



Superior Solutions

Zep Equipment & Service Division
C4 Entryway Foam System

C4

Cross Contamination Control Center



Instruction Manual

Installation Instructions

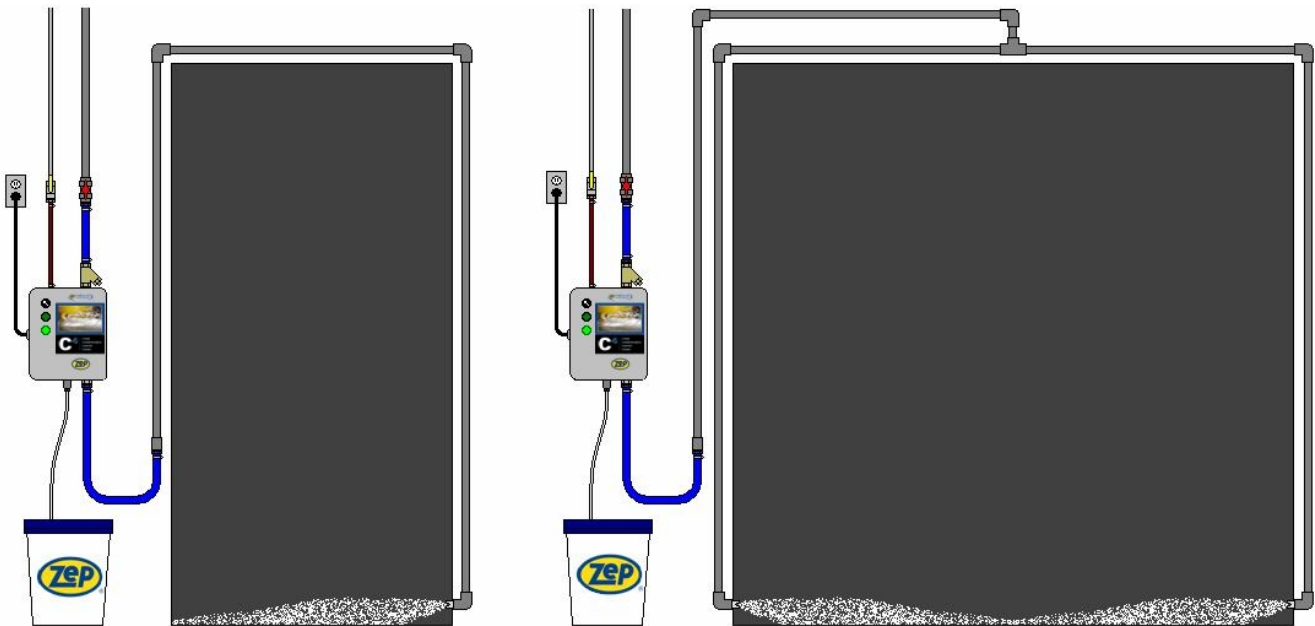
The following utilities must be available in the location where the C⁴ unit will be installed:

<i>W59901 Stand Alone Unit</i>	<i>W60301 Pump Fed Unit</i>
Water (40-80 PSI, 5 GPM)	Premixed Solution (40-80 PSI, 5 GPM)
Compressed Air (30-100 PSI, 7 SCFM), Clean and Dry	Compressed Air (30-100 PSI, 7 SCFM), Clean and Dry
Electricity (15 A, 120 VAC)	Electricity (15 A, 120 VAC)

The content of the shipping box includes:

<i>W59901 Stand Alone Unit</i>	<i>W60301 Pump Fed Unit</i>
(1) C ⁴ Foamer Unit	(1) C ⁴ Foamer Unit
(1) Roll ¾" Blue Discharge Hose	(1) Roll ¾" Blue Discharge Hose
(1) Roll ¼" Clear Reinforced Pick-Up Hose w/ Strainer	---
(1) Metering Tip Kit	---
(2) Foam Nozzle Assemblies	(2) Foam Nozzle Assemblies
(1) ¾" Sch. 80 PVC Tee	(1) ¾" Sch. 80 PVC Tee
(3) ¾" Sch. 80 PVC 90° Elbows	(3) ¾" Sch. 80 PVC 90° Elbows
(6) ¾" HB x ¾" MNPT Adapters	(6) ¾" HB x ¾" MNPT Adapters

You will also need ¾" Sch. 80 PVC pipe, ¾" hose clamps, mounting hardware, and fittings to connect the water/solution and compressed air supplies to complete the installation (not included).



Stand alone unit with one nozzle

Pump fed unit with two nozzles

1. Open the shipping box and check the contents. If you are missing any parts, please contact your ZEP representative.
2. Determine how many nozzles you will need to cover the doorway. Doors up to 5 feet wide require one nozzle; doors from 5 feet up to 10 feet wide require two nozzles.
3. Construct a foam header around the door using ¾" PVC fittings (included) and ¾" PVC pipe (not included). For two nozzle systems, build the header symmetrically to produce balanced flow and pressure between the nozzles.
4. Mount the C⁴ unit on the wall near the door. Connect the discharge of the C⁴ unit to the header with a short piece of the ¾" discharge hose using hose barb adapters (included) and hose clamps (not included).
5. Connect the water supply (stand alone unit) or premixed solution supply (pump fed unit) and compressed air supply (top of unit) to the C⁴ unit.

- Place the container of ZEP sanitizer near the C⁴ unit (stand alone unit only). DO NOT connect the ¼” pick-up hose to the metering tip adapter at this time.
- Turn the **OFF-CYCLE switch** to the OFF position.
- Plug the C⁴ unit into a 120 VAC power outlet.
- Open the water/solution and compressed air supply valves.

Start-Up Instructions (W59901 Stand Alone Unit)

- Open the C4 unit door and close the **needle valve** by turning the knob to the right until it stops.
- With the **OFF-CYCLE switch** in the OFF position, press and hold the **PRIME button** until water is flowing consistently through the foam nozzle(s).
- Check the **water/solution pressure gauge**. The water pressure must be at least 40 PSI for the C⁴ unit to operate properly (60 PSI is ideal).
- The flow rate through the injector is approximately 2.25 GPM at 60 PSI. You can determine the actual flow rate by disconnecting the blue hose from the foam header and timing the flow of water through the hose into a large graduated container (i.e. bucket with gallon marks) while pressing the **PRIME button**.
- Determine the dilution for the ZEP sanitizer being used. The recommended dilution can be found on the product label. This is usually specified as a ratio (i.e. 1:50) or in fluid ounces per gallon.
- Calculate the required flow rate of chemical to achieve your desired dilution (see examples below).
- Select the **metering tip** that will achieve your desired dilution from the table below.

<i>Metering Tip Color</i>	<i>Injection Rates (oz/min)</i>		
	<i>1 cps</i>	<i>75 cps</i>	<i>200 cps</i>
Tan	1.1	0.8	0.5
Orange	1.4	1.0	0.7
Turquoise	2.0	1.4	1.0
Pink	2.7	1.8	1.3
Clear	3.5	2.4	1.6
Brown	4.0	2.7	1.7
Red	4.9	3.3	2.0
White	6.0	3.9	2.3
Green	6.8	4.4	2.5
Blue	7.8	4.9	2.7
Yellow	10.3	5.9	2.9
Black	13.2	6.7	3.0
Purple	17.1	6.7	3.1
Gray	19.0	7.1	3.3
No Tip	20.0	8.0	3.7

All injection rates are based on a water inlet pressure of 40 PSI and operating at full vacuum.

EXAMPLE #1: Desired dilution is 2 oz/gal.

- Water flow rate is approximately 2.25 GPM at 60 PSI.
- 2.25 GPM x 2 oz/gal = 4.5 oz/min chemical flow rate
- 4.5 oz/min is closest to 4.9 oz/min for water-thin chemicals (from selection table).
- The RED TIP is required.

EXAMPLE #2: Desired dilution is 1:50.

- Water flow rate is approximately 2.25 GPM at 60 PSI.
- 2.25 GPM x 128 oz/gal = 288 oz/min total flow rate
- 288 / 50 = 5.8 oz/minute chemical flow rate
- 5.8 oz/min is closest to 6.0 oz/min for water-thin chemicals (from selection table).
- The WHITE TIP is required.

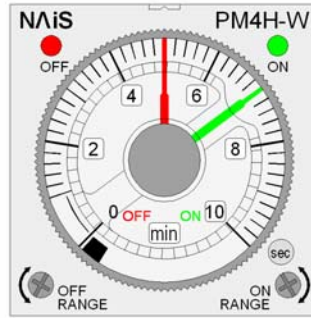
NOTE: It is always best to determine the actual water flow rate through the injector and base your calculation on that result. It is also recommended that you confirm your metering tip choice with a pull test. To perform a pull test, pour some chemical into a small graduated container (i.e. a measuring cup). Put the ¼” pick-up hose into the container, press the prime button for one minute, and determine how much chemical was pulled into the injector.

8. Thread the **metering tip** into the metering tip adapter on the C⁴ unit. Connect the ¼” pick-up hose to the metering tip adapter and place the strainer into the product container.
9. With the **OFF-CYCLE switch** in the OFF position, press and hold the **PRIME button** until the ¼” pick-up hose is full and the solution is flowing consistently through the foam nozzle(s).
10. Release the **PRIME button**.
11. Check the **water/solution pressure gauge**. The water pressure must be at least 40 PSI for the C⁴ unit to operate properly (60 PSI is ideal).
12. Using the **air pressure regulator and gauge**, set the air pressure 10-15 PSI lower than the water pressure. For example, if the water pressure is 60 PSI, set the air pressure at 45 PSI.
13. Press and hold the **PRIME button** again until the solution is flowing consistently through the foam nozzle(s).
14. While pressing the **PRIME button**, adjust the foam quality by slowly increasing the air volume with the **needle valve** (DO NOT adjust the air pressure).

Start-Up Instructions (W60301 Pump Fed Unit)

1. Open the C⁴ unit door and close the **needle valve** by turning the knob to the right until it stops.
2. With the **OFF-CYCLE switch** in the OFF position, press and hold the **PRIME button** until solution is flowing consistently through the foam nozzle(s).
3. Check the **water/solution pressure gauge**. The solution pressure must be at least 40 PSI for the C⁴ unit to operate properly (60 PSI is ideal).
4. With the **OFF-CYCLE switch** in the OFF position, press and hold the **PRIME button** until the solution is flowing consistently through the foam nozzle(s).
5. Release the **PRIME button**.
6. Check the **water/solution pressure gauge**. The solution pressure must be at least 40 PSI for the C⁴ unit to operate properly (60 PSI is ideal).
7. Using the **air pressure regulator and gauge**, set the air pressure 10-15 PSI lower than the solution pressure. For example, if the solution pressure is 60 PSI, set the air pressure at 45 PSI.
8. Press and hold the **PRIME button** again until the solution is flowing consistently through the foam nozzle(s).
9. While pressing the **PRIME button**, adjust the foam quality by slowly increasing the air volume with the **needle valve** (DO NOT adjust the air pressure).

Cycle Timer Instructions



1. Using a pocket screwdriver, set the off time units and scale by turning the OFF RANGE knob. The unit indicator is located on the dial face. The available off time units and scales are:
 - Seconds – 0 to 1.0, 0 to 5, 0 to 10, 0 to 50
 - Minutes – 0 to 1.0, 0 to 5, 0 to 10, 0 to 50
 - Hours – 0 to 1.0, 0 to 5, 0 to 10, 0 to 50
 - 10 Hours – 0 to 1.0, 0 to 5, 0 to 10, 0 to 50
2. Using a pocket screwdriver, set the on time units by turning the ON RANGE knob. The unit indicator is located at the bottom right of the timer. The on time will use the same number scale as the off time. The available on time units are:
 - Seconds
 - Minutes
 - Hours
 - 10 Hours
3. Set the off cycle time by turning the outer gray dial (red hand).
4. Set the on cycle time by turning the inner clear dial (green hand).
5. When power is applied, the timer will always start in the off cycle.

EXAMPLE (see timer diagram):

- The off time range is set for **0-10 minutes**.
- The on time range is set for **0-10 seconds**.
- The off cycle time is set for **5 minutes**.
- The on cycle time is set for **7 seconds**.

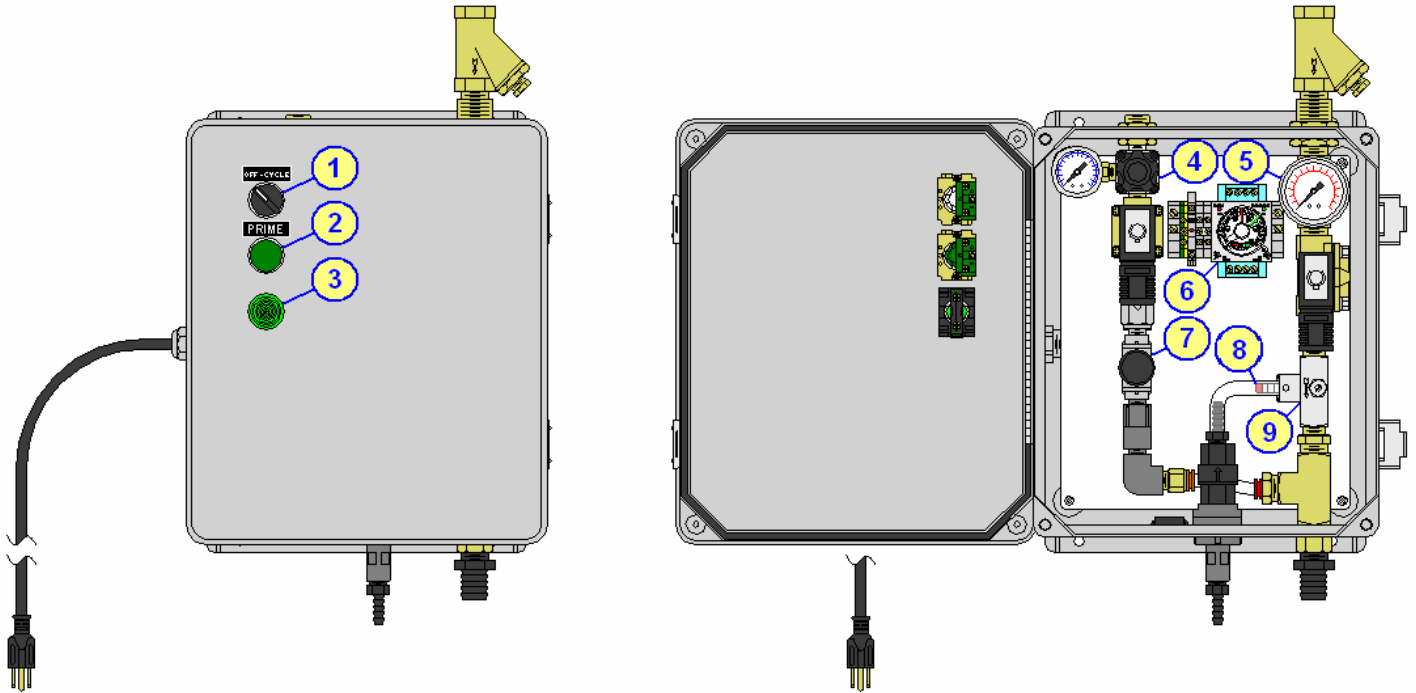
NOTE: The timer will always start with the “off” cycle when power is supplied.

Troubleshooting Guide

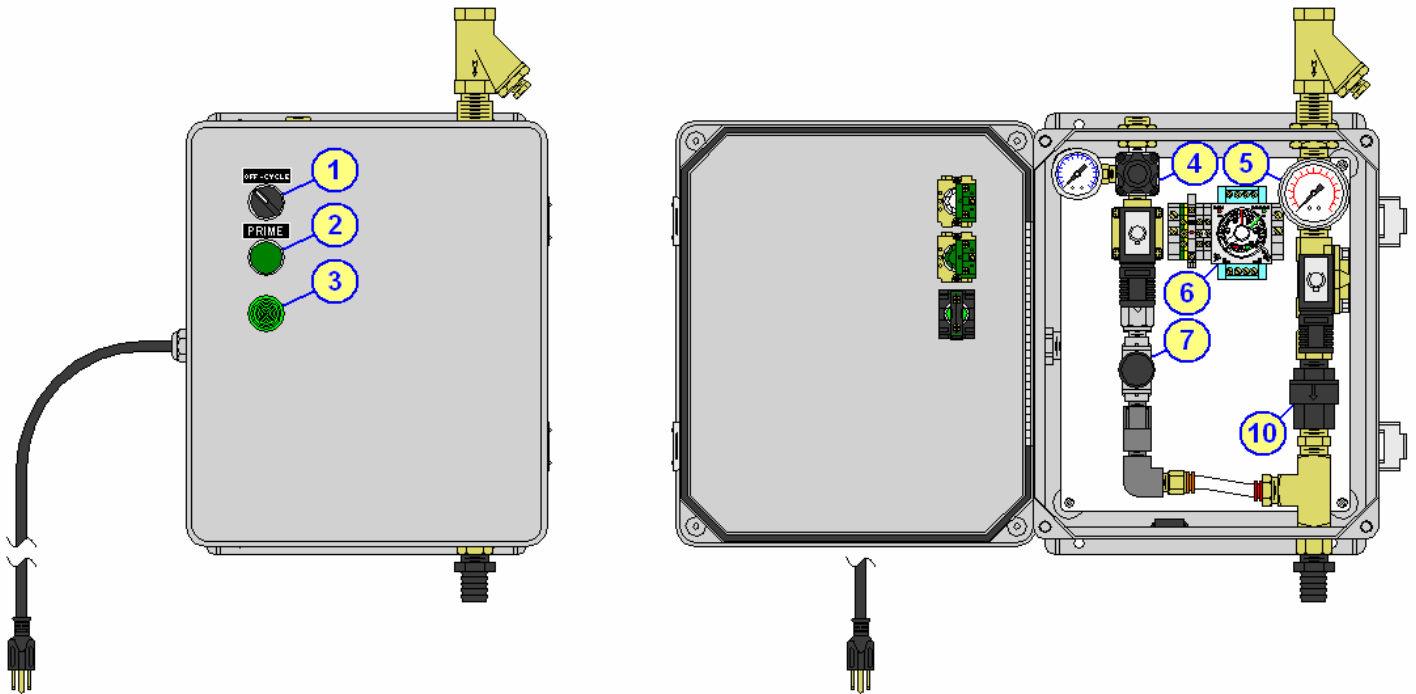
Problems	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Will not draw chemical	X	X	X		X				X	X	X	X	X	
Poor foam quality	X	X	X		X				X	X	X	X	X	
Foam surges and/or sputters	X	X	X	X	X		X	X	X	X	X	X	X	
Foam output too wet	X		X	X	X	X	X	X	X	X		X	X	
Foam output too dry		X												
Water flowing into container											X			
Unequal solution flow (2 nozzles)														X

1. *Chemical pick-up hose is not immersed in the chemical supply or chemical supply is depleted* – Immerse the hose in the chemical or replenish the chemical supply.
2. *Air pressure/volume is too high for available water pressure* – Adjust the air regulator and/or needle valve.
3. *Water pressure is too low* – At least 40 PSI is required, increase the water pressure if possible or decrease the air pressure/volume.
4. *Chemical-to-water ratio is too low* – Correct the chemical-to-water ratio with a larger metering tip.
5. *Foam hose or pipe is the wrong size or too long* – The hose or pipe must be 3/4" I.D and no more than 50' long. Replace it with the correct I.D. and/or shorten the overall length.
6. *Inadequate air supply* – Open the air inlet valve fully and check the needle valve.
7. *Wrong chemical is being used* – Ensure that the chemical is recommended for the application.
8. *Use of a lubricator on the air supply may decrease foam quality* – Use only clean, dry air.
9. *Pin hole/cut in the chemical pick-up hose* – Replace the hose.
10. *Chemical strainer or metering tip is blocked* – Clean or replace the strainer and/or metering tip.
11. *Chemical check valve is not working* – Clean or replace the check valve.
12. *Needle valve or air pressure regulator has failed* – Clean or replace the needle valve and/or regulator.
13. *Water scale or chemical build-up may have formed in the injector* – Remove injector and soak in descaling acid.
14. *Foam nozzle branches are not equal in length* – Reinstall the hose or pipe so that each nozzle branch is approximately the same length.

W59901 Stand Alone Unit



W60301 Pump Fed Unit



<i>No.</i>	<i>Description</i>	<i>No.</i>	<i>Description</i>
1	Off-Cycle Switch	6	Cycle Timer
2	Prime Button	7	Needle Valve
3	Power Indicator Light	8	Metering Tip (Stand Alone Unit)
4	Air Pressure Regulator & Gauge	9	Single-Stage Injector (Stand Alone Unit)
5	Water Pressure Regulator	10	Flow Restrictor (Pump Fed Unit)

Parts & Accessories

Electrical Parts

<i>Shop Part #</i>	<i>Description</i>
W60101	10 Ft. Power Cord
W60901	Repeat Cycle Timer
W61801	Green Prime Switch
W61901	Green Indicator Light
W62001	Off-Cycle Switch
W62101	8-Pin Relay Base

Air Side Parts

<i>Shop Part #</i>	<i>Description</i>
W61101	¼" Solenoid Valve
W61301	Air Pressure Gauge
W51301	¼" Check Valve (Gray)
W61601	Air Pressure Regulator
W62801	¼" Needle Valve

Liquid Side Parts (Shop Part #W59901 Stand Alone Unit)

<i>Shop Part #</i>	<i>Description</i>
S82401	¼" Reinforced Vinyl Tube (Per Ft.)
T06601	Slotted Strainer
T70801	Metering Tip Kit
W55701	¼" Check Valve (Black)
W61001	203 Dema Injector
W61201	Water Pressure Gauge
W61401	½" Solenoid Valve
W62701	½" Wye Strainer

Liquid Side Parts (Shop Part #W60301 Pump Fed Unit)

<i>Shop Part #</i>	<i>Description</i>
W61201	Water Pressure Gauge
W61401	½" Solenoid Valve
W62701	½" Wye Strainer
W63001	Flow Restriction Valve

Foam Nozzle Parts

<i>Shop Part #</i>	<i>Description</i>
W62201	80200 Foam Nozzle
W62301	¾" Blue Hose (Per Ft.)
W62401	¾" PVC Elbow
W62501	Swivel Nozzle Connector



¼" Strainer Assy.

Foam Nozzle Assy.

Metering Tip Kit

All parts may be ordered by calling your local ZEP Rep or 877-I-BUY-ZEP (877-428-9937).