

# KOMATSU

## Simulator



Hydraulic Excavator  
for Construction and Quarry

**KCS600 Series**  
Simulator consoles  
Full-motion seat type

**KCS60 Series**  
Simulator consoles  
Compact type

# Flexibility and adaptability to maximize your investment.

**KCS600 series**  
Full motion seat type

**Dynamic Motion,  
Realistic Experience**



### 12 in. multi-touch panel display

This touch screen displays offers a versatile and interactive user experience. With its responsive touch functionality, users can effortlessly navigate between different configurations and setups.

### Full-motion seat

Capable of replicating movements and vibrations to simulate real-world scenarios, enhancing user engagement and immersion

### Multi-language support

Users can select their preferred language from a list of available options. This feature enables content and user interfaces to be displayed in the chosen language, making it easier for individuals who are more comfortable in languages other than the default or primary language.

### Simulator consoles

Equipped with OEM pedals, standard switches and controls, it offers seamless flexibility to switch to another machine class whenever needed.





## KCS60 series Compact type

**Space and  
distance matters**

### 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.



2-in-1 simulator

**PC210 for construction simulation**  
**PC950 for quarry simulation**

Scenarios

**16 total scenarios in a realistic simulated environment**

Operator Errors

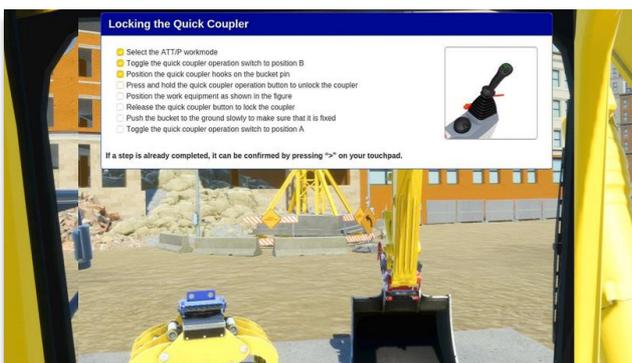
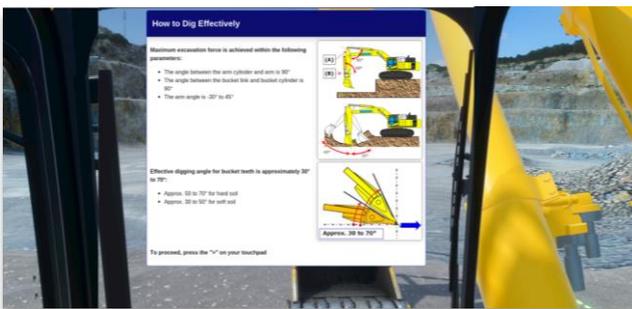
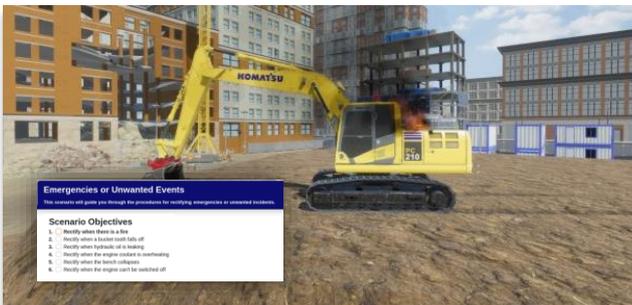
**37 common operation mistakes**

Events

**6 unexpected faults or events**

## Basics come first

- Safe training environment
- Train and prepare new and experienced operators
- Machine controls familiarization
- Step by step guidance
- Response to emergencies and faults
- Realistic hands-on experience
- Real-time feedback



# 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

**KOMATSU** System Config Administration User Help Return



**Operator safety profile: Careless**

Safety violations	
The excavator work equipment collided with the machine body.	1x
Failed to check the direction of the crawlers.	1x

Operator faults	
The operator spilled material around the hauler.	3x
Operated hydraulics to relief pressure	
The operator dumped material too far above the hauler	
The operator failed to sound horn twice before moving	

Stats	
Fuel consumed:	5.8l
Fuel consumption rate:	33.7l/h

## Incident report

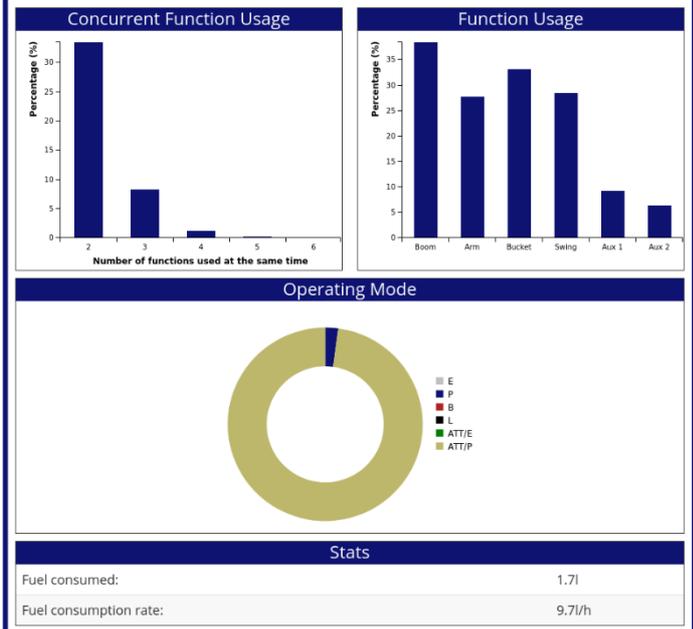
No incident events

**Productivity Report**

Statistics	Load Cycles		
	Time	Bucket fill	Mass
Loaded material	48.7 t		
Production pace	647.56 t/h		
Production efficiency	8.33 t/s		
Average bucket fill	83 %		
Average load cycle (t/m3/s)	00:28		
Average mass per bucket:	4873.8 kg		
Load cycles	10		

Time	Bucket fill	Mass
01:06	113%	6696kg
00:22	48%	2822kg
00:15	18%	1082kg
00:16	71%	4211kg
00:21	102%	5998kg
00:19	107%	6300kg
00:35	98%	5799kg
00:23	92%	5431kg
00:27	55%	3253kg
00:31	121%	7145kg

## Machine usage profile



# Realistic training experience that improves safety and efficiency



## Training courses

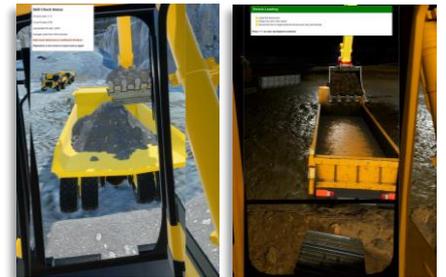


### Basic Controls and Operation

Fully guided scenario to familiarize basic wheel loader controls and its functions.

### Bench Loading Scenarios

Run a full production cycle focusing on production target while focusing on safety and efficient operation for PC210 and PC950.



### Quick Coupler Operation

Perform multiple tasks through quick attachment changes

### Emergency Scenarios

Realistic training for safety and preparedness needed for emergency situation



## Attachment Features

The simulator covers conventional operation as well as advance features such as: quick coupler, tilt rotator, grapple, and other attachments.

## Responding to Emergencies and Unwanted Events

Operate through a real site with random simulated events. Instructions on how to rectify each emergency event are given in a fully guided scenario.



Engine Coolant Overheating



Machine fire situation



Bench collapse event



Hydraulic oil burst

## Overview of operator errors

### Safety critical

Bucket collided with the vessel, Machine rolled over, Attachment collided with the machine body. Avoid excessive steering on a slope, Travelling in High-speed mode on uneven rocky ground.

### Equipment damage

Digging with the dropping force of the bucket, Use of hydraulic relief while digging, Digging with travel force, Digging at stroke end of hydraulic cylinder

### Operation Procedure Errors

Invalid start-up procedure sequence, Invalid shutdown procedure sequence, Operator did not check the direction of the crawlers, Operator's seatbelt was not fastened while the machine was in motion.

## New Simulator Features

### Team Training

#### Collaborative Learning

Explore the benefits of collaborative learning with Team Training, a multiplayer feature enabling operators of two simulators to seamlessly collaborate within the same environment.

#### Enhanced teamwork skills

While one operator practices loading techniques with the Hydraulic Excavator or Wheel Loader module, their counterpart can simultaneously hone their skills with the Rigid Truck module in real-time. This dynamic approach fosters enhanced coordination and communication between operators, optimizing training outcomes and preparing teams for real-world scenarios.



### Instructor Station

#### Instructor Control Suite

Introducing the Teacher Interface, an all-encompassing toolset poised to redefine the instructor's role. It combines the 3D Scenario view and Settings panel, offering instructors unparalleled mastery over the learning environment. With capabilities to initiate Events and oversee Weather conditions, instructors seamlessly traverse the immersive 3D Scenario view, employing user-friendly toolbar buttons and input devices to manipulate viewpoints and orchestrate scenes effortlessly.

#### Teacher Camera feature

Discover the Teacher Camera, offering both automatic and free-flying modes for instructors to tailor their perspective, ensuring optimal instruction. With essential toolbar functionalities like video recording, visibility masks, and overlay toggles, customization is seamless, empowering instructors to enhance the learning experience effortlessly.



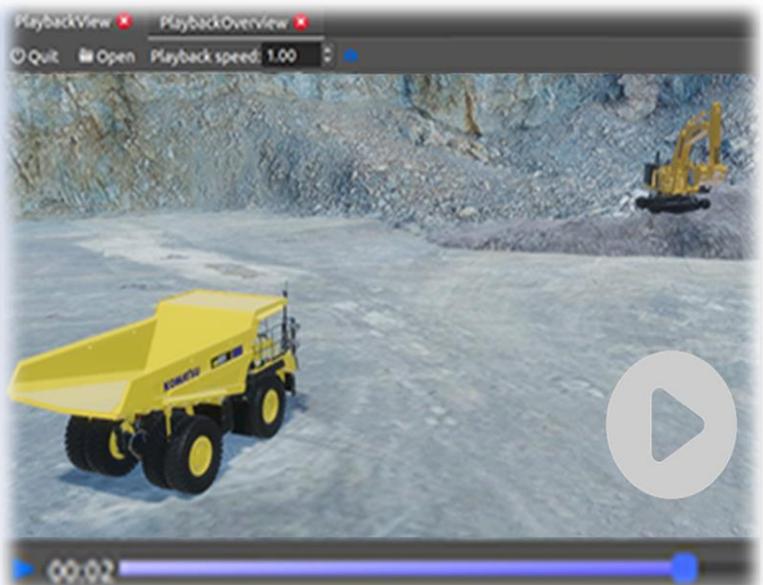
### Replay Module

#### Efficient Session Capturing

Our recording feature, crafted to enhance teaching efficacy and simplify content evaluation processes, seamlessly captures sessions, preserving every instructional detail for future reference. Within our Playback interface, users find an array of tools, including the Recording Selection panel and the Information panel, which neatly organizes recordings by date and allows for the marking of favorites, ensuring swift access.

#### Enhancement Replay Features

Transitioning to the Replay Module, users are equipped with a dynamic toolbar offering essential functions such as playback speed adjustment, camera selection, and screenshot capture. The Timeline bar facilitates precise playback control, allowing users to jump to specific moments within recordings effortlessly.



## Specifications

### Simulator

Model	KCS600 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	-16m to 3,048m (-50 ft. to 10,000 ft.)
Storage altitude	-16m to 10,600m (-50 ft. to 35,000 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	28 kg (62 lbs)
Right console	28 kg (62 lbs)
Steering wheel assembly	40 kg (88 lbs)

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### Power supply

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Voltage rating	115V AC, 50/60Hz, 20A 230V AC, 50/60HZ, 10A

### Unit weight

Simulator computer	12 kg
Consoles and steering wheel mounts	9.5 kg
Touch screen	1.5 kg
Peripherals & Cables	4 kg
Transport case (Empty)	14 kg

### Front and side consoles weight

Left console + arm rest	12 kg
Right console	9.5 kg
Steering wheel	14 kg
Floor pedal	11.5 kg
Transport cases	30 kg

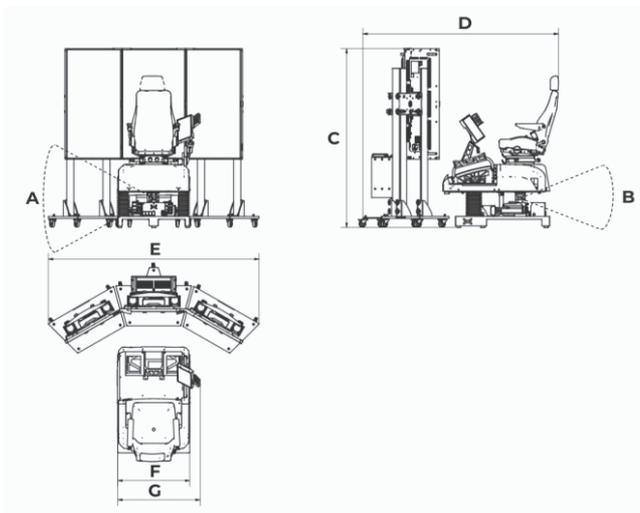
## KCS600 dimensions and weights

### Base Simulator

A	Maximum Roll angle:	$\pm 23^\circ$
	Maximum Roll velocity:	$46^\circ /s$ (115VAC operation)
B	Maximum Pitch angle:	$\pm 15^\circ$
	Maximum Roll velocity:	$30^\circ /s$ (115VAC operation)
F	Width (base)	800 mm
G	Width (assembled operator unit)	916 mm

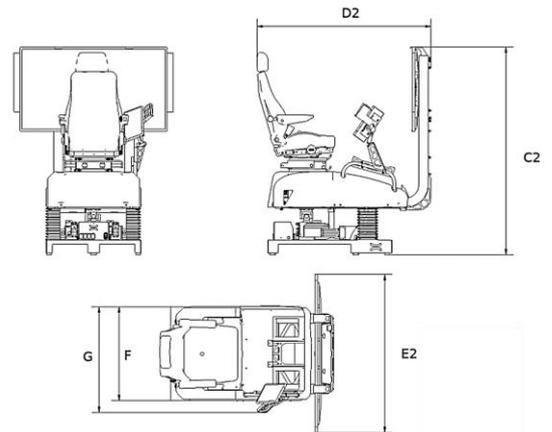
### 3 screen variant, portrait

C	Height	2005 mm
D	Length	2175 mm
E	Width	2342 mm



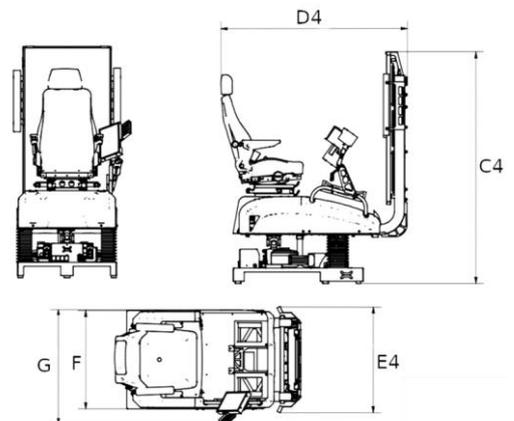
### 1 screen variant, landscape

C2	Height	1767 mm
D2	Length	1473 mm
E2	Width (screen)	1348 mm



### 1 screen variant, portrait

C4	Height	1883 mm
D4	Length	1500 mm
E4	Width (screen)	860 mm



Your Komatsu partner:

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