



Specifications- IR4⁺ (B-1-A & B-1-B)

Industrial SCARA Robot Kinematic Trainer System



Introduction

Calculating kinematics is a cornerstone skill for robotics engineers.

Unfortunately, only traditional industrial robotic arm is available for training which does not have any access to firmware and thus the internal kinematics.

The IR4⁺ is a full functioning industrial SCARA robot with complete access to internal firmware. This makes the IR4⁺ an excellent robot kinematic learning platform. It can be used in its traditional roles of robot application trainer (such as pick-&-place)

Further, it is supplied with necessary functions and accessories such as academic curriculum, aids for conducting experiments, programming software with training, heavy duty table, pick & place kit, etc.

Industrial construction and latest industrial electronics ensure durability and long service life without obsolesce.

Versions Available

IR4+ Standard-

Hardware

- Industrial SCARA Manipulator
 - 20μm repeatability
 - AC Servo Motors
 - Absolute Encoders on axes
- Robot Controller
- Heavy duty Table
- Essential Toolkit

Software

- *MotionPerfect V4*
 - Similar to Basic language
 - 3D Machine Simulation
 - Oscilloscope
- Training for Software
- Aids for academic Kinematic Experiments

IR4+ Advanced- Apart from all items from the standard version, following additional accessories are available with advanced version-

- Pick-&-Place kit Options
 - Pneumatic Suction Type
 - Pneumatic 2-finger gripper type



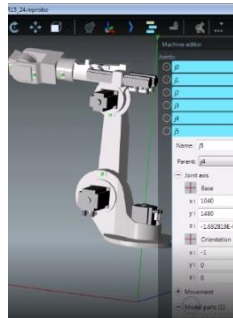
Options-

- Touch-Screen Operation & Testing Kit
- Teach-Pendant Unit
- Electric, force-controlled gripper for soft objects

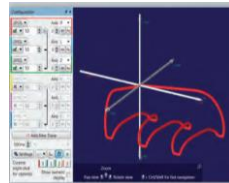
Features



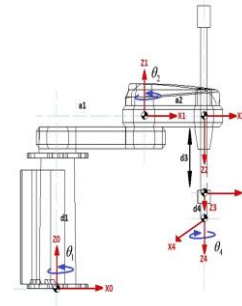
Industrial Grade



3D Simulation



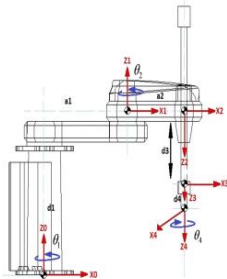
3D Oscilloscope



Academic Experiments

Applications

Kinematics Trainer



Mechatronics Lab

Machine Vision Assisted Robot Arm



Computer Science / Electronics Lab

Industrial Pick-&-Place



Small parts in Factories/Labs

Robotic Application Development



Start-ups/Research Labs

Core Specifications- Manipulator

Item	Property		Value	
Payload	Maximum Payload		3kg	
	Rated Payload		1kg	
Arm Length / Reach	J1+J2		400 mm (225+175 mm)	
	J3 (Z)		150 mm	
Repeatability & Max Speed	Axis	Range	Repeatability	Max Speed (Standard Load)
	J1	+/-132°		
	J2	+/-141°	+/-0.02mm	600°/s
	J3 (Z)	0-150mm	+/-0.01mm	1000mm/s



	J4	+/-360°	+/-0.01°	2500°/s
Physical	Net Weight		15kg	
	U Inertia		0.005kg-m ²	
	Insertion Force		100N	
	Controller		IR Separate Controller with 5m cabling	
	Robot Mounting		Table- Top	
Application Software	Environment		Temperature: 5-40°C; indoor Humidity: 10-80% (NC)	
	Software		MotionPerfect v4.0	
	System Requirements		Windows 10; Multi-core Processor, 4GB RAM, 1GB HDD space, Ethernet Port	

System Specifications

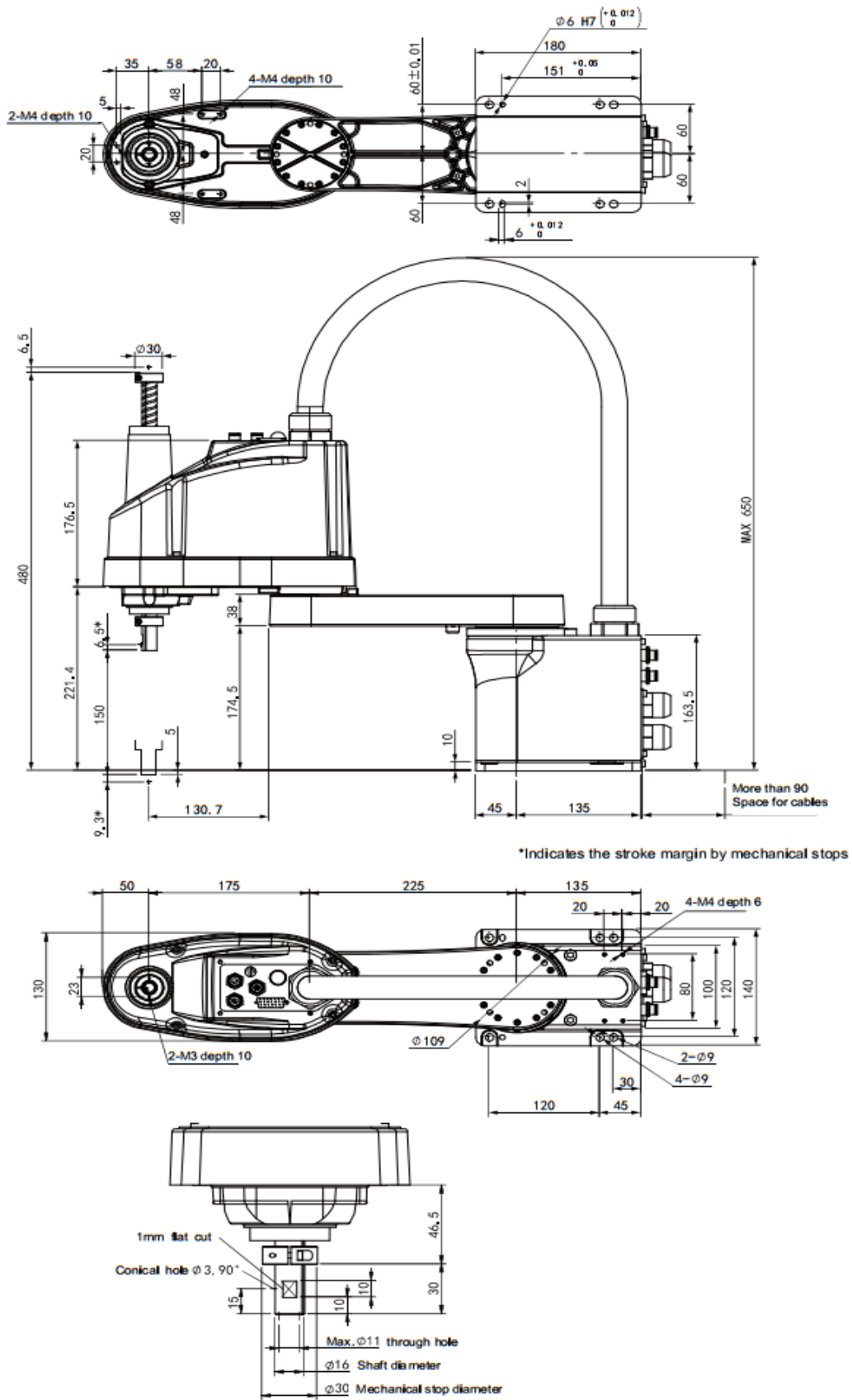
Item	Property	Value
Physical	Type	Table Mounted
	Net Weight	~100kg (including table, controller & manipulator)
	Environment	Temperature: 5-40°C; indoor Humidity: 10-80% (NC)
Other	Power Supply	Single power plug required- 230VAC, 25A with earthing
	Pneumatic Supply	2-6 bar

Notes-

1. A PC for running the application software is not a part of scope of supply.
2. End-user Training is typically organized at our partner location.



Manipulator Dimensions



- End