Proposal for Inner Solar Heater Tank Production

I. Inner Heater Tank:

Thickness: δ0.5-0.7mm
Material: sus304, 316L, Φ380, L=3000mm, Max. Volume is 340L

<table>
<thead>
<tr>
<th>Description</th>
<th>Size &amp; Specification</th>
<th>Qty (set)</th>
<th>Unit price (USD)</th>
<th>Amount (USD)</th>
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<tbody>
<tr>
<td>Precision Shearing Machine</td>
<td>Q11 4×3200</td>
<td>1</td>
<td>15269</td>
<td>15269</td>
</tr>
<tr>
<td>Longitude Seam Welding Machine (open type)</td>
<td>L-3000</td>
<td>1</td>
<td>39152</td>
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<tr>
<td>Air pressure reinforced ring making machine</td>
<td>L-3000</td>
<td>1</td>
<td>17031</td>
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<tr>
<td>Automatic Air pressure flaring machine</td>
<td>L-3000</td>
<td>1</td>
<td>18206</td>
<td>18206</td>
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<tr>
<td>Automatic Nozzle Welding Machine(double head)</td>
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<td>Automatic impulse seam welding machine</td>
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II. Description of the Equipment

1. Precision Shearing Machine
◆ Technical Data:

Max. thickness: ≤4mm
Max. width: ≤3000mm

2. Longitude Seam Welding Machine (open type)

◆ Description:

✧ This equipment is used for longitude seam welding (TIG) of solar water heater. The back shall be water cooling with copper backing covered with Argon gas.
✧ Penetration rate is 100%, after welding, both sides are smooth without any slag and gas hole, the welds is stronger than base plate.

◆ Configuration:

✧ HIWIN series liner guiding rail, Mitsubishi PLC, button control, Chromium zirconiumcopper pressing plate.
✧ Panasonic YC-400TX inverter precise impulse TIG welding machine, water cooling welding torch, automatic cycling water tank;
✧ Welding material: stainless steel SUS304、SUS316L;
✧ Thickness: 0.5mm ~ 0.7mm;

3. Automatic Air pressure Flaring Machine
◆ Equipment Information

This machine is widely used for flaring the both ends of inner solar water heater tank. The machine is comprised of the following: machine frame, working table, movable pintle, flaring dies, Damping cylinder, etc..

The machine is controlled by computer programme: touch screen and PLC, the operation status can be supervised. The parameters can be set and modified. The AC motor drive the system through gearbox and transmission mechanism. The rotation speed is stable. The compressed air pressure is bigger than 0.5MPa. The flared end width tolerance is less than 0.5mm.

◆ Technical Data:

✧ Flared workpiece length: 800～3000mm;
✧ Flared workpiece thickness: 0.5mm～0.7mm;

4. Automatic Air pressure Reinforced Ring Making Machine
Equipment Information:

The equipment is used for making reinforced ring on the heater tank. It comprises following: machine frame, upper and lower roller, dies, lock device, air pressure system, electrical control system.

- The air system: air filter gearbox, solenoid valve, air cylinder and air pipe.
- Stopping plate, positioning cylinder;
- Time controller and set the length of ring radius.
- The position of male and female dies can be adjusted;

Technical Data:

- Length of tank: 800~3000mm (1set);
- Thickness of tank: 0.5mm~0.7mm;
- Diameter of the tank: ø380mm

5. Double Head Automatic Welding Machine

Equipment Description:

The equipment is used for welding nozzle on the inner tank by TIG welding. It assure the high quality and fast welding. Both inner and outside of the welds can be well protected by Argon gas. It comprises the following items: machine frame, air system, motor speed adjustment, electrical control, water cooling, welding...
torch adjustment mechanism, etc..

- The motor speed adjustment system comprises following: DC motor, gearbox, DC power supply.
- Welding torch minor adjustment: handwheel, screw, sliding block, etc.
- Electrical control system: both "manual" and "Auto" are available. When machine is at 'manual' mode, each unit can be separately controlled. It can be easily adjusted. While at 'Auto' mode, all actions can be completed according to set programme automatically.
- Dies: the dies are used to position the tank, emit the heat and protect the tank with Argon gas which can assure high quality welding on thin wall tank. The tank is clamped with pneumatic system. The different size dies are designed for different diameter tanks.
- Water cooling system: water cooling system is inside the dies which can assure long time operation without failure due to over heat.
- Welding machine: Panasonic welding machine

◆ Technical Data:
  - Thickness: 0.5~0.7mm
  - Diameter: φ380m

6. Automatic Air Pressure Impulse Seam Welding Machine
◆ Equipment Description:

The equipment is used for joint welding the end disc cover and tank, it is a kind of resistance circumferential welding. The lapped area is pressed between two electrodes. The welding current can be continuous welding or impulse welding. It is comprised of the following: machine frame, air system, electrical control system, etc..

✧ The welding rollers is copper alloy; pneumatic pressing. The conductor contact with resistance with small area.

✧ The upper shaft drives the system: DC motor, gearbox, etc..

✧ The water cooling system combinates inner water and outer cooling system.

The electrical control system is DC power supplied, including anti parallel thyristor and controller.

✧ Seaming controller, set pressing time, welding current, welding speed, impulse frequency and welding time, etc..

◆ Technical Data:

✧ Thickness: 0.5mm ~ 0.7mm

✧ Diameter of the tank: φ380mm

7. Nozzle Flattening Machine

◆ Description

The equipment is used to flatten the nozzle of vacuum tube on the inner tank. It
comprises following: machine frame, backing shaft, sliding device, pneumatic device and dies, etc. The walking device is driven by AC motor, the stable rotation can be achieved with gearbox and transmission device. The compressed air source is more than 0.6 MPa.

When machine works, open the hook, put the tank into backing shaft, the vacuum pipe must be positioned properly. Press <Start> button, the upper die comes down, the sliding device walks, thus the nozzle ends can be flattened. After flattening, the sliding device comes back, open the hook and take out the work piece.

◆ Technical Data:

- Length of tank: 800~3000mm;
- Thickness of tank: 0.5mm~0.7mm;
- Tank diameter: Φ380