DIGITAL TRAINER – LH
LOADER SIMULATOR

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The Digital Trainer – LH, training simulator for the Toro™ LH517i and Toro™ LH621i loaders, offers an efficient and flexible tool for operator training. The Digital Trainer allows to start practicing loader operation well before the actual loader arrives to the site, leaving the on-site equipment available for productive work. The Digital Trainer significantly improves the overall training efficiency.

Naturally, pre-training with the simulator improves safety as the operator gets familiar with the equipment functionalities, prior to entering the underground environment.

INCREASED PROFITABILITY

- Thorough training helps to avoid component breakdowns and unnecessary stresses, reducing overall maintenance cost and increasing profitability

HIGHER PRODUCTIVITY & UTILIZATION

- Skilled operator knows how to best utilize the equipment the most efficient way, improving productivity
- Improved loader utilization: The loader itself can be used for productive operation while the operator is being trained with the simulator
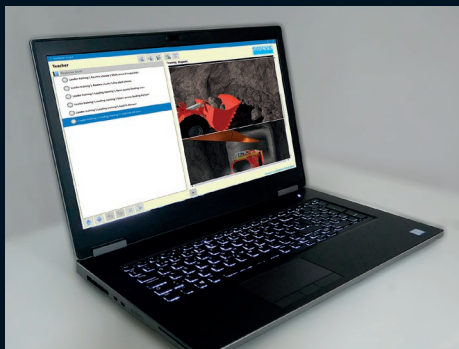
SAFETY & OPERATOR COMFORT

- Premium ergonomics, real controls
- Unexpected situations can be practiced beforehand
- Trainer near for support

SKILLS AND CONFIDENCE

HANDS-ON WELL IN ADVANCE

One of the main benefits of simulator training is that practicing can be started well before the actual equipment arrives on site. By the time the loader is ready for mucking, the operator has already had an opportunity to get familiar with the new Toro™ family loader, as the Digital Trainer features the exact same functionalities as the Sandvik Intelligent Control System in the loader. Pre-training with the simulator increases equipment utilization in productive work and improves operation efficiency, without increasing engine hours or operating costs.

INDIVIDUALLY TAILORED LEARNING

To be able to create an effective program for an individual operator, the training exercises are divided in different levels: beginner, basic and experienced. This way, also a more experienced operator can benefit from a tailor-made training program. The Digital Trainer can be used for identifying development areas where more practice would help to meet the targets. Practicing the specifically defined areas with a simulator improves performance with the real equipment, safely and without disturbance to the mine production.

GET READY FOR THE UNEXPECTED

As the trainee advances and is ready to take the next challenge, the trainer can feed unexpected situations to the simulator. Practicing timely and correct response to fault and alarm messages, such as warning & alarm signals from brake system, hydraulic system, power train, engine, fire etc. help the operator to take quick and correct action in real life, decreasing potential damage and risk for production loss. The Digital Trainer is also equipped with fire suppression system functionality, which can simulate the activation of fire suppression system in the equipment, allowing the operator to learn both the automatic and manual fire suppression system operation.

LEARN NEW FUNCTIONALITIES

The software backbone, Sandvik Intelligent Control System, is continuously developed to enable introduction of improvements and new functionalities. To get a full understanding of the newest features, the simulator software can be updated with the latest available control system release before uploading it to the loader itself, allowing the operators to get familiar with the changes prior to real equipment operation.

INCREASED PRODUCTIVITY

UTILIZE THE EQUIPMENT FULL POTENTIAL

A skilled operator knows how to utilize the equipment the most efficient way without compromising safety or the equipment itself. Efficient and smooth operating practices improve the individual equipment productivity but may also have a significant effect on optimizing the whole mine operation, contributing to a seamless process. As all the equipment functions are used as intended, the possibilities for disturbances and losses are minimized.

HIGHER UTILIZATION

The Digital Trainer offers a tool which increases the equipment utilization, as the loader itself is not needed while the trainee is practicing with the simulator. Further, once the operator has learned the best practices, the resulting accurate operation and timely responses to the control system signals significantly reduce the time spent on the workshop.

REDUCED COSTS

Underground mining operation poses an unique challenge for the operators – and for the equipment. Hits to tunnel walls and roof, mucking rocks and keeping up to speed with only minimum number of stops, requires a lot and easily subjects the equipment to damages. Thorough training helps to avoid component breakdowns and unnecessary stresses, reducing overall maintenance costs.

THOROUGH TRAINING HELPS TO AVOID COMPONENT BREAKDOWNS AND UNNECESSARY STRESSES, REDUCING MAINTENANCE COSTS & INCREASING PROFITABILITY.

OPERATOR COMFORT WITH AUTHENTIC CONTROLS

PREMIUM ERGONOMICS

To ensure premium ergonomics and comfort, the Digital Trainer – LH features same controls and elements as the ones used in the Toro™ LH517i and Toro™ LH621i loader cabins. This includes an adjustable low frequency suspension seat, soft padded and adjustable armrests as well as adjustable joysticks.

MOTION BASE

The operator compartment is mounted on a motion base platform supported by two electrical cylinders, resulting in an authentic feel of driving a loader. A sound bar simulates the engine sound and other equipment central functions.

REAL USER INTERFACE DISPLAY

The Digital Trainer – LH comes with a real loader 7" color display with touch screen functionality.

The user interface is exactly the same as in the loaders. The control system display view can also be extended to be shown on the trainer's interface, and the trainer can monitor real time data on the control system display.

TRAINER INTERFACE

In addition to the trainee position, the simulator comes with a trainer interface, consisting of an external display that can be connected to the simulator with an HDMI cable. The trainer position can be placed outside of the simulator working zone. The trainer can set up and modify exercises, simulate fault and other unexpected situations, monitor progress, and generate trainee performance reports, among others.

3D VIEW OF THE MINE WORKING AREA

To simulate the mine environment, the Digital Trainer is equipped with three 32" HD displays providing a 3D view of the working area. The displays are secured tightly in a mounting frame for improved rigidity and connected to the simulation computer with HDMI cables.
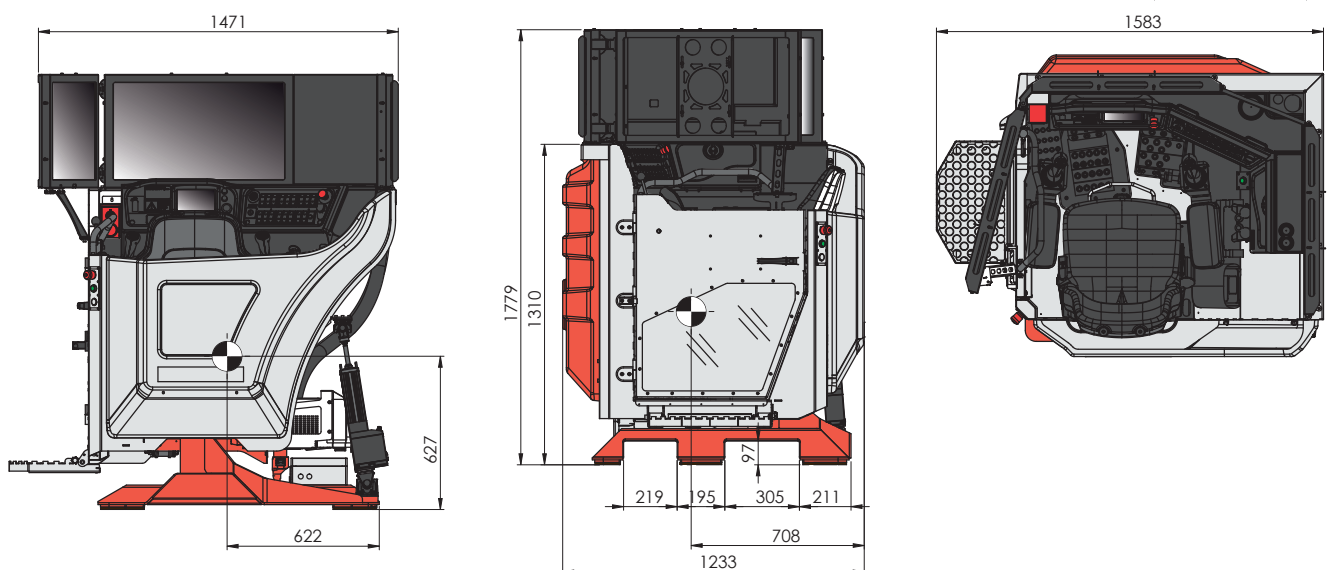
KEY
SPECIFICATIONS

User interface:	7" color display with touch screen functionality
Main displays:	3x32" full HD display
External display:	Desktop monitor
Simulation computer:	Windows 10 PC with powerful 3D graphic board
Power supply:	110 - 240 V AC, 16 A
Product model:	LH517i and LH621i
Motion base cylinders:	2 x electrical AC cylinders
Sound bar:	Integrated in the dashboard
SimTrainer software language:	English
Control system display language:	Control system available in 17 different languages
Simulator net weight:	435 Kg

DIMENSIONS

The dimension of simulator when in operating condition are,
Length = 1232 mm; Width =1580 mm; Height = 1758 mm

Transportation box size: L 132 cm x W 142 cm x H 178 cm
Gross Weight: 605 kg

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