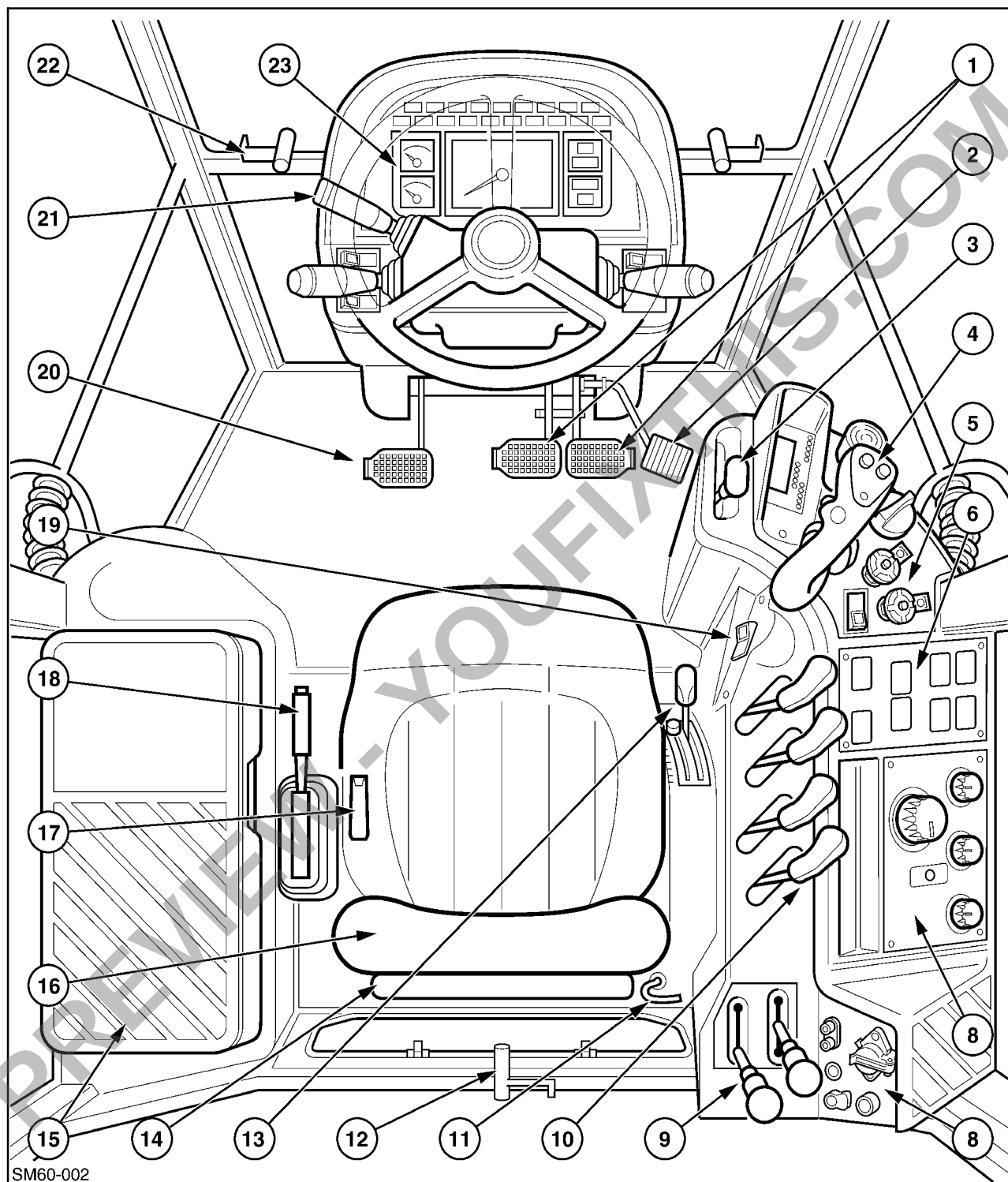


CAB AND PLATFORM CONTROLS



1 General View of Tractor Controls

LUBRICATION AND MAINTENANCE CHART

Service Interval	Operation No.	Maintenance Requirement	Check	Clean	Lube	Change	Adjust	Drain	Wash	Page No.
------------------	---------------	-------------------------	-------	-------	------	--------	--------	-------	------	----------

Blurred on purpose. The manual you buy has this page in full quality.

SECTION 8 SPECIFICATION

Blurred on purpose. The manual you buy has this page in full quality.

SYSTEM TROUBLE SHOOTING

The following information lists possible problems, their cause and corrective action. The systems are listed as follows:

Subject	Page	Subject	Page
Engine	5-2	Hydraulics	5-8
Transmission - Semi-Powershift	5-5	3-point linkage	5-9
Transmission - Hi Lo	5-6	Brakes	5-10
Transmission - Mechanical	5-7	Cab	5-10
		Electrical	5-11

ENGINE

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine will not start or is difficult to start	Incorrect starting procedure.	Review starting procedure.
	Low or no fuel.	Check fuel level.
	Air in fuel lines.	Bleed fuel system.
	Low ambient temperature.	Use cold starting aid.
	Contaminated fuel system.	Clean and bleed fuel system.
	Fuel pump inoperative.	Check fuse. If satisfactory, replace pump.
	Clogged fuel filter(s).	Replace fuel filter element(s).
	Malfunctioning fuel injectors.	See your authorised dealer.
	Malfunctioning fuel solenoid or solenoid relay.	See your authorised dealer.
	Incorrect engine oil viscosity.	Use correct viscosity oil.
Engine runs roughly and/or stalls	Incorrect fuel for operating temperature.	Use correct type fuel for temperature conditions.
	Slow starter speed.	See slow starter speed in Electrical.
	Clogged fuel filter(s).	Replace fuel filter element(s).
	Contaminated fuel system.	Clean and bleed fuel system.
	Fuel solenoid incorrectly adjusted.	See your authorised dealer.
	Fuel cap vent blocked.	Wash cap in clean fuel oil.

CONTENTS

Title	Page
Section 1 - General Information and Safety	
To the owner	1-1
Product identification	1-2
Ecology and the environment	1-4
Safety precautions	1-5
Safety decals	1-11
International symbols	1-14
Airborne noise emission	1-15
Section 2 - Controls, Instruments and Operation	
Cab	2-2
Seats	2-17
Handbrake, Throttle and Foot Controls	2-25
Instrument Console	2-27
Analogue and Analogue/Digital Instruments	2-30
Electronic Instrument Panel	2-36
Mechanical Transmission (16 x 16 and 20 x 16)	2-56
Hi Lo Transmission (24 x 12 and 23 x 12)	2-67
Semi-Powershift Transmission (18 x 6 and 17 x 6)	2-72
Electronic Management Unit	2-79
Power Take-Off	2-86
Mechanical Lower Link Sensing Hydraulics	2-89
Electronic Draft Control	2-90
Remote Control Valves	2-94
Section 3 - Field Operation	
Starting and Stopping the Engine	3-2
Rear Power Take-Off	3-8
Front Power Take-Off and Hydraulic Lift	3-17
Mechanical Lower Link Sensing Hydraulics	3-23
Electronic Draft Control	3-28
Remote Control Valves	3-34
Three-point Linkage	3-45
Front Wheel Track Adjustment	3-53
Rear Wheel Track Adjustment	3-60
Ballasting and Tyres	3-74
Section 4 - Lubrication and Maintenance	
General information	4-1
Lubrication and maintenance chart	4-6
Servicing when warning lights illuminate	4-7
10-hour/daily service	4-13
50-hour service	4-14
300-hour service	4-23
600-hour service	4-33
1200-hour/12 month service	4-37
1200-hour/24 month service	4-42
1800-hour service	4-46
General maintenance - as required	4-48

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** driving, operating or servicing the tractor. Equipment should be operated only by those who are responsible and instructed to do so.

PRECAUTIONARY STATEMENTS

Throughout this Manual you will see text in *italics*, preceded by the words **NOTE**, **ATTENTION**, **IMPORTANT CAUTION**, **WARNING** or **DANGER**. Such text has the following significance:

Machine Safety

NOTE: *This text stresses a correct operating technique or procedure.*

ATTENTION: *This text warns the operator of potential machine damage if a certain procedure is not followed.*

IMPORTANT: *This text informs the reader of something that he needs to know to prevent minor machine damage if a certain procedure is not followed.*

Personal Safety



CAUTION: The word **CAUTION** is used where a safe behavioural practice, according to operating and maintenance instructions and common safety practices will protect the operator and others from accident involvement.



WARNING: The word **WARNING** denotes a potential or hidden hazard which could possibly cause serious injury. It is used to warn operators and others to exercise due care and attention to avoid a surprise accident with machinery.

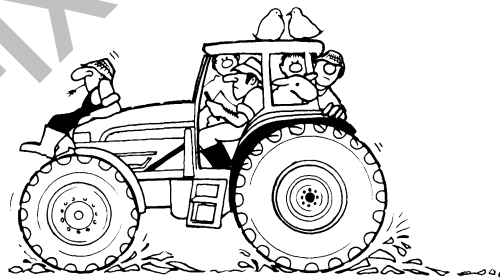


DANGER: The word **DANGER** denotes a forbidden practice in connection with a serious hazard.

Failure to follow the CAUTION, WARNING and DANGER instructions may result in serious bodily injury or even death.

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. To prevent falls, use the handrails and step plates when getting on and off the tractor. Keep steps and platform clear of mud and debris.
4. Replace all missing, illegible or damaged safety decals.
5. Keep safety decals free of dirt or grime.



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 passengers otherwise.
7. Keep children away from the tractor and farm machinery at all times.
8. 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 your dealer.
9. Install all guards before starting the engine or operating the tractor.

DRIVING THE TRACTOR

1. Always sit in the driver's seat while starting or driving the tractor.
2. When driving on public roads, have consideration for other road users. Pull in to the side of the road occasionally to allow any following traffic to pass. Do

Section 5 - Fault Finding

Introduction	5-1
Engine	5-2
Transmission - Semi-Powershift	5-5
Transmission - Hi Lo	5-6
Transmission - Mechanical	5-7
Hydraulics	5-8
3-point linkage	5-9
Brakes	5-10
Cab	5-10
Electrical	5-11

Section 6 - Vehicle Storage 6-1

Section 7 - Accessories

Safety Frame (ROPS)	7-2
Roof Beacon	7-3
Automatic Engine Shut Down	7-3
Hydraulic Trailer Brakes	7-4
Air-Operated Trailer Brakes	7-5
Walterscheid Hitch	7-7
Walterscheid Automatic Stabilisers	7-9
Sway Block Stabilisers	7-11
Drawbars and Towing Attachments	7-13

Section 8 - Specification

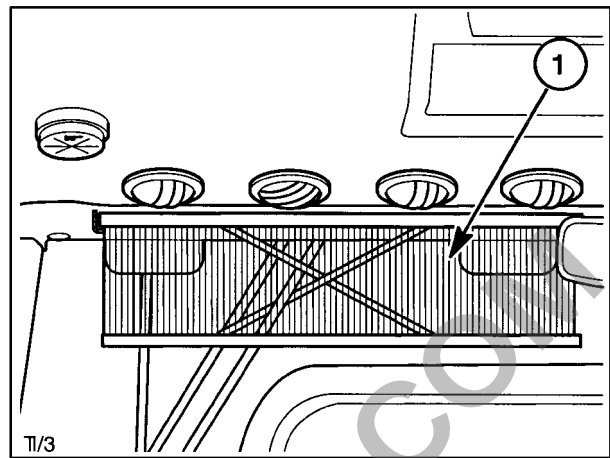
General Dimensions	8-1
Weight	8-4
Engine	8-5
Fuel System	8-5
Cooling System	8-6
Transmission Availability	8-6
Hydraulic System Availability	8-7
Three-Point Lift	8-7
Front Power Lift	8-8
Brakes	8-8
Steering	8-8
Maximum Operating Angle	8-8
Front Power Take-Off Availability	8-9
Rear Power Take-Off Availability	8-9
Electrical Equipment	8-10
Lubricant and Fluid Capacities	8-10
Lubricant and Fluid Specifications	8-12

Section 9 - First 50-hour Service Forms 9-5

Section 10 - Index 10-1

Sun Visor - Figure 11

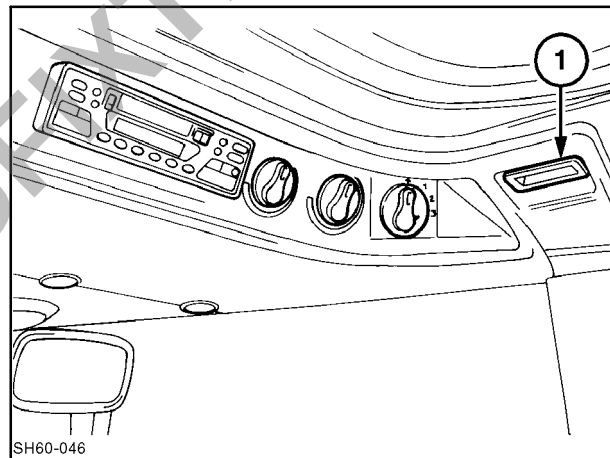
Pull down the sun visor (1) to protect the driver's eyes from the glare of the sun. The visor will remain in the chosen position. Push the visor up to retract.



11

Console Light - Figure 12

The light (1) provides a soft, red glow to the gear levers and hydraulic console. A switch is not provided. The light is illuminated when the key-start switch turned on.



12

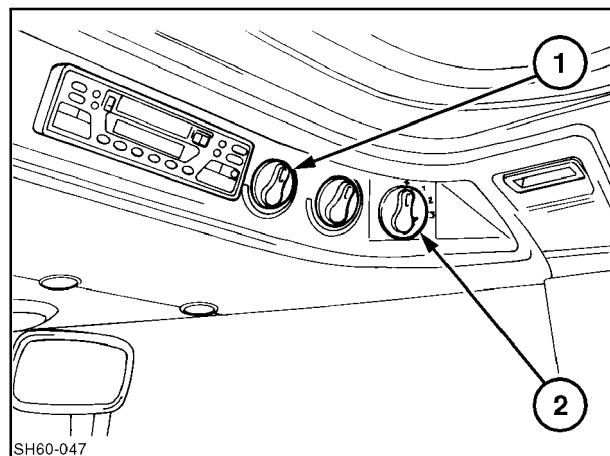
Heater Temperature Control - Figure 13

Turn the knob (1) clockwise to increase the temperature of the air from the heater. Turn fully anti-clockwise to obtain unheated air from the heater vents.

Blower Control - Figure 13

A 3-speed blower is installed for the heater. Turn the switch (2) clockwise to the first position for low speed. Further rotation of the switch in a clockwise direction selects the medium and fast speeds.

With the windows closed, the blower may be used to pressurise the cab to exclude dust etc. Provided that the cab air filters are serviced correctly, maximum pressurisation and optimum dust exclusion may be achieved by operating the blower with the recirculation vents closed. See Figure 14.



13



WARNING: The cab air filter is designed to remove dust from the air but may not exclude chemical vapour. Follow the chemical manufacturer's directions regarding protection from dangerous chemicals.

Malfunction Warning Light - Figures 68 and 69

In the unlikely event that a malfunction occurs in an electrical circuit, the malfunction warning light (1) Figure 68 will flash for approximately 5 seconds accompanied by an fault code in one of the LCD's (2) or (3).

To indicate the area of the malfunction, one of the three arrows (1), (2) or (3) Figure 69 will flash. The symbol immediately above each arrow indicates the main area in which the fault has occurred, as follows:

- a) Hydraulic lift system
- b) Transmission
- c) Any Electronic Management Unit function (PTO, differential locks FWD, etc.)

The code indicates the precise circuit or sensor in which the malfunction lies and the type of malfunction, e.g. short circuit, open circuit, sensor failure, etc.

Malfunctions are classified into two categories:

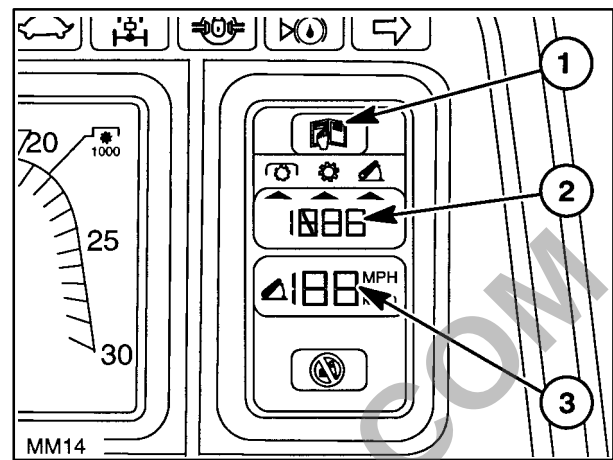
Critical

Non-critical.

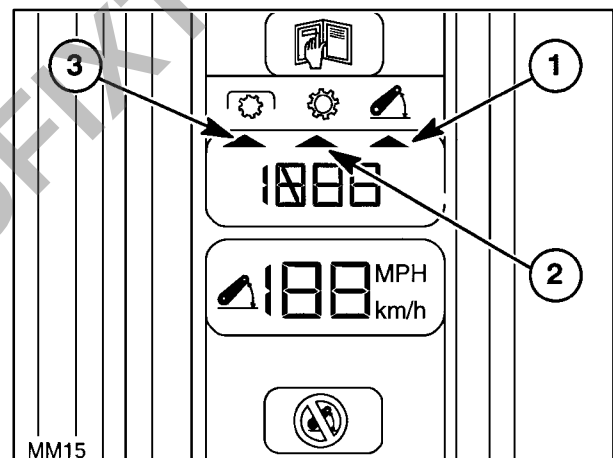
A critical fault will stop the tractor and the fault code and warning light will continue to flash until the fault is rectified or the key-start switch turned off.

A non-critical fault will cause the fault code and warning light to flash for approximately 5 seconds. The tractor may continue to be operated until it is convenient to correct the fault.

Every time the key-start switch is turned on, the malfunction warning light and fault code will flash for a short period.



68



69

GROUND SPEEDS in Miles per Hour at Rated Engine Speed (2200 rev/min.)

M100, M115, M135, 8160, 8260 and 8360 Tractors with 30 Kph 16 x 16 Transmission and 18.4 - 38, 520/70R - 38 or 600/65R - 38 Rear Tyres (these tyres have the same rolling radius)

	Shift Lever Positions	Miles per Hour at Rated Engine Speed	Miles per Hour at Rated Engine Speed
--	-----------------------	---	---

Blurred on purpose. The manual you buy has this page in full quality.

MECHANICAL LOWER LINK SENSING HYDRAULICS (open centre system)

INTRODUCTION

The hydraulic system described here is an open centre type that mechanically senses changes in the draft loading via the lower links of the 3-point linkage. The system allows the operator to select Position Control, Draft Control, a combination of the two or float. The function selected by the operator will depend on the type of implement in use and the operating conditions.

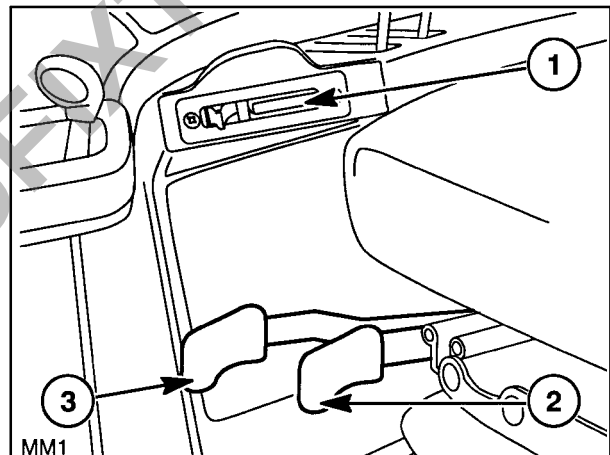
The system is controlled by the Draft Control lever (2) Figure 156, the Position Control lever (3) and the fast raise button (1). The fast raise button will fully raise the 3-point linkage (and attached implement) independently of the Position or Draft Control levers.

Position Control provides accurate and sensitive control of implements such as sprayers, rakes, mowers, etc., that operate above the ground. Once set, Position Control will maintain the selected implement height. Position Control may also be used with ground-engaging equipment but is not recommended. When in Position Control, the tractor and implement become, in effect, a rigid unit and undulations in the surface of the land will cause the tractor/implement combination to rise and fall.

Draft Control is most suitable for mounted or semi-mounted implements operating in the ground. Changes in the working depth or changes in soil resistance cause the draft loading on the implement to increase or decrease.

The change in draft loading is sensed mechanically. The lower links are mounted on a bar connected to the rear axle housing. Draft loadings cause the bar to flex slightly. The flexing is sensed by mechanical linkage that sends a signal to the hydraulic system causing it to respond by raising or lowering the implement to restore the original draft loading. In this way a uniform draft load is maintained on the implement.

For full operating instructions, see Section 3 – Field Operation.

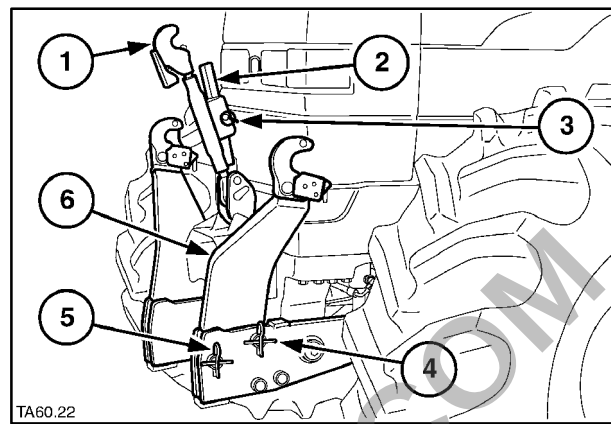


156

Transport Position - Figure 26

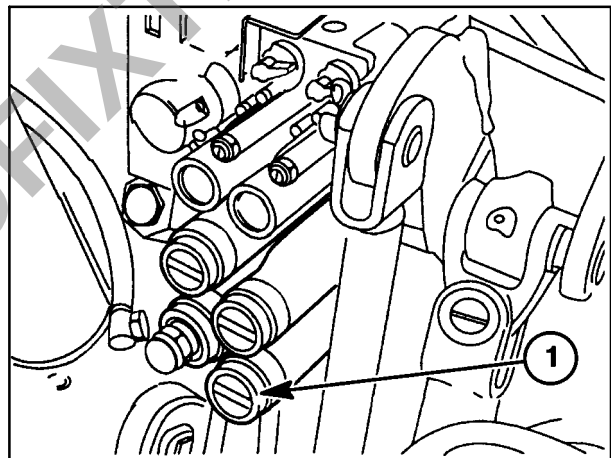
The top link and lower links should be pinned in the transport position when not in use. Raise the top link (1) Figure 26, to the vertical position and secure to the bar (2) with the linch pin (3).

Each lower link pivots about the pin (4). This pin should not be removed unless it is required to remove the lower links. Remove the lower pin from the lower link assembly and raise the lower link (6) to the vertical position, as shown. Insert the pin into the upper, front hole (5) when the holes in the inner and outer links are correctly aligned. Secure with the 'R' clip.

**26****Preparing for Use - Figures 27 to 30**

To provide oil flow for the front hitch, the hydraulic hose is connected into the lower coupling of remote control valve No. 1, see (1) Figure 27. When the front hitch is not in use, the coupler may be disconnected so that the remote control valve may be used for other implements.

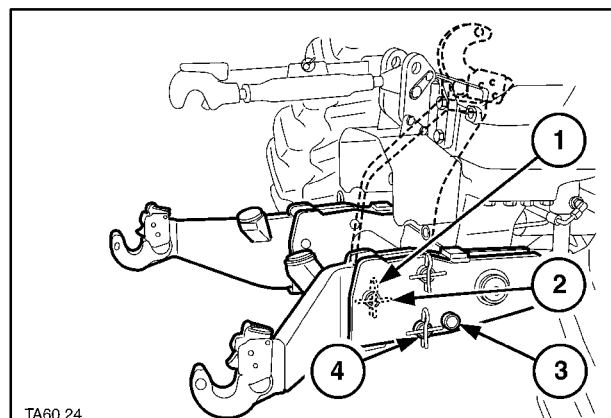
With the lower links in the transport position, remove the 'R' clip (1) Figure 28, pull out the pin (2) and manually lower the lower link down to the operating position, as shown. Install the removed pin in one of the holes (3) or (4), as required.

**27**

When installed in the rear hole (3), the lower link will be locked as a rigid unit. If the pin is installed in the front hole (4), as shown, the lower link will be allowed to move up and down freely (float) through a range of approx. 75 mm (3 in). Secure the pin with the 'R' clip.

Repeat on the other lower link, ensuring that both lower links are set up the same, i.e., both are locked as rigid units or both are allowed to float.

NOTE: With the lower links pinned in the float position, the left- and right-hand sides of the implement can move up and down independently to allow for operation on uneven surfaces. In addition, the remote control valve float function will allow the whole implement to move up or down as it passes over uneven ground.

**28**

THREE-POINT LINKAGE

NOTE: Before attaching equipment read the following text, carefully.

Description - Figure 82

The three-point linkage enables semi-mounted and fully mounted implements to be connected to the tractor, operated and controlled by the tractor hydraulic system. The linkage consists of two lower links (3) connected to a shaft in the rear axle housing. The rear ends of the lower links should be connected to the lower hitch pins on the implement. Various types of link end are available to aid implement connection.

The lower links are raised and lowered by means of the lift rods (2) connected to the lift arms. The lift arms may be readily adjusted to aid proper alignment of the implement to the tractor.

The top link (1) is connected to a bracket on the rear axle centre housing. The rear of the top link should be connected to the upper hitch pin of a mounted implement. The top link is also adjustable to aid implement alignment.

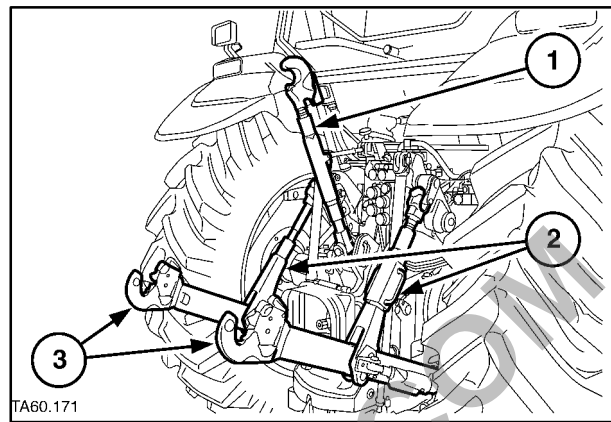
ATTACHING 3-POINT EQUIPMENT

NOTE: Before attaching equipment, adjust lift rods and select the correct top link hole for the implement and work to be carried out.

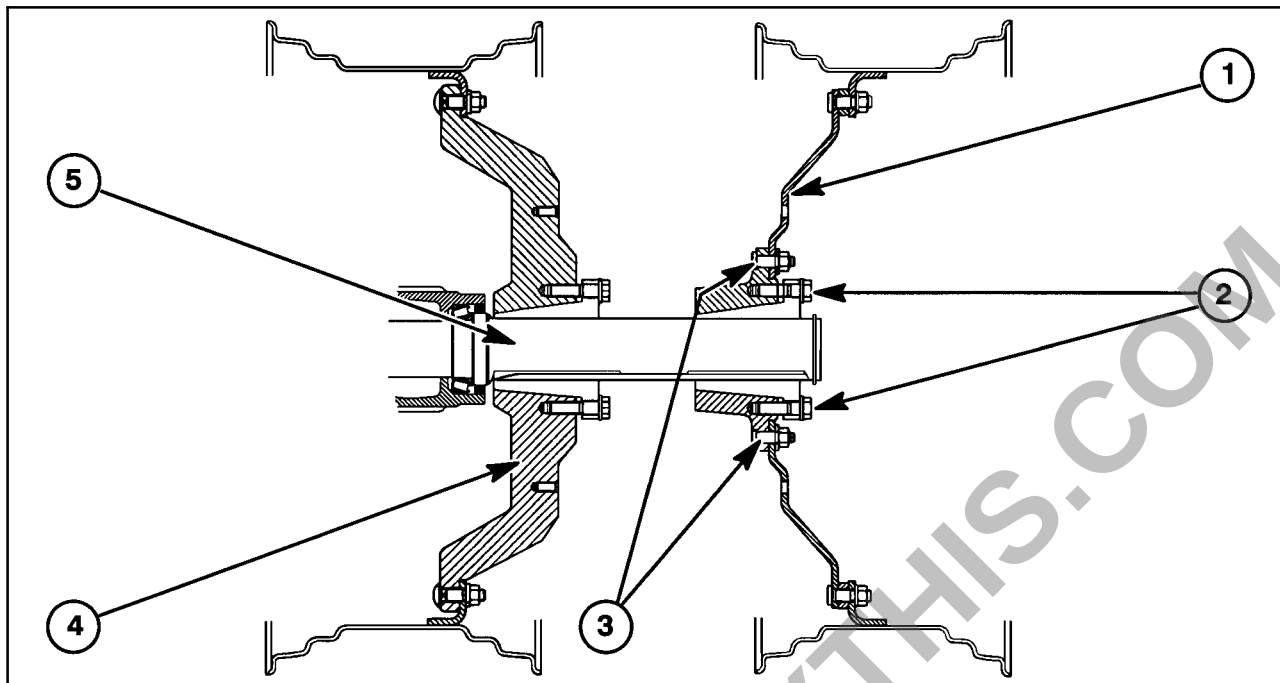
Ensure that the telescopic stabilisers or sway blocks are installed and correctly adjusted. Remove the swinging drawbar, if close-mounted equipment is being attached.

IMPORTANT: Always select Position Control when attaching equipment, transporting equipment, when no equipment is attached or at any time when not operating in Draft Control.

NOTE: See also 'External Power Lift Control' on pages 3-27 and 3-31 for more details.



82



124

DUAL REAR WHEELS (where fitted) - Figures 124 and 125

Dual rear wheels are available as a factory installed option or dealer installed accessory, in conjunction with the 2845 mm (112 in.) bar axle and cast iron wheels. The dual wheel kit consists of an additional pair of steel wheels, hubs and wheel-to-hub attaching hardware.

Customers may wish to mount their existing wheels to make a dual wheel installation. In this instance, provided that the existing wheels have the same mounting dimensions, they will only need to obtain the hub assembly. The hub assembly has eight, equi-spaced M18 mounting studs (4) Figure 124, in a pitch circle diameter of 275 mm.

IMPORTANT: *Dual wheels are intended for flotation. Use of dual wheels under **heavy traction conditions** could cause severe transmission overload and is not approved.*

Before the outer wheels can be installed, the inner wheels must be adjusted to the minimum attainable track width, as described in the previous text.

Figure 124 shows correct wheel installation. The inner (cast) wheel (4) is clamped onto the bar axle (5). The outer (steel) wheel (1) is attached to the hub by eight bolts (3). The hub is clamped to the bar axle by the four bolts (2) in a similar manner to the cast, inner wheel.

When mounting wheels, the clearance between the tyres on the inner wheels and the closest part of the tractor must be no less than 100 mm (4 in.).

Additionally, a minimum clearance of 100 mm (4 in.) must be maintained between the closest points of the tyre walls, see Figure 125. The clearance should be checked with the tractor correctly ballasted and the attached implement in the raised position.

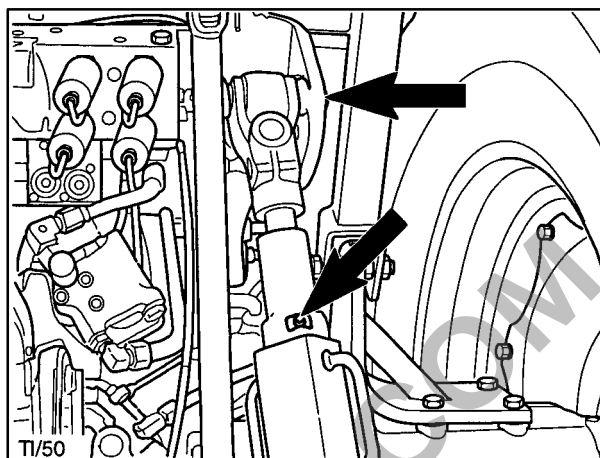
To move a wheel on the axle shaft it is necessary to unclamp the hub from the shaft.

Block the front wheels and jack up and support the rear axle.

OPERATION 11**ALL GREASE FITTINGS - Figures 26 to 39**

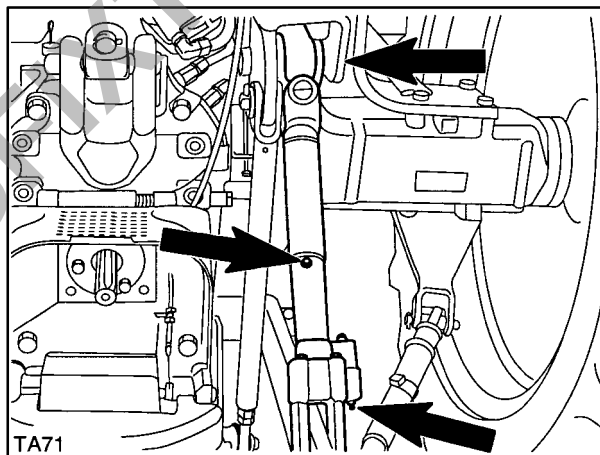
Oil all pivots and apply a grease gun to the lubrication fittings, as shown in Figures 26 to 39 inclusive.

See section 8 for the correct grease specification.

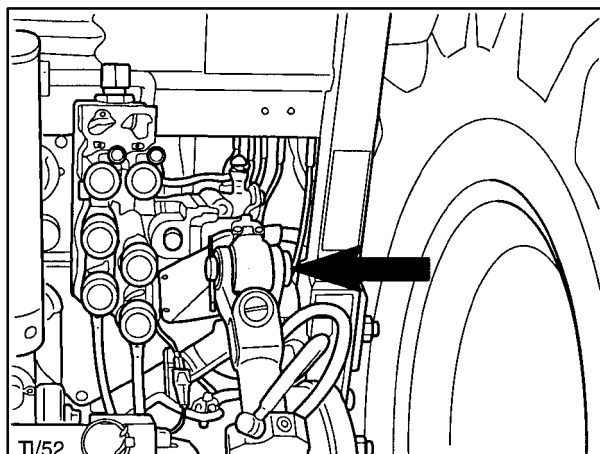
**26****Right-hand Lift Rod (with turnbuckle adjustment) - Figure 26**

Apply a grease gun to the lubrication fittings, as shown.

NOTE: On M135, M160, 8360 and 8560 tractors, the left-hand lift rod also has turnbuckle adjustment with similar grease fittings.

**27****Right-hand Lift Rod (with levelling box adjustment) - Figure 27**

Apply a grease gun to the lubrication fittings, as shown.

**28****Right-hand Lift Rod (with hydraulic adjustment) - Figure 28**

Apply a grease gun to the lubrication fitting, as shown.



WARNING: Inhibitor solution is irritating to eyes and skin. It contains buffered potassium hydroxide.

- Avoid contact with eyes or prolonged and repeated skin contact.

14. Remove the radiator cap (1) Figure 88 and add coolant to the radiator to bring the coolant level to the bottom of the filler neck. Install the radiator cap. Add coolant to the recovery tank as required to bring the level up to the cold mark (2).

Blurred on purpose. The manual you buy has this page in full quality.

TRANSMISSION - MECHANICAL

PROBLEM	POSSIBLE CAUSE	CORRECTION
High transmission operating temperature	Low oil level. Incorrect oil grade/viscosity. Dirty or blocked transmission oil cooler.	Add oil, as required. Drain and refill with oil of the correct specification. Clean.
Noisy transmission	Low oil level. Incorrect oil grade/viscosity. Worn bearings or failed parts.	Add oil, as required. Drain and refill with oil of the correct specification. See your authorised dealer.
Gear engagement difficult	Incorrect linkage adjustment or worn linkage. Worn shift forks/selectors. Worn bearings. Air in hydraulic clutch system.	Adjust linkage, replace worn parts or see your authorised dealer. See your authorised dealer. See your authorised dealer. Bleed system or see your authorised dealer.
Jumping out of gear	Incorrect linkage adjustment or worn linkage. Worn shift forks/synchronisers. Worn bearings. Faulty detents.	Adjust linkage, replace worn parts or see your authorised dealer. See your authorised dealer. See your authorised dealer. Replace detent balls and springs or see your authorised dealer.
Holding in gear	Incorrect linkage adjustment or worn linkage. Worn couplers.	Adjust linkage, replace worn parts or see your authorised dealer. See your authorised dealer.

To attach a trailer drawbar to the tow pin, remove the 'R' clip (3) from the tow pin and lift out using the handle (2). Re-insert the tow pin so that it passes through the eye of the trailer drawbar. Replace the 'R' clip.

NOTE: The static downward load on the tow pin must not exceed the rear tyre load capacity or the following values, whichever is lower. (See Tyre Pressures and Permissible Loads at the end of Section 3).

Standard tow pin (Fig. 29)	1500 kg (3300 lb.)
Category D2 tow pin (Fig. 30)	2000 kg (4400 lb.)

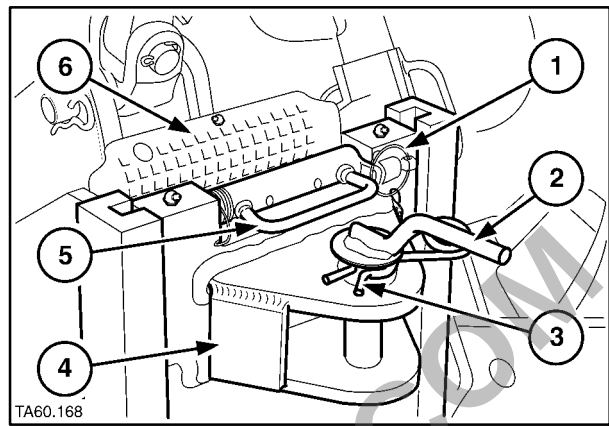
NOTE: A Category D3 tow pin (with housing) is available as a dealer installed accessory. The static downward load on the Category D3 tow pin should not exceed 2500 kg (5500 lb.) or the rear tyre load capacity, whichever is lower. (See Tyre Pressures and Permissible Loads at the end of Section 3).

Slider Frame with Swivelling Tow Pins - Figures 31 to 35

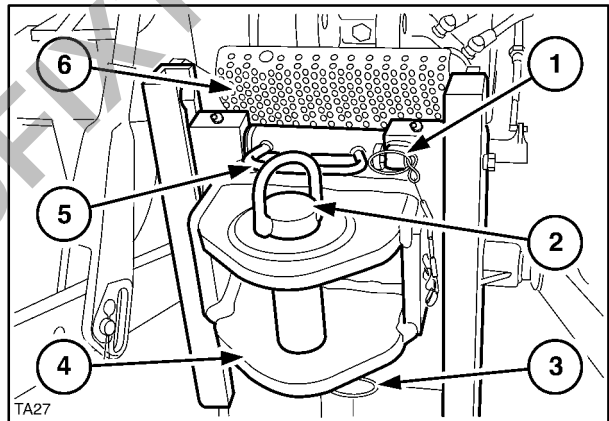
The tow hitches shown are equipped with a height adjustable, swivelling tow pin assembly with manual or auto operation.

With reference to Figure 31, adjust the height of the tow pin assembly, as follows:

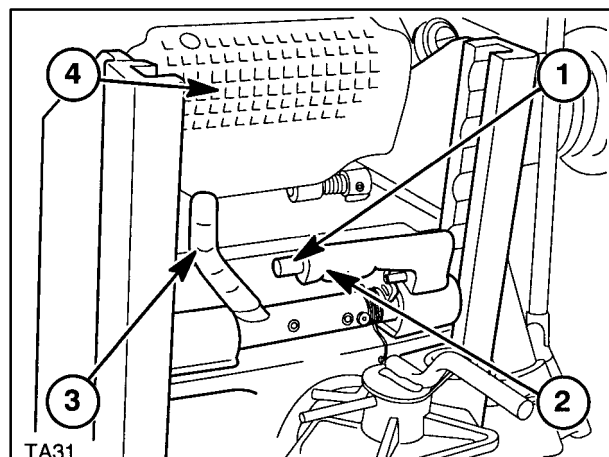
Grasp the handle (2) with the right hand. Press and hold in the button (1) to release the locking mechanism. Pull the handle (3) down to the horizontal position with the left hand and release the push button to lock the handle (3) in the horizontal position. Lowering the handle will rotate the pins and disengage them from the frame. Using both handles, lift or lower the complete tow pin assembly. When at the required height, hold in the push button and lift the left-hand handle up to the vertical position, as shown in Figure 31. The pins will rotate and re-engage the notches in the frame. Lower the P.T.O. guard (4).



29



30



31

PREVIEW ONLY

You're viewing 18 of 330 pages

The full manual includes:

- All 330 pages, complete
 - Searchable PDF (find any keyword)
 - No watermarks
 - Instant download
 - Print-ready quality
-

GET FULL MANUAL NOW

New Holland 8160, 8260, 8360, 8560 Operator Manual



Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual