

## General Information

Service Manual - Side Engine Loadalls - SH,SL Engines - from May 2014

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## Safety

### Safety - Yours and Others

All machinery can be hazardous. When a product is correctly operated and maintained, it is a safe product 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 product 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 product you must be thinking of what hazards there might be and how to avoid them.

Do not work with the product 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 product 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 product, 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 product damage.

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

Figure 2. The safety alert system



### General Safety

#### Training

To operate the machine safely you must know the machine and have the skill to use it. You must abide by all relevant laws, health and safety regulations that apply to the country you are operating in. The operator's manual instructs you on the machine, its controls and its safe operation; it is not a training manual. If you are a new operator, get yourself trained in the skills of using a machine before trying to work with it. If you don't, you will not do your job well, and you will be a danger to yourself and others.

### **Care and Alertness**

All the time you are working with or on the machine, take care and stay alert. Always be careful. Always be alert for hazards.

### **Clothing**

You can be injured if you do not wear the correct clothing. Loose clothing can get caught in the machinery. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained. Remove rings, watches and personal jewellery.

### **Alcohol and Drugs**

It is extremely dangerous to operate machinery when under the influence of alcohol or drugs. Do not consume alcoholic drinks or take drugs before or while operating the machine or attachments. Be aware of medicines which can cause drowsiness.

### **Feeling Unwell**

Do not attempt to operate the machine if you are feeling unwell. By doing so you could be a danger to yourself and those you work with.

### **Mobile Phones**

Switch off your mobile phone before entering an area with a potentially explosive atmosphere. Sparks in such an area could cause an explosion or fire resulting in death or serious injury.

Switch off and do not use your mobile phone when refuelling the machine.

### **Lifting Equipment**

You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

### **Raised Equipment**

Never walk or work under raised equipment unless it is supported by a mechanical device. Equipment which is supported only by a hydraulic device can drop and injure you if the hydraulic system fails or if the control is operated (even with the engine stopped).

Make sure that no-one goes near the machine while you install or remove the mechanical device.

### **Raised Machine**

Never position yourself or any part of your body under a raised machine which is not correctly supported. If the machine moves unexpectedly you could become trapped and suffer serious injury or be killed.

### **Lightning**

Lightning can kill you. Do not use the machine if there is lightning in your area.

### **Machine Modifications**

This machine is manufactured in compliance with legislative and other requirements. It must not be altered in any way which could affect or invalidate any of these requirements. For advice consult your JCB dealer.

## **Clothing and Personal Protective Equipment (PPE)**

Do not wear loose clothing or jewellery that can get caught on controls or moving parts. Wear protective clothing and personal safety equipment issued or called for by the job conditions, local regulations or as specified by your employer.

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# About the Product

## Introduction

### General

Before you start using the product, you must know how the product operates. Use this part of the manual to identify each control lever, switch, gauge, button and pedal. Do not guess, if there is anything you do not understand, ask your JCB dealer.

### Name and Address of the Manufacturer

JCB Excavators Limited, Lakeside Works, Rocester, Uttoxeter, United Kingdom, ST145JP

### Product Compliance

Your JCB product was designed to comply with the laws and regulations applicable at the time of its manufacture for the market in which it was first sold. In many markets, laws and regulations exist that require the owner to maintain the product at a level of compliance relevant to the product when first produced. Even in the absence of defined requirements for the product owner, JCB recommend that the product compliance be maintained to ensure safety of the operator and exposed persons and to ensure the correct environmental performance. Your product must not be altered in any way which could affect or invalidate any of these requirements. For advice consult your JCB dealer.

For its compliance as a new product, your JCB and some of its components may bear approval numbers and marking's, and may have been supplied with a Declaration/Certificate of Conformity. These marking's and documents are relevant only for the country/region in which the product was first sold to the extent that the laws and regulations required them.

Re-sales and import/export of products across territories with different laws and regulations can cause new requirements to become relevant for which the product was not originally designed or specified. In some cases, pre owned products irrespective of their age are considered new for the purposes of compliance and may be required to meet the latest requirements which could present an insurmountable barrier to their sale/use.

Despite the presence of any compliance related marking's on the product and components, you should not assume that compliance in a new market will be possible. In many cases it is the person responsible for import of a pre owned product into a market that becomes responsible for compliance and who is also considered the manufacturer.

JCB may be unable to support any product compliance related enquiry for a product which has been moved out of the legislative country/region where it was first sold, and in particular where a product specification change or additional certification would have been required in order for the product to be in compliance.

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## Description

### General

The JCB Loadall is a self propelled, seated operator, wheeled machine for operation on unimproved natural terrain and disturbed terrain.

A main structural support is designed to carry an extending boom with a carriage mounted on the front to which forks or an approved attachment can be fitted.

When used normally the machine lifts and places loads by extending/retracting, raising/lowering the boom.

### Intended Use

The machine is intended to be used in normal conditions for the applications described in this manual. If the machine is used for other applications or in dangerous environments, for example in a flammable atmosphere or in areas with dust containing asbestos, special safety regulations must be obeyed and the machine must be equipped for use in these environments.

### Log Moving/Object Handling

Do not use the machine to move or handle logs unless sufficient log protection is installed. You could cause serious injury to yourself and damage to the machine. For more information, contact your JCB dealer.

### Optional Equipment and Attachments

A wide range of optional attachments are available to increase the versatility of your machine. Only the JCB approved attachments are recommended for use with your machine. Contact your JCB dealer for the full list of approved attachments available.

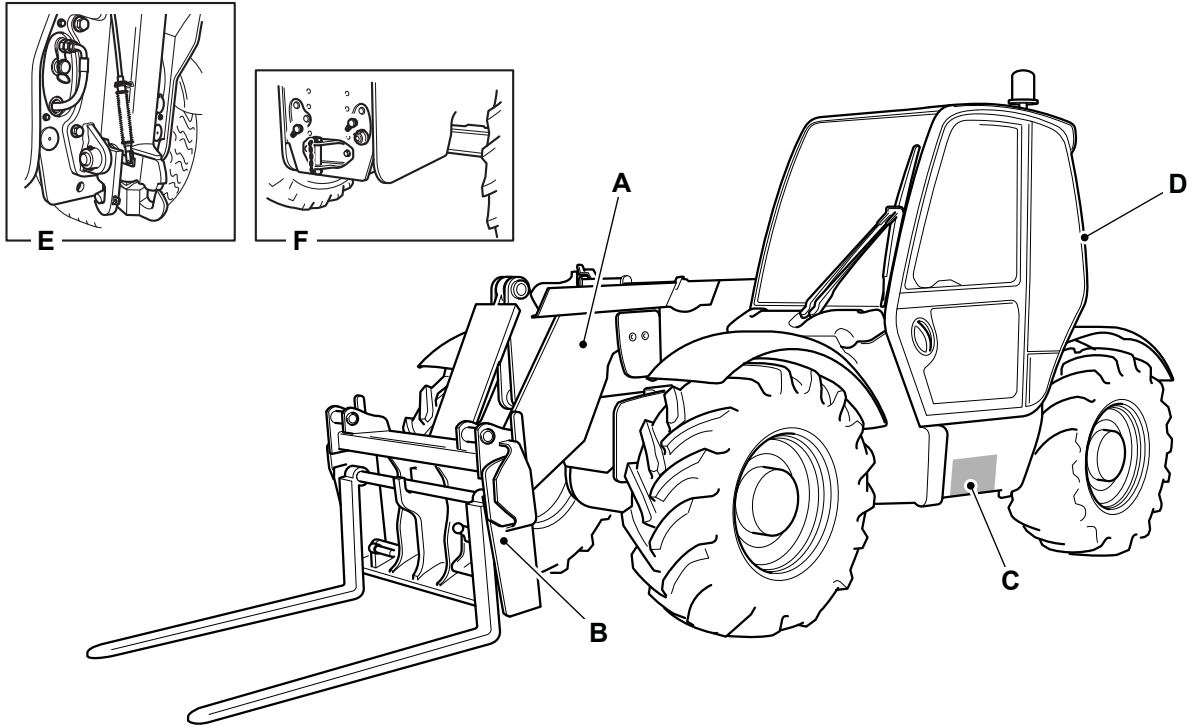
### Danger Zone

The danger zone is any zone within and/or around the machinery in which a person is subject to a risk to their health or safety. During operation of the product, keep all persons out of the danger zone. Persons in the danger zone could be injured. [Refer to: Technical Data \(Page 319\)](#).

Before you do a maintenance task, make the product safe. [Refer to: Maintenance > Maintenance Positions \(Page 248\)](#).

## Main Component Locations

Figure 3.



- A** Boom
- B** Carriage
- C** Battery
- D** ROPS (Roll-Over Protective Structure)/FOPS (Falling-Object Protective Structure) cab
- E** Hydraulic tow hitch
- F** Mechanical tow hitch

## Product and Component Identification

### Machine

#### Machine Identification Plate

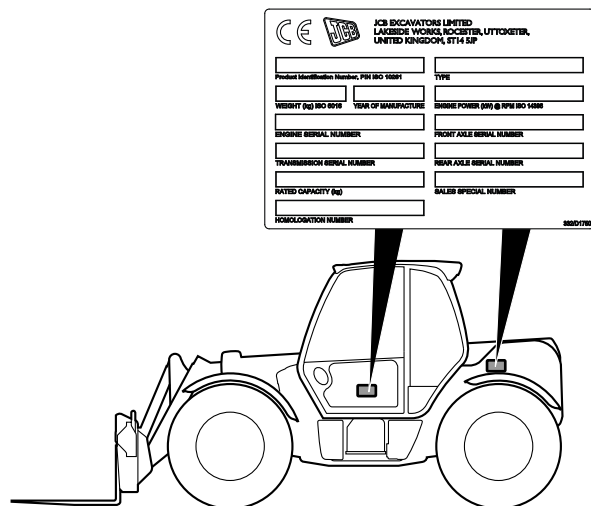
Your machine has an identification plate mounted in one of two positions as shown. The serial numbers of the machine and its major units are shown on the plate.

The machine model and build specification is indicated by the PIN (Product Identification Number)

The serial number of each major unit is also shown 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 get a replacement identification plate from your JCB Dealer or simply remove 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.

The machine identification plate fitted to European Tractor Type Approved builds is different. Refer to Figure 5.

**Figure 4.**



#### Typical Product Identification Number

The machine model and build specification are indicated by the PIN. The PIN has 17 digits and must be read from left to right.

**Table 1. Typical PIN**

JCB	5AA	J	E	C	12345678
-----	-----	---	---	---	----------

**Table 2.**

Digit 1 to 3	World Manufacturer Identification
JCB	United Kingdom
GEO	Georgia, US
HAR	Haryana, India
SOR	Sorocaba, Brazil
GET	Gatersleben, Germany
PUN	Pune, India
SHA	Shanghai, China
JBP	JCB Branded Products

**Table 3.**

<b>Digit 4 to 6</b>	<b>Machine Model</b>
5AA	531-70
5AB	535-95
5AC	536-60
5AD	541-70
5AF	540-170
5AH	533-105
5AL	540-140
5AN	535-125 HiViz
5AP	535-140 HiViz
5AR	536-70
5AS	526-56
5AW	550-80
5AY	560-80
5A1	536-70 LP
5TA	531T70
5TB	541T70
5TC	536T60
5TD	535T95
5TE	536T70
5T1	536T70 LP
5UW	550U80
5UY	560U80

**Table 4.**

<b>Digit 7</b>	<b>Engine Type</b>
JCB Dieselmax (Tier 2):	
J	Naturally Aspirated, 63kW
K	Turbocharged, 74kW
JCB Dieselmax (Tier 3):	
P	85kW
R	Turbocharged and after-cooled, 97kW
S	Turbocharged, 74kW
T	Turbocharged, 63kW
V	Turbocharged and after-cooled, 108kW
JCB Dieselmax (Tier 4):	
W	55kW
X	81kW
Y	93kW
Z	108kW

**Table 5.**

<b>Digit 8</b>	<b>Gearbox Model</b>
E	3 Speed (PS750)
F	3 Speed (PS760)
G	4 Speed (PS750)
H	4 Speed (PS760)
J	6 Speed (PS760)
M	4 Speed (SS700)
N	4 Speed (PS750)



**Table 6.**

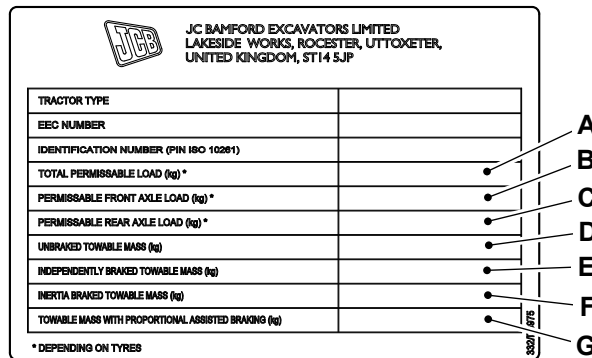
<b>Digit 9</b>
Random check letter. The check letter is used to verify the authenticity of a machine's PIN

**Table 7.**

<b>Digit 10 to 17</b>
Machine serial number. Each machine has a unique serial number.

**European Tractor Type Approved Builds**

**Figure 5.**



**Table 8. Hitch Descriptions**

H1	JCB Hydraulic Pick-up Hitch
H2/H3	Rockinger Fixed Clevis (Auto & Manual)
H4/H5/H6	Rockinger Ladder Clevis (Top Position)
H4b/H5b/H6b	Rockinger Ladder Clevis (Bottom Position)
H7/H8	Rockinger Ladder with Piton/ Ball Ø80
H9	JCB Ladder with Clevis (Manual)
H10	JCB Piton

**Table 9.**

		<b>5TA</b>	<b>5TB</b>	<b>5TC</b>	<b>5TD</b>
		<b>531-70</b>	<b>541-70</b>	<b>536-60</b>	<b>535-95</b>
		<b>kg</b>	<b>kg</b>	<b>kg</b>	<b>kg</b>
A	Total Permissible Mass	10,250	10,250	10,250	10,250
B	Permissible Front Axle Load <sup>(1)</sup>	From 2,400	2,400	2,400	2,400
		To 8,500	8,500	8,500	8,500
C	Permissible Rear Axle Load <sup>(1)</sup>	From 2,400	2,400	2,400	2,400
		To 7,500	7,500	7,500	7,500
D	Unbraked Towable Mass	750	750	750	750
E	Independently Braked Towable Mass	6,000	6,000	6,000	6,000
F	Intertia Braked Towable Mass	3,500	3,500	3,500	3,500
G	Towable Mass Fitted with a Proportionally Assisted Braking System	H1 11,570	9,915kg	11,250kg	9,205kg
		H2-H10 17,865	16,840kg	17,735kg	14,890kg

(1) Dependent on tyre option.

**Table 10.**

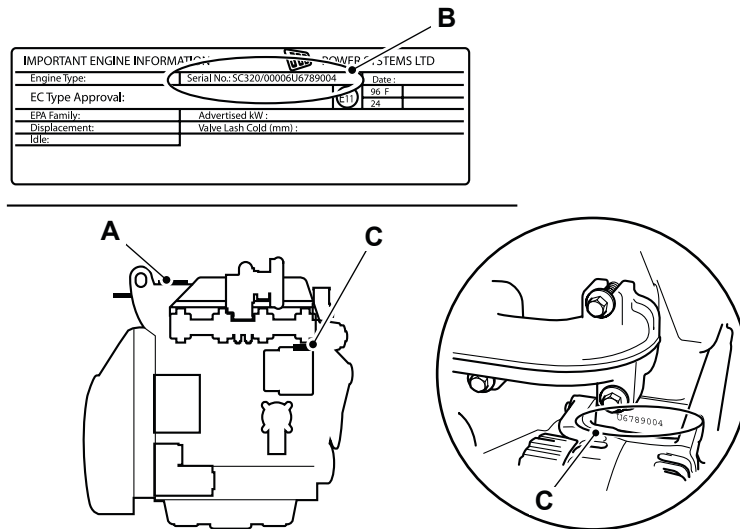
			<b>5TE</b>	<b>5T1</b>	<b>5UW</b>	<b>5UY</b>
	<b>Item</b>		<b>536-70</b>	<b>536-70LP</b>	<b>550-80</b>	<b>560-80</b>
			<b>kg</b>	<b>kg</b>	<b>kg</b>	<b>kg</b>
A	Total Permissible Mass		10,250	10,250	12,005	12,005
B	Permissible Front Axle Load <sup>(1)</sup>	From	2,400	2,400	2,400	2,400
		To	8,500	8,500	10,000	10,000
C	Permissible Rear Axle Load <sup>(1)</sup>	From	2,400	2,400	2,400	2,400
		To	7,500	7,500	10,000	10,000
D	Unbraked Towable Mass		750	750	750	750
E	Independently Braked Towable Mass		6,000	6,000	6,000	6,000
F	Inertia Braked Towable Mass		3,500	3,500	3,500	3,500
G	Towable Mass Fitted with a Proportionally Assisted Braking System	H1	9,960	10,240kg	7,720kg	7,510kg
		H2-	16,970	17,245kg	11,350kg	10,910kg
		H10				

(1) *Dependent on tyre option.*

## Engine

The engine data labels are attached to the cylinder block as shown.

**Figure 6.**



- A** Engine data label - rocker cover
- B** Engine identification number
- C** Stamp

The data label includes the engine identification number.

**Table 11. Example of the engine identification number**

	<b>SD</b>	<b>320/40001</b>	<b>U</b>	<b>00001</b>	<b>04</b>
Digit	1-2	3-10	11	12-16	17-18

**Table 12.**

<b>Digit 1-2</b>	<b>Engine Type</b>
SH	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 4i)
SJ	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 4) > 56kW
SL	4.4L turbocharged and aftercooled electronic common rail fuel injection (Tier 4) < 56kW
DH	4.8L turbocharged and aftercooled electronic common rail fuel injection (Tier 4i)
DJ	4.8L turbocharged and aftercooled electronic common rail fuel injection (Tier 4) > 56kW
DL	4.8L turbocharged and aftercooled electronic common rail fuel injection (Tier 4) < 56kW

**Table 13. Explanation of the engine identification number**

<b>Digit</b>	<b>Explanation</b>
3-10	Engine part number
11	Country of manufacture. U = United Kingdom
12-16	Engine serial number
17-18	Year of manufacture

The country of manufacturer, engine serial number and year of manufacture of the engine are also stamped on the cylinder block. Refer to Figure 6.

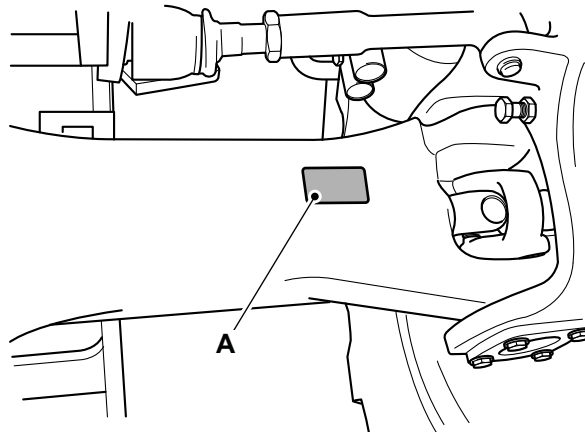
## Axle

For: 526-56, 531-70, 533-105, 535-125, 535-140, 535-95, 536-60, 536-70, 536-70LP, 540-140, 540-170, 541-70 ..... Page 12  
 For: 550-80, 560-80 ..... Page 13

(For: 526-56, 531-70, 533-105, 535-125, 535-140, 535-95, 536-60, 536-70, 536-70LP, 540-140, 540-170, 541-70)

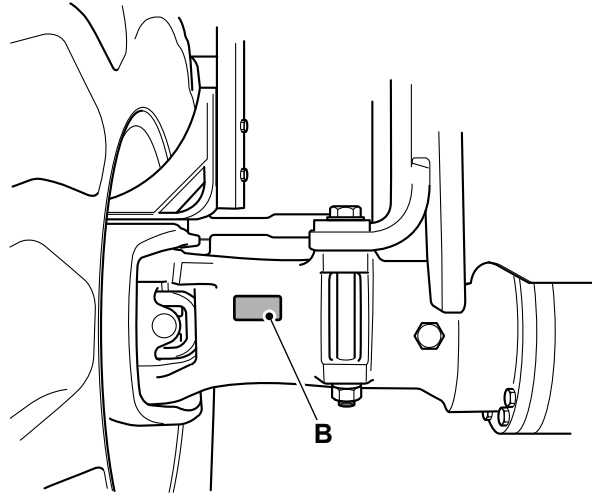
The axles have a serial number stamped on a data plate as shown.

**Figure 7. Front axle**



**A** Data plate - front axle

**Figure 8. Rear axle**



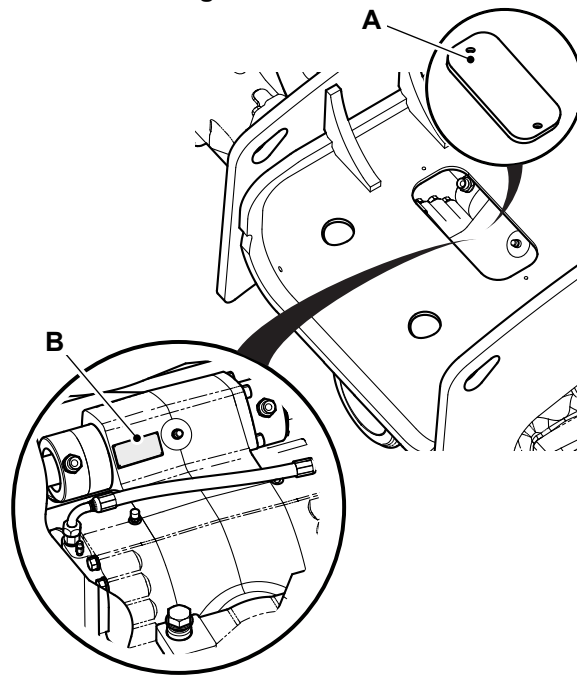
**B** Data plate - rear axle

(For: 550-80, 560-80)

The axles have a serial number stamped on a data plate label as shown.

To view the front axle data plate remove the cover. The plate will be visible through hole.

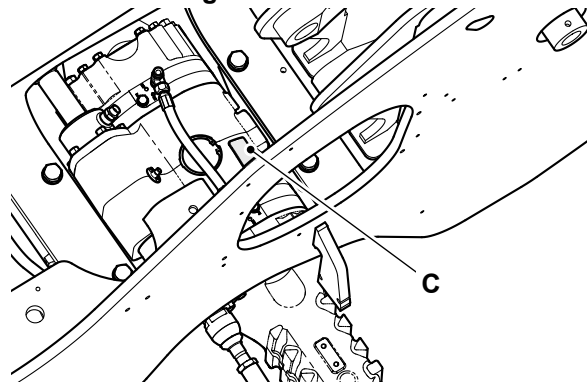
**Figure 9. Front axle**



**A** Cover

**B** Data plate - front axle

**Figure 10. Rear axle**



**C** Data plate - rear axle

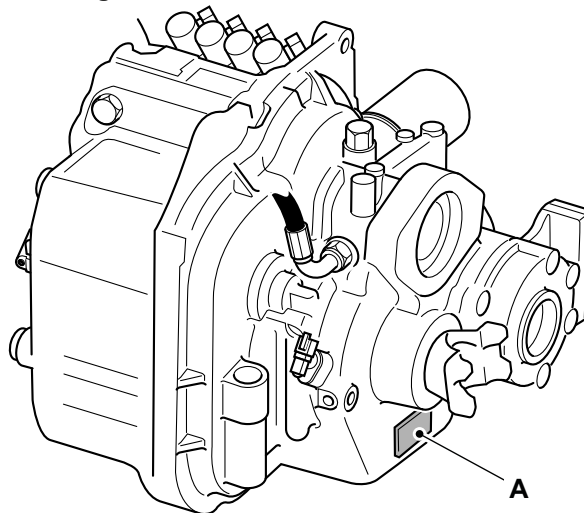
## Gearbox

For: 531-70, 533-105, 535-125, 535-140, 535-95, 536-60, 536-70, 536-70LP, 540-140, 540-170, 541-70 ..... Page 14  
 For: 526-56 ..... Page 14

(For: 531-70, 533-105, 535-125, 535-140, 535-95, 536-60, 536-70, 536-70LP, 540-140, 540-170, 541-70)

The gearbox has a serial number stamped on a data plate as shown.

**Figure 11. Power-shift Transmission**

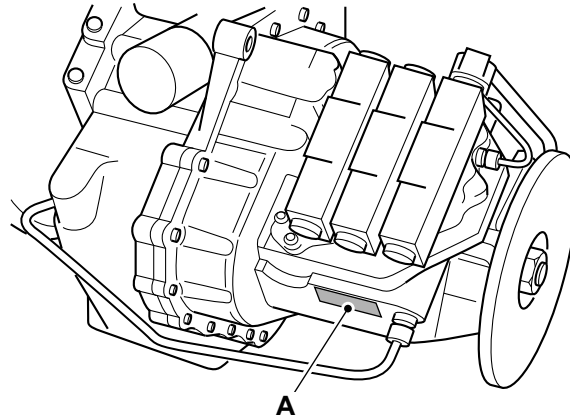


**A** Data plate

(For: 526-56)

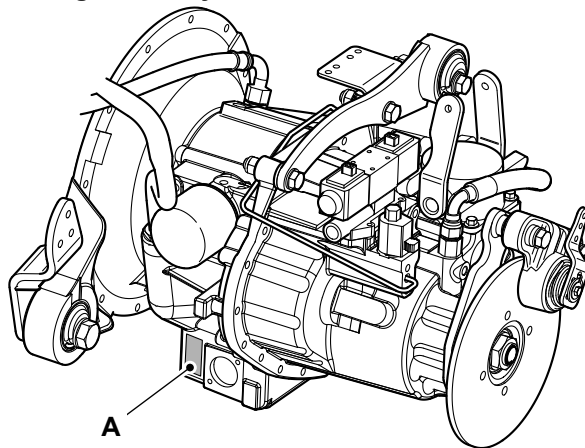
The gearbox has a serial number stamped on a data plate as shown.

**Figure 12. Power-shift Transmission**



A Data plate

**Figure 13. Syncro Shuttle Transmission**



A Data plate

## Operator Protective Structure

**▲ Warning!** You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the ROPS/FOPS has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS certification.

**Warning!** Machines with a ROPS, FOPS or TOPS are equipped with a seat belt. The ROPS, FOPS or TOPS is designed to give you protection in an accident. If you do not wear the seat belt you could be thrown off the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

## FOPS Data Plate

**▲ Warning!** Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

If the machine is used in any application where there is a risk of falling objects then a FOPS (Falling-Object Protective Structure) must be installed. For further information, contact your JCB dealer.

The FOPS has a data plate attached. The data plate indicates what level of protection the structure provides.

There are two levels of FOPS:

**Buy Now**



Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)