LF-8151-QS

Quick Setup Guide

Q-FOG
Cyclic Corrosion Tester

For Q-FOG Models:

SSP600	CCT600
SSP1100	CCT1100

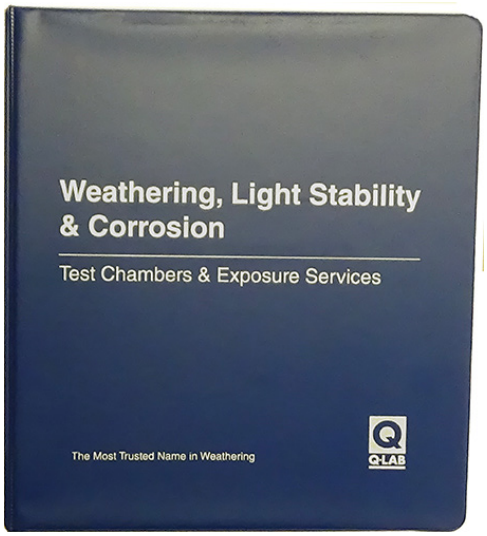
Q-LAB

Revision Date
01 Sep 2021

Table of Contents

Purpose

- This Quick Setup Guide is not an operating manual.
- It is intended to explain only the basics of setting up a Q-FOG® cyclic corrosion tester.
- *LF-8151-TM Q-FOG SSP and CCT Technical Manual* is necessary for a complete understanding of how to operate the Q-FOG cyclic corrosion tester.
- The technical manual is located in a blue binder packed inside the tester.



Technical manual in this binder.

LF-8151-TM Q-FOG SSP and CCT Technical Manual.

1. Specifications, Classifications, Symbols (Aug 2021)

Specifications, Classifications

- Replacement (Make-up) Air: 60 CFM
- Transportation and Storage Temperature: -40 to 80 °C.
- Installation Category: Category II for transient over-voltages.
- Pollution Control: Pollution Degree 2.
- Sound Pressure Level: Sound Pressure Level does not exceed 75 dBA.
- Altitude: 2000 meters or less.
- Operation: Continuous Rating
- Voltage: 230 V or 208 V (as stated on the nameplate) ± 10% - single phase.
- Maximum Current: See table below.

Voltage	SSP600	CCT600	SSP1100	CCT1100
208 V	16 A		20 A	
230 V	14 A		18 A	

- Frequency: 50 or 60 Hz.
- Supply Connection: Permanently connected or plug/socket connection (industrial type per IEC 6309 or twist lock type in North America).
- External Disconnect: Required for all connections.
- External Over-Current Protection: Must be rated for not more than 40 A (USA, Canada) or 64 A (Europe).
- Heat Load Dissipation: 1000 W for SSP600 and CCT600, 1500 W for SSP1100 and CCT1100.

Symbols

Electrical Shock Hazard

Hot Surfaces Hazard

Attention

Finger/Hand Crushing hazard

Local Waste & recycling regulations per the WEEE Directive 2002/96/EC on Waste Electrical and Electronic Equipment

2. Safety (Aug 2021)

Q-Lab accepts no responsibility for the consequences if the user fails to comply with the instructions in this technical manual. Q-Lab will accept responsibility for defective parts or components only if the machinery was defective at the time that the tester was shipped.

- This manual does not claim to address potential safety issues, if any, associated with the use of this product.
- It is the responsibility of the user of this manual to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Follow all local, OSHA, EHS and other applicable safety requirements, recommendations, and practices.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment safety devices may be impaired.
- The Q-FOG meets the European Low Voltage Directive 2014/35/EU and complies with the requirements of EN61010-1: 2010 (Third Edition), "Safety of Electrical Equipment for Measurement, Control and Laboratory Use."
- The Q-FOG meets the European Electromagnetic Directive 2014/30/EC and complies with the requirements of EN 55011:2007 Radiated and Conducted Emissions – class A.
- Do not use gases such as SO_2 in the Q-FOG. Do not use hazardous or petroleum based organics (solvents). Purge the chamber of airborne mist or fog before opening the chamber lid.
- Use only parts that have been supplied or recommended by Q-Lab.

Safety Devices

- Chamber Cabinet, Residual Current Device
- Chamber, Over Temperature Cut-out
- Bubble Tower, Over Temperature Cut-out
- Bubble Tower, Low Water Level Switch
- Bubble Tower, High Water Level Switch
- Control Top Protected Area Tool Access
- Bubble Tower, O-Rings and Compression Springs
- Bubble Tower, Pressure Relief Valve
- Solution Reservoir, Low Level Switch
- Solution Reservoir, Empty Switch
- Chamber Heater, Over Current Switch

3. General Description (Aug 2021)

- Q-FOG corrosion test chambers are available in three models. Models SSP and CCT are covered in this document.
  1. Model SSP performs traditional salt spray and Prohesion tests.
  2. Model CCT performs salt spray, Prohesion, and 100% humidity for most cyclic automotive tests.
  3. The third model is the Q-FOG CRH, covered in *LF-8165-QS Q-FOG CRH Quick Setup Guide*.
- Q-FOG chambers are available in 600 or 1100 liter sizes to accommodate a wide range of specimen sizes.
- In Q-FOG cyclic corrosion testers, specimens are exposed to a series of different environments in a repetitive cycle that mimics the outdoors.
- Q-FOG test chambers are designed to cycle between four conditions: Fog, Dry-Off, 100% Humidity (Model CCT only), and Dwell.
- Simple cycles, such as Prohesion, may consist of cycling between salt fog and dry conditions.
- More sophisticated automotive methods may call for multi-step cycles that incorporate humidity or condensation, along with salt spray and dry-off. Many of these methods can only be performed with the CRH model.
- Test conditions, time, and temperature are controlled by a built-in microprocessor.
- A simple, dual full-color touchscreen interface allows for easy programming and operation.
- The operator can quickly create new cycles, or run any of the programmed cycles.
- The Q-FOG controller includes complete self-diagnostics, including warning messages, routine service reminders and safety shut down.

4. Operating Environment

The Tester Must Be Located in a Suitable Environment

- All Q-Lab test chambers are sophisticated scientific instruments.
- All tester models must be operated in a suitable controlled environment (Section 4.1).
- Operating the tester in an unsuitable environment (Section 4.2) will void the warranty.

4.1. Suitable Environments (Jul 2020)

Ambient Laboratory Temperature and Humidity

- The recommended ambient operating temperature and relative humidity (RH) for Q-FOG testers is 23 ± 5 °C and 50 ± 25% RH.
- Operating outside the recommended range (or in rare cases, even within it), certain standards or test cycle conditions may not be achievable.
- Operating outside the recommended range can result in the tester producing chamber temperature and/or humidity faults.
- Never operate a Q-FOG tester in lab temperatures >40 °C or >80% RH.
- Consult with Q-Lab for more specific information about achievable chamber temperature/humidity values based upon various ambient lab conditions.

Physical Environment

- A room that is dry, clean and free of dust, particles, gases or salt fog.
- A room with an HVAC (heating/ventilation/air-conditioning) system.
- A location away from windows or HVAC vents.
- A location that provides the necessary minimum clearances as specified in Section 5.2.

4.2. Unsuitable Environments (Aug 2021)

Salt Fog or Other Airborne Contamination

- Always wait five (5) minutes for the purge blower to clear the chamber of mist or fog before opening the Q-FOG test chamber lid.
- Do Not install Q-FOG corrosion chambers in a room with Q-SUN xenon testers or QUV weathering testers.
- Do Not locate Q-FOG in a room with machines or processes that generate dust, particles, vapors, gases, etc.

Figure 4.2a: Do not install Q-FOG in a room with Q-SUN or QUV testers.

Figure 4.2b: Do not locate tester in a room with airborne dust, particles or gases.

Uncontrolled Temperature and Humidity

- Do not operate the tester in a room with uncontrolled temperature and humidity.
- Do not locate tester near sources of cold or hot air.

Figure 4.2c: Do not locate Q-FOG near open windows.

Figure 4.2d: Keep tester away from sources of hot or cold air.

Other Unsuitable Environments

- **Outdoors:** Rain and dust will corrode or short out electrical components.
- **Metal Dust / Metal Chips:** Do not locate the tester near metal cutting machines or metal grinding machines. Conductive metal dust or metal chips in the air will damage electronic components.
- **Carbon Fibers:** Do not operate the tester where carbon fibers or carbon reinforced plastic are being cut. The conductive carbon fibers will damage electronic components.
- **Conductive Pigments:** Do not operate the tester where carbon black or other conductive pigment dust is in the air. The conductive dust will damage electronic components.
- **Other Corrosive Gases:** Do not expose the tester to acid fog, SO_2 gas, or other corrosive gases.
- **Excessive Voltage:** The electrical supply to the tester must be no more than 10% higher than the voltage listed on the nameplate.
- **Low Voltage:** Recurring “brown-outs” or voltages less than 90% of the rated voltage will damage electrical components.
- **Water Leaks from Ceiling:** Water leaking onto the tester will damage electrical components.

For further detail on laboratory environment requirements, please contact Q-Lab Repair and Tester Support (see Section 7).

5. Setup

5.1. Uncrating (Feb 2021)

Carefully read these instructions before uncrating the tester. Follow all local, OSHA, EHS, and other applicable equipment operation and material handling safety requirements, recommendations, and practices.

- All Q-FOG testers are shipped in one of two types of crates (Figure 5.1a) and Figure 5.1b).
- Labels on the crate indicate the location of the instructions to be opened first (Figure 5.1c).
- Instructions for uncrating and setting up the tester are located in the envelope shown in Figure 5.1d.

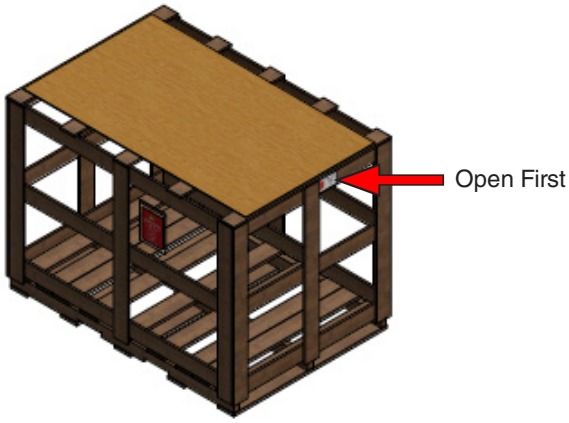


Figure 5.1a: This crate has a flat top.

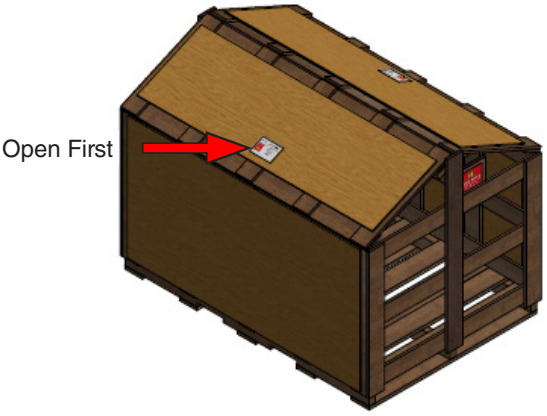


Figure 5.1b: This crate has a peaked top.

Figure 5.1c: Labels on the crate indicate the envelope to be opened first.

Figure 5.1d: Open this envelope for important uncrating instructions.

Shipping Weights (Approximate)	SSP600 and CCT600	SSP1100 and CCT1100
Q-FOG in Crate	499 kg (1100 lb)	544 kg (1200 lb)
Q-FOG Only	224 kg (494 lb)	269 kg (594 lb)

Tools Required	
Phillips Screwdriver	Ratchet
Utility Knife	15 mm (9/16") Socket
Fork Lift*	11 mm (7/16") Socket
Step Stool or Small Ladder	Pry Bar for Closed Sided Crates

*A fork lift or other mechanical lifting device is recommended for use in moving the crated tester to the installation location. Follow all local, OSHA, EHS, and other applicable equipment operation safety requirements, recommendations, and practices.

Use extreme care when uncrating to avoid damaging the Q-FOG cabinet.

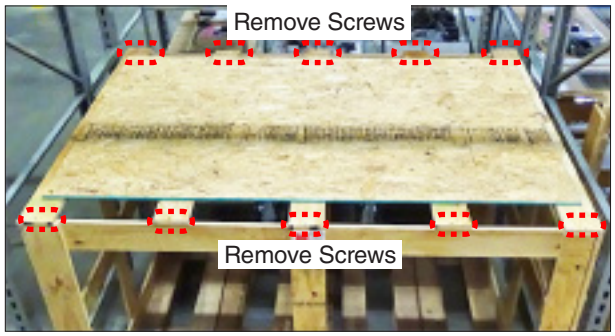
Do not attempt to remove the chamber lid without special instructions. Contact Q-Lab Corporation Repair and Tester Support for detailed instructions (Section 7).

- For flat top crate uncrating instructions go to Section 5.1.1.
- For peaked crate uncrating instructions go to Section 5.1.2.

5.1.1 Flat Top Crate (Container Shipping)

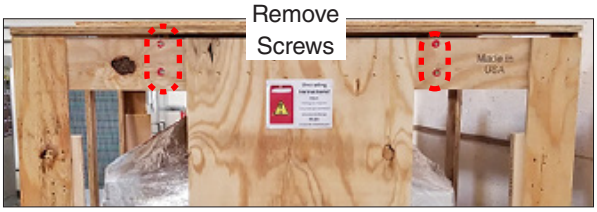
1. Uncrating instructions are located in the red envelope attached to the top of the tester. Remove the envelope and read the instructions.

2. Follow the uncrating instructions in the envelope and as shown below. Screws to be removed are marked on the crate and shown below.



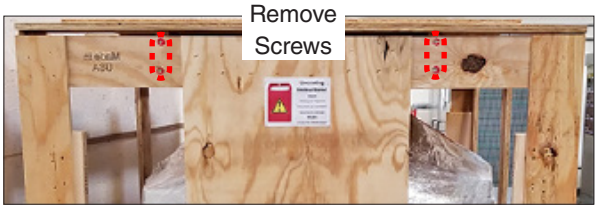
3. Remove the screws along the top front and back edges of the crate in areas shown.

Right End of Crate

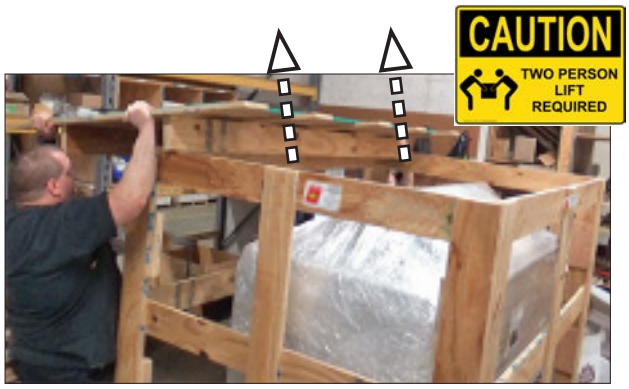


4. Remove the screws at the top right end of the crate.

Left End of Crate

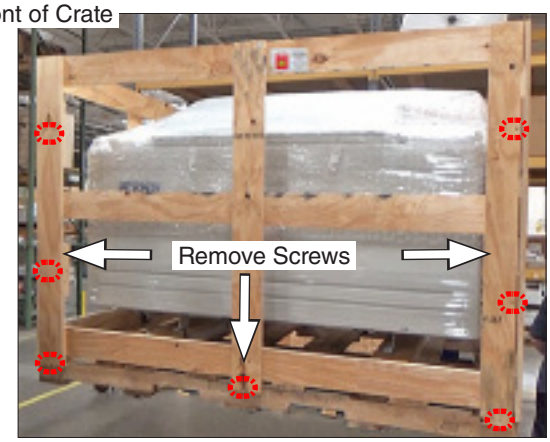


5. Remove the screws at the top left end of the crate.



6. **IMPORTANT:** Use two persons. Lift off the top of the crate. The top may be discarded.

Front of Crate



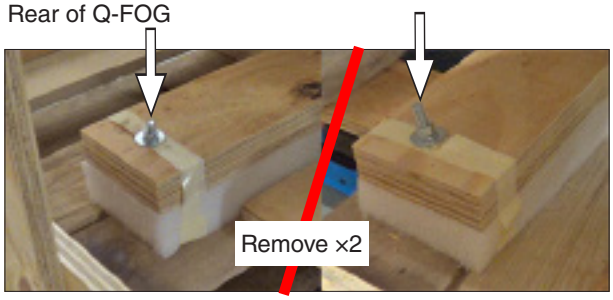
7. Remove the screws in the front side of the crate in the areas shown.

8. Remove the front side of the crate. The front side may be discarded.

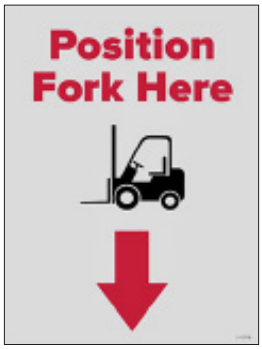
Front of Q-FOG

9. Remove the two (2) 15 mm (9/16") bolts and nuts holding the front of the Q-FOG to the pallet.

Rear of Q-FOG

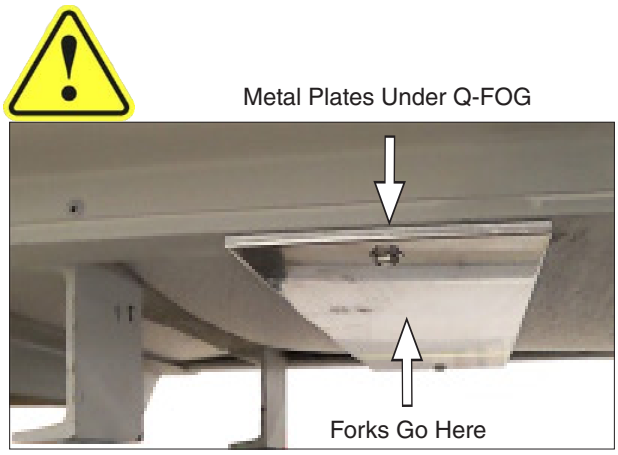


10. Remove the two (2) 15 mm (9/16") bolts and nuts holding the rear of the Q-FOG to the pallet.

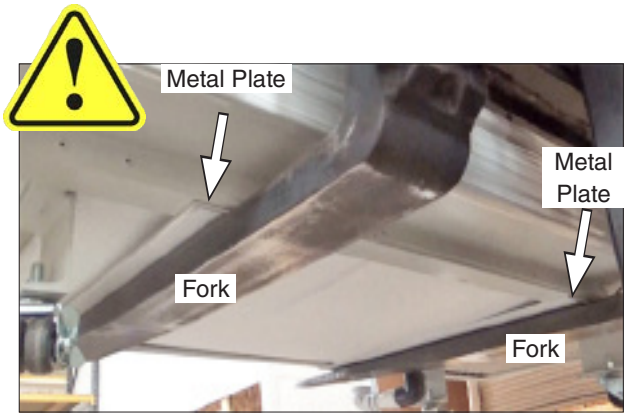


11. **IMPORTANT:** Locate the forklift labels on the front of the Q-FOG chamber. **Follow all local, OSHA, EHS, and other applicable equipment operation safety requirements, recommendations, and practices.**

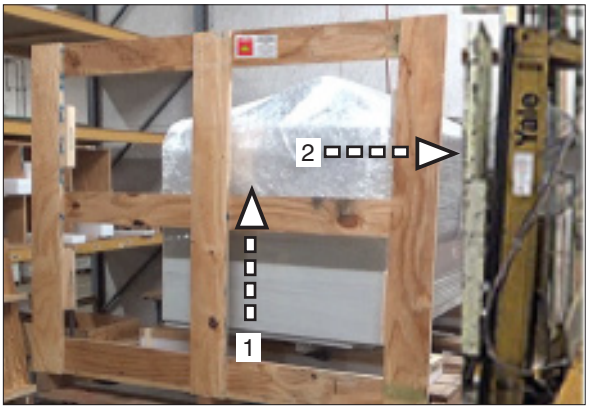
12. Location of lift plates under Q-FOG.



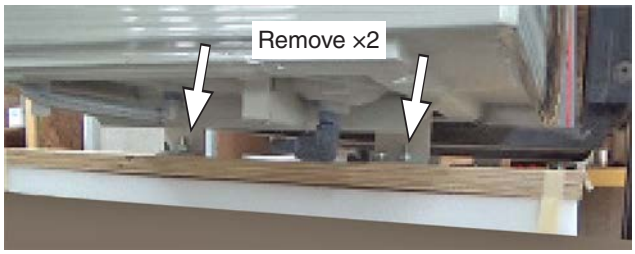
13. Make sure lift forks are under the metal plates on the bottom of the Q-FOG.



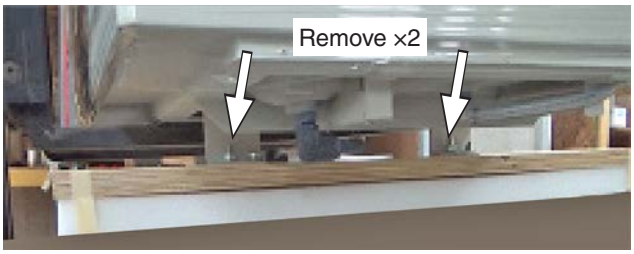
14. **USE EXTREME CAUTION: Forks can easily damage the Q-FOG. Make sure forks are under metal plates before lifting.**



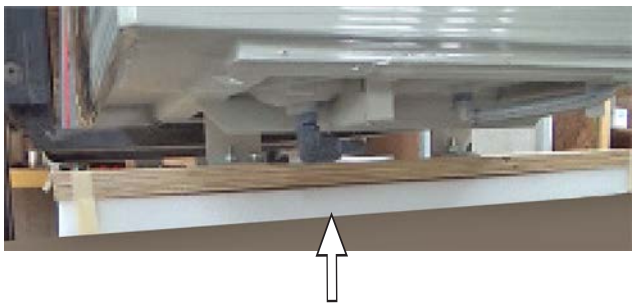
15. Use a forklift to lift Q-FOG a few inches up off the pallet. Move the Q-FOG away from the crate. Lower the Q-FOG to the floor.



16. Use a 15 mm (9/16") wrench to remove the 2 nuts from the bolts in the left angle brackets under the Q-FOG cabinet.



17. Use a 15 mm (9/16") wrench to remove the 2 nuts from the bolts in the right angle brackets under the Q-FOG cabinet.



18. Lift the Q-FOG a few inches and remove the bolts, both boards, and the foam pieces from the tester. Discard.

19. Carefully move the Q-FOG to the installation location and lower into position. See Section 5.3.

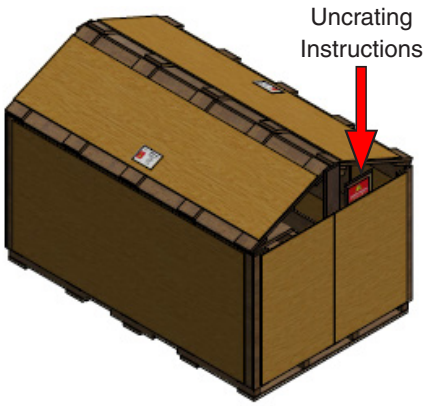
20. Use a utility knife to carefully remove the plastic wrapping. Use care to avoid scratching the Q-FOG cabinet.

21. Q-FOG cabinet uncrating is complete.

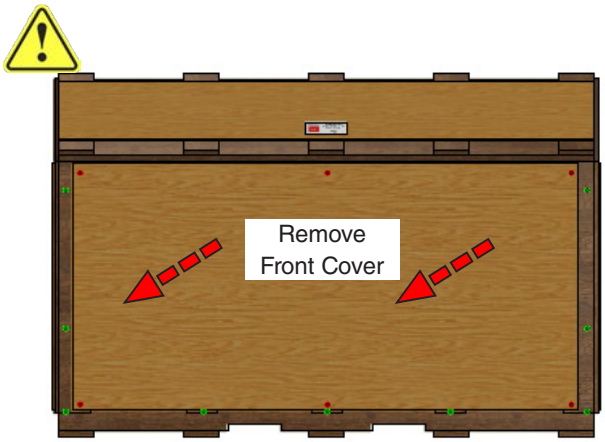
22. If any accessories are attached to the pallet, remove them and remove the plastic wrap.

5.1.2 Peaked Crate (Domestic and Air Shipping)

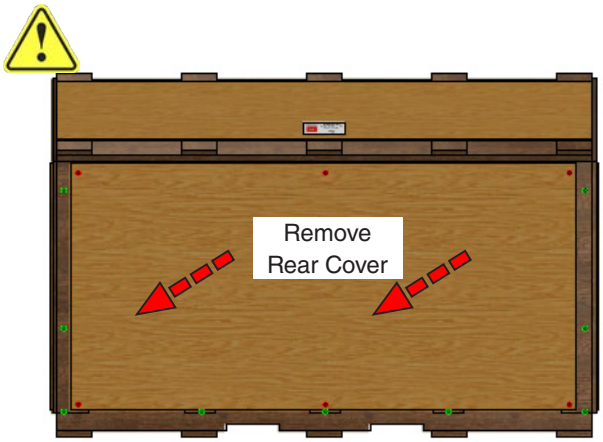
1. Uncrating instructions are in this envelope attached to the end of the tester. Remove and read first.



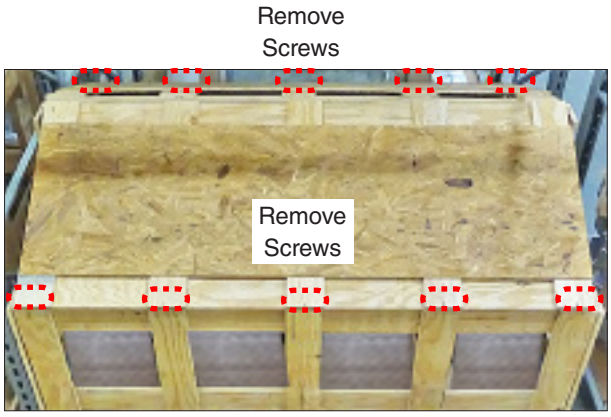
2. Uncrating instructions are located in the red envelope attached to the end of the tester. Remove the envelope and read the instructions.



3. Carefully pry the front cover off of the crate.



4. Carefully pry the rear cover off of the crate.

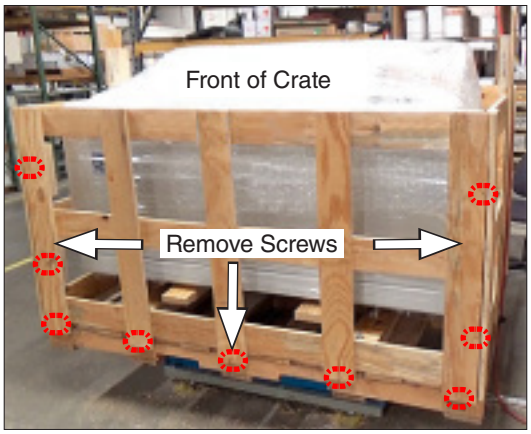


5. Remove the screws along the top front and back edges of the crate in areas shown.

6. Remove the screws in the vertical support at the right end of the crate.

7. Remove the screws in the vertical support at the left end of the crate.

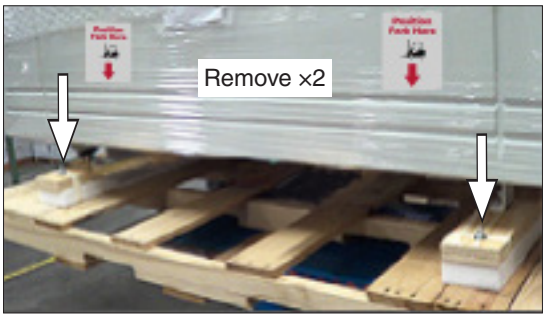
8. **IMPORTANT:** Use two persons. Lift off the two sides of the top of the crate. Set aside.



9. Remove the screws in the front side of the crate in the areas shown.

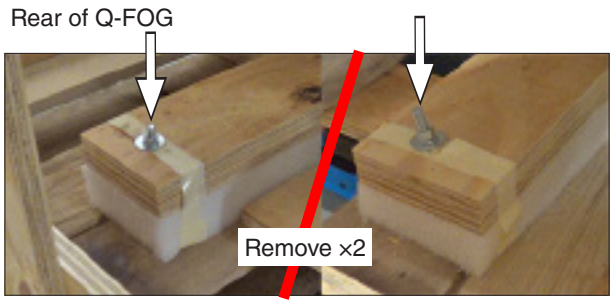
10. Remove the front side of the crate. The front side may be discarded.

Front of Q-FOG

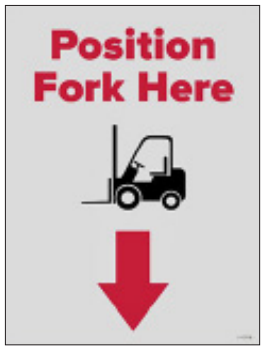


11. Remove the two (2) 15 mm (9/16") bolts and nuts holding the front of the Q-FOG to the pallet.

Rear of Q-FOG

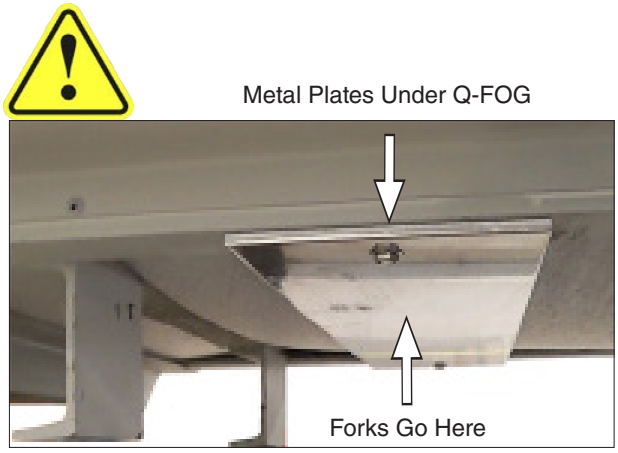


12. Remove the two (2) 15 mm (9/16") bolts and nuts holding the rear of the Q-FOG to the pallet.

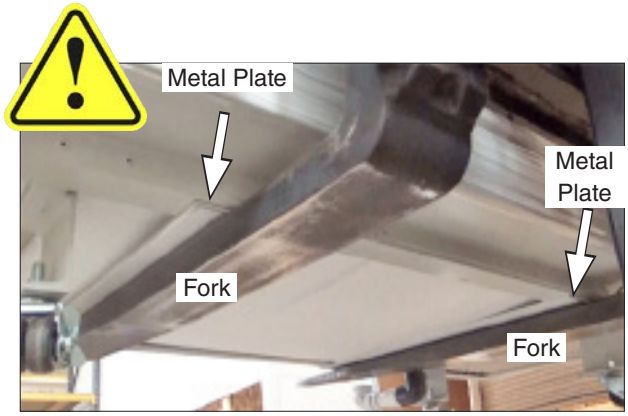


13. **IMPORTANT:** Locate the forklift labels on the front of the Q-FOG chamber. **Follow all local, OSHA, EHS, and other applicable equipment operation safety requirements, recommendations, and practices.**

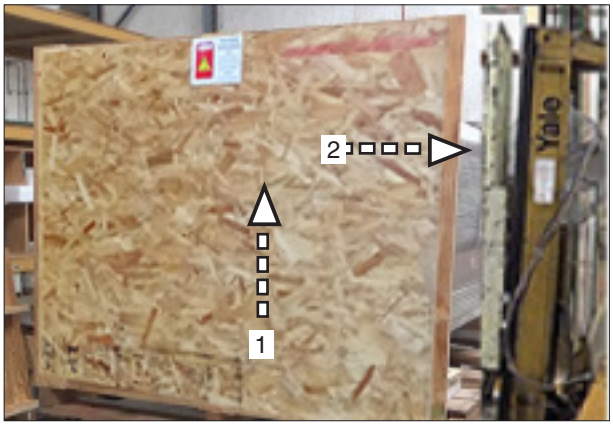
14. Location of lift plates under Q-FOG.



15. Make sure lift forks are under the metal plates on the bottom of the Q-FOG.



16. **USE EXTREME CAUTION: Forks can easily damage the Q-FOG. Make sure forks are under metal plates before lifting.**



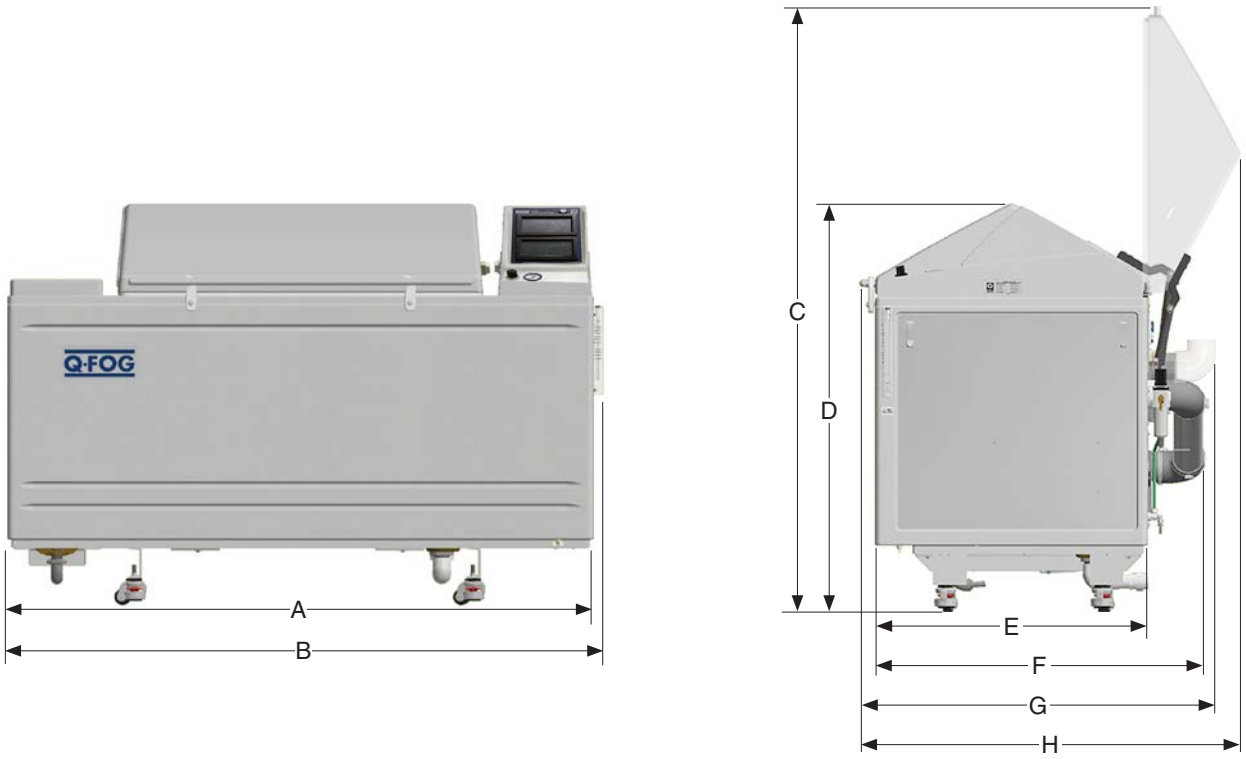
17. Use a forklift to lift Q-FOG up off the pallet. Move the Q-FOG away from the crate.

18. Follow Step 16 through Step 22 in Section 5.1.1 to complete cabinet uncrating.

5.2. External Dimensions (Aug 2021)

	Model 600		Model 1100	
A	184 cm	73"	221 cm	87"
B	187 cm	74"	224 cm	88"
C	187 cm	74"	200 cm	79"
D	126 cm	50"	131 cm	52"
E	84 cm	33"	100 cm	40"
F	102 cm	40"	107 cm	42"
G	113 cm	45"	129 cm	51"
H	120 cm	47"	138 cm	54"

NOTE: All dimensions approximate. Vertical dimensions vary based upon caster (leveling feet) adjustment.
Dimension **C** is overall height of tester with lid in 90° open position.
Dimension **D** is overall height of tester with lid closed.
Dimension **H** is overall depth of tester with lid in 90° open position.



Drawing Not To Scale

Figure 5.2: Q-FOG external dimensions.

5.3. Space Requirements (Aug 2021)

- The Q-FOG should be installed away from walls or other obstructions by the minimum distances shown in Figure 5.3.
- These minimum distances provide sufficient surrounding space to operate the unit, gain access to service areas, and allow proper ventilation.
- See Section 4 for other installation location guidelines.

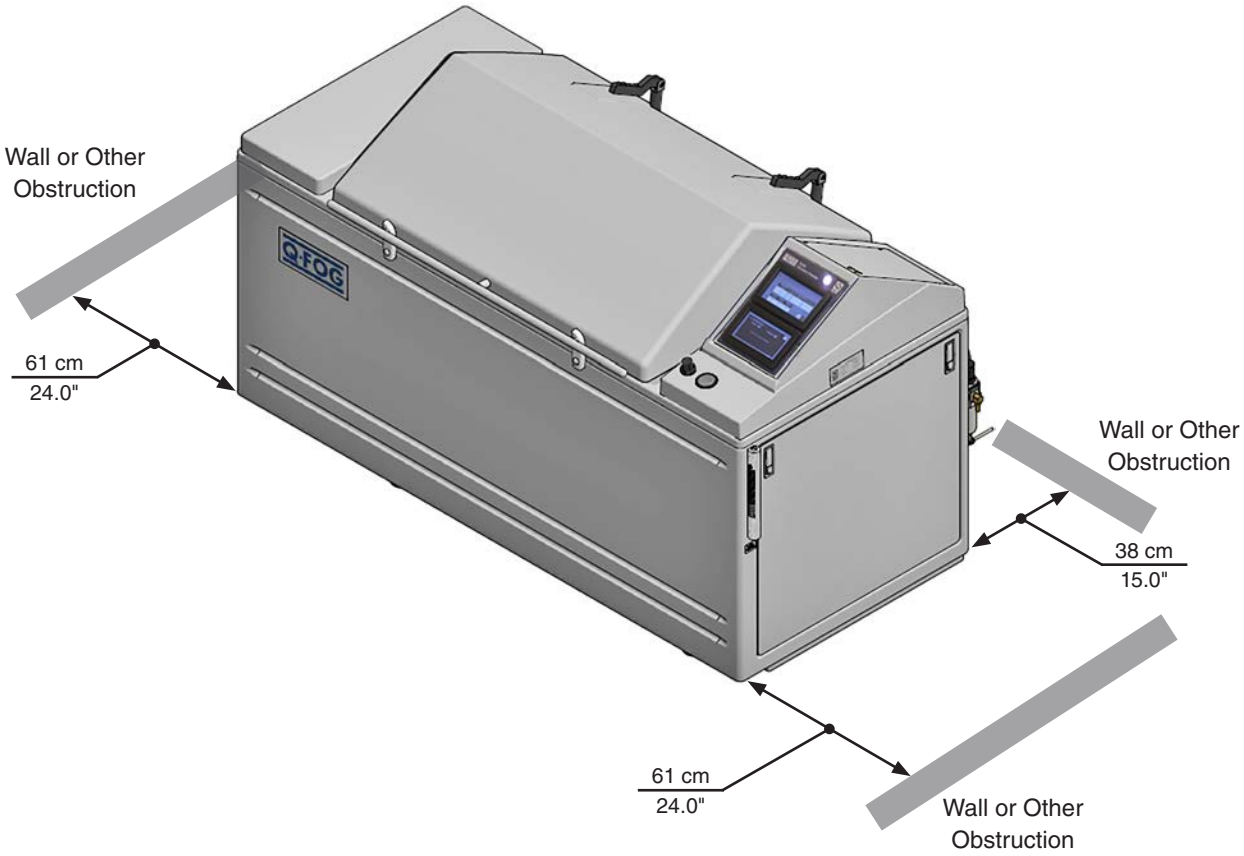


Figure 5.3: Q-FOG installation space requirements.

5.4. Leveling (Aug 2021)

- The Q-FOG must be leveled correctly to assure a proper lid seal and prevent leakage of corrosive fog into the laboratory.
- The Q-FOG is an all-plastic chamber and, therefore, it is not perfectly rigid. Because of this, the chamber can flex a small amount.
- Flexing can cause the lid seal to leak if the Q-FOG chamber is not properly adjusted.
- The Q-FOG is equipped with leveling casters that can be adjusted to level the chamber (Figure 5.4a).
- An optional leveling pad kit (Part Number F-8977-K) is available (Figure 5.4b).
- Be sure to follow these instructions to level the chamber so that the lid seals properly.

Instructions for Leveling the Q-FOG to Prevent Leakage

1. Position the Q-FOG where you want to operate it. The floor should be flat and level.
2. Close the lid and close the lid latch by rotating the latch counter-clockwise until in fully engages with the center lid handle post.
3. Adjust the leveling casters support feet (or optional leveling pads) so the Q-FOG is reasonably level and all four casters touch the ground (does not rock). The leveling casters or pads are adjusted using a wrench.
4. To check for leakage put a light inside the chamber, darken the room, and look for light escaping around the lid seal. Insert the light into the chamber through the air vent at the rear on the chamber. See Section 5.9.
5. Make sure the lid is closed and latched. Look all along the lid seal for light escaping between the lid seal and the chamber.
6. If light is escaping from the left side of the lid, lift the left front corner of the chamber by adjusting the left front support caster or pad. If light is escaping from the right side of the lid, lift the right front corner of the chamber by adjusting the right front caster or pad. The adjustments should be made just enough to prevent light from escaping the chamber.
7. After adjustment, the Q-FOG may rock because only three feet are touching the ground. If it rocks, extend the caster or pad that is not touching until it touches the ground. The caster or pad should be extended just enough to touch the ground. Too much extension may create another leak.

Figure 5.4a: Standard leveling caster.

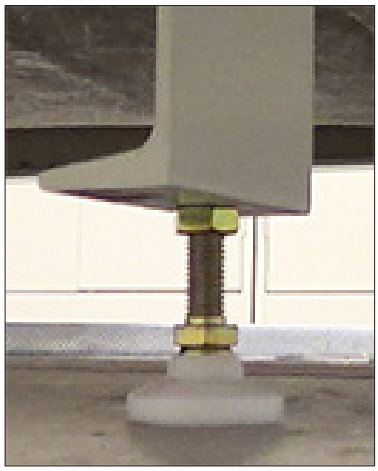


Figure 5.4b: Optional leveling pad.

Do not use other leveling devices. Contact Q-Lab Repair and Tester Support for more information (Section 7).

5.5. Electrical (Aug 2021)

IMPORTANT: Do not switch main power ON until the other services have been connected.

- The Q-FOG chamber power requirements are listed in Figure 5.5a
- This voltage requirement was specified by the purchaser at the time the chamber was ordered.
- The input voltage is shown on the nameplate attached at the rear of the chamber near the mains power entry (Figure 5.5b).
- It is important that the cabinet be connected to the correct voltage.
- If the voltage is too low, the chamber will not heat up quickly enough.
- If the voltage is too high, it could cause damage to the chamber.

Power Cord Not Supplied

- The power cord connection between the facility main power supply and the Q-FOG main power circuit breaker **IS NOT** supplied with the Q-FOG (see Installation).

Model	Voltage	Maximum Current	Frequency
SSP600 CCT600	208 V± 10%, 1-Phase	16 A	50/60 Hz
	230 V± 10%, 1-Phase	14 A	
SSP1100 CCT1100	208 V± 10%, 1-Phase	20 A	
	230 V± 10%, 1-Phase	18 A	

Figure 5.5a: Q-FOG power requirements.

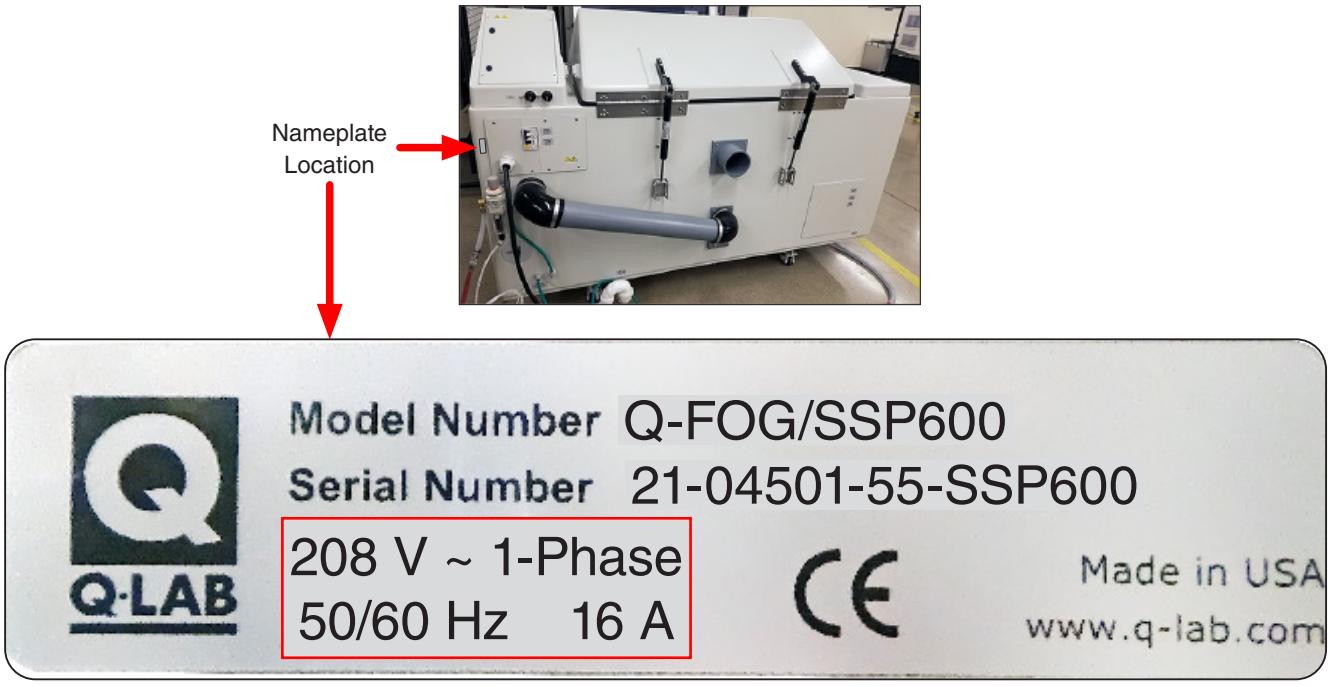


Figure 5.5b: Typical Q-FOG nameplate showing power requirements.

Installation

- A qualified electrician should connect the mains according to local codes using approved disconnect and over-current protection.
- The Main Power Circuit Breaker and a Ground Fault Circuit Interrupter (GFCI) are located on the rear of the Q-FOG (Figure 5.5c).
- Near the breaker is a hole for the mains power entry.
- The electrician can enlarge this hole to accept the chosen electrical conduit or power cord.
- The mains wires should be connected to the terminal block near the breaker.
- A power cord for connecting the facility main power supply to the Q-FOG **IS NOT** supplied with the tester.
- For dual phase systems, such as the USA, both the brown and blue wires will be live.
- For single phase systems, such as Europe, the brown is live and the blue is neutral.
- See *LF-8151-SO (55.0) - Q-FOG SSP and CCT System Overviews (Ser. 55)* for additional electrical information.

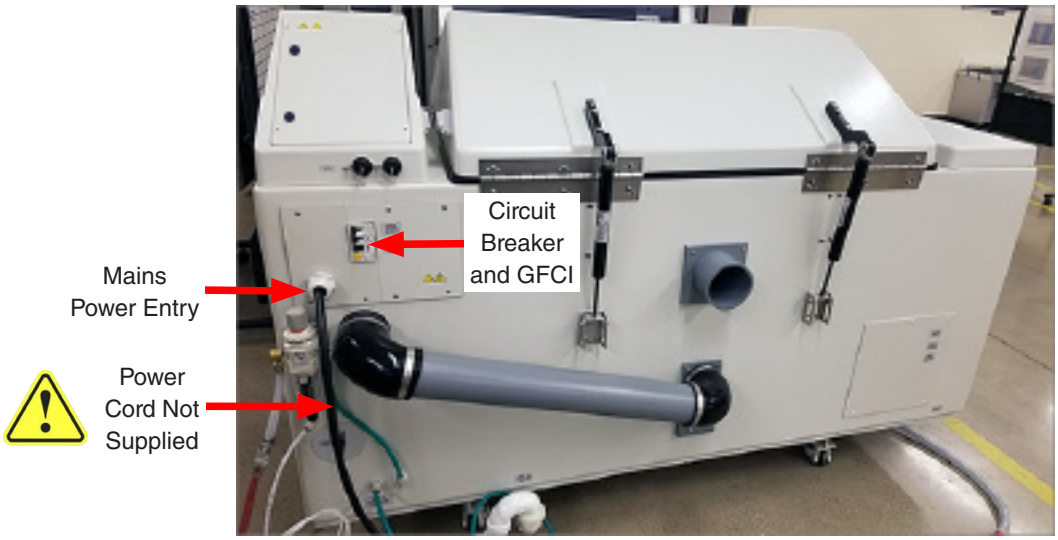


Figure 5.5c: Mains power entry and circuit breaker locations.

5.6. Compressed Air (Aug 2021)

Purity

- The compressed air supply must be clean, dry, and oil-free.
- The presence of solid impurities, water, oil, or other contaminants in the compressed air may affect test results.
- Do not add a lubricator to your compressed air system.
- Oil in the air will reduce the corrosive effects of the electrolyte on the test specimens.
- Pollutants in the air may increase the corrosive effects.
- Impurities in the air supply may also clog the spray nozzle, solenoid valves, or check valves, and cause maintenance problems.
- The Q-FOG is equipped with a moisture filter to improve the incoming compressed air quality (Figure 5.6a).
- As moisture accumulates, the filter purges to a water drain.

Installation

- The Q-FOG is equipped with a pressure regulator and gauge (Figure 5.6b).
- Incoming air pressure should be in this range: 40-150 psi (2.8 – 10.3 bar) as shown on label behind pressure regulator adjustment knob (Figure 5.6b).
- Set the pressure regulator to 40 psi.
- Volume: 3.5 CFM (1.7 LPS) maximum.
- A 9 mm or a 3/8 " inside diameter (ID) compressed air supply hose is required to connect to the air inlet at the rear of the cabinet (Figure 5.6a).
- The distance from the floor to the air inlet on a Q-FOG chamber with casters is approximately 67.3 cm (26.5"). Without casters the distance is approximately 60 cm (23.5"). With the chamber in the installation location, measure the distance from the floor to the air inlet to determine the actual height.

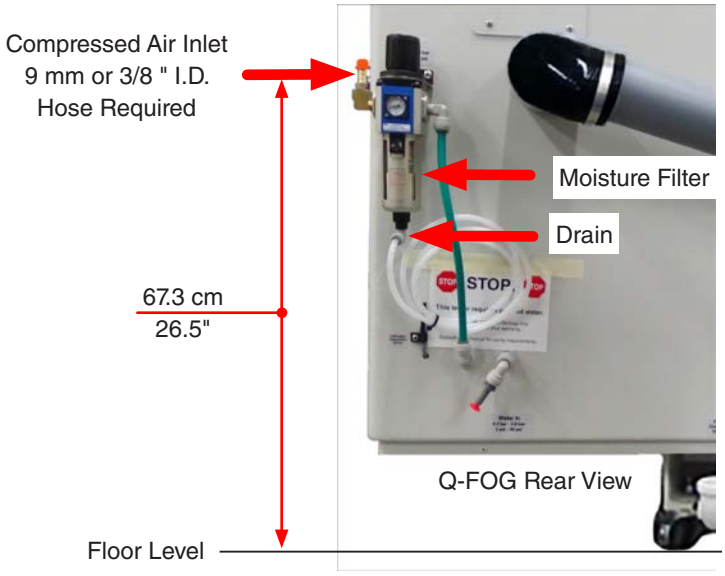


Figure 5.6a: Compressed air connection.

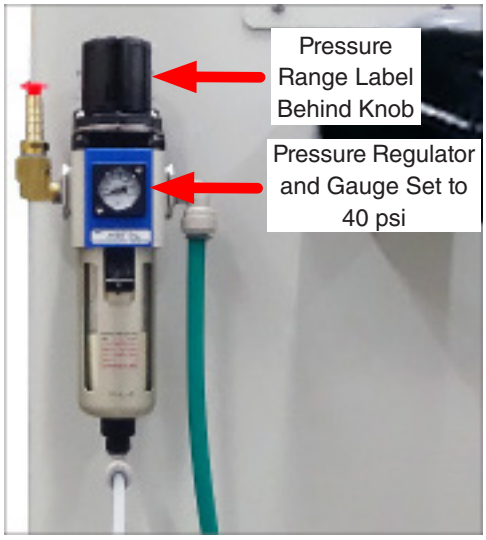


Figure 5.6b: Compressed air pressure regulator.

5.7. Water Supply (Aug 2021)

Purity

Important Caution: Q-FOG testers require purified water.

- **The Q-FOG tester warranty is voided if this condition is not met.**
- Water purity requirements are listed below.

- Q-FOG testers require a supply of pure water for the bubble tower.
- This is used for saturating the compressed air with water vapor during the fog function.
- Q-FOG CCT tester also needs pure water for producing chamber humidity.
- The reverse osmosis / deionized (RO/DI) water system described on the next page produces water pure enough for Q-FOG CCT testers.
- **This type of RO/DI system is required for Q-FOG testers.**

Pressure	Maximum Flow Rate	Maximum Volume	Resistivity	Conductivity	Total Dissolved Solids	pH
0.2-3.8 bar (3-56 psi)	0.4 Liter/min.	2 Liters/hr.	> 200k ohm•cm	< 5 µS/cm	< 2.5 ppm	6-8

- Remove Solid Particles: > 20 µm
- If line pressure is greater than 4.0 bar (56 psi), install a pressure regulator.
- In CCT models, maximum volume value is during a humidity function, or a fog function when the chamber air temperature set point is greater than 48 ^{O}C.
- Typical maximum volume will be approximately 7 Liters/day.
- Additionally, the purified water system must be sized to accommodate maximum peak demand during short duration bubble tower refill step at 0.4 liters/minute.

Recirculation

- To avoid the build-up of organic contaminants in the water supply system, Q-Lab recommends the use of a recirculating RO/DI system. Contact Q-Lab Repair and Tester Support for more information (See Section 7).

Reverse Osmosis / Deionization System (RO/DI)

The system shown below allows water at two different purity levels (RO and RO/DI) to be distributed throughout the laboratory. RO/DI water output by Stage E is required for Q-FOG CCT testers.

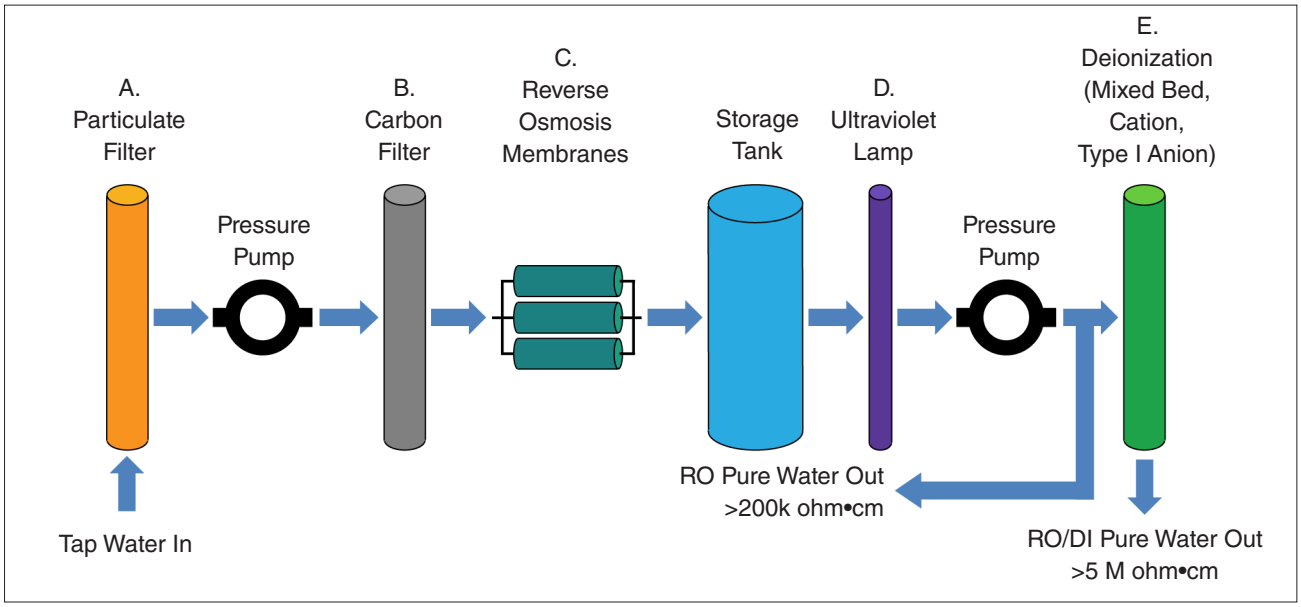


Figure 5.7a: An Effective Reverse Osmosis / Deionized Water System with Anion Type I Resin for Spray Water Silica Removal. For more information on RO/DI systems contact the Life Science business of Merck KGaA, Darmstadt, Germany. The Life Science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the USA and Canada.

Stage	Purpose	Outgoing Purity	Notes
A. Particulate Filter	Remove small particles		Replace once per year
B. Carbon Filter	Remove chlorine		Replace once or twice per year
C. R/O Membranes	Remove dissolved solids, colloidal silica, organic and biological contaminates	>200k ohm•cm	Produces pure (RO) water
D. Ultraviolet Lamp	Disinfect water		Any bacteria or algae from the storage tank is removed
E. Mixed Bed Tank	Final polishing to remove positively and negatively charged ions	> 5 M ohm•cm	Produces ultra pure (RO/DI) water required for the Q-FOG CCT

Important: For Stage E, use Type I, not Type II anion in the mixed bed tanks of the DI system.

The Strong Base Type I Anion resin in the mixed bed tanks is an important part of these systems. This is because strong base Type I anion resin is the only resin that can effectively remove suspended silica. Type I anion is much better at removing suspended silica than Type II. Unfortunately, Type II is the most common anion. So be sure to insist that your water purification supplier installs Type I, not Type II. The cost for Type I anion is about the same as Type II.

Installation

Flush out the water supply line prior to connecting to the Q-FOG tester.

- A 9 mm (3/8 ") inside diameter purified water supply hose is required to connect to the water inlet at the rear of the cabinet.
- Distance from floor to purified water inlet on tester with casters is approximately 31.8 cm (12.5 “)*. Without casters the distance is approximately 23 cm (9 “).
- Optionally, for connection to 10 mm water supply tubing, a metric installation kit (part number F-70099-K) is available.
- The water supply connection should be fitted with a stop valve.

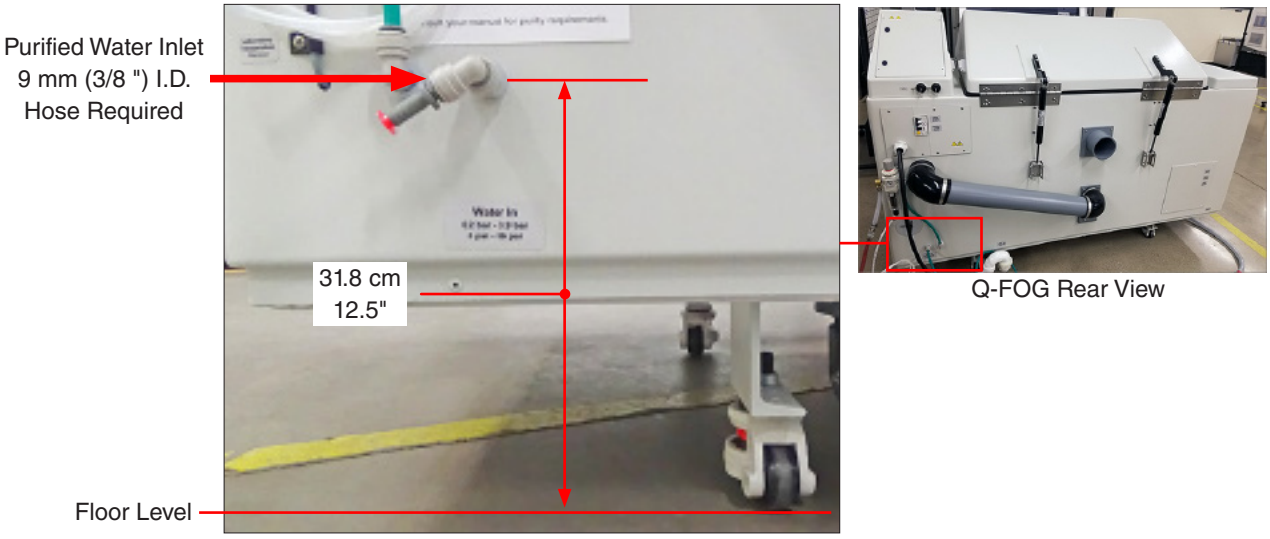


Figure 5.7b: Purified water connection.

* Actual distance from the floor to the center of the water inlet will vary based upon adjustment of leveling feet or installation of optional casters. Once the tester is in position, measure the distance to determine the actual height.

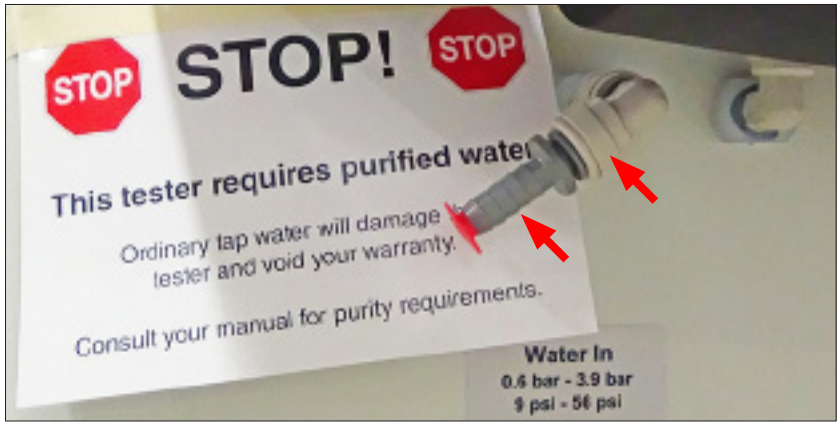


Figure 5.7c: 9 mm (3/8") Supplied quick-connect hose barb and elbow for water connection.

- When electrical, compressed air, and purified water have been connected, turn on the air and water, and check for leaks at the connection points.

5.8. Water Drainage (Aug 2021)

A floor drain is <u>required</u>. The Q-FOG tester has multiple drains (See Figures below).

- Waste water disposal must be made in accordance with local ordinances regarding chemical disposal.
- Usually simple salt water is not regulated
- The main testing chamber is fitted with a drain to enable excess solution to go to a sanitary sewer drain.
- A supplied trap <u>must be installed</u> on the drain so that corrosive vapors cannot escape.
- Run the supplied hose from the trap to a drain.

Chamber Drain

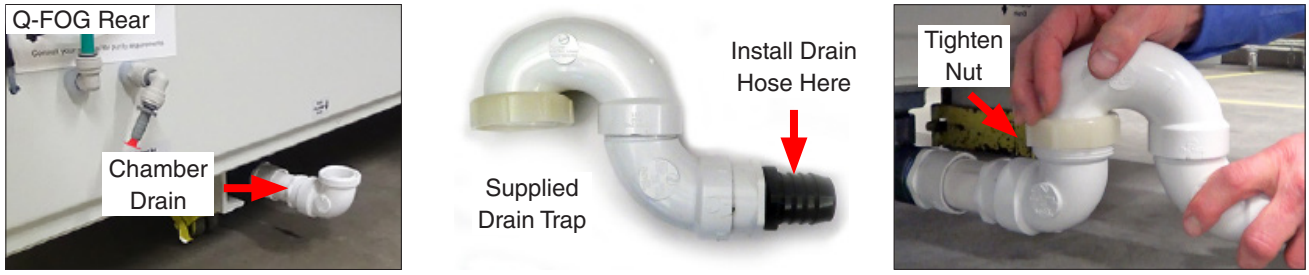
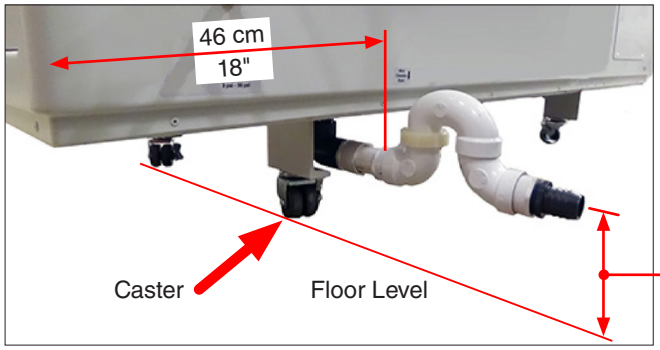


Figure 5.8a: Drain trap installation.

Q-FOG Rear View



NOTE: Trap may be positioned at an angle to facilitate connection to drain.

Figure 5.8b: Chamber drain location with 70 mm (2.75") high optional caster.

* Actual distance from the floor to the center of the chamber drain will vary based upon adjustment of leveling feet or installation of optional casters. Once the tester is in position, measure the distance to determine the actual height.

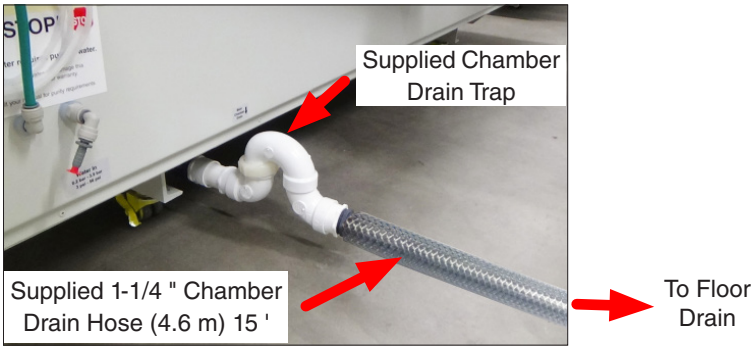


Figure 5.8c: Chamber drain connection.

Solution Reservoir Drain

- The supplied 19 mm (3/4 ") hose and ball valve shut off must be attached to the reservoir drain.
- This hose is used only when cleaning out the reservoir and does not have to be run to a drain.
- However, for convenience, we recommend that this hose be connected to a drain.
- Plastic pipe (not supplied) may be used to connect all Q-FOG drains permanently into a sanitary drain.
- Make sure the ball valve is attached and closed before filling the reservoir.

Figure 5.8d: Solution reservoir drain location with 70 mm (2.75") high optional caster.

* Actual distance from the floor to the center of the reservoir drain will vary based upon adjustment of leveling feet or installation of optional casters. Once the tester is in position, measure the distance to determine the actual height.

Figure 5.8e: Solution reservoir drain connection.

Bubble Tower and Vapor Generator Drain

- This system consists of a 13 mm (1/2 ") hose.
- This hose is used only when cleaning out the Bubble Tower (SSP and CCT), or Vapor Generator (CCT only), and does not have to be run to a drain.
- However, for convenience, we recommend that this hose be connected to a drain.

Q-FOG Rear View

Figure 5.8f: Bubble tower/vapor generator drain connection.

Air Filter Drain

The end of the supplied 1/4" tubing from the bottom of the air filter should be placed into a floor drain.

Q-FOG Rear View

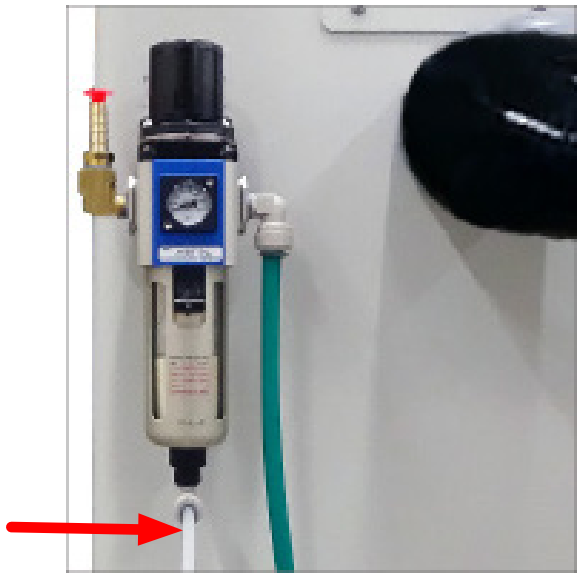


Figure 5.8g: Air filter drain location.

5.9. Venting (Aug 2021)

- Be sure to comply with all local regulations regarding chemical exhaust. Usually simple salt water is not regulated.
- The Q-FOG exhausts air from the test chamber at a rate of approximately 60 CFM.
- For proper operation of the venting system, 60 CFM of replacement (make up) air must be available to the room where the Q-FOG is installed.
- Heat load dissipation is 1000 W for SSP600 and CCT600, and 1500 W for SSP1100 and CCT1100.
- Proper venting will prevent corrosive mist from entering the laboratory and assure correct performance of your Q-FOG tester.
- Air venting from the chamber is done via a 114 mm (4.5 ") outside diameter vent tube (Figure 5.9a).
- The user must connect an exhaust system with a 102 mm (4.0 ") inside diameter (minimum) vent line.
- Optionally, for connection to an exhaust system having 100 or 110 mm outside diameter tubing, a metric installation kit (part number F-70099-K) is available. See Figure 5.9b, c and d for various metric installation configurations.
- Because of the typically corrosive nature of the exhaust, plastic vent tubing is strongly recommended.
- The length of the venting system must be less than 30 meters (100 feet) and contain fewer than 10 elbows (i.e. 90° turns).
- If it must be longer, or if it must contain more turns, there could be significant back pressure on the chamber and this might cause corrosive mist to enter the laboratory and/or reduce the tester's performance capabilities.
- A "tee" is recommended at the end of the vent to reduce the risk of periodic back-pressure from the wind (Figure 5.9e).
- Place a screen over the vent to discourage birds and small animals.

Vent Location

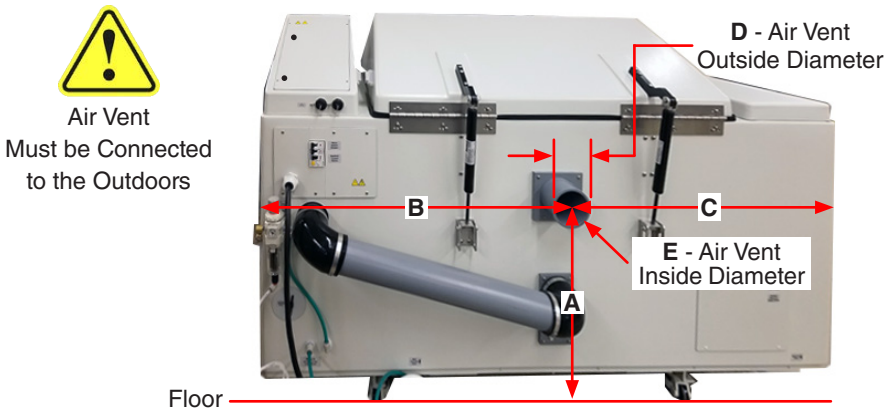


Figure 5.9a: Vent location.

Air Vent Location

	Model 600		Model 1100	
A*	71.1 cm	28.0 "	71.1 cm	28.0 "
B	90.2 cm	35.5 "	109.2 cm	43.0 "
C	91.4 cm	36.0 "	110.5 cm	43.5 "
D	11.4 cm	4.5 "	11.4 cm	4.5 "
E	10.2 cm	4.0 "	10.2 cm	4.0 "

* Distance from floor to center of vent varies based upon adjustment of leveling feet and optional installation of casters. Measure tester to determine actual height.

Optional Metric Venting

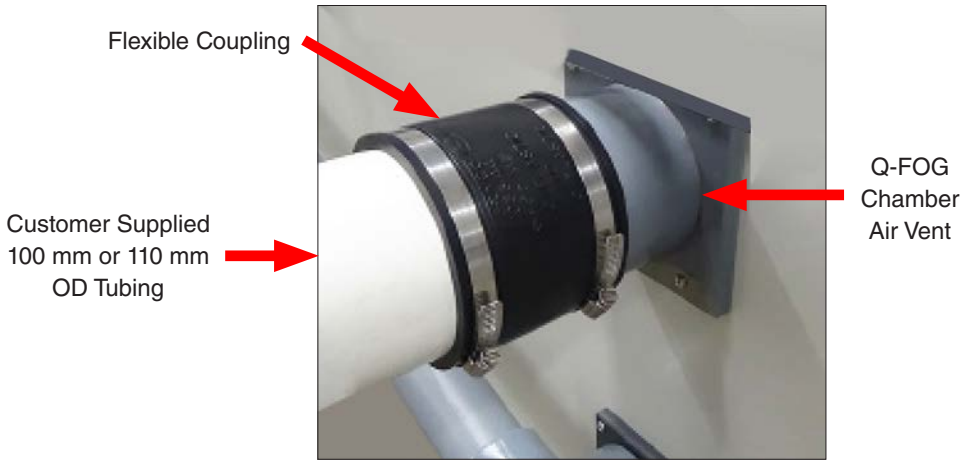


Figure 5.9b: Metric kit flexible coupling installed for straight out venting.

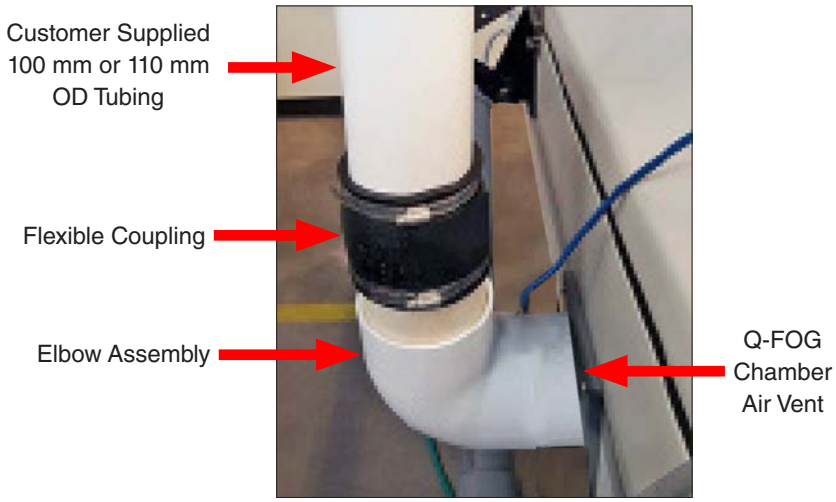


Figure 5.9c: Metric kit flexible coupling and elbow assembly installed for vertical venting.

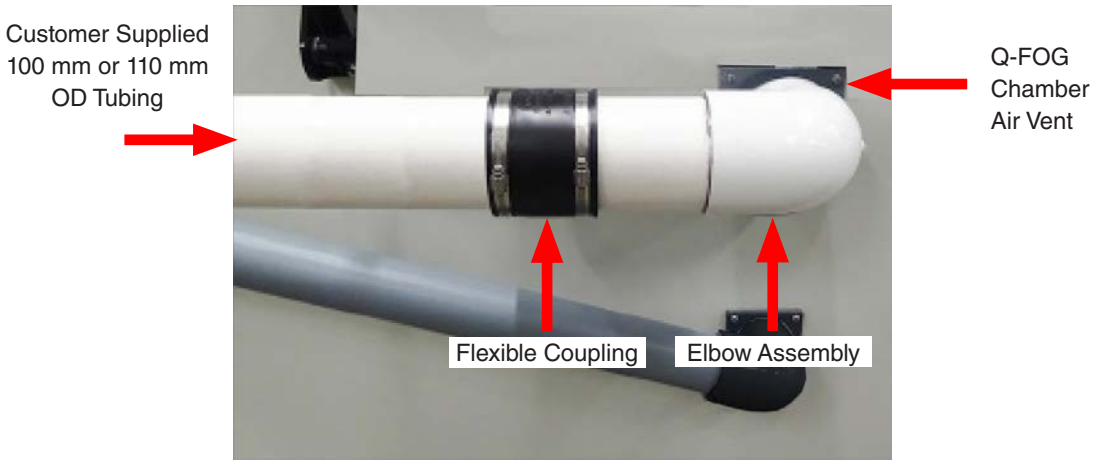


Figure 5.9d: Metric kit flexible coupling and elbow assembly installed for horizontal venting.

Vent Connections

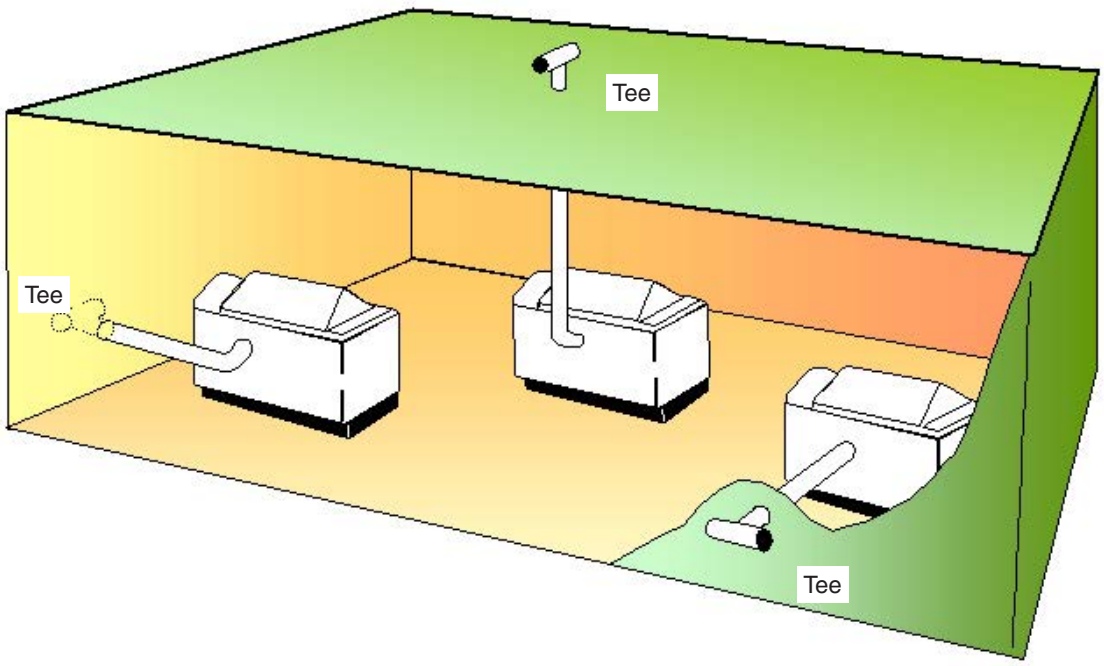


Figure 5.9e: Recommended venting.

- Because some liquid from the salt fog may condense on the inside of the vent tube, we recommend that all sections of the vent tube have a slope either back toward the chamber or away to a drain (see Figure 5.9f).
- Otherwise, liquid may build up in the vent tube and cause problems with back-pressure and operation of the chamber.
- Avoid all installations that could create moisture traps (see Figure 5.9g).
- Flexible tubing is not recommended due to the potential for creating moisture traps. Excessive amounts of moisture build up can create a weight load on the vent tubing.
- When venting variations are necessary, please consult Q-Lab Repair and Tester Support for recommendations. See Section 7 for contact information.

Figure 5.9f: Correct vent installations.

Important: Make sure the vent is installed so that moisture cannot build up and create a trap as shown below.

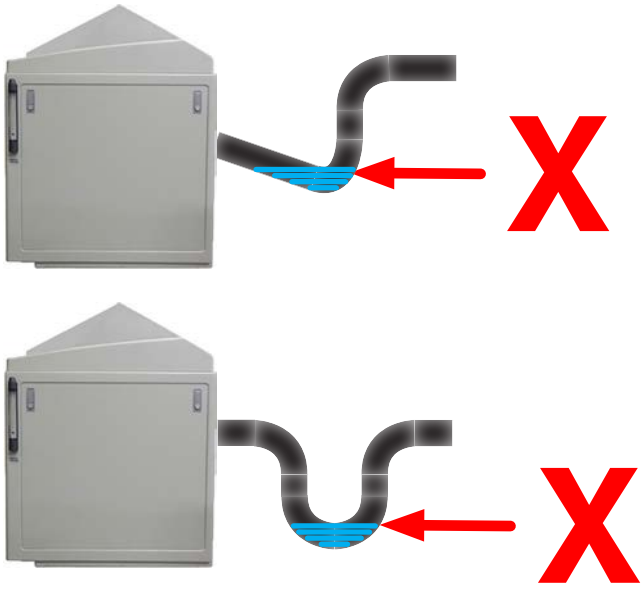


Figure 5.9g: Incorrect vent installations.

6. Warranty (Aug 2021)

- All Q-FOG SSP and CCT corrosion chambers and components are guaranteed against defects in workmanship or materials for one year.
- Liability is limited to replacing or repairing any part or parts that are defective in materials or workmanship.
- Liability in all events is limited to the purchase price paid.
- Damage due to accident or abuse is not covered. Labor cost is not covered.
- Q-Lab Corporation makes no other warranties, including implied warranties of merchantability or fitness for a particular purpose, except as may be expressly provided by the Q-Lab Corporation in writing.
- Q-Lab Corporation shall not be liable for any incidental, consequential, special or contingent damages arising out of the sale or use of any product.
- Q-FOG test chambers are made in the USA.

7. Repair and Tester Support (Jul 2020)

- Repair and Tester Support is available Monday through Friday from 8:30 AM to 5 PM.
- Please contact the nearest international branch office by phone or email for technical support.
- You can also visit our website at www.q-lab.com to register your tester for access to additional useful troubleshooting guides, operating manuals, and technical information.

For sales, technical, or repair support please visit:

Q-Lab.com/support

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