

# Positioner

# Technical Specification

Welding/Cutting expert for over 20 years

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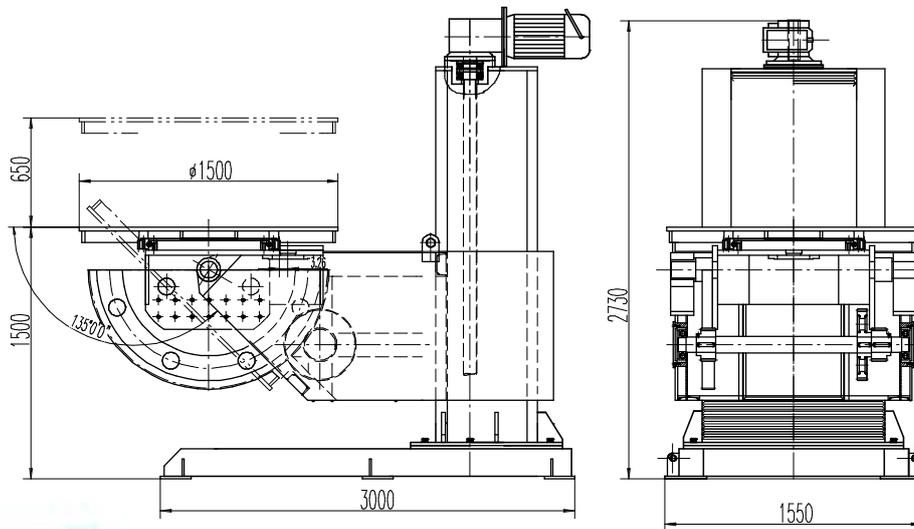


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## 1. Overall introduction(seat type)

Positioner is a professional equipment designed according to the customer's welding needs, utilizing advanced technology. It lifts, rotates, and turns the work table to make sure the weld groove in the best welding position. The rotation of the work table is regulated by 'frequency converter steplessly. The linkage connection on the electrical box makes the positioner able to realize linkage function with manipulator and welding power source.



Position drawing (For reference only)

### Parameter for all models:

| Model                               | TB1-6        | TB2-12   | TB1-20   | TB1-30   | TB1-40   | TB1-50   | TB1-80   | TB1-100  | TB1-150  | TB1-200  | TB1-250   | TB1-500  |
|-------------------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| Load(kg)                            | 600          | 120      | 200      | 300      | 400      | 500      | 800      | 1000     | 1500     | 2000     | 2500      | 5000     |
| Rotating speed(r/min)               | 0.1-1        | 0.09-0.9 | 0.09-0.9 | 0.06-0.6 | 0.06-0.6 | 0.05-0.5 | 0.02-0.2 | 0.05-0.5 | 0.02-0.2 | 0.04-0.4 | 0.004-0.4 | 0.02-0.4 |
| Turning speed(r/min)                | 0.75         | 0.37     | 0.37     | 0.27     | 0.27     | 0.27     | 0.25     | 0.24     | 0.15     | 0.15     | 0.15      | 0.15     |
| Turning angle(degree)               | 0-12         | 0-12     | 0-12     | 0-12     | 0-12     | 0-12     | 0-12     | 0-12     | 0-90     | 45-90    | 45-90     | 45-90    |
| Diameter of work table(mm)          | 800          | 110      | 120      | 130      | 140      | 160      | 180      | 2000     | 2200     | 2500     | 3000      | 5000     |
| Height of work table(mm)            | 830          | 110      | 120      | 149      | 150      | 152      | 180      | 2030     | 2300     | 2400     | 2400      | 3225     |
| Allowable work piece off-center(mm) | Max          | 150      | 200      | 200      | 200      | 200      | 200      | 200      | 200      | 200      | 200       | 200      |
|                                     | eccentricity | 200      | 250      | 300      | 300      | 300      | 300      | 350      | 400      | 500      | 500       | 500      |

|                             |                     |      |      |     |     |     |     |   |     |     |           |       |           |
|-----------------------------|---------------------|------|------|-----|-----|-----|-----|---|-----|-----|-----------|-------|-----------|
|                             | load<br>grav<br>ity |      |      |     |     |     |     |   |     |     |           |       |           |
| Rotating motor<br>power(kw) |                     | 0.37 | 1.5  | 1.5 | 1.5 | 1.5 | 2.2 | 3 | 4   | 4   | 2x2.<br>2 | 2x3   | 2x7.<br>5 |
| Turning motor<br>power(km)  |                     | 0.37 | 0.75 | 1.1 | 2.2 | 2.2 | 3   | 4 | 5.5 | 7.5 | 2x3       | 2x5.5 | 2x11      |

## 2. Characteristics

The positioner's work table can rotate 360 degrees continually, and turn 135 degrees. The work piece can be lifted or descended to adjust the height. The positioner comprises the rotating work table, rotating driving system, electrical conductor, tilt driving mechanism, lifting driving device, positioner base and electrical controlling system.

1) Rotating work table: Work table is driven by AC frequency converter motor through gear-turbo reducer & gear pair. Work table has the self-lock function to make sure when the load eccentricity is within the specified range; the work table is securely locked. Driving motor adopts AC frequency converter, speed regulating range is 2-50Hz, constant torque.

2) Work table is made by high quality steel, and treated by annealing and fine machining.

3) Work table turning. Work table is driven by AC turbo reducer to turn 0-135 degrees forward continuously. It can be stopped or continued moving within the scope during the turning process.

4) There is a turbo reducer with self-locked function at the final collector. Turning gear is modulated and processed by 40CrMnMo.

5) Two extreme positions with reliable limit control devices, and travel switch controls the turning. There is an angle indicator installed at the side of machine to indicate tilt angle.

6) There is a lifting device at the top of column. Driven by reducer, beam lift & descend by screw rod. Beam can stay at any height within the travel length, travel switch installed at the extreme position.

7) Electrical conductive device: It is installed under the work table. Electrical resistance of conductive device should not be over 1mΩ.

8) Electrical control system

Each driving motor' control system is installed in the control cabinet. Control cabinet is separately installed with main power switch and quick connector. There is a manual operator with all operation buttons, including emergency stop button. Suspension device is also built in, when not in use, the manual operator can be hung on positioner.

All cables with reliable insulation and external force protection. Protection case is used when cable contacts with metal parts. Reliable anti-nuisance measures adopted by control system, and over-loading protection, power-off protection also applied

### 3. Equipment standard

|                |  |
|----------------|--|
| JB/T 8833-2001 | Welding positioner                                   |
| GB/T10089-1988 | Cylinder turbo and worm precision                    |
| GB/T1184-1996  | Common difference of figure and position             |
| GB1356-1988    | Involute cylinder gear standard                      |
| GB100-1995     | Involute cylinder gear precision                     |
| GB4064-1986    | Principles of design for electrical equipment safety |
| GB6988-1986    | CAD  |

### 4. Equipment supply

- 1) Positioner body: 1set
- 2) Electrical control cabinet and hand operated device: 1set
- 3) Technical documents: Operation manual, quality certificate, drawing, packing list.



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