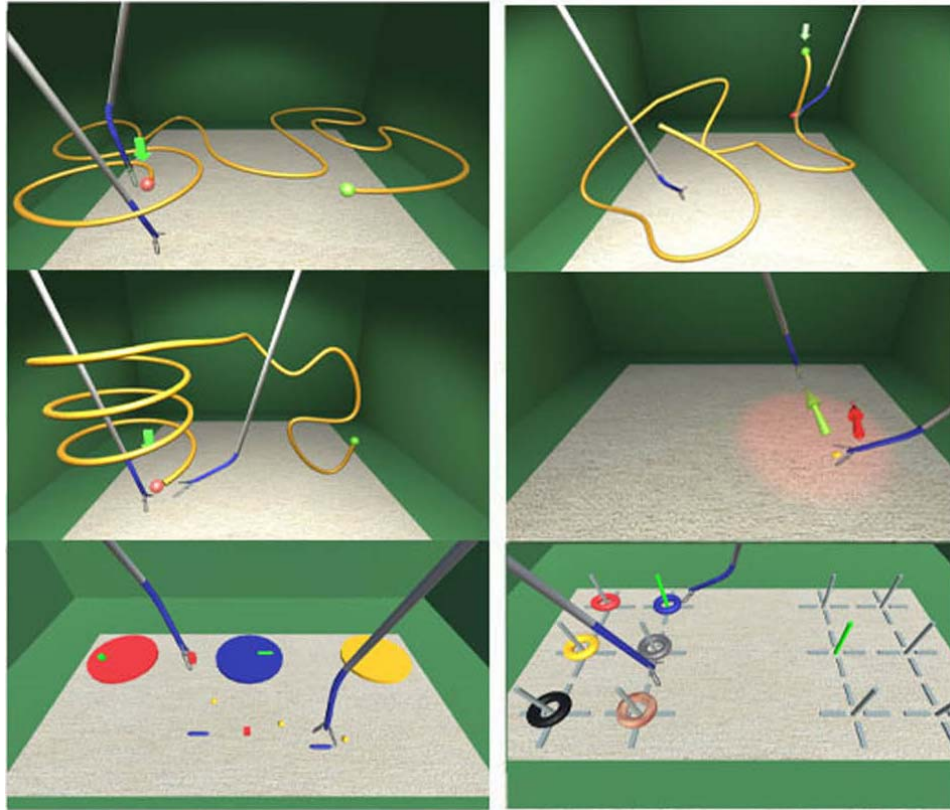
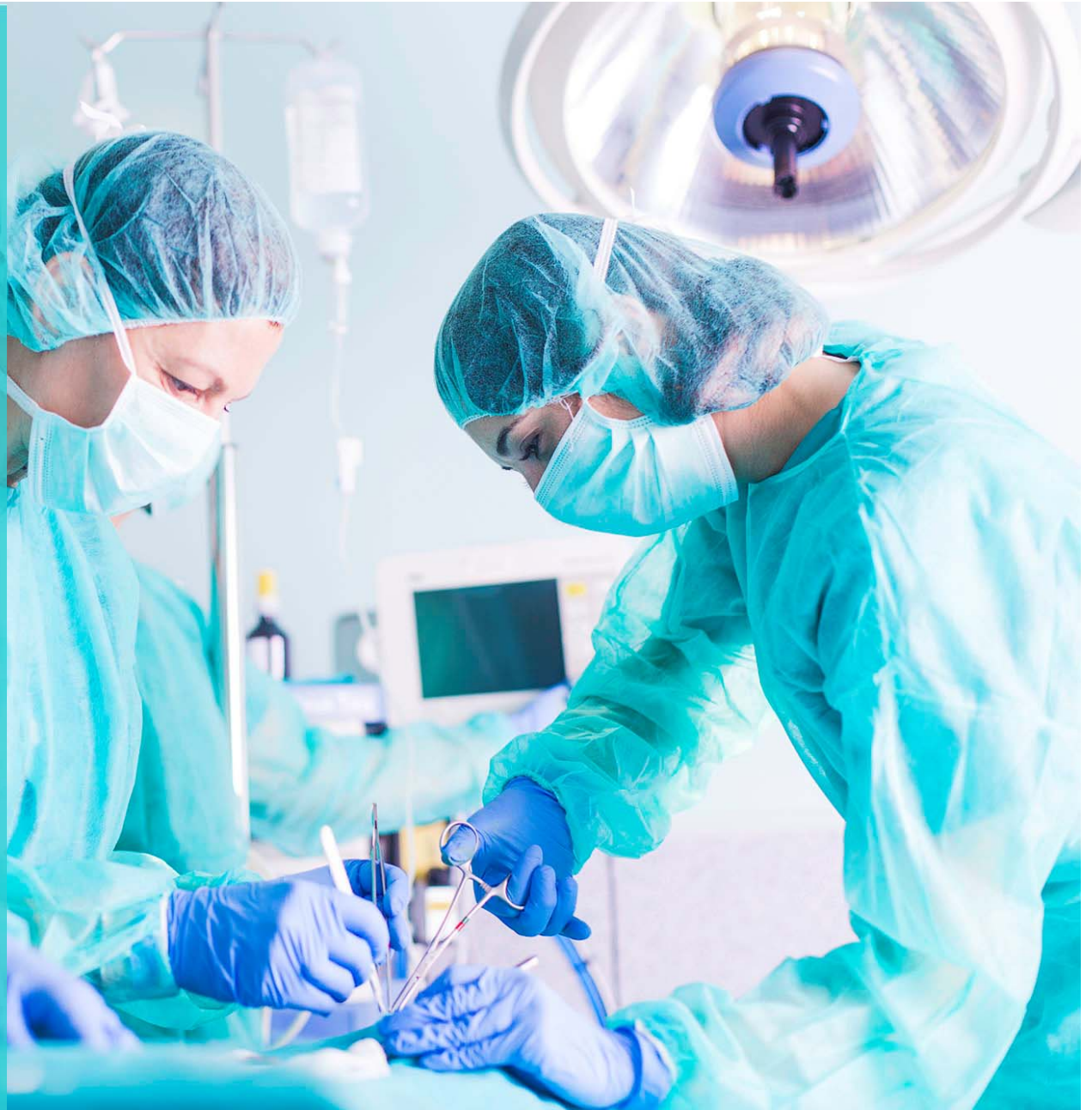


RoboSim

Robotic Telesurgery Simulator



**Learn the
Robotic
Telesurgery in
Virtual Reality
Environment
before
Encountering
to Real
Situation**

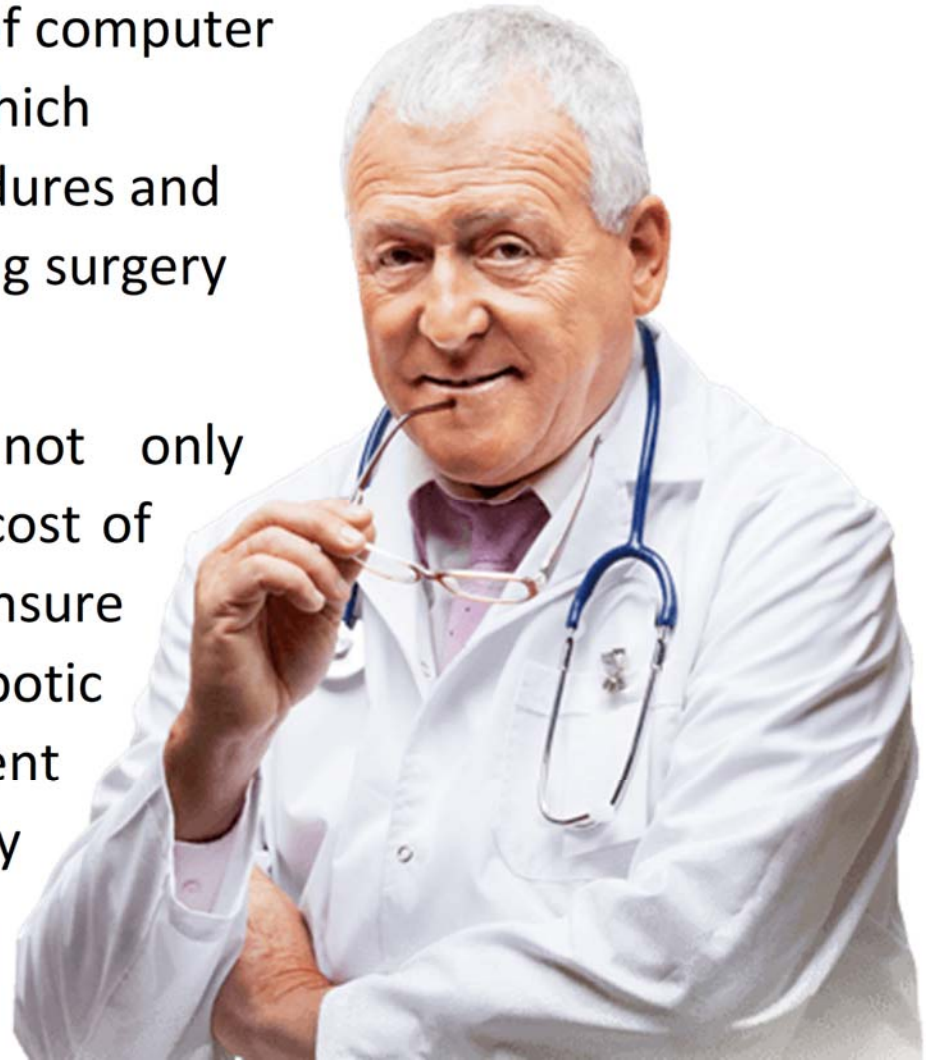




**Just
seat
and do
it with
your
hands!**

Sina*RoboSim* Robotic Telesurgery Simulator is a Virtual-Reality-Based system with a combination of computer hardware and software modules which recreate the robotic surgery procedures and training environment for performing surgery with flexible robotic instruments.

Virtual-Reality-Based education not only greatly reduces the maintenance cost of training surgeons, but also will ensure maximum efficiency in learning robotic surgery skills which enhancing patient safety by providing the surgery residents with unique challenges and experiences.

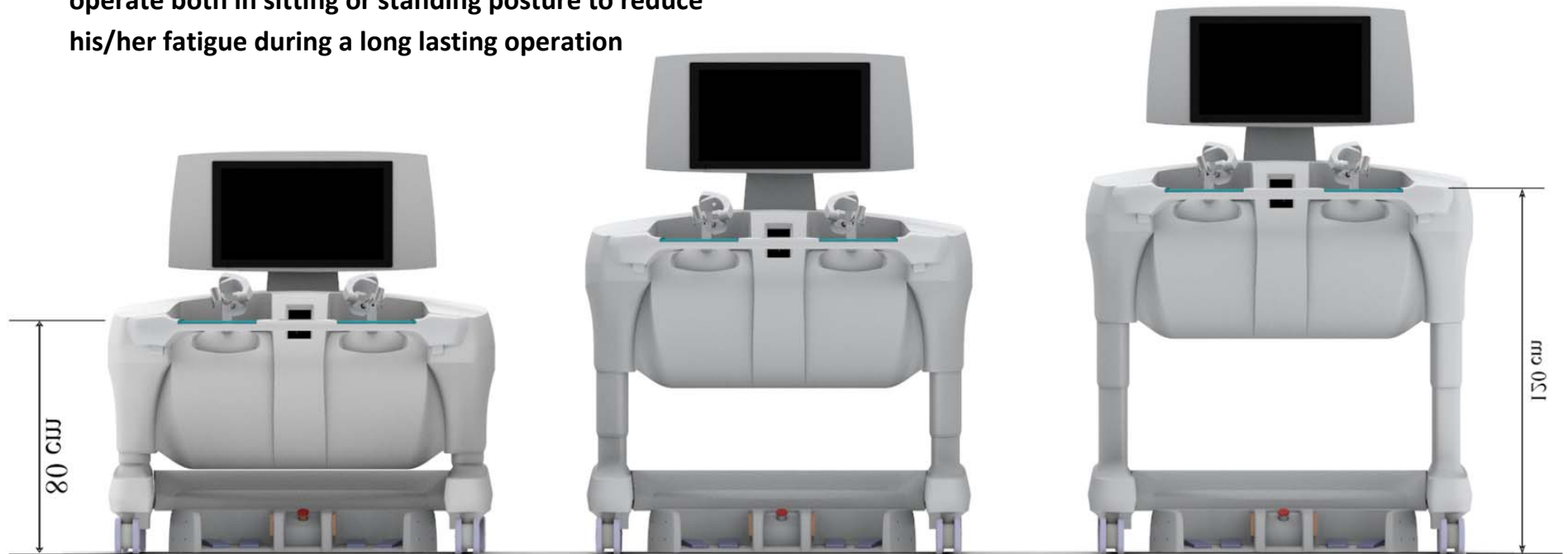


We think about your convenience!

Which posture do you prefer? Sitting, standing or reconfiguring during a long lasting operation!

We offer a reconfigurable surgery console that brings best ergonomic posture for you.

The console may memorize the preset configurations and reconfigure from sitting to standing posture during surgery in less than 30 sec. So surgeon may operate both in sitting or standing posture to reduce his/her fatigue during a long lasting operation



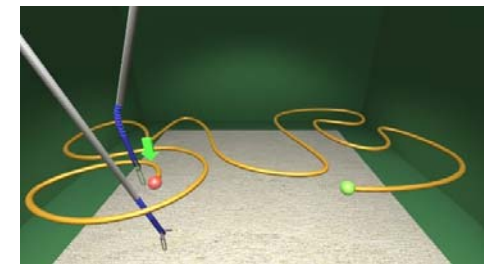
You may adjust almost everything!



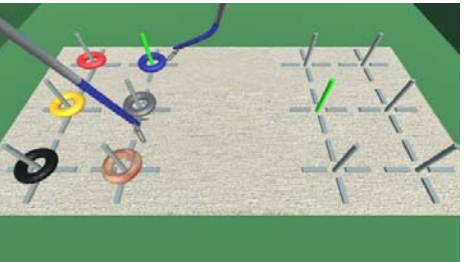
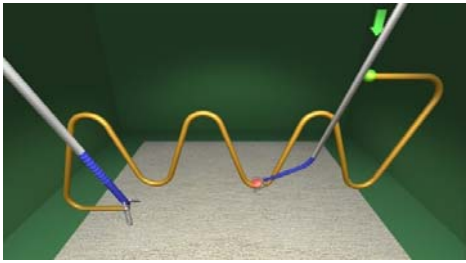
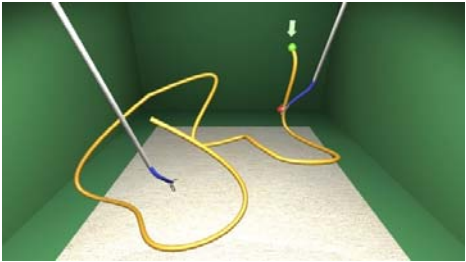
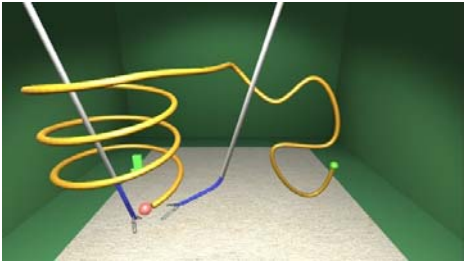
Reconfigurable Surgery Console

Technical Specifications

Robotic Telesurgery Simulator (Hardware)	
Console type	Ergonomic two postural (sitting and standing)
Total dimensions (L*W*H)	110*95*100 to 170 cm3
Total weight	120 kg
No. of total active DOFs	8 motorized joints
No. of total passive DOFs	8 encoded joints plus 5 adjusting joints
Local communication frequency	10 kHz
Main monitor type	IPS, eye-care
Main monitor resolution	4k (3840 x 2160 pixels)
Remote setting panel	SD touch panel
Posture setting panel	Push button
Automatic Setting parameters	Height (based on tool handle): 75-120 cm
	Distance between two master robots: 35-80 cm
	Arm Support: 65- 75 cm
Manual Setting parameters	Monitor height (based on base of it): 0- 20 cm
	Monitor depth (based on base of it): 0- 20 cm
	Monitor angulation (based on base of it): ± 10 degree
Left and right master robots type	7 DOF Fully back drivable, 3 DOF force feedback
Master robots DOFs types	3 force feedback DOF to control surgery instrument position and interaction forces
	2 encoded DOF to control the surgery tool orientation



	1 encoded DOF to control the surgery tool 360 degree infinite rotation
	1 force feedback DOF to control the surgery tool grasping and pinch force to soft tissues
Handles types (optional)	Open surgery instrument type
	Stylus type Ergonomic type
Workspace of each handle	20*20*20 cm ³
Accuracy of position recording	± 0.1 mm
Accuracy of orientation recording	± 0.1 degree
Resolution of position recording	0.01 mm
Resolution of orientation recording	0.01 degree
Repeatability of position recording	0.1 mm
Repeatability of orientation recording	0.1 degree
Movement indexing (clutch):	Up to 20 cm in each direction
Movement scaling:	Up to 10X scale down
Rang of force feedback at each direction	10 N
Rang of pinch force feedback	5 N
Accuracy of directional force feedback	± 1 N
Accuracy of pinch force feedback	± 0.5N
Resolution of directional force feedback	0.5 N
Resolution of pinch force feedback	0.25 N
Repeatability of directional force feedback	± 0.5N
Repeatability of pinch force feedback	± 0.25N
Foot pedals:	Foot pedals for controlling the laparoscopic camera
	Foot pedals for activating the electrocautery
	Foot pedals to switch the electrocautery instrument
	Foot pedals to switch between active instruments (2 of 3)





Robotics & Medical Innovators

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