Stock 20182

Tractor 1715

OPERATOR'S MANUAL

NEW HOLLAND

42171510 10/96

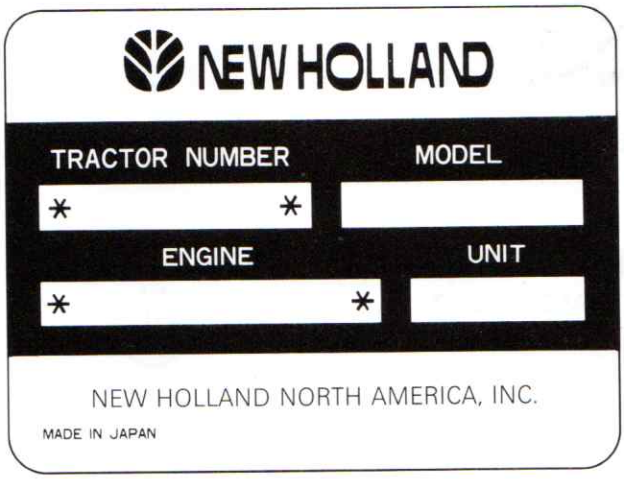

NEW HOLLAND
1715
FORD

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 **61** and **63**. The copy on page **61** is your record of the service performed and the copy on page **63**, which is to be removed from the manual, is your dealer's. MAKE SURE THAT YOU AND THE DEALER SIGN BOTH COPIES.

After you have operated the tractor for 50 hours take your tractor and this manual to your selling dealer. He will perform the factory recommended 50 hour service. You will be responsible for the cost of lubricants, filters and other items replaced as part of normal maintenance. Prior to taking the tractor to your selling dealer for service, it is recommended that you contact them to determine any other charges for which you may be responsible.

A PRODUCT 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.



NEW HOLLAND's policy is one of continuous improvement, and the right to change prices, specification or equipment at any time without notice is reserved.

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

CONTENTS

INTERNATIONAL SYMBOLS

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


Engine speed


Hours recorded


Engine water temperature


Air filter


Engine oil pressure


Hazard warning


Axle connect


Axle disconnect


Continuously variable


Increase

Decrease


Fuel level


Creeper range


High range


Middle range


Low range

N Neutral


Diesel fuel


Glow


Engine stop


Engine oil


Parking brake


Lights (upper beam)


Lights (lower beam)


Lock


Release lock


Up


Down


Differential lock


Read operator's manual


Battery


Power take-off (on)


Power take-off (off)


"Tortoise," slow or minimum setting


"Hare," fast or maximum setting


Warning


Control lever operating direction


Rock shaft (raised)


Rock shaft (lowered)


Remote cylinder (float)


Remote cylinder (retracted)

Remote cylinder (extended)

Forward

Warning! contains asbestos

F1001

SAFETY PRECAUTIONS

The following precautions are suggested to help prevent accidents.

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. Read and take the following precautions before operating this tractor to help prevent accidents. Equipment should be operated only by those who are responsible and instructed to do so.

THE TRACTOR

1. Read the Operator's Manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
2. Use an approved Rollbar and Seat Belt for safe operation. Overturning a tractor without a rollbar can result in death or injury. If your tractor is not equipped with a rollbar and seat belt, see your NEW HOLLAND Dealer.
3. Always use the seat belt. Do not use the seat belt if the rollbar has been removed from the tractor.
4. If a front end loader is to be installed, always use a FOPS canopy to avoid injury from falling objects.
5. Use the handholds and step plates when getting on and off the tractor to prevent falls. Keep steps and platform cleared of mud and debris.
6. Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.
7. Replace all missing, illegible, or damaged safety decals. See list of decals on page 54.
8. Keep safety decals clean of dirt and grime.

SERVICING THE TRACTOR

1. The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while system is hot. Always turn cap slowly to the first stop and allow the pressure to escape before removing the cap entirely.
2. Do not smoke while refueling the tractor. Keep any type of open flame away. Wait for engine to cool before refueling.
3. Keep the tractor and equipment, particularly brakes and steering, maintained in a reliable and satisfactory condition to ensure your safety and comply with legal requirements.
4. Keep open flame away from battery or cold weather starting aids to prevent fires or explosions. Use jumper cables according to instructions to prevent sparks which could cause explosion.
5. Stop the engine before performing any service on the tractor.
6. Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury.

   - **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
   - Stop engine and relieve pressure before connecting or disconnecting lines.
   - Tighten all connections before starting engine or pressurizing lines.

   If fluid is injected into the skin, obtain medical attention immediately or gangrene may result.
7. Do not modify or alter or permit anyone else to modify or alter this tractor or any of its components or any tractor function without first consulting a NEW HOLLAND Dealer.
8. The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle or any other part of the fuel injection system. Failure to follow these instructions can result in serious injury.
9. Continuous long term contact with used engine oil may cause skin cancer. Avoid prolonged contact with used engine oil. Wash skin promptly with soap and water.
10. Some components on your tractor, such as gaskets, may contain asbestos. Breathing asbestos dust is dangerous to your health. You are therefore advised to have any maintenance or repair operations on such components carried out by an authorized NEW HOLLAND Dealer. If, however, service operations are to be undertaken on parts that contain asbestos, the essential precautions listed below must be observed :

    - Work out of doors or in a well ventilated area.
    - Dust found on the tractor or produced during work on the tractor should be removed by extraction not by blowing.
    - Dust waste should be dampened, placed in a sealed container and marked to ensure safe disposal.
    - If any cutting, drilling, etc., is attempted on materials containing asbestos, the item should be dampened and only hand tools or low speed power tools used.

OPERATING THE TRACTOR

1. Apply the parking brake, place the P.T.O.lever in the "OFF" position, the lift control lever in the down position, the remote control valve levers in the neutral position, and the transmission in neutral before starting the tractor.
2. Do not start the engine or operate controls while standing beside the tractor. Always sit in the tractor seat when starting the engine or operating controls.
3. Do not bypass the neutral start switches. Consult your NEW HOLLAND Dealer if your neutral start controls malfunction. Use jumper cables only in the recommended manner. Improper use can result in tractor runaway.
4. Avoid accidental contact with the gear shift lever while the engine is running. Unexpected tractor movement can result from such contact.
5. Do not get off the tractor while it is in motion.
6. Disengage PTO, shut off the engine and apply the parking brake before getting off the tractor.
7. Do not park the tractor on a steep incline.
8. Do not operate the tractor engine in an enclosed building without adequate ventilation. Exhaust fumes can cause death.
9. If power steering or engine ceases operating, stop the tractor immediately.
10. Pull only from the drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle or any point above the axle may cause the tractor to upset.

(cont.)

SAFETY PRECAUTIONS (Continued)

11. 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.
12. Always set the hydraulic selector lever in position control when attaching equipment and when transporting equipment. Be sure hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
13. Do not leave equipment in the raised position.
14. Use the Flasher/Turn Signal Lights and SMV signs when traveling on public roads both day and night unless prohibited by law.
15. Be sure tractor lights are adjusted to prevent blinding an oncoming vehicle operator.

DRIVING THE TRACTOR

1. Watch where you are going especially at row ends, on roads, around trees and low hanging obstacles.
2. To avoid upsets drive the tractor with care and at speeds compatible with safety, especially when operating over rough ground, when crossing ditches or slopes, and when turning corners.
3. Lock tractor brake pedals together when transporting on roads to provide two wheel braking.
4. Keep the tractor in the same gear when going downhill as used when going uphill. Do not coast or free wheel down hills.
5. Any towed vehicle whose total weight exceeds that of the towing tractor should be equipped with brakes for safe operation.
6. When the tractor is stuck or tires are frozen to the ground, back up the tractor to prevent upset.
7. Always check overhead clearance, especially when transporting the tractor.
8. When operating at night, adjust lights to prevent blinding an oncoming driver.

OPERATING THE P.T.O.

1. When operating P.T.O. driven equipment, shut off the engine and wait until the P.T.O. stops before getting off the tractor and disconnecting the equipment.
2. Do not wear loose clothing when operating the power take-off, or when near rotating equipment.
3. When operating stationary P.T.O. driven equipment, always place both gear shift levers in neutral, apply the tractor parking brake and block the rear wheels front and back.
4. To avoid injury, do not clean, adjust, unclog or service P.T.O. driven equipment when the tractor engine is running.
5. Make sure the P.T.O. master shield is installed at all times and always replace the P.T.O. shield cap when the P.T.O. is not in use.

DIESEL FUEL

1. Under no circumstances should gasoline, alcohol or blended fuels be added to diesel fuel. These combinations can create an increased fire or explosive hazard. Such blends are more explosive than pure gasoline in a closed container such as a fuel tank. **Do not use these blends.**
2. Never remove the fuel cap or refuel with the engine running or hot.
3. Do not smoke while refueling or when standing near fuel.
4. Maintain control of the fuel filler pipe nozzle when filling the tank.
5. Do not fill the fuel tank to capacity. Allow room for expansion.
6. Wipe up spilled fuel immediately.
7. Always tighten the fuel tank cap securely.
8. If the original fuel tank cap is lost, replace it with a Ford approved cap. A non-approved, proprietary cap may not be safe.
9. Keep equipment clean and properly maintained.
10. Do not drive equipment near open fires.
11. Never use fuel for cleaning purposes.
12. Arrange fuel purchases so that winter grade fuels are not held over and used in the spring.

SAFETY FRAME (ROPS)

If your Ford Tractor is equipped with a safety frame it must be maintained in a serviceable condition. Be careful when driving through doorways or working in confined spaces with low headroom.

Under no circumstances:

1. ····modify, drill or alter the safety frame in any way as doing so could render you liable to legal prosecution.
2. ····attempt to straighten or weld any part of the main frame or retaining brackets which have suffered damage. By doing so you may weaken the structure and endanger your safety.
3. ····secure any parts on the main frame or attach your safety frame with other than the special high tensile bolts and nuts specified.
4. ····attach chains or ropes to the main frame for pulling purposes.
5. ····take unnecessary risks even though your safety frame affords you the maximum protection possible.

When you see this symbol  **it means:** ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

SEAT, SEAT BELT AND ROPS

TRACTOR SEAT

Your NEW HOLLAND 1715 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 fore and aft by repositioning the seat pin shown in Figure **2**.
An additional inch of adjustment can be obtained by repositioning the mounting bolts shown in Figure **2**.

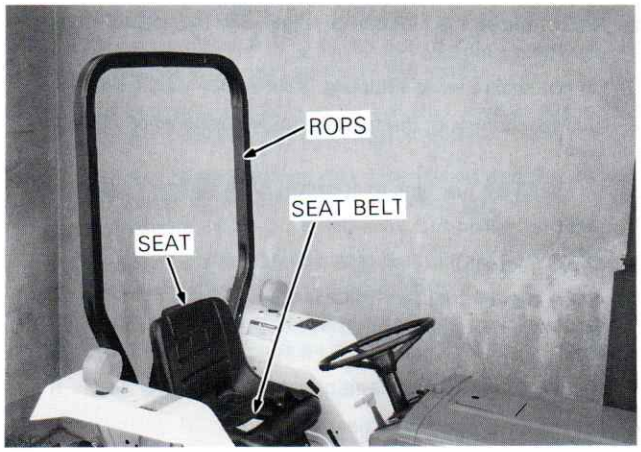


Figure 1 – Tractor Seat, Seat Belt and ROPS

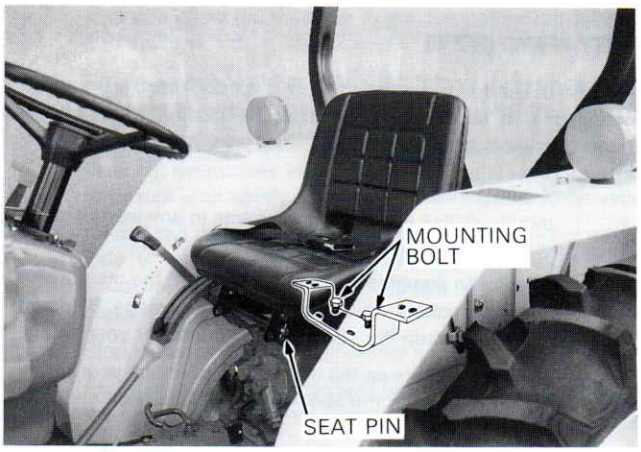


Figure 2 – Tractor Seat Adjustment

ROLLOVER PROTECTIVE STRUCTURE (ROPS)

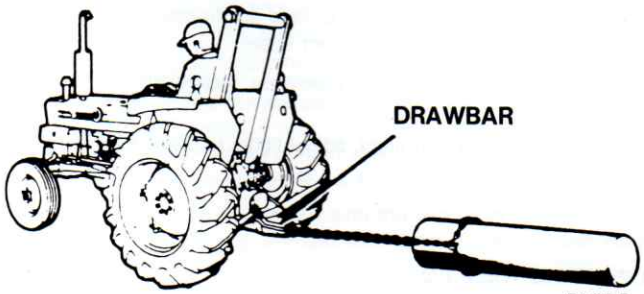
A Roll Over Protective Structure (ROPS) and seat belts are standard equipment for this tractor at time of factory assembly. If the ROPS was deleted by the original purchaser or has been removed, it is recommended that you equip your tractor with a Roll Over Protective Structure (ROPS) and seat belts. ROPS are effective in reducing injuries during tractor overturn accidents. Overturning tractor without a ROPS can result in serious injury or death.

Roll Over Protective Structure (ROPS), and seat belts are available form your NEW HOLLAND Dealer.

The safety offered by the ROPS and seat belt is minimized if your seat belt is not buckled. Always use your seat belt — they save lives.

WARNING: Always wear the **seat belt** when the tractor is equipped with a **ROPS**. DO NOT use the **seat belt** if the **ROPS** is removed from the tractor.

WARNING: DO NOT attach chains or ropes to the **ROPS** for pulling purposes since the tractor can 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 overhead clearance for the **ROPS**.



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

LIGHTING

FLASHER WARNING LAMP

Your NEW HOLLAND tractor is equipped with flasher warning lights, Figure **3**. The switch, Figure **4** for the warning lights is located on the instrument panel.

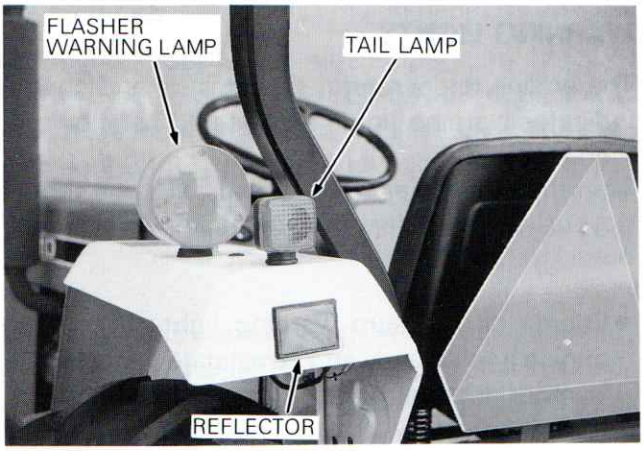


Figure 3 — Flasher Warning and Tail Lamp

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

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

LIGHT SWITCH

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

Turning counter-clockwise . . . . . "OFF"
Turning clokwise . . . . Headlights and Tail Lamps "ON"

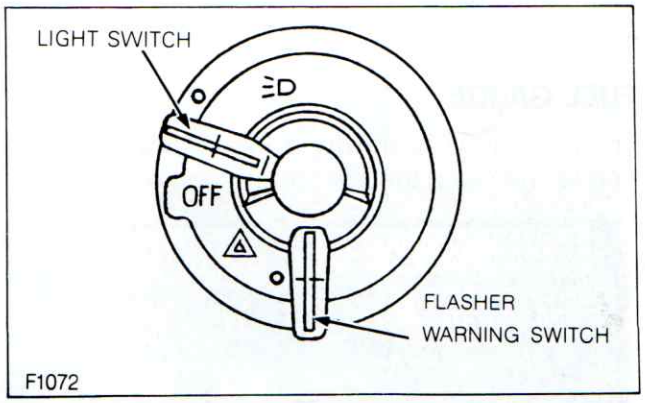


Figure 4 — Combination Switch

INSTRUMENT PANEL

KEY SWITCH

The key switch is shown in Figure **5**. Turning the key to the left will activate the cold-start aid.

KEY SWITCH (Continued)

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.

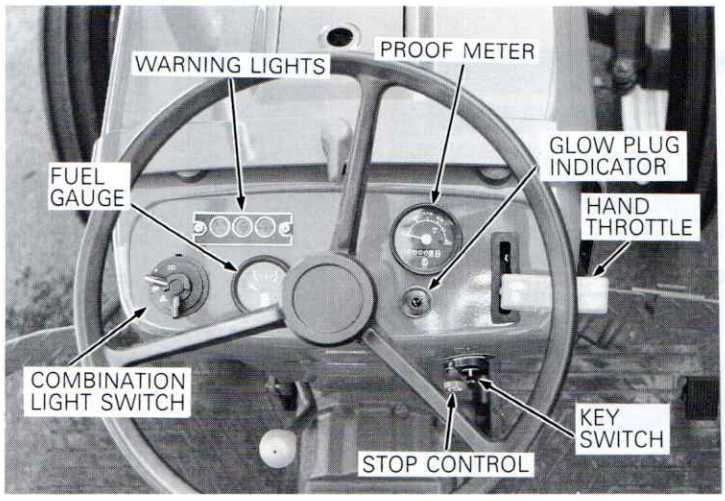


Figure 5 — Instrument Panel

The starting circuit can only be activated when the clutch pedal is fully depressed and the P.T.O. control lever is in the "OFF" position and the mid P.T.O. lever in the "OFF" position, if equipped. Always check to make certain the transmission main shift lever is in neutral before attempting to start the engine. Refer to page **13** for complete starting instructions.

FUEL GAUGE

The fuel gauge is shown in Figure **5** and **6**. The needle indicates the amount of fuel in the tank.

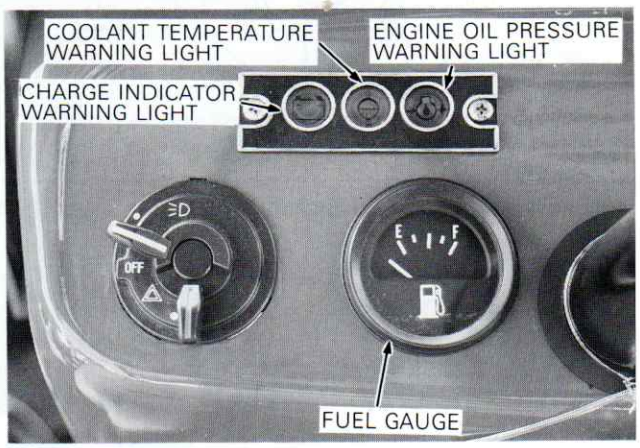


Figure 6 — Fuel Gauge and Warning Lights

FUEL SHUT-OFF VALVE

The fuel shut-off valve is shown in Figuer **7**. To open the fuel shut-off valve, move the handle so that it points straight up and down. To close the fuel shut-off valve, move the handle to the horizontal position. Always shut off the valve when servicing any portion of the fuel system.

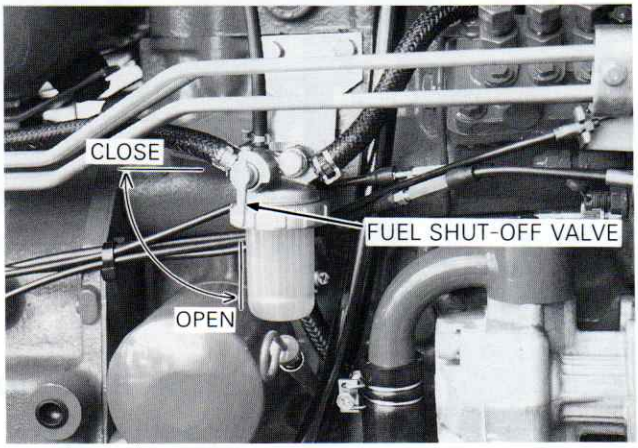


Figure 7 — Fuel Shut-off Valve

WARNING LIGHTS

The engine temperature, oil pressure and charge indicator warning lights are located as shown in Figure **5** and **6**.
After the engine has been started, all 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 will become fully discharged.
- Coolant temperature warning light : The warning light is not on under normal operating conditions. If the light comes on, stop the engine and investigate. Regularly check the radiator for proper coolant level.

WARNING : 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 right side of the instrument panel, Figure **5**. 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.
- Use the Proof-Meter when operating P.T.O. driven equipment. P.T.O.-driven equipment must be operated at an engine speed not to exceed 2419 rpm as shown by the P.T.O. symbol on the rpm scale. Additional information on P.T.O. operation can be found on page **16**.

Ground speeds are indicated on a decal attatched to the top of the left fender. Additional ground speed information can be found on page **53**.

THROTTLE CONTROLS

HAND THROTTLE AND ENGINE STOP CONTROL

The hand throttle is shown in Figure **8**. Push the throttle forward to increase engine rpm. Pull the throttle rearward to decrease engine rpm. Turning the key switch to the "OFF" position and pulling the fuel stop control knob stops the engine.

Figure 8 – Hand Throttle

FOOT THROTTLE

The foot throttle, shown in Figure **9**, 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.

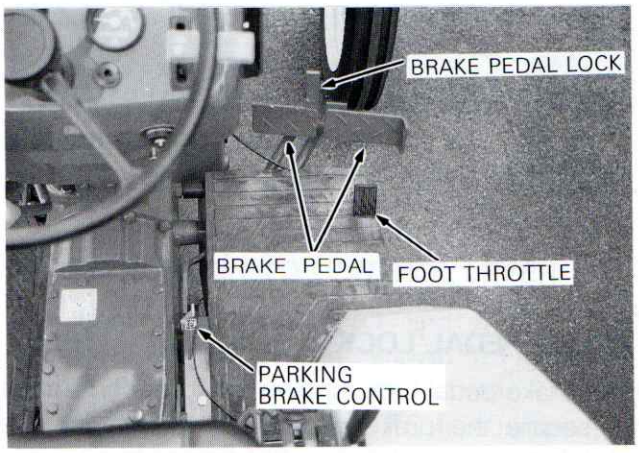


Figure 9 – Foot Throttle and Brake Control

BRAKE CONTROLS

BRAKE PEDALS

The brake pedals are shown in Figure 9. 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 speed, depress the right or left brake pedal as required.

WARNING: 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 9, 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, shown in Figure 9, 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 parking brake :

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

To release the parking brake :

- Depress the brake pedals to release the latch.
- 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 10. Depressing the pedal locks the rear axle shafts together, providing additional traction in wet or loose soil. Refer to page 17 for differential lock operating information.

WARNING: Tractor is very difficult to steer with differential locked.

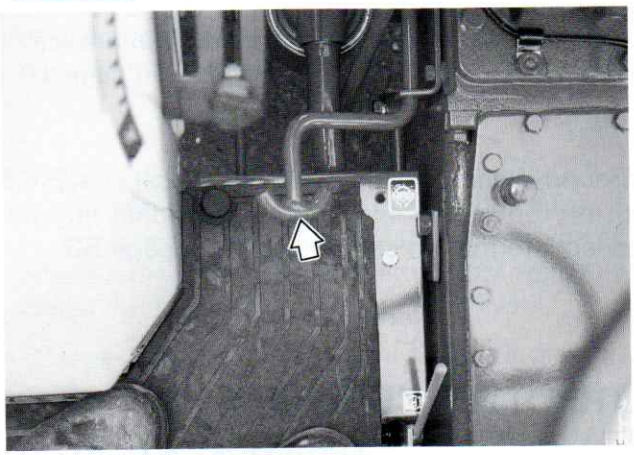


Figure 10 – Differential Lock Pedal

TRANSMISSION AND PTO CONTROLS

TRANSMISSION GEARSHIFT LEVERS

The transmission main shift lever is shown in

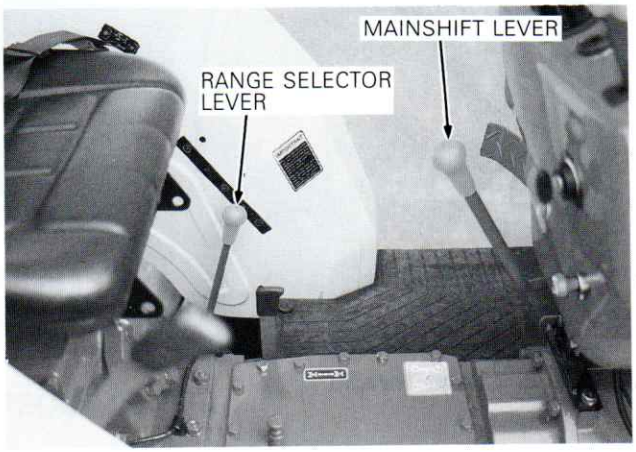


Figure 11 – Transmission Controls

Figure 11. A diagram showing the shift pattern is shown on the top of transmission housing. Range selector is located at the left-hand side of the seat, Figure 11. Three forward and one reverse speed are provided for each of the three ranges. This provides a total of 9 forward and 3 reverse speeds.

FOUR-WHEEL DRIVE (OPTIONAL)

The shift lever for the four-wheel drive is located on the top left-hand side of the rear-axle center housing, Figure 12.

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

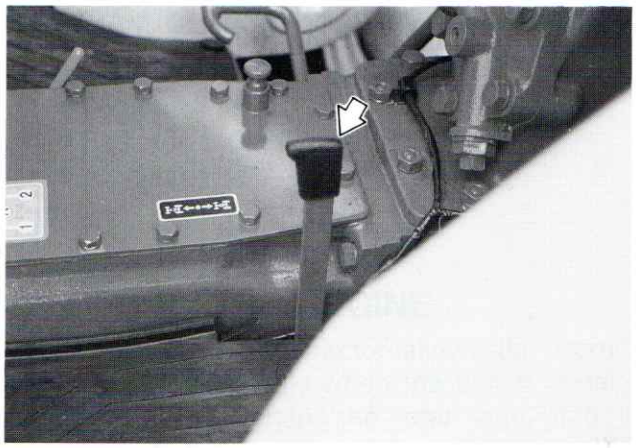


Figure 12 — Four-Wheel Drive Lever (Optional)

CLUTCH PEDAL

The foot-operated clutch pedal, Figure 13, must be completely depressd to stop forward travel and P.T.O. shaft rotation. Always fully depress the pedal when changing gears, engaging P.T.O. or engaging four-wheel drive.

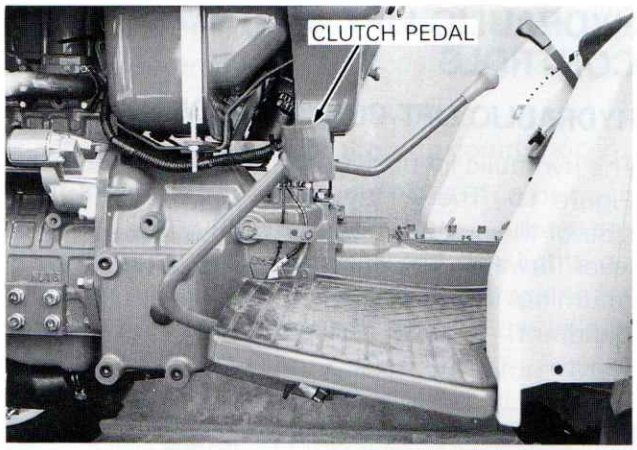


Figure 13 — Clutch Control

TRANSMISSION PTO CONTROL LEVER

The transmission rear PTO and mid PTO (if equipped) control lever are shown in Figure 15. One engages and disengages the rear PTO and the other operates the mid PTO (if equipped). If the tractor engine is running, always depress the clutch pedal fully before moving the lever.

Move the rear PTO control lever forward to engage and rearward to disengage the rear PTO.

Move the mid PTO control lever forward to engage and rearward to disengage the mid PTO.

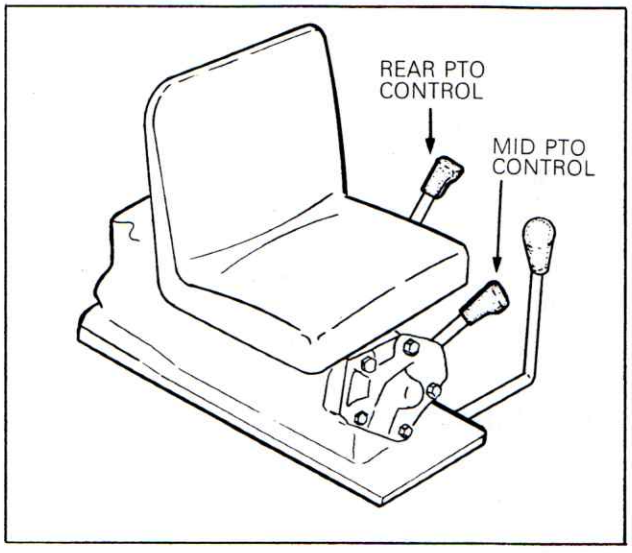


Figure 15 — PTO Controls

HYDRAULIC LIFT SYSTEM CONTROLS

HYDRAULIC LIFT CONTROL LEVER

The hydraulic lift position control lever is shown in Figure 16. 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.

Figure 16 — Hydraulic Lift System Controls

REMOTE CONTROL VALVES — OPTIONAL

Tow types of remote control valves are available for your NEW HOLLAND Tractor. A single and/or double spool valve is availabe to operate one or two remote cylinders for rear/mid and front mounted implements.

Refer to page 20 for operating instructions.

HYDRAULIC MANIFOLD BLOCK

Your NEW HOLLAND Tractor is equipped with a hydraulic manifold block, which can be utilized to supply oil to hydraulic equipment such as a front loader, dozer blade, etc.

Refer to "OPERATING HYDRAULIC MANIFOLD BLOCK" on page 20.

BREAK-IN PROCEDURES

Your NEW HOLLAND Tractor will provide long and dependable service if given proper care during the 50-hour break-in period. During the first 50 hours of operation :

1. Avoid "lugging" the engine. Operating in too high a gear under heavy load may cause engine "lugging", which is indicated when the engine will not respond to a throttle increase.
2. Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. You will save fuel and minimize engine wear by selecting the correct gear ratio for a particular operation. Operating the tractor in low gear with a light load and high engine speed will waste fuel.
3. Avoid prolonged operation at either high or low engine speeds without a load on the engine.
4. Check the instruments frequently and keep the radiator and oil reservoirs filled to their recommended levels. Daily checks include :
   - Engine oil level
   - Radiator coolant
   - Air cleaner

STARTING THE ENGINE

A key switch on the tractor allows the starting motor to be used only when the clutch pedal is depressed and when the rear and mid (if equipped) P.T.O. control levers are in the "OFF" position. For safe operation the range selector lever and main transmission should be in neutral position prior to starting the engine.

WARNING : Never attempt to start the engine while standing beside the tractor – always sit in the seat when starting the engine.

IMPORTANT : Do not engage the starting motor continuously for more than 30 seconds ; doing so may cause starting motor failure.

WARM WEATHER STARTING

To start a cold engine in warm weather or to start an engine that is warm :

1. Depress the clutch pedal fully, move the transmission shift lever to the neutral position and P.T.O. levers to the "OFF" position.
2. Move the hand throttle forward to 1/4 to 1/3 open position and push the stop contrl knob in.
3. Turn the key switch to the "START" position, Figure **17**. 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.

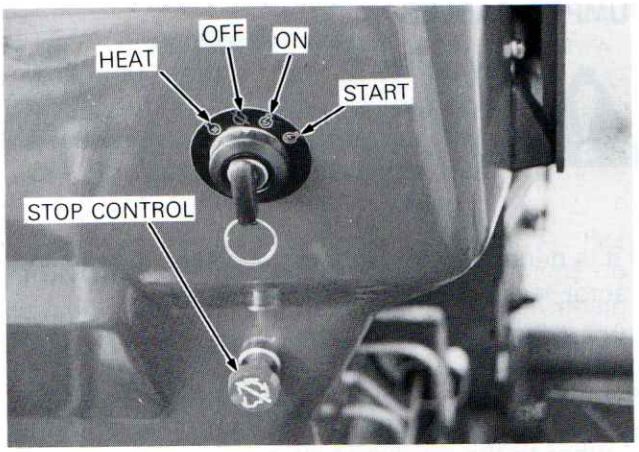


Figure 17 — Key Switch and Stop Control

COLD WEATHER STARTING

If the engine fails to start using the preceding warm weather starting procedure or when starting the engine in cold weather :

1. Depress the clutch pedal fully and move the transmission shift levers to the neutral position and P.T.O. levers to the "OFF" position.
2. Move the hand throttle forward to 1/4 to 1/3 open position and push the stop control knob in.
3. Turn the key switch to "HEAT" to preheat the precombustion chambers and wait until the cold-start aid indicator glows red. (approximately 20 seconds).
4. Turn the key switch to the "START" position. When the engine starts, release the key.

IMPORTANT : In cold weather below 23°F (−5°C) start the engine after holding the key switch to the "HEAT" position for an additional 10 seconds even if the glow plug indicator has shown red.

WARNING: Do not use ether with the thermostat starting aid.

NOTE: A coolant immersion heater which provides for 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

WARNING: Start engine only from operator's seat. If safety start switches are bypassed, engine can start with transmission and/or P.T.O. in gear.

If it is necessary to use jumper cables to start the tractor, follow the instructions below.

1. Shield eyes.
2. Connect one end of the jumper cable to the tractor battery positive (+) terminal and the other to the auxiliary battery positive (+) terminal. Connect one end of the other cable first to the auxiliary battery negative (−) terminal, and the other end to the tractor starter ground terminal. Follow the starting procedures indicated previously above.

   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.

WARNING: Batteries contain sulfuric acid and produce explosive gases. 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, pull the stop control to stop the engine and turn the key switch to the "OFF" position shown in Figure 17.

IMPORTANT: Failure to turn the key switch to the "OFF" position when engine has stopped will allow the warning lights to remain on, causing the battery to discharge.

OPERATING THE TRANSMISSION, FOUR-WHEEL DRIVE AND P.T.O.

TRANSMISSION CONTROLS

The transmission operates through the use of a clutch pedal, Figure 13, a main shift lever and a range selector lever, Figure 18. Ground speeds for the various gear ratios can be found on page 53. Figure 19 shows the combinations of main shift lever and range selector lever positions to obtain the 9 forward and 3 reverse speeds.

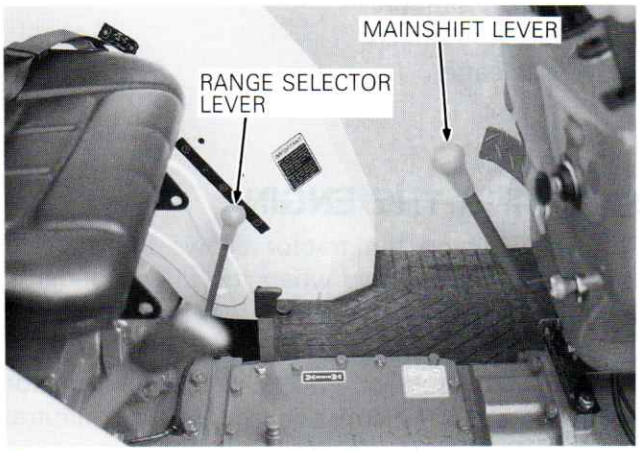


Figure 18 Transmission Controls

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.

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

Figure 19 – Speed Range Combinations

IMPORTANT: When shifting down on the go, shift through each gear sequence. Skipping gears while down shifting can damage components due to over speed.

FOUR-WHEEL DRIVE

The four-wheel drive is engaged and disengaged through the use of the lever on the top left-hand side of the transmission, Figure **12**.

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

IMPORTANT: The front wheel drive should be used when additional traction is required while operating in loose soil, wet, slippery conditions or on slopes. For normal operation on firm soil, level hard surfaces and roading the unit at high speeds, front wheel drive should be disengaged to maximize tire and driveline life and fuel economy.

FIXED DRAWBAR (Standard)

The Model 1715 is equipped with a non-adjustable fixed drawbar.

IMPORTANT: If using pull-type PTO implements the optional extendable or swinging drawbar must be obtained to assure proper PTO to drawbar relationship, Figure **20**. See your NEW HOLLAND dealer.

SWINGING DRAWBAR (Optional)

The swinging drawbar may be fixed or allowed to swing the full width of the hanger.

Fasten the drawbar in position using the swing limiter pins when pulling equipment which requires accurate positioning and when transporting equipment.

Allow the drawbar to swing when pulling ground engaging equipment which does not require accurate positioning. This will make steering and turning easier.

WARNING: Always secure the drawbar to prevent swinging when transporting equipment or when operating any but ground engaging equipment.

IMPORTANT: When transporting equipment on the highway it is recommended that a safety chain having a tensile strength equal to the gross weight of the implement be installed between the tractor and implement hitch.

POWER TAKE-OFF

The power take-off (P.T.O.) in your tractor transfers engine power directly to mounted or pull-type P.T.O. equipment. The standard rear P.T.O. speed is 540±10 rpm. Most P.T.O. equipment is designed to operate efficiently at this speed. This speed is obtained when engine rpm is set at 2419 rpm, as indicated by the P.T.O. symbol on the Proof-Meter rpm scale.

IMPORTANT: Do not exceed 2419 rpm engine speed when operating P.T.O.-driven equipment.

The optional mid P.T.O. speed is 2000±10 rpm. This speed is obtained when the engine speed is set at 2377 rpm.

The transmission rear P.T.O. and optional mid P.T.O. are controlled through the levers shown in Figure **15**. The transmission P.T.O. can be engaged, operated, and disengaged as described under "POWER TAKE-OFF OPERATION."

IMPORTANT: The optional extendable or swinging drawbar is required to provide standard rear P.T.O. drawbar relationship, Figure 20.

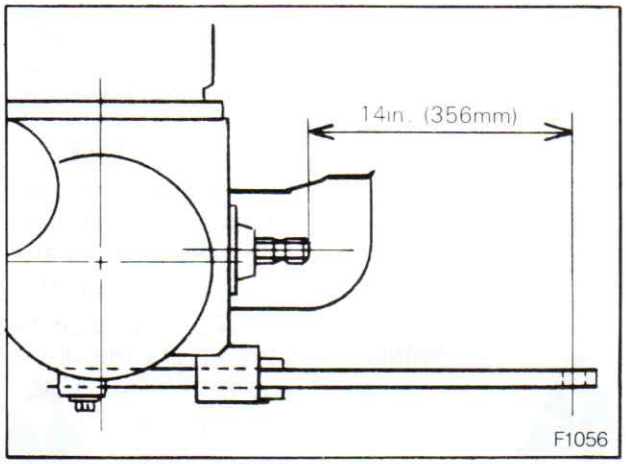


Figure 20 — Drawbar Settings for PTO Operation (optional Drawbar required)

P. T. O. SHIELD AND CAP

The P.T.O. shield, shown in Figure 21, is standard equipment. The shield is to be used with both mounted and pull-type equipment. The P.T.O. cap should always be installed when the P.T.O. is not in use.

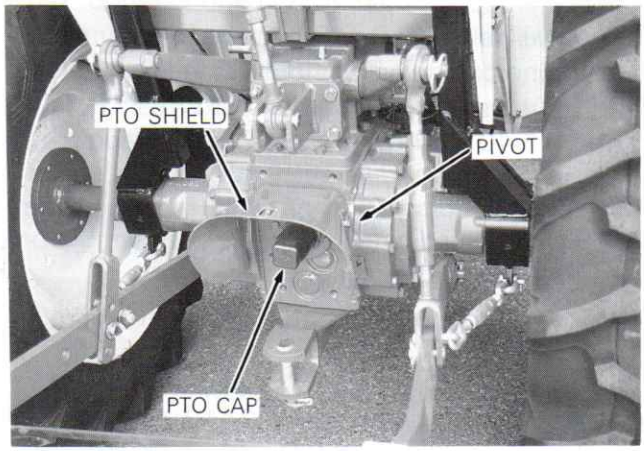
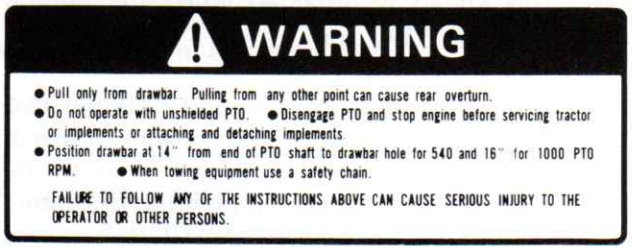


Figure 21 — P.T.O. Shield and Cap



POWER TAKE-OFF OPERATION

1. Attaching the P.T.O..
   - Stop the engine.

WARNING: To reduce the possibility of personal injury comply with the following before attaching or detaching P.T.O. equipment and before working on or clearing P.T.O. equipment.

   - Depress the clutch pedal completely and move the transmission gearshift lever to the neutral (N) position.
   - Set parking brake.
   - Disengage the P.T.O. with the P.T.O. control lever, Figure 15.
   - Remove the P.T.O. cap.
   - Wait until the P.T.O. shaft stops turning.
   - Attach the mounted or drawn equipment. Make sure the equipment-driven shaft is properly aligned and locked to the tractor P.T.O. drive shaft and that the P.T.O. shield is down in the guarded position.
2. With the P.T.O. 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 rear P.T.O. by moving the P.T.O. control lever, Figure 15, forward. To engage the optional mid P.T.O. move the mid P.T.O. lever forward.

   NOTE: Failure to move the P.T.O. lever through its full range may result in damage to the P.T.O. gears.
4. Check the P.T.O.-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 P.T.O. and tractor in motion.

6. Control the P.T.O. speed with the throttle, never exceeding 2419 rpm for rear P.T.O. and 2377 rpm for mid P.T.O. If the tractor movement is too fast for the P.T.O. load, stop the tractor and shift to a transmission lower gear.
7. Disengage the rear P.T.O. with the P.T.O. control lever when making sharp turns with pull-type equipment and with mounted equipment in the fully raised position.
8. Disconnect the P.T.O.-driven shaft at the tractor P.T.O. shaft before traveling on highways or for any great distance.
9. Reinstall the P.T.O. shaft cap when the P.T.O.-driven equipment is disconnected from the tractor or when the P.T.O. is not being used.

WARNING: To avoid inadvertent movement of P.T.O. implement, disengage P.T.O. after each use.

TOWING THE TRACTOR

To tow your tractor, place the transmission gearshift levers in neutral. Do not exceed 12 mph (20 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 12 mph (20kph).

WARNING: 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 22. 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.

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

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

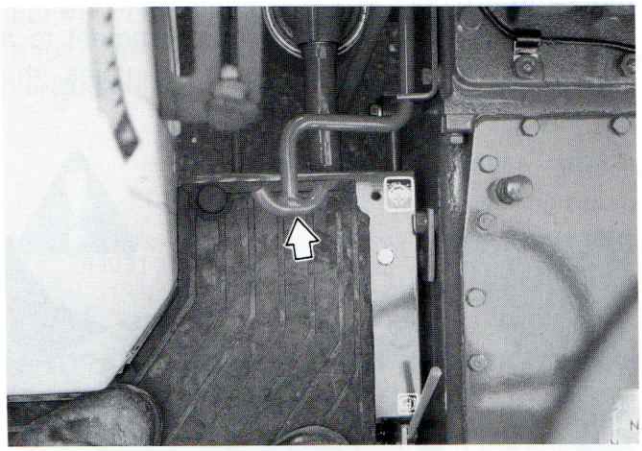


Figure 22 – Differential Lock Pedal

To operate the differential lock, depress and hold the pedal down 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 slipping rear wheel.

OPERATING THE HYDRAULIC LIFT SYSTEM

SINGLE LEVER HYDRAULIC LIFT SYSTEM (STANDARD)

The hydraulic lift system provides accurate, smooth, and instant hydraulic power for raising a variety of compatible 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 23.

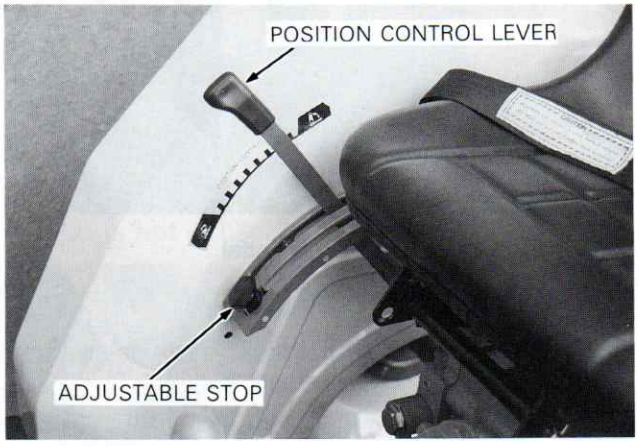


Figure 23 – Hydraulic Lift System Control

TWO LEVER HYDRAULIC LIFT SYSTEM WITH DRAFT AND POSITION CONTROL (OPTIONAL)

If your tractor is equipped with the optional Two Lever Control System shown in Figure 24, there are two modes of Hydraulic Lift System operation – Position Control or Draft Control – that can be selected to satisfy operating conditions for the implement being used.

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

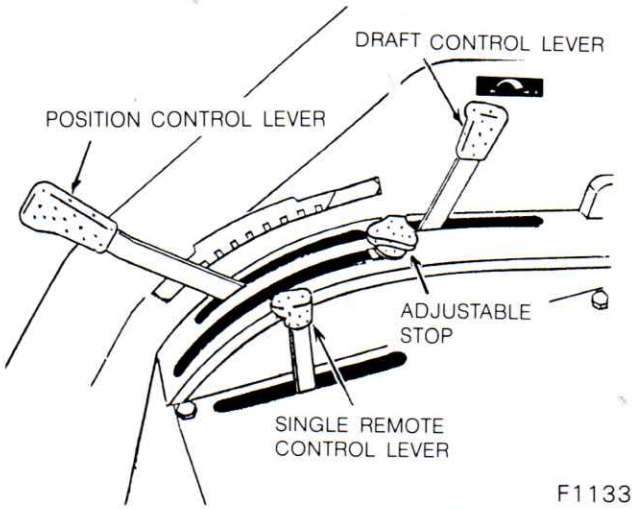


Figure 24 – Two Lever Hydraulic Lift System Control (Draft and Position)

POSITION CONTROL

When operating in position control, there is a definite relationship between the position of the control lever in the quadrant and the position of the equipment. The lever must be moved to change the position of the equipment relative to the tractor. The system will automatically maintain the equipment in the selected position.

Position control provides easy, accurate control of three-point linkage equipment that operates above the ground ; such as sprayers, rakes, mowers, etc. It also provides a uniform depth when using a blade or similar equipment on level ground.

The position control lever (Front) is used to raise and lower the equipment.

DRAFT CONTROL

When operating in draft control, the draft control lever is used to adjust sensitivity to draft loads. Once the lever is positioned, the hydraulic lift system will automatically adjust the depth of the equipment to maintain an even load on the tractor as soil conditions vary. The hydraulic system senses draft-changes through changes in upper link compression. The operation of the upper link draft sensing system is described in the following paragraph.

Upper Link Compression Loads: As the equipment is pulled through the soil, the draft caused by soil resistance tends to rotate the equipment upward around the lower link hitch points. This draft creates a pushing or compressive force on the upper link. When changes in soil resistance cause the draft to increase, the compression force on the upper link will also increase. These changes in upper link compression, signal the hydraulic system through internal linkage, to raise the equipment slightly to maintain uniform draft.

WARNING: Always lower the hydraulic lift and all other hydraulic equipment before stopping the tractor.

NEW HOLLAND tractors having the Hydraulic Draft Control option are equipped with two lever hydraulic lift control systems The operation of each system is described below:

TWO LEVER CONTROLS POSITION CONTROL OPERATION

The two lever control system is shown in Figure 24. Position control is obtained by placing the draft control lever all the way forward and then moving the position control lever to position the equipment as desired. The front (position) lever is used to set the desired working height or depth.

DRAFT CONTROL OPERATION

Draft control is obtained by placing the position control lever in the forward position. Use the draft control to adjust the draft setting (the lift system will automatically maintain the selected draft as described above).

OPERATING IN BOTH POSITION AND DRAFT CONTROL

The position control may be used together with the draft control as follows:

1. Set the position control lever at the maximum desired implement depth. The hydraulic system will not lower the implement below the preselected depth. (This will also prevent "diving" which may be encountered with light equipment, such as a rear blade, when grading or backfilling.)
2. Adjust the draft control lever for the maximum draft load (pull) desired.

The hydraulic lift system will now provide normal draft response within the range set by the position control. This adjustment provides a more uniform depth while maintaining an even pull in widely varying soil conditions.

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

HYDRAULIC LIFT ROCKER (OPTIONAL)

The hydraulic lift rocker, Figure 25, has two holes for attaching the upper link. Attach the link in the lower hole for light draft loads (cultivating) and in the top hole for heavier draft loads (plowing) shown.

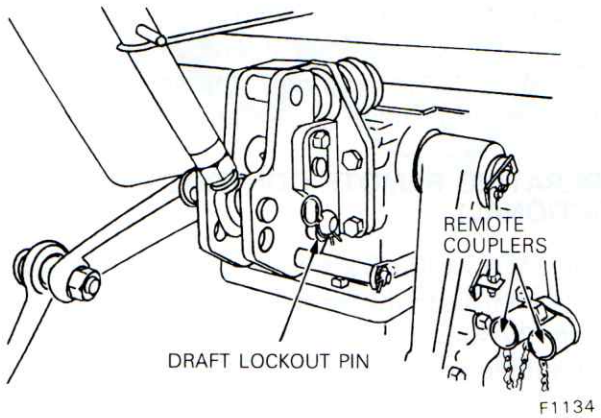


Figure 25 — Hydraulic Lift Rocker and Remote Couplers — Single Spool Valve

NOTE: Fix the draft-arm with pin, Figure 25, when operating equipment without draft control.

OPERATING HYDRAULIC MANIFOLD BLOCK

The hydraulic Manifold Block is provided to supply hydraulic oil to equipment such as a front loader, dozer blade, etc. Location of the Block is shown in Figure 26.

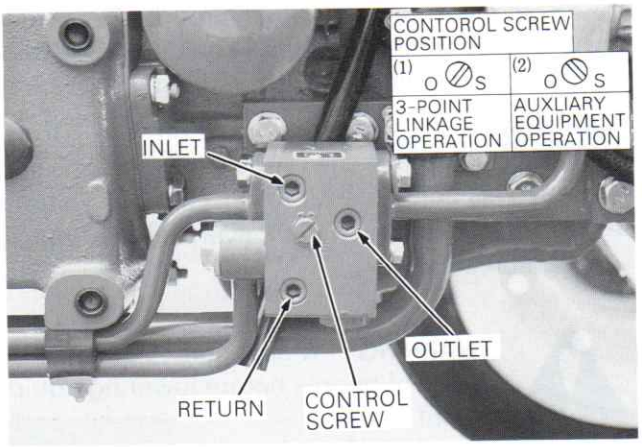


Figure 26 – Hydraulic Manifold Block

To operate auxiliary equipment, remove the plugs from the manifold block and connect the feed hose to the outlet port, Figure 26 and the return hose to the inlet port.

INPORTANT: In order to operate auxiliary equipment, the control screw must be turned to the position shown at (2). With a front remote valve installed, it is **not** required to turn the control screw to the position shown at (1) to operate the three point linkeage. When it is required to operate the three point linkage **only**, the screw must be turned to the position shown at (1).

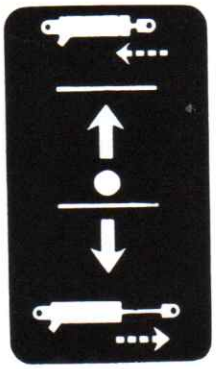
OPERATING REMOTE CONTROL VALVES (OPTIONAL)

Your NEW HOLLAND Tractor can be equipped with a single and/or double spool remote control valves. Figure 27 shows the operation of the single spool and double spool valves.

On the single spool valve, pull the control lever rearward to extend the cylinder. Push the control lever forward to retract the cylinder. Release the control lever to stop the cylinder in any position before it is fully extended. The lever returns to neutral automatically.

For the double spool valve pull the control lever rearward or push it sideways to the right to extend the cylinder. Push the control lever forward or pull it sideways to the left to retract the cylinder. Release the control lever to stop the cylinder in any position before it is fully extended. The lever returns to neutral automatically. Fully forward past detent position is a "FLOAT" position which allows a cylinder to extend or retract freely.

Single Spool



Double Spool

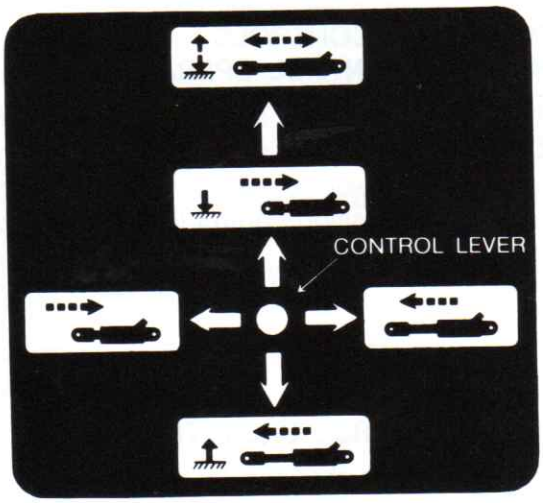


Figure 27 – Operating Remote Control Valve

NOTE: The lever of single spool remote control valve is shown in Figure 24. The tubing coupler location for this valve option is shown in Figure 25.

WARNING: Before disconnecting cylinders or equipment, make certain that the implement or equipment is supported securely.

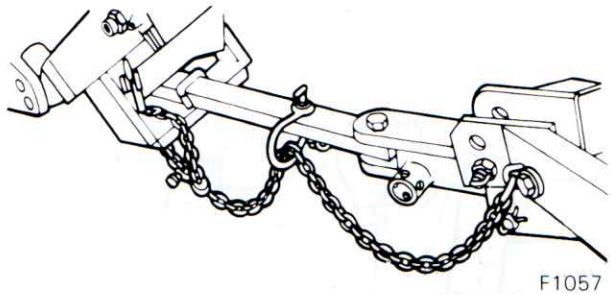
WARNING: Remote couplers must be properly mounted and securely fastened to tractor mounting bracket for proper function of safety disconnect feature.

DRIVING THE TRACTOR

WARNING: Observe the following precautions when driving the tractor.

- **2WD MODELS ONLY** are equipped with manual steering. Higher steering efforts are required for maneuvering. Turf tires increase efforts. Loaders are not recomended.
- 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.
- Any towed vehicle whose total weight exceeds that of the towing tractor should be equipped with brakes for safe operation.
- 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.
- Always check overhead clearance, especially when transporting the tractor.

INPORTANT: Also, when attaching closemounted equipment to the tractor, remove the swinging drawbar (Optional). When transporting on the highway, it is recommended that a safety chain with tensile strength equal to the gross weight of the implement be connected between the tractor and the towed implement. This will control the implement in the event the hitch pin is lost.



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NOTE: Attaching hardware will need to be procured locally. Check implement assembly or operators manual for attaching hardware specifications, such as bolt size and grade, chain strength, washers, lockwashers, nuts, etc.

After attaching the safety chain, make a trial run by driving the tractor to the right and to the left for a short distance to check the safety chain adjustment. If necessary, readjust to eliminate tight or loose chain. Safety chains and suitable hardware are available from your NEW HOLLAND dealer.

WHEEL TREAD SETTINGS

FRONT WHEEL SETTINGS

The front wheel tread setting is adjustable from 39.2 to 43.1 in. (99.5-109.5 cm) on the standard nonadjustable front axle by reversing the front wheels.

On optional front-wheel drive the tread setting is 42.5 in. (108 cm).

Turf tire is 42.7 in. (108.5 cm) on the two wheel drive and 44.1 in. (112 cm) on the four-wheel drive.

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

NOTE: When the front wheel is removed the wheel disc to hub bolts should be torqued to 43-54 lbs. ft. (58-73 N. m), the tie rod setting bolt should be torqued to 31-41 lbs. ft. (42-55 N. m) or 69-87 lbs. ft. (93-117 N. m) if optional four-wheel drive equipped.

STANDARD	INTERCHANGE L & R WHEEL
39.2 in. (995 mm)	43.1 in. (1095 mm)

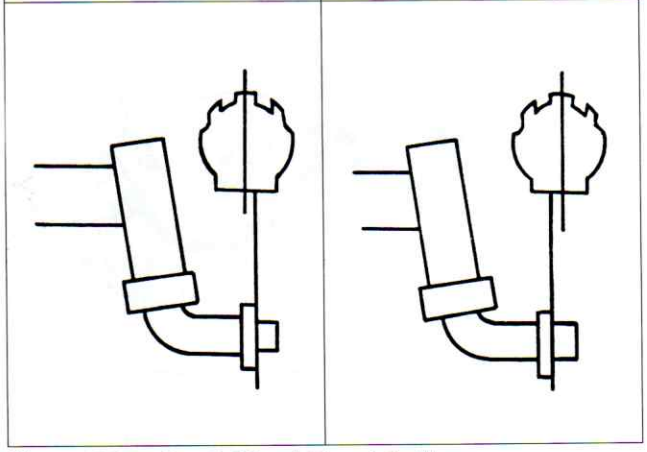


Figure 28 — Front Wheel Tread Settings

REAR WHEEL TREAD SETTINGS

The rear wheels are adjustable from 42.2 to 48.2 in. (107-122.5 cm) on the standard nonadjustable rear wheels by switching the rear wheels from side to side.

Turf tire tread settings is adjustable from 44.1-46.3 in. (112-117.5 cm) by switching the rear wheels from side to side.

NOTE: The wheel bolts should be torqued 137-159 lbs. ft. (186-215 N. m)

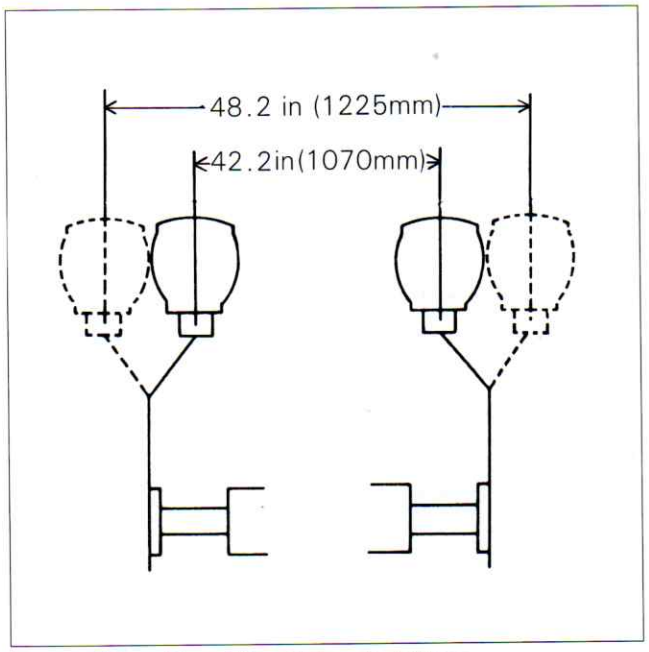


Figure 29 — Rear Wheel Tread Settings (9.5×24 Tires)

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 Figure 30 and 31, or 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 and thus higher fuel consumption.

WEIGHTING FOR STABILITY

Front end ballast may be required for stability and steering control when weight is transferred from the front wheels to the rear wheels as the implement is raised by the tractor 3-point hitch.

As a general guide :
Ballast the tractor (less implement) so that approximately 1/3 of the tractor weight is on the front wheels. For optimum traction, tractor equipped with FWD should be ballasted so 40-45% of machine weight is on front wheels.

When a mounted implement is raised to the transport position, the front wheel reaction should be at least 20% of tractor weight.

Add additional front end ballast as required for stability during operation and transport. Tractor front end ballast may not always maintain satisfactory stability if the tractor is operated at high speed on rough terrain. Reduce tractor speed and exercise caution under these conditions.

When using front mounted equipment, add weight to the rear axle to maintain good traction and stability.

WARNING : If proper stability cannot be obtained within the weighting limitations below, reduce the load on the tractor until stability is obtained.

IMPORTANT : Do not exceed the tire inflation specifications in the "Tire Inflation" on page 25.

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.

Total Vehicle Weight
Do not add cast iron weight in excess of the following :

Front End — 99 lbs.

Each Rear Wheel — 132 lbs. plus liquid ballast.

LIQUID BALLAST (OPTIONAL)

It is a common practice to add weight to the tractor by filling the rear tires with liquid. A calcium chloride ($CaCl_2$) and water solution is recommended due to its low freezing point and greater density (weight per gallon) than water. Never exceed the total recommended weight for the tractor. Because special equipment is required to fill the tires, we recommend that you consult your NEW HOLLAND Dealer. Tires should never be filled beyond 75% (tire filled to the valve stem when valve stem is at its highest point at the top of the wheel).

CAST IRON WEIGHTS (OPTIONAL)

Cast iron weights are available as accessories from your NEW HOLLAND Dealer. Weights can be mounted, on the front end of the tractor, and on the rear wheels as shown in Figures 30 and 31.

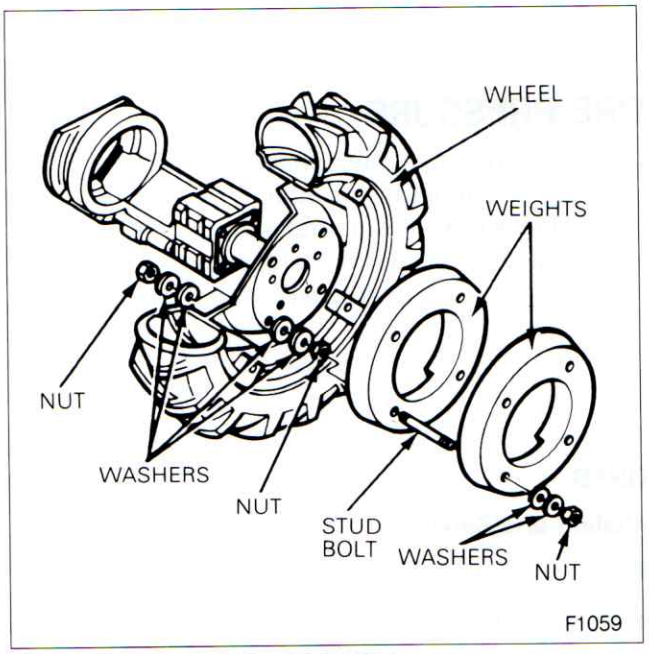


Figure 30 — Rear Wheel Weights

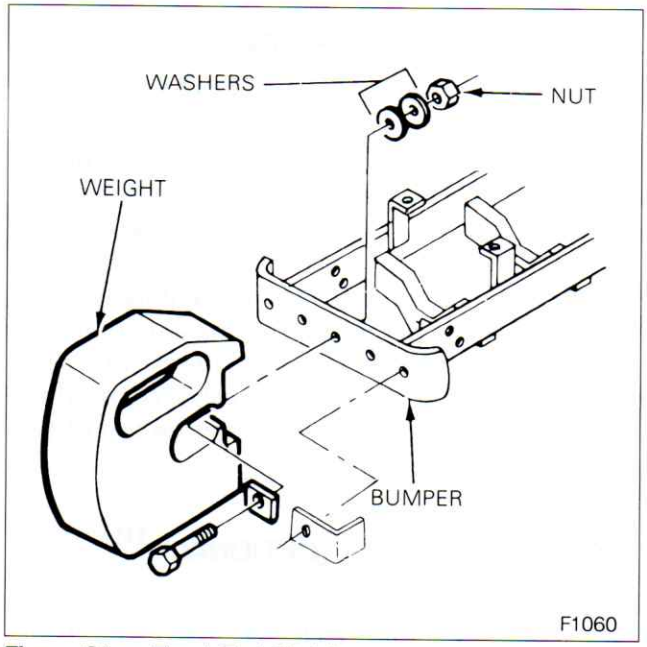


Figure 31 — Front End Weights

TIRE PRESSURE

Tire pressure must be considered when adding weights, implements, or attachments to the tractor or damage to the tractor may occur. Consult your dealer for proper tire pressures.

TIRES

Inflation and Service

- Check tire pressure every **50** hours, or weekly.
- Do not inflate a tire above the manufacturer's maximum pressure shown on the "Tire Inflation" chart.
- Do not inflate a tire that has been run flat or seriously under-inflated until the tire has been inspected for damage by a qualified person.
- When checking tire pressure, inspect the tire for damaged side walls and tread cuts. Neglected damage will lead to early tire failure.

WARNING : Inflating or servicing tires can be dangerous. Trained personnel should be called to service and/or mount tires when possible. In any event to avoid possible serious or fatal injury, follow the safety precautions below :

- Be sure the rim is clean and free of rust.
- Lubricate both tire beads and rim flanges with soap solution. Do not use oil or grease.
- 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.
- NEVER INFLATE TO OVER **35** psi (2.4 bar) TO SEAT BEADS. If beads have not seated by time pressure reaches **35** psi, deflate the assembly, reposition tire on rim, relubricate both tire beads and rim flanges and re-inflate. Inflation beyond **35** psi with unseated beads may break the bead or rim with explosive force sufficient to cause serious injury.
- After seating the beads, adjust inflation pressure to recommended operating pressure.
- 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 weld, braze, otherwise repair, or use a damaged rim.
- Never attempt tire repairs on a public road or highway.
- Use jack stands or other suitable blocking to support the tractor while repairing tires.
- Insure jack has adequate capacity to lift your tractor.
- Do not put any part of your body under the tractor or start the engine while the tractor is on the jack.
- Torque lug bolts to specification after reinstalling wheel. Check lug bolt torque daily until torque stabilizes.
- Refer to tractor weighting section before adding ballast to the tires.

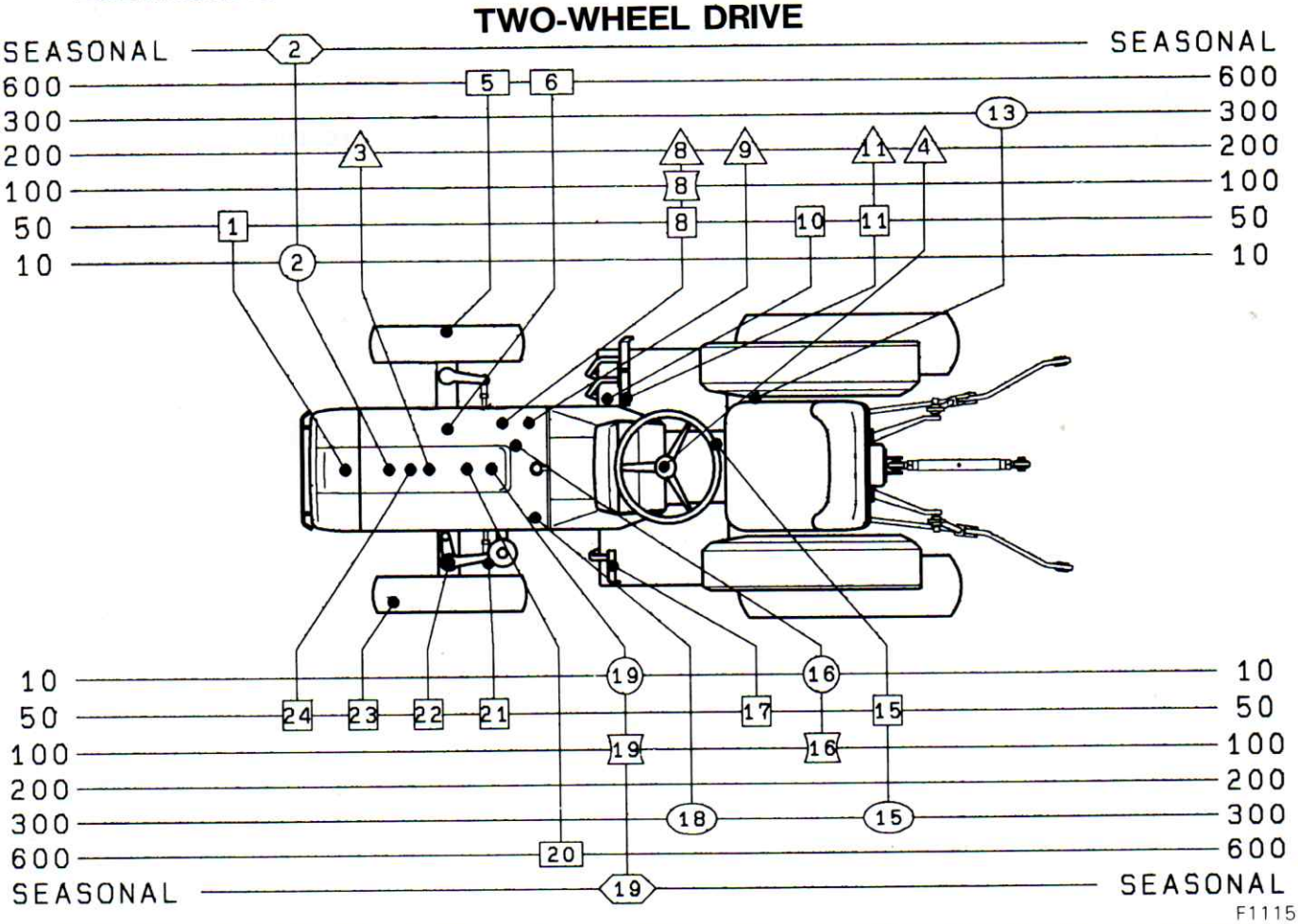
Tire Inflation

Front Tire Size			Inflation Pressure
4.00-15	4PR	F2	20 — 44 PSI 1.4 — 3.1 BAR
5.50-16	4PR	F2	20 — 36 PSI 1.4 — 2.5 BAR
6-14	4PR	R1	8 — 28 PSI 0.6 — 2.0 BAR
7-14	4PR	R1	8 — 26 PSI 0.6 — 1.8 BAR
23X8.50-12	4PR	R3	8 — 24 PSI 0.6 — 1.7 BAR
25X8.50-14	4PR	R3	8 — 20 PSI 0.6 — 1.4 BAR

Rear Tire Size			Inflation Pressure
9.5-24	4PR	R1	12 — 20 PSI 0.8 — 1.4 BAR
11.2-24	4PR	R1	12 — 18 PSI 0.8 — 1.3 BAR
13.6-16	4PR	R3	12 — 14 PSI 0.8 — 1.0 BAR

Note : Do not under-inflate or over-inflate the tires.
Do not exceed the maximum inflation pressure listed.

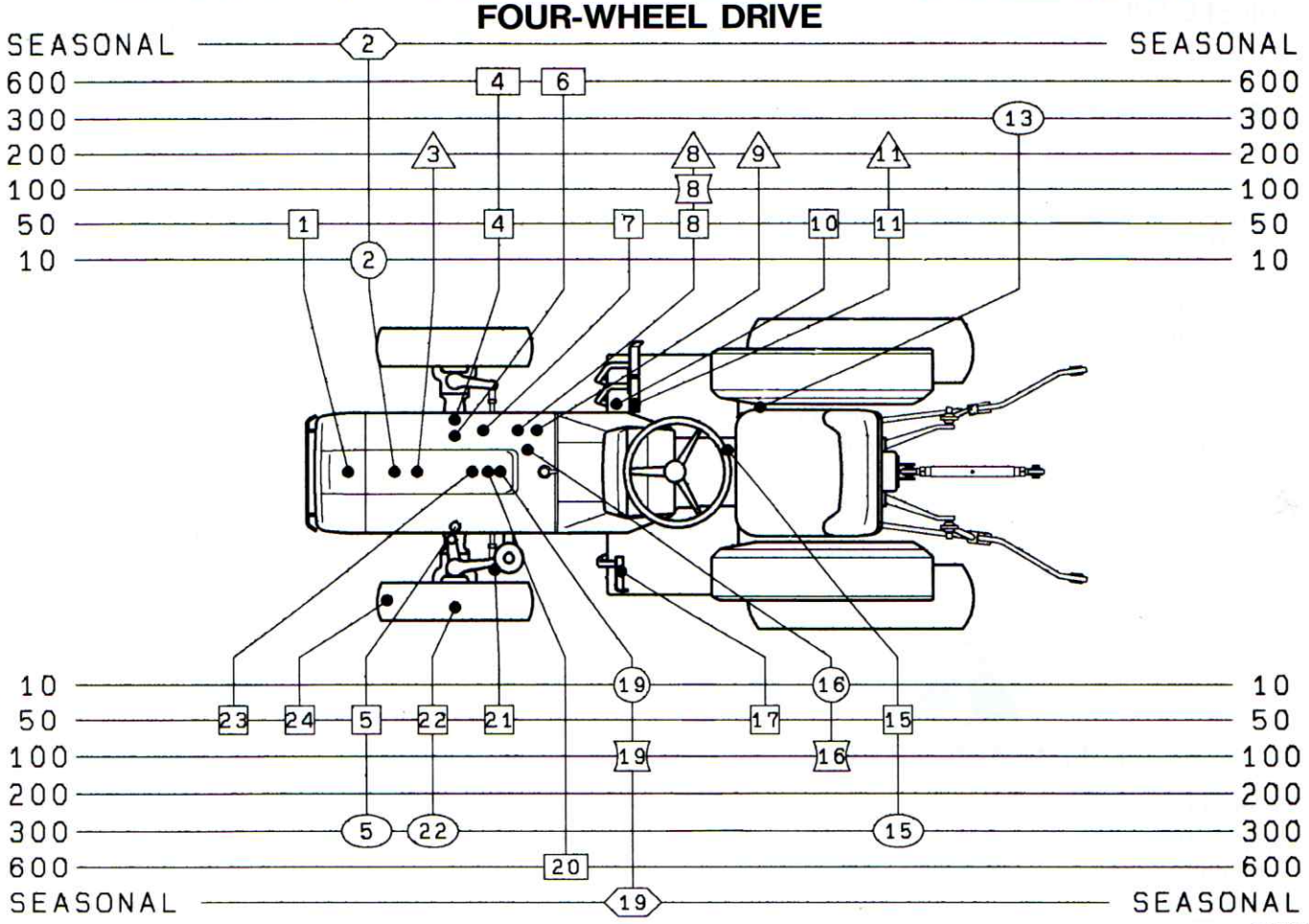
LUBRICATION AND MANITENANCE CHART — NEW HOLLAND 1715 TWO-WHEEL DRIVE



NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil Level	×					Every (10) Hours or Daily
19	Air Cleaner	×					
2	Radiator Coolant	×					
13	Hydraulic Filter				×		First 50 Hours
15	Transmission Oil Level	×					
23	Tires	×					
17	Clutch Pedal	×				×	
1	Battery	×					
	Lubrication Fittings :						
21	Steering Linkage			×			Every 50 Hours
22	Front Wheel Spindles (2)			×			
24	Pivot Shaft			×			
17	Clutch Pedal			×			
11	Brake Pedal			×			
10	Pedal Shaft			×			

NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil				×		Every 100 Hours
8	Fuel Filter		×				
19	Air Cleaner Element		×				
3	Fan Belt	×				×	Every 200 Hours
9	Engine Oil Filter				×		
11	Brake					×	
8	Fuel Filter Element				×		
4	Steering Free-play					×	
15	Transmission Oil				×		Every Hours
13	Hydraulic Filter				×		
5	Front Wheel Bearings			×			Every 600 Hours
6	Fuel Injectors	×				×	
20	Valve Clearance	×				×	
2	Radiator Coolant				×		Seasonal
19	Air Cleaner Element				×		

LUBRICATION AND MANITENANCE CHART — NEW HOLLAND 1715 FOUR-WHEEL DRIVE



NO.	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil Level	×					Every (10) Hours or Daily
19	Air Cleaner	×					
2	Radiator Coolant	×					
13	Hydraulic Filter				×		First 50 Hours
15	Transmission Oil Level	×					
24	Tires	×					
17	Clutch Pedal	×				×	
1	Battery	×					
5	Front Axle Oil Level	×					
22	Final Reduction Gear Cases Oil Level	×					
4	Power Steering Oil Level	×					Every 50 Hours
	Lubrication Fittings :						
21	Steering Linkage			×			
17	Clutch Pedal			×			
11	Brake Pedal			×			
7	Power Steering cylinder			×			
10	Pedal Shaft			×			
23	Drive Shaft Cover			×			

NO	LUBRICATION AND MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
16	Engine Oil				×		Every 100 Hours
8	Fuel Filter		×				
19	Air Cleaner Element		×				
3	Fan Belt	×				×	Every 200 Hours
9	Engine Oil Filter				×		
11	Brake					×	
8	Fuel Filter Element				×		
5	Front Axle Oil				×		Every 300 Hours
22	Final Reduction Gear Cases Oil				×		
15	Transmission Oil				×		
13	Hydraulic Filter				×		
6	Fuel Injector	×				×	Every 600 Hours
4	Power Steering Oil				×		
20	Valve Clearance	×				×	
2	Radiator Coolant				×		Seasonal
19	Air Cleaner Element				×		

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-D with a minimum cetane rating of 40. When operating in temperatures below 20°F (−6.7°C), use diesel fuel oil No. 1-D with a minimum cetane rating of 40. Low ambient temperatures as well as engine operation at high altitudes may require use of fuels with higher cetane ratings.

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.

FUEL USAGE SAFETY

Fuel is becoming very expensive and scarce. As a result, many of our customers are trying new fuels or blends to reduce costs and conserve energy.

Today's new fuels or blends are frequently more volatile and there is a need to handle them carefully. Furthermore, some of the blends are dangerous and should not be used at all.

The following new or blended fuels are becoming available or are sometimes recommended by certain sources. Our recommendations are as follows :

Dieselhol

Under no circumstances should gasoline, alcohol or gasohol be added to diesel fuel. These combinations can create an increased fire hazard and under certain circumstances an explosive hazard. They are more dangerous (explosive) than pure gasoline in a closed container such as fuel tank. Do Not Use These Blends.

In addition, let's review the old recommendations. These are even more important today :

- Never remove the Fuel Cap or refuel the tractor when the engine is running or is hot.
- Don't smoke while refueling or while anywhere near fuel.
- When filling the tank, maintain control of the nozzle.
- Don't fill the fuel tank to capacity...allow room for expansion.

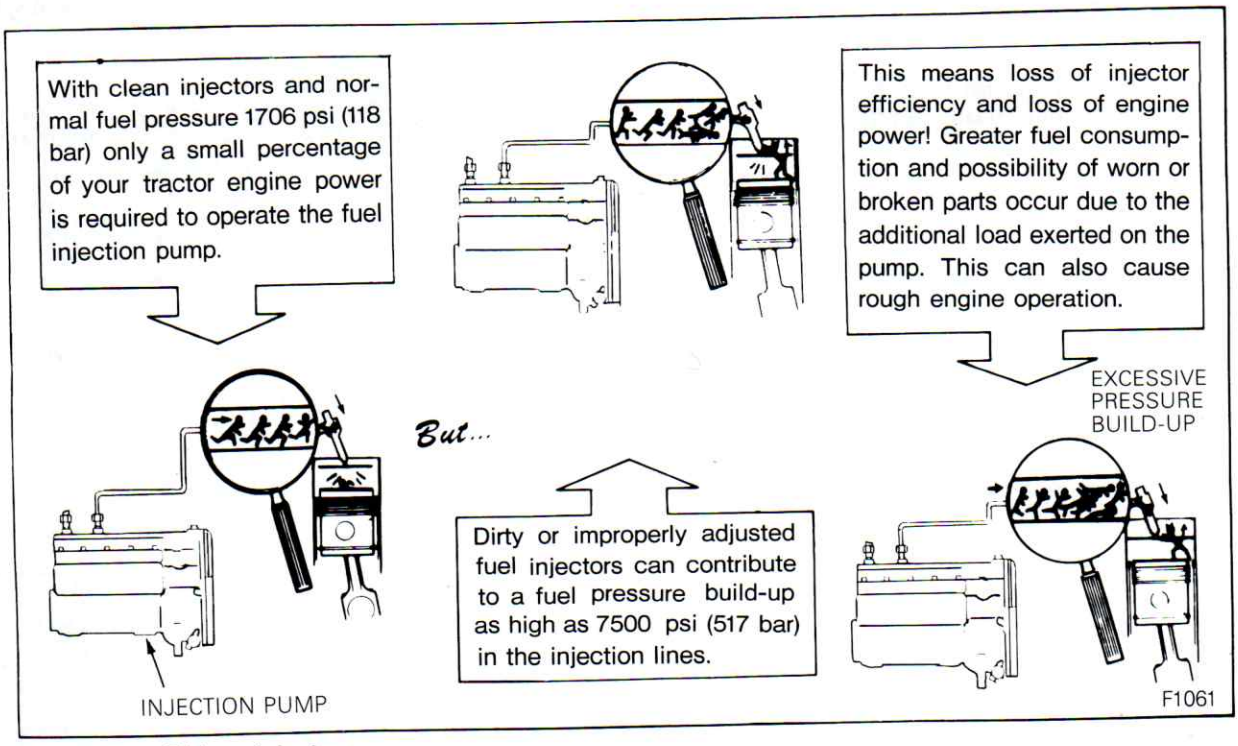


Figure 32 — Dirt vs. Injectors

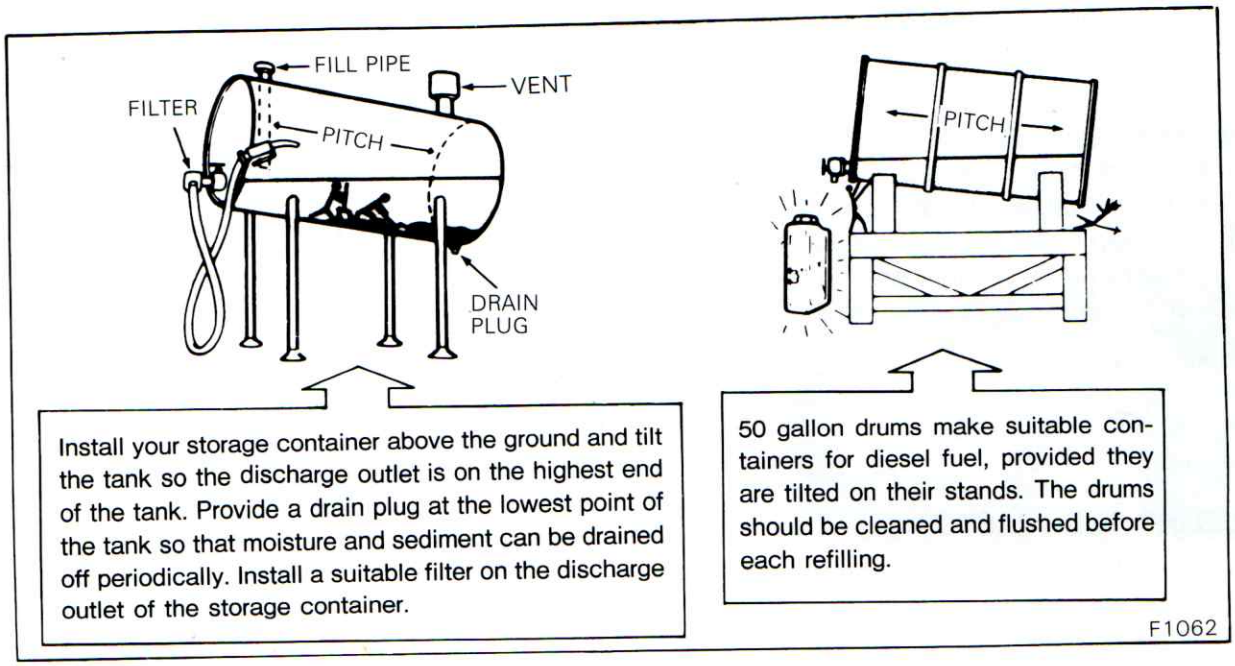


Figure 33 – Diesel Fuel Storage

- Wipe up spills immediately.
- Always tighten the fuel tank cap securely.
- If the original equipment fuel tank cap is lost, always replace it with a NEW HOLLAND approved cap. A will-fit cap may not be safe.
- Keep equipment properly maintained.
- Keep equipment clean – free of trash and oil.
- Don't drive equipment near open fires.
- Never use gasoline for cleaning parts.

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 **31** for additional fuel information.

WARNING: Fuel oil in the injection system is under high pressure and can penetrate the skin.

Unqualified persons should not remove or attempt to adjust a pump injector, nozzle or any part of the fuel injection system.

DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.

If any fluid is injected into the skin, obtain medical attention immediately or gangrene may result.
Failure to follow these instructions can result in serious injury.

FUEL STORAGE

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 **32**.

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, Figure **33** with either a tank and pump, 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.

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 33. 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 of 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.

LUBRICANTS

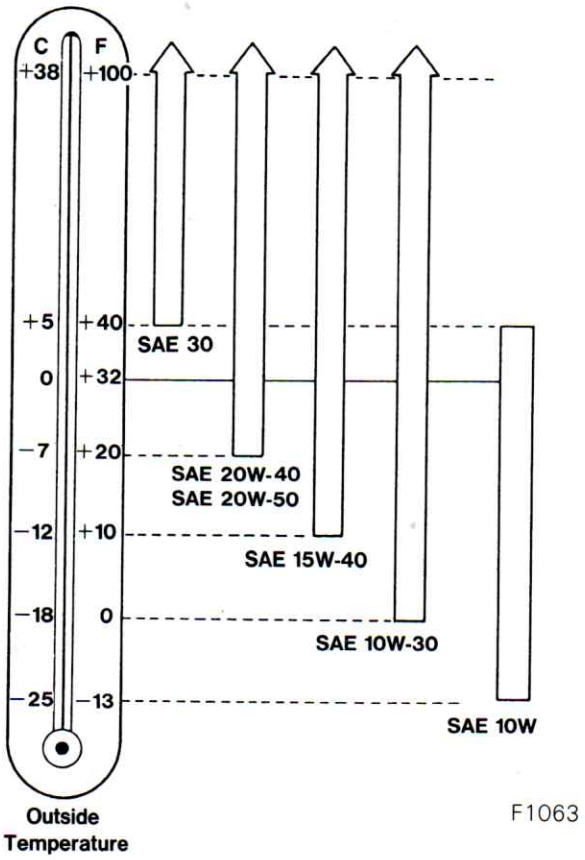
Type of lubricant to use ;

Transmission, Rear Axle, Final Reduction, Hydraulic System and Power Steering Oil ..... NEW HOLLAND 134

Engine Crankcase ..... NEW HOLLAND TRACTOR SUPER PREMIUM ENGINE OIL OR API SF/CD QUALITY OIL

Front Wheel Bearings and All Lubrication Fittings ..... 1TM—1C—137—B OR NLG1 GRADE 2 EP GREASE WITH LITHIUM SOAP

NOTE: NEW HOLLAND Tractor engine oil is a super premium, heavy-duty engine oil compounded specifically to meet the rigid requirements of NEW HOLLAND Tractor engines. NEW HOLLAND engine oil exceeds both SF and CD requirements. It is available from your NEW HOLLAND dealer. Use the following chart to determine which SAE Grade



engine oil to use :

In areas where prolonged periods of extreme temperatures are encountered, local lubricant practices are acceptable, such as the use of SAE 5W (CC) in extremely cold temperatures or the use of SAE40 (CD) or SAE50 (CD) in extremely high temperatures.

IMPORTANT: Engine crankcase oil drain intervals should be adjusted downward when diesel fuel sulfur content is over 0.5%.

Consult your dealer for details of Engine Crankcase Oil usage.

LUBRICANT STORAGE

Your NEW HOLLAND 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 plug, 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 **34**.

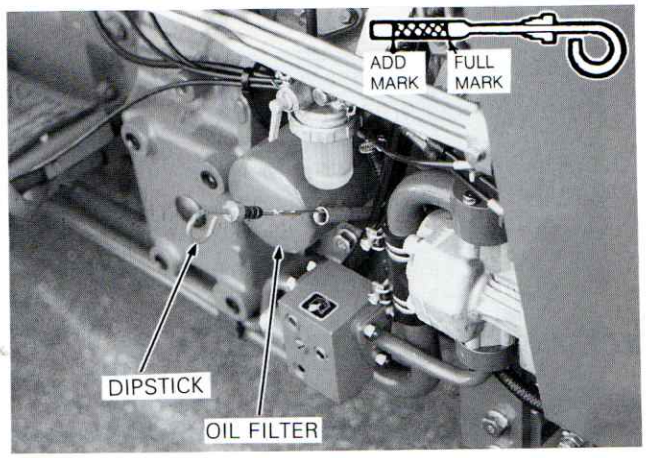


Figure 34 – Engine Oil Level Dipstick and Filter

2. If the oil level is low, remove the filler cap, Figure **35** 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.

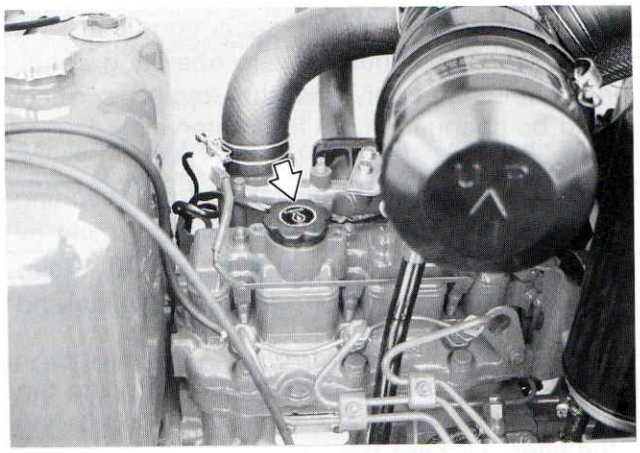


Figure 35 – Engine Oil Filler Cap

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

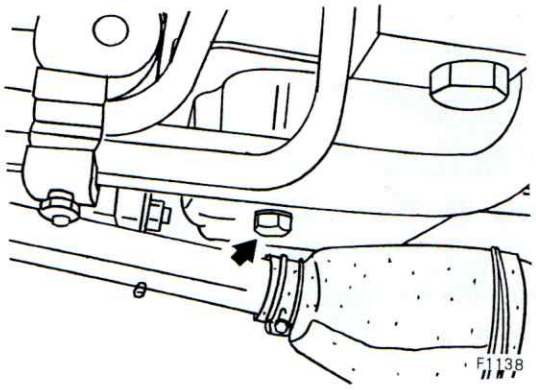


Figure 36 – Engine Oil Drain Plug

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

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

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 and the engine oil filter should be changed at 70 hour intervals.

1. With the engine off, but at normal operating temperature, drain and discard the engine oil by removing the drain plug, Figure **36**. Reinstall the plug after the oil has drained and discard the oil.
2. Unscrew the oil filter, Figure **34**, 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 overtighten.
4. Add new oil of the type specified, page **30**. Start the engine and check the filter for leaks after adding the oil. Be sure the oil is at the proper level.

FUEL FILTER

Draining the Filter: Drain the diesel fuel filter when water is visible in the sediment bowl.

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

1. Be sure there is adequate fuel in the fuel tank, close the fuel shut-off valve, then remove the fuel sediment bowl, Figure **37**.
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."

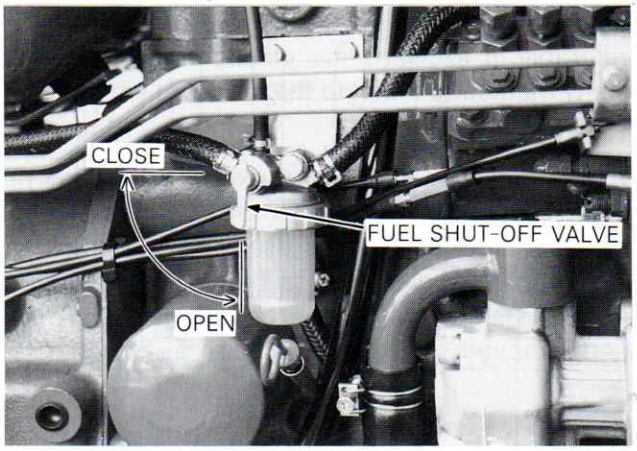


Figure 37 – Fuel Filter

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

1. Close the shut-off valve.
2. Remove the sediment bowl, Figure **37**.
3. Open the fuel shut-off valve to drain any remaining water from the tank.
4. Discard the old element and install a new element.
5. Install and securely tighten the sediment bowl.
6. Open the fuel shut-off valve so fuel will flow to the filter.
7. 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 :

WARNING : Fuel oil in the injection system is under high pressure and can penetrate the skin.

Unqualified persons should not remove or attempt to adjust a pump injector, nozzle or any part of the fuel injection system.

DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.

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

Failure to follow these instructions can result in serious injury.

1. Be sure there is adequate fuel in the fuel tank.
2. Open the fuel shut-off valve.
3. Open the bleed screw at the pump Figure **38** and let the air bubbles escape, then close the bleed screw.

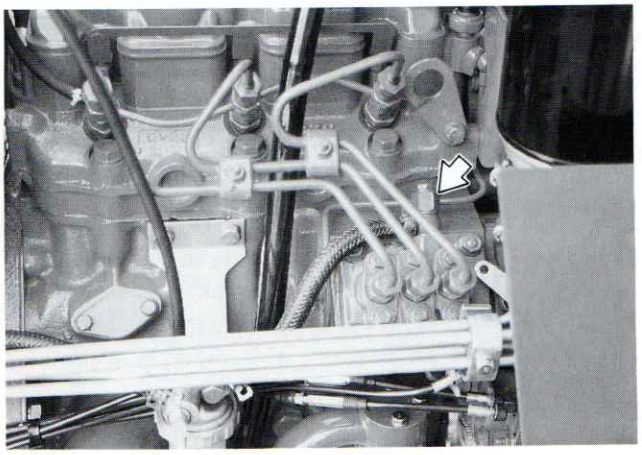


Figure 38 – Fuel System Bleed Screw

4. Push the hand throttle to the high speed position. Turn the engine over for a few seconds to bleed the high pressure fuel tube.

Injector Lines : Bleed the injector lines if the tractor has run out of fuel, if new injectors have been installed, or if the injection pump has been removed for service repairs.

1. Loosen the injector line fittings at the injectors.
2. Move the hand throttle control lever to its wide open position.
3. Crank the engine until air-free fuel flows from each connection, then tighten the fittings to 18-22 lbs. ft. (24-29 Nm).

IMPORTANT : Do not crank the engine continuously for more than 30 seconds. Doing so may cause starting motor failure. If air is not purged from the system, repeat the procedure.

AIR CLEANER

Checking Dirt Level : Check the dirt level in the dust pan daily or every 10 hours, Figure **39**.

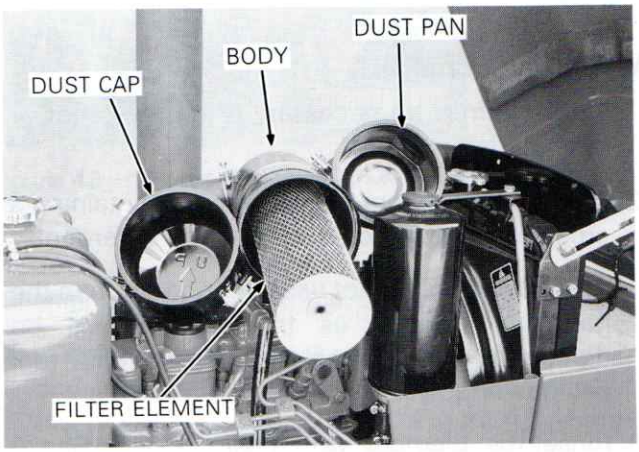


Figure 39 – Air Cleaner – Disassembled

Clean the element every 100 hours of service.

1. Loosen the spring clamps and remove the dust cap, Figure **39**.
2. Remove the seal and dust pan from the dust cap and clean the dust cap, seal and dust pan using a damp lint free cloth, Figure **39**.
3. Remove the wing nut holding the filter element

and remove the filter element from the body.

4. Pat the sides of the element with the palm of the hand to remove dust trapped in the pleats.

   IMPORTANT: Tapping the element against a hard surface or with hard objects may dent or break the element end cap seals.

5. Using low air pressure (not over 30 psi, 2.1 bar), blow out remaining dust from the 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 bulb inside the 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 the 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 40.

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 30, through the filler plug, Figure 41. Do not fill beyond the mark on the stick, as the transmission will be overfilled.

3. Install the filler plug and dipstick.

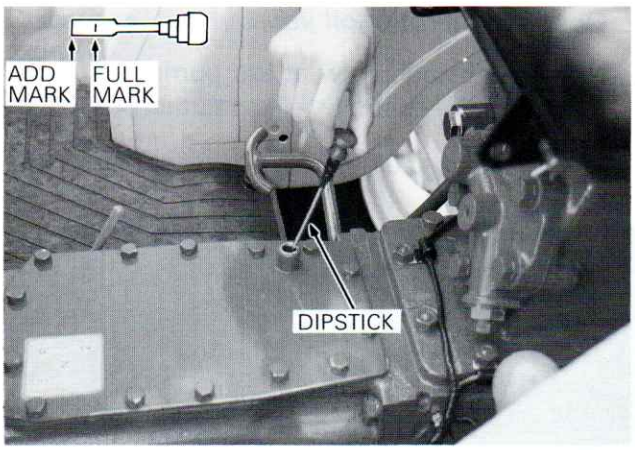


Figure 40 – Transmission, Rear Axle and Hydraulic System Oil Level Dipstick

Changing Oil: Change the oil every 300 hours.

1. With the oil at normal operating temperature, drain the oil by removing the transmission and rear axle drain plugs, Figure 42. Reinstall the plugs after the oil has drained. Discard the oil.

2. Remove the filler plug, Figure 41, and fill with new oil of the type specified, page 30.

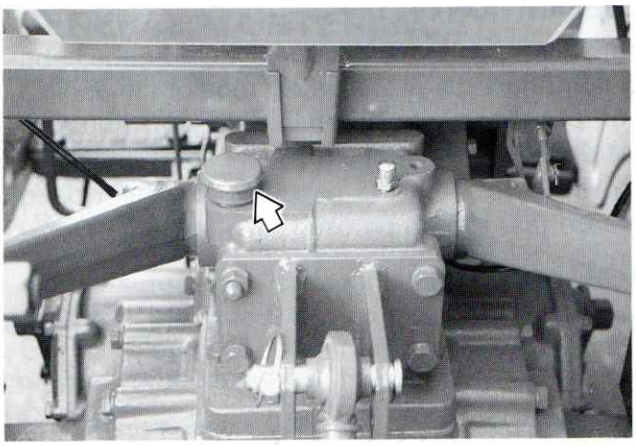


Figure 41 – Transmission, Rear Axle and Hydraulic System Oil Filler Plug

3. 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.

4. Install the dipstick and filler plug.

IMPORTANT: Because there is a common sump for the transmission, rear axle and hydraulic system, special attention is necessary in keeping the oil clean.

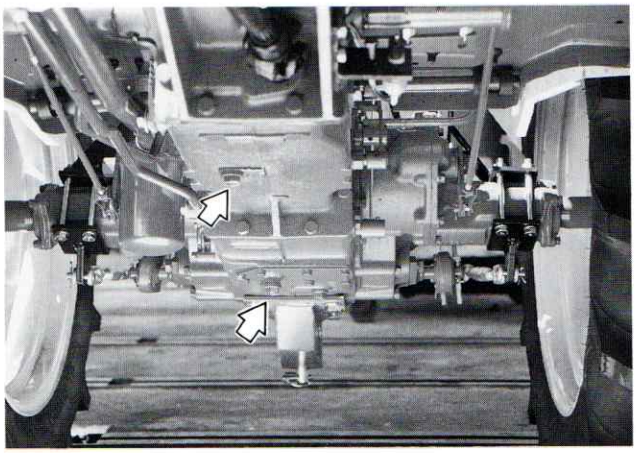


Figure 42 – Transmission, Rear Axle Center Housing and Rear Axle Oil Drain Plugs

POWER STEERING

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 **43**.

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 **30**, through the combined dipstick/filler plug. Do not fill beyond the mark on the stick, as the oil reservoir will be overfilled.

3. Install the dipstick/filler plug.

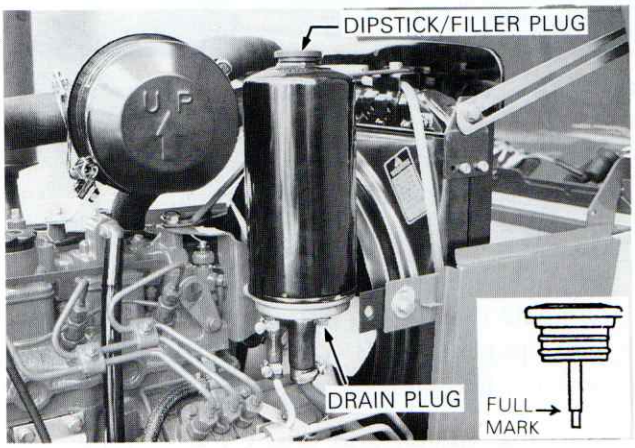


Figure 43 – Power Steering Oil Level Dipstick/Filler Plug and Drain Plug

Changing Oil: Change the oil every 600 hours.

1. With the oil at normal operating temperature, drain the oil by removing the drain plug of reservoir for power steering, Figure **43**. Reinstall the plug after the oil has drained. Discard the oil.

2. Remove the filler plug, Figure **43** and fill with new oil of the type specified, page **30**.

3. The oil reservoir 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 oil reservoir will be overfilled.

4. Install the dipstick/filler plug.

HYDRAULIC SYSTEM OIL FILTER

The hydraulic system is equipped with a spin-on type oil filter, Figure **44**. Replace the filter after the first 50 hours of operation and every 300 hours thereafter following the procedure below.

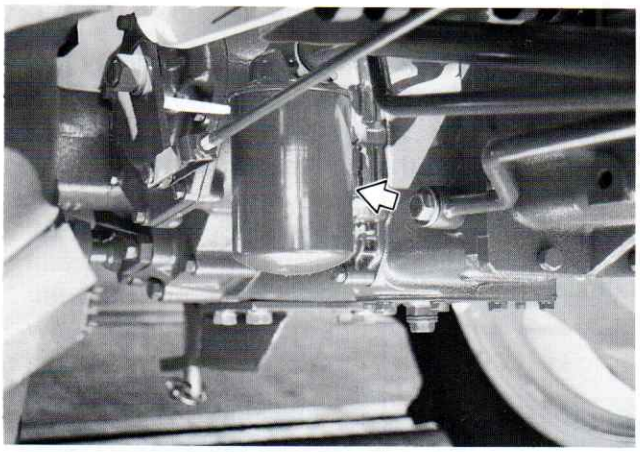


Figure 44 — Hydraulic Oil Filter

1. Unscrew the oil filter and discard.
2. Coat the gasket on the new filter with a film of oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter approximate 3/4 of a turn by hand. Do not over tighten.
3. Start the engine and check the hydraulic oil filter for leaks.
4. Stop the engine and check the hydraulic oil level. Replenish if necessary.

LUBRICATION FITTINGS

The following lubrication points (refer to the Lubrication Chart, page **26** or **27**) require the application of a good quality grease every 50 hours. In extremely dirty conditions, lubrication should be more often. Refer to page **30**, for the type of grease that should be used.

- Steering linkage
- Front Axle Pivot
- Front wheel spindles (Two-wheel drive)
- Power steering cylinder (Four-wheel drive)
- Pedal shaft ; clutch and brake pedals
- Two-wheel drive king pins

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 NEW HOLLAND 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 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.

WARNING : 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 fins clear of chaff or dirt to allow free passage of air.

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 (NEW HOLLAND) antifreeze, or equivalent, and clear water.

To Drain the System :

1. Remove the radiator cap and open the drain valve along R.H. tractor frame. This valve will drain radiator and engine block, Figure **45**.

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 the block drain valve before starting the 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.

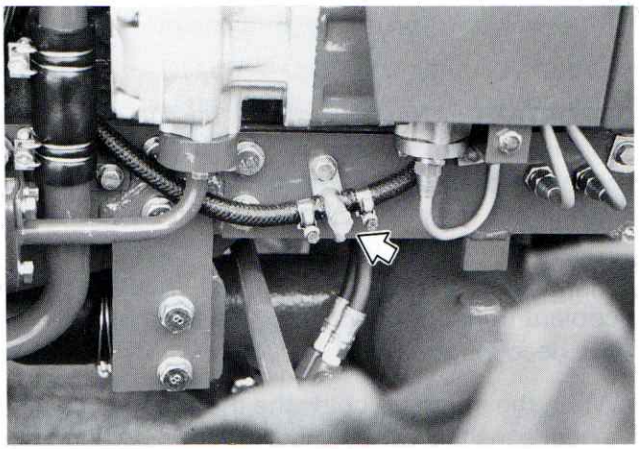


Figure 45 – Combination Engine Block and Radiator Drain Valve

3. Close the drain valve 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.

4. Clean the radiator cap and cap seal. Install the cap.

5. Clean the radiator front screen, Figure **46**.

6. Run the engine until normal operating temperature is reached, then stop the engine and recheck the coolant level after the engine is cold. Add coolant as required.

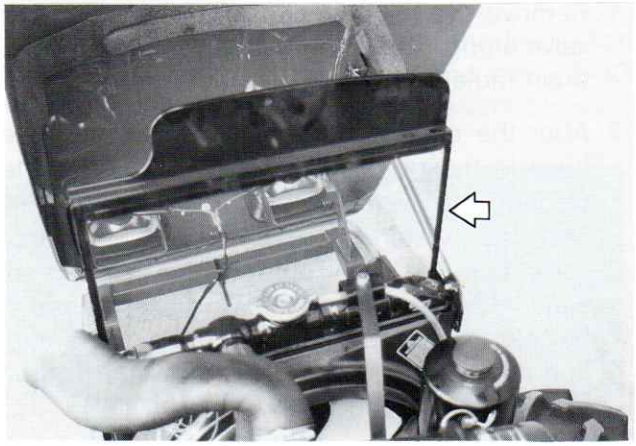


Figure 46 — Radiator Screen

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 47.

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 48.
2. Pry the alternator away from the engine and tighten the mounting bolts.
3. Recheck belt deflection.

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

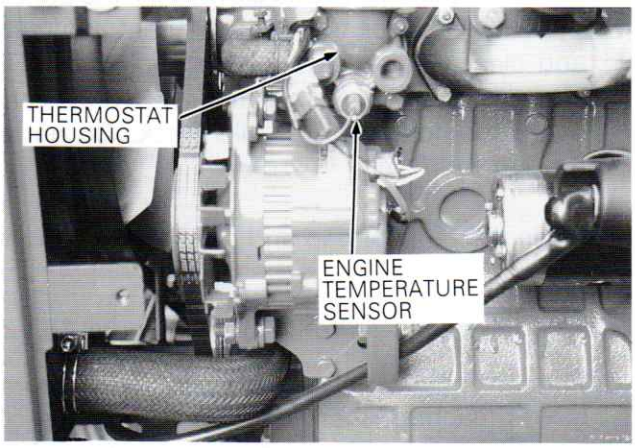


Figure 47 — Thermostat Housing

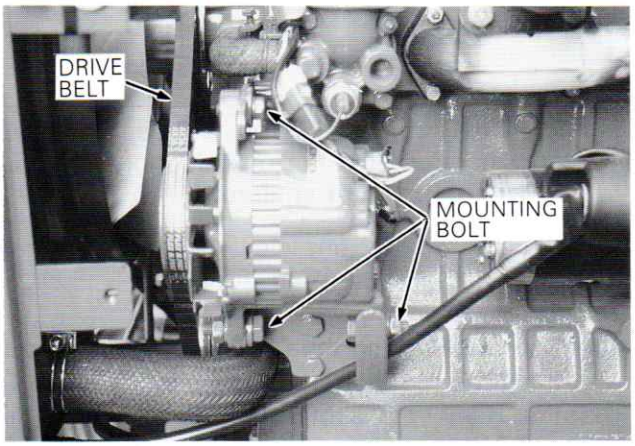


Figure 48 — Alternator Mounting Bolts

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 NEW HOLLAND Dealer.

To remove the injectors :

1. Clean all loose dirt from around the injectors and lines. Disconnect the leak-off lines from the injectors, Figure **49**.
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 22-29 lbs. ft. (29-39 N.m).

   IMPORTANT : Do not overtighten the retaining nuts. Overtightening may distort the injector.

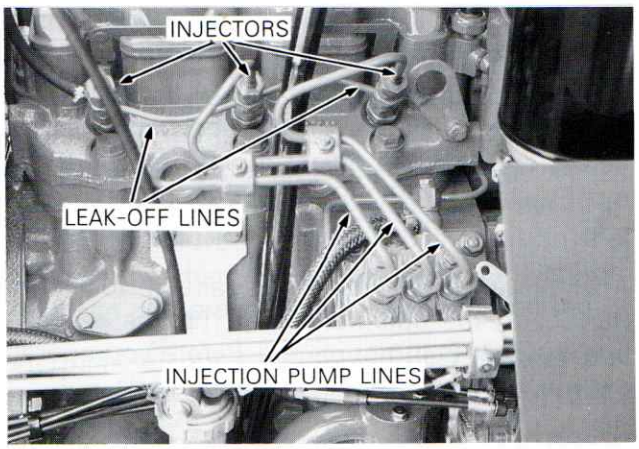


Figure 49 — Fuel Injector Leak-off Lines

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 58-61 lbs. ft. (78-83 N.m).
3. Install the leak-off line. Tighten the leak-off line nuts to 22-36 lbs. ft. (29-49 N.m).
4. Bleed the fuel system as covered under "Bleeding the Fuel System," page **32**. Tighten the injector fittings.

WARNING : Fuel oil in the injection system is under high pressure and can penetrate the skin.

Unqualified persons should not remove or attempt to adjust a pump injector, nozzle or any part of the fuel injection system.

DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.

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

Failure to follow these instructions can result in serious injury.

ENGINE SPEED ADJUSTMENT

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

Idle Speed

1. Pull the throttle lever rearward to the lowest engine speed, this makes foot throttle free.
2. Adjust to the designated idling engine speed (800-900 rpm) by adjusting idling stop bolt and lock it.

Maximum Speed

1. Push the hand throttle lever forward to the maximum engine speed.
2. To adjust maximum engine speed to 2750-2800 rpm, elongate outer cable gradually by tightening the turnbuckle of throttle wire, and lock the turnbuckle.

3. To shorten outer cable release the turnbuckle of throttle wire.

4. Use the same procedure for adjusting maximum speed on the foot throttle. Lock the turnbuckle at full throttle pedal stroke.

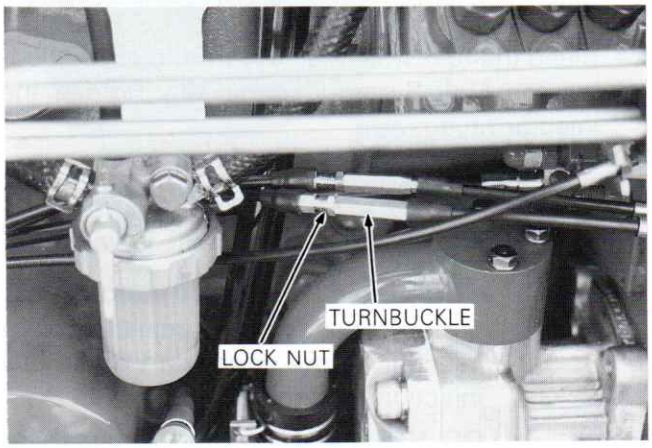


Figure 50 – Throttle Adjustment

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. Check each pair of valves when the corresponding piston is on top dead center on the compression stroke (both valves closed). Check the clearance of each valves with a feeler gauge, Figure 51.

   The setting should be :

   Intake .008 (.2 mm)
   Exhaust .008 (.2 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 feeler gauge.

4. Install the rocker arm cover. Use a new gasket if the old one is damaged. Tighten the cover bolts evenly.

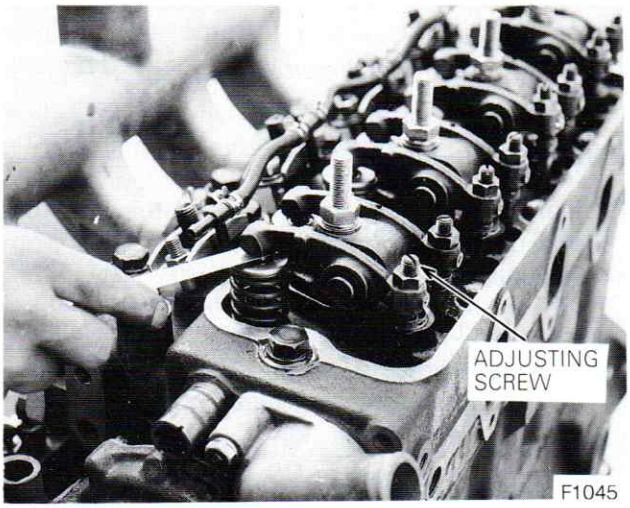


Figure 51 – Checking Valve Clealance

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 52.

2. Check the operator's seat and the mounting parts for the seat belt. Tighten the bolts to the correct torque. Replace parts that show 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 straighten the ROPS.

WARNING: Never attach chains, ropes, or cables to the ROPS or Cab for pulling purposes ; this will cause the tractor to tip backward. Always pull from the tractor drawbar.

WARNING: If the ROPS or cab has been removed or replaced, make certain that the proper hardware is used and the recommended torque values are applied to the attaching bolts.

WARNING: Always wear your seat belt. Never wear the seat belt if the tractor is not equipped with a ROPS or Safety Cab.

FALLING OBJECT PROTECTIVE STRUCTURES (FOPS)

When tractors are equipped with front-end loaders and are not equipped with safety cabs, it is recommended the tractor be equipped with a FOPS canopy to protect the operator from falling objects.

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.

WARNING: 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, non-metallic 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 52, 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 38.

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.
- 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.

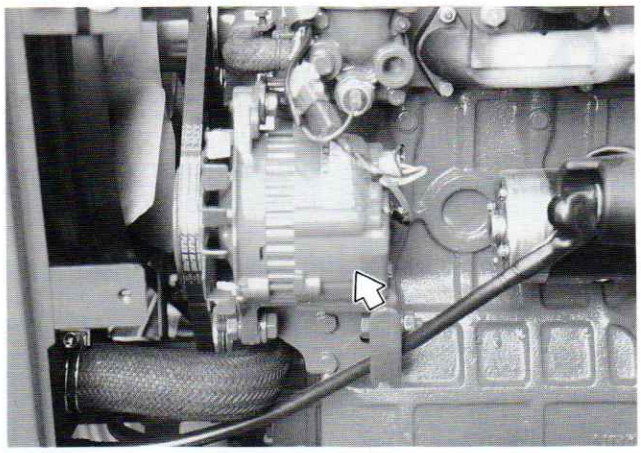


Figure 52 — Alternator

- 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.

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 NEW HOLLAND Dealer.

FUSE BOX

The fuse box is shown in Figure **53**. The plastic fuse cover is easily removed by pulling it off. Always replace blown fuses with the specified fuse.

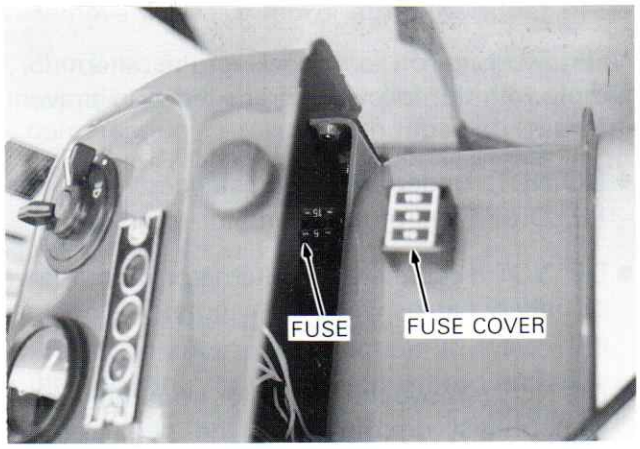


Figure 53 — Fuse Box

HEADLAMP

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

1. Turn the socket counter-clockwise and remove the socket from the housing, Figure **54**.
2. Remove the bulb.
3. Install a new bulb in the socket and install the socket with bulb in the housing.

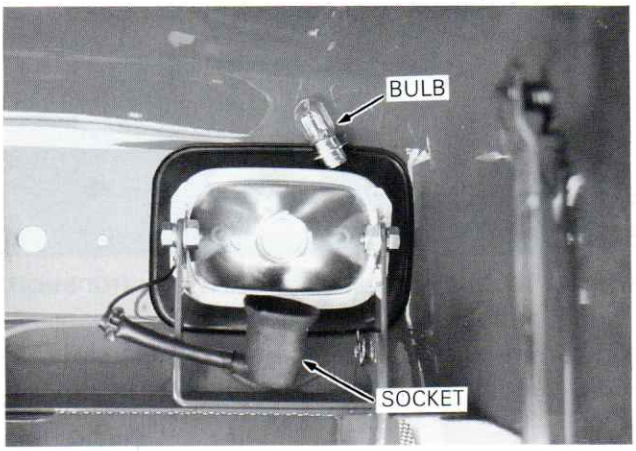


Figure 54 — Headlamp

TAIL LIGHT AND FLASHER WARNING LIGHT

To replace a tail light bulb or flasher warning light 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. Pull the socket from the housing behind the panel.

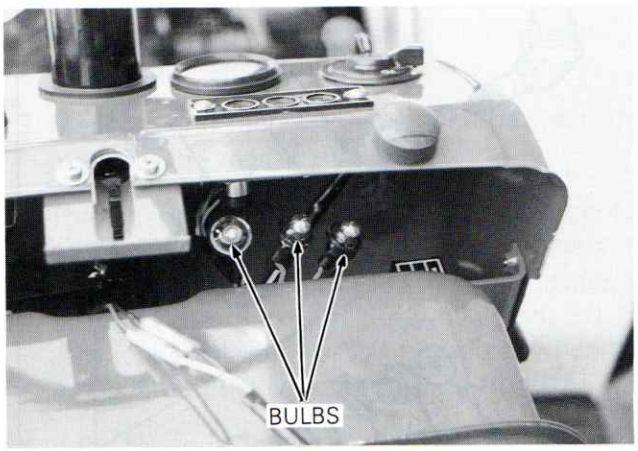


Figure 55 — Instrument Panel Warning Lights

2. Replace bulb.

TIRES

Inflation and Service

- Upon receiving your tractor, check the air pressure in the tires as indicated in the tables.
- Check tire pressure every 50 hours, or weekly.
- Tire inflation pressure affects the amount of weight which a tire may carry. Locate the tires for your tractor in the "TIRE INFLATION vs. PERMISSIBLE LOAD" chart on page **25**. Do not over-or-under inflate the tires.
- Do not inflate a tire above the manufacturer's maximum pressure shown on the tire or the maximum pressure shown in the inflation vs permissible load chart, page **25** if the tire is not marked.
- 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.
- When checking tire pressure, inspect the tire for damaged side walls and tread cuts. Neglected damage will lead to early tire failure.

WARNING: Inflating or servicing tires can be dangerous. Trained personnel should be called to service and/or mount tires when possible. In any event to avoid possible serious or fatal injury, follow the safety precautions below :

- Be sure the rim is clean and free of rust.
- Lubricate both tire beads and rim flanges with soap solution. Do not use oil or grease.
- 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.
- NEVER INFLATE TO OVER 35 psi (2.4 bar) TO SEAT BEADS. If beads have not seated by time pressure reaches 35 psi, deflate the assembly, reposition tire on rim, relubricate both tire beads and rim flanges and re-inflate. Inflation beyond 35 psi with-unseated beads may break the bead or rim with explosive force sufficient to cause serious injury.
- After seating the beads, adjust inflation pressure to recommended operating pressure.
- 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 weld, braze, otherwise repair, or use a damaged rim.
- Never attempt tire repairs on a public road or highway.
- Use jack stands or other suitable blocking to support the tractor while repairing tires.
- Insure jack has adequate capacity to lift your tractor.
- Insure jack is placed on a firm level surface.
- Do not put any part of your body under the tractor or start the engine while the tractor is on the jack.
- Torque lug nuts to specification after reinstal-

ling wheel. Check lug nut torque daily until torque stabilizes.

- Refer to tractor weighting section before adding ballast to the tires.

FRONT WHEEL BEARINGS (TWO-WHEEL DRIVE)

The front wheels are carried on the wheel spindles by inner and outer tapered roller bearings. A grease retainer is provided at the inner end of the spindle, and a cover at the outer end, to retain the lubricant and to keep out dirt and other foreign material.

Front wheel bearings should be repacked every 600 hours as follows :

1. Apply the parking brake to hold the tractor securely.
2. Jack up one of the front wheels, remove the wheel and remove the cover, the cotter pin, and the nut, Figure **56**. Remove the thrust washer, outer bearing, and then the hub.
3. Remove the grease retainer and the inner bearing from the inner end of the hub.
4. Thoroughly clean all parts in a suitable solvent and allow to dry naturally. Do not use compressed air. Inspect the bearing cone and roller assemblies for excessive discoloration or wear of the rollers ; similarly, check the bearing cups.
5. Repack the cone and roller assembly with clean grease (See specifications.) Pack approximately 1/4-inch (6.35 mm) of grease in the space between the bearing cups in the hub, but do not pack the hub completely. Apply a film of grease on the surface of the spindle.
6. Reinstall the inner bearing and install the grease retainer in the rear of the hub.
7. Place the wheel assembly on the spindle and install the outer bearing, thrust washer, and castellated nut. Tighten the nut, at the same time turning the wheel, until a slight drag is felt. Back off the nut until nearest slot in the nut lines up with the hole in the spindle. Install a new cotter pin, then the cover, with a new gasket.

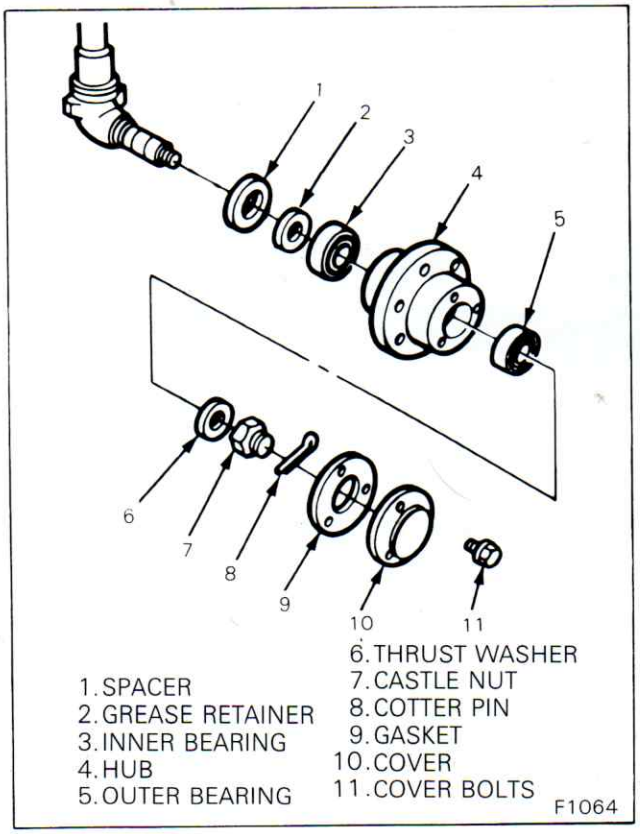


Figure 56 – Servicing Front Wheel Bearings – Two-Wheel Drive

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 **57**.

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 marks at the rear of the wheels.

4. The difference between the dimensions recorded in Step 2 and 3 should give zero to 13/64-inch (0-5 mm) toe-in. The distance between the marks on 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.

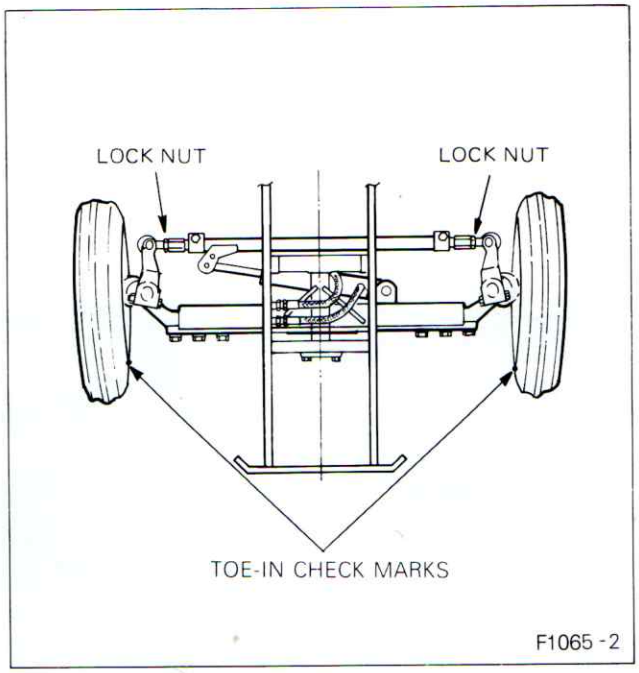


Figure 57 – Checking Toe-In

Adjusting Toe-In

1. Loosen the tie rod lock nuts.

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 nuts.

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 :

1. Loosen the lock-nut, Figure **58**, and rotate the brake rod as necessary until there is 1-3/8 – 1-3/4 inch (35-45mm) of pedal free play. Lengthening the rod increases free play while shortening the rod decreases free play.

2. Test drive the tractor to make sure the braking action of both rear wheels is equal. Readjust as necessary.

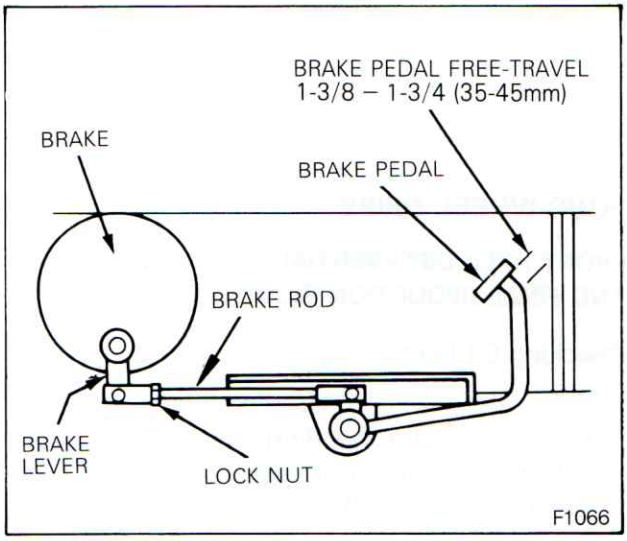


Figure 58 – Brake Pedal Adjustment

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 **59**.

1. Remove the cotter pin and clevis pin.

2. Turn the clevis to increase or decrease pedal travel as required.

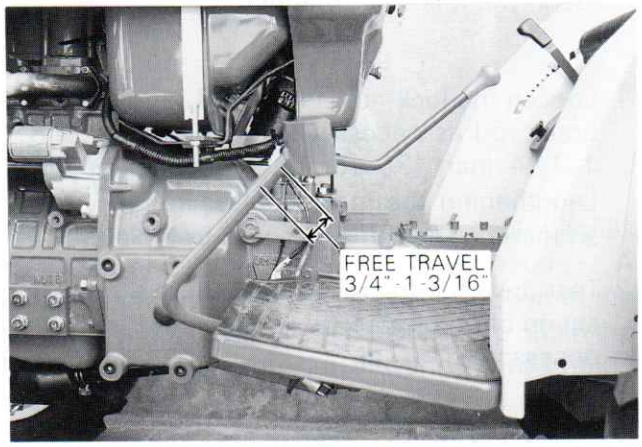


Figure 59 – Clutch Pedal Free Travel Adjustment

FOUR-WHEEL DRIVE

FRONT AXLE DIFFERENTIAL CASE AND FINAL REDUCTION GEAR CASES

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

1. With the tractor standing level and the engine off, check the front axle oil level with the dipstick, Figure 60.

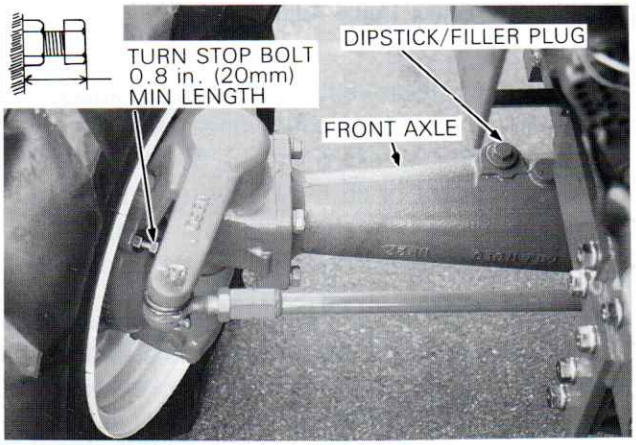


Figure 60 – Front Axle Oil Level Dipstick/Filler Plug

2. The oil is at the correct level when the oil level is between the mark and lower end of the dipstick. If low, add new oil of the type specified, page30, through the combined dipstick/filler plug. Do not fill beyond the mark on the stick, as the front axle and differential housing will be overfilled.

3. Install the dipstick/filler pulg.

NOTE: To ensure correct steering operation the stop bolt, Figure 60, should protrude a minimum of 0.8 in (20 mm) from the casing.

Changing Oil: Change the oil every 300 hours.

1. With the oil at normal operating temperature, drain the oil by removing the front axle differential, Figure 61, and final reduction gear case drain plugs, Figure 62. Reinstall the plugs after the oil has drained. Discard the oil.

2. Remove the filler plugs at each final reduction gear case, Figure 62, and fill with new oil as specified on page 30, and install the filler plugs

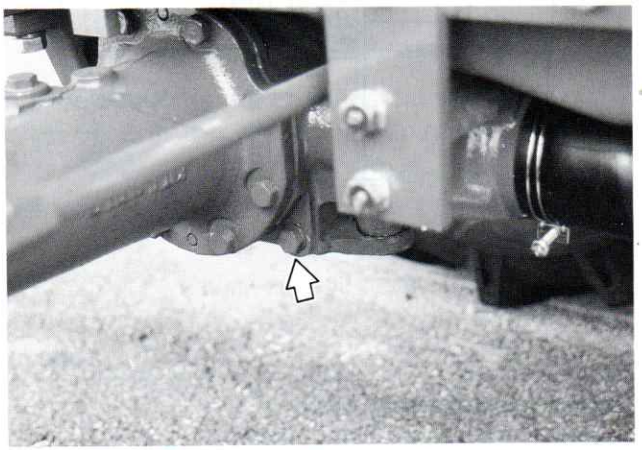


Figure 61 – Front Axle Differential Drain Plug

3. Remove the dipstick/filler plug on the top, left side of axle housing, Figure 60, and fill with new oil of the type specified, page 30.

4. The front axle is filled to correct level when the oil level is between the mark and lower end of the stick. Do not fill beyond the full mark on the stick, as the front axle will be overfilled.

5. Install the dipstick/filler plug.

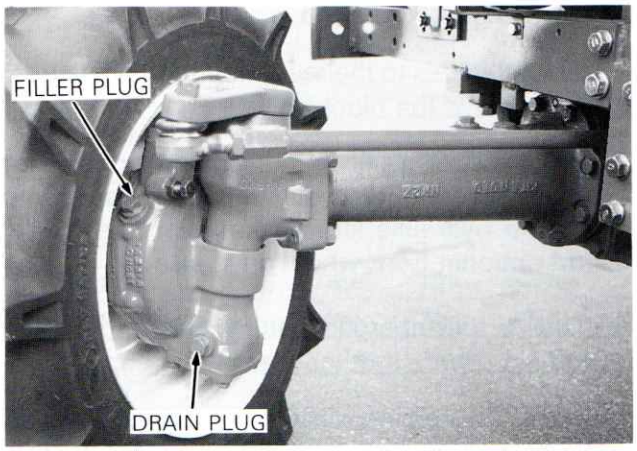


Figure 62 – Final Reduction Gear Case Filler and Drain Plug

FRONT AXLE PIVOT

Grease the center housing pivot point, Figure **63**, 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.

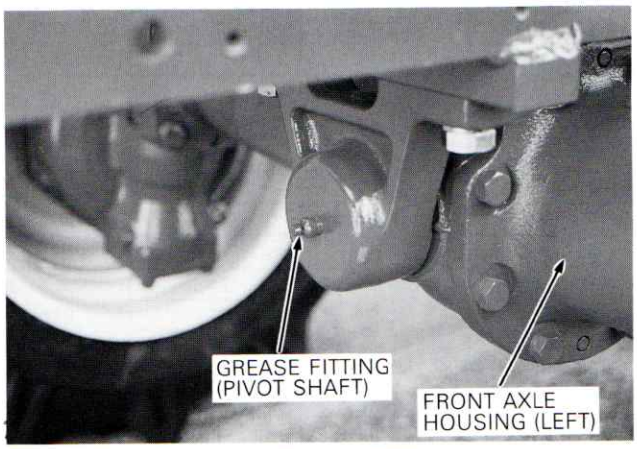


Figure 63 – Front Axle Grease Fitting

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 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 (0.8327 Imp.pt.) (.473 liters) 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 setting at low temperature.

6. Open the drain valve of the radiator and engine block. Flush the system, close the drain valves, and fill with a 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.

10. Place pedal spacer between clutch pedal and step plate to separate clutch disc from flywheel Figure **64**.

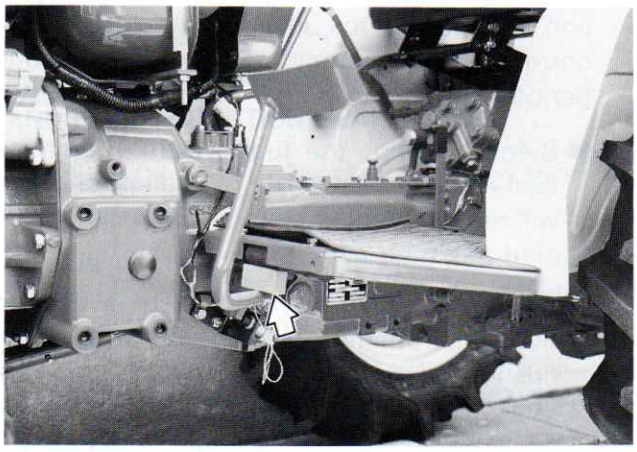


Figure 64 – Installing Pedal Spacer

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, power steering resevoir, the common sump (for the hydraulic lift, transmission, rear axle) and optional front wheel drive axle.

3. Install a fully-charged battery and remove the exhaust cover, if other than a rain cap.

4. Check the cooling system for proper level of 50/50 solution of antifreeze and clear water.

5. Remove pedal spacer from between clutch pedal and step 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.

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.

SAE Grade No.		2				5				8 *			
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary						  				  			
Bolt Size		Torque Pounds Feet		Newton-Meters		Torque Pounds Feet		Newton-Meters		Torque Pounds Feet		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	35	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

Bolt Size	Grade No.	Coarse Thread Pitch (mm)	Coarse Thread Pounds-Feet	Coarse Thread Newton-Meters	Fine Thread Pitch (mm)	Fine Thread Pounds-Feet	Fine Thread Newton-Meters
M6	4T 4T 4.8	1.0	3.6– 5.1	4.9– 6.9	—	—	—
	7T 7T 8T 8.8		6.1– 8.3	8.3– 11.3			
	10T 10T 11T		8.7– 11.6	11.8– 15.7			
M8	4T	1.25	9.4– 12.3	12.7– 16.7	1.0	11.2– 14.8	15.2– 20.1
	7T		16.6– 21.0	22.6– 28.4		19.5– 25.3	26.5– 34.3
	10T		21.0– 26.8	28.4– 36.3		22.4– 29.7	30.4– 40.2
M10	4T	1.5	18.8– 24.6	25.5– 33.3	1.25	21.0– 26.8	28.4– 36.3
	7T		32.5– 41.2	44.1– 55.9		36.2– 46.3	49.0– 62.8
	10T		39.8– 51.4	53.9– 69.6		42.7– 54.2	57.9– 73.5
M12	4T	1.75	27.5– 34.7	37.3– 47.1	1.25	31.8– 40.5	43.1– 54.9
	7T		48.5– 61.5	65.7– 83.4		55.0– 69.4	74.5– 94.1
	10T		68.0– 85.4	92.2–116		73.1– 93.3	99.0–127
M14	4T	2.0	46.3– 59.3	62.8– 80.4	1.5	51.4– 64.4	69.6– 87.3
	7T		76.7– 96.9	104 –131		86.1–109	117 –148
	11T		102 –129	139 –175		108 –137	147 –186
M16	4T	2.0	63.6– 81.0	86.3–110	1.5	67.3– 84.6	91.2–115
	7T		110 –136	149 –184		116 –142	157 –192
	11T		152 –188	206 –255		163 –199	221 –270
M18	4T	2.0	83.9–104	114 –141	1.5	96.9–120	131 –163
	7T		145 –174	196 –235		170 –206	230 –279
	11T		203 –246	275 –333		221 –271	299 –368
M20	4T	2.5	106 –132	144 –179	1.5	127 –156	172 –211
	7T		177 –213	240 –289		203 –246	275 –333
	11T		268 –325	363 –441		293 –358	397 –485

SPECIFICATIONS

The specifications on the following pages are porvided for your information. For additional information, see your NEW HOLLAND Dealer.

Properly Maintained Equipment is Safe Equipment

"NEW HOLLAND NORTH AMERICA, INC. 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 buit."

ENGINE

Type ····· Diesel
Number of Cylinders ····· 3
Bore ····· 3.31 in. (8.4 cm)
Stroke ····· 3.15 in. (8.0 cm)
Displacement ····· 81.16 cu.in. (1330 cc)
Compression Ratio ····· 23 : 1
Firing Order ····· 1-2-3
Low Idle Speed ····· 800-900 rpm
Maximum Speed :
  High Idle ····· 2750-2800 rpm
  Rated ····· 2600 rpm
Valve Clearance (Cold Engine) :
  Intake ····· 0.008 in. (.20 mm)
  Exhaust ····· 0.008 in. (.20 mm)

CAPACITIES

Fuel Tank ····· 7.1 U.S. Gals.
5.9 Imp. Gals.
27 Liters
Cooling System ····· 4.2 U.S. Qts.
3.5 Imp. Qts.
4.0 Liters
Engine Crankcase :
  Less Filter ····· 4.2 U.S. Qts.
3.5 Imp. Qts.
4.0 Liters
  With Filter Change ····· 4.8 U.S. Qts.
4.0 Imp. Qts.
4.5 Liters
Rear Axle and Transmission ···· 23.3 U.S. Qts.
(Includes Hydraulics) ····· 19.3 Imp. Qts.
22 Liters
Front Axle Final Reduction and
Differential Gear Case ····· 3.2 U.S. Qts.
2.6 Imp. Qts.
3.0 Liters
Power Steering (4WD) ····· 1.9 U.S. Qts.
1.6 Imp. Qts.
1.8 Liters

COOLING SYSTEM

Type ····· Pressurized Liquid with Recirculating
Water Pump : Bypass
  Type ····· Centrifugal
  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.

COOLING SYSTEM — Cont'd.

Fan Diameter ····· 13.4 in. (34 cm)
Thermostat :
  Start to Open ····· 160°F (71°C)
  Fully Open ····· 185°F 85°C)
Radiator Cap ····· 13 psi (.9 bar)

ELECTRICAL SYSTEM

Alternator ····· 12-volt, Heavy
Duty, 35 amps
Regulator ····· Mechanical
Battery ····· 12-volt, 65 amp.
Hour Rating with
Negative Ground
Starting Motor ····· Reduction,
Magnet Shift

FUEL SYSTEM

Type of Fuel to Use	Temperature	Type
Diesel	Above 20°F (−6.7°C)	No. 2D Cetane Rating min. 40
	Below 20°F (−6.7°C)	No. 1D Cetane Rating min. 40

Injection Pump :
  Type ····· In-Line
  Timing ····· 22.5°BTDC

CLUTCH

Type ····· 8.46 in. (21.5 cm)
Dry Disc.,
Organic Face
Pedal Free-Travel ····· 3/4-1-3/16 in.
(19-30 mm)

BRAKES

Type ····· Wet Disc
6.1 in. ×4.8 in. Diameter
(15.5 cm×12.3 cm)

STEERING

Type (2-Wheel Drive) ····· Manual
Type (4-Wheel Drive) ····· Hydraulic Power
Turns-Lock-to-Lock
  Manual Steering ····· 4.0
  Power Steering ····· 2.5
Steering Wheel Free-Play
(Manual Steering Olnly) ····· 0.78-1.38 in.
(20-35 mm)
Front Wheel Toe-In ····· 0-13/64 in.
(0-5 mm)

SPECIFICATIONS

STEERING-Cont'd

Turning Radius
(Without Brake) ·····8.69 ft. (265 cm)
Two Wheel Drive
9.38 ft. (286 cm)
Four Wheel Drive

POWER TAKE-OFF

Type ·····Transmission
Shaft ·····1-3/8 in. (3.49 cm)
6 Spline SAE STD
Engine Speed for 540 rpm
PTO Operation ·····2419 rpm
Horsepower PTO
Observed ·····23.0

HYDRAULIC LIFT SYSTEM

Type ·····Live Category 1
3-point Linkage
Pump Type ·····Gear
Pump Capacity ·····6.16 U.S. gpm@
5.13 Imp. gpm@
23.3 liters per minute@
2133 psi at 2600 rpm
147 bar at 2600 rpm
System Relief Valve
Setting ·····2133 psi (147 bar)

CAST IRON WEIGHTS

(3) Front End Weights ·····33 lbs.
(15 kg) each
(4) Rear Wheel Weights ·····66 lbs.
(30 kg) each

Draw Bars

Fixed Type ·····Standard
Extendable ·····Optional
Swinging ·····Optional

TIRES

Front :

	Two Wheel Drive	Four Wheel Drive
Standard (AG)	4.00-15, F2, 4PR	6-14 R1, 4PR
Optional (AG)	5.50-16, F2, 4PR	7-14 R1, 4PR
Optional (TURF)	23-8.50-12, 4PR	25-8.50-14,4PR

Rear :
Standard (AG) ····(Two & Four Wheel Drive)
9.5×24, R1, 4PR
Optional (AG)·····(Two & Four Wheel Drive)
11.2×24, R1, 4PR
Optional (TURF) ··(Two & Four Wheel Drive)
13.6-16, R3, 4PR

WHEEL BOLT TORQUES

Front Wheel : Disc-to-Hub	Two Wheel Drive	Four Wheel Drive
	43-54 lb. ft. (58-73 N.m)	69-87 lbs. ft. (93-117 N.m)

Rear Wheel :
Disc-to-Axle ·····137-159 lbs. ft.
(186-215 N.m)

ROPS ATTACHING BOLT TORQUES

ROPS to Axle (M12) ·····55 lbs. ft. (74 N.m)
Seat Belt (M10)·····37 lbs. ft. (50 N.m)

LUBRICANTS

TRACTOR COMPONENT	LUBRICANT RECOMENDATION	NEW HOLLAND PART NO.
Engine Oil	NEW HOLLAND Super Premium	1QM-2C 121-AMV (Case-24 Qts. 15W-40) 1QM-2C 121-A10 (Case-24 Qts. SAE 10W) 1QM-2C 121-A30 (Case-24 Qts. SAE 30W)
Transmission, Rear Axle, Power Steering and Hydraulic System Oil	NEW HOLLAND 134	1GM-134C (1 Gal.) 5GM-134C (5 Gal.)
Front Wheel Bearings and Lubrication Fittings	M1C-137-B	1TM-1C-137-B (1 Tube)
Front Axle	NEW HOLLAND 134	1GM-134C (1 Gal.) EOAZ-19580-E (5 Gal.)

NOTE: Should the recommended engine oil not be readily available, use a commercial oil as shown on page **30**.

IMPORTANT: Engine crankcase oil drain intervals should be adjusted downward when diesel fuel sulfur content is over 0.5%. (See page **31**.)

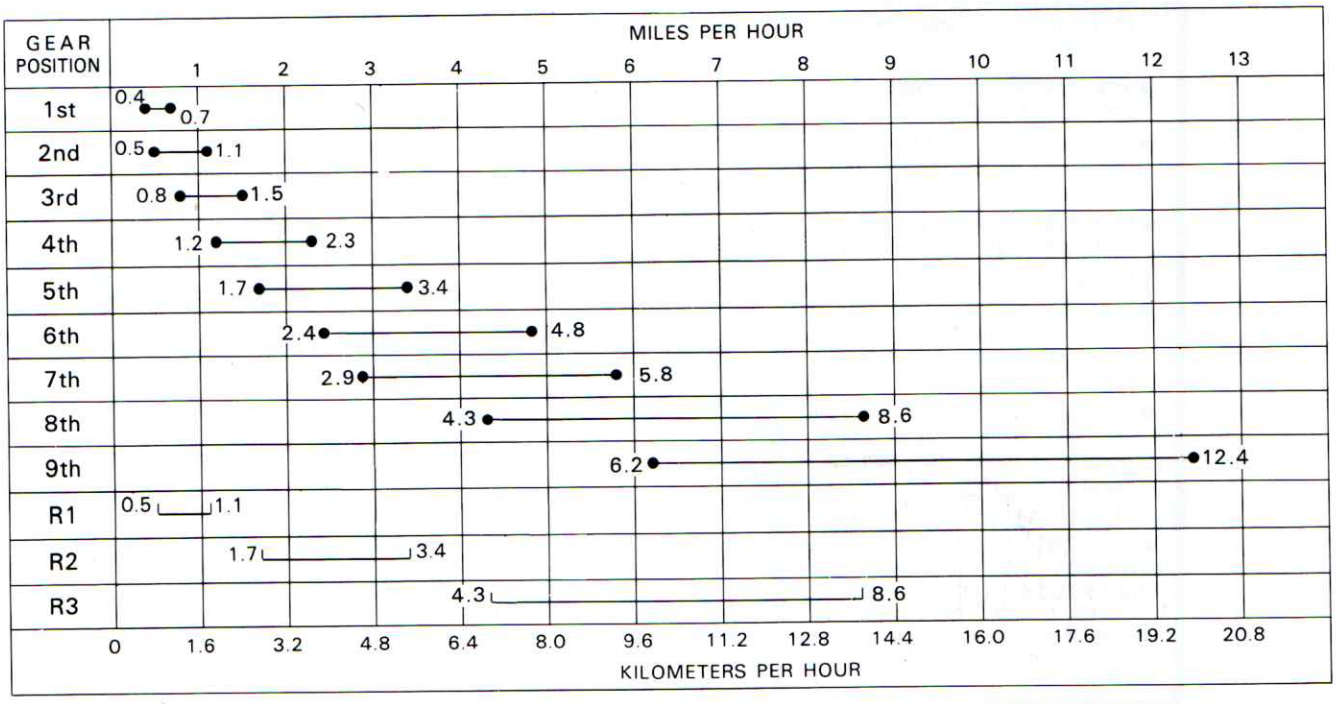
GENERAL DIMENSIONS

	Tow-Wheel Drive	Four-Wheel Drive
Length	111.4 in. (283.0 cm)	111.4 in (283.0 cm)
Wheelbase	63 in. (160.0 cm)	63 in. (160.0 cm)
Height :		
Top of Steering Wheel	55.7 in. (141.5 cm)	55.1 in. (140.0 cm)
Top of ROPS	84.4 in. (214.5 cm)	84.4 in. (214.5 cm)
Top of Vertical Exhaust	78.7 in. (200.0cm)	78.5 in. (199.5 cm)
Width :	51.6 .in (131 cm)	51.6 in. (131 cm)

GENERAL DIMENSIONS — Cont'd

	Tow-Wheel Drive	Four-Wheel Drive
Minimum Ground Clearance	11.8 in. (30.0 cm)	11.2 in. (28.5 cm)
Adjustable Wheel Tread		
Front	39.2-43.1 in. (995-109.5 cm)	42.5 in. (108.0 cm)
Rear	42.2-48.2 in. (107-122.5 cm)	42.2-48.2 in. (107-122.5 cm)
Weight (W/ROPS) (Less Options)	1929 lbs. (875 kg)	2116 lbs. (960 kg)

GROUND SPEEDS
From 1300-2600 RPM Engine Speed
with 9.5×24 Rear Tires



SAFETY DECALS

In the event that decals become damaged or illegible, they should be replaced with new decals at their original position. Replacement decals are available from your NEW HOLLAND Dealer.

⚠ WARNING

- Pull only from drawbar. Pulling from any other point can cause rear overturn.
- Do not operate with unshielded PTO. ● Disengage PTO and stop engine before servicing tractor or implements or attaching and detaching implements.
- Position drawbar at 14″ from end of PTO shaft to drawbar hole for 540 and 16″ for 1000 PTO RPM. ● When towing equipment use a safety chain.

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.

WARNING — Pull only from drawbar
PART NO. — SBA-390192292
LOCATION — Inside of L.H. fender

⚠ WARNING

- Before starting and operating
  - — Know the operating and safety instructions in the operators manual and on the tractor.
  - — Clear the area of bystanders.
  - — Locate and know operation of controls.
  - — Fasten your seat belt.
- Start engine only from operators seat with transmission in neutral, PTO disengaged and hydraulic controls in lowered position.
- Slow down on turns, rough ground and slopes to avoid upset.
- Do not permit anyone but the operator to ride on the tractor. There is no safe place for riders.
- Lock brakes together, use warning lights and SMV emblem while driving on roads.
- Lower equipment, place gear shift levers in neutral, stop engine and apply parking brake before leaving tractor seat.
- Avoid accidental contact with gear shift lever while engine is running. Unexpected tractor movement can result.

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.

(Replacement manuals are available from your NEW HOLLAND dealer or NEW HOLLAND NORTH AMERICA, INC., New Holland, PA 17557)

⚠ WARNING

- Start engine only from operators seat, if safety start switch is bypassed engine can start with transmission in gear.
- Do not connect or short across terminals on starter solenoid.
- Attach booster cables as shown on battery decal.

Starting in gear causing runaway can result in serious injury.

WARNING — Start engine only from operator's seat
PART NO. — SBA-190196682
LOCATION — On the starting motor

WARNING — Before starting and operating
PART NO. — SBA-390192273
LOCATION — Center of R.H. fender

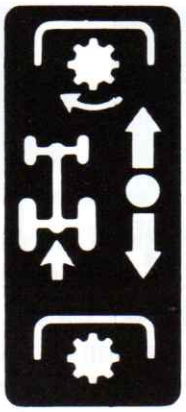
WARNING — TO JUMP START
PART NO. — SBA-490990571
LOCATION — On the battery

WARNING — Keep hands and clothing away from rotating fan.
PART NO. — SBA-390191352
LOCATION — Rear radiator

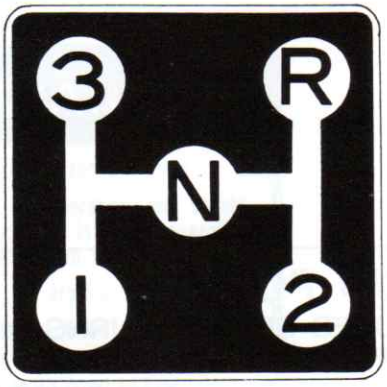
DANGER-EXPLOSIVE/ACID — POISON
PART NO. — SBA-390194390
LOCATION — On the battery

WARNING — DRAWBAR
PART NO. — SBA-390195760
LOCATION — Top of PTO shield support

INSTRUCTION DECALS



P. T. O. Control Lever – Rear
PART NO. – SBA-390171940
LOCATION – Inside of L.H. fender

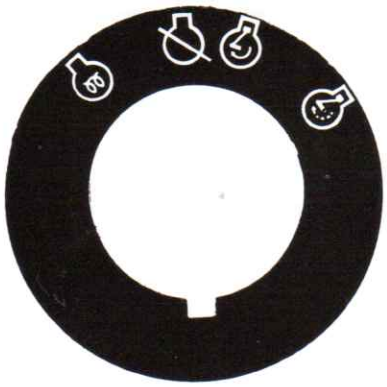


Main Shift Lever
PART NO. – SBA-390172840
LOCATION – Top Cover of Transmission

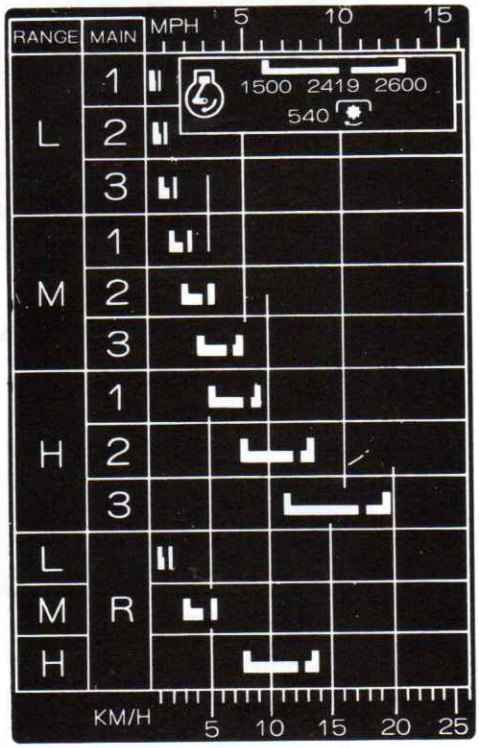
Range Selector Lever
PART NO. – SBA-390172000
LOCATION – Inside of L.H. fender

Four-Wheel Drive Control Lever
PART NO. – SBA-390170630
LOCATION – Below seat pan back of lever

Differential Lock
PART NO. – SBA-390191690
LOCATION – Above pedal



Starter Switch
PART NO. – SBA-390194290
LOCATION – Starter switch, right side of instrument panel



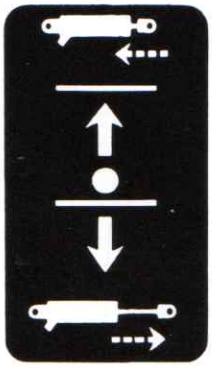
Ground Speed Diagram -- Manual
PART NO. – SBA-390172850
LOCATION – Inside of L.H. fender

INSTRUCTION DECALS

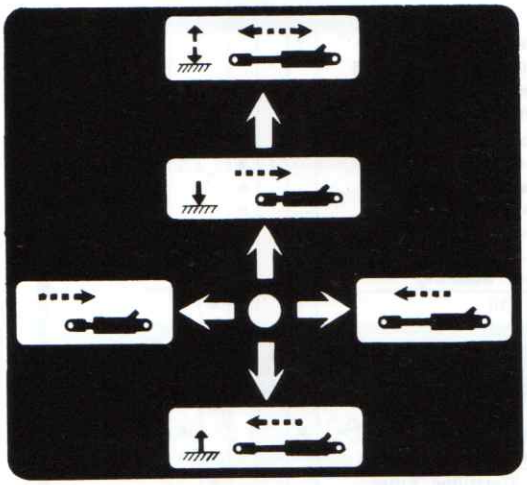
Position Control Lever
PART NO. – SBA-390371320
LOCATION – Inside of R.H. fender

HYD. Manifold Operation
See Operator Manual
PART NO. – SBA-390192850
LOCATION – R.H. side of Hyd. Manifold

Draft Control Lever
PART NO. – SBA-390371300
LOCATION – Right of seat to the rear of draft quadrant lever



Operating Remote Control valve – Single
PART NO. – SBA-390370300
LOCATION – On cover of single spool remote valve



Operating Remote Control valve – double
PART NO. – SBA-390193270
LOCATION – On cover of 2-spool remote valve

Coupler – Extending
PART NO. – SBA-390194340

Coupler – Extending
PART NO. – SBA-390194360

Coupler – Retracting
PART NO. – SBA-390194350

Coupler – Retracting
PART NO. – SBA-390194370

INSTRUCTION DECALS

Power Steering Fluid
PART NO. – SBA-390230130
LOCATION – On top of P.S. reservoir

WATCH YOUR PROOF METER HOURS

LUBRICATION AND MAINTENANCE SERVICE INTERVALS

LUBRICATION AND MAINTENANCE ITEM	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVAL
Radiator Coolant	•					Every 10 Hours or Daily
Engine Oil Level	•					
Air Cleaner	•					
Transmission Oil Level	•					
Power Steering Oil Level	•					
Front Diff Oil Level	•					
Front Axle Oil Level	•					
Tires	•					
Clutch Pedal			•		•	
Battery	•					
Lubrication Fittings						Every 50 Hours
Steering Linkage			•			
2-Wheel Drive King Pins			•			
3-Point Linkage			•			
Pivot Shaft			•			
Pedal Shaft			•			
Brake Pedal			•			
Drive Shaft Cover			•			
H.S.T Foot Pedal Shaft			•			
Power Steering			•			
Engine Oil				•		Every 100 Hours
Fuel Filter		•				
Air Cleaner		•				
Fuel Filter				•		Every 200 Hours
Engine Oil Filter				•		
Fan Belt	•				•	
Brakes					•	
H.S.T Cartridge Filter				•		Every 300 Hours
Front Axle Oil				•		
Front Diff Oil				•		
Hydraulic Filter				•		
Transmission Oil				•		
Fuel Injectors	•				•	Every 600 Hours
Valve Clearance	•				•	
Front Wheel Bearings			•			
Power Steering Oil				•		
Radiator Coolant				•		Seasonal
Air Cleaner Element				•		

Refer to your Operator's Manual for additional information

Lubrication and Maintenance Intervals
PART NO. – SBA-390194330
LOCATION – On inside of hood

IMPORTANT

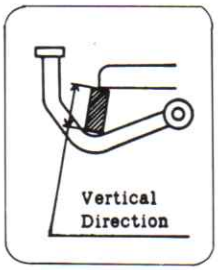
- For normal operation on firm soil, hard surfaces and roading the unit, front wheel drive should be disengaged to maximize tire and driveline life and fuel economy
- Only use front wheel drive when addtional traction is required while operating in loose soil; wet, slippery conditions or on slopes.

IMPORTANT – For normal operation
PART NO. – SBA-390192410
LOCATION – Top of transmission case
Four – Wheel control lever

USAGE

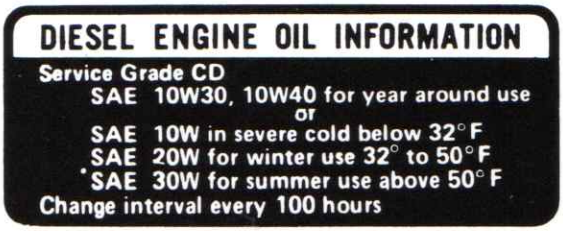
Tractors that are to be stored for an extended period should have this part between clutch pedal and platform to prevent clutch from adhering.

USAGE – Tractors that are to be stored
PART NO. – SBA-390190300
LOCATION – On clutch pedal spacer block



Installing Pedal Spacer
PART NO. – SBA-390190290
LOCATION – On clutch pedal spacer block

INSTRUCTION DECALS



Diesel Engine Oil Information
PART NO. — SBA-190196490
LOCATION — On air cleaner

Diesel Fuel
PART NO. — SBA-390192840
LOCATION — Under the fuel fill lid.

Engine Oil
PART NO. — SBA-390230120
LOCATION — On engine oil filler cap

Cold Start Aid
PART NO. — SBA-390191370
LOCATION — Instrument Panel

Engine Stop Control
PART NO. — SBA-390193620
LOCATION — Upward of Engine stop knob

CAUTION — This vehicle is equipped with manual steering
PART NO. — SBA-390195790
LOCATION — Instrument Panel (2WD only)

13/16 Motor Drain Plug 4.8 Qts 15w-40 Motor Filter = Napa Gold 1348
Tranny & Reverse 3/4" Plug

NOTES

11/20/2015 - 536.3 hrs. Changed motor oil & filter. Changed Transmission filter, ~~not transmission oil~~ tranny fluid.

PRE-DELIVERY SERVICE

CHECK AND ADJUST AS REQUIRED

INOPERATIVE SERVICE CHECKS

1. Tire pressure ☑
2. Air cleaner element 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. Power steering reservoir oil level ☐
8. Transmission and rear axle ☑
9. Front axle and front differential oil level (4WD) ☐
10. Hydraulic Lift control adjustment ☑
11. Upper link, and hitch ☑
12. Brake adjustment and pedal equalization ☑
13. Rear wheel disc and hub bolts for tightness ☑
14. Front wheel hub bolts for tightness (2WD) ☑
15. Front wheel hub bolts for tightness(4WD) ☐
16. Front wheel toe-in ☑
17. Fuel level ☑
18. Sheet metal and paint condition ☑
19. Check lift rod for proper operation ☑
20. Drain diesel fuel filter ☑

SAFETY ITEMS CHECKS

1. ROPS installed ☑
2. Seat belts installed ☑
3. Bolt torque check of ROPS and seat belt ☑
4. PTO master shield installed ☑
5. SMV emblem installed ☑
6. Safety decals installed ☑
7. Neutral start switches operation ☑
8. Parking brake & latch operation ☑
9. Flashing lights/tail lights operation ☑
10. Operator's Manual ☑

OPERATIVE SERVICE CHECKS

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

1. Lights and instruments for proper operation, and fuel shut down with key switch OFF ☑
2. Fluid and oil leaks ☑
3. Maximum no-load speed and idle speed adjustments ☑
4. P.T.O. engagement and disengagement ☑
   - Clutch pedal and P.T.O. lever ☑
5. Hydraulic System:
   - Selector lever for position control ☑
6. 4-wheel drive lever operation ☐
7. Low speed (creeper) lever ☑

TRACTOR MODEL NO. 1715 **INSPECTION PERFORMED WARRANTY EXPLAINED** **TRACTOR SERIAL NO.** UR29645

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. Power steering reservoir oil level ☐
12. Transmission and rear axle oil level ☐
13. Front differential and front axle oil level (4WD) ☐
14. Injection pump timing ☐
15. Replace hydraulic system oil filter ☐
16. Bolt torque check of ROPS and seat belt ☐

OPERATIVE SERVICE CHECKS

1. Lights and instruments for proper operation, and fuel shut down with key switch OFF ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments ☐
4. Starting and starter safety switches ☐
5. Hydraulic system:
   - Selector lever for position 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 element 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. Power steering reservoir oil level ☐
8. Transmission and rear axle ☐
9. Front axle and front differential oil level (4WD) ☐
10. Hydraulic Lift control adjustment ☐
11. Upper link, and hitch ☐
12. Brake adjustment and pedal equalization ☐
13. Rear wheel disc and hub bolts for tightness ☐
14. Front wheel hub bolts for tightness (2WD) ☐
15. Front wheel hub bolts for tightness(4WD) ☐
16. Front wheel toe-in ☐
17. Fuel level ☐
18. Sheet metal and paint condition ☐
19. Check lift rod for proper operation ☐
20. Drain diesel fuel filter ☐

SAFETY ITEMS CHECKS

1. ROPS installed ☐
2. Seat belts installed ☐
3. Bolt torque check of ROPS and seat belt ☐
4. PTO master shield installed ☐
5. SMV emblem installed ☐
6. Safety decals installed ☐
7. Neutral start switches operation ☐
8. Parking brake & latch operation ☐
9. Flashing lights/tail lights operation ☐
10. Operator's Manual ☐

OPERATIVE SERVICE CHECKS

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

1. Lights and instruments for proper operation, and fuel shut down with key switch OFF ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments ☐
4. P.T.O. engagement and disengagement ☐
   - Clutch pedal and P.T.O. lever ☐
5. Hydraulic System:
   - Selector lever for position control ☐
6. 4-wheel drive lever operation ☐
7. 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. Power steering reservoir oil level ☐
12. Transmission and rear axle oil level ☐
13. Front differential and front axle oil level (4WD) ☐
14. Injection pump timing ☐
15. Replace hydraulic system oil filter ☐
16. Bolt torque check of ROPS and seat belt ☐

OPERATIVE SERVICE CHECKS

1. Lights and instruments for proper operation, and fuel shut down with key switch OFF ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments ☐
4. Starting and starter safety switches ☐
5. Hydraulic system:
   - Selector lever for position 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**

OWNER ASSISTANCE

We at New Holland and your NEW HOLLAND dealer want you to be completely satisfied with your investment. Normally any problems with your equipment will be handled by your dealer's Service Department. Sometimes, however, misunderstanding can occur. If your problem has not been handled to your satisfaction, we suggest the following.

1. Contact the owner or General Manager of the dealership, explain the problem, and request assistance. When additional assistance is needed, your dealer has direct access to our branch office.

2. If you cannot obtain satisfaction by doing this, contact the NEW HOLLAND branch Office in your area and provide them with:

    - Your name, address, and telephone number
    - Machine model and serial number
    - Dealership name and address
    - Machine purchase date and amount of use
    - Nature of problem

Atlanta
2000 Mountain Ind, Blvd
Tucker, GA 30084
Telephone: (404) 723-3615
States : AL, FL, GA, KY, MS,
NC, SC, TN, VA

Dallas
P.O. Box 10227
Dallas, TX 75207
Telephone: (214) 939-4919
States : AR, AZ, CA, CO, HI, KS,
LA, MO, NM, NV, OK, TX, UT

Minneapolis
P.O. Box 1342
Minneapolis, MN 55440
Telephone: (612) 887-4232
States : AK, IA, ID, IL, MN, MT,
ND, NE, OR, SD, WA, WI, WY

New Holland
500 Diller Avenue
New Holland, PA 17557
Telephone: (717) 285-8302
States : CT, DE, IN, MA, MD, ME,
MI, NH, NJ, NY, OH, PA, RI, VT,
WV

Calgary
Box 1616, Main P.O.
Calgary, AB
CANADA T2P 2M7
Telephone: (403) 569-3208

3. If you need further assistance contact:
    Service Department:
    Mail Station 500
    NEW HOLLAND NORTH AMERICA, INC.
    New Holland, PA 17557

When contacting NEW HOLLAND's branch office or Service Department, be aware that your problem will likely be resolved in the dealership using the dealer's facilities, equipment, and personnel. So it is important that your initial contact be with the dealer.

A Service Publications Catalog & Order Form is available which lists the operator's and service manuals for many prior model and most current model - NEW HOLLAND - Versatile tractors, equipment, and consumer products. To obtain a copy of this catalog, please call 1-800-635-4913.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

NEW HOLLAND

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NEW HOLLAND NORTH AMERICA, INC.
New Holland, PA 17557

Printed in Japan