OPERATOR'S MANUAL



SKIDSTEER LOADER

135, 150T, 155, 175, 190T, 205T, 210, 215

EN - 9831/4350 ISSUE 2 - 04/2017

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, 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 4. The safety alert system



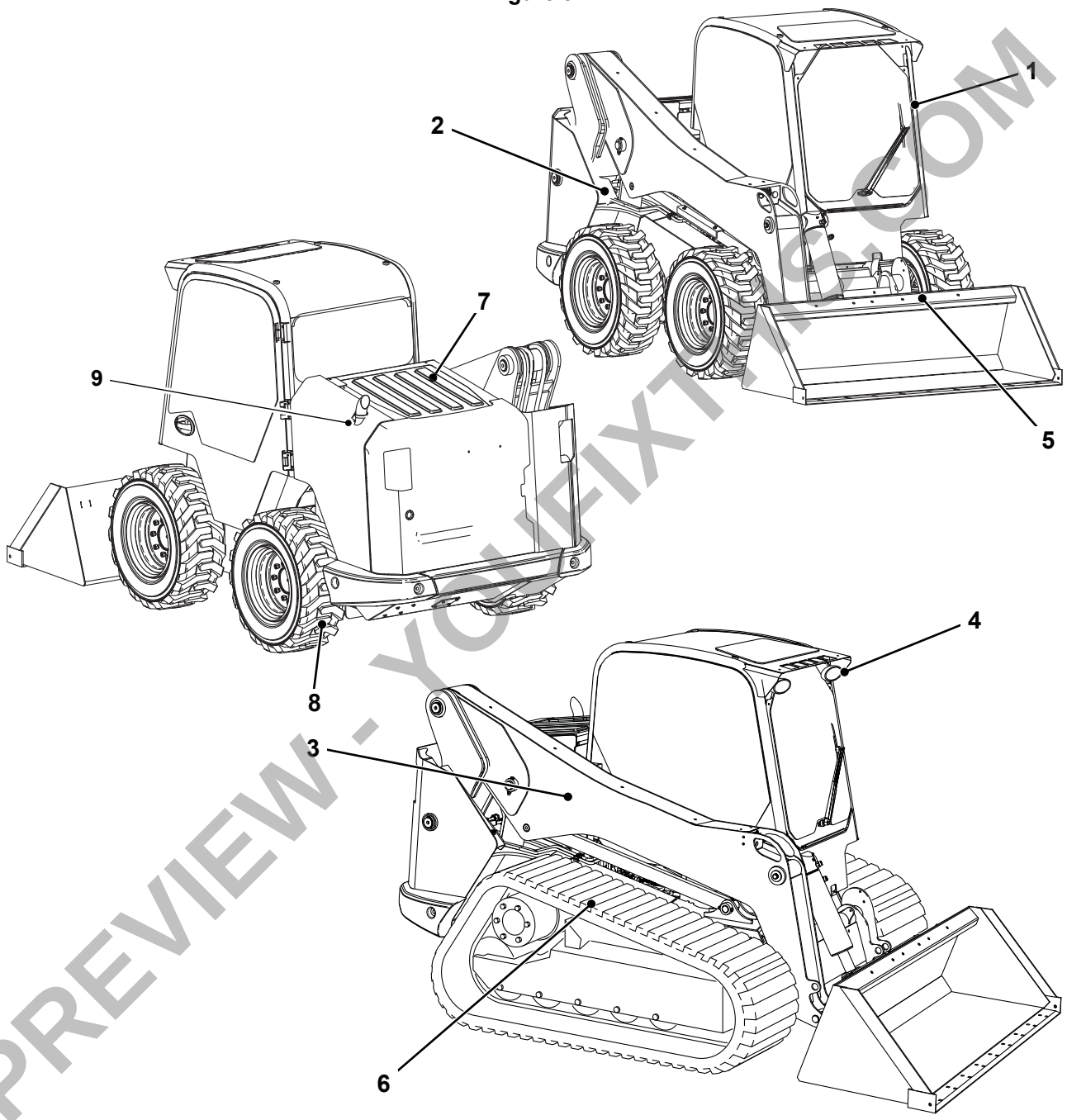
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Main Component Locations

The illustration shows a typical machine model. Your machine may look different from the one shown.

Figure 5.

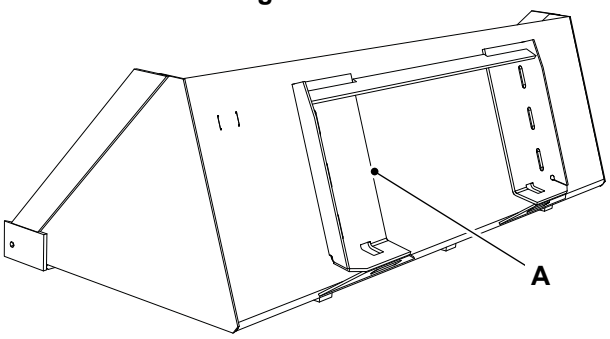


1 ROPS/FOPS cab
2 Fuel tank filler point
3 Lift arm/boom
4 Front working lights
5 Quickhitch
6 Rubber tracks
7 Engine top cover
8 Wheels/tyres
9 Exhaust

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Figure 154.



A Integral framework

Before selecting an attachment for use, assess the application and select the appropriate attachment. The density of any materials being handled will affect the selection of the appropriate attachment.

Remember, do not operate attachments until you have read and fully understand the attachment operating instructions.

These attachments will help increase the productivity of your machine, for more information contact your JCB dealer.

Do not operate or work with attachments until the machine hydraulic oil has reached its normal working temperature.

Hydraulic attachments are only compatible with auxiliary couplers positioned on the right hand side of the lift arm, and not with the left hand auxiliary coupler option.

* = For use on this machine model.

Table 5.

Model	Part No.	Item	135	155	175	190	210	215	150T	190T	205T
AUGERS											
PASF	332/L3978	Planetary Drive Auger - Standard Flow	*	*	*	*	*	*	*	*	*
PAHF	332/L3979	Planetary Drive Auger - HIGH FLOW					*	*			
AUGER EXTENSIONS											
	980/L7271	Hex Drive Extension - 12"	*	*	*	*	*	*	*	*	*
	980/L7272	Hex Drive Extension - 18"	*	*	*	*	*	*	*	*	*
	980/L7273	Hex Drive Extension - 24"	*	*	*	*	*	*	*	*	*
AUGER BITS - STANDARD DUTY											
	980/A2019	6" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2021	9" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2023	12" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2025	15" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2027	18" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2028	24" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2029	30" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*
	980/A2030	36" x 4' Standard Auger 2" Hex	*	*	*	*	*	*	*	*	*

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Figure 101.



Error Code Messages

Each press of the Up or Down button will cycle to the next higher or lower error code respectively.

Figure 102.



No Error Code

The alternate screen if no active error codes are present.

Figure 103.



Foot Throttle Smoothing On

Use the up/down buttons to turn foot throttle smopothing off or on.

Figure 104.



Foot Throttle Smoothing Off

Use the up/down buttons to turn foot throttle smopothing off or on.

Figure 105.



ISO Control Pattern

Use the buttons on the left hand control panel to change the control pattern. When the park brake, lift arm isolate or iso control pattern switch is selected the selected control pattern is displayed temporarily.

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This manual contains original instructions, verified by the manufacturer (or their authorized representative).

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Foreword

The Operator's Manual

⚠

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

Machine Delivery and Installation

Even if you have operated this type of equipment before, it is very important that your new machines operations and functions are explained to you by a JCB Dealer Representative following delivery of your new machine.

Following the installation you will know how to gain maximum productivity and performance from your new product.

Please contact your local JCB dealer if the Installation Form (included in this manual) has not yet been completed with you.

Your local JCB Dealer is

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Fluids, Lubricants and Capacities

General

For: Kohler KDI 1903 TCR, 135 [T4F], 150T [T4F], 155 [T4F IND], 155 [T4F], 175 [T4F IND], 175 [T4F], 205T [T4F] ..... Page 242
For: Kohler KDI 2504 TCR, 190T [T4F], 210 [T4F], 215 [T4F], 2545671-2546100 ..... Page 242

(For: Kohler KDI 1903 TCR, 135 [T4F], 150T [T4F], 155 [T4F IND], 155 [T4F], 175 [T4F IND], 175 [T4F], 205T [T4F])

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 46. Machines with JCB Diesel Engine by Kohler

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size[1]	Specification
Fuel Tank	98L (radial lift), 92L (vertical lift)	Diesel Oil			
Engine (Oil)[2]	Min5.5L Max7.4L	JCB Engine Oil EP 5W40	4001/2705	20L	API CJ4, ACEA E6-E9, Low SAPS
Engine (Coolant)[3]	10L	JCB Antifreeze HP	4006/1120	20L	ASTM D3306, ASTM D4985, ASTM D6210, SAE J1034, BS6580 (1992), AFNOR NF R15-601
Hydraulics System[4]	System:43.5L Tank:26L	JCB Extreme Performance Hydraulic Fluid 46 (climates between -20°C (-4°F) and 46°C (115°F)	4002/2900	200L	
Chain Cases (each side)	19L	JCB Engine Oil EP 15W40	4001/1805	20L	
Grease Points		JCB Special HP Grease (blue)[5]	4003/2017	24 x 0.4kg cartridges	

(1) For information about the different container sizes that are available (and their part numbers), contact your JCB dealer.
(2) Do not use ordinary engine oil.
(3) It is recommended that the cooling system be filled at a maximum rate of 6L (1.6gal) per minute. If the fill rate is any higher than this then there is a possibility of air becoming trapped in the system.
(4) This is nominal capacity. The total hydraulic system capacity depends on the equipment being used. Fill with all cylinders closed. Watch level sight glass when filling.
(5) JCB Special HP Grease is the recommended specification grease. If JCB Special MPL-EP Grease is used, all 50h greasing operations must be carried out at 10h intervals; all 500h greasing operations must be carried out at 50h intervals.

(For: Kohler KDI 2504 TCR, 190T [T4F], 210 [T4F], 215 [T4F], 2545671-2546100)

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.

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Maintenance Schedules

General

⚠ **WARNING** Maintenance must be done only by suitably qualified and competent persons.

Before doing any maintenance make sure the machine is safe, it must be correctly parked on solid, level ground.

To prevent anyone starting the engine, remove the ignition key. Disconnect the battery when you are not using electrical power. If you do not take these precautions you could be killed or injured.

A badly maintained machine is a danger to the operator and the people working around the operator. Make sure that the regular maintenance and lubrication tasks listed in the service schedules are done to keep the machine in a safe and efficient working condition.

To ensure the correct functioning of the engine and emissions control system all operation and maintenance must be conducted in accordance with the instructions in this manual. Incorrect operation, maintenance or repair of the engine and emissions control system may lead to reduced product life, loss of performance or malfunctions. It is the machine owner's responsibility to ensure maintenance is conducted properly in accordance with the requirements in this manual.

Apart from the daily tasks, the schedules are based on the machine running hours. Keep a regular check on the hourmeter readings to correctly gauge the service intervals. When there is no hourmeter installed, use the calendar equivalents to determine the service intervals.

Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are corrected immediately.

More frequent checks of engine components than the engine manufacturer recommends do not invalidate emissions warranty.

How to Use the Maintenance Schedules

The schedules show the service tasks which must be done and their intervals.

The services must be done at either the hourly interval or the calendar equivalent, whichever occurs first.

The intervals given in the schedules must not be exceeded. If the machine is operated under severe conditions (high temperature, dust, water, etc.) shorten the intervals.

Table 8.

○	Service task can be completed by a competent operator. Details of how to complete the service task are given in the Operator's Manual.
□	We recommend that a Service Engineer completes the service task. Details of how to complete the service task are given in the Service Manual.

Maintenance Intervals

Table 9.

Interval (h)	Calendar Equivalent
10	Daily
50	Weekly
500	Six months
1000	Yearly
2000	Two years

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Starting the Engine

General

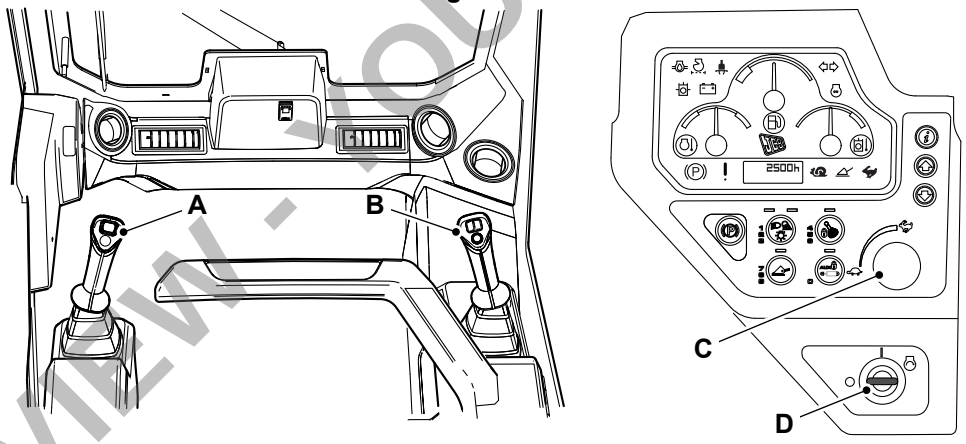
⚠ **WARNING** Care should be applied to the first few operations of the drive control. Failing to verify control response behaviour could result in an instance of uncontrolled machine operation causing possible injury, death or damage to property.

Notice: Do not use ether or other starting fluids to assist cold starting. Using these fluids may result in an explosion causing possible injury and/or damage to the engine.

Ambient Temperatures Above 0°C (32°F)

1. Make sure that the joystick control levers are in the neutral position.
   Refer to: Before Starting the Engine (Page 37).
2. Turn the ignition switch to position 'I' and allow the display to self-check.
   Duration: 3s
3. Set the hand throttle control knob to its minimum position.
4. If the keyless start feature (option) is enabled enter the PIN (Personal Identification Number) code on the right hand switch panel.
   Refer to: Interior Switches (Page 17).
5. Turn the ignition switch fully clockwise against the spring to position 'II' to start the engine.
6. As soon as the engine starts, release the switch, which will return to position 'I'.

Figure 38.



A Left joystick control lever
B Right joystick control lever
C Hand throttle control knob
D Ignition switch

7. Once the engine has warmed up, set the hand throttle control knob to the required speed.
8. Check for normal machine operation prior to starting work.

The starter should be operated for no longer than 15s at any one time. If the engine fails to start, allow the starter to cool for a few minutes before trying again

Make sure all the warning lights are off when the engine is running. If any warning lights remain on, stop the engine immediately and investigate the cause.

New engines do not require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores resulting in excessive oil consumption could occur if the engine is gently run-in.

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Torque Values

General

Operator Protective Structure

Refer to: Operator Station (Page 190).

Table 50.

Mounting Nuts	Torque
A, B	205N·m

Refer to: General (Page 109).

Table 51.

Lifting Eyes	Torque
A	190N·m

Wheels

Refer to: Wheels (Page 207).

Table 52.

Front	Rear
220N·m	220N·m

Tracks

Refer to: Tracks (Page 211).

Table 53.

	Torque
Access plate bolts	140N·m
Track sprocket bolts	368N·m

Engine

Table 54.

	Torque
Oil filter cartridge cap Refer to: Oil (Page 192).	25N·m
Fuel filter cartridge Refer to: Fuel System (Page 201).	17N·m
Engine fuel filter sensor housing	5N·m
Engine oil drain plug Refer to: Oil (Page 192).	40N·m
Alternator belt adjustment bolt	40N·m
Compressor belt adjustment bolt	47N·m

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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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