

HIWIN®

Consumer Goods | Automobile Industry | Semiconductor Industry | Energy Industry

Welding Robot System



HIWIN Welding Robot System

Innovative Multi-Axis Welding Solution

Precision and Reliability in Every Weld

Provides Stable Welding Quality and Accuracy

- The system uses HIWIN self-made key components, and the absolute accuracy of Robot reaches $\pm 0.05\text{mm}$, ensuring stable and reliable.
- Improve the instability during manual welding, make the weld bead smoother, maintain quality and improve yield rate.
- Can be integrated with a laser seam sensor tracking system with precise trajectory correction technology to achieve excellent weld performance.

Improve Welding Efficiency

- With self-developed EtherCAT control platform, providing real-time mutual communication.
- Synchronous control of up to six axes, the robot and external axes reach the point at the same time, saving waiting time.
- Effectively improve production efficiency and more than double production capacity.

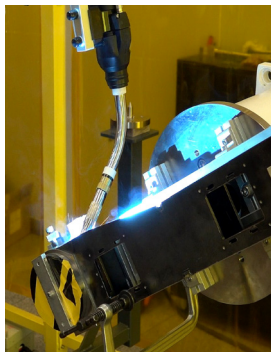
HRSS 4.0 Brand-New Software Experience

- Provide a user-friendly graphical interface to make operation easy and simple.
- Establish a dedicated welding interface to make setting welding parameters more intuitive and faster, saving machine adjustment time.

Reduce Labor & Cost

- Upgraded production line, simplify the operation process.
- Through the task scheduling function, operators can perform high value-added operations while robot welding.
- Effectively save human-power, time and costs!

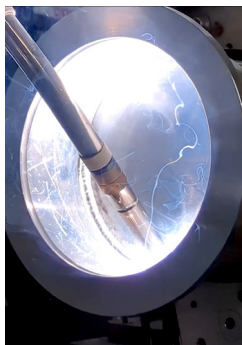
Use Cases:



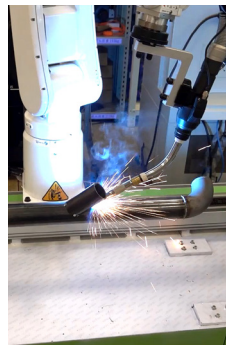
Mechanical Industry



Infrastructure Industry



Automobile Industry



Semiconductor Industry

Features:

Welding Robot Software

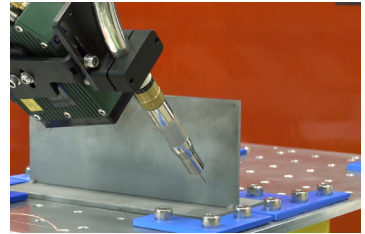
“Smart-weld designed interface” -
All settings can be completed via the roboto teach pendant.



Touch Sensors

“Auto-search the position of the weld bead” -
Workpiece displacement, assembly, machining error Ccompensation

- Standard built-in functions
- Multiple search planning



Weaving

“Welding gun weaves left and right in the direction of travels” - to improve weld bead filling range

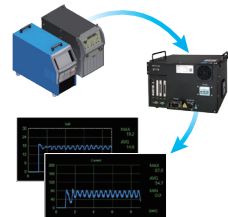
- Real-time data with visual graphs
- Abnormal error and stop function
- Complete record of welding parameter data



Real-Time Welding Monitor

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

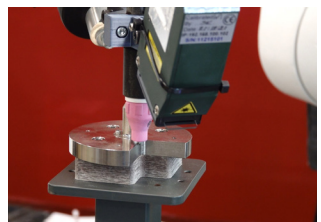
- Real-time data with visual graphs
- Abnormal error and stop function
- Complete record of welding parameter data



TCP Auto Recovery

“Ensure the repeatability every time welding” - Main-
tain welding quality in a long run

- Automatically correct weld bead deviation caused by welding torch tip deviation
- Even if the welding torch collides or stops abnormally, production can be quickly resumed

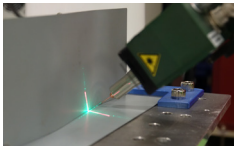
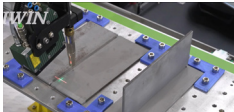


Accessories:

Laser Seam Sensor

“Fast Search for weld beads with high accuracy” - Compensation for the tolerances of manufacturing and assembly

- Quickly locate the workpieces position
- Excellent position accuracy
- Real-time tracking the weld bead position during welding process
- Flexible use



Torch Clean Station

“Keep weld torch in good condition” - Save time on torch cleaning and maintenance

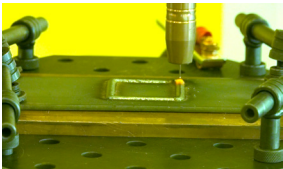
- One-stop solution for welding spatter removal, welding wire cutting, and anti-spatter liquid spraying
- Lightweight, highly reliable structural design



Analog Welding Module Solution

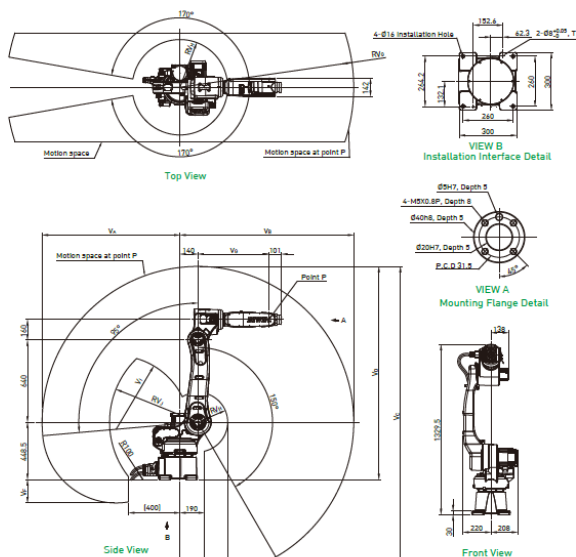
Support most welding power sources on the market

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



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

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

Global Sales and Customer Service Site

HIWIN GmbH
OFFENBURG, GERMANY
www.hiwin.de
www.hiwin.eu
info@hiwin.de

HIWIN JAPAN
KOBE NAGOYA TOKYO
TOHOKU NAGANO
SHIZUOKA HOKURIKU
HIROSHIMA FUKUOKA
KUMAMOTO, JAPAN
www.hiwin.co.jp
info@hiwin.co.jp

HIWIN USA
CHICAGO, U.S.A.
www.hiwin.us
info@hiwin.com

HIWIN Schweiz GmbH
JONA, SWITZERLAND
www.hiwin.ch
info@hiwin.ch

HIWIN s.r.o.
BRNO, CZECH REPUBLIC
www.hiwin.cz
info@hiwin.cz

HIWIN FRANCE
STRASBOURG, FRANCE
www.hiwin.fr
info@hiwin.de

HIWIN SINGAPORE
SINGAPORE
www.hiwin.sg
info@hiwin.sg

HIWIN KOREA
SUWON CHANGWON, KOREA
www.hiwin.kr
info@hiwin.kr

HIWIN CHINA
SUZHOU, CHINA
www.hiwin.cn
info@hiwin.cn

Mega-Fabs Motion Systems, Ltd.
HAIFA, ISRAEL
www.mega-fabs.com
info@mega-fabs.com

HIWIN Srl
BRUGHERIO, ITALY
www.hiwin.it
info@hiwin.it

- HIWIN is a registered trademark of HIWIN Technologies Corp. For your protection, avoid buying counterfeit products from unknown sources.
- Actual products may differ from specifications and photos provided in this catalog. These differences may be the result of various factors including product improvements.
- HIWIN website for patented product directory: http://www.hiwin.tw/Products/Products_patents.aspx
- HIWIN will not sell or export products or processes restricted under the "Foreign Trade Act" or related regulations. Export of restricted products should be approved by proper authorities in accordance with relevant laws and shall not be used to manufacture or develop nuclear, biochemical, missiles or other weapons.

HIWIN®

HIWIN TECHNOLOGIES CORP.

No. 7, Jingke Road,
Taichung Precision Machinery Park, Taichung
40852, Taiwan
Tel: +886-4-23594510
Fax: +886-4-23594420
www.hiwin.tw
www.hiwin.support.com
business@hiwin.tw (Sales)
robotsservice@hiwin.tw (Customer Service)

The specifications in this catalog are subject to change without notification.

Copyright © HIWIN Technologies Corp.

©2024 FORM C32DE01-2401 (PRINTED IN TAIWAN)