

Proper protection, such as gloves, eyewear, and aprons, are recommended when handling a pump.

eMP - Metering Pump Troubleshooting Section A

This document contains **Section A** of the troubleshooting documents **A**, **B**, and **C**.

Section A covers:

Part 1 - All of the eMP LEDs are off and the pump is not stroking.

Part 2 - The eMP LEDs are lit, but the pump's controls have no function.

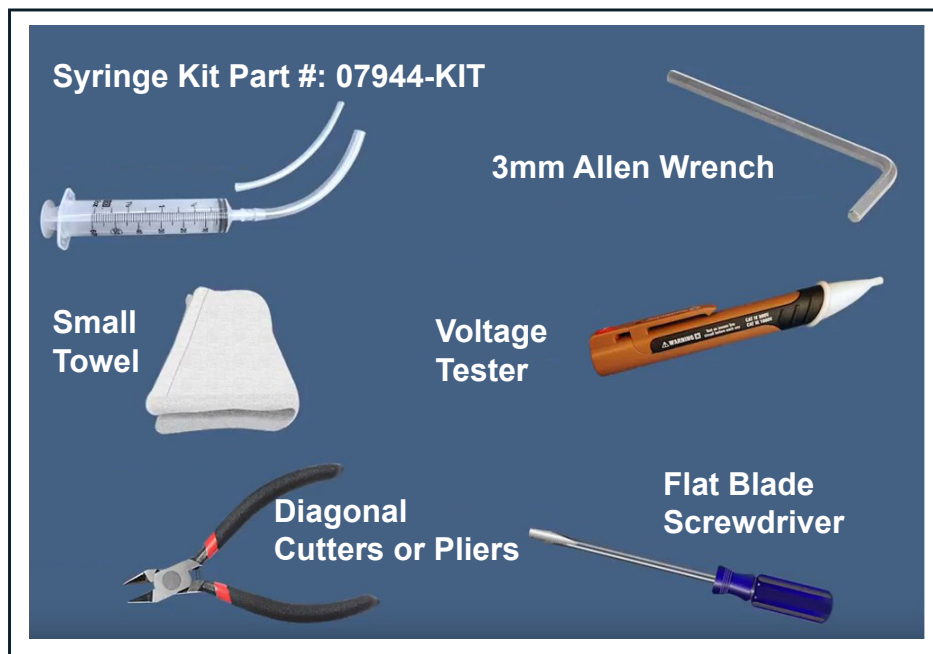
Part 3 - The eMP is stroking but not drawing chemistry:

3a. Inspect your suction tubing, tubing connections, and foot filter.

3b. Tighten the pump head.

3c. Release air lock from the pump head.

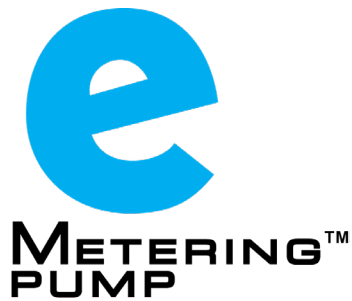
If these areas do not apply to your troubleshooting problem, please see **Section B** of these troubleshooting series for key area 4, or **Section C** for key areas 5, 6, and 7.



To start you will need:

- A 3mm Allen Wrench
- Diagonal pliers or cutters
- A voltage tester
- Small towel
- Flat blade screwdriver
- A syringe (**Syringe Kit Part #: 07944-KIT**)

If you do not have a syringe, you can purchase the **Syringe Kit (Part # 07944-KIT)** through **Dilution Solutions** at **1-800-451-6628** or search Syringe Kit at **dilutionsolutions.com**.



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PART 1 - If all the eMP LEDs are off and the pump is not stroking, check the power supply.



Step 1: First, check if the breaker is off. If the breaker is on, the outlet could be bad.

Test it with a voltage tester, if the outlet is good, plug the eMP into another outlet to confirm it works.

NOTE: If your outlet is activated by a light switch, check to make sure it is in the on position.

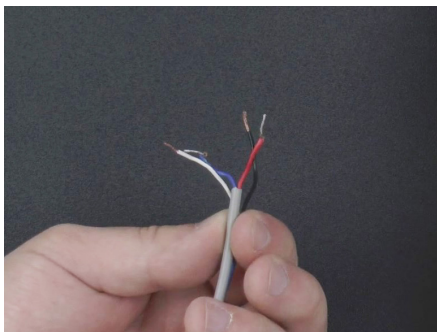
PART 2 - If the eMP LEDs are lit, but the pump's controls have no function, reset the controls.



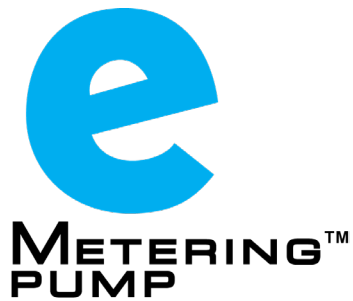
Step 2: First, run a few gallons of fresh water through the supply line.

Due to the water meter being connected to the eMP via dry contact, the water meter closes the contact to operate the pump.

The running of fresh water cycles the water meter which opens the contact. This should release the eMP controls and allow it to function properly.



Step 3: If the running of fresh water does not release the eMP controls, disconnect the water meter lead wires from the eMP lead wires.



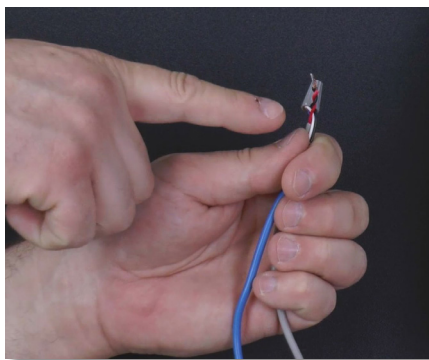
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Step 4: Touch the eMP lead wires together to verify if the interface works.

The eMP controls should now be functioning properly.

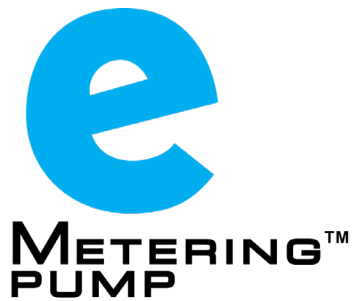


Step 5: Reconnect the water meter lead wires to the eMP blue wires and put the pump back into service.

For any additional assistance, please call **Dilution Solutions** at **1-800-451-6628**.

PART 3 - If the eMP is stroking but not drawing chemistry, you need to:

- 3a. Inspect your suction tubing, tubing connections, and foot filter.**
- 3b. Tighten the pump head.**
- 3c. Release air lock from the pump head.**



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PART 3a: If the eMP is stroking but not drawing chemistry, inspect your suction tubing, tubing connections, and foot filter.



Step 6: Lift the PVC suction tubing, along with the foot filter out of the chemical bucket or stock tank.

NOTE: Be careful of any chemical splashes.



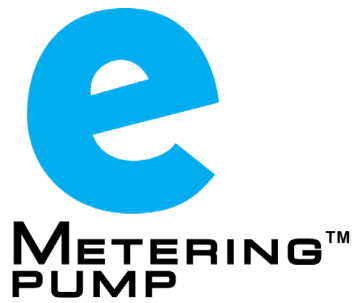
Step 7: Disconnect the suction tubing connections from the foot filter by unscrewing the foot filter tube nut.

Set the foot filter aside in a safe place.



Step 8: Remove the nozzle, collar, and tube nut from the PVC suction tubing and set aside. Do not lose them.

Make sure any leftover chemical in the tubing or foot filter pours out into the chemical bucket or stock tank.

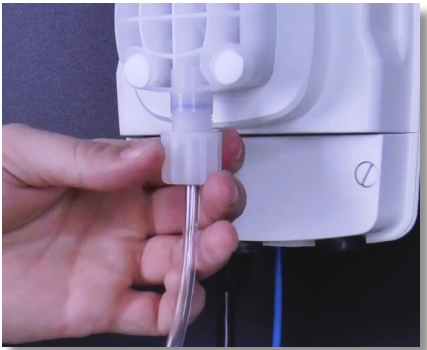


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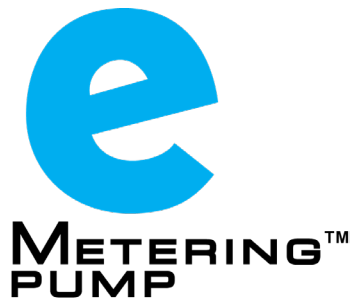
Step 9: Locate the suction valve at the bottom of the pump head.



Step 10: Disconnect the suction valve tubing connections from the pump head by unscrewing the suction valve tube nut.



Step 11: Remove the nozzle, collar, and tube nut from the PVC suction tube and set aside. Do not lose them.



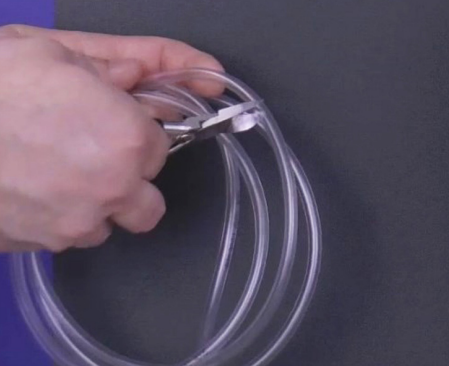
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Step 12: Visually inspect the condition of the PVC suction tubing. If either end is flared, use the diagonal pliers to cut the flared portion off.

If the tubing is cracked, old, or broken, then you need to replace it now.

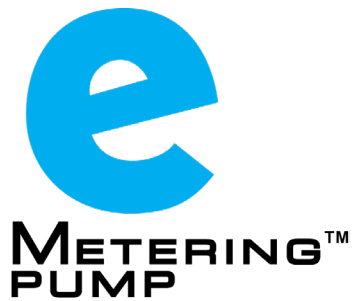


Step 13: Use leftover tubing from your eMP installation or rebuild to replace the damaged tubing, or call **Dilution Solutions** at **1-800-451-6628** for assistance on the correct replacement tubing.

Estimate the length of tubing you will need by measuring from the suction valve to the chemical bucket. Cut the PVC suction tubing so that the foot filter will comfortably sit around 2 inches from the bottom of the chemical bucket.



Step 14: Grab the suction valve tube nut and slide one end of the flexible PVC suction tubing through the outside opening of the tube nut.



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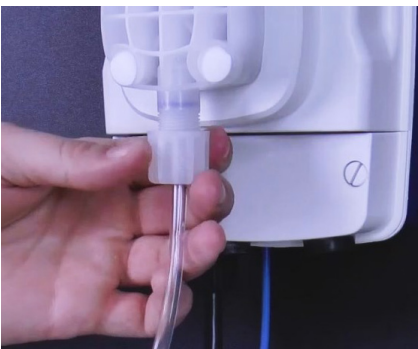
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Step 15: Slide the collar back onto the tube. Make sure the collar's crown is pointed away from the tube nut. Then, insert the nozzle back onto the end of the tube's opening.

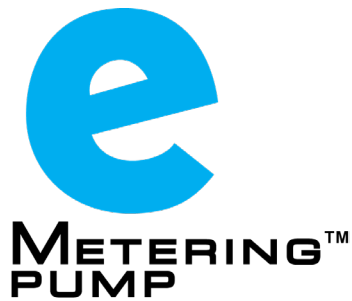


Step 16: Push the collar and nozzle together as close as possible, and pull the tube nut toward the nozzle to compress the collar and nozzle tight together, forming a ferrule connection.



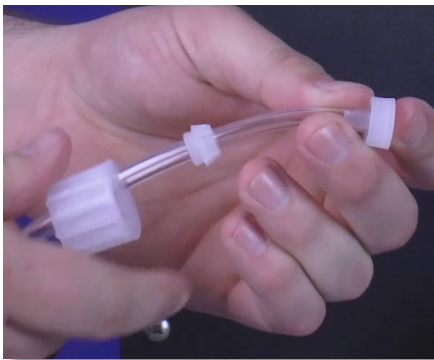
Step 17: Reattach the tube and tubing connections onto the suction valve of the pump head by hand tightening the tube nut. Do not cross thread or overtighten.

If the tube nut is not securing, recheck the ferrule connection. Pull the tube nut toward the nozzle once more, to compress the collar and nozzle together. Retighten the tube nut until secure.



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Step 18: Reattach the foot filter tubing connections onto the loose end of the tube. Be mindful of their orientation. Push the collar and nozzle together as close as possible. Pull the tube nut toward the nozzle to compress the collar and nozzle tight together, forming a ferrule connection.

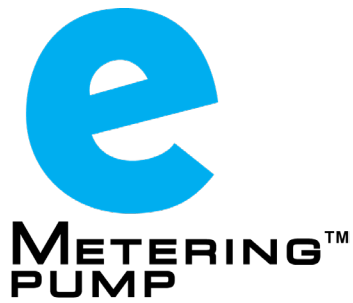
Let the PVC suction tubing hang from the pump head as you inspect the foot filter. Do not place it back into the chemical bucket or stock tank yet.



Step 19: Grab the foot filter and shake it back and forth. You should hear a ceramic ball moving freely inside.



Step 20: If not, separate the foot filter into three (3) pieces by popping the filter basket from the filter body.



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Step 21: The filter seat may stick to the filter body. Make sure the filter seat rests in the filter basket instead, to avoid losing the ceramic ball.

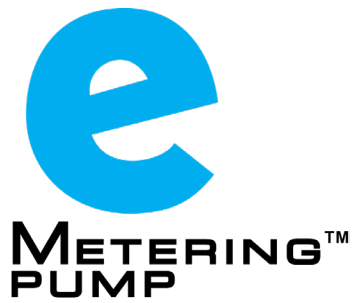


Step 22: Set the filter body aside and locate the ceramic ball in the filter seat.

NOTE: If there is no ceramic ball, switch out the current foot filter with a new one or call **Dilution Solutions** at **1-800-451-6628** for assistance.



Step 23: Pull the filter seat out of the filter basket and set the filter basket aside.

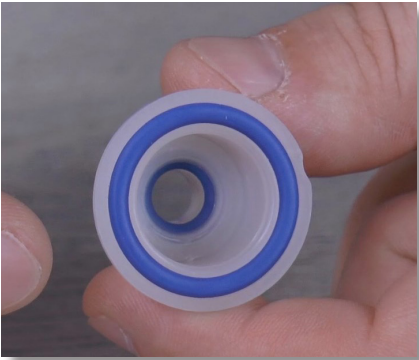


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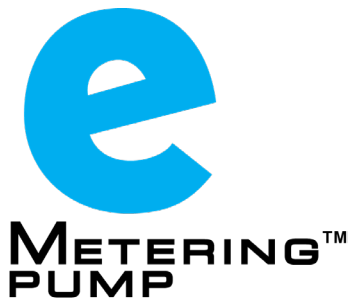
Step 24: Pour the ceramic ball out of the filter seat and into your hand. Set the filter seat down and use the small towel to wipe the ceramic ball clean. Do not misplace it.



Step 25: While holding onto the ceramic ball, inspect the two (2) blue o-rings in the grooves of the filter seat and make sure they are not damaged.



Step 26: Put the ceramic ball back into the filter seat and set the filter seat aside.



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Step 27: Grab the filter body and inspect to make sure the small blue o-ring on top of the filter body is not damaged.

NOTE: If any of the o-rings are damaged, switch out the current foot filter with a new one or call **Dilution Solutions** at **1-800-451-6628** for assistance.

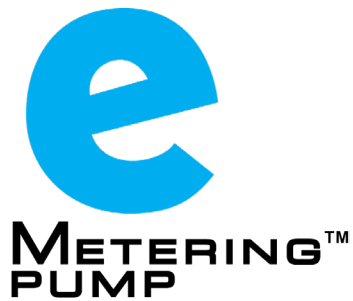


Step 28: Set the filter body down, grab the filter basket and put the filter seat back into the filter basket.



Step 29: Insert the filter basket into the filter body and forcefully pop them together.

This may take a couple of tries, please be sure not to misplace the ceramic ball.



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Step 30: Pull on the two (2) sections to make sure they are connected securely and shake the foot filter back and forth once more, verifying the ceramic ball is moving freely.

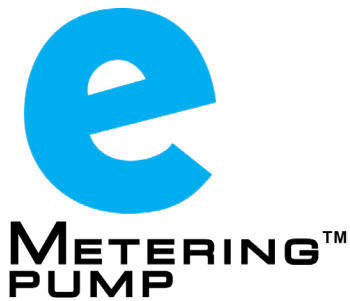


Step 31: Grab the PVC suction tubing and connections hanging from the suction valve of the pump. Reattach the tubing connections to the foot filter by hand tightening the tube nut. Do not cross thread or overtighten.

If the tube nut is not securing, recheck the ferrule connection. Set the foot filter down. Pull the tube nut toward the nozzle to compress the collar and nozzle together. Retighten the tube nut onto the foot filter.



Step 32: Place the foot filter back into the chemical bucket or stock tank, making sure it is sitting vertically.



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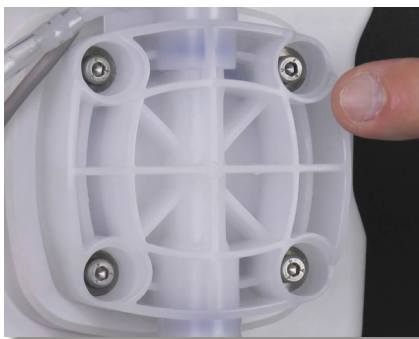
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PART 3b: If the eMP is stroking but not drawing chemistry, tighten the pump head.

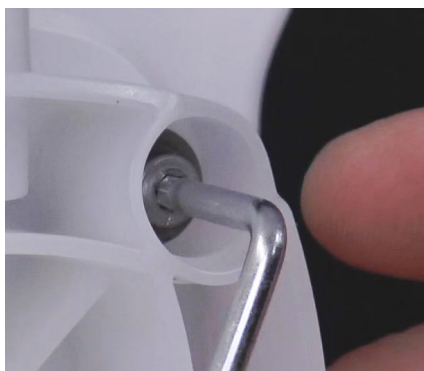


Step 33: Over time the pump head may work itself loose from the pump. To check this, remove the four (4) white screw caps on the pump head.

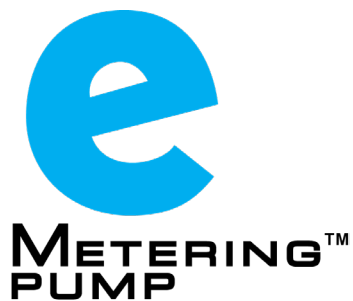
This can be done with your finger or a flat blade screwdriver. Set the white screw caps aside and do not lose them.



Step 34: Underneath the caps are four (4) pump head screws.



Step 35: Using the 3mm Allen wrench, tighten the four (4) pump head screws about 1/8 turn each. It's best to tighten in a crisscross pattern.



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Step 36: Reinsert the four (4) white screw caps back over the pump head screws.

PART 3c: If the eMP is stroking but not drawing chemistry, release air lock from the pump head.

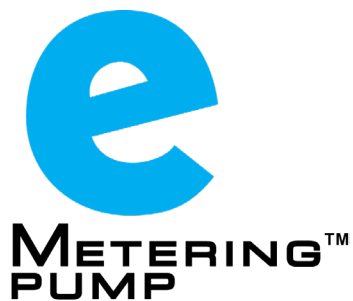


Step 37: Locate the air bleed valve on the upper left portion of the pump head and open it by turning the valve counter-clockwise.



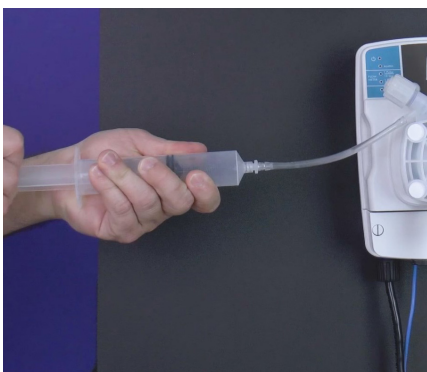
Step 38: Remove the bleed-off tubing from the air bleed barb and set it outside of the chemical bucket.

NOTE: Be careful of any chemical splashes.



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Step 39: Using the syringe kit, slide the 4mm adapter of the syringe onto the air bleed barb and draw the plunger back. Chemistry should enter the syringe. This may take a couple of tries.

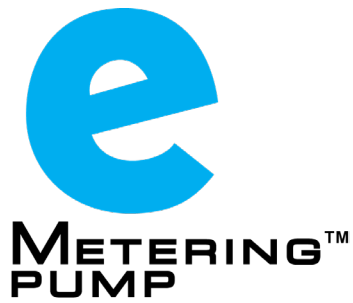
NOTE: If no chemistry enters, call **Dilution Solutions** at **1-800-451-6628** for assistance.



Step 40: Eject the chemistry from the syringe into the chemical bucket.



Step 41: Slide the bleed-off tubing back onto the air bleed barb and place the tubing back into the chemical bucket.



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Step 42: Now close the air bleed valve by turning it clockwise.

Start the eMP and run a few gallons of water through. The eMP should now be drawing chemistry and functioning properly.

We hope this document has been helpful troubleshooting your **eMP Metering Pump**.

For more information, please call us at **1-800-451-6628**
or visit us online at **www.dilutionsolutions.com**.



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