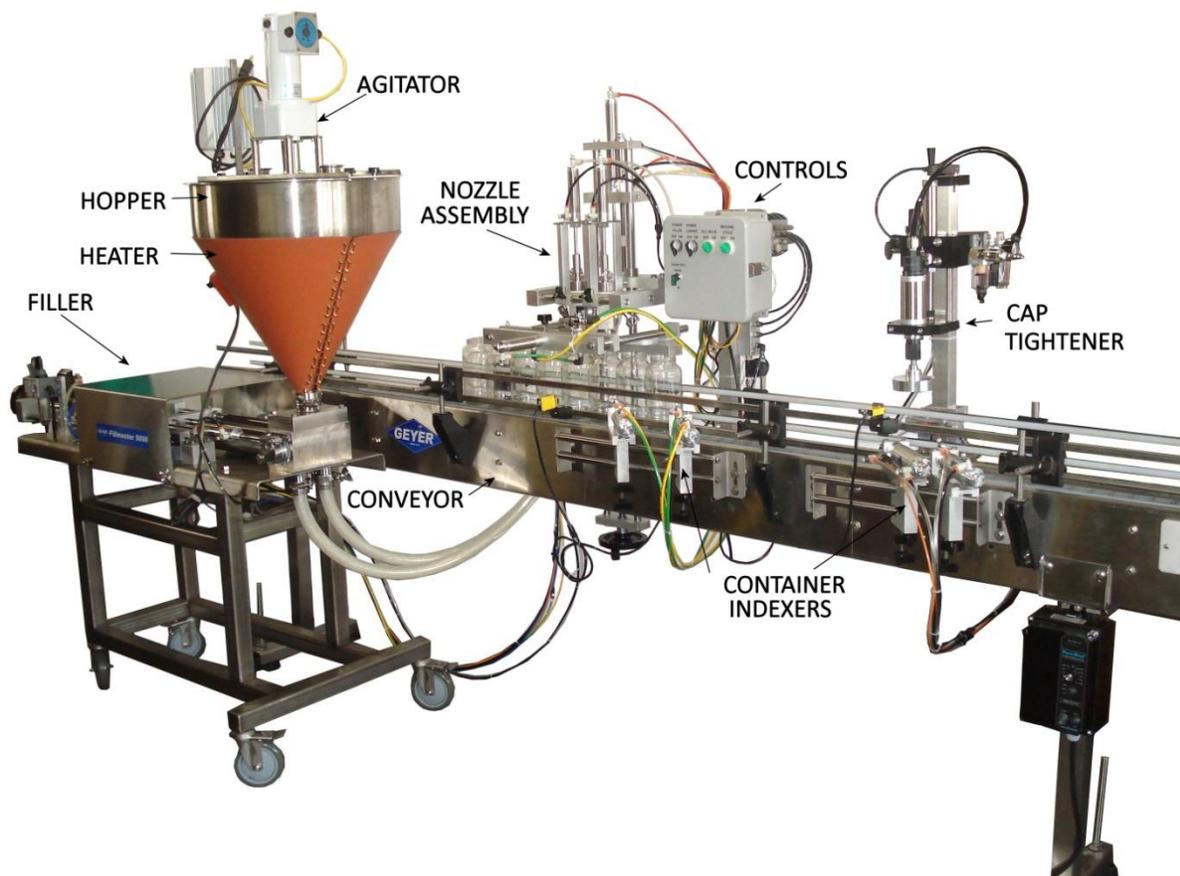




**2 Cylinder
Fillmaster 5000
Operating Instructions**



FILLMASTER 5000 AUTOMATIC

Operating Instructions

A. Inspection Upon Arrival

Your Geyer filler has received careful inspection and has been test run at our factory prior to shipment. It has been crated securely to insure delivery without damage or loss of parts. Upon its arrival in your plant, please inspect the shipment for any damage or loss in transit. If there is any damage please call us at (215) 322-2122.

B. Locating the Machine

Your Geyer filler should be set up in a location which will allow enough space around the machine for the operator and provide easy access for maintenance purposes.

C. Leveling the Machine

Make sure that the machine is properly leveled. This can be accomplished by adjusting the threaded rods of the machine casters so that the machine is level in all directions.

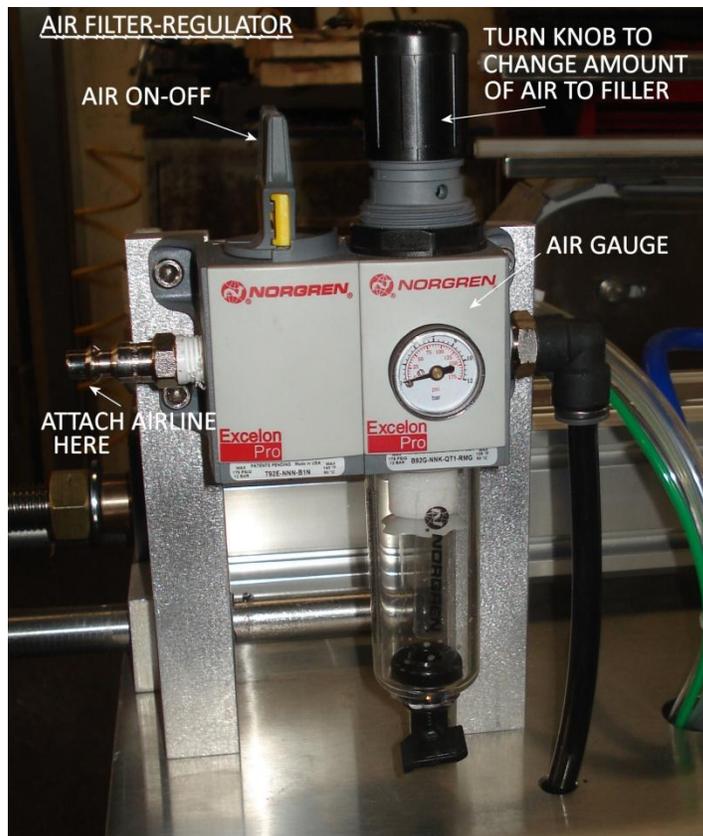
D. Assembling the Machine

After the machine has been test run and prepared for shipment in our plant, the machine is shipped to you ready to operate. Remove all tape and other materials used in shipping the machine. If any parts are unattached for shipping purposes, follow the instructions on the attached tags for re-assembly. If you have any questions, you may call us for technical assistance. Ask for Tim Geyer or John Morris at (215) 322-2122, email: fillers@philapack.com

E. Air Connection

The filling machine portion of the assembly is entirely pneumatic. Air required is approximately 10 cfm to 12 cfm @ 90-100 psi. A line will have to be run from your air compressor to the machine's air intake. At the air intake there is an emergency air cut-off switch. This can be used to cut the supply of compressed air to the machine.

Your machine has been supplied with a Filter-Regulator (see photo below). The air supply runs through this unit so that it may be properly lubricated and regulated. There is a dial indicator on the F-R-L that shows the amount of air pressure the machine is receiving. The amount of pressure can be adjusted to increase or decrease the amount of air pressure the machine receives. This unit will be pre-set from testing at our factory generally at 90-100 psi. We do not recommend that you change the factory setting.



F. Machine Controls

FILLER OFF / ON controls AC power to the filler's photo eye and solenoid

CAPPER OFF / ON controls AC power to the cap tightener's photo eye and solenoid

FILL VALVE OFF / ON this controls air power to the filler's valve rotor (pallet). This is helpful when changing over to a different size container. The filler can run without dispensing product.

MACHINE CYCLE ON/OFF once all adjustments have been made to run a particular size container, turn this to **ON** to start filling. In the **OFF** position, the filler can cycle without dispensing the product. This is useful for checking the container indexing when changing over from one container to another.

CONTAINER DETECT OVERRIDE this switch allows bypassing the container detect photo eye that is mounted on the conveyor

CONVEYOR ON / OFF there is a separate control box mounted on the conveyor to turn the Conveyor on and off. There is also a knob in this box that controls the conveyor speed.

AGITATOR ON / OFF There is a separate control box above the agitator that turns on the motor for the agitator inside the hopper.



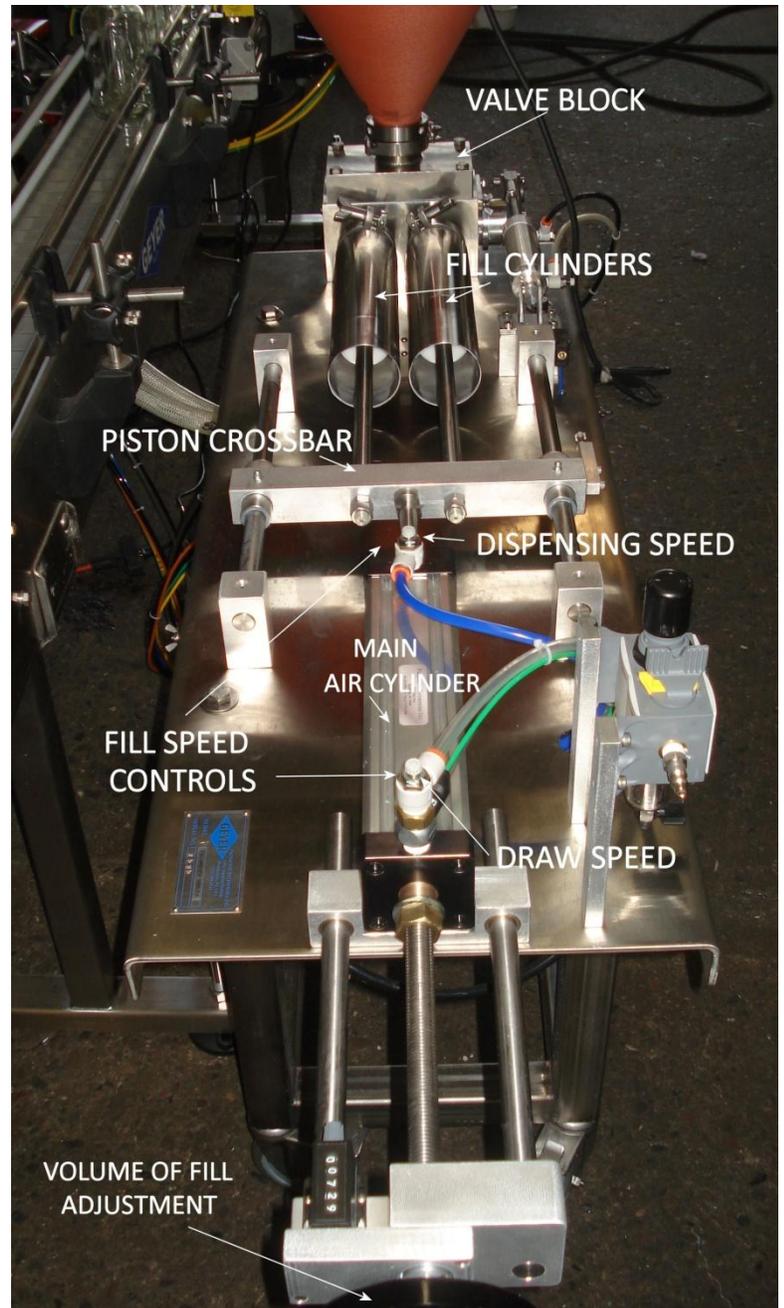
G. Machine Speed

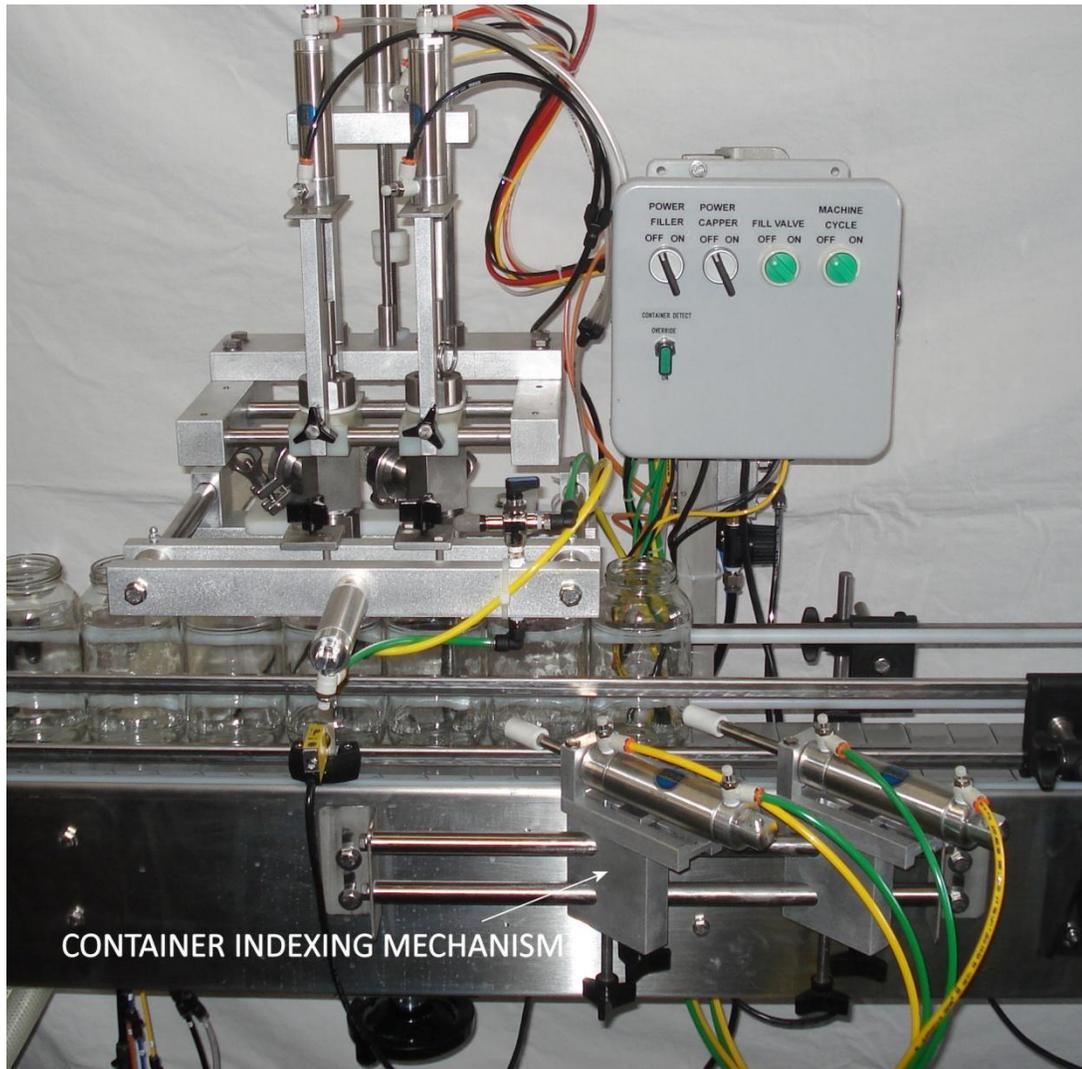
The speed of your Fillmaster is controlled by the amount of time it takes to complete one fill cycle multiplied by the number of potential fill cycles per minute. The limiting factors here are 1) how fast the container can be filled (product and volume considerations) and 2) container handling.

The machine can be set up to manually fill two containers only at a time without the conveyor running. Following the procedure in section I allows the operator to pre-set and check the correct fill volume and set the speed of the fill cycle to get the maximum fill rate. The container handling should be pre-tested as well to make sure that the bottles are capable of getting in place and can exit as fast as is required.

Adjustments to the speed of the machine are made by first adjusting the speed of the fill cycle. The faster or slower the fill cycle determines the ultimate output of your filler.

As shown in the photo below, there are two flow controls mounted on the top of the main air cylinder. The flow control at the rear of the air cylinder (handle end) controls the speed of the draw or intake stroke of the pistons. The flow control at the front end of the air cylinder (cross bar end) controls the speed of the discharge or fill stroke of the pistons. Note: each of the flow controls has a locking ring. You can loosen this ring by hand, and then the knob on top can be turned. Make very small adjustments at a time and check the results. Turn the knobs clockwise slows the speed of the air cylinder. Once you have the desired setting, hand tighten the locking ring.





H. Container Indexing system

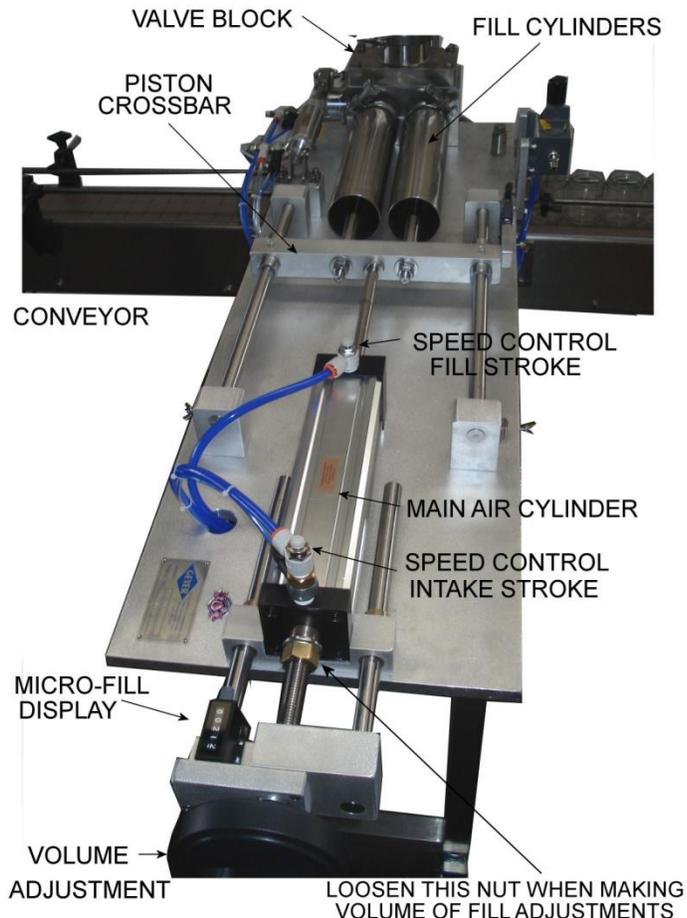
These air cylinders stop the containers momentarily for filling. Underneath each air cylinder bracket is a nut that loosens so that the air cylinders can be moved right or left along the slide track that they are mounted to. The two containers just filled, help to position the next containers to be filled.

To set up a new size container, put four containers in the fill zone. Put two containers centered directly under the filling nozzles, and another two containers just past the filling nozzles. Adjust the outside air cylinder first (see photo above), making sure the two containers to be filled are lined up with the nozzles. With air off, pull the rod of the air cylinder out so that it contacts the corner of the end container. Then adjust the position of the inside air cylinder to contact the corner of the second container under the filling nozzles.

We have a video posted to www.youtube.com that shows the correct movement of the indexing mechanism. You can see it at http://www.youtube.com/watch?v=ijF_4IECO8s. This video is also on our website www.packagingenterprises.com.

I. Volume of Fill

- a. The volume of product that the filling machine dispenses, depends upon the size of the inside diameter of the fill cylinder being used and the length of stroke that the piston takes. The stroke that the piston takes is adjustable from 0 to 12", thus allowing the machine to deliver different volumes of fill.
 - b. Each size cylinder has a "fill range." The smaller the diameter of the cylinder, the smaller the fill range. In general, the best accuracy of fill is achieved when the cylinder has a small diameter and a long piston stroke.
- Note: it is easiest to make the following adjustment with the air **OFF**
- c. First, with an adjustable wrench, loosen the nut on the threaded rod that goes into the back of the air cylinder.
 - d. To make an adjustment to the volume of fill, turn the hand wheel on the back of this air cylinder. By turning the hand wheel clockwise will decrease the volume of fill. By turning the hand wheel counterclockwise increases the volume.
 - d. Once the proper volume setting is found, retighten the nut.



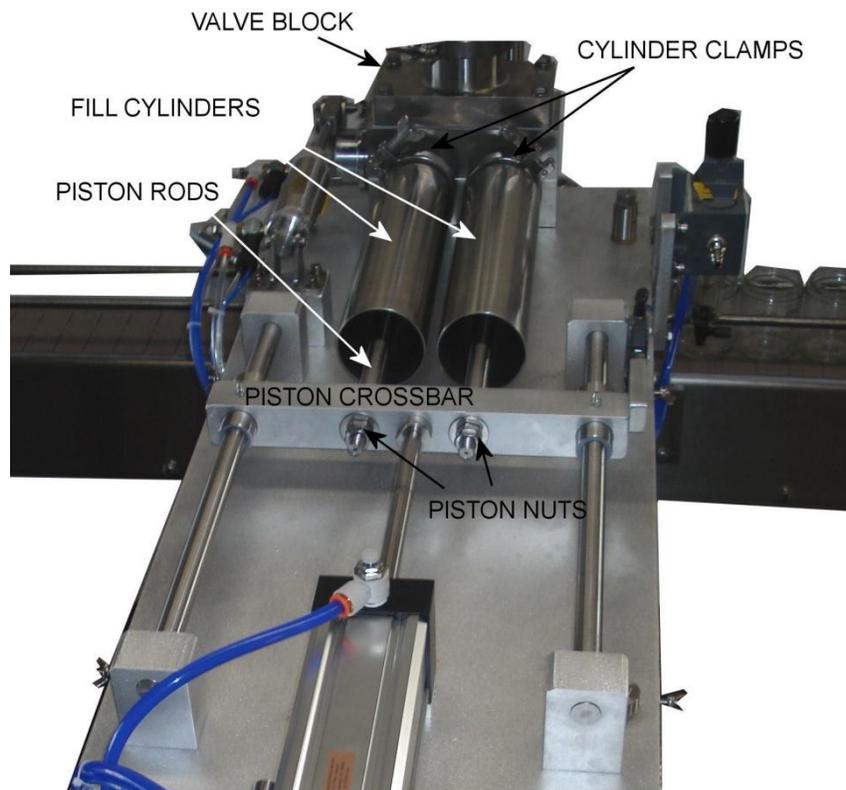
Micro-Fill Adjustment

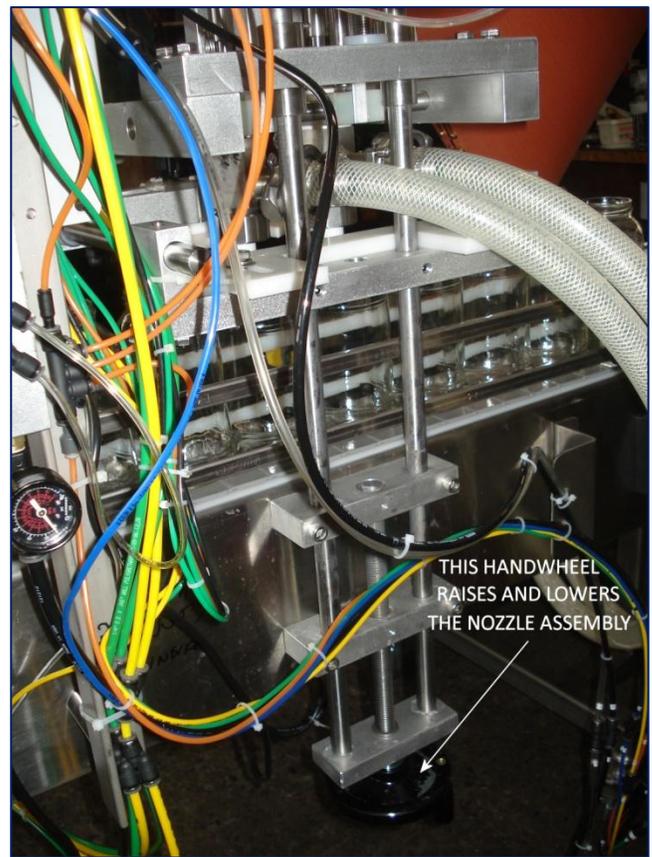
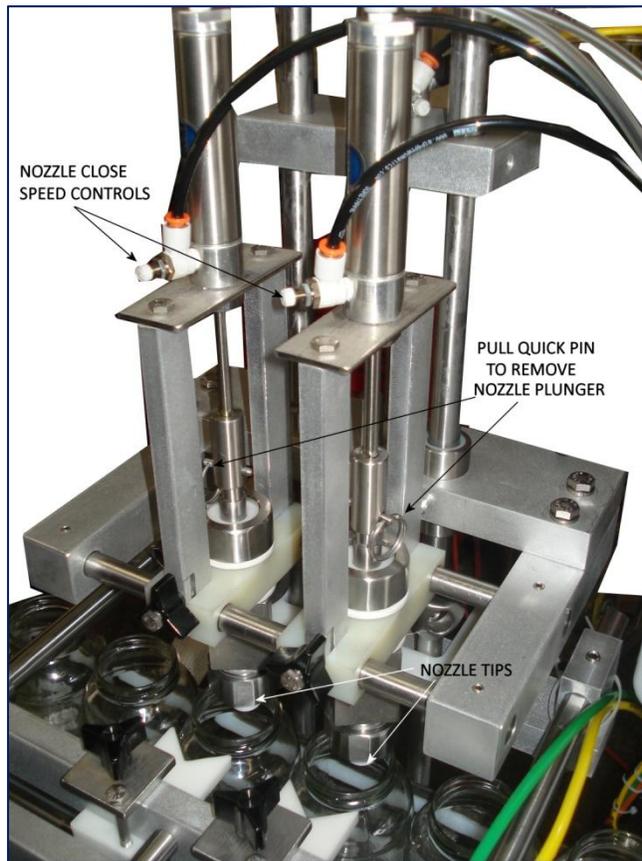
The purpose of this unit is to indicate the setting of the piston stroke for determining a particular volume.

When making fill volume adjustments by turning the volume adjustment hand wheel, the numbers on the micro-fill display will change. Once the correct volume for a particular size container is found, note the number on the display. That would be the setting for that size fill. When filling multiple size containers repeat this process. By doing this you will be able to return to the exact setting for a particular size container quickly and easily.

J. Removing (or Changing) Cylinders and Pistons

- a. Make sure no product is in hopper, or the valve rotor is closed to the hopper.
- b. With the air connection **OFF**, manually pull the piston cross bar away from the back of the cylinders.
- c. Remove both nuts at the back end of each of the piston rods.
- d. Push the piston rod forward into the cylinder out of the cross bar. The piston can now be tilted up and the piston can be pulled out of the back of the cylinder.
- e. You can now remove the cylinders from the valve by removing the cylinder clamps. Watch that you do not lose the gasket between the cylinder and the hopper. Also, be very careful with the cylinders not to drop or damage them in any way. When replacing the cylinders, make sure the clamps are tightened by hand only.
- g. When you are cleaning the cylinders and pistons, check the condition of the O-ring seals on the pistons. O-rings should be changed when product starts coming out of the back of the cylinder while you are filling. Also, before placing the pistons back into the cylinders, always use a small amount food grade lubricant (we sell a product called Sana-Lube) so that the pistons slide easily inside the cylinders.





K. Filling Nozzle Assemblies

The purpose of the nozzles is to control and direct the flow of product into the containers. The type of nozzles on this machine are pneumatically operated positive cut-off nozzles. There is an air cylinder located on top of each of these assemblies that operates a plunger located inside each nozzle. The air cylinder moves the plunger up to open the nozzle to allow product to flow and then closes at the end of each cycle to cut off the flow of product. Each air cylinder has two small knobs called “flow controls.” These control the speed of the opening and closing action of the filling nozzle.

The nozzle assemblies can be adjusted to accommodate the different containers widths. Place two containers on the conveyor (diameter to diameter). Adjust the position of the filling nozzles to the center of the containers. Adjust the conveyor guide rails to the diameter of the containers

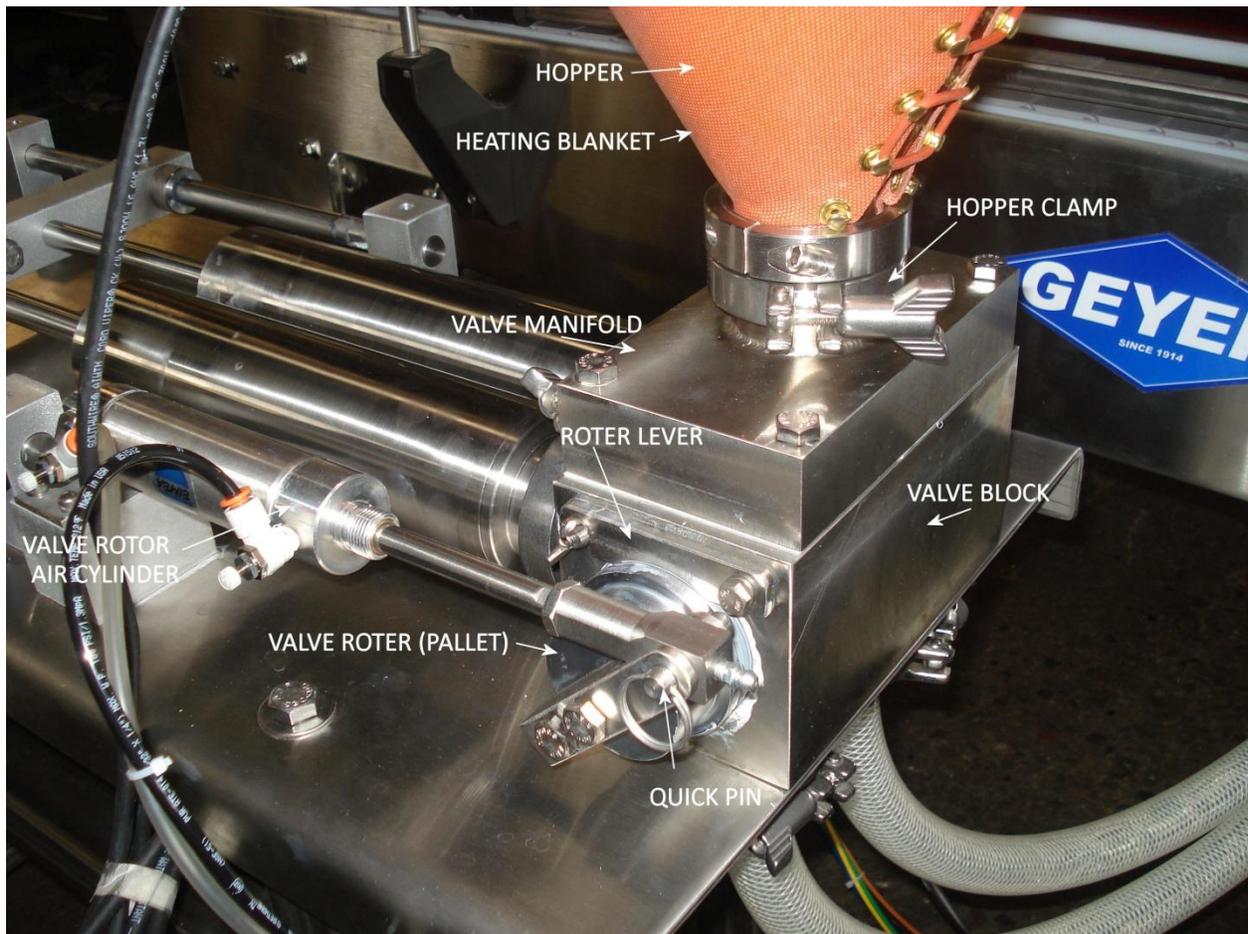
If the whole nozzle assembly is too low or too high, you can raise and lower the entire filling head by turning an adjusting rod with an adjustable wrench (see photo above). The bottom of the filling nozzles should be about $\frac{1}{4}$ " to $\frac{1}{2}$ " above the container openings.

The nozzle assemblies can be removed from the machine easily for cleaning. The component parts are attached with hand sanitary clamps and a quick pin. When reassembling make sure all gaskets are placed in between the clamps. The clamps should be hand tightened only.

L. Valve Assembly (see photo below)

The main valve block is located underneath the hopper. The cylinder and nozzle assemblies are attached to it. Inside the valve block, the valve rotor (also known as the pallet) moves back and forth each fill cycle. On top of the valve block is a manifold that directs product from the hopper to both ports of the valve.

The valve rotor can be removed from the valve block by first removing the quick pin on the pallet air cylinder clevis. Then, loosen the wing nut on the rotor release lever and lift it. The valve rotor can then be pulled out. Please be gentle with this item. Check the condition of the O-ring and replace if necessary. Once cleaned it is best to put a very slight amount of a sanitary lubricant on the diameter of the valve rotor before inserting it back into the valve block.



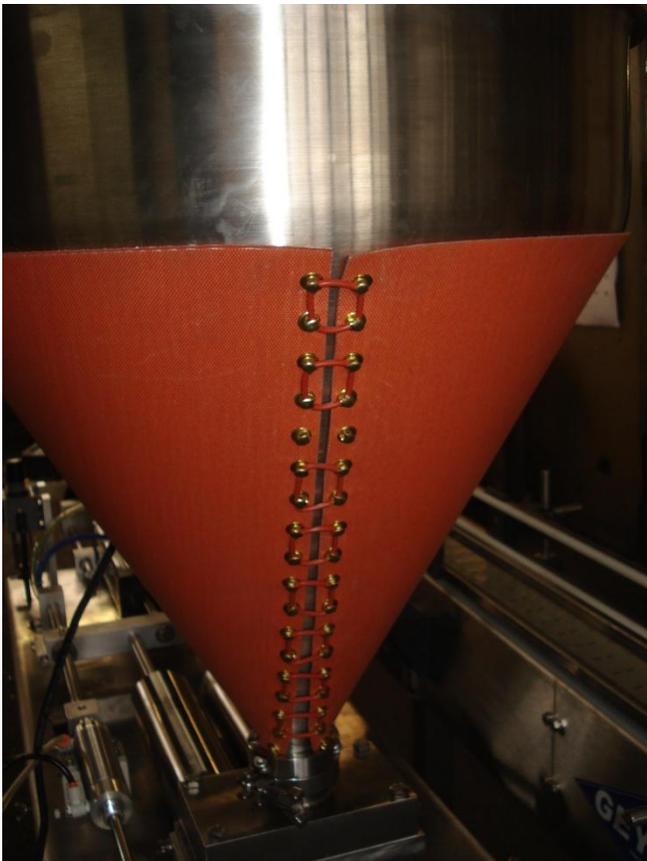
M. Silicone Heater for Hopper (see photos below)

This unit wraps around the cone part of the hopper to heat the outside of the hopper and its contents. The unit has eyelets that can be fastened together with O-rings as shown in the left photo below. The heater sits on top of a 2" collar located on the throat of the hopper.

The heater is 120 volt and has a 3 prong plug. It also has a 0-10 voltage regulator-controller attached to the side of the heater. This heater will heat up to 250 degrees F. The controller has an adjustment knob to regulate the amount of heat to the desired level.

Some notes:

1. The heating blanket can be removed for cleaning.
2. It is recommended to clean it with a damp cloth. Do not immerse the unit in water.
3. Also do not overlap the heater on itself. It should fit snugly against the cone as shown.

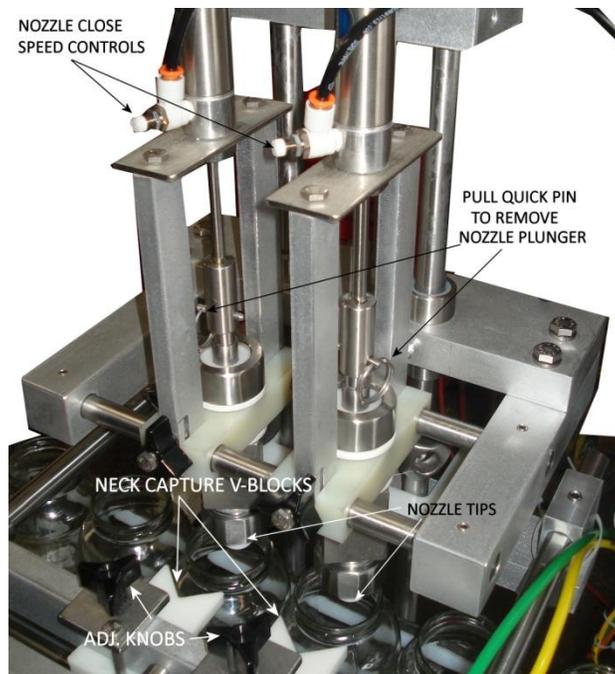
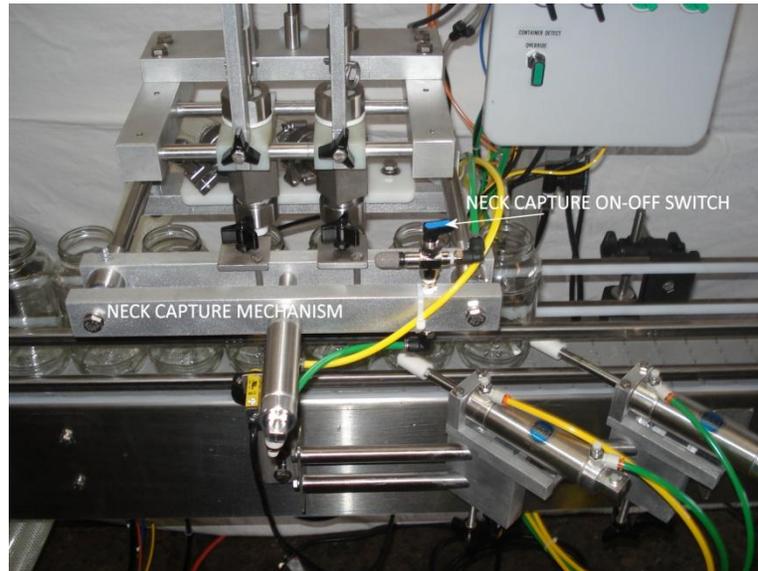


N. Product Agitator (see photos below)

This unit is located on top of the filler's hopper. The purpose of this unit is to keep products mixed as they are being filled. This unit has also been supplied with a plastic scraper that helps pull product off the wall of the hopper back to the center of the hopper.

There is a control box (right photo below) mounted at the top of the agitator's motor drive. This control box has an on-off switch. It also has a speed control so the movement of the agitator can be sped up or slowed down to the desired speed.





0. Neck Capture Mechanism

The purpose of this unit is to correctly line up the openings of the bottle with the filling nozzles. This unit is operated by an air cylinder and will operate with each fill cycle. This unit is used only containers that have a narrow opening and have an extended neck area. Wide mouth containers typically do not require this unit and so it can be turned off by using the switch shown in the upper photo. There is adjustable plastic bar behind the containers that should be adjusted as well so that when the V-blocks are moved into place, the necks of the containers are pushed against it.

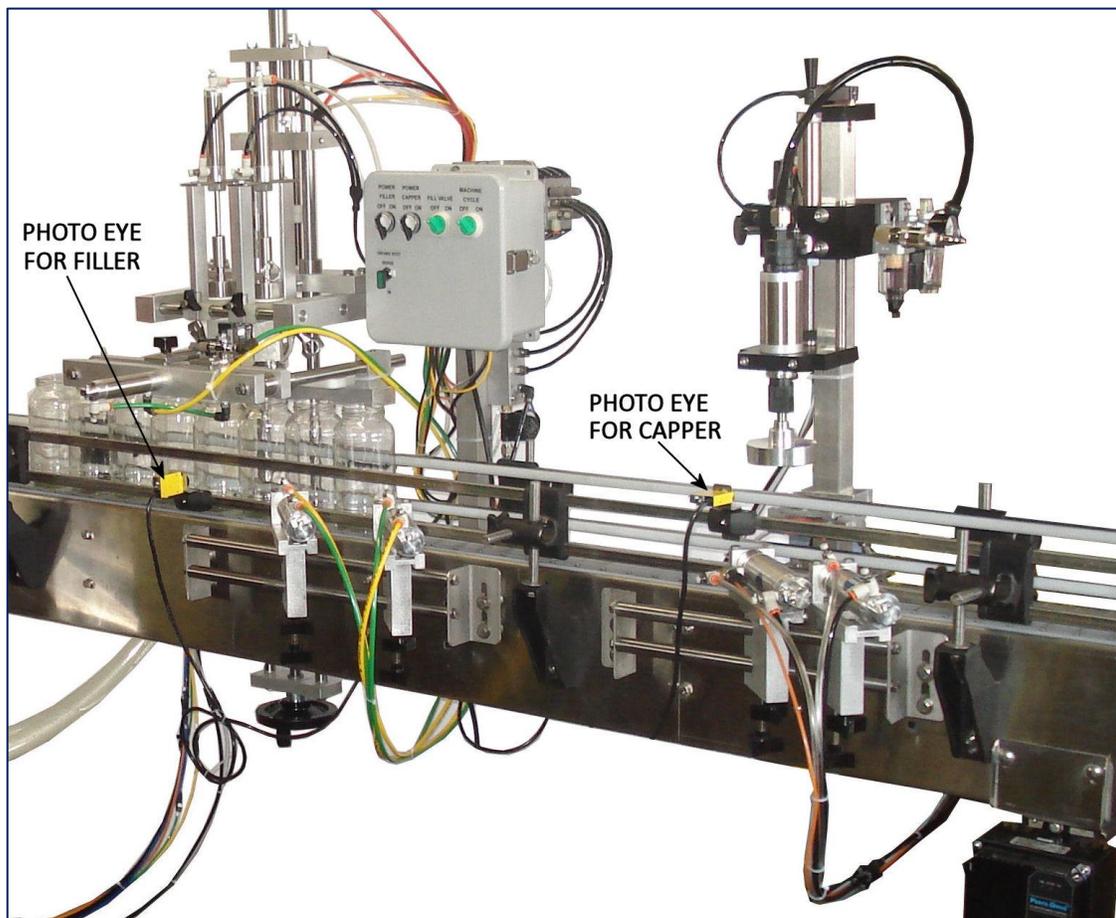
The neck capture bar has two V shaped blocks. These blocks are adjustable along the centerline of the conveyor by turning the knobs shown in the lower photo above. When setting up for a new container, these blocks should be set up the same time as when the container indexing air cylinders are adjusted as well.

P. Photo Eyes

The purpose of these units is to detect containers present before the filling zone and before the cap tightener. As long as containers are present, these units will continue to operate. If containers are not present prior the filler, the filler will shut off.

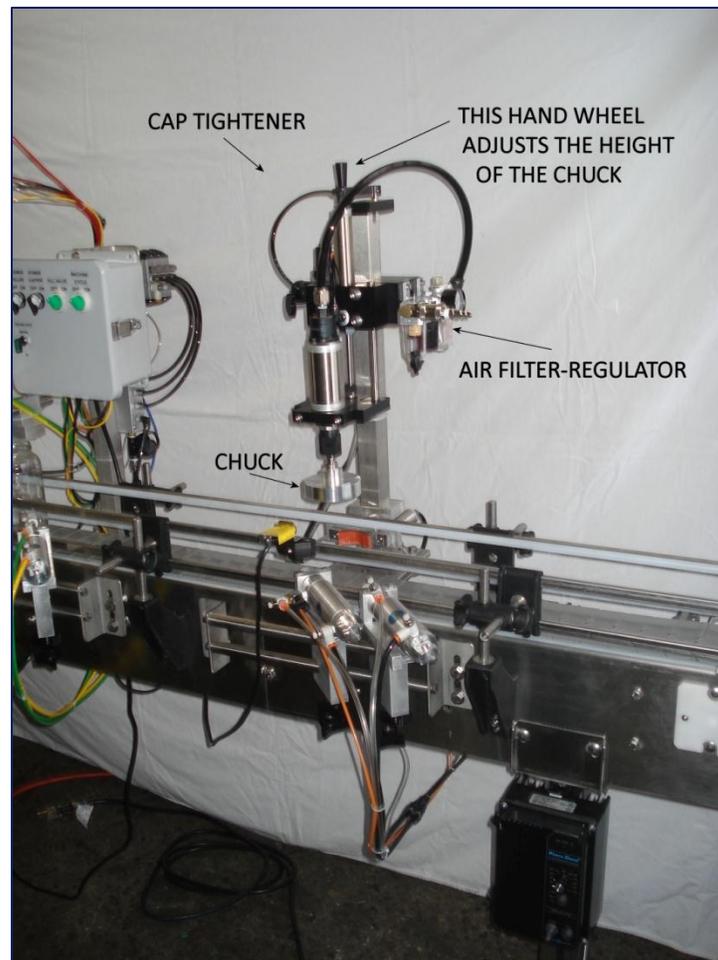
The photo eye for the cap tightener works to operate the cap chuck if a container activates the eye. Once a container passes this photo eye, it sends a signal to the cap tightener chuck to lower and spin the cap on.

Both of these eyes are adjustable in location along the centerline of the conveyor. Both also have an adjustable sensitivity.



Q. Cap Tightener

The purpose of this unit is spin on and torque down a hand placed lid onto the container. There is a separate booklet on this unit. This unit has its own air filter-regulator that must be attached to an air compressor. The unit has been supplied with a few different size chucks that are interchangeable according to the cap size. The height of the entire assembly is adjustable by turning hand wheel shown in the photo below. The torque of the chuck is also adjustable. Each chuck has a rubber liner. This liner makes the actual contact with the container lid. These liners should be replaced once they show wear.



R. Set-up procedure for a new size container

Prior to putting product in the hopper, for steps 1-4 make sure air power is **OFF**.

1. Put a container at either end of the conveyor and (4) empty containers underneath the fill zone. Adjust the conveyor guide rails to allow containers to run down center of conveyor.
2. Adjust filling nozzles to line up with container openings (see p. 8). Also raise or lower the entire filling head by turning the fill head adjustment rod (see p. 8). Bottom of the nozzles should be about ½" above the container openings
3. Adjust the container index air cylinders (see p. 5).
4. With the conveyor **OFF**, turn the air supply **ON**, then turn the **FILLER** to **ON**.
5. Make sure that the index air cylinders are lining up with the containers.
6. Turn the conveyor **ON** and make sure that the containers move correctly and line up with under the nozzles. You may have to adjust the speed of the conveyor if the containers are not moving in and out of the fill zone quickly enough.
7. Next, turn the conveyor **OFF**, to set up the filler for filling.
8. Adjust the volume of fill by turning the hand wheel on the main air cylinder. If you are not sure where to start, reduce the fill down to minimal to start and gradually increase the fill to where you have the correct amount. Make a note of this setting on the micro-fill display (see p. 6).
9. Place some containers under the filling nozzles. You may want to test filling water. Make sure that the containers to be filled are lining up with the nozzles. Make necessary adjustments.
10. Turn the **FILLER ON/OFF TO ON**. If the product is coming out with too much velocity, on the main air cylinder adjust the speed control for the fill stroke (see p. 4).
11. Once you are happy with the volume of fill and the fill speed, you are ready to test the machine automatically.
12. Load containers on the conveyor. Remember to place two filled containers at the lead (see section H).

Safety Procedures

Please make sure that all operators use extreme caution when operating, cleaning, and repairing the filling machine. Make sure that all operators and maintenance personnel read and understand all warning stickers that have been placed on your machine.

GENERAL SAFETY GUIDELINES:

- I. Never operate machine without all guarding securely in place.
- II. Never clean machine with hands while it is in operation. It is recommended that you turn the machine off while cleaning it.
This is extremely important when cleaning the valve.
- III. Never place hands or fingers around moving parts, especially the valve(s) and Pallet (rotor). The valve and pallet are the main operating parts directly beneath the filler's hopper. The pallet is a mechanically operated cut off device and extreme caution should be exercised while the machine is in operation.
- IV. While cleaning the machine, making adjustments or replacing parts, please turn the machine off first before performing these operations, and make sure that it can not be accidentally restarted, by using the Safety Shutoff Valve.
- V. Packaging Enterprises, Inc. has made every effort to provide adequate guarding to provide you with a safe machine. However, please remember this is a machine and it has many moving parts. Good judgment and caution should be exercised at all times when dealing with the machine. It is the responsibility of the buyer to inspect the filler upon receipt and inform us if the machine has any missing guards or lacks reasonable safety protection. It is also the responsibility of the buyer to make sure that all operators have been adequately trained and understand the above safety guidelines completely.

Machine Cleaning / Maintenance

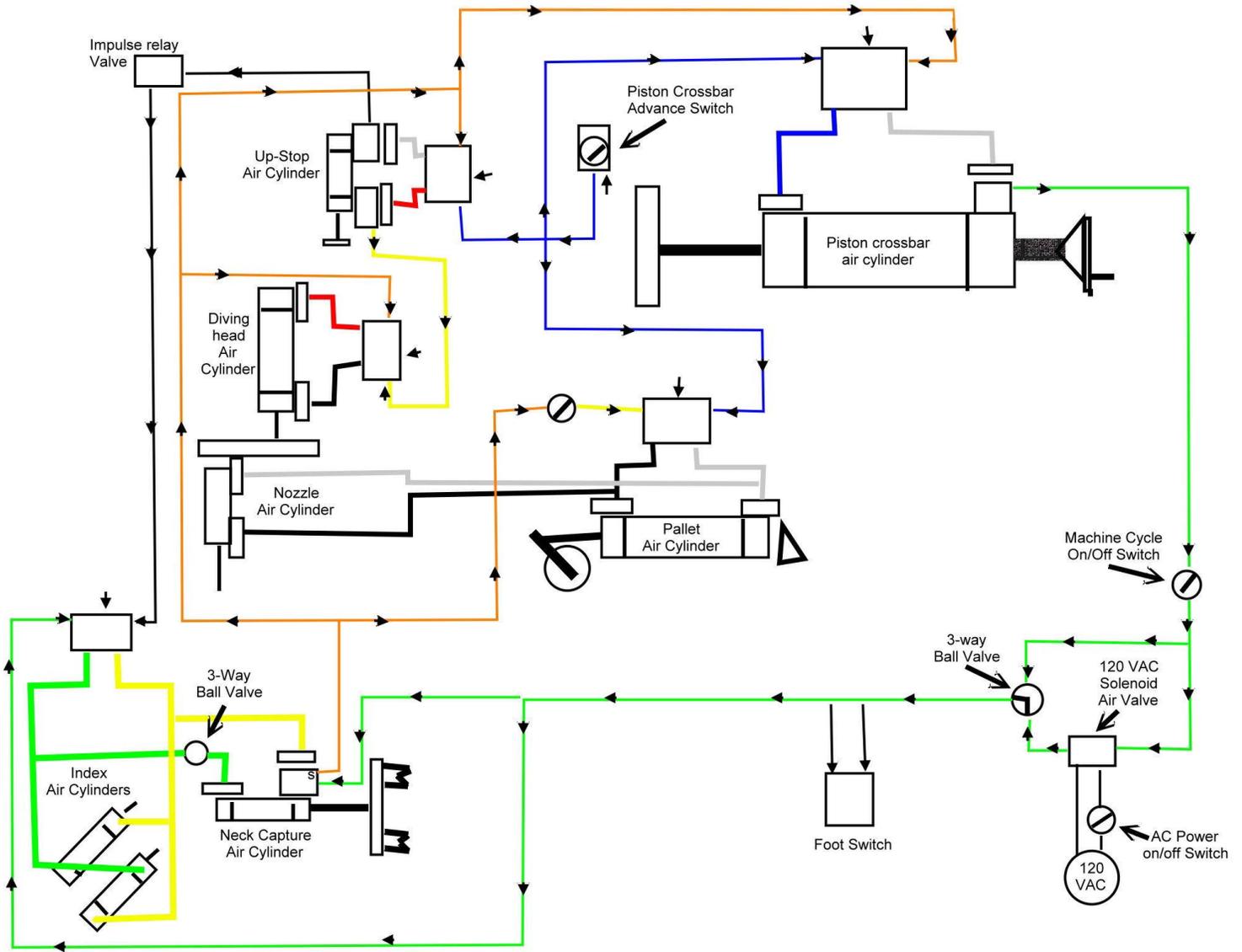
These Procedures should be performed at least twice a week to maintain cleanliness. **(Food Processors should perform this cleaning procedure once a day, after run is complete, to prevent growth of bacteria.)**

The following procedure should take no more than 10-15 minutes once you become familiar with it. In many cases you can run water and a sanitizer through the machine to flush out most if not all of the product. With the conveyor off, fill the hopper with water. Put a bucket or large receptacle under the nozzles and hold the container detect switch open to make the machine cycle.

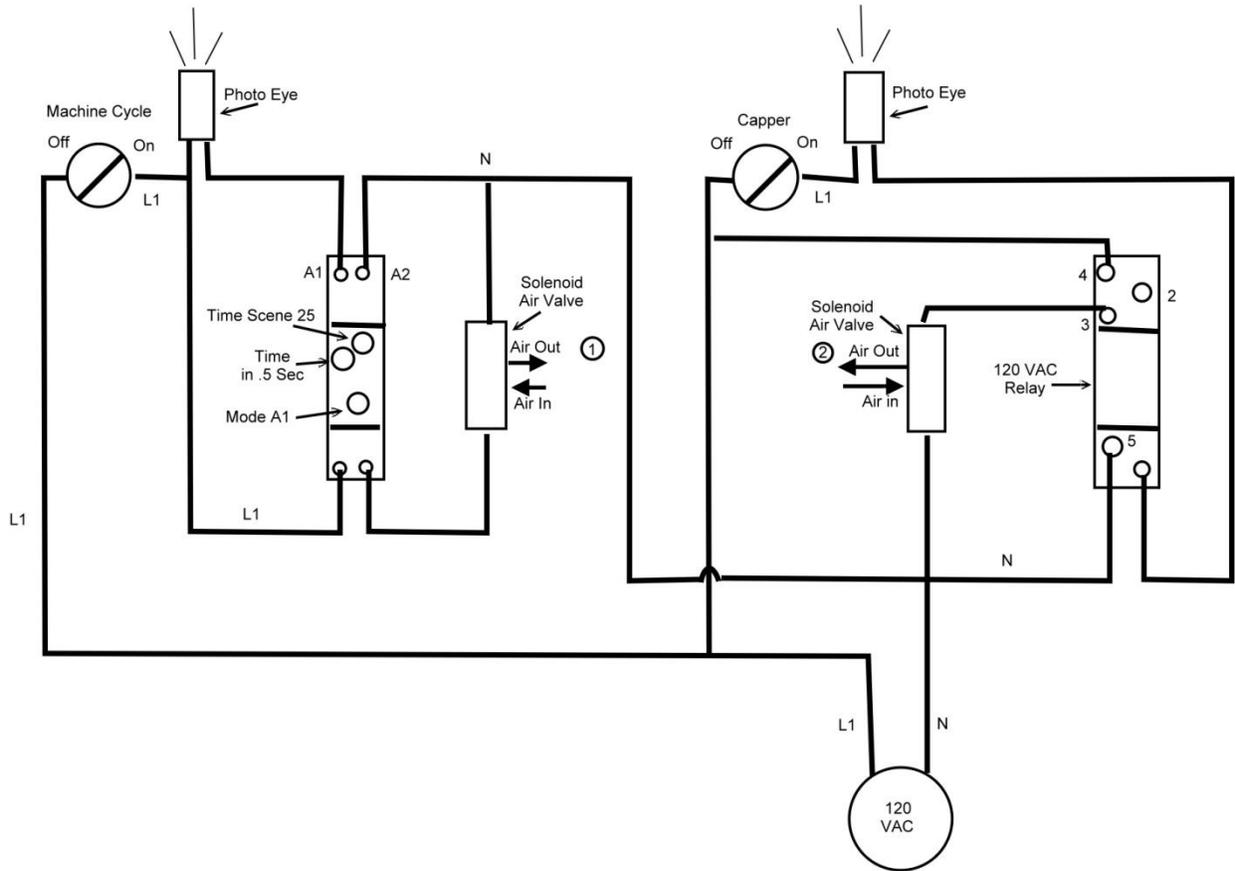
For a complete cleaning, first make sure the air compressor is disconnected. (There is an air cut-off on the air regulator).

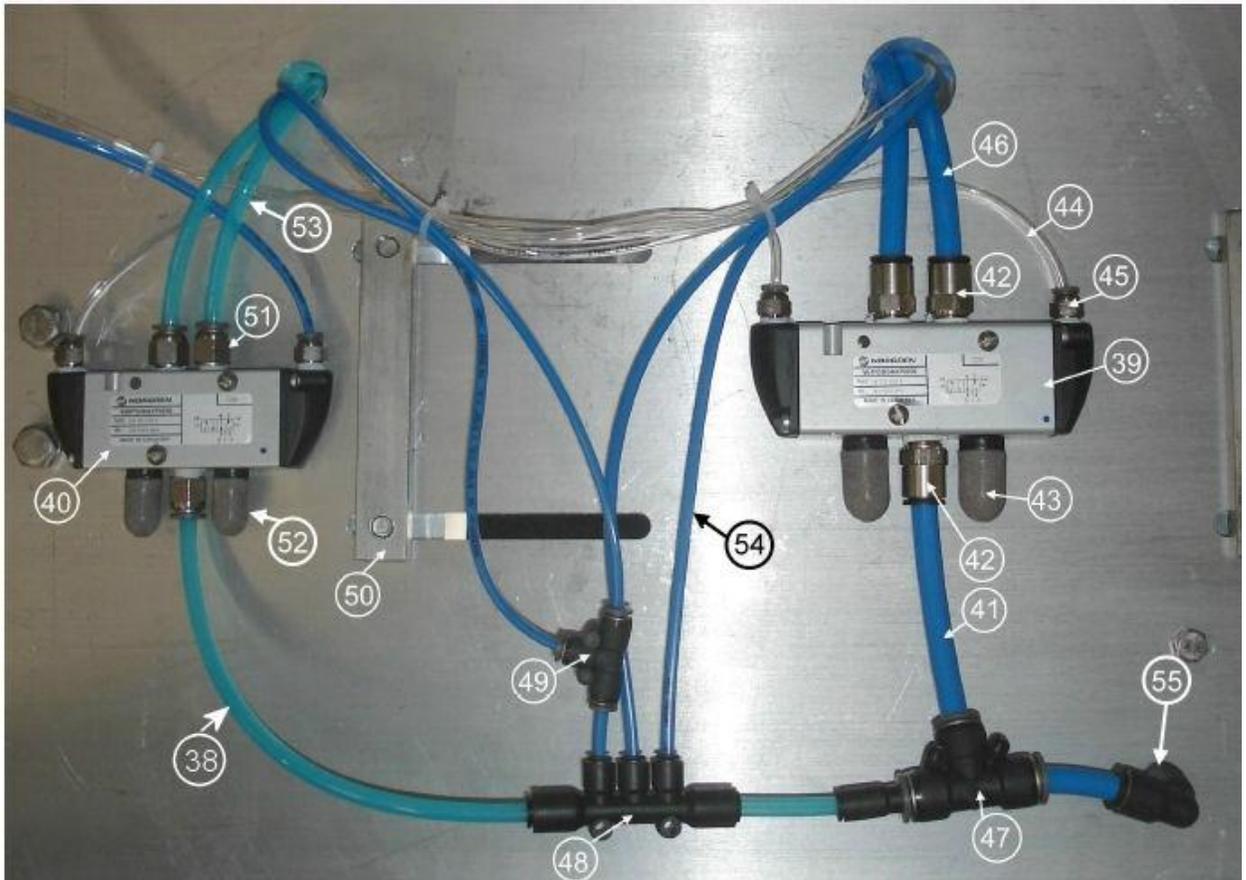
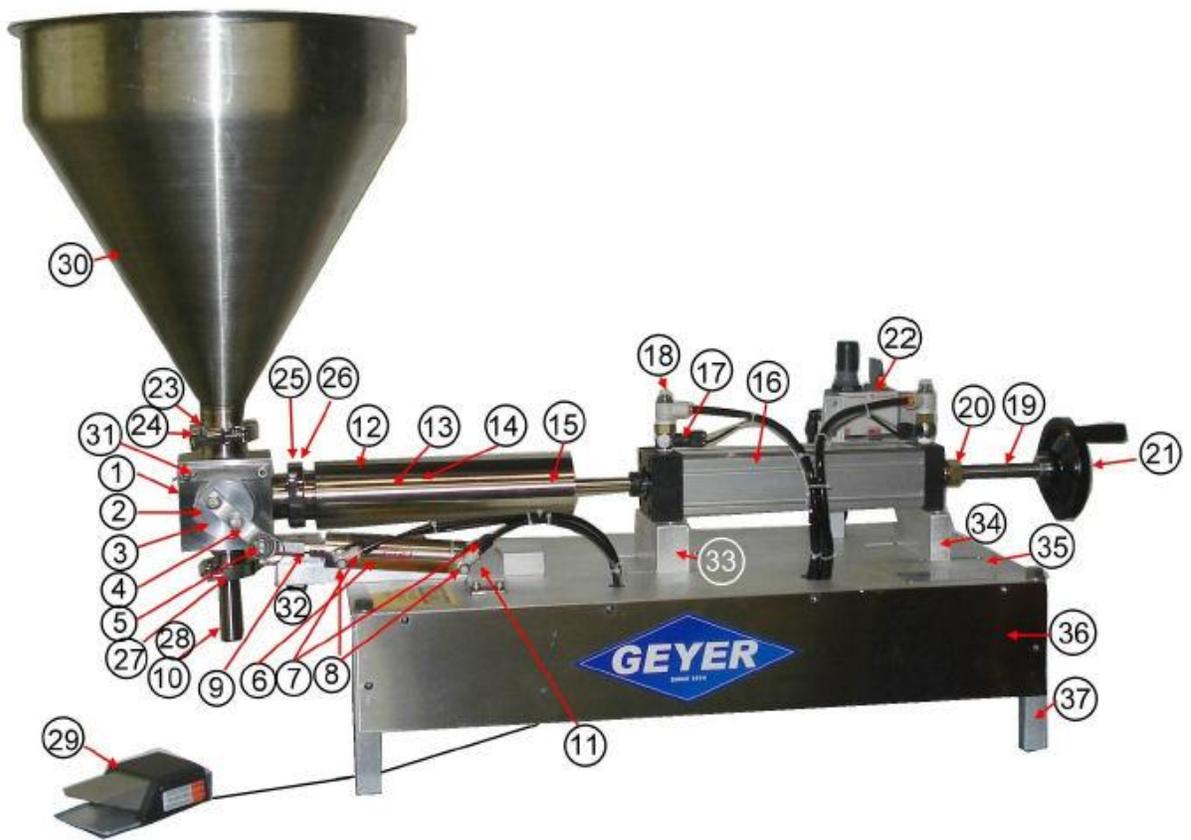
1. Remove the hopper .
2. Remove the valve rotor (see p. 10)
3. Remove the cylinders and pistons (see p. 8)
4. Remove the nozzle assemblies (see p. 9)
6. The valve block and manifold can be cleaned in place or removed.
7. Wipe down the conveyor and any other areas where product may have been spilled.
8. While cleaning these parts, inspect the O-rings and gaskets for damage and wear. Replace if necessary.
9. Once everything is cleaned you can reassemble the above parts, by reversing the above procedure. Note: be gentle with the valve rotor. Do not nick or scratch of this item. Also when replacing the valve rotor and pistons it is recommended to put a very small amount of sanitary lubricant on the piston heads and valve rotor before reinstalling these parts. We sell a product called Sana-Lube which is USDA and H1 rated.

Air Logic



Electrical Schematic





Fillmaster 5000 filling machine parts list

Diagram - Page 1				
1	Three Way Valve		Stainless Steel	1
2	Pallet (Valve Roter)		PET	1
	Chrome Plated Pallet		Stainless Steel	1
3	Pallet O-Rings (not visible)			2
4	Pallet Crank		Stainless Steel	1
5	Pallet Crank Pin		Stainless Steel	1
6	Pallet Air Cylinder		Stainless Steel	1
7	Pneumatic Sensor	1/8 " NPT		2
8	Flow Control	1/8" NPT		2
9	Pallet Air Cylinder Rod End			2
10	Filling Nozzle			1
11	Pallet Air Cylinder Pivot Bracket (2 pieces left and right)		Stainless Steel	1 Set
12	Fill Cylinder		Stainless Steel	1
13	Fill Piston (not visible)			1
14	Fill Piston O-Rings (not visible)			2
15	Alignment Coupler (not visible)		Stainless Steel	1
16	Main Air Cylinder	2.5" x 10"		1
17	Pneumatic Sensor	3/8" NPT		2
18	Flow Control	3/8" NPT		2
19	Quantity Adjustment Rod		Stainless Steel	1
20	Locking Nut and Sealing Washer			1 Set
21	Quantity Adjustment Hand wheel			1
22	Filter/Regulator with lockout			1
23	Hopper Sanitary Clamp	2"	Stainless Steel	1
24	Hopper Sanitary Clamp Gasket (not visible)	2"		1
25	Cylinder Sanitary Clamp	2"	Stainless Steel	1
26	Cylinder Sanitary Clamp Gasket (not visible)	2"		1
27	Nozzle Sanitary Clamp	1-1/2"	Stainless Steel	1
28	Nozzle Sanitary Clamp Gasket (not visible)	1-1/2"		1
29	Foot Switch			1
	Foot Switch Internal Valve (not visible)			1
30	Hopper		Stainless Steel	1
31	Pallet Locking Lever		Stainless Steel	1
32	Valve Mounting Bolt		Stainless Steel	1
33	Air Cylinder Forward Mounting Block			1
34	Air Cylinder Rear Mounting Block			1
35	Base Plate			1
36	Base Side Guards		Stainless Steel	1 Set
37	Legs			4

Item Number	Description	Size	Material	Unit
40	Pallet Air Valve	1/4" Tube		1
41	Main air valve Air Supply Tube	3/8"		
42	Male Tube Fitting	3/8" Tube		3
43	Muffler - Main Air Valve			2
44	Sensor Signal Tube			
45	Male Tube fitting - Sensor Line			4
46	Main Air Cylinder Tube			1
47	Tube Tee with Reducer	3/8" to 1/4"		1
48	Multi Tee			1
49	Tube Tee	5/32" Tube		1
50	Main Air Cylinder Mounting Bar		Stainless Steel	2
51	Male Tube fitting	1/4" Tube		3
52	Muffler - Pallet Air Valve			2
53	Pallet Air Cylinder Tube			
54	Sensor Pressure Tube			
55	Tube Elbow	3/8" Tube		1

Warranty

Subject to the terms, conditions and limitations contained herein, Philapack LLC guarantees the quality of the material and workmanship of all machines it manufactures and sells.

Philapack LLC agrees to furnish Purchaser without charge, F.O.B. Huntingdon Valley, PA, any part proving defective either in material or workmanship within one year from date of shipment, (subject to the limitations stated below) providing Purchaser gives Philapack LLC immediate notice of defective parts and affords Philapack LLC the opportunity to inspect subject part.

Unless otherwise expressly agreed to by Philapack LLC, Purchaser shall bear the expense of installation. The liability of Philapack LLC shall be limited to furnishing such part or parts as required. Failure of equipment and or component parts due to exposure to overload, misuse, negligence or accident shall not be deemed attributable to defectiveness of material or workmanship, nor if the equipment has been repaired or altered outside of our Huntingdon Valley, PA, factory in any respect which, in our judgment, affects its condition or operation. Also, normal wear and tear of component parts such as gaskets, seals, and similar wearing parts due to normal use of the machinery, is not covered under this warranty. In no event shall Philapack LLC be liable for incidental or consequential damages.

Philapack LLC reserves the right to install or supervise the installation of any necessary replacement, and to perform or supervise any adjustment, incident to satisfactory operation of the equipment.

PLEASE NOTE: In case of motor, electrical component and pneumatic component failures, Warranty is limited to ninety (90) days after equipment is shipped. The above Warranty is void if the motor, electrical, or pneumatic components are tampered with or disassembled by anyone other than an authorized representative of the their manufacture.

THE FOREGOING WARRANTIES AND LIMITATIONS ARE EXCLUSIVE REMEDIES AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR OF