

## TM180/220

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## General Information

Service Manual - TM180/220

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# Use

## Introduction

This topic contains information about the structure of the manual and how to use the manual.

⇒ [Scope \(□ 1-1-2\)](#)

⇒ [Personnel \(□ 1-1-2\)](#)

⇒ [Applications \(□ 1-1-2\)](#)

⇒ [Newest Data \(□ 1-1-2\)](#)

⇒ [Format \(□ 1-1-3\)](#)

⇒ [Left and Right Sides \(□ 1-1-4\)](#)

⇒ [Hydraulic Schematic Codes \(□ 1-1-5\)](#)

⇒ [Colour Codes \(□ 1-1-5\)](#)

⇒ [Electrical Device Codes \(□ 1-1-6\)](#)

## Scope

### Personnel

This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic earthmoving equipment. Finally, please remember above all else SAFETY MUST COME FIRST!

### Applications

This manual contains data relevant to a range of machines. Make sure you reference the data for the correct machine. → [Applications \(□ 1-7-63\)](#)

### Newest Data

From time to time new machines, systems or devices require the manual to be re-issued. Make sure you have the newest issue.

Always check the on-line JCB data system for relevant technical information.

## Format

The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1 General Information** - Use the **Applications Tables** at the front of the section to see which topic in the manual is applicable to which machine model. The section also includes general information such as torque settings and service tools.
- 2 Care & Safety** - includes warnings, cautions and general procedures related to aspects of workshop procedures contained in the manual.
- 3 Routine Maintenance** - includes service schedules and recommended lubricants for all the machine.

The remaining sections are alphabetically coded and deal with dismantling, overhaul etc. of specific components, for example:

- A Attachments**
- B Body and Framework...etc.**

The sections contain topics. Each topic is a self contained set of data about a machine System or Device.

Some topics are only applicable to some machine models. Use the **Applications Tables** in this section to see which topic is applicable to which machine model.

Each topic contains data such as specifications, descriptions, fault finding and test procedures. Device topics also contain removal, replacement, dismantle and assemble procedures.

Some topics contain **procedures and specifications for different variants**. This happens because of market requirements, or when the machine specification changes after a period of time. Where applicable, a table in the introduction of each topic contains information to help you identify the correct specifications or procedures.

Each topic also contains a **Related Topics** table. This table lists all the topics that contain related data. For example a hydraulic system contains devices such as valves and pumps. These devices have their own topics and they are listed in the system related topics table.

### Left and Right Sides

'Left Hand' and 'Right Hand' are as viewed from the rear of the machine facing forwards.

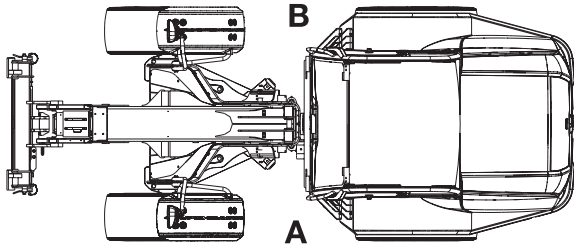


Fig 1.








C087420



## Hydraulic Schematic Codes

### Colour Codes

The following colour coding, used on illustrations to denote various conditions of oil pressure and flow, is standardised throughout JCB Service Publications.

	<b>Red</b>	<b>Full Pressure:</b> Pressure generated from operation of a service. Depending on application this may be anything between neutral circuit pressure and LSRV operating pressure.
	<b>Pink</b>	<b>Pressure:</b> Pressure that is above neutral circuit pressure but lower than that denoted by Red.
	<b>Orange</b>	<b>Pilot:</b> Oil pressure used in controlling a device (Pilot).
	<b>Blue</b>	<b>Neural:</b> Neutral circuit pressure.
	<b>Green</b>	<b>Exhaust:</b>
	<b>Light Green</b>	<b>Cavitation:</b> Oil subjected to a partial vacuum due to a drop in pressure (cavitation).
	<b>Yellow</b>	<b>Lock Up:</b> Oil trapped within a chamber or line, preventing movement of components (lock up).

## Electrical Device Codes

This manual uses a code system to help you identify the electrical devices on the machine.

When the electrical system is designed at the factory codes are given to the electrical connectors on the electrical harnesses. The system allows the same code to be used for different connectors.

For this reason a different system is used in this manual.

Each main category of devices is given a code type:

Code Type	Category
-000	Earth points
+000	Power (from battery or alternator)
1000	Switches
2000	Relays
3000	Valves/Coils
4000	ECU's
5000	Sensors
6000	Indicators/Lamps
7000	Other devices
8000	Harness Interconnections
9000	Fuses

Each device is given one code and the code is used throughout the manual. The same code is given to both the device and its electrical connector.

**Important:** *The electrical schematics and the harness drawings in Section C are reproduced from the factory drawings. For this reason they retain the factory connector codes.*

# Machine Identification

## Introduction

This topic contains information about a machine identification. On the machine and on the machine devices there are identification data plates.

⇒ [Related Topics \(□ 1-2-8\)](#)

⇒ [Machine Identification Plate \(□ 1-2-9\)](#)

⇒ [Typical Product Identification Number \(PIN\) \(□ 1-2-9\)](#)

⇒ [European Tractor Type Approved Builds \(□ 1-2-11\)](#)

⇒ [Component Identification Plates \(□ 1-2-12\)](#)

⇒ [Typical Engine Identification Number \(□ 1-2-12\)](#)

⇒ [Typical Transmission Identification Plate \(□ 1-2-12\)](#)

⇒ [FOPS Data Plate \(□ 1-2-15\)](#), ⇒ [ROPS Data Plate \(□ 1-2-15\)](#)



## Related Topics

**Table 1. Related Topics in This Publication**

The table lists other topics in the manual that contain information related to this topic. Refer to the applicable topics to complete your procedures. Where applicable the text in this section contains cross references to this page to help you find the correct information. Some machines have different systems and devices. Make sure you refer to the correct topic, refer to **Section 1 - Applications**.

Sections	Topic Titles	Sub Titles
1	<a href="#">⇒ Applications (□ 1-7-63)</a>	ALL

### Machine Identification Plate

The machine has an identification plate mounted as shown. → Fig 1. (□ 1-2-9). The serial numbers of the machine and its major units are stamped on the plate.

**Note:** The machine model and build specification is indicated by the PIN.

The serial number of each major unit is also stamped on the unit itself. If a major unit is replaced by a new one, the serial number on the identification plate will be wrong. Either stamp the new number of the unit on the identification plate, or simply stamp out the old number. This will prevent the wrong unit number being quoted when replacement parts are ordered.

The machine and engine serial numbers can help identify exactly the type of equipment you have.

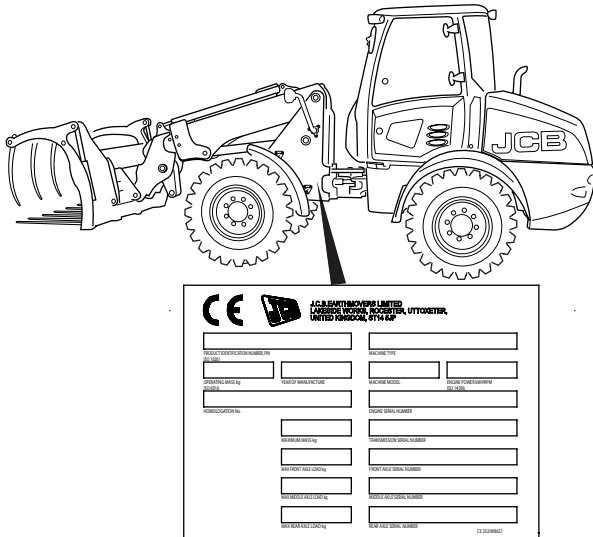
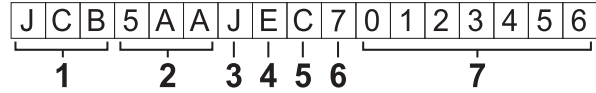


Fig 1.

C051170-C3

### Typical Product Identification Number (PIN)

#### Machines Built Before January 2010



T011100

- 1 World Manufacturer Identification (3 Digits)
- 2 Machine Model (3 Digits)

#### Standard Builds:

- 5AA = 531-70
- 5AB = 535-95
- 5AC = 536-60
- 5AD = 541-70
- 5AH = 533-105
- 5AR = 536-70
- 5AS = 526-56

#### European Tractor Type Approved Builds:

- 5TA = 531-70
- 5TD = 535-95
- 5TB = 541-70
- 5TE = 536-70
- 5TC = 536-60

- 3 Engine Type (1 Digit)

#### JCB Dieselmax (Tier 3):

- P = Turbocharged and after-cooled, 85kW (114Hp)
- R = Turbocharged and after-cooled, 97kW (130Hp)
- S = Turbocharged, 74.2kW (100Hp)
- T = Turbocharged, 63kW (85Hp)

- 4 Gearbox Model (1 Digit)

- E = 3 Speed (PS750)
- H = 4 Speed (PS760)
- F = 3 Speed (PS760)
- J = 6 Speed (PS760)



## Section 1-2 - General Information Machine Identification

### Machine Identification Plate

G = 4 Speed (PS750)      M = 4 Speed (SS700)  
N = 4 Speed (PS750 - 40 KPH)

R = Turbocharged and after-cooled, 97kW (130Hp)  
S = Turbocharged, 74.2kW (100Hp)  
T = Turbocharged, 63kW (85Hp)

5 Randomly generated check letter (1 Digit)

6 Year of Manufacture (1 Digit)

7 = 2007                      A = 2010  
8 = 2008                      B = 2011  
9 = 2009                      C = 2012

4 Gearbox Model (1 Digit)

E = 3 Speed (PS750)      H = 4 Speed (PS760)  
F = 3 Speed (PS760)      J = 6 Speed (PS760)  
G = 4 Speed (PS750)      M = 4 Speed (SS700)  
N = 4 Speed (PS750 - 40 KPH)

7 Machine Serial Number (7 Digits)

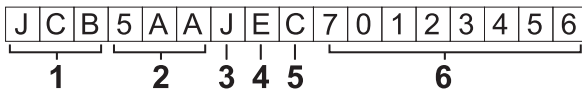
Each machine has a unique serial number.

5 Randomly generated check letter (1 Digit)

6 Machine Serial Number (8 Digits)

Each machine has a unique serial number.

### Machines Built After January 2010



T011100-C1

1 World Manufacturer Identification (3 Digits)

2 Machine Model (3 Digits)

Standard Builds:

5AA = 531-70  
5AB = 535-95  
5AC = 536-60  
5AD = 541-70  
5AH = 533-105  
5AR = 536-70  
5AS = 526-56

European Tractor Type Approved Builds:

5TA = 531-70                      5TD = 535-95  
5TB = 541-70                      5TE = 536-70  
5TC = 536-60

3 Engine Type (1 Digit)

JCB Dieselmex (Tier 3):

P = Turbocharged and after-cooled, 85kW (114Hp)

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