



World Class Manufacturer of Wine and Beverage Machines

World-Class Machines for Wine Producers and Bottlers



Australian Made Wine Technology

PTI Pacific is a 100% Australian owned company engineering manufacturing novel process technologies for carbonation and the management of dissolved gases in wine and beverages.

The Company was founded by Lee Carty, a specialist in membrane-based process and plant machinery. Lee was tired of seeing the vast majority of wine and packaging technologies being imported from Europe, plus the vast majority of suppliers being merely resellers and agents for overseas company. Most people said that it's too expensive to manufacture in Australia and the market is too small. Don't bother, pick up and agency for a company and sell their products. Taking this onboard, Lee wanted to prove those wrong and to be a genuine contributor to the Australian wine industry

Many discussions with winemakers were had over the years with particular emphasis on the wasteful and inefficient method of managing dissolved gases in the cellar and pre-bottling preparation. With this, PTI Pacific's first wine innovation was born.



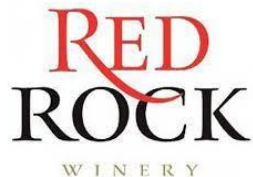
1300 Series

Automated Filtration

The crossflow killer



- Gentle alternative to crossflow technology
- Fully automated, self-cleaning
- Single-pass filtration, no recirculation
- No oxygen pick-up
- No temperature increase
- No product losses or waste
- Hygienic design
- Variable filtration from 20.0 – 0.45 μm



The No-Shear crossflow alternative for premium wines



1300 Series Automated Filtration System

The gentle alternative to crossflow and centrifuge filtration

Compared to crossflow technology:

- Zero wine losses
- No wine heating
- Ultra-Gentle filtration, no continuous recirculation or shearing
- Zero oxygen pickup
- Backwash cleaning of filters with water, not wine
- Ability to choose your filtration level from 20 μ m to 0.45 μ m
- 30-60% reduction in cleaning water (CIP/backwash)
- 68% saving on energy/power consumption
- Integrated cleaning and auto-backwash
- Filter life = 24-36 months compared to high-consumables using lenticular/cartridges
- Huge reduction in landfill and plastic waste



Filter Cartridges & Lenticular Landfill

No filter cartridges or lenticular modules can be recycled. This is not only because of the microbial contamination but the mixed materials. Most filter cartridges include some or all of:

- Polypropylene
- Polyethersulphone
- Stainless steel and/or glass-fibre (borosilicate microfibre)
- Silicone/EPDM seals

One cartridge is designed to last up to 3 years using 1300 Series.

The result – 100% landfill for conventional filtration

Crossflow vs 1300 Series – Energy consumption



Crossflow filters usually have 2 or 3 pumps and motors installed and operate continuously or sequentially.

This consists of:

1. Centrifugal feed pump
2. High velocity loop pump
3. Backwash pump

Comparison energy consumption and using PTI Pacific designed crossflow machines

Feed pump – 1.5 kW

Loop Pump – 7.5 kW

Backwash pump – 1.5 kW

Total – 10.5 kW

Note: All energy (including heating) from these pumps is input into the wine

Crossflow (8 hour shift)

Feed Pump (1.5 kW) – 9 kWh total consumption with 6 hrs of operation (excluding pause time for backwash)

Loop Pump (7.5 kW) – 45 kWh total consumption with 6 hrs of operation (excluding pause time for backwash)

Backwash Pump (1.5 kW) – 3 kWh total consumption with 2 hrs of total operation (only operating in backwash mode)

TOTAL Pump Energy for an 8 hour shift = 57 kW

Crossflow vs 1300 Series – Energy consumption

1300 Series Crossflow Killer machines utilise only two pumps. One for backwash and a single primary process (wine) pump.

This consists of:

1. Wobble pump (wine)
2. Centrifugal water backwash pump

Comparison energy consumption and using PTI Pacific designed crossflow vs 1300 Series machines

Wine pump – 2.2 kW

Backwash pump – 4.0 kW

Note: All energy (including heating) from these pumps is input into the wine

1300 Series (8 hour shift)

Feed Pump (2.2 kW) – 17.2 kW for an 8 hour shift (assuming 2 x backwash cycles)

Backwash Pump (1.5 kW) – 0.668 kW total over the 8 hour shift

TOTAL PUMP ENERGY (8 hr shift): 17.9 kW



Crossflow vs 1300 Series – Energy consumption



Comparing only pump energy and conservatively assuming a machine is running 3 shifts per week for 30 weeks of the year:

Total Wine Crossflow Energy Consumption*: 5,130 kW per annum

1300 Series Energy Consumption: 1,611 kW per annum

Total Energy Saving = 3,519 kWh per annum

* note, for fairness PTI Pacific have compared energy consumption with own-manufactured crossflow machines using polymer membranes. Other manufacturers can differ and rigid membrane types such as ceramic often require larger pumps and more energy

The Results



As a result, the Crossflow Killer offers:

1. No heating of wine during production
2. Gentle operation – low RPM positive displacement wine pump
3. No Wine Backwashing
4. No wine losses through concentration and dumping
5. 68% reduction in pump energy
6. Up to 80% reduction in landfill from consumable cartridges.

Case Study



Machine Delivered December 2021

Replace existing Pall xflow machine

First filter installed 2021 – no filters changed during this time

Quote from happy customer:

“I can’t believe how gentle this machine is on our wine, we had it running and didn’t even realise it was on, haha”



Dual-Filtration



Acknowledgement

The development of the 1300 Series Wine Wine Filtration machine was supported by the Victorian Government's **Technology Adoption and Innovation Program (TAIP)** and thank our local parliament members be coming out to see and support small local innovators and manufacturers.

Thank you to the participating wineries that helped to make it happen. Particularly Shadowfax, Stella Bella and Red Rock.

Our goal is to make this another international success for Australian engineering.



Thank You



World Class Manufacturer of Wine and Beverage Machines

**Thank you for your time and thank you for supporting
genuine Australian wine innovations**

Lee Carty

Managing Director

lcarty@ptipacific.com

+61 400 734 275

+61 3 9452 6906

