Installation manual of AJ16US dental chair
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# CONTENTS

1 Introduction...........................................................................................................1
  1.1 Products information.........................................................................................1
  1.2 Symbols explanation..........................................................................................1

2 Composition.........................................................................................................3

3 Parameters...........................................................................................................4
  3.1 Specifications....................................................................................................4
  3.2 Size..................................................................................................................4

4 Preparations.........................................................................................................5
  4.1 Attentions..........................................................................................................5
  4.2 Tools recommended..........................................................................................6
  4.3 Installation requirements...................................................................................7

5 Installation..........................................................................................................7
  5.1 Place the chair .................................................................................................7
  5.2 Fix the chair......................................................................................................8
  5.3 Install the backrest............................................................................................9
  5.4 Install the headrest ..........................................................................................10
  5.5 Install backrest upholstery................................................................................10
  5.6 Install seat upholstery.......................................................................................11

6 Operations.........................................................................................................12
  6.1 Power...............................................................................................................12
  6.2 Chair positioning..............................................................................................13
    6.2.1 Operate by foot control...............................................................................13
    6.2.2 Control panel and function set ....................................................................14
    6.2.3 System state ...............................................................................................14
    6.2.4 Initial settings of the chair..........................................................................15
    6.2.5 Initial settings description...........................................................................16
    6.2.6 Chair positions description.........................................................................17
  6.3 Dual articulating headrest................................................................................18
  6.4 Armrest ............................................................................................................19
  6.5 Chair rotation...................................................................................................20

7 Regulation & maintenance..................................................................................21
  7.1 Remove the upholstery....................................................................................21

8 Reserved lines ...................................................................................................23

9 Upholstery Maintenance Instruction..................................................................27

10 Connecting diagrams.........................................................................................28
# 1 Introduction

## 1.1 Product information

- **Name**: Dental chair
- **Model**: AJ16US
- **Working conditions**:
  1. Ambient temperature: 5 °C ~ 40 °C;
  2. Relative humidity: ≤ 80%;
  3. Air pressure: 12.5 ~ 15.4 psi;
  4. Nominal voltage: AC110 V ± 22 V;
  5. Nominal frequency: 60 Hz ± 1 Hz;

## 1.2 Symbols explanation

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Manufacturer" /></td>
<td>Manufacturer</td>
</tr>
<tr>
<td><img src="image" alt="EU representative" /></td>
<td>EU representative</td>
</tr>
<tr>
<td><img src="image" alt="Producing date" /></td>
<td>Producing date</td>
</tr>
<tr>
<td><img src="image" alt="Serial number" /></td>
<td>Serial number.</td>
</tr>
<tr>
<td><img src="image" alt="Place with care" /></td>
<td>Place with care</td>
</tr>
<tr>
<td><img src="image" alt="Keep dry" /></td>
<td>Keep dry</td>
</tr>
</tbody>
</table>

Table 1
### Installation manual of AJ16US dental chair

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Refer to attached document" /></td>
<td>Refer to attached document</td>
</tr>
<tr>
<td><img src="image2.png" alt="Notice" /></td>
<td>Notice</td>
</tr>
<tr>
<td><img src="image3.png" alt="Avoid electric shock" /></td>
<td>Avoid electric shock</td>
</tr>
<tr>
<td><img src="image4.png" alt="Backrest Down" /></td>
<td>Backrest Down</td>
</tr>
<tr>
<td><img src="image5.png" alt="Ground protection" /></td>
<td>Ground protection</td>
</tr>
<tr>
<td><img src="image6.png" alt="Backrest Up" /></td>
<td>Backrest Up</td>
</tr>
<tr>
<td><img src="image7.png" alt="Original position" /></td>
<td>Original position</td>
</tr>
<tr>
<td><img src="image8.png" alt="Chair Down" /></td>
<td>Chair Down</td>
</tr>
<tr>
<td><img src="image9.png" alt="Set" /></td>
<td>Set</td>
</tr>
<tr>
<td><img src="image10.png" alt="Chair Up" /></td>
<td>Chair Up</td>
</tr>
<tr>
<td><img src="image11.png" alt="Spitting position" /></td>
<td>Spitting position</td>
</tr>
<tr>
<td><img src="image12.png" alt="Program Chair Position 1" /></td>
<td>Program Chair Position 1</td>
</tr>
<tr>
<td><img src="image13.png" alt="Program Chair Position 2" /></td>
<td>Program Chair Position 2</td>
</tr>
<tr>
<td><img src="image14.png" alt="Program Chair Position 3" /></td>
<td>Program Chair Position 3</td>
</tr>
</tbody>
</table>
2 Composition

AJ16US dental chair (figure 1) combined with new design concepts, provide a good balance for usability, simplicity and comfortability.

Figure 1 AJ16 US Dental Chair

<table>
<thead>
<tr>
<th>Item</th>
<th>Component</th>
<th>Item</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Headrest</td>
<td>6</td>
<td>Armrest button</td>
</tr>
<tr>
<td>2</td>
<td>Backrest</td>
<td>7</td>
<td>Touch pad control panel</td>
</tr>
<tr>
<td>3</td>
<td>Armrest</td>
<td>8</td>
<td>Lifting arm</td>
</tr>
<tr>
<td>4</td>
<td>Seat</td>
<td>9</td>
<td>Junction box</td>
</tr>
<tr>
<td>5</td>
<td>Foot control</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Parameters

3.1 Specifications

Load bearing

Patient bearing: Max 135kg

Tip: Specifications are subject to change without notice.

3.2 Size (unit: inches)
4 Preparations

4.1 Attentions

Before install the unit, you should:

- Clear all the debris in the room, and clean the floor thoroughly.
- Apply two manually operated valves for the air and water source.
- Exhaust the dirty water and air before connecting.

Before install the unit, please read the manual carefully:

- Input voltage AC110 V, 50/60 Hz.
- Make sure the dental unit is in good grounding.
- All the electrical components and connections should be made by an authorized technician.
- Only fuse and accessories recognized by ADS technician can be used.
- This device should not operate in the environment of high temperature, high humidity, vibration, flammability, unbalance, or dusty.
- Only the authorized spare parts can be used in this device.
- This dental unit should not come into contact with any object in its operational range of movement.
- This device can not be used in the environment of strong magnetic, electromagnetic.

Leather maintenance:

- 1. No organic solvent or alkaline detergent (such as: gasoline, alcohol, etc.), or the leather will crack, be smelly or fade;
- 2. No exposure, keep the room in good ventilation (exposure can cause the leather crack, bad ventilation lead to go mouldy);
- 3. Mention the patient to remove edged tools (like keys) before operation, to avoid scratch the leather.
4.2 Tools recommended

The tools and instruments need to prepare before installation.

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical drill</td>
<td>Pincers</td>
</tr>
<tr>
<td>Hammer</td>
<td>Scissors</td>
</tr>
<tr>
<td>Leveling instrument</td>
<td>Flat-bladed Screw driver</td>
</tr>
<tr>
<td>Phillip screw driver</td>
<td>Allen wrench</td>
</tr>
<tr>
<td>Spanner</td>
<td>Hexagon socket wrench</td>
</tr>
</tbody>
</table>
4.3 Installation requirements

Size: inches

5 Installation

5.1 Place the chair

1. Remove all debris and cardboards around the chair.
2. Hold the handrail and the front of the frame, uplift the chair and place the chair on the right place.
3. Remove binding belt and packages.
4. Remove the front shell.
5.2 Fix the chair

**Attentions:**
1. The chair must be fixed on the floor for ensuring stability, for it can be seriously damaged by wrong fixation.
2. Check out the material of the floor on the installing place. Please contact the authorized contractor to thickening the floor if its thickness is less than 82 mm.

1. Power on and activate the unit.
2. Step the button on foot control, raise the unit.
3. Unit switched off and power disconnected.
4. Remove the cover and mark the installing position, then move the unit away.
   
   Drill on the marked position, press the explosive bolt, then return the unit to its position and tighten the screw.
5.3 Install the backrest

Pass the fixing shaft through the backrest push rod, fix the shaft on backrest with the cap screw assembly.

<table>
<thead>
<tr>
<th>Tool:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5mm Allen wrench</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Backrest</td>
</tr>
<tr>
<td>2</td>
<td>Fixing shaft</td>
</tr>
<tr>
<td>3</td>
<td>M6*20 Hexagon socket cap screw assembly</td>
</tr>
<tr>
<td>4</td>
<td>GFM-1214-10 Slide bearing</td>
</tr>
<tr>
<td>5</td>
<td>Push rod</td>
</tr>
</tbody>
</table>
5.4 Install the headrest

**Figure 3**

Push the headrest glidebar into the slot of the backrest.

5.5 Install backrest upholstery

**Figure 4**

When installing the upholstery, you should put the upholstery on the backrest with the shaft head pass through corresponding keyholes of the upholstery, then push the upholstery in force till it’s fixed.
5.6 Install the seat upholstery

**Figure 5**

<table>
<thead>
<tr>
<th>A</th>
<th>Fixing bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Chair frame</td>
</tr>
<tr>
<td>C</td>
<td>M5*16 hex cap screws</td>
</tr>
</tbody>
</table>

**Install the seat upholstery**

Put the upholstery onto the chair frame, lock the bracket and the rear end of the chair frame together, and tighten the two screws on the front end of the chair frame.
6 Operations

6.1 Power

The power switch of the power box controls power supplying of the dental chair and its delivery system.

Switch on and you can get the power, switch off for not using in a long term, or before maintenance.

Figure 6
6.2 Chair positioning

You can operate the chair manually or by foot control.

6.2.1 Operate by foot control

Raise or low the chair by pressing base up/down button, step on the up/down arrow on the foot control till the chair is in best position.

Move the backrest by pressing backrest up/down button, step on the left/right arrow till the chair is in best position.

Figure 7

<table>
<thead>
<tr>
<th></th>
<th>Original position</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Original position</td>
</tr>
<tr>
<td>1</td>
<td>Program Chair Position 1</td>
</tr>
<tr>
<td>2</td>
<td>Program Chair Position 2</td>
</tr>
<tr>
<td>P</td>
<td>Set</td>
</tr>
<tr>
<td>LP</td>
<td>Spitting position</td>
</tr>
</tbody>
</table>

> Backrest down
> Backrest up
> Chair up
> Chair down
6.2.2 Control panel and function set

Figure 8

<table>
<thead>
<tr>
<th></th>
<th>Original position</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>Program Chair Position 1</td>
</tr>
<tr>
<td>P_1</td>
<td>Program Chair Position 2</td>
</tr>
<tr>
<td>P_2</td>
<td>Program Chair Position 3</td>
</tr>
<tr>
<td>P_3</td>
<td>Set</td>
</tr>
<tr>
<td>LP</td>
<td>Spitting position</td>
</tr>
<tr>
<td>P</td>
<td>Backrest down</td>
</tr>
<tr>
<td></td>
<td>Backrest up</td>
</tr>
<tr>
<td></td>
<td>Chair up</td>
</tr>
<tr>
<td></td>
<td>Chair down</td>
</tr>
</tbody>
</table>

6.2.3 System state

If the indicator light is bright on the control panel, it indicating that the system is normal, and you can operate normally.
6.2.4 Initial settings of the chair

Electric motor system initial settings specification:

Press the “O” button on the main control panel of dentist unit to descend the chair motor till the lower limit switch is triggered, raise the backrest motor till the higher limit switch is triggered. System initialize automatically, it can be normally performed after initialization finished.

Caution: Electric motor system shall have the initial settings in following situations:
- First installation.
- Motor replacement.
- Main board replacement.
- Limit switch readjustment or replacement.
- Abnormal movement.

Hydraulic system initial settings specification:

1. Press ”P” button about 12 second until the buzzer sound 2 short beeps, enter original setup status; press P1, the buzzer sound 1 short beep, escape setup status. This steep eliminates the original stroke parameters.

2. Press “P” button about 12 second until the buzzer sound 2 short beeps, enter initial setup status, press the four moving chair button to make backrest up and press”0”, and then press the four moving chair button again to make chair up to the highest and the backrest is on the lowest. At this time, press ”LP” and then finish the setting.
Caution: Hydraulic system shall have the initial settings in following situations.

First installation or replacement of mainboard.
Insert/replace/repair any position feedback potentiometer or wiring.
Reset or replace the limit switch.
Reset the motion range of the chair.(Disabled to move or cannot move to desired position.)

Caution:
When setting up the system, do not extent the maximum range of the cylinder to prevent the hydraulic pump from not working properly!

6.2.5 Settings of programming memory position

Process P → P1 or P2 or P3 → P

• Move the chair and backrest to the working position, and adjust dental light to the desired condition (On or Off), press the “P” button (12S), the indicator light is on (beep 2 time), (loose button so as not to enter the original setting state), enters the setup procedure.
• Press the “P1” button , and then press the “P “button one time again,(beep1-2times), setup finished and escape the setup procedure.
• P2, P3 position setup are same step as the P1.
6.2.6 Chair positions description

a. Backrest Up
Press this button continuously and the backrest will move upwards. When the backrest reach the desired position, stop pressing the button and the backrest will stop immediately.

NOTE: If you press the button continuously, when the chair backrest reach the limit position, it will automatically stop the movement.

b. Backrest Down
Press this button continuously and the backrest will move downwards. When the backrest reach the desired position, stop pressing the button and the backrest will stop immediately.

NOTE: If you press the button continuously, when the chair backrest reach the limit position, it will automatically stop the movement.

c. Chair up
Press this button continuously and the chair will move upwards. When the backrest reach the desired position, stop pressing the button and the backrest will stop immediately.

NOTE: If you press the button continuously, when the chair backrest reach the limit position, it will automatically stop the movement.

d. Chair down
Press this button continuously and the chair will move downwards. When the backrest reach the desired position, stop pressing the button and the backrest will stop immediately.

NOTE: If you press the button continuously, when the chair backrest reach the limit position, it will automatically stop the movement.
e. Original position
Press the button, the chair and backrest will move to the original position automatically (Original position: backrest highest, the chair lowest) and light off. Press this button again, the chair returns to former position and light on. The chair shall stop at a new position by halfway stop.

f. Spitting button
Press the button, the chair and backrest will move to spitting position automatically (Spitting position: backrest highest, the chair is still) and light off. Press this button again, the chair returns to former position and light on. The chair shall stop at a new position by halfway stop.

6.3 Dual articulating headrest

Figure 8  Headrest adjustment

- Press the quick-release buttons to adjust rotation angle of the headrest.
- Headrest extension length: 0-150mm.
**Figure 9  Fix the headrest for a wheelchair.**

Fix the headrest for a wheelchair:

1. Backrest of the dental chair is fully raised.
2. After reposition the headrest, raise or descend the chair to adjust heights. Patient's position should also be adjusted to put the wheelchair and dental chair back to back together.
3. Make sure the wheelchair is locked.

6.4 Armrest

The armrest is easy to operate, which provides convenience to users. Press the button you can rotate the armrest forward or backward.

**Figure 10  Armrest positioning**
6.5 Chair rotation

Figure 12 Chair rotation

Pull the handle behind the chair to rotate:
1. Pull the handle rightwards to loosen the brake;
2. Push the handle leftwards to tighten the brake when the chair gets to desired angle.

Figure 13 Handle adjustment

You should adjust the tension of handle if the chair can not be fixed or the handle is hard to move.
1. Loosen the set screw by an Allen wrench.
2. Rotate the handle to adjust tension: clockwise to tighten, counterclockwise to loosen;
3. Tighten the screw after adjustment.
7 Regulation & maintenance

7.1 Remove the upholstery

The special design of upholstery is easy to remove and replace. They are installed on backrest, seat and headrest of the chair.

Backrest upholstery

To take off the upholstery from backrest, you should hold the bottom edge of gasket firmly and lift it up (1 inch or 25 mm), then lift the upholstery from the backrest of the chair (Figure14).

To reinstall the upholstery, you can put the keyhole of gasket on nail head, then push till the gasket is fixed.

Figure 14 Remove the upholstery
Seat upholstery
Loose the screw at the front end of the upholstery, push the upholstery forward, then remove the seat upholstery.

**Figure 15  Remove the seat upholstery**
8 Reserved lines

1. 1/8" white, reserved for dentist unit
2. 1/8" brown, reserved for dentist unit
3. 1/8" red, reserved for dentist unit
4. 1/8" orange, reserved for dentist unit
5. 1/8" black, reserved for dentist unit
6. 1/8" blue, reserved for dentist unit
7. 1/8" yellow, reserved for dentist unit
8. 1/8" green, reserved for dentist unit
9. 1/4" black, reserved for dentist unit
10. 1/4" blue, reserved for dentist unit
11. 1/4" red, reserved for dentist unit
12. Control wire for delivery head
13. 7 core power cord for delivery head
14. 24V power cord for dental light
15. Ground wire for delivery head
16. 1/4" green, reserved for assistant's control
17. 1/4" yellow, reserved for assistant's control
18. Control wire for assistant control

B. Drainage pipe
1. 1/8" white, connect to delivery system
2. 1/8" brown, connect to delivery system
3. 1/8" red, connect to delivery system
4. 1/8" orange, connect to delivery system
5. 1/8" black, connect to delivery system
6. 1/8" blue, connect to delivery system
7. 1/8" yellow, connect to delivery system
8. 1/8" green, connect to delivery system
9. 1/4" black, connect to delivery system
10. 1/4" blue, connect to delivery system
11. 1/4" red, connect to delivery system
12. Control wire for delivery head
13. 7 core power cord for delivery head
14. 24V power cord for dental light
15. Ground wire for delivery head
16. 1/4" blue, connect to side box
17. 1/4" green, connect to cuspidor
18. 1/4" yellow, connect to side box
19. Drainage pipe, connect to cuspidor
20. Drainage pipe, connect to filter
# Lines of Beyond300/301

<table>
<thead>
<tr>
<th>#</th>
<th>Line Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1#</td>
<td>1.1/8&quot; transparent, reserved for dentist unit</td>
</tr>
<tr>
<td>2#</td>
<td>2. 1/8&quot; White for delivery head</td>
</tr>
<tr>
<td>3#</td>
<td>3.1/8&quot; brown for delivery head</td>
</tr>
<tr>
<td>4#</td>
<td>4.1/8&quot; red for delivery head</td>
</tr>
<tr>
<td>5#</td>
<td>5.1/8&quot; Orange for delivery head</td>
</tr>
<tr>
<td>6#</td>
<td>6.1/8&quot; Black for delivery head</td>
</tr>
<tr>
<td>7#</td>
<td>7.1/8&quot; Yellow for delivery head</td>
</tr>
<tr>
<td>8#</td>
<td>8.1/4&quot; Black for delivery head</td>
</tr>
<tr>
<td>9#</td>
<td>9. Control wire for delivery head</td>
</tr>
<tr>
<td>10#</td>
<td>10.24V, 7 core power cord for delivery head</td>
</tr>
<tr>
<td>11#</td>
<td>11. Ground wire for delivery head</td>
</tr>
<tr>
<td>12#</td>
<td>12. Control wire for assistant control</td>
</tr>
<tr>
<td>13#</td>
<td>13. 24V power cord for dental light</td>
</tr>
<tr>
<td>14#</td>
<td>14.1/8&quot; Green for side box</td>
</tr>
<tr>
<td>15#</td>
<td>15.1/4&quot; Yellow for side box</td>
</tr>
<tr>
<td>16#</td>
<td>16.1/4&quot; Blue for side box</td>
</tr>
<tr>
<td>17#</td>
<td>17. Connect cuspidor (Steel winding tube)</td>
</tr>
<tr>
<td>18#</td>
<td>18. Connect side box filter (Screw thread tube)</td>
</tr>
</tbody>
</table>
12. Control wire for delivery head

14. 24V power cord for dental light

15. Ground wire for delivery head
9 Upholstery Maintenance Instruction

The upholstery provides users unparalleled comfort, excellent aesthetics and reliable quality. The upholstery has a one-year warranty on defective materials and workmanship. This instruction ensures a longer life of the upholstery if it is properly maintained.

Cleaning
Users can clean the upholstery with mild solution, non-ionic detergent, water or cleaners without alcohol, bleach or ammonia. Do not use abrasive cleansers or tools which can permanently damage the surface of upholstery.

Disinfection
The dental system suggests disinfecting the leather once a month with a 3% hydrogen peroxide solution, leather cleaner or 3% muti-enzyme cleaner based on its instruction to ensure effective disinfection, and then fully wipe it with water.

Caution:
Do not disinfect the upholstery with alcohol, potentiated glutaraldehyde disinfectant, liquid bleach, Benzammonium bromide (Benzalkonium chloride) disinfectant, Benzoyl chloride ammonium propanol disinfectant or any kind of acid and alkaline disinfectants which will lead to the aging, cracking or color difference of the upholstery. If the improper material is used and the upholstery is damaged, such as leather cracking or aging and color difference, this warranty becomes void.
10 Connecting diagrams

Connecting diagram (Hydraulic system)
We reserve the right to make any alterations which may be due to technical improvements.

---

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