

# **Portable Welding Carriages and Positioners**

## ■ Outline

Wel-handy Multi- II series succeeds merits of conventional model such as light weight, strong traction force, and extensibility for various works. And Wel-handy Multi- II series are renewed for higher performance.

### Wel-handy Multi- II (Standard)

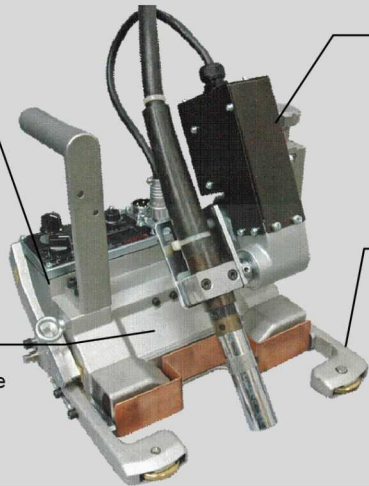
- 7 kg body weight of high portability, magnet adsorption, and 4 wheels drive provide running stability (constant speed).

#### • Built-in Permanent Magnet

By turning down the lever on side of machine, built-in magnet is attracted to the steel plate, it demonstrates the high traction pulling the torch lead.

#### • Aluminum Die-cast Body

The aluminum die-cast molded body provide its light-weight and sturdy.  
(Net Weight 7kg by Standard Specification)



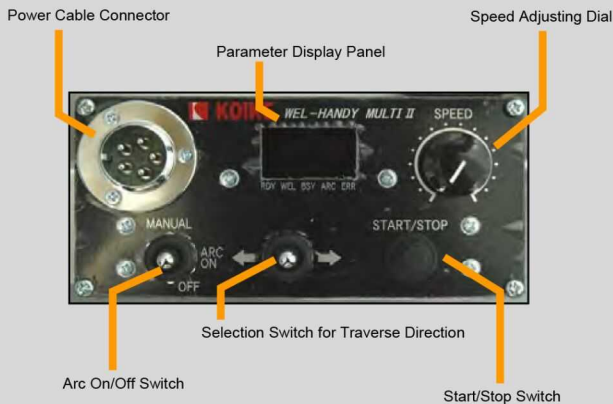
#### • Torch Slide unit

Each 45mm of adjustment has been ensured in back and forth, up and down. Smooth operability, it can be fine adjusted the torch position even during welding.

#### • Guide Roller Arm

No need to install a rail.  
Guide Roller Arm will trace the surface of vertical plate.  
Besides standard type shown in the picture, other types of Guide Roller Arm are also available as option for various different applications.

### ● Standard type Controller



- High performance microcomputer controller.
- User-friendly digital display of traverse speed (mm/min). Easy welding parameter setting for unskilled welder.
- Encoder ensures Constant Speed control.
- Fine adjustment of carriage start position is possible. By simply pressing limit switch, carriage moves at low speed for your quick and easy setup to start point. (Patent Pending)
- Wide traverse speed range. (50 ~ 1,500 mm/min)

● More lineup for high-end models with “Tack” and “Weaving” features

## Wel-handy Multi- II (Tack)

- Automate Tack welding application at high-speed

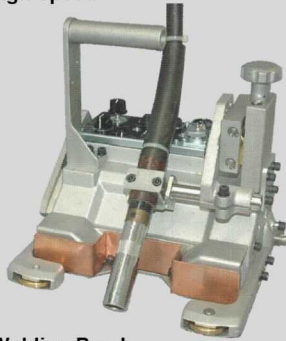


Image of Welding Bead



Tack welding is made by repeating welding and dry-run traverse alternatively. Automatically switched to maximum speed during dry-run traverse to improve work efficiency.

## Wel-handy Multi- II (Weaving)

- Longer welding leg with Torch weaving motion

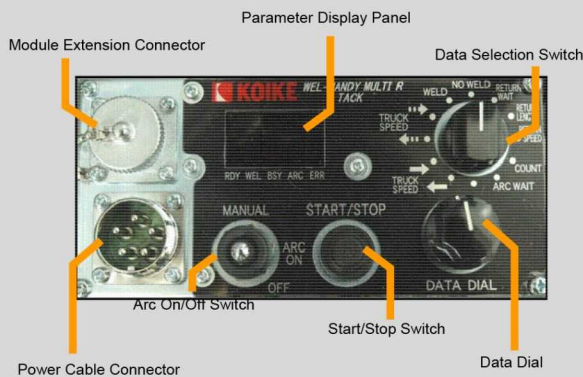


Image of Welding Bead



Longer welding leg can be achieved by torch weaving motion. Strong magnet enables vertical position welding application; such as vertical up welding.

● Tack and Weaving Controller



Weaving Unit WU-5R



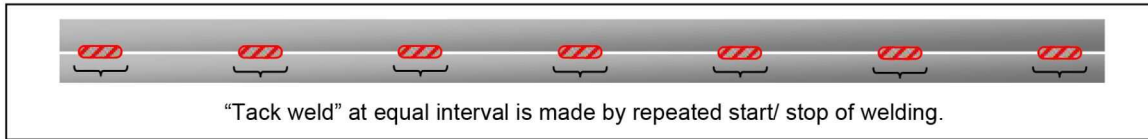
Operation Pendant Box PCR-A

- High performance microcomputer controller.
- Switch unit with click feeling enables operate with leather gloves kept. No need to take off leather gloves.
- Capable of tack and weaving parameter editing in the middle of carriage operation.
- Tack welding interval (weld/ dry-run part) is temporarily adjustable by switching Arc ON/OFF.
- Crater treatment at the end point of weld bead can be made by both carriage reverse run and welding machine control.
- Fine adjustment of carriage position at start point is possible. By pressing limit switch, carriage moves at low speed. (Patent Pending)
- Wide traverse speed range. (50~1500 mm/min)

\* Please use weaving unit "WU-3R" with module expansion connector when using operation pendant together with weaving unit.

## Application example for Wel-handy Multi- II Tack

Repeated "Tack welding" at equal interval is commonly used application to prevent intense heat input.



### Problem in conventional method

In conventional automation of Tack welding, timer is popularly used to control arc ON/ OFF, which contains following problems.

**Problem 1** It's hard to recognize welding length.

$L = V \times T$

By timer control, weld bead length (L) is calculated by: "Traverse Velocity (V)" × "Arc ON Time (T)".

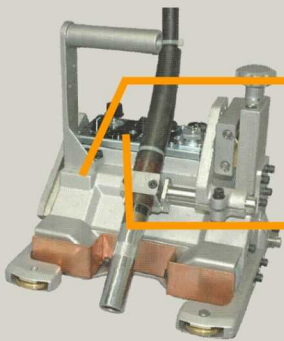
If traverse speed is changed, weld bead length also changes.  
Calculation is required to recognize welding length.  
Therefore, it's hard to adjust the welding length.

**Problem 2** Crater treatment is not available.

Crater at the end of welding point has risk of weld crack; therefore, crater must be filled up by Crater treatment.

To do crater treatment, complicated control such as ON/ OFF of torch switch and carriage reverse drive are required.  
Therefore, it's hard to do crater treatment by analog circuit.

## Wel-handy Multi- II Tack can solve it!



#### Motor with encoder

Drive distance is automatically calculated by motor rotation.  
Tack weld is available by simply inputting weld length and dry-run length only.

#### High performance controller

Microcomputer control allows detail parameter setting for crater treatment; such as speed and distance of carriage reverse drive.  
All parameter settings are indicated in Digital Display Panel for easy welding quality control.



Crater treatment process is fully automated by inputting detail parameter setting; such as crater welding current and carriage reverse drive.

## Application example for Wel-handy Multi- II Weaving

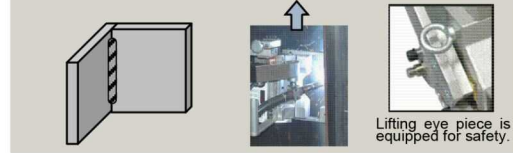
Weaving function to wave a torch can not only make leg length wider but also manage following works.

### Method 1 Butt-weld for bevel edge plates



With weaving function, wider welding bead can be filled in bevel groove. (Guide plate need to be prepared separately.)

### Method 2 Vertical-up fillet welding

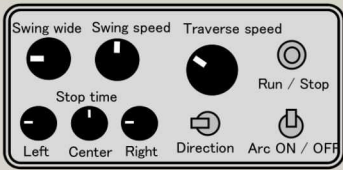


Only skilled welder can make vertical-up fillet welding. Weaving function automates it with use of flux-cored welding wire.

### Problem in conventional method

By adding weaving unit to standard welding carriage, a lot more parameters are required for setting, which contains following problems in the conventional method.

#### Problem Low workability, and operability.



- Difficult to operate tiny size of switches. Either enlarge operation panel or minimize switches is required to place number of switches for each parameter.
- Analog volume dial switches are not precise. Digital parameter data cannot be recorded either.



## Wel-handy Multi- II Weaving can solve it!



### High performance controller

- User-friendly controller layout design with larger size switches for easy operation even with leather grooves.
- Easy parameter control with Digital Display Panel for carriage speed, traverse direction, and any other weaving parameters.



① By selecting a type of parameter from this knob, current setting figure will be indicated on the Digital Display Panel at the left.

② The parameter selected on the above process ① can be edited by this knob. Parameter can be edited even in the middle of welding process.

## ■ Main Specification

Model Name	Wel-handy Multi- II (Standard)	Wel-handy Multi- II (Tack)	Wel-handy Multi- II (Weaving)
Stock Number	Pending	Pending	Pending
Machine Weight	Standard Magnet Model: 6.9 kg Strong Magnet Model: 7.5 kg	Standard Magnet Model: 6.9 kg Strong Magnet Model: 7.5 kg	Strong Magnet Model: 9.8 kg
Machine Dimension	See Figure 1.		See Figure 2.
Traction Force	16 kg		12 kg
Gap (F. L. ~ Base Board)	6 mm		
Magnet Up and Down Mechanism	Magnet Lever		
Driving Method	4-Wheel Driving Rubber Roller (Chain Transmission)		
Magnet-type	Permanent Magnet		
Traverse Speed	50 ~ 1,500 mm/min		
Tracing Method	Guide Roller (being pushed against Vertical plates)		
Applied Posture	Standard Magnet Model: Horizontal position Fillet Welding Strong Magnet Model: Vertical position Fillet Welding		
Torch Adjust Range	Torch Angle	40° ~ 55°	
	Up and Down	45 mm	
	Forward and Backward	45 mm	
	Forward / Backward Angle	5° Angle at both Forward / Backward	
Automatic Stop Function	Limit Switch (equipped at both sides of Carriage at FL +20 mm height)		
Fine Adjustment of Carriage Position	Included		
Non-Welded Portion	Approximately 270 mm (in total at both Start and End point)		Approximately 305 mm (in total at both Start and End point)
Power Cable	Y-Branch Cable (Power and Signal cable Integrated) <ul style="list-style-type: none"> <li>● Carriage ~ Branch: 6 m,</li> <li>● Branch ~ Power: 10 m,</li> <li>● Branch ~ Wire Feeder: 0.5 m (with matching Panasonic-type Connector)</li> </ul> ※ Please consult when using welding machine other than Panasonic.		
Welding Torch	Straight WHM (C) - 350S & 500S Curved 350A & 500A		
Torch Hold Diameter	Straight Torch Holder: φ20 mm Curved Torch Holder: φ16~20 mm Diameter		
Motor	DC Motor with Encoder		
Input Power	AC 100 ~ 240V, 50/60Hz		

## External Dimension

Figure 1. Wel-handy Multi- II / Wel-handy Multi- II Tack

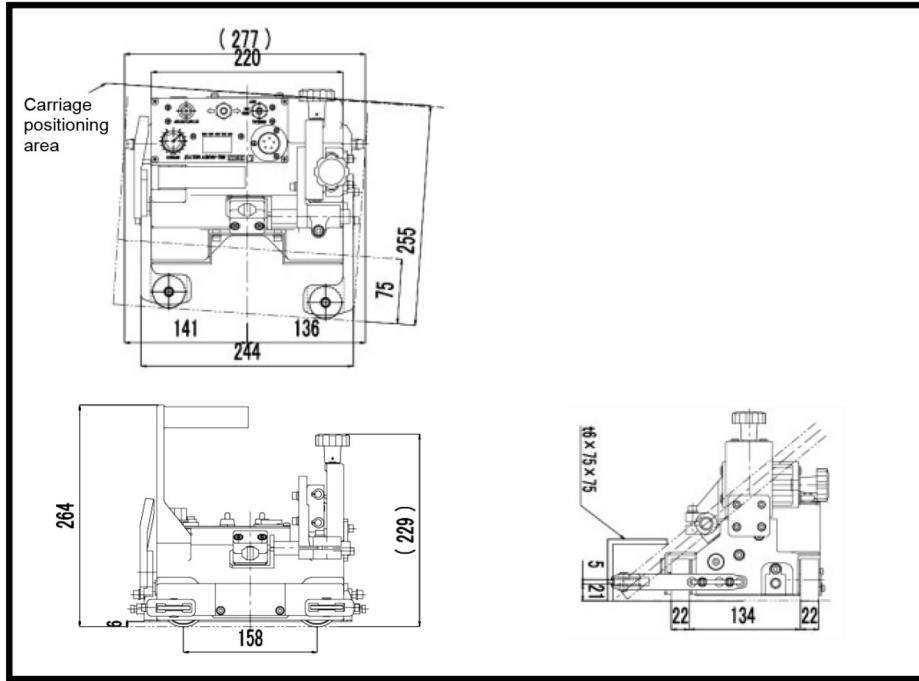
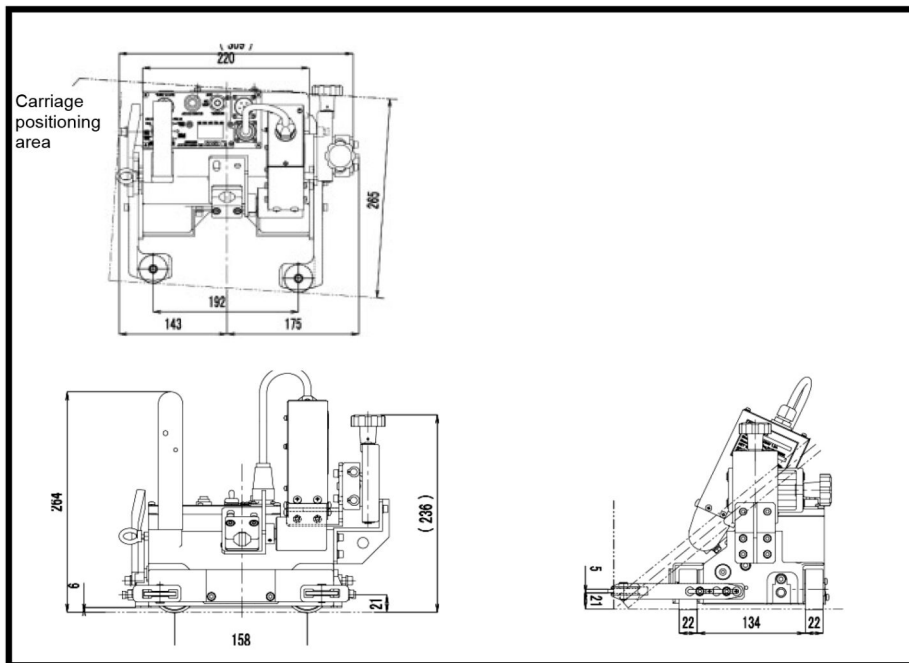


Figure 2. Wel-handy Multi- II Weaving



## Other Options

### Twin Torch Kit



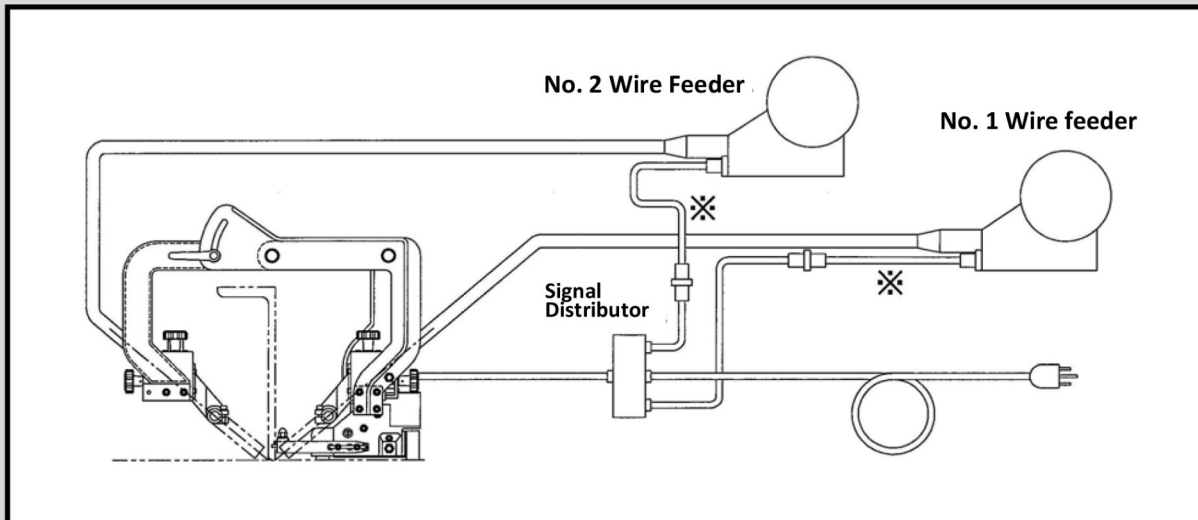
- **Clearance of Max. 500 mm height Vertical Plate**

By placing 2 torches face to face, fillet welding at both sides of vertical plate becomes possible with 1 set of carriage.

- \* Clearance of Vertical Plate Height: up to 500 mm.
- \* Arm is made of aluminum for light weight with rigid structure.
- \* Zigzag tack (stitch) weld is also capable by combination use with Wel-handy Multi- II Tack.



※ Twin Torch Kit is available only for strong magnet type of Wel-handy-Multi, Wel-handy-Multi II, Wel-handy-Multi II Tack. (Standard magnet type is not available due to the risk of fall down.)



Special twin torch box enables interlocking with two welding machines.

**Guide Rail (Butt-Weld)**

Stock No. 61002282



- **Butt-Welding with Wel-handy Multi**

Simple Guide Rail with Magnet attached at both Ends. Enables Butt-Welding by Fillet-Welding Carriage; Wel-handy Series.

Combination use with weaving unit also enables butt-weld on Y-bevel plates joint.

Guide Rail length: 2M

**Guide roller (Various types)**

- **Replaceable guide roller**

Stock No. 61006608



Roller itself can be replaced from this guide roller arm after worn-out. Suitable to heavy duty environment like; shipyards.

- **Sword shape Guide Roller**

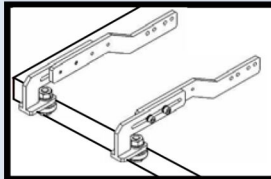
Stock No. 61006609



By sword shape Roller, height to trace on vertical plate can be as low as FL+15mm.

- **Edge Trace Guide Roller**

Stock No. 61004332



The roller traces the edge surface of bottom plate.

Welding can be made without vertical plate to trace.

As another application with Edge Trace Guide roller, welding can be made at corner of column pipe.