

Mig/Mag Auto Welding Carriage **MANUAL**

MODEL: ED-100B(P)



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Before using this auto welding carriage, please carefully read this "manual." And please put this manual handy for ready access, auto welding carriage can play the best performance.

NOTES

To ensure safe operation, be sure to observe the following

Warning: Please note to avoid a major personal accident

- clothing, wear safety protective equipment

In order to prevent eye irritation and skin burns, be sure to comply with occupational safety and health rules, wear appropriate protective equipment.

- Replace protective gas Precautions

To prevent harmful gas poisoning and asphyxia (welding fumes and gases hazardous to health), must comply with Occupational Health and Safety Law Enforcement Decree of the machine against the rules on the dust, the installation of local exhaust, or breathing with the use of effective protection apparatus.

Note: To prevent burning and fire like machine accident

- Prevent fires caused by overheating and burning machine

Please to keep flammable materials away more than 50cm.

- Prevent sparks caused by the fire and the burning machine.

Remember the spark (splash, flash) spilled on combustible materials.

- Manual reading

Carefully read this manual before using the machine.

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1. Overview:

CO2 auto welding carriage is widely used in ships, bridges, locomotives, steel, petrochemical and other industries, for welding a variety of welded structures, such as: strengthening ribs, ribs, cross-site welding, box-beam welding, etc. Its main advantages are:

- Reduce labor intensity and improve the working environment.
- To avoid the human factor caused by the poor weld quality. In general the defect rate in the manual about 20%, while the use of automatic welding carriage without resulting in poor welding rate, so its overall efficiency, compared with manual welding by nearly 200%.
- High degree of automation to ensure the stability of the welding quality.
- Do not need highly-skilled technical workers.

ED-100B(P) is the use of vertical rack and pinion drive type of welding equipment, widely used in the horizontal and vertical butt welding, especially for thick plate welding situation. Fixtures and point of view by adjusting the welding torch, it is alsosuitable for angle welding and overhead position welding.

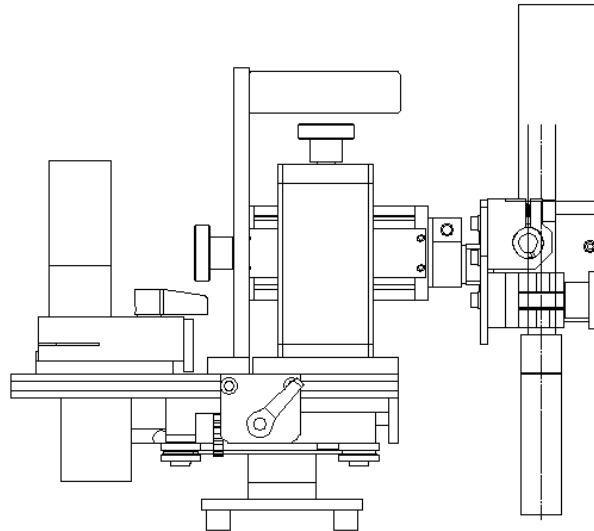
Its body, swing device and the control panel are designed as a whole.It can walk and weldingalong the track. Track pull on the workpiece by magnet for easy installation and removal.

Small size, light weight makes mobile and easy to use. Vertical welding applications can also be applied to ensure good welding quality.

2. Feature:

- 1) ED-100B-Pis a multi-carriage, and can be achieved vertical welding, horizontal welding etc.
- 2) The device has a fast return; you can manually track to achieve the level of movement.
- 3) Swings conditioning system, enabling the left, right stop time and center position adjust.
- 4) In order to prevent welding undercut, left and right stop time can be adjusted around the swing function.
- 5) Rail is high strength elastic material, can be bent into an arc for welding camberedsurface.
- 6) The standard rail length is 1.8M.And can be a plurality of combination.
- 7) The digital display shows travel speed.
- 8) Welding torch automatically returns to the center after stop welding.

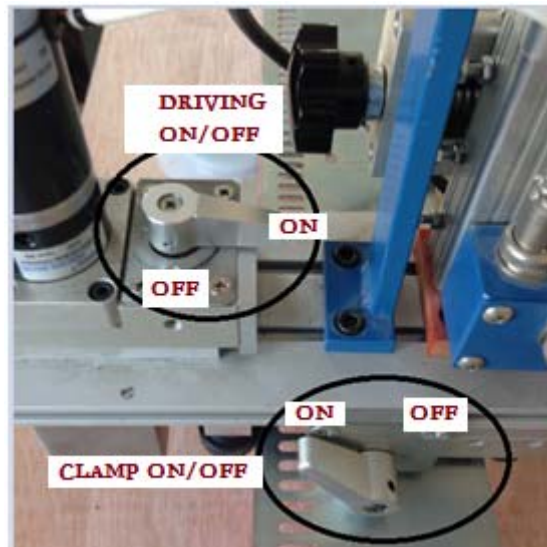
3. Composition:



- ①Welding carriage: the body of carriage
- ②Power adapter: AC220V to AC36V, provide low voltage safety electric for carriage
- ③Controller: control carriage travelling and swing
- ④Flexible track: for the carriage travel and adsorbed on the work piece

The carriage body has two clutch handle, respectively holding clutch and driving clutch handle (see below).

Driving clutch handle is the switcher for drive motor to gear, it must be closed when running; Opened manually pushing, car can be fast move. Holding clutch after being closed to make the carriage tightly around the track, the clutch must be closed before running carriage; Open after he released tracks, can easily remove the car body. Clutch counterclockwise rotation is closed, clockwise is opened, switches trip is 90 degrees.




4. Control panel:



- 1) Torch **ON / OFF** selector switch: selection switch **ON** for touch; if select **OFF**, carriage travels without welding;
- 2) Travel direction selector switch: Carriage travels left or right;
- 3) Start button : carriage began to travel when press it;
- 4) Stop button: carriage stop traveling when press it;
- 5) Speed adjust knob: carriage traveling speed adjustment;
- 6) Power switch: power **ON / OFF**;
- 7) Oscillator control parts: You can adjust the swing speed, swing width, right and left stop time, center position and swing mode.

5. Technical parameters

| | Project | Content | Remarks | |
|-----------------|--------------------|-----------------------|--|--|
| | Model | ED-100B(P) | | |
| carriage | size | 380 x160 x 310 | W×L×H | |
| | weight | 7.5Kg | | |
| | travel | Rack and pinion | | |
| | Torch adjust | Up, down | 70mm | |
| | | Left, right | 70mm | |
| | | Operation angle | ±45° | |
| | | Rack and pinion | ±10° | |
| controller | Power | AC36V | Supplied by adapter | |
| | Size | 210 x140 x125 | W×L×H | |
| | Weight | 1.95Kg | | |
| | Operation function | Power switch | | |
| | | Power lamp | | |
| | | Start button | | |
| | | Stop button | | |
| | | Travel speed | 0~990mm/min | |
| | | Direction select | Up and down (left and right) | |
| | | Torch on / off switch | up, down (left, right) | |
| | | Swing width | ±8° | |
| | | Swing mode |  | |
| | | Swing speed | 0~3.5RPM | |
| | | Center position | ±3° | |
| | | Left stop time | 0~2S | |
| Right stop time | 0~2S | | | |
| rail | form | Magnets suction | | |
| | size | 92×2 ×1800 | W×H×L | |
| | material | 65Mn | | |
| | curing radius | R≥1.5M | | |
| | weight | 3Kg | Includes 10 couples of magnets | |
| adapter | I/O | | Input AC220V, output AC36V | |
| | Size | 200×150×130 | L×W×H | |
| | weight | 2.4KG | Without cable | |

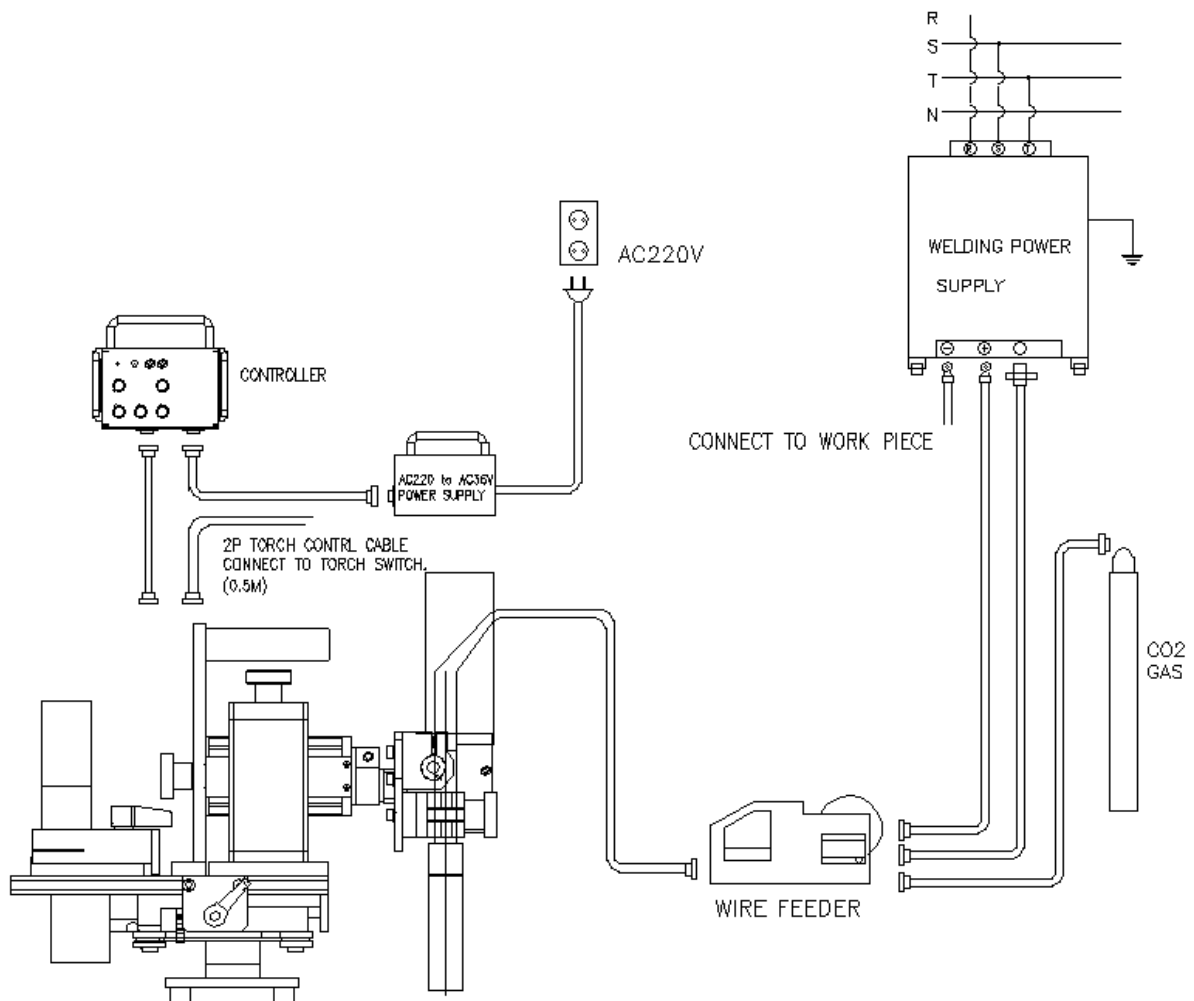
6. Installation:

(1) Tools ready

- Welding power source and wire feeder unit;
- AC 22~44V power;
- CO₂ cylinder;
- Torch for CO₂;
- Other necessary tools

(2) System connection (seepicture)

- Install wire tray and pull wire to the torch end;
- Torch port connect to the wire feeder
- 2P port on the carriageconnects to torch switch or to wire feeder switch uses longer cable;
- Control cord connects between carriage and controller;
- Power cord connect between controller and adapter,then adapter to AC 220V.



7. Running

Please make sure that the track began nearly firmly adsorbed on the work piece before welding, car driving clutch and hold the clutch is closed; if the welding work piece is vertical, recommended to install an anti falling steel in the car and the track, to prevent accidental falling injuries and car damage.

- 1) Select the wire diameter switch;
- 2) Select the type of wire, solid wire or flux cored wire;
- 3) Turn on the power distribution box switch;
- 4) Turn on the power source switch;(Arc-create switch should be off)
- 5) Open the valve of CO₂ cylinder; adjust pressure to 2~3kg/cm²
- 6) Feed wire to the torch end, and install the nozzle;
- 7) Confirm the length of wire;
- 8) Put the track on work piece and adjust its position;
- 9) Put the carriage track;
- 10) Get torch on the fixture and adjust angle by wrench;
- 11) Adjust slides for a correct distance between torch nozzle and work piece;
- 12) Adjust the process parameters; (current, voltage)
- 13) Confirm CO₂ gas flow and pool protective effect;
- 14) Start welding, observe arc, adjust welding speed and other welding parameters;
- 15) Press stop when finish welding;

8. Carriage maintenance and inspection

For the safe use of CO₂ carriage for a long time, it needs to check and maintain the carriage regularly.

(1) Is there dust accumulation?

- Control box, torch adjust position and switch should always wipe and keep clean, should be no welding dust.

(2) Is there accumulation of rubbish?

- Tip, torch head, idler pulley, wheel and slide parts of the sediment to be removed, so as not to affect

the safe traveling of the carriage.

(3) Torch holder and the guide wheel screws loose?

-Screw loose cause carriage travel poor and uneven welding. Screws should be always confirmed tightened or not.

(4) Adjusting the slides effortlessly?

-It needs to add oil.

(5) Confirm the connector, cable, hose, torch is broken or damaged?

-They need to check regularly.

(6) Is there abnormal sound or abnormal heat?

- Check guide wheel, motor, gun and other components regularly

(7) Fuse is burned?

- If the welding wire and the power light do not shine, please check the fuses.

9. Failure and responses:

1) Control box power light is not lit

| Cause | Solutions |
|---------------------|---------------|
| Bad cable connector | Replace cable |
| Fuse burned | Replace fuse |
| No power | Check power |

2) Start button does not work

| Cause | Solutions |
|-------------------------------------|-----------------------------------|
| Wire contact poor | Remove welding slag |
| Drive motor burned out | Replace or repair the drive motor |
| Welding / no-welding switch damaged | Check circuit or replace switch |

3) Weld torch position is inconsistent with the objectives

| Cause | Solutions |
|----------------------------|--------------------|
| Touch holder not tightened | Tighten the holder |

4) slides adjust not flexible

| Cause | Solutions |
|--------------------------|-----------------------------|
| Slides parts of sediment | Remove sediment and add oil |

5) Stop phenomenon during welding

ED-100B(P) Auto welding Carriage

| Cause | Solutions |
|--------------------------|-----------------|
| Travel surface barrier | Remove barrier |
| Sediment on guide wheels | Remove sediment |

6) Stop button does not work

| Cause | Solutions |
|---------------------------------|-------------------------------------|
| Stop button failure | Replace button |
| Arc-create switch "on" position | Arc-create switch to "off" position |

7) Oscillator is not working properly

| Cause | Solutions |
|----------------------|--------------------------------------|
| Swing motor not work | Check motor, connect cords and knobs |