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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 4. The safety alert system



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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.

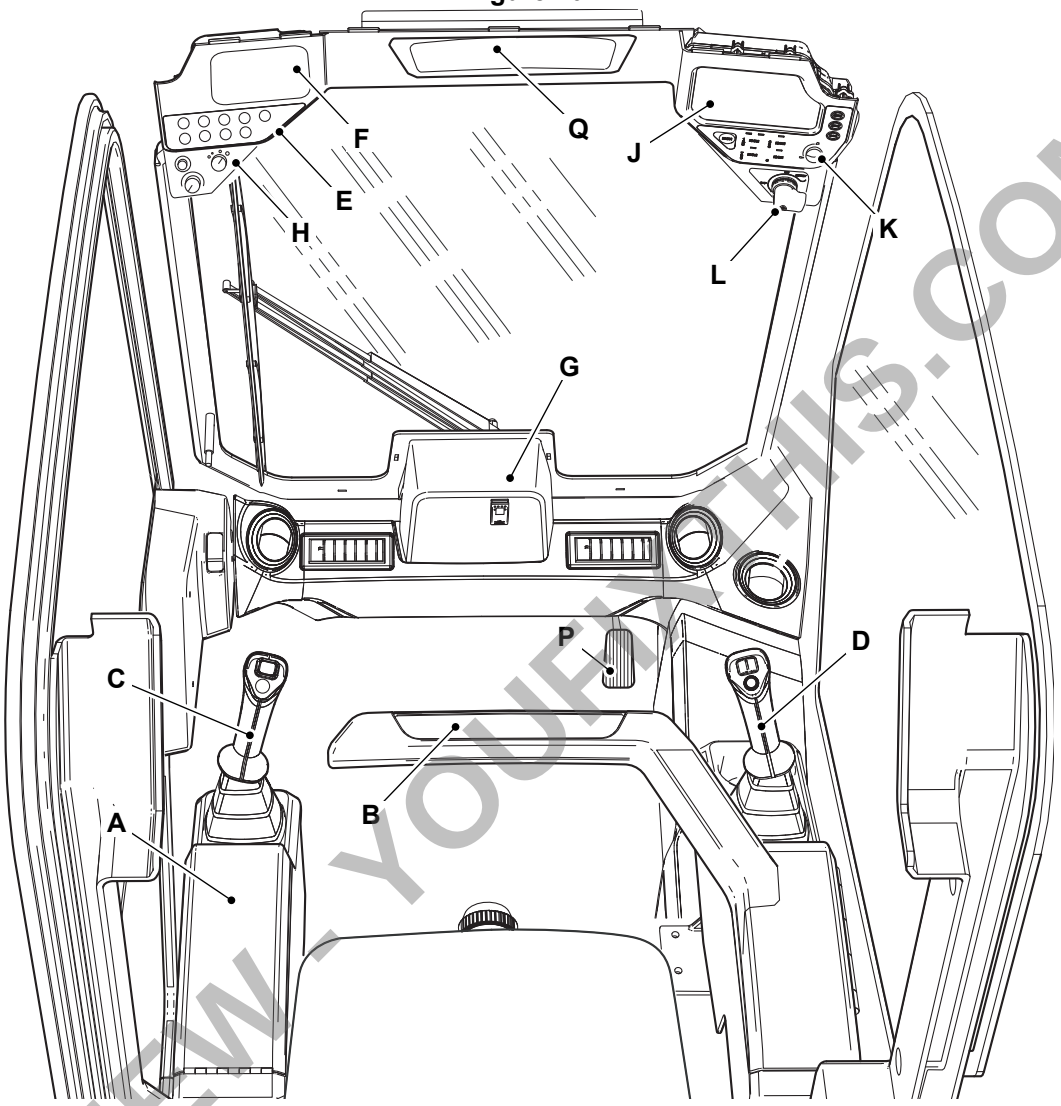
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Operator Station

Component Locations

Figure 10.



A Left armrest (contains 12V accessory socket), Refer to: Operation > Safety Equipment (Page 52).
B Right interlock bar,Refer to: Operation > Safety Equipment (Page 52).
C Left joystick control lever, Refer to: Operation > Drive Controls (Page 54).
D Right joystick control Lever, Refer to: Operation > Operating Levers/Pedals (Page 83).
E Left switch panel, Refer to: Operation > Instruments > General (Page 62).
F Radio, Refer to: Operation > Radio > General (Page 94).
G Front panel, Refer to: About the Product > Console Switches (Page 17).
H Cab HVAC (Heating Ventilation Air Conditioning), (optional)Refer to: Operation > Heating, Ventilating and Air-Conditioning (HVAC) (Page 92).
J Instruments, Refer to: Operation > Instruments (Page 62).
K Hand throttle, Refer to: Operation > Safety Equipment (Page 52).
L Ignition switch, Refer to: About the Product > Interior Switches > Ignition Switch (Page 18).
P Foot throttle control (optional), Refer to: Operation > Drive Controls (Page 54).
Q Interior rear view mirror, Refer to: Operation > Mirrors > General (Page 42).

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Retrieval

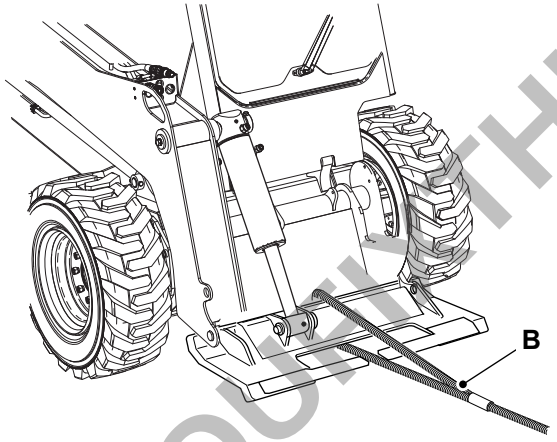
Retrieval

⚠ **Notice:** It is not recommended to tow a disabled machine. Permanent damage to the track motors of the disabled machine may occur if the machine is towed.

If the machine becomes disabled, the machine should be made safe, lifted onto a transporter and moved to a location where maintenance can be carried out.

In the event that towing the machine to a safe location is unavoidable then attach wire rope around the quickhitch, capable of pulling the machine to a maximum towing load of 80kN. Refer to Figure 134.

Figure 134.



B Wire rope

Apply the minimum force to move the machine slowly (not greater than 1km/h (0.6mph)) smoothly and without shocks.

The angle of pull must not exceed 10° in any plane from the longitudinal axis of the machine.

Tow the machine the minimum distance to a safe location for recovery or repair, but do not exceed 20m. Following this procedure the machine should be inspected by a qualified person for damage to the hydraulic motors and the braking system. For assistance, contact your JCB dealer.

Loader Arm (Emergency Operation)

Load Recovery Procedure

During normal operation, the engine must be running before a load can be raised or lowered.

If the engine fails while the load is in the raised position, the load may be lowered as follows:

DANGER! *Do not stand underneath the raised load during the lifting/lowering procedure. Stand clear and to one side until the load has been safely lowered. Make sure that the area is clear of other people before lowering the load. If you do not follow these precautions you or others could be killed or seriously injured.*

1. Make sure the area beneath the load is clear.
2. Open the engine compartment cover.
   Refer to: Maintenance > Access Apertures (Page 169).
3. Move the boom lower lever slowly in a clockwise direction, in line with the valve body, to lower the load.
4. As soon as the load is lowered, move the boom lower lever in a counterclockwise direction to the closed position, perpendicular to the valve body.

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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.

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 tyres. Make sure the machine will not foul on the ramp angle.

Check the condition of the transport vehicle before the machine is loaded on to its trailer.

Make sure that the transport trailer is suitable for the dimensions and weight of your machine. Refer to: Technical Data > Static Dimensions (Page 215).

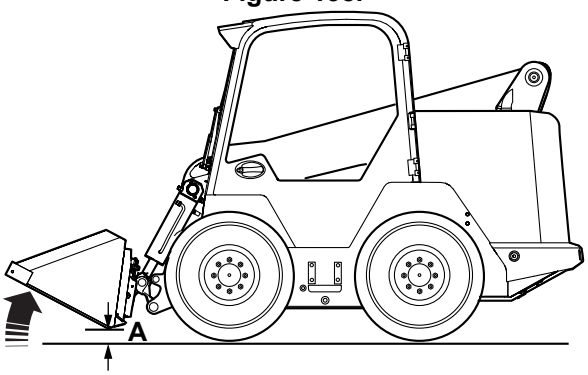
Before transporting the machine make sure you will be obeying the local rules and laws regarding machine transportation of all the areas that the machine will be carried through.

Loading the Machine onto the Transporting Vehicle/Trailer

Using a Trailer

1. Position the trailer on solid, level ground.
   1.1. If the machine is disabled it will be necessary to align the trailer with the rear of the machine.
   1.2. For an operational machine any convenient position will be suitable.
2. Block the trailer wheels and position the ramps.
   2.1. Make sure the ramps are correctly in place and secure.
3. Loading a disabled machine onto the trailer:
   Refer to: Operation > Moving a Disabled Machine (Page 99).
4. Loading a serviceable machine onto the trailer:
   4.1. Raise the lift arm to position the shovel/ attachment approximately to the required dimension from the ground.
   Dimension: 305mm

Figure 138.

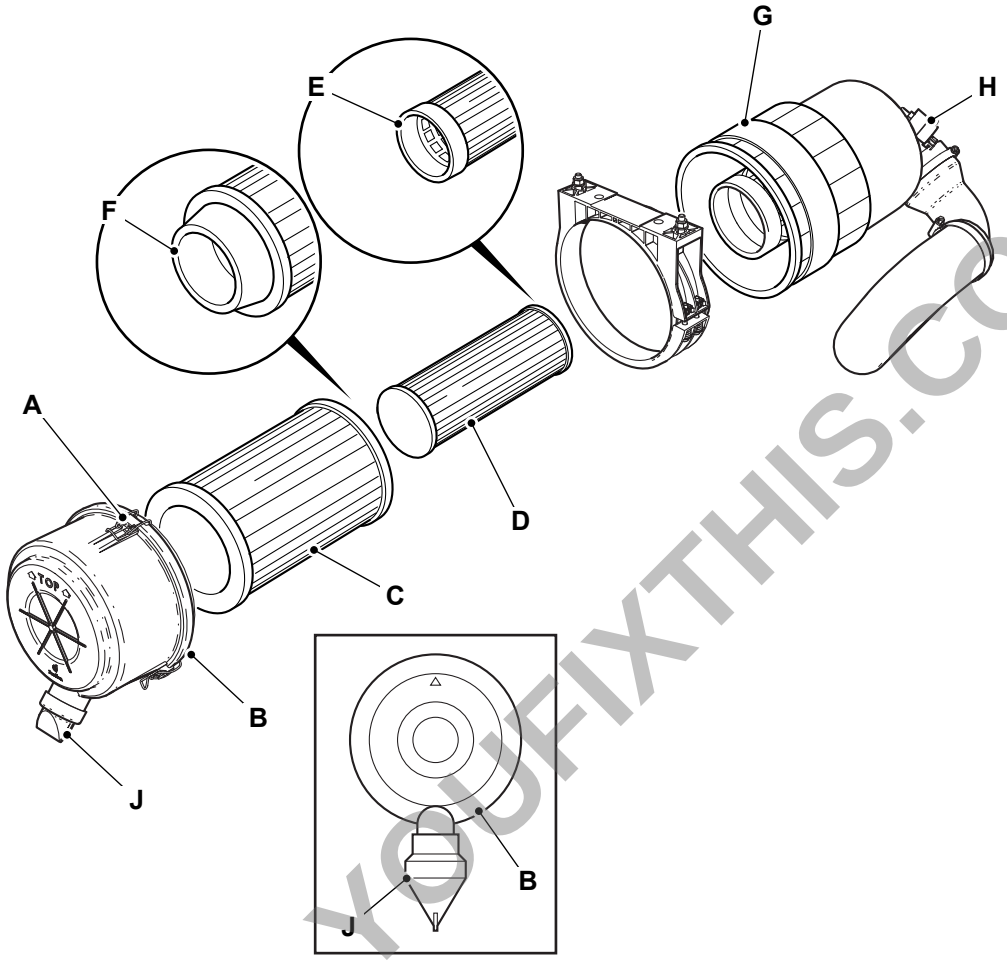


A Dimension = 305mm

   4.2. Carefully reverse the machine onto the trailer.
   4.3. When the machine is safely in position, lower the lift arm to its lowest position.
   4.4. Apply the park brake.
   4.5. Switch off the engine.

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Figure 203.

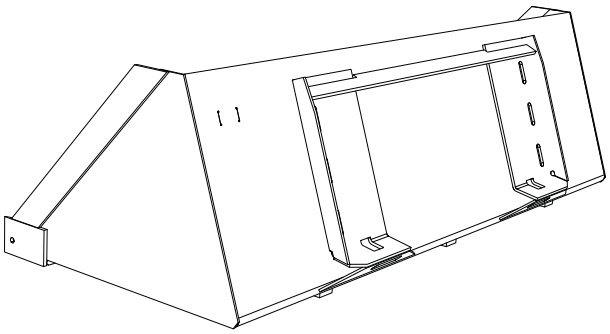


A Clips
B Cover
C Outer element
D Inner element
E Inner element seal
F Outer element seal
G Canister
H Air filter blocked switch
J Dust valve

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Figure 142.



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 7.

Model	Part No.	Item	135	155	175	190	205
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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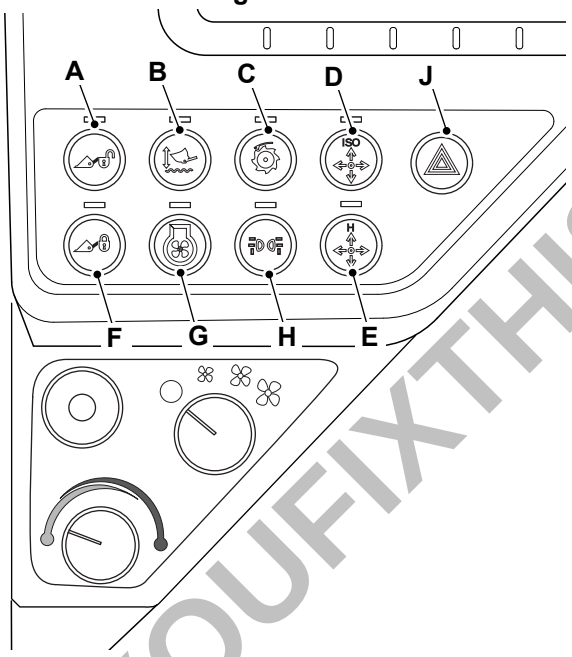
Instruments

General

Left Hand Switch Panel

When a function is installed and enabled its switch is back lit (dark when not fitted or enabled). The LED (Light Emitting Diode) above each switch is illuminated solid when the function is activated/selected.

Figure 51.



A Powered Quickhitch unlock (option)
B SRS (Smooth Ride System)
C High flow auxiliary (option)
D ISO (International Organization for Standardization) control pattern
E H control pattern (option)
F Powered Quickhitch lock (option)
G Reversing fan (option)
H Sidelights (option)
J Hazard warning lights (option)

Powered Quickhitch Unlock (Option)

Figure 52.



Press and hold to unlock the Quickhitch.Refer to: Attachments > Quickhitch (Page 127).

Smooth Ride System (SRS) (Option)

Figure 53.



When the lift arm is fully lowered press to activate SRS.

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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.

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 10.

O	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 11.

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

Pre-start Cold Checks, Service Points and Fluid Levels

Table 12.

Component	Task	10	50	500	1,000	1,500	2,000
Attachments/Optional Equipment							
As required	Lubricate	O	O	□	□	□	□
As required	Check (condition)	O	O	□	□	□	□
Body and Framework							

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Fluids, Lubricants and Capacities

General

For: 135, 155 - Perkins 400 Series ..... Page 224
For: 175, 190, 205 - Perkins 400 Series ..... Page 224

(For: 135, 155 - Perkins 400 Series)

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. Machines with JCB Diesel Engine by Perkins

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size(1)	Specification
Fuel Tank	98L	Diesel Oil			
Engine (Oil)	Min8.9L	JCB Engine Oil EP 15W40	4001/1805	20L	API CH4/SJ. ACEA E5,E3,B3,A3
	Max10.6L	JCB Engine Oil EP 5W40 (climates below -12°C (10.4°F)	4001/2705		API CH4/CG-4/CF-4/ CF/SJ. ACEA E2,B3,A3
Engine (Coolant)	10L	JCB Antifreeze HP	4006/1120	20L	ASTM D3306, ASTM D4985, ASTM D6210, SAE J1034, BS6580 (1992), AFNOR NF R15-601
Hydraulics System	System:43.5L Tank:26L	JCB Extreme Perfor-mance Hydraulic Fluid 46 (climates between -20°C (-4°F) and 46°C (115°F)	4002/2900	200L	
		JCB Bio Hydraulic Fluid 46 (if required)	4002/2603	200L	
Chain Cases	19L	JCB Engine Oil EP 15W40	4001/1805	20L	
Grease Points		JCB HP Grease or JCB Special MPL EP Grease	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.

(For: 175, 190, 205 - Perkins 400 Series)

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 34. Machines with JCB Diesel Engine by Perkins

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size(1)	Specification
Fuel Tank	92L	Diesel Oil			
Engine (Oil)	Min8.9L	JCB Engine Oil EP 15W40	4001/1805	20L	API CH4/SJ. ACEA E5,E3,B3,A3
	Max10.6L	JCB Engine Oil EP 5W40 (climates below -12°C (10.4°F)	4001/2705		API CH4/CG-4/CF-4/ CF/SJ. ACEA E2,B3,A3

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Notes:

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