

Collaborative Robot Welding System

The Applications

Rail transit, automobile, shipyard, steel structure, container, machinery, hardware and other industries, preferred for heavy-industrial harsh environment operations.

Products features

Easy to use

Cobot drag the welding point position, integrate the human-machine interaction interface on the welding torch. No code programming, it directly sets the number of welds, matches the welding process, and can choose swing and multi-layer functions.

Intelligent application

Using new motion control algorithm, the repetitive positioning accuracy is $\pm 0.02\text{mm}$, the maximum working speed is 2m/s , which effectively suppresses vibration, improves adaptability and makes the action more flexible.

Arc tracking

The arc signal can be collected and processed to obtain the relative position of welding torch and groove, timely correct the deviation of robot planning trail, and ensure the accuracy of welding.

Pulse transfer

Precise control of pulse waveform, achieving one pulse one drop transfer. Short arc length, high stiffness. Good welding fusion, reducing welding defects such as pores and undercut.

Adapt to various materials

With rich built-in welding expert database, the operation is simple and the arc shape can be adjusted freely. It can achieve pulse and short-circuit welding of materials such as carbon steel, stainless steel and other materials.



Standard Configuration for Collaborative Robot Welding System

Robot	KX850-5Y/KX950-3D
Welding torch	Cobot special welding torch
Welding power source	X350L/X500
Wire feeder	Standard configuration
Welding accessories	Control cable, wire feed tube, wire feed frame
Trolley	Standard configuration
Arc tracking	
Water tank	
Robot fixed base	
Contact sensing	Optional configuration

Welding Power Source Technical Parameters

Model	X350L	X500
Rated input voltage	380VAC	380VAC
Input frequency	50Hz	50Hz
Rated no-load voltage	80V	80V
Rated output current / voltage	350A/31.5V	500A/39V
Output current range	30-350A	30-500A
Output voltage range	12-45V	12-45V
Duty cycle	350A/100%/40°C	500A/100%/40°C
Welding methods	Short circuit/Single pulse/Ultra-low spatter	Short circuit/Single pulse
Applicable materials and wire diameter	Carbon steel /Stainless steel $\phi 0.8\sim 1.6\text{mm}$	Carbon steel /Stainless steel $\phi 0.8\sim 1.6\text{mm}$

Collaborative Robot Servo Welding System

The Applications

Automobile parts, motorcycle parts, sports equipment, medical equipment, electric vehicle parts, tricycle parts, daily hardware, metal furniture, tool products and other industries

Products features

Easy to use

Cobot drag the welding point position, integrate the human-machine interaction interface on the welding torch. No code programming, it directly sets the number of welds, matches the welding process, and can choose swing and multi-layer functions.

Intelligent application

Using new motion control algorithm, the repetitive positioning accuracy is $\pm 0.02\text{mm}$, the maximum working speed is 2m/s , which effectively suppresses vibration, improves adaptability and makes the action more flexible.

Almost zero spatter

Compared to traditional short-circuit transition, the amount of spatter can be reduced by 99%.

Low heat input

Lower heat input can reduce the deformation of the thin plates.

Faster welding speed

The welding short-circuit frequency can reach between 125Hz and 150Hz depending on the welding application, with a welding speed of 2m/min for 0.8mm thick workpiece.

Servo process

Through the collaboration of high dynamic push and pull pulsating wire feeding and current waveform, the heat input is significantly reduced. It can achieve molten droplet flexible transition, ultra-low spatter welding and improve welding quality and efficiency, realizing high-quality welding of carbon steel, stainless steel, aluminum alloy and other materials with different thickness.

Standard Configuration for Collaborative Robot Servo Welding System

Robot	KX1300-8D
Welding power source	Welding power source
Welding torch	Servo welding torch
Wire feeder	Wire feeder
Wire feeder	Control cable, wire feed tube, wire feed frame
Trolley	Customization
Arc tracking	Customization
Water tank	Customization
Robot fixed base	Customization
Contact sensing	Optional configuration

Servo Welding Power Source Technical Parameters

Model	X350SW
Rated input voltage/frequency	Three-phase 380VAC 50Hz
Allowable working range	Voltage: 320V~450V; Frequency: 40~60Hz
Rated no-load voltage	80V
Rated output current / voltage	350A/31.5V
Duty cycle(ambient temperature 40°C)	350A@100%
Rated output voltage regulation	$\pm 5\%$ (hot and cold state and input voltage $\pm 10\%$ fluctuation)
Output characteristic	CV(constant voltage characteristic)/CC(constant current characteristic)
Output voltage range	12~45V
Output current range	30~350A
Arc extinguish voltage regulating range	12~45V
Arc extinguish current regulating range	30~350A
Welding methods	Short circuit/Pulse/Servo welding

