

Welding Robot System



Welding Robot



HIWIN Home

HIWIN Welding Robot System

Efficient, Reliable, and Built for Advanced Welding Applications

Why Transition from Manual to Automated Welding?

- **Enhanced Quality:** Achieve consistent and precise welds with robotic precision, eliminating variability caused by manual processes.
- **Improved Productivity:** Continuous operation with higher output compared to manual welding, ensuring efficiency and faster project completion.
- **Reduced Labor Dependence:** Automate repetitive welding tasks to address shortages of skilled welders.

How HIWIN's Robot Meets Critical Welding Needs?

- **Precision and Stability:** Absolute accuracy of ± 0.05 mm ensures exceptional weld path precision and consistency.
- **Advanced Capabilities:** Optional features like laser seam tracking handles irregular or misaligned seams when required.
- **Durability:** Designed for long-term reliability in demanding production environments.
- **No-Fuss Control:** Intuitive teach pendant enables effortless operation of the robot, external axis, welding power supply, and connected peripherals.

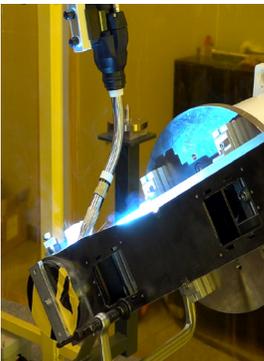
HIWIN's Added Value

- **Flexible Integration:** HIWIN robots are compatible with HIWIN's own servo positioning tables, as well as third-party options, for adaptable setups.
- **Extended Range:** Integrates with HIWIN's or third-party 7th axis RTUs to handle larger workpieces and enhance flexibility.
- **Seamless Compatibility:** Easily integrates with leading MIG ARC welding power supply manufacturers, including Lincoln Electric, Miller, Fronius, and SKS.
- **No Software License Fees:** HIWIN's HRSS 4.0 software is provided at no additional cost, offering a user-friendly and cost-effective solution.

Streamline Your Welding Process

Contact HIWIN today to discover how our Welding Robot System can elevate your operations.

Applications:



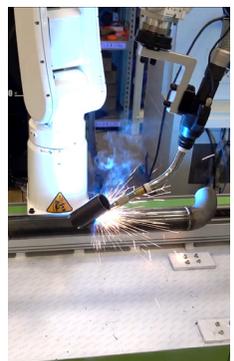
Mechanical Industry



Infrastructure Industry



Automotive Industry



Semiconductor Industry

Features:

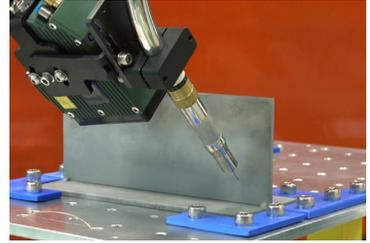
Welding Robot Software

All robot controller and simulation software included. Compatible welding power supplies weld settings can be adjusted and executed through HIWIN's "Smart-Weld" interface.



Touch Sensors

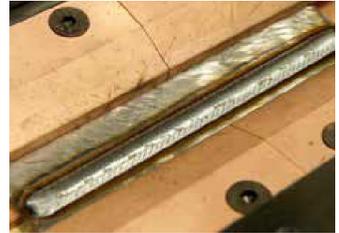
Automatically detects and compensates for weld bead position, including workpiece displacement, assembly variations, and machining errors.



Weaving

The welding gun performs side-to-side weaving along the travel path to enhance weld bead coverage and filling.

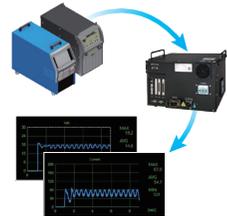
- Real-time data with visual graphs
- Abnormal error and stop function
- Complete record of welding parameter data



Real-Time Welding Monitor

Quickly analyze the cause of poor welding results. Reduce idle time, increase productivity, and quality.

- Real-time data with visual graphs
- Abnormal error and stop function
- Complete record of welding parameter data



TCP Auto Recovery

Ensures consistent repeatability in every weld, maintaining long-term welding quality.

- Automatically corrects the weld bead deviation caused by the welding torch tip deviation
- Even after torch collisions or abnormal stops, production can quickly resume with minimal disruption.

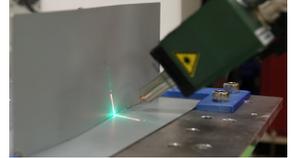
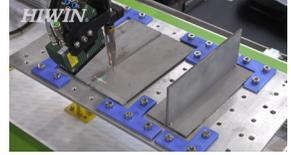


Accessories:

Laser Seam Sensor

Proactively and accurately locates weld beads, with fast detection and compensation for manufacturing and assembly tolerances.

- Quickly locate the workpiece's position
- Excellent position accuracy
- Real-time tracking of the weld bead position during the welding process
- Flexible use



Torch Clean Station

Maintains optimal torch condition while reducing time spent on cleaning and maintenance.

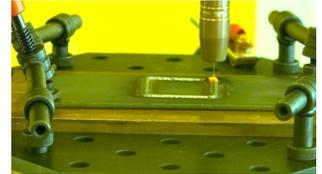
- One-stop solution for welding spatter removal, welding wire cutting, and anti-spatter liquid spraying
- Lightweight, highly reliable structural design



Analog Welding Module Solution

Supports most welding power sources on the market

- Support up to 200 sets of welding parameter settings
- Support continuous change of welding parameters during the welding process



Head Stock Specifications

View				
Max. Payload	200 kg	350 kg	500 kg	1000 kg
Max. Speed of Rotation	180 °/s	115 °/s	115 °/s	100 °/s
Rated Torque of Rotation	128 N-m	229 N-m	450 N-m	1029 N-m
Repeatability	0.03mm [R=100mm]	±0.08mm [R=300mm]	±0.08mm [R=300mm]	±0.1mm [R=300mm]
Weight	35 kg	105 kg	181 kg	242 kg

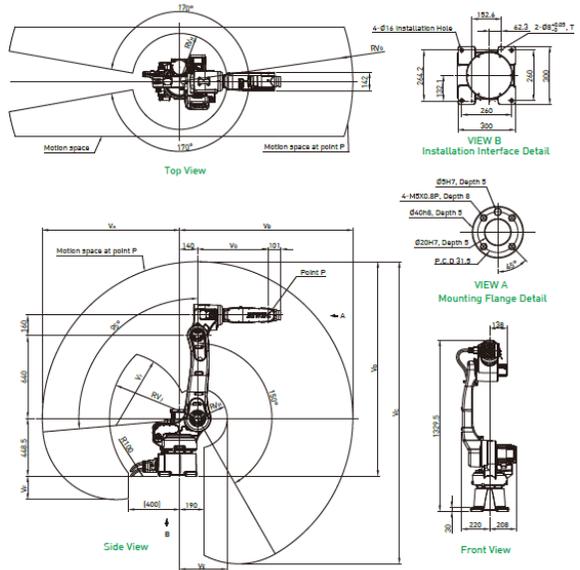
* Tail stocks are optional.

Head Stock Specifications

Model Name	HH-350	HH-500
View		
Max. Payload	350 kg	500 kg
Max. Speed of Rotation	115 °/s	115 °/s
Max. Speed of Tilted Angle	115 °/s	110 °/s
Rated Torque of Rotation	229 N-m	450 N-m
Rated Torque of Tilted Angle	167 N-m	746 N-m
Repeatability	±0.1mm (R=300mm)	±0.1mm (R=300mm)
Working Area	ARM=±185° PLATE=Infinite	ARM=±185° PLATE=Infinite
Weight	446 kg	583 kg

Robot Specifications

Model Name	RA610-GC			
Degrees of Freedom	6			
Nominal Load Capacity (kg)	12	10	10	7
Maximum Load Capacity (kg)	14	12	12	9
Maximum Reach Radius (mm)	1355	1476	1672	1869
Motion Range (deg.)	J1	±170		
	J2	+95--150		
	J3	+185--85		
	J4	±190		
	J5	±135		
	J6	±360		
Position Repeatability (mm)	±0.05		±0.06	
Cycle Time (sec)*Note 1	1			
Manipulator Weight (kg)	143	147	150	152
Protection Rating	IP54(Wrist:IP65)			
Robot Controller	RCA610-GC			
Integrated Air Supply	Two channels of air connection			
Safety Certification	CE/RoHS2.0			



* Note 1: Based on a back-and-forth movement over a vertical distance of 25mm and a horizontal distance of 300mm.

Model / Dimensions	V _A	V _B	V _C	V _D	V _E	V _F	V _G	V _H	V _I	V _J
RA610-1355-GC	1075	1355	2343	1663	372.5	182	552	R232.5	R575	R688
RA610-1476-GC	1196	1476	2587	1785	368	304	678	R228	R697	R784
RA610-1672-GC	1392	1672	2979	1981	463	500	878	R323	R892	R951
RA610-1869-GC	1589	1869	3374	2178	630	697	1078	R490	R1089	R1129

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