

## Cornelius Viper FCB Installation and Commissioning Guide

### 1. Utilities and Installation requirements:

#### a) Water Supply Requirements:

Each 2 or 3 barrel machine requires a designated 1/2" ID filtered cold water supply line in accordance with federal, state and local codes and as per Cornelius installation manual. All hoses must reach the back of the machine plus have adequate amount of extra tubing to allow the unit to be pulled out for servicing.

Viper is designed as a high throughput machine, therefore it is important to ensure adequate water volume is supplied, as per the below guidelines.

Note: Check water flow rates with all other water flow loads also on to ensure peak demand is met.

#### Minimum water flow rates and dynamic pressure:

2 Barrel Viper: 6 liters per minute with a minimum of 25 PSI flowing pressure, fed from a filtered water supply per machine.

3 Barrel Viper: 9 liters per minute with a minimum of 25 PSI flowing pressure, fed from a filtered water supply per machine.

#### b) CO<sub>2</sub> Supply Requirements:

Each 2 or 3 barrel machine requires a 3/8" ID supply line from the CO<sub>2</sub> supply regulator to the machine and installed as per Cornelius installation manual.

#### Ensure only food grade CO<sub>2</sub> is used.

External Regulator 1: Supplying CO<sub>2</sub> to Viper: 75 - 80 psi

External Regulator 2: Syrup Pump Supply: 70 - 75 psi for BIB's located in cart.

Note: If syrup line run is over 15 meters boost pressure up to 80psi

#### c) Electrical

2 Barrel machine: 20amp single phase, 50Hz supply – dedicated supply

3 Barrel machine: 30amp single phase, 50Hz supply - dedicated supply

#### d) Syrup Pumps

Syrup pumps can be installed inside or on the back of the Viper cart. Syrup pumps can also be installed remotely on BOH BIB racks if no space at the Viper is available.

Recommendation: Installation of syrup air traps is recommended to remove any air from the syrup system.

**e) New Barrel Seals**

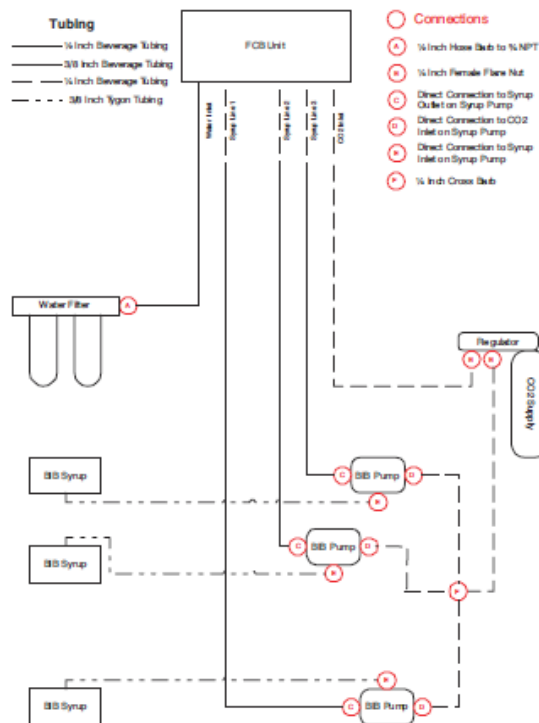
It is recommended that each barrel seal be replaced before initial start up and commission. This is to ensure that the machine is started with fresh seals and to maximum seal life for operation longevity. Seals should be replaced every 6 months.

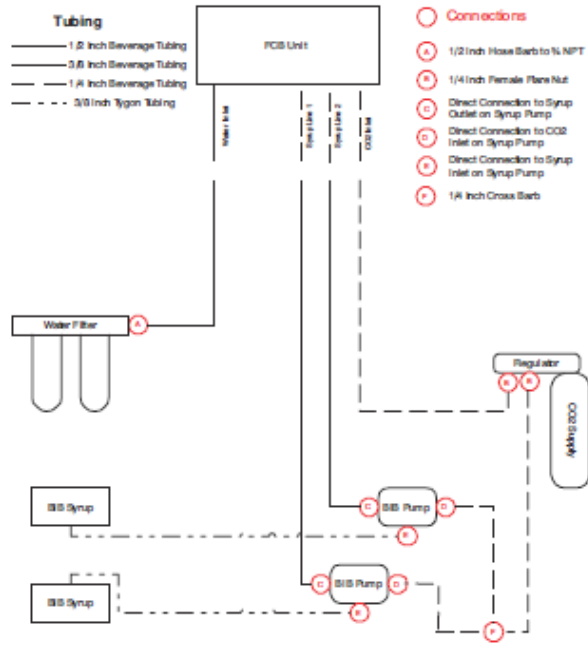
*Instructions for replacing the barrel seals can be found on P56 in the service manual.*

**2. Plumbing Configuration**

Viper 2 barrel plumbing configuration

Viper 3 barrel plumbing configuration





Please refer Cornelius plumbing installation instructions publications for additional information:

2 Barrel Viper: Publication Number: 629096927INS

3 Barrel Viper: Publication Number: 629096928INS

### 3. Start up sequence:

#### a) Water Supply:

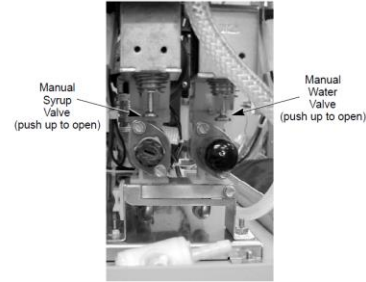
Turn on water supply and check for leaks. Turn the 3 way valve to Brix Fig 11 and open the sample valve into a bucket Fig 12. Manually operate the water valve on the flow control with a blade screwdriver by pushing up the plunger Fig 13. Purge water until all the air is out of the water supply. Repeat this process until all water circuits are purged of air.



**Fig 11**



**Fig 12**



**Fig 13**

b) **NOTE:** Before commissioning the unit the unit is required to be sanitized as per the instructions contained within the Viper operators manual.

#### c) Syrup Bag in Box:

Connect BIB syrup to BIB tubing via connectors.

#### d) CO<sub>2</sub> Supply:

Turn on the CO<sub>2</sub> supply and set the regulators supplying the machine and pumps to the advised setting at the start of this document. Allow the syrup pumps to fill the system and cycle off. Check the syrup system for any leaks. Now check the CO<sub>2</sub> system for any leaks. Purge the syrup from the sample valve using the same method as described above for the water, but now using the syrup flow control Fig 13. Purge all air from the syrup lines for all barrels.

#### e) Brix the product:

Turn power on to the machine. Note the front display will go through an initialization process.

Using the **MAINT** menu select **BRIX SETUP**. Make sure the 3 way valve is set on BRIX and the sample valve is open. Now select the barrel you are Brixing and with the sample valve in a 16oz cup press **BRIX** and the cup will be filled with a sample. Discard these first 3 samples and capture the 4<sup>th</sup> sample in a clean cup. Using a refractometer check the Brix of the captured sample. Current target brix should be 13% +/- 0.5, unless advised differently by your syrup supplier.

Make adjustments as required and discard the first 2 x samples before checking the brix again. Continue until a brix of 13% +/- 0.5 is achieved for each barrel.

Manually depress the water flow valve as previously described to purge syrup from sample line and leave water only in the brixing line.

Turn the 3 way valve to the off position once brix is complete.

Rinse the sample valve in clean water and wipe down any splashed product with fresh water and a soft cloth or paper towel.

**Note:** For more information on Brix setup please refer to P38 of the service manual.

**f) Set internal CO<sub>2</sub> regulators:**

Behind the front splash panel (under dispense valves) is located the CO<sub>2</sub> injection regulators. There is 1 x regulator per barrel.

A good starting point for a quality dispensed product is to set each regulator at between **36-38 psi**.

Maximum setting should not exceed 42psi

Minimum setting should not be lower than 32psi

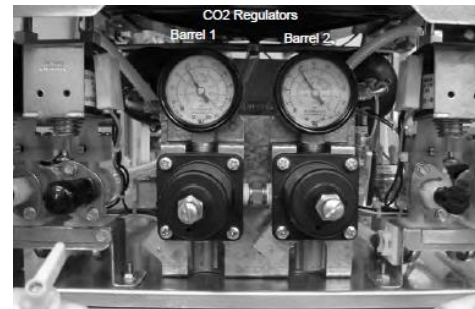


Figure 1: Co2 Injection regulators - 1 per barrel

On the right hand side of the machine behind the RH side panel is another CO<sub>2</sub> regulator. This regulator supplies CO<sub>2</sub> gas to the expansion tanks.

Ensure that this regulator is set at **30psi**

**g) Purge the barrels of air:**

From the maintenance menu, select **"PURGE"**. Activating the purge button will energize the CO<sub>2</sub> solenoid only and fill the barrel with CO<sub>2</sub> gas.

By pulling on the front face plate ring pull, air will be purged from the system leaving only CO<sub>2</sub> in the barrel.

Once all barrels have been purged of air for 30 seconds each, press the STOP button and the purging process will cease.

Note: When purging, the beater blades will spin inside the barrel.

Instruction for using the purge mode can be found on P35 of the service manual.

**h) Fill the Barrels:**

Using the **MAINT** menu select **BARREL MAINT**. Make sure the 3 way valve is set to BARREL and the sample valve is closed. Now select the barrel you are filling, and press **FILL** and the barrel will start filling. Some pressure may have to be released from the pressure release valve on the front face plate for filling to commence. The barrel will partially fill and then stop. Relieve more gas pressure from the front relief valve to continue filling. Repeat this process until the level of the barrel reaches the point shown below Fig 19. Follow this process for all barrels.

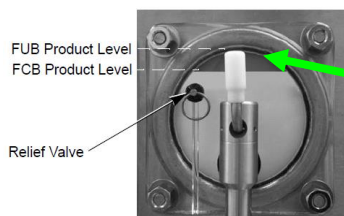
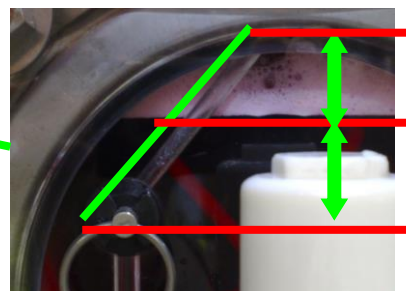


Fig 19



Fill each barrel to approx halfway between the relief valve and the top of the barrel.

Once all barrels are filled, press **STOP** to end the filling procedure. This will allow next step to be started.

**i) Motor Calibration:**

Select: **MENU**, press: **MAINT** and scroll down to: **MOTOR SETUP**. Press: **GO** and make sure that both motors are set on Type 2 (50Hz). Select: **CAL** and calibrate all motors until **PASS** comes up. All barrels may be done at the same time.

**j) Turn barrels ON:**

Turn all barrels **ON** and wait until the unit freezes down and cycles off. Pour off 3 cups of product from each barrel and discard. Once the unit cycles on again wait until 2 compressor cycles have finished and check product quality.

**10. Summary of parameter settings:**

Menu setting	Standard set up required:
Clock set up	Set time of day in 12hr or 24hr
Events set up	Set sleep times or defrost lock out times if required
Syrup type	FCB
System set up	Set to either 2 or 3 barrel machine
C02 supply to machine	75 - 80 psi
C02 supply to syrup pumps	70-75 psi
C02 injection regulator setting	36-38 psi
Expansion tank regulator setting	30 psi
Viscosity setting	4-5 suits most syrup types
Brix	13% +/- 0.5 Depending on syrup type
Motor type setting	Type 2 for 50hz supply Type 1 for 60hz supply

Further Viper technical Information can be found on the below site

[Click here](#)

Or Scan the QR Code

