# TRANQUILITY SERIES

## ADVANCED HEATING SYSTEM

## INSTALLATION MANUAL

**MODELS COVERED:**

| MODEL NUMBER | VOLTS | WATTAGE | AIR SWITCH | TIMER | AMP |
|---|---|---|---|---|---|
| **TR2000-65-QE** | 120 | 650 | N | N | 5.4A |
| **TR2001-65-QE** | 120 | 650 | Y | N | 5.4A |
| **TR2002-65-QE** | 120 | 650 | N | Y | 5.4A |
| **TR2000-10-QE** | 120 | 1000 | N | N | 8.3A |
| **TR2001-10-QE** | 120 | 1000 | Y | N | 8.3A |
| **TR2002-10-QE** | 120 | 1000 | N | Y | 8.3A |
| **TR2000-15-QE** | 120 | 1500 | N | N | 13.5A |
| **TR2001-15-QE** | 120 | 1500 | Y | N | 13.5A |
| **TR2002-15-QE** | 120 | 1500 | N | Y | 13.5A |
| **TR2200-20-QE** | 240 | 2000 | N | N | 8.3A |
| **TR2201-20-QE** | 240 | 2000 | Y | N | 8.3A |
| **TR2202-20-QE** | 240 | 2000 | N | Y | 8.3A |

***NOTE: MAY BE FOLLOWED BY "-QC" OR "-QE"***

**CARTON CONTENTS:**

**A** - One (1) Tranquility Heater System
**B** - One (1) 1.5" X 1.0" tailpiece
**C** - One (1) 1" Union Assy
**D** - One (1) heater gasket

***Other size tailpieces available**


*REVERSIBLE FEATURE!*

Fig. 1

# CONTENTS

# IMPORTANT SAFETY INSTRUCTIONS

**INSTRUCTIONS PERTAINING TO RISK OF FIRE, ELECTRICAL SHOCK OR INJURY TO PERSON**

**WARNING -** When using this unit, basic precautions should always be followed, including the following:

## 1. READ AND FOLLOW ALL INSTRUCTIONS

2. The heater must be connected only to a supply circuit that is protected by a ground-fault-circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interupt power. Push the reset button. The Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the heater without the test button being pushed, a ground current is flowing, indicating the possibility of an electrical shock. Do not use this hydromassage bathtub. Disconnect this hydromassage bathtub and have the problem corrected by a qualified service representative before using.

## 3. NEVER OPERATE WITHOUT WATER - PUMP/HEATER DAMAGE WILL OCCUR

## 4. SAVE THESE INSTRUCTIONS

Prolonged immersion in hot water may induce hyperthermia. Causes, symptoms, and effects of hyperthermia:

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F. The symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness, and fainting. The effects of hyperthermia include:

A) Failure to perceive heat,

B) Failure to recognize the need to exit the bathtub,

C) Unawareness of impending hazard,

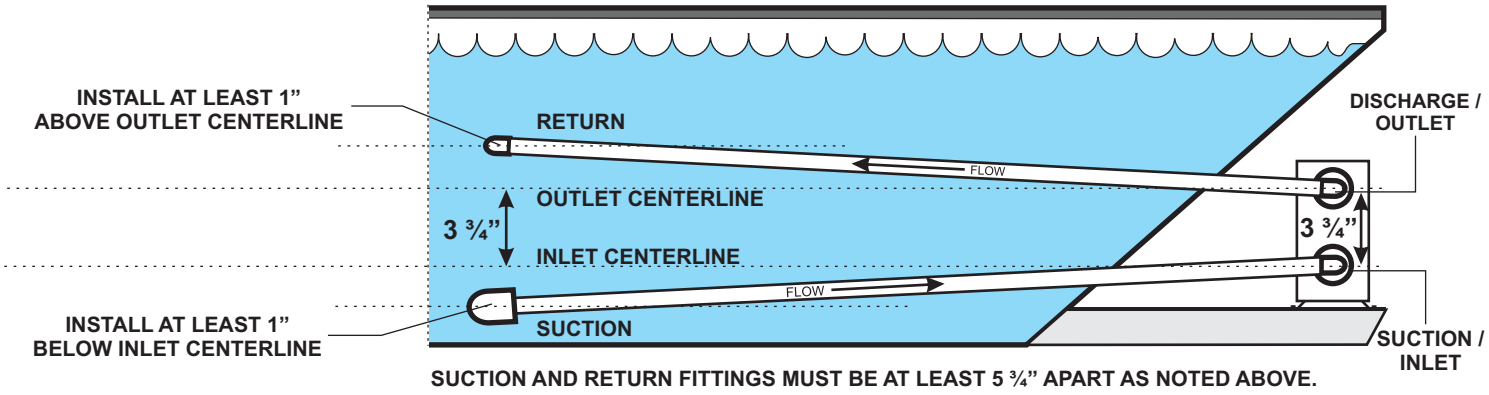
D) Fetal damage in pregnant women,

E) Physical inability to exit the bathtub, and

F) Unconsciousness resulting in the danger of drowning.

WARNING - The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

# SYSTEM INSTALLATION




## Installation Considerations

### Plumbing Considerations

1. The Tranquility system should only be plumbed using Schedule 40, rigid PVC pipe to assure proper plumbing drainage and pump priming.
2. Due to the low flow of the Tranquility pump(6-10 gpm), it is recommended to not use plumbing larger than 1" PVC.
3. Return plumbing can utilize 1-3 return fittings depending upon individual fitting flow capabilities.
4. The Tranquility unit requires a minimum flow rate of 5 gpm and a return line back-pressure of 1.9 psi to operate properly.

### Mounting/Location

Mount the Tranquility System to a firm mounting platform.

**Note:** The Tranquility System can be installed on either right or left hand tub installations by simply rotating the unit (there is no front or back).

### Suction/Inlet Plumbing

Install the suction fitting (not included) at least 1" below the centerline of the Tranquility System suction/inlet port to allow for proper drainage.

A 1" union disconnect is installed/glued on the suction/inlet port of the Tranquility System to allow for easy removal should service ever be required. Disassemble the fitting prior to gluing to assure that excess glue does not enter the fitting.

### Discharge/Outlet Plumbing

Install the return fitting/s (not included) at least 1" above the centerline of the Tranquility System discharge/outlet port to allow for proper drainage and priming.

A 1" x 1 ½" union disconnect is installed on the discharge/outlet port of the Tranquility System to allow for easy removal should service ever be required. Disassemble the fitting prior to gluing to assure that excess glue does not enter the fitting.

# WATER LEVEL OPTION INSTALLATION

## DESCRIPTION

The Water Level Sensor is a control that senses water level through the bathtub wall. It will prevent pump damage from “dry firing” (running without water) and jet over spray by allowing the pump to be operated only with the proper tub water level. An indicator light is provided on the front face, and will be on when the tub water is at or above the actuation level of the Water Level Sensor.

## INSTALLATION SPECIFICATIONS:

The Water Level Sensor is designed for acrylic, fiberglass, and cultured marble bathtubs, with a wall thickness of ¼ to 1 inch. It easily plugs into the three-pin connector provided on the Tranquility controls (see FIG 4).

## WATER LEVEL SENSOR TUB INSTALLATION:

Locate a suitable mounting position on a flat sidewall of the tub, approximately 1 inch above the highest return fitting and below the overflow, in an accessible area if possible (see FIG 3). Use double sided tape to hold sensor in place. Place a bead of sealant (e.g., silicone sealant) or resin around the perimeter of the box at the contact point to the tub. DO NOT mount unit near plumbing, studs, conduit, etc. as these may interfere with unit sensitivity.

## ADJUSTMENT:

Due to thickness and varying types of tub wall materials, it may be necessary to adjust the Water Level Sensor to greater or lower sensitivity. If the unit does not activate when the water level is at the actuation point (the waterline on the label), or if actuation occurs before the water level has reached this point (see FIG 1), adjust the Water Level Sensor as follows:

Bring the tub water level up to the Water Level Sensor actuation point (the waterline on the label). Remove the hole plug on front face of the Water Level Sensor. Use a small screwdriver and gently rotate the adjustment screw until the indicator light is on, then back the screw down slightly until the light goes out, and very slowly turn until the the light is on again. (see FIG 2 for adjustment hole plug and screw location). Drain the tub water level below the Water Level Sensor-the indicator light should go out. Next fill the tub up to the actuation level and check that the indicator light has come on. Repeat above adjustments until the unit activates and de-activates at the desired level.

## TYPICAL INSTALLATION:

FIG. 1

EXAMPLES OF WATER LEVEL SENSORS IN NEED OF ADJUSTMENT.

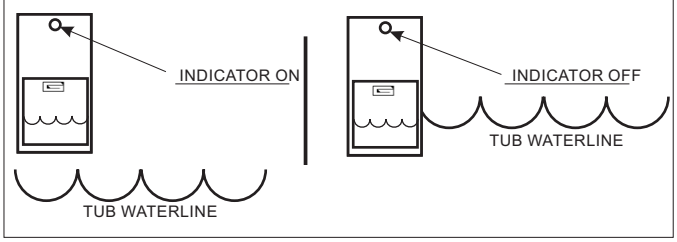



FIG. 2

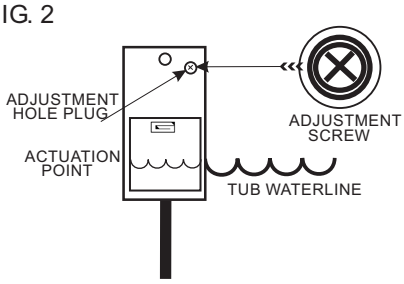



FIG. 3

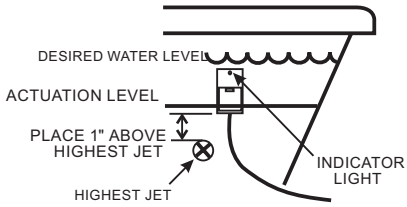



FIG. 4

LOCATE THE WATER LEVEL RECEPTACLE ON THE BOX.

# ELECTRICAL REQUIREMENTS

**NOTE: Read both the sections below to determine the electrical requirements of your system before proceeding.**

## DEDICATED CIRCUIT INSTALLATION

A qualified and licensed electrician in accordance with the National Electric Code (NEC) Article 680, Canadian Electric Code, and with any local codes must accomplish the electrical installation.

All connections must be made according to the electrical installation label on the outside of the control box. Follow the instructions from the label if they are different than the instructions in this manual. If your electrician is not absolutely sure how to connect your system correctly, call your local dealer. Any mistake may be costly and void your equipment warranty.

The GFCI (Ground Fault Circuit Interrupter) is a mandatory electrical safety device required for all hydromassage bathtubs as specified in the National Electrical Code Article 680-70.

Your bath equipment may require a DEDICATED CIRCUIT. This means no other appliances or lights can be on this circuit. Refer to equipment data label for power supply requirements of your bath heater.

Use copper conductors ONLY. The ground must be sized following the National Electric Code, Table 250-122.

For Power conductor size, refer to the National Electric Code Table 310-16.

## SYSTEM POWER REQUIREMENTS

| MODELS | MAX AMPS | CIRCUIT BREAKER | GFCI REQUIRED | BONDING REQUIRED |
|---|---|---|---|---|
| **TR200X-65** | **6** | **15** | **YES** | **YES** |
| **TR200X-10** | **9** | **15** | **YES** | **YES** |
| **TR200X-15** | **13** | **15** | **YES** | **YES** |
| **TR220X-20*** | **9** | **15** | **YES** | **YES** |

*** = 240V SYSTEM**

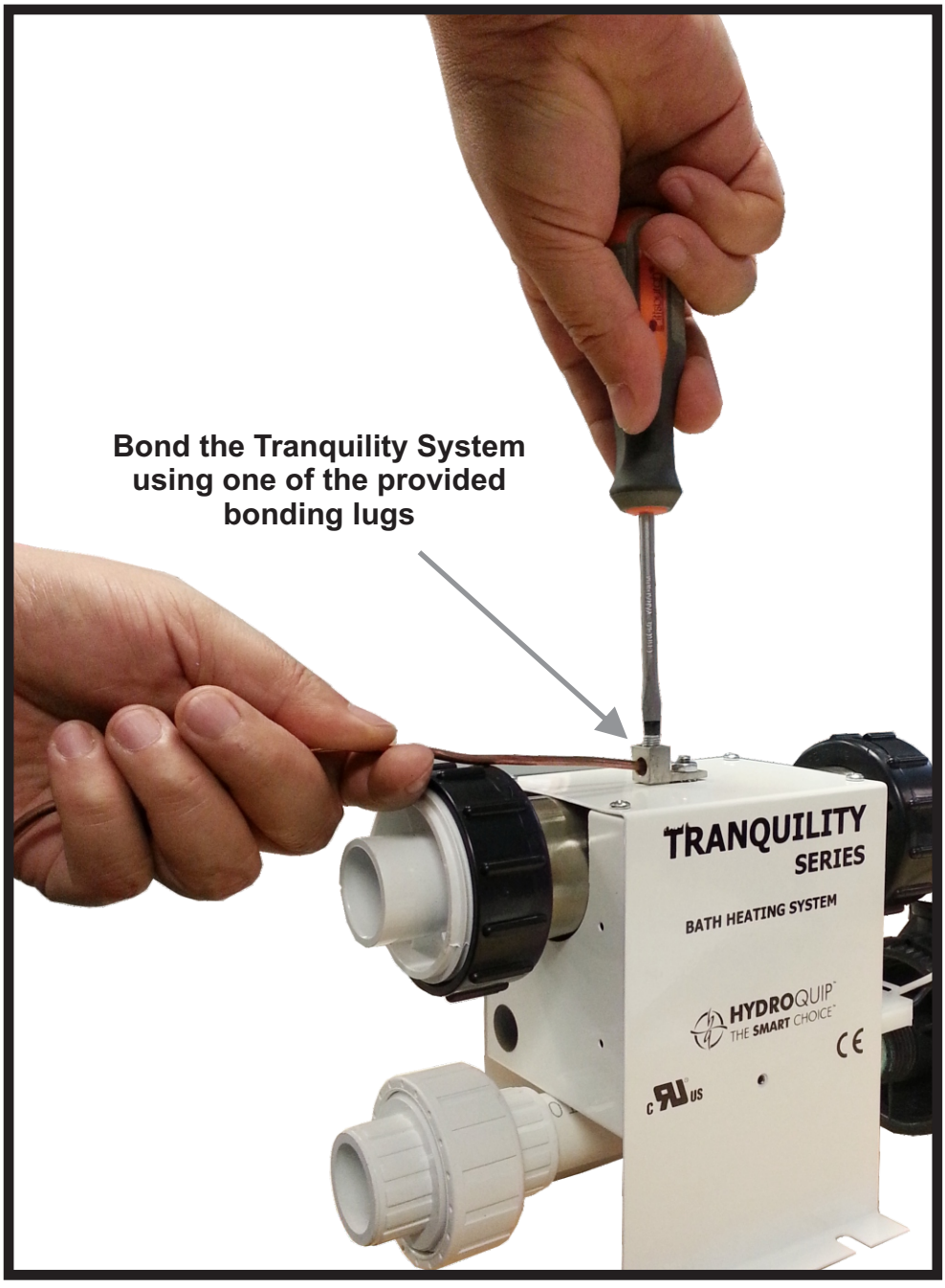
## CIRCUIT INSTALLATION

- **Refer to chart below**

| If your system amps are... | | You can use a circuit this size... |
|---|---|---|
| **6A** | **THEN** | **15A/120V** |
| **9A** | **THEN** | **15A/120V or 240V** |
| **13A** | **THEN** | **15A/120V** |

# BONDING

Prior to testing your installation for leaks, you **must** properly bond the TRANQUILITY SYSTEM to ground. All systems come equipped with a bonding lug specifically for this purpose. Refer to bathtub manufacturers instructions to locate the bonding system. All electrical wiring and bonding must be done as specified in Article 680, National Electric Code and your local Building Code.



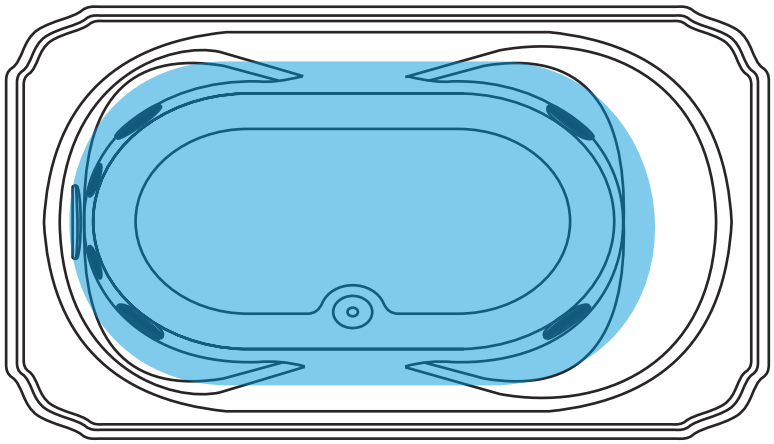
# TEST YOUR INSTALLATION

After allowing the glue joints to dry for 24-hours, a **STATIC** leak test must be performed. You can accomplish this by **SLOWLY** filling the tub with **COLD WATER** until the water level at least 2" above the highest jet.

**IMPROPER INSTALLATION OF THE TRANQUILITY HEATER CAN RESULT IN WATER LEAKING FROM THE PLUMBING SYSTEM! WATER DAMAGE CAN OCCUR TO SPACES BELOW OR ADJACENT TO THE BATHTUB.**

Do not leave the tub unattended during the testing process and only fill the tub with enough water to exceed the level of the return fitting.

**FILL THE TUB SLOWLY SO FILLING CAN BE STOPPED IF A LEAK IS DETECTED. DRAIN THE TUB IMMEDIATELY IF A LEAK IS DETECTED AND CORRECT THE PROBLEM BEFORE RETESTING.**



If no leaks were detected, a **PRESSURE** leak test must be performed. Perform this final **REQUIRED** leak test by activating the Tranquility System. Allow the system to run for 15-20 minutes minimum. The cold water will allow you to verify that the "Heater On" indicator is illuminated on your Tranquility heater. If the light does not illuminate or if you encounter any other problems, refer to the Troubleshooting section of these instructions.

**IF NO LEAKS WERE DETECTED AND YOU HAVE VERIFIED THAT YOUR TRANQUILITY HEATER IS FUNCTIONING PROPERLY, CONGRATULATIONS, THE INSTALLATION OF YOUR TRANQUILITY HEATER IS COMPLETE. YOU CAN NOW RELAX AND ENJOY THE COMFORT YOU WILL EXPERIENCE IN YOUR HEATED BATHTUB.**

# TROUBLESHOOTING

**NO SERVICEABLE PARTS - DO NOT OPEN**

**NOTHING WORKS!**

Main Breaker is OFF - Set to On
GFCI Tripped - Press Reset
Power Cord not plugged in - Plug in power cord (if plugged in, is plug lit?)
System Air Switch (if equipped) not activated - Press air button to activate

**HEATER "ON" LIGHT DOES NOT TURN ON**

Plumbing Issue - See Page #3
Pump not plugged into control - Plug in
Pump Bad - Replace pump
Overheat Protection Switch Tripped - Remove Power from system. Switch will automatically reset once safe temperature is achieved.
Power cord not plugged in - Plug in power cord (if plugged in, is plug lit?)
GFCI Tripped - Press Reset
No Power to Heater - Reset breaker at service panel
Water Temperature Too High

**HEATER "ON" LIGHT WILL NOT TURN OFF**

Water Level Too Deep for Pressure Switch Setting - Lower Water Level
Pressure Switch Defective - Replace Heater
Heater Wiring Error - Replace Heater

**OVERHEAT PROTECTION SWITCH TRIPPED**

Water Blockage - Correct/Remove Blockage
Low Water Flow - Correct Problem
High-Limit Will Not Reset - Replace Heater

**WATER LEAKS FROM CONTROL BOX**

Defective Component - Replace Heater

**GFCI TRIPS OCCASIONALLY**

Lightning or Electrical Storm, Power Surge, Extremely Humid Conditions or Radio Frequency Interference - Reset GFCI Note: Assure Heater is Properly Grounded and Bonded
Inspect Heater for Leaks or Moisture - Correct or Replace as Required

**GFCI TRIPS REPEATEDLY**

Defective Component - Replace System

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