Safety

Safety - Yours and Others

All machinery can be hazardous. When a machine is correctly operated and maintained, it is a safe machine to work with. When it is carelessly operated or poorly maintained it can become a danger to you (the operator) and others.

In this manual and on the machine you will find warning messages, read and understand them. They inform you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB dealer to explain them.

Safety is not just a matter of responding to the warnings. All the time you are working on or with the machine you must be thinking of what hazards there might be and how to avoid them.

Do not work with the machine until you are sure that you can control it.

Do not start any work until you are sure that you and those around you will be safe.

If you are not sure of anything, about the machine or the work, ask someone who knows. Do not assume anything.

Remember:

- Be careful
- Be alert
- Be safe.

Safety Warnings

In this manual and on the machine, there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

The signal word 'DANGER' indicates a hazardous situation which, if not avoided, will result in death or serious injury.

The signal word 'WARNING' indicates a hazardous situation which, if not avoided, could result in death or serious injury.

The signal word 'CAUTION' indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

The signal word 'Notice' indicates a hazardous situation which, if not avoided, could result in machine damage.

The safety alert system (shown) also helps to identify important safety messages in this manual and on the machine. When you see this symbol, be alert, your safety is involved, carefully read the message that follows, and inform other operators.

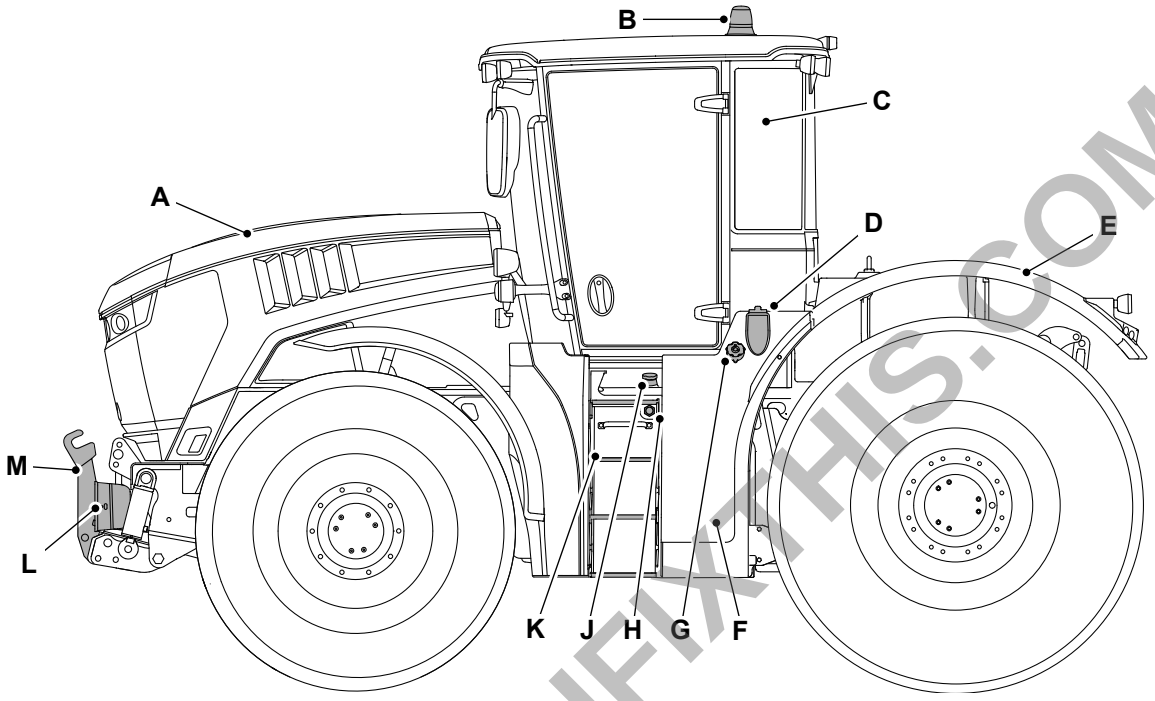
Figure 3. The safety alert system



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Main Component Locations

Figure 4.



A Bonnet
B Beacon
C Cab
D Fuel filler
E Fenders
F Left hand pannier
G DEF (Diesel Exhaust Fluid) filler
H Hydraulic oil sight gauge
J Hydraulic oil filler
K Steps
L Front PTO (Power Take-Off)
M Front 3-point linkage

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Prefix letter	Affected Part of Machine
R	Rear 3-point Linkage
S	Suspension
U	Front 3-point Linkage
V	Electronic spool valve green slice
W	Electronic spool valve blue slice
X	Electronic spool valve brown slice
Y	Electronic spool valve grey slice
Z	Electronic spool yellow slice

Table 77.

Error Code	Description
A2228	Rear left ABS wheel speed sensor did not report wheel speed
A2229	Rear right ABS wheel speed sensor did not report wheel speed
A2230	Front left ABS wheel speed sensor did not report wheel speed
A2231	Front right ABS wheel speed sensor did not report wheel speed
C0075	Warning buzzer: output open circuit
C0076	Warning buzzer: output short to ground
C0077	Warning buzzer: output short to voltage
C0078	Warning buzzer: open circuit
C0079	Warning buzzer: intermittent connection
C0130	Valve block pilot valve open circuit
C0150	Valve block pressure sensor open circuit
C0300	Warning buzzer: CAN (Controller Area Network) error
C0301	Spool position switch implausible
C0302	GPS position switch implausible
C0303	Rapid steer position switche(s) implausible
C0304	Rapid steer solenoid HSD open circuit
C0305	Rapid steer solenoid HSD short circuit to ground
C0306	Rapid steer Solenoid HSD Supply Fault
C0307	Rapid steer control message lost
C0308	Rapid steer solenoid hsd short circuit (high current above schmitt threshold)
C0309	Rapid steer speed differential too high
C0310	Spool switch setup override active
C0311	Setup emergency spool implausible
C0312	Setup GPS spool implausible
C0313	Setup rapid steer implausible
C0314	Inlet pressure low. Possible hydraulic tank empty
D0227	Engine air filter blocked
D0228	Trailer ABS system fault
D0230	Brake fluid level low.
D0234	Park brake on when vehicle moving
G0007	Transmission actuator reference signal fault
G0008	Transmission gear speed pickup sensor fault: direction signal
G0012	Transmission hydrostat sensor: speed signal fault
G0013	Transmission engine speed sensor fault
G0014	Transmission gear speed pickup sensor fault: speed signal
G0015	Transmission oil filter blocked
G0016	Gearbox oil temperature over 110°C (229.8°F)
G0019	Range 1 solenoid activation fault

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Seat Belt

Inertia Reel Seat Belt

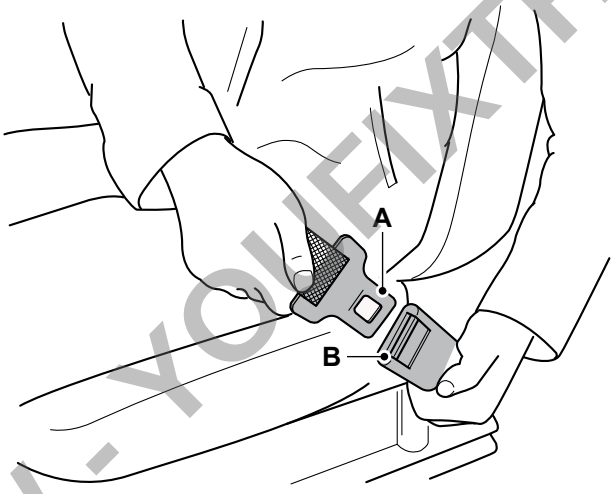
Fasten the Seat Belt

⚠ **WARNING** If you do not wear your seat belt you could be thrown about inside the machine, or thrown out of the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

1. Sit correctly in the seat.
2. Pull the seat belt and the tongue from the inertia reel holder in one continuous movement.
3. Push the tongue into the latch. Make sure the seat belt worn is snug and properly located on the body. Make sure the seat belt is not twisted and that it is over your hips not your stomach.

   3.1. If the seat belt 'locks' before the tongue is engaged, let the seat belt retract into the inertia reel holder then try again. The inertia mechanism can lock if you pull the seat belt too quickly or if the machine is parked on an slope.

Figure 41.



A Tongue **B** Latch

WARNING! *If the seat belt does not 'lock' when you check if the seat belt is operating correctly, do not drive the machine. Get the seat belt repaired or replaced immediately.*

4. To make sure the seat belt operates correctly, hold the middle of the seat belt and pull quickly. The seat belt should 'lock'. Refer to Figure 42.

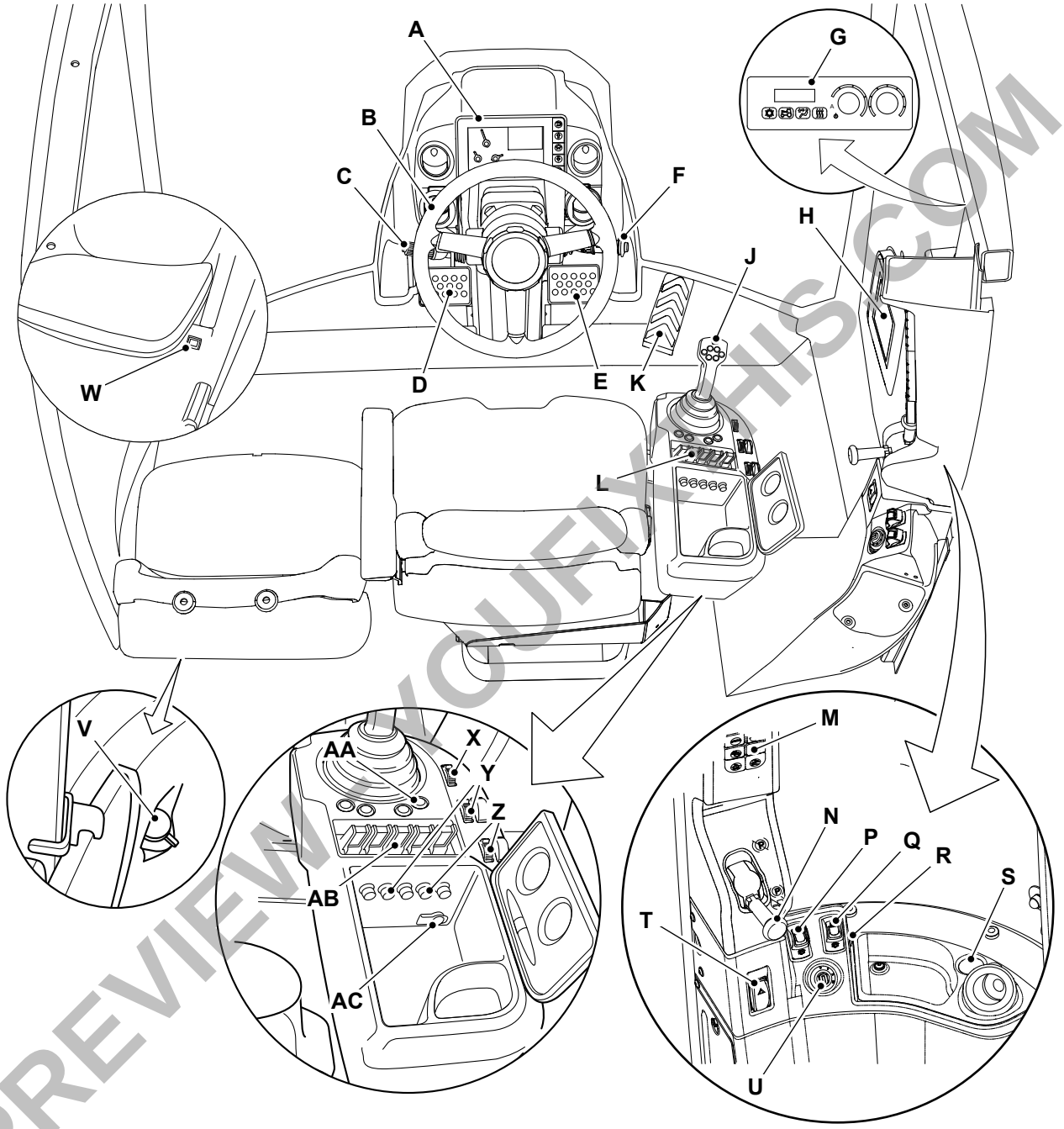
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Operator Station

Component Locations

Figure 16.



A Instrument panelRefer to: Instrument Panel (Page 85).
B Steering wheel Refer to: Steering Wheel (Page 52).
C Forward/reverse shuttle lever (option)
D Clutch pedal
E Brake pedal
F Column mounted multi-purpose switch Refer to: Multi-Purpose Switch (Page 19).
G Heater and air-conditioning controls Refer to: Heating, Ventilating and Air-Conditioning (HVAC) (Page 148).
H Touch screen monitor Refer to: General (Page 53).
J Multi functional joystick
K Accelerator pedal
L Armrest mounted switches
M Switch panels Refer to: General (Page 22).

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Operation
Introduction

General

The aim of this part of the manual is to guide the operator step-by-step through the task of learning how to operate the machine efficiently and safely. Read the Operation section through from beginning to end.

The operator must always be aware of events happening in or around the machine. Safety must always be the most important factor when you operate the machine.

When you understand the operating controls, gauges and switches, practice using them. Drive the machine in an open space, clear of people. Get to know the 'feel' of the machine and its driving controls.

Do not rush the job of learning, make sure you fully understand everything in the Operation section. Take your time and work efficiently and safely.

Remember:

- Be careful.
- Be alert.
- Be safe.

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Power Sockets

Auxiliary Power Socket

Figure 152.

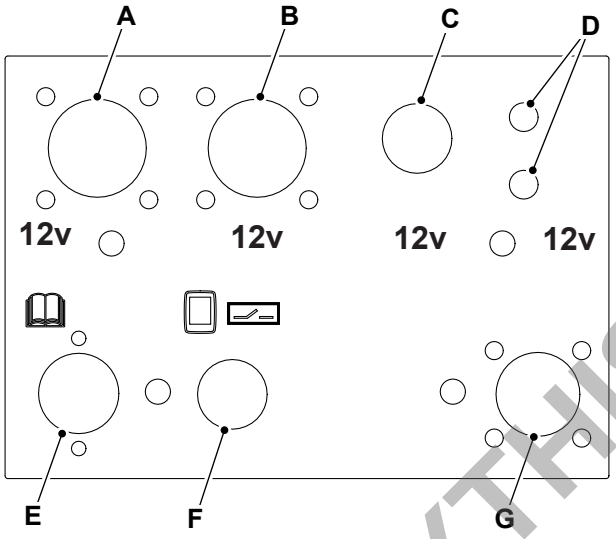


Table 50.

A and B	12V Power socket (10A)
C and D	12V Power socket (10A)
E	Implement socket
F	Cut-out socket used for an external switch to control the area meter (usually mounted on the implement)
G	ISOBUS (optional). The harness installed from the rear implement connector socket terminates here. This connection is to the ISOBUS/GPS ECU.

12 volt Cut-out Socket

A 12V signal from an external source can be used to control the field area counter.

Implement Socket

This conforms to ISO (International Organization for Standardization) 11786 and a mating plug kit is available from your JCB dealer. The socket is provided with the following connections from the tractor:

Table 51.

Pin Number	Function	Signal
1	Radar sensed speed	Pulses per metre. UK=131.8. Elsewhere 132.7
2	Gearbox sensed speed	130 pulses per metre
3	Rear PTO (Power Take-Off) speed	Signal grounded 6 pulses/ rpm
4	Rear linkage in work	Signal grounded when linkage in work (as set using rear hitch cutout %)
5	Not used	
6	12V (5A)	
7	Earth	

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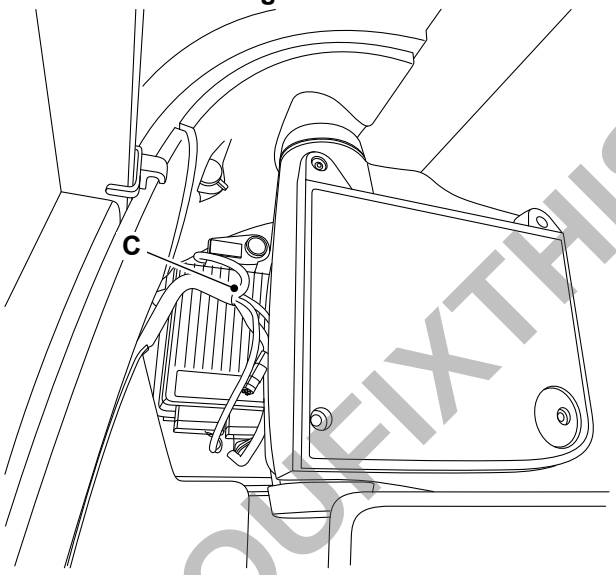
GPS ECU Connectors

The GPSECU should be installed behind the passenger seat. Ensure it is installed the correct way around to ensure accuracy of the internal gyroscope.

A diagnostic light and buzzer are provided. During normal use the diagnostic light flashes green quickly (9Hz) when the GPSECU is powered.

Two ECU connectors and a diagnostic connector are provided behind the passenger seat. Refer to Figure 162.

Figure 162.



C ECU connectors

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Replace

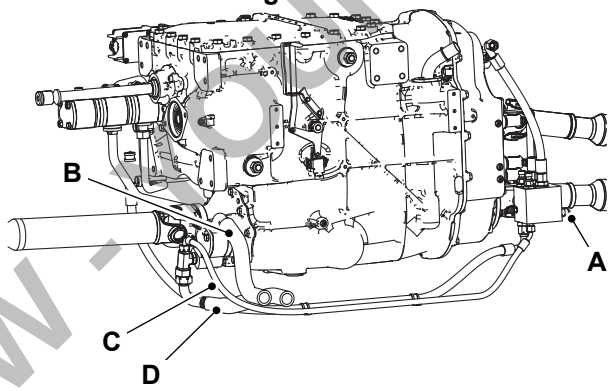
The emergency steer pump may become air locked when the hydraulic oil tank is drained and then refilled. Follow the bleeding procedure.

1. Make the machine safe and switch off the engine.
2. Drain the oil from the tank using the drain plug provided.
3. Tighten the drain plug to a specified torque.
4. Fill the hydraulic oil through the filler cap.
5. Add hydraulic oil that is the correct specification.
   Refer to: General (Page 245).
6. Make sure that you use a clean funnel and avoid contamination.

The emergency steer pump may become air locked when the hydraulic oil tank is drained and then refilled. The system will not self bleed by driving the tractor. Consult your dealer for more information.

1. Bleed the trapped air by installing a bleed tap onto the valveblock test point. Refer to Figure 209.
2. Open and close the tap to purge the air from the system while the ground driven pump (front propshaft) is turning, e.g. machine on axle stands. Otherwise the system may remain air locked, a fault code is generated while you are driving and you could damage the pump.

Figure 209.



A Test point/bleed point
B Pump suction (driving forwards)
C Pump pressure line (forwards only)
D Pump suction (driving reverse)

Coupling

Drain

Drain the rear reservoirs as follows:

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Full pump flow is available at the power beyond connections at 210bar (3,043.5psi) at 126L/min or 178L/min, depending on the pump specifications.

The power beyond system is a class 3 load sensing system capable of delivering over 100L/min, closed centre hydraulic system that have a specific flow rate. Conforming to ISO 17567:2005. Maximum pump flow can be delivered though the power beyond system.

Releasing Auxiliary Circuit Hydraulic Pressure

Hydraulic fluid at system pressure can injure you. Before disconnecting or connecting hydraulic hoses, select float on the relevant external hydraulics control with engine running, then switch off the engine. Make sure the engine cannot be started while hoses are open.

Hydraulic Oil Temperature

During normal use, the oil temperature is not expected to exceed 90°C (193.9°F). Overheating can result in oil degradation.

In the event of high oil temperatures note the following:

Ensure the tractor cooling pack (which includes an auxiliary hydraulic oil cooler) is clean and not blocked.

– If powering implements using the tractor hydraulic valve block:

- Reduce the % flow setting as much as possible.
- Check the implement pipework, hoses and QRC couplings for excessive restrictions or damage causing pressure increases.
- Use the free flow return if appropriate.
- Consult the implement manual for correct implement valve settings, especially if additional flow control valves are fitted.
- Increase oil and air flow through the tractor oil cooler by increasing engine speed (cooler circuit operated by gear pump)

– If using Power Beyond:

- Check the LS control circuit is operating correctly.
- Consider adding an additional oil cooler.

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Notes:

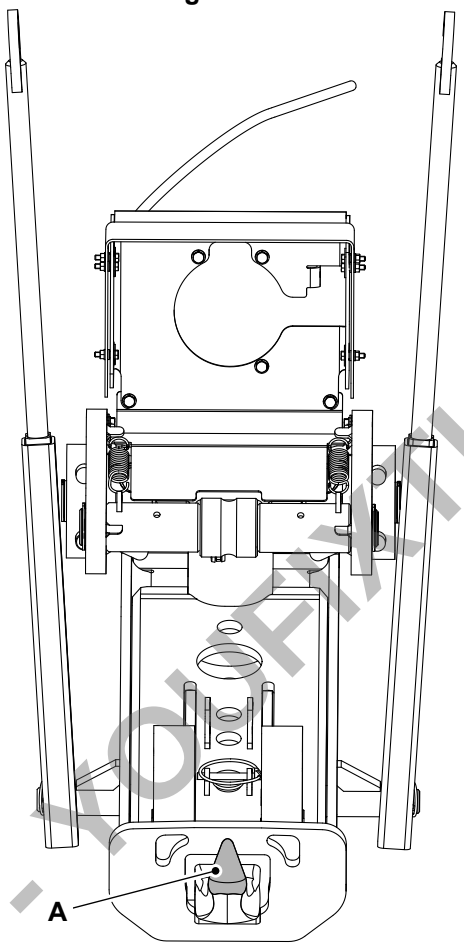
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Max drawbar loading is shown on the drawbar data plate

Letters correspond to the adjustment holes shown in Refer to Figure 134.

Figure 134.



A Hook

Make sure that the implement is safety supported on level ground and secured in a safe manner before disconnecting or connecting towed implements.

Before using towed implements, check that the tractor hook and implement towing eye are not worn or damaged.

Do not exceed the axle capacity, tyre ratings or hitch capacity.

Lowering

1. Raise the linkage fully using switch. Refer to Figure 135.
2. Release the PUH using lever to unlatched position. Refer to Figure 136.

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