

M-710iC/20L™

Arc Applications

Basic Description

The M-710iC/20L is a six-axis, modular construction, electric servo-driven robot designed for precise, high-speed welding and cutting. Based on its simple and reliable serial link construction, the M-710iC/20L offers an industry leading reach and stroke making this the largest arc welding robot of its kind. The compact yet flexible design simplifies installation, maximizes reach and makes this robot ideally suited for large fabrications.

The robot controller and easy-to-use ArcToo® software provide reliable performance with high productivity.

Benefits

- Features highest motion speeds in class for maximize performance and productivity.
- Best-in-class reach versus stroke ratio.
- The M-710iC/20L offers an extremely large work envelope useful for large parts.
- Simplified design reduces wrist interference ideal for reaching into complex tooling.
- Extremely fast wrist axes reduces aircut times, thus improving throughput.

Features

- “Plug and play” simplicity with Lincoln Electric’s power sources.
- J3 flip-over capability provides large working envelope that is ideal for inverted applications.
- Slim wrist size enables the robot to enter into smaller openings in the work space.
- RV reducer drivetrain with integral bearings provides rigidity and performance in a compact package.



- Wire feed motor mounted directly to robot’s upper arm shortens welding torch length, which improves wire feed reliability and arc start capability.
- Compatible with all major brands of welding equipment.
- Arc welding teach pendant with application-specific hard keys offers intuitive control over the process.
- Interfaces with most types of servo driven or indexing positioners.
- 3,110 mm reach and 2,194 mm stroke.
- Serial link construction eliminates the “link arm” and provides greater flexibility and fewer moving parts.
- 20 kg load on the faceplate; 24 kg load on upper J3 arm.
- Increased payload capabilities make this robot ideally suited for arm-mounted tandem applications.
- ISO wrist consistent with arc family of robots; welding peripherals stay the same.

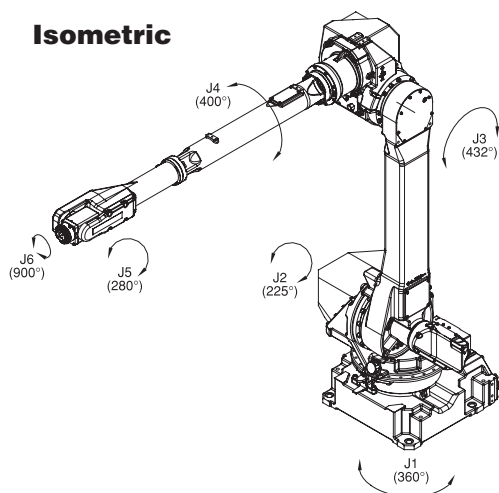
- Mounting flexibility supports upright, inverted, wall or angle mount with no changes to the mechanical unit.

Options

- Integrated ServoTorch™ wrist-mounted wire feeder optimizes feeding for aluminum and soft wire applications.
- Additional process welding I/O integrates multi-channel welding equipment such as 4 channel TIG and 3 channel MIG (STT).
- Various robot connection cable lengths and optional track rated cables for flexible cabinet placement.
- J1, J2, J3 axis stroke modification kit.
- Auxiliary axis package for integration into welding positioners.
- Solution Arm Torch Dress-out Package.

FANUC
Robotics

Isometric



4-DIA. 24 THROUGH
HOLE, 38 FACING DEPTH 5
(FOR ROBOT MOUNTING BOLT)

310 225 40 30

MOUNTING FACE

ROTATION CENTER OF J1 AXIS

240 255 205 40 275 590

FRONT

380 190

[illegible]

Items		
Axes		6
Payload (kg)		20
Reach (mm)		3110
Repeatability (mm)		±0.15
Interference radius (mm)		368
Motion range (degrees)	J1	360
	J2	225
	J3	432
	J4	400
	J5	280
	J6	900
Motion speed (degrees/s)	J1	175
	J2	175
	J3	180
	J4	350
	J5	360
	J6	600
Wrist moment N·m (kgf·m)	J4	39 (4)
	J5	39 (4)
	J6	19 (2)
Wrist inertia (kg·m)	J4	.88
	J5	.89
	J6	.24
Mechanical brakes		All axes
Mechanical weight (kg)		540
Mounting method ⁽¹⁾		Floor, ceiling, angle and wall
Installation environment:		
Temperature °C		0 to 45
Humidity		Normally: 75% or less Short term (within a month): 95% or less No condensation
Vibration (m/s ²)		4.9 or less
Payload at axis 3 (kg) ⁽²⁾		24

- (1) Motion range is de-rated for wall and angle mount.
- (2) Maximum load capacity at J3 casting is limited by payload at wrist.

Wrist

Technical drawing of the Wrist component. The side view (left) shows a profile with a total width of 100 and a mounting flange with a thickness of 6. The front view (right) shows a circular face with a 45° chamfer. Dimensions include a central hole of $\varnothing 50^{H7}$, a hole of $\varnothing 25^{H7}$, and a 6H7 DEPTH 10 ON 40 B.C. feature. The front view also shows a 4-M6 DEPTH 10 EQ.SP. on 40 B.C. feature. The overall width is 89.5, and the height is 60.

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