

# ViscoMix

Innovations in Viscous Mixing

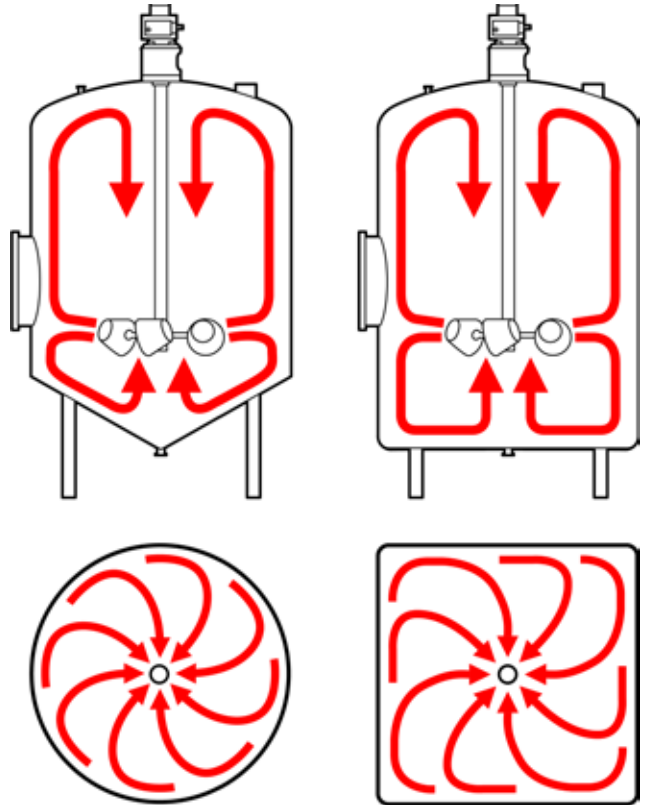


# ViscoMix: Innovations in Viscous Mixing

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The **ViscoMix** is stirring up viscous mixing technology. It uses a revolutionary converging nozzle design to accelerate product in a jet from the mixing element to the tank walls and up towards the surface. The product then travels down towards the center of the **ViscoMix**, and back up the sides of the vessel creating an intense vertical and horizontal circulation throughout the whole tank.

The design is much more energy efficient than any other mixing element in both volumetric displacement and total product circulation. Because of this energy efficiency, the impellers can be spun at a slower tip speed, allowing not only for gentle agitation of sensitive products like Greek yogurt, but also for agitation with large sensitive particulates like berries, cooked broccoli, and diced tomatoes.



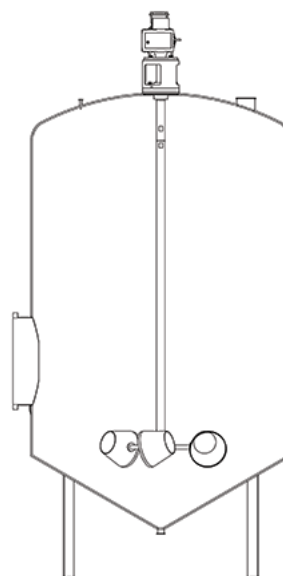
## Top & Bottom Mounted **ViscoMix**

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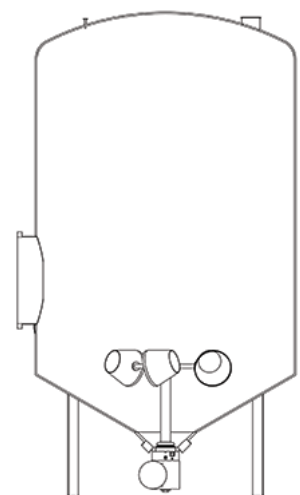
The **ViscoMix** is versatile enough to suit any tank orientation or sanitation requirement. The **ViscoMix** can be installed in either the top or bottom of the tank. **PROCESSTEC** can even retrofit existing silo tanks with low bottoms to allow for bottom-mounted applications.

The bottom-mounted **ViscoMix** is especially beneficial for very tall tanks or silos. A bottom-mounted **ViscoMix** uses less shaft material, is not top heavy, eliminates spray shadow, and provides easy access for motor and gearbox maintenance.

In addition, **PROCESSTEC** sumps for the bottom-mounted **ViscoMix** can have integrated supply and discharge valves, utilizing **PROCESSTEC's Smart-Connect** to integrate multiple tanks in series, in order to streamline the overall system (see page 6).



**VM1**  
(TOP-MOUNTED)

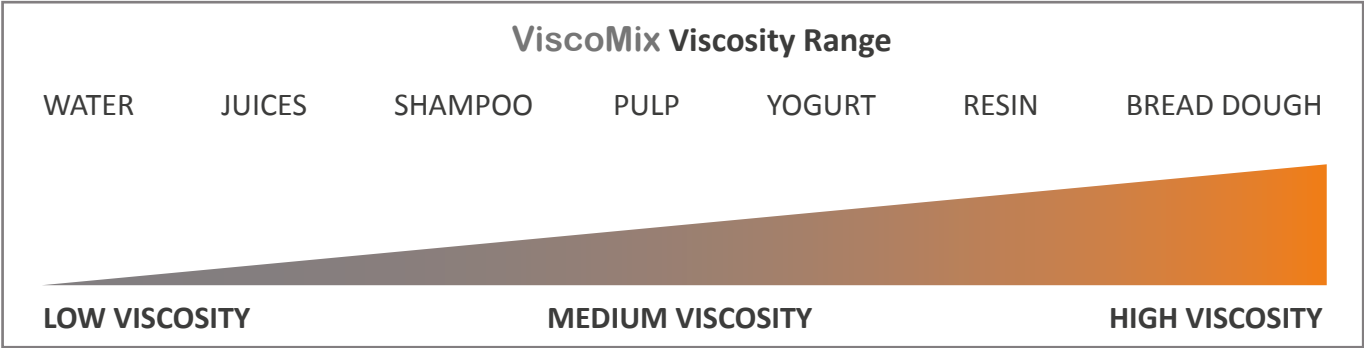


**VM-2**  
(BOTTOM-MOUNTED)

# ViscoMix Performance

The **PROCESSTEC ViscoMix** is a reliable and energy efficient solution for any mixing and homogenizing process, especially with viscous product and sensitive particulates. The **ViscoMix** is sized and designed based on your custom process needs. The **ViscoMix** can successfully agitate product from 0 to 100,000 cPs, and tanks with an inside diameter from 75mm to 22,000mm (22 meters). All of this is achieved while still being fully CIP-able and easy to maintain. The **ViscoMix** is designed per safety and sanitary standards, whether aseptic, chemical, pharmaceutical, explosion proof, or 3A.

## A Versatile Mixer for any Product



- FEATURES & BENEFITS:**
- More Energy Efficient Mixing
  - Fully CIP-able
  - Ease of Use for Maintenance Servicing and Sanitary Inspection
  - A Reliable Mixing & Homogenizing Solution

- 0 - 100,000 cPs
- 75mm - 22,000mm Inside Tank Diameter
- 3A & Aseptic to Chemical Applications

# A Custom Solution for any Need

*Each ViscoMix is designed specifically for the process and tank it's commissioned for.*

**PROCESSTEC** has a variety of options to create the perfect **ViscoMix** application varying from minimum retrofitting to fabricating a new tank. Below are just some examples of the different ways the **ViscoMix** has been applied to all kinds of mixing and homogenizing processes.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

High Protein Mix	Industrial Coffee	Jalepeno Brine (with sensitive Particulates)	Nutrition R&D
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## VM1 TANK (TOP MOUNT)

## VM2 TANK (BOTTOM MOUNT)



Fig. 5



Fig. 6



Fig. 7

Flow Balance Tank	Canola Oil Silo	Chocolate Mix
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## Choosing the Right Element for the Job

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**PROCESSTEC** offers Multiple Impeller Options for use with the **ViscoMix** depending on the needs of your particular operation.

### CONE ELEMENT *(standard)*

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- Default Element for all mixing, and homogenization applications
- Gentle homogenization of suspensions with soft particulates

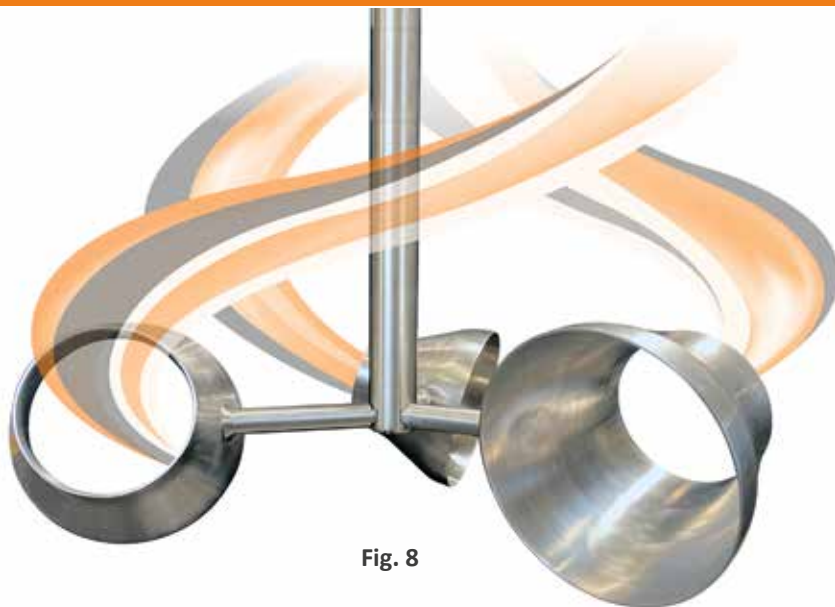


Fig. 8

### SHEAR ELEMENT

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- Homogenizing of suspensions with light shearing
- Incorporating powders & flours
- Very high viscous media above 50,000 cps



Fig. 9

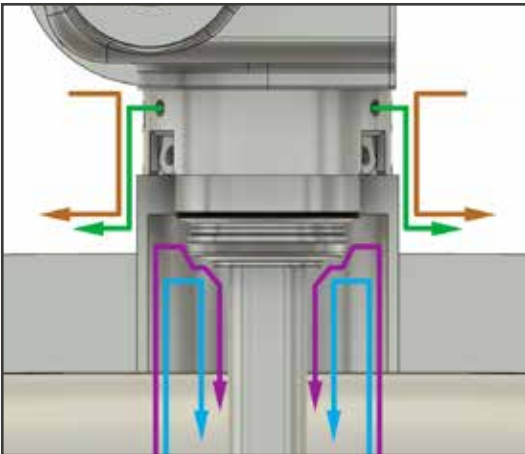


## A Sealing Solution for Any Application

The **ViscoMix** also comes with multiple sealing options for the aseptic, food-grade, and chemical industries. Every **ViscoMix** Sealing Option has been specifically designed to completely isolate the mixed product from oils, and outside debris. These sealing options range in complexity and price based on the application need. **PROCESSTEC** will always consult the complete process when recommending sealing options based on the process itself, price, lead time, and maintainability. The different sealing options include the following:

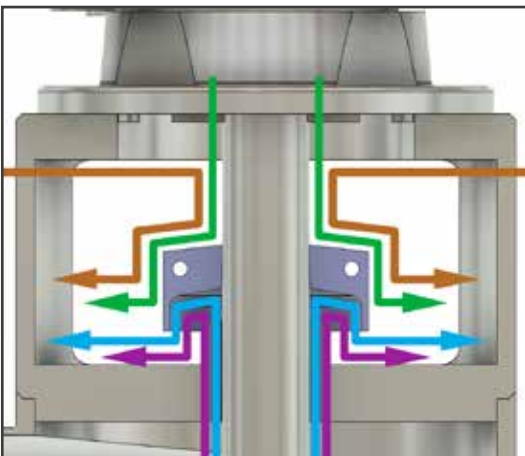
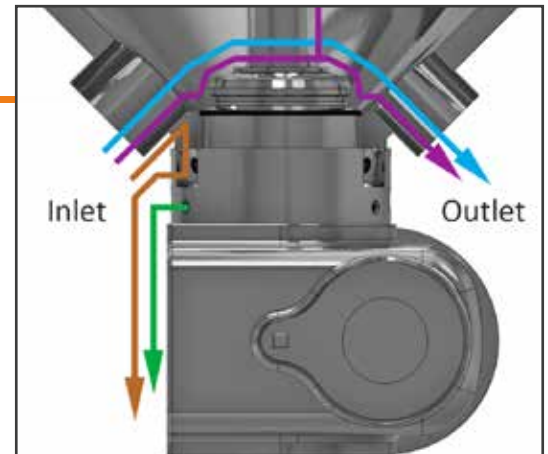
The color-coded arrows in the diagrams below indicate the paths which the fluids and/or product will follow.

**CIP** →  
**PRODUCT** →  
**OIL** →  
**DUST/DEBRIS** →



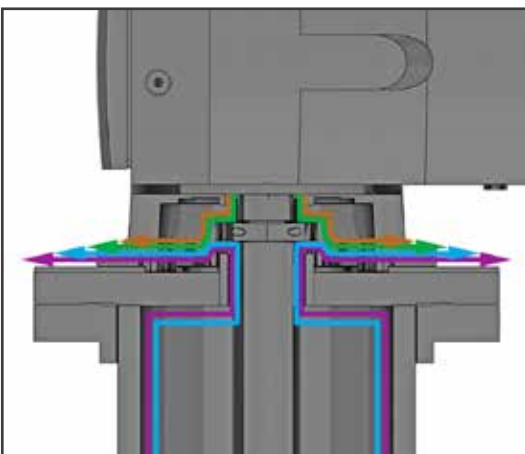
### GS-FUSION *NEW!*

- Low exterior profile
- Gearbox with integrated seal for easy maintenance and assembly
- Low internal profile means no spray shadow
- Can be installed in either VM1 or VM2 style



### LANTERN WITH SANITARY SLINGER DISK

- For atmospheric tanks
- Prevents ingress of oil and debris
- Low cost
- Very easy to maintain and install



### INDUSTRIAL SLINGER DISK

- For chemical and industrial applications
- Low exterior profile
- Very low cost
- Simplest agitator system to assemble and maintain



## Optional Equipment That's Reliable and Easy to Use

**PROCESSTEC** has developed several options to our **ViscoMix** line to meet different application requirements. These options help ensure the **ViscoMix** is optimally designed to work as efficiently as possible while also increasing durability and allowing for easier maintenance. A few of the options we've built are:

### Bottom Bearing

The **Bottom Bearing** is a low-cost option for the VM1 **ViscoMix** that needs extra stability. By adding a bearing to the bottom of the shaft (see fig. 3 on page 3), the **ViscoMix** can use a smaller shaft to reduce weight, retrofitting costs, and power requirements. The **Bottom Bearing** uses a food-grade plastic as the bearing piece to ensure durability. The specific bearing piece material is optimally chosen based on the specific product characteristics. It is also designed to be removable from outside the tank and is fully CIP-able.

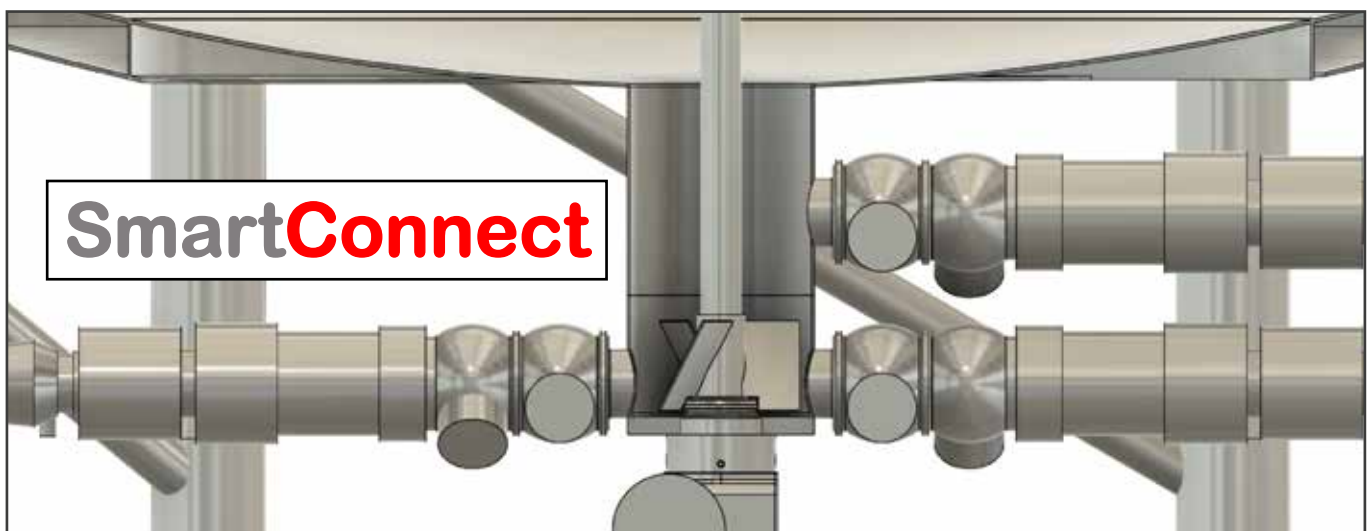


fig. 10

### SmartConnect

**SmartConnect** is a system designed in a partnership between GEA Tuchenhausen and **PROCESSTEC** to simplify mixing in multiple tanks. It allows the system to be interconnected via mixproof valves in a safe and hygienic way to avoid excess piping. For the tank, the **ViscoMix** VM2 base can implement **SmartConnect** as part of the solution, allowing for one tank in a series to be cleaned while others are mixing product and/or emptying without worry of cross-contamination.

More information about **SmartConnect** is available at <https://processtec.com/smartconnect-valving-system-overview-.html>



## Effective Cleaning Solutions

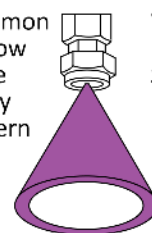
The **ViscoClean** is an economic cleaning solution to efficiently clean the **ViscoMix** from product and residue. The **ViscoClean** uses a full cone spray pattern to power wash the slowly rotating **ViscoMix**. This process eliminates the need to submerge the **ViscoMix** in CIP solution in order to clean it, saving CIP solution, water, and cleaning time.

The **ViscoClean** is a completely clean installation and is designed around a custom flush-mounted flange. For more information, visit <https://processtec.com/viscoclean-overview--.html>

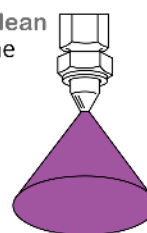
Fig. 11



Common  
Hollow  
Cone  
Spray  
Pattern



**ViscoClean**  
Full Cone  
Spray  
Pattern



## Explosion-Proof Equipment

The **ViscoMix** can be designed for explosion-proof conditions in accordance with ATEX standards. The primary difference is the use of an air motor to power the mixing element.

For explosion-proof applications, please contact us.

Fig. 12



## Custom Process Tank Solutions

**Processtec** designs and fabricates small tanks based on the individual customer's process and system requirements.

The Flow-Balance Tank with a VM2 Mixing Element and split tank design (Fig. 13) was supplied by **PROCESSTEC**. The design also allows it to be manufactured and certified as a pressured vessel.

Fig. 13



## Some of the Industries We Serve



Use this QR Code to watch a brief Testimonial Video about the **ViscoMix** line of Mixers and Agitators.

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