

Simulator



Rigid dump truck

SIM600 Series
Convertible consoles
Full-motion seat

SIM60 Series
Convertible consoles
Compact type

Scenarios

11 scenarios in a real quarry environment

Operator Errors

40 common operation mistakes

Events

10 unexpected faults or events

Basics come first

- Train and prepare new and experienced operators
- Machine controls familiarization
- Step by step guidance
- Response to emergencies and faults
- Real-time feedback
- Safe efficient operation



Self-paced and guided learning anytime, anywhere.

Track and review performance

- Review operator's performance
- Easy to use tracking dashboard
- Each operator tracked for safety, productivity and utilization
- Safe operation emphasized

Administration User Return

DASHBOARD
GROUPS
USERS
SCENARIOS

Users > Administration User > Basic Demo Area - Free Operations > report

User: Administration User
Date: 2020-08-13 09:17
Total runtime: 03:16:01
Machine: HD605-8
Scenario: Basic Demo Area - Free Operations

Score

55 / 100

Operator safety profile: Careless

Safety violations

- Incorrect use of service brake
- Collision with another vehicle/loading equipment

Incident report

Incident	Operator Response
<p>Tier fire</p> <p>Correct operator response:</p> <ol style="list-style-type: none"> 1. Bring machine to a complete stop 2. Apply park brake 3. Activate emergency stop button 4. Activate fire suppression system 	<p>Incorrect</p>
<p>Torque Converter Oil Overheating</p> <p>Correct operator response:</p> <ol style="list-style-type: none"> 1. Bring machine to a complete stop 2. Apply park brake 3. Place engine on medium idling speed. 	<p>Correct</p>

Productivity report

Stats	Time	Mass
Loaded material: 242t	04:53	28850kg
Production pace: 4020t/h	05:53	39876kg
Production efficiency: 140%	04:59	39620kg
Average load cycle (mass): 0520	08:53	37890kg
Load cycles: 6	05:53	37390kg
	03:23	39050kg

Machine usage profile

Stats	Times
Distance driven: 4.3km	
Fuel consumed: 11.4l	
Fuel consumption: 12l/h	
Average speed: 23km/h	

Operator faults	Times
Not stopping when loading equipment sounded the horn	2x
Accelerating while starting	1x
Gear shifting while accelerator pedal is pressed	1x

Gear usage

Speed distribution

Brake function usage

F/R switch speed

Realistic training experience that improves safety and efficiency

Training courses

Basic Control and Operation Procedures

Fully guided scenario to familiarize basic rigid truck controls and its functions.

Basic Driving with Brake Retarder Operation

Learn the basics of driving the truck and apply brake retarder, both with and without load. Manual and automatic retarding is also covered. You can also choose to drive either left or right side of the road.



Reversing with Cones

Drive the truck in reverse safely by avoiding the cones along the route. Limited visibility areas are recognized by recognizing obstacles as they appear in rearview mirrors.

Short-haul Driving Course

Learn the techniques of left and blind-side approach to a loading unit. This will be done with an excavator and a wheel loader.



Responding to Faults & Emergencies

Drive through a real quarry site while events are simulated randomly through the load cycles. Instructions on how to rectify an event are given in a fully guided scenario. There is also a separate scenario without guidance.

Production Scenario

Run a full production cycle focusing on production target while focusing on safety and efficient operation.

Overview of operator errors

Safety critical

Collision with other vehicles and loading equipment, not stopping when loading equipment sounds the horn.

Equipment damage

Abrupt shifting of transmission gears, keeping parking brake engaged while driving, neutral coasting, gear shifting while the accelerator pedal is depressed and applying the parking brake when transmission gear is not in neutral

Potential accidents

Speeding, seatbelt not worn, not sounding the horn, shutting down the engine with the transmission gear not in neutral, driving with the body raised, not stopping at indicated STOP signs

Simulated events



Brake, Torque converter oil & coolant overheating



Loss of service brake & steering control



Engine and tire fires



Engine shutdown while traveling uphill

Simulator

600 series Full motion seat



12 in. multi-touch panel display

This touch screen displays the rear view camera. This is also used to interact with the machine simulator on the theoretical machine learning section.

Emulated monitor display

An imitation of the dashboard monitor display that all gauges, caution lamps, menus function same as the real truck yet giving you the power to adapt to future enhancements.

Multiple languages

Set your own language from English to Japanese, Russian, Arabic, Thai, Traditional Chinese, and European languages.

Convertible side consoles

Equipped with OEM pedals, all-functional standard switches and controls giving you the flexibility to switch to another machine class in no time.

Full-motion seat

Pitch and roll degrees of freedom that responds well to ground condition and truck operation .



Flexibility and adaptability to maximize your investment

60 series Compact type



Computer unit

Compact yet packed with a powerful processor to retain simulation experience without compromising learning results.

LCD monitor

We give you the flexibility to use what is available. The graphic card supports full HD 1080p resolution display.

Non-slip foot controls

Slip-resistant mat which creates positive surface traction reducing risk of slipping.



OEM switches and controls

Installed with OEM standard switches and controls retaining the same real feel with the actual machine. Extra slots on 600 series are provided to keep you moving with the future.

Sturdy case

Conduct training classes and practice with ease where distance and space needs to be considered. Comes in three cases.

Space and distance matters

Specifications

Simulator

Model	600 Series
Operating temperature	10 °C to 35 °C (50 °F to 77 °F)
Operating humidity	20% to 80%, non-condensing
Storage temperature	-20 °C to 45 °C (-4 °F to 113 °F)
Storage humidity	5% to 95%, non-condensing

Computer

Operating vibration	0.26 G at 5-350 Hz for 2 minutes
Storage vibration	1.54 Grms random vibration at 10-250 Hz for 15 minutes
Operating shock	1 shock pulse of 41 G for up to 2 ms
Storage shock	6 shock pulses of 71 G for up to 2 ms
Operating altitude	-16 to 3,048m (-50 ft. to 10,000 ft.)
Storage altitude	-16 to 3,048m (-50 ft. to 10,000 ft.)
Maximum humidity gradient	10% per hour, operational and non-operational conditions

Power supply

Configuration	Single-phase
Voltage rating	115V AC, 50/60Hz, 20A 230V AC, 50/60HZ, 10A

Motion system

Maximum roll angle	±23°
Maximum roll velocity	46°/s (115VAC operation)
Maximum pitch angle	±15°
Maximum pitch velocity	30°/s (115VAC operation)

Unit weight

Base simulator, single screen variant	256 kg (564 lbs)
Base simulator, triple screen variant	210 kg (463 lbs)
Screen stands	208 kg (459 lbs)

Front and side consoles weight

Left console	10 kg (22 lbs)
Right console	14 kg (31 lbs)
Front console (Steering wheel and foot pedals)	40 kg (88 lbs)

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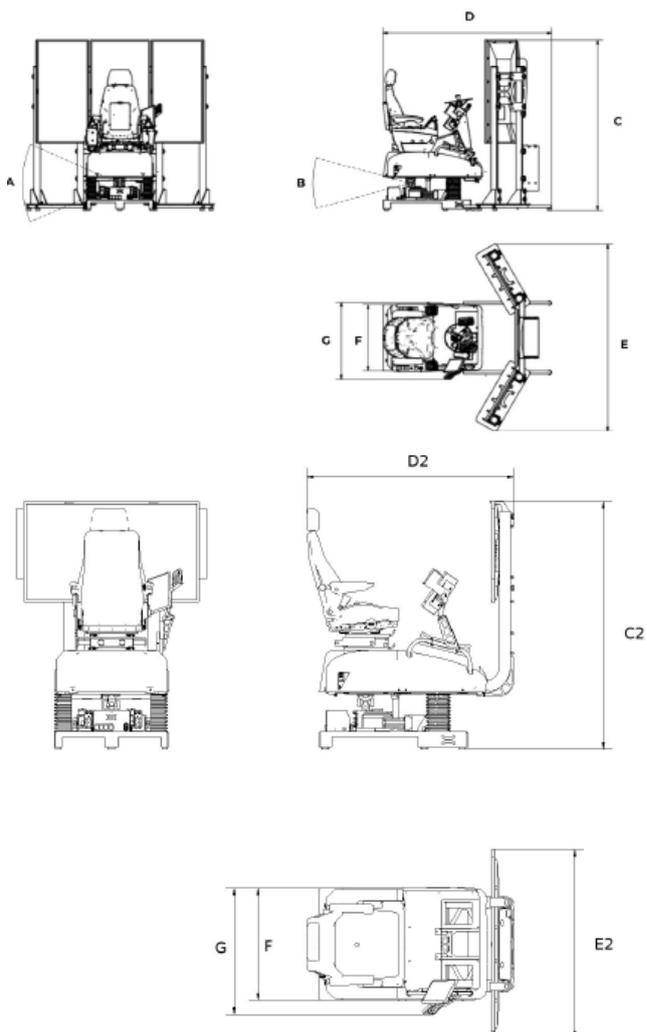
Left console	
Right console	
Front console (Steering wheel and foot pedals)	

Simulator dimensions **600 Series
Single screen variant**

C2	Height	1767 mm
D2	Length	1473 mm
E2	Width (screen)	1348 mm
F	Width (base)	800 mm
G	Width (assembled operator unit)	901 mm

Simulator dimensions **600 Series
Triple screen variant**

C	Height	2059 mm
D	Length	2020 mm
E	Width (screen stand)	2263 mm
F	Width (base)	800 mm
G	Width (assembled operator unit)	901 mm



Standard and optional equipment

600 series hardware

55" Industrial grade LED monitor	●
3.5mm audio jack connection	●
External speakers	●
Wireless keyboard	●
Auxiliary screen for viewing different camera position	○
Expansion kit to triple screen	○
Virtual Reality (VR) kit	○
Reusable transport box	○

60 series hardware

LCD monitor	✕
External speakers	✕
Carry cases (comes in 3)	●
Bluetooth keyboard	●
Virtual reality (VR) kit	○
Auxiliary screen for viewing different camera position	○
Virtual Reality (VR) kit	○



Expansion kit to triple screen

Further equipment on request

- standard equipment
- optional equipment
- ✕ excluded

Please consult your local Komatsu distributor for any optional items you may require. Materials and specifications are subject to change without notice.

Declaration

EC Declaration of conformity

Manufacturer's name	ORYX Simulations AB
Address	Kaserngatan 16, SE-903 47 Umeå, Sweden
Directives applicable	
Machinery directive	2006/42/EC
EMC directive	2014/30/EC
RoHS	2011/65/EC (with amendments)
Harmonizing standards	
EN ISO 12100:2010	
EN ISO 13849-1:2015	
EN ISO 13854:2019	
EN 60204-1:2006	
EN 50581:2012	

ORYX
SIMULATIONS



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