Using Manual for JP80T

Testing Static Powder Manual Spraying Equipment

Producer:
(China) Yantai Maituo Electromechanical Instrument Technical Engineering Co., Ltd.
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Website: www.asc365.net
*Dear customer: Thank you for using our product and we are pleasure to be given your advice on quality, service and so on.

*The warranty of this equipment is one year and we offer the technical service guarantee after the warranty.

*Before installing and using this equipment, please read the instruction carefully.

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6. Equipment failure and troubleshooting
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1, Usage, application scope and features of the equipment

JP80T testing static powder manual spraying equipment is used for the powder coating factory to do the spraying experiment and random inspection on the powder quality while producing. It also can be used for the spraying process test of samples and test pieces as well as the small scale spraying work. Features: The powder feeding system adopts funnel and Venturi pipe, and the powder in the powder cup at the back of the gun is drawn into the powder pipe and blown to the gun muzzle under the negative pressure produced when the powder feeding air passing through the Venturi pipe. In the muzzle, the powder will be diluted and speeded up and then spray to the sample. This makes the powder feeding be continuous, even, stable, and well–atomized. The static electricity produced system adopts integrated circuit, which works stable; and the boost system adopts gun inside multi–voltage boost system, which the consumption of static electricity is low and the spraying rate is
The control box is portable case, which is used for lab and filed–work. To make the colour–change convenient, this machine is configured with a cleaning gun.

2, Main specification and technical parameter

1. Electric parameter
   - Power supply : AC110V, 50~60HZ, 30VA
   - Output static voltage : 0~80kV (negative polarity)
   - Output current : 100uA (Max.)
   - Solenoid valve control voltage : DC24V

2. Air circuit parameter
   - Air pressure: 0.5~0.6Mpa, Flow rate : 15Nm³/h
   - Air source quality : the water content should be less than 1.5g / Nm³ (when dew point is 7℃), and the oil content is less than 0.1mg / Nm³
   - Output pressure : 0 ~ 0.3Mpa

3. Complete equipment parameter
   - Powder cup capacity : 80g / cup
   - Spraying powder output : 50 ~ 300g / min (adjust according to need)
   - Gun weight : 600g (Without pipe and cable)
   - Control box weight : 4.2Kg  Outside size : Width 205×height 85×depth 200mm

3, The composition, structure and operating principle of the equipment

JP80T testing static powder manual spraying equipment is composed with control box and spraying gun (refer to the following diagram)
1) Control box: It is made up with static electricity produced system (low voltage part) and air circuit adjustment system. On the control board, there are static electricity adjusting knob and light cross indicator as well as powder feeding pressure adjusting knob in air circuit system and powder supply switch of atomizing air adjusting knob (refer to the following diagram on the left). At the back of the control box, there are power input socket, static electricity output interface, air source input interface, and air circuit interface as following:

(1) Powder feeding air pressure meter  (2) Powder feeding air adjusting knob  
(3) Atomizing air adjusting knob  (4) Electrostatic LED indicator  
(5) Electrostatic adjusting knob

2) Spraying gun: The powder in the powder cup is drawn into the pipe under the negative pressure produced by powder feeding air and mixed with atomizing air in the gun muzzle before spraying to the work piece.
3) Cleaning gun: It is used to clean the dust or powder of work piece as well as cleaning when changing colour.

4. The installation and debugging of the equipment.

1) Fix one end of the earth wire on the earth pillar on the back side of the control box and connect another end with the earth wire (wet conductor buried into earth of 0.5m deep outdoor) installed specially and the hanger for hanging work pieces.

2) Insert the plug of the power line into the socket at the back of the control box, and connect the other end with the power supply. The earth pins should be in good earth.

3) Insert the air source pipe (blue) with outer diameter ø8 along with the equipment into the air source connector at the back of control box; and the other end is connected with compressed air resource with oil removing and drying process. (The air source pressure: 0.5~0.6Mpa; the oil content is less than 0.1mg/Nm³ and the water content is less than 1.5g./Nm³)

4) Insert the gun connecting cable into the signal output socket at the back of control box, then insert the powder feeding air pipe (outer diameter ø6, black) and atomizing air pipe (outer diameter ø6, blue) into the powder feeding air and atomizing air interface at the back of control box separately.

5) Insert the cleaning gun pipe into the air injection pipe at the back of control box.

6) Check whether the connection of control box, earth wire, spraying gun, cleaning gun, power supply and air source corresponds with the following diagram:

7) Take down the cover of powder cup, fill proper powder (1/5~3/5 of the capacity of cup) and keep the rim of the cup upwards. Then close the cover. Point the gun to the spraying room (prepare it
yourself), and switch on the power supply. Before pulling the trigger, adjust the powder feeding air to
the proper pressure (according to the powder output and the manometer indicates about 0.1~0.3Mpa)
and then adjust the atomizing adjusting knob (observe the powder output) to proper position. After that,
adjust electrostatic adjusting knob to make it indicate 40~70KV (set it to the certain value according to
the need). You can spray the work piece (sample) as soon as you finish debugging.

8) If it is needed to clean the dust or the powder on the work piece (sample), cleaning gun can be used
to do it. The adjusting nozzle in the front of the cleaning gun can be used to adjust the air flow: rotate
right, the flow will be little; conversely, it will be large.

5, The operation, application, maintenance and precautions of the equipment.

● Starting up operation
1. Turn on the air source and power supply.
2. Pour proper powder into the powder cup.
3. Switch on the power and the indicator lights.
4. Point the gun at the spraying room, tug the trigger, adjust powder feeding air pressure,
atomizing air flow and electrostatic to the needed state, then spray the work piece (sample).

● Shutdown operation
1. Switch off the power supply and the indicator is off.
2. Take down the powder cup cover, pour out the left powder and clean the whole cup with the
   cleaning gun.
3. Screw down the gun head screw, take down the spout and electrode needle, and clean the
   powder absorbing pipe and muzzle with cleaning gun for several times until there is no powder.
   Then clean the nozzle and electrode needle diversion head.
4. Install the gun electrode needle and muzzle, screw on the gun head screw and install the cup
   cover.
5. Switch off the power supply and air source.
6. If changing the colour of powder is not needed, you can follow the steps 2,3,4
● Maintenance

1. After every spraying operation, the gun and powder cup must be cleaned by the cleaning gun.
2. Use cleaning gun to clean the outside of the control box.

● Attention

1. The earth wire, work piece, spraying room and retrieving arrangement of the control box should be in good earth.
2. The spraying operation should be carried out in the spraying room with air inducting recovery device.
3. In spraying operation, the spraying gun head should be 80–150mm away from the work piece and shouldn’t contact with the short circuit of the work piece as possible.
4. When the spraying gun head is about 20mm away from the work piece, corona discharging would occur around the electrode. With small discharging power, this kind of discharging will not threaten the safety but may affect the spraying quality.
5. The spraying gun should be protected from falling or collision in application to avoid the damage of the spraying gun and the internal parts.
6. Mechanical damage and warp block should be avoided in the powder transferring tube of the spraying gun and the cable.
7. The air source should be clean and dry, or it will influence the normal work of the equipment and spraying quality.
8. After disassembling the gun electrode needle, the powder between it and the electric contact should be cleaned to avoid influencing conduction.

6. Equipment failure and troubleshooting

<table>
<thead>
<tr>
<th>Failure</th>
<th>Reasons</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without powder discharging</td>
<td>1. Air source not energize</td>
<td>1. Energize the air source.</td>
</tr>
<tr>
<td></td>
<td>2. There is no powder in powder cup or the powder is used up</td>
<td>2. Add powder.</td>
</tr>
<tr>
<td></td>
<td>3. When cocking the gun switch, there is no powder feeding pressure indication</td>
<td>3. Add the powder feeding pressure (anticlockwise) to proper value.</td>
</tr>
<tr>
<td></td>
<td>4. Solenoid valve doesn’t move</td>
<td>4. Check if the power line of</td>
</tr>
<tr>
<td>Issue</td>
<td>Possible Causes</td>
<td>Solutions</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| With little output                                                   | 1. The air source pressure is too low or the flow is not enough  
2. The powder feeding air pressure is low | 1. Adjust the air source pressure upwards or increase the flow  
2. Adjust the powder feeding air pressure upwards (anticlockwise) |
| The spraying gun leaks powder and bad atomization                    | 1. The powder feeding air pressure is low  
2. The atomizing air flow is little | 1. Adjust the powder feeding air pressure upwards (anticlockwise)  
2. Adjust the atomizing air flow upwards (anticlockwise) |
| The powder doesn’t absorb well.                                      | 1. The electrostatic voltage is low  
2. There is powder between electrode cover and electric contact of the gun head.  
3. The powder quality of powder is bad.  | 1. Adjust the electrostatic voltage upwards (clockwise rotation)  
2. Clean the powder to keep good contact.  
3. Change the powder. |
| The powder doesn’t absorb (without static electricity)              | 1. The gun connecting cable is off.  
2. Circuit board failure: After turning on the gun and adjust the voltage upwards, one or more of the red, yellow, and green lights on the circuit board in control box is off. | 1. Repair or change the cable  
2. Repair or ask the manufacturer to maintain. |
| The spraying power is out of control (can’t stop spraying)           | 1. The gun switch can’t reset  
2. There is some foreign object in the solenoid valve to block it. | 1. Repair it to make it reset  
2. Open the solenoid valve and clean it. |
| Power indicator is out                                               | 1. The plug of power line isn’t inserted well.  
2. The power fuse is burnt. | 1. Insert the plug well.  
2. Change the fuse (0.5A) |

7. The equipment delivery details (package list)
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Code</th>
<th>Specification</th>
<th>Amount</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control box</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spraying gun</td>
<td></td>
<td></td>
<td>1</td>
<td>ø6 air pipe (black) 1.5m</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ø6 air pipe (blue) 1.5m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gun connecting cable</td>
<td></td>
<td>1.5m</td>
</tr>
<tr>
<td>3</td>
<td>Cleaning gun</td>
<td></td>
<td></td>
<td>1</td>
<td>ø6 air pipe (blue) 1.5m</td>
</tr>
<tr>
<td>4</td>
<td>Power line and plug</td>
<td></td>
<td>Three-core</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5 length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Earth wire and clip</td>
<td></td>
<td>Greenish yellow</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5 length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Diversion head</td>
<td></td>
<td>Ø20</td>
<td>1</td>
<td>spare parts</td>
</tr>
<tr>
<td>7</td>
<td>Fusing tube</td>
<td></td>
<td>0.5A, Ø5×20</td>
<td>2</td>
<td>spare parts</td>
</tr>
<tr>
<td>8</td>
<td>Air source pipe and connector</td>
<td></td>
<td>Ø8 2m (blue)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Operation manual</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

8. Equipment easily worn parts details (additional order is required)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Ordering No.</th>
<th>Specification</th>
<th>Amount</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diversion head</td>
<td>DL20</td>
<td>Ø20</td>
<td></td>
<td>Order alone</td>
</tr>
<tr>
<td>2</td>
<td>Gun electrode needle</td>
<td>JZ30</td>
<td></td>
<td></td>
<td>Order alone</td>
</tr>
<tr>
<td>4</td>
<td>Gun connecting cable</td>
<td>3×1500</td>
<td>Three-core</td>
<td></td>
<td>Order alone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.5 length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Main circuit board</td>
<td>JP80T</td>
<td>150×100</td>
<td></td>
<td>Order alone</td>
</tr>
</tbody>
</table>