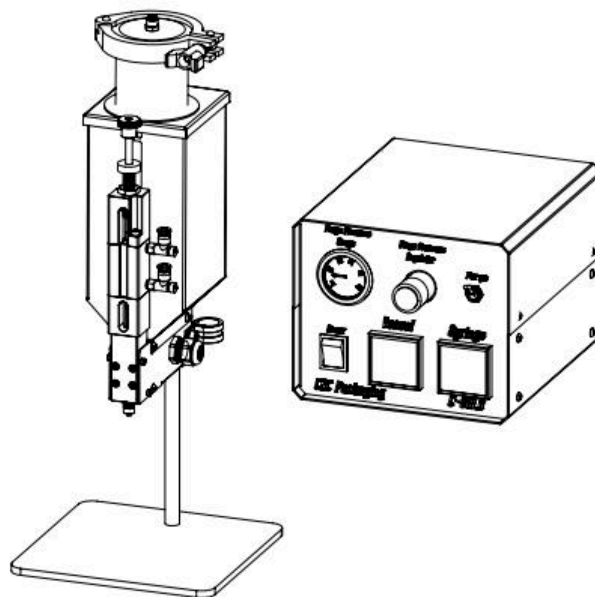


CNC Packaging

C-SOLO

CARTRIDGE FILLING MACHINE



Operation Manual

**CNC Packaging Inc 3211 Regal drive, Suite E, Alcoa, Tn 37701 United States
865-724-1235 (EST)**

Designed-Engineered-Built in Tennessee, U.S.A.

V1.3 Rev-

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1- Safety



This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators. Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, and the usage of personal protective equipment. The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using the machine. **TRAINED OPERATORS ONLY.** Untrained operators have a higher risk of being injured. Only allow trained/supervised people to use this machine. When the machine is not being used, disconnect power to prevent unauthorized use.

ELECTRICAL EQUIPMENT INJURY RISKS.

You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER AND AIR FIRST.

Always disconnect the machine from power and air BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended motion or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying objects. Regular everyday glasses are not safety glasses.

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair.

Warning

 **CAUTION**



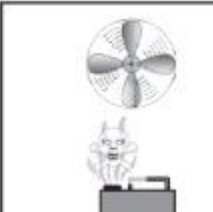
SHOCK HAZARD!
Two-prong outlets do not meet the grounding requirements for this machine. Do not modify or use an adapter on the plug provided—if it will not fit the outlet, have a qualified electrician install the proper outlet with a verified ground.

 **WARNING**



To reduce your risk of serious injury, read this entire manual **BEFORE** using machine.

 **CAUTION**



Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

2- Contact Info:

<u>Address</u>	CNC Packaging Inc3211 Regal Drive Suite D Alcoa TN 37701
<u>Phone</u>	(865)724-1235
<u>Email</u>	help@cncpackaginginc.com

Scope:

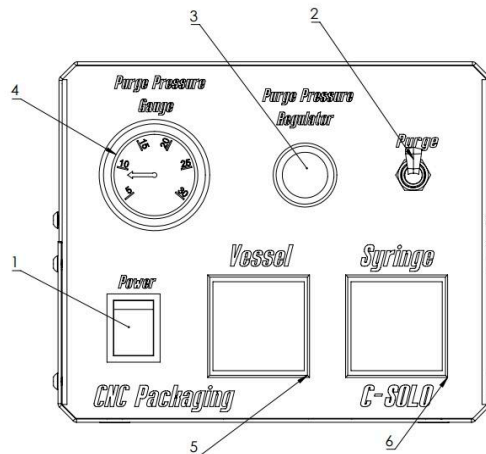
This manual helps the reader understand the machine, how to prepare its for operation, how to control it during operation, and how to keep it in good working order. We assume the reader has a basic understanding of how to operate this type of machine, and that the reader is experienced with using machine controls. As with all machinery of this nature, learning the nuances of operation is a process that happens through repetition. If you are not an experienced operator of this type of machinery, read through this entire manual, and watch to learn more from our operational tutorial video before attempting operations. Following this advice will help you avoid serious machine damage, personal injury, and get the best results from your work.

3- Specifications

<u>C-SOLO KEY FEATURES:</u> • Hands Free Foot Pedal Operation • Fills up to 2200 units per hour • Fills pods, disposables, carts, and luer lock syringes • Internally Integrated Heating System • Fill Volume from 0.1mL to 1.1mL *available in 3ml upon request* • Low Maintenance Design • Designed and Manufactured in the USA	<u>C-SOLO SPECIFICATIONS:</u> • 0.1-1.1mL Filling Volume OR • 0.3-3.1mL Filling Volume • Filling Accuracy +/- 0.02mL • 500mL Capacity • 2 zone PID Temperature Control • Vessel Temperature from 10° to 75° C • Syringe Temperature from 10° to 90° C • 0-30psi System Purge • Up to 750 psi Injection Pressure
<u>REQUIREMENTS:</u> • 120vAC 3A Single Phase • Filtered, Dry and Oil Free Compressed Air, 80psi	

4- Identification of Components

Control Box



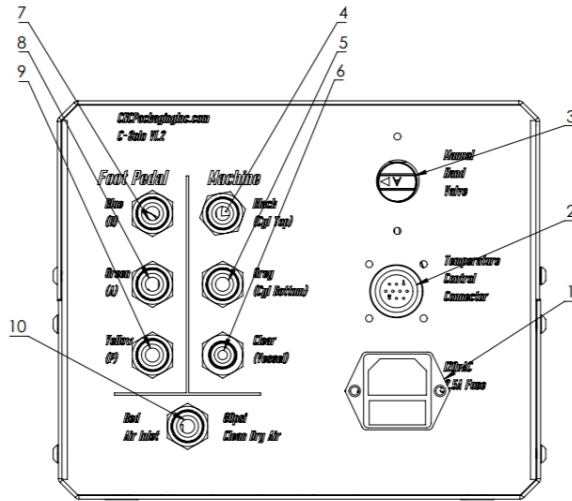
Item#	Description
1	Power Switch
2	Purge Switch
3	Purge Pressure Regulator
4	Purge Pressure Regulator
5	Vessel Temperature Controller
6	Syringe Temperature Controller

(Front)

The control box is the hub that powers the temp controls and directs the air into the C-SOLO. The front of the control box features a power switch, air purge pressure gauge, air purge pressure regulator, air purge switch, a syringe temperature control, and a vessel temperature control.

1. **Power switch:** Supplies power to the unit by turning the switch to the on/up position. Power on is indicated by the illuminated switch.
2. **Purge On/Off Switch:** Turns on the Air Purge function to initiate product flow, evacuate air bubbles from the product and perform the cleaning procedure.
3. **Purge Pressure Regulator:** The regulator adjusts the air purge pressure. To adjust the Purge Pressure first unlock the Purge Pressure Regulator. To unlock the Purge Pressure Regulator pull out on the yellow sleeve on the knob to unlock. Turning the knob clockwise increases the pressure and turning it counter-clockwise decreases the pressure. To lock the Purge Pressure Regulator, push in on the sleeve of the yellow knob.
4. **Purge Pressure Gauge:** indicates the amount of air pressure within the vessel when the purge switch is turned on.
5. **Syringe Temperature Control:** Controls the syringe temperature. To change the Syringe temperature, press the "Set" button and use the up and down arrows to adjust, then press the "Set" button to lock the desired temperature.
6. **Vessel Temperature Control:** Controls the vessel temperature. To change the Syringe temperature, press the "Set" button and use the up and down arrows to adjust, then press the "Set" button to lock the desired temperature.

Control Box



(Back)

Item#	Hose Color	Component
1		120vAC Receptacle
2		Temperature Control Connector
3		Manual Hand Valve
4	Black	Syringe Cylinder Top
5	Grey	Syringe Cylinder Top
6	Clear	Syringe Cylinder Bottom
7	Blue	Foot Pedal (B)
8	Green	Foot Pedal (A)
9	Yellow	Foot Pedal (P)
10	Red	Air Inlet (Compressor)

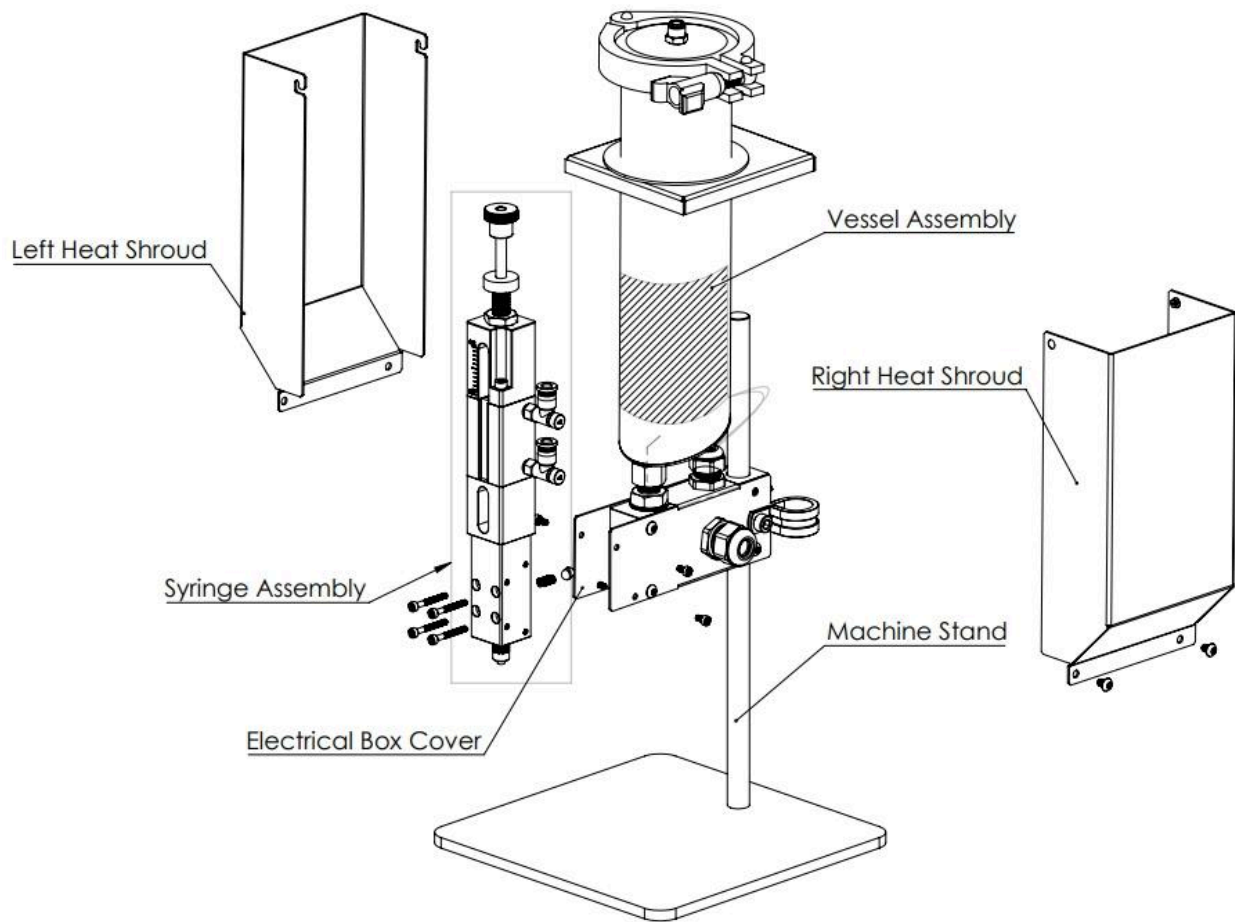
The back of the control box features all the power inputs and air fittings that operate the machine. Each of the fittings and inputs are clearly labeled to make setup easy and pain free.

120vAC Receptacle: The Receptacle has a 2.5amp fuse to protect the internal electrical components from power surges or shorts from component failure. In the fuse compartment, within the Receptacle, you will also find a spare fuse.

1. **Temperature Controller Connector:** Connects power to the heaters and sensors for the syringe and vessel temperature control systems. To connect, align keyways on the circular connector. Once the plug is aligned, tighten the locking sleeve to secure the plug to the receptacle.
2. **Manual Hand Valve:** To activate the “Manual Inject Valve” move the switch from the horizontal position to the vertical position. When the valve is activated, the operator can manually operate the C-SOLO by moving the “Manual Injection Knob” up to draw the product into the syringe body then down to dispense product.

4-10. Bulkhead Air Fittings: The hoses from the “Foot Pedal” and “Machine” connect to the Control Box using the table or the labels indicated on the back panel.

Machine



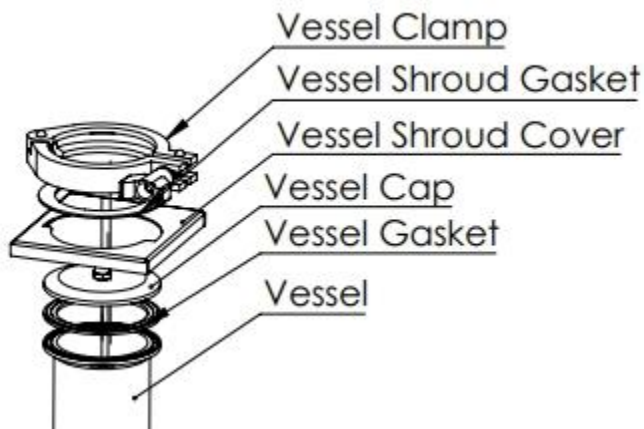
Machine Stand: is the foundational structure for the C-SOLO Syringe Assembly. The stand consists of a base plate and the rod that supports the Machine.

Left and Right Heat Shroud: These covers help limit the operator and foreign objects from access to electrical components; these are not to be removed while the machine is plugged in.

Electrical Box Cover: This cover conceals the connections for the 2 heated zones, fuses and ground. This box cover should NEVER be removed. The results of tampering with this enclosure has the potential to cause personal injury or even death.

Vessel Assembly

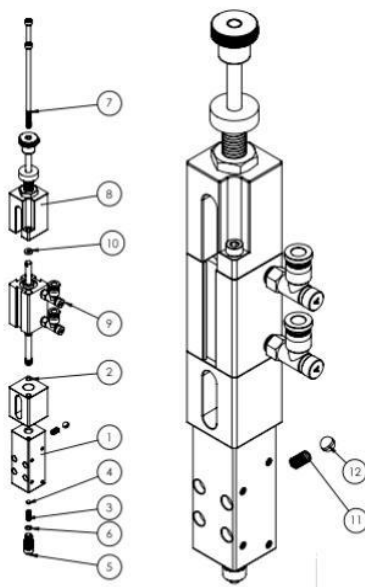
The Vessel Assembly is responsible for containing, distributing and heating product as well as pressurizing during the Purge Procedure. The Vessel has a silicone heater with a fuse and temperature sensor. It is sealed by a Viton tri clamp gasket and a tri clamp vessel clamp. The Vessel can accommodate up to 500ml of product. The temperature of the vessel is controlled by the Vessel Temperature Controller. The temperature can be set from 10degC to 75degC. The Vessel distributes the product through a port on the bottom through a fitting with a screen and into the distribution block.



1. **Vessel Clamp:** The Vessel Clamp tightens around the top of the Vessel, Vessel Cap and Vessel Gasket. It provides an air tight seal.
2. **Vessel Shroud Gasket:** The Vessel Shroud Gasket keeps spilled product from dripping down onto the Vessel Heater.
3. **Vessel Cap:** The Vessel Cap is the cover for the Vessel. It contains a fitting for the 4mm hose used for Purging.
4. **Vessel Gasket:** The Vessel Gasket provides the seal for the Vessel.
5. **Vessel:** The Vessel contains the Vessel Heater and Vessel Fuse. It is used to heat up to 500ml of product within the Vessel. The Vessel is designed for 30PSI of air pressure and has a range in temperature of 10deg C to 75 deg C that's controlled by the Vessel Temperature Controller.

Syringe Assembly

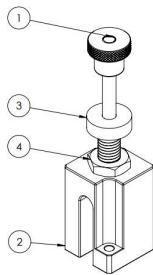
The Syringe assembly meters the quantity of product using the mechanical stops within the Volumetric Stop block assembly. The product flows from the Vessel via Distro Block, through the Distro Spring and Ball check valve, into the Syringe Block, through Syringe Spring and Ball check valve, and out of the Syringe Tip. The temperature of the Syringe is controlled by the Syringe Temperature Controller. The temperature can be set from 10degC to 90degC.



Item #	Component
1	Syringe Body
2	Syringe Cylinder Spacer Block
3	Syringe Spring
4	Syringe Ball
5	Syringe Tip
6	Syringe O'ring
7	Syringe Assembly Bolts
8	Volumetric Stop Block Assembly
9	Syringe Cylinder Assembly
10	Volumetric Stop Washer
11	Distro Spring
12	Distro Ball

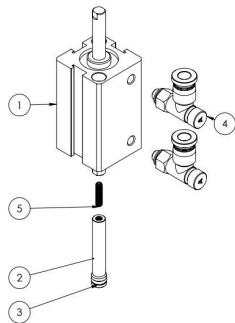
1. **Syringe Body:** The syringe body houses the check valves and syringe plunger. It also serves as the main hub for the needle tip, injection cylinder, manual injection shaft, and the volume adjustment components.
2. **Syringe Cylinder Spacer Block:** This part provides the necessary space between the Syringe Cylinder and the Syringe Body for the Syringe Plunger to move the prescribed amount within the syringe.
3. **Syringe Spring:** This part provides the back pressure for the Syringe ball to seal the port within the Syringe Block.
4. **Syringe Ball:** This part provides the seal to close the port with in the Syringe Block
5. **Syringe Tip:** This part is the adapter for connecting accessories for the Csolo. (ie: Injection and Infusion Needles, Luer Lock Components and Oral Syringes)
6. **Syringe Tip O'ring:** This part provides the seal for the Syringe Tip
7. **Syringe Assembly Bolts:** These bolts hold the entire Syringe Assembly together

8. **Volumetric Stop Block Assembly:** This assembly performs two functions, First, it is the mechanism that is adjusted to dispense the desired amount of product during semi-automatic operation by loosening the Stop Nut and adjusting the Volumetric Bolt to the desired volume and re-fastening the Stop Nut. Secondly, the Manual Inject Bolt is used to manually dispense product by turning the Manual Valve on the back of the Control Box to the vertical position, pull the Manual Inject Bolt up to manually draw the product into the Syringe Body and then pressing the Manual Inject Bolt downward to dispense the desired amount of product.



Item#	Component
1	Manual Inject Bolt
2	Volumetric Stop Block
3	Stop Bolt
4	Stop Nut

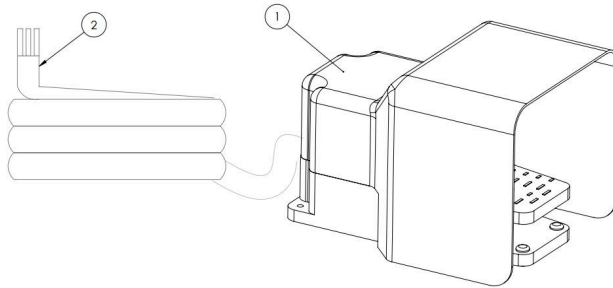
9. **Syringe Cylinder Assembly:** This is the assembly that is actuated by the Foot Pedal that draws in and plunges the product from the Vessel through the check valves and out of the Syringe Body. The Plunger O'ring provides the seal within the Syringe Body. The Flow Controls regulate the rate of motion of the cylinder. Pulling the knob on the Flow Control and turning it clockwise closes the valve and makes the cylinder travel slower, and turning the knob counterclockwise opens the valve and makes the cylinder travel faster in its respective directions.



Item#	Component
1	Syringe Cylinder
2	Plunger
3	Plunger O'Ring
4	Flow Controls
5	Syringe Set Screw

10. **Inject Washer:** This washer is used as a stop between the Volumetric Stop Block Assembly and the Syringe Cylinder Assembly to gauge the volume of product to be dispensed from the machine.
11. **Distro Spring:** This part provides the back pressure for the Distro Ball to seal the port within the Distro Block.
12. **Distro Ball:** This part provides the seal to close the port with in the Distro Block

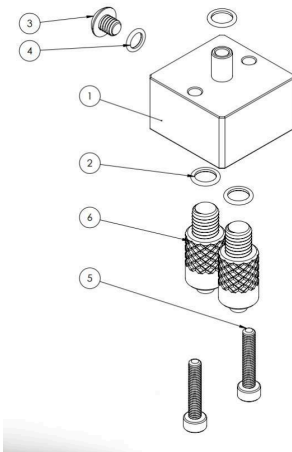
Foot Pedal



Item	Component
1	Foot Pedal
2	Pneumatic Hose Lines

1. **Foot Pedal:** The Foot Pedal is used to cycle the machine by pressing your foot onto the treadle to dispense product and releasing it to complete the cycle and send the machine back to its home position.
2. **Pneumatic Hose Lines:** The Pneumatic Hose Lines are connected to the control box by way of the instructions in the [Set Up](#) portion of this manual or on the back of the Control Box.

Dual Needle Adapter



Item#	Component
1	Dual Needle Adapter
2	Syringe Tip O-rings (3x)
3	Dual Needle Adapter Port Screw
4	Dual Needle Adapter Port Screw O-ring
5	Dual Needle Adapter Screws (2x)
6	Syringe Tips (2x)

1. **Dual Needle Adapter Body:** This component facilitates the filling of Dual Pod/Chambered systems simultaneously.
2. **Syringe Tip O'ring:** This part provides the seal for the Syringe Tip
3. **Dual Needle Adapter Port Screw:** This screw closes the clean out port on the "Dual Needle Adapter Body"
4. **Dual Needle Adapter Port O'ring:** This o'ring provides the seal for clean out port on the "Dual Needle Adapter Body"
5. **Dual Needle Adapter Screws:** These screws are used to mount the "Dual Needle Adapter" to the underside of the Syringe Body
6. **Syringe Tip:** These parts on the Dual Needle Adapter are for connecting two Injection Needles for filling Dual Pod/Chambered units.

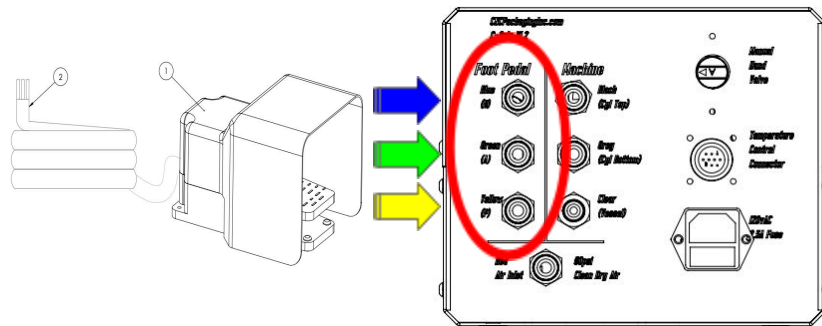
Consumables Bag

Kit Name	Item Name	Quantity	Part Reorder Number
3ml Option	3ml Plunger O'rings	50	P-00-01-242606
1ml Option	1ml Plunger O'rings	50	P-00-01-242607
Syringe Kit	Syringe Ball Bearings	10	P-00-01-242608
	Syringe Springs	10	P-00-01-242609
	Syringe Tip O'rings	10	P-00-01-242610
	Syringe Plunger Set Screws	2	P-00-01-242611
	Syringe Block Screws	12	P-00-01-242612
Distro Block Kit	Distro Block Ball Bearings	10	P-00-01-242613
	Distro Block Springs	10	P-00-01-242614
	Distro Block O'rings	10	P-00-01-242615
	Luer Lock Connectors	2	P-00-01-242616
	Vessel Ferrule	1	P-00-01-242617
	Coarse Screens	5	MP-00-01-242618
Dual Needle Adapter Kit	Dual Needle Adapter Assembly	1	MP-10-01-242620
	Dual Needle Mounting Screws	4	P-00-01-242621
	Syringe/Manifold O'rings	3	P-00-01-242622
	Side Port O'ring	3	P-00-01-242623
	Side Port Screw	1	P-00-01-242624
	6ft 120vAC Power Cord	1	P-00-01-242625
	6ft Red Pneumatic Hose Assembly	1	MP-10-01-242626

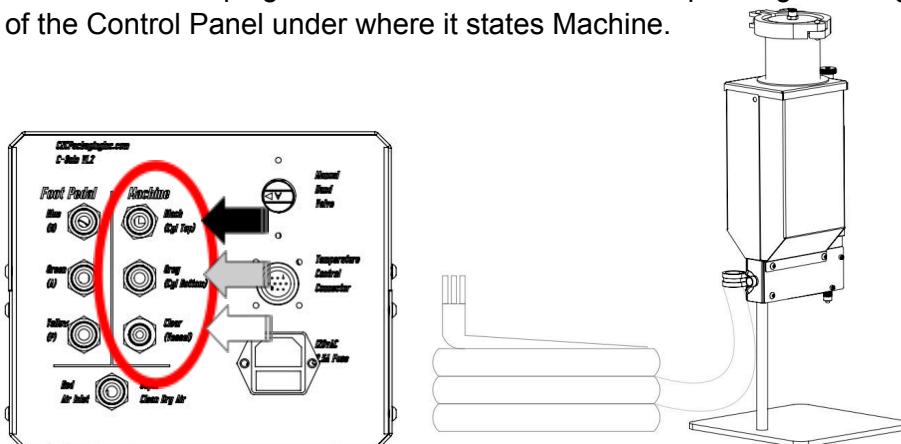
	10mm Wrench	1	
	16g 1inch Needles	12	P-00-01-242628
	18g 1inch Needles	12	P-00-01-242629
	19g 1inch Needles	12	P-00-01-242630
	20g 1inch Needles	12	P-00-01-242631
	Bondus Hex Wrenches, 1.5-6mm	1	

5- The Setup

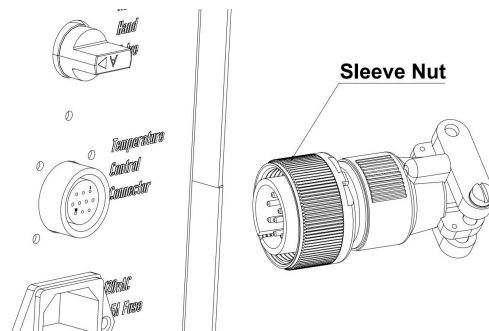
1. Remove the CSolo Welcome Package and the C-SOLO and all of its components from the box.
2. Designate an area with a clean, firm and flat surface to operate the C-Solo. The area must be free of clutter, flammable objects and comfortable for machine operation.
3. With your C-SOLO unpacked on a firm flat surface, locate the Foot Pedal. Find the end of the hoses and plug each color hose into the corresponding air fitting on the back of the Control Panel where it states Foot Pedal. Place the Foot Pedal onto the floor in a position comfortable for operation.



4. Next, locate the Machine and place it on a firm flat surface on its Base. Set the height of the Machine by loosening the Wing Nut on the back of the machine and sliding the head of the machine upward to its desired height, then fasten the wing nut.
5. Identify the end of the Hoses and Temperature Control Connector. Take the (3) three hoses and plug each color hose into the corresponding air fitting on the back of the Control Panel under where it states Machine.



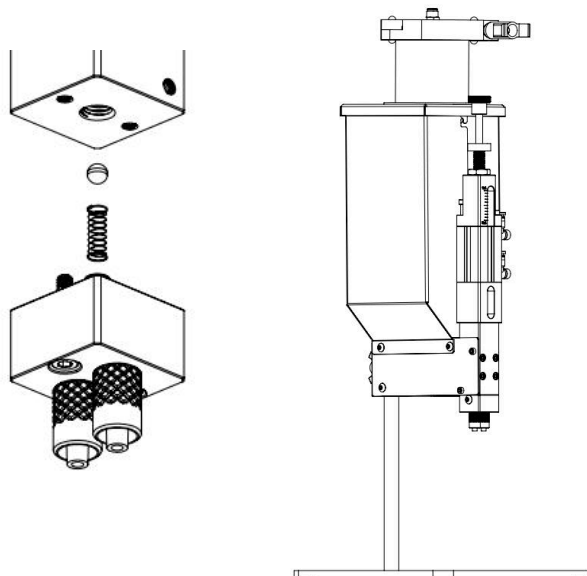
6. Then, take the Temperature Control Connector, align the keyways on the connector with the receptacle on the back of the control panel where it's labeled Temperature Control Connector. Once aligned, tighten the sleeve nut onto the receptacle.



Dual Needle Pod Adapter (Optional)

Dual Needle Pod Adapter (Optional) The Machine comes stock with a single Syringe Tip to be used on single pod/510's/oral syringes and other single chambered devices. If you're running production with a device that contains 2 chambers, use the Dual Needle Pod Adapter.

Install the Dual Needle Pod Adapter by removing the existing Syringe tip and replacing it with the Dual Needle Pod Adapter using the 2 screws provided.



7. Once the Machine and Foot Pedal are connected, take the Red Hose from the Consumables bag and plug the hose into the fitting on the back of the panel where it's labeled Air Inlet. As the machine fills with air, the cylinders on the machine may move. Keeping hands and objects free from the area of the machine while supplying air, connect the other end of the Red Hose to the compressor. Start the compressor and set the Air Pressure to 80PSI.

8. Once the Compressor is up to pressure, we'll conduct a Cleaning Procedure. Although we test, run and clean each machine, this procedure should be performed upon receipt of the machine to remove any potential contaminants including dust, packing fibers, residue from manufacturing or anything the machine may be exposed to between packing and setup.

Cleaning/Inspection Procedure

The cleaning/inspection procedure is to be done by qualified and trained personnel prior to each shift and/or batch to ensure that the system is free from any contaminants, bacteria, or any other foreign matter. Failure to follow these procedures may result in poor performance and/or personal injury. It is recommended you read the entire manual to get familiar with its components related to this procedure before you start.

NOTICE:

USE PHARMACEUTICAL/FOOD GRADE ETHANOL ONLY

1- Inspect and free the Machine, Hoses, Wires, Connectors, Air Fittings, the Vessel and all other components of foreign matter and/or defects. (ie: lint, hair, old product, leaks, cracks, corrosion, loose bolts, wires and/or fittings) If any anomalies that cannot be rectified through standard maintenance and cleaning procedures please notify CNC Packaging Inc. immediately before running the machine.

2- Once the initial cleaning and inspection is complete and the air is supplied to the machine, remove the Vessel Clamp, Vessel Cap and Vessel Gasket and set aside.

3- Get an empty beaker and a bottle of ethanol. Pour approximately 50ml of food grade ethanol into the top of the open Vessel, focusing on rinsing the ethanol down the inside walls of the Vessel. Return the Gasket and Cap to the Vessel and fasten the Clamp into place.

4- Before initiating the Purge function, locate the Purge Regulator. Adjust the yellow knob by pulling on the sleeve to the unlocked position and turning it gently counterclockwise till it stops.

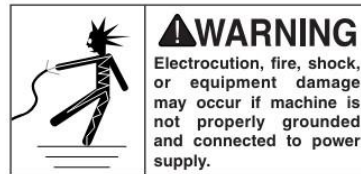
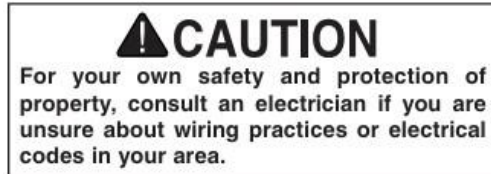
5- With CSolo set an appropriate height and an empty beaker placed under the Syringe Tip, toggle the Purge Switch to the up position. Slowly turn the yellow knob clockwise on the Purge Regulator till the ethanol starts dispensing from the Syringe Tip into the beaker, then turn the Purge Switch off.

6- While the beaker remains under the Syringe tip, depress fully and release the foot pedal 5 times to dispense the ethanol to ensure proper function. The motion of the Syringe Cylinder should be smooth without excessive speed and/or sound of leaks and/or mechanical issues coming from the Machine, Control Box or Foot Pedal. If the machine fails to dispense ethanol and/or any inspection detail, refer to the troubleshooting guide.

7- After the Foot Pedal and Syringe is tested, inspected and with the beaker under the syringe tip, turn the Purge Switch on again. Let the ethanol continue to flow till the Vessel is empty. Repeat this process till desired cleanliness is achieved. Once desired cleanliness is achieved, let the air purge run for a few minutes till all of the Ethanol has evaporated.

The Cleaning Procedure is complete

9. Remove the Power Cord from the Consumables Bag and plug the appropriate end into the receptacle on the back of the Control Panel where it states 120vAC. Check the power switch is in the down/off position, then plug the other end into the designated 120vAC outlet.



10. Turn the power switch on the front of the control panel to the On/Up position. Notice the switch will illuminate and after a few seconds the temperature controllers will power on and the heaters will start to warm up indicated by the temperature rising on each of the temperature controllers. The machine will take approximately 10-15 minutes to reach the set temperature. If either of the temperature controllers do not show power, display a temperature or start to warm up please notify us before running the machine.
11. To achieve desired temperature for your specific product, refer to the Temperature Procedure

Temp Procedure

In order to operate efficiently, you need to come up with a reasonable temperature to run the vessel and syringe. The theory is that the cooler you can run your product, the more of its integrity is preserved. It is recommended you read the entire manual to get familiar with its components related to this procedure before you start.

Method A - Distillates/Decarboxylated Formulations:

1- The easiest way to come up with a conservative base temperature for your product, you'll need to consult your lab for what the decarboxylation temperature is for this particular batch/formulation. Once you have that temperature, you subtract 30 degrees from that number for your Syringe temperature. Take that number, subtract another 10-15 degrees for the Vessel temperature.

Example: Decarboxylation temperature = 105 degrees

-30 degrees

75 degrees = Syringe Temperature

-15 degrees

60 degrees = Vessel Temperature

2- When the product temperature in each zone has stabilized at the new setting, Go to Purge Procedure".

Method B - Live Rosin/Resin Liquid Diamonds etc.

1- Set the Syringe temperature at 50 degrees and the vessel at 50 degrees.

*****Keeping as low a temperature in the vessel as possible will help to preserve the product. When working with delicate formulations, only if it's absolutely necessary do you raise the temperature of the vessel if the product isn't flowing concurrently during production rates. Maintain no more than a 20 degree delta between vessel and syringe zones. (ie: If syringe temp is 75 degrees and vessel is 50 degrees, add 5 degrees to maintain not more than 20 degrees in between the two to keep up with faster production rates) Note: Production rates with delicate formulations with lower temperatures will run at a slower rate.

2- Take your product in a beaker, warm it enough to flow (via hot plate, oven etc..), then pour up to 500ml into the vessel. Allow the temperatures on each of the Temperature Controllers to stabilize, it could take up to 10 minutes.

3- Run the Purge Procedure, if the product does not flow at a constant rate/or at all, add 5 degrees to the Syringe Temperature zone and repeat till product starts to flow bubble free and Purge procedure is complete.

11. Add product to the vessel. It is recommended, for ease and efficiency of the process, to pre-warm your product to make it less viscous. Remove the Vessel Clamp, Cap and Gasket and set aside. Slowly pour up to 500ml of product into the vessel. Once the product is finished being poured and the top of the vessel is wiped clean, return and align the Gasket, Cap and Vessel Clamp to the Vessel and fasten clamp.

12. When the Vessel and Syringe has reached the desired temperature as indicated on each of the Temperature Controllers, we're going to perform the "Purge Procedure".

Purge Procedure

The Purge Procedure is used to eliminate the air bubbles and initiate flow of product upon start up of the machine. With the Csolo turn on, air plugged in and once the product temperature has stabilized on both zones, the machine is ready to Purge. It is recommended you read the entire manual to get familiar with its components related to this procedure before you start.

- 1- Place a clean empty beaker on the base under the Syringe Tip.
- 2- Identify the Yellow knob on the Purge Regulator and pull the sleeve to the unlock position and turn it gently counterclockwise till it stops. Toggle the Purge Switch to the up/on position.
- 3- With the Purge Switch turned on, start to turn the yellow knob on the Purge Regulator clockwise. Notice the pressure on the Pressure Gauge starts to rise.

*****The maximum pressure for the Purge System is regulated to 30psi by a pressure relief valve in the Control Box. If the maximum pressure of 30PSI is reached, the relief valve will open and make a buzzing sound from the Control Box. Completely normal, just dial back the knob till the buzzing stops*****

As the vessel continues to pressurize, the product will start to flow. The product may initially sputter from the air bubbles contained within the product. Once the sputtering stops and the product is flowing in a solid stream, toggle the Purge Switch to the down/off position. If the product doesn't initially start to flow, you may help facilitate flow by depressing the Foot Pedal up to 5 times. Using a heat gun on the needle tip is another helpful way to initiate flow.

- 4- With the product in a fluid state throughout the Syringe Assembly, depress the foot pedal to inspect that the rest of the air bubbles from the system have been completely evacuated and the product continues to flow smoothly.

The Purge Procedure is complete

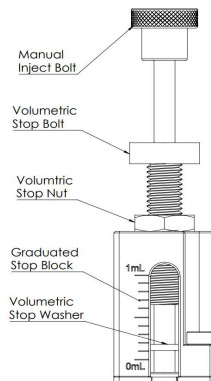
11. With the product flowing smoothly, we're ready to dial in the desired volume/weight of the product for the device you're looking to fill. We're going to perform the "Calibration Procedure"

It is recommended that if the product doesn't flow, during the Purge Procedure after reaching maximum pressure and cycling the Foot Pedal 5 times, to see our Troubleshooting Guide for more information. Cycling the machine dry, without product within the syringe body, can cause premature wear to the O'rings and possible damage to the internal details of the syringe body.

Calibration Procedure

The Calibration Procedure is used to set the volume/weight of your fill.

- 1- Select the hardware device you're looking to fill and attach the proper size needle to the Syringe Tip. (Luer Lock Adapter/Dual Needle Adapter/Oral Syringe Adapter).
- 2- With a wrench, loosen the volumetric stop nut and set the volume of the hardware on the scale through the window in the Stop Block by turning the Volumetric bolt. Clockwise adds more product to the fill, counterclockwise subtracts product from the fill. (ie.. if its a .5g device, on a 1ml Csolo, then align the graduation to the middle on the stop block to the stop washer within the window) Once you've set the approximate volume with the stop bolt, tighten the stop nut.



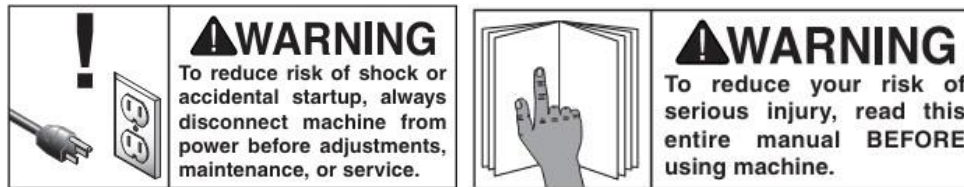
- 3- Set the scale with a clean empty beaker under the needle and Tare the scale.
- 4- Dispense the product into the beaker.
- 5- Inspect the weight add/subtract product by loosening the stop nut and turning the bolt in the respective direction depending on the results of your fill. If the weight is too high, turn the Volumetric bolt clockwise. If the weight is too low turn the Volumetric bolt counterclockwise.
- 6- Once you set the stop nut to the new volume, lock the stop nut in place and dispense another cycle into the beaker, tare the scale, then once again, dispense product and inspect the weight. Repeat steps 5-6 as necessary.

Dispensing the product twice during step 6 is crucial. The machine fills the Syringe body with product from the settings on the volumetric bolt from the previous cycle. So, adjusting the volumetric bolt then dispensing it, gives the machine a fresh batch of product with the new setting in place as it would during normal operating procedures.

The Calibration Procedure is complete

6- Maintenance

The Maintenance section of this manual will guide you through general maintenance tasks related to keeping this machine production ready and operating efficiently. As with any maintenance task, only qualified individuals should be performing this task. Air and electricity should be removed from the machine while performing all maintenance tasks. It is recommended you read the entire manual to get familiar with its components related to this section before any Maintenance procedures detailed in this section are done.



Plunger O'Ring Replacement-

In this exercise, we remove and replace the Plunger O'Ring. It is recommended you read the entire procedure before you start.

1- Remove Syringe Assembly Bolts by loosening completely and sliding the bolts upward to remove.

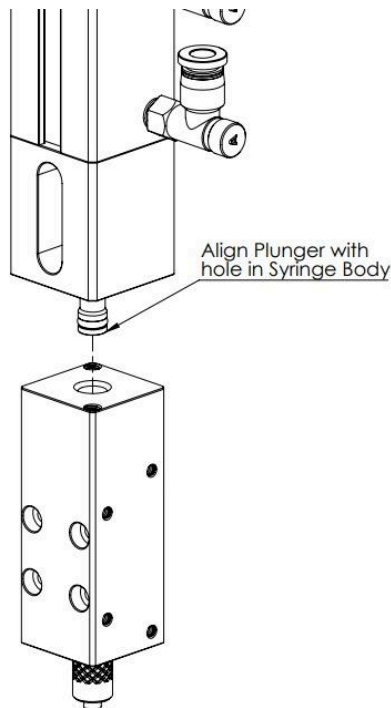


2- Gripping the rest of the assembly with one hand and the other hand holding the machine stable, slide the Syringe assembly up and guide the plunger out of the Syringe Body.

3- Once the rest of the Syringe assembly is separate from the Syringe body, wipe clean any residual product and remove the existing O'ring using a pair of tweezers or needle nose pliers.

4- Locate the consumables bag labeled "Plunger O'rings" Remove an O'ring from the bag and stretch it gently over the end of the plunger and set the O'ring into the groove provided.

5- With the plunger O'ring replaced, align the tip of the plunger with the hole in the top of the syringe body. Gently press down the plunger, making sure to maintain alignment. Failure to align assembly properly will cause damage to the O'ring resulting in poor performance. Continue pressing down on the assembly till the components are nested together.



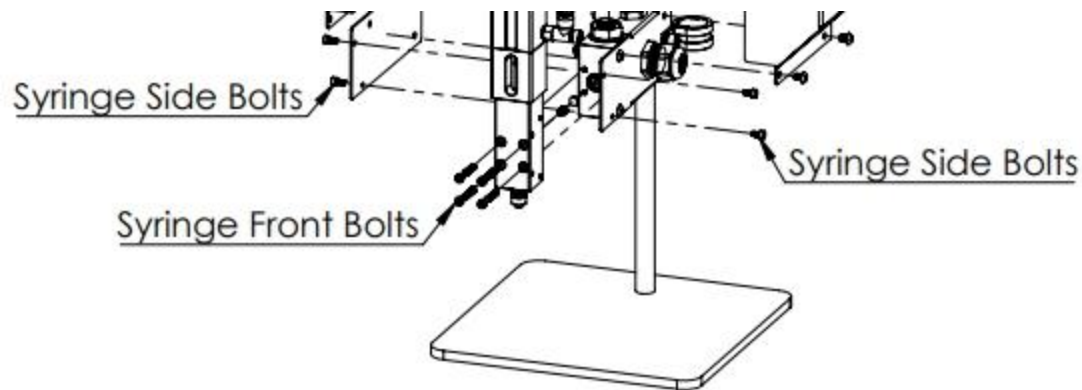
6-Install the Syringe Assembly bolts and start the threads on each bolt. DO NOT TIGHTEN AT ONCE. Alternate tightening the bolts, $\frac{1}{4}$ turn at a time till tightened fully all while keeping the entire assembly from the Graduation block down to the Syringe Body even and on the same plane. Improper tightening procedures will result in premature wear to the Syringe O'ring and possibly permanent damage to the Syringe Block.

Distribution Block O'ring, Spring and Ball Replacement-

It is recommended you read the entire procedure before you start. Air and electricity should be removed from the machine. The machine should be free of product before beginning the procedure.

1- Locate and remove the 2 (Two) Syringe Side Bolts on each side of the Syringe Block as detailed below, 4 (four) Syringe Side Bolts total. Do not remove any other side bolts.

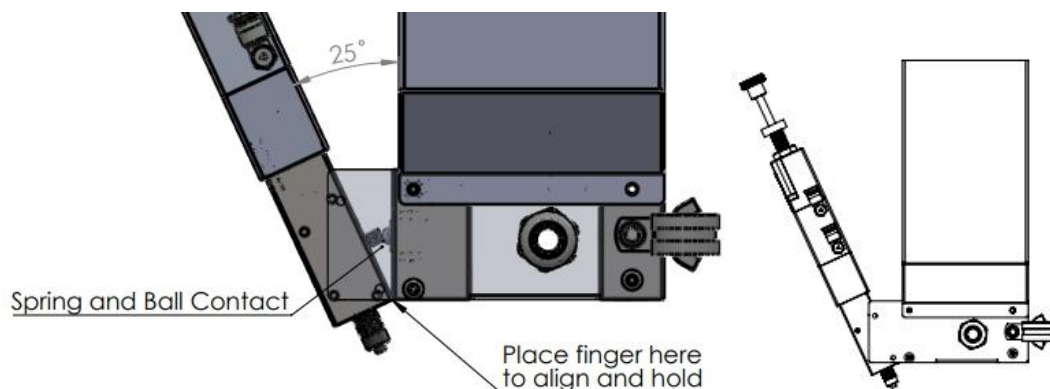
2- While holding the Syringe assembly, remove the 4 (Four) Syringe Front Bolts, once the assembly is free from the rest of the machine, be aware the spring, ball bearing and O'ring may fall out, placing a tray under the Syringe will prevent losing these components.



3- Remove the old spring, ball bearing and O'ring and discard. Locate the consumables bag, CSolo Distro Block Kit and remove one of each component.

4- Install O'ring in the groove on the distribution block. Place/balance the ball in the large bore within the area of the O'ring. Place the spring into the bore on the back of the Syringe body. Do so by twisting the spring gently, about a half a turn, it will set the spring upright.

5- With the spring standing up out of the hole, take the Syringe assembly, place your finger at the bottom corner of the assembly and hold at a 25deg angle, as detailed in the figure below.



5- With the spring now in contact with the ball, close the angle till the assembly is together. With your finger still in place holding alignment, insert the bolts into the holes in front of the Syringe Body and start the threads. Do not tighten at once. Thread each bolt till the assembly is against the Distro Block. Continue to turn each one 1/4 turn each till the Syringe is tightened appropriately. **Do Not Overtighten!**

6- Once the Syringe Front Bolts are tightened sufficiently, continue to install the 4 Syringe Side Bolts to complete the procedure.

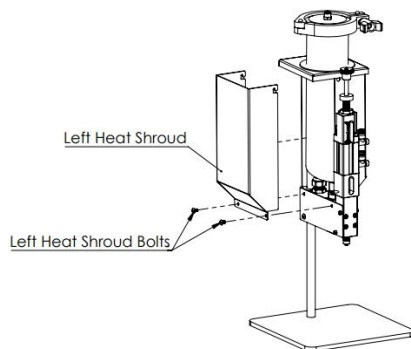
Syringe Tip O'ring, Spring and Ball Replacement-

It is recommended you read the entire procedure before you start. Air and electricity should be removed from the machine. The machine should be free of product before beginning the procedure.

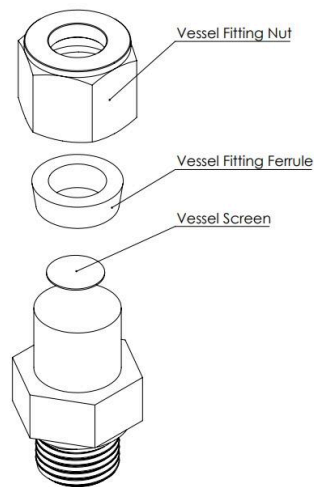
- 1- Using a wrench start loosening the Syringe Tip. Be aware that behind the Syringe tip is the Spring and Ball which may fall out, placing a tray under the Syringe will prevent losing these components.
- 2- Locate the consumables bag labeled "Syringe Kit" and retrieve a Spring, Ball and Oring.
- 3- Remove the Syringe Tip O'ring with a pair of tweezers or needle nose pliers. Install the new one in its place.
- 4- Be sure to remove the old Spring and Ball before installing the new set. Place the ball on the top of the spring (like an ice cream cone). Locate the hole, push the ball and spring together into the hole with your finger, hold your finger there till you replace it with the Syringe Tip. Tighten the Syringe tip appropriately.

Vessel Screen and Ferrule Replacement-

This procedure is for the removal and replacement of the Vessel Screen. The Vessel Screen is used to trap any particulate (lint, hair, etc..) that may make its way into your formulation. If the Vessel Screen traps enough particulate, it will clog and restrict flow to the Syringe causing the refill of the Syringe to be slower or in some cases, not flow at all. It is recommended you read the entire procedure before you start. Air and electricity should be removed from the machine. The machine should be free of product before beginning the procedure.



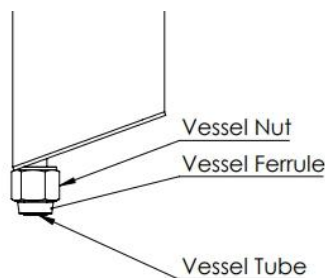
- 1- Remove the 2 (two) bolts that fasten the Left Heat Shroud.
- 2- Using an 18mm wrench, loosen the Vessel Fitting Nut. Once the nut is loose, twist the vessel gently to free it from the fitting. When the Vessel is free from the fitting, slide the vessel in an upward direction till it's removed from the fitting. The Vessel Nut and Ferrule may come off with the Vessel. Be aware the wires from the Vessel heater are still connected to the assembly. Gently turn the vessel upside down and rest it gently on its top while the screen is replaced.



3- With the Vessel Assembly put aside, remove the Vessel Nut and Ferrule. Look into the Vessel Fitting and at the bottom of the fitting, you'll find the screen. Remove the Vessel Screen with a tweezer or a needle.

4- Locate the Consumables bag with the screens and ferrules, place the coarse screen into the bottom of the fitting where the original screen was located. Be sure to place the screen flat on the bottom of the hole. Slide the Nut onto the Vessel tube and slide the Vessel Ferrule on after

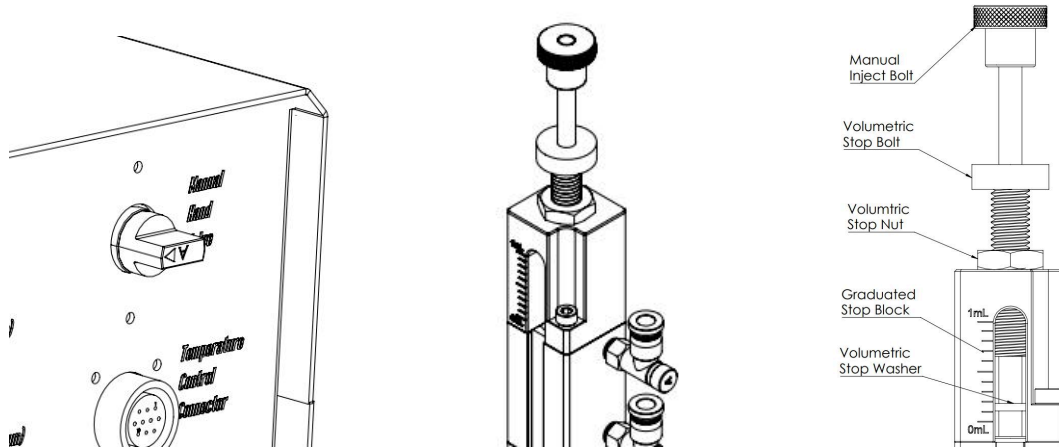
5- Take the Vessel, align the Vessel tube with the opening at the top of the fitting and press gently while twisting slightly till you hit a hard stop. Once the Vessel tube is bottomed into the Fitting, Tighten the Vessel Nut.



6- With the Vessel Nut tight, replace the Left Heat Shroud along with the two bolts to complete this procedure

Manual Inject Feature-

This feature is to allow the operator to manually inject if they run out of product during a production run or short fills a cartridge.



1- Locate the Manual Hand Valve on the back of the Control Box. You'll find that during normal operation, this switch is in the horizontal position. Turn it to the vertical position to engage the Manual Inject Feature.

2- Using the Manual Inject Bolt, Press down to dispense into the cartridge desired amount. Pulling up on the Manual Inject Bolt will refill the Syringe Body for another Manual fill if necessary. Once you've finished Manually injecting, turn the Manual Inject Valve to the horizontal position and you're ready to cycle using the foot pedal.

Disassembly

1. Turn the Power Switch to the Off/Down position.
2. Disconnect all supplied power and air from the Control Box, removing completely, the Red Hose and Power Cord from the back of the Control Box.
3. Disconnect all air lines on the Control Box identified for the machine.
4. Disconnect all air lines from the Control Box identified for Foot Pedal.

You've completed disassembling the machine

7- Troubleshooting

Machine or one of its components will not power up	• Check 110Vac outlet for power • Check the plug for proper fitment • Check fuse in power receptacle • Contact CNC Packaging for Assistance
Temperature Controller reads “LL” or “HH”	• Check 10pin Plug is connected • Contact CNC Packaging for Assistance
Temperature will not reach desired setpoint	• Contact CNC Packaging for Assistance
Product will not flow (insufficient flow/no flow)	• Perform Purge Procedure • Check Vessel Screen Vessel Screen and Ferrule Replacement- • Contact CNC Packaging for Assistance
Flow has air bubbles	• Purge Procedure Perform purge Procedure • Temperature may be too high (see Temp Procedure) • Contact CNC Packaging for Assistance
Machine doesn't dispense the same volume/weight	• Perform Purge Procedure Purge Procedure • Perform Temp Procedure • Perform Calibration Procedure • Contact CNC Packaging for Assistance
Syringe Plunger doesn't retract or retracts slowly	• Check Manual Hand Valve Switch is in horizontal position for standard operation • Check flow control valves on Syringe Cylinder are open • Check the Vessel Screen for clogging (see Vessel Screen and Ferrule Replacement-) • Contact CNC Packaging for Assistance
Leaking air from foot pedal	• Check the spring on the foot pedal is performing correctly • Replace Foot Pedal or Syringe

	Cylinder • Contact CNC Packaging for Assistance
Product leaking from the Syringe Spacer Block	• See Plunger O'Ring Replacement
Product dripping out of Syringe Tip	• See Syringe Tip O'ring, Spring and Ball Replacement in the Maintenance section • Temperature may be too high (see Temp Procedure)
Product was flowing, then it stopped	• Keep the cycle times as short as possible to keep the needle from cooling • Use heat gun to temporarily warm needle with the foot pedal to continue production

8-Warranty Info

1 Year Limited Warranty

ONE YEAR LIMITED WARRANTY WHAT IS COVERED WHAT IS NOT COVERED. For one year from the date of purchase, when this filling machine is installed, operated and maintained according to instructions with the product, CNC Packaging INC will pay for Factory Specified Replacement Parts and repair labor to correct defects in materials or workmanship that existed when this filling machine was purchased, or at its sole discretion replace the product. In the event of product replacement, your appliance will be warranted for the remaining term of the original unit's warranty period. YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. This limited warranty is valid only in the United States and applies only when the filling machine is used in the country in which it was purchased. This limited warranty is effective from the date of original purchase. Proof of original purchase date is required to obtain service under this limited warranty. 1. Commercial, and non-residential, use, or use inconsistent with published user, operator or installation instructions. 2. In-house instruction on how to use your filling machine. 3. Service to correct improper product maintenance or installation, installation not in accordance with electrical or correction of commercial electrical (i.e. commercial wiring, fuses or air compressor hoses etc). 4. Consumable parts (i.e. needles, gaskets, fittings, etc). 5. Conversion of products from 120v to 240v electricals. 6. Damage from accident, misuse, abuse, fire, floods, acts of God or use with products not approved by CNC Packaging INC. 7. Repairs to parts or systems to correct product damage or defects caused by unauthorized service, alteration or modification of the appliance. 8. Cosmetic damage including scratches, dents, chips, and other damage to the filling machine finishes unless such damage results from defects in materials and workmanship and is reported to CNC Packaging INC within 30 days. 9. Discoloration, rust or oxidation of surfaces resulting from caustic or corrosive environments including but not limited to high salt concentrations, high moisture or humidity or exposure to chemicals. 10. Oil concentrate loss due to product failure. 11. Pick-up or delivery. This product is intended for commercial repair. 12. Travel or transportation expenses for service in remote locations where an approved servicer is not available. 13. Removal or reinstallation of inaccessible filling machine that interfere with servicing, removal or replacement of the product. 14. Service or parts for filling machine with original model/serial numbers removed, altered or not easily determined. The cost of repair or replacement under these excluded circumstances shall be borne by the customer. DISCLAIMER OF IMPLIED WARRANTIES IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR OR THE SHORTEST PERIOD ALLOWED BY LAW. Some states and provinces do not allow limitations on the duration of implied warranties of merchantability or fitness, so this limitation may not apply to you. This warranty gives you specific legal rights, and you also may have other rights that vary from state to state or province to province. DISCLAIMER OF REPRESENTATIONS OUTSIDE OF WARRANTY CNC Packaging INC makes no representations about the quality, durability, or need for service or repair of this filling machine other than the representations contained in this warranty. LIMITATION OF REMEDIES; EXCLUSION OF INCIDENTAL AND CONSEQUENTIAL DAMAGES YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. CNC Packaging INC SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so these limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you also may have other rights that vary from state to state or province to province.

IF YOU NEED SERVICE:

- Before contacting us to arrange service, please determine whether your product requires repair. Some questions can be addressed without service. Please take a few minutes to review the Troubleshooting videos on our website - cncpackaginginc.com/c-solo-videos
- Direct all requests for support or warranty service to: CNC Packaging INC Call 1-865-724-1235.

Please have the following information available when you call the CNC Packaging Customer Support:

- Name, address and telephone number.
- Model number.
- A clear, detailed description of the problem.
- Proof of purchase including distributor name and address.

