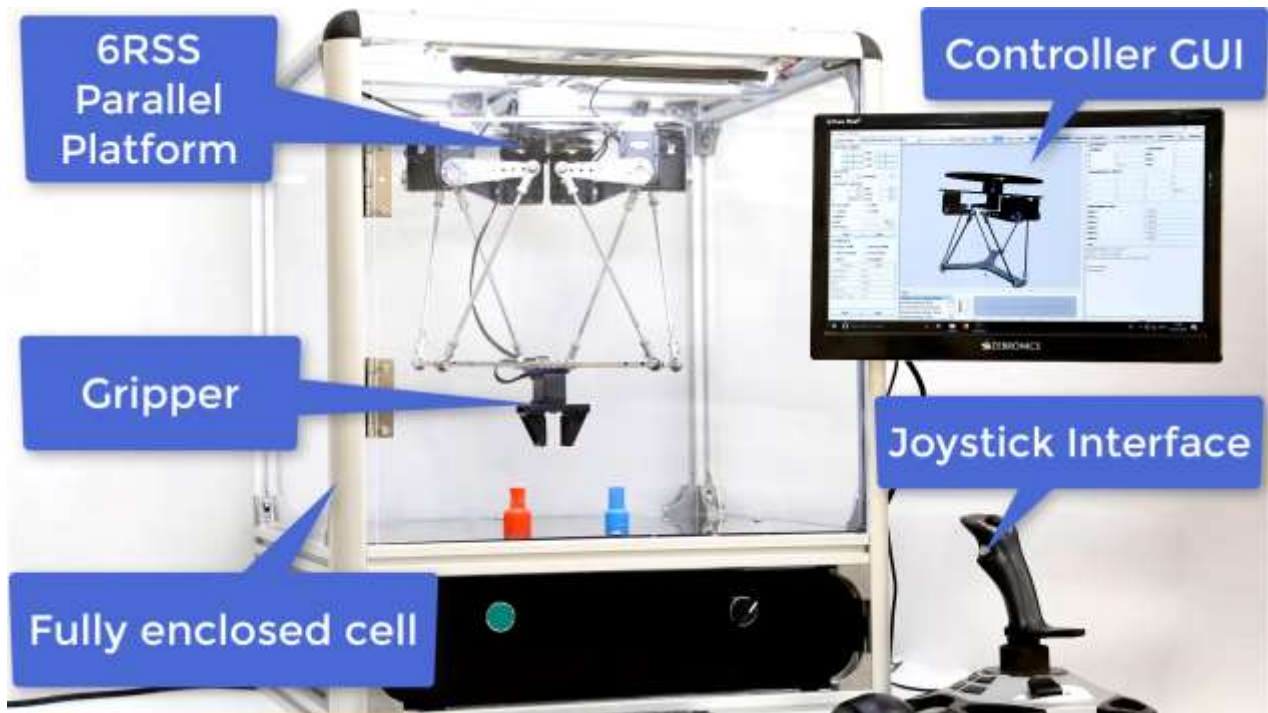


6-DOF Parallel Robot Training Cell



Technical Specifications:

Mechanical	
Type	6 DOF, Parallel Robot
Number of Axis	6
Pose repeatability	± 0.2 mm (ISO 9283)
Weight	25 kg
Cubical workspace	60mm $\times$ 60mm $\times$ 60mm
Maximum Displacements	X $\sim$ 160mm, Y $\sim$ 160mm, Z $\sim$ 160mm
Maximum Angular Displacements	Roll $\sim$ 43°, Pitch $\sim$ 25°, Yaw $\sim$ 65°
Payload	6 kg (at 12.0V)
Operating temperature	-5°C to +80°C
Mounting position	Floor, Ceiling (Inverted - Default), walls, floating

Size	500mm × 500mm × 750mm
Enclosure Material	Aluminium Extruded Channels and Acrylic covers Robot: Stainless Steel
Material	Robot Body: Stainless Steel, Actuators: Engineering plastic body
Joint Level Accuracy	0.088°
Incremental Motion	1.0mm along each X, Y, Z direction
Maximum Velocity	0.5m/s
Maximum Joint Torque	6.0 Nm (at 12V)
Maximum Joint Speed	378°/second
Force/Torque Control	Torque control (upto 10 bit precision) at each joint allows end-effector force/torque control
Sound Level	< 50dB
Top Platform	Modified for more agility and light weight. Provision for mounting sensors and gripper.
Electrical	
Operating Voltage	12.0V (Included)
Maximum Current	25A at Full load
Standby Current	600mA
Connecting Cable	Single 3-Wire cable (Included)
Actuator Characteristics	• Full metal gear • PID adjustable using separate Actuator GUI • Contactless absolute encoder (12 bit for 360°)

	• Feedback: Position, Temperature • Position, Velocity or Torque Control
Power Supply	110/220 V
Software	
Supported platforms	PC with Mac or Linux (Ubuntu, Debian, Raspberry Pi, or other distributions.) GUI Supported on Windows 10/11 (License Included)
Programming Compatibility	MATLAB, Python (Codes Included with the supply), Java, C/C++, C#, LabView, ROS.
Communication	USB to TTL (Daisychain - Half duplex Asynchronous Serial Communication)
API Compatibility	Python, ROS

Included GUI Features	• Cartesian Jogging for Position and Orientation • PTP Motion using Cycloidal, Cubic, Quintic, and Cosine trajectories • Controllers: Virtual using mouse, Android App or 3D Joystick • Programmed motions: Planar/Vertical SHM, Spiral, Lissajous, Helical, Precession • Live plot for joint angles for any cartesian motion, end-effector homogeneous transformation matrix, error logs • Mouse interactive 3D visualization and standard views buttons • Trace feature for end-effector motion visualization • Inbuilt safety feature for singularity check and joint angle limits
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Scope of Supply:

- 1 No. all rotary parallel Stewart platform with actuators within the enclosure cell.
- USB to TTL converter for communication (Inbuilt).
- Emergency stop and Power Switch (Inbuilt).
- 3 core, 5m, submersible cable.
- USB Drive with Software, API, Assembly Instructions, User Documentation, Android Application, Videos and Example codes.
- Full customization in terms of hardware and software may be provided (chargeable extra).
- Lab. Manuals for teaching.
- 3D Joystick for Programming and Demonstration

Field of Use:

- As a laboratory apparatus or in classroom for demonstrating parallel robot.
- Positioners: for cameras, solar plates, mirrors, surgical instruments, etc.
- Low frequency vibration compensators or dynamic balancing (needs appropriate sensors).
- Motion platform: e.g. simulators, gaming stations, medical applications, test workbench, etc.
- Torque controlled joints allows it to be used as a haptic feedback device or as an assembly robot.



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