

Wine Dosing Systems

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Flavourtech has been working with winery customers for over 30 years. Its proprietary technology, the Spinning Cone Column (SCC), is used throughout the world for alcohol and flavour management of wines and beer. Important in this two step dealcoholisation process is the preservation of the delicate flavours of the wine during the removal of alcohol to produce either medium alcohol (5-8% abv) or zero alcohol (<0.5%) wines.

Flavourtech's Centritherm® evaporator is used in the wine industry for the production of premium grade grape juice concentrate. Its ability to process the grape juice to concentrations of 70° Brix utilising temperatures of 40°C as well as a one second heat contact time produces grape juice concentrates without heat derived "jammy" or cooked notes. It also provides wineries with low sugar juice (LSJ) for use in other applications.

Through listening to their wine customers Flavourtech has now expanded their list of products to the wine industry by being able to offer Dosing systems for accurate in-line blending of various processing aids, components and additives to wine. This can be done for either one or many component additions. The design scope is up to the wine maker's requirements and will depend on how many products need to be added in-line to the wine. Pipe work, valves, instrumentation and control panels are all supplied and installed by

Flavourtech. Systems are easy to use and it is ensured that operators are properly trained in use of the system once it is installed. Some of the benefits of the in-line Dosing System include:

- It increases the accuracy of dosing as it is computer controlled.
- It is a **Continuous Process** that can operate 24/7.
- It does not require any labour component other than operation of the control panel.
- Password protected control panel ensures that addition levels are not changed by unauthorised personnel.
- All additions and flows are monitored and recorded for tracking and traceability.
- There is **No Stratification** within the tank of dosed additives as they are added continuously as the wine is passed to the tank.
- There is **No Wastage** of wine due to human error or wastage of additives as system accuracy is preserved by the operator panel.
- **Alarm and safety measures** programmed into the control panel prevent inaccurate dosing. In case of errors or low volume levels the system pauses, alarms and waits for operator commands.
- **Easier CIP** through automation of tank and line cleaning.

- Wine personnel can be used on other tasks.
- In-Line analytical instruments are available for direct feedback of some components.

Products that can be automatically added to the wine include:

- Various base wines
- Ascorbic Acid
- Bentonite
- Citric Acid
- Copper Sulphate
- Clarified Retentate
- CO2
- Grape juice concentrates
- Nitrogen
- Sulphur Dioxide
- ...and more

Case Study 1 – Warburn Estate - Bentonite Dosing System

A bentonite dosing system for the addition of bentonite to a 40kL/hr wine flowrate has been installed at Warburn Estate Winery in Griffith. Bentonite slurry addition in conjunction with centrifugation is being used to reduce time required for fining by many wineries. However, one of the issues faced by wineries is quality downgrades of the wine if it has been in contact with bentonite for extended period of time.

The Bentonite Dosing System supplied by Flavourtech automatically regulates the amount of bentonite slurry being dosed and mixed with



Fig 1: Screen shots from Bentonite Dosing System

the wine using an in-line mixer to ensure that the correct amount is added. All the operator has to do is input desired wine flow, bentonite slurry ratio and bentonite dosing rate into the operator panel. The addition is then handled automatically and accurately by the system. Bentonite is added automatically and can be programmed to be added at levels as low as 0.1g/L.

Benefits of the system include:

- System can be designed to suit customer's required flow rate.
- Wine flow rate is controlled to overcome flow variation as tank level changes.
- Flow rate of bentonite slurry is controlled to ensure accurate additions and minimal waste.
- System is provided complete and is cleaned via automatic CIP.
- Ensures reproducibility and avoids errors in bentonite addition.

Case Study 2 – Casella Wines – In-line Blending System

Casella Wines in Griffith being the largest single wine manufacturing and bottling site in Australia was facing various issues with the management of additions to their wine. Flavourtech was invited by Casella Wines to design a system to handle the blending of 10 components in-line to wine as it was being sent to the tank farm. Wine flow rates of up to 65 kL/hr were required and processing aids and additives are blended automatically through control of parameters on an easy to use operator control panel.

Additives are added and blended in-line from individual tanks of:

- Wine component A, B and C
- Grape juice Concentrate A and B
- Copper Sulphate
- Carbon Dioxide
- Nitrogen
- Sulphur Dioxide

Benefits as realised by Casella Wines include:

- Process can run 24 hrs, 7 days a week.
- Automated process ensures increased accuracy and minimal waste.
- Staff can be used more productively in other areas of the winery.
- Addition levels are monitored and stored electronically for traceability.

- No stratification of additive/wine mixture within the blended tanks as additives are added in a continuous process.
- Automated CIP is now controlled and monitored by the operator control panel.

Flavourtech have the people, knowledge and expertise to design, manufacture and install any wine dosing system regardless of the additive or of how big or small the requirement and throughput of wine. In addition, they can supply all tanks, pipe work and components to minimise time spent in dealing with multiple suppliers.

Contact Flavourtech today to discuss your requirements and to design a system that is automated, accurate and hassle free.

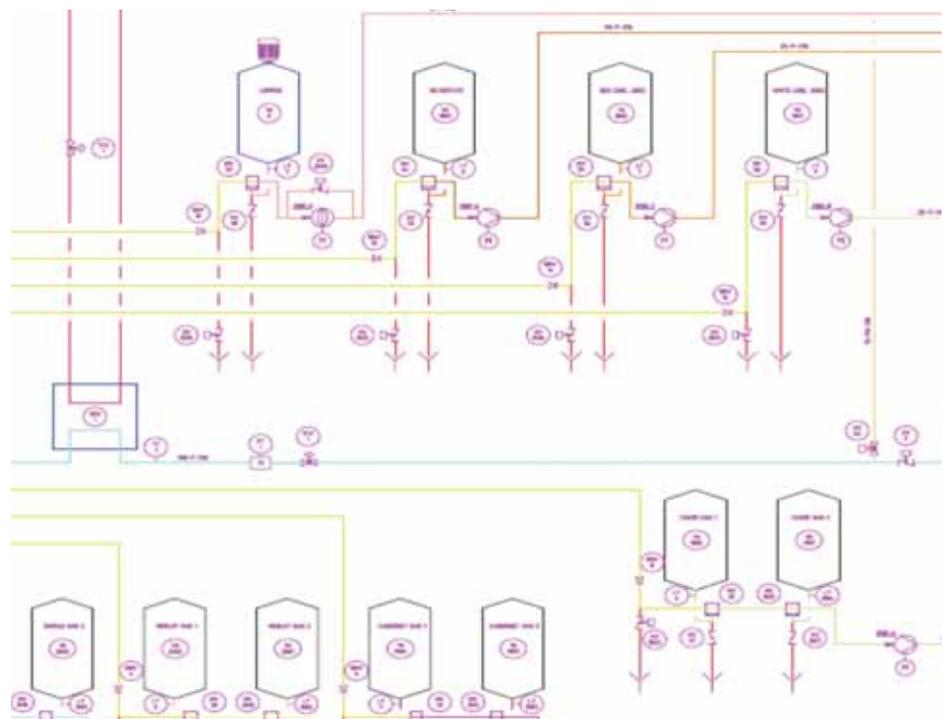


Fig 2: Part of Design drawing for Inline Blending System

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Flavourtech is an Australian based company specialising in innovative process technology, particularly thin film distillation and concentration systems. Technologies include:

- Centritherm® Evaporator
- Spinning Cone Column
- Integrated Extraction System
- Rotating Disc Column

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