRANTY EXPLAINED** **TRACTOR SERIAL NO.** _____

_____

OWNER'S SIGNATURE **DATE** **DEALER'S SIGNATURE** **DATE**

50-HOUR SERVICE

CHECK AND ADJUST AS REQUIRED

INOPERATIVE SERVICE CHECKS:

1. Tire pressure ☐
2. Check air cleaner hose connection ☐
3. Replace diesel fuel filter(s) ☐
4. Tighten in-line pump delivery valve holders ☐
5. Radiator coolant level ☐
6. Fan belt tension ☐
7. Battery cleanliness and vent openings, electrolyte level, and charge ☐
8. All electrical cables, terminals, and wires ☐
9. Drain and refill engine oil ☐
10. Replace engine oil filter ☐
11. Transmission and rear axle oil level ☐
12. Front differential and front axle oil level (4WD) ☐
13. Injection pump timing ☐
14. Cylinder head bolt torque ☐
15. Clean Hydraulic System Oil Filter ☐

OPERATIVE SERVICE CHECKS:

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments, and fuel shut-off ☐
4. Starting and starter safety switch ☐
5. Valve lash ☐
6. Hydraulic System:
   - Hydraulic controls and linkage for proper operation ☐
   - Flow control operation ☐

PERFORMANCE SERVICE CHECKS:

1. Engine operation including throttle and governor operation ☐
2. Transmission including clutch ☐
3. Steering control ☐
4. Differential lock engagement and disengagement ☐
5. Brake action ☐
6. All optional equipment and accessories ☐

TRACTOR MODEL NO. _____ **INSPECTION PERFORMED** **TRACTOR SERIAL NO.** _____

_____

OWNER'S SIGNATURE **DATE** **DEALER'S SIGNATURE** **DATE**

PRE-DELIVERY SERVICE

CHECK AND ADJUST AS REQUIRED

INOPERATIVE SERVICE CHECKS:

1. Tire pressure ☐
2. Air cleaner for dust and dirt removal and hose connections ☐
3. Radiator coolant level ☐
4. Fan belt tension ☐
5. Battery cleanliness, vent openings, electrolyte level, and charge ☐
6. Engine oil level ☐
7. Transmission and rear axle oil level ☐
8. Front Axle and Front Diff oil level (4WD) ☐
9. Starter safety switch operation ☐
10. Hydraulic Lift control adjustment ☐
11. Upper link, and hitch ☐
12. Brake adjustment and pedal equalization ☐
13. Operation of brake pedal lock ☐
14. Rear wheel disc and hub bolts for tightness ☐
15. Front wheel disc and hub nuts for tightness (2WD) ☐
16. Front wheel disc and hub bolts for tightness (4WD) ☐
17. Front wheel toe-in ☐
18. Fuel level ☐
19. Sheet metal and paint condition ☐
20. Check lift rod leveling crank for proper operation ☐
21. Drain diesel fuel filter ☐

OPERATIVE SERVICE CHECKS:

All operating checks are to be performed with the tractor at normal operating temperature.

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments, and fuel shut-off ☐
4. Starting and starter safety switch ☐
5. P.T.O. engagement and disengagement:
   - Clutch pedal and P.T.O. lever ☐
6. Hydraulic System:
   - Check hydraulic control and linkage for proper operation ☐
   - Flow control operation ☐
7. 4-wheel drive lever operation ☐
8. Low speed (creeper) lever ☐

TRACTOR MODEL NO. _____ **INSPECTION PERFORMED** **WARRANTY EXPLAINED** **TRACTOR SERIAL NO.** _____

OWNER'S SIGNATURE **DATE** **DEALER'S SIGNATURE** **DATE**

50-HOUR SERVICE

CHECK AND ADJUST AS REQUIRED

INOPERATIVE SERVICE CHECKS:

1. Tire pressure ☐
2. Check air cleaner hose connection ☐
3. Replace diesel fuel filter(s) ☐
4. Tighten in-line pump delivery valve holders ☐
5. Radiator coolant level ☐
6. Fan belt tension ☐
7. Battery cleanliness and vent openings, electrolyte level, and charge ☐
8. All electrical cables, terminals, and wires ☐
9. Drain and refill engine oil ☐
10. Replace engine oil filter ☐
11. Transmission and rear axle oil level ☐
12. Front differential and front axle oil level (4WD) ☐
13. Injection pump timing ☐
14. Cylinder head bolt torque ☐
15. Clean Hydraulic System Oil Filter ☐

OPERATIVE SERVICE CHECKS:

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments, and fuel shut-off ☐
4. Starting and starter safety switch ☐
5. Valve lash ☐
6. Hydraulic System:
   - Hydraulic controls and linkage for proper operation ☐
   - Flow control operation ☐

PERFORMANCE SERVICE CHECKS:

1. Engine operation including throttle and governor operation ☐
2. Transmission including clutch ☐
3. Steering control ☐
4. Differential lock engagement and disengagement ☐
5. Brake action ☐
6. All optional equipment and accessories ☐

TRACTOR MODEL NO. _____ **INSPECTION PERFORMED** **TRACTOR SERIAL NO.** _____

OWNER'S SIGNATURE **DATE** **DEALER'S SIGNATURE** **DATE**

Ford Tractor Operations

Troy, Michigan 48084

Ford Motor Company

SE 3973 1980

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