

## MA3120

### ARC WELDING

#### KEY BENEFITS

Longest-reach arc welding robot with integrated torch cable

Streamlined design improves torch access into tight spaces

Patented multiple robot control allows more arms to be combined in workcell

Extra-long arm reduces need for tracks

#### SPECIFICATIONS

6 kg payload

3,121 mm horizontal reach

5,615 mm vertical reach

±0.08 mm repeatability

#### CONTROLLERS



DX200



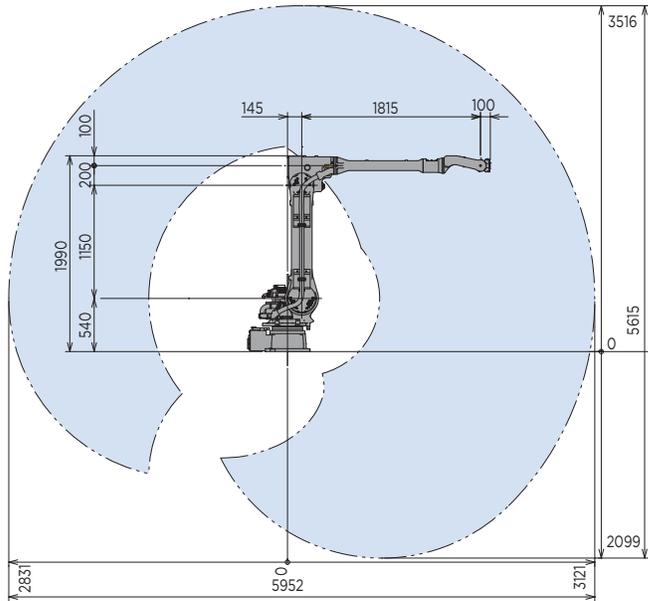
FS100



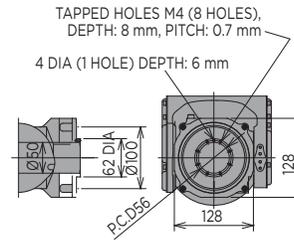
MLX100

- Slim, extended reach six-axis MA3120 welding robot increases productivity and achieves highest welding performance.
- Extended reach is ideal for use in workcells with larger workpieces such as agriculture and construction machinery or automotive frames.
- Slim arm allows easy access to parts in tight spots and avoids potential interference with fixtures.
- Reduces welding cycle time due to cutting-edge Sigma-5 AC servo motor control technology and ARM (Advanced Robot Motion) control.
- Integrated through-the-arm torch cabling eliminates cable interference, simplifies programming and reduces cable wear.
- Feeder cable and welding utilities (gas and air hoses) can be routed through robot base to upper arm.
- Hollow upper arm maintains optimum bend radius of welding torch cable, maximizing weld performance. T-axis can rotate torch  $\pm 210$  degrees without cable interference.
- Arm design prevents bent, pinched or stretched cables regardless of torch orientation or part size or shape; minimizes wire feed problems and optimizes weld performance.
- Symmetric wrist profile provides equal torch access to both sides of part.
- Floor-mounted model is standard. Wall- or ceiling-mounted versions are available.

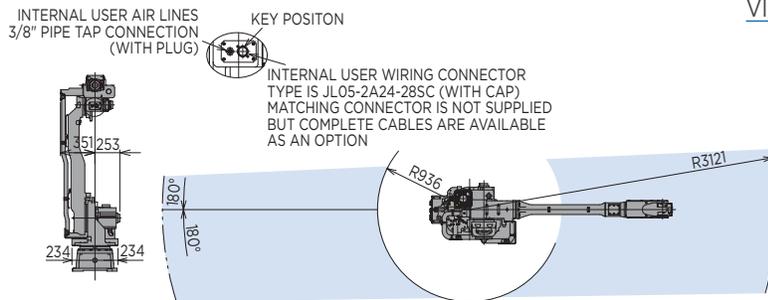
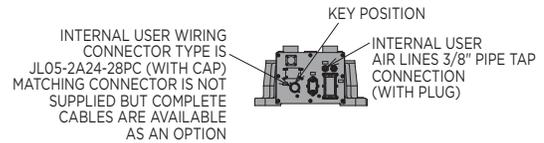
# MA3120 ROBOT



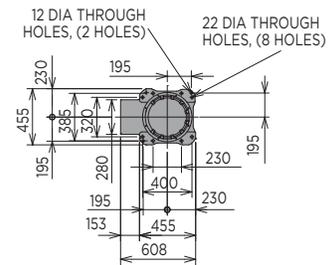
VIEW A



VIEW B



VIEW C



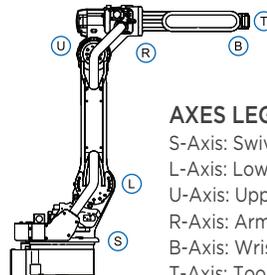
All dimensions are metric (mm) and for reference only.  
Request detailed drawings for all design/engineering requirements.

## SPECIFICATIONS

| Axes | Maximum motion range [°] | Maximum speed [°/sec.] | Allowable moment [N•m] | Allowable moment of inertia [kg•m <sup>2</sup> ] | Controlled axes                     | 6                   |
|------|--------------------------|------------------------|------------------------|--------------------------------------------------|-------------------------------------|---------------------|
| S    | ±180                     | 180                    | -                      | -                                                | Maximum payload [kg]                | 6                   |
| L    | +135/-90                 | 178                    | -                      | -                                                | Repeatability [mm]                  | ±0.15               |
| U    | +251/-160                | 178                    | -                      | -                                                | Horizontal reach [mm]               | 3,121               |
| R    | ±150                     | 400                    | 10.5                   | 0.28                                             | Vertical reach [mm]                 | 5,615               |
| B    | +90/-135                 | 430                    | 10.5                   | 0.28                                             | Temperature [°C]                    | 0 to +45            |
| T    | ±210                     | 630                    | 3.2                    | 0.06                                             | Humidity [%]                        | 20 - 80             |
|      |                          |                        |                        |                                                  | Weight [kg]                         | 501                 |
|      |                          |                        |                        |                                                  | Power rating [kVA]                  | 2.5                 |
|      |                          |                        |                        |                                                  | Internal I/O cable (feeder control) | 24 conductors       |
|      |                          |                        |                        |                                                  | Internal gas line                   | (2) 3/8" connection |

## OPTIONS

- Extended length manipulator cables
- Robot risers and base plates
- Wide variety of fieldbus cards
- Vision systems
- Seam tracking and seam finding packages
- Variety of weld packages



### AXES LEGEND

- S-Axis: Swivel Base
- L-Axis: Lower Arm
- U-Axis: Upper Arm
- R-Axis: Arm Roll
- B-Axis: Wrist Bend
- T-Axis: Tool Flange

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# YASKAWA