

The promise of precision, every time.



www.mac-weld.com

V-MAC SYSTEM

Thermowell Wake Frequency PTC 19.3 TW-2016





V-MAC comes with many features to ensure you have everything you need right at your finger tips.



V-MAC Basic

\$4,000

USD (1 License)



V-MAC Advanced

\$5,500

USD (1 License)

Thermowell Wake Frequency Analysis

V-MAC software designed by Mac-Weld Machining Ltd.

Thermowell velocity design software that's easy to use and ensures you meet the ASME PTC 19.3 TW 2016 code.

The ASME PTC 19.3 TW-2016 is the latest code that establishes the practical design considerations for thermowell installations in power and process piping. The current code evaluates a combination of static and dynamic forces, resulting from fluid impingement as well as external pressure acting on thermowell stem. It includes complex formulas for calculation of natural frequency, Strouhal frequency, in-line resonance and stress evaluation.

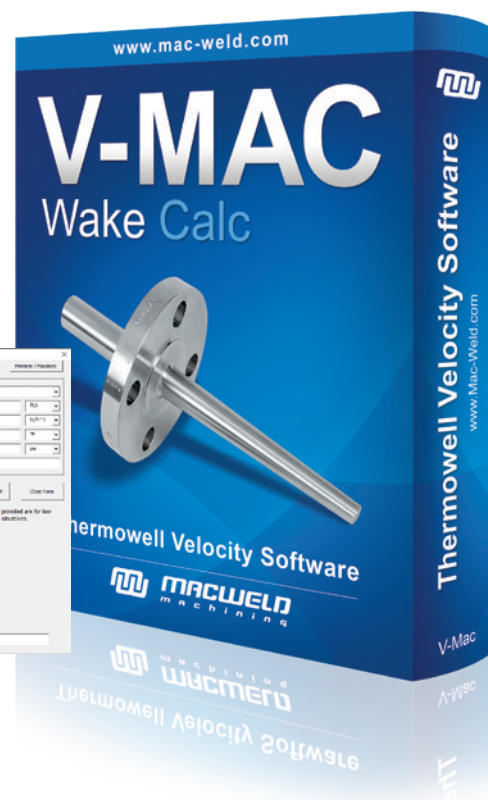
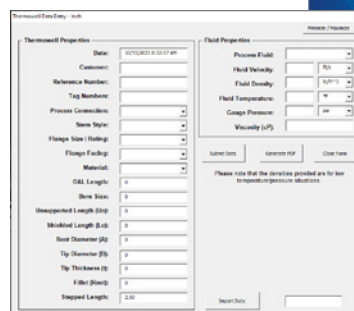
With each edition, the calculations became more and more complex. It is a great time to invest in the software that makes performing these complex calculations fast, easy and efficient.

Key features standard with the V-MAC System:

- Our system comes preloaded with 50+ Materials
- Built in Unit conversion tool that handles temperature, pressure, velocity, and density.
- Ability to run calculations for flanged, threaded, socket weld, weld-in, and vanstone thermowells.
- Run 100 plus calculations with the click of a single button.

Our system comes with many built in features to ensure you have everything you need right at your figure tips. Whether it be our 50+ preloaded materials, our convenient unit conversion tool, or simply our customizable print sheet. Our system ensures your customers get the information they need, in an easy to follow print sheet.

For a web demonstration, or more details contact us today.



System Requirements

Operating System (Windows)	10 & 11
Microsoft Excel (32 bit)	Required
Support Concurrent users *	Yes

* Requires a V-MAC Server License

Features

	Basic	Adv.
1 Year Free Support	✓	✓
50+ Preloaded Materials	✓	✓
Multiple Thermowell Configurations	✓	✓
Enter Data in Imperial or Metric	✓	✓
Unit Conversion Tool	✓	✓
1 Click PDF Generator	✓	✓
Large Project Capability	✓	✓
Customized Print Sheet	✓	✓
Custom Material Add-on		✓

MACWELD
MACHINING

WAKE FREQUENCY ANALYSIS
In accordance with ASME PTC-19.3-TW

Report Information
Customer: _____
Tag Numbers: _____
Analyst: _____
Reference #: _____
Date: _____

Process Operating Conditions
Process Fluid: N/A
Max Temperature (T): 300 °F
Max Pressure (P): 150 psi
Fluid Velocity (v): 6.05 ft/s
Fluid Density: 55.39 lb/ft³
Fluid Viscosity: 24 centipoise

Thermowell Material Properties
Density (Pm): 0.29 lb/in³
Elastic Modulus, E(T): 27000000 psi
Allowable Stress (S) / Fatigue Limit (SF): 15600 psi/9100 psi
Von Mises Stress (Root): 236.73 psi

Stress (Support Plane)
In-Line Reson. Velocity (VIR): 7.9 m/s
Bending stress at VIR (So max): 363147.15 psi
Peak oscill. bending stress (So max): 202.04 psi

Frequency
Frequency Limit: 0.40
Frequency must be below: 87.08 [Hz]
Installed Natural Freq (fnc): 217.69 [Hz]
Strouhal Frequency (fs): 25.04 [Hz]

Pressure
Allowable Stem Pressure (Pc): 5655.82 psi
Allowable Tip Pressure (Pt): 110917.93 psi

Thermowell Rating
Oscillating Stress (psi): **PASS**
Steady State Stress (psi): **PASS**
Pressure (psi): **PASS**
Frequency (Hz): **PASS**

Thermowell Configuration
Process Connection: Flanged PP Weld
Stem Style: Tapered
Thermowell Material: 316
Flange Size / Rating: 2" 300#
Flange Facing: Raised Face
Flange Material: 316
Flange Thickness: 0.26"
Bore Size: 12.25"
Overall Length (L): 10"
Unsupported Length (L0): 6"
Shielded Length (Q): 0.781"
Root Diameter (D): 0.625"
Tip Diameter (T): 0.25"
Tip Thickness (Y): 0.188"
Fillet (Root): _____

Value
202.03
393.051
150
25.04

The thermowell design has **PASSED** the wake frequency calculation
calculations are based on the ASME PTC-19.3-TW-2015 formulas. The results of these calculations should only be used
design. MacWeld does not guarantee the performance of a specific well design obtained from the use of these
calculations".
When the thermowell is manufactured and supplied by MacWeld Machining Ltd.

- 4 -

Solutions for all businesses

With multiple packages available, we can offer a solution that matches your needs.

User License

If you find that your company is running a significant amount of calculations, then your best option is to purchase a **license**. This gives you the ability to run calculations in house, and drastically reduce your turn around time.

* Additional licenses allow you to install the software on additional computers

** Our server license is best for larger companies where many users will access the system using their business network

Pricing - License

V-MAC Basic (1 License)	\$4000.00
V-MAC Advanced (1 License)	\$5500.00
Additional Licenses (2 - 5)*	\$750.00 ea.
Additional Licenses (6 - 10)*	\$550.00 ea.
Server License (15 users) **	\$3000.00
Maintenance / Support (1 Year)	FREE
Customize Print (One Time Charge)	\$500.00

All prices shown in USD

Pay As You Go

Our **Pay as You Go** service, is best for those who do not typically run a large amount of calculations, however still need the option for the occasional customer. This option allows you to purchase calculations in bulk to save on small batch costs.

* Calculations purchased using our Pay as You Go option must be used within 6 months from date of purchase

** Purchase in bulk for greater saving

Pricing - Pay As You Go

1 - 100 Calculations*	\$35.00 ea.
101 - 250 Calculations*	\$25.00 ea.
> 250 Calculations*	Call**
Customize Print (One Time Change)	\$500.00

All prices shown in USD

Easy to use features:

- Export to PDF format for easy sharing or file storage
- Import data for quick and easy calculations
- Submit an RFQ directly from the app to our facility
- Easy to read results with colour coded labels
- Dropdowns with common measurement units
- Support packages available





For a web demonstration,
or more details contact us today.

Flexible maintenance options available

V-MAC
Basic



Maintenance / Support	1 Year	3 Year
Software Updates	Included	Included
Email Support	Included	Included
Updated Documentation	Included	Included
Price	\$800.00	\$1400.00

V-MAC
Advanced



Maintenance / Support	1 Year	3 Year
Software Updates	Included	Included
Email Support	Included	Included
Updated Documentation	Included	Included
Price	\$1000.00	\$2000.00

All prices shown in USD. Our 3 year maintenance / support package gives you 3 years for the price of 2.

Wake calculations made easy!

The ASME PTC 19.3 TW-2016 code is very complex, but does that mean that the software needs to be? We didn't think so either, so thats why when we set out to develop this system, we held nothing back. We wanted to create a system that was not only user friendly, but very accurate and consistent.

Discover how V-Mac can help you and your customers today!

Contact a Mac-Weld sales representative, and setup your free web demonstration.

✉ sales@mac-weld.com

📞 1-877-622-9353

📞 519-332-1388

Hours of Operation

Monday	8am - 4pm
Tuesday	8am - 4pm
Wednesday	8am - 4pm
Thursday	8am - 4pm
Friday	8am - 4pm
Sunday & Sunday	Closed



Threaded
Thermowell

Socket-Weld
Thermowell





📍 1324 Lougar Ave Sarnia, ON N7S 5N7

📞 1-877-MAC-WELD (622-9353)

✉️ sales@mac-weld.com