

Cascade Comfort  
Bathing Systems with Aqua-Aire™  
*Installation / Assembly Instructions*



***PENNER PATIENT CARE INC.  
Box 523 / 101 Grant St.  
Aurora, NE 68818***

***SPAS MODEL NUMBERS- 560010-X, 560010-XL  
(X REPRESENTS A COLOR NUMBER)***

560745 Revision B – 10/2/18

1-866-PENNERS

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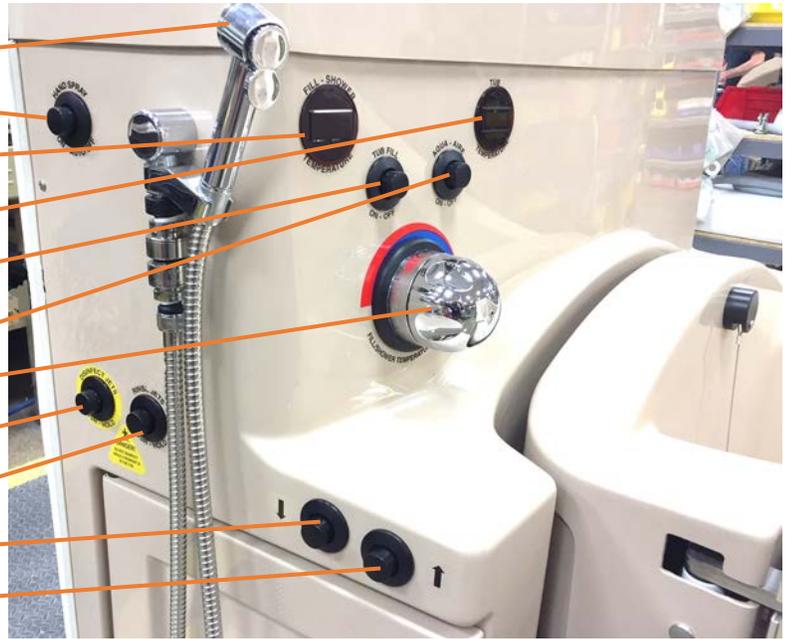
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## Table of Contents

<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>CASCADE COMFORT SPA CONTROLS .....</b>	<b>3</b>
<b>INTRODUCTION: .....</b>	<b>4</b>
<b>TERMINOLOGY AND SYMBOLS MEANINGS:.....</b>	<b>4</b>
<b>UNPACKING THE SPA: .....</b>	<b>4</b>
<b>BASIC TUB DIMENSIONS:.....</b>	<b>4</b>
<b>BASIC ROOM DIMENSIONS: .....</b>	<b>5</b>
<b>DRAIN REQUIREMENTS: .....</b>	<b>6</b>
<b>PLUMBING REQUIREMENTS: .....</b>	<b>6</b>
<b>HOT AND COLD WATER SUPPLY REQUIREMENTS:.....</b>	<b>6</b>
<b>ELECTRICAL REQUIREMENTS:.....</b>	<b>6</b>
<b>HOOKING UP THE SPA .....</b>	<b>7</b>
<b>ANCHORING THE SPA:.....</b>	<b>8</b>
<b>WATER SUPPLY AND DRAIN CONNECTIONS:.....</b>	<b>8</b>
<b>ELECTRICAL CONNECTIONS: .....</b>	<b>9</b>
<b>FINISHING UP:.....</b>	<b>9</b>

## Cascade Comfort Spa Controls

- HAND SPRAYER
- HAND SPRAYER - ON/AUTO-OFF
- FILL/SHOWER TEMPERATURE DISPLAY
- SPA TEMPERATURE DISPLAY
- TUB FILL ON/OFF
- AQUA-AIRE ON/OFF
- FILL/SHOWER TEMPERATURE CONTROL
- DISINFECT JETS
- RINSE JETS
- SPA TILT FORWARD
- SPA TILT BACK



## Introduction:

These instructions are for the installation of a Cascade Comfort Spa.

## Terminology and Symbols Meanings:

When the terms “left” or “right” are used with reference to the tub, this means left or right as you look at the control panel from the seat end of the spa.



### **Warning**

Meaning: Safety warning. Failure to understand and obey this warning may result in injury to you or to others.

### **CAUTION**

Meaning: Failure to follow these instructions may cause damage to parts or systems.

Note: Refer to the “Spa Controls” section of this manual for the location of any of the controls referenced.

## Unpacking the Spa:

- Inspect the equipment upon receipt to ensure no damage occurred during shipping.
- Remove the spa from the shipping container.
- Locate installation parts for safe keeping.

## Basic Tub Dimensions:

Figure 2 shows basic dimensions for a Cascade Comfort spa.

Figure 2

## Basic Room Dimensions:

Room layout for Cascade Comfort Spa

### CASCADE - COMFORT SPA ROOM AND SPA DIMENSIONS

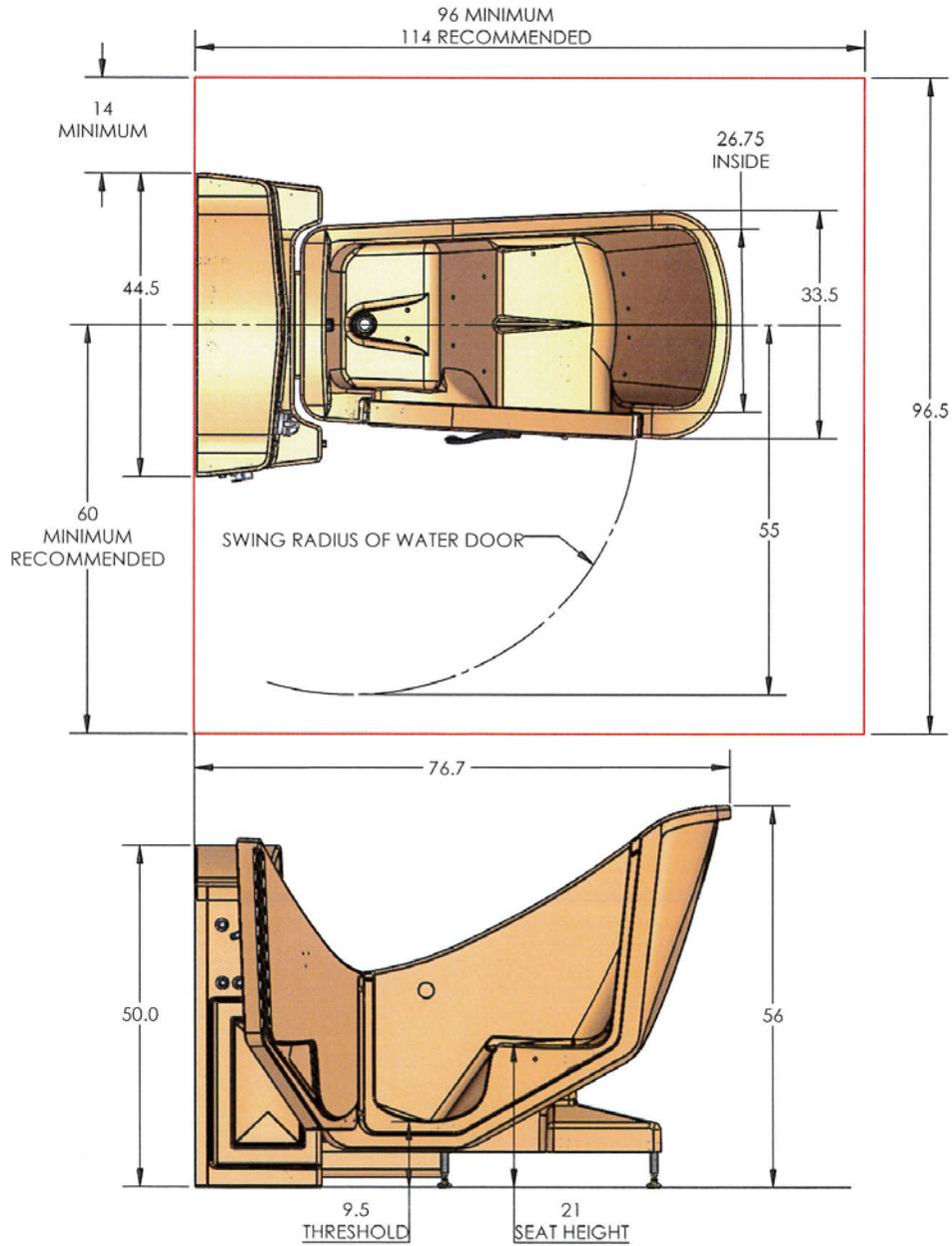


Figure 3

## Drain requirements:

The spa is equipped with a 1 1/2" actual O.D. PVC drain pipe. As shown in Figure 4, the spa's drain pipe is approximately 12" from the wall and 3 1/2" above the floor. Figure 4 shows two different options for roughing in the drain pipe – from the floor or from the wall.

## Plumbing Requirements:

It is required that a licensed plumber make all plumbing connections. He can select the best method of connection and if Reduced Pressure Zone Backflow Preventers are required.

## Hot and cold water supply requirements:

3/4" supply lines with on/off valves with 3/4" NPT female threads. We recommend 3/4" ball valve with 3/4" NPT female ports. (Valves supplied by others.) See figure 4 for recommended locations.

For optimum performance, dynamic pressures should be nominally equal between hot and cold supplies.

Maximum static supply pressure: 145 PSI.

Maximum dynamic/maintained supply pressure: 81 PSI.

Maximum supply Hot water temperature: Consult local requirements for maximum allowed supply temperatures. (Not recommended over 120°F)

### PENNER CASCADE - COMFORT (LH) ROUGH-IN SPECIFICATIONS

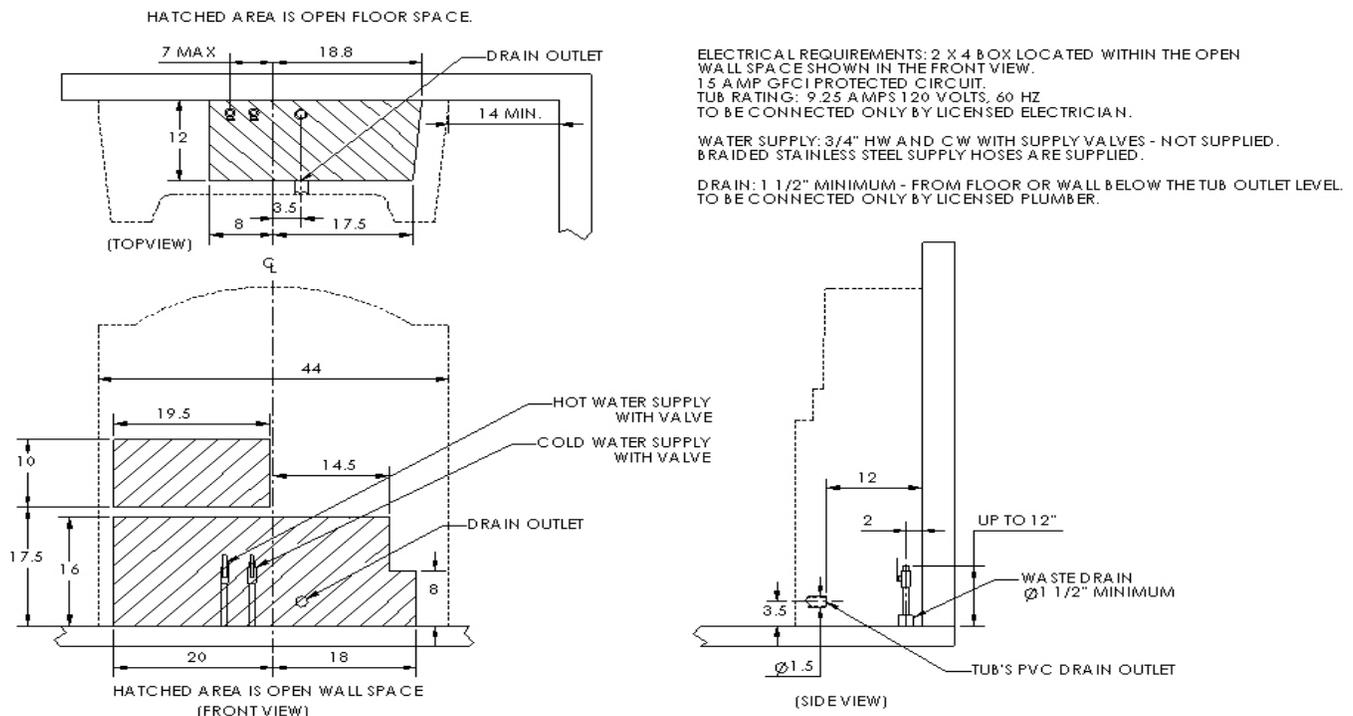


Figure 4  
Suggested Rough-ins

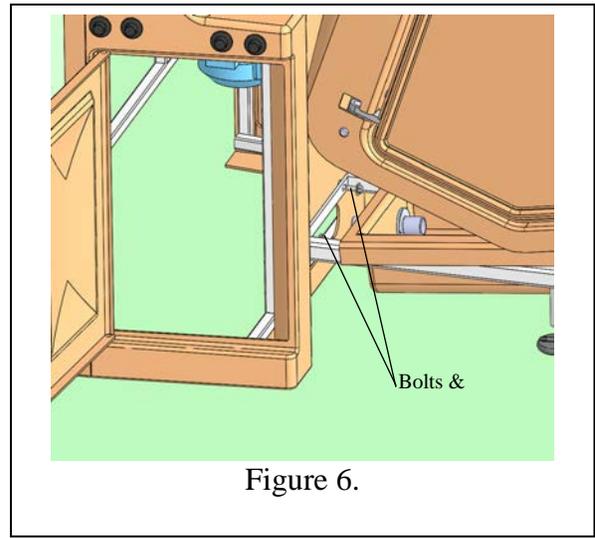
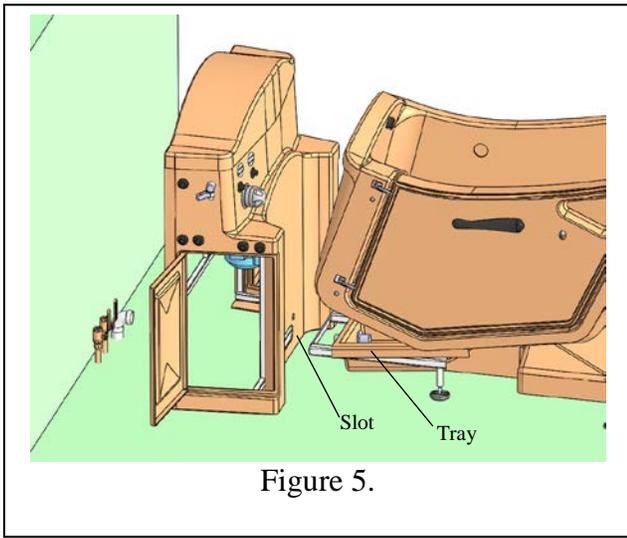
## Electrical requirements:

The Cascade Comfort Spa (Aqua-Air) is rated 9.25 amps at 120 Volts AC.

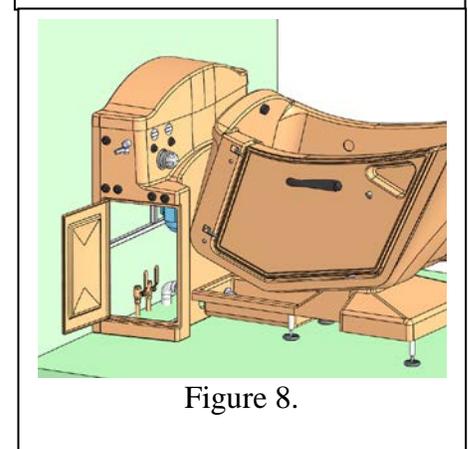
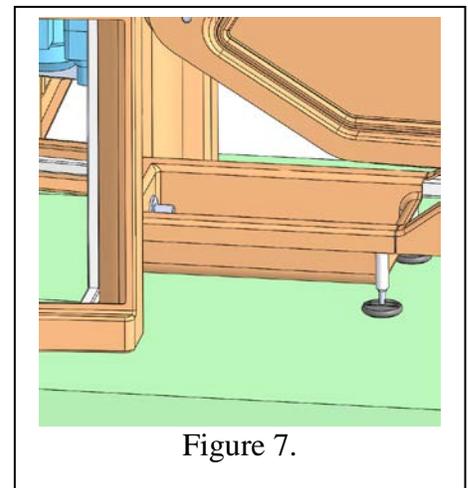
A 15 amp GFCI circuit is required.

## Hooking up the Spa

1. Position the cabinet around 18" to 24" from the wall in front of the final installation location, as shown in figure 5.
2. Position the tub around 6" to 10" from the recessed front of the cabinet, centered as shown in figure 5.



3. Place manifold assembly through the slot of the cabinet.
4. Raise the rear of the base cover tray and slide it back about 3", as shown in figure 5.
5. Re-position the tub against the cabinet.
6. Install the provided (2 ea) 3/8-16 x 1 hxhd bolts, 3/8 washers and 3/8 lock washers through the tub frame slots and into the cabinet frame. See figure 6. Note: If the tub needs to be centered better, loosen these bolts, adjust, and re-tighten.
7. Move the base cover tray forward and down onto the tub base frame, as shown in figure 7.
8. Connect the manifold assembly to the cabinet air system with the union nut.
9. Locate and run the actuator power cable from inside the cabinet through the opening in the base frame tray, and connect to the actuator cable. Lock the connection with the connector nut.
10. Run the tub fill hose (braided stainless steel hose) from the tub, through the opening in the base frame tray and into the cabinet and connect it to the like hose from the tub fill solenoid valve.
11. Locate the temperature readout probe in the cabinet, and run it through the base frame tray opening and route it up to the temperature probe fitting, which is just above the drain fittings at the front of the tub. Place the probe through the hex nut part of the fitting until the end of the probe extends into the tub by 3/8". Tighten the hex nut enough to secure the probe in place.
12. Slide tub and cabinet back to the wall as shown in figure 8.

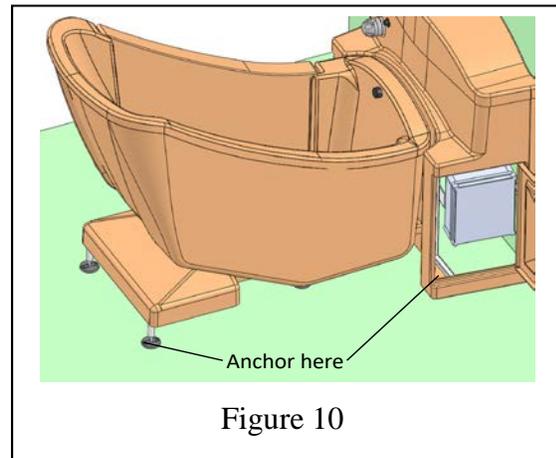
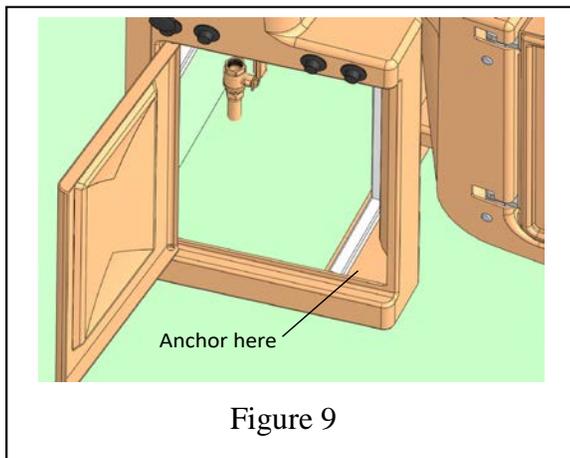


## Anchoring the Spa:

### Note:

These instructions for anchoring the spa are written with the assumption that the installation is being done on a concrete floor. If this is not the case, the spa can be anchored with simple lag screws (not provided). We recommend anchoring at minimum the locations shown below.

1. Place the spa in the final installation position.
2. Drill a 5/16" diameter x 1 1/2 inches deep hole in the floor at the anchor locations. A masonry drill will be required. In the cabinet drill through the fiberglass bottom flange at the locations shown.
3. Clean the drilled holes and clean the drilling dust with a shop vacuum.
4. Insert the provided anchors through the flange and into the anchor holes just drilled.
5. Tighten the nuts until the anchor locks the spa in position.



## Water Supply and Drain Connections:

**It is required that a licensed plumber make all plumbing connections. He can select the best method of connection and if Reduced Pressure Zone Backflow Preventers are required.**

1. Connect the ends of the connecting hoses (hot and cold water supply) to the respective ports on the tub. Ensure that there are sealing gaskets within the swivel fittings on the hoses.
2. Connect the drain (waste) of the tub to the facility's drain system.
3. The system needs to be checked for any leaks in the entire system. However, the electrical connections must be made prior to doing this. Once the electrical connections have been made, continue with step 4.
4. Open the facility's supply valves to the spa and check for leaks. If no leaks are found, check the entire plumbing system for any leaks. Look for leaks while each of the following systems are running: "Tub fill", "Shower", and "Disinfecting".

## Electrical Connections:

### **Warning:**

This unit is to be connected only by a licensed electrician. A minimum of 15 amp 120 volt service is required with ground fault circuit interrupter.

1. Remove the cover from the electrical box of the spa.
2. Run flexible conduit and the proper size wires, from the facility's junction box to the connecting point of the spa's electrical enclosure. (Located inside the large access door opening on the "right" side of the tub.)
3. Connect the ground to the "protective earth" (ground) bar.
4. Connect the neutral wire to neutral bar marked "N".
5. Use the provided female disconnect wire terminal to connect the "line" wire to the circuit breaker tab marked "L". The provided female disconnect wire terminal is shipped already connected to the circuit breaker.
6. Replace the electrical enclosure cover. With the spas circuit breaker switch in the "OFF" position, turn "ON" the circuit to the spa.

Figure 11.

7. Switch the spa's circuit breaker to the "ON" position. The temperature gauges should now display a temperature reading.

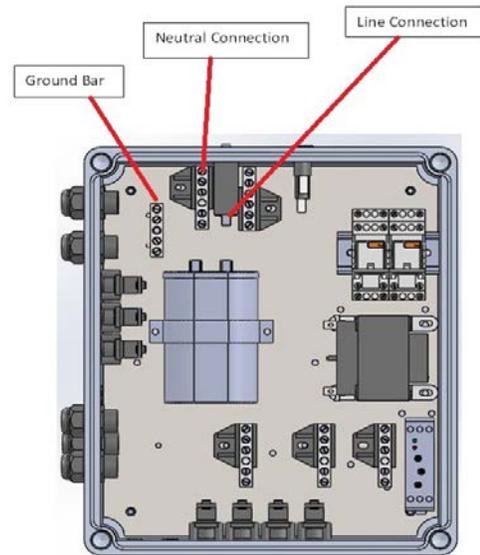


Fig. 9  
Spa Electrical Box

### **CAUTION**

When the spa circuit breaker is turned on, if there is a sound like a running motor, **immediately** switch "OFF" the circuit breaker. Find the "Aqua-Aire" button on the control panel of the spa and press it once. Switch on the spa circuit breaker. The motor should not be running now.

### **Finishing up:**

1. Once the spa has been connected to the drain, checked for leaks (and fixed if needed), and is connected to power.
2. Once all the systems are operational, use zip (wire) ties to secure the hoses, electrical cords and temperature probe wire that are routed through the base frame tray to ensure they are not pinched or rubbing excessively as the tub is tilted backward and forward.

### **Warning**

**Do not** attempt to operate this equipment before selected personnel are trained in its operation per the operation manual. The use of this equipment before inspection, adjustment, and training per the operation manual could result in injury to the operator and/or resident along with damage to the equipment.





For your nearest distributor, contact:

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