



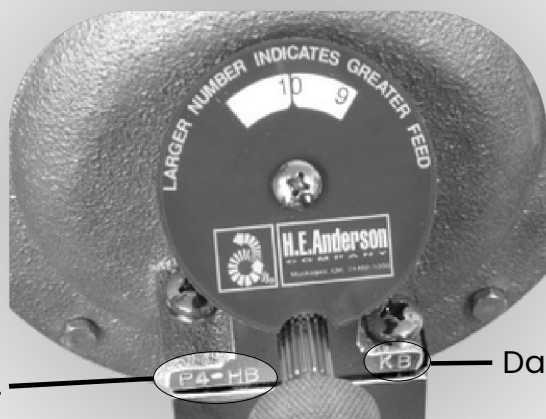
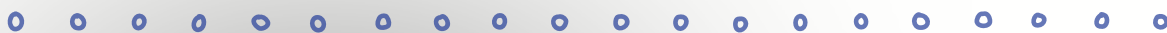
Anderson Injectors

Pumper Calibration Manual

We are committed to assisting our customers with the installation and use of our systems. Throughout this document you will find various calibration instructions.

Please review this resource in its entirety, if your questions are still not answered once doing so, contact our technical team for further assistance. We're always here to help.

We recommend system calibration every 12 months. This supports accurate nutrient delivery, pH and EC control, verifies equipment performance, and is ideal standard maintenance for system upkeep.



***Have this information
ready before you call:***

Have the pumper model number and date code to reference before you call.

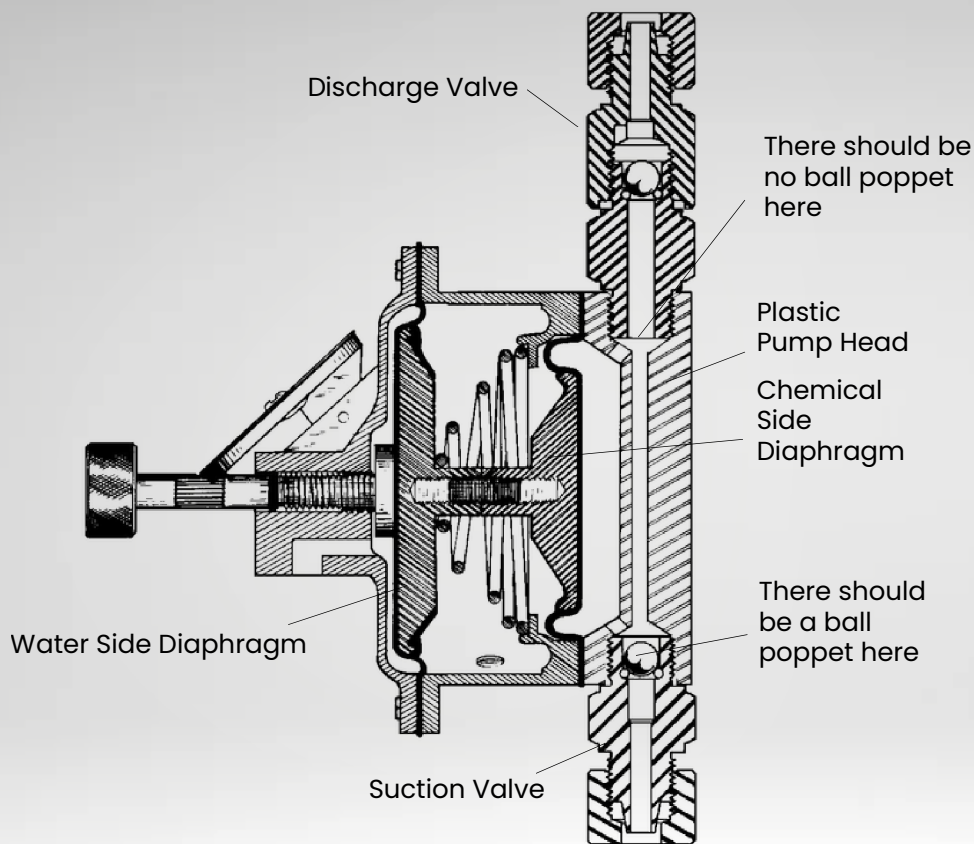
Reference the photo on the left for appropriate locations.

Our technical representatives are available each weekday from 8:30 AM to 4:30 PM Central Time.

Call us toll free at **1-800-331-9620** from anywhere in the U.S.A. and Canada. If no one is available, please leave us a message, and we will promptly return your call.

You may also contact us via e-mail at **info@heanderson.com**.

Sectional View of Pumper



Calibration Pipe and Scale



Please note:

When working with hazardous chemicals use extreme caution and carefully follow the handling instructions and safety procedures in the Material Safety Data Sheets

If you have the calibration standpipe accessory available, confirming calibration accuracy is simplified. Please refer to the instructions that came with the standpipe.
If you would like to purchase a calibration standpipe, please contact our team.



Confirming Accuracy

1. Fill a small container with the chemical you will be feeding and set the pumper dial to 10 (maximum feed).
 - a. Adjust the feed knob only when the unit is making a pumping stroke. It will turn much easier during that time especially when going to a lower feed.
2. Fill the 400 mL calibration beaker to the 400 mL mark.
3. Remove the suction fitting and put the tube into the beaker with the end near the bottom, but do not restrict flow.
4. Restart the feeder and allow the pumper to make the number of strokes determined by the table.
5. Remove the suction line.
6. Compare the amount pumped to the amount to pump in the table.
7. If the amount pumped does not agree with the table, you need to recalibrate the pumper. Refer to the section below "Pumper Calibration" to calibrate the pumper.

Tip: You may want to use the 400 mL beaker to calibrate a larger wide mouth container such as a quart jar. Then you can submerge the end of the suction tube with the suction fitting still attached.

Recommended Method for Pumper Calibration

You can check the calibration of your pumps at any time with the outlined procedure below.

You may need to temporarily replace the suction line at the suction valve on the pumper if the foot-valve/strainer has been installed as a bulkhead fitting, or is otherwise inaccessible. If this is necessary, be careful not to inadvertently drain your concentrate tank.

While performing this test you will be inserting and withdrawing the suction line from a graduated cylinder or beaker. For accurate results this must not be done during suction strokes. You should always insert or withdraw the suction line just after the injector has discharged water.

TABLE 1: PUMPER CALIBRATION

 PUMPER MODEL	 STROKES PUMPED	 mL WITHDRAWN
A3	10	30
P1	4	40
A10	4	40
P2	2	40
A20	2	40
H4	1	40

The next steps should be completed with the pumper fully primed and operational:

1. Fill the calibrated beaker with the chemical you are feeding.
2. Submerge the suction line in the beaker and let the pumper make one, or possibly several, suction strokes, depending on the capacity and setting of the pumper.
3. Withdraw the suction line from the beaker and calculate the volume of solution withdrawn.

Use the values in Table 1, or calculate the volume which should have been withdrawn, according to the following formula:

PUMPER CALIBRATION FORMULA

$$SW = \frac{(C) (NS) (DS)}{10}$$

VARIABLE DEFINITIONS

SW	=	the solution withdrawn in mL
NS	=	the number of stroke in test
DS	=	the dial setting of the pumper

C VALUES BY PUMPER MODEL

C	VALUE
C	40 mL for model P4 , H4 pumper
C	20 mL for model P2 , H2 , or A20 pumper
C	10 mL for model P1 , H1 , or A10 pumper
C	3 mL for model A3 pumper

4. If the pumper did not withdraw the correct amount of solution, you may calibrate it according to this simple procedure.
 - a. Simply adjust the stroke adjustment knob until the pumper withdraws the amount = C mL per stroke, for the appropriate pumper.
5. Then remove the screw which holds blue dial cover and remove the cover. Carefully lift out the numbered dial and reposition it in the dial holder with the number 10 at the top.
6. Be certain that the teeth on the edge of the numbered dial mesh with the teeth of the gear of the stroke adjustment shaft. If necessary, loosen the screw which holds the dial holder to the flange (the screw is located underneath the dial holder, on the side), and reposition the dial holder so the dial meshes properly.
7. Once the numbered dial is positioned properly, replace the blue dial scale cover.
8. Carefully line up the line in the window with the mark at number 10 and replace the screw which holds the cover in place.

This completes the calibration procedure. Readjust the pumper to the proper setting.

Alternative Calibration Method



In some cases it is not ideal to use the recommended method mentioned above.

This stands especially true when pumping hazardous chemicals. With the alternate method below the pumper may be calibrated when in actual operation. It does not require a graduated cylinder or any chemical handling.

1. You must first turn the pumper completely off. This is done by turning the control knob clockwise as far as possible.
 - a. Turn the feed knob to a lower setting only when the unit is making a pumping stroke; it will turn much easier during this time.
2. Turn the knob a little at a time, until it will turn no farther. If the pump is stroking slowly, you may need only one pumping stroke to turn the pumper completely off.
3. Remove the screw which holds the blue dial cover and remove the cover.
4. Carefully lift out the numbered dial and reposition it in the dial holder with the number 0 at the top.
5. Be certain that the teeth on the edge of the numbered dial mesh with the teeth of the gear of the stroke adjustment shaft. You may need to loosen the screw which holds the dial holder to the flange (the screw is located underneath the dial holder, on the side), and reposition the dial holder so the dial gear meshes properly.
6. Line up the line in the window with the mark at number 0 and replace the screw which holds the cover in place. This completes the calibration procedure.
7. Readjust the pumper to the proper setting.



For additional questions or parts inquiries, please contact us at 1-800-331-9620 or info@heanderson.com.

