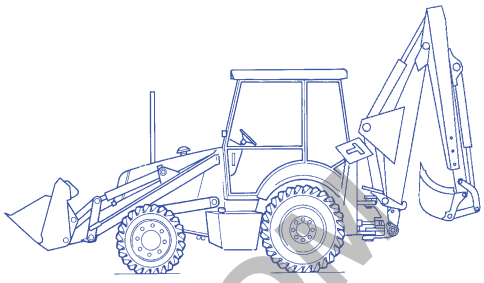
NEW HOLLAND

555E
575E
655E
675E

Serial #031009910 and above

OPERATOR'S MANUAL



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NEW HOLLAND

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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 machine. Equipment should be operated only by those who are responsible and instructed to do so.

IMPORTANT: *In this manual references are made to positions of switches and components as located to the Left Hand and Right Hand side of the machine. In most situations the position described is when the operator is seated on the machine and looking forward, unless otherwise stated.*

THE BACKHOE LOADER

IMPORTANT: *Never leave the machine with the loader or backhoe raised, always lower the loader and backhoe to the ground when not in use. Unless the loader support and Backhoe transport lock are engaged.*

1. Do not allow anyone to operate the machine without proper instruction. Legislation in many countries requires that all operators be instructed on the proper procedures and operation of the machine and safety procedures before use.

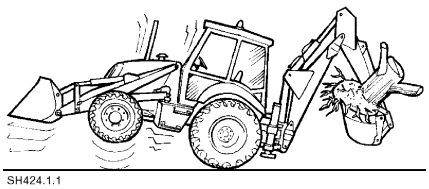


2. Read the Operator's Manual carefully before using the machine. Lack of operating knowledge can lead to accidents.



3. Ensure any attached equipment or accessories are correctly installed and are *approved for use with the machine*.

'DO NOT OVERLOAD THE MACHINE'

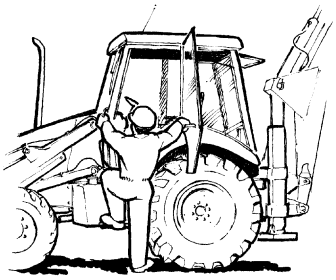

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Ensure attached or trailed equipment is operated and maintained in accordance with the instructions issued by the equipment or accessory manufacturer.

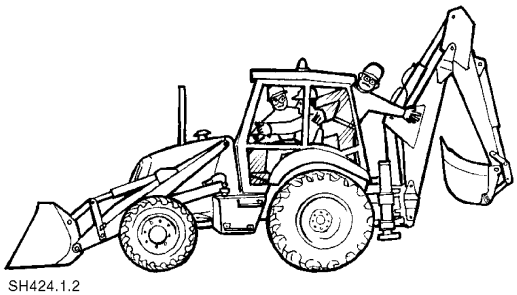
4. With the machine operational always use the seat belt.


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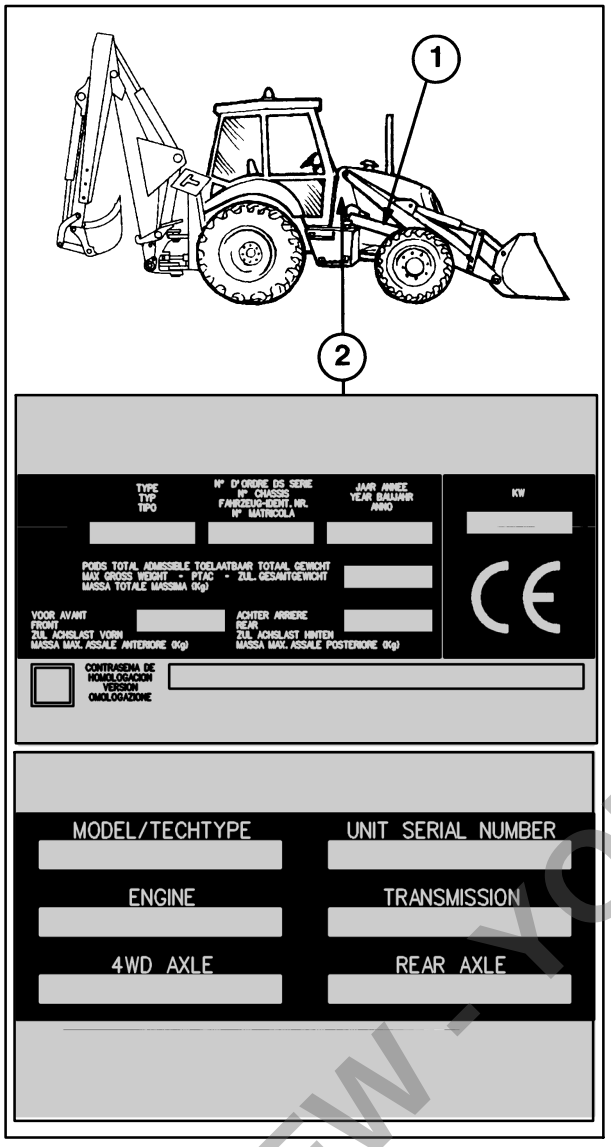
5. Use the grab handles and step plates when getting on and off the machine to prevent falls. Keep steps and platform clear of mud and debris.



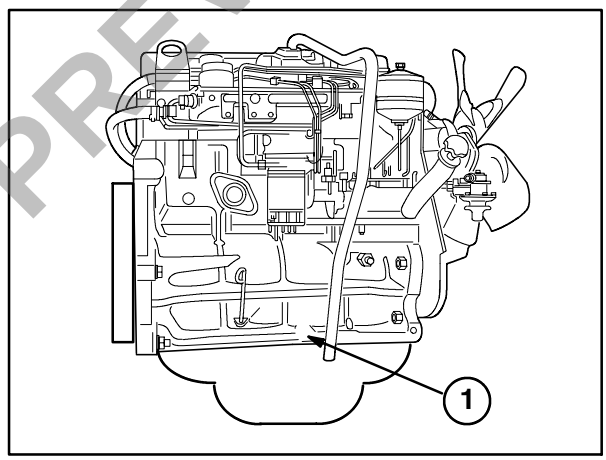
6. Do not permit anyone but the operator to ride on the machine unless a passenger seat is fitted. There is no safe place for extra passengers.


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1-1



1-2

PRODUCT IDENTIFICATION

Your Backhoe Loader and its major components are identified by serial numbers and letters for recognition in After Sales Service. The following information provides the locations of these identification plates, stamped numbers and examples of what can be found on your machine.

VEHICLE SERIAL NUMBER (1), Figure 1-1.

The Serial Number is stamped on the top of the right hand main frame, in front of the right hand loader post, in position (1). . . . . *Example: *031005017**

NOTE: *The Serial Number and identification numbers of components may be required by your dealer when requesting parts or service. These numbers will also be required as an aid to identifying the machine if it is ever stolen. Keep them safe.*

VEHICLE IDENTIFICATION PLATES (2), Figure 1-1.

The machine identification plates are located on the right-hand loader post, as shown at position (2). Record the data of your machine below.

MODEL/TECHNICAL TYPE _____
*Example: *655E.699.510.700**

UNIT SERIAL NO. _____
*Example: *031005017**

YEAR _____
*Example: *1995**

ENGINE IDENTIFICATION, Figure 1-2.

The engine identification information is located on the right hand engine sump rail. Record the information below for quick reference.

MODEL NO. _____
*Example: *EA5**

SERIAL NO. _____
*Example: **57018**

DATE CODE. _____
*Example:*5J25*=5(1995),J(SEPTEMBER),25(DAY)*

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SECTION 5

SYSTEM TROUBLESHOOTING

IMPORTANT: *The following trouble shooting table is designed for your guidance only. If any repairs are required beyond routine maintenance, your machine must be returned to your dealer who has the correct tools, facilities and knowledge to perform repairs to the correct specification and safe standard.*

QUICK REFERENCE GUIDE

Page No	Component
5-1	Engine
5-3	Transmission
5-4	Electrical
5-5	Whole Unit
5-5	Brakes
5-6	Cab

ENGINE

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine will not start, or starts with difficulty	Incorrect starting procedure	Review starting procedures
	Low or no fuel	Check fuel level
	Air in fuel lines	Bleed fuel system
	Incorrect engine oil viscosity	Use correct viscosity oil
	Incorrect fuel for operating temperature	Use correct type fuel for temperature conditions
	Contaminated fuel system	Clean system
	Clogged sedimenter	Clean sedimenter
	Clogged fuel filter	Replace filter element
	Malfunctioning fuel injector(s)	See your authorized dealer
	Malfunctioning fuel solenoid or solenoid relay	See your authorized dealer
Engine runs rough and/or stalls	Clogged sedimenter or fuel filter	Clean sedimenter and replace filter

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APPLICATION AND RECOMMENDED FLUIDS	SPECIFICATION	QUANTITY
Front Wheel Drive -		
Alxe, NH 134D Hydraulic Oil		1.7 gals (6.5 liters)
Per Hub, NH 134D Hydraulic Oil		1 qt. (0.9 liters)
Backhoe/Loader Hydraulic -		
NH 134D Hydraulic Oil NH F200 Hydraulic Oil	Use of NH F200 recommended in extreme cold temperatures, below 0°F (-18°C).	28 gals (106 liters) Tank 36 gals (137 liters) System
Engine Coolant -		
Water/Antifreeze	SCA Conditioner - 5% Water 50% Ethylene Glycol - 50%	6.3 gals (24 liters)
Rear Axle -		
NH 134D Hydraulic Oil		6.5 gals (24.6 liters)
Brakes -		
NH Brake Oil (86541699DS)	Mineral Base	1 qt. (0.9 liters)
Grease Fittings/Bearings -		
NH Super Premium M.P. Lithium NH High Temp M.P. Lithium	NLGI 2 NLGI 2	As Required
Extendible Dipper Stick -		
Dry Lubricant	Dow-Corning Moly Coat	As Required
AC Compressor -		
NH SP20DS Oil	PAG Oil	As Required

RADIATOR COOLANTS

Anti-freeze should be changed every 1200 hours or 24 months.

NOTE: *In order to reduce deposits and corrosion, water in the cooling system should not exceed the following limits:*

Total hardness	*Chloride*	*Sulphates*
300 parts per million	*100 parts per million*	*100 parts per million*

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Service Interval	Page No	Maintenance Operation	Check	Clean	Lube	Adjust	Change	Drain	Wash
Daily	5	Pre-cleaner	X	X					
	7	Engine oil level	X			X			
	8	Radiator coolant level	X			X			
	9	Radiators and oil coolers		X					
	9	Windsheld washer reservoir (where fitted)	X			X			
	9	Extendible dipper drain port (where fitted)		X					
	10	Hydraulic system oil level	X			X			
	11	Air Cleaner							X
Every 50 Hours	12	Battery electrolyte level (not low maintenance type)	X			X			
	13	Water/sediment separator and filter						X	
	13	Cab air filters (where fitted)		X					
	14	Door hinge grease fittings			X				
	14	Air conditioning filter		X					
	14	Tires	XX			X			
	14	Front and rear wheel nuts	X			X			
	15	Differential lock linkage			X				
	15	Front wheel spindles (two wheel drive)			X				
	15	Drive shaft's couplings			X				
	15	Front axle trunnion bearings (two wheel drive)			X				
	15	Front axle trunnion bearings (four wheel drive)			X				
	16	Front axle swivel bearings (four wheel drive)			X				
	16	Seat suspension (de-luxe seat)			X				
	16	Seat rails			X				
	17	Loader grease fittings			X				
	17	Backhoe grease fittings - Side-shift			X				
	17	Backhoe grease fittings - Center pivot							
	18	Extendible dipperstick	X			X			
	18	Front axle hub oil level (four wheel drive)	X			X			
	18	Front axle differential oil level (four wheel drive)	X			X			
	19	Front axle breather (four wheel drive)		X					
	19	Hydraulic system breather		X					
Every 300 Hours	20*	Engine oil and filter (all models)					X		
	21	Drive belts				X			
	22	Air conditioning compressor	X			X			
	22	Dry air cleaner							X
	23	Cab air filters (where fitted)							X
	23	Air conditioning filter							X
	24	Extendible dipper wear pads	X			X			X
Every 600 Hours	25	Front wheel bearings (two wheel drive)		X	X	X			
	25	Dry air cleaner					X		
	26	Valve tappet clearance	X			X			
	26	Engine breather filter					X		
	27	Hydraulic oil filter					X		
	28	Fuel filter					X		
	28	Fuel lift pump strainer	X	X					
	29	Transmission oil					X		
	29	Transmission oil filter and screen					X	X	
Every 1200 Hours or Annually	31	Fuel injectors					X		
	32	Hydraulic system oil and reservoir filter					X		
	32	Front axle differential oil (four wheel drive)					X		
	33	Front axle hub oil (four wheel drive)					X		
	33	Rear axle oil					X		
	33	Dry air cleaner inner element					X		
	34	Cab air filter (where fitted)					X		
	34	Brake pivot grease fittings			X				
Every 1200** Hours or 2 years	35	Engine Coolant					X		
General Maintenance	36	Parking Brake adjustment	X			X			
	36	Footbrake	X			X			
	37	Hydraulic Hose and tubing	X						
	38	Alternator charging system	X						
	39	Front wheel toe-in	X			X			
	40	Steering stop adjustment	X			X			
	40	Bulb replacement					X		
	42	Fuse/direction indicator/relay replacement					X		
	45	Machine storage	X	X	X	X	X	X	X
	46	Preparing machine after storage	X	X	X	X	X	X	X
	47	Tire inflation	X			X			

* Oil change interval will be reduced if diesel fuel has a high sulphur content.

** Frequency depends on antifreeze in use (See "Specifications" section).

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Engine Start Up With Starting Code (Example Shown "0009"), Figure 3-58.

At keystart (ignition "ON"), the EIC will carry out a short self test on all the LED lights and bar graphs and will display in order: 8888 - 0050 - 0300 - ----. When a starting code is required, as indicated by a series of four dashes (----), the code must be entered or the machine will not start.

Press and release key 2 repeatedly to select the first digit, "9".

Press key 1 until the second digit , "-", begins to flash. Release key 1.

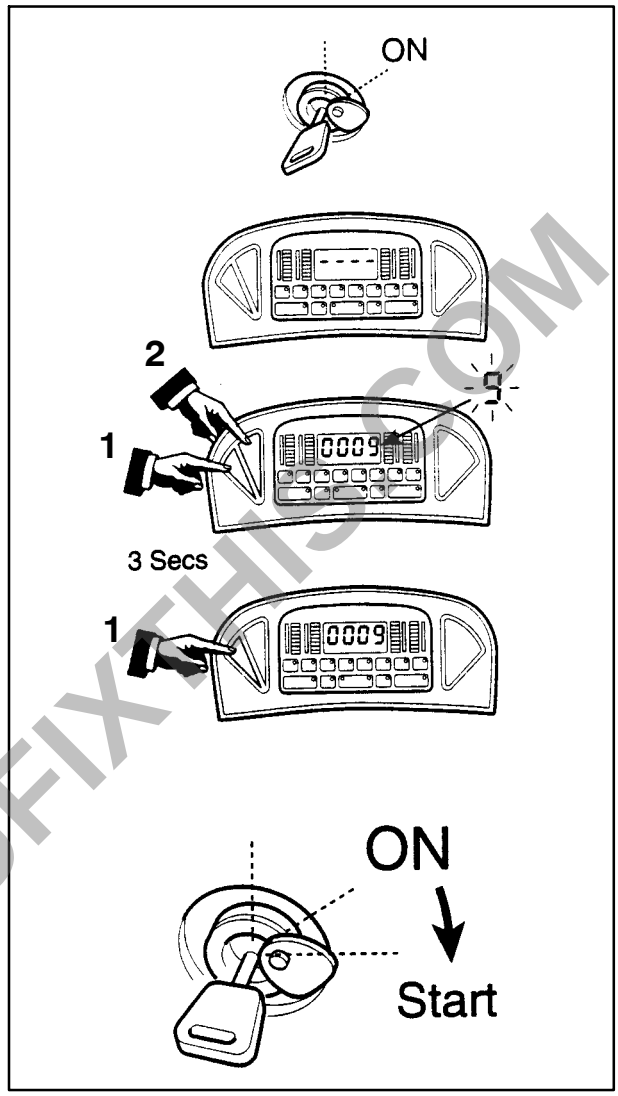
Press key 2 to select the second number, "0", of the starting code.

After selecting the second number, press and hold key 1 until the third digit, "-", starts to flash and then release key 1.

Repeat the process for the third, "0", and fourth, "0", numbers of the starting code.

After selecting the fourth number, press and hold key 1 until the total engine hours appears in the display, indicating the EIC microprocessor has confirmed the starting code.

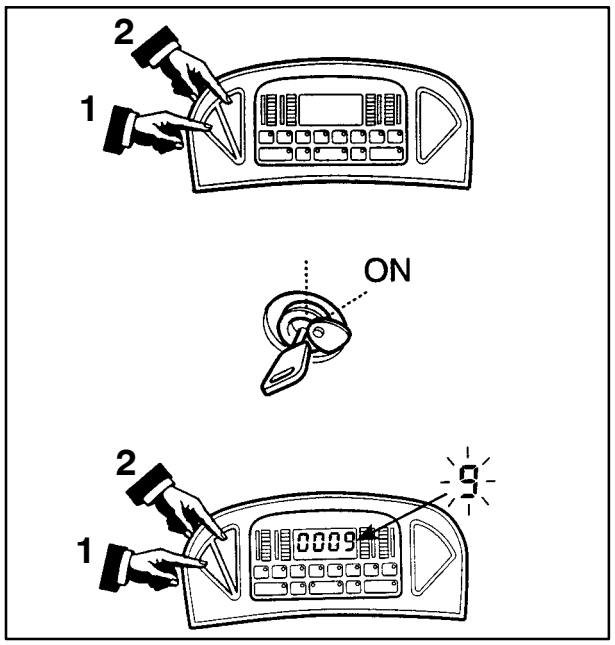
Turn the key switch to the "Start" position for engine start up.



3-58

Starting Code Forgotten, Figure 3-59.

With the ignition key switch "Off", depress EIC keys 1 and 2 at the same time. With the two keys depressed, turn the ignition key switch to "On". Hold keys 1 and 2 for approximately ten seconds until the starting code appears on the display. Turn the key "Off" and turn it "On" again. Proceed to enter starting code after "----" appears on the display.



3-59

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BRAKES

Type	Wet Multi-Discs 4 per Axle
Disc Diameter	8 in (203.2mm)
Parking Type	Single Disc on Driveline

STEERING

Power Steering Type	Hydrostatic
Turns Lock to Lock	
2WD	2.9
FWD Left	3.1
Right	3.0
Pump Type	Gear
System Pressure	2030 lb in^2 (140 bar)
Front Wheel Toe-in 2WD	0 - 0.24 in. (0 - 6mm)
Front Wheel Toe-in 4WD	0 - 0.24 in. (0 - 6mm)

REAR AXLE

Type	Double Reduction, Inboard Planetary
Differential Lock	Mechanical

TORQUES

	Nm.	ft. lbs.
Front Wheel Nuts - 2WD	176	130
- FWD	270	200
Rear Wheel Nuts	540	400
Backhoe Attaching Bolts	970	715
Cab/ROPS Attaching Bolts	380	280
Turbocharger - Oil Inlet Pipe	20	15
- Oil Outlet Pipe	34	25

Hydraulic Hoses/Tubes/ ORS Connections

Thread Size:	Nm.	ft. lbs.
$^9/_{16}$ - 18	13.5 - 16.5	10 - 12
$^{11}/_{16}$ - 16	23 - 28	17 - 20
$^{13}/_{16}$ - 16	45 - 53	32 - 39
1 - 14	62 - 77	46 - 57
$1^3/_{16}$ - 12	86 - 107	63 - 79
$1^7/_{16}$ - 12	125 - 142	93 - 105
$1^{11}/_{16}$ - 12	169 - 190	125 - 140
2 - 12	203 - 246	150 - 182

FRONT WEIGHTS

Chin Weight - 136 kg (300 lbs)

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CONTROLS AND INSTRUMENTS
POWER SHUTTLE MACHINES WITH ANALOG INSTRUMENTS

Figure 2-10

1. Turn Signal Indicator, Mainbeam Selection, Front Windshield Wiper stalk and Front Windshield Washer Control (Turn Signal Rocker Switch only on ROPS Units)

2. Gear Lever (with integrated Transmission Disconnect Switch)

3. Foot Throttle Pedal

4. Loader Lever (with integrated Transmission Disconnect Switch)

5. Heater Control Panel (cab unit only)

6. Key Start

7. Side Mounted Instrument Panel

8. Parking Brake

9. Hand Throttle Lever

10. Stabilizer Leg Levers

11. Air Flow Direction Outlet

12. Hydraulically Extendible Dipper, H.E.D Operating Pedal (Optional Equipment)

13. Backhoe Control Lever Patterns

    Standard:
    2 Lever - Cross Pattern with Horn Button

    Optional:
    4 Lever - Fore/Aft Pattern

14. Hammer Operating Pedal (Optional Equipment)

15. Air Flow Direction Outlet

16. De Luxe Seat with Document Pouch to the rear

17. Cigar Lighter/12 volt Auxiliary Outlet

18. Radio Placement / Miscellaneous Objects Holder

19. Drink Holder

20. Mechanical Differential Lock Pedal

21. Independent Brake Pedals and Pedal Latch

IMPORTANT: *When travelling on the road the brake pedals must be latched together for straight line braking.*
If the pedals are not latched pressure applied to one pedal only could result in the machine veering severely to the left or right hand side.

22. Four Way Flasher Button

23. Power Shuttle 4x4 - Transmission Forward/Reverse Lever with Integral Horn Button

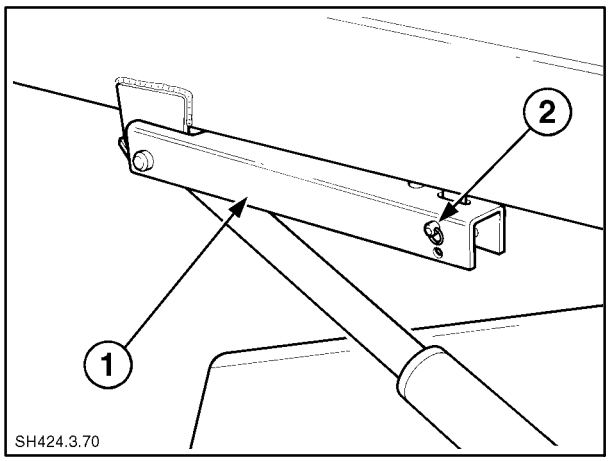
24. Air Flow Direction Outlet (cab units only)

25. Steering Wheel

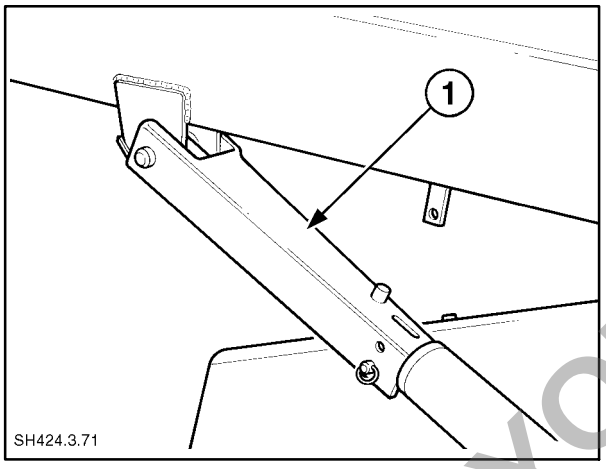
26. Front Instrument Panel

27. Air Flow Direction Outlet

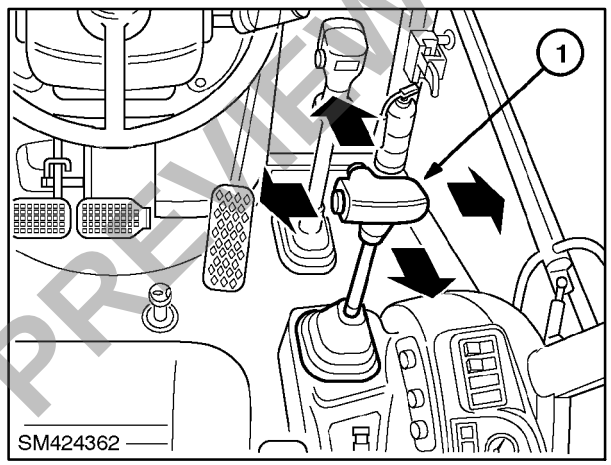
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3-125



3-126



3-127

LOADER ARM SUPPORT, Figures 3-125 & 3-126.

The machine's are equipped with a loader arm support, which is stored on the left-hand loader arm and retained in position by a pin and spring.

WARNING: *To avoid personal injury never work beneath or around an unsupported loader. Always install the loader arm support.*

To install the support (1), raise the loader to full height then withdraw the retaining pin (2) and position the support onto the loader lift cylinder. Slowly lower the loader until the support takes the weight of the loader and refit the retaining pin (2). Do not apply down pressure on the loader lift cylinders.

To remove the support remove the pin (2), raise the loader to full height then lift and position the support onto the loader arm. Retain the support to the loader arm with the retaining pin then lower the loader to the ground.

LOADING OPERATIONS, Figures 3-127 to 3-134

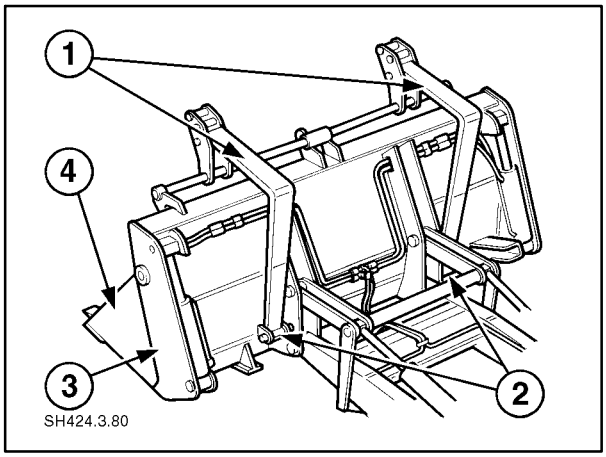
WARNING: *Do not operate the loader without the bucket installed. Operation of the loader without bucket installed can result in a loss of stability and the possibility of upsetting the machine.*

Suggested operating techniques for loader operation are outlined in this section. Practice the lever movements as you operate the loader to increase operating efficiency.

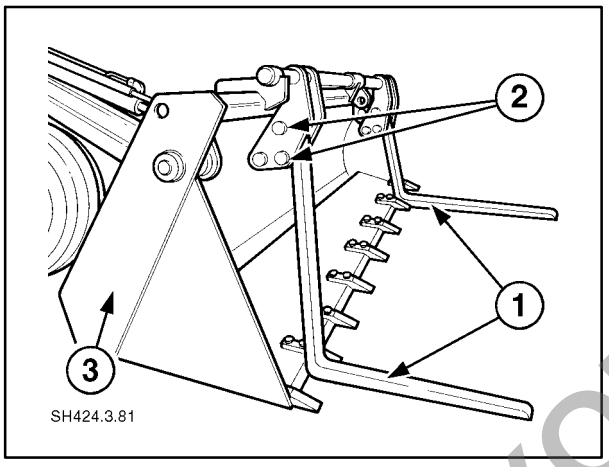
IMPORTANT: *Before operating in temperatures below 30°F (-1°C) operate the engine for approximately 15 minutes at speeds below 1200 rev/min. to warm the oil to the normal operating temperature.*

Operate the loader with the engine running at 1200-1700 rpm. Good production will result at this speed and will reduce bucket spillage and unnecessary component strain.

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3-135



3-136

LOADER BUCKET ASSEMBLY WITH FORK OPTION (MULTI-PURPOSE BUCKET SHOWN), Figures 3-135 & 3-136.

Loader bucket lift forks (1) are available as a factory fitted and dealer installed option, and can be swung into position by detaching the locking pins (2) at the rear of the bucket (3).

NOTE: *Forks are not available for the 1.15 cu. yd. bucket.*

WARNING: *Do not operate the bucket clam (4) with the forks in operation as the hydraulic pressure variance will effect lift capacity*

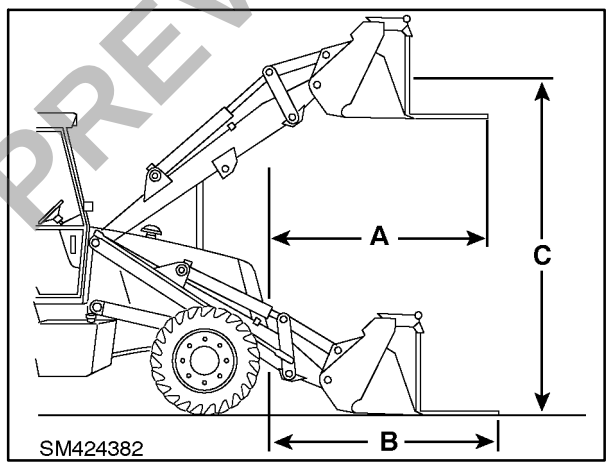
When the lift forks (1) are swung over the front of the bucket, (3) remove the lower pin (2) and relocate in the working position pin hole. Refer to Lift Fork Performance before use. On completion of use of the forks, relocate pin in transport position and swing the forks back behind the loader bucket into the stowage position. Refit the locking pins to retain forks in position.

IMPORTANT: *Do not use the pallet forks to move the machine for any reason, as this will apply forces to the fork attachment beyond its design capability.*

LIFT FORK PERFORMANCE, Figure 3-137.

WARNING: *Do not exceed the maximum safe working load for the loader. Ensure you comply with local "lifting" regulations, if in any doubt contact your Dealer.*

IMPORTANT: *When using the forks with the Multi Purpose Bucket option, ensure that the bucket jaws are in the closed position when attempting to lift a load. Do not attempt to open the bucket jaws with loaded pallet forks.*



3-137

LIFT FORK DATA:*

Reach Full Height	A	7′ 2″ (2207mm)
Reach Ground Level	B	8′ 2″ (2668mm)
Lift Height	C	11′ 5″ (3486mm)
Fork Spacing - Min Centres		11″ (275mm)
Fork Spacing - Max Centres		6′ 10″ (1773mm)
Fork Length		3′ 4″ (1026mm)
Fork Width		3″ (80mm)
Safe Working Load at 1′ 8″ (515mm) Load Center		2204 lbs (1000kgs)

* With 14-17.5 front tires and 16.9-28 R4 rear tires.

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