OPERATOR'S MANUAL



LOADER

427, 435S, 437

EN - 9831/1600 ISSUE 5 - 02/2018

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

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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, you must 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 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 symbol (shown) also helps to identify important safety messages in this manual. When you see this symbol your safety is involved, carefully read the message that follows.

Figure 2. The safety alert system symbol



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Introduction
About this Manual

Model and Serial Number

This manual provides information for the following models(s) in the JCB machine range:

Table 1.

Model	From:	To:	Front Axle	Rear Axle
427	2407001	2408000	-	-
	2452501	2453000	-	-
435S	2438601	2438700	3085 Series	3075 Series
	2474301	2474600	3085 Series	3085 Series
	2556851	2556951	3085 Series	3085 Series
437	2408001	2409000	3085 Series	3075 Series
	2473801	2474300	3085 Series	3085 Series

Using the Manual

This operator's manual is arranged to give you a good understanding of the machine and its safe operation. It also contains maintenance and technical data.

Read this manual from the front to the back before you use the machine for the first time, even if you have used machines of a similar/same type before as the technical specification, systems and controls of the machine may have changed. Particular attention must be given to all the safety aspects of operating and maintaining the machine.

If there is anything you are not sure about, ask your JCB dealer or employer. Do not guess, you or others could be killed or seriously injured.

The general and specific warnings in this section are repeated throughout the manual. Read all the safety statements regularly, so you do not forget them. Remember that the best operators are the safest operators.

The illustrations in this manual are for guidance only. Where the machines are different, the text and or the illustration will specify.

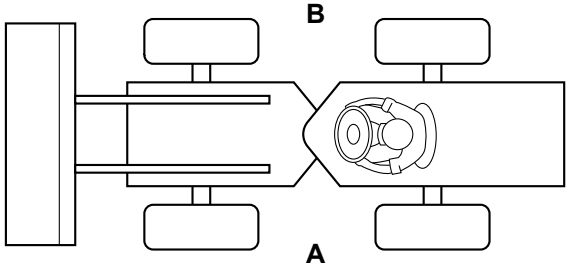
The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this manual.

All of the optional equipment included in this manual may not be available in all territories

Left-Hand Side, Right-Hand Side

In this manual, 'left' and 'right' mean your left and right when you are seated correctly in the machine.

Figure 1.



A Left **B** Right

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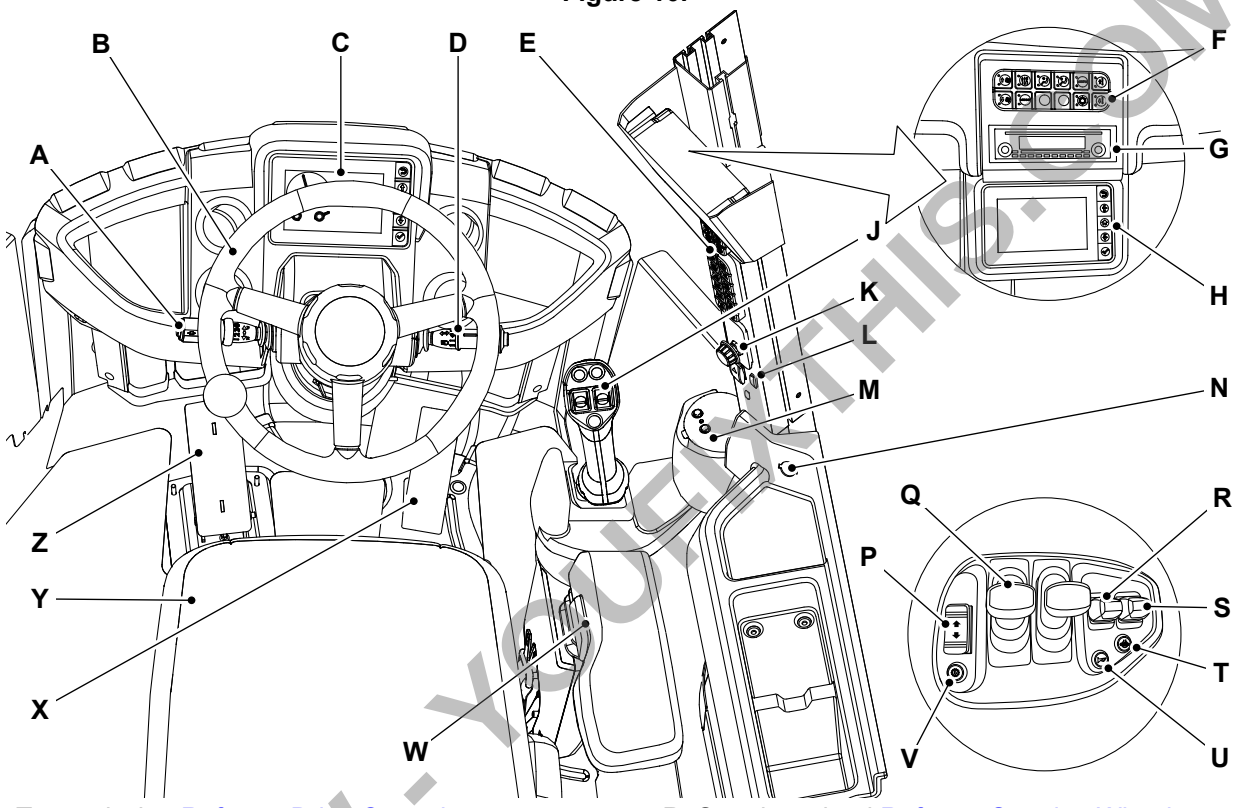
Operator Station

Component Locations

For: 427 [T4F], 437 [T4F] ..... Page 18
For: 435S [T4F] ..... Page 19

(For: 427 [T4F], 437 [T4F])

Figure 10.



A Transmission Refer to: Drive Controls (Page 68).
B Steering wheel Refer to: Steering Wheel (Page 69).
C Front display panel Refer to: Instruments (Page 79).
D Multi purpose steering column switch Refer to: Multi-Purpose Switch (Page 20).
E Console switches Refer to: Console Switches (Page 23).
F ATC (Automatic Temperature Control) panel or optional manual HVAC (Heating Ventilation Air Conditioning) controls Refer to: Air-Conditioning Controls (Page 105).
G Radio
H Secondary display panel (option) Refer to: Instruments (Page 79).
J Proportional lever controls Refer to: Operating Levers/Pedals (Page 95).
K Rotary switch panel Refer to: Instruments (Page 79).
L Park brake switch Refer to: Park Brake (Page 74).
M Coffee machine (option)
N Starter switch Refer to: Ignition Switch (Page 20).
P Forward reverse switch Refer to: Forward, Neutral and Reverse Switch (Page 70).
Q Multi lever controls Refer to: Drive Controls (Page 68).
R Primary auxiliary controller (option)Refer to: Auxiliary Circuit Controls (Page 97).
S Secondary auxiliary controller (option)
T Differential lock
U Horn
V Transmission kickdown switch Refer to: Transmission Kickdown Switch (Page 74).
W Armrest Refer to: Armrest (Page 44).
X Accelerator pedal Refer to: Accelerator Pedal (Page 70).
Y Seat Refer to: Operator Seat (Page 41).
Z Service brake pedal Refer to: Service Brake Pedal (Page 73).

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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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8.1. Disconnect the negative booster cable from the machine frame earth. Then disconnect if from the booster supply.

8.2. Disconnect the positive booster cable from the positive (+) terminal on the battery. Then disconnect it from the booster supply.

Retrieval

Towing a machine too far or too fast can damage the transmission. The towing vehicle(s) must have enough pulling and braking power to move and stop the machine.

A disabled machine (non-running engine) will not be able to power off the park brake. In these circumstances the park brake must be manually disengaged, contact your local JCB Service representative for support in these instances.

1. Make sure the park brake is engaged, the transmission is in neutral and the engine is off. If necessary, block the wheels of the machine.
2. Prepare the lift arms (if engine and hydraulics are working):

   Refer to: Lift Arm Controls (Page 95).

   2.1. If the engine and hydraulic systems are not damaged, lift the shovel above the ground as distance specified.

   Distance: 900mm

   2.2. Fully crowd the shovel. The machine in this position can have a straight pull from the recovery point.
3. Prepare the lift arms (if the engine and hydraulics are not working):

   3.1. Use the applicable equipment to lift the shovel and secure it above the ground as distance specified.

   Distance: 900mm

   3.2. Crowd the shovel. Secure the shovel in position.
4. Make sure that both the retrieval chains are suitable and that you use both the retrieval points when retrieving the machine. Attach the retrieval chains to the retrieval points located on both sides of the machine on the chassis in the rear wheel arches and attach to the correct point on the towing vehicle. If you are in any doubt about the suitability of the retrieval chains, do not use them. The retrieval chains should be rated to at least as specified weight.

   Weight/Force: 190,000N
5. Make sure that the retrieval chains are arranged to work within the angular range as shown.

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Transporting the Machine

General

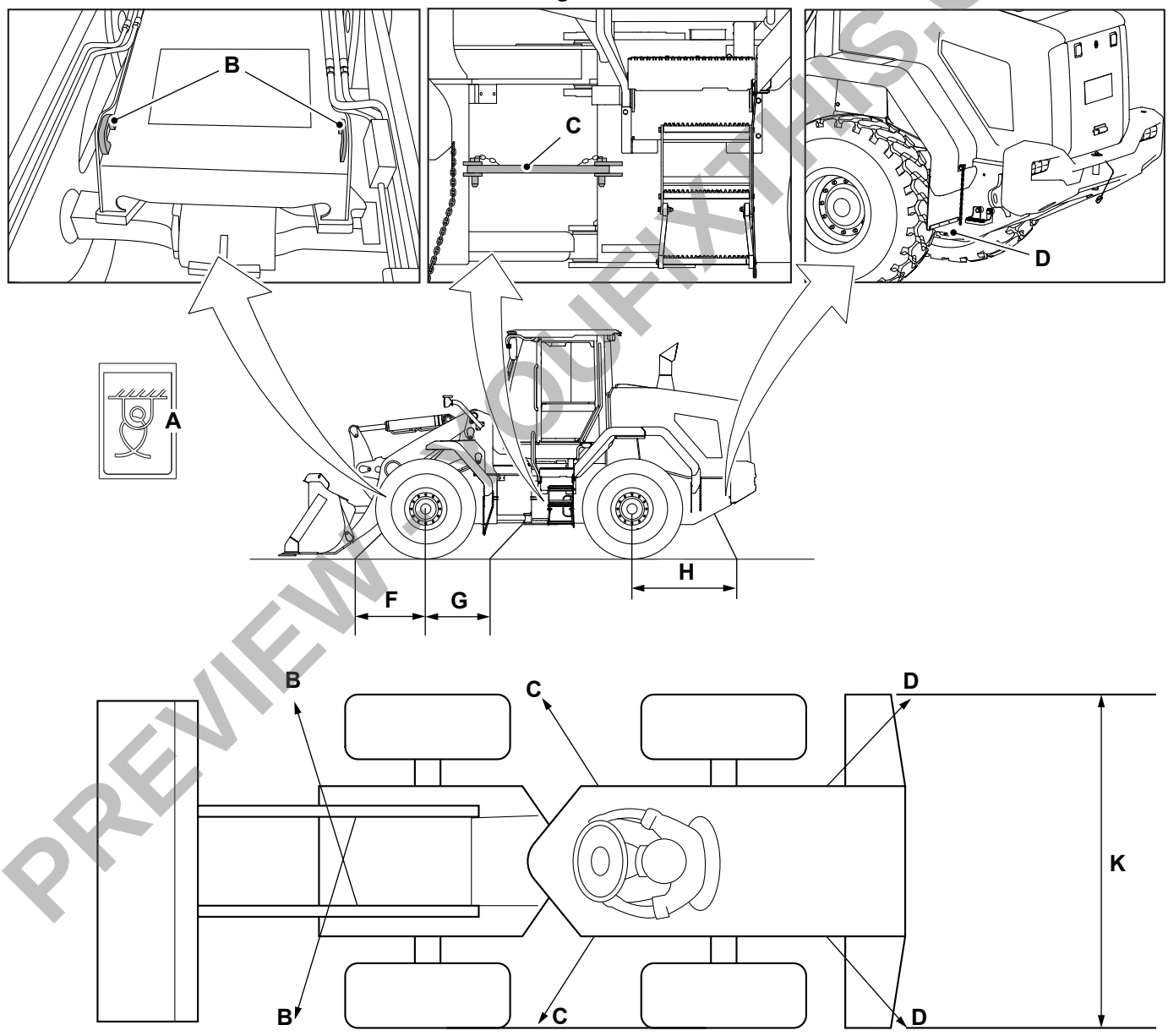
⚠ **WARNING** The safe transit of the load is the responsibility of the transport contractor and driver. Any machine, attachments or parts that may move during transit must be adequately secured.

WARNING Make sure that the ramp incline does not exceed the machine's operational limits.

CAUTION Before moving the machine onto the trailer, make sure that the trailer and ramp are free from oil, grease and ice. Remove oil, grease and ice from the machine tracks. Make sure the machine will not foul on the ramp angle.

Make sure that the transporting machine is suitable for the dimensions of your machine. Refer to: Static Dimensions (Page 209).

Figure 83.

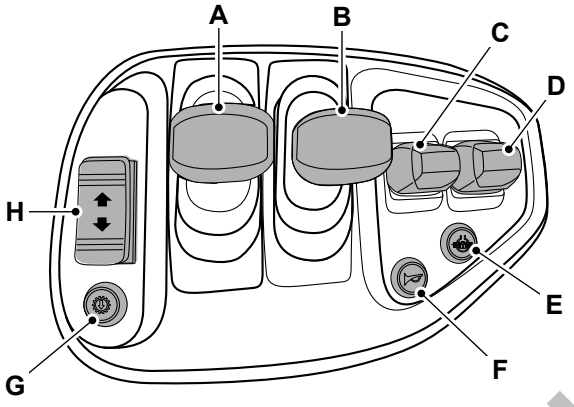


A Tie down decal
B Front tie down points (both sides) (load = 6.33t)
C Front tie down points (load = 4.26t)
D Rear tie down points (both sides) (load = 7.4t)
F Dimension = 800mm
G Dimension = 800mm
H Dimension = 1,700mm
K Dimension = 2,550mm

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6.2. Multi lever control option: Move the lever to the rear and tilt the Quickhitch fully back.

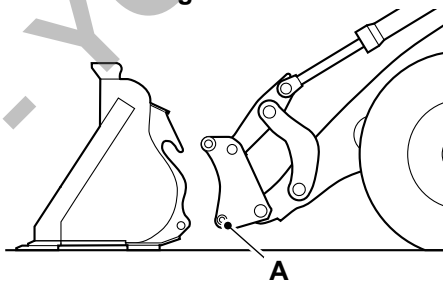
Figure 106.



A Lift arm (lower/raise)
B Shovel ram (crowd/dump)
C Aux 1 (option)
D Aux 2 (option)
E Differential lock
F Horn
G Transmission kickdown switch
H Forward/reverse switch

7. Push and hold the quickhitch isolator switch.
8. Engage the locking pins in the attachment:
   8.1. Proportional lever control with an Aux button: Push the Aux 1 button until the locking pins are engaged.
   8.2. Multi lever control option: Push the lever until the locking pins are engaged.
9. Make sure the locking pins in the base of the Quickhitch are fully engaged. Refer to Figure 107.

Figure 107.



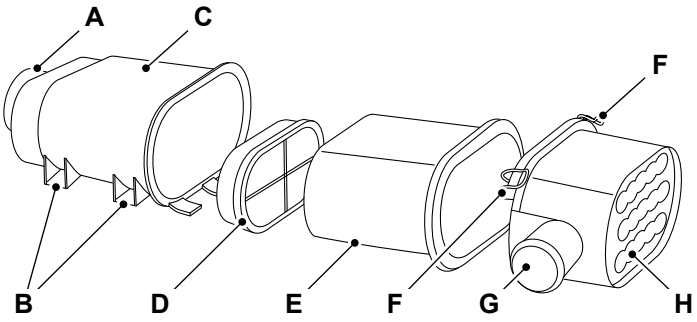
A Red locking pins

10. Release the Quickhitch isolator switch.
11. If necessary connect the hydraulic hoses.

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Figure 135.



A Filter service indicator port
B Mounting brackets
C Body
D Safety filter
E Primary filter
F Cover retention latches
G Pre-cleaner drop tube
H Pre-cleaner tubes

Pre-Cleaner

Clean

Check the intake and exhaust ports of the filter for blockages. Clean if necessary. Refer to: Service Points (Page 160).

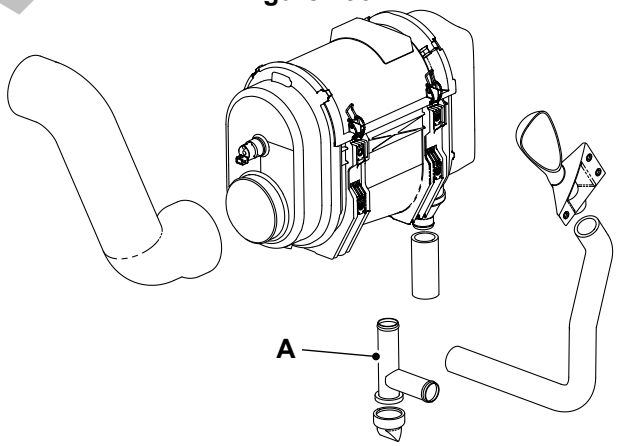
Dust Valve

Check (Condition)

- Check the dust valve for rips/tears.
- Check there are no obstructions.
- Check that the dust valve is free of dirt and dust.
- Check that the dust valve securely attached to the air filter housing.

There is a T-piece and vacuation valve in the air filter assembly to allow any water to drain away. Remove this T piece and check the hose and valve are free from debris.

Figure 136.



A T-piece

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Noise Emissions

General

To assist in compliance with European Directives 2000/14/EC and 2005/88/EC, the noise data values for this type of machine have been provided on the following page(s) and may be used for the assessment of risks to exposure from noise.

The noise data values shown only apply to CE marked machines.

For information relating to this machine when used with other JCB approved attachments, please refer to the literature accompanying the attachments.

Table 73. Definition of terms

Term	Definition	Notes
LpA	A-weighted sound pressure level measured at the operator's station.	Determined in accordance with the test method defined in ISO 6396 and the dynamic test conditions defined on 2000/14/EC.
LwA	Equivalent A-weighted sound power level emitted by the machine.	Guaranteed equivalent sound power (external noise) determined in accordance with the dynamic test conditions defined in 2000/14/EC.

Noise Data

For: 427 [T4F], 437 [T4F] ..... Page 240
For: 435S [T4F] ..... Page 240

(For: 427 [T4F], 437 [T4F])

Table 74.

Engine rating(1)	LpA	LwA
109kW, 120kW	68	104

(1) Net installed power

(For: 435S [T4F])

Table 75.

Engine rating(1)	LpA	LwA
117kW	68	104

(1) Net installed power

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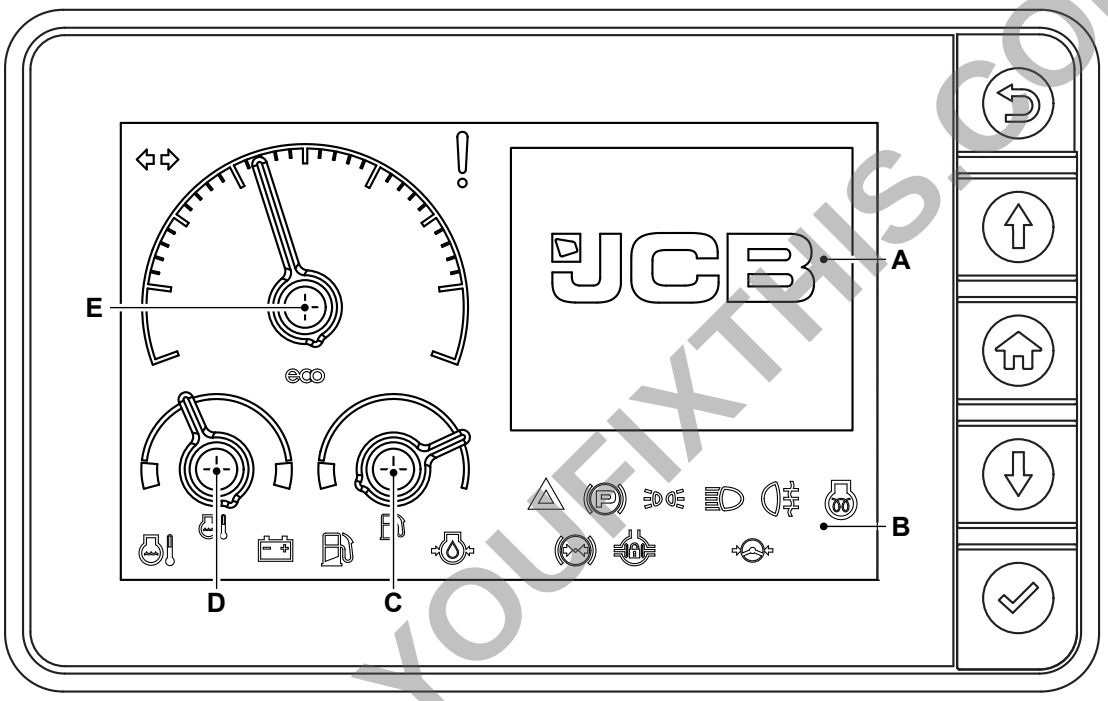
Instruments

Instrument Panel

Front Display

The gauges, warning and indicator lamps are grouped together on the instrument cluster. When a warning lamp comes on, an alarm will sound.

Figure 56.



A LCD (Liquid Crystal Display) screen
B Warning and indicator lamps
C Fuel level gauge
D Coolant temperature gauge
E Engine speed

The LCD shows the live machine information to the operator.

Fuel level gauge: The needle position shows the current level of fuel in the tank. Do not let the tank run dry, or air can enter the fuel system.

Coolant temperature gauge: The needle position shows the current temperature of the engine coolant. Do not let the needle rise into the red danger zone of the gauge.

Engine speed: The needle position shows the current speed of the engine.

During the operation of the machine faults may be displayed as red or amber pop-up icons on the LCD display. An amber fault may be acknowledged and cleared from the display by pressing the 'tick' button on the display. All red faults cannot be cleared from the display. If an icon illuminates red, stop the machine and turn off the engine as soon as it is safe to do so. If an icon illuminates amber, proceed with caution, stop the machine and turn off the engine as soon as it is safe to do so. Scroll to the diagnostics symbol and select to display any fault codes for the machine. If multiple faults are active, the display will automatically cycle through the highest severity faults.

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