OPERATOR'S MANUAL



COMPACT EXCAVATOR

15C-1, 16C-1, 18Z-1, 19C-1, 19C-1 PC

EN - 9831/2900 ISSUE 4 - 03/2018

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

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Contents **Page No.**

Acronyms Glossary vii

Introduction
About this Manual
Model and Serial Number 1
Using the Manual 1
Left-Hand Side, Right-Hand Side 1
Cab/Canopy 1
Cross References 2
Location of Manual 2
Safety
Safety - Yours and Others 3
Safety Warnings 3
General Safety 4
Clothing and Personal Protective Equipment (PPE) 5

About the Product
Introduction
General 7
Name and Address of the Manufacturer 7
Product Compliance 7
Description
General 8
Intended Use 8
Log Moving/Object Handling 8
Optional Equipment and Attachments 8
Danger Zone 8
Main Component Locations 9
Product and Component Identification
Machine 10
Engine 10
Operator Protective Structure 11
Safety Labels
General 14
Safety Label Identification 14
Operator Station
Component Locations 21
Interior Switches
Ignition Switch 23
Cab Interior Light 23
Control Pattern Selector 24
Console Switches
General 25
Work Lights 27
Beacon 27
Controls Isolation 27
Window Wipers 27
Bi-Directional and Hammer Mode Selector 27

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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 model(s) in the JCB machine range:

Model	From:	To:
15C-1	2700721	2701320
16C-1	2701321	2702320
18Z-1	2493516	2493975
19C-1	2492571	2493515
19C-1 PC	2493976	2494335

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.

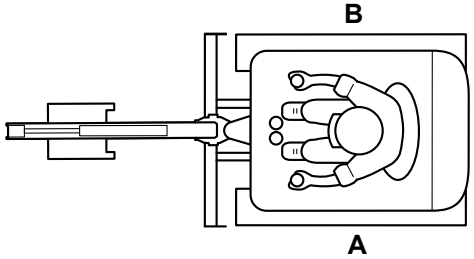
The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this manual.

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

Cab/Canopy

This manual frequently makes references to the cab. For example, 'do not operate the machine without an operator's manual in the cab'. These statements also apply to canopy build machines.

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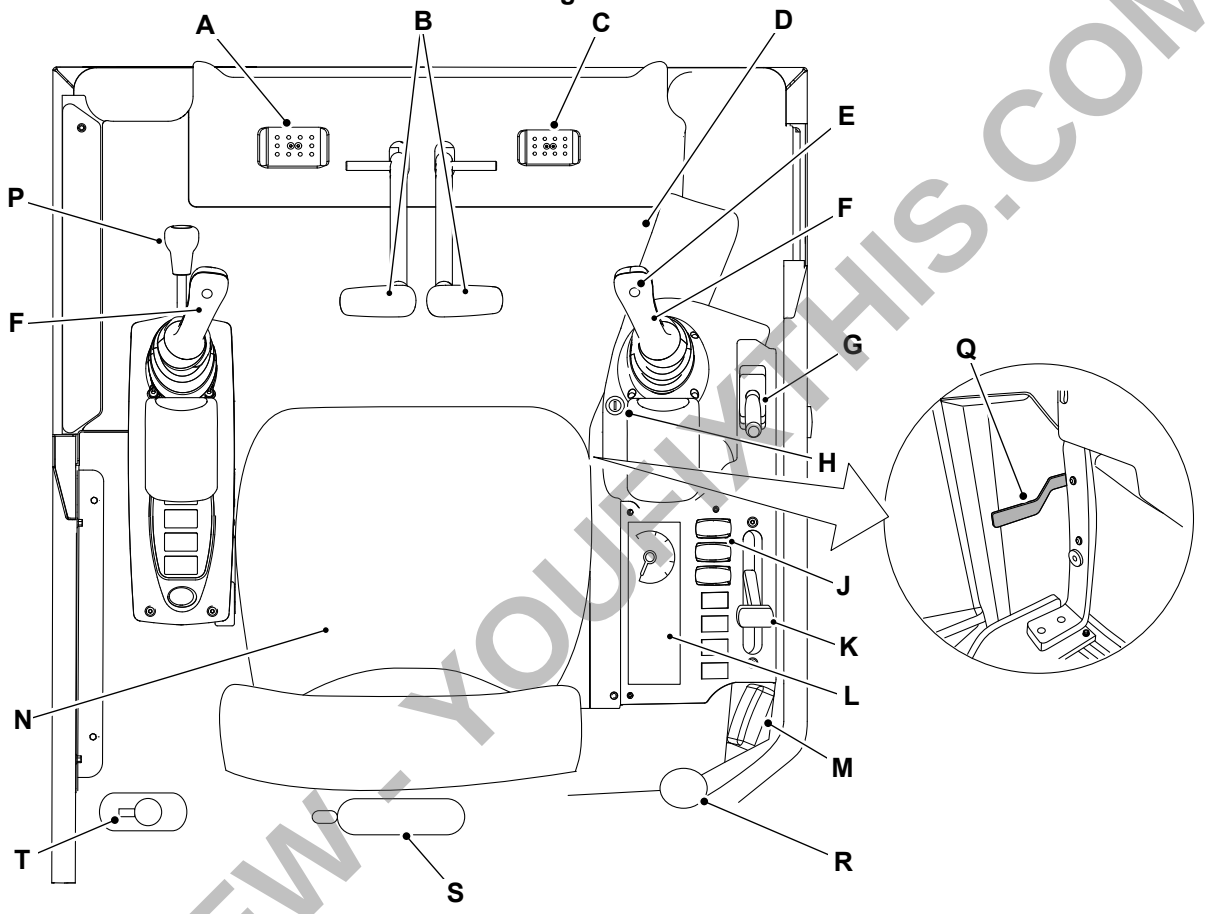
Operator Station

Component Locations

For: 15C-1 [T3], 16C-1 [T3], 18Z-1 [T3], 19C-1 [T3] ..... Page 21
For: 19C-1 PC [T3] ..... Page 22

(For: 15C-1 [T3], 16C-1 [T3], 18Z-1 [T3], 19C-1 [T3])

Figure 14.



A Auxiliary pedal Refer to: Auxiliary Circuit Controls (Page 82).
B Track controls Refer to: Track Controls (Page 69).
C Swing left/right Refer to: Excavator End Controls (Page 77).
D Heater controls (if installed) Refer to: Cab Heater Controls (Page 92).
E Horn
F Excavator arm controls Refer to: Excavator End Controls (Page 77).
G Dozer control lever Refer to: Dozer Blade Controls (Page 80).
H Ignition switch Refer to: Ignition Switch (Page 23).
J Right console switches Refer to: Console Switches (Page 25).
K Hand throttle control Refer to: Hand Throttle Control (Page 69).
L Instrument panel Refer to: Instrument Panel (Page 70).
M Radio (if installed)
N Operator seat Refer to: Operator Seat (Page 50).
P Controls isolation lever Refer to: Control Lock (Page 67).
Q Undercarriage track extension lever (if installed) Refer to: Extending Undercarriage Controls (Page 81).
R Fire extinguisher (18Z-1) Refer to: Fire Extinguisher (Page 94).
S Fire extinguisher (16C-1) Refer to: Fire Extinguisher (Page 94).
T Window washer bottle (machine installed with cab) Refer to: Window Washer (Page 191).

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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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Notice: *Some attachments may contact parts of the machine when in the fully folded position. Take extra care to avoid damage to the machine.*

List of attachments applicable for your machine. Refer to Table 11.

Table 11.

Part No.	Attachments Description	15C-1	16C-1	18Z-1	19C-1	19C-1 PC
980/B0508	150 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0435	230 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0436	300 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0437	400 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0438	460 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0439	610 mm GP bucket (inclusive teeth)	Yes	Yes	Yes	Yes	Yes
980/B0521	150 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0522	230 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0523	300 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0524	400 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0525	460 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0526	610 mm GP bucket (inclusive teeth) and pins	Yes	Yes	Yes	Yes	Yes
980/B0501	150 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0502	230 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0503	300 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0504	400 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0505	460 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0506	600 mm GP bucket, bolt on toeplate, and pins	Yes	Yes	Yes	Yes	Yes
980/B0107	760 mm Ditch maintenance bucket	Yes	Yes	Yes	Yes	Yes
980/B0108	1,000 mm Ditch maintenance bucket	Yes	Yes	Yes	Yes	Yes
980/B4000	Mechanical Quickhitch	Yes	Yes	Yes	Yes	Yes
980/B5000	Mechanical Quickhitch - conversion (1)	Yes	Yes	Yes	Yes	Yes
980/B6000	Hydraulic Quickhitch	No	No	No	No	Yes
980/B3202	Earth drill - 1,500 N·m	Yes	Yes	Yes	Yes	Yes
980/H6662	HM100Q	Yes	Yes	Yes	Yes	Yes
980/B5211	HM012T- top mount	Yes	Yes	Yes	Yes	Yes
980/B0450	Quickhitch adaptor (auger)(2)	Yes	Yes	Yes	Yes	Yes

(1) Mechanical Quickhitch is compatible with JCB supplied old buckets.
(2) Adaptor to connect earth drill to mechanical and hydraulic Quickhitch.
(3) GP is abbreviation for General Purpose.

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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.

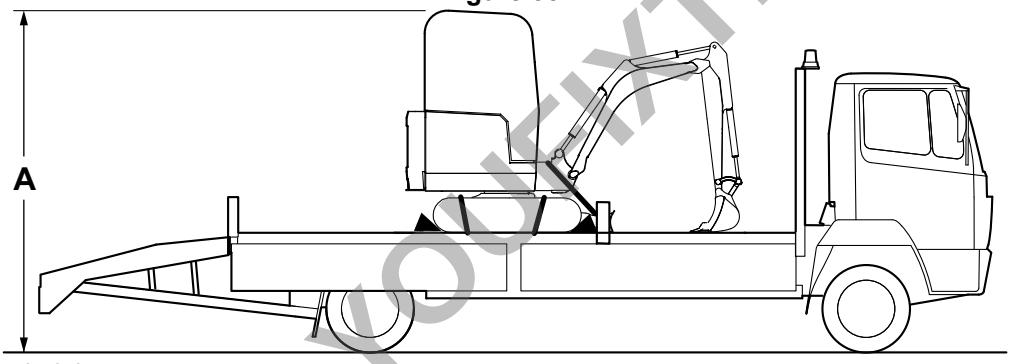
Before transporting the machine make sure you will be obeying the local rules and laws regarding machine transportation of all the areas that the machine will be carried through.

Check the condition of the transporting vehicle before loading the machine on to its trailer.

Check the Condition of the Transporting Vehicle

1. Make sure that the transporting vehicle is suitable for the dimensions and weight of your machine. Measure the clearance height. Make sure that the truck driver knows the clearance height before he drives away.

Figure 85.



A Clearance height

2. Remove all loose dirt that may otherwise come off and obstruct the highway and damage other vehicles.
3. Check the operation of the park brake.
4. Check the trailer bodywork for signs of damage.
5. Check the tyre pressures are correct (consult the manufacturer's manual).
6. Check the trailer lights are working and are the correct voltage for the towing vehicle (consult the manufacturer's manual).
7. Check the breakaway cable is serviceable.

Loading the Machine onto the Transporting Vehicle/Trailer

⚠ **CAUTION** The machine must be securely tied down to the transport vehicle to prevent lateral movement, fore-and-aft movement, and slewing of the superstructure. Failure to do so could cause injury to yourself or others.

1. Position the transporting vehicle on solid, level ground.
2. Apply the park brakes and lower any stability jacks.
3. Attach the loading ramps on to the transporter correctly.
4. Align the machine with the loading ramps, position the dozer blade to the front and fully raised.
5. Slightly extend the boom and dipper for stability.

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Table 14.

Component	Task	10	50	500	1,000	2,000
ENGINE						
Oil level	Check	O	O	□	□	□
Oil and Filter	Replace			□	□	□
Air Filter (Dusty Conditions only)	Check and Clean		O	□	□	□
Air Filter[1]	Replace				□	□
Air Filter Dust Valve (Dusty Condition Only)	Check and Clean		O	□	□	□
Fuel Injectors[2]	Clean and Test					□
Coolant Quality/Level	Check	O	O	□	□	□
Coolant	Replace					□
Fuel lift pump	Clean			□	□	□
Fuel Sedimenter	Drain and Clean		O	□	□	□
Fuel Filter/Sedimenter Element/Primary Filter	Replace			□	□	□
Fuel Pre Filter	Replace			□	□	□
Fan Belt Tension/Condition	Check and Adjust (if required)		O	□	□	□
Valve Clearances[2]	Check and Adjust (if required)				□	□
Cylinder Head Bolts for Tightness	Check and Adjust (if required)			□	□	□
Engine Mounting Bolts for Tightness	Check and Adjust (if required)			□	□	□
Exhaust System Security	Check and Adjust (if required)			□	□	□
Radiator	Clean and Check	O	O	□	□	□
TRANSMISSION						
Security of Mounting Bolts and Nuts						
Track Wheel Motor to Undercarriage Bolts	Check			□	□	□
Drive Sprocket Bolts	Check			□	□	□
Slew Gearbox Bolts	Check				□	□
Track Gearbox Oil	Replace			□	□	□
HYDRAULICS						
Oil Level	Check	O	O	□	□	□
Oil	Replace					□
Rams - Chrome Condition	Check		O	□	□	□
Hoses and Pipework - Damage/Leaks	Check		O	□	□	□
Return Filter Element	Replace			□	□	□
Suction Strainer	Clean				□	□
Security of Mounting Bolts on Major Assemblies	Check				□	□
ELECTRICS						
Battery Electrolyte Level (if applicable)	Check			□	□	□

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Fluids, Lubricants and Capacities

General

JCB recommend that you use the JCB lubricants shown as they have been verified by JCB for use on JCB machines. However, you could use other lubricants that are equivalent to the JCB standards and quality or offer the same machine component protection.

Table 33. Fluids, Lubricants and Capacities

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size (1)	Specification
	L				
Fuel Tank	20.5	Diesel Oil	-		
Engine (Oil)	2.5	-30 °C (-22 °F) to 40 °C (104 °F) JCB Extreme performance 5W40	4001/2705	20 L	API CH4
Engine Coolant	4.2 (Canopy Machine) and 4.7 (Cab Machine)	JCB Antifreeze HP/ Coolant/Water	4006/1120	20 L	ASTM D3306, ASTM D4985, ASTM D6210, SAE J1034, BS6580 (1992), AFNOR NF R15-601
Track Gearbox (each)	0.3	JCB Engine Oil HP SAE 30 (Not Multigrade)	4001/0305	20 L	
Track Idler Wheels	0.3	JCB HP90 Gear Oil	4000/0305	20 L	
Track Rollers (bottom)	0.025	JCB HP90 Gear Oil	4000/0305	20 L	
Hydraulic System	System 28 Tank 15	-20 °C (-4.0 °F) to 46 °C (114.7 °F):JCB Hydraulic Fluid OP46	4002/2005	20 L	
Slew Ring Bearings	As required	JCB HP Grease	4003/2017	0.4 kg	
Slew Ring Gear Teeth	As required	JCB Special Slew Pinion Grease	4003/1619	0.4 kg	
All Other Grease	As required	JCB Special HP Grease (Blue)	4003/1501	0.4 kg	

(1) For information about the different container sizes that are available (and their part numbers), contact your local JCB dealer.

Fuel

⚠ **Notice:** No warranty liability whatsoever will be accepted for failure of fuel injection equipment where the failure is attributed to the quality and grade of the fuel used.

Table 34. Acceptable Fuels

Fuel Specification	Applicable Engines	Service Requirements
EN590 Diesel fuel types - Auto/C0/ C1/C2/C3/C4	All	Obey the usual routine maintenance schedules and procedures.
BS2869 Class A2		
ASTM D975-076 2-D, US DF1, US DF2, US DFA		
JIS K2204 Grades 1, 2, 3 and Special Grade 3		

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Electrical System

General

Table 38.

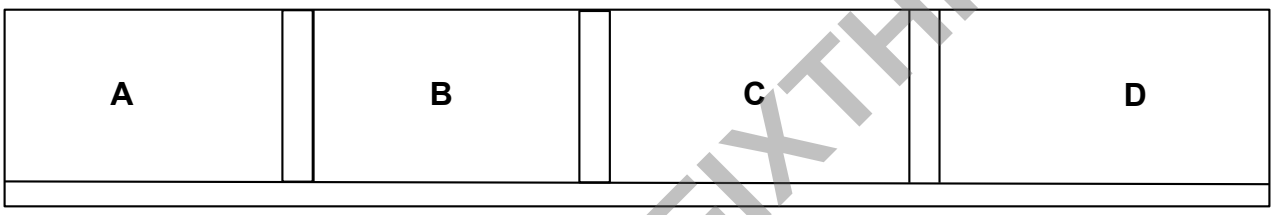
Item	Specification
System voltage	12

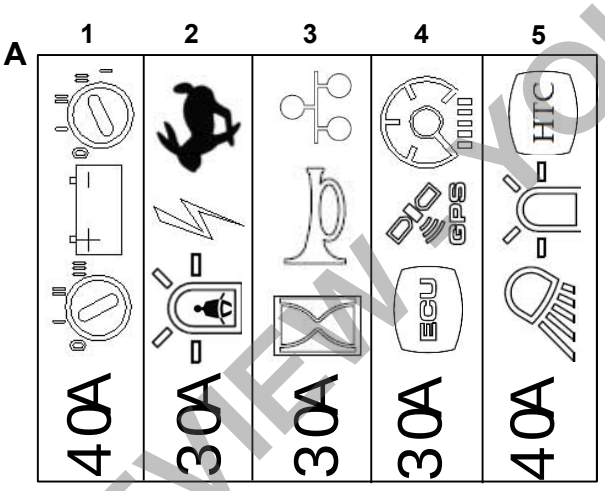
Fuses

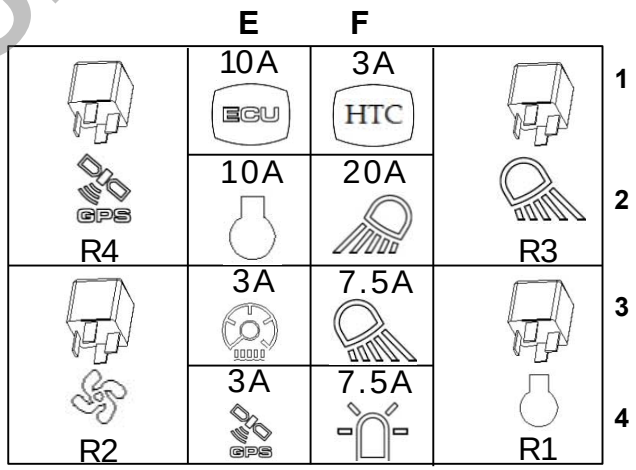
For: 15C-1 [T3], 16C-1 [T3], 19C-1 [T3] ..... Page 219
For: 18Z-1 [T3] ..... Page 221
For: 19C-1 PC [T3] ..... Page 223

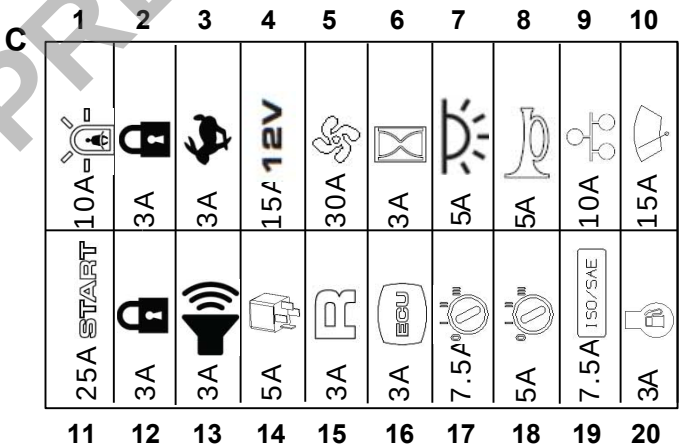
(For: 15C-1 [T3], 16C-1 [T3], 19C-1 [T3])

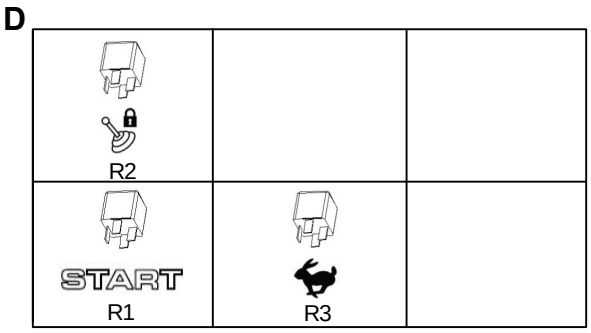
Figure 168.











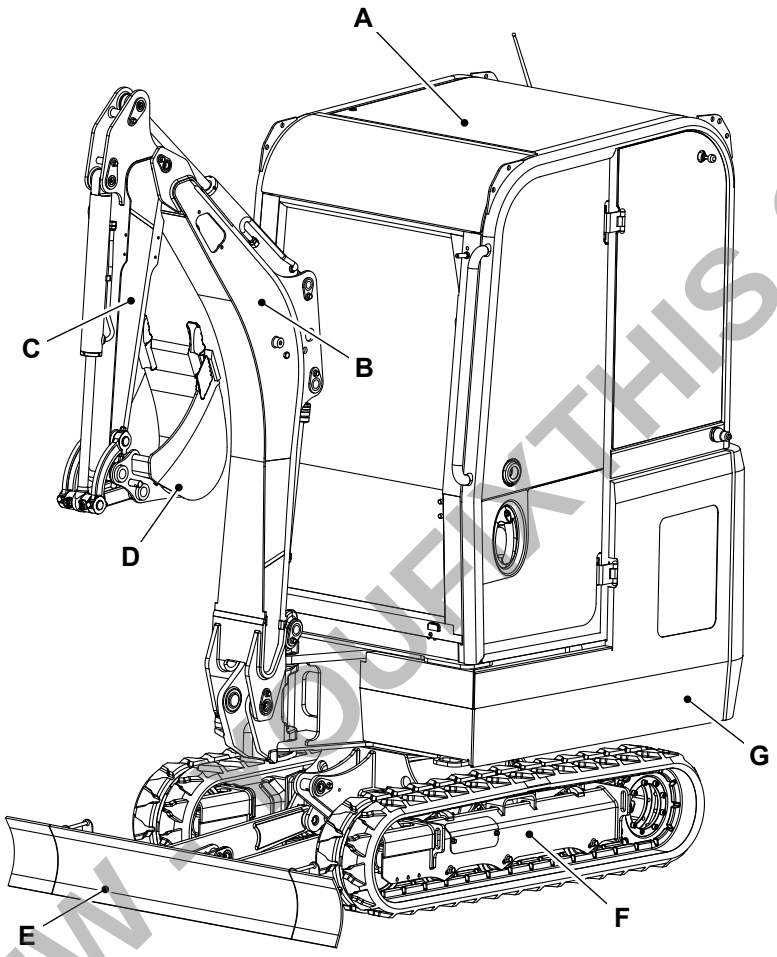
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Before you do a maintenance task, make the product safe.

Main Component Locations

Figure 3.



A Cab/canopy (contains the operator station)
B Boom (part of the excavator arm)
C Dipper (part of the excavator arm)
D Bucket
E Dozer blade
F Undercarriage
G Upper structure

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