

# VOLVO SIMULATORS – WHEEL LOADER

## VOLVO WLO 500

Product Description





# VOLVO SIMULATORS – WHEEL LOADER

## Features

The Volvo WLO 500 features an authentic operator environment with original controls, a high performing motion platform and industrial grade visualization system. It is designed for ease of use and to deliver the most realistic and immersive experience possible.



# Technical data

## Simulator overview



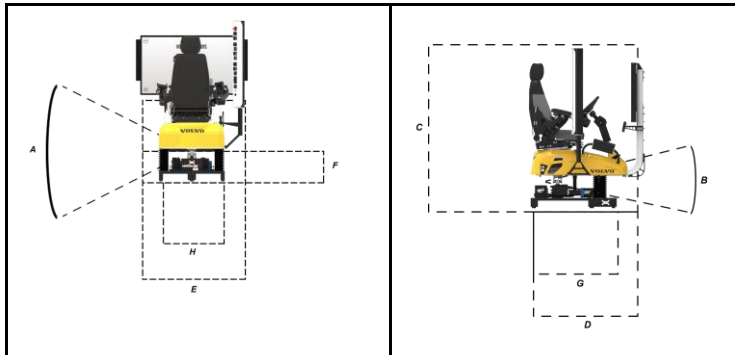
1. Motion system
2. Operator's chair
3. Simulator screen
4. Left hand console
5. Right hand console
6. Simulator numpad
7. External speakers
8. Removable chassis cover
9. External connections and main power switch
10. WLO control box

## Power supply

Single-phase power:  
115VAC, 50/60Hz, 20A

230VAC, 50/60Hz, 10A

## Dimensions and weight



## Motions system

The degrees of freedom are pitch and roll.

A	Maximum Roll Angle: Maximum Roll Velocity:	$\pm 23^\circ$ 46°/s (115VAC operation)
B	Maximum Pitch Angle: Maximum Pitch Velocity:	$\pm 15^\circ$ 30°/s (115VAC operation)

## Static dimensions

C	Height (simulator)	1930mm
D	Length (simulator)	1470 mm
E	Width (simulator)	1370mm
F	Height (base)	410 mm
G	Length (base)	1050 mm
H	Width (base)	800 mm

## Weight

Simulator weight	275 kg
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## Simulator assembly

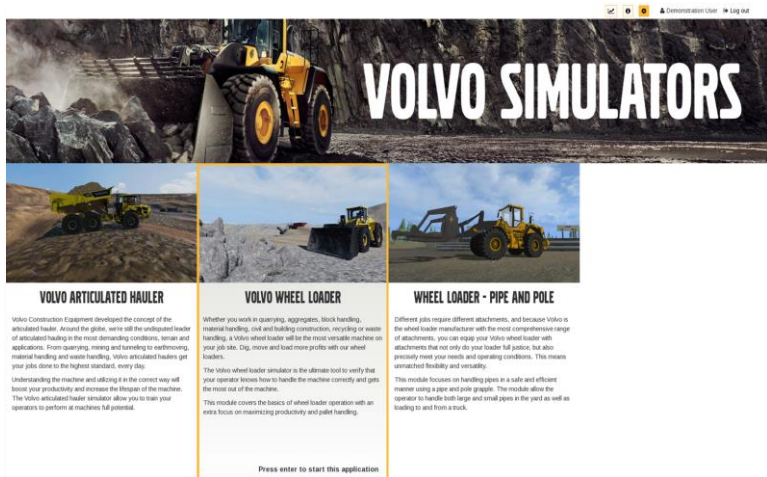
The simulator arrives fully assembled and ready to use.

# Volvo Wheel Loader Simulation

Understanding the machine and utilizing it in the correct way will boost your productivity and increase the lifespan of the machine. The Volvo wheel loader simulator allows you to train your operators to perform at the machine's full potential.

The simulator comes with twenty scenarios that cover the basics of how to operate the Volvo L120 and L220 wheel loaders. The operator is guided through starting, stopping and manoeuvring the vehicles as well as performing load cycles in diverse real-life environments with materials such as rock, earth, trees or goods pallets. The scenarios include both guided lessons and free operation playgrounds. As always, the focus is on getting the most out of the operator and maximizing productivity.

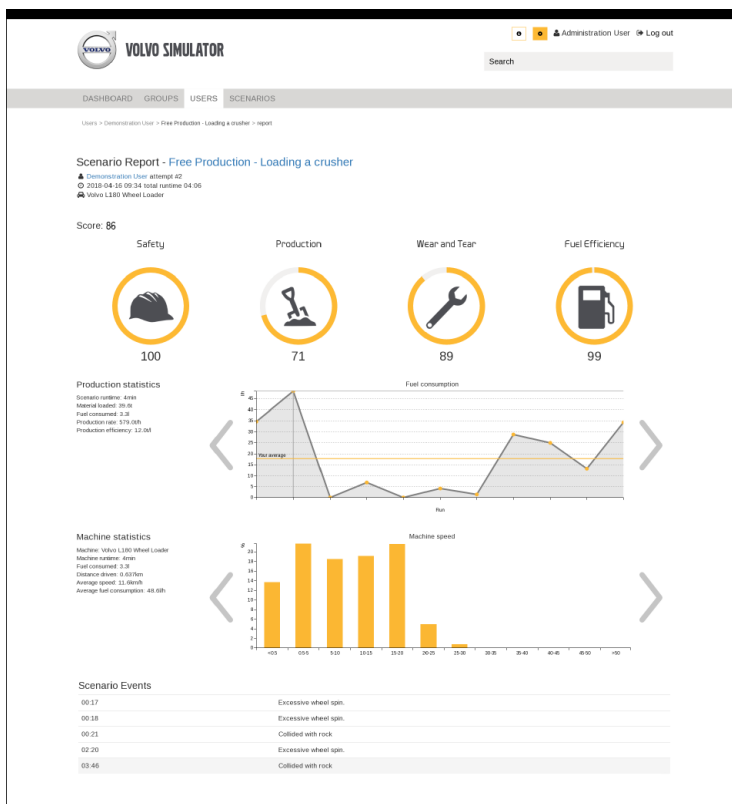
In addition to this there is an extension available with five extra scenarios focusing on handling Pipes and Poles with a grapple.





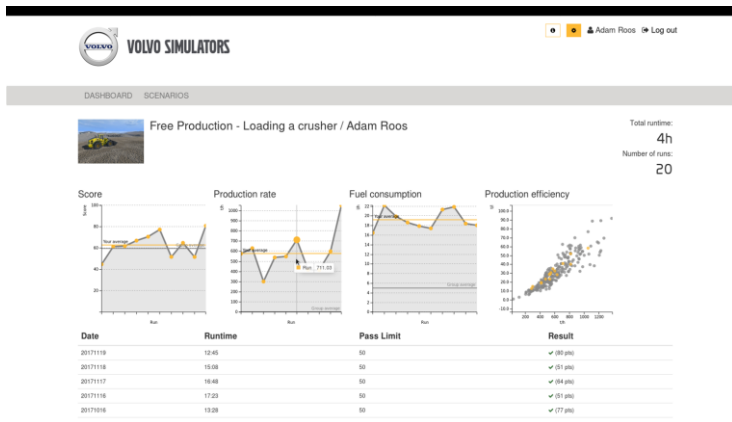
# Scenario report

After the completion of every scenario a performance report is presented to help shed light on what the operator did right and where improvements can be made. Maybe the completion time and production score was great but at the cost of high fuel consumption and unnecessary wear and tear. The report helps highlight issues that when using a real machine could slip by unnoticed, saving on cost and improving safety.



# The Operator Performance System

The operator performance system (OPS) is a user management system, combined with tools for setting up groups and available scenarios, as well as a system for accessing operator performance records. The OPS is built around a SQL database which logs simulator activity and key metrics for each scenario. The OPS also provides views and reports making this data easy to understand and accessible for instructors when evaluating the progress and skill-set of the operators.



# Scenarios

## Operation around a crushing plant

This scenario is all about task management. Feed the rock crusher with rocks while maintaining a manageable size of the surge piles of fine and coarse material. The latter is done through load and carry operations from the surge piles to the corresponding stockpiles. Load the dump trucks from the stockpiles upon their arrival.



## Expo Scenario - Loading a crusher

This scenario will run for three minutes. Load as much material as possible from the pile into the nearby crusher. You will be evaluated on your production rate as well as on your fuel economy skills. Penalties will be handed out for bad handling, such as collisions, operating over rocks, and other behaviour that will have an impact on machine wear.



## Slalom Course

Practice manoeuvring the wheel loader through a slalom course. To pass this exercise you must navigate through the slalom course without disturbing any obstacles.

### Learning Points:

- Precision manoeuvring.
- Using rear view mirrors.



## Reversing Truck

Practice directing a reversing hauler.

### Learning Points:

- Hauler positioning.



## Attachment Introduction

Introduction to using attachments on the wheel loader. The exercise will teach how the attachment lock works and how to change attachments.

### Learning Points:

- Interactive instructions for using the attachment lock.
- Changing attachments.



## Pallet forks intro

This exercise is an introduction to using pallet forks for handling pallet goods.

### Learning Points:

- Starts with having the operator attach the pallet forks. Introduction to attachment lock operation, no prerequisite knowledge required.
- Disable FAPS and enable BSS and single acting lifting when working with pallet forks.
- Handling pallets. Correctly placing the pallet against the vertical shank of the lift. Taking care of the fact that the forks lift in a circular motion.
- Detailed interactive help for placing forks. Both a camera view showing the forks from the outside and help on how to use the controls to place the forks correctly.
- Safety precautions while using pallet forks.
- Lifting heavy goods.





## Goods Handling

Practice goods handling skills by loading cargo on a trailer. The score is affected by the time it takes to load the trailer, distance driven and how much the lifting arms are used. Any damages to the goods will lower the score.

### Learning Points:

- Instructions on lifting goods and loading them on a truck correctly.
- Loading a truck.
- Production / Load cycle training.

Interactive status of distance driven.



## Goods Handling Long

An extended version of Goods Handling.

### Learning Points:

- Loading 60 pallets on a truck in 60 minutes.
- Production / Load cycle training.



## Load cycle driving

In this exercise you will practice performing an efficient load cycle.

### Learning Points:

- Learning to drive an efficient load cycle.



## Rock Handling – Filling the Bucket

This exercise is an introduction to rock handling. In this exercise you will learn to enter the material and fill the bucket only.

### Learning Points:

- Instructions how to enter material with maximal traction.
- Instructions how to fill the bucket completely.
- Practice entering abrasive material.
- Practice filling the bucket.



## Rock Handling – Load Truck

This exercise is an introduction to rock handling. In this exercise you will learn how to load a truck only.

### Learning Points:

- Instructions how to unload to a hauler.
- Practice unloading to a hauler.



## Rock Handling Introduction

This exercise combines Rock Handling – Load Truck, Rock Handling – Filling the Bucket and Load cycle driving into a complete production load cycle.

### Learning Points:

- Use BSS in gear dependent mode and gear 2 when handling rocks.
- Performing a load cycle.



## Rock Handling Training

Practice rock handling skills by loading rocks onto a hauler. The score is affected by the time it takes to load the hauler and distance driven. Any damage to the wheel loader will lower the score. Points are deducted for colliding with the hauler.

### Learning Points:

- Production / Load cycle training.



## Rock Handling

Practice rock handling skills by loading rocks on a hauler. The score is affected by the time it takes to load the hauler and distance driven. Any damage to the wheel loader will lower the score. Slamming into the hauler is not allowed.

### Learning Points:

- Production / Load cycle training.





## Rock Handling – Quarry

Rock Handling production exercise in a quarry environment.

### Learning Points:

- Production / Load cycle training.



## Earth Moving Training

Practice performing a load cycle loading soil onto a hauler. Points are deducted for colliding with the hauler.

### Learning Points:

- Production / Load cycle training.



## Earth Moving

Practice performing a load cycle loading soil onto a hauler. Slamming into the hauler is not allowed. Exercise will stop on critical error.

### Learning Points:

- Production / Load cycle training.



## Volvo Playground

In the Volvo wheel loader playground, it is possible to practice different tasks. This area is intended for free training.

### Sections available:

- Lift pallets and stones with pallet forks.
- Load soil onto an articulated hauler.
- Use a material arm to lift and stack objects.
- Load rocks onto a hauler.
- Manoeuvring in steep and rough terrain.



## Forestry Playground 1 & 2

The forestry playground provides the possibility to practice loading and unloading lumber trucks using log grapples.



## Goods Handling Playground

The goods handling playground provides the possibility to practice loading and unloading goods from trucks.



## Rock Handling Playground – Small & Big Rocks

The rock handling playgrounds provides the possibility to practice loading rocks of different sizes.



## Volvo Pipe and Pole (Optional Extension)

Different Jobs require different attachments. Volvo Pipe and Pole is an extension that comes with five extra scenarios focused on handling pipes in a safe and efficient manner using a pipe and pole grapple. It allows the operator to handle both large and small pipes in the yard as well as loading to and from a truck. Volvo Pipe and Pole is an optional application and is ordered separately.





## Pipe and Pole: Yard Shift 1

In this exercise pipes are to be shifted between two stacks in the pipe yard, completely emptying the source stack of pipes. The source stack is marked with an upward pointing flashing arrow and the destination stack with a downwards pointing flashing arrow.



## Pipe and Pole: Unload Truck

Unload all of the pipes from the truck and place them in the close by designated pipe stack, marked with a green downwards pointing slashing arrow.



## Pipe and Pole: Truck Loading

Pick up pipes at the pipe stack marked with an upwards pointing flashing arrow and place them on the rear portion of the truck's bed. Continue until all of the pipes have been loaded.



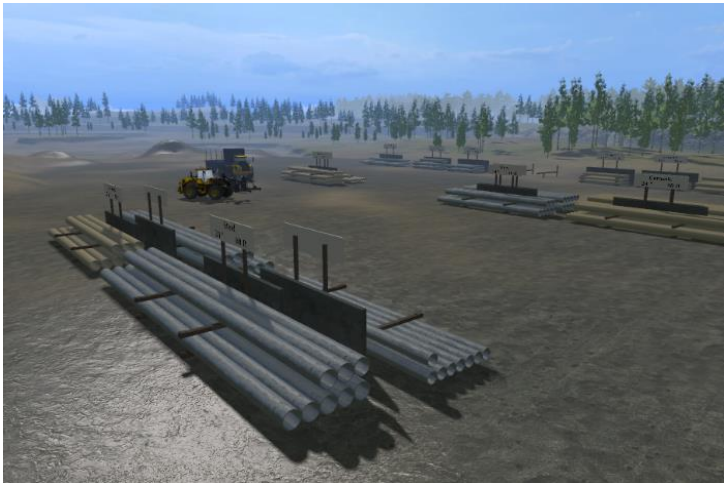
## Pipe and Pole: Large Pipe Handling

Move all of the large pipes from the source stack, marked with an upwards pointing flashing arrow, to the destination stack marked with a downwards pointing flashing arrow. If picking up more than one pipe at a time the wheel loader may tip over when breaking hard or turning sharply. Take extra care to travel with load close to the ground and to manoeuvre carefully.



## Pipe and Pole: Pipe Yard Playground

There are no predefined objectives or goals in this exercise. The operator or teacher may set their own goals and use the displayed timer to score the results. The yard has been set up with two pipe types, so that pipes can be shifted around the yard with spacers being added and removed automatically.



# Volvo Simulator Support Agreement

All aftermarket support is provided by Oryx Simulations AB.

## Always included

Simulator Support Agreement is included with all new Volvo Simulators for a period of three years (for simulators sold after 2019-06-01). At the end of the three-year period, it is possible to extend the Support Agreement for a period of one or three years.

## Support services

The agreement includes technical support (online and/or e-mail). Oryx will respond to all support requests within 24 hours during Swedish business hours. Availability may however be delayed in July. The Simulator Support Agreement does not include on-site support or spare parts. Support issues that require special conditions will be offered separately (e.g. On-site support, spare parts or freight costs for repair in Umeå, Sweden). A Simulator Support Agreement is required if a Software Upgrade is requested. If a Software Upgrade is requested (ordered separately), Oryx will install the new software onto the designated simulator and verify the new functionality (Internet connected Simulator).

## Internet connected

Simulators connected to the Internet can be supported and/or upgraded on-line. For simulators that don't have access to the Internet, the support services are limited to instructions and file transfers.

## Contact

When help is required, please use the contact form available at [www.oryx.se/support](http://www.oryx.se/support), and our technical team will contact you within 24 hours (Swedish business hours)

Clarification, Support agreement/year/simulator, Extension.

Extension is valid when an agreement is extended, continuously. If you have a simulator without Simulator Support Agreement, you will have to choose the restart option.