

CHEMICAL PLANT & ENGINEERING

40 Years of Manufacture and Supply Experience



WINE & SPIRIT AGITATION SOLUTIONS



CHEMICAL PLANT & ENGINEERING

Chemical Plant & Engineering (CPE) is a world leading designer, manufacturer, and supplier of field process technology, and a division of CEM International Pty Ltd which is a wholly owned Australian company.

CPE specialises in global supply of Liquid Agitation, Filtration, and Powder Mixing solutions to a wide variety of industries including Wine and Spirits, Food and Beverage, Mineral Processing, Chemical and Pharmaceutical, Environmental, and Oil & Gas industries.

Headquartered in Melbourne, Australia, the company enjoys multiple strategic manufacturing partnerships and licensing agreements across the world. CPE's global presence is strengthened via agents and partners in New Zealand, SE Asia, South Africa, Europe, and America.



Agitators



Filters



Powder Blenders

VINFOIL AGITATORS

WINE AND SPIRITS

CPE is the world leading designer, manufacturer and supplier of Wine and Spirit mixing solutions, VINFOIL®. With decades of knowledge, experience and market exposure, we thoroughly understand the requirements of this industry.

CPE has numerous installations in major wineries and distilleries throughout AUNZ and USA.



DESIGN SCOPE

OUR FOCUS

The focus of Vinfoil® design has been gentle yet efficient mixing of wine and spirits in order to enhance product quality and consistency while minimising operating and maintenance cost.

APPLICATIONS

INDUSTRY

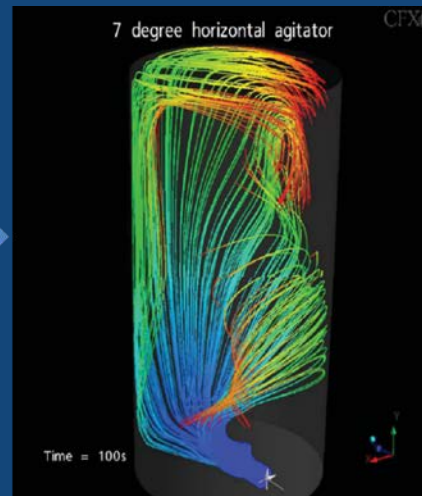
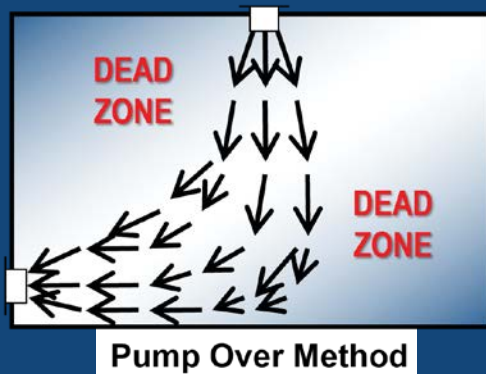


OFFERINGS

CPE DIFFERENCE

- **World leading technology:** fast mixing at a fraction of energy input offering significant cost savings
- **Optimised Product Quality**
- **Maximum Plant Utilisation**
- **Laboratory and Pilot Plant Testing**
- **Aftermarket Services:** process optimisation, failure analysis

PUMP-OVER vs WINE AGITATION



Side Entry VINFOIL®

Why Mix Wine?

Mixing wine can have a dramatic effect on wine **consistency, quality** and **taste**, as well as accelerating the process of winemaking by creating or accelerating below process changes:

- Blending and motion
- Solid suspension
- Heat or mass transfer

Why use Agitators?

- Gentle and consistent blending with no tank dead zone unlike pumping
- Improved wine structure and better mouth feel
- Significantly faster homogenisation, thus better plant utilisation
- Lower capital and operating cost

Why Agitate Spirits?

The introduction of gentle and effective mixing to beer and spirits manufacture offers enhanced process efficiency and product quality. VINFOIL® is used in processing and storage of beer and spirits, including whisky, gin, and vodka.

The main benefits of incorporating VINFOIL® in spirits manufacture are:

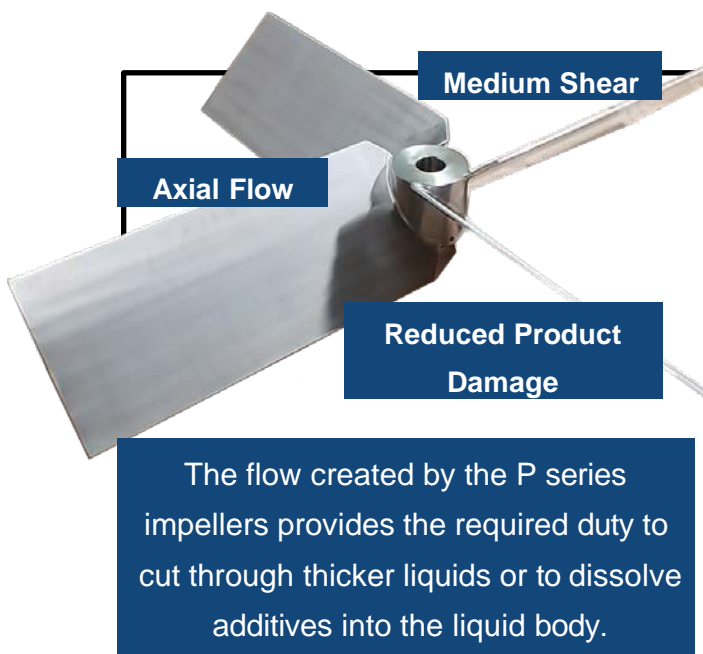
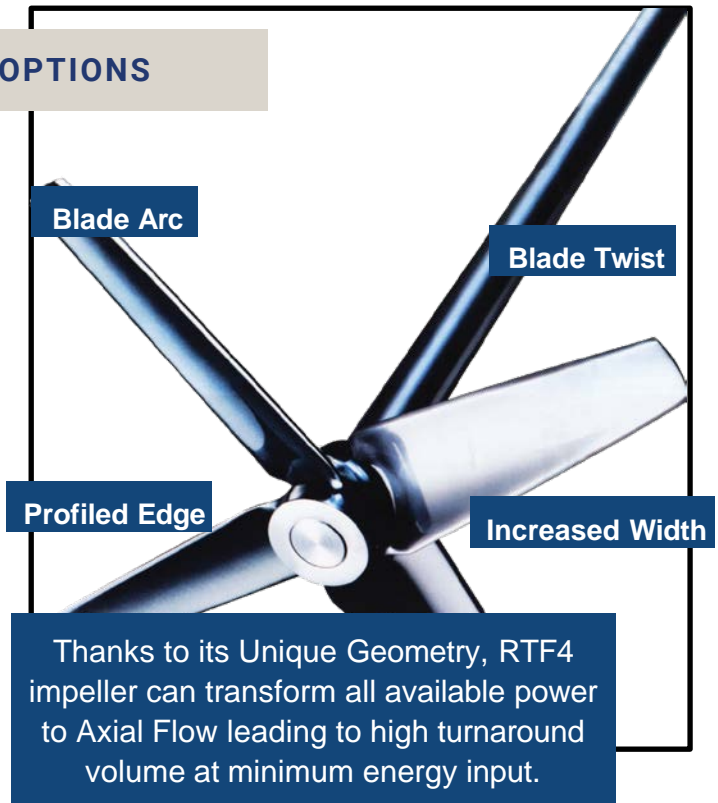
- thorough and efficient sugar extraction from malted grains
- uniform dispersion of yeast in wort thus faster and more complete fermentation
- faster and more accurate alcohol level adjustment
- maintained homogeneity during storage



IMPELLER OPTIONS

Hydrofoil Technology - RTF4

- Suitable for fast and thorough mixing and effective solid suspension.
- Efficient with minimum energy input to achieve desired results, leading to major cost savings
- Fast heat stabilisation
- Anti-scaling



Medium Shear - P Series

- Used for additive mixing (Bentonite, etc.)
- Axial Flow with medium shear
- Often used in combination with RTF4 impeller to best results.

VINFOIL® Configurations



- Wide size range from small boutique wineries to large scale operations
- Top, side, and bottom tank entry points (portable agitators available)
- Direct drive and gear reduced motors
- Retractable agitator to conduct maintenance with full tank
- Explosion protected motor available
- Various seal options (mechanical, lip, hydraulic, etc.)
- Special agitator for operating under high pressure (Charmat method)

AGITATION PROCESS OPTIMISATION

At CPE, we can conduct in-depth analysis of your process and recommend cost-effective solutions to optimise your process.

When to Retrofit an Agitator?

- Ineffective solids suspension
- Time to uniform mixing is long or never!
- Frequent mechanical failure or maintenance shutdown
- Excessive energy consumption
- Considerable change in physical properties of the slurry

Why Agitators Fail?

- Undersized agitator (impeller or motor)
- Wrong impeller design
- Wrong flow rate/pattern
- Low service factors in agitator design

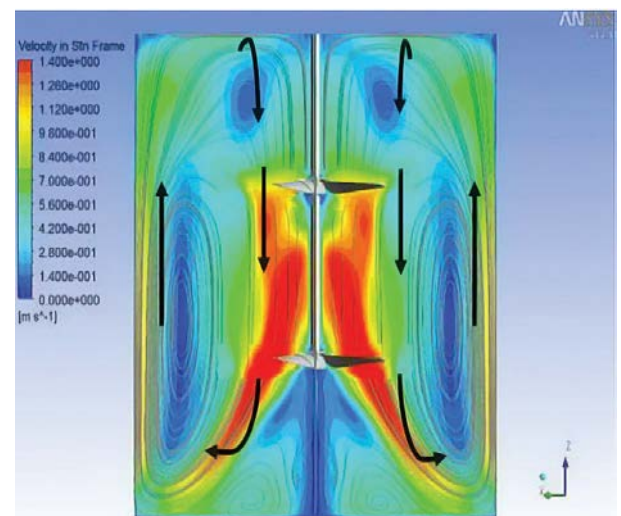
In most cases, retrofitting of an existing agitator involves impeller replacement (same size or different) without changing the motor and gearbox.

BENEFITS of agitator retrofits with RTF4 Technology

CPE has a long history of retrofitting underperforming mineral processing agitators to provide enhanced performance and efficiency.

Our world leading **RTF4 impeller technology** offers:

- quicker mix time at the same power input
- lower power consumption and maximum plant utilisation
- effective solid suspension
- increased mixing capacity
- lower power loadings, thus longer lasting agitator



Flow analysis of a top entry hydrofoil agitator

Why Use *Vinfoil* ?

- Decades of design, manufacture and global supply experience.
- Superior agitation technology with many installations worldwide.
- Manufacturing facilities in Australia and strong global partnerships.
- We can custom design agitators to your specific process needs.
- A range of agitator configurations to suit various application requirements.
- Pilot plant units available for in-house or customer trials.



Aftermarket Services



Process analysis & Optimisation to reduce mix time and energy consumption



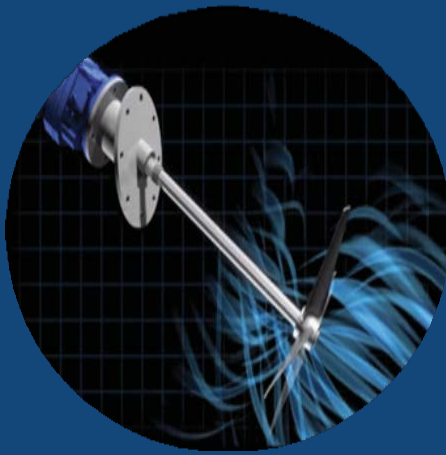
Supervision of installation and commissioning



Retrofitting of existing agitators to enhance performance

Product	Applications
Wine	Blending (fermentation, storage) Additive mixing (bentonite, etc.) Flavour extraction (oaking, etc.) Solid suspension for centrifuge feed Cold stabilisation (white wine ,champagne) Micro-oxygenation (red wine) Charmat method (champagne)
Beer	Yeast mixing into wort 1st and 2nd fermentation Storage
Whisky	Sugar extraction Yeast mixing into wort Alcohol level adjustment of distillate
Gin and Vodka	Mixing botanicals into distillate Alcohol level adjustment of distillate





Cold Stabilization

VINFOIL® effectively moves the warm wine over to the refrigerated tank walls, increasing the rate of heat transfer. As a result, a cold stabilised wine is achieved much faster.

- Eliminates tank temperature striation
- Improves heat transfer rate
- Optimizes tank utilization

“VINFOIL® is reported to reduce the time to cold stabilisation from 13 days down to 4”

Centrifuge Feed

CPE has developed an agitation solution using VINFOIL® which ensures full and uniform solid suspension in the wine body. Minimizing the tank and centrifuge maintenance time and cost while the plant efficiency is at its maximum.

- Consistent solids feed rate
- More reliable performance of centrifuge
- Easily adapted to cellar automated control system
- Less labour for final tank clean out



Flavour Extraction

Compared to traditional static soaking methods, VINFOIL® agitators reduce the time required for the oak chips to impart their woody aroma and taste to the wine.

- Reduced time in tank
- Rapid flavour profiling
- Increased throughput/tank utilization
- Minimised tank striation
- Homogeneous blending



Chemical Plant & Engineering

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