



# **OPERATION & MAINTENANCE MANUAL**

## **H&T WELDING POSITIONER**

**Load Capacity: 10Ton**

**REFUEL THE REDUCERS BEFORE START THE MACHINE!!!**

# WARNING

This machine can be injurious to yourself and others. Take precautions when welding. Ask for your employer's safety practices which should be based on manufacturer's hazard data.



## **ELECTRIC SHOCK can kill.**

- ◆ Install and earth the welding unit in accordance with applicable standards.
- ◆ Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.



## **FUMES AND GASES can be dangerous to health.**

- ◆ Keep your head out of the fumes.
- ◆ Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.



## **ARC RAYS can injure eyes and burn skin.**

- ◆ Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- ◆ Protect bystanders with suitable screens or curtains.



## **IMPORTANT to read the user manual.**

- ◆ Disregarding the safety regulations and guidelines can result in severe injury or heavy damage to the positioner or work pieces.
- ◆ Disregarding the safety regulations and guidelines can be life-threatening.
- ◆ Important information used to prevent errors.

**READ AND UNDERSTAND THE INSTRUCTION & SERVICE MANUAL  
BEFORE INSTALLING AND OPERATING.**

# INSTRUCTION MANUAL

## 1. SAFETY FUNCTIONS

Users of handling equipment have ultimate responsibility for ensuring that anyone who works with or near the equipment observes all the relevant safety precautions.

The following recommendations should be observed in addition to the standard regulations that apply to the work place.

All work must be carried out by trained personnel who are familiar with the operation of the STWB Welding positioner. Incorrect operation of the equipment may lead to a hazardous situation which can result in injury to the operator and damage to the equipment.

Staying under the work piece during the working cycle is absolutely forbidden! Staying on top of the work piece during the working cycle is forbidden without the safety equipment!

1. Anyone who uses the STWB Welding positioner must be familiar with
  - ◆ its operation
  - ◆ the location of the emergency stop
  - ◆ its function
  - ◆ relevant safety precautions

To make this easier each switch, push button or potentiometer is marked with a symbol that indicates its function when activated.

2. The work place must
  - ◆ be suitable for the purpose
  - ◆ be free from loose objects
  - ◆ be clean, because dust and welding flux can make the frictional force of the positioner.
3. Personal safety equipment
  - ◆ always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
  - ◆ do not wear loose-fitting items, such as scarves, bracelets, rings etc., which could become trapped or cause burn.

**NOTE!** THE FUNCTION IS PHASE SENSITIVE!

CONDUCT DAILY INSPECT ON DEVICE BEFORE START.

WARNING INSTRUCTION ON OPERATOR' S MANUAL TO REMIND OPERATOR DURING OPERATION.

## 2. INTRODUCTION

### 2.1 General

Welding Positioner is a basic solution for tilting of the work pieces. They occupy little space and feature quick and easy to operate.

All models meet or exceed the EN occupational safety requirements.







- 1. Lifting motor & reducer
- 2. Lifting position measure ruler
- 3. Traveling basis with lock
- 4. Lifting motor & reducer
- 5. Turning Table
- 6. Fixed basis

### 2.2 Specification

Model		STWB-100
Max capacity	Ton	10
Table diameter	mm	1000
Rotation speed	rpm	0.1-1
Rotation power	kw	2*2.2 KW
Elevator stroke	mm	1000-1800mm
Traveling way	/	Manual traveling
Input voltage	V	400V 50Hz 3 Phase

### 2.3 Warning Information Stickers

S/N	Information Text	Picture of sticker
1.	ELECTRIC BOX ELECTRICITY DANGEROUS	
2.	DO NOT OVERLOAD! CHECK CAPACITY ON DATAPLATE!	
3.	READ THE MANUAL BEFORE OPERATION!	
4.	GROUND MACHINE TO A SUITABLE GROUND BEFORE OPERATION.	

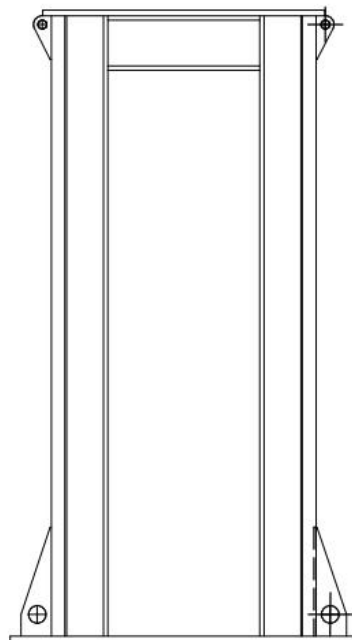
### 3. INSTALLATION

**IMPORTANT! READ ALL RELEVANT MANUALS AND SAFETY PRECAUTIONS CAREFULLY BEFORE STARTING TO UNPACK AND INSTALL THE EQUIPMENT!**

**PLEASE CHECK ALL OIL AND GREASE BEFORE OPERATING EQUIPMENT!**

**NOTE! MAKE SURE INSTALLATION IS CARRIED OUT BY SUITABLY TRAINED PERSONNEL.**

- ◆ The Positioner is shipped with fully assembled condition.
- ◆ The location for installation should be level and able to take the required loading without subsequent soil settlement.
- ◆ Connect Power Cable (by others) to an appropriate 3-Phase Isolator following the required Amperes based on the table above. (Incoming Power: check data plate on Main Panel.)
- ◆ Inspect the machine to ensure that the Positioner is supplied with Push Button pendant station, and that they are not damaged during transit. There are no loose items supplied with this Equipment.
- ◆ Recommended lifting method by 2 lifting hooks via lifting lugs provided on both sides of the positioner, use the 2 lifting lugs nearer to the table only (nearer to the C.G. of the positioner)



- ◆ Machine is ready for power “ON” .
- ◆ The worm wheel decelerator of the machine adopts lubricating oil, other gears and bearings adopt grease lubrication, periodic change. Note: the lubricating oil isn't oiled into the machine at shipping, the users must oil assigned lubricating oil, and then begin to use.
- ◆ Test Emergency Buttons on both the panel and the pendant to ensure functionality.
- ◆ Trial run the FWD & REV / UP &DOWN motions in all directions and observes if there is any unusual noise or smell.

### **3.1 Handling and Storage of the Machine**

The machines are packed on a base, suitable for lifting by crane and/or forklift. Lift the machine from the lifting points (lifting loops) only.

Unload the machine from the packing and check the outer condition. Do not store the machine outside or in damp places.

## 4. STARTING-UP INSTRUCTIONS

### 4.1 Safety Consideration

- ◆ This machine is to be operated by authorized and trained operator only.
- ◆ Do not attempt to service the machine in the event of breakdown. Contact your Service/Maintenance Department.
- ◆ Do not wear loose clothing, as there are moving parts.
- ◆ Safety practices on electrical hazards must be observed such as no wet hands, clothing and properly insulated shoe.
- ◆ Always keep a copy of the Manual in the Electrical Panel.

### 4.2 Daily Checks

- ◆ Ensure that the work piece which was in the range of tank diameter.
- ◆ Check that the Emergency button is functioning.
- ◆ Check that FOR / REV Switches are functioning.

**NOTE! PLUG FITS ONLY IN ONE POSITION.**



DO NOT CONNECT THE WELDING RETURN CABLE THROUGH THE FRAME OF THE ROLLER BED – THE BEARINGS AND THE CONTROL MAY BE DAMAGED.



## 5. OPERATION INSTRUCTIONS

HBJ series welding positioners are designed to facilitate the manual and mechanized welding. All models meet or exceed the EN occupational safety requirements. With the positioner, the work piece is always turned to the most favorable position. If you intend to use the positioner for any other purpose, please confirm suitability from the manufacturer or his representative.

### 5.1 Loading and Unloading of the Work piece

- ◆ Use the table plate holes and T-slots for fastening the work piece (Figure A-1).
- ◆ Check that the fastening of the work piece is permanent during all the working time. Check regularly the fastening!
- ◆ Check that the earth terminal of the welding machine is connected to the positioner's own earth connector (Figure A-2).

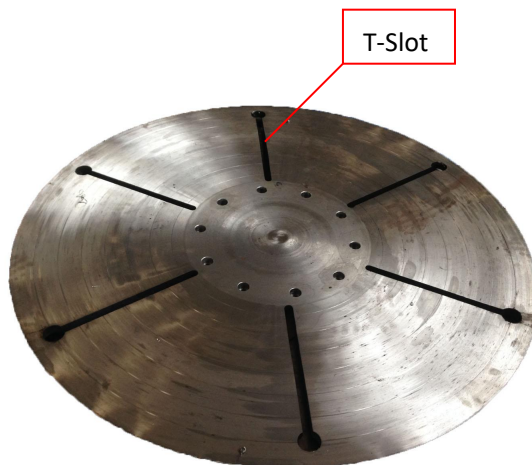


Figure A-1



Figure A-2

## 5.2 Control Devices

### 5.2.1 Hand control box / Electric control panel

<p>Details function of hand control box:</p> <p>Please see together with the Figure B</p> <ol style="list-style-type: none"> <li>1. Roller Turning Speed Digital Readout Display.</li> <li>2. Speed Setting for rotation and elevator.</li> <li>3. Forward/Reverse Switch.</li> <li>4. UP / DOWN Switch.</li> <li>5. Emergency Stop</li> </ol>
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Figure B

<p>Details function of electric box panel:</p> <p>Please see together with the Figure C</p> <ol style="list-style-type: none"> <li>1. Power On Light.</li> <li>2. Reset button..</li> <li>3. Emergency Stop.</li> </ol>
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Figure C

<p>Details function of electric box side panel:</p> <p>Please see together with the Figure D</p> <ol style="list-style-type: none"> <li>1. Power Switch.</li> <li>2. Hand Control Box Plug.</li> <li>3. Motor cable.</li> </ol>
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Figure D

## SERVICE MANUAL

### 1. SERVICE AND MAINTENANCE

#### 1.1 Service, checking and cleaning procedures

Status	Causation	Obviate method
Motor not running	Motor malfunction	Examine and repair the motor
	Inverter at the malfunction protection status	Please refer to the instruction of the inverter.
Motor overheat	Overloading	Reduce the capacity
	Temperature overheat	Cooling the motor
Reducer overheat	Overloading	Reduce the capacity
	The oil is not suitable	According to Maintenance instruction
Cacophony	Gearing not suitable	Check the bearing and gearing is too tighten or deflating
		Reduce the capacity
	Bearing is badness	Check the machine and change the bearing
	Surface of gear is not good connected	Take out the gear and milling the gear, then refit it.
Gear forepart abrasion	Overloading	Reduce the capacity
	Gearing not suitable	Check the gearing is right or not.

**NOTE!** IN CASE OF HEAVY USE, THE CHECKING HAS TO BE DONE ONCE A MONTH!

## 1.2 Lubrication Instructions

### 1.2.1 Lubrication Instructions for Accessories

S/N	Component		Inspection Action	Lubricant & Detergent Code	Qty	Duration of Operation
1	Gear Train		See Note 1	Shell EP Grease 1128	N.A	As required
2	Grease Nipple		See Note 2	Shell EP Grease 1128	N.A	Every 6 month
3	Gear Box	Primary	Oil Change	Refer to Table 1.2.2	See line	As necessary, 2000 hours or 18 months

Notes:

1. Use white spirit to clean Gear Train during replacement of Grease
2. All Grease Nipples to be charged every 3 months

Temperature (°C)	ISO VG	Mobil	Shell
-30 ~ -15	VG 150	Mobil gear 629	Omala 150
-15 ~ -3	VG 220	Mobil gear 630	Omala 220
-3 ~ 23	VG 320	Mobil gear 632	Omala 320
23 ~ 40	VG 460	Mobil gear 634	Omala 460
40 ~ 48	VG 680	Mobil gear 636	Omala 680

**Table 1.2.2**

Note:

1. Before replacing the oil, the inside of the gearbox should be cleaned, and old oil drained out.
2. During the operation, if the heat is over 80 °C or any abnormal noise is heard, please shut down and check immediately. Do not start to run again until the problem has been identified and resolved.

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