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## Tips for getting the most out of this manual

### Keep this manual in a safe place!

Digital files seem to have a habit of getting lost exactly when you need them most. To ensure that you don't accidentally delete or misplace this file here are some tips you should follow:

- Immediately after downloading your manual (i.e. now) it's a good idea to save this file in a place you will remember. We recommend putting it in a folder. To make a new folder in Windows just right click -> New -> Folder. Name the folder something like Digital Manuals, Tractor Manual, etc.
- Once you have a folder for this file, go to File -> Save As... Now save the manual file to the folder you created. If you want, rename the file to something you will remember. We recommend including the model number (this is important in case you forget where you saved this file on your computer).



**Remember:** If you have put this file in a safe place on your computer and are unable to find it again the following year, try Windows search feature: Start -> Search. Type in the model number or another keyword that you know is in the file name.

### Quick Search

If you are looking for something specific in this manual, you are in luck; All our manuals are searchable! Just press CTR + F and type in what you are looking for. Some things to remember when using the quick search feature:

- Your search won't be 100 percent accurate. The software we use to make the text readable might confuse an "l" with an "I" (L and I ) or a smudge on the paper might have made the text unreadable by the software.
- Quick search will only search the exact words you type into the search bar in the exact order you put them in. For example if you type in 20 **millimeters** when in the manual it was written 20 **mm** your search will not work.



What you should get from this tip is that: Quick Search is not completely reliable. Be sure to check the index and table of contents if you are getting no results when using the quick search feature.

## Printing

You will likely want to print out some or all of the pages from this manual to use in the workshop.

Even if you want to print the whole manual you will probably not want to print out these first couple of pages.

All of the printing options are located at File -> Print or CTRL + P. The most important options are in the page range box. If you printed this manual now it's likely that your printer would automatically print every page. If you want to omit some pages or only print certain page numbers you should click the Pages button rather than All in the page range box. Now enter the page numbers you wish to print, for example 2-40 or 18-22.



If you are planning to print only a certain section of pages be sure to use the page numbers that are shown on the toolbar and not the page number shown on the actual page.



If you are planning to print this entire manual it is recommended that you print on both sides of the paper. It looks nicer and you use half as much paper. Some printers have duplex printing where the printer can automatically print on both sides. If your printer doesn't have duplexing capabilities it will take more work. First you need to print off the odd pages. To do this select odd pages only in the print setup. Before you start to print, we recommend you label the different sides of the first sheet in your paper tray because depending on your printer it may be hard to figure out which way to correctly put the paper. Once you have printed out the odd pages just flip the stack of papers around according to the markings you made earlier and print the even side. Then put it in a binder, folder etc



These Tips might be outdated. Check [www.FarmManualsFast.com/Tips-and-Tricks](http://www.FarmManualsFast.com/Tips-and-Tricks)

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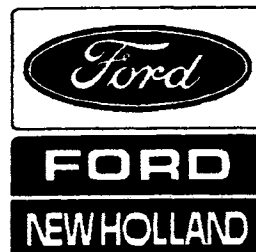
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### Injury Disclaimer

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# FORD

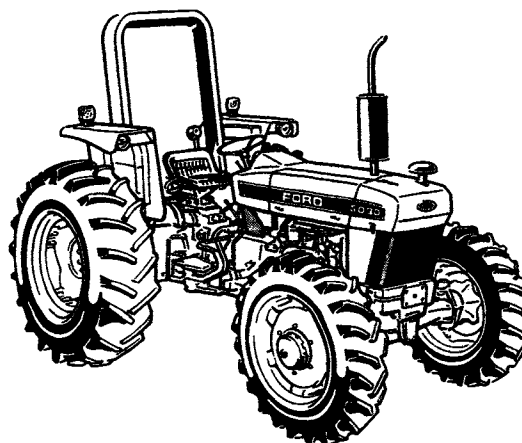
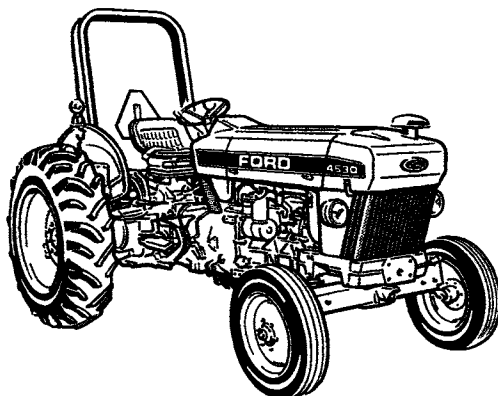
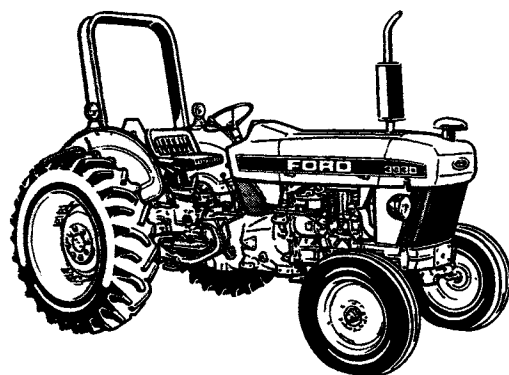
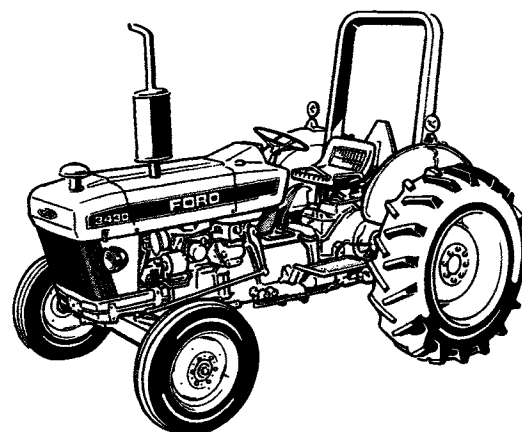
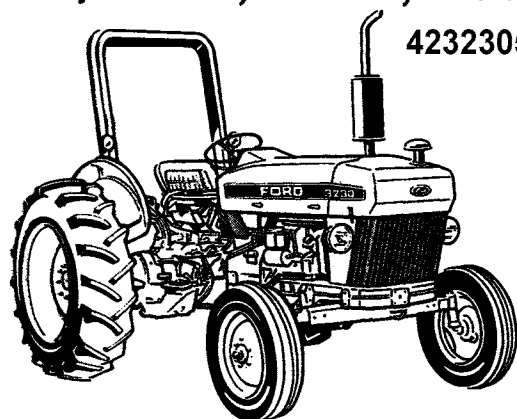
## Operator's Manual



### Tractors

3230, 3430, 3930, 4630, and 5030

42323051




Reprinted



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A vehicle identification plate is located under the tractor hood. In addition, if your tractor is equipped with optional four wheel drive, a similar plate is affixed to the rear surface of the front axle housing. For convenience, the numbers shown on the plates should be recorded in the panels below and quoted to your Ford New Holland dealer in the event the tractor requires service.

		Ford New Holland Limited	
TRACTOR NUMBER			
<input type="text"/>			
MODEL			UNIT
<input type="text"/>	<input type="text"/>		<input type="text"/>
ENGINE			
<input type="text"/>			
TRANSMISSION			REAR AXLE
<input type="text"/>	<input type="text"/>		<input type="text"/>
HYDRAULIC PUMP			HYDRAULIC LIFT
<input type="text"/>	<input type="text"/>		<input type="text"/>

Vehicle Identification Plate

<input type="radio"/>	AXLE TYPE	SERIAL NUMBER	<input type="radio"/>
<input type="text"/>		<input type="text"/>	
REF. NUMBER		TOTAL RATIO	
<input type="text"/>		<input type="text"/>	
INPUT ROT.		DIFF. TYPE	
<input type="text"/>		<input type="text"/>	
OIL SPECIFIC		LIT.	LOCATION
<input type="text"/>		<input type="text"/>	DIFF.
<input type="text"/>		<input type="text"/>	EPIC.
<input type="radio"/>	<input type="text"/>		<input type="radio"/>

Front Axle Identification Plate



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# ABOUT THIS MANUAL

This Manual has been prepared to assist you in the correct procedure for break-in, operation and maintenance of your new Ford tractor.

Your tractor has been designed and built to give maximum performance, economy and ease of operation under a wide variety of operating conditions. Prior to delivery, the tractor was carefully inspected, both at the factory and by your Ford New Holland dealer to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble-free operation, it is important that the routine services, as specified in this Manual, are carried out at the recommended intervals.

The upper portion of pages xv and xvii are pre-delivery inspection sheets. The first sheet (page xv) is the dealers' copy and should be removed by the dealer after the inspection has been carried out. The second sheet (page xvii) is your copy of the service performed. **Ensure that you and the dealer sign both copies.** After you have operated the tractor for 50 hours, take your tractor, together with this Manual, to your dealer. He will then perform the factory recommended 50 hour service as listed on the lower portion of pages xv and xvii. **Ensure that you and the dealer sign both copies.**

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

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

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

# INTRODUCTION

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

The warranty coverage that is extended to your Ford tractor is explained in the Warranty and Limitation of Liability form, a copy of which forms pages v and vi of this book. A further copy will be provided (pages vii and viii) which your dealer will remove from the book and ask you to sign after you have read it. Ask your dealer to explain any points that you do not understand.

Do not modify or alter or permit anyone else to modify or alter this tractor or any of its components or any tractor function without first consulting a Ford New Holland Dealer. If you have any questions regarding tractor modification contact Ford New Holland, Inc., at one of the addresses shown on the following page.

A Roll Over Protective Structure (ROPS) and seat belt were standard equipment for the tractor at time of factory assembly. If the ROPS was deleted by the original customer or has been removed, it is recommended that you equip your tractor with a Roll Over Protection Structure (ROPS) and seat belt. ROPS and seat belts are effective in reducing injuries during tractor overturn accidents. Overturning a tractor without ROPS can result in serious injury or death. Further instructions regarding the care and use of the ROPS will be found on page ix of this book.

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

Safety and instructional decals should be kept clean and replaced if they become damaged, illegible or are missing. Pictures of the safety decals as well as placement instructions are to be found on pages x and xi of this book.

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

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

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

To obtain these catalogues merely fill out the order form available from your local authorized Ford New Holland Dealer.



# ROPS

## ROLL OVER PROTECTIVE STRUCTURES

A Roll Over Protective Structure (ROPS) and seat belt were standard equipment for the tractor at time of factory assembly. The seat belt, when used by the operator, maximizes the protection offered by the ROPS. Always use your seat belt when the ROPS is installed – seat belts save lives when they are used. Do not use your seat belt if the ROPS is not installed on the tractor.

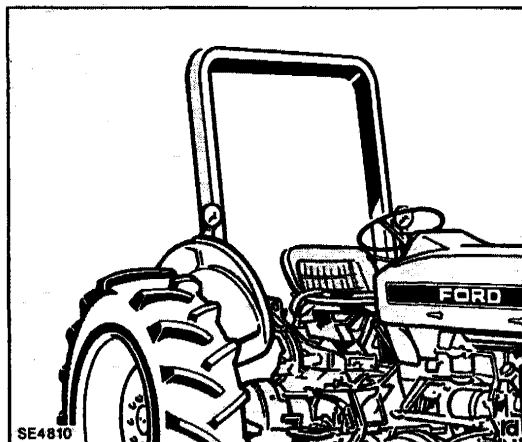
If the ROPS was deleted by the original purchaser or has been removed, it is recommended that you equip your tractor with a Roll Over Protective Structure and seat belt. ROPS, when used with a seat belt, are effective in reducing injuries during tractor overturn accidents. Overturning a tractor without a ROPS can result in serious injury or death.

A Roll Over Protective Structure and seat belt are available from your Ford New Holland dealer.

## ROPS MAINTENANCE AND INSPECTION

After the first 20 hours of operation and every 300 hours of operation (or six months, whichever comes first):

1. Check the torque of the ROPS/safety cab mounting bolts. Tighten, if necessary, to 180–220 lbf.ft. (244 – 298 Nm).
2. Check the operator's seat mounting bolts and the seat belt mounting points. Tighten bolts to torque and replace any worn or damaged parts.



Ford Roll Over Protective Structure (ROPS)

## DAMAGE TO THE ROPS

If the tractor has rolled over or the ROPS has been damaged (such as striking an overhead object during transport), it must be replaced to provide the original protection.

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

DO NOT TRY TO WELD OR STRAIGHTEN THE ROPS.

**WARNING:** *Never attach chains, ropes or cables to the ROPS for pulling purposes; this will cause the tractor to tip backwards. 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.*

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

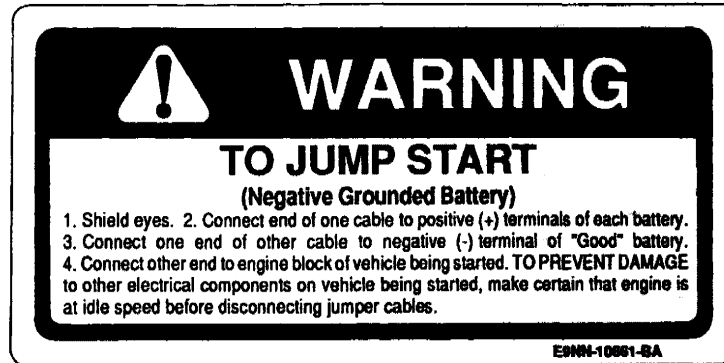
**WARNING:** *Always wear your seat belt if the tractor is equipped with a ROPS or safety cab. Do not use the seat belt if the ROPS is removed from the tractor.*

## FALLING OBJECT PROTECTIVE STRUCTURE (FOPS)

When a tractor is equipped with a front end loader and is not equipped with a safety cab, it is recommended that the tractor be fitted with a FOPS canopy to protect the operator from falling objects.

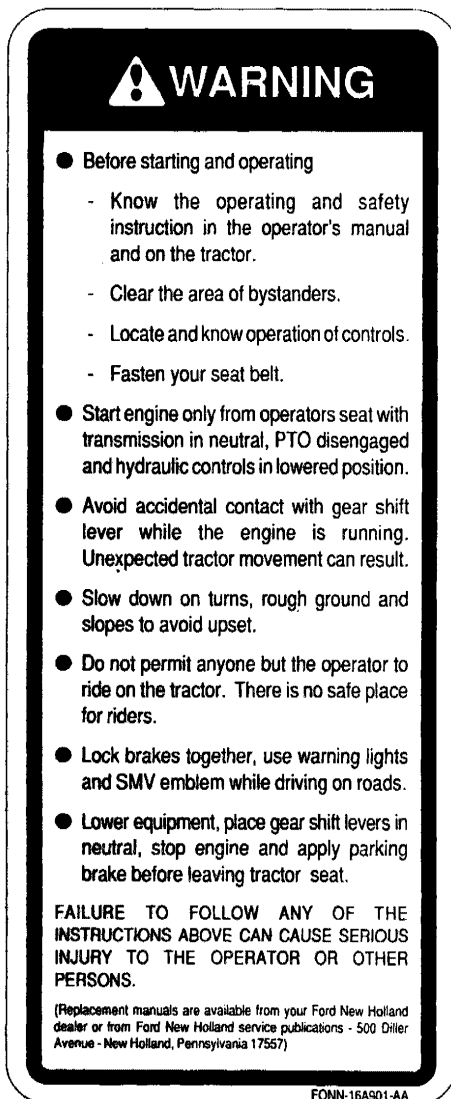
# SAFETY DECALS

Replace all missing, damaged or illegible decals.



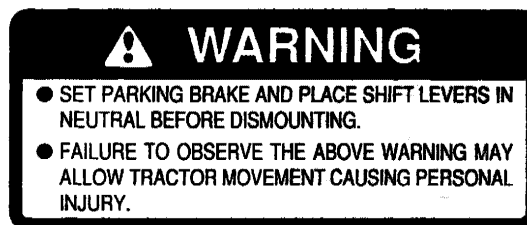
Part No. E9NN-10661-BA

Location: Top of battery



Part No. F0NN-16A901-AA

Location: Right-hand fender



Part No. E4NN-7Z273-DA

Location: Right-hand fender



Part No. E1NN-16A901-EA

Location: Starting motor

# SAFETY DECALS

Replace all missing, damaged or illegible decals.



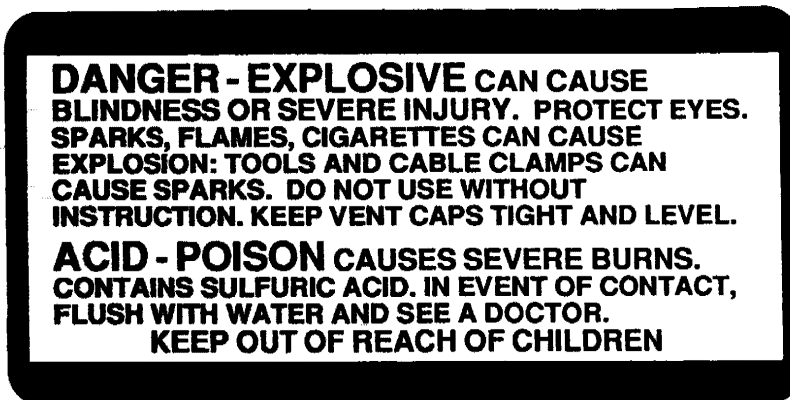
Part No. E1NN-16A901-BA

Location: Rear axle housing – right-hand side



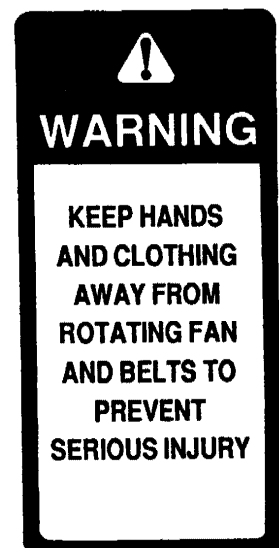
Part No. D2NN-2K106-A

Location: Handbrake lever  
(where fitted)



Part No. E9NN-10K694-DA

Location: Top of battery



Part No. D8NN-8653-AB

Location: Both sides of radiator fan shroud

# SAFETY PRECAUTIONS

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and take the following precautions before operating the tractor. 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. Only allow properly trained and qualified persons to operate the tractor.
3. Use an approved roll bar and seat belt for safe operation. Overturning a tractor can result in death or injury. If your tractor is not equipped with a ROPS and seat belt, see your Ford New Holland dealer.
4. If a front end loader is to be installed, a FOPS canopy is recommended to avoid injury from falling objects.
5. To prevent falls, use the handholds and step plates when getting on and off the tractor. Keep steps and platform clear of mud and debris.
6. Do not permit anyone but the operator to ride on the tractor unless a passenger seat is fitted. There is no safe place for extra riders otherwise.
7. Replace all missing, illegible or damaged safety decals.
8. Keep safety decals free of dirt or 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 the system is hot. Always turn the cap slowly to the first stop and allow the pressure to escape before removing the cap entirely.
2. Do not smoke while refuelling the tractor. Keep any type of open flame away. Wait for the engine to cool before refuelling.
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. To prevent fire or explosion, keep open flames away from battery or cold weather starting aids.

To prevent sparks which could cause explosion, use jumper cables according to instructions.

5. Stop the engine before performing any service on the tractor.
6. Escaping diesel/hydraulic 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 the engine and relieve pressure before connecting or disconnecting lines.
  - Tighten all connections before starting the 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 the tractor or any of its components or any tractor function without first consulting a Ford New Holland dealer.
8. The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle or any other part of the fuel injection system. Failure to follow these instructions can result in serious injury.
9. Continuous long term contact with used engine oil may cause skin cancer. Avoid prolonged contact with used engine oil. Wash skin promptly with soap and water.
10. Tractor wheels are very heavy. Handle with care and ensure, when stored, that they cannot topple and cause injury.
11. Some components on your tractor, such as gaskets and friction surfaces (brake linings, clutch linings, etc.), may contain asbestos. Breathing asbestos dust is dangerous to your health. You are, therefore, advised to have any maintenance or repair operations on such components carried out by an authorized Ford New Holland dealer. If, however, service operations are to be undertaken on parts that contain asbestos, the following



# SAFETY PRECAUTIONS

essential precautions 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 levers in the down position, the remote control valve levers in the neutral position and the transmission levers 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 the controls.
3. Do not bypass the transmission and P.T.O. neutral start switches. Consult your Ford New Holland dealer if your neutral start controls malfunction. Use jumper cables only in the recommended manner. Improper use can result in a tractor runaway.
4. Avoid accidental contact with the gear shift levers while the engine is running. Unexpected tractor movement can result from such contact.
5. Do not get off the tractor while it is in motion.
6. Shut off the engine and P.T.O. 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 the power steering or engine ceases operating, stop the tractor immediately as the tractor will be more difficult to control.

10. Pull only from the swinging drawbar or the lower link drawbar in the lowered 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 overturn.

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 the implement.

13. Do not leave equipment in the raised position.

14. Ensure any attached equipment or accessories are correctly installed, are approved for use with the tractor, do not overload the tractor and are operated and maintained in accordance with the instructions issued by the equipment or accessory manufacturer.

15. Remember that your tractor, if abused or incorrectly used, can be dangerous and become a hazard both to the operator and to bystanders. Do not overload or operate with attached equipment which is unsafe, not designed for the particular task or is poorly maintained.

## DRIVING THE TRACTOR

1. Watch where you are going, especially at row ends, on roads and around trees and low overhanging obstacles.
2. To avoid overturns, 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. When operating at transport speeds, lock the tractor brake pedals together for two wheel braking.
4. Keep the tractor in the same gear when going downhill as would be 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 must be equipped with brakes for safe operation.

# SAFETY PRECAUTIONS

6. If the tractor becomes stuck or the tires are frozen to the ground, reverse the tractor to prevent overturning.
7. Always check overhead clearance, especially when transporting the tractor.
8. Make sure the lights are adjusted to prevent blinding an oncoming vehicle operator.
9. Use the flasher/turn signal lights and SMV sign when travelling on public roads, both day and night, unless prohibited by law.

## 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 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. guard is in position at all times and always replace the P.T.O. 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. In a closed container such as a fuel tank these blends are more explosive than pure gasoline. **Do not use these blends.**
2. Never remove the fuel cap or refuel with the engine running or hot.
3. Do not smoke while refuelling 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 New Holland approved cap. A non-approved 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 summer grade fuels are not held over and used in the winter.

## ROLL OVER PROTECTIVE STRUCTURE (ROPS)

Your Ford tractor is equipped with a Roll Over Protective Structure (ROPS). 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 ROPS in any way.
2. --- attempt to straighten or weld any part of the ROPS 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 ROPS or attach your ROPS with other than the special high tensile bolts and nuts specified.
4. --- attach chains or ropes to the ROPS for pulling purposes.
5. --- take unnecessary risks even though your ROPS and seat belt afford you the maximum protection possible.

Whenever you see this symbol



it means:

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

## PRE-DELIVERY INSPECTION - CHECK AND ADJUST AS REQUIRED

### INOPERATIVE SERVICE CHECKS:

1. Tire pressures and condition ☐
2. Lift-rod levelling crank for proper operation ☐
3. Radiator coolant level and antifreeze protection (S.G. 1.071-1.083 at 60° F) ☐
4. Fan belt ☐
5. Engine oil level ☐
6. Transmission oil level ☐
7. Rear axle center housing oil level ☐
8. Front axle differential oil level (4wd) ☐
9. Front axle hub oil level (4wd) ☐
10. Power steering reservoir oil level ☐
11. Hydraulic lift Draft Control mainspring adjustment ☐
12. Upper link, drawbar and pin in position ☐
13. Brake adjustment and pedal equalisation ☐
14. Wheel-to-rim clamp bolts and lock nuts for tightness ☐
15. Wheel disc-to-hub nuts for tightness ☐
16. Front end weight clamp bolts for tightness ☐

17. Front axle support bolts for tightness ☐
18. Front axle spindle nuts for proper tightness (2wd) ☐
19. Front wheel toe-in ☐
20. Fuel level ☐
21. Sheet metal and paint condition ☐
22. Drain diesel fuel filter and water separator ☐
23. Lubricate all grease fittings ☐
24. Air cleaner element and hose connections ☐
25. Seat mounting and adjustment ☐
26. All electrical cables, terminals and wires ☐

### SAFETY ITEMS CHECKS:

1. ROPS and seat belt installed ☐
2. Safety decals installed ☐
3. P.T.O. & transmission neutral start switches operation ☐
4. Parking brake operation ☐
5. Flashing lights/tail lights operation ☐
6. Operator's Manual ☐
7. P.T.O. master shield installed ☐
8. S.M.V. emblem installed (where applicable) ☐

### OPERATIVE SERVICE CHECKS:

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

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments and fuel shut-off ☐
4. P.T.O. operation ☐
5. Hydraulic System:
  - Selector levers for Draft and Position Control operation ☐
  - Flow control operation ☐
  - Draft Control for tension and compression loads ☐
  - Auxiliary Services Control or remote control valves (if installed) ☐

### 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 ☐

INSPECTION PERFORMED-WARRANTY EXPLAINED TRACTOR MODEL NO. TRACTOR SERIAL NO.

OWNER'S SIGNATURE

DATE

DEALER'S SIGNATURE

DATE

## FIRST 50-HOUR SERVICE - CHECK AND ADJUST AS REQUIRED

### INOPERATIVE SERVICE CHECKS:

1. Tire pressures and condition ☐
2. Dry air cleaner element and hose connections ☐
3. Drain diesel fuel filter and water separator and bleed system ☐
4. Radiator coolant level and antifreeze protection (S.G. 1.071-1.083 at 60° F) ☐
5. Fan belt ☐
6. Drain engine oil and refill ☐
7. Change engine oil filter ☐
8. Change hydraulic filter(s) ☐
9. Rear axle center housing oil level ☐
10. Power steering reservoir oil level ☐
11. Change front axle differential oil (4wd) ☐
12. Change front hub oil (4wd) ☐
13. Grease front wheel bearings (2wd) ☐
14. Lubricate all grease fittings and pivots ☐

15. Wheel disc-to-hub nuts for tightness ☐
16. Wheel-to-rim clamp bolts or lock nuts for tightness ☐
17. Front end weight clamp bolts for tightness ☐
18. Adjust engine valve clearance ☐
19. Brake adjustment and pedal equalisation ☐
20. Check and adjust parking brake ☐
21. Clutch pedal free play ☐

### SAFETY ITEMS SERVICE CHECKS:

1. ROPS/safety frame bolt torque ☐
2. Seat belt condition and bolt torque ☐
3. P.T.O. and transmission neutral start switches operation ☐

### OPERATIVE SERVICE CHECKS:

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments and fuel shut-off ☐
4. P.T.O. operation ☐
5. Hydraulic System:
  - Draft Control operation ☐
  - Position control operation ☐
  - Flow control operation ☐
  - Auxiliary Services Control or remote control valves (if installed) ☐

### 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 ☐

INSPECTION PERFORMED-WARRANTY EXPLAINED TRACTOR MODEL NO. TRACTOR SERIAL NO.

OWNER'S SIGNATURE

DATE

DEALER'S SIGNATURE

DATE



## PRE-DELIVERY INSPECTION – CHECK AND ADJUST AS REQUIRED

### INOPERATIVE SERVICE CHECKS:

1. Tire pressures and condition ☐
2. Lift-rod levelling crank for proper operation ☐
3. Radiator coolant level and antifreeze protection (S.G. 1.071–1.083 at 60° F) ☐
4. Fan belt ☐
5. Engine oil level ☐
6. Transmission oil level ☐
7. Rear axle center housing oil level ☐
8. Front axle differential oil level (4wd) ☐
9. Front axle hub oil level (4wd) ☐
10. Power steering reservoir oil level ☐
11. Hydraulic lift Draft Control mainspring adjustment ☐
12. Upper link, drawbar and pin in position ☐
13. Brake adjustment and pedal equalisation ☐
14. Wheel-to-rim clamp bolts and lock nuts for tightness ☐
15. Wheel disc-to-hub nuts for tightness ☐
16. Front end weight clamp bolts for tightness ☐

17. Front axle support bolts for tightness ☐
18. Front axle spindle nuts for proper tightness (2wd) ☐
19. Front wheel toe-in ☐
20. Fuel level ☐
21. Sheet metal and paint condition ☐
22. Drain diesel fuel filter and water separator ☐
23. Lubricate all grease fittings ☐
24. Air cleaner element and hose connections ☐
25. Seat mounting and adjustment ☐
26. All electrical cables, terminals and wires ☐

### SAFETY ITEMS CHECKS:

1. ROPS and seat belt installed ☐
2. Safety decals installed ☐
3. P.T.O. & transmission neutral start switches operation ☐
4. Parking brake operation ☐
5. Flashing lights/tail lights operation ☐
6. Operator's Manual ☐
7. P.T.O. master shield installed ☐
8. S.M.V. emblem installed (where applicable) ☐

### OPERATIVE SERVICE CHECKS:

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

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments and fuel shut-off ☐
4. P.T.O. operation ☐
5. Hydraulic System:
  - Selector levers for Draft and Position Control operation ☐
  - Flow control operation ☐
  - Draft Control for tension and compression loads ☐
  - Auxiliary Services Control or remote control valves (if installed) ☐

### 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 ☐

INSPECTION PERFORMED—WARRANTY EXPLAINED      TRACTOR MODEL NO.      TRACTOR SERIAL NO.

OWNER'S SIGNATURE      DATE      DEALER'S SIGNATURE      DATE

## FIRST 50-HOUR SERVICE – CHECK AND ADJUST AS REQUIRED

### INOPERATIVE SERVICE CHECKS:

1. Tire pressures and condition ☐
2. Dry air cleaner element and hose connections ☐
3. Drain diesel fuel filter and water separator and bleed system ☐
4. Radiator coolant level and antifreeze protection (S.G. 1.071–1.083 at 60° F) ☐
5. Fan belt ☐
6. Drain engine oil and refill ☐
7. Change engine oil filter ☐
8. Change hydraulic filter(s) ☐
9. Rear axle center housing oil level ☐
10. Power steering reservoir oil level ☐
11. Change front axle differential oil (4wd) ☐
12. Change front hub oil (4wd) ☐
13. Grease front wheel bearings (2wd) ☐
14. Lubricate all grease fittings and pivots ☐

15. Wheel disc-to-hub nuts for tightness ☐
16. Wheel-to-rim clamp bolts or lock nuts for tightness ☐
17. Front end weight clamp bolts for tightness ☐
18. Adjust engine valve clearance ☐
19. Brake adjustment and pedal equalisation ☐
20. Check and adjust parking brake ☐
21. Clutch pedal free play ☐

### SAFETY ITEMS SERVICE CHECKS:

1. ROPS/safety frame bolt torque ☐
2. Seat belt condition and bolt torque ☐
3. P.T.O. and transmission neutral start switches operation ☐

### OPERATIVE SERVICE CHECKS:

1. Lights and instruments for proper operation ☐
2. Fluid and oil leaks ☐
3. Maximum no-load speed and idle speed adjustments and fuel shut-off ☐
4. P.T.O. operation ☐
5. Hydraulic System:
  - Draft Control operation ☐
  - Position control operation ☐
  - Flow control operation ☐
  - Auxiliary Services Control or remote control valves (if installed) ☐

### 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 ☐

INSPECTION PERFORMED—WARRANTY EXPLAINED      TRACTOR MODEL NO.      TRACTOR SERIAL NO.

OWNER'S SIGNATURE      DATE      DEALER'S SIGNATURE      DATE

# UNIVERSAL SYMBOLS

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

	Engine speed (rev/min x 100)		Air conditioner temperature control		Remote cylinder (extend)
	Hours recorded		Warning		Remote cylinder (retract)
	Engine coolant temperature		Hazard warning		Remote cylinder (float)
	Fuel level		Neutral		'Tortoise', slow or minimum setting
	Engine stop control		Fan		'Hare', fast or maximum setting
	Lights		Wipe/wash control		Transmission oil pressure
	Horn		Power take-off engaged		Turn Signal
	Engine oil pressure		Power take-off disengaged		Transmission oil temperature
	Air filter		Four wheel drive engaged		Parking brake
	Alternator charge		Four wheel drive disengaged		Work lamps
	Heater temperature control		Lift arm/raise		Differential lock
	Pressurised – open slowly		Lift arm/lower		See Operator's Manual
	Continuously variable		Corrosive substance		Warning! Contains asbestos

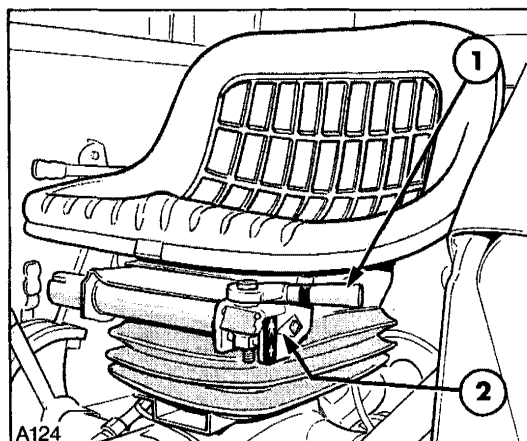
# **CONTROLS, INSTRUMENTS AND OPERATION**

**The following pages in this section detail the location and function of the various instruments, switches and controls on your tractor. Even if you operate other tractors, you should read through this section of the Manual and ensure that you are thoroughly familiar with the location and function of all the features of your new tractor. Do not start the engine or attempt to drive or operate the tractor until you are fully accustomed to all the controls. It is too late to learn once the tractor is moving. If in doubt about any aspect of operation of the tractor, consult your Ford New Holland dealer.**

**Particular attention should be paid to the recommendations for breaking-in to ensure that your tractor will give the long and dependable service for which it was designed.**

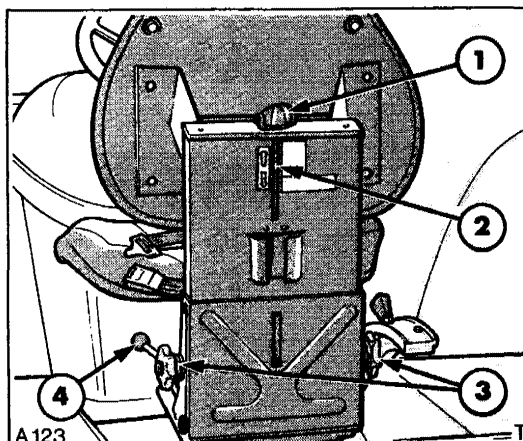
**See Section B for the routine lubrication and maintenance requirements. The specification of your tractor will be found in Section C.**

# CONTROLS, INSTRUMENTS AND OPERATION



1. Seat

- 1. Suspension adjuster
- 2. Weight indicator



2. Seat

- 1. Suspension adjuster
- 2. Weight indicator
- 3. Height adjustment knobs
- 4. Seat travel adjuster

## OPERATOR'S SEAT

Two types of seat are available, each having a comprehensive range of adjustments. Before operating the tractor, it is important to adjust the seat to the most comfortable position. Refer to Figures 1 or 2 to identify the seat fitted to your tractor.

**NOTE:** Do not use solvents to clean the seat. Use warm water with a little detergent added.

### Seat – Figure 1

While sitting in the seat, adjust the suspension by cranking the ratchet handle from side to side.

The ratchet is reversible. With the plus (+) sign on the handle uppermost, as shown, cranking the handle will increase suspension stiffness to give a firmer ride. Pull the handle out and rotate half a turn until the minus (–) sign is uppermost. The ratchet action is now reversed and the seat suspension will become softer as the handle is cranked.

The optimum setting will be achieved when, with the operator seated, the weight indicator on the left-hand side of the seat indicates the approxi-

mate size of the operator. This is denoted by two symbols indicating a large and a small man with, of course, an infinite number of positions in between

Fore and aft seat travel is effected after loosening the bolts securing the seat base to the tractor.

### Seat – Figure 2

To achieve the optimum suspension setting, turn the knob on the back of the seat until the weight indicator registers your approximate weight.

To adjust the seat height, loosen the two knobs located low down on either side of the seat frame and lift the seat to the required height. Tighten the bolts.

Lift the travel adjustment lever and slide the seat backwards or forwards, as required. The seat will lock in position when the lever is released. On units not equipped with deluxe remote control valves, further travel adjustment is possible after loosening the two bolts that secure the seat base to the tractor.



## SEAT BELT AND ROPS



**WARNING:** Always use the seat belt with a ROPS installed. Do not use a seat belt if the tractor is not equipped with a ROPS.

To lengthen the belt, tip the buckle away from the belt and pull on the buckle. With the belt fastened around you, pull the free end of the belt until it is a snug fit.

The belt may be sponged with clean, soapy water. Do not use solvents, bleach or dye on the belt as these chemicals will weaken the webbing. Replace the belt when it shows signs of fraying, damage or general wear.

The ROPS must be maintained in a serviceable condition.

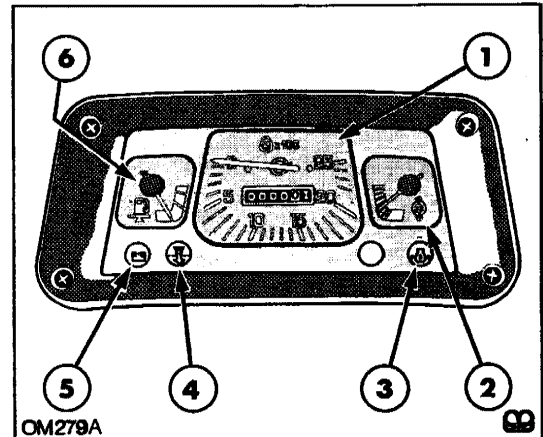


**WARNING:** Do not attach chains or ropes to the ROPS for pulling purposes since the tractor may tip backwards. Always pull from the tractor drawbar. Be careful when driving through door openings or under low overhead objects. Make sure that there is sufficient overhead clearance for the ROPS.

If your tractor is fitted with a front end loader, it is recommended that a FOPS canopy be fitted to protect the operator from falling objects.

## INSTRUMENT PANEL

The following text describes the various warning lights and gauges installed in your tractor. See Figure 3.



3. Instrument Panel

1. Proofmeter
2. Engine coolant temperature gauge
3. Engine oil pressure warning light
4. Air cleaner restriction warning light
5. Alternator warning light
6. Fuel gauge

### Proofmeter

The proofmeter indicates engine revolutions per minute. Each division on the scale represents 100 rev/min., therefore with the needle indicating '20' the engine is running at 2000 rev/min.

The P.T.O symbol on the proofmeter scale indicates the engine speed at which the standard P.T.O. speed of 540 rev/min is obtained.

The proofmeter also records the total number of hours that the tractor has operated, based on an average engine speed of 2055 rev/min. If the engine is run at a speed lower than 2055 rev/min then the proofmeter will accumulate hours at a rate slower than real time.

Higher engine speeds will cause the proofmeter to accumulate hours at a rate faster than real time.

The hours recorded should be used as a guide to determine hourly servicing intervals. (See Section B of this Manual).

# CONTROLS, INSTRUMENTS AND OPERATION

## Engine Coolant Temperature Gauge

The temperature gauge indicates the temperature of the engine coolant. If the needle enters the red area of the gauge while the engine is running, stop the engine and investigate the cause.

**NOTE:** *When the key-start switch is turned off, the gauge needle will assume a random position.*

## Engine Oil Pressure Warning Light

The red warning light indicates low engine oil pressure and should extinguish after the engine is started.

**NOTE:** *If the light comes on while the engine is running, stop the engine immediately and investigate the cause. The light indicates low oil pressure and is not an indication of oil level. The engine oil level must still be checked daily by means of the dipstick.*

*The oil pressure light is connected into the air cleaner warning light circuit. In the event of low oil pressure, both the oil pressure and air cleaner warning lights will be illuminated.*

## Air Cleaner Restriction Warning Light (Dry air cleaner only)

The red warning light will illuminate when the air cleaner requires servicing.

If the light illuminates while the engine is running, service the air cleaner as soon as practicable and certainly within one hour of operation. See Section B.

**NOTE:** *When the key-start switch is turned on, the light will illuminate to indicate that the lamp is functioning. The light should extinguish with the engine running and the air cleaner functioning correctly.*

## Alternator Warning Light

The warning light indicates that the alternator is not charging the battery and should extinguish when the engine speed is increased above idle.

## Fuel Gauge

The gauge indicates the level of fuel in the tank and is only operative with the key-start switch in the on position.

**NOTE:** *When the key-start switch is turned off the gauge needle will assume a random position and may indicate a fuel level greater than the true level. Always check the fuel level with the key-start switch on.*

The fuel filler is located on the left-hand side of the hood, immediately in front of the instrument panel.

## INSTRUMENT CONSOLE

The following text describes the function of the switches and hand controls located on the instrument console. See Figure 4.

### Hand Throttle

With the engine running, pull the throttle lever rearwards to progressively increase engine speed.

### Tractor Lights Switch

Switch on the tractor and instrument panel lights by pressing the upper section of the lights switch. Press the lower part of the switch to turn the lights off.

### Engine Stop Control

Pull the stop control knob fully out to cut off the fuel supply to the injectors and stop the engine. The knob must be pushed fully in before restarting the engine.

### **Engine Stop Control**

Pull the stop control knob fully out to cut off the fuel supply to the injectors and stop the engine. The knob must be pushed fully in before restarting the engine.

### **Key-Start Switch**

The key-start switch actuates the starting motor and the Thermostart. See **STARTING THE TRACTOR** in this section of the Manual for the correct operating procedure.

### **Dual Power Switch**

Press the rear of the switch (tortoise symbol) to select Dual Power underdrive. Press the front of the switch (hare symbol) for direct drive.

### **Hazard Warning Lights Switch**



**WARNING:** *Hazard warning lights are used when driving on the public highway. The switch for the hazard warning lights, which is of the push-push type, is located on the left-hand lamp body. For your protection, use the hazard warning lights when traveling on public roads, both by day and night, unless prohibited by law.*

### **Work Lamp(s) (where fitted)**

One or two work lamps may be fitted to the rear fenders. The switch for the work lamp is on the rear of the lamp body.

**NOTE:** *Work lamps are only operative with the main tractor lights switch in the ON position.*

### **Steering**

**IMPORTANT:** *Your tractor is equipped with hydrostatic power steering. Never hold the steering wheel against either of the steering stops (full lock) for more than 10 seconds or for more than a total of 10 seconds in any one minute. Failure to observe this precaution may result in damage to the steering system components.*

## **STARTING THE TRACTOR**



**WARNING:** *Your tractor is equipped with the Thermostart cold weather starting aid. Do not use ether with Thermostart installed. If, in an emergency, it is necessary to use ether, disconnect the Thermostart terminal wire from the glowplug on the front of the intake manifold and insulate the free end of the wire.*

The Thermostart, which is effective in ambient temperatures down to  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ), consists of a heating element installed in the inlet manifold. When operated by the key-start switch, the Thermostart will ignite fuel in the manifold, heating indrawn air prior to it being drawn into the combustion chamber.

If temperatures below  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) are encountered, a coolant immersion heater is available as an accessory. The coolant immersion heater is effective in ambient temperatures down to  $-29^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ) when used in conjunction with the Thermostart.

A five-position key-start switch is installed. See Figure 5 and the following text.

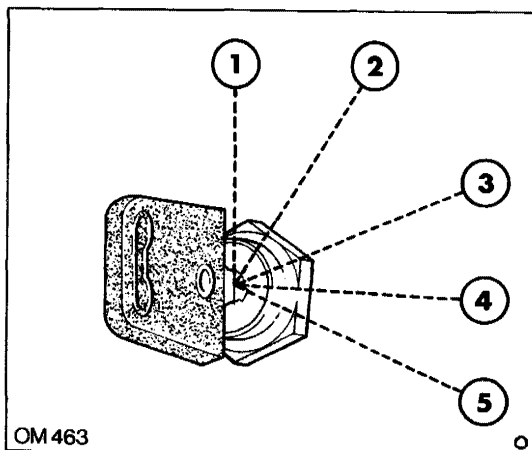
**IMPORTANT:** *Never push or tow the tractor to start the engine. Doing so may overstress the drive train.*

**NOTE:** *Neutral start switches prevent operation of the starting motor unless the transmission range lever is in the neutral (N) position and the P.T.O. lever is in the disengaged (rear) position.*

Before starting the engine, always carry out the following procedure:

- Sit in the driver's seat and ensure that the parking brake or latch is firmly applied.
- Push the stop control knob fully in.
- Ensure that all gearshift levers are in neutral and that the P.T.O. lever is in the disengaged position.

# CONTROLS, INSTRUMENTS AND OPERATION



## 5. Key-start Switch

1. Electrical equipment off
2. Accessories on
3. Warning lights and instruments on
4. Thermostart heater on
5. Starting motor operates

Before starting the engine, always carry out the following procedure:

- Sit in the driver's seat and ensure that the parking brake or latch is firmly applied.
- Push the stop control knob fully in.
- Ensure that all gearshift levers are in neutral and that the P.T.O. lever is in the disengaged position.
- Place the remote control valve levers in the neutral position and move the hydraulic lift control levers fully forward.

## Starting in warm weather or when the engine is hot

- Open the hand throttle halfway, depress the clutch and turn the key-start switch fully clockwise to position (5) to operate the starting motor. Crank the engine until it starts but do not operate the starting motor for more than 60 seconds,

- Return the throttle to the idle position and check that all warning lights extinguish and gauge readings are normal.

## Starting in cold weather – below 4° C (40° F) with a cold engine

- Open the hand throttle fully, depress the clutch and turn the key-start switch clockwise to position (4) to operate the Thermostart heater. Hold in this position for 15 seconds then turn the key fully clockwise to position (5). Crank the engine until it starts but do not operate the starting motor for more than 60 seconds.
- If the engine fails to start, repeat the foregoing procedure operating the Thermostart for 15 seconds and the starting motor for up to 60 seconds. If the engine still fails to start, allow the battery to recover for 4 – 5 minutes then repeat the procedure.
- When the engine starts, return the throttle to the idle position and check that all warning lights extinguish and gauge readings are normal.

## COOLANT IMMERSION HEATER (where fitted)

This dealer installed accessory consists of a heating element fitted into one of the core plug apertures on the right-hand side of the block. This accessory provides easier starting down to -29° C (-20° F).

To operate the heater, connect the heater plug to a suitable 115 volt outlet and leave for two hours before carrying out the cold weather starting procedure.

**NOTE:** The heater may be left switched on for more than two hours without harm. However, no noticeable increase in the heater's effectiveness will be achieved after this period.

### STARTING THE TRACTOR WITH JUMP LEADS

If it is necessary to use jump leads (booster cables) to start the tractor, proceed as follows:

**WARNING:** *Start the tractor only from the driver's seat. If the key-start switch is by-passed, the engine may start inadvertently with a gear selected and cause sudden and unexpected movement of the tractor or a tractor runaway. Wear eye protection when starting the tractor with jump leads or when charging the battery.*

- Connect one end of the red jump lead to the tractor battery positive (+) terminal and the other end to the auxiliary battery positive (+) terminal.
- Connect one end of the black jump lead to the auxiliary battery negative (-) terminal and the other end to a suitable projection on the tractor engine block. Follow the starting procedure previously described.
- When the engine starts allow it to run at idle speed, turn on all electrical equipment (lights, etc.) then disconnect the jump leads in the reverse order to the connecting procedure. This will help protect the alternator from possible damage due to extreme load changes.

**NOTE:** *When using an auxiliary battery to start the engine, ensure that the polarity of the jump leads is correct – positive to positive, negative to negative, otherwise the alternator may be damaged.*

### STOPPING THE ENGINE

To stop the engine, carry out the following procedure:

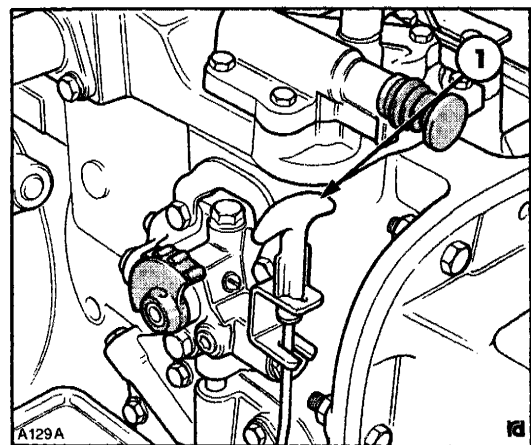
- Sit in the driver's seat and close the throttle.

- Ensure that the parking brake or latch is firmly applied.
- Ensure that all gearshift levers are in neutral and that the P.T.O. lever is in the disengaged position.
- Place the remote control valve levers in the neutral position.
- Pull the stop control knob fully out and turn the key-start switch off.
- Move the hydraulic lift control levers fully forward to lower all hydraulic equipment to the ground.

**WARNING:** *Check the area beneath the equipment to ensure that no injury or damage will be caused when equipment is lowered.*

### PARKING BRAKE

The standard parking brake consists of a latch that is used to secure the footbrakes in the applied position. (See Figure 6).



6. Standard Parking Brake

1. Parking brake latch

# CONTROLS, INSTRUMENTS AND OPERATION

To operate the parking brake latch, lock the brakes together (see the following text entitled 'Footbrakes'), apply the footbrakes and pull up the latch and rotate one quarter turn. To free the parking brake, rotate the latch one quarter turn and release. Momentarily depress the footbrakes to disengage the ratchet. In Figure 6 the latch is shown in the applied position.

On some models, a conventional handbrake lever coupled to the footbrake linkage may be installed. The handbrake is located to the right of the seat.

To apply the handbrake, pull the lever up. To release, ease the lever up further, depress the button on the end and lower the lever fully.

**IMPORTANT:** *Ensure that the handbrake is fully released before driving off.*

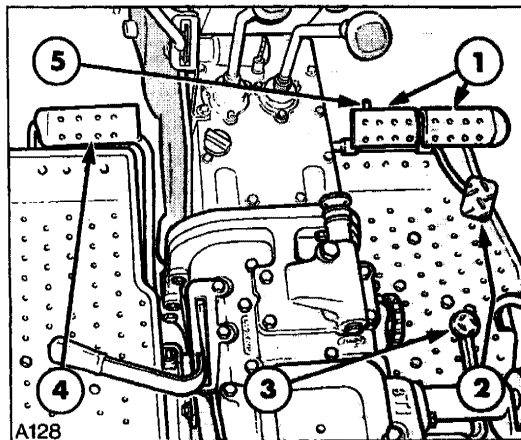
## FOOT CONTROLS

For details of foot operated controls, refer to Figure 7 and the following text.

### Footbrakes

The footbrakes may be operated independently, to aid turning in confined spaces or together for normal stopping. When operating in the field, the brake pedals may be unlocked. However, due to the close proximity of the pedals to one another, it is still possible to apply both brakes together, when required.

**WARNING:** *For your safety, always lock the brake pedals together when travelling at transport speeds. To lock the pedals together, slide the bolt (5) Figure 7, across to engage in the hole in the underside of the right-hand pedal, as shown.*



7. Foot Controls

- |                            |                  |
|----------------------------|------------------|
| 1. Brake pedals            | 4. Clutch pedal  |
| 2. Foot throttle           | 5. Locking latch |
| 3. Differential lock pedal |                  |

### Foot Throttle

The foot throttle may be used independently of the hand throttle to control the speed of the tractor. It is recommended that you use the foot throttle when driving on the highway.

**IMPORTANT:** *When it is required to use the foot throttle, set the hand throttle to the idle position (fully forward).*

### Differential Lock

In field conditions inducing wheel slip, hold down the differential lock pedal until the lock is felt to engage. The lock will automatically disengage when traction at the rear wheels equalises.

If conditions cause a wheel to spin at speed, reduce the engine speed to idle before engaging the differential lock.

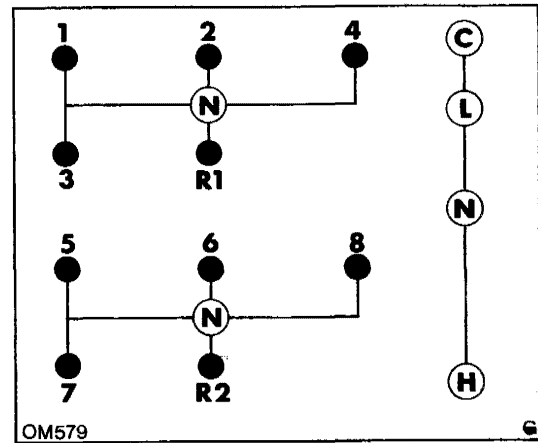
**WARNING:** *Never engage the differential lock at speeds above 5 mph (8kph) or when turning the tractor. When engaged, the lock will make the tractor difficult to steer.*

## Clutch

When the clutch pedal is depressed the drive between the engine and transmission will be disengaged. Use the clutch pedal to transfer engine power smoothly to the driving wheels when moving off from a standstill.

Always depress the clutch pedal to engage or disengage a gear ratio.

**NOTE:** Avoid using the clutch pedal as a footrest when operating the tractor. Such action will lead to early clutch failure.



8. Gear Shift Levers (8 x 2 transmission with optional creeper gears)

C = Creeper gears  
H = High range  
L = Low range

N = Neutral  
R = Reverse

## TRANSMISSION AND DUAL POWER

Two types of transmission are available:

1. Constant mesh transmission with eight forward and two reverse ratios (8 x 2).
2. Synchronised shuttle shift transmission with eight forward and reverse ratios (8 x 8).



**WARNING:** To prevent inadvertent tractor movement, avoid accidental contact with the gearshift levers. Always stop the engine, firmly apply the parking brake and place all transmission levers in neutral before leaving the tractor.

### 8 x 2 Constant Mesh Transmission

The gearshift levers protrude from the center of the transmission, beneath the steering wheel.

The left-hand lever (main) is used to select any one of four forward or one reverse gear ratio. The right-hand lever (range) is used to select the high (H) or low (L) range which has the effect of doubling the number of available gear ratios. Stop the

tractor and fully depress the clutch before moving either of the gear levers. See Figure 8 for the gear-shift positions.

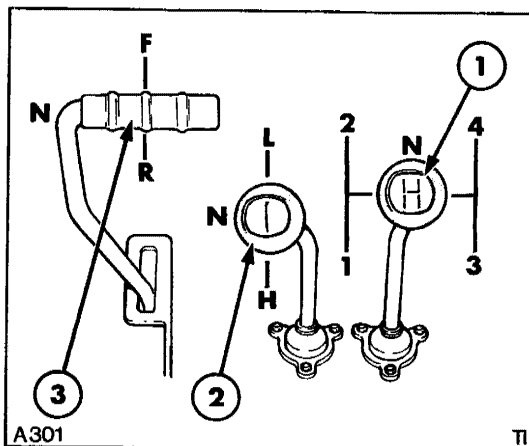
### Synchronised Shuttle Shift Transmission

The fully synchronised shuttle shift transmission is of an advanced design having eight forward and reverse gear ratios (8 x 8 transmission). This transmission also benefits from the optional Dual Power feature which doubles the number of forward gear ratios (16 x 8 transmission).

Synchronised shuttle shift transmission is operated by means of the clutch pedal, the main gear shift lever, the range lever and the shuttle shift lever (see Figure 9). The main gear shift lever, the range lever and the shuttle shift lever are identified by orange coloured knobs.

The main gear shift lever is used to select any one of four gear ratios. The range lever is used to select the high or low range, which has the effect of doubling the number gear ratios to eight, both in forward and reverse. The shift pattern is clearly marked on a decal affixed to the right-hand fender and is also shown in Figure 9.

# CONTROLS, INSTRUMENTS AND OPERATION



9. Gear Shift Levers (8 x 8 and 16 x 8 transmission)

- 1. Main gear shift lever
- 2. Range lever
- 3. Shuttle lever

F = Forward  
R = Reverse

L = Low range  
N = Neutral  
H = High range

The transmission permits upward and downward gear changes on the move. In addition, the advanced design permits a change from one range to another while on the move, provided the clutch pedal is depressed and the engine speed adjusted accordingly.

**IMPORTANT:** When shifting to a lower ratio, while on the move, select the next consecutive gear in order to avoid overspeeding the engine which may cause damage to the clutch and/or transmission components. Further, it should be recognised that when shifting from one range to another, four intermediate gear ratios are bypassed. When shifting from one range to another while on the move, adjust the engine speed to compensate and/or select an alternative gear ratio to minimize the number of ratios bypassed.

The shuttle lever is used to select forward or reverse travel when any one of the eight gear ratios is engaged provided that the clutch pedal is depressed.

For forward travel, depress the clutch, engage the required gear with the main gearshift lever and use the range lever to select the required range. With the engine idling, ease the shuttle lever to the right to clear the safety stop, then move fully forward and engage the clutch to obtain forward travel.

**NOTE:** When operating in temperatures below  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) with cold transmission oil, avoid shuttle operations, as far as practicable, until the oil has warmed up.

To reverse the direction of travel, reduce engine speed, depress the clutch, ease the shuttle lever to the right to clear the safety stop, then move the lever rearwards.

**NOTE:** The speed in reverse gear is approximately the same as the speed in the equivalent forward gear.

The gearshift lever positions are shown in the road speed charts at the end of Section C.

**IMPORTANT:** If it is necessary to tow the tractor, the range lever must be in the high range with the main and shuttle levers in neutral. This will ensure correct lubrication of the transmission bearings.

## Dual Power Transmission (option)

Dual power transmission is a hydraulically operated dual clutch pack within the transmission housing which allows the operator to select underdrive in any forward gear while on the move. This, effectively, increases torque, reduces tractor speed by approximately 20% and doubles the number of forward gear ratios (16 x 8 transmission).

The switch for Dual Power is located on the instrument panel. Press the rear of the switch (tortoise symbol) to select underdrive. Press the front of the switch (hare symbol) for direct drive.



The gearshift lever positions and Dual Power positions are shown in the road speed charts at the end of Section C.

**WARNING:** *Dual Power does not operate in reverse gear. If operating in a forward gear with underdrive selected, travel speed will increase to the equivalent direct drive ratio when the shuttle lever is moved to the reverse position.*

**IMPORTANT:** *A tractor fitted with Dual Power transmission must not be tow started. When using a slave battery to start the engine ensure that the polarity is correct positive to positive, negative to negative, otherwise the alternator may be damaged.*

**WARNING:** *Always engage the parking brake before dismounting. Dual Power transmission will not prevent the tractor from rolling when the engine is shut off.*

**IMPORTANT:** *If it is necessary to tow the tractor, the range lever must be in the high range with the main and shuttle levers in neutral. This will ensure correct lubrication of the transmission bearings.*

## Reduction Gear Set (Creeper Gears)

For operations requiring extra low ground speeds, reduction gear sets are available. For constant mesh transmissions, it is available as a dealer installed accessory with a 5.7:1 or 10:1 reduction ratio.

As the name implies, the reduction gear set has the effect of reducing all the ratios within the main transmission to provide additional gear ratios. Constant mesh transmissions with a reduction gear set have a further four forward and one reverse gear ratios.

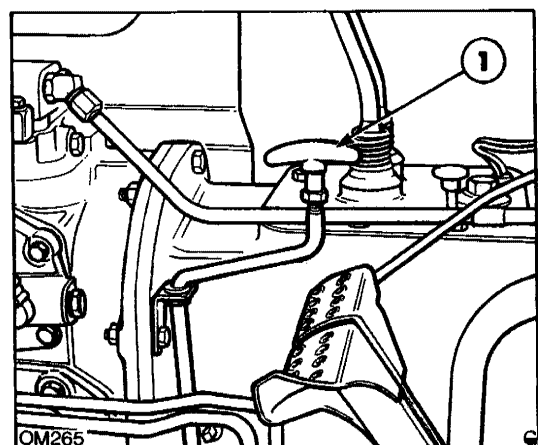
To select the reduction gears, with the engine running, depress the clutch and use the main gear lever to engage the required ratio and push the range lever fully forward beyond the low (L) position to select 'creep' (C), see Figure 8.

**NOTE:** *Always return the lever to neutral (N) from the creep position before stopping the engine. The lever may be difficult to move to neutral with the engine stopped due to 'wind-up' of the gears. The creeper gears offer very low ground speeds. Do not use the low gearing advantage to apply excessive draft loads to the tractor.*

## FOUR WHEEL DRIVE (where fitted)

Four wheel drive greatly improves traction in difficult conditions. The drive to the front wheels is designed to be engaged or disengaged with the tractor stationary or moving.

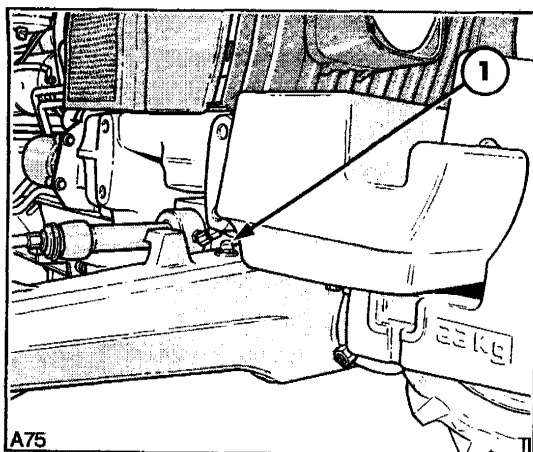
Four wheel drive is engaged by means of a T-handle located on the right-hand side of the transmission housing (see Figure 10). To engage the drive to the front wheels, pull the handle up. Push down to disengage four wheel drive.



10. Four Wheel Drive

1. Four wheel drive engagement lever

# CONTROLS, INSTRUMENTS AND OPERATION



11. Four Wheel Drive Axle

1. Axle breather

The front axle assembly incorporates a limited slip differential for improved traction and stability. The limited slip differential is fully automatic, unobtrusive in operation and requires no action on the part of the operator.

When cleaning the tractor, particularly if using a hose, avoid directing the water jet directly at the breather located on top of the axle. See Figure 11. Water entering the axle may cause severe damage to driveline components.

**NOTE:** To avoid undue tire wear when travelling on the public highway or any hard surface, it is recommended that four wheel drive be disengaged.

**WARNING:** Tractors with four wheel drive engaged or disengaged should not be allowed to exceed 25 mph (40 kph). Over-speeding by towing or coasting downhill with clutch depressed or transmission in neutral may cause loss of control, personal injury or failure of the drive shaft. Keep the tractor in the same gear going downhill as would be used when going uphill.

## BREAKING-IN PROCEDURE

Your new Ford tractor will provide long and dependable service if given proper care during the 50 hour breaking-in period and if serviced at the recommended intervals.

Avoid prolonged operation at either high or low engine speeds without a load on the engine.

Avoid overloading the engine. Operating in too high a gear under heavy load may cause excessive engine overloading. Overloading occurs when the engine will not respond to a throttle increase.

Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. Operating the tractor in too low a gear with a light load and high engine speed will waste fuel. You will save fuel and minimise engine wear by selecting the correct gear ratio for each particular operation.

Check the instruments frequently and keep the radiator and various oil reservoirs filled to the recommended levels.

## DRIVING THE TRACTOR



**WARNING:** Observe the following precautions when driving the tractor.

- Watch where you are going – especially at row ends, on roads and around trees.
- To avoid overturns, drive the tractor with care and at speeds compatible with safety, especially when operating on rough ground, when crossing ditches or slopes and when turning corners.
- Keep the tractor in gear when going down hill. Use a low gear to maintain control with minimum braking.

- *If the tractor is stuck, reverse out to prevent overturning 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 if the front wheels rise off the ground.*
- *Reduce speed before turning or applying the brakes. Lock the brake pedals together when travelling at high speed or on the highway. Brake both wheels simultaneously when making an emergency stop.*
- *Never apply the differential lock when turning.*
- *Use extreme caution and avoid hard application of the tractor brakes when pulling heavy, towed loads at road speeds.*
- *Towed loads that weigh more than the weight of the tractor should have brakes for safe operation. Ensure compliance with local regulations.*
- *Always sit in the driver's seat while starting or driving the tractor.*
- *Always use a slow moving vehicle (SMV) emblem when travelling on public roads.*

### **SLOW MOVING VEHICLE EMBLEM**

A triangular SMV (slow moving vehicle) emblem is affixed to the rear of the operator's seat. Before driving on the highway, ensure that the emblem is in place and not obstructed, damaged or dirty.

### **POWER TAKE-OFF**

The power take-off (P.T.O.) transfers engine power directly to mounted or trailed equipment via a splined shaft at the rear of the tractor.

The P.T.O. shaft is a 6-spline, 1.375 in. (34.9 mm) diameter shaft designed for 540 rev/min operation, the speed at which most P.T.O. actuated equipment is designed to run.

Independent P.T.O. may be engaged or disengaged whether the tractor is moving or stationary. The speed of rotation of the shaft is independent of the clutch and of tractor speed and is related directly to the speed of the engine.

All P.T.O. controls are color-coded yellow.

#### **Attaching P.T.O. Driven Equipment**



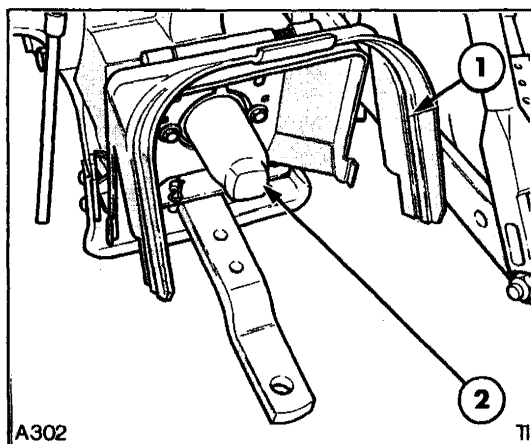
**WARNING:** *Before attaching or detaching equipment:*

- *Firmly apply the parking brake.*
- *Move the main and high/low gearshift levers to neutral.*
- *Disengage the P.T.O. by pulling the P.T.O. selector rearwards.*
- *Stop the engine.*
- *Ensure that the P.T.O. shaft has stopped turning.*

To connect P.T.O. driven equipment to the P.T.O. shaft, tilt the guard upward, as shown in Figure 12, to gain access. It is not necessary to remove the guard. Unscrew and remove the P.T.O. cap and store in the toolbox. Attach the implement to the P.T.O. shaft and lower the guard.

The P.T.O. guard has a special spring-loaded hinge that will retain the guard in any one of several points between the horizontal and fully raised

# CONTROLS, INSTRUMENTS AND OPERATION



**12. Power Take-Off**

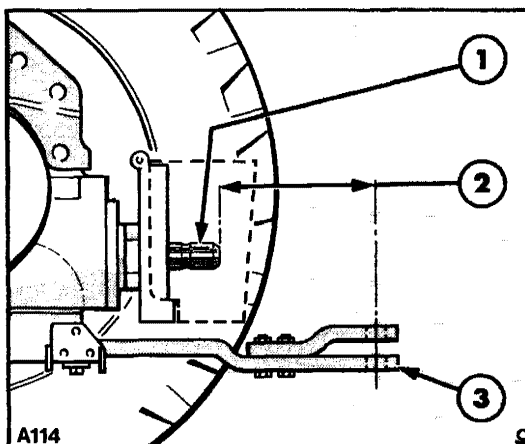
1. Guard
2. P.T.O. Cap

positions. The guard also serves as a supporting member for drive line shields used with pull-type P.T.O. driven equipment and provides for your safety.

If P.T.O.-driven equipment is attached to the swinging drawbar then the drawbar should be set to the extended position, that is, so the horizontal distance between the end of the P.T.O. shaft and the pin hole in the end of the drawbar is at least 14.9 in (378 mm). See Figure 13.

**NOTE:** *Dependent upon the drawbar and transmission installed in your tractor, the extended position will vary between 14.9 in. (378 mm) and 16.0 in. (406 mm). See SWINGING DRAWBAR in this section of the Manual.*

**IMPORTANT:** *After attaching mounted equipment, carefully raise and lower using Position Control and check clearances and P.T.O. shaft slide range/articulation. When attaching trailed equipment, ensure the drawbar is correctly set. See POSITION CONTROL or SWINGING DRAWBAR in this section of the Manual for correct operating procedure.*



**13. Drawbar Setting**

1. P.T.O. Output Shaft
2. Horizontal distance – shaft to hitch pin
3. Drawbar

**WARNING:** *Firmly apply the parking brake, place all gearshift levers in neutral and block all four wheels before operating any stationary P.T.O. equipment.*

**WARNING:** *Do not approach or work on the P.T.O. shaft or equipment with the P.T.O. in motion. Shut off the tractor engine and the P.T.O. and wait for all movement to stop before working on the P.T.O. or equipment.*

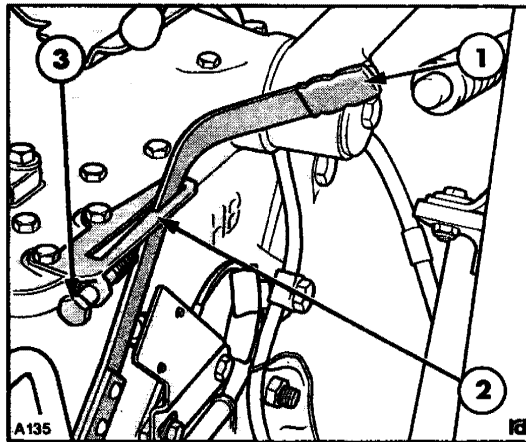
## Operating Independent P.T.O.

Independent P.T.O. may be engaged or disengaged whether the tractor is moving or stationary.

To engage the P.T.O., start the engine and ease the P.T.O. selector lever (Figure 14) to the right in order to clear the detent, then move the lever forward to engage the P.T.O.

Under normal conditions and with good quality equipment, the P.T.O. can be 'feathered' during engagement by gently moving the P.T.O. selector lever forward until the P.T.O. shaft just begins to rotate, pausing and then fully engaging the P.T.O.

This procedure could prove extremely difficult with certain types of equipment and could even re-



**14. P.T.O. Selector Lever**

- 1. P.T.O. selector lever
- 2. Disengaged position detent
- 3. Feathering stop

sult in failure of the shear bolt on the implement drive shaft. An adjustable feathering stop is provided to assist in smooth implement start-up. See Figure 14.

To adjust the feathering stop, proceed as follows:

- Attach an implement to the tractor and P.T.O., that has proved difficult to feather.
- With the engine running between idle and 1000 rev/min., move the P.T.O. selector lever gradually forward until the P.T.O. just starts to rotate. Make a mark on the bracket in line with the front edge of the P.T.O. lever.
- Disengage the P.T.O. and stop the engine.
- Position the lever in line with the mark previously made and adjust the feathering stop until it just contacts the lever.
- Finally, check P.T.O. operation by engaging and disengaging the P.T.O. and make any adjustments necessary. Screw the stop in to slow down P.T.O. engagement and screw it out to speed up engagement.

To operate, proceed as follows:

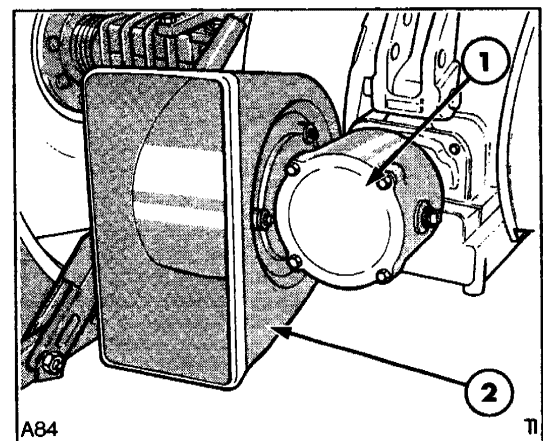
- With the engine at idle, move the P.T.O. selector lever out of the disengaged position detent and forward until it contacts the feathering stop.
- When the implement starts to rotate, move the lever fully forward and increase engine speed to 1800 rev/min (8 x 2 transmission) or 1750 rev/min (16 x 8 and 8 x 8 transmissions) to obtain 540 rev/min at the P.T.O. shaft.

**IMPORTANT:** Do not use the feathering stop to start up implements such as balers, etc., that are clogged. Do not leave the P.T.O. lever in the feathering position for more than 5 seconds.

For most P.T.O. operations the speed of the tractor is controlled by selection of the appropriate gear ratio whilst maintaining the correct P.T.O. speed by means of the throttle.

## BELT PULLEY (where fitted)

The belt pulley, which is driven by the P.T.O. output shaft, should be installed as shown in Figure 15.



**15. Belt Pulley Installed**

- 1. Belt pulley
- 2. Belt guard


# CONTROLS, INSTRUMENTS AND OPERATION

Prior to installation, remove the P.T.O. safety cap and guard and the drawbar. Install the belt pulley on the P.T.O. shaft using the four bolts and special spacers provided.

The use of a belt guard is strongly recommended.

## To Operate the Belt Pulley

- Fully raise and secure the lower links.
- Align the tractor with the equipment to obtain full width contact on both pulleys without the belt contacting any other part of the tractor or equipment.
- Apply the parking brake and block all wheels to prevent tractor movement due to vibration.
- Hang a chain or lean an iron bar against the tractor to ground static electricity.
- Start the engine and engage the P.T.O. The recommended belt speed is 3000–3200 ft/min (15.3 – 16.3 m/sec). To obtain this speed set the engine speed at 2200 rev/min.

 **WARNING:** *Never attempt to re-fit or adjust a belt in motion. Never approach a moving belt when wearing loose clothing. Firmly apply the parking brake, place both gear-shift levers in neutral and block all four wheels before operating the belt pulley.*

## THREE-POINT LINKAGE

Before attaching equipment to your tractor study the whole of the text under 'THREE- POINT LINKAGE':

- Ensure the stabilisers or check chains are adjusted to suit the equipment.

- Attach the lift rods to the appropriate hole in the lower links.
- Remove the swinging drawbar if close-mounted equipment is being attached.

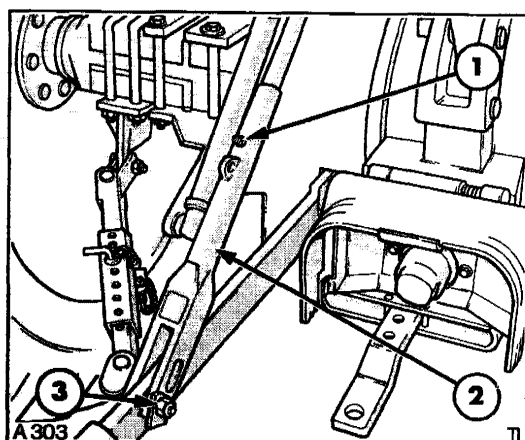


**WARNING:** *Do not transport or attach equipment when the hydraulic system is in Draft Control. Use Position Control for these operations. Always lower hydraulic equipment to the ground before stopping the tractor.*

Most equipment can be attached to your tractor as follows:

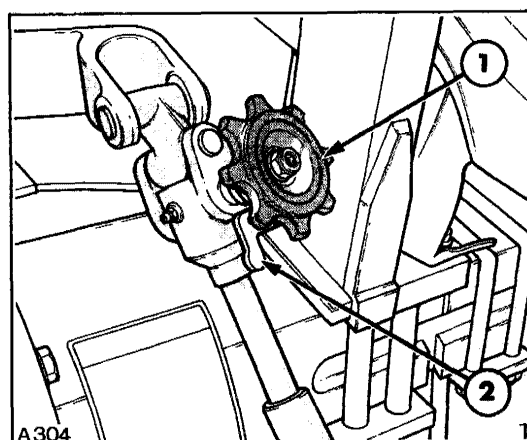
1. Position the tractor so that the lower link hitch points are level with and slightly ahead of the implement hitch pins. Carefully inch the tractor rearwards to align the tractor and implement hitch points. Stop the engine and insert the hitch pins and secure with linch pins.
2. Lengthen or shorten the top link until the implement mast pin can be inserted through the mast and upper link. Adjust the upper link to an initial 27 in. (685 mm) setting.
3. Attach remote equipment as covered on pages 24 to 31.
4. When detaching equipment, the procedure is the reverse of attaching. The hints listed below will make unhitching and hitching easier and safer.

- Always park the equipment on a level, firm surface.
- Support equipment so that it will not tip or fall when detached from the tractor.
- Always relieve all hydraulic pressure in remote cylinders before unhitching.



**16. Left-Hand Lift Rod**

- 1. Grease fitting
- 2. Lower end of lift rod
- 3. Securing pin



**17. Right-Hand Lift Rod**

- 1. Hand wheel
- 2. Locking latch

## Lift Rods

To adjust the left-hand lift rod, remove the securing pin (Figure 16) and turn the lower half of the lift rod to lengthen or shorten the lift rod assembly, as required. Ensure the grease fitting remains facing rearward.



**WARNING:** Before disconnecting a lift rod from the lower link, stop the engine, lower attached equipment to the ground and ensure the hydraulic lift control lever is fully forward. Ensure attached equipment is correctly supported and that no residual pressure remains in the hydraulic system before removing the lift rod securing pin.

For normal operation the left-hand lift rod should be adjusted so the length between centers of the fixing points is 30.4 (770 mm).

The right-hand lift rod is adjusted by means of a hand wheel attached to the levelling box. See Figure 17. Lift the locking latch in order to turn the hand wheel.

Turn the crank handle or hand wheel clockwise to shorten the lift rod. Turn counter-clockwise to lengthen the lift rod. When the lift rod is correctly

set, push the latch down to prevent further rotation of the hand wheel.

**NOTE:** Both left and right-hand lift rods may have a slot as well as a round hole at the lower end. If the pivot bolt or pin is inserted through the slotted hole this will allow an implement limited vertical movement independent of the tractor which is a useful feature for the operation of wide implements. When the pivot bolt is inserted through the slotted hole, avoid overtightening the locknut to prevent the lift rod being pinched.

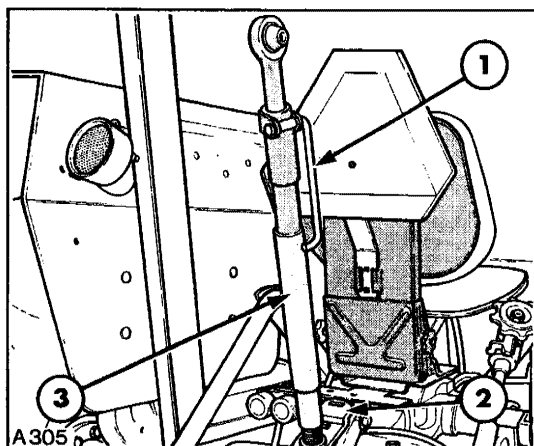
Each lower link has two holes for attachment of the lift rods. Attach the lift rods to the front holes (nearest the tractor) for maximum lift height. Use the rear holes for normal operation and maximum lift capacity.

## Top Link

The top link length is adjusted by turning the sleeve. See Figure 18. The latch must be pulled back before the sleeve can be turned. Most equipment will operate at the correct depth/height if the top link is set to a nominal 27 in. (685 mm) measured between the centers of the attaching pins.

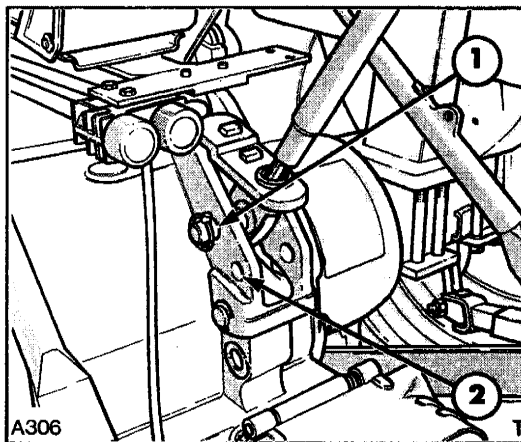
When transporting the tractor, hook the link plate over the lug on the hydraulic lift rocker.

# CONTROLS, INSTRUMENTS AND OPERATION



**18. Top Link**

- 1. Latch
- 2. Link plate
- 3. Sleeve



**19. Hydraulic Lift Rocker**

- 1. Light draft position
- 2. Heavy draft position

**IMPORTANT:** When attaching mounted or semi-mounted equipment to the three-point linkage or when coupling trailed equipment to the drawbar, ensure that there is adequate clearance between the implement and the tractor.

The clearances in the raised position should be checked by raising the implement carefully in Position Control. Check the swing clearance by performing a series of left and right-hand turns with the tractor and implement combination.

Ensure the check chains or stabilizers are adjusted to prevent damage to remote control valves (where fitted).

## Hydraulic Lift Rocker

When operating in Draft Control, draft signals are transmitted via the top link and hydraulic lift rocker to the control valve within the hydraulic system. The draft signal transmitted may be varied by adjustment of the lift rocker connections.

The lift rocker has two holes for attachment of the top link.

With the top link in the upper hole of the rocker, as shown in Figure 19, the hydraulic system is more sensitive to changes in draft loading and is the recommended setting for light draft loads and equipment.

With the top link in the lower hole in the rocker the system is less sensitive to draft loadings and should be used when operating with heavier equipment or for heavy draft loads.

## Linkage Categories

An alternative pair of lower link balls and an outer section of the top link are available as an accessory.

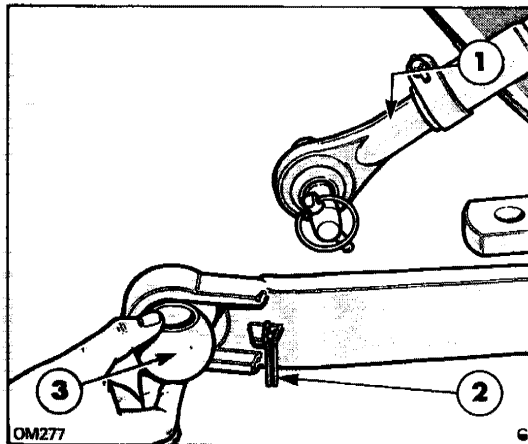
To change the linkage category pull back the latch and unscrew the implement end of the top link Figure 20. Install the alternative outer section of the top link.

Pull back the spring retainer on each lower link, turn the ball until the pin hole is vertical and remove the ball. Reverse the procedure to install the alternative ball.

## Telescopic Stabilizers

The telescopic stabilizers, Figure 21, will control the sway of the lower links and attached equipment when in work or being transported. This is





**20. Changing the Linkage Category**

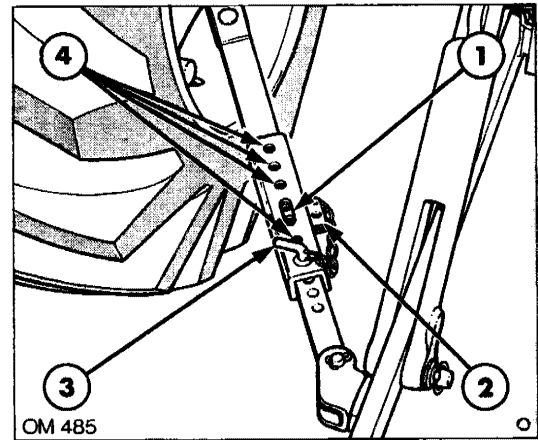
- |                    |         |
|--------------------|---------|
| 1. Top link end    | 3. Ball |
| 2. Spring retainer |         |

especially important when operating on slopes or near fences, walls or ditches and with certain implements. Check your Implement Operator's Manual.

Each stabilizer consists of a fabricated, square section tube attached to a mounting bracket bolted to the outer ends of the rear axle housing. A square-section rod, attached to the lower links, is a loose, sliding fit within the tube and the overall length of the assembly is determined by the position of a pin that may be passed through drillings in the tube and rod.

The holes in the inner and outer sections are drilled at different centers so a wide range of stabilizer settings may be achieved by selection of the most suitable pair of holes.

In practice, the implement should be attached to the three-point linkage with the locating pin removed from both stabilizers. When satisfactorily aligned, the locating pins should be passed through any one of the five holes in the outer sections that align with one of the nine holes in the sliding inner section. With the pins inserted in this manner, both stabilizers will be locked as a rigid



**21. Telescopic Stabilizers**

- |                          |                           |
|--------------------------|---------------------------|
| 1. Slot in outer section | 3. Locating pin           |
| 2. Storage bracket       | 4. Holes in outer section |

unit and the implement will be prevented from swaying both in work or in the transport position.

Under certain conditions or when using equipment such as plows etc., it may be desirable to allow the three-point linkage (and implement) to sway from side to side. If the pin is inserted through the slot to engage one of the holes in the inner section, a limited degree of sway will be permitted.

**IMPORTANT:** *When setting the stabilizer length, particularly if using the slot to provide sway, ensure that there is no possibility of the rear tires fouling the stabilizers or lower links.*

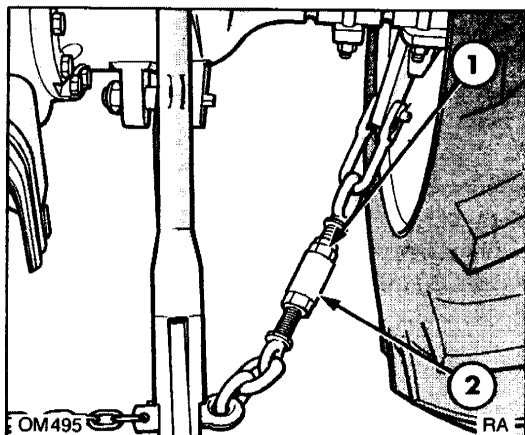
A hole in a bracket welded to the outer section provides a storage position for the pin when the stabilizers are not in use.

## External Check Chains (where fitted)

Adjustable external check chains may be installed to control lateral movement of equipment connected to the three-point linkage. See Figure 22.

To adjust the length of a check chain, loosen the locknut and screw the turnbuckle in or out, as required. Tighten the locknut.

## CONTROLS, INSTRUMENTS AND OPERATION



22. External Check Chains

1. Locknut
2. Turnbuckle

**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. See Figure 34.

### Flexible Link Ends (where fitted)

Position the tractor so that the lower link hitch points are level with and slightly ahead of the implement hitch pins.

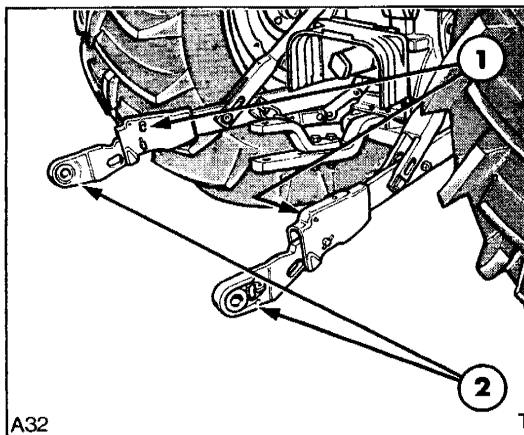
Stop the engine. Pull up the release levers to free the link ends, see Figure 23, and slip the ends on the implement hitch pins. Secure with the linch pins.

Start the engine and slowly back the tractor up until the flexible link ends lock in the operating position. Stop the engine.

Attach the top link, as previously described.

## HYDRAULIC SYSTEM

Your tractor is equipped with a hydraulic system providing accurate and sensitive control over a wide range of operating conditions.



23. Flexible Link Ends

1. Release levers
2. Link ends

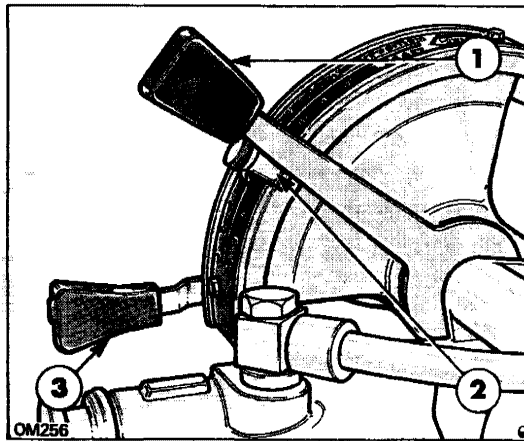
Two distinct systems are incorporated:

1. Upper Link Draft Control.
2. Position Control

The type of control selected will depend on the type of implement in use and the operating conditions.

Draft Control is most suitable for mounted implements operating in the ground. Changes in the working depth or soil resistance cause the draft loading on the implement to increase or decrease. This change in draft loading is sensed through the top link of the three-point linkage and the hydraulic system responds by raising or lowering the implement to restore the draft loading. In this way a uniform draft load is maintained on the implement. The system responds to both upper link compression and tension loads, and is described as double-acting.

Position Control provides accurate and sensitive control of implements such as sprayers, rakes,



**24. Hydraulic Controls**

- 1. Draft Control lever
- 2. Adjustable stop
- 3. Position Control lever

mowers, etc., that operate above the ground. Position Control can also be used with ground engaging equipment which must maintain a constant depth regardless of the draft load.

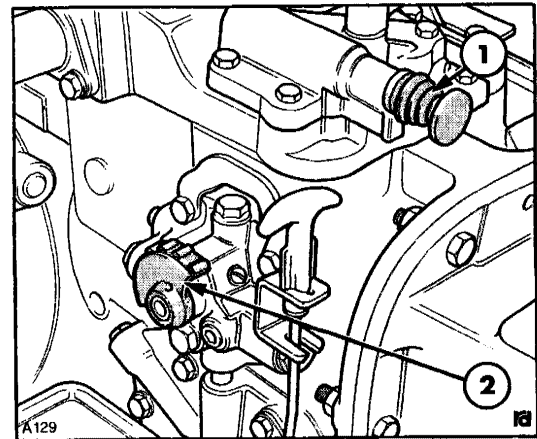
All tractors have a dual lever system, i.e., a separate lever for Draft and Position Control functions. See Figure 24.

The Draft and Position Control levers are used to raise or lower the three-point linkage (and implement) to the required height or working depth.

Before operating the hydraulic three-point linkage the auxiliary services control valve knob (if fitted) must be correctly set. The auxiliary services control valve (A.S.C. valve) directs oil to the three-point linkage, to external cylinders or both together.

To operate the three-point linkage, push the A.S.C. valve knob fully in (rearward). See Figure 25.

Pull the A.S.C. valve knob fully out (forward) to operate external services only.



**25. Hydraulic Flow Control and A.S.C. Valve**

- 1. A.S.C. valve knob
- 2. Flow control valve knob

The midway position is selected to operate the three-point linkage and external cylinders simultaneously. See OPERATING REMOTE CYLINDERS WITH THE A.S.C. VALVE in this section of the manual.



**WARNING:** Do not transport or attach equipment when the hydraulic system is in Draft Control. Use Position Control for these operations. Always lower hydraulic equipment to the ground before stopping the tractor.

## Upper Link Draft Control Operation

Move the Draft Control lever in the quadrant to find the point near the center where the lift links neither raise nor lower. This is the neutral point.

Lower the implement into work using the Draft Control lever. Push the lever forward to increase the draft loading. Pull rearwards to reduce the draft loading. In most circumstances, forward movement of the Draft Control lever will increase implement depth and rearward movement will reduce the depth.

Once set, the tractor hydraulic system will automatically adjust the implement depth to maintain an even pull on the tractor and so reduce wheel slip to a minimum.

# CONTROLS, INSTRUMENTS AND OPERATION

When the required implement working depth has been established, set the adjustable stop adjacent to the Draft Control lever to locate the position for repeated use. The Draft Control lever may be eased sideways to bypass the adjustable stop, if required.

The adjustable stop is reversible after loosening the central clamp screw so may be used as a location point for either the Draft or Position Control levers.

A pressure sensitive feathering valve, installed within the hydraulic system, automatically regulates the hydraulic oil flow to give smoother response to draft signals when using soil engaging implements. In addition, some models have a manually operated flow control valve fitted to regulate the rate of correction of the hydraulic system. See Figure 24.

Move the flow control valve knob (where fitted) counter-clockwise (rearwards) for the maximum rate of correction and clockwise (forwards) for the minimum correction rate. The rate of oil flow (correction) of the hydraulic system is infinitely variable between these two points.

**NOTE:** *Position Control is not recommended for soil engaging implements. The flow control valve provides fine adjustment of hydraulic system sensitivity. However, quite large changes of sensitivity may be obtained by locating the pivot pin in a different hole in the lift rocker. See THREE-POINT LINKAGE in this section for correct operating procedure.*

Pull the Draft Control lever to the top of the quadrant to override the flow control valve (manual or automatic) and raise the implement quickly.

**NOTE:** *When grading and backfilling with light equipment, such as a rear blade, it may be desirable to "block out" upper link tension loads to prevent the blade from "diving". This is accom-*

*plished by installing a spacer (available from your Ford New Holland dealer) between the counter-bore in the Draft Control main-spring housing and the spring seat. See Figure 26. Alternatively, use the Position Control lever in conjunction with the Draft Control lever. See "Draft Control Operation with Position Control" on the next page.*

## **Position Control Operation**

Set the required implement height/depth using the Position Control lever. Pull the lever back to raise the implement, push forward to lower. Implement height/depth is relative to the position of the lever in the quadrant.

**NOTE:** *When operating in Position Control the Draft Control lever should be pushed down to the bottom of the quadrant.*

When the required implement working height/depth has been established, set the adjustable stop adjacent to the Position Control lever to locate the position for repeated use. The lever may be eased sideways when it is required to by-pass the adjustable stop.

The adjustable stop is reversible after loosening the central clamp screw so may also be used when operating in Draft Control.

**IMPORTANT:** *When transporting equipment on the three-point linkage set the adjustable stop to maintain the Position Control lever in the raise position. This will prevent accidental movement of the lever which could result in attached equipment lowering and becoming damaged or damaging the road surface.*

When operating in Position Control it is of no advantage to restrict the oil flow in the hydraulic system. However, the manual flow control valve (where fitted) may be used to reduce the rate of lift of the three-point linkage, if required.

To reduce the rate of lift, move the flow control valve knob clockwise. Move the knob counter-clockwise to increase the rate of lift.

## Draft Control Operation with Position Control

**NOTE:** When operating in Draft Control the Position Control lever should normally be at the bottom of the quadrant. However, the Position Control lever may be used in conjunction with Draft Control to limit the maximum depth to achieve a more even depth of cultivation in fields with widely varying soil conditions.

Position Control may be used together with the Draft Control as follows:

Set the Position Control lever at the maximum desired implement depth. The hydraulic system will not lower the implement below this depth. (This will also prevent "diving" which may be encountered with light equipment, such as a rear blade, when grading or backfilling).

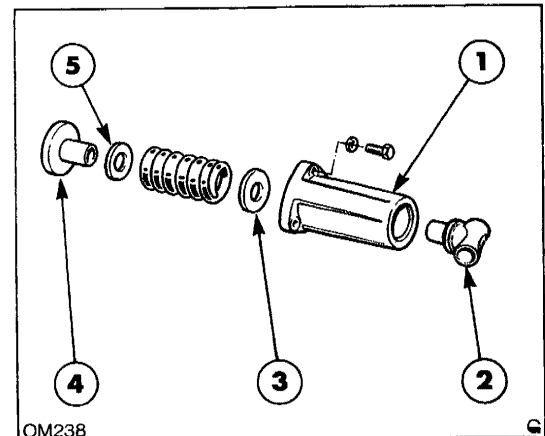
Adjust the Draft Control lever for the maximum required draft load (pull).

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.

## Tension Load 'Block-Out' Spacer Installation

Remove the pin that attaches the hydraulic lift rocker to the yoke, Figure 26. Pull the rocker back and unscrew the yoke.

Remove the three bolts and lock washers from the spring housing and pull the housing from the tractor, along with the washer, spring and spring seat.



26. Main-Spring Housing - Spacer Installation

- |                   |                |
|-------------------|----------------|
| 1. Spring housing | 4. Spring seat |
| 2. Yoke           | 5. Spacer      |
| 3. Washer         |                |

Remove the spring seat and any shims behind the seat from the counterbore of the housing.

Install the spacer over the spring seat as shown in Figure 26. Install the spring seat, and any shims that were removed, then attach the assembled housing to the tractor with the three bolts and lock washers previously removed.

Thread the yoke on the plunger until all free-play is eliminated, then back the yoke out until the hole is horizontal. Do not back the yoke out more than is necessary to position the hole horizontally.


Attach the hydraulic lift rocker to the yoke with the pin previously removed.

## OPERATING REMOTE CYLINDERS WITH THE A.S.C. VALVE (where fitted)

The optional Auxiliary Service Control (A.S.C.) valve is installed in place of the accessory cover or remote control valves and may be supplied with pipework leading to a convenient coupling at the rear of the tractor. Alternatively, remote cylinders may be connected directly into the tapping on the top of the A.S.C. valve.

# CONTROLS, INSTRUMENTS AND OPERATION

Pull the Draft Control lever back to the neutral position, i.e., when the three-point linkage neither raises nor lowers. Set the adjustable stop adjacent to it.

 **WARNING:** Draft Control is recommended when operating Auxiliary Services. Never change from Draft to Position Control while Auxiliary Services are in use as this may cause sudden unexpected movement of the implement and could result in injury to a bystander.


The A.S.C. valve is operated by means of a knob installed beneath the front of the seat. See Figure 25. Move the knob to the mid-position. This will allow oil to flow to the three-point linkage and the remote cylinder together when the Draft Control lever is raised above the neutral position.

**NOTE:** Hydraulic oil will take the path of least resistance, therefore, operation of the three-point linkage will depend upon the type of auxiliary equipment in use.

Pull the A.S.C. valve knob fully out (forward) to cut off the oil supply to the three-point linkage and direct the oil to the remote cylinder only.

**NOTE:** Do not operate the tractor with the A.S.C. valve knob pulled out and no cylinder connected as this will cause the hydraulic system relief valve to blow continuously and overheat the oil. This can also occur when a cylinder is fully extended or retracted and the control is not returned to neutral.

To extend the remote cylinder pull the Draft Control lever to the rear of the neutral point. When fully extended, return the lift control lever to the neutral position to avoid blowing the circuit relief valve. Push the Draft Control lever forward of the neutral position to retract the remote cylinder.

 **WARNING:** Before disconnecting remote cylinders, ensure the implement


is fully lowered and move the A.S.C. valve lever (where fitted) fully rearward (towards the seat).

**NOTE:** If the implement is removed with the cylinder extended then oil will be lost from the rear axle housing. Top up the rear axle, if necessary.

If the equipment is required to give a positive hold, operate independently of the tractor lift controls or where the full power of the tractor hydraulic system is required to operate remote cylinders it is recommended that a Ford remote control valve be used instead of the auxiliary services control valve.

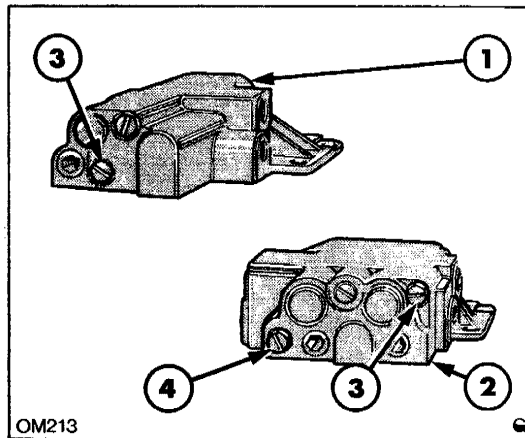
Ensure that oil contained within the remote cylinders is clean, has not broken down due to long storage and is of the correct grade. Contaminated oil within the cylinders will be drawn into the tractor hydraulic system when the cylinders are in use and may cause early failure of transmission or hydraulic components.

## REMOTE CONTROL VALVES

 **WARNING:** Hydraulic fluid or diesel oil escaping 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 the engine and relieve pressure before connecting or disconnecting lines.
- Tighten all connections before starting the engine or pressurizing lines.

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



**27. Single and Double Spool Remote Control Valves**

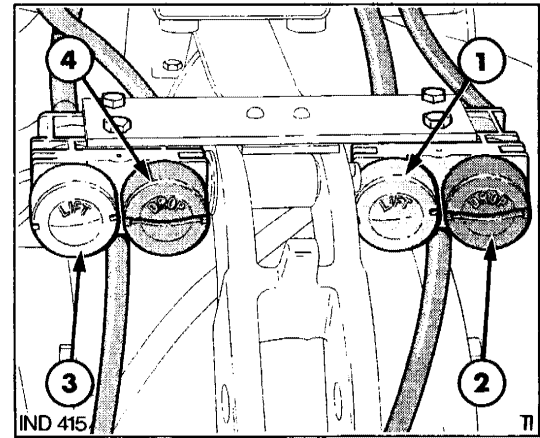
1. Single-spool valve
2. Double-spool valve
3. 'Quick-drop' valve
4. Float valve

To facilitate the operation of remote cylinders, optional remote control valves are available for your tractor.

The standard version is available with a single or double spool feature whilst up to four de luxe remote control valves may be installed. See the following text headed STANDARD REMOTE CONTROL VALVES or DELUXE REMOTE CONTROL VALVES, as appropriate.

## STANDARD REMOTE CONTROL VALVES

Single or double-spool remote control valves may be installed on the hydraulic top cover, replacing the accessory cover or A.S.C. valve. See Figure 27. The remote control valves are connected by pipework to quick-release couplers located at the rear of the tractor. Single-spool valves have the couplers to the right of the hydraulic lift rocker. Double-spool valves have couplers either side of the rocker as shown in Figure 28.



**28. Standard Remote Control Valve Couplers**

1. Lift coupler (right-hand spool valve)
2. Drop coupler (right-hand spool valve)
3. Lift coupler (left-hand spool valve)
4. Drop coupler (left-hand spool valve)

Single-acting or doubling-acting remote cylinders may be operated provided the float and 'quick-drop' valves are correctly set and the cylinders are connected to the appropriate coupler(s). See Figures 27, 28 and the remote control valve application chart on the next page.

Single-spool valves and the in-board (left-hand) spool of double-spool valves have a 'quick-drop' facility. This feature eliminates system back pressure and will assure the gravity return of a lightly loaded single-acting cylinder, as used on implements such as tipping trailers and semi-mounted, reversible plows. To close the quick-drop valve, turn the hexagon head adjusting screw clockwise. To open the valve, turn the screw counter-clockwise. See Figure 27.

**NOTE:** *If it is required to operate one single-acting cylinder with a double-spool valve installed, always use the inboard (left-hand) spool.*

The outboard (right-hand) spool of the double-spool valve has a float valve. A partially open float valve will allow an implement to 'float' or follow the ground contour, a feature that is useful for grading operations. To open the float valve, turn

# CONTROLS, INSTRUMENTS AND OPERATION

Standard Remote Control Valve Application Chart

Control Valve Type	Cylinder Application(s)	Float Valve	'Quick-drop' Valve	Hose Installation			
				Single-Spool Valves or Outboard Spool of Double-Spool Valves		Inboard Spool of Double-Spool Valves	
				Lift Coupler	Drop Coupler	Lift Coupler	Drop Coupler
Single-Spool with Detents	One Double-Acting	N/A	Closed	Lift Hose	Drop Hose	N/A	N/A
	One single-Acting	N/A	Open	Lift Hose	None	N/A	N/A
Double-Spool with Detents	Two Double-Acting	Closed	Closed	Lift Hose	Drop Hose	Lift Hose	Drop Hose
	One Double-Acting One Single-Acting	Closed	Open	Lift Hose	Drop Hose	Lift Hose	None
	Two Single-Acting	Open	Open	Lift Hose	None	Lift Hose	None


the hexagon head adjusting screw counter-clockwise. To close the valve, turn the screw clockwise. See Figure 27.

Implement down pressure may be varied by adjustment of the float valve between fully open and fully closed.

To operate a remote control valve, connect the remote cylinder feed hose to the lift coupler, Figure 28, by inserting the hose through the slit in the dust cap, ensuring that it is correctly seated. The return hose from a double-acting cylinder must be connected to the drop coupler.

**NOTE:** The lift couplers have blue dust caps and the drop couplers have black dust caps.

If a double-spool valve is installed, a second pair of couplers are mounted to the left of the hydraulic lift rocker, as shown in Figure 28.

 **WARNING:** Before connecting or disconnecting hydraulic hoses at the remote cylinders, stop the engine and relieve the pressure in the circuit by moving the remote control valve lever(s) fully forward to the 'float' position then

back to neutral. Ensure no one will be injured by moving equipment when relieving pressure in the system.

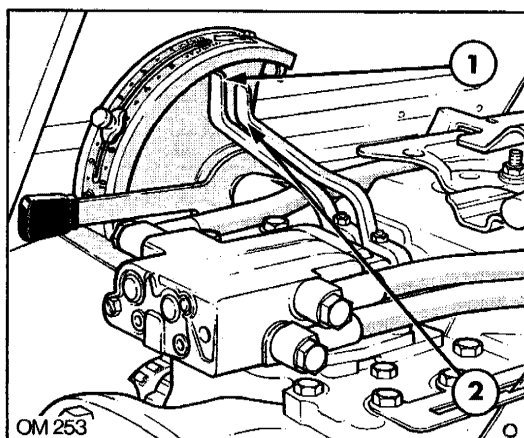
Before disconnecting cylinders or equipment ensure the equipment or implement is supported securely.

Never work under equipment supported by an hydraulic device because it may drop if the control is actuated (even with the engine stopped) or in the event of a hose failure, etc. Always use a secure support for equipment which must be serviced while in the raised position.

**NOTE:** Before connecting remote cylinder hoses, thoroughly clean the connections to prevent oil contamination. Remote cylinders are operated by oil drawn from the tractor hydraulic system, therefore, always check and top up the hydraulic system oil after remote cylinder equipment has been connected and cycled a few times.

Ensure that oil contained within the remote cylinders is clean, has not broken down due to long storage and is of the correct grade.





**29. Standard Remote Control Valve Levers**

1. Operating lever (right-hand spool)
2. Operating lever (left-hand spool)

The 'quick-drop' and/or float valve should be set as indicated in the 'Standard Remote Control Valve Application Chart'.

Pull the control handle(s), Figure 29, rearwards to extend remote cylinders. Push forward to retract.

Each spool valve has detents that retain the control handle in the selected retract or extend position. When the remote cylinder reaches the end of its stroke, the handle will automatically return to the neutral position. The detent may be eliminated by removing the detent spring. See your Ford New Holland dealer for instructions.

**NOTE:** When operating in the single-acting mode with the 'quick-drop' or float valve open, the control handle will not automatically return to neutral when the remote cylinder reaches the end of the return stroke. The control handle must be manually returned to neutral from the drop position.

**IMPORTANT:** When operating with a 'quick-drop' remote control valve installed, the following precautions must be observed:

- Never unscrew the 'quick-drop' valve for the continuous return of oil to the lift port, such as for hydraulic motor operation. It is recommended that the return pipe be routed to the hydraulic oil cooler feed circuit (where fitted) or into the rear axle oil filler if no oil cooler is installed.
- Do not operate the tractor unless the 'quick-drop' valve is either fully closed (in) or fully open (out).



**WARNING:** Remote couplers must be properly mounted and securely fastened to the tractor mounting bracket to ensure correct operation of the safety disconnect feature.

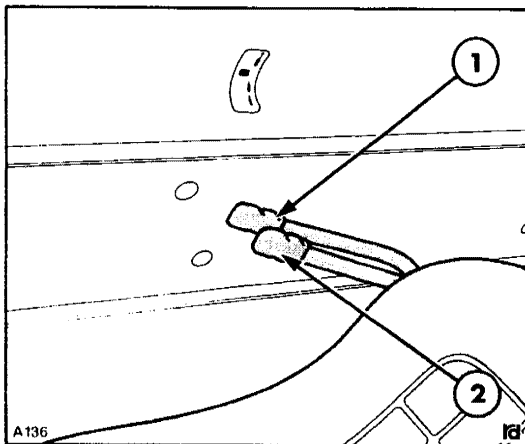
## DELUXE REMOTE CONTROL VALVES

Deluxe remote control valves are available to facilitate the operation of external hydraulic cylinders, motors etc. One or two remote control valves are available as a factory installed option. A third or fourth valve may be ordered as a dealer installed accessory. The remote control valves are installed at the rear of the tractor. Valves one and two are installed to the right of the hydraulic rocker. Valves three and four to the left.

The valves are operated by levers located either side of the operator's seat. If one or two valves are installed, the levers are to the right of the seat, as shown in Figure 30. If a third or fourth valve is installed, similar, additional levers are installed to the left of the seat.

The remote control valve levers are laid out in a logical manner, i.e., the outer right-hand lever controls the outer right-hand valve, etc. The levers have four positions:

## CONTROLS, INSTRUMENTS AND OPERATION



30. Deluxe Remote Control Valve Levers

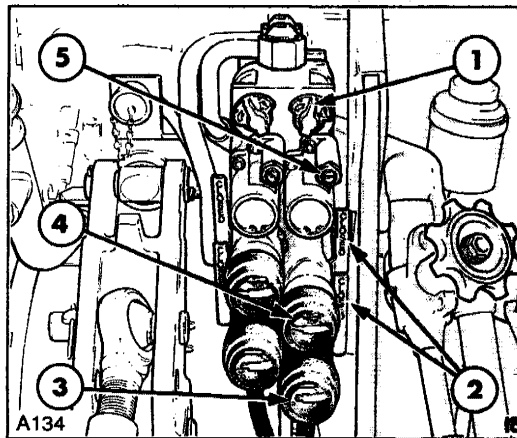
1. Right-hand side outer
2. Right-hand side inner

Pull a lever back from the neutral position to extend the cylinder to which it is connected. Push the lever forward, past neutral, to retract the cylinder. Pushing the lever fully forward, beyond the 'retract' position, will select 'float' which will permit the cylinder to extend or retract freely, thereby allowing equipment such as scraper blades to 'float' or follow the ground contour.

The float position is also used for retracting a single-acting ram cylinder, such as when lowering a tipping trailer, etc. (see page 29).

The extend, neutral, retract and float positions are identified by symbols on a decal adjacent to the control levers.

A detent will hold the lever in the selected extend or retract position until the remote cylinder reaches the end of the stroke when the control lever will automatically return to neutral. Alternatively, the lever may be returned to neutral manually. The lever will not return automatically from the float position. The detent screw, Figure 31, may be adjusted to vary the system pressure required to return the lever automatically to the neutral position.



31. Deluxe Remote Control Valves

- |                        |                 |
|------------------------|-----------------|
| 1. Flow control valve  | 4. Lift coupler |
| 2. Oil shut-off levers | 5. Detent screw |
| 3. Drop coupler        |                 |

**NOTE:** Do not hold the lever in the extend or retract position once the remote cylinder has reached the end of the stroke as this will cause the relief valve to 'blow'. Forcing oil through the relief valve for extended periods will overheat the oil and may lead to failure of hydraulic and driveline components.

Each remote control valve has its own flow control valve and a pair of couplers. The couplers are of a self-locking design and each is provided with an oil shut-off lever. The couplers also allow the remote cylinder hoses to pull free if the implement should become disconnected from the tractor. The upper (lift) coupler is identified by an 'extended cylinder' symbol molded into the rubber dust cap. The lower (drop) coupler has a 'retracted cylinder' symbol.



**WARNING:** Before connecting or disconnecting hydraulic hoses at the remote cylinders, stop the engine and relieve the pressure in the circuit by moving the remote control valve lever(s) fully forward to the 'float' position then back to neutral. Ensure no one will be injured by moving equipment when relieving pressure in the system. Before disconnecting cylinders or equipment ensure the equipment or implement is supported securely.

**NOTE:** *Before connecting remote cylinder hoses, stop the engine and thoroughly clean the connections to prevent oil contamination. Remote cylinders are operated by oil drawn from the tractor hydraulic system, therefore, always check and replenish the hydraulic system oil after remote cylinder equipment has been connected and cycled a few times. Operating the tractor with a low oil level may result in damage to the rear axle.*

To connect a remote cylinder, insert the feed or return hose through the slit in the appropriate dust cap, ensuring it is correctly seated in the coupler. Pull the shut-off lever down to permit oil flow.

**NOTE:** *Some implements require the use of an additional, remotely mounted control valve. When such a valve is plumbed in to receive an oil supply from the tractor de luxe remote valve, it must be of the open center type.*



**WARNING:** *Never work under equipment supported by a hydraulic device because it may drop if the control is actuated (even with the engine stopped) or in the event of hose failure, etc. Always use a secure support for equipment which must be serviced while in the raised position.*

The flow control valve meters the flow of oil to the remote cylinder and thus controls the rate of response of the cylinder.

Turn the flow control knob counter-clockwise (hare symbol uppermost) to increase the rate of oil flow. Turn the knob clockwise (tortoise symbol uppermost) to decrease the rate of flow. See Section C – Specifications, for flow rates.

#### **Operating Double-Acting Cylinders**

Connect the feed hose from a double-acting cylinder to the upper coupler on a remote control valve and the return hose to the lower coupler on the same valve, as previously described. To extend a

double-acting cylinder, pull the control lever back to the 'extend' position.

To retract a double-acting cylinder, push the control lever forward past neutral to the 'retract' position.

Further forward movement of the lever will select 'float' which will allow the cylinder to extend or retract freely. This feature is of assistance when carrying out work with equipment such as scraper blades and loaders.

#### **Operating Single-Acting Cylinders**

Connect the hose from a single-acting cylinder to the upper coupler on a remote control valve, as previously described.

To extend a single-acting cylinder, pull the control lever back to the 'extend' position.

Manually return the lever to the neutral position to stop the cylinder before it is fully extended or allow the valve to return to the neutral automatically when the cylinder reaches the end of its stroke.

To retract a single-acting cylinder, move the lever fully forward to the 'float' position.

**IMPORTANT:** *Always use the 'float' position to lower a single-acting cylinder. The 'retract' position is for double-acting cylinders only.*

#### **Operating Continuous Flow Hydraulic Equipment**

Continuous flow hydraulic equipment (e.g. hydraulic motors) should be connected to the remote control valve couplers with the pressure hose connected to the lower coupler and the return hose connected to the upper coupler of the same valve.

With the remote control valve lever fully forward in the 'float' position the motor will be stationary. The hydraulic motor will operate if the lever is pulled rearwards to the 'retract' position.

# CONTROLS, INSTRUMENTS AND OPERATION

**IMPORTANT:** *To stop the motor, move the lever fully forward from the 'retract' position to the 'float' position. The motor will then slow to a halt and not stop abruptly causing internal line pressures which, unless relieved by special valving, could damage the motor seals.*

Observe the following to further protect the tractor and equipment:

- Do not open any by-pass valve in the equipment or motor. Use the flow control valve to control the rate of flow or speed of the motor.
- Do not hold the remote control valve lever to operate the equipment. If the detent will not hold the lever in the lower position, check the equipment for proper adjustment or contact your Ford New Holland dealer for assistance in adapting the equipment to suit the tractor.
- To assure optimum hydraulic oil cooling and prevent overheating, operate continuous flow equipment at the highest flow setting (by use of the flow control valve) and lowest engine speed that will give the required machine performance and speed.
- It is recommended that a temperature gauge, where available, is installed in the remote circuit when using hydraulic motors for continuous operation. If over-heating occurs, stop the hydraulic motor until the oil cools. Ensure the flow control setting is at maximum and the engine speed at a minimum, appropriate to machine performance. If operating conditions are normal and high temperatures persist, install an oil cooler in the motor return circuit. The maximum recommended operating temperature of the oil is 100° C (212° F).
- Your authorized Ford New Holland dealer will supply the necessary fittings or make the installation for you.

## **Operating Several Remote Valves Simultaneously or Remote Valves and Hydraulic Lift Simultaneously**

**NOTE:** *Hydraulic pump output varies with engine speed. Oil flow will be relatively constant in the remote control valve circuits if the flow control valve is used to provide reduced oil flow, thus providing constant operating speed for hydraulic motors, etc., even if engine speed varies. Maintain the engine speed above the minimum required for simultaneous operation of all the required circuits and vary ground speed by selection of the appropriate gear ratio.*

If operating two or more remote control valves simultaneously or remote valves and the hydraulic lift, all the flow control valves should be adjusted to provide a partial flow. If not so adjusted, all the available flow may be directed to the full flow circuit when the pressure in that circuit is less than that of the other circuits in use.

## **Bleeding Remote Cylinders**

When connecting a cylinder with trapped air, i.e., a new cylinder, one that has been out of service or one that has had the hoses disconnected, it will be necessary to bleed the cylinder to remove the air.

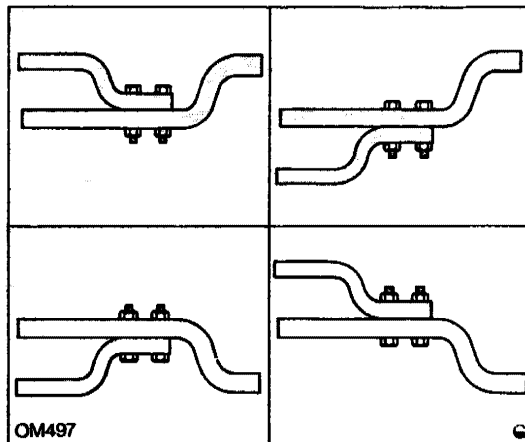
With the hoses connected to the remote control valve couplers at the rear of the tractor, position the cylinder with the hose end uppermost and extend and retract the cylinder seven or eight times using the remote control valve operating lever.

Check the rear axle oil level before and after operating the remote cylinder.

## **ATTACHING AND DETACHING TRAILED EQUIPMENT**

### **Swinging Drawbar (where fitted)**

The swinging drawbar may be fixed in any one of five positions or allowed to swing the full width of the hanger.



**32. Swinging Drawbar Clevis Positions**

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.



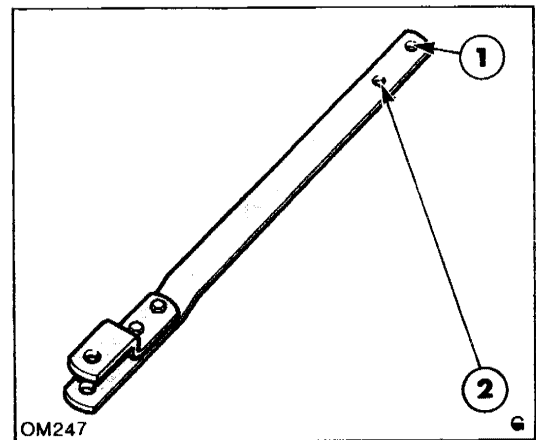
**WARNING:** Always secure the drawbar to prevent swinging when transporting equipment or when operating any but ground engaging equipment.

The drawbar is adjustable for height and projection relative to the end of the P.T.O. shaft.

To vary the height of the drawbar/implement hitch point, invert the drawbar and/or reposition the clevis strap as shown in Figure 32.

The front locating pin may be inserted in either of two holes in the drawbar to vary the P.T.O. shaft to hitch point distance.

This distance is dependent upon the type of transmission installed in your tractor. See Figure 33 and the following table:



**33. Drawbar Locating Pinholes**

1. Extended position
2. Close-coupled position

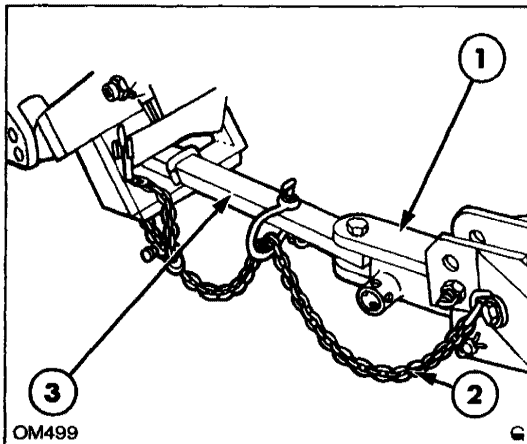
Hole (See Fig. 33)	P.T.O. Shaft to Drawbar Hitch Point	Maximum Static Downward Load lb.    kg.	
1 (Extended Position)	Constant mesh Transmission 15.5 in. (394 mm)	1745	792
	synchronized Transmission 14.9 in. (378 mm)		
2 (Close-coupled Position)	Constant mesh Transmission 9.12 in. (232 mm)	2300	1043
	synchronized Transmission 8.5 in. (216 mm)		

Always use the close-coupled position (hole 2) when towing equipment exerting high static downward forces, such as two wheeled trailers, etc.



**WARNING:** Do not pull from the lower links with the links above the horizontal position. Always use the drawbar or lower links in the lowered position for pull-type work, otherwise the tractor may overturn rearwards.

# CONTROLS, INSTRUMENTS AND OPERATION



34. Safety Chain

- 1. Implement
- 2. Chain
- 3. Tractor drawbar

**NOTE:** When supporting equipment on the drawbar ensure that the total weight on the rear axle does not exceed the maximum static downward load or the rear tire load capacity, whichever is the lower (see REAR TIRE PRESSURES AND LOADS in Section C).

## Safety Chain

When towing implements on the highway, use a safety chain (see Figure 34) with a tensile strength equal to or greater than the gross weight of the implement to be towed by the tractor. This will restrain the implement if the hitch pin is displaced.

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, re-adjust to eliminate a tight or loose chain. Check the implement operator's manual for implement weight and attaching hardware specifications. Safety chains and attaching hardware are available from your Ford New Holland dealer.

## FRONT WHEEL TRACK ADJUSTMENT (two wheel drive)

**WARNING:** A tractor with narrow wheel settings, may not be as stable under the same conditions, as a tractor with wide wheel settings. Use the maximum width possible which is compatible with your operation, especially on rough ground, slopes or across ditches.

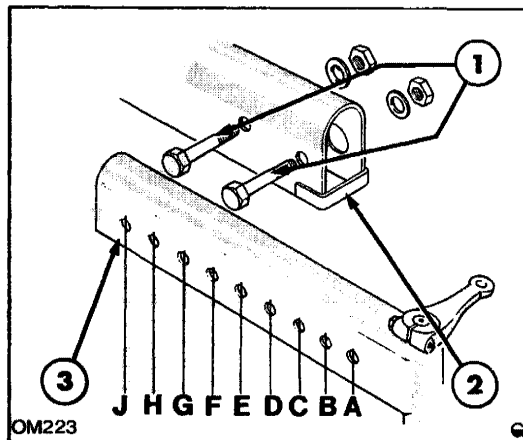
**WARNING:** Your tractor is produced with lights that meet lighting regulations when operating or traveling on the public highway. If the wheel track setting is adjusted beyond the initial factory position then you may be required to reposition the lights or fit auxiliary lighting to comply with legal requirements. Additionally, before traveling on the highway, ensure that the overall tractor width does not exceed the maximum permitted in your country.

Adjustment of the front wheel track width is effected by extending both ends of the axle equally.

To extend the axle, block the rear wheels, jack up the front axle and remove the bolts, Figure 35, securing the left-hand outer section of the axle to the center beam. Repeat on the right-hand side.

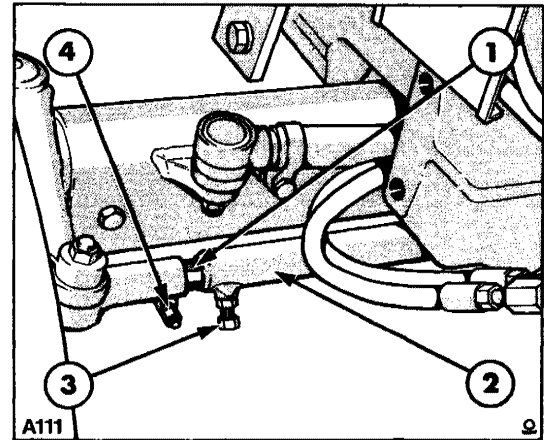
Remove the lock-bolt from both ends of the track rod. See Figure 36. The track rod consists of a central hollow tube with a sliding section at each end. The sliding sections are drilled at intervals and a lock-bolt passes through the tube and sliding section to lock the track rod assembly at the desired length. The left-hand end is threaded to provide fine adjustment.

Reset the left- and right-hand axle outer sections, passing the securing bolts through the center beam and outer sections, as indicated in Figure 35.



**35. Front Axle Extension (left-hand side)**

- 1. Securing bolts
- 2. Center beam
- 3. Axle outer section



**36. Track Rod**

- 1. Threaded section
- 2. Track rod assembly
- 3. Lock-bolt
- 4. Clamp bolt

## Track Adjustment

Track Setting in. (mm)	Axle Bolt Locations Refer to Figure 36
52 (1321)	A C
56 (1422)	B D
60 (1524)	C E
64 (1626)	D F
68 (1727)	E G
72 (1829)	F H
76 (1930)	G J

**NOTE:** The track settings shown in the above table may increase with the installation of larger section tires. For example, tractors with 7.50-16 tires will have track settings approximately 1.5 in. (38 mm) greater than those shown.

**NOTE:** The front wheel discs are off-set relative to the center line of the rim. The track settings in the tables above are with the deep-dished side of the wheel nearest the axle hub. If the front wheels are reversed on the hubs the track settings shown

in the table will be increased by approximately 8 in. (203 mm), dependent upon tire size. The maximum permissible track width setting is 80 in. (2032 mm).

Position both front wheels straight ahead and install the lock-bolts (Figure 36) in the appropriate hole at each end of the track rod sliding section.

Tighten the axle extension securing bolts to 155 lbf.ft. (210 Nm) and the lock-bolts to 78 lbf. ft. (105 Nm). Recheck the torques after 50 hours of operation.

After resetting the track width, the front wheel toe-in may require adjustment. The correct toe-in setting is 0-0.5 in. (0-13 mm) measured at the wheel rim at hub height.

To adjust the toe-in, remove the lock-bolt, Figure 36, from the left-hand end of the track rod, slacken the clamp bolt and turn the threaded section of the track rod in or out until the toe-in is correct when the lock-bolt is re-inserted.

Tighten the clamp bolt to 33 lbf.ft. (45 Nm) and the lock-bolts to 78 lbf. ft. (105 Nm).

# CONTROLS, INSTRUMENTS AND OPERATION

**⚠ WARNING:** Owners should ensure that all steering components are maintained in a reliable and satisfactory condition to ensure safe operation and comply with legal requirements.

## FRONT WHEEL TRACK ADJUSTMENT (four wheel drive)

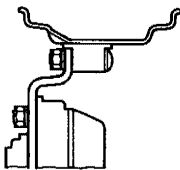
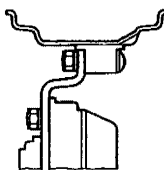
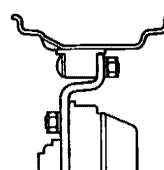
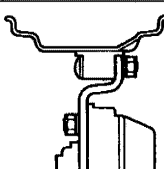
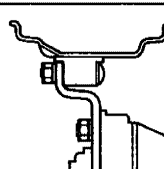
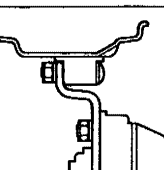
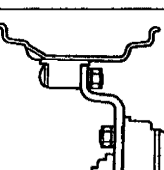
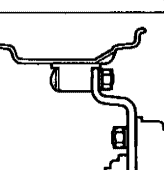
Front wheel drive tractors have fixed axle assemblies. However, the wheels are fully adjustable having separate rims and center discs. The discs are dished and by reversing their position on the hub (by inter-changing the front wheels) two different track settings can be achieved. In addition, the lugs on the wheel rim to which the discs are attached are off-set relative to the center line of the wheel. By changing the wheel rim relative to the center disc and/or the disc relative to the axle hub a range of track settings may be achieved.

**⚠ WARNING:** With a front wheel on a four wheel drive tractor supported on a stand, never attempt to rotate the wheel or start the engine. This may cause the rear wheels to move resulting in the tractor falling from the stand. Wheels should always be supported such that the tires are only just clear of the ground.

The sectioned drawings shown in the following tables (Figures 37 – 39) illustrate the wheel rim and disc positions relative to the hub at various track settings.

Each drawing represents either a left-hand wheel viewed from the rear or a right-hand wheel viewed from the front.

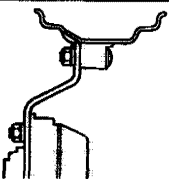
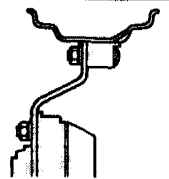
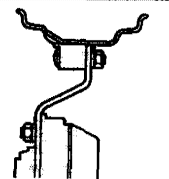
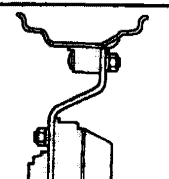
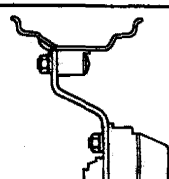
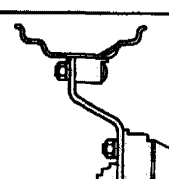
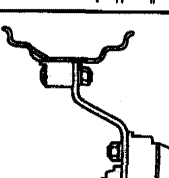
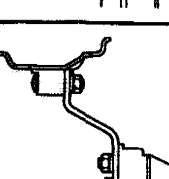
**NOTE:** When interchanging left and right-hand wheel assemblies, ensure the “V” of the tire tread remains pointing in the direction of forward travel.

Disc/Rim Position	Track Setting
	56.4 in (1432 mm)
	59.3 in (1506 mm)
	60.8 in (1545 mm)
	63.7 in (1619 mm)
	64.2 in (1632 mm)
	67.2 in (1706 mm)
	68.7 in (1745 mm)
	71.6 in (1819 mm)

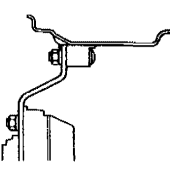
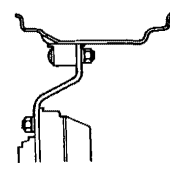
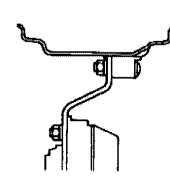
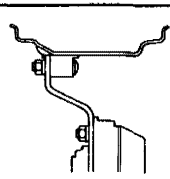
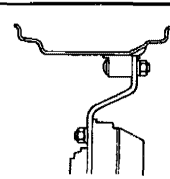
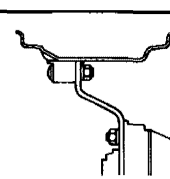
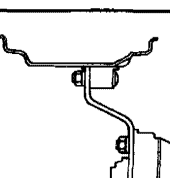
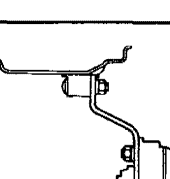
A100

37. Track Setting (9.50 – 20 tires)



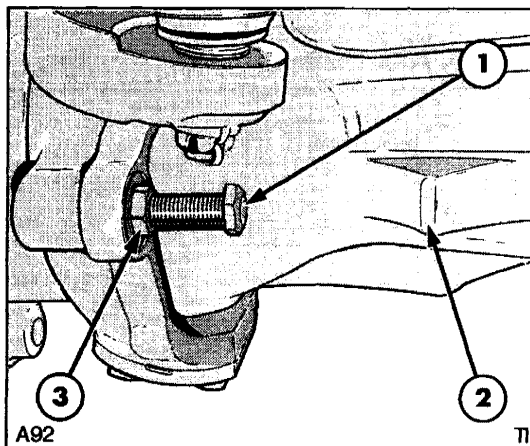
Disc/Rim Position	Track Setting
	54.9 in. (1394 mm)
	56.6 in. (1440 mm)
	59.3 in. (1507 mm)
	61.1 in. (1553 mm)
	66.7 in. (1694 mm)
	68.5 in. (1740 mm)
	71.1 in. (1807 mm)
	73.0 in. (1853 mm)
A101	

38. Track Setting (8.30 – 24 and 9.50 – 24 tires)

Disc/Rim Position	Track Setting
	51.9 in. (1318 mm)
	56.3 in. (1431 mm)
	59.5 in. (1512 mm)
	63.7 in. (1618 mm)
	64.0 in. (1625 mm)
	68.1 in. (1731 mm)
	71.3 in. (1812 mm)
	75.8 in. (1925 mm)
A102	

39. Track Setting (11.2 – 24 and 12.4 – 24 tires)

# CONTROLS, INSTRUMENTS AND OPERATION



**40. Steering Stop**

1. Stop bolt
2. Boss
3. Locknut

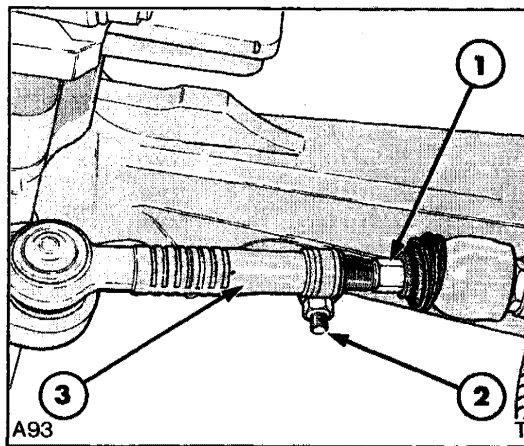
**NOTE:** If your tractor is equipped with the optional front fenders, ensure there is adequate clearance under all operating conditions.

**WARNING:** Never operate the tractor with a loose wheel rim or disc. Always tighten nuts to the specified torque and at the recommended intervals. Owners should ensure that all steering components are maintained in a reliable and satisfactory condition to ensure safe operation and comply with legal requirements.

When refitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor for 200 yards (200 m), after 1 hour and 8 hours operation and thereafter, at the 50 hour service intervals:

Disc to hub nuts	200 lbf.ft. (270 Nm)
Disc to rim nuts	177 lbf.ft (240 Nm)

**NOTE:** At the smaller track settings a foul condition may occur between the tire and tractor when the wheels are turned to the full lock position particularly when the axle is fully articulated. To



**41. Toe-in Adjustment**

1. Hexagon adjuster
2. Clamp bolt
3. Track control rod

avoid this condition it is necessary to adjust the steering stops.

Two steering stops are incorporated in the axle, one each end. The stops are adjustable and should be set to prevent the tires touching the tractor on full left and right lock with the axle fully articulated. See Figure 40.

To adjust, slacken the locknut and turn the stop bolt counter-clockwise to reduce the steering angle of the wheels or clockwise to increase the steering angle. Tighten the locknut.

With the wheels in the straight ahead position, check the front wheel toe-in. The correct toe-in is 0 – 0.25 in. (0 – 6 mm) measured at the wheel rim at hub height.

Should it be necessary to adjust the front wheel toe-in, proceed as follows:

Loosen the clamp bolt, Figure 41, on each track control rod. Turn the hexagon adjuster to screw the threaded rod into or out of the track control rod, as necessary.

Ensure this adjustment is carried out equally on both track rods in order to achieve the specified toe-in.

## REAR WHEEL TRACK ADJUSTMENT (manually adjusted rear wheels)

Rear wheel track adjustment is effected by changing the wheel rim relative to the center disc, the rim and/or the disc relative to the axle hub or by inter-changing the rear wheels.

The sectioned drawings shown in Figure 42 illustrate the wheel rim and disc positions relative to the hub at various track settings.

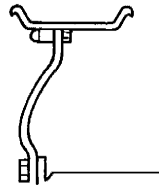
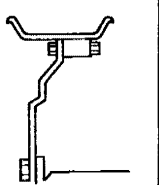
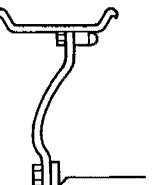
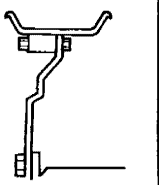
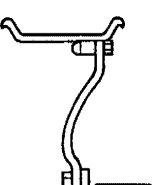
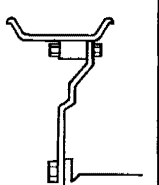
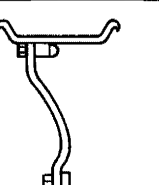
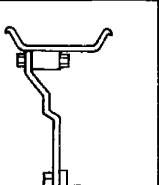
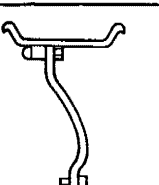
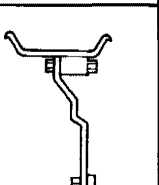
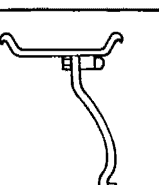
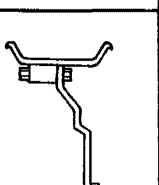
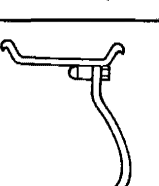
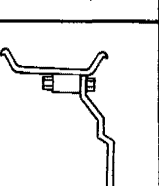
Each drawing represents either a left-hand wheel viewed from the rear or a right-hand wheel viewed from the front.

**NOTE:** When interchanging left and right-hand wheel assemblies, ensure the "V" of the tire tread remains pointing in the direction of forward travel.

**NOTE:** With certain options and/or tire sizes, the smaller track settings may not be attainable due to minimal clearance between tires and fenders or equipment.

When refitting or adjusting a wheel, tighten the bolts to the following torques then recheck after driving the tractor for 200 yards (200 m), after 1 hour and 8 hours operation and thereafter at the 50 hour service intervals:


Rear disc to hub nuts	350 lbf.ft. (475 Nm)
Rear disc to rim nuts (Wheels up to 30 in. diameter)	129 lbf.ft. (176 Nm)
Rear disc to rim nuts (Wheels of 32 in. diameter and over)	177 lbf.ft. (240 Nm)


Disc/Rim Position		Track setting
Wheels up to 30 in. diameter	Wheels 32 in. dia. and over	
		56 in. (1425 mm)
		60 in. (1525 mm)
		64 in. (1625 mm)
		68 in. (1725 mm)
		72 in. (1825 mm)
		76 in. (1925 mm)
		80 in. (2025 mm)


A103

42. Rear Wheel Track Setting

# CONTROLS, INSTRUMENTS AND OPERATION

 **WARNING:** *Never operate the tractor with a loose wheel rim or disc. Always tighten nuts to the specified torque and at the recommended intervals. Owners should ensure that all steering components are maintained in a reliable and satisfactory condition to ensure safe operation and comply with legal requirements.*

 **WARNING:** *A tractor with narrow wheel settings, may not be as stable under the same conditions, as a tractor with wide wheel settings. Use the maximum width possible which is compatible with your operation, especially on rough ground, slopes or across ditches.*

 **WARNING:** *Your tractor is produced with lights that meet lighting regulations when operating or traveling on the public highway. If the wheel track setting is adjusted beyond the initial factory position then you may be required to reposition the lights or fit auxiliary lighting to comply with legal requirements. Additionally, before traveling on the highway, ensure that the overall tractor width does not exceed the maximum permitted in your country.*

## POWER ADJUSTED REAR WHEELS (Option)

Examples of power adjusted rear wheels are shown in Figures 43 and 44.

Each wheel disc (the centre part of the wheel assembly) is clamped to rails welded to the rim to form a helix. Movement of the clamps along the rail will cause the rim to move in or out, relative to the wheel disc which is bolted to the axle.

One of the clamps is positively located by a pair of stop lugs screwed into holes in one of the rails. Movement of the stop lugs from one hole to the

next will, when all the clamp bolts have been loosened, allow the wheel disc to rotate relative to the rim and tire to provide an alteration in track width.

### 28 in. dia. Wheels with 11 in. or 13 in. Rims

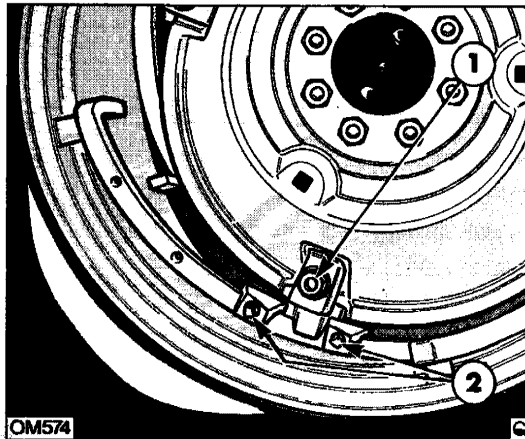
A dished wheel disc is installed. The dished or hollow side of the wheel disc may be fitted facing away from or toward the tractor to provide two track width ranges. 11 in. rims have nine positions. 13 in. rims have six positions. See the three tables following:

**11 in. rims – dished side of the disc facing the tractor (as shown in Figure 43):**

Track Setting	
in.	(mm)
56.3	1430
58.3	1480
60.2	1530
62.2	1580
64.2	1630
66.1	1680
68.1	1730
70.1	1780
72.0	1830

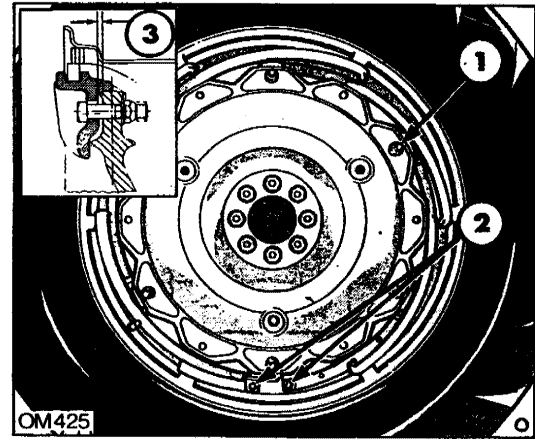
**11 in. rims – dished side of the disc facing away from the tractor:**

Track Setting	
in.	(mm)
59.4	1510
61.4	1560
63.4	1610
65.4	1660
67.3	1710
69.3	1760
71.3	1810
73.2	1860
75.2	1910



**43. Power Adjusted Wheel (28 in. wheels)**

1. Clamp nut and bolt
2. Stop lugs



**44. Power Adjusted Wheel (30 and 38 in. wheels)**

1. Clamp nut and bolt
2. Stop lugs
3. Clamp to disc gap

**13 in. rims – dished side of the disc facing the tractor**

Track Setting	
in.	(mm)
54.0	1372
58.0	1474
62.0	1570
66.0	1678
70.0	1780
74.0	1882

**13 in. rims – dished side of the disc facing away from the tractor:**

Track Setting	
in.	(mm)
57.3	1456
61.3	1558
65.4	1660
69.4	1762
73.4	1864
77.4	1966

**NOTE:** With certain options and/or tire sizes, the minimum track setting may not be attainable due

*to minimal clearance between tires and fenders or equipment.*

## 30 and 38 in. Diameter Wheels

These wheels have cast iron centre discs. The clamps may be positioned on the inner face of the disc, as shown in Figure 44, or on the outer face, to provide two track width ranges. Both size wheels provide the same track settings and have seven positions as shown in the following table:

## 30 and 38 in. wheels

Track Setting			
Clamps on Inner Face		Clamps on Outer Face	
in.	(mm)	in.	(mm)
56.0	1442	66.0	1676
60.0	1524	70.0	1778
64.0	1626	74.0	1880
68.0	1727	78.0	1981
72.0	1829	82.0	2083
76.0	1930	86.0	2184
80.0	2032	90.0	2286

**NOTE:** With certain options and/or tire sizes, the minimum track setting may not be attainable due to minimal clearance between tires and fenders or equipment.

# CONTROLS, INSTRUMENTS AND OPERATION

## **Power Adjust Procedure – Left-hand Wheel (all models)**

Position the left-hand wheel with the stop lugs at the bottom and loosen the nuts on all the clamp attaching bolts.

If an increase in track width is required, remove the stop lug to the right of the clamp and relocate in the appropriate hole in the rail.

**NOTE:** *If the wheel is to be adjusted to the minimum or maximum setting within a range then remove one stop lug. The end of the rail will act as a stop. The minimum track setting may not be attainable due to minimal clearance between tires and fenders or equipment.*

With the engine running, select a low forward gear, apply the right-hand footbrake, release the handbrake and engage the clutch. Forward rotation of the centre disc will cause the left-hand rim to move outwards.

Conversely, relocate the left-hand stop lug, select a low reverse gear, apply the right-hand footbrake, release the handbrake and engage the clutch to move the left-hand rim inwards.

Reset the second stop lug against the other side of the clamp.

Tighten all the clamp nuts uniformly, 50 lbf.ft (69 Nm) at a time, until the following torques are achieved:

28 in. wheels:	225 lbf.ft (305 Nm)
30 and 38 in. wheels:	325 lbf.ft (440 Nm)

**IMPORTANT:** *30 and 38 in. wheels only: Check the gap between each clamp and the wheel disc. See Figure 44. The gap should not vary more than 0.125 in. (3 mm) between any of the six clamps otherwise the rim and tire will not run true and excessive side loads will be imposed on one or more of the rails.*

Tighten the stop lug screws to 33 lbf.ft (45 Nm).

## **Power Adjust Procedure – Right-hand Wheel (all models)**

Position the right-hand wheel with the stop lugs at the bottom and loosen the nuts on all the clamp attaching bolts.

If an increase in track width is required, remove the stop lug to the right of the clamp and relocate in the appropriate hole in the rail.

With the engine running, select a low reverse gear, apply the left-hand footbrake, release the handbrake and engage the clutch. Rearward rotation of the centre disc will cause the right-hand rim to move outwards.

Conversely, relocate the left-hand stop lug, select a low forward gear, apply the left-hand footbrake, release the handbrake and engage the clutch to move the right-hand rim inwards.

Reset the second stop lug against the other side of the clamp, tighten all the clamp nuts uniformly and recheck at the appropriate intervals, as previously described.

Drive the tractor for approximately 200 yards (200 m) and check the clamp nut torques. Recheck the torque settings after 1 hour and 8 hours operation and thereafter at the 50 hour service interval.

**NOTE:** *Use a forward gear to move the left-hand rim outwards or the right-hand rim inwards. Conversely, a reverse gear is used to move the left-hand rim inwards or the right-hand rim outwards.*

## **Changing Track Width Range – 28 in. wheels**

To change from one track width range to another it is necessary to change the wheel disc around. The simplest way to achieve this is to inter-change the left and right-hand wheels. If, for example, the

dished side of the disc is facing the tractor (minimum range), when the wheel is installed on the other side of the tractor the dished side will be facing away from the tractor. After inter-changing the wheels, tighten the disc to hub nuts to 350 lbf.ft (475 Nm).

### **Changing Track Width Range – 30 and 38 in. wheels**

To change from one track width range to another, it is necessary to remove the clamps and reposition them on the other side of the wheel discs, as follows:

**NOTE:** *If the wheels are at the minimum track setting with the clamps on the outside of the discs, or, if the wheels are at the maximum setting with the clamps on the inside of the discs, it will be necessary to move the stop lugs one position from the extreme and power adjust the wheels as previously described before the clamps can be removed.*

Position the wheel with the stop lugs at the bottom and loosen the nuts on all the clamp screws.

Working from the top of the wheel, remove one clamp at a time and reposition on the other side of the wheel disc to fit against the rail and disc. To obtain this fit it will be necessary to install the clamp one hole either side of the original positions.

Tighten the clamp nuts just sufficiently to retain the clamps.

When the three upper clamps have been repositioned in this way, move the tractor until the stop lugs are at the top of the wheel. Reposition the remaining clamps on the other side of the wheel disc.

Before repositioning the upper clamp the stop lugs must be removed. Re-install the stop lugs when the clamp is correctly positioned.

Tighten all clamp nuts uniformly, 50 lbf.ft (68 Nm) at a time, until a torque of 325 lbf.ft (440 Nm) is obtained. 'Seat' the clamps using a hammer and hardwood block then retorque the nuts to 325 lbf.ft (440 Nm).

**IMPORTANT:** *30 and 38 in. wheels only: Check the gap between each clamp and the wheel disc. See Figure 44. The gap should not vary more than 0.125 in. (3 mm) between any of the six clamps otherwise the rim and tire will not run true and excessive side loads will be imposed on one or more of the rails.*

Tighten the stop lug screws to 33 lbf.ft (45 Nm).

Repeat the procedure on the other wheel.

Drive the tractor for approximately 200 yards (200 m) and check the clamp nut torques. Re-check the torque settings after 1 hour and 8 hours operation and thereafter at the 50 hour service interval.



**WARNING:** *Never operate the tractor with a loose wheel rim or disc. Always tighten nuts to the specified torque and at the recommended intervals. Owners should ensure that all steering components are maintained in a reliable and satisfactory condition to ensure safe operation and comply with legal requirements.*

### **USE OF DUAL WHEELS, ROWCROP WHEELS, TERRA TIRES AND OTHER SPECIALIZED WHEEL EQUIPMENT**

Dual rear wheels are available as a dealer installed accessory in conjunction with certain power adjust wheels. The dual wheel kit consists of power adjust rims and rim to disc attaching hardware.

Both wheels are supported by the same disc. Before the outer wheels can be installed, the inner wheels must be power adjusted to the minimum

# CONTROLS, INSTRUMENTS AND OPERATION

**attainable** track width. Although the dual wheels are on power adjust rims, once installed they cannot be adjusted. If the outer wheels are removed, the inner wheels may be power adjusted as described in the previous text.

**IMPORTANT:** *The installation of dual wheels to manual adjust wheels is not approved by Ford New Holland. Use of dual wheels in conjunction with manual or power adjust wheels under heavy traction conditions could cause severe transmission overload and is also not approved by Ford New Holland.*

During normal farming and contracting operations, it is possible that a variety of specialized tires and wheel equipment may be required. There are numerous makes and types on the market. Such equipment has not been tested by Ford New Holland Engineering and Field Test Operations.

Please contact your Ford New Holland dealer who will be pleased to advise and assist you in procurement and use of suitable equipment.

## TRACTOR WEIGHTING

For maximum performance in heavy draft conditions weight should be added to the tractor in the form of liquid ballast, cast iron weights or a combination of both.

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

As a general guide, two wheel drive tractors should be ballasted so that approximately one third of the total tractor weight (less implement) is on the front wheels.

For optimum performance and efficiency, four wheel drive tractors should be ballasted so the weight on the front wheels is approximately 40 – 45% of the total tractor weight.

When a rear mounted implement is raised to the transport position, the weight on the front wheels should be at least 20% of total tractor weight.

Add additional front end ballast, as required, for stability during operation and transport. Ballasting of the front end may not always provide adequate 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 implements, add weight to the rear wheels to maintain traction and stability.

**IMPORTANT:** *Only sufficient weight should be added to provide traction and stability. Adding more weight than necessary results in unnecessary loads being imposed on the tractor and a higher fuel consumption. When adding weight, adhere to the maximum tire capacity loading stated in the tables towards the end of Section C of this Manual. If further information or assistance is required on tractor weighting consult your Ford New Holland dealer. Do not add weight to the outer wheels of a dual wheel installation.*

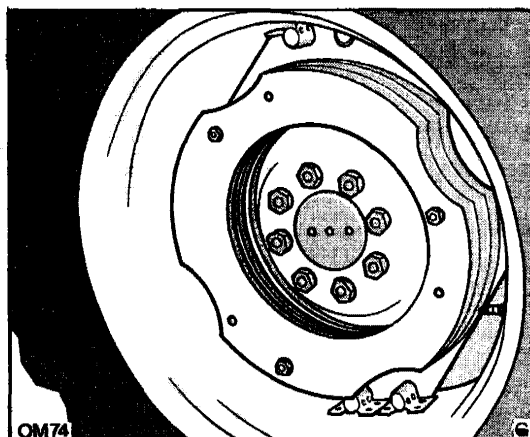
When adding ballast the total weight of the tractor including liquid, cast iron weights and mounted equipment (where specified) should not exceed the maximum shown in the following tables:

**NOTE:** *When ballasting the tractor do not exceed the Gross Vehicle Weight as identified on the ROPS.*

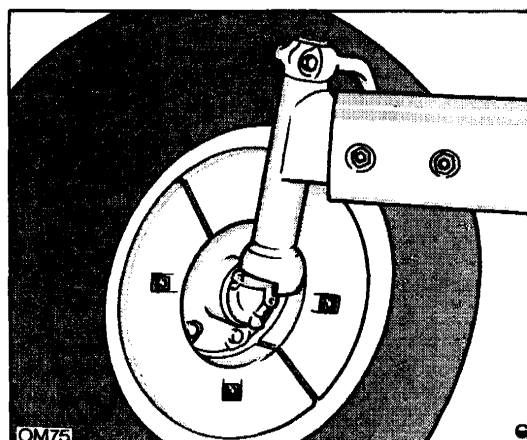


**WARNING:** *If proper stability cannot be achieved within the following weighting limitations, reduce the load on the tractor until stability is restored.*





45. Rear Wheel Weights



46. Front Wheel Weights

## Weighting Limitations

For optimum driveline reliability and tractive efficiency, maximum ballasted tractor weight (base tractor plus ballast and any mounted equipment such as sprayers, tanks etc.) must not exceed:

Ford 3230, 3430, 3930:	7500 lb. (3400 kg.)
Ford 4630, 5030:	8250 lb. (3750 kg.)

Braking performance requires that total vehicle weight of the tractor and carried implement does not exceed:

Ford 3230, 3430, 3930:	8820 lb. (4000 kg.)
Ford 4630, 5030:	11020 lb. (5000 kg.)

Maximum permissible rear axle loading with ballast and mounted equipment: 9000 lb (4082 kg)

**NOTE:** Total rear axle weight is measured with only the rear wheels on the scales inclusive of liquid and cast iron ballast and with mounted equipment in the raised position.

The total front axle load must not exceed 5000 lb. (2268 kg) or the load capacity of the tires, whichever is the lower.

**NOTE:** The front axle loading includes a front end loader in the raised position but with no load in the bucket.

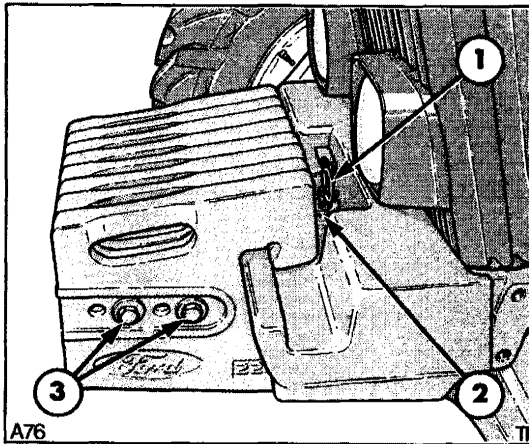
## Cast Iron Weights

Up to three cast iron weights may be added to each rear wheel. See Figure 45. The weights available for 24 and 28 in. wheels and for 30 in. manual adjust wheels weigh 70 lb. (32 kg) each, giving a maximum rear axle ballast weight of 420 lb. (194 kg).

For 36 and 38 in. manual adjust wheels and 30 in. power adjust wheels 100 lb. (45 kg) weights are available permitting a maximum of 600 lb. (272 kg) to be carried.

Segmented, cast iron front wheel weights are available as a set of four to give a total front wheel ballast weight of 172 lb. (78 kg). See Figure 46.

# CONTROLS, INSTRUMENTS AND OPERATION



47. Front End Weights

- 1. Locking pin
- 2. Retaining plate
- 3. Clamp bolts

Wafer type front end weights are available and are mounted on a substantial cast iron carrier secured by a central locking pin and clamp bolts. See Figure 47.

After removing the central locking pin, the weights may be removed as a complete set with the aid of suitable lifting gear. A spring-loaded retaining plate beneath the handle of the locking pin prevents removal of the pin. Lift the retaining plate, against spring pressure, and turn through 90° to clear the rear of the weights. Extract the locking pin. Alternatively, the weights can be removed individually after removing the clamp bolts.

**WARNING:** *The tractor must not be operated unless both the central locking pin and the clamp bolts are in position with the bolts tightened to 125 lbf.ft. (169 Nm). Recheck the bolt torques after 50 hours of operation if the bolts have been disturbed for any reason.*

The front end wafer weights weigh 48.5 lb. (22 kg) each and are available as a set of 8 or 14 that,

together with the weight carrier, total 625 lb. (283 kg) or 910 lb. (412 kg) respectively.

## Liquid Ballast

Filling the front and rear tires with liquid ballast is a convenient method of adding weight.

A solution of calcium chloride and water is recommended. This gives a low freezing point and provides a higher density than plain water.

The table on the next page shows the quantity of calcium chloride and water required for each tire size option and is based on 0.6 kg of calcium chloride per liter of water to give a 75% fill of the tire. This calcium chloride/water solution will give protection from freezing down to an ambient temperature of - 46° C (- 51° F).

Never add water to calcium chloride. If the flakes should contact the eyes, wash the eyes immediately with clean, cold water for at least 5 minutes. Consult a doctor as soon as possible.

**NOTE:** *When filling a tire with calcium chloride/water solution the valve should be at the highest point on the wheel. The valve should be at the lowest point when checking or adjusting air pressure if the tire contains liquid ballast. Special equipment is required to water ballast tires. See your Ford New Holland dealer or tire supplier for details.*

**NOTE:** *Front tractor tubes do not have air/water valves fitted as standard equipment. A suitable air/water valve must be fitted to enable front tires to be filled with calcium chloride solution.*

# SECTION A

Tire Size	Water			Calcium Chloride		Total weight of Solution per Tire	
	U.S. Gals	Imp. Gals	Liters	lb	kg	lb	kg
5.50 – 16	3.8	3.1	14	19	8.6	50	20.6
6.00 – 16	4.3	3.6	16	22	10	58	26
6.00 – 19	6.0	5.0	23	30	14	80	37
6.50 – 16	5.5	4.6	21	28	13	74	34
7.50 – 16	7.5	6.3	28	37	17	100	45
7.50 – 18	8.1	6.8	31	40	18	108	49
8.30 – 24	11	9.0	41	53	24	143	65
9.00 – 10	7.2	6.0	27	36	16	96	43
9.00 – 20	9.0	7.4	34	62	28	136	62
9.50 – 24	14	11.7	53	70	32	187	85
10.00 – 16	15	12.7	58	76	34	203	92
11L – 15	11	9.2	42	53	24	145	64
11L – 16	12	10	46	60	27	160	73
11.00 – 15	19	16	72	95	43	253	115
11.2 – 24	19	16	72	95	43	253	115
12.4 – 24	25	20.8	93	125	55	333	148
12.4 – 28	28	23	105	139	63	369	168
12.4 – 32	35	29	131	172	78	462	209
12.4 – 36	36	30	136	180	82	480	218
13.6 – 28	35	29	135	175	80	465	215
13.6 – 36	43	36	163	215	97	575	260
13.6 – 38	46	38	173	230	104	610	277
14.9 – 24	38	32	141	187	85	507	226
14.9 – 28	43	36	163	215	97	575	260
14.9 – 30	46	38	174	230	104	610	278
15.5 – 38	53	44	201	265	120	705	321
16.9 – 24	49	41	185	245	111	655	296
16.9 – 30	59	49	223	295	134	785	357
16.9 – 34	66	55	250	330	150	880	400
18.4 – 16.1	39	33	149	198	90	527	239
18.4 – 26	64	54	242	320	145	854	387
18.4 – 30	72	60	273	360	163	960	436

# CONTROLS, INSTRUMENTS AND OPERATION

## TIRE INFLATION



**WARNING:** *Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called in to service or install tires. In any event, to avoid the possibility of serious or fatal injury, follow the safety precautions below:*

Upon receiving your tractor, check the air pressure in the tires and recheck every 50 hours or weekly.

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

Inflation pressure affects the amount of weight that a tire may carry. Locate the tire size for your tractor in the tire Pressure and Load tables in Section C of this Manual. Do not exceed the load for the pressures listed. Do not over or under inflate the tires.

- *Never attempt tire repairs on a public road or highway.*
- *Do not inflate a steering tire (front tire on a two wheel drive tractor) above the manufacturer's maximum pressure shown on the tire or beyond the maximum shown in the tire Pressure and Load tables in Section C if the tire is not marked with the maximum pressure.*
- *Never inflate a traction tire (front tire on a four wheel drive tractor or any rear tire) over 35 psi (2.4 bar). If the bead does not seat on the rim by the time this pressure is reached, deflate the tire, relubricate the bead with a soap/water solution and re-inflate. Do not use oil or grease. Inflation beyond 35 psi with unseated beads may break the bead or rim with explosive force sufficient to cause a serious injury.*
- *After seating the beads, adjust inflation pressure to the recommended operating pressure.*
- *Do not re-inflate a tire that has been run flat or seriously under-inflated until it has been inspected for damage by a qualified person.*
- *Torque wheel to axle nuts to specification after re-installing the wheel. Check nut tightness daily until torque stabilizes.*
- *Refer to tractor weighting section before adding ballast to the tires.*
- *Ensure the jack is placed on a firm, level surface.*
- *Ensure the jack has adequate capacity to lift your tractor.*
- *Use jack stands or other suitable blocking to support the tractor while repairing tires.*
- *Do not put any part of your body under the tractor or start the engine while the tractor is on the jack.*
- *Never hit a tire or rim with a hammer.*
- *Ensure the rim is clean and free of rust or damage. Do not weld, braze, otherwise repair or use a damaged rim.*
- *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.*
- *When fitting a new or repaired tire, use a clip-on valve adaptor with a remote gauge that allows the operator to stand clear of the tire while inflating it. Use a safety cage, if available.*

# LUBRICATION and MAINTENANCE

This section gives full details of the service procedures necessary to maintain your tractor at peak efficiency while the lubrication and maintenance chart on page 2 provides a ready reference to these requirements.

**In addition to the regular service operations listed, the following items should be checked every 10 hours or daily during the first 50 hours of operation:**

- Transmission oil level
- Rear axle oil level
- Rear wheel nuts for tightness
- Front axle hub oil levels (four wheel drive)

**At the first 50 hour service, ensure that the following additional service operations are carried out:**

- Change engine oil and filter
- Change hydraulic inlet filter(s)
- Check and adjust engine valve clearance
- Check and adjust fan belt tension
- Clean, inspect and grease front wheel bearings (two wheel drive only)
- Check and adjust brakes
- Change front differential oil (four wheel drive only)
- Change front axle hub oil (four wheel drive only)
- Check torque of front end weight clamp bolts (where fitted)

**NOTE:** Ensure that the tractor is on level ground and that all rams are extended, where applicable, before checking oil levels. See Section C – SPECIFICATIONS for additional amount that may be added to the rear axle and for oil capacities and grades.

*To prevent contamination when changing oils, filters, etc., always clean the area around the filler, level and drain plugs, dipsticks and filters. Before connecting remote cylinders, ensure that oil contained within them is clean, has not degenerated due to long storage and is of the correct grade.*



**WARNING:** Some components on your tractor, such as gaskets and friction surfaces (brake linings, clutch linings, etc.), may contain asbestos. Breathing asbestos dust is dangerous to your health. You are therefore advised to have any maintenance or repair operations on such components carried out by an authorized Ford New Holland dealer. If, however, service operation 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.

# LUBRICATION AND MAINTENANCE

## LUBRICATION AND MAINTENANCE CHART

The numbers in the second column refer to the Operation number or Figure number contained in the following pages of this section.

Hours Operated	Operation No.	Service Requirements	Check	Clean	Lube	Change	Adjust	Drain	Wash
Every 10 hours or Daily	4	Engine oil level	X				X		
	5	Engine coolant recovery system	X				X		
	6	Radiator and oil cooler		X					
	7	Power steering oil level	X				X		
	8	Pre-cleaner		X					
	9	Oil bath air cleaner (where fitted)	X	X	X				
When warning light glows	10	Dry air cleaner (where fitted)		X					
Every 50 hours	11	Oil bath air cleaner (where fitted)		X	X				
	12	Front and rear wheel nuts	X				X		
	13	Tires	X				X		
	14	Clutch pedal free play	X				X		
	15	Fuel filter/sediment separator						X	
	16	Rear axle oil level	X				X		
	17	Belt pulley oil level (where fitted)	X				X		
	18	Front axle differential oil level (four wheel drive only)	X				X		
	19	Front axle hub oil levels (four wheel drive only)	X				X		
	20/29	All grease fittings			X				
Every 300 hours	* 30/31	Engine oil and filter				X			
	32/33	Transmission oil level	X				X		
	34/35	Hydraulic oil filter(s)				X			
	36	Footbrakes	X				X		
	37/38	Handbrake	X				X		
	39	Safety frame bolts	X				X		
	40	Fan belt tension	X				X		
	41	Dry air cleaner (where fitted)						X	
Every 600 hours	42	Oil bath air cleaner (where fitted)		X	X				
	43	Dry air cleaner (where fitted)				X			
	44	Front wheel bearings (two wheel drive)	X	X	X		X		
	# 45	Starter motor pinion	X	X	X				
	46/47	Valve tappet clearance	X				X		
	48/49	Fuel filter/sediment separator		X		X			
Every 1200 hours or annually	50/51	Fuel injectors	X	X			X		
	52/53	Bleeding the fuel system							
	55/57	Rear axle oil				X			
	58/61	Transmission oil and internal filter				X			
	62/63	Front axle oil (four wheel drive)				X			
	64	Front axle hub oil (four wheel drive)				X			
	65	Belt pulley oil (where fitted)				X			
	66/67	Power steering oil and filter				X			
	68	Dry air cleaner (where fitted)				X			
Every 1200 hours or Two years	69/71	Coolant inhibitor/filtration system				X		X	
As Required	72/86	General maintenance							

\* Oil change interval will be reduced if the diesel fuel has a high sulfur content or if the tractor is operated in extremely cold temperatures. See page 13 of this section.

# Frequency depends on clutch usage.

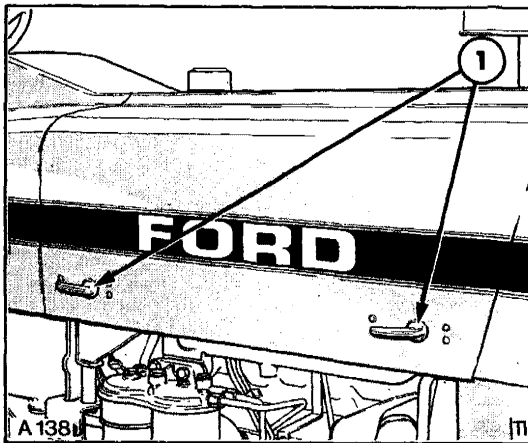
**DIESEL FUEL**

Before handling fuel, filling tanks, etc., observe the following:

- Under no circumstances should gasoline, gasohol, or dieselhol (a mixture of diesel fuel and alcohol) be added to diesel fuel because of increased fire or explosion risks. In addition, in a closed container, such as a fuel tank, they are more explosion than pure gasoline. Do not use these blends. Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system.
- Clean the filler cap area. Fill the fuel tank at the end of each day to reduce overnight condensation.
- Never remove the filler cap or refuel with the engine running.
- Keep control of the fuel pipe nozzle and do not smoke when filling the tank.
- Do not fill the tank to capacity. Allow room for expansion and wipe up spilled fuel immediately.
- If the original fuel tank cap is lost or damaged, replace it with a Ford New Holland approved cap and tighten securely. A non-approved cap may not be safe.
- Keep equipment properly maintained.
- Use diesel fuel with a minimum cetane rating of 40 (diesel fuel No. 2) at ambient temperatures above  $-7^{\circ}\text{C}$  ( $20^{\circ}\text{F}$ ) or diesel fuel No. 1 below this temperature. At very low ambient temperatures and/or at high altitudes, a fuel with a higher cetane rating is required.
- Diesel fuel with a sulphur content above 1.3% is not recommended.
- Precautions should be taken to ensure that stored fuel is kept free of dirt, water, etc.
- Fuel should be stored in black iron tanks, not galvanised tanks, as the galvanised coating will react with the fuel and form compounds that will contaminate the injection pump and injectors.
- Bulk storage tanks should be installed away from direct sunlight and angled slightly so that the outlet pipe is at the higher end. In this way sediment in the tank settle away from the outlet pipe.
- To facilitate moisture and sediment removal, a drain plug should be provided at the lowest point (at the opposite end to the outlet pipe). If there is no filter on the outlet pipe, then a funnel with a fine mesh screen should be used when filling the tractor fuel tank.
- Fuel purchases should be arranged so that Summer grade fuels are not held over and used in Winter.
- Refill the fuel tank via the filler tube which is on the rear left-hand side of the hood.

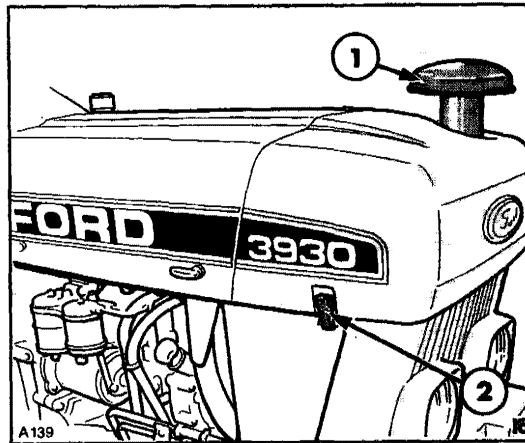
# LUBRICATION AND MAINTENANCE

## ACCESS PANELS



**1. Hood Side Panel**

1. Hood catch



**2. Radiator Cowling and Grille**

1. Pre-cleaner
2. Over-center catch

It is necessary to remove various panels to gain access to certain service items.

### 1. Hood Side Panel

To gain access to the battery, radiator cap, engine rocker valve cover, etc., turn the two catches, Figure 1, on the right-hand side panel, to the vertical position and raise the hood. There is a built-in prop clipped to the underside of the hood. Remove it from the securing clip and hook it into the hood rear support.

### 2. Radiator Cowling and Grille

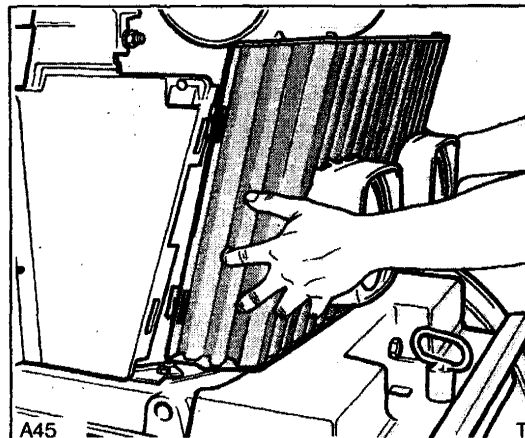
To gain access to the air cleaner, oil cooler, horn and grille-mounted headlamps, proceed as follows:

Remove the pre-cleaner, Figure 2, together with the extension tube (where fitted). Lift up the over-center catches on each side of the cowling and raise the cowling. There is a built-in prop clipped to the underside of the cowling. Remove it from the securing clip and hook it into the bracket on the air cleaner casing.

### 3. Radiator Grille

For additional access to the oil cooler, grille-mounted headlamps, etc., remove the radiator grille. The grille hooks into slots in the radiator side panels. To remove, lift the grille up and forwards, as shown in Figure 3.

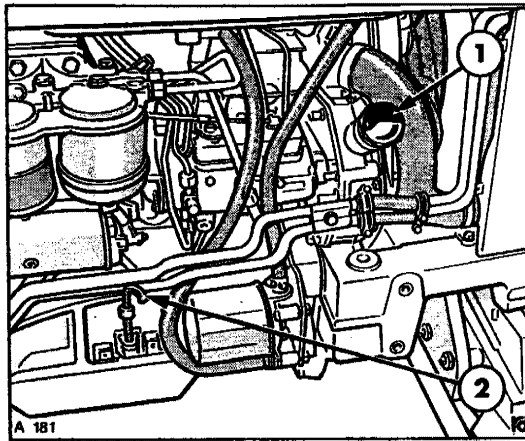
If grille-mounted headlamps are installed, pull the cable connector from the back of each headlamp to allow the grille to be withdrawn.



**3. Radiator Grille**



**EVERY 10 HOURS or DAILY (whichever occurs first) carry out the following checks:**



**4. Engine Oil Level**

1. Filler cap
2. Dipstick

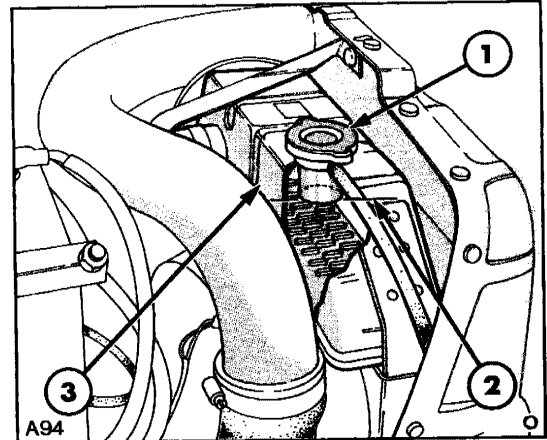
#### 4. Engine Oil Level

Before checking the oil level, stop the engine and wait for a short period to allow the oil to drain back into the sump. Check the oil level by means of the dipstick, Figure 4. If necessary, remove the filler plug and top up with fresh oil to the upper mark on the dipstick. Do not overfill.

#### 5. Engine Coolant Recovery System

During peak power operation, followed by a rapid reduction in power requirement and engine speed, there is a tendency for the coolant to boil and be expelled from the radiator overflow tube. Normally, this loss of coolant would be very small and of little consequence, but repeated occurrence can significantly lower the coolant level and necessitate topping up.

Your tractor is equipped with a coolant recovery system in the form of an expansion chamber within the radiator header tank (see Figure 5). Two small vents in the radiator top baffle allow any surges of coolant into the expansion chamber. The expelled coolant is drawn back into the radiator as the engine cools and the coolant contracts. If, how-



**5. Radiator Coolant Level**

1. Filler cap
2. Filler tube (coolant level)
3. Expansion chamber

ever, the radiator is overfilled, the excess coolant will be discharged via the overflow tube.

With the engine **cold**, remove the radiator filler cap, Figure 5 and check that the coolant level is flush with the bottom of the filler tube. If necessary, top up with a clean water/antifreeze/inhibitor solution of the correct strength.

It is recommended that a solution of 50% clean water and 50% antifreeze (no matter what degree of freeze protection is required) be pre-mixed with 5% inhibitor and kept as a top-up solution.

The inhibitor is available from your Ford New Holland dealer under the part number FW-15. It is supplied in 16 fl. oz. (473 ml) bottles, the side of the bottle being marked in 1 fl. oz. increments.

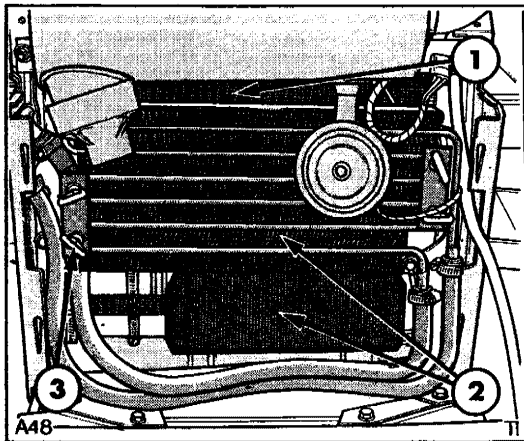
See Section C for details of coolant capacity, anti-freeze specification and clean water properties. See also Operations 68 to 70.



**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. Use a thick cloth and turn the cap slowly to the first stop and allow

# LUBRICATION AND MAINTENANCE

## 10 HOUR/DAILY SERVICE (continued)



### 6. Radiator and Oil Cooler

1. Radiator
2. Oil coolers
3. Thumbscrew

*the pressure to escape before fully removing the cap.*

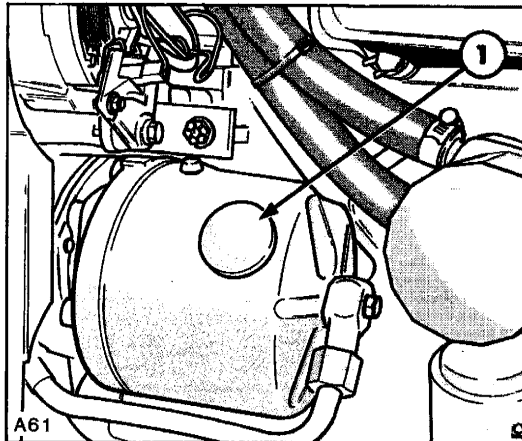
*Coolant should be kept off the skin. Adhere to the precautions outlined on the antifreeze and inhibitor containers.*

**IMPORTANT:** *It is essential that a Ford New Holland approved cap is used. If the original cap is mislaid or damaged, obtain a replacement from your Ford New Holland dealer.*

### 6. Radiator and Oil Cooler

Clean the radiator matrix and the oil coolers with compressed air not exceeding 100 psi (7 bar). Remove the four thumbscrews and move the transmission oil cooler forward to improve access to the radiator. See Figure 6.

Fins blocked with oily substances may be cleaned with a detergent solution, preferably applied with a high pressure washer.



### 7. Power Steering Oil Level (where fitted)

1. Filler cap

### 7. Power Steering (where fitted)

Unscrew the filler cap, Figure 7 and check that the oil is level with the bottom of the filler neck. Top up, if necessary.

See Section C for correct oil grade.

### 8. Pre-cleaner

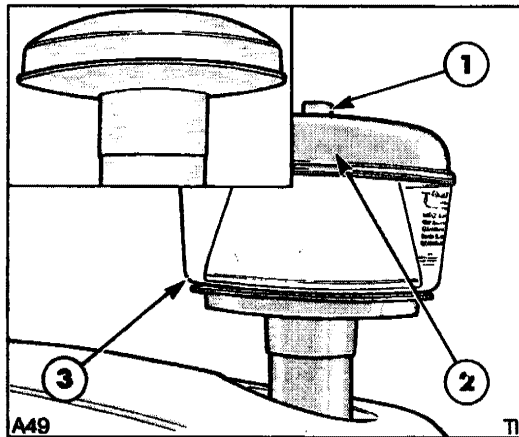
One of two types of pre-cleaner may be fitted. If your tractor has the pressed steel pre-cleaner (inset Figure 8) pull off the pre-cleaner and shake out any loose chaff, dirt etc.

The de luxe pre-cleaner may also be removed from the intake tube by pulling upwards. Loosen the knurled nut, Figure 8 and remove the cover and bowl assembly. Clean out and dry the pre-cleaner assembly and re-install on the tractor.

### 9. Oil Bath Air Cleaner (where fitted)

The function of the air cleaner is to remove impurities from the air but at the same time allow sufficient volume of air to enter the engine and ensure complete combustion of the fuel.

## 10 HOUR/DAILY SERVICE (continued)



**8. Pre-cleaner**

1. Knurled nut
2. Cover
3. Bowl assembly

The air cleaner will only fulfil this function if it is correctly and regularly maintained. A poorly maintained air cleaner will mean loss of power, excessive fuel consumption and a reduction in engine life.

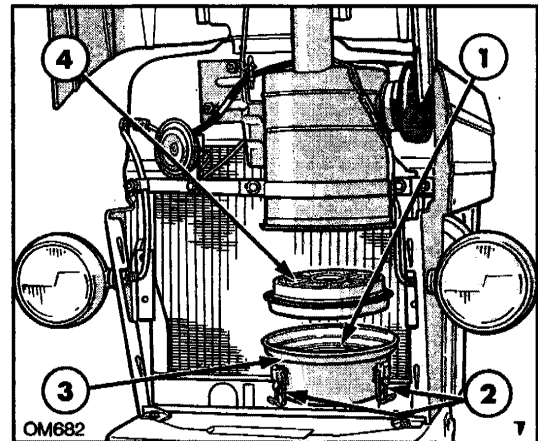
The oil bath air cleaner should be checked daily or more often when operating in dusty conditions. In extreme conditions, it may be necessary to service the air cleaner two or three times each day.

Release the four over-centre catches, Figure 9, remove the bowl assembly and gauze filter.

Visually check the condition and level of oil in the inner cup and the bowl. If there is more than 0.5 in. (12 mm) of sediment present, clean the inner cup and bowl and refill to the level mark with fresh engine oil. Do not fill above the level mark.

Remove any leaves, straw or chaff clinging to the underside of the filter. Hold the filter up to the light. If an even pattern of light cannot be seen over the whole of the filter surface then the filter is blocked or partially blocked and must be cleaned as described in operation 11.

Position the filter in the bowl, ensuring the rubber seal is correctly seated. Offer the bowl/filter as-



**9. Oil Bath Air Cleaner (where fitted)**

1. Inner cup
2. Over-centre catches
3. Bowl assembly
4. Gauze filter

sembly up to the air cleaner body ensuring that the tag on the bowl engages in the cut-out in the filter body. Secure with the four over-centre catches.

**NOTE:** Operation 11 is scheduled to be carried out after every 50 hours of work. However, in very dusty conditions this service interval may also need to be reduced.

## SERVICING THE DRY AIR CLEANER

### 10. Dry Air Cleaner (where fitted)

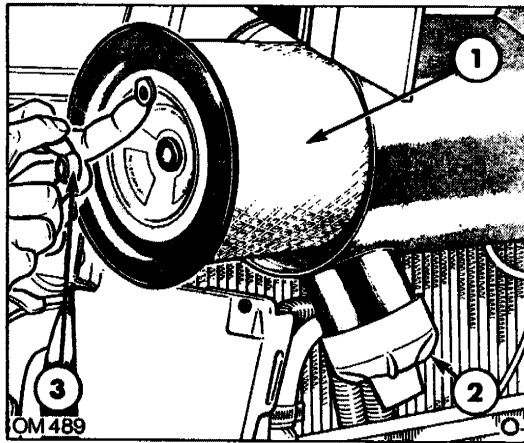
The dry air cleaner consists of an inner and outer paper element and is located under the radiator cowl.

Periodically squeeze the end of the rubber dust collector, Figure 10, which will open and discharge any dust that may have accumulated. Inspect the dust collector for damage and replace, if necessary.

There is no specific service interval for the dry air cleaner. If the air cleaner restriction warning light

# LUBRICATION AND MAINTENANCE

## SERVICING THE DRY AIR CLEANER (continued)



10. Dry Air Cleaner (where fitted)

1. Outer element
2. Dust collector
3. Retaining nut

illuminates when the engine is running, service the air cleaner as soon as practicable and certainly within one hour of operation. Extract the outer element, Figure 10, after removing the retaining wing nut.

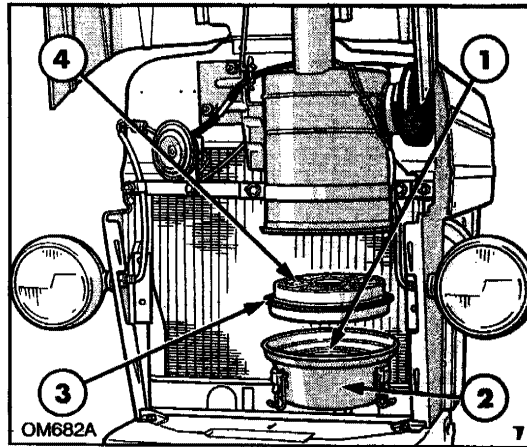
If dust is present inside the outer element, it must be renewed. If satisfactory, clean the element by tapping both ends on the palm of the hand. Do not tap the element against any hard surface as it will be damaged or distorted.

Alternatively, compressed air, not exceeding 30 psi (2 bar) may be used. Insert the air line nozzle inside the element and blow the dust from the inside through the element to the outside. Blow loose particles from the outside of the element by holding the nozzle at least 6 in. (150 mm) from the element.



**WARNING:** Wear eye protection when carrying out this operation.

Clean the inside of the air cleaner casing with a damp, lint-free cloth and re-install the outer element ensuring that the rubber sealing ring on the end is secure and undamaged.



11. Oil Bath Air Cleaner (where fitted)

1. Inner cup
2. Bowl assembly
3. Sealing ring
4. Gauze filter

**NOTE:** Do not remove or disturb the inner element. If, after servicing or renewing the outer element the air cleaner restriction warning light still does not extinguish when the engine is running, then the inner element requires attention. The inner element should only be serviced by an authorized Ford New Holland dealer.

**EVERY 50 HOURS** carry out the preceding checks plus the following:

### 11. Oil Bath Air Cleaner (where fitted)

Release the four over-centre catches, Figure 11 and remove the bowl assembly and gauze filter.

Remove the rubber sealing ring, wash the filter thoroughly in a suitable solvent and blow through with compressed air not exceeding 30 psi (2 bar).



**WARNING:** This operation should be carried out in a well ventilated area and eye protection worn. Avoid skin contact with the solvent.

Clean the rubber sealing ring with a dry cloth and, if in good condition, re-install on the filter or else

## 50 HOUR SERVICE (continued)

fit a new sealing ring. The seal ensures an airtight fit between the filter element and the air cleaner body. Do not fit a seal that is perished, torn or otherwise damaged. Never omit the seal when reassembling the air cleaner.

Clean the inner cup and bowl and refill to the level mark with fresh engine oil. Do not fill above the level mark.

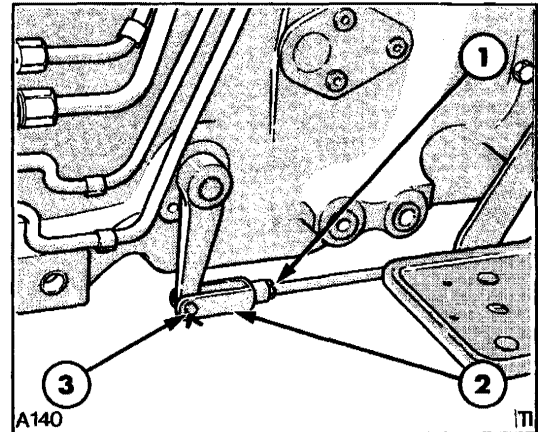
Position the filter in the bowl, ensuring the rubber seal is correctly seated. Offer the bowl/filter assembly up to the air cleaner body ensuring that the tag on the bowl engages in the cut-out in the filter body. Secure with the four over-centre catches.

### 12. Front and Rear Wheel Nuts

Check the front and rear wheel nuts for tightness using a torque wrench and torque multiplier, where necessary.

The specified torque figures are given below:

Front disc to hub nuts (two wheel drive)	98 lbf. ft. (133 Nm)
Front disc to hub nuts (four wheel drive)	200 lbf. ft. (270 Nm)
Front disc to rim nuts (four wheel drive)	177 lbf. ft. (240 Nm)
Rear disc to hub nuts	350 lbf. ft. (475 Nm)
Rear disc to rim nuts (manual adjust wheels up to 30 in. diameter)	129 lbf. ft. (176 Nm)
Rear disc to rim nuts (manual adjust wheels 32 in. diameter and over)	177 lbf. ft. (240 Nm)
Rear wheel clamp nuts (power adjust wheels — 28 in. wheels only)	225 lbf. ft. (305 Nm)
Rear wheel clamp nuts (power adjust wheels — 30 & 38 in wheels only)	325 lbf. ft. (440 Nm)



14. Clutch Pedal Adjustment

- 1. Locknut
- 2. Clevis
- 3. Clevis pin

### 13. Tires

Check and adjust the front and rear tire pressures and inspect the tread and side walls for damage. Adjust the tyre pressures to suit the load being carried. See TIRE PRESSURES AND LOADS in Section C.

**NOTE:** If the tires are ballasted with a calcium chloride/water solution, a special tire gauge should be used as the solution will corrode a proprietary type gauge.

### 14. Clutch Pedal Free Play Adjustment

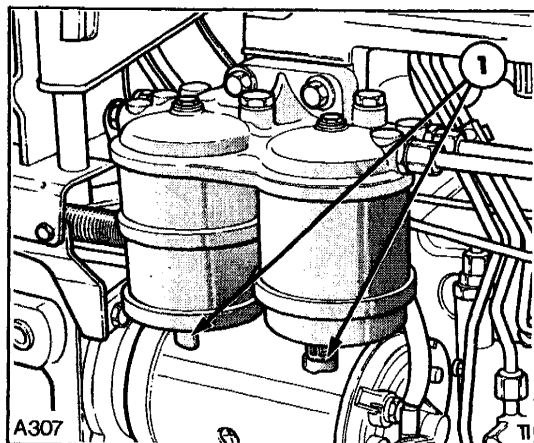
Check clutch free play. It should be 1.1 – 1.6 in. (28 – 41 mm) at the clutch pedal. If adjustment is required, loosen the locknut, Figure 14, remove the split pin and clevis pin. Turn the clevis to lengthen or shorten the operating rod, as required. Secure the clevis pin with a new split pin and tighten the locknut.

### 15. Fuel Filter/Sediment Separator

If water or sediment can be seen in the glass bowl of the sediment separator, turn the drain plugs,

# LUBRICATION AND MAINTENANCE

## 50 HOUR SERVICE (continued)



**15. Fuel Filter/Sediment Separator**

1. Drain plugs

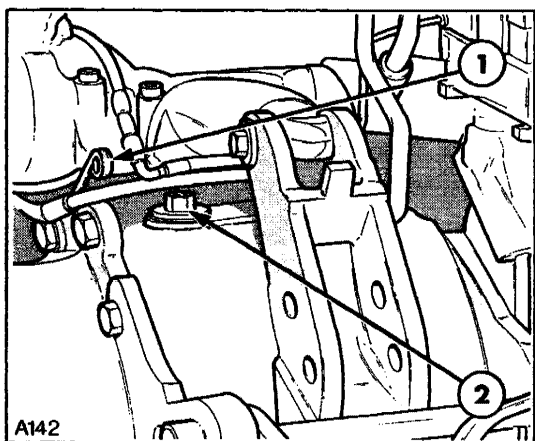
Figure 15, counter-clockwise and allow the contaminated fuel to drain.

After draining the fuel filter/sediment separator, bleed the injection system as outlined in operations 52 to 54.

### 16. Rear Axle Oil Level

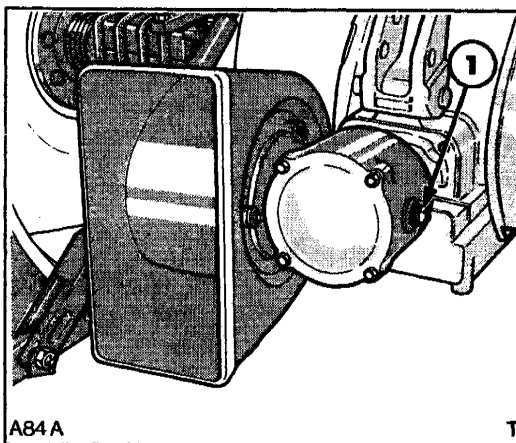
With all rams extended, check that the oil reaches the upper mark on the dipstick, Figure 16. If necessary, unscrew and remove the filler plug and top up the system with clean oil.

See Section C for correct oil grade.



**16. Rear Axle Oil Level**

1. Dipstick
2. Filler plug



**17. Belt Pulley Oil Level (where fitted)**

1. Level/filler plug

### 17. Belt Pulley Oil Level (where fitted)

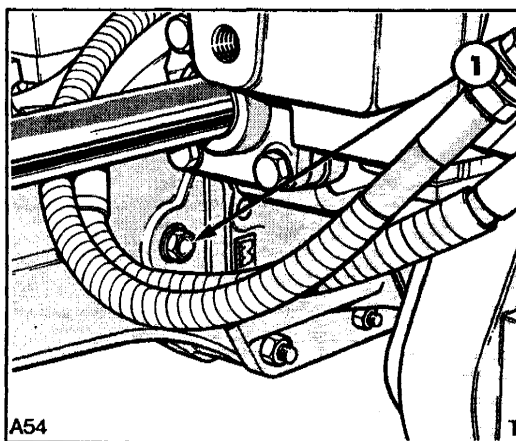
Remove the combined level/filler plug, Figure 17 and top up with clean oil through the opening.

See Section C for correct oil grade.

### 18. Front Axle Differential Oil Level (four wheel drive only)

Ensure that the oil reaches the combined level/filler plug, Figure 18. If necessary, top up through the opening with clean oil.

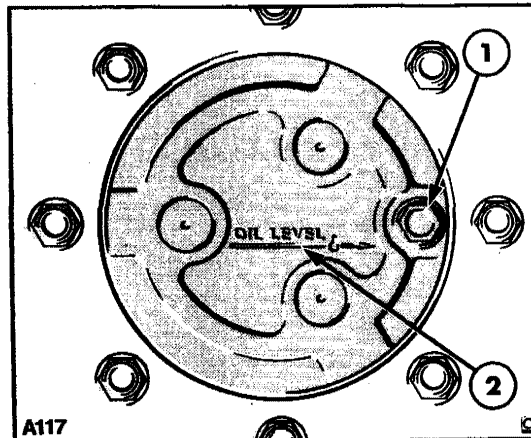
See Section C for correct oil grade.



**18. Front Axle Differential Oil (four wheel drive only)**

1. Level/filler plug

## 50 HOUR SERVICE (continued)



**19. Front Axle Hub Oil (four wheel drive only)**

1. Level/filler plug      2. Level line

### 19. Front Axle Hub Oil Levels (four wheel drive only)

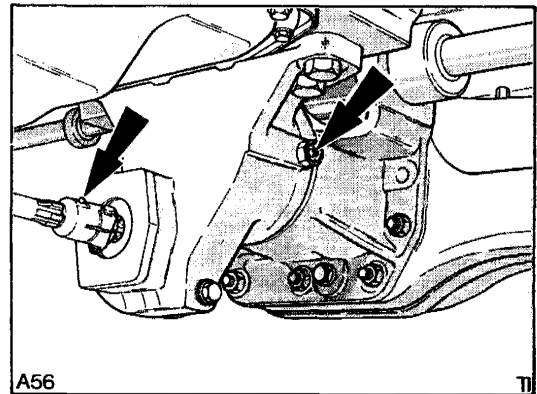
Position the left-hand front wheel with the oil level line horizontal, as shown in Figure 19. Ensure that the oil reaches the combined level/filler plug. If necessary, top up through the opening with clean oil.

Repeat on the right-hand wheel.

See Section C for correct oil grade.

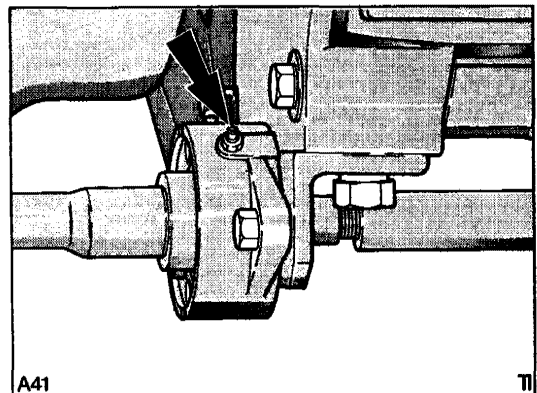
### 20/29. Grease Fittings and Pivots

Oil all pivots and apply a grease gun to the lubrication fittings, as shown in Figures 20 to 29 inclusive:



**20. Drive Shaft Front Bearing and Rear Trunnion Pin (four wheel drive only)**

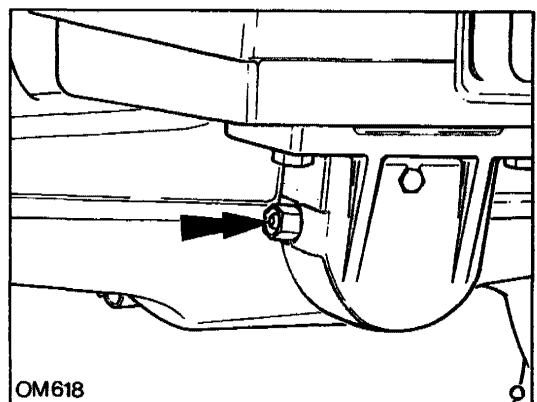
(Cover removed for clarity).



**21. Drive Shaft Centre Bearing (four wheel drive only)**

(Cover removed for clarity).

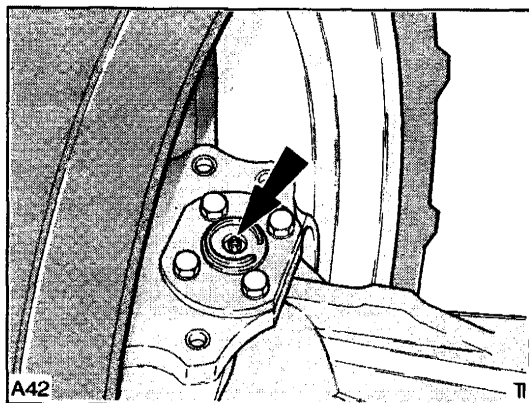
There is also a fitting on the rear of the drive shaft.



**22. Front Trunnion Pin (four wheel drive)**

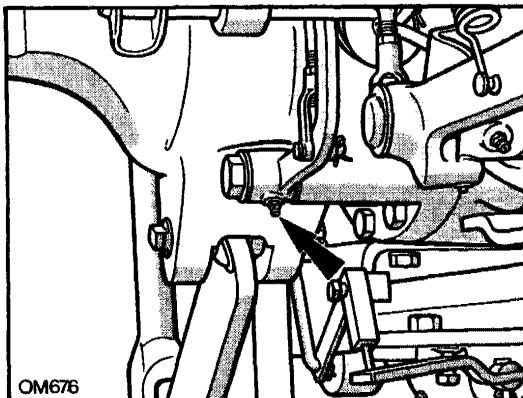
# LUBRICATION AND MAINTENANCE

## 50 HOUR SERVICE (continued)

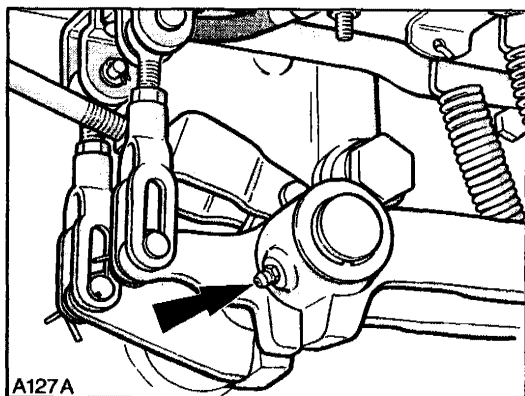


**23. Swivel Bearing (four wheel drive only)**

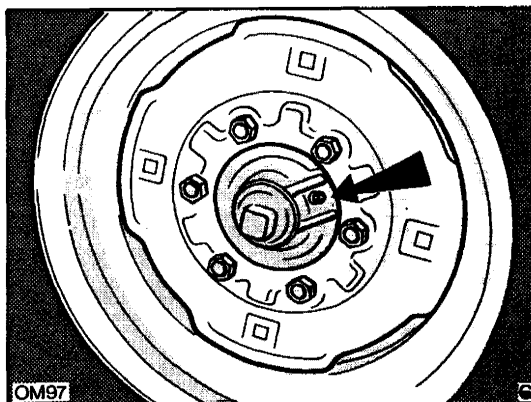
An upper swivel bearing is illustrated. There are grease fittings on both upper and lower front swivel bearings.



**26. Differential Lock Pedal Pivot**

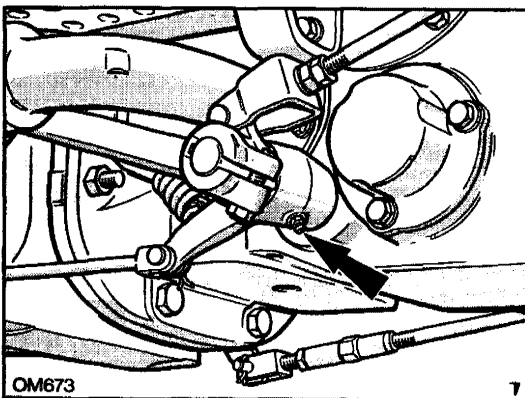


**24. Footbrake Pedal Pivot**

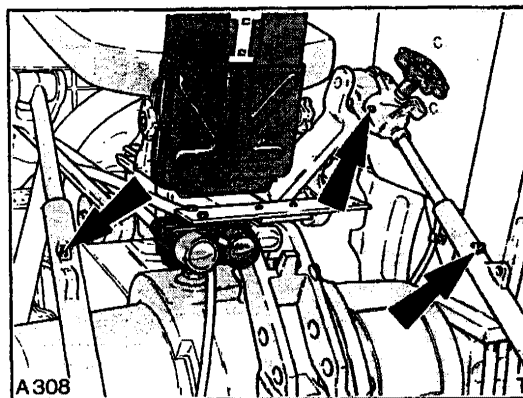


**27. Front Wheel Hubs (two wheel drive only)**

Grease the hubs of both front wheels daily when operating in adverse conditions.



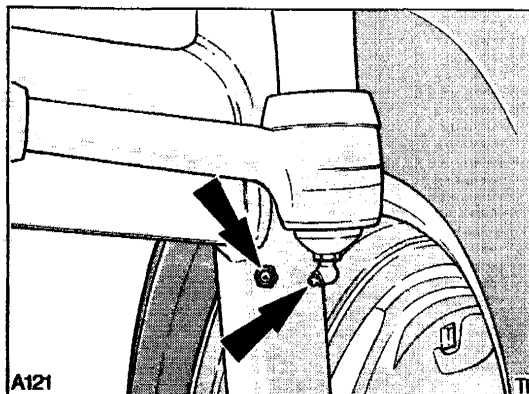
**25. Clutch Pedal Pivot**



**28. Three-point Linkage**



## 50 HOUR SERVICE (continued)



**29. Front Wheel Spindles and Right-hand Steering Arm (two wheel drive only)**

There is a grease fitting on both front wheel spindles. However, there is no grease fitting on the left-hand steering arm. This joint is sealed and permanently lubricated.

## EVERY 300 HOURS carry out the preceding checks plus the following:

The following text and illustrations depict the normal 300 hour engine oil and filter change period.

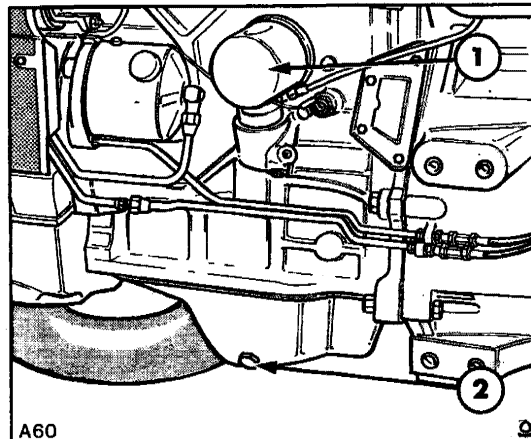
Engines operating in temperatures below  $-12^{\circ}\text{C}$  ( $10^{\circ}\text{F}$ ) or in arduous conditions should have the oil changed every 150 hours of operation. (The oil filter need only be changed at the normal 300 hour service interval).

In some countries, locally available diesel may have a high sulfur content, in which case the oil change period should be adjusted, as follows:

Diesel fuel sulfur content below 0.5% – normal oil change period applies.

Diesel fuel sulfur content between 0.5 and 1.0% – reduce oil change period to half the normal.

## 300 HOUR SERVICE (continued)



**30. Engine Oil and Filter**

1. Oil filter
2. Drain plug

Diesel fuel sulfur content between 1.0 and 1.3% – reduce oil change period to one quarter the normal.

The use of diesel fuel with a sulfur content above 1.3% is not recommended.

**IMPORTANT:** *If in doubt, follow the engine oil change recommendations on the decal affixed to the underside of the hood.*

## 30/31. Engine Oil and Filter

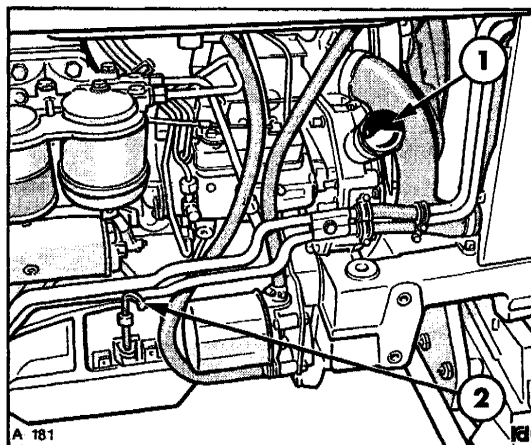
Warm the engine to operating temperature. Stop the engine, remove the drain plug, Figure 30 and catch the oil in a suitable container. Unscrew and discard the oil filter.

Clean the area around the filter. Smear clean engine oil around the rubber seal of a new filter and install on the tractor. Screw up until the faces just meet, then tighten a further  $3/4$  of a turn. Do not overtighten.

Replace the drain plug and refill the engine with clean oil through the filler tube, Figure 31.

# LUBRICATION AND MAINTENANCE

## 300 HOUR SERVICE (continued)



**31. Engine Filler Plug and Dipstick**

1. Filler cap
2. Dipstick

Run the engine for a minute or so, to circulate the oil, then stop the engine. Wait for a short period to allow the oil to drain back to sump, then check the oil level by means of the dipstick.

Add clean oil, as necessary, until the oil reaches the upper mark on the dipstick.

See Section C for correct oil grade.

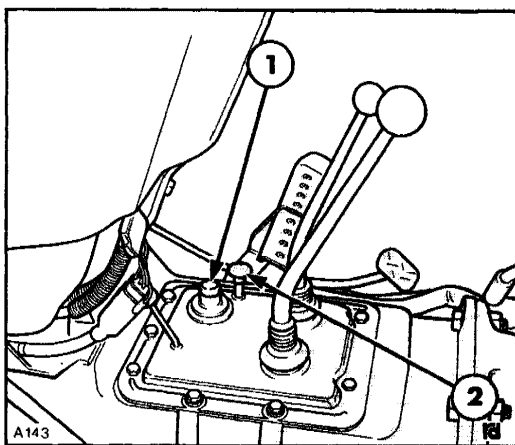
### 32/33. Transmission Oil Level

8 x 2 transmission: Pull out the dipstick, Figure 32, and wipe it with a clean cloth. Replace the dipstick, pushing it fully home and check that the oil reaches the upper mark on the dipstick when it is removed from the transmission aperture.

If necessary, top up the transmission with clean oil and replace the filler plug/dipstick.

See Section C for correct oil grade.

Synchronized transmission: Unscrew the combined filler plug/dipstick, Figure 33, and wipe it



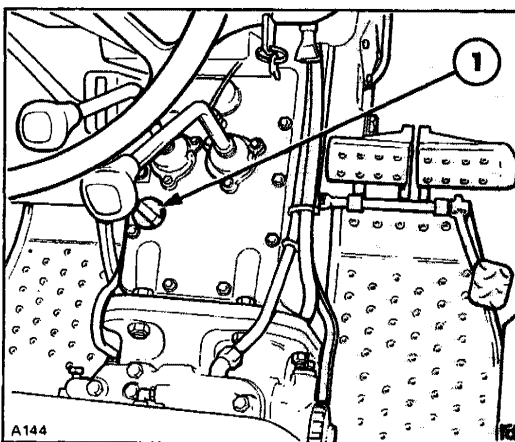
**32. Transmission Oil Level (8 x 2 transmission)**

1. Filler plug
2. Dipstick

with a clean cloth. Replace the dipstick, screwing it fully in. Check that the oil reaches the upper mark when the filler plug/dipstick is removed once more.

If necessary, top up the transmission with clean oil and replace the filler plug/dipstick.

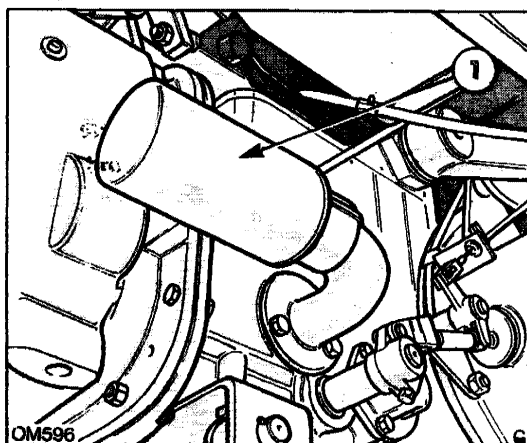
See Section C for correct oil grade.



**33. Transmission Oil Level (synchronized transmission)**

1. Filler plug/dipstick

## 300 HOUR SERVICE (continued)



**34. Hydraulic Oil Filter**

1. Oil filter

### 34/35. Hydraulic Oil Filter(s)

Unscrew and discard the hydraulic oil filter, Figure 34.

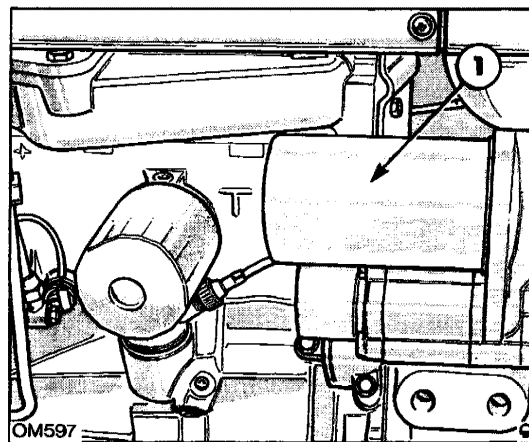
If you have the optional engine-mounted pump, the filter, Figure 35, should also be removed and discarded. Install new filter(s) as follows:

Clean the inlet channel and the face of the manifold. Smear clean oil around the rubber seal of a new filter and install on the tractor. Screw up until the faces just meet, then tighten a further  $\frac{3}{4}$  of a turn. Do not overtighten.

### 36. Footbrake Adjustment

Check the free play of the right-hand brake pedal which should be 1.50 in. (38 mm).

If adjustment is necessary, loosen the locknut, Figure 36 and turn the adjuster until the free play at



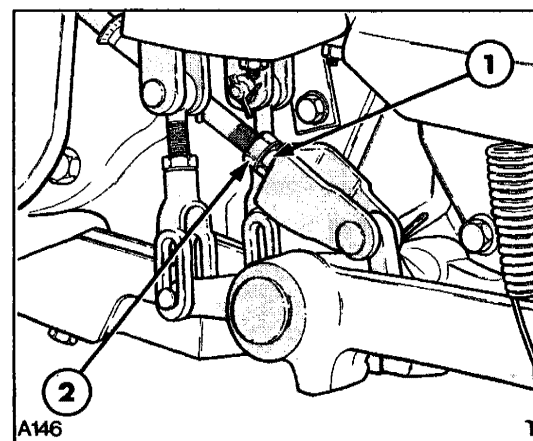
**35. Hydraulic Oil Filter (engine-mounted pump)**

1. Oil filter

the brake pedal is as specified. Tighten the locknut. Repeat on the left-hand brake linkage.

Lock the brake pedals together and road test to ensure that the brakes are balanced and will stop the tractor in a straight line.

Any further adjustment necessary to balance the brakes should be carried out on the left-hand brake linkage.

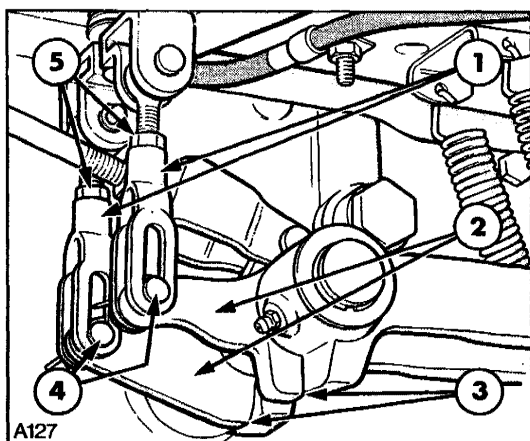


**36. Footbrake Adjustment**

1. Adjuster
2. Locknut

# LUBRICATION AND MAINTENANCE

## 300 HOUR SERVICE (continued)



**37. Handbrake Adjustment (mechanical type)**

- |                      |               |
|----------------------|---------------|
| 1. Clevis            | 4. Clevis pin |
| 2. Cross-shaft lever | 5. Locknut    |
| 3. Contact point     |               |

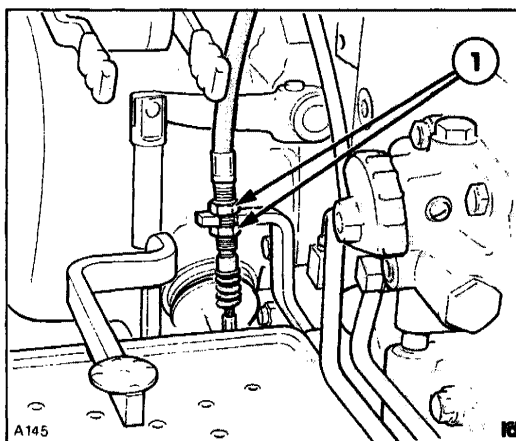
**! WARNING:** Owners should be aware of local regulations concerning the braking system. Regularly maintain the brakes to ensure compliance with the law and ensure your safety. If in doubt, contact your Ford New Holland dealer.

### 37. Handbrake Adjustment (mechanical type)

Adjustment of the handbrake should be carried out after the footbrakes have been adjusted.

If handbrake lever movement is excessive, chock the wheels, front and rear, and release the handbrake.

Slacken the locknuts, Figure 37, extract the split pins and remove the clevis pins from both cross-shaft levers. Pull down both cross-shaft levers until they contact the brake pedal shanks at point (3) as depicted in Figure 37.



**38. Handbrake Adjustment (cable-operated type)**

1. Adjuster nuts

Adjust the operating rod lengths by rotating the clevises until both clevis pins can just be inserted right at the bottom of the slot in each clevis.

Secure the clevis pins with new split pins and re-tighten the operating rod locknuts.

Road test and ensure that, when applied, the handbrake will stop the tractor in a straight line.

### 38. Handbrake Adjustment (cable-operated type)

Adjustment of the handbrake should be carried out after the footbrakes have been adjusted.

If handbrake lever movement is excessive, chock the wheels, front and rear, and release the handbrake.

Adjust the length of the operating cable by turning the adjusting nuts, Figure 38. After adjustment, apply the handbrake to ensure that the system operates freely.

## 300 HOUR SERVICE (continued)

### 39. ROPS Bolts

Check that all ROPS bolts and nuts are securely tightened. The specified torques are:

180 – 220 lbf. ft. (244 – 298 Nm).

### 40. Fan Belt

Belt tension is correct when the belt can be deflected 0.50 – 0.75 in. (13 – 19 mm).

To adjust, remove the guard, loosen the mounting bolts, Figure 40, and move the alternator to retension the belt. Do not overtension the belt.

Tighten the mounting bolts.

### 41. Dry Air Cleaner (where fitted)

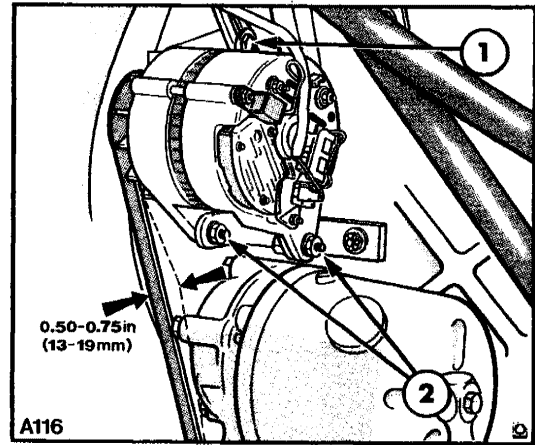
Remove the outer element and dry clean as detailed in Operation No. 10.

Wash the element every 300 hours or after five dry-cleanings, whichever occurs first.

Seal the small opening at the outer end of the element, then immerse completely in warm water containing a little non-sudsing detergent. Immediately raise the element and allow to soak for at least 15 minutes with the open end above the water line.

After soaking, agitate the element in the water, taking care not to allow dirty water outside the element to splash over to the inside.

Rinse the element in clean, running water, allowing the water to run from the inside of the element through to the outside. If a hose is used, do not use high pressure. A gentle trickle of water is sufficient and will ensure that the element is not ruptured.



40. Fan Belt Tension

1. Alternator mounting bolt
2. Alternator mounting bolts

**IMPORTANT:** Do not attempt to dry the element with heat or compressed air and do not install until thoroughly dry as it may rupture. It is recommended that a new element is installed at this service and the washed element put aside for installation at a subsequent service. The spare element should be stored in a dry place and wrapped to prevent dust contamination or damage.

After drying thoroughly, use a light inside the element to check for damage to the paper pleats. The element should be discarded if pin pricks of light can be seen or if there are areas of paper that appear thin. If the paper is bunched, the metal casing

distorted or the rubber end seal is loose or damaged, then the element should likewise be discarded and a new one installed.

Clean the inside of the air cleaner casing using a damp, lint-free cloth on a probe, taking care not to damage the inner element.

Install the cleaned or a new outer element.

# LUBRICATION AND MAINTENANCE

**EVERY 600 HOURS** carry out the preceding checks plus the following:

## 42. Oil Bath Air Cleaner (where fitted)

Release the three over-center catches, Figure 42 and remove the bowl assembly and gauze filter.

Remove the rubber sealing ring, wash the filter thoroughly in a suitable solvent and blow through with compressed air not exceeding 30 psi (2 bar).

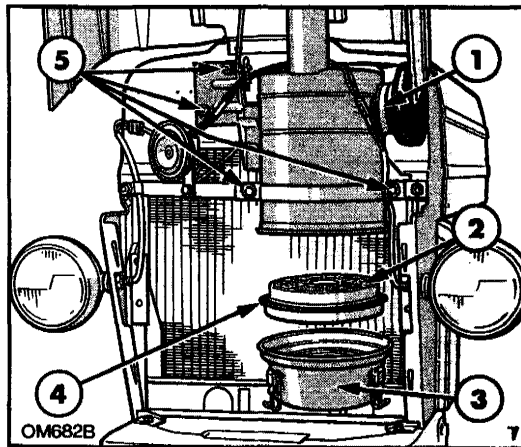


**WARNING:** *This operation should be carried out in a well ventilated area and eye protection worn. Avoid skin contact with the solvent.*

Release the hose clip, remove the hose and unscrew the retaining screws. Remove the air cleaner body and agitate in a suitable solvent to clean the gauze mesh within the body. Using compressed air, blow down the center tube and outlet pipe to remove the solvent.

Re-install the air cleaner body, ensuring that the outlet hose is correctly seated on the pipe protruding from the side of the body.

Clean the rubber sealing ring, previously removed from the filter, with a dry cloth and, if in good condition, re-install on the filter or else fit a new sealing ring. The seal ensures an airtight fit between the filter element and the air cleaner body. Do not fit a seal that is perished, torn or otherwise damaged. Never omit the seal when re-assembling the air cleaner.



42. Oil Bath Air Cleaner (where fitted)

- |                  |                     |
|------------------|---------------------|
| 1. Hose clip     | 4. Sealing ring     |
| 2. Gauze filter  | 5. Retaining screws |
| 3. Bowl assembly |                     |

Clean the inner cup and bowl and refill to the level mark with fresh engine oil. Do not fill above the level mark.

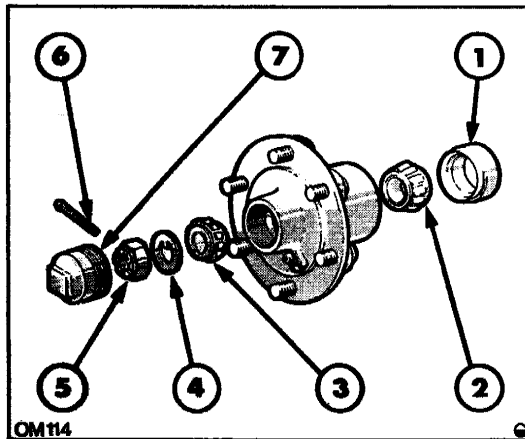
Position the filter in the bowl, ensuring the rubber seal is correctly seated. Offer the bowl/filter assembly up to the air cleaner body ensuring that the tag on the bowl engages in the cut-out in the filter body. Secure with the four over-centre catches.

## 43. Dry Air Cleaner (where fitted)

Remove the outer element, as described in operation 10, and discard.

Clean the inside of the air cleaner casing using a damp, lint-free cloth on a probe, taking care not to damage the inner element. Install the new outer element.

## 600 HOUR SERVICE (continued)



44. Front Wheel Bearings (two wheel drive)

- |                    |              |
|--------------------|--------------|
| 1. Grease retainer | 5. Nut       |
| 2. Inner bearing   | 6. Split pin |
| 3. Outer bearing   | 7. Hub cap   |
| 4. Thrust washer   |              |

### 44. Front Wheel Bearings (two wheel drive)

With the parking brake applied, jack up and support one front wheel and block the other three wheels. Remove the cap, Figure 44, split pin, nut, thrust washer and the outer bearing.

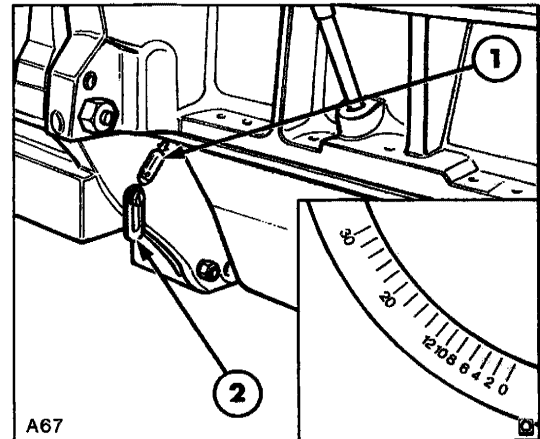
Remove the complete wheel and hub assembly and extract the grease retainer and inner bearing. Thoroughly clean all parts in a suitable solvent and allow to dry.



**WARNING:** Do not use solvents in a confined space. Work in a well ventilated area.

Inspect the bearings and both bearing cups in the wheel hub for discoloration or wear. Repack the bearings and the space between the two bearing cups with grease. Grease the axle shaft.

Re-assemble using a new grease retainer seal and tighten the castellated nut to 25 lbf. ft. (34 Nm). Rotate the wheel hub three to six revolutions in a clockwise direction. Further tighten the castellated nut to 50 lbf. ft. (68 Nm). Now slacken the



46. Flywheel Timing Marks

- |                         |
|-------------------------|
| 1. Flywheel access hole |
| 2. Cover plate          |

nut two slots. If the hole in the axle shaft does not align with a slot in the nut, turn the nut in a clockwise direction just sufficient to align the hole with the nearest slot.

Install a new split pin and replace the hub cap.

Repeat the procedure on the other front wheel.

### 45. Starter Motor Pinion

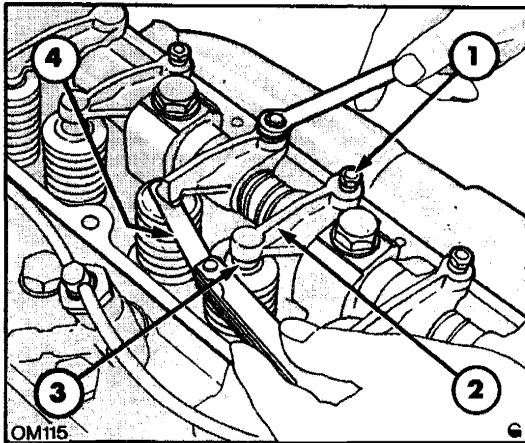
Disconnect the cable from the battery ground terminal and the battery cables from the starter motor and solenoid. Extract the three securing bolts and remove the starter motor.

Examine the starter pinion for clutch dust contamination and, if necessary, brush clean with a solution of 75% kerosene and 25% lubricating oil. This mixture will provide sufficient lubrication for the pinion until the next 600 hour service.

**NOTE:** This operation should be carried out more frequently if the clutch is subject to heavy useage, such as continuous loader operation.

# LUBRICATION AND MAINTENANCE

## 600 HOUR SERVICE (continued)



**47. Valve Tappet Clearance**

- |                     |                 |
|---------------------|-----------------|
| 1. Rocker arm screw | 3. Valve stem   |
| 2. Rocker arm       | 4. Feeler gauge |

### 46/47. Valve Tappet Clearance

With the engine cold, place No. 1 (front) cylinder on top dead center (TDC) of the firing stroke using the flywheel access hole, Figure 46, to indicate TDC. (The arrow on the casing will be aligned with the '0' timing mark on the flywheel).

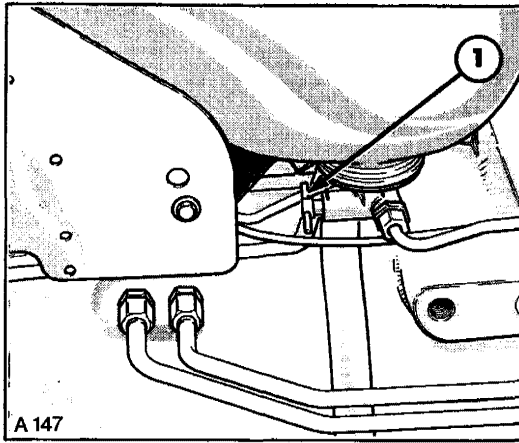
On the firing stroke both valves of No. 1 cylinder will be closed. In this condition, check and adjust the following valves:

- |               |               |
|---------------|---------------|
| No. 1 Inlet   | No. 3 Inlet   |
| No. 1 Exhaust | No. 2 Exhaust |

Use a feeler gauge, Figure 47, to check the clearance between the valve stem and the rocker arm. Turn the rocker arm screw to adjust the clearance.

Rotate the engine one complete revolution until No. 1 cylinder is on TDC of the exhaust stroke. (The valves of No. 1 cylinder will both be open with the inlet opening and the exhaust closing).

Check and adjust the remaining valves, as follows:



**48. Fuel Tank Shut-off Valve**

1. Shut-off valve

No. 2 Inlet

No. 3 Exhaust

The correct valve clearance is:

Inlet	0.014 – 0.016 in. (0.36 – 0.41 mm)
Exhaust	0.017 – 0.019 in. (0.43 – 0.48 mm)

Replace the rocker cover, using a new gasket, if necessary.

### 48/49. Fuel Filter/Sediment Separator

Close the fuel tank shut-off valve, Figure 48, by turning in a clockwise direction.

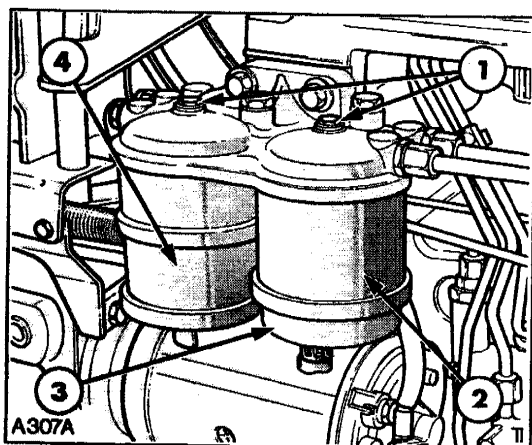
Unscrew the central retaining bolts, Figure 49, remove the filter element and glass bowl and discard the filter element.

Using clean fuel, wash out the filter bowl and the glass bowl on the sediment separator. Install a new filter element and gaskets and re-install the bowl.

Open the fuel shut-off valve and bleed the system. See Operations 52 to 54.



## 600 HOUR SERVICE (continued)



49. Fuel Filter/Sediment Separator

- |                    |                |
|--------------------|----------------|
| 1. Retaining bolts | 3. Filter bowl |
| 2. Filter element  | 4. Glass bowl  |

**EVERY 1200 HOURS or 12 months (whichever occurs first) carry out the preceding checks plus the following:**

### 50/51. Fuel Injectors



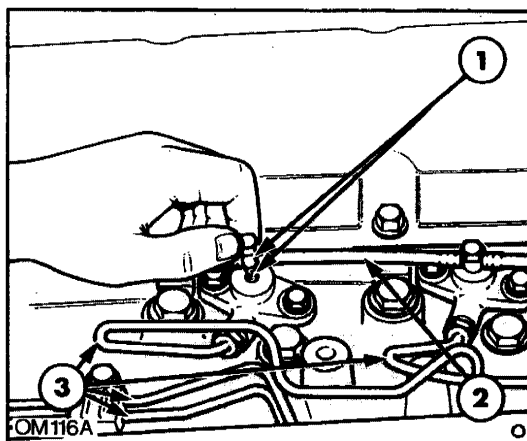
**WARNING:** Diesel fuel or hydraulic oil escaping under pressure can penetrate the skin causing serious injury.

- Do not use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks. Wear eye protection.
- Stop the engine and relieve pressure before connecting or disconnecting lines.
- Tighten all connections before starting the engine or pressurising lines.

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

**IMPORTANT:** Before loosening or disconnecting any part of the fuel injection system, thoroughly clean the area to be worked on.

## 1200 HOUR/12 MONTHS SERVICE (continued)



50. Pipe Connections

- |                   |                   |
|-------------------|-------------------|
| 1. Copper washers | 3. Injector pipes |
| 2. Leak-off line  |                   |

Loosen the injector pipe connections at the injection pump end.

Disconnect the injector pipes, Figure 50 and the leak-off line at the injectors, discarding the copper washers either side of the leak-off port banjo fittings.

Withdraw the injectors, Figure 51, after removing the retaining bolts.

Extract the copper sealing washer from each injector bore in the cylinder head together with the cork dust washer on each injector. Discard the copper and cork washers.

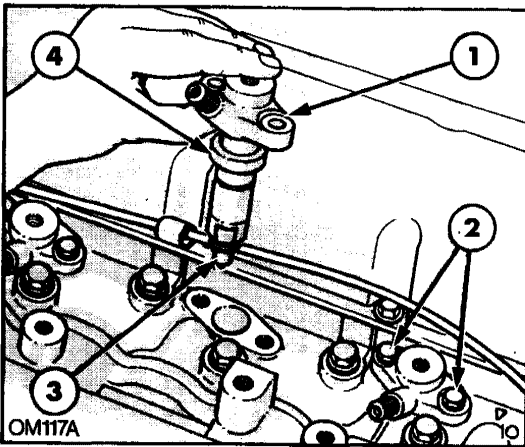
Using new sealing and dust washers, install the replacement injectors and tighten the retaining bolts evenly to 17 lbf. ft. (22 Nm).

Reconnect the leak-off line using new washers either side of the banjo fittings and tighten the retaining bolts to 6 lbf. ft. (8 Nm).

Reconnect the pump to injector pipes and tighten the connections to 18 lbf. ft. (24 Nm).

# LUBRICATION AND MAINTENANCE

## 1200 HOUR/12 MONTHS SERVICE (continued)



**51. Injector Removal**

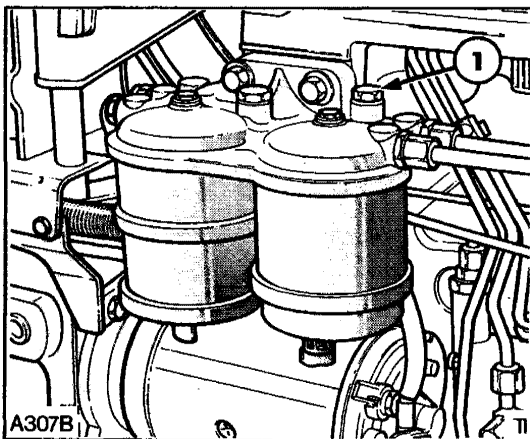
- |                    |                          |
|--------------------|--------------------------|
| 1. Injector        | 3. Copper sealing washer |
| 2. Retaining bolts | 4. Cork dust washer      |

After replacing the injectors and pipes, bleed the system (see Operations 52 to 54).

**NOTE:** *Modification or adjustment of fuel injection equipment outside specification may invalidate the warranty.*

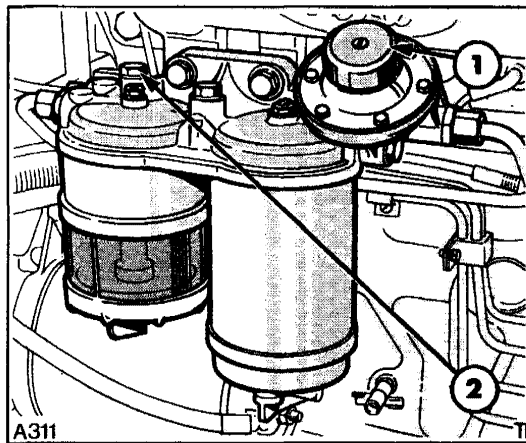
### 52/54. Bleeding the Fuel System

Loosen the filter bleed screw, Figure 52 or 53, until fuel free of air bubbles is discharged from the bleed screw hole. Tighten the bleed screw.



**52. Fuel Filter/Sediment Separator (except Ford 5030)**

1. Filter bleed screw

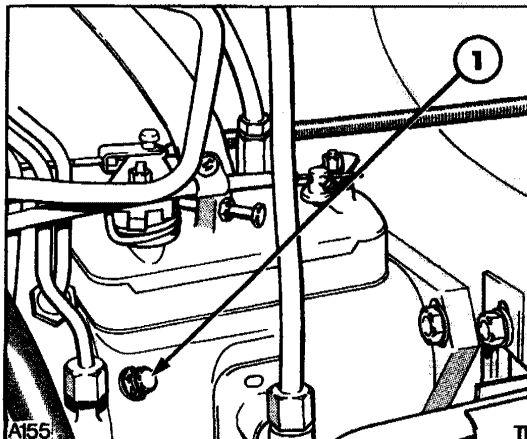


**53. Fuel Filter/Sediment Separator (Ford 5030 only)**

- |                       |
|-----------------------|
| 1. Hand primer        |
| 2. Filter bleed screw |

All models except Ford 5030 – Loosen the injection pump bleed screw, Figure 54. With the stop control out, crank the engine until fuel, free of air, is discharged from the bleed screw hole. Tighten the bleed screw.

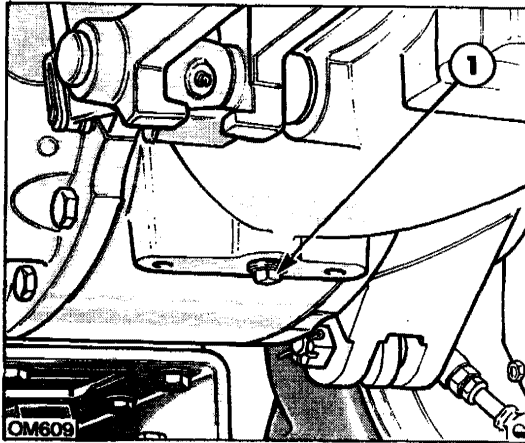
Ford 5030 only: A plunger-type primer, Figure 53, is mounted on top of the filter. Press the plunger several times until resistance is felt, indicating that the system is free of air.



**54. Bleeding the Injection Pump**

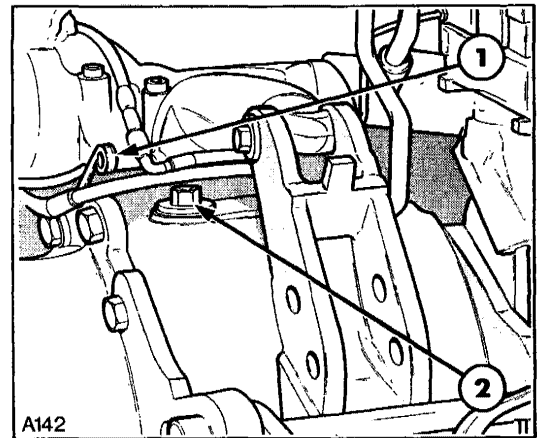
1. Pump bleed screw

## 1200 HOUR/12 MONTHS SERVICE (continued)



**55. Rear Axle Oil (two wheel drive)**

1. Rear axle drain plug



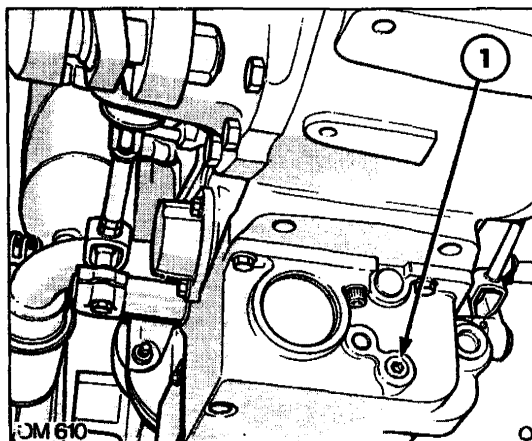
**57. Rear Axle**

1. Dipstick
2. Filler plug

### 55/57. Rear Axle Oil

With the oil hot, remove the drain plug, Figure 55 and allow the oil to drain into a suitable container. Replace the plug after the oil has drained.

With four wheel drive, the rear axle oil is drained via the transfer box bolted to the underside of the rear axle housing. Remove the drain plug, Figure 56 and allow the oil to drain into a suitable container. Replace the plug after the oil has drained.



**56. Rear Axle Oil (four wheel drive)**

1. Rear axle drain plug

Unscrew and remove the filler plug, Figure 57 and refill the rear axle until the oil reaches the upper mark on the dipstick.

See Section C for oil capacity and grade.

### 58/61. Transmission Oil

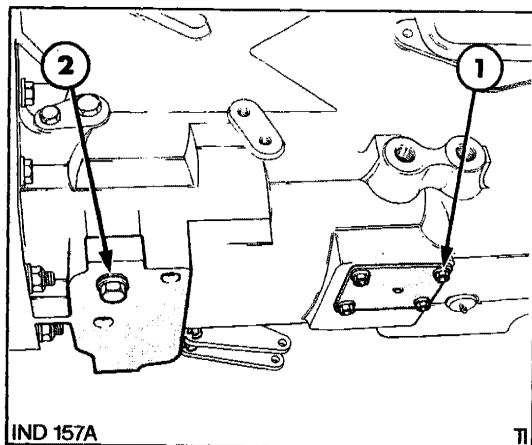
All models: With the oil hot, remove the drain plug from the bottom of the transmission housing and allow the oil to drain. Replace the drain plug after the oil has drained. See Figure 58 or 59 (according to transmission type).

Synchronised transmission only: With the transmission drained of oil, remove the four bolts retaining the transmission hydraulic pump filter screen, Figure 58. Remove the filter assembly from the transmission and discard.

Install a new filter and tighten the retaining bolts to 38 lbf. ft. (52 Nm).

# LUBRICATION AND MAINTENANCE

## 1200 HOUR/12 MONTHS SERVICE (continued)



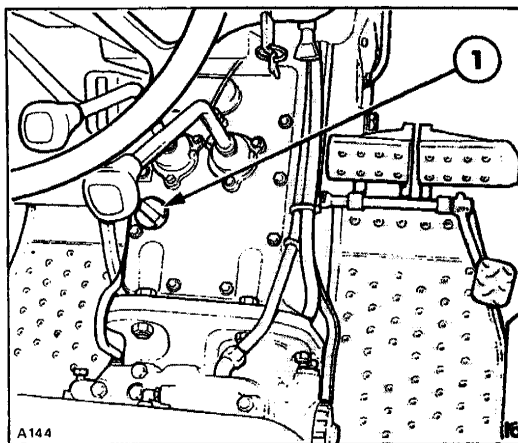
**58. Synchronised Transmission**

1. Filter screen bolts (4 off)
2. Transmission drain plug

Synchronised transmissions have a combined filler plug/dipstick, Figure 60. Unscrew and remove the combined filler plug/dipstick and refill the transmission with clean oil.

Wipe the dipstick with a clean cloth, replace it into the filler aperture and screw it fully in. Check that the oil in the transmission reaches the upper mark when the filler plug/dipstick is removed once more. Top up as necessary.

8 x 2 transmission: Unscrew the filler plug, Figure 61, and refill the transmission with clean oil. Pull



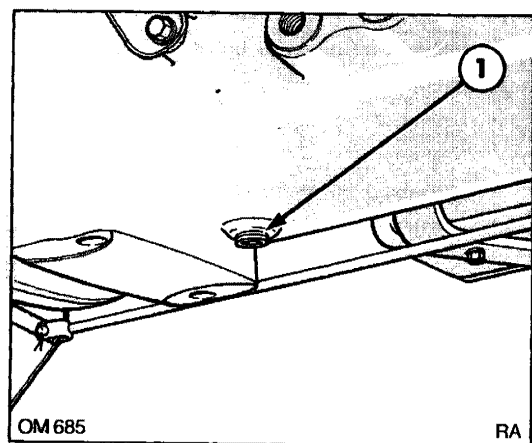
**60. Synchronised Transmission**

1. Filler plug/dipstick

out the dipstick and wipe it with a clean cloth. Replace the dipstick, pushing it fully in and check that the oil reaches the upper mark on the dipstick when it is removed from the transmission aperture.

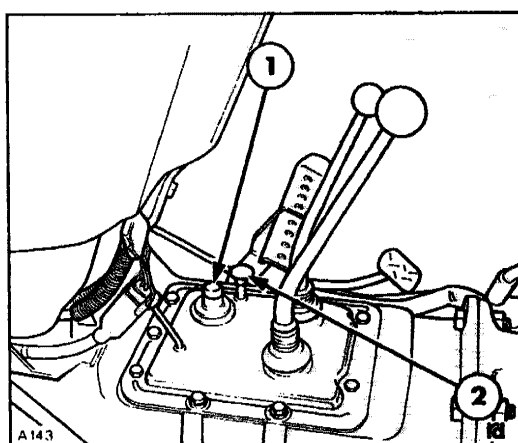
All models: After refilling the transmission, start the engine to allow the oil to circulate throughout the transmission. After a minute or so, stop the engine and recheck the transmission oil level.

See Section C for oil capacity and grade.



**59. 8 x 2 Transmission**

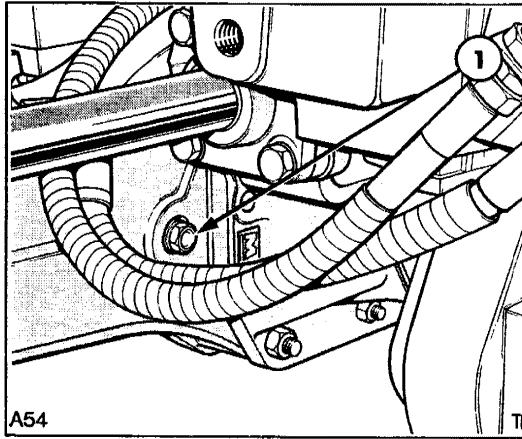
1. Transmission drain plug



**61. 8 x 2 Transmission**

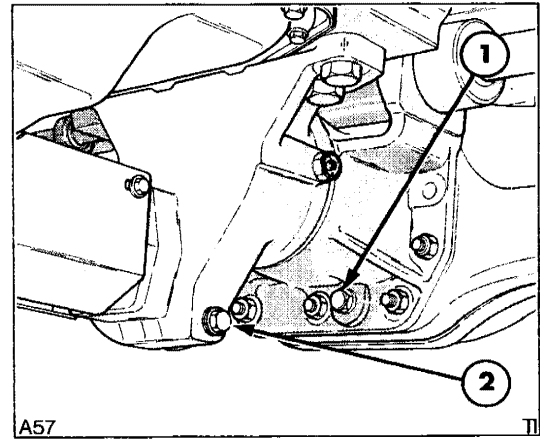
1. Filler plug
2. Dipstick

## 1200 HOUR/12 MONTHS SERVICE (continued)



**62. Front Axle (four wheel drive)**

1. Level/filler plug



**63. Front Axle (four wheel drive)**

1. Axle drain plug
2. Drop box drain plug

### 62/63. Front Axle (four wheel drive)

Remove the level/filler plug, Figure 62, from the axle and the drain plugs, Figure 63, from the axle and drop box. Allow the oil to drain. Replace the drain plugs after the oil has drained.

Reposition the wheel with the level line horizontal, as shown in Figure 64. Top up through the opening with clean oil until the oil reaches the combined level/filler plug opening. Replace the plug. Repeat on the right-hand wheel.

Refill the axle through the level/filler plug opening until the oil reaches the bottom of the opening.

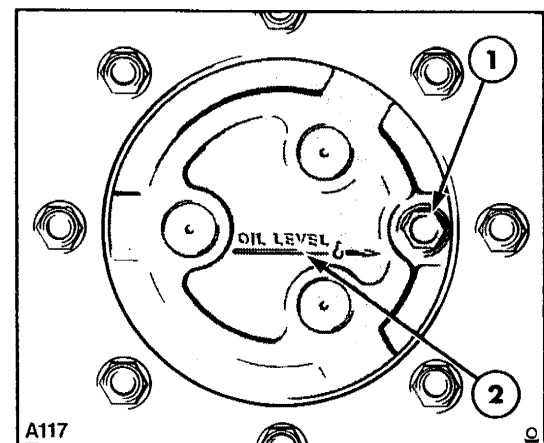
See Section C for oil capacity and grade.

**NOTE:** The drop box is lubricated by oil overflowing from the axle.

See Section C for oil capacity and grade.

### 64. Front Axle Hub Oil (four wheel drive)

Position the left-hand front wheel with the oil level/filler plug, Figure 64 at the lowest point. Remove the plug and allow the oil to drain.

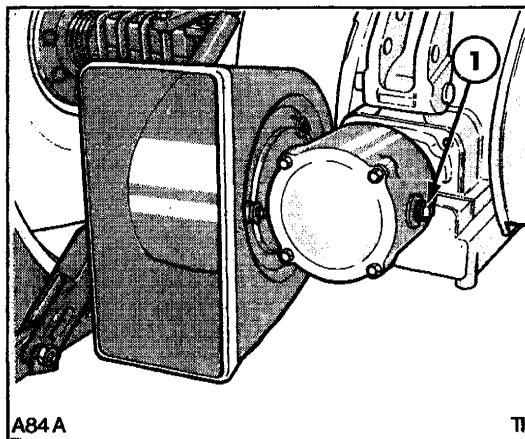


**64. Front Axle Hub Oil (four wheel drive)**

1. Filler/level plug
2. Oil level line

# LUBRICATION AND MAINTENANCE

## 1200 HOUR/12 MONTHS SERVICE (continued)



**65. Belt Pulley (where fitted)**

1. Filler/level plug

### 65. Belt Pulley Oil (where fitted)

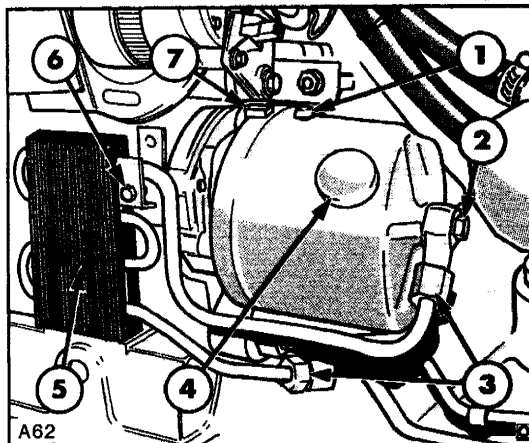
Remove the combined level/filler plug, Figure 65 and drain the oil by removing the belt pulley to rear axle securing bolts and rotating the pulley so that the opening is at the bottom. Refit the belt pulley, as shown and refill with clean oil through the opening. Replace the plug.

See Section C for oil capacity and grade.

### 66/67. Power Steering Oil and Filter

Disconnect the oil cooler pipes at the unions, Figure 66. Remove the bolt retaining the cooler and take off the cooler complete with pipework. Remove the central bolt and ease the reservoir casing rearwards. Catch the oil in a suitable container.

Discard the filter, Figure 67 and the 'O' ring. Clean the pump and reservoir with a lint-free cloth. Re-install the reservoir and a new filter, ensuring that the breather is in line with the projecting lug on the pump body, as shown in Figure 66. Refit the oil cooler and pipework and refill the reservoir with clean oil up to the bottom of the filler neck.



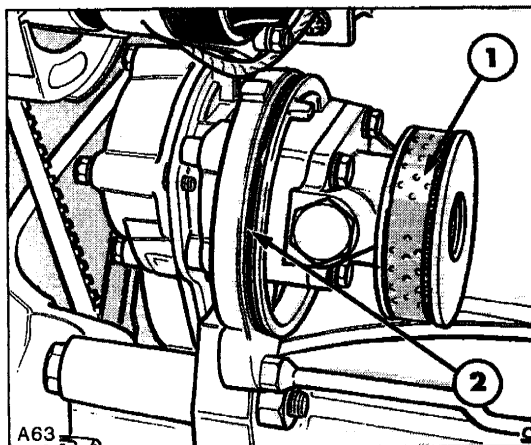
**66. Power Steering (where fitted)**

- |                           |                   |
|---------------------------|-------------------|
| 1. Breather               | 4. Filler         |
| 2. Central retaining bolt | 5. Cooler         |
| 3. Unions                 | 6. Retaining bolt |
|                           | 7. Lug            |

With the engine running, bleed the system by turning the steering wheel from lock to lock several times. Top up the reservoir, as required. See Section C for oil capacity and grade.

### 68. Dry Air Cleaner (where fitted)

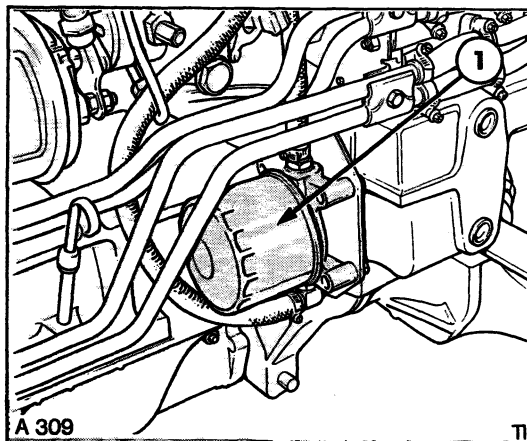
Change the outer element as described in operation 43. The inner element must also be changed every 1200 hours or annually, whichever occurs first. This service must be performed by a Ford New Holland dealer.



**67. Power Steering Filter**

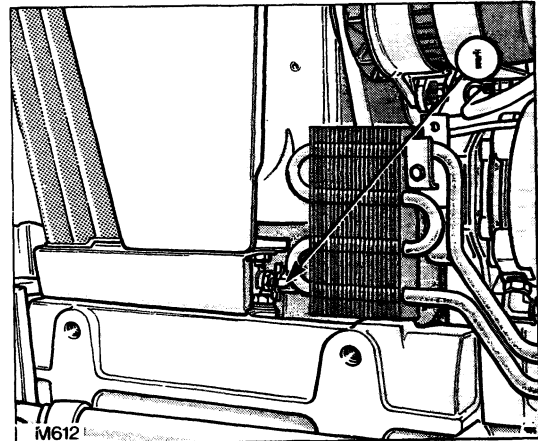
1. Filter                      2. 'O'-ring

**EVERY 1200 HOURS or 2 YEARS (whichever occurs first) carry out the following:**



**69. Coolant Filtration System**

1. Coolant filter



**70. Draining the Cooling System**

1. Radiator drain cock

## **69/71. Coolant Inhibitor/Filtration System**

The ever increasing output of modern, high speed diesel engines, particularly those used in heavy duty agricultural applications, has created the need for an inhibitor in the cooling system.

During manufacture, the engine cooling system is filled with a high quality antifreeze and water solution to which is added the inhibitor. This inhibitor increases and extends the protection offered by the existing inhibitor already present in the antifreeze. The added inhibitor will:

- Increase rust prevention.
- Reduce scale formation.
- Minimise cylinder wall erosion (pitting).
- Reduce foaming of the coolant.

As the chemical inhibitor works and protects the system it gradually loses its strength and must,

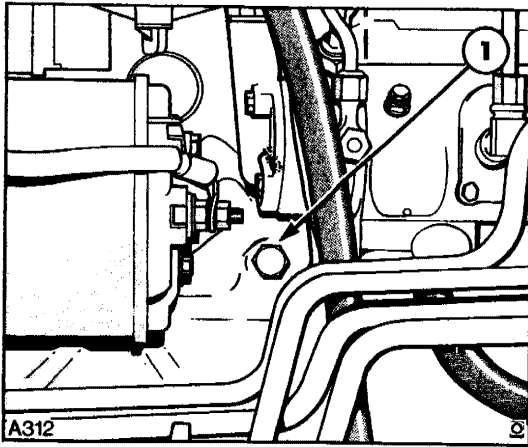
therefore, be replenished at intervals with a measured dosage to maintain the optimum protection level. The chemical inhibitor is available in 16 fl. oz. (473 ml) bottles from Ford New Holland dealers.

A throw-away, spin-on coolant filter is available. The filter canister, Figure 69, in addition to containing the filter element also contains inhibitor in the form of a paste. As coolant flows through the filter, the paste quickly dissolves and mixes with the coolant to provide optimum protection between normal coolant change intervals.

**IMPORTANT:** *The new filter contains a measure of chemical inhibitor in paste form. The measure of inhibitor and the size of the filter element are matched to the cooling capacity of your tractor. It is important that this filter is changed every 1200 hours or two years, whichever occurs first, if total protection of the engine cooling system is to be maintained. The use of a non-approved filter may jeopardize this protection.*

# LUBRICATION AND MAINTENANCE

## 1200 HOUR/2 YEAR SERVICE (continued)



71. Draining the Cooling System

1. Engine coolant drain plug

### – Tractors with Coolant Filter

With the engine cool, drain and refill the cooling system and install a new filter, as follows:

**WARNING:** Coolant should be kept off the skin. Adhere to the precautions outlined on the antifreeze container.

Open the radiator drain cock, Figure 70 and allow the coolant to drain. Unscrew and remove the drain plug, Figure 71 and drain the coolant from the engine block. Remove the radiator cap at this stage to increase the drainage rate.

**NOTE:** Some models may have a drain cock in place of the plug shown in Figure 71. If so, open the cock to drain the coolant from the block.

After draining, unscrew and remove the coolant filter and flush the cooling system via the radiator filler.

After flushing, close the drain cock(s) and/or replace the engine coolant drain plug. Clean the sealing face of the filter manifold and install a new filter. Do not overtighten.

**IMPORTANT:** Anti-leak additives should be avoided. The clogging properties of these additives could affect the performance of the filter.

Refill the cooling system via the radiator filler tube using a 50% solution of clean water and antifreeze. Check the coolant level is flush with the indicator at the bottom of the filler tube (see Operation 5).

**NOTE:** To avoid trapping air in the system, fill the radiator as slowly as practicable thereby allowing any air pockets to disperse.

Start and run the engine to circulate the coolant. Stop the engine and top up the radiator with the same 50% solution of clean water and antifreeze.

**NOTE:** The coolant level may drop as it is pumped around the cooling system.

**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. Use a thick cloth and turn the cap slowly to the first stop and allow the pressure to escape before fully removing the cap.

Coolant should be kept off the skin. Adhere to the precautions outlined on the antifreeze and inhibitor containers.

**IMPORTANT:** It is essential that a Ford New Holland approved cap is used. If the original cap is mislaid or damaged, obtain a replacement from your Ford New Holland dealer.

If the engine is not going to be operated immediately following this filter change, run the engine for one hour to ensure that the chemical inhibitor within the filter is dispersed into the cooling system.

Allow the engine to cool and make a final check to ensure that the coolant level is satisfactory.



## 1200 HOUR/2 YEAR SERVICE (continued)

### – Tractors without Coolant Filter

With the engine cool, drain and refill the cooling system, as follows:



**WARNING:** *Coolant should be kept off the skin. Adhere to the precautions outlined on the antifreeze container.*

Open the radiator drain cock, Figure 70 and allow the coolant to drain. Unscrew and remove the drain plug, Figure 71 and drain the coolant from engine block. Remove the radiator cap at this stage to increase the drainage rate.

**NOTE:** *Some models may have a drain cock in place of the plug shown in Figure 71. If so, open the cock to drain the coolant from the block.*

After flushing, close the drain cock(s) and/or replace the engine coolant drain plug. Refill the cooling system via the radiator filler tube using a 50% solution of clean water and antifreeze premixed with 5% inhibitor. The inhibitor is available from Ford New Holland dealers under the part No. FW-15. It is supplied in 16 fl. oz. (473 ml) bottles, the side of the bottle being marked in 1 fl. oz. increments.

**IMPORTANT:** *Anti-leak additives should be avoided. The clogging properties of these additives could affect the performance of the filter.*

Mix FW-15 inhibitor with clean water and permanent antifreeze in the following proportions:

	Water	Antifreeze	Inhibitor
U.S. Gal.	1.0	1.0	13 oz.
Imp. Gal.	1.0	1.0	16 oz.
Litres	4.0	4.0	12 oz.

Check that the coolant level is flush with the indicator at the bottom of the filler tube (see Operation 5). See Section C for cooling system capacity, clean water properties and antifreeze specification.

**NOTE:** *To avoid trapping air in the system, fill the radiator as slowly as practicable thereby allowing any air pockets to disperse.*

Start and run the engine to circulate the coolant. Stop the engine and top up the radiator with the same solution of clean water, antifreeze and inhibitor.

**NOTE:** *The coolant level may drop as it is pumped around the cooling system.*



**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. Use a thick cloth and turn the cap slowly to the first stop and allow the pressure to escape before fully removing the cap. Coolant should be kept off the skin. Adhere to the precautions outlined on the antifreeze and inhibitor containers.*

**IMPORTANT:** *It is essential that a Ford New Holland approved cap is used. If the cap is mislaid or damaged, obtain a replacement from your Ford New Holland dealer.*

If the engine is not going to be operated immediately following this coolant change, run the engine for one hour to ensure that the chemical inhibitor is dispersed throughout the cooling system. Allow the engine to cool and make a final check to ensure that the coolant level is satisfactory.

# LUBRICATION AND MAINTENANCE

## GENERAL MAINTENANCE

The following pictures and text detail service or adjustment procedures that are not required to be carried out on a routine basis.

### 72. Engine Coolant

In the event of a loss of coolant, for example a leaking hose or gasket, it is important to firstly, correct the leak and secondly, top up with a pre-mixed solution of water, antifreeze and inhibitor of the correct proportions.

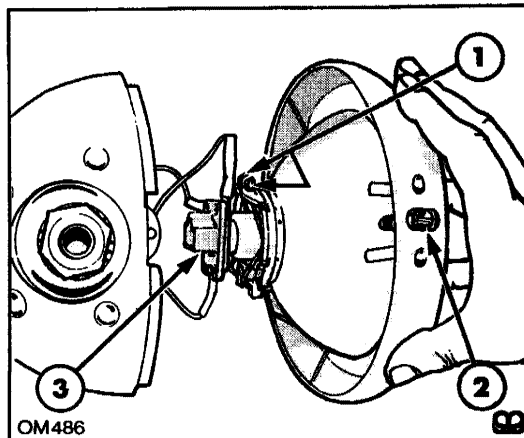
Ford New Holland recommends that a solution of 50% clean water and 50% antifreeze, no matter what degree of freeze protection is required, be pre-mixed with 5% inhibitor and used as a top-up solution. The inhibitor is available from Ford New Holland dealers under the part number FW-15. It is supplied in 16 fl. oz. (473 ml) bottles and when this amount is mixed with 2.4 U.S. Gals. (2.0 Imp. Gals – 9.0 litres) of water/antifreeze solution it will provide the correct inhibitor charge.

Always keep this pre-mixed solution in a specially marked container for top-up purposes and always investigate the cause of leakage and repair properly. Do not use anti-leak additives.



**WARNING:** Inhibitor solution is irritating to eyes and skin. It contains buffered potassium hydroxide.

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



73. External Headlight

- |                     |              |
|---------------------|--------------|
| 1. Retaining spring | 3. Connector |
| 2. Retaining screw  |              |

### 73/75. Headlight Bulb Replacement

Two types of headlight are available: Figure 73 depicts the headlight that is mounted externally on the side of the radiator cowl while Figures 74 and 75 show the grille-mounted type.

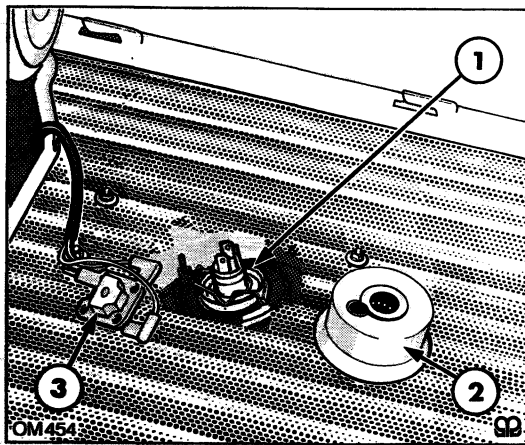
**IMPORTANT:** All headlights and worklamps have halogen bulbs. Never touch a halogen bulb with the fingers. Natural moisture in the skin may cause the bulb to fail prematurely when switched on. Always use a clean cloth or tissue when handling halogen bulbs.

#### – External Headlights

Detach the rim/lamp assembly from the headlight shell after releasing the retaining screw, Figure 73. Pull the connector, from the rear of the bulb, detach the retaining spring and remove the bulb. Re-assemble in reverse order.

To avoid blinding oncoming drivers, adjust the angle of the headlight beam after slackening the headlight shell to mounting bracket nut.

## GENERAL MAINTENANCE (continued)



**74. Grille-mounted Headlight**

- 1. Retaining spring
- 2. Rubber cap
- 3. Connector

### – Grille-mounted Headlights

Remove the radiator grille and pull the connector, Figure 74 and the rubber cap, from the rear of the lamp assembly. Detach the retaining spring and remove the bulb. Re-assemble in reverse order.

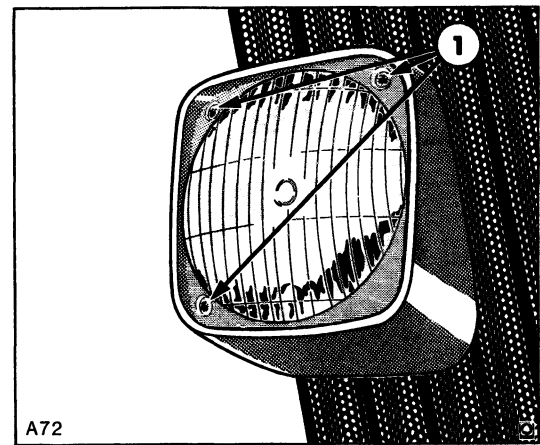
Adjust the angle of the headlight beam to avoid blinding oncoming drivers.

The headlights are secured to the grille by three spring-loaded screws, Figure 75. The beam may be adjusted vertically or laterally by turning one or more of the screws in or out, as required.

### 76. Worklamps, Front/Side/Indicator Lamps and Rear/Stop/Indicator Lamps

To gain access to a worklamp bulb (Figure 76), peel back the rubber casing and remove the lens/reflector assembly. Release the spring clip and extract the bulb from the back of the reflector assembly.

All front/side/indicator bulbs and rear/stop/indicator bulbs are accessible after removal of the

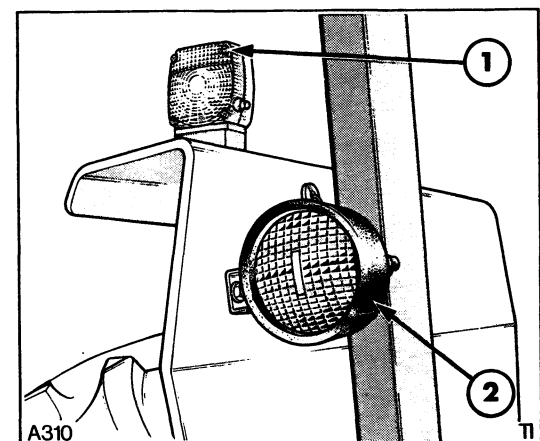


**75. Grille-mounted Headlight**

- 1. Adjuster screws

plastic lens assembly, secured by screws, Figure 76. The bulbs have a bayonet cap and may be removed by pressing in and turning approximately 20° counter-clockwise.

**IMPORTANT:** When replacing the lens, take care not to overtighten the retaining screws.

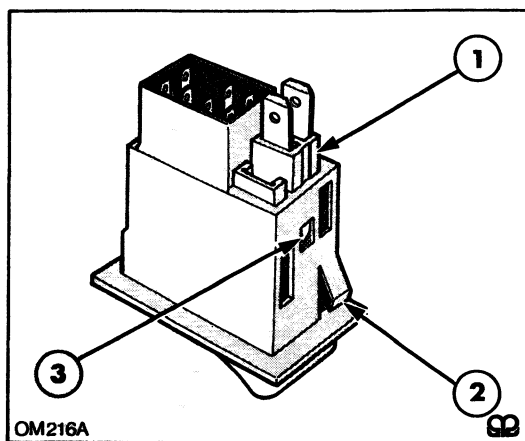


**76. Rear Lamp**

- 1. Lens retaining screws
- 2. Worklamp casing

# LUBRICATION AND MAINTENANCE

## GENERAL MAINTENANCE (continued)



78. Rocker Switch Bulb Replacement

- 1. Bulb retainer
- 2. Sprung tag
- 3. Bulb retainer tag

### 77. Instrument Panel Bulb Replacement

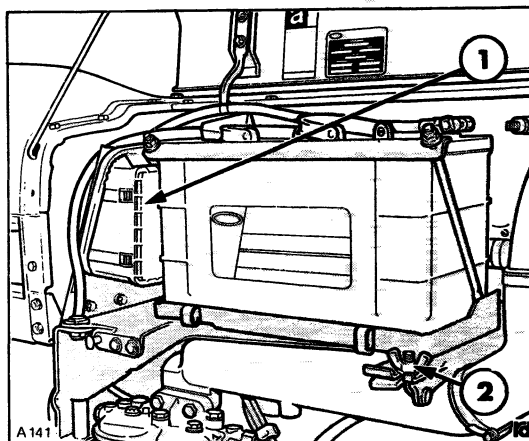
The warning and panel light bulbs are removable from the rear of the instrument panel. To gain access, remove the four securing screws from the instrument panel surround and withdraw the instrument panel assembly. Disconnect the proofmeter drive cable, if necessary.

### 78. Rocker Switch Bulb Replacement

The warning lights on the instrument console and certain of the rocker switches are internally illuminated, the bulb being removable from the rear of the lamp or switch assembly. To gain access, remove the instrument panel, as previously described.

The lamp or switch assembly is retained by a sprung tag (2) Figure 78, at either end. Press in both tags and withdraw the assembly.

To change a bulb, press in the tag (3) using a small screwdriver and pull the bulb retainer from the back of the assembly. The bulbs are of the capless



80. Fuse Box Location

- 1. Fuse box
- 2. Wing nut

type, rated at 1.2w and are a push fit in the retainer. After changing the bulb, push the retainer

into the back of the lamp or switch assembly until the tag locates in the aperture. Re-install the lamp/switch assembly.

### 79. Battery

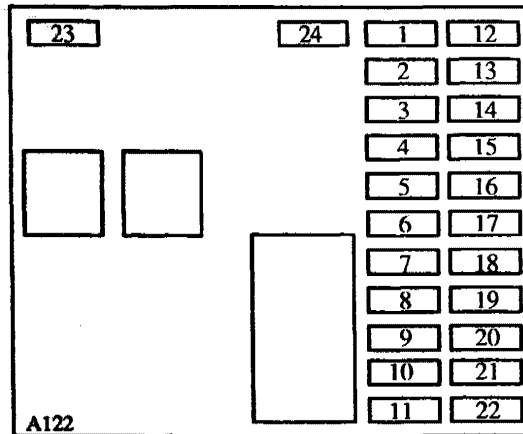
A low maintenance battery is installed. However, from time to time the battery terminals should be inspected to ensure that they are clean and tight. To prevent the formation of corrosion the terminals should be greased with petroleum jelly (Vaseline or similar).

### 80/81. Fuses

The fuse box is located behind the battery. To gain access, slacken off the wing nut, Figure 80 and swing out the tray on which the battery is mounted.

Pull off the lid of the fuse box to gain access to the fuses. The fuses are numbered and color-coded as shown in Figure 81 and the following chart:

## GENERAL MAINTENANCE (continued)



81. Fuses

Fuse No.	Rating	Colour	Circuit
1	15A	Lt. Blue	Spare
2	15A	Lt. Blue	Head lights
3	10A	Red	R.H. sidclamp
4	10A	Red	Spare
5	—	—	None fitted
6	—	—	None fitted
7	5A	Tan	Spare
8	—	—	None fitted
9	—	—	None fitted
10	15A	Lt. Blue	Hazard switch
11	25A	Natural	Spare
12	15A	Lt. Blue	Spare
13	10A	Red	Dual Power/4WD
14	5A	Tan	Instruments
15	15A	Lt. Blue	Spare
16	—	—	None fitted
17	15A	Lt. Blue	Spare
18	—	—	None fitted
19	25A	Natural	Thermostart
20	—	—	None fitted
21	5A	Tan	Start relay
22	—	—	None fitted
23	—	—	None fitted
24	—	—	None fitted

There is provision for 24 fuses although they may not all be fitted. In addition, certain items of equipment may not be installed on your tractor. However, the fuses for these features are still fitted and may be used as spares.

**IMPORTANT:** Do not replace a blown fuse with another of a different rating.

### 82. Alternator

To avoid damage to the alternator charging system, service precautions should be observed, as follows:

- Never make or break any of the charging circuit connections, including the battery, when the engine is running.
- Never short any of the charging components to ground.
- Do not use a slave battery of higher than 12 volts nominal voltage.
- Always observe correct polarity when installing a battery or using a slave battery to jump start the engine. Follow the instructions on page 7 of Section A when jump starting the tractor.
- Always disconnect the battery ground cable before carrying out arc welding on the tractor or on any implement attached to the tractor.

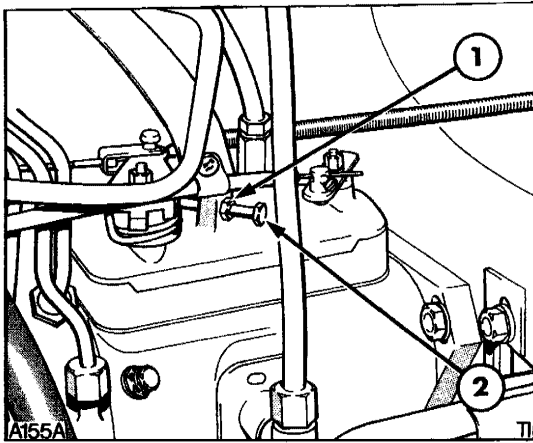


**WARNING:** Wear eye protection when charging the battery or starting the tractor with a slave battery.

Connect positive to positive and negative to negative.

# LUBRICATION AND MAINTENANCE

## GENERAL MAINTENANCE (continued)



83. Engine Idle Speed Adjustment (3-cylinder illustrated – Ford 5030 is similar)

1. Locknut
2. Stop screw

### 83. Engine Idle Speed

Loosen the locknut, Figure 83 and turn the stop screw to adjust the engine idle speed. The maximum no-load speed is set in the factory and must only be adjusted, if required, by an authorized Ford New Holland dealer.

### 84. Tractor Storage

Before storing the tractor for an extended period, the following precautions should be taken:

- Clean the tractor.
- Drain the engine, transmission and rear axle and refill with clean oil.
- Drain the fuel tank and pour approximately two gallons of special calibrating fuel into the tank. Run the engine for at least 10 minutes to ensure complete distribution of the calibrating fuel throughout the injection system. See the next item before running the engine.
- Check the radiator coolant level. If the water filter/coolant is within 200 hours of the next

change, renew the filter and/or the coolant and inhibitor. See Operations 69 to 71, as appropriate. Run the engine for one hour to disperse the inhibitor throughout the cooling system.

- Lubricate all grease fittings.
- Raise the lift linkage hydraulically and support the lift arms in the fully raised position.
- Lightly coat all exposed hydraulic piston rods with petroleum jelly, e.g., power steering cylinder rams, lift assist rams, spool valves, etc.
- Remove the battery and store in a warm, dry atmosphere. Recharge periodically.
- Raise the tractor and place supports under the axles to take the weight off the tires.
- Block the clutch pedal in the fully depressed position.
- Cover the exhaust pipe opening.

### 85. Preparing the Tractor for Use after Storage

- Inflate the tires to the correct pressure.
- Refill the fuel tank.
- Check the radiator coolant level.
- Check all oil levels.
- Install a fully charged battery.
- Remove the exhaust pipe covering.
- Start the engine and check that all instruments and controls are functioning correctly.
- Drive the tractor without a load to ensure that it is operating satisfactorily.

# SPECIFICATIONS

The specifications on the following pages are given for your information and guidance. For further information concerning your tractor and equipment, consult your authorized Ford New Holland dealer.

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

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

# SPECIFICATIONS

## GENERAL DIMENSIONS (two wheel drive)

		3230		
		3430		
		3930	4630	5030
Height to top of ROPS	in	89.4	88.6	88.6
	(mm)	(2270)	(2250)	(2250)
Height to top of exhaust	in	87.5	94.3	102.9
	(mm)	(2223)	(2396)	(2614)
Ground clearance under engine	in	13.2	13.2	13.2
	(mm)	(335)	(335)	(335)
Ground clearance under rear axle center housing	in	15.2	14.1	14.1
	(mm)	(386)	(358)	(358)
Width at minimum track (across rear tires)	in	69.6	75.5	75.5
	(mm)	(1768)	(1918)	(1918)
Width at maximum track (across rear tires)	in	93.3	91.2	91.2
	(mm)	(2371)	(2316)	(2316)
Overall length	in	136.7	136.7	141.9
	(mm)	(3473)	(3473)	(3603)
Wheelbase	in	84.5	84.5	89.6
	(mm)	(2146)	(2146)	(2276)
Turning Radius – at 52 in. (1320 mm) track setting without brakes	in	142	142	156.5
	(mm)	(3607)	(3607)	(3975)

The above dimensions are

based on standard tractors

fitted with the tire sizes shown:

Front	5.50 – 16	5.50 – 16	5.50 – 16
Rear	13.6 – 28	14.9 – 24	14.9 – 24

**NOTE:** If your tractor has tires of a different size then the above dimensions will vary due to the difference in the rolling radius and section width of the tires fitted.



<b>GENERAL DIMENSIONS</b>		<b>3230</b>		
<b>(four wheel drive)</b>		<b>3430</b>		
		<b>3930</b>	<b>4630</b>	<b>5030</b>
<b>Height to top of ROPS</b>	<b>in</b>	<b>89.4</b>	<b>88.6</b>	<b>88.6</b>
	<b>(mm)</b>	<b>(2270)</b>	<b>(2250)</b>	<b>(2250)</b>
<b>Height to top of exhaust</b>	<b>in</b>	<b>90.2</b>	<b>93.3</b>	<b>101.9</b>
	<b>(mm)</b>	<b>(2290)</b>	<b>(2370)</b>	<b>(2588)</b>
<b>Ground clearance under front axle transfer case</b>	<b>in</b>	<b>11.1</b>	<b>12.3</b>	<b>12.3</b>
	<b>(mm)</b>	<b>(283)</b>	<b>(313)</b>	<b>(313)</b>
<b>Ground clearance under rear axle transfer case</b>	<b>in</b>	<b>9.7</b>	<b>9.4</b>	<b>9.4</b>
	<b>(mm)</b>	<b>(247)</b>	<b>(239)</b>	<b>(239)</b>
<b>Width at minimum track (across rear tires)</b>	<b>in</b>	<b>68.4</b>	<b>75.5</b>	<b>75.5</b>
	<b>(mm)</b>	<b>(1738)</b>	<b>(1918)</b>	<b>(1918)</b>
<b>Width at maximum track (across rear tires)</b>	<b>in</b>	<b>92.2</b>	<b>91.2</b>	<b>91.2</b>
	<b>(mm)</b>	<b>(2341)</b>	<b>(2316)</b>	<b>(2316)</b>
<b>Overall length</b>	<b>in</b>	<b>140.9</b>	<b>141.9</b>	<b>147.0</b>
	<b>(mm)</b>	<b>(3580)</b>	<b>(3605)</b>	<b>(3735)</b>
<b>Wheelbase</b>	<b>in</b>	<b>84.1</b>	<b>84.1</b>	<b>89.2</b>
	<b>(mm)</b>	<b>(2136)</b>	<b>(2136)</b>	<b>(2266)</b>
<b>Turning Radius – at 64 in. (1625 mm) track setting (without brakes)</b>	<b>in</b>	<b>158</b>	<b>158</b>	<b>157</b>
	<b>(mm)</b>	<b>(4013)</b>	<b>(4013)</b>	<b>(3988)</b>
<b>The above dimensions are based on standard tractors fitted with the tire sizes shown:</b>				
	<b>Front</b>	<b>9.50 – 20</b>	<b>8.30 – 24</b>	<b>8.30 – 24</b>
	<b>Rear</b>	<b>12.4 – 28</b>	<b>14.9 – 24</b>	<b>14.9 – 24</b>

**NOTE:** *If your tractor has tires of a different size then the above dimensions will vary due to the difference in the rolling radius and section width of the tires fitted.*

# SPECIFICATIONS

<b>WEIGHTS (two wheel drive)</b>		<b>3230</b>			
		<b>3430</b>	<b>3930</b>	<b>4630</b>	<b>5030</b>
Total with fuel, oil and water	lb	4524	5059	5097	5214
	(kg)	(2052)	(2295)	(2312)	(2365)
On front axle	lb	1687	1719	1753	1852
	(kg)	(765)	(780)	(795)	(840)
On rear axle	lb	2837	3340	3344	3362
	(kg)	(1287)	(1515)	(1517)	(1525)

<b>WEIGHTS (four wheel drive)</b>		<b>3230</b>			
		<b>3430</b>	<b>3930</b>	<b>4630</b>	<b>5030</b>
Total with fuel, oil and water	lb	5393	5928	5966	6082
	(kg)	(2446)	(2689)	(2706)	(2759)
On front axle	lb	2335	2368	2401	2493
	(kg)	(1059)	(1074)	(1089)	(1131)
On rear axle	lb	3058	3560	3565	3589
	(kg)	(1387)	(1615)	(1617)	(1628)

Above weights are based on standard production tractors without optional equipment.

<b>ENGINE</b>		<b>3230</b>			
		<b>3430</b>	<b>3930</b>	<b>4630</b>	<b>5030</b>
Number of cylinders		3	3	3	4
Bore	in	4.4	4.4	4.4	4.4
	(mm)	(111.8)	(111.8)	(111.8)	(111.8)
Stroke	in	4.2	4.4	4.4	4.2
	(mm)	(106.7)	(111.8)	(111.8)	(106.7)
Displacement	in <sup>3</sup>	192	201	201	256
	(cm <sup>3</sup> )	(3147)	(3294)	(3294)	(4186)

## ENGINE (continued)

		3230	3430 3930	4630	5030
Compression ratio		16.3:1			
Firing order		1-2-3			1-3-4-2
Idle speed (rpm)		600 - 700	600 - 850		
Rated speed	rev/min	2000	2000	2200	2200
Maximum no-load speed	rev/min	2175	2175	2375	2375
Tappet clearance (cold)					
Intake	in	0.14 - 0.16			
	(mm)	(0.36 - 0.41)			
Exhaust	in	0.017 - 0.019			
	(mm)	(0.43 - 0.48)			

## COOLING SYSTEM

All models

Type		Pressurized Recirculation By-Pass
Fan and alternator belt deflection	in	0.5-0.75
	(mm)	(13-19)
Thermostat		
Starts to open at	° C	82
	(° F)	(180)
Fully open at	° C	95
	(° F)	(203)
Pressure Cap	psi	10
	(bar)	(0.7)

**Antifreeze:** WSN-M97B18-D. Mix with an equal amount of clean water and change every 1200 hours or 24 months (whichever occurs first). Change the coolant filter at the same time. See important information on pages 27 to 30 of Section B concerning topping up the cooling system and the use of chemical inhibitor Part No. FW-15.

**Clean water only:** (Only applicable to hot countries where antifreeze is not available). Change coolant and coolant filter (where fitted) every 1200 hours or 24 months, whichever occurs first.

**NOTE:** In order to reduce deposits and corrosion, water used in the cooling system should not exceed the following limits:

<b>Total hardness:</b>	<b>Chlorides</b>	<b>Sulfates</b>
300 parts per million	100 parts per million	100 parts per million

# SPECIFICATIONS

## TRANSMISSION

### All models

Standard

Constant mesh with 8 forward and 2 reverse ratios

Option \*

Synchronized Shuttle Shift with 8 forward and 8 reverse ratios

Option (with Shuttle

Dual Power – provides 16 forward and 8 reverse ratios

Shift transmission \*)

### Reduction gears

with constant mesh transmission

5.7: 1 (factory installed option or dealer installed accessory)

with constant mesh transmission

10: 1 (dealer installed accessory)

\* Not available on Ford 3230 tractors.

**NOTE:** To calculate the road speed in any 'creep' ratio refer to the appropriate road speed chart, depending on the model, and divide the speeds obtained in the low ratios (1st–4th) by 5.7 or 10, depending on the reduction gearbox fitted.

## POWER TAKE OFF (P.T.O.)

### All models

Type

Single speed, independent

Engine speed for 540 rpm PTO Speed

8 x 2 transmission

1800

16 x 8 and 8 x 8 transmissions

1750

## BRAKES

3230

3430

3930

4630

5030

Type

Wet disc

Disc Diameter  
(mm)

in

8.0

(203)

No. of discs

3 per side 4 per side

Pedal free travel

in  
(mm)

1.50

(38)

Parking brake

Operates on footbrake linkage

## CLUTCH

All models

Pedal free travel	in (mm)	_____ 1.1-1.6 _____ _____ (28-41) _____
Plate diameter	in (mm)	_____ 13 _____ _____ (330) _____

## ELECTRICAL EQUIPMENT

All models

Alternator	_____ 12v. 55 amp _____
Regulator (with battery sensor)	_____ Integral with alternator _____
Starter Motor	_____ Positive engagement, solenoid operated _____
Battery	_____ 12v. 107 a/h (minimum maintenance type) _____

## STEERING

3230/3430

3930

4630/5030

Steering wheel turns (lock to lock)		3.4	3.4	3.6
Pump type (Hydrostatic steering)		_____ Gear _____		
Maximum pressure	psi (bar)	_____ 1400 - 1500 _____ _____ (96 - 104) _____		
Front wheel toe-in (two wheel drive)	in (mm)	_____ 0 - 0.5 _____ _____ (0 - 13) _____		
(four wheel drive)	in (mm)	_____ 0 - 0.3 _____ _____ (0 - 7.5) _____		



CAPACITIES (continued)		3230	3430/3930	4630	5030
*Constant Mesh Transmission (8 x 2)	U.S. Gals.		3.2		
	Imp. Gals.		2.6		
	Liters		12.0		
Shuttle Shift Transmission (8 x 8)	U.S. Gals.		2.5	2.5	2.5
	Imp. Gals.	—	2.0	2.0	2.0
	Liters		9.4	9.4	9.4
Shuttle Shift Transmission (16 x 8)	U.S. Gals.		2.2	2.2	2.2
	Imp. Gals.	—	1.85	1.85	1.85
	Liters		8.4	8.4	8.4
**Rear Axle/Hydraulic System (with 8 x 2 transmission)	U.S. Gals.		12.0		
	Imp. Gals.		10.0		
	Liters		45.7		
**Rear Axle/Hydraulic System (with 8 x 8 or 16 x 8 transmission)	U.S. Gals.		8.5		
	Imp. Gals.		7.2		
	Liters		32.5		
Front Wheel Drive Front Hubs (Quantity shown is for one hub only)	U.S. Qts.		1.0		
	Imp. Pts.		1.6		
	Liters		0.9		
Front Wheel Drive Differential Case	U.S. Qts.		5.8		
	Imp. Pts.		9.7		
	Liters		5.5		
Hydrostatic Steering System	U.S. Qts.		2.3		
	Imp. Pts.		3.8		
	Liters		2.2		
Belt Pulley (where fitted)	U.S. Qts.	0.6	0.6	1.2	1.2
	Imp. Pts.	1.0	1.0	2.0	2.0
	Liters	0.57	0.57	1.13	1.13

\*With reduction (creeper) gears installed, the transmission oil fill is increased by 3.3 U.S. Qts., 5.5 Imp. Pts. (3 Liters).

\*\*With the four wheel drive option, increase the rear axle oil by 1.5 U.S. Qts., 2.5 Imp. Pts. (1.4 Liters). The four wheel drive transfer case is lubricated by oil from the rear axle.

**NOTE:** When operating remote cylinders, the rear axle oil level will be affected. When topping up the rear axle to accommodate the oil requirement of remote cylinders, no more than 6.0 U.S. Gals., 5.0 Imp. Gals. (22.7 Liters) should be added to bring the oil level up to the upper mark on the dipstick when all rams are fully extended. Alternatively, remote cylinders with an oil capacity of up to 7.2 U.S. Gals., 6.0 Imp. Gals. (27.7 Liters) may be connected to the tractor hydraulic system without adding oil, provided the tractor is being operated on level ground.

# SPECIFICATIONS

## LUBRICANTS

Engine

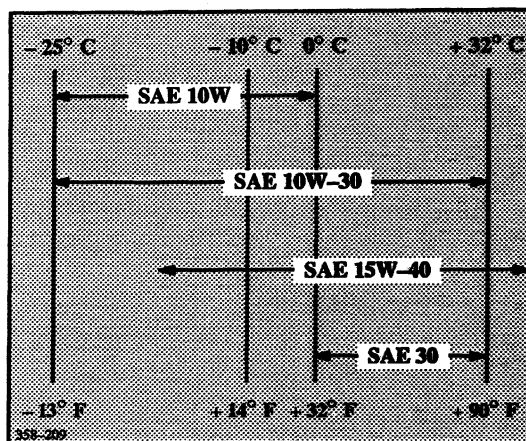
Ford M2C121-E

Where all the above mentioned oils cannot be used, the chosen oil must, at minimum, meet A.P.I. (American Petroleum Institute) quality level "CD" – U.S.A. Military specification – MIL-L-2104C or preferably, A.P.I. quality "SF/CD" – U.S.A. Military specification MIL-L-2104D.

Choose the correct viscosity grade from the chart on the right.

**NOTE:** In areas where prolonged periods of extreme temperatures are encountered, local lubricant practices are acceptable; such as the use of SAE 5W in extreme low temperatures or SAE 50 in extreme high temperatures.

The engine oil change period is shown on page 13 of Section B. However, locally available fuel may have a high sulfur content, in which case the oil change period should be adjusted as follows:-



**Sulfur Content %**

Below 0.5

0.5 – 1.0

1.0 – 1.3

The use of a fuel with a sulfur content above 1.3% is not recommended.

**Oil Change Period**

Normal

Half the normal

One quarter normal

Hydrostatic Steering Reservoir

Ford M2C134-D/C

Belt Pulley

Ford M2C134-D/C

Four Wheel Drive Differential  
Casing and Front Hubs

Ford M2C134-D/C

Front Wheel Bearings (2wd)  
and Lubrication Fittings

Ford M1C75-A/B  
or M1C137-B

Constant Mesh Transmission (8 x 2)

Ford M2C134-D/C

Shuttle Shift Transmission (8 x 8 or 16 x 8)

Ford M2C134-D only

Rear Axle

Ford M2C134-D/C

## FOUR WHEEL DRIVE

**NOTE:** The tires fitted to tractors with optional four wheel drive have been carefully selected to match the gearing of the transmission and axles. When renewing worn or damaged tires, always install tires of the same make, model and size as those removed. The installation of other tire combinations may result in excessive tire wear, loss of useable power or severe damage to drive line components. If in doubt, consult your Ford New Holland dealer. See the following pages for tire pressure and load tables.



## FRONT TIRE PRESSURES AND PERMISSIBLE LOADS (two wheel drive only)

The following charts give the carrying capacity of the axle at the tire pressures indicated.

Tire Size	Ply Rating	Inflation Pressures – lbf/in <sup>2</sup>									
		24	26	29	33	36	41	45	48	54	56
		Load Capacity per axle – lb									
5.50 – 16	6	–	1540	1650	1770	1860	2000	2120	2190	2330	–
6.00 – 16	4	–	1710	1830	1960	–	–	–	–	–	–
	6	–	1710	1830	1960	2060	2250	2380	2480	–	–
6.00 – 19	6	–	1930	2070	2225	2365	2520	2715	2830	–	–
6.50 – 16	6	1900	2000	2175	2330	2420	2625	2780	–	–	–
7.50 – 16	6	–	2500	2665	2880	3040	3315	–	–	–	–
	8	–	2500	2665	2880	3040	3315	3465	3625	3860	–
7.50 – 18	6	–	2700	2890	3120	3280	3600	–	–	–	–
9.00 – 10	4	2460	–	–	–	–	–	–	–	–	–
	10	2460	2570	2730	2940	3100	3340	3535	3680	3940	4020
10.00 – 16	8	3900	4080	4350	4700	4940	5260	–	–	–	–
11L – 15	6	3390	3560	3815	–	–	–	–	–	–	–
11L – 16	8	3200	3330	3680	4010	4300	4585	4870	–	–	–

Tire Size	Ply Rating	Inflation Pressures – (bar)									
		1.7	1.8	2.0	2.3	2.5	2.8	3.1	3.3	3.7	3.9
		Load Capacity per axle – (kg)									
5.50 – 16	6	–	700	750	810	850	900	960	990	1050	–
6.00 – 16	4	–	780	830	900	–	–	–	–	–	–
	6	–	780	830	900	940	1010	1080	1120	–	–
6.00 – 19	6	–	880	940	1020	1080	1160	1230	1280	–	–
6.50 – 16	6	890	915	985	1070	1105	1180	1260	–	–	–
7.50 – 16	6	–	1140	1210	1320	1390	1490	–	–	–	–
	8	–	1140	1210	1320	1390	1490	1570	1640	1740	–
7.50 – 18	6	–	1230	1310	1430	1500	1620	–	–	–	–
9.00 – 10	4	1115	–	–	–	–	–	–	–	–	–
	10	1115	1165	1240	1335	1405	1515	1605	1670	1790	1820
10.11 – 16	8	1770	1850	1975	2130	2240	2385	–	–	–	–
11L – 15	6	1575	1630	1730	–	–	–	–	–	–	–
11L – 16	8	1500	1560	1670	1820	1950	2080	2210	–	–	–

For 8.30 – 24, 9.50 – 20, 9.50 – 24, 11.2 – 24, 12.4 – 24 and 12.4 – 28 tires, see REAR TIRE PRESSURES AND PERMISSIBLE LOADS on the next two pages.

When front mounted implements are fitted, front tire loads may be increased by up to 35% with no increase in inflation pressure when operated at speeds not exceeding 12 mph (20 kph). At speeds not exceeding 5 mph (8 kph) the load on 6 and 8-ply front tires may be increased by 50% with no increase in inflation pressure.

The above tables are for guidance only. For exact information regarding inflation pressures and loads for your particular tires, consult your authorized Ford New Holland dealer.

# SPECIFICATIONS

## REAR TIRE PRESSURES AND PERMISSIBLE LOADS (Cross Ply Tires – including front tires on front wheel drive tractors)

The following charts give the carrying capacity of the axle at the tire pressures indicated.

Tire Size	Ply Rating	Inflation Pressures – psi														
		12	13	14	16	17	19	20	21	23	25	26	29	30	35	40
		Load Capacity per axle – lb														
8.30 – 24*	4	–	–	2110	2200	2310	2430	2540	2650	2760	–	–	–	–	–	–
	6	–	–	2110	2200	2310	2430	2540	2650	2760	2860	2950	3150	3260	3570	–
9.50 – 20*	6	–	–	2360	2510	2620	2780	2870	3000	3110	3220	3330	3570	3700	–	–
	8	–	–	2360	2510	2620	2780	2870	3000	3110	3220	3330	3570	3700	3890	4070
9.50 – 24*	4	–	–	2690	2820	2980	3130	3260	–	–	–	–	–	–	–	–
	6	–	–	2690	2820	2980	3130	3260	3360	3530	3640	3770	4010	4140	–	–
11.2 – 24*	6	–	–	–	3370	3550	3730	3920	4100	4260	4430	4610	–	–	–	–
	8	–	–	–	3370	3550	3730	3920	4100	4260	4430	4610	4870	5005	5400	–
12.4 – 24*	6	–	–	–	4160	4320	4540	4740	4890	5160	5290	–	–	–	–	–
12.4 – 28*	4	–	–	4120	4430	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	4120	4430	4630	5030	5030	5220	5420	5620	–	–	–	–	–
	8	–	–	–	4430	4630	5030	5030	5220	5420	5620	5800	6130	6300	6655	–
12.4 – 32	6	4055	4275	4390	4720	4940	5160	5380	5580	5780	5970	–	–	–	–	–
	8	4055	4275	4390	4720	4940	5160	5380	5580	5780	5970	6175	6525	6700	7075	–
12.4 – 36	6	4320	4540	4655	5000	5220	5450	5670	5890	6110	6350	–	–	–	–	–
	8	4320	4540	4655	5000	5220	5450	5670	5890	6110	6350	6525	6920	7100	7495	–
13.6 – 24	6	4100	4320	4540	4760	5000	5200	5440	5675	5910	–	–	–	–	–	–
	8	4100	4320	4540	4760	5000	5200	5440	5675	5910	6130	6370	6810	–	–	–
13.6 – 28	6	4370	4610	4850	5090	5340	5580	5820	6060	6310	–	–	–	–	–	–
	8	4370	4610	4850	5090	5340	5580	5820	6060	6310	6545	6790	7255	–	–	–
13.6 – 36	6	4850	5160	5470	5730	6000	6280	6570	6860	7120	–	–	–	–	–	–
	8	4850	5160	5470	5730	6000	6280	6570	6860	7120	7385	7650	8180	–	–	–
13.6 – 38	6	5050	5340	5620	5910	6200	6460	6750	7030	7320	–	–	–	–	–	–
	8	5050	5340	5620	5910	6200	6460	6750	7030	7320	7600	7890	8460	–	–	–
14.9 – 24	6	4940	5220	5510	5800	6080	6370	6660	–	–	–	–	–	–	–	–
	8	4940	5220	5510	5800	6080	6370	6660	6945	7230	7495	7760	–	–	–	–
14.9 – 28	6	5270	5580	5890	6190	6500	6810	7100	–	–	–	–	–	–	–	–
	8	5270	5580	5890	6190	6500	6810	7100	7385	7695	7980	8290	–	–	–	–
14.9 – 30	6	5445	5755	6085	6395	6700	7035	7340	–	–	–	–	–	–	–	–
	8	5445	5755	6085	6395	6700	7035	7340	7650	7960	8245	8555	–	–	–	–
15.5 – 38	6	5775	6120	6335	6790	7120	7450	7780	–	–	–	–	–	–	–	–
	8	5775	6120	6335	6790	7120	7450	7780	8000	8440	8870	9080	–	–	–	–
16.9 – 24	6	5865	6212	6570	7275	–	–	–	–	–	–	–	–	–	–	–
16.9 – 30	6	6440	6840	7230	7630	8000	8380	–	–	–	–	–	–	–	–	–
	8	6440	6840	7230	7630	8000	8380	8750	9150	9525	9900	–	–	–	–	–
16.9 – 34	8	6680	7140	7630	8090	8485	8885	9280	9825	10095	10535	–	–	–	–	–
18.4 – 16.1	6	4740	4970	5200	5620	–	–	–	–	–	–	–	–	–	–	–
18.4 – 26	6	7275	7780	8115	8775	–	–	–	–	–	–	–	–	–	–	–
18.4 – 30	8	7760	8290	8815	9345	9765	10205	10650	–	–	–	–	–	–	–	–

\* Fitted to the front wheels of four wheel drive tractors.

**REAR TIRE PRESSURES AND PERMISSIBLE LOADS (Cross Ply Tires – continued)**

Tire Size	Ply Rating	Inflation Pressures – bar														
		12	13	14	16	17	19	20	21	23	25	26	29	30	35	40
		Load Capacity per axle – kg														
8.30 – 24*	4	–	–	960	1000	1050	1100	1150	1200	1250	–	–	–	–	–	–
	6	–	–	960	1000	1050	1100	1150	1200	1250	1300	1340	1430	1480	1620	–
9.50 – 20*	6	–	–	1070	1140	1190	1260	1300	1360	1410	1460	1510	1620	1680	–	–
	8	–	–	1070	1140	1190	1260	1300	1360	1410	1460	1510	1620	1680	1760	1850
9.50 – 24*	4	–	–	1220	1280	1350	1420	1480	–	–	–	–	–	–	–	–
	6	–	–	1220	1280	1350	1420	1480	1540	1600	1650	1710	1820	1880	–	–
11.2 – 24*	6	–	–	–	1530	1610	1690	1780	1860	1930	2010	2090	–	–	–	–
	8	–	–	–	1530	1610	1690	1780	1860	1930	2010	2090	2210	2270	2450	–
12.4 – 24*	6	–	–	–	1890	1960	2060	2150	2220	2340	2400	–	–	–	–	–
12.4 – 28*	4	–	–	1870	2010	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	1870	2010	2100	2190	2280	2370	2460	2550	–	–	–	–	–
	8	–	–	1870	2010	2100	2190	2280	2370	2460	2550	2630	2780	2860	3020	–
12.4 – 32	6	1840	1940	2040	2140	2240	2340	2440	2530	2620	2710	–	–	–	–	–
	8	1840	1940	2040	2140	2240	2340	2440	2530	2620	2710	2800	2960	3040	3210	–
12.4 – 36	6	1960	2060	2160	2270	2370	2470	2570	2670	2770	2880	–	–	–	–	–
	8	1960	2060	2160	2270	2370	2470	2570	2670	2770	2880	2960	3140	3220	3400	–
13.6 – 24	6	1860	1960	2060	2160	2270	2360	2470	2600	2680	–	–	–	–	–	–
	8	1860	1960	2060	2160	2270	2360	2470	2600	2680	2780	2890	3090	–	–	–
13.6 – 28	6	1980	2090	2200	2310	2420	2530	2640	2750	2860	–	–	–	–	–	–
	8	1980	2090	2200	2310	2420	2530	2640	2750	2860	2970	3080	3290	–	–	–
13.6 – 36	6	2210	2340	2480	2610	2730	2850	2980	3110	3230	–	–	–	–	–	–
	8	2210	2340	2480	2610	2730	2850	2980	3110	3230	3350	3470	3710	–	–	–
13.6 – 38	6	2290	2420	2550	2680	2810	2930	3060	3190	3320	–	–	–	–	–	–
	8	2290	2420	2550	2680	2810	2930	3060	3190	3320	3450	3580	3840	–	–	–
14.9 – 24	6	2240	2370	2500	2630	2760	2890	3020	–	–	–	–	–	–	–	–
	8	2240	2370	2500	2630	2760	2890	3020	3150	3280	3400	3520	–	–	–	–
14.9 – 28	6	2390	2530	2670	2810	2950	3090	3220	–	–	–	–	–	–	–	–
	8	2390	2530	2670	2810	2950	3090	3220	3350	3490	3620	3760	–	–	–	–
14.9 – 30	6	2470	2610	2760	2900	3040	3190	3330	–	–	–	–	–	–	–	–
	8	2470	2610	2760	2900	3040	3190	3330	3470	3610	3740	3880	–	–	–	–
15.5 – 38	6	2620	2775	2930	3080	3230	3380	3530	–	–	–	–	–	–	–	–
	8	2620	2775	2930	3080	3230	3380	3530	3630	3830	4025	4120	–	–	–	–
16.9 – 24	6	2660	2820	2980	3140	3300	–	–	–	–	–	–	–	–	–	–
16.9 – 30	6	2920	3105	3280	3460	3630	3800	–	–	–	–	–	–	–	–	–
	8	2920	3105	3280	3460	3630	3800	3970	4150	4320	4490	–	–	–	–	–
16.9 – 34	8	3090	3275	3460	3650	3850	4030	4210	4400	4580	4760	–	–	–	–	–
18.4 – 16.1	6	2080	2260	2440	2540	–	–	–	–	–	–	–	–	–	–	–
18.4 – 26	6	3400	3590	3780	3980	–	–	–	–	–	–	–	–	–	–	–
18.4 – 30	8	3650	3845	4040	4240	4440	4630	4830	–	–	–	–	–	–	–	–

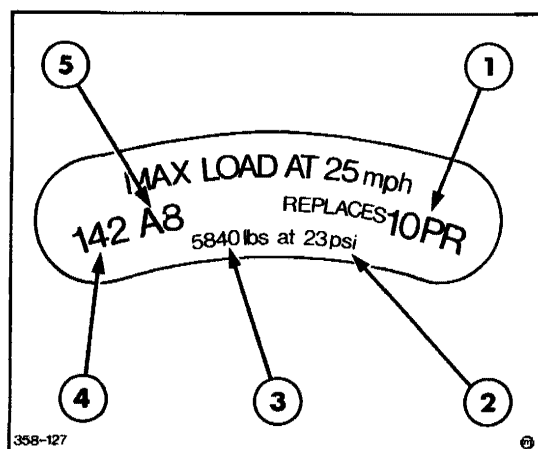
\* Fitted to the front wheels of four wheel drive tractors.

To avoid the possibility of tire to rim creep, tire pressure below 14 psi (1.0 bar) should not be used with cross ply tires for operations having a high torque requirement, e.g. sub-soiling, plowing, heavy cultivation, etc. When mounted implements are used, rear tire loads may be increased by up to 20% with no increase in inflation pressure when operated at speeds not exceeding 12 mph (20 kph).

The above tables are for guidance only. For exact information regarding inflation pressures and loads for your particular tires, consult your authorized Ford New Holland dealer.

# SPECIFICATIONS

## REAR TIRE PRESSURES AND PERMISSIBLE LOADS (Radial tires – including front tires on four wheel drive tractors)



1. Typical Side Wall Markings

1. Old ply rating mark
2. Maximum inflation pressure (in psi)
3. Maximum load at 25 MPH
4. Load Index
5. Speed Symbol

Radial tire performance is now denoted by a Load Index and Speed Symbol replacing the Ply Rating commonly found on cross ply tires. Figure 1 shows typical markings to be found on the side wall of radial ply tires.

**NOTE:** All tires fitted to Ford tractors have a Speed symbol 'A8' and are therefore suitable for speeds up to 25 MPH (40km/h).

The maximum load that may be carried by the tire is dependent upon the Load Index shown on the side wall. In the following charts the loads given are for individual tires operated at speeds up to 19 MPH (30 km/h). The right-hand (shaded) column indicates the maximum load at speeds up to 25 MPH (40 km/h).

Load Index	Inflation Pressure – psi									
	12	13	15	16	17	18	20	22	23	25
Load Capacity per TIRE – lb										
107	1500	1600	1695	1795	1895	2005	2105	2205	2315	2450
109	1585	1685	1795	1895	2005	2115	2215	2325	2430	2570
114	1830	1950	2070	2180	2315	2425	2545	2665	2780	2920
116	1950	2070	2195	2325	2460	2580	2700	2820	2955	3100
119	2125	2250	2405	2525	2665	2800	2945	3065	3205	3360
121	2250	2380	2535	2690	2830	2985	3130	3275	3430	3595
122	2305	2470	2610	2790	2930	3085	3230	3385	3540	3705
123	2360	2525	2690	2855	3010	3150	3340	3495	3655	3820
124	2435	2600	2775	2945	3110	3285	3450	3615	3780	3955
126	2580	2755	2945	3120	3295	3485	3660	3835	4010	4195
127	2645	2830	3020	3195	3385	3570	3770	3925	4135	4360
128	2710	2910	3110	3295	3485	3680	3870	4055	4245	4450
134	3185	3415	3650	3880	4090	4330	4550	4770	5005	5255
135	3330	3560	3790	4025	4230	4475	4695	4915	5145	5395
136	3415	3660	3890	4135	4355	4585	4815	5050	5280	5530
137	3538	3770	4010	4245	4485	4715	4950	5180	5425	5675
139	3780	4025	4265	4520	4750	5005	5245	5500	5730	5985
141	4010	4265	4530	4785	5050	5315	5555	5820	6085	6355
142	4133	4385	4660	4915	5190	5465	5720	5975	6250	6530
144	4365	4650	4940	5200	5490	5765	6050	6360	6615	6895
146	4595	4905	5225	5535	5840	6150	6460	6770	7075	7395
153	5565	5950	6340	6715	7085	7475	7860	8280	8610	8955
155	5895	6315	6715	7110	7530	7925	8335	8730	9150	9540
157	6250	6690	7130	7560	8000	8430	8860	9390	9735	10195
159	6615	7075	7535	8015	8475	8950	9390	9865	10330	10815
166	8145	8695	9235	9775	10330	10880	11420	11960	12510	13085

The above table is for guidance only. For exact information regarding inflation pressures and loads for your particular tires, consult your authorized Ford New Holland dealer.

## REAR TIRE PRESSURES AND PERMISSIBLE LOADS (Radial tires – including front tires on four wheel drive tractors) (continued)

Load Index	Inflation Pressure – (bar)									
	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6
	Load Capacity per TIRE – kg									
107	680	725	770	815	860	910	955	1000	1050	975
109	720	765	815	860	910	960	1005	1055	1100	1030
114	830	885	940	990	1050	1100	1155	1210	1260	1180
116	885	940	995	1055	1115	1170	1225	1280	1340	1250
119	965	1020	1090	1145	1210	1270	1335	1390	1455	1360
121	1020	1080	1150	1220	1285	1355	1420	1485	1555	1450
122	1045	1120	1185	1265	1330	1400	1465	1535	1605	1500
123	1070	1145	1220	1295	1365	1430	1515	1585	1660	1550
124	1105	1180	1260	1335	1410	1490	1565	1640	1715	1600
126	1170	1250	1335	1415	1495	1580	1660	1740	1820	1700
127	1200	1285	1370	1450	1535	1620	1710	1780	1875	1750
128	1230	1320	1410	1495	1580	1670	1755	1840	1926	1800
134	1445	1550	1655	1760	1855	1965	2065	2165	2270	2120
135	1510	1615	1720	1825	1920	2030	2130	2230	2335	2180
136	1550	1660	1765	1875	1875	2080	2185	2290	2395	2240
137	1605	1710	1820	1925	2035	2140	2245	2350	2460	2300
139	1715	1825	1935	2050	2155	2270	2380	2495	2600	2430
141	1820	1935	2055	2170	2290	2410	2520	2640	2760	2575
142	1875	1990	2115	2230	2355	2480	2595	2710	2836	2650
144	1980	2110	2240	2360	2490	2615	2745	2975	3000	2800
146	2085	2225	2370	2510	2650	2790	2930	3070	3210	3000
153	2525	2700	2875	3045	3215	3390	3565	3755	3905	3650
155	2675	2865	3045	3225	3415	3595	3780	3960	4150	3875
157	2835	3035	3235	3430	3630	3825	4020	4260	4415	4125
159	3000	3210	3420	3635	3845	4060	4260	4475	4685	4375
166	3695	3945	4190	4435	4685	4935	5180	5425	5675	5300

The above table is for guidance only. For exact information regarding inflation pressures and loads for your particular tires, consult your authorized Ford New Holland dealer.

## ROAD SPEEDS (Constant Mesh Transmission)

The following charts show the road speeds in MPH and km/h for 3430 and 3930 tractors with Constant Mesh transmission, fitted with 13.6 – 28 rear tires. If the rear tires of your tractor are of a different size, multiply the road speeds shown in the printed charts by the following conversion factors:

Tire size:	12.4 – 28	12.4 – 32	14.9 – 24	14.9 – 28	16.9 – 24	16.9 – 30
Factor:	0.967	1.049	0.967	1.049	1.016	1.139

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

# SPECIFICATIONS

## ROAD SPEEDS (Constant Mesh Transmission – continued)

Ford 3430 and 3930 with Constant Mesh transmission and 13.6 – 28 rear tires

Gear	Miles per hour			Miles per hour		
	Engine Speed (rev/min)			Engine Speed (rev/min)		
	1200	1800	2000	1200	1800	2000
<b>1</b>	1.04	1.56	1.73			
<b>2</b>	1.30	1.94	2.16			
<b>3</b>	2.27	3.41	3.79			
<b>4</b>	3.09	4.64	5.16			
<b>5</b>	3.70	5.56	6.18			
<b>6</b>	4.62	6.94	7.71			
<b>7</b>	8.11	12.17	13.52			
<b>8</b>	11.09	16.63	18.49			
<b>Low Reverse</b>	1.49	2.24	2.49			
<b>High Reverse</b>	5.33	8.00	8.89			

Ford 3430 and 3930 with Constant Mesh transmission and 13.6 – 28 rear tires

Gear	Kilometers per hour			Kilometers per hour		
	Engine Speed (rev/min)			Engine Speed (rev/min)		
	1200	1800	2000	1200	1800	2000
<b>1</b>	1.67	2.51	2.79			
<b>2</b>	2.09	3.13	3.48			
<b>3</b>	3.66	5.49	6.10			
<b>4</b>	4.98	7.47	8.30			
<b>5</b>	5.96	8.94	9.94			
<b>6</b>	7.44	11.17	12.41			
<b>7</b>	13.05	19.58	21.76			
<b>8</b>	17.85	26.77	29.75			
<b>Low Reverse</b>	2.40	3.60	4.00			
<b>High Reverse</b>	8.58	12.87	14.30			

## ROAD SPEEDS (Constant Mesh Transmission – continued)

The following charts show the road speeds in MPH and km/h for 4630 and 5030 tractors with Constant Mesh transmission, fitted with 12.4 – 32 or 14.9 – 28 rear tires (these two tire sizes have the same rolling radius). If the rear tires of your tractor are of a different size, multiply the road speeds shown in the printed charts by the following conversion factors:

Tire size:	12.4 – 28	12.4 – 36	13.6 – 28	13.6 – 36	14.9 – 24	14.9 – 30
Factor:	0.922	1.078	0.953	1.117	0.922	1.039
Tire size:	16.9 – 24	16.9 – 30	16.9 – 34	18.4 – 26	18.4 – 30	
Factor:	0.969	1.086	1.164	1.047	1.125	

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

### Ford 4630 and 5030 with Constant Mesh transmission and 12.4 – 32 or 14.9 – 28 rear tires

Gear	Miles per hour			Miles per hour		
	Engine Speed (rev/min)			Engine Speed (rev/min)		
	1200	1800	2200	1200	1800	2200
1	0.79	1.18	1.45			
2	0.98	1.48	1.80			
3	1.73	2.59	3.17			
4	2.35	3.52	4.31			
4	2.81	4.23	5.16			
6	3.52	5.28	6.44			
7	6.17	9.25	11.31			
8	8.40	12.60	15.40			
Low Reverse	1.13	1.70	2.08			
High Reverse	4.05	6.08	7.43			

### Ford 4630 and 5030 with Constant Mesh transmission and 12.4 – 32 or 14.9 – 28 rear tires

Gear	Kilometers per hour			Kilometers per hour		
	Engine Speed (rev/min)			Engine Speed (rev/min)		
	1200	1800	2200	1200	1800	2200
1	1.27	1.90	2.33			
2	1.58	2.38	2.90			
3	2.78	4.17	5.10			
4	3.78	5.67	6.94			
4	4.53	6.80	8.31			
6	5.66	8.49	10.37			
7	9.93	14.89	18.20			
8	13.52	20.28	24.78			
Low Reverse	1.82	2.74	3.34			
High Reverse	6.52	9.78	11.95			

# SPECIFICATIONS

## ROAD SPEEDS (Synchronized Shuttle Shift Transmission)

The following chart shows the road speeds in MPH for 3430 and 3930 tractors with Synchronized Shuttle Shift transmission, fitted with 13.6 – 28 rear tires. If the rear tires of your tractor are of a different size, multiply the road speeds shown in the printed charts by the following conversion factors:

<b>Tire size:</b>	<b>12.4 – 28</b>	<b>12.4 – 32</b>	<b>14.9 – 24</b>	<b>14.9 – 28</b>	<b>16.9 – 24</b>	<b>16.9 – 30</b>
<b>Factor:</b>	0.967	1.049	0.967	1.049	1.016	1.139

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

### Ford 3430 and 3930 with Synchronized Shuttle Shift transmission and 13.6 – 28 rear tires

Gear			Miles per hour			Miles per hour		
			Engine Speed (rev/min)			Engine Speed (rev/min)		
			1400	1750	2000	1400	1750	2000
<b>L</b>	<b>1</b>	<b>Dual Power</b>	0.86	1.07	1.22			
		<b>Direct Drive</b>	1.06	1.32	1.52			
	<b>2</b>	<b>Dual Power</b>	1.27	1.58	1.81			
		<b>Direct Drive</b>	1.57	1.96	2.24			
	<b>3</b>	<b>Dual Power</b>	1.93	2.42	2.77			
		<b>Direct Drive</b>	2.39	2.98	3.42			
	<b>4</b>	<b>Dual Power</b>	2.83	3.55	4.06			
		<b>Direct Drive</b>	3.03	4.38	5.02			
<b>H</b>	<b>5</b>	<b>Dual Power</b>	3.02	3.77	4.32			
		<b>Direct Drive</b>	3.29	4.65	5.34			
	<b>6</b>	<b>Dual Power</b>	4.48	5.60	6.41			
		<b>Direct Drive</b>	5.54	6.92	7.91			
	<b>7</b>	<b>Dual Power</b>	6.85	8.56	9.76			
		<b>Direct Drive</b>	8.42	10.53	12.05			
	<b>8</b>	<b>Dual Power</b>	10.02	12.53	14.33			
		<b>Direct Drive</b>	12.38	15.48	17.70			
<b>R</b>	<b>1</b>	<b>Low</b>	1.05	1.32	1.51			
		<b>High</b>	3.71	4.64	5.31			
	<b>2</b>	<b>Low</b>	1.56	1.95	2.23			
		<b>High</b>	5.51	6.88	7.87			
	<b>3</b>	<b>Low</b>	2.38	2.97	3.40			
		<b>High</b>	8.42	10.53	11.99			
	<b>4</b>	<b>Low</b>	3.49	4.37	5.00			
		<b>High</b>	12.38	15.48	17.62			

If your tractor does not have Dual Power then please ignore the line preceded by the words 'Dual Power'.



## ROAD SPEEDS (Synchronized Shuttle Shift Transmission – continued)

The following chart shows the road speeds in km/h for 3430 and 3930 tractors with Synchronized Shuttle Shift transmission, fitted with 13.6 – 28 rear tires. If the rear tires of your tractor are of a different size, multiply the road speeds shown in the printed charts by the following conversion factors:

<b>Tire size:</b>	<b>12.4 – 28</b>	<b>12.4 – 32</b>	<b>14.9 – 24</b>	<b>14.9 – 28</b>	<b>16.9 – 24</b>	<b>16.9 – 30</b>
<b>Factor:</b>	0.967	1.049	0.967	1.049	1.016	1.139

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

### Ford 3430 and 3930 with Synchronized Shuttle Shift transmission and 13.6 – 28 rear tires

Gear			Kilometers per hour			Kilometers per hour		
			Engine Speed (rev/min)			Engine Speed (rev/min)		
			1400	1750	2000	1400	1750	2000
L	1	Dual Power	1.38	1.72	1.97			
		Direct Drive	1.70	2.13	2.44			
	2	Dual Power	2.04	2.55	2.92			
		Direct Drive	2.52	3.15	3.61			
	3	Dual Power	3.11	3.89	4.46			
		Direct Drive	3.84	4.80	5.50			
	4	Dual Power	4.56	5.72	6.54			
		Direct Drive	4.87	7.05	8.08			
H	5	Dual Power	4.86	6.07	6.96			
		Direct Drive	5.29	7.49	8.59			
	6	Dual Power	7.21	9.01	10.31			
		Direct Drive	8.91	11.14	12.73			
	7	Dual Power	11.02	13.77	15.71			
		Direct Drive	13.55	16.94	19.40			
	8	Dual Power	16.13	20.16	23.07			
		Direct Drive	19.93	24.91	28.49			
R	1	Low	1.69	2.12	2.43			
		High	5.97	7.46	8.55			
	2	Low	2.51	3.14	3.59			
		High	8.86	11.07	12.67			
	3	Low	3.83	4.78	5.47			
		High	13.55	16.94	19.30			
	4	Low	5.62	7.03	8.04			
		High	19.93	24.91	28.35			

If your tractor does not have Dual Power then please ignore the line preceded by the words 'Dual Power'.

# SPECIFICATIONS

## ROAD SPEEDS (Synchronized Shuttle Shift Transmission – continued)

The following chart shows the road speeds in MPH for 4630 and 5030 tractors with Synchronized Shuttle Shift transmission, fitted with 12.4 – 32 or 14.9 – 28 rear tires (these two tire sizes have the same rolling radius). If the rear tires of your tractor are of a different size, multiply the road speeds shown in the printed charts by the following conversion factors:

<b>Tire size:</b>	<b>12.4 – 28</b>	<b>12.4 – 36</b>	<b>13.6 – 28</b>	<b>13.6 – 36</b>	<b>14.9 – 24</b>	<b>14.9 – 30</b>
<b>Factor:</b>	0.922	1.078	0.953	1.117	0.922	1.039
<b>Tire size:</b>	<b>16.9 – 24</b>	<b>16.9 – 30</b>	<b>16.9 – 34</b>	<b>18.4 – 26</b>	<b>18.4 – 30</b>	
<b>Factor:</b>	0.969	1.086	1.164	1.047	1.125	

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

**Ford 4630 and 5030 with Synchronized Shuttle Shift transmission and 12.4 – 32 or 14.9 – 28 rear tires**

Gear			Miles per hour			Miles per hour		
			Engine Speed (rev/min)			Engine Speed (rev/min)		
			1400	1750	2200	1400	1750	2200
L	1	Dual Power	0.72	0.89	1.12			
		Direct Drive	0.88	1.10	1.39			
	2	Dual Power	1.06	1.32	1.66			
		Direct Drive	1.30	1.63	2.05			
	3	Dual Power	1.61	2.01	2.53			
		Direct Drive	1.98	2.48	3.13			
	4	Dual Power	2.35	2.95	3.72			
		Direct Drive	2.91	3.64	4.59			
H	5	Dual Power	2.51	3.13	3.95			
		Direct Drive	3.09	3.87	4.88			
	6	Dual Power	3.72	4.65	5.85			
		Direct Drive	4.60	5.75	7.23			
	7	Dual Power	5.69	7.11	8.92			
		Direct Drive	7.00	8.74	11.01			
	8	Dual Power	8.33	10.41	13.10			
		Direct Drive	10.29	12.86	16.17			
R	1	Low	0.88	1.09	1.38			
		High	3.08	3.85	4.85			
	2	Low	1.30	1.62	2.04			
		High	4.57	5.72	7.19			
	3	Low	1.98	2.47	3.11			
		High	6.99	8.74	10.95			
	4	Low	2.90	3.63	4.56			
		High	10.29	12.86	16.09			

If your tractor does not have Dual Power then please ignore the line preceded by the words 'Dual Power'.

## ROAD SPEEDS (Synchronized Shuttle Shift Transmission – continued)

The following chart shows the road speeds in km/h for 4630 and 5030 tractors with Synchronized Shuttle Shift transmission, fitted with 12.4 – 32 or 14.9 – 28 rear tires (these two tire sizes have the same rolling radius). If the rear tires of your tractor are of a different size, **multiply** the road speeds shown in the printed charts by the following conversion factors:

<b>Tire size:</b>	<b>12.4 – 28</b>	<b>12.4 – 36</b>	<b>13.6 – 28</b>	<b>13.6 – 36</b>	<b>14.9 – 24</b>	<b>14.9 – 30</b>
<b>Factor:</b>	<b>0.922</b>	<b>1.078</b>	<b>0.953</b>	<b>1.117</b>	<b>0.922</b>	<b>1.039</b>
<b>Tire size:</b>	<b>16.9 – 24</b>	<b>16.9 – 30</b>	<b>16.9 – 34</b>	<b>18.4 – 26</b>	<b>18.4 – 30</b>	
<b>Factor:</b>	<b>0.969</b>	<b>1.086</b>	<b>1.164</b>	<b>1.047</b>	<b>1.125</b>	

**NOTE:** For your convenience, the right-hand side of each chart has been left blank so, should your tractor have rear tires of a different size, you may insert your own calculated road speeds.

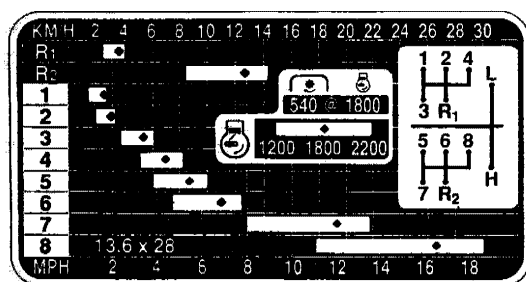
**Ford 4630 and 5030 with Synchronized Shuttle Shift transmission and 12.4 – 32 or 14.9 – 28 rear tires**

Gear			Kilometers per hour			Kilometers per hour		
			Engine Speed (rev/min)			Engine Speed (rev/min)		
			1400	1750	2200	1400	1750	2200
<b>L</b>	<b>1</b>	<b>Dual Power</b>	1.15	1.43	1.80			
		<b>Direct Drive</b>	1.41	1.77	2.23			
	<b>2</b>	<b>Dual Power</b>	1.70	2.12	2.67			
		<b>Direct Drive</b>	2.10	2.62	3.30			
	<b>3</b>	<b>Dual Power</b>	2.59	3.24	4.07			
		<b>Direct Drive</b>	3.19	3.99	5.03			
	<b>4</b>	<b>Dual Power</b>	3.79	4.74	5.98			
		<b>Direct Drive</b>	4.69	5.86	7.38			
<b>H</b>	<b>5</b>	<b>Dual Power</b>	4.04	5.04	6.36			
		<b>Direct Drive</b>	4.98	6.23	7.85			
	<b>6</b>	<b>Dual Power</b>	5.99	7.48	9.42			
		<b>Direct Drive</b>	7.41	9.26	11.63			
	<b>7</b>	<b>Dual Power</b>	9.15	11.44	14.35			
		<b>Direct Drive</b>	11.26	14.07	17.72			
	<b>8</b>	<b>Dual Power</b>	13.40	16.76	21.08			
		<b>Direct Drive</b>	16.56	20.70	26.03			
<b>R</b>	<b>1</b>	<b>Low</b>	1.41	1.76	2.22			
		<b>High</b>	4.96	6.20	7.81			
	<b>2</b>	<b>Low</b>	2.09	2.61	3.28			
		<b>High</b>	7.36	9.20	11.57			
	<b>3</b>	<b>Low</b>	3.18	3.98	5.00			
		<b>High</b>	11.25	14.07	17.63			
	<b>4</b>	<b>Low</b>	4.67	5.84	7.34			
		<b>High</b>	16.56	20.70	25.90			

If your tractor does not have Dual Power then please ignore the line preceded by the words 'Dual Power'.

# SPECIFICATIONS

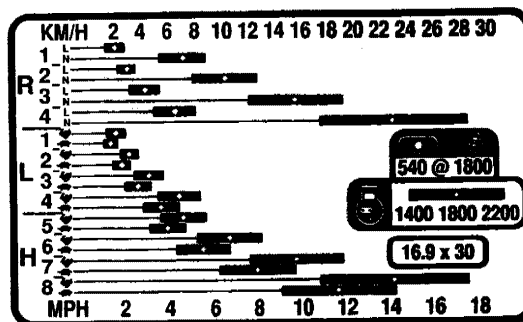
## ROAD SPEEDS (continued)



## ROAD SPEED DECAL

A decal similar to one of those shown above is affixed to the right-hand fender. The decals illustrate the P.T.O./engine speeds and the road speed in all ratios at three alternative engine speeds.

The particular example on the left-hand side is for a tractor with constant mesh transmission (8 forward and 2 reverse ratios) having a rated speed of 2200 rev/min. and fitted with 13.6 – 28 rear tires. To find the road speed at, for example, 1800 rev/min. in 7th. gear, follow the dot on the 7th. gear block down to the MPH line or up to the km/h line. In the example shown, the road speed indicated is 12.2 MPH or 19.6 km/h.



The decal on the right-hand side is for a tractor with Synchronized Shuttle Shift transmission and Dual Power (16 forward and 8 reverse ratios) having a rated speed of 2200 rev/min. and fitted with 16.9 – 30 rear tires. The hare and tortoise symbols on the decal represent direct drive and Dual Power, respectively.

To find the road speed at, say, 2200 rev/min. in 7th. gear, high range (H), direct drive, follow the right-hand edge of the 7th. gear block (hare symbol) down to the MPH line or up to the km/h lines. In the example shown, the road speed indicated is 12.0 MPH or 19.3 km/h.

## REDUCTION GEAR SET (creeper gears)

The reduction gear set offers additional transmission ratios with very low ground speeds. Constant mesh transmission offers reduction gear sets with a reduction ratio of 5.7 or 10:1.

The road speeds for constant mesh transmission are printed in the tables on pages 15 to 17 or you may have calculated the speeds for your tractor

and inserted the calculated figures into the appropriate table.

To obtain the ground speeds with creeper gears, divide the speeds in the first 4 forward gears and low reverse, by 5.7 or 10, according to the type of reduction gear set installed.

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