

COPPER AND CAST STONE FIRE & WATER BOWLS

INSTALLATION, MAINTENANCE & WARRANTY GUIDELINES

12VAC Systems



FOR YOUR SAFETY – READ BEFORE OPERATING

THIS PRODUCT MUST BE INSTALLED AND SERVICED BY AUTHORIZED PERSONNEL, INCLUDING LICENSED CONTRACTORS. FAILURE TO FOLLOW THESE INSTRUCTIONS EXACTLY MAY RESULT IN FIRE, EXPLOSION, PERSONAL INJURY, DEATH, DAMAGED EQUIPMENT, AND PROPERTY DAMAGE.

WHAT TO DO IF YOU SMELL GAS

- Do not store or use any gasoline or other flammable vapors and/or liquids in the vicinity of this or any other burner assembly.
- If you smell gas, immediately shut off gas to the burner assembly.
- Extinguish any open flame near the burner assembly.
- Do not attempt to manually light any automated electronic burner assembly.
- If odor continues, move away from the area and immediately call your gas supplier.

This manual should remain with the homeowner or parties responsible for the operation of the unit.

FOR USE WITH NATURAL OR LIQUID PROPANE GAS ONLY DO NOT USE SOLID FUELS

WARNING AND SAFETY INFORMATION

CODE REQUIREMENTS

Installation must be in accordance with all local codes and/or the latest edition of the National Fuel Gas Code, ANSI Z223.1 and the latest edition of the National Electrical Code, NFPA 70 (US).

Installation in Canada must be in accordance with the latest CAN/CGA-B149.1 or.2 and CSA C22.1 Canadian Electric Code, part 1.

Installations must be electrically grounded and bonded in accordance with local codes, or, in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70 (US) or in Canada in accordance with the Canadian Electric Code, part 1 as applicable.



SAFETY CODE APPROVAL CERTIFICATION

LOW VOLTAGE LANDSCAPE AND SWIMMING POOL/SPA AUTOMATIC IGNITION GAS BURNER ASSEMBLY AND TRANSFORMER PANEL is approved for use near water's edge. The Pebble Technology Fire + Water Elements fire burner assembly is CSA/AGA approved. It is tested and approved to comply with the nationally recognized specification, ANSI Z21.42-2013 Gas-Fired Illuminating Appliances, and to be in compliance with the 2017 NEC code.

12V AUTOMATIC IGNITION GAS BURNER ASSEMBLY: CSA 2.41 2012

TRANSFORMER PANEL, Input 120VAC - Output 12VAC: CSA LR42620

Tested to: National Fuel Gas Code ANSI Z223.1, ANSI Z21.97, ANSI Z21.42

OPERATING CONDITIONS

In order to ensure successful and safe operation, the unit should be inspected before each use and at least annually by a qualified service person. More frequent cleaning may be required as necessary depending on environmental conditions. It is imperative that the transformer panel, pilot hood, burner assembly and circulating air passageways of the unit be kept clean and free of debris at all times.

This system is not designed to operate in wind conditions exceeding 10MPH.

DO NOT use this unit if any part of the burner assembly has been under water or is soaked heavily. Immediately call a licensed contractor to inspect the unit and to replace any part of the burner assembly that has been under water.

Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the burner assembly.

WARNING:

HOT! DO NOT TOUCH. FIRE RISK/ BURN RISK. SEVERE BURNS MAY RESULT. CLOTHING IGNITION MAY RESULT. KEEP CHILDREN AWAY. CAREFULLY SUPERVISE CHILDREN. CLOTHING OR OTHER FLAMMABLE MATERIALS SHOULD NOT BE HUNG FROM THE UNIT NOR PLACED ON OR NEAR THE UNIT.

WARRANTY.....	5
SYSTEM REQUIREMENTS.....	6
Water Requirements	6
Gas Requirements	6
Electrical Requirements	6
Installation Requirements	7
 SYSTEM COMPONENTS.....	 7
Planter Only Bowls	7
Planter & Water Bowls	8
Water Only Bowls	8
Fire Only Bowls	9
Fire & Water Bowls.....	9
 INSTALLATION GUIDE.....	 11
Bowl Mounting	11
Plumbing.....	13
Transformer Panel Wiring	14
Bowl Connections	15
 OPERATION & SAFETY.....	 19
Initial Start-Up Procedures	19
Basic System Operation.....	20
Trouble Shooting	21
 GENERAL CARE & MAINTENANCE.....	 23
Planter Bowls	23
Water Bowls	23
Fire Bowls	23
Cleaning and Care for Hammered Copper Bowls	23
Cleaning, Care and Sealing for Cast Stone Bowls.....	24
Repair for Cast Stone Bowls	24
Cleaning and Care for Polished Copper Finishes	25
Seasonal Care	26

**READ THIS INSTRUCTION GUIDE IN ITS ENTIRETY PRIOR TO
COMMENCING INSTALLATION**

WARRANTY

Fire + Water Elements – Product Warranty

1-Year Limited Residential Warranty

Pebble Technology International® (PTI) will attempt to repair any unit, when used as intended, which has proven to be defective in workmanship or material, preventing the proper operation of the unit when reported within one year of the date of purchase. This warranty does not cover any costs related to removal or replacement of the unit. For warranty consideration, contact the original dealer and provide proof of purchase, date of purchase, and the date of installation. The dealer will contact PTI to obtain instructions regarding the warranty request. If the unit is deemed defective and cannot be repaired, PTI will replace it with a new or refurbished unit. This warranty applies only to residential use of the unit. The customer is responsible for shipping costs, which may be reimbursed by PTI should the unit be deemed defective.

IF NECESSARY, THE UNIT MUST BE REMOVED AND REPLACED ONLY BY A LICENSED PROFESSIONAL IN THE PLUMBING AND/OR ELECTRICAL TRADE. DO NOT ATTEMPT TO REMOVE AND REPLACE THE UNIT YOURSELF.

PTI will not be responsible for any asserted defect, which has resulted from accidents, over-heating, freeze/thaw, misuse, abuse, repair or alteration. Under no circumstances, will PTI be liable for incidental or consequential damage resulting from defective units, improper installation, or improper removal. PTI is not responsible for any injury or mishap related to misuse, abuse or lack of judgment in choosing fire display locations.

Cementitious Based Components: Non-structural hairline cracks are considered an inherent part of any cementitious product, not a manufacturing defect. Hairline cracks can occur at any time during the life of the product due to temperature changes and expansion and contraction of concrete. Hairline cracks are defined as cracks that do not threaten the integrity or stability of the product, nor prevent the continued and normal use of the product. These hairline cracks are not covered by the warranty.

Calcium buildup and efflorescence are naturally occurring byproducts that are deposited on the surface of cementitious products. These can usually be cleaned and are typically harmless to the cementitious structure, only presenting a cosmetic issue. The effects of these surface deposits are not covered by the warranty.

Metallic Based Components: Improper chemical balance of pool water may cause corrosive conditions to metal water features. PTI will not warrant products exposed to such conditions. Additionally, finishes offered such as powder coating are affected by factors like UV exposure and pool water chemistry and are therefore not encompassed by this warranty. Some components (such as brass fittings) may need to be replaced over time, as they will degrade when in contact with a dissimilar metal (copper). This circumstance is naturally occurring and is therefore not covered by the warranty. These components are designed to be replaced and this design feature helps to preserve the life and integrity of the copper.

Terms and Conditions: This warranty does not apply to any damages caused by: (1) any failure resulting from unreasonable use or abuse, (2) unsatisfactory material choices by you or the installer, and (3) accidental damage or element damage such as water or rain. PTI is not responsible for the application of local codes and/or if the unit is not approved for installation. Please check with your local building department or governing agencies for prior approval before purchasing. PTI is not responsible for the actions and omissions, including negligence, of the installer. Installation workmanship and any materials used in installation are not covered under this warranty. Variations in handmade products are normal and not to be considered a warrantable issue. PTI will not warranty fire products in which a burner unit purchased from another supplier has caused damage.

This warranty, as most currently published at <https://www.pebbletec.com/customer-support/warranty-information/> is your sole warranty and sets forth your exclusive remedy, with respect to a defective fire and water feature. All other warranties, expressed or implied, whether of merchantability, fitness for purpose or otherwise, are expressly disclaimed by PTI. PTI reserves the right to make changes to the warranty program.

Contact Us

Pebble Technology International
15540 N. 77th Street
Scottsdale, AZ 85260
480.948.5058
warranty@pebbletec.com

SYSTEM REQUIREMENTS

WATER REQUIREMENTS:

Water flow per bowl: 10 – 15 GPM

Water supply line should be 3/4" Schedule 40 PVC to each bowl. A larger diameter main supply line may be needed for multiple bowl applications.

GAS REQUIREMENTS:

The required gas pressure and flow should be measured at each bowl location.

Natural Gas: 7" WC (0.25 psi) max. pressure

Propane (LP): 11" WC (0.4 psi) max. pressure

Gas supply line should be 1/2" Schedule 40 black steel gas pipe to each bowl. A larger diameter main supply line may be needed for multiple bowl applications. *NOTE: Check with your gas supplier to verify gas flow and pressure available at the location of your installation. In many cases, utility companies will install larger meters at no charge to accommodate larger flows.*

Gas Flow Requirements	
Number of bowls	BTU/per hour
1 bowl system	60,000 – 80,000 BTU/HR
2 bowl system	120,000 – 160,000 BTU/HR
3 bowl system	180,000 – 240,000 BTU/HR
4 bowl system	240,000 – 320,000 BTU/HR

ELECTRICAL REQUIREMENTS:

Transformer panel input voltage: 120VAC / 60Hz

Transformer output voltage: 12VAC / 60Hz nominal

Transformer output power: 300 watts AC

Automated burner assembly input voltage: 12VAC / 60Hz nominal

Use 14 gauge wire to connect transformer panel to bowls

INSTALLATION REQUIREMENTS:

- **Installation must be performed by a licensed contractor.** All aspects of installation must be in accordance with all local codes and/or the latest edition of the National Fuel Gas Code, ANSI Z223.1 and the latest edition of the National Electrical Code, NFPA 70 (US).
- Adhere to recommended CSA/AGA clearances: sides 4ft and overhead 6ft.
- Do not install near any combustibles (side or overhead) such as wood structures, fuels, clothing, fabrics or dry vegetation.
- Install bowls well clear of pedestrian traffic.
- The water, gas and electrical plumbing must be installed underground.
- Install 90° elbow at flexible gas hose gas connection at each bowl for proper installation. *CAUTION:* When connecting the flexible gas hose to the burner assembly, do not make tight radius bends or kinks in the hose.
- Low voltage wiring (14ga 12VAC) should be installed underground between the transformer panel and each bowl. Wire per PTI wiring diagram. 120VAC source into transformer panel can come from any 120VAC source, including pool controller or home system.
- On commercial installations, it is required to install a keyed valve switch and kill switch located in close proximity, in visible sight, of the unit. *The keyed valve and kill switches are not supplied by PTI.*
- With all gas connections tight, position burner assembly so that it sits level in the bowl. Rotate as required so that the gas hose is not kinked.

SYSTEM COMPONENTS

Components required for installation. Check to make sure all components are included in the correct quantities. This installation guide covers all bowl shapes, all water features, and all automated and manual burner assemblies.

PLANTER ONLY BOWLS

COMPONENTS INCLUDED WITH PURCHASE

Hammered Copper

- Mounting bracket with required hardware including rubber washers
- Planter only bowl
- 4" ABS cleanout cap

Cast Stone

- Planter only bowl
- 4" ABS cleanout cap

COMPONENTS NOT INCLUDED WITH PURCHASE

- (4) Stainless steel surface anchor hardware including washers
 - Use 1/4" or 5/16" for Hammered Copper bowls
 - Use 5/16" or 1/2" for Cast Stone bowls
- Fine wire mesh or window screen is recommended to cover drain tube
- Outdoor silicone sealant
- PVC cement glue & primer

PLANTER & WATER BOWLS

COMPONENTS INCLUDED WITH PURCHASE

Hammered Copper

- Mounting bracket with required hardware including rubber washers
- 1/2" NPT plumbing kit
- Planter & Water bowl
- 4" ABS cleanout cap

Cast Stone

- 3/4" NPT plumbing kit
- Planter & Water bowl
- 4" ABS cleanout cap

COMPONENTS NOT INCLUDED WITH PURCHASE REQUIRED FOR INSTALLATION (4) Stainless steel surface anchor hardware including washers

- Use 1/4" or 5/16" for Hammered Copper bowls
- Use 5/16" or 1/2" for Cast Stone bowls
- Fine wire mesh or window screen is recommended to cover drain tube
- PTFE Teflon thread seal tape
- Outdoor silicone sealant
- PVC cement glue & primer
- COPPER BOWL ONLY: Water line connection 1/2" x 3/4" Schedule 40 PVC reducing male adapter – MIPT x socket
- CAST STONE BOWL ONLY:
 - 3/4" PVC 90° elbow
 - Water line connection 3/4" x 3/4" Schedule 40 PVC female adapter – FIPT x socket

WATER ONLY BOWLS

COMPONENTS INCLUDED WITH PURCHASE

Hammered Copper

- Mounting bracket with required hardware including rubber washers
- Copper water only plumbing parts
- Water only bowl

Cast Stone

- Cast Stone water only plumbing parts
- Water only bowl

COMPONENTS NOT INCLUDED WITH PURCHASE REQUIRED FOR INSTALLATION

- (4) Stainless steel surface anchor hardware including washers
 - Use 1/4" or 5/16" for Hammered Copper bowls
 - Use 5/16" or 1/2" for Cast Stone bowls
- PTFE Teflon thread seal tape
- PVC cement glue & primer
- COPPER BOWL ONLY: Water line connection 1/2" x 3/4" Schedule 40 PVC reducing male adapter – MIPT x socket
- CAST STONE BOWL ONLY:
 - 3/4" PVC 90° elbow
 - Water line connection 3/4" x 3/4" Schedule 40 PVC female adapter – FIPT x socket

FIRE ONLY BOWLS

COMPONENTS INCLUDED WITH PURCHASE

Hammered Copper

- Mounting bracket with required hardware including rubber washers
- Automated or manual burner assembly
- Support plate
- Flexible gas hose
- Propane adder (propane versions only)
- 12VAC transformer panel
- Fire only bowl

Cast Stone

- Automated or manual burner assembly
- Support plate
- Flexible gas hose
- Propane adder (propane versions only)
- 12VAC transformer panel
- Fire only bowl

COMPONENTS NOT INCLUDED WITH PURCHASE REQUIRED FOR INSTALLATION

- (4) Stainless steel surface anchor hardware including washers
 - Use 1/4" or 5/16" for Hammered Copper bowls
 - Use 5/16" or 1/2" for Cast Stone bowls
- Gas line connection 1/2" NPT black steel 90° elbow fitting
- MANUAL ONLY: 1/2" MPT x 3/8" FPT adapter, hex black steel
- AUTOMATED ONLY:
 - 1/2" MPT x 3/8" MPT adapter, hex black steel
 - Water tight wire connectors
- PVC cement glue & primer
- Nipple black steel 3/8" x close
- Gas key switch (valve)

FIRE & WATER BOWLS

COMPONENTS INCLUDED WITH PURCHASE

Hammered Copper

- Mounting bracket with required hardware including rubber washers
- Automated or manual burner assembly
- Support plate
- Flexible gas hose
- Propane adder (propane versions only)
- 12VAC transformer panel
- 1/2" NPT plumbing kit
- Fire & Water bowl

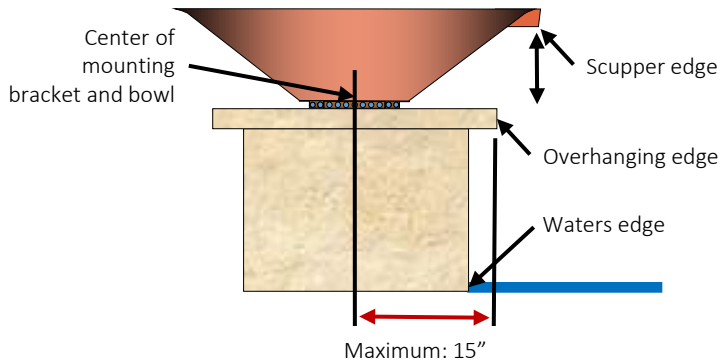
Cast Stone

- Automated or manual burner assembly
- Support plate
- Flexible gas hose
- Propane adder (propane versions only)
- 12VAC transformer panel
- 3/4" NPT plumbing kit
- Fire & Water bowl

COMPONENTS NOT INCLUDED WITH PURCHASE REQUIRED FOR INSTALLATION

- (4) Stainless steel surface anchor hardware including washers
 - Use 1/4" or 5/16" for Copper Bowls
 - Use 5/16" or 1/2" for Cast Stone Bowls
- Gas line connection 1/2" black steel 90° elbow fitting
- Nipple black steel 3/8" x close
- Gas key switch (valve)
- COPPER BOWL ONLY: Water line connection 1/2" x 3/4" Schedule 40 PVC reducing male adapter – MIPT x socket
- CAST STONE BOWL ONLY:
 - 3/4" PVC 90° elbow
 - Water line connection 3/4" x 3/4" Schedule 40 PVC female adapter – FIPT x socket
- MANUAL ONLY: 1/2" MPT x 3/8" FPT adaptor, hex black steel
- AUTOMATED ONLY:
 - 1/2" MPT x 3/8" MPT adaptor, hex black steel
 - Water tight wire connectors
- PVC cement glue & primer
- PTFE Teflon thread seal tape

HAMMERED COPPER BOWLS

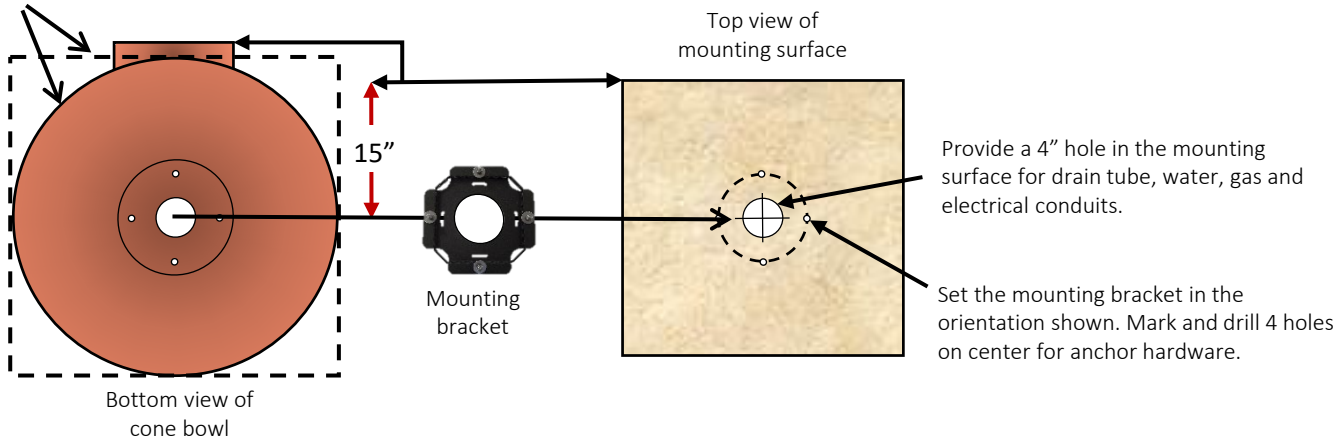


MOUNTING BRACKET FOR COPPER BOWLS ONLY

WARNING: Product warranty is voided if mounting bracket is not installed properly. It is critical that the mounting bracket be installed and kept clear of debris to provide an opening below the bowl and for ventilation to the burner assembly.

CRITICAL DIMENSION: Face the scupper towards the body of water. Set and mark the center location of the mounting bracket and bowl with a maximum of 15" from the furthest face overhanging the waters edge.

31" diameter
or 31" square

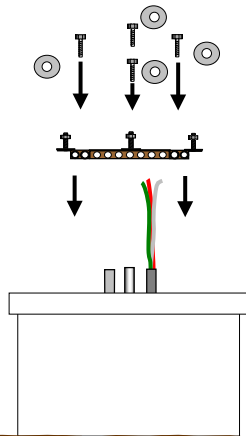


Top view of mounting
bracket

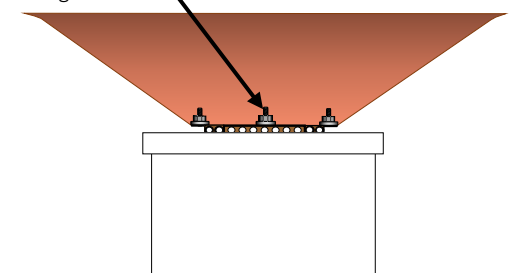


1. Level mounting bracket on mounting surface. Shims may be used to level. Plastic, brass or stainless steel shims are recommended.

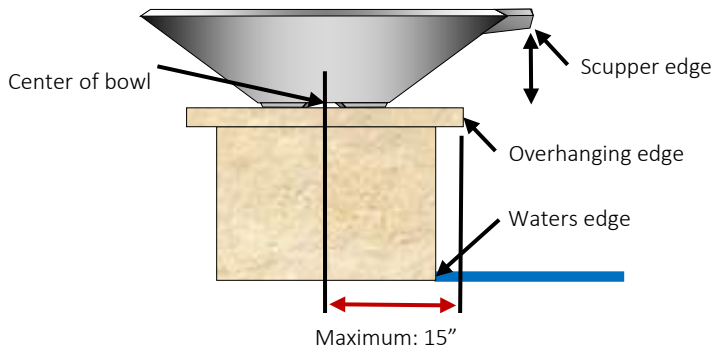
2. Secure mounting bracket to mounting surface with 4 stainless steel anchors and washers. Use 1/4" or 5/16" (not supplied).



3. Set and level bowl. Place rubber washers first, then place stainless steel flat washers over the studs. Thread and tighten the four 1/4"-20 nuts to seal and secure the bowl to the mounting bracket.



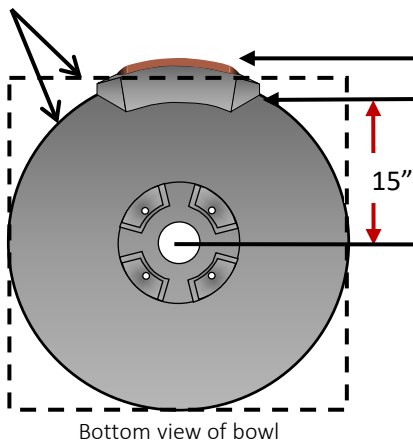
CAST STONE BOWLS



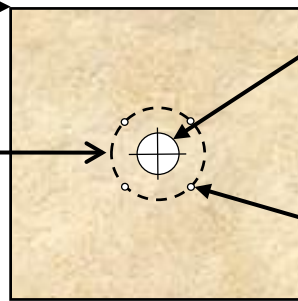
WARNING: It is critical that the openings at the bowl feet be kept clear of debris to provide an opening below the bowl for ventilation to the burner assembly.

CRITICAL DIMENSION: Face the scupper towards the body of water. Set and mark the center location of the bowl a maximum of 15" from the furthest face overhanging the waters edge.

33" diameter
or 33" square



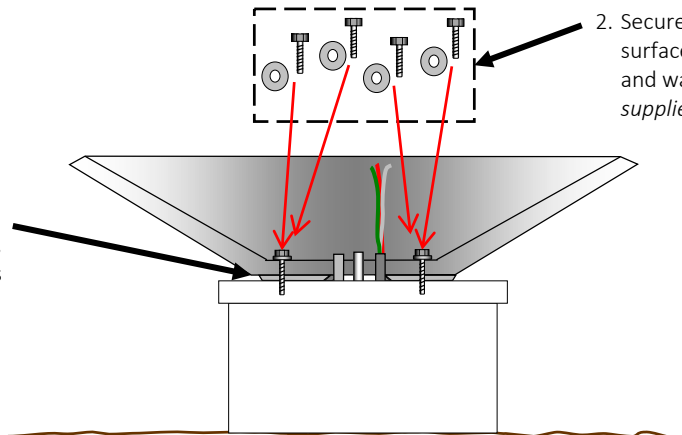
Top view of
mounting surface



Provide a 4" hole in the mounting surface for drain tube, water, gas and electrical conduits.

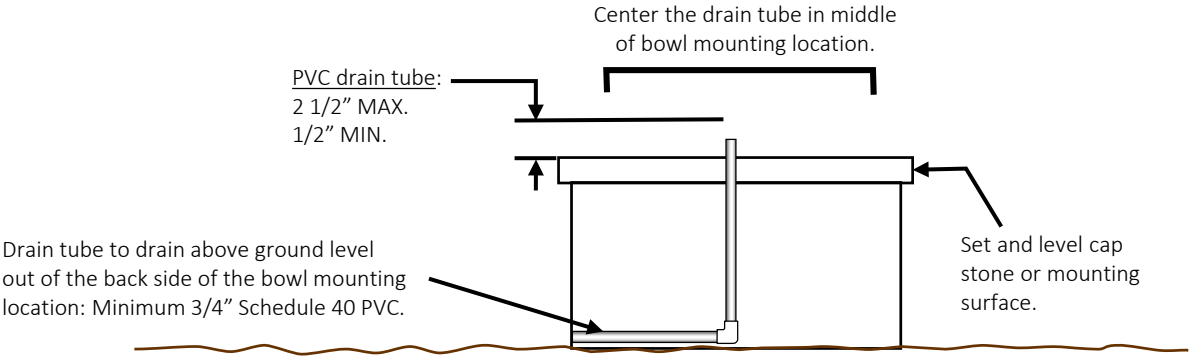
Set the bowl with the scupper feature in the orientation shown. Mark and drill 4 holes on center for anchor hardware.

1. Set and level bowl on mounting surface. Shims may be used to level. Plastic, brass or stainless steel shims are recommended.



2. Secure bowl directly to the mounting surface using 4 stainless steel anchors and washers. Use 5/16" or 1/2" (not supplied).

DRAINAGE



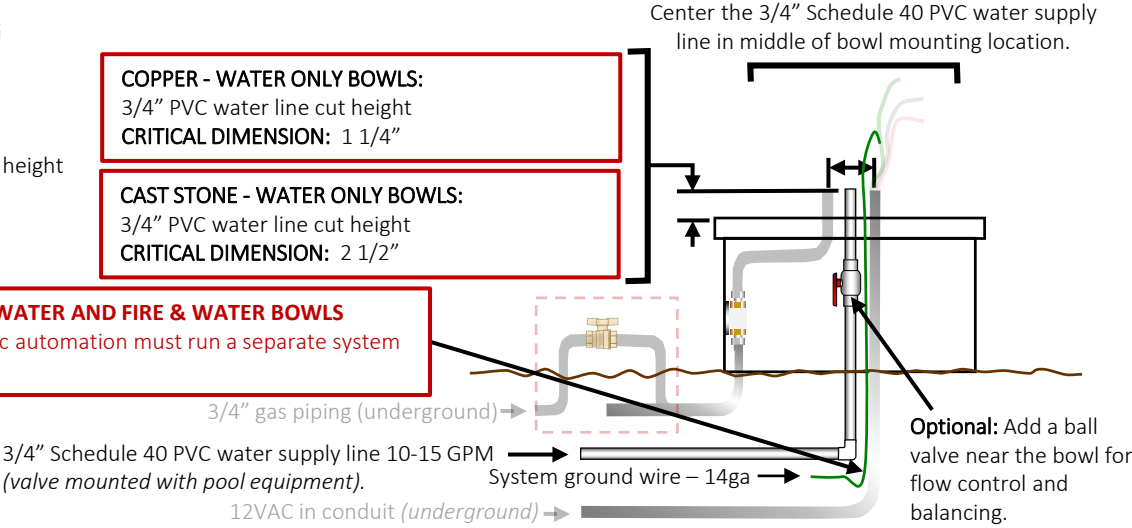
WATER PLUMBING

Planter & Water and Fire & Water bowls:
3/4" PVC water line cut height
3 1/2" MAX.
2 1/2" MIN.

COPPER - WATER ONLY BOWLS:
3/4" PVC water line cut height
CRITICAL DIMENSION: 1 1/4"

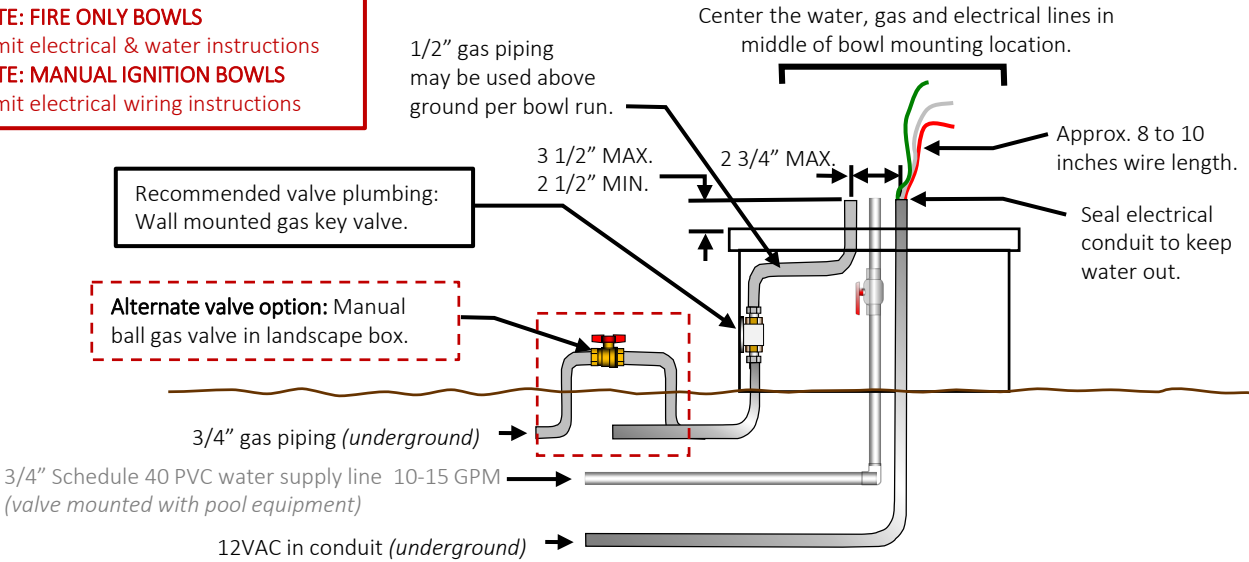
CAST STONE - WATER ONLY BOWLS:
3/4" PVC water line cut height
CRITICAL DIMENSION: 2 1/2"

***NOTE: FOR PLANTER & WATER AND FIRE & WATER BOWLS**
Systems without electronic automation must run a separate system ground wire – 14ga.

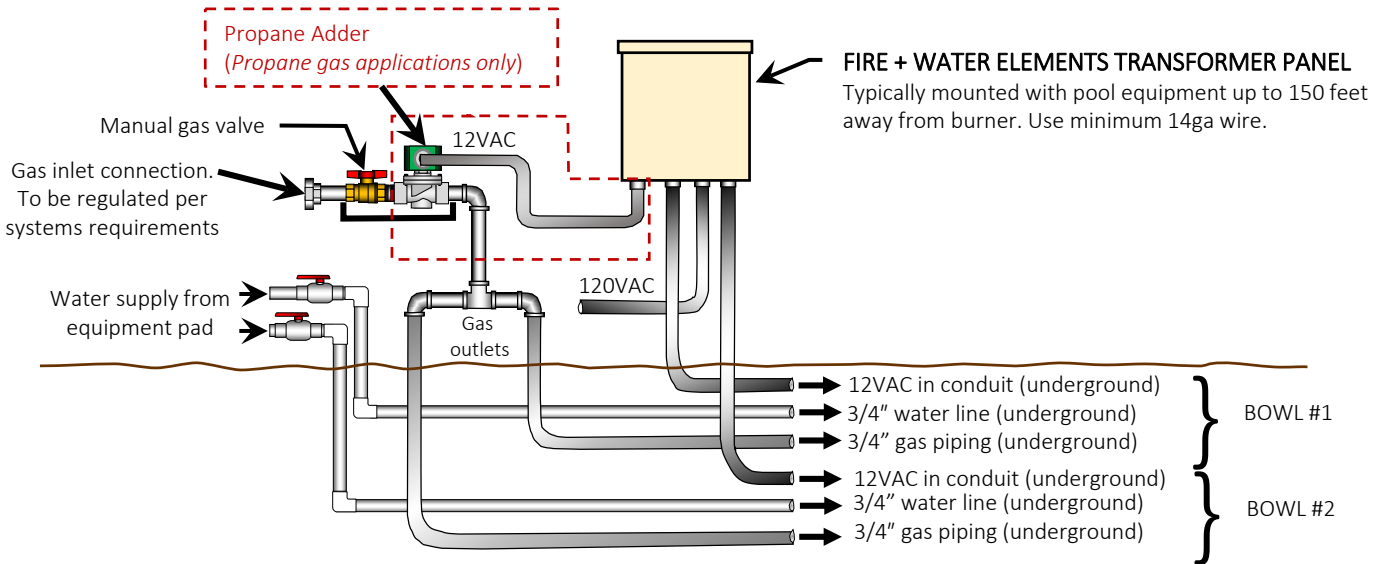


GAS, ELECTRICAL & PLUMBING

***NOTE: FIRE ONLY BOWLS**
Omit electrical & water instructions
***NOTE: MANUAL IGNITION BOWLS**
Omit electrical wiring instructions



EQUIPMENT PAD – WATER, GAS & ELECTRICAL



TRANSFORMER PANEL WIRING

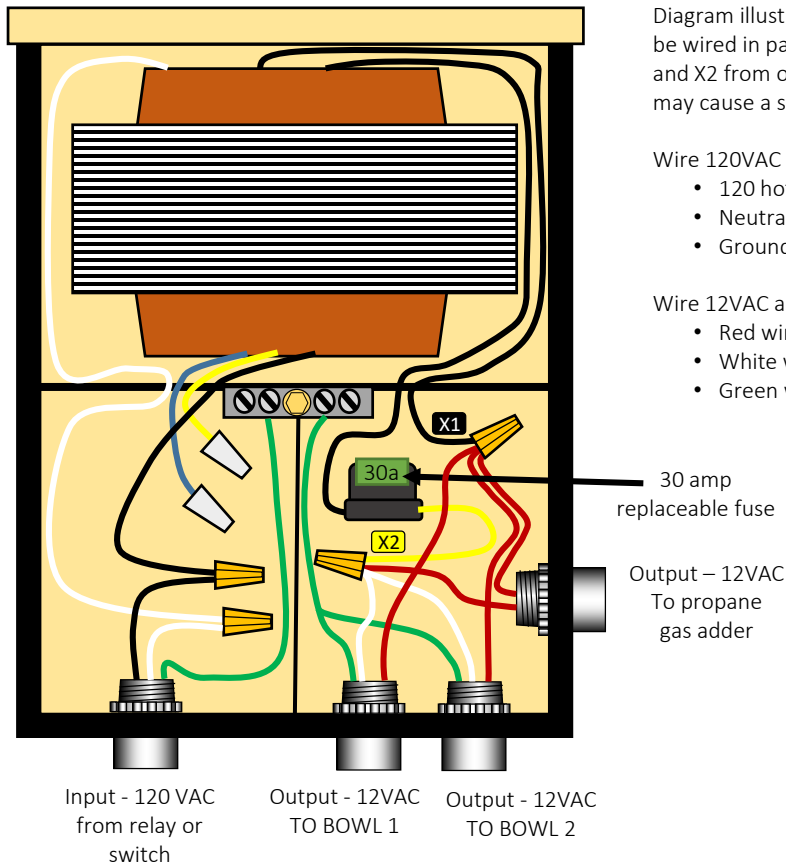
Diagram illustrates wiring to two bowls in parallel. Bowls can be wired in parallel or in a series (*daisy chain*) running both X1 and X2 from one bowl to the next. Series (*daisy chain*) wiring may cause a slight delay in bowl ignition down the line.

Wire 120VAC as follows:

- 120 hot (black wire) to L
- Neutral (white wire) to N
- Ground (green wire) to G

Wire 12VAC as follows:

- Red wire to Black X1
- White wire to Yellow X2
- Green wire to G (Ground)



PROPANE ADDER WIRING

(Propane gas applications only)

Diagram illustrates wiring a propane adder into the system. Since propane gas is heavier than air and thus can pool on the ground waiting for an ignition source, a propane adder is installed to shut off the gas supply should a gas leak occur.

Wire propane adder as follows:

- Red wires to Black X1 and to Yellow X2

COPPER PLANTER ONLY/ PLANTER & WATER BOWLS

***NOTE: PLANTER ONLY BOWLS** Omit electrical ground wire and water connections.

Wrap all threads with Teflon seal tape

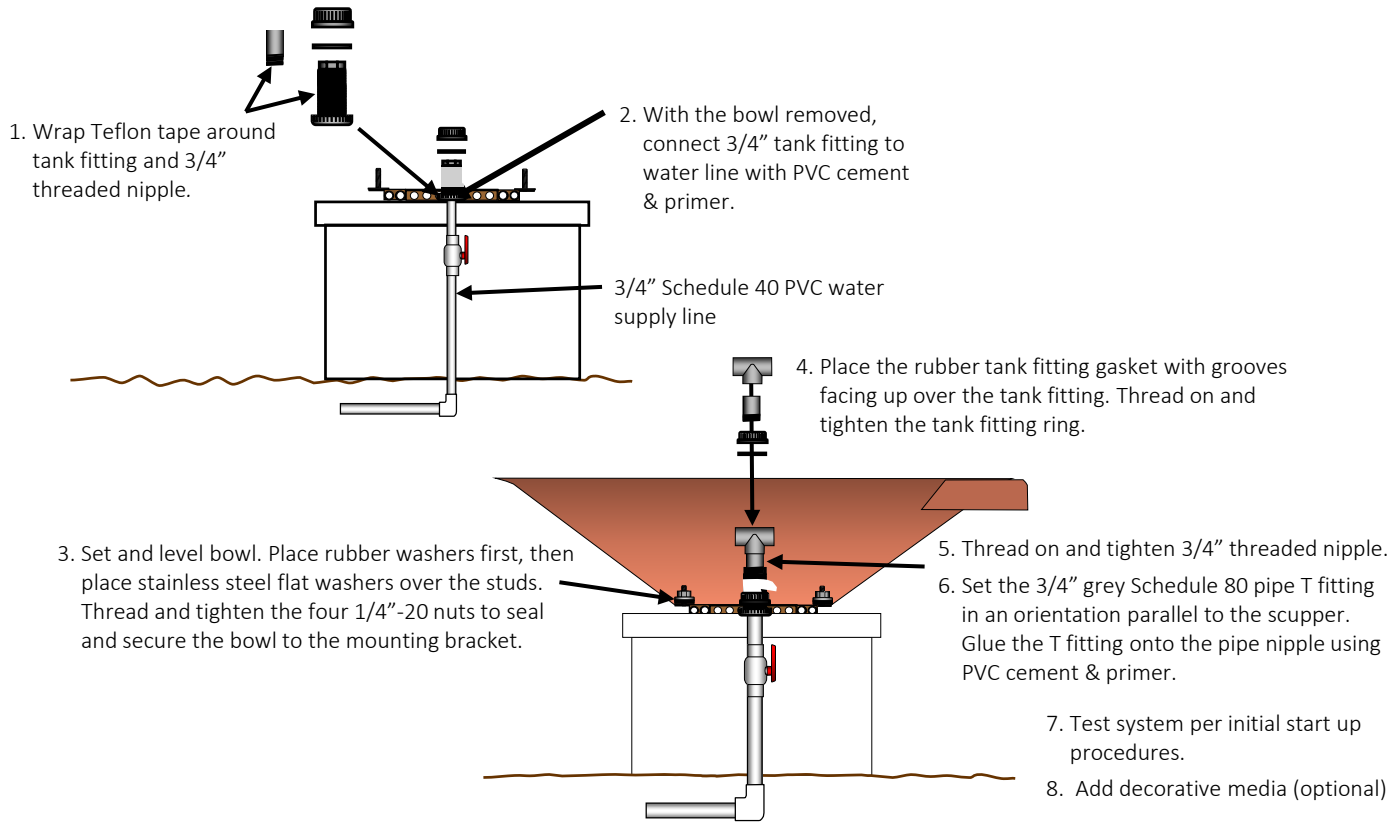
1. Place provided rubber washers over studs. Thread and tighten the four provided 1/4"-20 nuts and washers to the mounting bracket to seal the bowl.
 2. Place the 4" ABS cleanout cap down into the 4" center hole of the bowl and mounting bracket. Use silicone to seal the cap to the inside of the bowl.
 3. Connect 1/2" brass T (included in kit) to 1/2" MNPT – 3/4" socket Schedule 40 PVC adapter.
 4. Orient the T so the barbed fittings point toward the scupper. Use PVC cement & primer to glue the 3/4" socket side of the adapter to the inlet water line.
 5. Connect 1/2" NPT plumbing kit to scupper insert.
 6. Connect system ground wire to bond lug on scupper insert.
 7. Fill and seal inside the 4" ABS cleanout cap around the water and drain tubes with silicon sealant.
 8. Before filling with dirt; place a fine mesh screen over the drain tube to prevent debris from clogging the outlet.
 9. Test system per initial start up procedures.
 10. Add plant media
- Drain tube to drain above ground level out of the back side of the bowl mounting location: Minimum 3/4" Schedule 40 PVC.
- 3/4" Schedule 40 PVC water supply line
-

CAST STONE PLANTER ONLY/PLANTER & WATER BOWLS

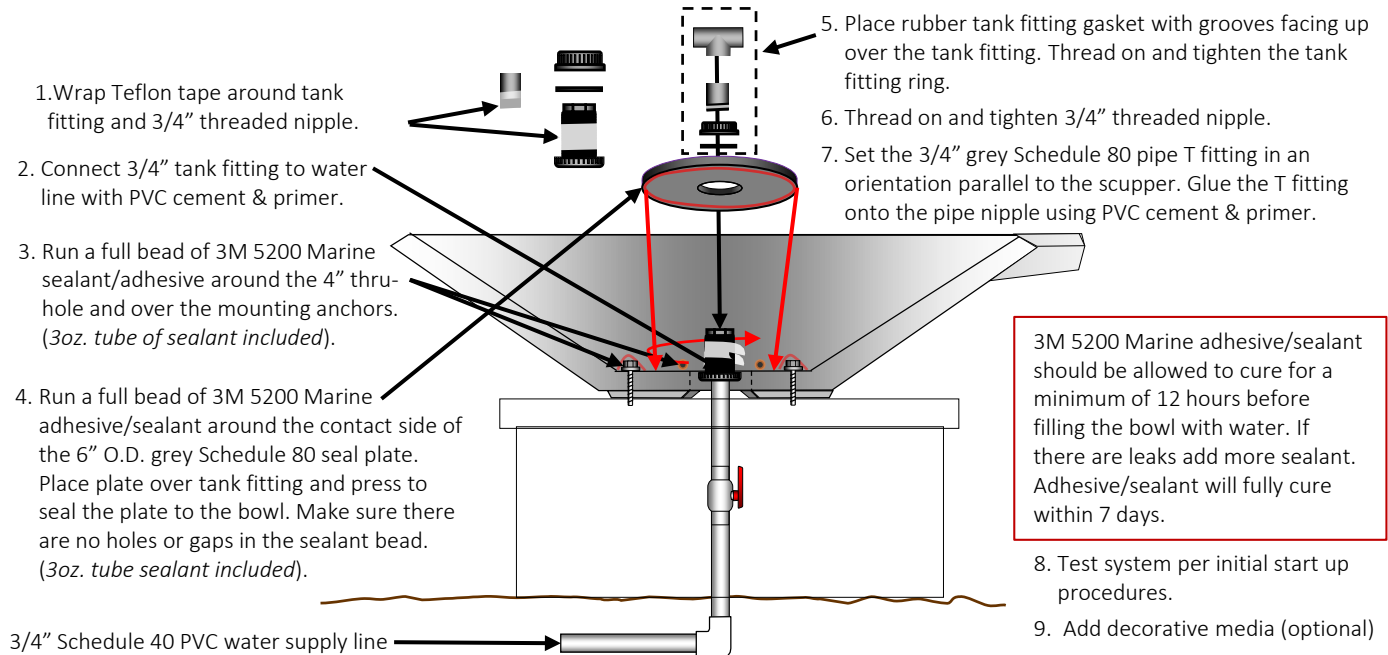
Wrap all threads with Teflon seal tape

1. Place the 4" ABS cleanout cap down into the 4" center hole of the bowl and mounting bracket. Use silicone to seal the cap to the inside of the bowl. Apply a coat of silicone sealant over the mounting anchors (not supplied).
 2. Orient the PVC elbow toward the scupper. Use PVC cement & primer to glue the 3/4" PVC 90° elbow and 3/4" FIPT x 3/4" socket adapter to the inlet water line.
 3. Connect 3/4" NPT plumbing kit to scupper insert.
 4. Connect system ground wire to bond lug on scupper insert.
 5. Fill and seal inside the 4" ABS cleanout cap around the water and drain tubes with silicon sealant.
 6. Before filling with dirt, place a fine mesh screen over the drain tube to prevent debris from clogging the outlet.
 7. Test system per initial start up procedures.
 8. Add plant media
- Drain tube to drain above ground level out of the back side of the bowl mounting location: Minimum 3/4" Schedule 40 PVC.
- 3/4" Schedule 40 PVC water supply line
-

COPPER WATER ONLY BOWLS



CAST STONE WATER ONLY BOWLS



3M 5200 Marine adhesive/sealant should be allowed to cure for a minimum of 12 hours before filling the bowl with water. If there are leaks add more sealant. Adhesive/sealant will fully cure within 7 days.

COPPER FIRE ONLY/FIRE & WATER BOWL

***NOTE: FIRE ONLY BOWLS** Omit water instructions

***NOTE: MANUAL IGNITION BOWLS** Omit electrical wiring instructions

1. Install a 1/2" NPT black steel 90° elbow fitting and a 1/2" x 3/8" NPT adapter. **Product warranty voided if not installed properly inside the bowl and above the finish surface.**

2. Connect the provided 3/8" corrugated flexible gas hose to supply line.
3. Connect 1/2" brass T (included in parts kit) to 1/2" MNPT – 3/4" socket Schedule 40 PVC adapter.
4. Orient the brass T so the barbed fittings point toward the scupper. Use PVC cement & primer to glue the 3/4" socket side of the adapter to the inlet water line.



Wrap all threads with Teflon seal tape

5. Connect 1/2" NPT plumbing kit to scupper insert. Tighten hose clamps.

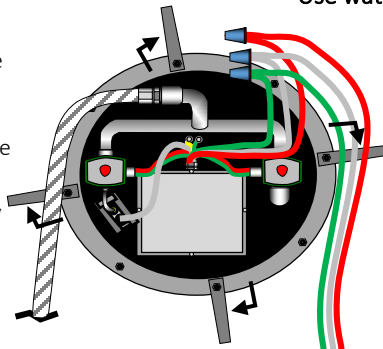
6. Connect system ground wire to bond lug on scupper insert.

7. Set and level support plate.

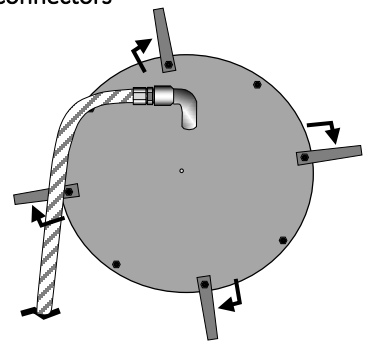
BURNER ASSEMBLY SET-UP

8. Open the four (4) support tabs attached to the burner plate to extend out at a right angle.
9. Tighten the nuts with the tabs in the extended position so the burner assembly will rest on the support plate.
10. Connect flexible gas hose to burner assembly
11. Connect wiring
 - Red to X1
 - White to X2
 - Green to ground

Use water tight wire connectors



Automated Burner Assembly



Manual Burner Assembly

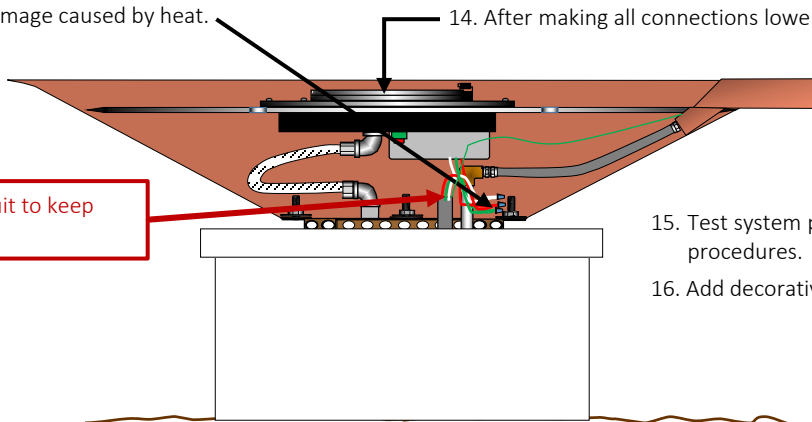
12. Position wires as low as possible in the bowl to prevent damage caused by heat.

14. After making all connections lower burner assembly into bowl.

13. Seal electrical conduit to keep water out.

15. Test system per initial start up procedures.

16. Add decorative media.



CAST STONE FIRE ONLY/ FIRE & WATER BOWL

***NOTE: Fire only bowls Omit water instructions**

***NOTE: Manual Ignition bowls Omit electrical wiring instructions**

1. Install a 1/2" NPT black steel 90° elbow fitting and a 1/2" x 3/8" NPT adapter. **Product warranty void if not installed properly inside the bowl and above the finish surface.**



Wrap all threads with Teflon seal tape

4. Connect 3/4" NPT plumbing kit to scupper insert.

5. Tighten hose clamps

2. Connect the provided 3/8" corrugated flexible gas hose.

6. Connect system ground wire to bond lug on scupper insert.

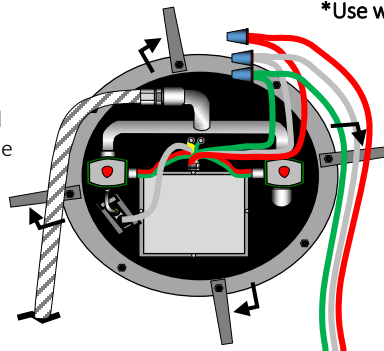
3. Orient the PVC elbow toward the scupper. Use PVC cement & primer to glue the 3/4" PVC 90° elbow and 3/4" FIPT x 3/4" socket adapter to the inlet water line.

7. Set and level support plate.

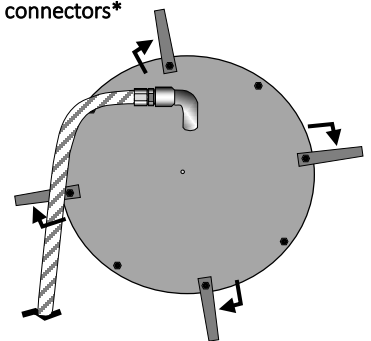
BURNER ASSEMBLY SET-UP

8. Open the four(4) support tabs attached to the burner plate to extend out at a right angle.
9. Tighten the nuts with the tabs in the extended position so the burner assembly will rest on the support plate.
10. Connect flexible gas hose to burner
11. Connect wiring
 - Red to X1
 - White to X2
 - Green to ground

Use water tight wire connectors



Automated Burner Assembly



Manual Burner Assembly

12. Position wires as low as possible in the bowl to prevent damage caused by heat.

14. After making all connections lower burner assembly into bowl.

13. Seal electrical conduit to keep water out.

15. Test system per initial start up procedures.

16. Add decorative media.

OPERATION & SAFETY

INITIAL START UP PROCEDURES

PLANTER BOWL

- Cover the drainage hole with a mesh screen so debris and dirt do not fall into the drainage tube
- Fill with dirt and use as any normal planter

ALL WATER BOWLS

- Open water valve
- Turn on water source
- Adjust valve to desired flow rate of 10 – 15 GPM
- Adjust valves per bowl to balance flow on multiple bowl set-ups
- Turn off water valve or water source
- Check for leaks at base of bowl and all fitting connections

ALL FIRE BOWLS

WARNING:

Fire bowls are for outdoor use only. Use only fire approved decorative media to cover the support plate and burner assembly. High temperature rated lava and tumbled lava/ceramic stone are all acceptable media for natural gas systems and propane. Fire glass is **ONLY** acceptable for natural gas systems. PTI offers lava rock and fire glass that is approved for fire applications. For optimal performance, 2" – 4" sized lava rock and 1/4" – 1/2" fire glass is recommended. Use caution when using other suppliers' media as pieces may pop or explode when exposed to heat.

NOTE: Install decorative media on top of the support plate and burner assembly. Be sure the decorative media is not packed too tightly around the pilot box. For proper ventilation and flame sensing, both sides of the pilot box must be kept clear of decorative media.

NOTE: Do not use fire glass with propane systems. For natural gas systems, use of a mesh screen is necessary to maintain fire glass above the support plate. When using lava rock smaller than 1/2", use of a mesh screen is necessary. For proper ventilation and flame sensing, the top of the pilot box needs to be kept clear of decorative media.

NOTE: Do not add decorative media until after all testing and flame height adjustments are satisfactorily complete.

FIRE BOWL – MANUAL OPERATION

- Purge air from gas line at each bowl using the following instructions:
 - Close manual gas valve
 - Disconnect gas hose from burner assembly
 - Open manual gas valve and hold gas hose outside bowl while purging air
 - When you smell gas, close manual gas valve and reconnect gas hose to burner assembly
 - Make certain all gas connections are tight and that there are no leaks
- Test and balance flame height
 - Open the manual gas valve near the fire bowl to turn on the flow of gas
 - Use stick lighter to ignite gas and light flame
 - Check flame height and make adjustments at the gas valve to achieve a balanced flame across all bowls
 - Do not adjust manual gas valve too low as this can cause the flame to be unstable resulting in possible flame out
 - To ensure a stable flame, maintain the required gas pressure and flow to the burner assembly
- Add decorative media after all testing and adjustments are complete

FIRE BOWL – AUTOMATED OPERATION

- Purge air from gas line at each bowl using the following instructions:
 - Close manual gas valve
 - Disconnect gas hose from burner assembly
 - Disconnect X1 & X2 wires at the transformer panel for each bowl. For propane gas systems, leave propane adder connected
 - Open manual gas valve and hold gas hose outside bowl while purging air
 - When you smell gas, close gas valve and reconnect gas hose to burner assembly
 - Reconnect X1 & X2 wires at the transformer panel for each bowl
 - Make certain all gas connections are tight and that there are no leaks
- Spark ignition check:
 - Close the manual gas valve
 - Using the control switch, turn on the power to the bowls
 - At each burner assembly, check that the spark electrode is arcing across to the pilot hood. You should be able to hear and see the electrode spark. If there is no spark, make sure that the burner assembly is receiving 12 VAC from the control panel
 - Once a spark has been verified, turn off the power to each bowl using the control switch
- Test and balance flame height:
 - Open manual gas valve
 - Using the control switch, turn on the power to the bowls
 - Check flame height and make adjustments at the manual gas valve to achieve a balanced flame across all bowls
 - Do not adjust manual gas valve too low as this can cause the flame to be unstable resulting in possible flame out
 - To ensure a stable flame, maintain the required gas pressure and flow to the burner assembly
- Add decorative media after all testing and adjustments are completed successfully

BASIC SYSTEM OPERATION

Caution: Before turning on a fire bowl make sure that the area is clear of people, animals or any objects that are combustible. If you smell gas or there are other indications of a gas leak, immediately turn off the manual gas valve, leave the area and do not operate the fire bowl. Immediately call your utility gas supplier to inspect the fire bowl.

FIRE BOWL – MANUAL OPERATION

- Open the manual gas valve near the bowl to turn on the flow of gas
- Use a stick lighter to light flame
- Check flame height and make adjustments at the manual gas valve to achieve a balanced flame across all bowls
- Do not adjust manual gas valve too low as this can cause the flame to be unstable resulting in possible flame out
- To ensure a stable flame, maintain the required gas pressure and flow to the burner assembly
- Do not store or use gasoline or other flammable materials in the vicinity of the bowl
- Do not leave flame on while unsupervised
- Do not operate in windy or rainy conditions
- Bowl should be operated only by a responsible adult
- Before any inspection of the bowl, always turn off gas and make sure the bowl is cool
- **If you experience problems with the bowl, call a licensed contractor**
- To turn off the bowl, close the manual gas valve to the fully closed position

FIRE BOWL – AUTOMATED OPERATION

- To turn on bowl use the automated control system
- Check flame height and make adjustments at the manual gas valve to achieve a balanced flame across all bowls
- Do not adjust manual gas valve too low as this can cause the flame to be unstable resulting in the system cycling on/off because the sensor cannot read the flame properly
- To ensure a stable flame, maintain the required gas pressure and flow to the burner assembly
- Do not store or use gasoline or other flammable materials in the vicinity of the bowl
- Do not leave flame on while unsupervised
- Do not operate in windy or rainy conditions
- Bowl should be operated only by a responsible adult
- Before any inspection of the bowl, always turn off gas and make sure the bowl is cool
- **If you experience problems with the bowl, call a licensed contractor**
- To turn off bowl, use the automated control system

TROUBLE SHOOTING

Prior to beginning any trouble shooting procedures, ensure all water, gas and electrical components of the system are off. **All procedures should be performed by a licensed contractor.**

While trouble shooting the unit, look for heat or water damage to the burner assembly which may be caused by improper installation or inadequate ventilation and drainage.

No spark at the pilot box

- Remove decorative media from the pilot box area. Look for small pieces obstructing the pilot box.
- If there is still no spark, confirm 12VAC output from the transformer panel by measuring the voltage over black X1 to yellow X2 wire leads. At the burner assembly, measure the wire leads at each bowl to verify there is no short in the wire runs.
- If there is voltage from the transformer panel, but no spark, check for proper wire connection at the pilot assembly. If there is still no spark, the ignition module or pilot assembly may need to be replaced.
- If there is no voltage from the transformer panel, check the 30AMP fuse on the yellow X2 wire, and replace fuse as needed. Confirm there is 120VAC at the transformer panel over terminals L and N.
- If 120VAC input to the transformer is confirmed and there is no 12VAC output from the transformer panel, the transformer panel may need to be replaced.

Spark but no pilot light

- Remove decorative media from the pilot box area. Look for small pieces obstructing the pilot box.
- The pilot valve may not be opening. Turn on burner assembly and listen for the pilot solenoid to energize and open the valve.
- If not energizing, the pilot solenoid may need to be replaced.
- If the pilot solenoid is energizing, confirm by sound or smell if gas is coming out of the pilot box. If needed, use a lighter to help determine if gas is coming out of the pilot box.
- If no gas at the pilot box, check that the gas is turned on.
- The pilot orifice may be plugged/blocked. If so, remove debris and verify gas flow. If pilot will still not light, the pilot assembly may need to be replaced.

Burner assembly cycles on/off

- Moisture can be trapped in the decorative media. As a result, steam from the moisture can cause the burner assembly to cycle on and off until all the moisture has dissipated.
- If the wind is causing an unstable flame or the flame goes out, rotate burner assembly such that the pilot box is blocked from the prevailing wind.
- If the problem continues, remove decorative media from the pilot box area and burner ring. Retest the flame.
- If flame is working properly, reapply the media in a thin layer over burner ring and loosely around the pilot box.
- Check gas pressure. If pressure is too low or high, it can result in an unstable flame, which can cause the burner assembly to cycle on and off. Check with gas supplier that the proper regulator is installed.
- Check gas flow. If flow is too low or high, it can result in an unstable flame, which can cause the burner assembly to cycle on and off. Regulate gas flow by adjusting the manual gas valve. If problems persist, check with gas supplier that the proper regulator is installed.

Burner assembly will not turn on

- Make sure the pool control system switches are functioning properly (batteries, transmitter signal, etc.).
- Electrical circuit fault: check for loss of power.
- No gas supply: check that all manual gas valves are in the proper position. If applicable, make sure the propane tank is full and that the propane adder is energized.
- Unit may overheat due to improper ventilation. Clear ventilation passageways. Check for heat damage, replace parts as needed.
- Failure of solenoid valve(s) may be indicated by a buzzing noise. Replacement parts may be needed.
- Excessive weather conditions such as rain, wind, snow and dust may affect operation. Wait for weather conditions to clear. Clear debris and eliminate moisture before attempting to operate the unit again.

Pilot light comes on but not the main burner

- Confirm that all manual gas valves are in the proper position.
- Check gas pressure. If pressure is too low or high, it can prohibit the main burner from igniting. Check with gas supplier that the proper regulator is installed.
- Check gas flow. If flow is too low or high, it can prohibit the main burner from igniting. Check with gas supplier that the proper regulator is installed.
- Failure of solenoid valve(s) may be indicated by a buzzing noise. Replacement parts may be needed.
- Remove decorative media from the pilot box area and burner ring. Retest the flame.

Main burner or pilot light does not shut off

- Make sure the pool control system switches are functioning properly (batteries, transmitter signal, etc.).
- Remove solenoid coil and clean inside of the solenoid.

For unresolved issues, call service provider. To purchase replacement parts, call PTI at 800-937-5058

GENERAL CARE & MAINTENANCE

General care of the unit is required to maintain proper operation and extend the life of the product. Inspect and clean the unit on a regular basis. Frequency of use will increase the amount of maintenance needed.

PLANTER BOWLS

- Periodically check that the drainage tube is not clogged and can still drain adequately.

WATER BOWLS

- Periodically clean out debris that collects inside the bowl.
- Periodically check the bowl for leaks at the base of the bowl.
- Check that all water connections are tight and sealed.

FIRE BOWLS

- Periodically clean the burner assembly with a wet cloth to remove carbon build-up.
- Periodically inspect the underside of the burner assembly for any signs of damage from excessive heat (e.g., melted wires, carbon build up, warped parts, etc.)
- Check that all gas connections are tight, clean and sealed.
- Keep base of bowl and ventilation passageways clear of debris.

CLEANING AND CARE FOR OIL-RUBBED HAMMERED COPPER BOWLS

Hammered copper bowls exposed to the outdoor environment and pool chemicals can patina over time. To restore the original finish, follow these cleaning instructions.

Items needed:

- Grade #000 steel wool
- 500 grit black wet sandpaper
- Dish soap
- A multi-surface wax
- Clean soft cloth: use clean microfiber or soft lint free rags
- Water hose
- Bucket for cleaning solution

Cleaning instructions:

- Mix dish soap and water in a bucket.
- Using the grade #000 steel wool and soapy water, clean the outside of the bowl.
- Wet the 500 grit sandpaper and lightly sand the bowl.
- After sanding, rinse the bowl with clean water. Make sure to spray off the decking and other nearby surfaces to prevent any staining.
- Apply multi-surface wax to the bowl in a circular motion and wipe off with a clean cloth.

CLEANING, CARE AND SEALING FOR CAST STONE BOWLS

The cast stone bowl comes with a hand applied penetrating sealer. Over time the bowl may become dirty or the sealant may fade due to exposure to the outdoor elements. To clean or restore the finish, follow the instructions outlined below. It is recommended that the bowl be sealed every 1-2 years to protect and maintain the finish. Call PTI at 800-937-5058 to purchase a Cast Stone Sealant Kit.

Items needed:

- 220 grit sandpaper
- Scotch-Brite® pad
- Clean soft cloth: use clean microfiber or soft lint free rags
- Mild cleaner such as dish soap, Simple Green®, or Windex®. Avoid abrasive cleaners such as Comet®, bleach, or ammonia-based products
- Water hose
- Bucket for cleaning solution and rinse water
- Rubber/latex gloves for sealer application

Cleaning instructions:

- Clean the bowl using a mild cleaner and soft cloth.
- If there is persistent dirt or a haze on the bowl, a Scotch-Brite® pad or 220 grit sandpaper can be used to clean the surface.
- Do a final wipe down with a clean, wet cloth.

Sealing instructions:

- Clean the bowl following the instructions above. Allow enough time for the bowl to fully dry before applying the sealer.
- Follow instructions included with cast stone Sealant Kit. The sealer is a 1-part penetrating sealant.
- Put on rubber/latex gloves. Apply the sealer in a circular motion with a microfiber cloth. Ensure the surface is wiped clean and there are no drips, runs or streaks on the finish.
- We recommend 2-3 coats, allowing 15 minutes between coats. Allow more time between coats in cooler temperatures.

REPAIR FOR CAST STONE BOWLS

If the cast stone bowl has been chipped or damaged, the finish can be repaired and restored. Call PTI at 800-937-5058 to purchase a Cast Stone Repair Kit.

Items needed in addition to the Cast Stone Repair Kit:

- 220 grit sandpaper
- Scotch-Brite® pad
- Blue painter's tape
- Putty knife
- Mixing stick
- Rubber/latex gloves

Repair instructions:

- Clean the bowl following the cast stone cleaning instructions above.
- Use blue painter's tape to mask off the area that is to be repaired.
- Following mixing instructions included with Cast Stone Repair Kit. The paste should have the consistency of toothpaste.
- Apply the paste with the putty knife or by hand to the damaged areas. Leave the paste high as it will shrink as it dries. NOTE: The paste needs to have a raised profile when dry so it can be sanded smooth and flush with the finish surface.
- Let dry for at least 1-2 hours. Allow more time in cooler temperatures.
- Once dry, sand smooth and flush with the 220 grit sandpaper.
- Clean the bowl following the cast stone cleaning instructions above.
- Reseal the repaired area of the bowl following the cast stone sealing instructions above. NOTE: We recommend resealing the whole bowl to achieve a more uniform finish.

CLEANING AND CARE FOR CAST STONE BOWL POLISHED COPPER SCUPPER INSERTS AND SPILLWAYS

Fire + Water Elements copper features are made with a high quality polished finish. It is the natural process for copper exposed to the elements or pool chemicals to patina due to oxidation. The copper may turn brown, green, blue or even purple. This natural process will continue to change over time. If you desire to keep the original copper appearance, you can do so by following the copper cleaning instructions below.

Items needed:

- Soft bristle brush
- Scotch-Brite® pad
- Dish soap
- Solution of 8 oz. of white vinegar, 2 tsp of salt, and 1 oz. of lemon juice
- Buckets for cleaning solutions
- Water hose
- A multi-surface wax protectant (spray version)
- Clean soft cloth: use clean microfiber or soft lint free rags

Cleaning instructions:

1. To clean light patina stains mix dish soap with water. Use a rag with solution to wipe away light patina and excess dirt from the polished copper surface.
2. To remove stains and heavier patina, mix a solution of 8 oz. of white vinegar, 2 tsp of salt and 1 oz. of lemon juice in a mixing bucket. Apply the cleaning solution to the surface using a rag. Allow 1-3 minutes to let the solution penetrate the copper. If stains persist, increase concentration of solution by adding more salt and lemon juice.
3. Wipe off the cleaning solution.
4. Use a soft bristled brush or a fine Scotch-Brite® pad to clean the patina from the polished copper surface. Start with very light pressure and work in a circular motion. (The brush or pad may be wetted with cleaning solution).
5. Wipe the polished copper surface with a clean dry rag. With a clean wet rag, immediately wipe and rinse any remaining cleaning solution from the polished copper surface. Be careful not to allow dirty water to run down the wall, into the pool or on the deck. Take necessary precautions to minimize the amount of run-off water that may stain or damage any nearby materials.
6. Wipe dry and allow the surface to dry.
7. Spray the polished copper surface slightly with the multi-surface wax and wipe off immediately with a cloth. Do not allow the surface wax to dry before wiping.
8. Repeat all steps as needed to maintain the desired look of the polished copper surface.

SEASONAL CARE

Seasonal shut down of the Fire + Water Elements product is recommended if there is a part of the year in which you do not use your features, or if you live in an area where dust, wind, snow or freezing conditions occur. In cold climates, you may need to cover the features to prevent damage from ice and snow. Additionally, summer storms can deposit dust and debris on the functional surfaces. Always clean out the features before use to prevent any debris from affecting the functionality of the system. Make sure water valves leading to water features are off or the pump system is disabled. Please contact your pool care professional for assistance if needed.

PHOENIX 56637-1 352514v1