D'VINE INTERVENTION
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OPERATING MANUAL – SWEETSPOTTER SS4-4-20V

Watch the how to video!

Revised: February 2022

TECHNICAL SPECIFICATIONS

Model	: SS4-4-20V
Permeate flow rate	: 20 gallons per hour
Wine flow rate	: 100 gallons per hour
Maximum operating pressure	: 650 psi
Power requirement	: 110V 1 Phase power
Maximum cleaning fluid temp	: 110°F
Recommended cleaning chemical	: TSP – Non Chlorinated
Capable processes for this machine	: VA reduction, Ethyl acetate reduction

TECHNICAL SUPPORT

Technical support is only available Monday through Friday 7:30am-4:00pm. We do not have technical support available on the weekends unless previously arranged.

SAFETY

It is imperative that safety goggles are worn for all operators operating the equipment at all times.

RESPONSIBILITY

Please note that neither D'Vine Intervention nor VA Filtration will accept responsibility for damage or loss of wine resulting from the operation of the Sweetspotter equipment. We would recommend that you familiarize yourself completely with the operation of the machinery by reading these instructions carefully prior to wine processing and make sure you supervise the machinery at all times.

If you are unsure about the operation of the equipment, please refer to the operating manual or contact one of our staff members and we would be happy to help you. It is critical that the operating manual is read thoroughly before using this equipment. If you do not feel comfortable operating the machine we can supply an operator to set up the system at a rate of $90.00 per hour plus travel.

WARNINGS

The SS4-4-20 is equipped with a safety pressure relief valve on the permeate side of the system. This relief valve will send permeate back to the feed line to relieve pressure. The valve is located at the outlet of the membrane pressure vessel. No loss of product will occur if the relief valve is triggered.

Always ensure all outlet valves from the system are open to avoid triggering the relief valve.

Risk of electrical shock

The SS4-4-20V is equipped with a grounded 110V electrical cable. Please ensure it is connected to a GFI electrical circuit to avoid the risk of electric shock.

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IMPORTANT TO REMEMBER

- Do not use chlorine in any form!
- PLEASE READ THESE INSTRUCTIONS COMPLETELY PRIOR TO OPERATION. WE ARE NOT RESPONSIBLE FOR WINE LOSS DUE TO NEGLIGENCE OR FAILURE TO FOLLOW THE CORRECT OPERATING PROCEDURE.
- Do not use Proxycarb for cleaning purposes.
- Do not close a valve on the inlet to the machine without turning off the feed pump first! This will cause the feed pump to cavitate and can lead to damage.
- Check pre-filter regularly for debris build-up and clean regularly.
- Very cold wine will increase the required operating pressure of the system and or decrease the permeate flow rate to unacceptable levels.
- Do not soak the membranes in a solution greater than a pH of 11.

Background on the System

The SS4-4-20, hereinafter called the SYSTEM, has been designed for the processing of smaller lots of wine for the removal of VA and EA. The system uses cutting edge technology to generate the necessary pressure required to produce permeate for VA removal without the requirement of a high pressure-pumping device. This means that the wine is handled as gently as possible.

Process flow rates from the system depend a great deal on the wine temperature and turbidity. The cleaner the wine, the longer the system is going to deliver a constant flow rate. Should the wine be dirty, then the system will require more frequent cleaning. If lees are pulled into the system, this may irreversibly foul the membranes requiring complete membrane replacement.

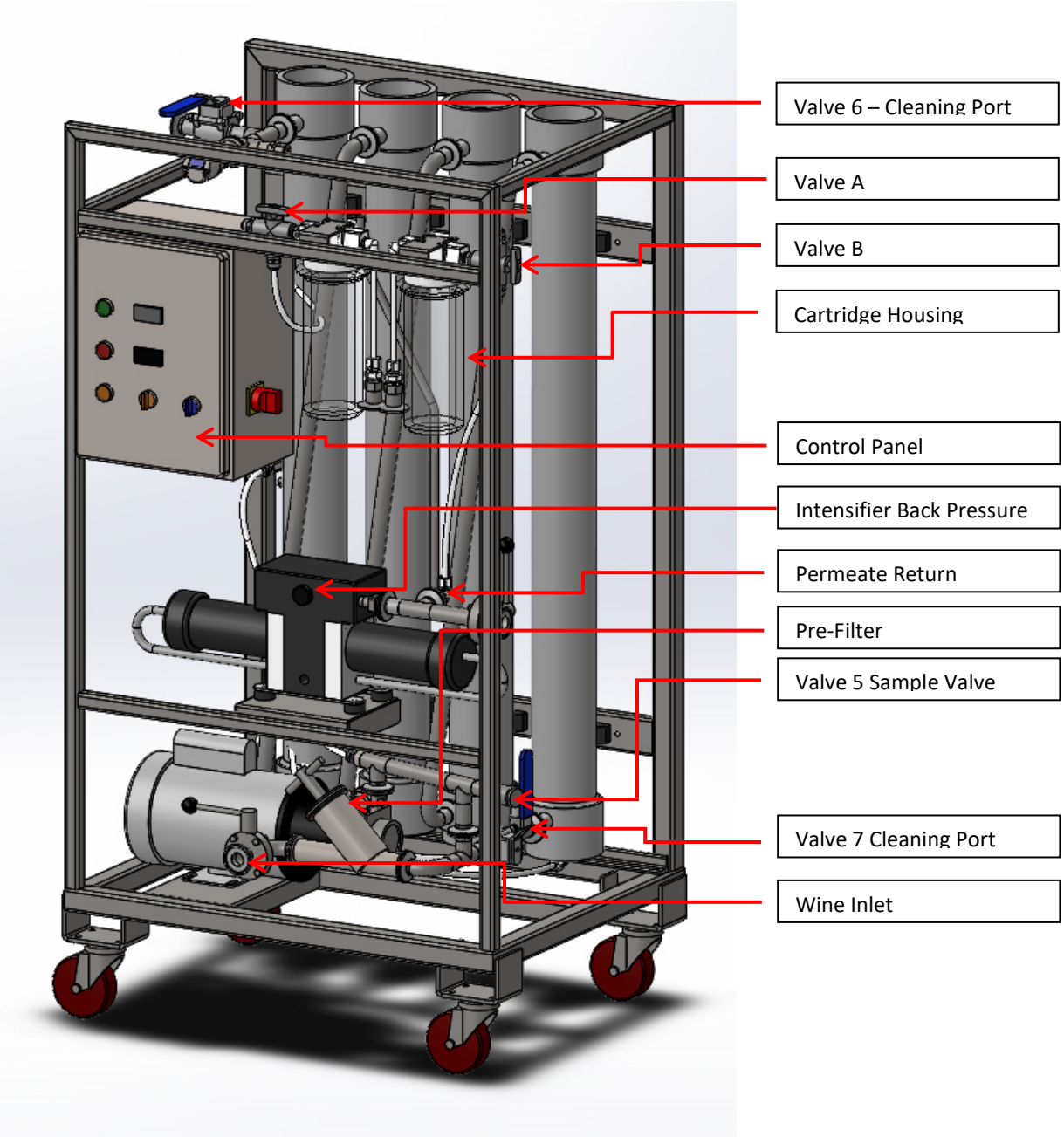
The system is supplied with 1.5” tri-clamp inlet, outlet and permeate connections.

What you need before you start

- Hot and Cold pressurized water (preferably de-chlorinated).
- 110 Volt, 1 phase power supply nearby.
- A handheld pH meter or accurate lab based pH meter
- Wine to be processed in tank at 55°F or higher.
- A tee and 2 valves on the outlet line to the machine.

Please note that there are four connections to the System. These are as follows:

- Wine Inlet (1.5” tri clamp)
- Wine Outlet (1.5” tri clamp)
- Permeate Outlet (3/8” tubing with 1.5” tri-clamp on the end)
- Permeate Return (3/8” tubing with 1.5” tri-clamp on the end)



GETTING STARTED

ELECTRICAL

- Connect the power cable to a 110V outlet.
- Do not turn on the pump yet.

Water Rinse

- Connect a pressurized cold water line to the *WINE INLET*.
- Connect a wine hose to the *WINE OUTLET* and run to drain.
- Turn *Valve 1* to drain
- Open the valve on your recently connected water line and let run for 5 minutes. Warm water can be used at this stage and is advised.
- Close the BACK *PRESSURE VALVE* on the *INTENSIFIER* for 2 minutes to ensure complete water rinsing. Open again and let run.

Please note that if the mains water pressure or flow is insufficient, you may suck water using the system pump from a previously filled container for rinsing purposes.

Citric acid rinsing

It is good practice to rinse the system with a citric acid solution prior to using it to treat wine. This does not have to take place between lot changes but should take place after each clean and prior to each run after the system has been left with a cleaning solution inside.

- Mix up approximately 50 gallons of a 1% citric acid solution in a container or tank
- Connect the citric acid container to *the WINE INLET*
- Connect a hose to the *WINE OUTLET* leave the other end open to drain.
- Turn *Valve A to drain (check arrow on top of handle for flow direction)*
- Switch on the feed pump.

The system will now suck up the citric solution and pump it through the system.

If the system does not suck up the citric, check that the *PRESSURE VALVE* on the *INTENSIFIER* is open.

Water Rinse

Once the Citric acid wash is complete. Follow up with a water rinse again until all the citric acid is gone.

- Disconnect the line from the *WINE INLET*
- Connect a pressurized/mains water line to the *WINE INLET*.
- Check that *Valve A is open to drain*

- Open the valve on your water line and let run for 5 minutes. Warm water can be used at this stage if preferred.
- Close the *PRESSURE VALVE* on the *INTENSIFIER* for 2 minutes to ensure complete water rinsing. Open again and let run.
- Once the water rinse is complete, please open the inlet strainer housing and check the strainer for debris. Clean out if necessary.

Please note that if the mains water pressure or flow is insufficient, you may suck water from a previously filled container for rinsing purposes

ELECTRICAL CONTROL PANEL – SEMI-AUTO

- Connect the power cable to a 110V outlet.
- Turn on the panel by rotating the switch mounted on the right side of the box to the ON position.

Panel Control

Your electrical panel is equipped with a START/RUNNING, STOP/TRIPPED AND PRESSURE ALARM RESET button. It is also equipped with a BATCHING and LOW FLOW switch.

START/RUNNING

To start the machine, press the Green START button. The pump switches on and the light glows green.

STOP/TRIPPED

To stop the pump, press the Red STOP button. The pump switches off. If this button is glowing red and the pump is off. This indicates that the pump has tripped on an overload condition. Reset the trip by pressing the STOP button again. If this does not solve the issue, then the overload inside the panel is tripped and will need resetting by removing the cover on the control panel.

PRESSURE ALARM RESET

This button indicates when the machine trips on a high-pressure condition. The pressure sensor is set at 700 psi. When the pressure in the system reaches this pressure, the system will switch off and this light will glow Orange. To reset, press this button and you will be able to restart the machine.

BATCHING

The system is equipped with a PERMEATE batching feature. It automatically switches off when a pre-set volume of PERMEATE has been generated – BUT only if the switch is in the ON position. The measurement is in LITERS and NOT Gallons. The volume can be pre-set in the system via the small up and down arrows on the front of the BATCH TOTALIZER. When a pre-set value is input into the display via the up or down arrows, when the switch is turned to the ON position, the machine will switch off after a pre-set volume of PERMEATE has been generated.

To reset the volume after the machine has reached the target liters/gallons has been reached, simply rotate the switch to the RESET position and the display will clear to 0.

LOW FLOW

The system also includes a low permeate flow alarm. If the flow drops to below the set point value, the system will shut off. When using this feature, please ensure that you leave the switch in the OFF position until the system is in service mode. Once in service mode, you can then turn this switch ON.

PROCESSING WINE FOR VA OR TAINT REMOVAL

Treatment Columns

IMPORTANT Prior to use:

Please check your treatment columns (VA, pHC or Brett).

Use caution removing the tri-clover blanks. There are chemicals in the columns.

- **The VA column needs to be rinsed until the pH of the water exiting the outlet is 10.5.**
- **The HpH column needs to be rinsed for 20 minutes prior to use.**
- **The pHC column needs to be rinsed for 20 minutes prior to use.**
- **The Brett column needs to have the water purged out prior to use – see purging below.**

After rinsing the column please purge out the water by connecting a nitrogen line to the inlet of the column. Connect the outlet of the column to drain. Run the nitrogen to the column at 15-30 psi until nitrogen gas is heard escaping from the outlet line.

The column is now ready for use.

PREPPING EQUIPMENT FOR VA/EA REDUCTION

Treatment Columns

IMPORTANT Prior to use:

Please check your treatment columns (VA, pHC or HpH).

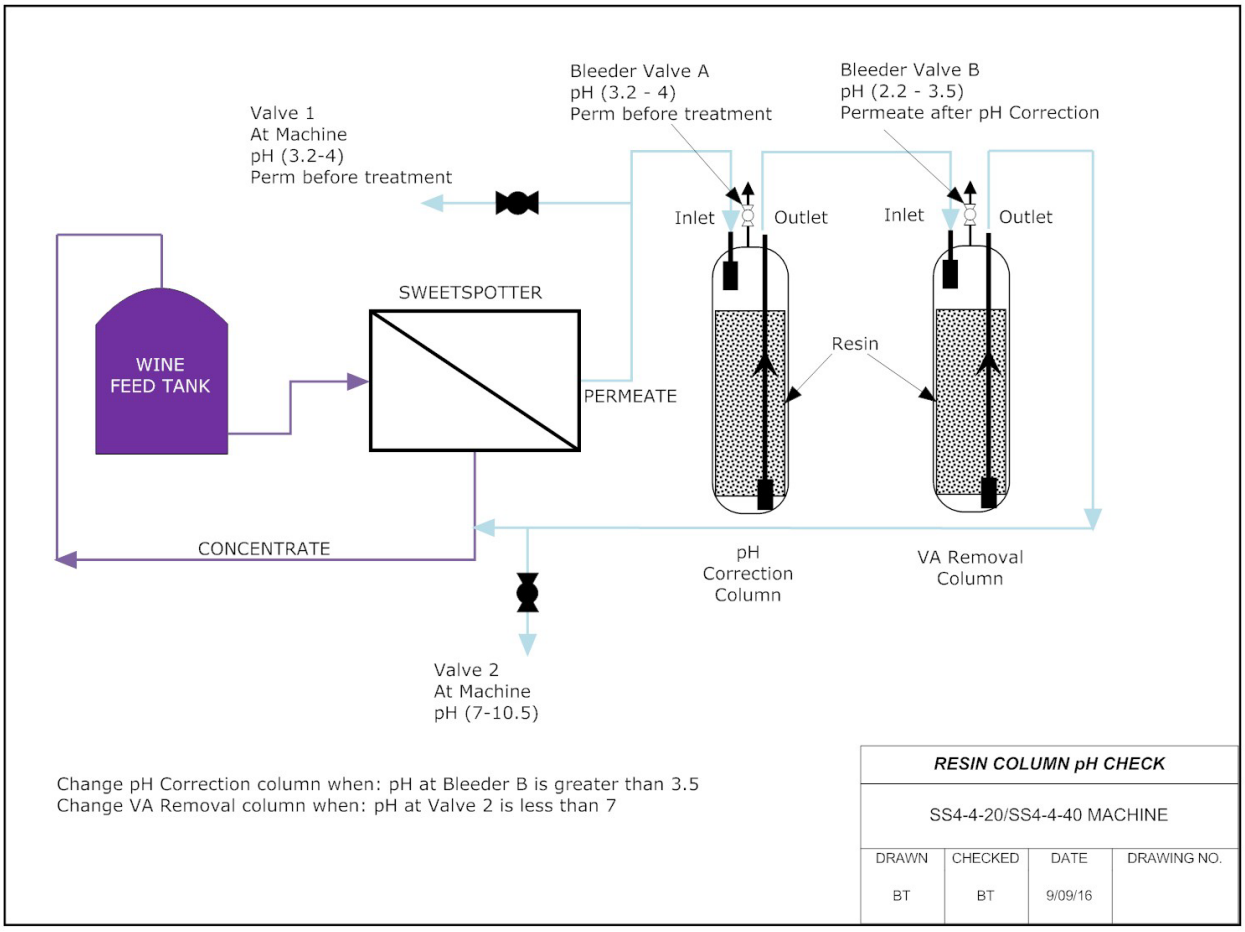
USE CAUTION removing the tri-clover blanks. There are chemicals in the columns.

- **The VA column needs to be rinsed until the pH of the water exiting the outlet is 10.5.**
- **The HpH column needs to be rinsed for 20 minutes prior to use.**
- **The pHC column needs to be rinsed for 20 minutes prior to use.**

After rinsing the columns please purge out the water by connecting a nitrogen line to the inlet of the column. Connect the outlet of the column to drain. Run the nitrogen to the column at 15-30 psi until nitrogen gas is heard escaping from the outlet line.

The column is now ready for use. Please set up the columns depending on the process you are running as follows:

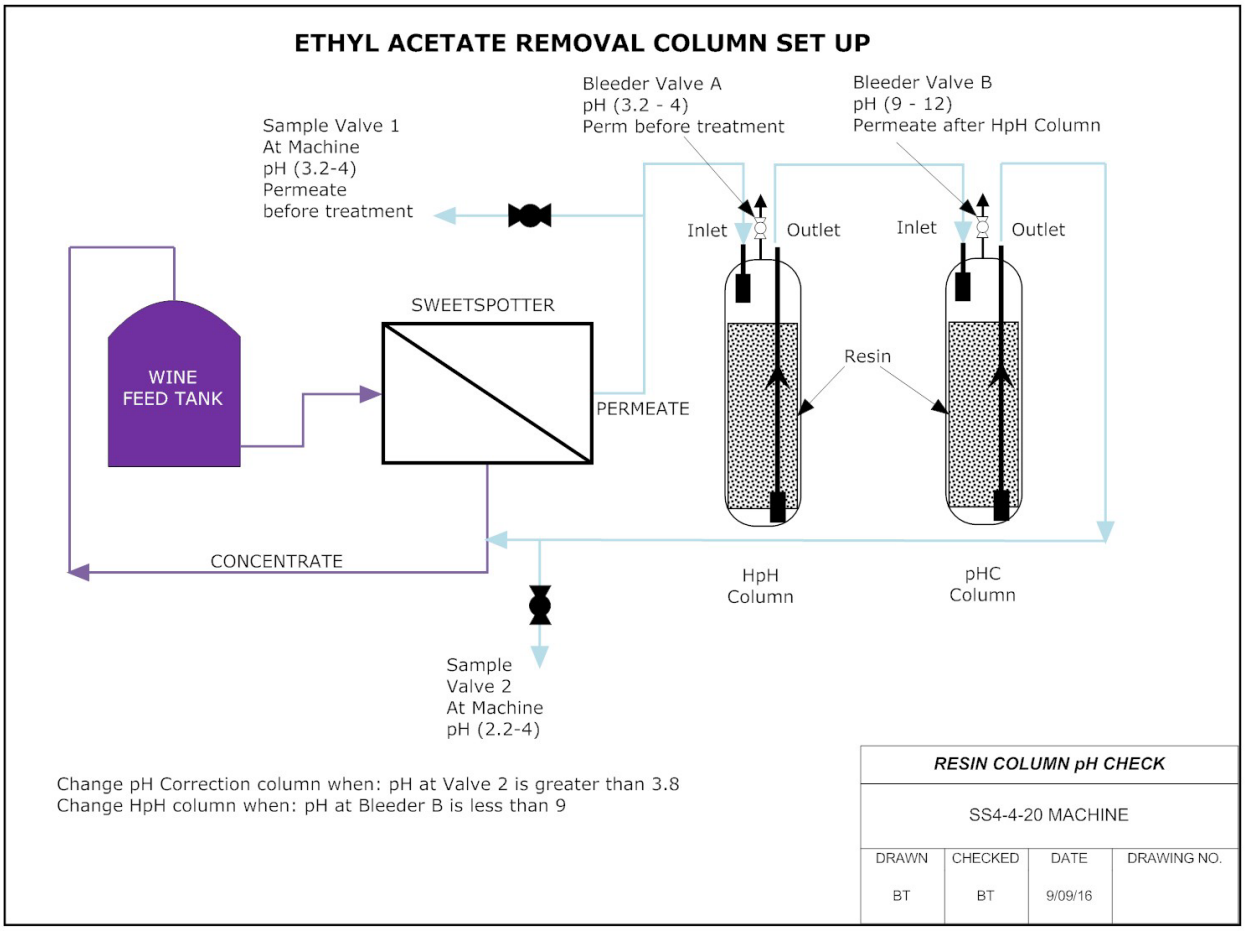
VA Reduction Processing



Set up columns as follows:

- pHC Column followed by VA Reduction Column (columns interconnected by jumper hose)

Ethyl Acetate Processing



Set up columns as follows:

- HpH Column followed by pHC column (columns interconnected by jumper hose)

PLEASE NOTE – pH Correction

Do not run the system on the pH correction column alone – unless you are planning on reducing the pH of the wine. If you leave the system running when the VA or HpH resin is saturated, the wine pH will continue to be lowered and can get as low as 2.8.

Wine Processing

Please ensure that your wine for processing is as clean as possible. The cleaner the wine, the longer the membrane elements will last.

- Connect the wine to be processed to the *WINE INLET*. Ensure your hoses are secure prior to opening the tank valve and make sure the tank lid is open to avoid tank collapse.
- Connect a tri-clamp tee-piece to the Wine Out line (for taste-out purposes). Place a valve on one side of the Tee-piece. Connect a wine line from this valve to the top of the tank from which wine will be processed. Leave the valve closed.
- Connect another valve to the other side of the same tee-piece and leave open. This valve is for tasting out purposes before and after the run.
- Connect the 3/8" tubing from the *Permeate Outlet* Connection (see FRONT VIEW drawing above) to the treatment vessel being used for the relevant treatment process. Turn Valve B so arrow faces UP and turn Valve A to left (toward drain tubing).
- Connect the return line from the treatment column back to the inlet of cartridge Housing 2 – *Permeate Return*. Check that Valve 2 is facing UP to drain.
- Open the valve on your wine tank so that wine flows to the machine.
- Open *Valve 5* slowly until wine is seen escaping. Close *Valve 5* when the line is full.
- Switch on the pump.
- Watch for wine exiting the open valve on the tee-piece that you installed on your line.
- Leave running and taste out the wine at the outlet line tee-piece.
- Once wine is tasted at the outlet line, switch off the machine pump. Close the open valve on the outlet tee-piece and open the valve that allows wine to flow back to the feed tank.
- Switch on the pump again.
- Check the pressure gauge and make sure pressure is at 0-15 psi for at least 30 seconds. (If the pressure is seen increasing, switch off the machine pump immediately and check that all the necessary valves are open, including the *PRESSURE VALVE* on the *INTENSIFIER*.)

Pressurizing the System and tasting out permeate

- Close the *PRESSURE VALVE* on the intensifier – THUMB TIGHT.
- Watch the pressure increase slowly and watch for flow in the *FLOW METER* – bubbles accompanied by liquid.
- The system will be pulsing as pressure builds up.
- Liquid should be seen exiting the tubing on Valve A after about 30 seconds.
- **Taste out for alcohol and then turn Valve A to the right (toward cartridge housing 1.**
- The treatment column is now receiving permeate.
- Wait for 2-5 minutes until liquid is seen exiting drain line on *Valve B* (the time depends on the size of treatment column).
- Taste the liquid exiting Valve B drain line for alcohol. **Once alcohol is tasted then OPEN THE BLEEDER VALVE AT THE TOP OF THE COLUMN.** Wait for between 1 and 10 minutes for the column to fill (again this depends on the size of column being used and the flow rate of permeate).
- When liquid exits the bleeder valve on the column, close the bleeder valve and **Turn Valve B so arrow faces down (toward permeate return to process)**.
- If running Brett removal, the permeate stream exiting *Valve B* may have a grey tint to it. Please do not worry; this will clear up within 30 seconds to a minute.

Treating the Permeate

- What is permeate?
  Permeate is a clear liquid containing water, alcohol and acetic acid.
- Which columns do I need to use?

  a. VA Reduction (VA starting at less than 1.0 g/l and wine pH less than 3.8)
     i. Use a VA resin column only
  b. VA Reduction (VA starting at greater than 1.0 g/l and or wine pH at >3.8)
     i. Use a pH Correction resin column followed by a VA column
  c. Ethyl acetate
     i. Use HPH (high pH Resin) followed by pH Correction
  d. 4EP Reduction
     i. Use a phenolic adsorption column only
  e. Smoke Taint
     i. Use a phenolic adsorption column only
  f. pH Correction
     i. Use a pH correction column only
  g. Tartrate stabilization
     i. Use 100% pH Correction column and 30% VA resin column

VA Reduction Checks

Measure the pH of the **permeate exiting the VA resin column** on a regular basis to gauge when the column is saturated. A sample can be obtained from *Valve 2.* It should read a pH of between 5 and 10.5. If the pH drops below 5, the VA resin column will require regeneration. If you have a spare column, swap it out now (follow instructions in *Purging Permeate* section). Please do not worry if the pH shows 4.5. Just stop and change columns as soon as possible. The pH can drop as much as 3 points within 5 minutes when the column saturates.

Please also sample the permeate at the top of the VA column. The pH should be less than 3.5, otherwise the pH correction column will require replacement or regeneration.

Brett Reduction checks

Evaluate the permeate entering and exiting the phenolic adsorption column on a sensory basis. If taint is detected after the column, then replacement of the column will be necessary.

pH Correction

It might be necessary to pH correct the permeate during process to prevent the pH of the wine from increasing. This is accomplished using the pHC (pH Correction) column that would have been supplied with the machine.

In order to use the column, connect the permeate line exiting the machine to the pH correction column inlet. Connect the outlet line from the pH correction column to the inlet of VA resin column. Connect the outlet of the VA column to the Permeate Return on the machine.

The pH Correction column efficacy can be measured by the pH exiting this column. A sample of this permeate can be obtained from the bleeder valve on top of the VA resin column.

PLEASE NOTE – pH Correction

Do not run the system on the pH correction column alone – unless you are planning on reducing the pH of the wine. If you leave the system running when the VA resin is saturated, the wine pH will continue to be lowered and can get as low as 2.8.

SYSTEM CHECKS

Once running, please check the following for correct operation:

- Permeate is flowing at 36 gal/hr or 0.6 gal/min.
- The System is pulsing. If no pulsing is taking place, check troubleshooting.
- The permeate is clear (it might have a pink tinge in the beginning, but this should clear up).
- We would recommend recording the start-up pressure and flow on a log sheet. Re-check every half hour and record the latest values on the log sheet.

PLEASE CHECK THE SYSTEM EVERY 30-60 MINUTES OR MORE FREQUENTLY AS IS DEEMED NECESSARY.

CHECK pH FREQUENTLY TO ENSURE ADEQUATE REMOVAL OF ACETIC ACID

CHECK PERMEATE AROMA EXITING TREATMENT COLUMN TO TELL IF BRETT COLUMN IS STILL REMOVING 4EP AND 4EG.

PRESSURE ABOVE 650 PSI

If at any time the pressure of the system exceeds 650 psi, the membranes are fouled, and the system needs cleaning. If the system reaches 650 psi within minutes of starting up after a clean, then the RS of the wine is high, and this will result in high pressure low flow conditions. Check with the office if it is appropriate to run at these conditions.

FLOWRATE AND NECESSARY RUN TIME

Your system is equipped with a rotameter (Flow Meter) and a magnetic flow meter. Your system permeate flow rate should be 36-40 gal/hr if running BP elements and 20 gph if running VP elements.

Please read the flow rate at the top of the float for accuracy. Note that for a 30% reduction in the VA, approximately 50% of the volume of wine as permeate needs to pass through the resin vessels. This is the same for 4EP/4EG reduction. For instance, a 600 gallon tank would require 300 gallons as permeate to be passed through the treatment column in order to achieve a 30% reduction in the VA or 4EP level. This equates to a run time of approximately 7 hours.

Here are approximate volumes to be processed based on percentage drops of VA:

20% VA or 4EP Reduction : Treat 40% of the volume as permeate
30% VA or 4EP Reduction : Treat 50% of the volume as permeate
40% VA or 4EP Reduction : Treat 60% of the volume as permeate
50% VA or 4EP Reduction : Treat 70% of the volume as permeate

IMPORTANT

If you run this system on clean, filtered or well-racked wine, you will have a longer life expectancy from the membranes.

Please check the inlet screen daily or between runs to ensure it is clean. It can be pressure washed.

Column Changeover if saturated

When the minimum pH conditions are met (pH of 7 or less for VA resin or pH of 9.5 or less for HpH resin), it is time to change over the resin columns. The following procedure explains this process:

- Stop the machine
- Close Valve 3
- Disconnect the Inlet permeate hose from the column you are changing out
- Connect a valved nitrogen line to the inlet of the resin column
- Set the nitrogen pressure to 15 psi
- Open the nitrogen valve
- Watch for nitrogen bubbles returning to the machine or flowing through the outlet line from the resin column
- When nitrogen bubbles are seen, close the nitrogen valve
- Wait 2 minutes
- Repeat the nitrogen purge cycle
- Close the nitrogen line
- Open the bleeder valve on the column getting changed out
- Disconnect the nitrogen hose
- Change columns and follow the fill procedure as explained on Page 8 and 9

End of wine Run – Follow the steps carefully below

Once finished with the wine, you can either go onto another wine or clean the system with water. As long as the system is not dirty, it can be used to process another tank or cleaned as necessary.

- Open the PRESSURE VALVE on the INTENSIFIER.
- Wait 1 minute.
- Switch off the system pump.
- Close the wine inlet valve from the feed tank.
- Disconnect the Wine Inlet line from the machine.
- Turn Valve A to the left (to tubing open to drain).
- Disconnect the 3/8” tubing from the inlet to the treatment column.

Purging Permeate

- Permeate is still sitting in the treatment column and requires purging back to the tank. Nitrogen is best for this purpose.
- Connect a nitrogen line to the column inlet.
- Set nitrogen pressure at 15-30 psi.
- Open the valve to allow nitrogen to enter the treatment column.
- Leave until gas is seen in *Cartridge Housing 2*.
- Please note that this liquid is clear and should not be mistaken for water!
- Close the gas line.
- Turn Valve B so arrow faces UP (to drain). Gas will be heard escaping.
- Connect a cold water line to the *WINE INLET*.
- Open the water and allow water to push out the wine back to the feed tank.
- Taste out by cracking the valve slightly on the tee-piece located on the *WINE OUTLET*.
- When water is tasted, close the valve on the wine hose side and open the valve at which you were tasting for water.
- Disconnect the wine hose from the machine and use nitrogen to push the remaining wine out of the line back into the tank.
- Check to make sure Valve A is facing to the left (open to drain)
- Leave the machine flushing for 1-2 minutes.

Warm Water Flushing

- Warm water can now be used for flushing. This will aid in the removal of colloids from the membranes. Please do not exceed 120°F on the water flush.
- Close the PRESSURE VALVE every 5 minutes for 2 minutes to flush through the permeate line too.

Treatment Column Storage

Please note that your permeate treatment column still has life to run more wine if the pH was above 9 when you stopped. Please rinse with water, making sure the column is full and store without purging to prevent bacteria growth. If you are not going to use the column again within a week, please return to VA Filtration or regenerate as necessary.

CLEANING INSTRUCTIONS FOR SYSTEM

Once you have completed the filtration of the wine, please follow the cleaning instructions to ensure that the wine is cleaned out of the system prior to storage.

WATER RINSE 1

- Warm water can now be used for flushing if required. This will aid in the removal of colloids from the membranes. Please do not exceed 120°F on the water flush.
- Close the *PRESSURE VALVE* on the Intensifier every 5 minutes for 2 minutes to flush through the permeate line too.
- Rinse system for 5 to 10 minutes to ensure removal of most of the color.

Non Chlorinated TSP Wash 1 (or Caustic potash if available)

The ideal cleaning solution is TSP.

Please use a winery pump with a variable speed flow rate (or the CIP station supplied) and connect it between *Valve 7* (Inlet) and *Valve 6* (Outlet) and your cleaning tank/drum. The pump should deliver between 10 and 15 gal/min.

Open *Valve 7* and *Valve 6*. Close the Pressure Valve on the intensifier.

Connect the 3/8" tubing used to deliver permeate to and from your treatment column together using the tri-clamp fittings. Turn Valve A so arrow faces right (toward Cartridge Housing 1). Turn Valve B to the down facing position (toward permeate return to process). Please do not run the cleaning solution through the treatment column.

Mix up a 1% solution (i.e. 1 kg of TSP in 100 liters (25 gallons) of water). Pump this solution through the Membranes using your winery pump to drain. When you first run the cleaning solution through the membranes, the solution exiting the membranes will be black and will turn to orange slowly over time. Once all liquid is drained. Mix another 1% solution and this time recirculate to the same tank for 10 minutes. Please make sure Valve 2 and 3 are open and place the end of your permeate tube exiting cartridge housing 1 into the cleaning solution bucket to avoid liquid from going to drain.

Check the INLET SCREEN. If dirty, rinse out and put back.

WATER WASH 2

Once the TSP wash has been completed, rinse the system again with warm water. Close *Valve 6* and 7 and use a pressurized water line connected to the Wine Inlet. Open and close the Pressure Valve every couple of minutes.

Please note – It is very important to ensure that Valve 2 and 3 are open during all cleaning cycles

CITRIC WASH 1

Please use a winery pump with a variable speed flow rate and connect it between *Valve 7* (Inlet) and *Valve 6* (Outlet) and your cleaning tank/drum.

Open *Valve 7* and *Valve 6*. Close the Pressure Valve on the intensifier.

Connect the 3/8" tubing used to deliver permeate to and from your treatment column together using the tri-clamp fittings. Turn Valve A so arrow faces right (toward Cartridge Housing 1). Turn Valve B to the down facing position (toward permeate return to process). Please do not run the cleaning solution through the treatment column.

Mix up a 1% solution (i.e. 1 kg of Citric acid in 100 liters (25 gallons) of water). Pump this solution through the Membranes using your winery pump to drain. When you first run the cleaning solution through the membranes, the solution exiting the membranes should be clear. If it is pink. Repeat the TSP cleaning procedure again after you have rinsed out the citric acid

Please note that citric acid is used as a neutralizing agent as well as to convert tannins that have not been removed from the membrane elements into tannic acid. Soaking the membrane elements in Citric Acid converts the tannin into tannic acid. If you follow this with a warm water rinse, and a TSP wash, these tannins eventually get removed.

END OF CLEAN – NOW USING THE SWEETSPOTTER PUMP

Once the citric acid is run clear, add a little KMBS to the citric solution. Close Valves 6 and 7. Now connect the hose that was hooked to Valve 7 on to the wine inlet line. Connect the hose that was connected to Valve 6 to the Wine Outlet line. Leave permeate tubing connected as per previous steps. Make sure valves 2 and 3 are open and make sure the intensifier knob is open.

Switch on the machine pump, and recirculate through the membranes for 5 minutes, switch off the recirc pump and Close ALL valves. If you would like the machine to remain completely full, we would recommend capping or valving the Wine Inlet and Wine Outlet

lines. You can leave the system in this state for up to a month after which we would recommend cleaning of the system again to prevent mold and or bacteria growth.

EXTENDED SOAK – FOR HEAVILY FOULED SYSTEM.

If the system has been used for a long period of time AND is not delivering a sufficient volume of permeate, it may be necessary to soak the system over night in a high pH solution or in TSP. To do this carry out the clean as above, but stop after the first TSP clean. Check the pH of the solution recirculating through the membranes and make sure it is between 11 and 12. If it is too high, adjust the pH slightly with some citric acid. High pH solutions can damage the membrane elements over a long soak period.

LONG TERM STORAGE

Recirculate a sulphur solution (0.1%) through the membrane elements only using *Valve 6* and 7. When complete, close all valves and store machine. Please remove filter bowls and rinse storing externally from the machine.

TROUBLESHOOTING

The system does not deliver any permeate after cleaning or during start-up.

Cause

- This may be caused by a blockage in the filter screen located at the back end of the feed pump.
- Another cause could be that the back pressure valve has not been closed.

Solution

- Check the Pressure Valve on the intensifier is closed! If it is, proceed to the next step.
- Switch off the pump and close all valves from the wine tank. Remove the Inlet Filter housing by unscrewing to the left. Once loose, the filter cartridge inside can be inspected for debris or blockage. Clean with hot water if necessary.

- If this fails to solve the problem, switch off the system and carry out a full chemical clean.

- If this still fails to solve the problem, then call our service department to schedule a service on the machine.

The System only delivers 12 gal/hr of permeate flow

Cause

- The sugar level in the wine is higher than the recommended 10%.
- The wine is less than 45°F
- The system is fouled and requires chemical cleaning.

Solution

- Try a chemical clean. If this does not sort out the problem, the system may be fouled. Check the 100 micron prefilter screen for signs of lees. Clean it out as necessary.

If the wine being processed has a high sugar level or is very cold, adjust the pressure relief valve to allow the feed pump to deliver more pressure to the system. Call VAF for assistance.

The Feed pump is running, but is not pumping

Cause

Air lock on the inlet line to the feed pump.

Solution

Bleed out the air on the inlet hose to the system as much as possible. If the pump is still not pumping the please call for advice.

Please contact our offices on 707 552 2616 x 102 if any of the above situations occur and can not be resolved by cleaning.

Regenerating the VA or HPH Resin column

Your system has been supplied with a regenerable resin column for purposes of VA Reduction.

You will require the following for correct operation of this column:

- 1 x Water line with tri-clamp fitting
- 1 x Nitrogen gas line to tri-clamp
- 1 x bottle of nitrogen
- A 6% Potassium hydroxide (CAUSTIC POTASH) solution
- Floor drain
- Handheld pH Meter
- Chemical pump in box + 2 hoses (supplied with the column)

Safety

Please make sure you protect your eyes and lungs when mixing up any chemical solution. Safety goggles and a gas mask rated for caustic fumes are necessary.

Connection Type
The resin column has the following connections

- Inlet and outlet 1.5" tri-clamp
- A bleed valve is located on the top of the resin column (in the column head).

Chemical pre-mix (please use necessary protection)

Mix up the water & caustic solution as follows:

8" diameter resin column : 12 gallons water with 6 pounds caustic potash
14" diameter resin column : 25 gallons water with 12.5 pounds caustic potash

Your resin column diameter is written on the lower part of the column in the form of 844 or 1447 etc. The first 2 numbers are the vessel diameter size in inches.

Prior to Use (of after prolonged storage)

1. Connect a water line to the fitting on the "INLET" line
2. Connect a drain line to the fitting on the "OUTLET" line
3. Make sure the bleeder valve is closed
4. Open the water line to the column
5. After a minute, water should be seen flowing from the OUTLET water line

6. Open the bleeder valve (air will be heard escaping) until water escapes through the valve.
7. Smell the water for “off” odors, if any strange odors are detected, regenerate the system.

Regeneration

Regeneration is made up of 3 stages: *Rinsing with water, pumping in the caustic potash solution and rinsing again with water for 20 minutes (HPH resin) or to a final pH of 10.5 (VA resin).* This is carried out as follows:

1. Connect the water line to the INLET tri-clamp connection on the column
2. Open the water line to the column
3. After a minute, water should be seen flowing from the outlet line
4. Open the bleeder valve (air will be heard escaping) until water escapes through the top of valve. Close the valve.
5. Rinse for 10 minutes
6. Position your 6% caustic potash solution near the column
7. Using the pump provided, pump the pre-mixed caustic solution through the resin column.
8. Once the caustic potash solution is empty, switch the pump off. Do not pump air into the column.
9. Add 5 gallons water to the empty caustic potash solution bucket. Switch on the regen pump and pump the water through the column for approximately 2 minutes. *This process is done mainly to flush out the pump*.
10. Disconnect the pump hose from the Column **Inlet.** Connect your water line to the column **inlet** and rinse down **for 30 minutes (HPH resin only).**
11. **For VA resin, rinse until the rinse water pH exiting the resin column is less than 10.5**
12. Purge the water out of the column with nitrogen or argon.
13. Now you are ready to start reprocessing your wine.

TROUBLESHOOTING REGENERATION OF VA RESIN

My resin column only lasted 2 hours before it was spent.

- An incomplete regeneration or incorrect caustic potash concentration was used. Purge the column and carry out a regeneration as per the instructions above.

Regenerating the pH Correction Resin column

Your system has been supplied with a regenerable resin column for purposes of pH correction.

You will require the following for correct operation of this column:

- 1 x Water line with tri-clamp fitting
- 1 x Nitrogen gas line to tri-clamp
- 1 x bottle of nitrogen
- A 5% HCl (Hydrochloric acid/Muriatic acid) solution
- Floor drain
- Handheld pH Meter
- Chemical pump in box + 2 hoses (supplied with the column)

Safety

Please make sure you protect your eyes and lungs when mixing up any chemical solution. Safety goggles and a gas mask rated for caustic fumes are necessary.

Connection Type

The resin column has the following connections

- Inlet and outlet 1.5" tri-clamp
- A bleed valve is located on the top of the resin column (in the column head).

Chemical pre-mix (please use necessary protection)

Mix up the water & acid solution (assuming 31% HCl strength) as follows:

8" diameter resin column : 6 gallons water with 1 gallon acid
12" diameter resin column : 20 gallons water with 4 gallons acid

14" diameter resin column : 25 gallons water with 5 gallons acid

Your resin column diameter is written on the lower part of the column in the form of 844 or 1447 etc. The first 2 numbers are the vessel diameter size in inches.

Prior to Use (of after prolonged storage)

i. Connect a water line to the fitting on the “INLET” line
ii. Connect a drain line to the fitting on the “OUTLET” line
iii. Make sure the bleeder valve is closed
iv. Open the water line to the column
v. After a minute, water should be seen flowing from the OUTLET water line
vi. Open the bleeder valve (air will be heard escaping) until water escapes through the valve.
vii. Smell the water for “off” odors, if any strange odors are detected, regenerate the system.

Regeneration

Regeneration is made up of 3 stages: *Rinsing with water, pumping in the acid solution and rinsing again with water for 20 minutes.* This is carried out as follows:

i. Connect the water line to the INLET tri-clamp connection on the column
ii. Open the water line to the column
iii. After a minute, water should be seen flowing from the outlet line
iv. Open the bleeder valve (air will be heard escaping) until water escapes through the top of valve. Close the valve.
v. Rinse for 10 minutes
vi. Position your 5% acid solution near the column
vii. Using the pump provided, pump the pre-mixed solution through the resin column.
viii. Once the solution is empty, switch the pump off. Do not pump air into the column.
ix. Add 5 gallons water to the empty solution bucket. Switch on the regen pump and pump the water through the column for approximately 2 minutes. *This process is done mainly to flush out the pump*.
x. Disconnect the pump hose from the Column **Inlet.** Connect your water line to the column **inlet** and rinse down **for 20 minutes.**
xi. Purge the water out of the column with nitrogen or argon.
xii. Now you are ready to start reprocessing your wine.

TROUBLESHOOTING REGENERATION OF pH CORRECTION RESIN

My resin column only lasted 2 hours before it was spent.

- An incomplete regeneration or incorrect acid concentration was used. Purge the column and carry out a regeneration as per the instructions above.