

PENNER MANUFACTURING
Cascade Contour
Bathing Systems with Aqua-Aire®
Installation / Assembly Instructions



PENNER PATIENT CARE, INC
Box 523 / 102 Grant St. Aurora, NE 68818

360745C Revision A – 05/01/2013

1-866-PENNERS 1-866-736-6377 1-800-732-0717

E-mail Address: pennersales@hamilton.net Web Site:
www.pennercareinc.com

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INTRODUCTION

These instructions are for the installation of the Cascade Contour Bathing System Cabinets and Tubs. The Reservoir is included in the cabinet of this system, which is to be pre-filled prior to placing the resident into the tub. Then the water in the reservoir can be released into the tub. This shortens the time required before the tub is full.

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 tub.

TERMINOLOGY AND SYMBOL MEANINGS



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 “Tub Controls” **figure 1** on page 4 of this manual for the location of any of the controls referenced.

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.

SYSTEM CONTROLS CASCADE CONTOUR SPA



HAND SHOWER

RESERVOIR
VALVE CLOSE

HAND SPRAYER
ON/ AUTO OFF BUTTON

BATH OIL DISPENSING PUMP PLUNGER

SHAMPOO DISPENSING PUMP

AQUA-AIRE ON/OFF

TUB FILL ON/OFF BUTTON

TUB TEMPERATURE READ-OUT

FILL-SHOWER TEMPERATURE READ-OUT

FILL-SHOWER TEMPERATURE CONTROL

RESERVOIR TEMPERATURE READ-OUT

RESERVOIR FILL ON

RESERVOIR FILL OFF

RINSE BUTTON

DISINFECT BUTTON

Figure 1

ROUGH-IN SPECIFICATIONS FOR RIGHT HAND CONTOUR SPA

- Water Supply: 3/4" HW & CW Supply lines preferred with ball valves with male 3/4 npt threads (not supplied)
(72" FLEXIBLE STAINLESS STEEL BRAIDED CONNECTING LINES SUPPLIED)
- Drain: 2" PVC pipe from floor or wall as shown below.
(P-trap not supplied)
- Tub Electrical Rating: 120 Volts 7.25 Amps
(9.5 Amps with swivel lift tub option)
Recommended Electrical Supply: 1.5 Amp with GFCI protection
(Nuisance tripping may occur if the wiring is too light for the distance between the breaker and the spa.)

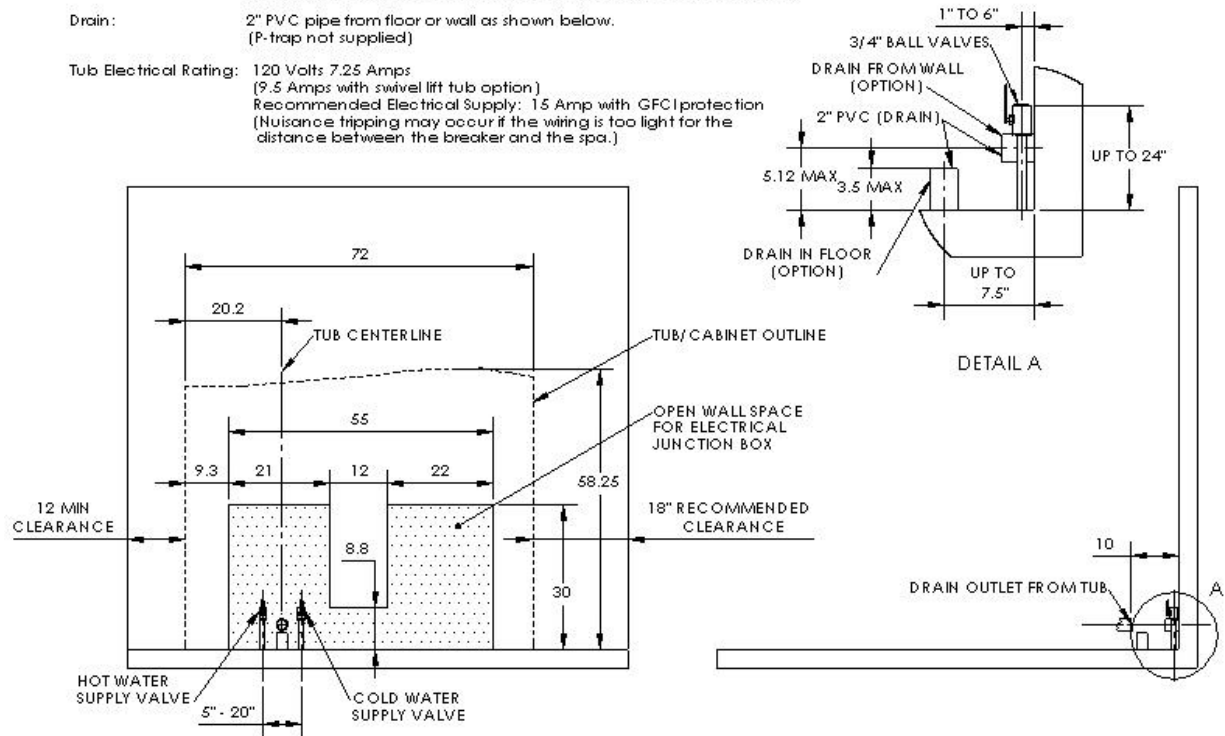


Figure 2

ROUGH-IN SPECIFICATIONS FOR LEFT HAND CONTOUR SPA

- Water Supply: 3/4" HW & CW Supply lines preferred with ball valves with male 3/4 npt threads (not supplied)
(72" FLEXIBLE STAINLESS STEEL BRAIDED CONNECTING LINES SUPPLIED)
- Drain: 2" PVC pipe from floor or wall as shown below.
(P-trap not supplied)
- Tub Electrical Rating: 120 Volts 7.25 Amps
(9.5 Amps with swivel lift tub option)
Recommended Electrical Supply: 1.5 Amp with GFCI protection
(Nuisance tripping may occur if the wiring is too light for the distance between the breaker and the spa.)

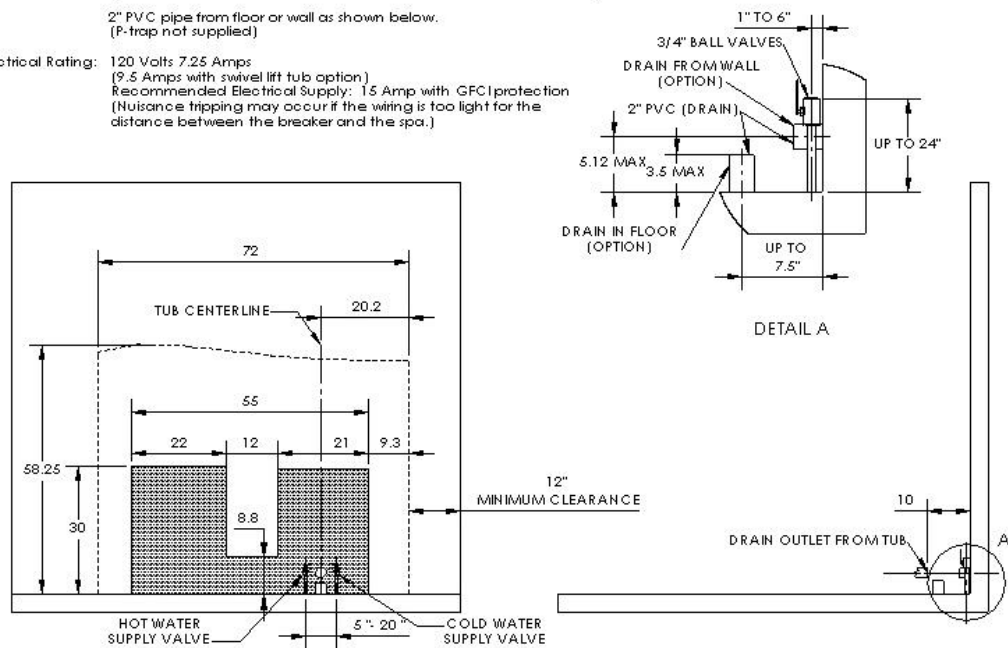


Figure 3

CASCADE CONTOUR WITH SIDE ENTRY TUB SPA

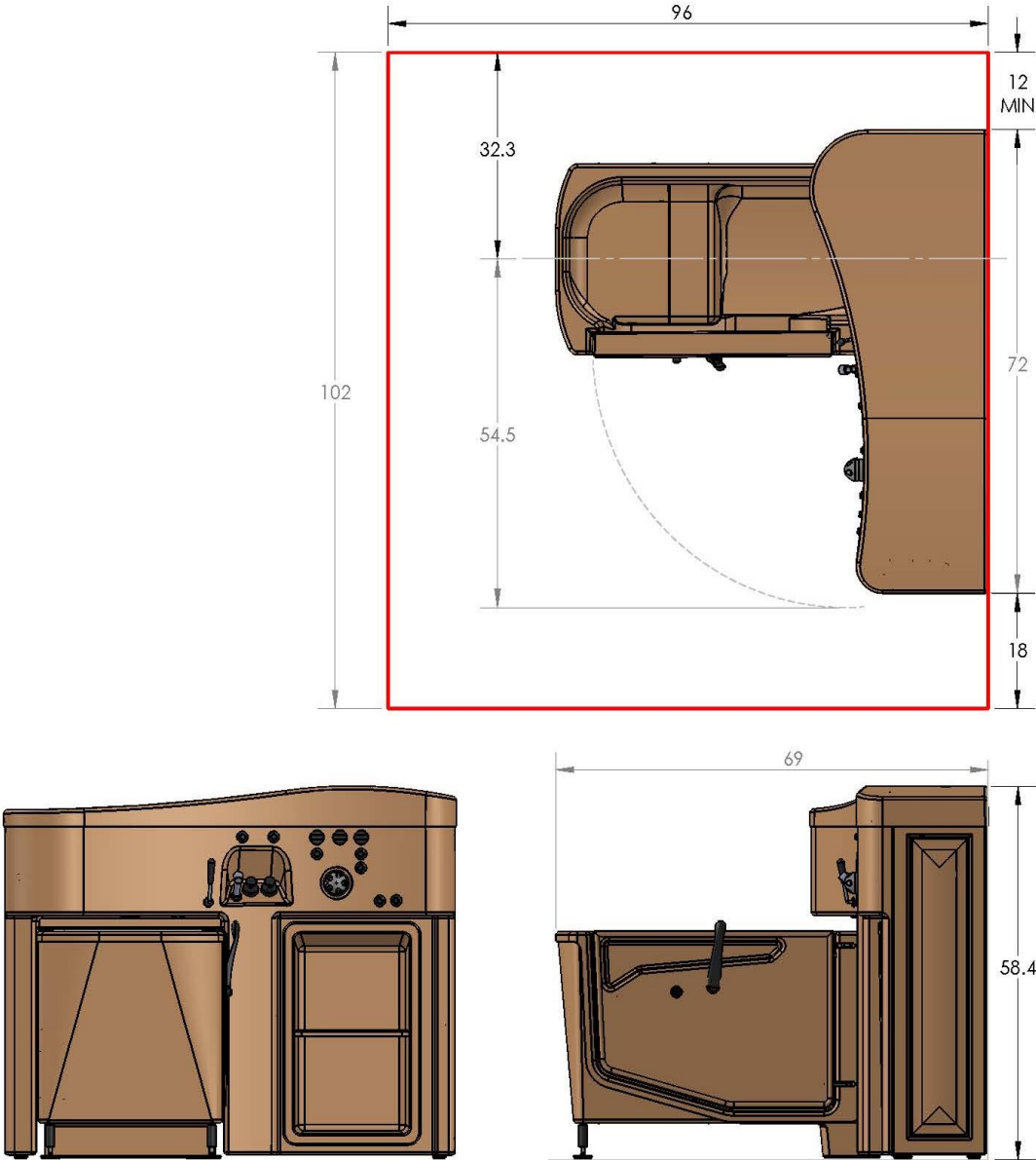


Figure 4

CASCADE CONTOUR WITH END OPENING SPA

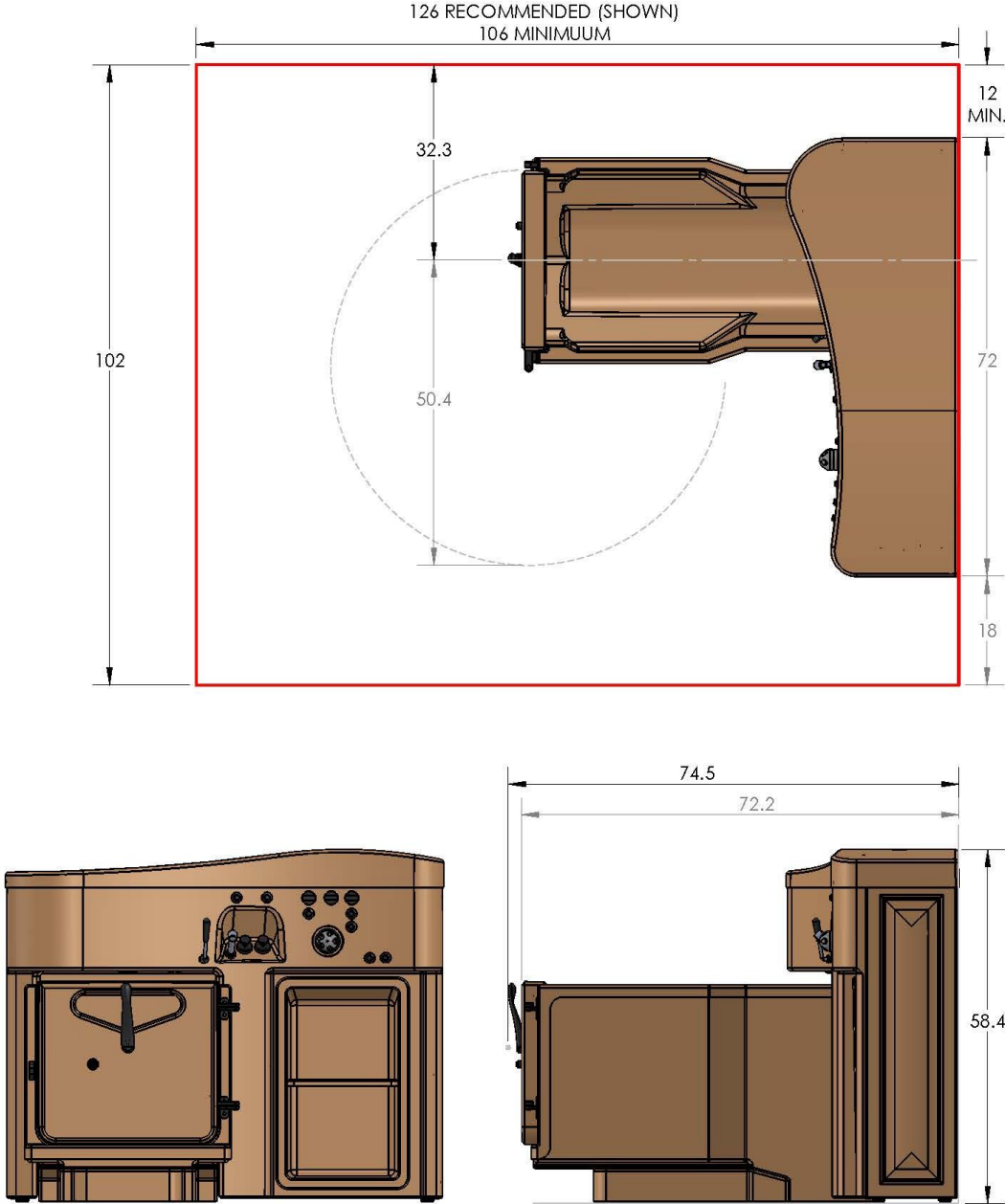


Figure 5

CASCADE CONTOUR WITH SWIVEL LIFT TUB SPA

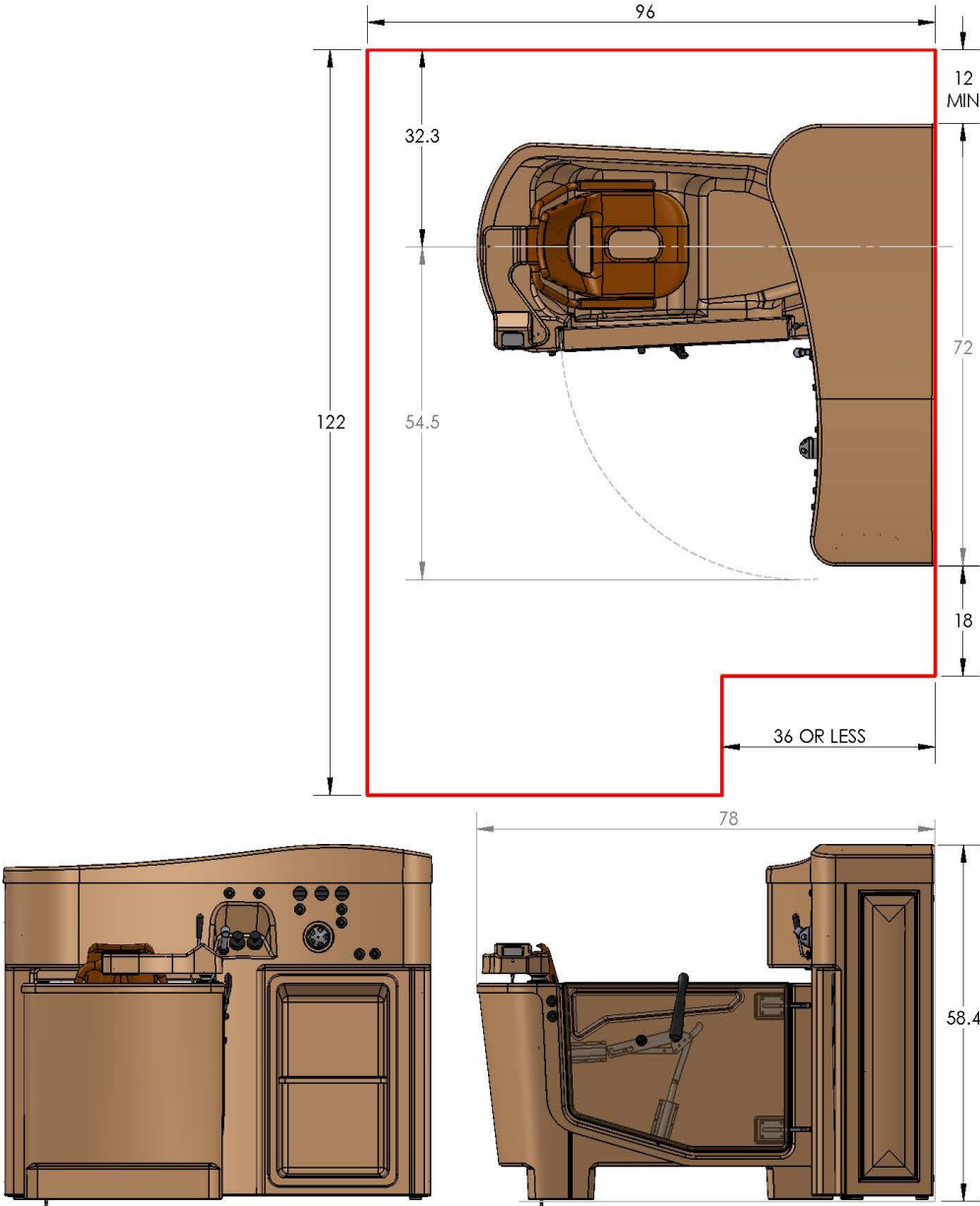


Figure 6

DRAIN REQUIREMENTS

Figure 2 shows two different options for roughing in the drain pipe – from the floor or from the wall. The tub is equipped with a 2” nominal (2 3/8” O.D.) PVC drain pipe.

NOTE: It is required that a licensed plumber make all plumbing connections. He can select the best method of connection for the particular situation and determine 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 Male threads. We recommend 3/4” ball valve with 3/4” NPT female ports. (Valves supplied by others.) See figure 2 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)

ELECTRICAL REQUIREMENTS

The Cascade Contour tub Aqua-Air is rated at 7.25 Amps (9.5 Amps for Swivel lift tubs), 120 Volts AC.

15 amp GFCI circuit is required.

UNPACKING THE CONTOUR TUB

1. Remove the Tub from the shipping crate.
2. Locate and save the installation parts.

UNPACKING THE CONTOUR CABINET

1. Remove the Cabinet from the shipping crate.
2. Locate and save the installation parts.
3. Remove the Top or lid, and the two end panels and place to the side out of the way.

ASSEMBLY AND INSTALLATION OF THE TUB AND CABINET

1. Place the cabinet approximately 2 feet from the wall directly in front of the intended final location.
2. Move the tub directly in front of the cabinet with the foot end of the tub just in front of the tub opening in the cabinet.
3. To avoid damaging the seal at the top of the tub opening of the cabinet, tip the cabinet back and then slide the tub into the opening of the cabinet. Lower the cabinet back down.
4. Connect the tub and cabinet frames together with the bolts, flat washer, and hex nuts provided. Use the flat washers under the heads of the bolts and under the hex nuts to protect the powder coated finish of the frames. Note: Some adjustment of the leveling feet of the tub may be needed to align the bolt holes in the frames.
5. Connect the air manifold of the tub to the union connection of the cabinet plumbing located inside side panel behind tub.
6. Connect the tub temperature probe to the tub at the probe fitting in the foot well of the tub just above the drain outlet. Tighten the compression nut slightly. Further tightening is needed only if the connection leaks with the tub full of water.
7. Connect the clear 3/8" I.D. drain tube from the bottom of the air system check valve to the barb fitting located on the tub drain base shoe. Secure the connection with the provided clamp.
8. Connect the overflow fill of the cabinet reservoir to the overflow of the tub and tighten.
9. With the help of 2 or 3 additional people, slide the cabinet and tub into the final location. Note: The leveling pads of the tub have non-skid pads on them. So it is not easy to slide. Picking up on the tub as it is pushed helps. The tub and cabinet are heavy and are not easy to move.
10. Anchoring the tub to the floor is not required **except** on the built in Swivel Lift tub. The Swivel Lift tub must be anchored to the floor.
11. Anchor the Cabinet to the floor with anchors provided.
12. Connect the Swivel lift power to the tub electrical kit.

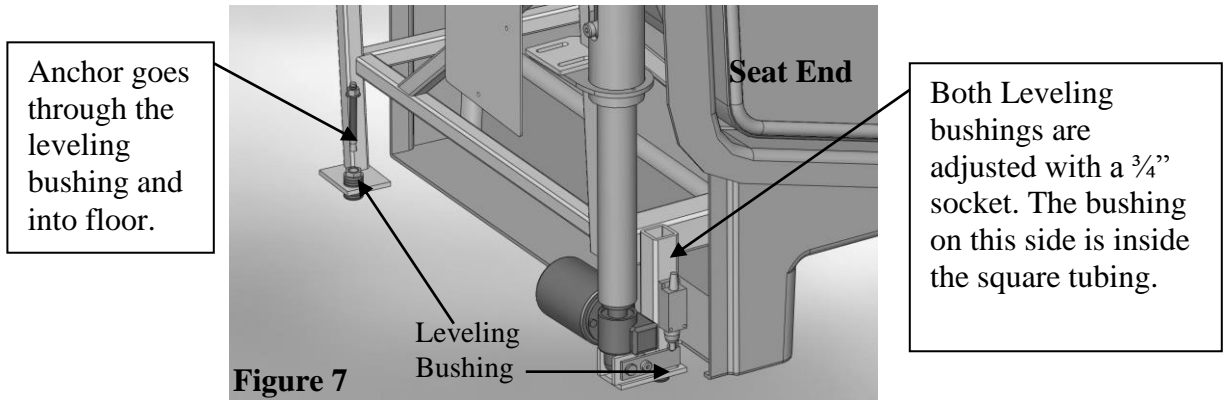
ANCHORING THE CASCADE SWIVEL LIFT TUB

Warning:

The Cascade Contour Tub with the built in Swivel lift System must to be anchored to the floor. Failure to anchor the Built in Swivel Lift Tub to the floor could result in injury to the operator or resident.

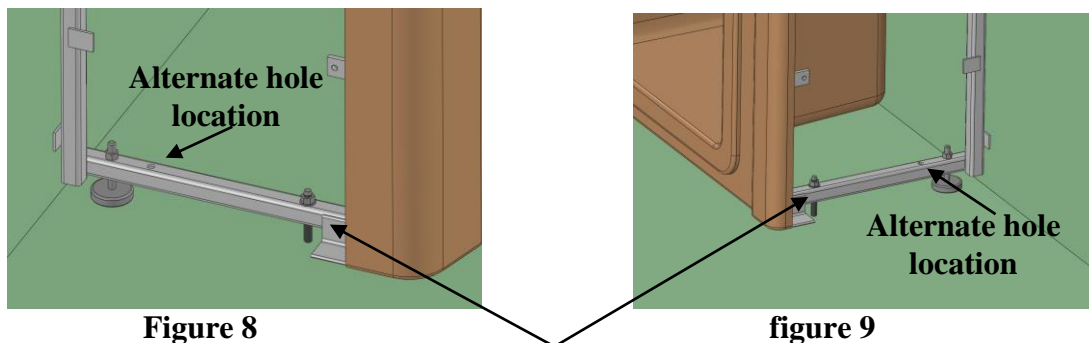
Note:

These instructions for anchoring the swivel lift tub are written with the assumption that the installation is being done on a concrete floor. If this is not the case, consult an Architect. There are three anchoring locations, two at the control end, and one at the seat end of the tub (see **Figure 7**). Anchoring the Reservoir is not necessary.



1. Remove the end panel, at the seat end of the tub, and set it to the side.
2. The tub is heavy and is not easy to move. Picking up on the tub as it is pushed helps. With the help of 2 or 3 additional people, place the tub/cabinet in the final installation position.
3. The leveling bushings are to be adjusted and can be done with a $\frac{3}{4}$ " socket as show in **Figure 7**.
4. Using a $\frac{3}{8}$ " masonry bit, drill through the one leveling bushing into the concrete floor as shown in **Figure 7**. (**2" deep**)
5. Clean the drilled holes and clean the drilling dust from the area.
6. Insert the provided $\frac{3}{8}$ " anchor through the leveling bushing and into the anchor hole just drilled.
7. Tighten the anchor nuts.
8. Re-install the end panel on the tub.

ANCHORING THE CASCADE CONTOUR CABINET



Anchor the Contour Cabinet in the two locations illustrated in figure 8 and figure 9 above.

WATER SUPPLY AND DRAIN CONNECTIONS

CAUTION

Note: Every installation is different. So the connecting fittings and the p-trap are not provided with the tub. A licensed plumber is required to make the drain connection.

1. Connect the tub drain outlet to the drain pipe.
2. The connecting fittings with the connecting hoses are provided. Do not open The Supply valves yet.

DRAIN REQUIREMENTS

The tub is equipped with a 2" nominal (2 3/8" O.D.) PVC drain pipe. As shown in **Figure 2 (RH)**, **Figure 3(LH) of page 5**, the tub's drain pipe is approximately 10" from the wall and 5 1/4" above the floor. Figure 2 & 3 shows two different options for roughing in the drain pipe – from the floor or from the wall.

It is recommended that a licensed plumber make all plumbing connections. He can select the best method of connection for the particular situation.

HOT AND COLD WATER SUPPLY REQUIREMENTS

3/4" supply lines with on/off valves with 3/4" NPT Male threads. We recommend 3/4" ball valve with 3/4" NPT female ports. (Valves supplied by others.) See **Figure 2 (RH)**, **Figure 3(LH) of page 5**, 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)

ELECTRICAL CONNECTIONS

Warning!

This unit is to be connected only by a licensed electrician. A minimum of 20 amp 120 volt service is required with ground fault circuit interrupter.

1. Remove the cabinet's electrical box cover and locate the connecting points within the box. See **figure 10**.
2. Ensure that the supply power has been turned OFF.
3. Connect the power cord from the tub lift electrical box to the cabinet electrical box (**figure 10**). Black to line bar, white to neutral bar, green to ground bar.
4. Run flex conduit and power wires from the wall mounted supply box to the connection hole of the electrical box located on the upper left side of the box.

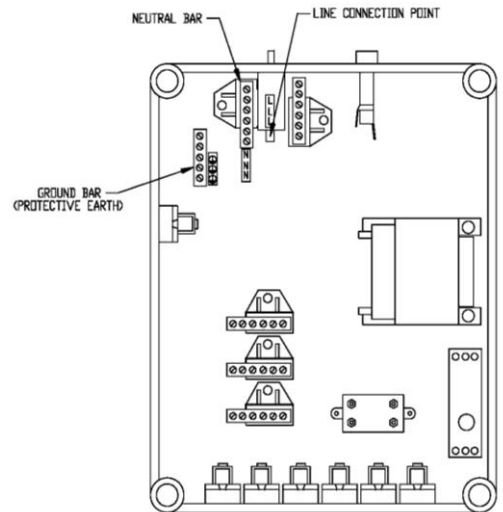


Fig. 10 Tub Electrical Box

5. Connect the line, neutral and ground wires to the appropriate connections within the electrical box. A female wire terminal is provided for connection of the line wire to the tub circuit breaker.
6. Replace the electrical box cover and turn off the tub's circuit breaker on the top of the box.
7. Turn ON the supply power.
8. Switch ON the tub circuit breaker. All the temperature gages located inside the upper right hand door of the cabinet should now be lit up.
9. The tub is now ready to be checked for leaks. Turn off the tub circuit breaker.

SYSTEM CHECKS

1. Ensure that the tub water door is closed.
2. Turn ON water supply valves and check for any leaks. Tighten any leaky connections as needed.
3. Switch ON the tub circuit breaker and switch off any water valves or the blower if they are ON by way of the control panel buttons.
4. On each of the water systems (Tub Fill, Reservoir Fill, Disinfect Jets, Rinse Jets, and Hand shower), and checking only one system at a time, turn ON the valve by pressing the appropriate control panel button. Look for any leaks and tighten connections as needed. Note: The hand shower needs to be directed into the tub before starting it.
5. Place the drain plug in the drain and partially fill the tub. Remove the drain plug and check the drain system for any leaks and repair if needed.
6. Close the reservoir (release) valve by moving the "Reservoir Valve" lever to the closed position. Place the drain plug in the tub drain and fill the reservoir by pressing the "Reservoir Fill ON" button. Watch the "Fill - Shower" temperature read out and adjust the mixing valve to get the desired temperature. The "Reservoir Temperature" read-out indicates the temperature of the water already in the reservoir.
7. Wait until the reservoir stops filling. Should it stop filling before the water level in the reservoir reaches the float switch, then the timer, within the electrical box needs to be adjusted to a longer time. The float switch is the primary system to turn OFF the reservoir fill. The timer is a back up system in the event that the float switch fails.
8. Check for any leaks.
9. Release the reservoir water into the tub by moving the "Reservoir Valve" lever to the "Open" position. Check for any leaks in that plumbing.
10. With the tub nearly full, check that there is no leaking around the temperature probe of the tub. Tighten the compression fitting if needed.
11. Start the Aqua-Aire blower by pressing the button. Note: The blower takes a few seconds to start and winds up to full speed somewhat slowly. This is normal. The bubbles should start flowing from each of the jets in the bottom of the tub shortly there after.
12. Stop the blower and drain the tub.
13. Install the end panels and the cabinet top.

FINISHING UP

1. Once the tub/reservoir has been connected to the drain, checked for leaks (and fixed if needed), and is connected to power, the access doors can be installed.
2. Train all operators of this equipment before using it per the Safe Operation & Daily Maintenance Instruction Manual.



Warning!

Because this equipment requires a trained operator, and to assure that these benefits are realized, **do not operate your PMI equipment until an authorized member of your staff has reviewed the Safe Operation & Daily Maintenance Instruction Manual and spoken to your PMI Representative. Failure acquire this training could** result in damage to the equipment or injury to the operator and resident. If needed, Your PMI Products Representative will assist you with questions you may have in the operation of this equipment.

For your nearest distributor, contact:

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