

**High performance manipulators and
G2 controller with 64 bit main CPU**
- to maximize your productivity -



G2 Series

Panasonic pursues "Only one" in welding.

G2 Controller

*Enhanced controller with 64 bit CPU
and Windows CE® user interface*

Teaching pendant



- **Improved operation**

7 inch wide TFT-LCD

Easy operation by JOG-DIAL

GUI (Graphic User Interface) with ICONS provides easy identification of operations

- **Compliant with world standard**

Patented Ergonomic Three Position Dead Man Switch

- **Revolutionary operation terminal**

Log-in function by password

Classify user by level

Can be connected to internet

(Modem or LAN and contract with provider are required by customer)

Standard equipment: PCMCIA card slot, SD card slot, PS/2 port,

Controller

- **Enhanced performance**

High speed processing by 64 bit CPU

Maximum 27 axes can be simultaneously controlled.

20,000 points and 20,000 sequence memory capacity (standard)

- **Compliant with safety standard**

RIA, UL, C-UL and CE models are available.

- **Digital communication**

with Panasonic's Full Digital welding machines will recreate the welding conditions precisely.

- **Compact and space saving**

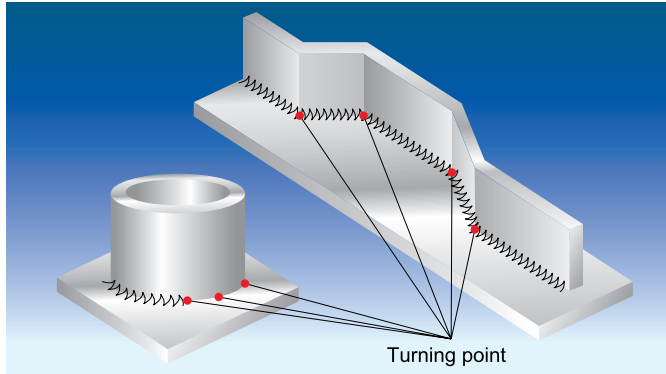
Possible to put under working table



Standard Features

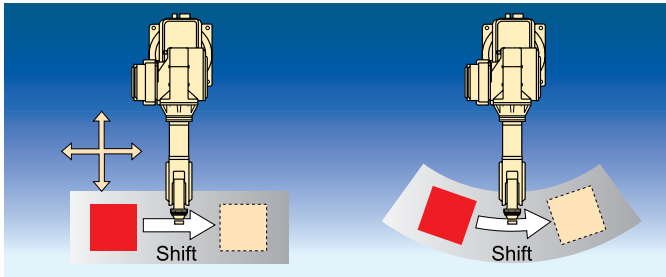
Weaving Function (6 patterns)

To create a weaving pattern, you just teach the starting point, amplitudes, turning point and ending point. Time for teaching will be reduced.



Parallel Shift + RT Axis Rotating Function

Time for teaching of same workpieces will be drastically reduced by those shifting function.



Other useful functions

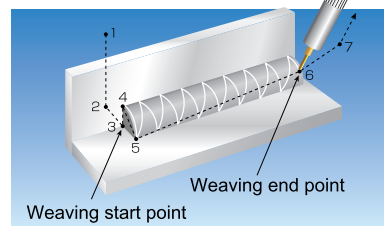
- Monitoring function of welding current and voltage
- Tip exchange timing control function
- Resume function
- Hot edit function
- Error handling move function

Optional Functions

Arc Sensor Unit

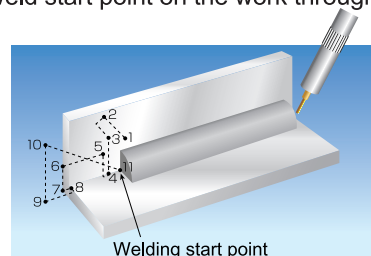
Poor welding may be resulted from deviation of the actual axis of weld from the taught weld line if the applied work is poorly precise or is easily distorted by heat in welding.

Arc sensor is to correct such deviation automatically by detecting variation of welding current in weaving welding operation.



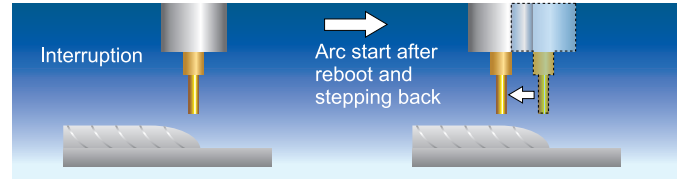
Touch Sensor Unit

Touch sensor detects a deviation between the taught weld start point and the actual weld start point on the work through the welding wire and automatically corrects for the deviation by contacting the top of wire with the work.



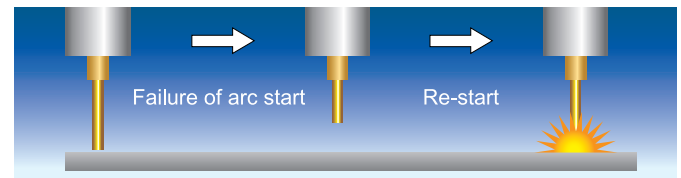
Overlap Function

In case of interruption during CO₂/MAG welding, the torch is stepped back by reboot and resume the welding from the ending point of welding.



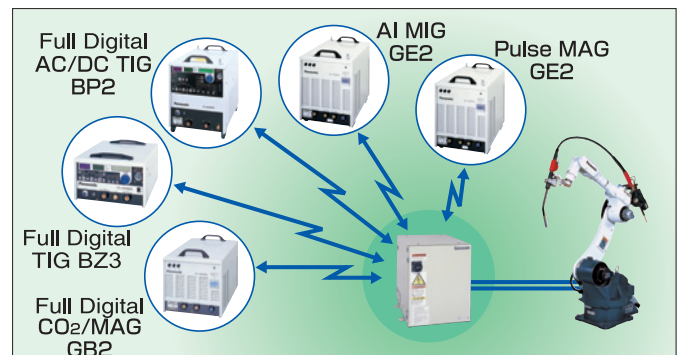
Arc Start Retry Function

Detecting a failure of arc start, the robot automatically starts arc ignition again.



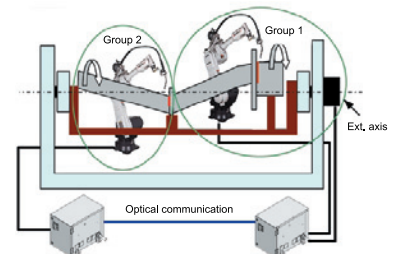
Multi Welder Function

One robot controller can register maximum 5 digital welding machines.



Multi Mechanism Control

When you define robots and external axis as groups, you can use maximum 6 groups in parallel.



Harmonizer

Master robot can control the slave robot at same time among the robots connected to harmonious communication units. In flexible multi-cooperative robot operation, robot to be master and robot to be slave can be changed according to work conditions.

Other Optical Unit

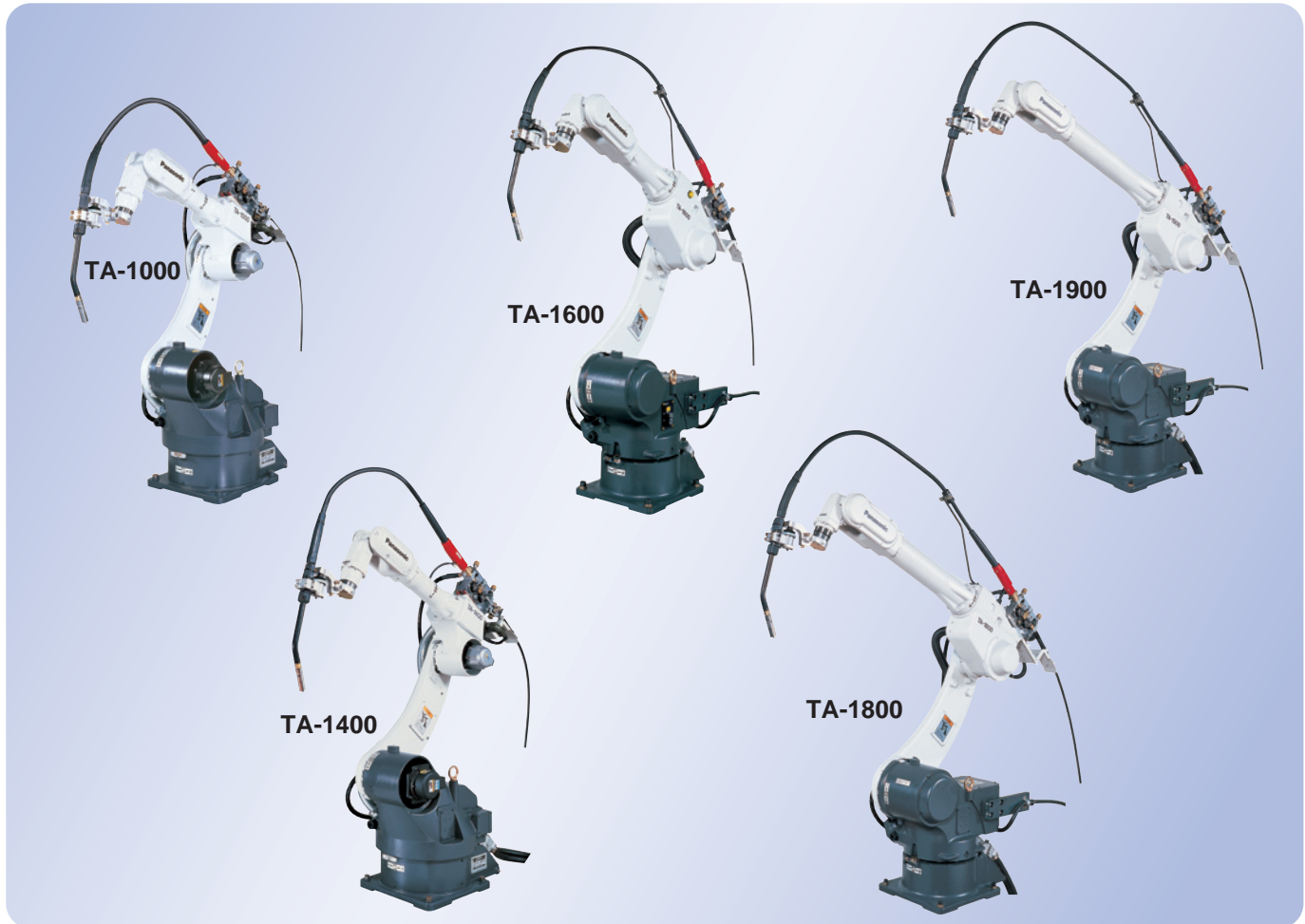
- Analog I/O Expansion Unit
- External Relay Unit
- Terminal Conversion Unit
- External Power Input Unit

TA Manipulators

TA-G2 Series

High performance TA series manipulators

TA-G2 Series manipulators line-up



Arm type	Short	Standard	Middle	Long	
Model	TA-1000	TA-1400	TA-1600	TA-1800	TA-1900
Max. reach	1068mm	1374mm	1598mm	1796mm	1895mm

Best-in-class high speed model

- **Higher performance on movement**

As the motor size and reduction gear capacity became bigger, TA series shows better performance on movement in the class.

- **Sensitive collision guard function and flexible control**

Advanced servo control that arm-dynamics is thoroughly considered made sensitive collision guard possible. "External force release control" absorbs the external impact.

- **Less interference to robot itself**

Unique wrist axis design, curved arm, etc.

- **High durability**

Newly designed robust structure and latest servo technology realize high speed and smooth movement.

- **Brakes on all six axes**

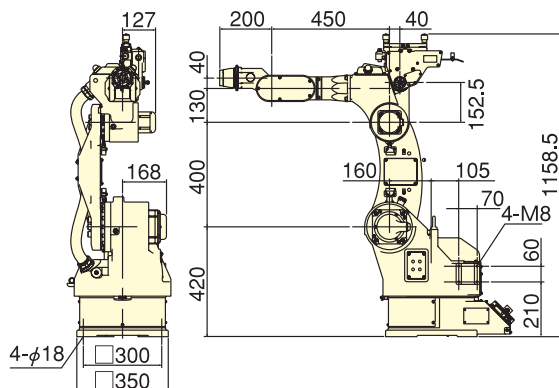
- **Compact, space saving and wide working envelope**

Outside dimensions of TA Manipulators

Short arm type

TA-1000G2

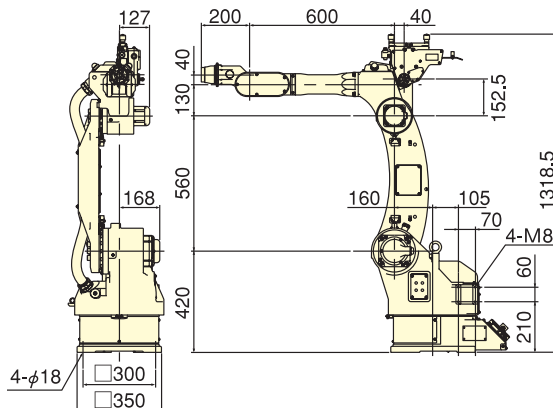
Max. Reach : 1068mm



Standard arm type

TA-1400G2

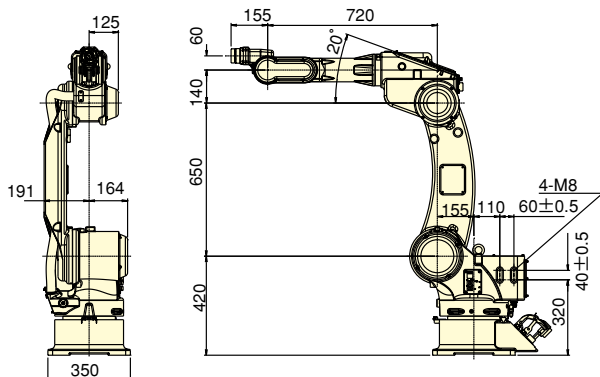
Max. Reach : 1374mm



Middle arm type

TA-1600G2

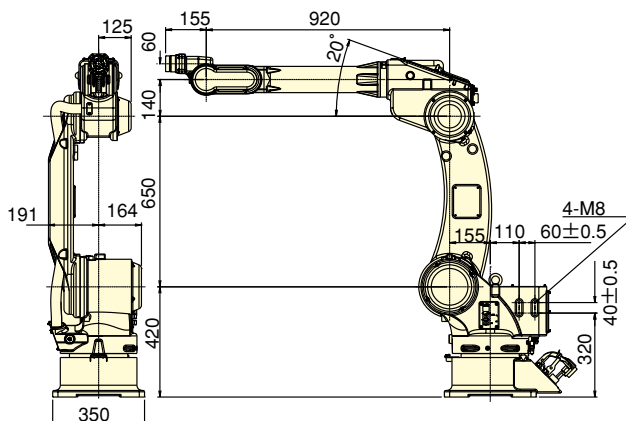
Max. Reach : 1598mm



Long arm type

TA-1800G2

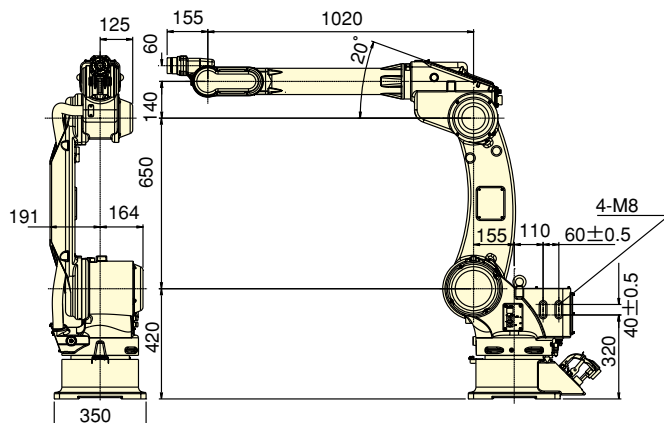
Max. Reach : 1796mm



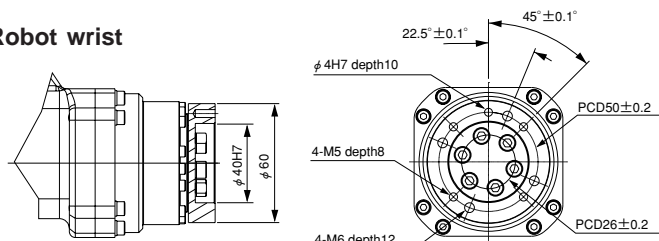
Long arm type

TA-1900G2

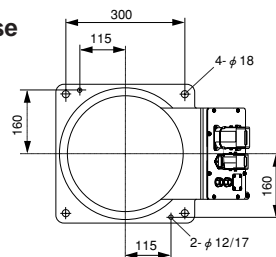
Max. Reach : 1895mm



Robot wrist

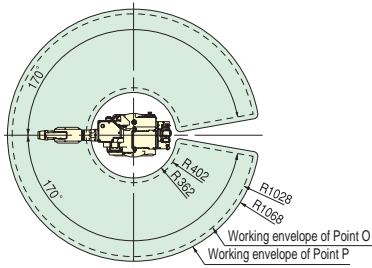
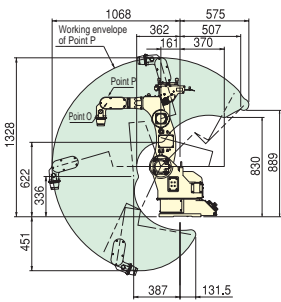


Robot base

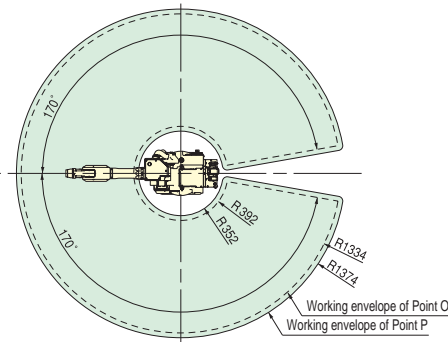
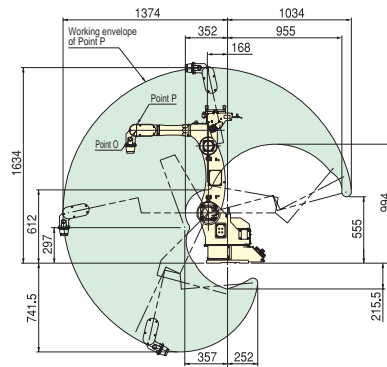


Working envelope of TA Manipulators

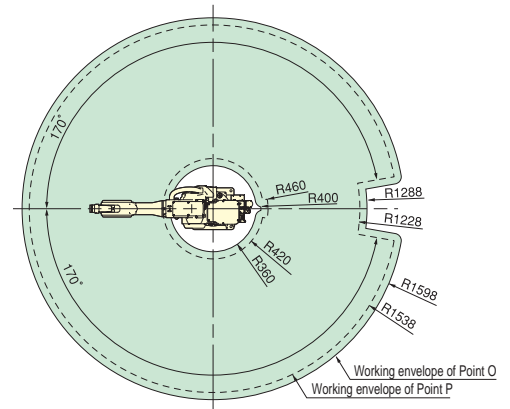
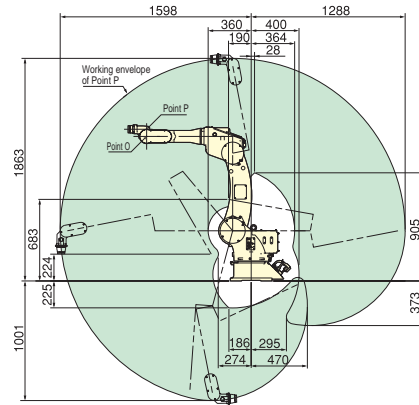
Short arm type
TA-1000G2
Max. Reach : 1068mm



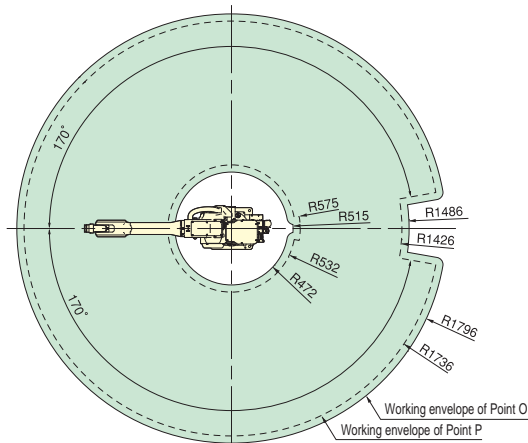
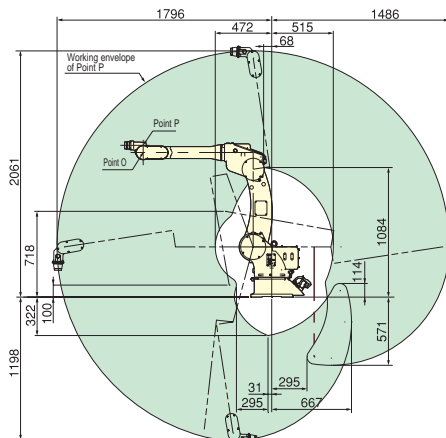
Standard arm type
TA-1400G2
Max. Reach : 1374mm



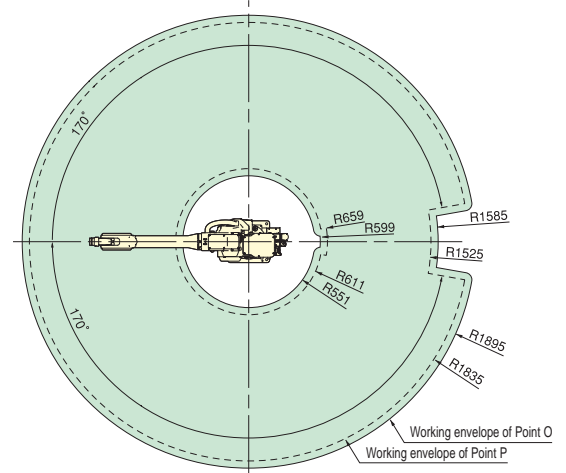
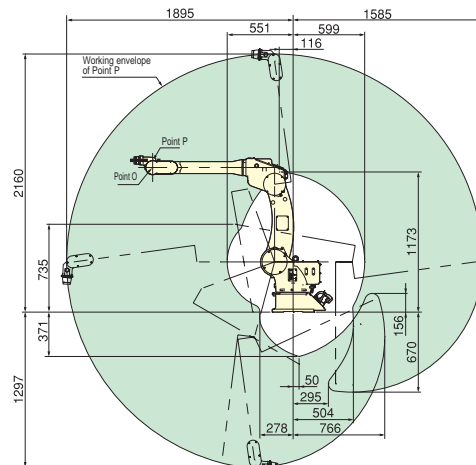
Middle arm type
TA-1600G2
Max. Reach : 1598mm



Long arm type
TA-1800G2
Max. Reach : 1796mm



Long arm type
TA-1900G2
Max. Reach : 1895mm

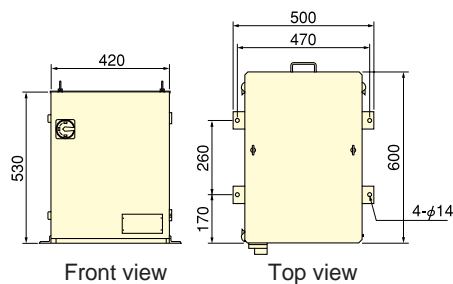


Standard specifications of TA Manipulators

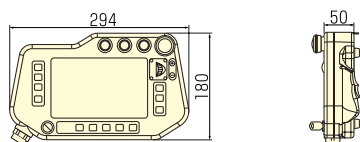
Model			TA-1000G2	TA-14002G	TA-1600G2	TA-1800G2	TA-1900G2
Type			Short arm	Standard arm	Middle arm	Long arm	
Structure			Independent articulated				
Axes			6				
Maximum allowable payload			6 kg		8 kg		6 kg
Robot working area	Maximum accessible distance		1,068mm	1,374mm	1,598mm	1,796mm	1,895mm
	Minimum accessible distance		362mm	352mm	360mm	472mm	551mm
	Horizontal motion length (distance between min. and max. accessible distance)		706mm	1,022mm	1,238mm	1,323mm	1,343mm
Momentary maximum speed	Arm	Rotation (RT)	2.97 rad/s (170°/s)				
		Upper arm (UA)	3.32 rad/s (190°/s)		2.97 rad/s (170°/s)		
		Front arm (FA)	3.32 rad/s (190°/s)		3.05 rad/s (175°/s)		
	Wrist	Rotating (RW)	6.46 rad/s (370°/s)		6.28 rad/s (360°/s)		
		Bending (BW)	6.54 rad/s (375°/s)		6.11 rad/s (350°/s)		
		Twisting (TW)	10.5 rad/s (600°/s)		9.42 rad/s (540°/s)		
Positioning repetition precision			±0.1mm or less				
Motor	Total drive power		2,800W		4,250W		
	Brake		All axis are provided with brakes				
Installation			Floor, Ceiling (factory option)				
Weight of manipulator			Approx. 145kg (Approx. 319lbs.)	Approx. 161kg (Approx. 354lbs.)	Approx. 180kg (Approx. 396lbs.)	Approx. 185kg (Approx. 407lbs.)	

Outside dimensions and specifications of G2 Controller

Controller

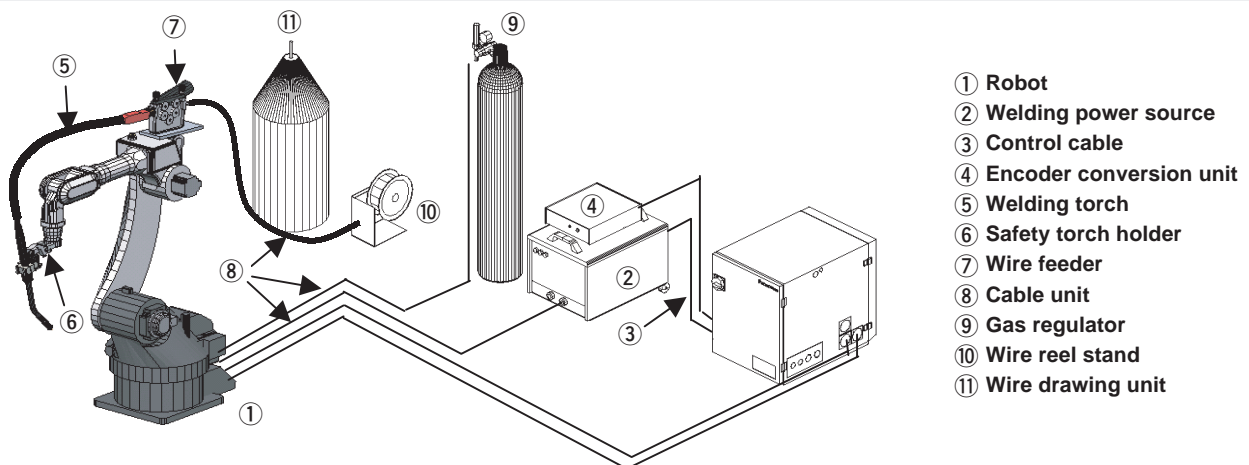


Teach pendant



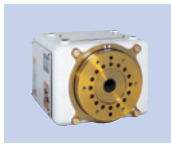
Structure and IP class		Closed box type, IP32 or equivalent
Cooling method		Indirect air cooling (Circulating internal air)
Input power source		3phase, 200-220VAC±10%, 6kVA, 50/60Hz
The number of control axis		6 axes simultaneously (Max. 27 axes)
Position control method		Software servo control
Memory capacity		20,000 points 20,000 sequence
Common I/O	Input	40 points (Option : expandable to max. 504 points)
	Output	40 points (Option : expandable to max. 504 points)
Status I/O	Input	1.Start, 2.Hold, 3.Error release, 4.Teaching mode 5.Operating mode, 6.Servo ON
	Output	1.Running, 2.Hold status, 3.Error, 4.Opearting mode 5.Teaching mode, 6.Servo ON, 7.Ready, 8.Alarm
Interface		TP: PCMCIA card slot, SD card slot, PS/2 port
Ethernet (option)		Optical fiber / Twisted pair
Demensions (WxDxH)		420 x 600 x 530 (mm)
Weight		Approx. 48kg (Approx. 106lbs.) (including TP and connecting cable)

Example of configuration for standard CO₂/MAG welding system

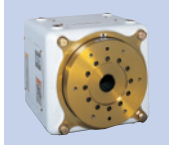


High efficiency in excellent combination with Panasonic robots

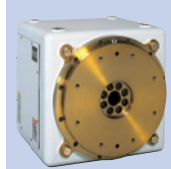
Positioner unit



YA-1GJB12



YA-1GJB22

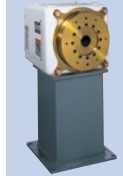


YA-1GJB32

- Return to origin is not necessary by AC absolute motor.
- Superior to noise resistance and applicable to TIG welding
- Unit design for compact, flexible combination and installation
- Hollow shaft designed for air and electric wiring
- Harmonic movement with robot

	YA-1 GJB12	YA-1 GJB22	YA-1 GJB32
Motor/ Encoder	AC absolute encoder		
Max. payload	200kg	500kg	1000kg
Max. rotating speed	25 rpm	16 rpm	10 rpm
Working envelope	Max. ± 10 turns (with re set function)		
Repeatability	± 0.05 mm		
Rated output	750W	1kW	2kW
Allowable welding current	500 A, Duty cycle 60 %		
Body weight	80kg	125kg	300kg

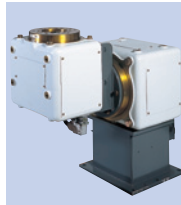
Support unit



Support unit has the same outlook as positioner unit but excludes driving mechanism and brushes.

Model	YA-1 GJS11K1	YA-1 GJS21K1	YA-1 GJS31K1
Support unit	YA-1 GJS11	YA-1 GJS21	YA-1 GJS31
Stand	AFU00080		AFU00091
Payload	200kg	500kg	1000kg

2 axis positioner



Harmonic movement with robot

Model	YA-1 GJR42	YA-1 GJR52
Driving unit	YA-1 GJM22	YA-1 GJM32
Positioner unit	YA-1 GJB12	YA-1 GJB22
Fixing unit	AFU00149	AFU00150
Stand	AFU00096	AFU00081
Payload	200kg	500kg

Rotating & tilting positioner



Suitable for heavy payload

Model	YA-1 GJC12	YA-1 GJC22
Positioner unit	YA-1 GJB22	YA-1 GJB32
Payload	500kg	1000kg
Tilting degree	$\pm 135^\circ$	
Stop position	Unlimited	

Motor unit



7 types from 100w to 5500w are applicable with system.

Model	APU01109	APU01110	APU01111	APU01112	APU01113	APU01114	APU01115
Rated output	100W	200W	750W	1000W	2000W	3500W	5500W
Rated torque	0.32 N·m	0.64 N·m	2.38 N·m	4.8 N·m	9.55 N·m	16.6 N·m	26 N·m
Rated rotating speed	3000rpm	3000rpm	3000rpm	2000rpm	2000rpm	2000rpm	2000rpm



Lead Free Solder

Aiming for the earth-friendly company, Panasonic Welding Systems Co., Ltd. strives for the production of lead free products. All of our printed circuit board do not include lead solders.

Windows CE is a trademark of Microsoft corporation in the United States and other countries.



Safety precautions

- Before attempting to use any welding product always read the manual to ensure correct use.

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