

Volvo Simulators – Articulated Hauler

Volvo ART 500

Product Description



Volvo Simulators – Articulated Hauler

Features

The Volvo Articulated Hauler Simulator, Volvo ART 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.

Now available with Co-Pilot 2.0



The Volvo Articulated hauler Simulator is also available as add-on to the Volvo Wheel Loader Simulator.

Technical data

Simulator overview

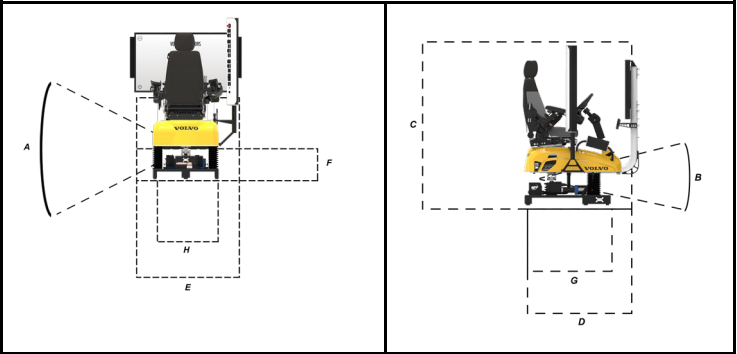


1. Motion system
2. Operator's chair
3. Simulator screen
4. Right hand console
5. Simulator Numpad
6. External speakers
7. External connections and main power switch

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

Static dimensions

C	Height (simulator)	1770 mm
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	273 kg
------------------	--------

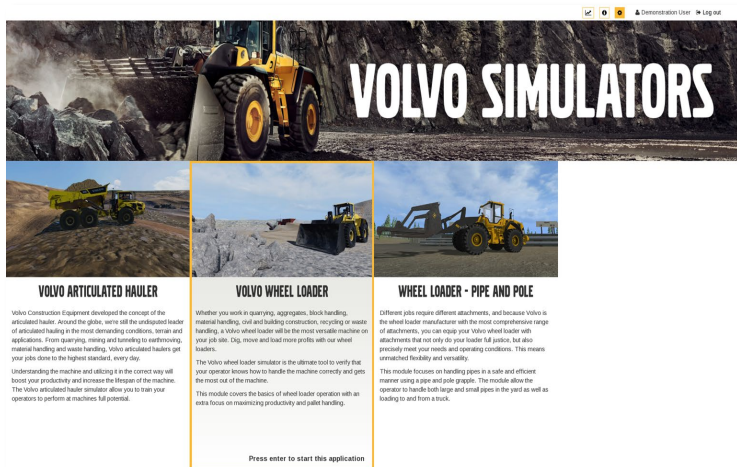
Simulator assembly

The simulator arrives fully assembled and ready to use.

Volvo Articulated Hauler Simulation

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

The simulator comes with over fifteen different scenarios suitable to beginners as well as experienced operators. Each scenario focuses on real world challenges an operator will face in their daily work.



VOLVO SIMULATORS

VOLVO ARTICULATED HAULER

Volvo Construction Equipment developed the concept of the articulated hauler. Around the globe, we're still the undisputed leader of articulated hauling in the most demanding conditions, terrain and applications. From quarrying, mining and tunneling to earthmoving, material handling and waste handling, Volvo articulated haulers get your job done to the highest standard, every day.

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

VOLVO WHEEL LOADER

Whether you work in quarrying, aggregates, block handling, material handling, civil and building construction, recycling or waste handling, a Volvo wheel loader will be the most versatile machine on your job site. Dig, move and load more profits with our wheel loaders.

The Volvo wheel loader simulator is the ultimate tool to verify that your operator knows how to handle the machine correctly and gets the most out of the machine.

This module covers the basics of wheel loader operation with an extra focus on maximizing productivity and pallet handling.

WHEEL LOADER - PIPE AND POLE

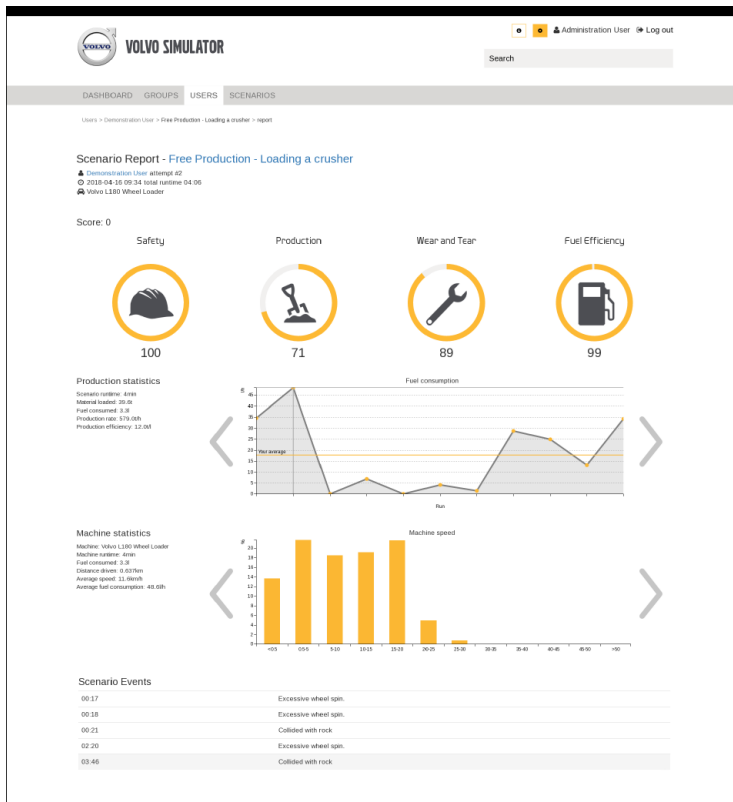
Different jobs require different attachments, and because Volvo is the wheel loader manufacturer with the most comprehensive range of attachments, you can equip your Volvo wheel loader with attachments that not only do your loader full justice, but also precisely meet your needs and operating conditions. This means unmatched flexibility and versatility.

This module focuses on handling pipes in a safe and efficient manner using a pipe and pole grapple. The module allows the operator to handle both large and small pipes in the yard as well as loading to and from a truck.

Press enter to start this application

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.



Co-Pilot 2.0

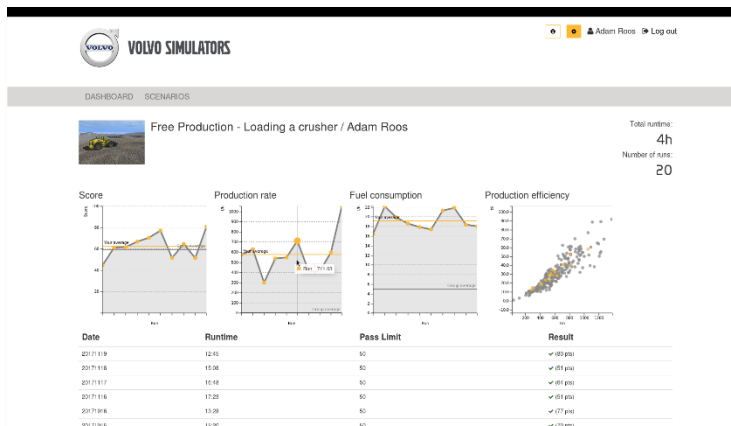
Volvo Co-Pilot 2.0 is an innovative assistance system for heavy equipment operators, now fully integrated into the ART 500 and available as an option for a highly realistic training experience. With advanced features such as Load Assist with Onboard Weighing and Operator Coaching, operators can practice precision work, load optimization, and efficient material handling in a safe, virtual environment.

By training on the Volvo Co-Pilot 2.0 in the simulator before operating real machinery, operators become safer, more productive, more efficient, and fully prepared to perform at their best from day one.



Operator Performance System (OPS)

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.



Multiple Configurations

The EXC 500 simulator is available in a range of configurations to suit different training needs and environments—ensuring there's a solution for everyone:

- **Single Screen with Caster Wheels**
A highly mobile option, ideal for flexible training spaces.
- **Single Screen with Motion Platform (MPF)**
A compact setup enhanced with motion feedback for a realistic training experience.
- **Three Screens with Caster Wheels**
Expansive visuals in a portable, easy-to-relocate format.
- **Three Screens with Motion Platform (MPF)**
An immersive, full-field view combined with motion for advanced simulation realism



Scenarios

With over fifteen training scenarios, many of them set within a virtual replica of our Eskilstuna Demo Center, the simulator covers the core skills required to operate the Volvo A45 articulated hauler. Each scenario is built around real-world challenges, helping operators build confidence and efficiency in day-to-day operations. This allows operators to practice in realistic environments and prepare for a variety of real-world situations. From foundational skills to complex site operations, each exercise is tracked and evaluated through the integrated Operator Performance System (OPS).

Machine Operations

Build essential skills and develop a deep understanding of machine functionality and controls.

Productivity Training

Start by evaluating your current performance, then progress through guided scenarios designed to improve efficiency and on-site productivity.

Grouped Scenarios

Structured, goal-oriented training modules that streamline learning, boost operator independence, and maximize training outcomes.

Skills Package

Build essential skills and develop a deep understanding of machine functionality and controls.

Basic Driving

Drive the articulated hauler around the Volvo Demo Center in Eskilstuna, Sweden. Follow along a path that introduces the operator to the basic functions of the Articulated hauler.

Basic Driving: Function Track

Follow up to the basic function scenario where the operator will be shown functions that increase the efficiency of the operator. Functions such as cruise control, downhill speed control and the load and dump brake.

Quarry & Productivity Package

This package educates and tests the operator on the usages of the Articulated hauler in a quarry environment.

Production - Productivity Assessment

Perform three full load cycles with the hauler

Productivity Enhancement

Learn the correct loading position when receiving a load from an excavator and a wheel loader. Once loaded learn both dumping on flat position and stockpiling.

Production - Night Time

Learn the production operation while working in low light conditions.

Production - Muddy Conditions

Learn the production operations while working in a muddy and wet environment.

Other Scenarios

Other scenarios contain scenarios that are not applicable to the other packages and mainly consist of scenarios aimed towards Expos or other events.

Expo Scenario – Production

In this scenario you will run a full production cycle with the articulated hauler. Start by reversing into position the excavator indicates with its bucket. The excavator will sound its horn once you are in the correct position and will start to load the hauler - remember to activate the load and dump brake. Once loaded, operate according to the indications on the ground to the dump area where you should dump the material within the indicated zone.

Make sure that you operate within the recommended speed while going downhill and that you use the load and dump brake when dumping. Your result will be based on your production rate as well as your ability to operate the machine in a safe and fuel efficient manner.



Expo Scenario - Production Muddy Conditions

In this production scenario you will be faced with operating through a very muddy area. To be able to manoeuvre through this patch you will need to use 6x6 drive and the duck-walk technique. First, position the articulated truck where the excavator indicates, once loaded follow the markers on the ground to the dump site. When you reach the muddy area, slow down the hauler and duck-walk through it. Dump the material in the indicated dump area and lower the load body to finish the scenario. You will be evaluated on your production rate as well as on your ability to operate the hauler through the muddy area in a correct manner.



Expo Scenario - Night Production

In this scenario you will run a full production cycle with the articulated hauler. Start by reversing into position the excavator indicates with its bucket. The excavator will sound its horn once you are in the correct position and will start to load the hauler - remember to activate the load and dump brake. Once loaded, operate according to the indications on the ground to the dump area where you should dump the material within the indicated zone.

Make sure that you operate within the recommended speed while going downhill and that you use the load and dump brake when dumping. Your result will be based on your production rate as well as your ability to operate the machine in a safe and fuel efficient manner.



Production - Three Load Cycles

In this scenario you will run three full production cycles with the articulated hauler. Start by reversing into position the excavator indicates with its bucket. The excavator will sound its horn once you are in the correct position and will start to load the hauler - remember to activate the load and dump brake. Once loaded, operate according to the indications on the ground to the dump area where you should dump the material within the indicated zone.

Make sure that you operate within the recommended speed while going downhill and that you use the load and dump brake when dumping. Your result will be based on your production rate as well as your ability to operate the machine in a safe and fuel efficient manner.



Volvo ART 15.1

Driving 1

Drive to the indicated parking area and stop the machine according to the correct shut down procedure.



Driving 2

Drive to the indicated parking area and stop the machine according to the correct shut down procedure. The parking area can be found by looking for the blue parking icon on the minimap at the lower left corner of the screen.



Driving 3

Navigate the articulated hauler through a slalom course. Drive to the indicated parking area and stop the machine according to the correct shut down procedure.



Reversing 1

In this exercise the hauler starts fully loaded. The objective is to reverse towards the stockpile and dump the material. After being loaded, a parking area will be shown. Drive there and shut down the machine to finish the scenario.



Reversing 2

In this exercise the hauler starts fully loaded. The objective is to reverse up the ramp and dump the material over the edge on the stockpile. After being loaded, a parking area will be shown. Drive there and shut down the machine to finish the scenario.



Reversing 3

Reverse the hauler through the course to the load site. When the hauler is fully loaded the scenario is completed. After being loaded, a parking area will be shown. Drive there and shut down the machine to finish the scenario.



Driving Uphill 1

In this exercise the articulated hauler starts fully loaded. The operator should drive the articulated hauler up a ramp of average 13% inclination to the indicated spot. The main learning points of this exercise are: Gear shift inhibitor usage. Adapting vehicle speed to current conditions. Operating sharp turns with fully loaded vehicle. Medium ground structure class.



Driving Uphill 2

Drive the fully loaded articulated hauler up a ramp of average 32% inclination to the indicated spot. Use gear shift lock-out when necessary. Adapt vehicle speed to road conditions. Take extra care to operate sharp turns with the fully loaded vehicle. Medium ground structure class.



Production 1

Back up to be loaded by an excavator and unload the material in a crusher.
Use the dump brake in a correct manner. Drive up and down the stockpile ramp.
Perform 10 load cycles to complete the exercise.



Production 2

Back up to be loaded by a wheel loader and unload the material on a stockpile ramp. Use the dump brake in a correct manner. Drive up and down the stockpile ramp. Perform 10 load cycles to complete the exercise.



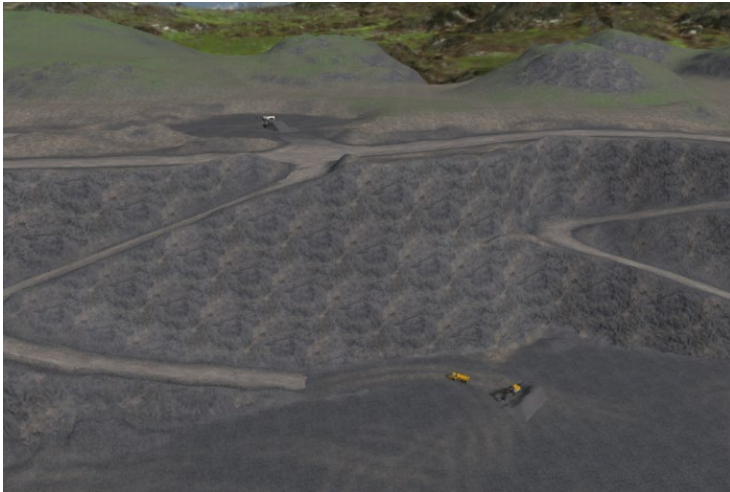
Production 3

Production exercise where the hauler is loaded by a wheel loader and unloads on a stockpile (ramp). Perform 5 load cycles and park to complete the exercise. Medium ground structure class.



Production 4

Haul material from the bottom of the quarry. Material is loaded by an excavator and unloaded in a crusher. Perform 2 load cycles and park to complete the exercise. Very good ground structure class.



Production 5

Haul material from the bottom of the quarry. Loading is done by an excavator. In this scenario the road conditions are very poor. Perform 3 load cycles and park to complete the exercise. Poor ground structure class.



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*. At the end of the three-year period, it is possible to extend the Support Agreement for a period of one or three years.

* For simulators sold after 2019-06-01

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 online. 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, 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.