

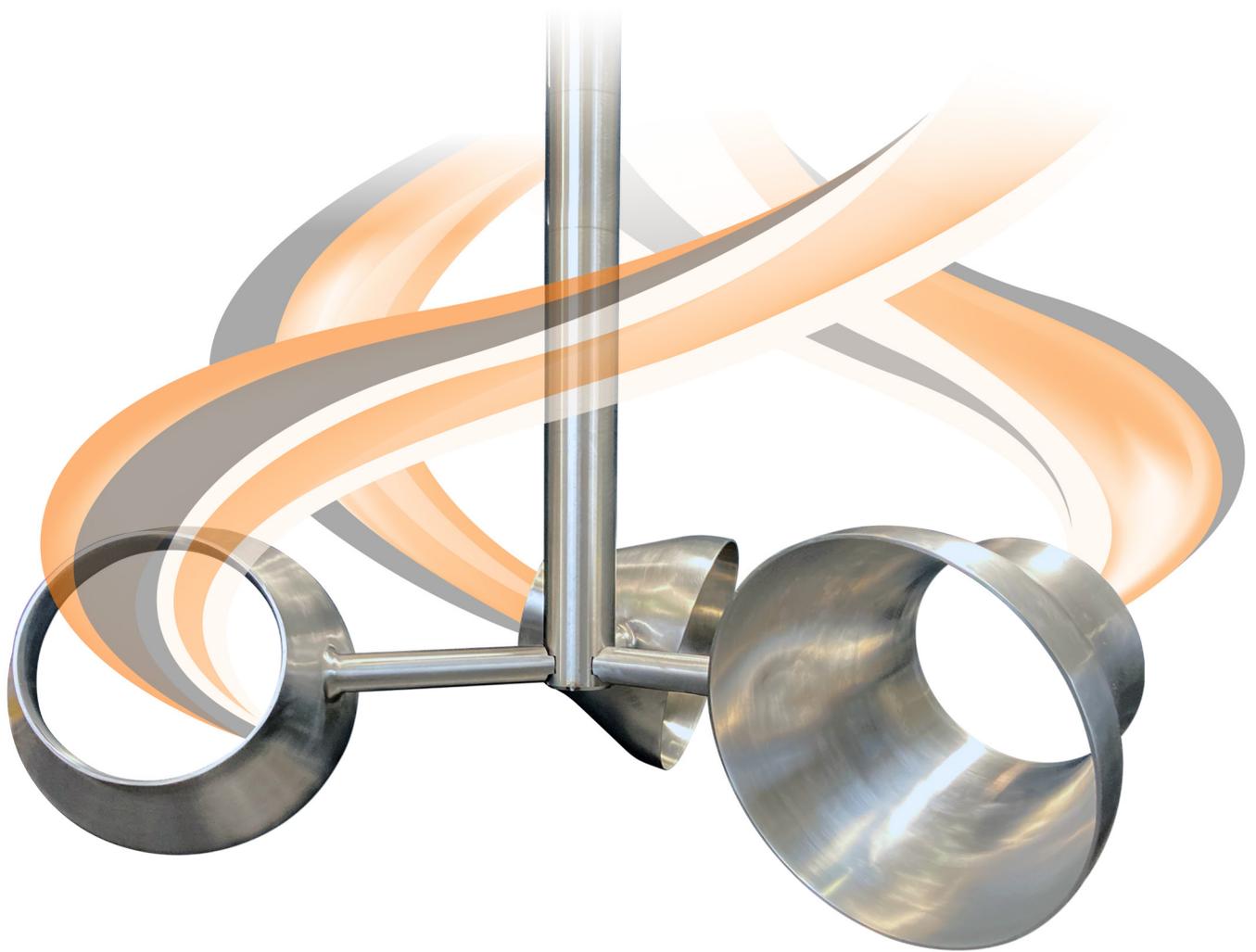
PROCESSTEC

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ViscoMix VM1 Agitator

Operation & Maintenance Manual

Published February 27th, 2026



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1. INTENDED USE OF AGITATOR

1.1 ViscoMix VM1 Agitator

The **ViscoMix VM1 Agitator** with Cone Impeller is designed to disperse powders into liquid without foaming. Under no circumstances should products be stirred when the risk of an explosive atmosphere exists. If you have any doubts regarding safe operation, please get in touch with **Processtec**.

See Section 11.1 "Service and Contact Information" on page 26.

The **ViscoMix VM1 Agitator** is a special assembly used for homogenizing viscous products.



NOTE:

Intended use of the **ViscoMix VM1 Agitator** includes compliance with the manufacturer's instructions for operation, maintenance and repairs.

2. SAFETY NOTES

2.1 Scope and Purpose of this Manual

This operating manual is valid for the **ViscoMix VM1 Agitator**. This manual is intended to support qualified personnel in becoming familiar with safety, assembly, operating and maintaining the **ViscoMix VM1 Agitator**.

This manual contains instructions which you should heed to ensure personal safety and prevent damage to property. These instructions are highlighted by a warning triangle and are marked according to degree of hazard as follows:



WARNING!

Indicates that death, severe personal injury or substantial damage to property will occur if the appropriate precautions are not taken.



CAUTION!

Indicates that minor personal injury or damage to property may occur if the appropriate precautions are not taken.



HAZARD!

Indicates that forklifts are in operation or use. Failure to comply could result in minor personal injury, back injury or damage to property if the appropriate precautions are not taken.



WARNING!

Indicates there is a suspended overhaul and parts can fall, slip or tip over. Severe personal injury or substantial damage to property can occur if the appropriate precautions are not taken.



HAZARD!

Indicates moving parts can crush and cut. Keep hands clear of moving parts while operating so to prevent minor personal injury or damage to property.



CAUTION!

Indicates heavy objects that can cause muscle strain or back injury. Use lifting aids and proper lifting techniques when moving to prevent minor personal injury or damage to property.



HAZARD!

Indicates rotating shaft that can cause injury. Keep arms, legs, hair and loose clothing away to prevent minor personal injury or damage to property.



WARNING!

Indicates high voltage and risk to shock or severe burns. Disconnect electricity source prior to servicing. Death, severe personal injury or substantial damage to property will occur if the appropriate precautions are not taken.



CAUTION!

When operating the **ViscoMix VM1 Agitator**, it is essential to wear appropriate protective equipment.

2.2 Read the Operating Manual

Commissioning and operating the **ViscoMix VM1 Agitator** may only be performed by qualified personnel. Qualified personnel in terms of the safety instructions in this operating and safety manual are persons trained in the use of and familiar with this system.



NOTE:

The manufacturer cannot be held responsible for any accidents or damage caused by failure to follow the safety instructions.



NOTE:

This entails important information about the machine, the handling of the machine and sections of the manual should be paid close attention to.



WARNING!

The **ViscoMix VM1 Agitator** may be used only for the applications described in the technical specifications and in the technical description, and only in connection with the use of spare parts recommended by **Processtec**. Safe operation of the machine requires careful transportation, storage, installation and assembly, operation and maintenance.

2.3 Audience

This manual is aimed at the assembly personnel and the users of the agitator.

The operating manual, work instructions and other applicable provisions relevant to safe installation, start-up and operation must be kept at a location accessible to affected personnel always.



NOTE:

Changes or alterations to the **ViscoMix** series will void liability and warranty claims.



NOTE:

In addition to this operating manual, general and other regulations applicable to accident prevention must be made available and followed.

2.4 Responsibilities of the Operator

The operator undertakes to operate the **ViscoMix VM1 Agitator** only in perfect working condition. Hazard areas between the agitator and on-site customer equipment must be secured by the operator. This operating and safety manual must be read carefully to the end. If there are any ambiguities, please get in touch with us without delay. Do not start operation until all uncertainties have been clarified.

By starting the system for the first time, you confirm that you have read and understood the operating and safety manual.



WARNING!

Operating the **ViscoMix VM1 Agitator** improperly or when not in good condition can lead to accidents.

3. TECHNICAL SPECIFICATIONS

GENERAL

Year	2023
Description	ViscoMix VM1 Agitator
Mixing Task	Dispersing
Serial No:	0223VM1-210.7-1416
Component ID	22529

PRODUCT DATA

Density	Various
Solids	Various
Viscosity	~50cps (0 to 500 cps)

VESSEL DATA

Shell Height	24"
Overall Height	~32" (without legs)
Operation Pressure	Atmospheric
Operation Temperature	Ambient
Vessel Diameter	35" (inner)
Nominal Volume	400 Liter (100 Gal)

VESSEL

Fastening	Gear motor mounted onto Lantern with integrated Slinger Disc
Sealing	Slinger Disc with O-Ring
Installation	15% Off-Centeric, Top Mounted
FDA-Version	Yes
CIP	Impeller periodically must be immersed in CIP

SHAFT

Finish	Ra≤0.8μm
Shaft Diameter	1.5"
Shaft Material	316L (3A)

IMPELLER

Quantity Impeller	1
Quantity of Cups	3
Diameter	400mm
Finish	316L, polished to meet 3A requirements
Connection	Threaded Connection

DRIVE

Design	Clincher Gear Motor, hollow shaft with keyway
Output Speed	320 rpm (After Gearbox) 1750rpm (Motor)
Allowable Max Speed (Nmax)	239 rpm
Critical Speed (Ncrit)	815 rpm
Frequency	60 Hz
Type of Gearbox	NORD parallel shaft gearbox with NEMA adapter, hollow bore, keyed
Gearbox Oil	Food Grade
NEMA	N184TC
Painting	Signal White
Power	1.5 HP
Protection Class	IP66
Voltage	460V AC
Ambient Max Temperature	40° Celsius
Lubricant	Food-Grade VG220-MIN-FG

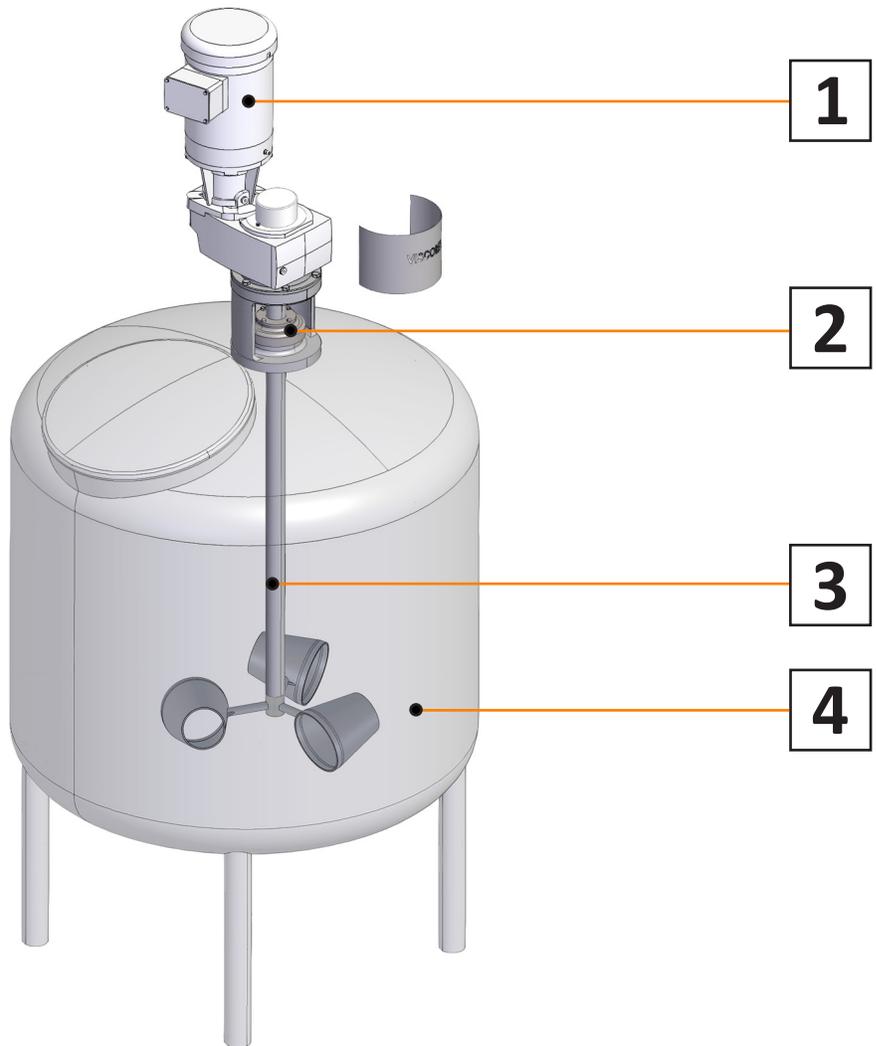
4. DESCRIPTION OF SYSTEM COMPONENTS

4.1 ViscoMix VM1 Agitator

The following illustration gives the operator an overview of the systems main components.

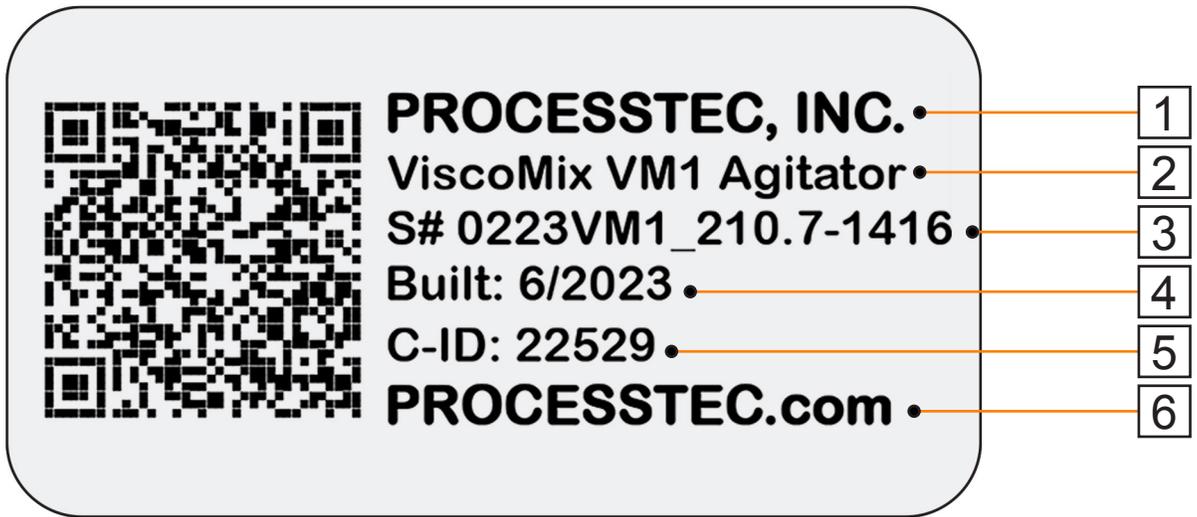
Configuration Key

1	Drive	Electrical, NORD Gear Motor (Clincher)
2	Vessel Fixation / Sealing	Lantern with Flange & Cover Slinger Disc with O-Ring
3	Mixing Element w/Shaft	Single Cone Element, Agitator Shaft, Top Install
4	Tank	Vertical, Round, Round Top, Round Bottom



4.2 Serial Number Label

The information on the serial number label should not be overwritten under any circumstances. The serial number label contains the following information:



Serial Number Label Key

1	Company / Manufacturer
2	Agitator Type
3	Serial Number
4	Date Manufactured
5	Component ID
6	Website

5. DELIVERY

5.1 Scope of Delivery

Before installing and starting up your new **ViscoMix VM1 Agitator**, please ensure that your delivery is complete and matches the information on the delivery packing slip.

Delivery Includes:

- **ViscoMix VM1 Agitator**, 3 Cone Impellers with Spokes, Motor and Gear Box.
- **PROCESSTEC ViscoMix VM1 Operation and Maintenance Manual**.

5.1.1 Reporting Damages

On receipt of the equipment, please inspect for damaged packaging caused by inadequate transportation. Damages to the equipment must be reported immediately to the shipping agent, the insurance company and **Processtec** (see section 11.1 "Service Assistance and Contact Information" on page 26 for the contact address).



CAUTION!

HEAVY LOAD: Improper removal from the packaging increases the risk of muscle or bone injury. Use a suitable lifting device to move the equipment properly.

6. INSTALLATION & ASSEMBLY

6.1 Setup for ViscoMix VM1

When transporting the assembled **ViscoMix VM1 Agitator**, use an assistant or a lifting device.



WARNING!

Use a suitable device to remove the individual components from the crate and transport them to the installation site to prevent the risk of muscle or bone injury.



WARNING!

No changes, additions or conversions may be made which may effect the safety or function of the machine.



WARNING!

Failing to properly inspect the machine and mounted components, safety equipment, etc. can seriously impact their function and lead to serious injury to personnel and damage to the machine.

Installation

1. The **ViscoMix VM1 Agitator** may only be installed by suitable, trained personnel.
2. Find a clean, level location with plenty of clearance on all sides to place the **ViscoMix VM1 Agitator**.
3. Secure the Electrical Terminal Box properly, before wiring the Motor.
4. Contract a Licensed Electrician to connect the Electrical Box to the Drive Motor.
5. Check that the mixing element is fitted securely before operation.

If any errors occur, please contact **PROCESSTEC** (see Section 11.1 "Service Assistance and Contact Information" on page 26 for the contact address).

6.2 VM1 Agitator Assembly and Installation



WARNING!

Under no circumstances should any extra weight be put on the cones or spokes of the impeller. The impeller is not designed to be used as a step. Any extra weight or force applied to a cone or spoke could bend the unit out of alignment or break it.

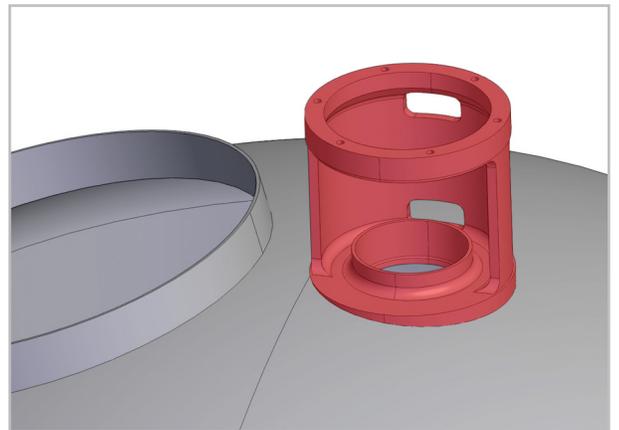


WARNING!

Before working on or servicing the **ViscoMix VM1 Agitator**, please be sure to observe all LOTO (lock-out, tag-out) procedures.

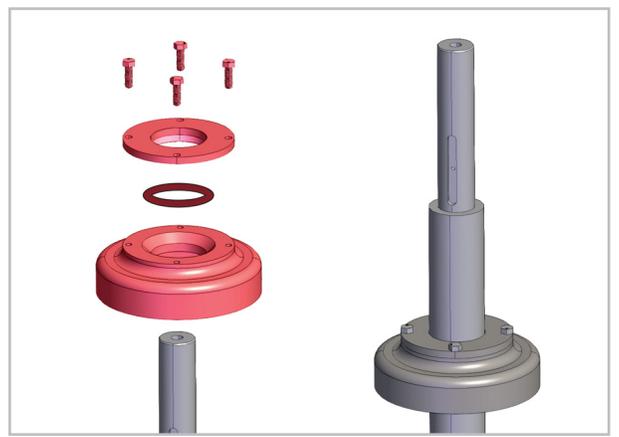
STEP 1)

Attach the Lantern to the tank in a level and upright position. Consult the technical drawings for proper location. Weld in place, and finish by polishing the welds to a food grade spec.



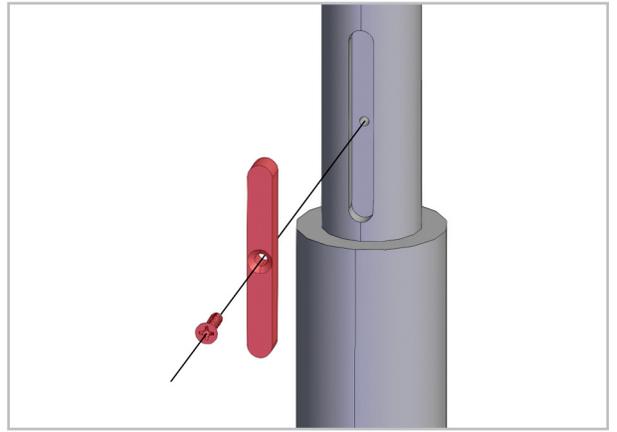
STEP 2)

Attach the Slinger Disc Top, O-ring and Slinger Disc Bottom to the top end of the agitator shaft, and secure in place with Four (4) bolts. Do not overtighten. The Slinger Disc may need to be repositioned later in the installation.



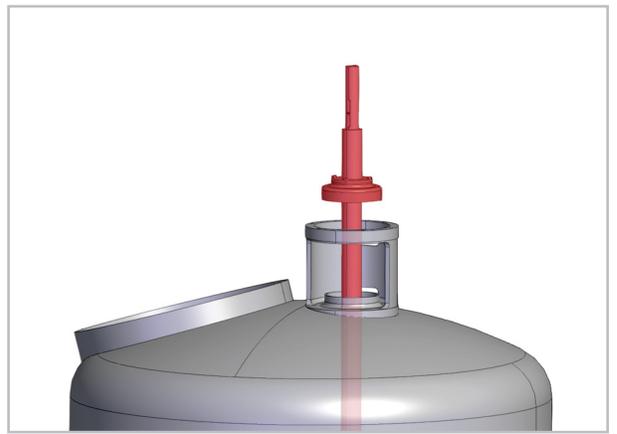
STEP 3)

Insert the key into the slot on the Agitator Shaft and fixate using the supplied M3 x 12mm Flat Head Phillips Screw.



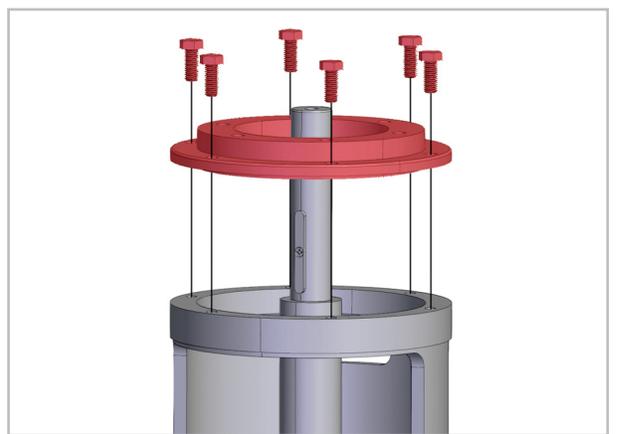
STEP 4)

Lower the Agitator Shaft into the tank from above through the Lantern, so that the shaft is supported by the Slinger Disc resting on the base of the Lantern, covering the built-in Labyrinth Tube.



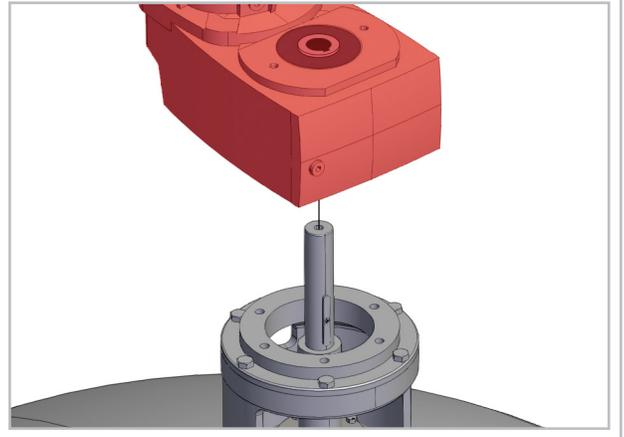
STEP 5)

Attach the Mount Flange to the top of the Lantern, and secure with Six (6) Bolts.



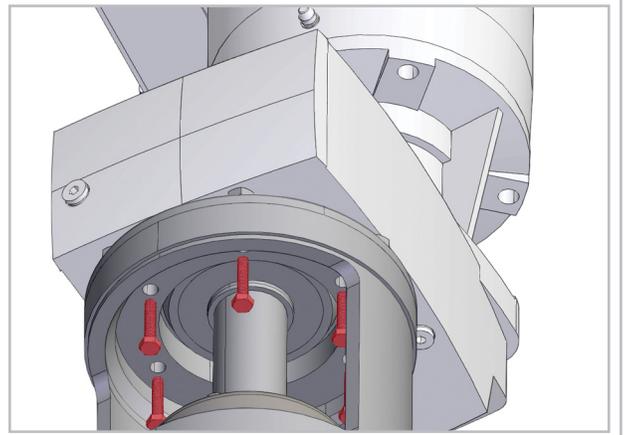
STEP 6)

Lower the Motor/Gearbox onto the Agitator Shaft, making sure the keyed shaft aligns with the keyway on the hollow bore of the Motor/Gearbox.



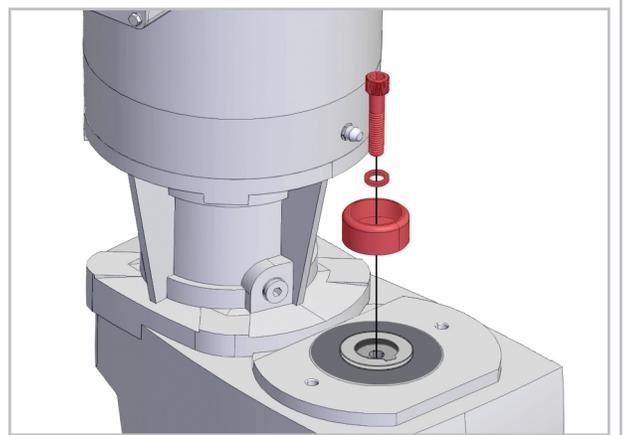
STEP 7)

Align the bolt holes on the bottom of Motor/Gearbox to the bolt holes on the Mount Flange and then attach it using Six (6) Bolts, tightening them from inside the lantern.



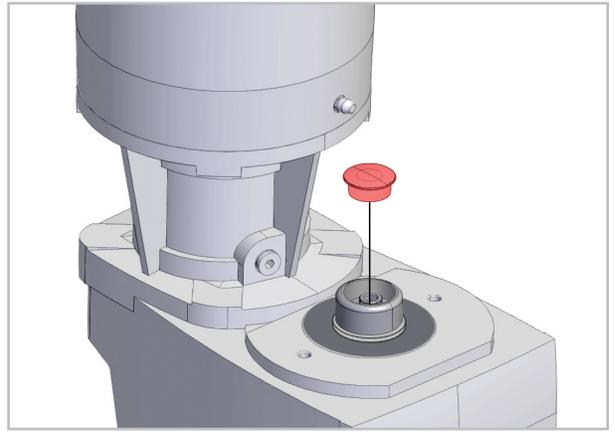
STEP 8)

Attach the Securing Bolt, Split Washer, and Retaining Washer to the top of the Agitator Shaft, and tighten.



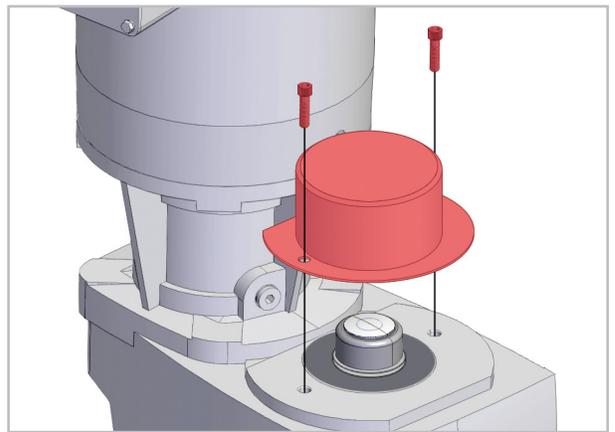
STEP 9)

Replace the plastic cap on top of the Retaining Washer.



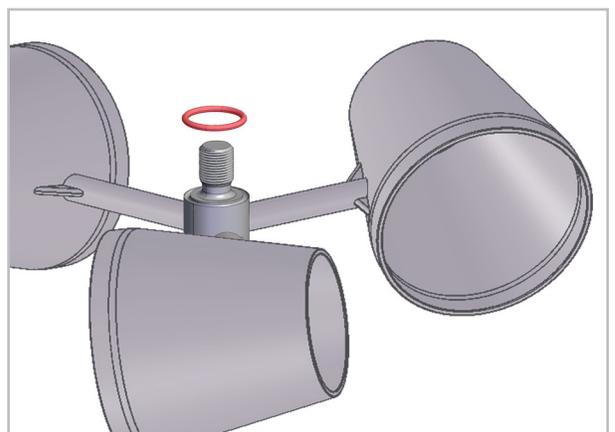
STEP 10)

Install the Shaft Fixing Element Cover to the Motor/Gearbox and secure with Two (2) Bolts.



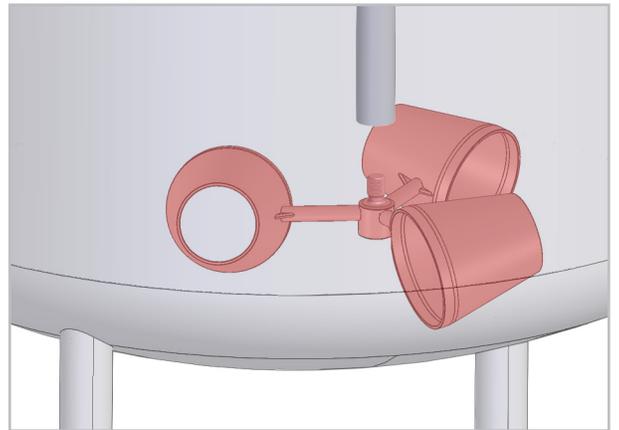
STEP 11)

Insert the O-ring into the O-Ring groove on the Cone Element Hub.



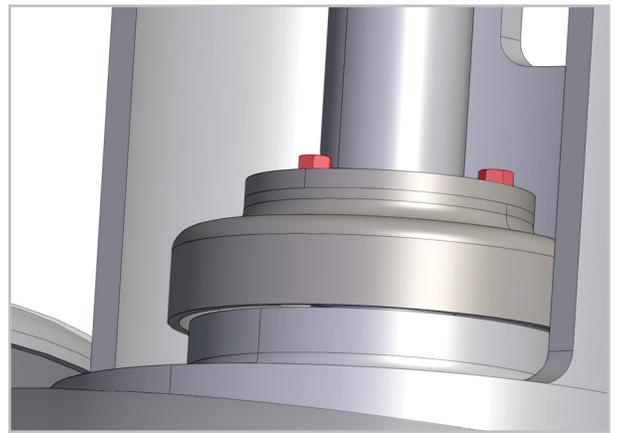
STEP 12)

Insert the Cone Element into the tank through the manhole, and attach to the bottom of the Agitator Shaft by threading Counter-Clockwise. Make sure that the O-ring seats properly as you tighten the Impeller.



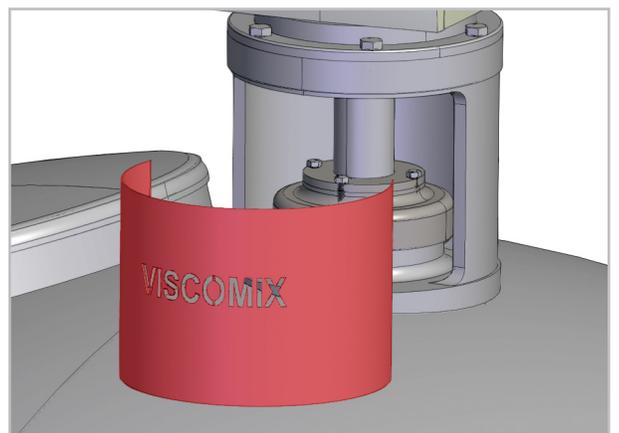
STEP 13)

Make sure that the Slinger Disc overlaps the Labyrinth Tube, but does not make contact. It should be able to spin freely without chance of rubbing. Adjust the height of the Slinger Disc if necessary by loosening the Four (4) Slinger Disc bolts, sliding it to the proper position, and then retightening.



STEP 14)

Attach the cover to the Lantern by snapping into place on the Outer Diameter of the Lantern.



7. START-UP

7.1 Start-Up

Please note the following points during first start-up or during the first test run of the **ViscoMix VM1 Agitator**. The user must ensure that:

- The operators are familiar with the operating manual, the system and system controls.
- The safety and monitoring equipment has been checked.
- The safety officer has checked for the presence of safety equipment.
- The main power supply matches the voltage specified on the type plate for each of the electrical components.
- The agitator should not be run at full speed in air or during flow-through.
- The agitator must be brought up to operating speed with a start-up ramp.



NOTE:

If you experience unexpected difficulties during a test run, contact **Processtec** without delay (see Section 11.1 "Service Assistance and Contact Information" on page 26 for the contact address).

Switching On

Remove the padlock from the safety switch.

Direction of Rotation

When making the electrical connections, note the direction of rotation of the agitator. Direction of rotation of the agitator shaft seen from the drive to the mixing element is clockwise, or as shown by the direction arrow shown on the drive.

Diagram 1 and 2 show the direction of rotation is going clockwise, as shown by the RED ARROWS. The direction of Product flow through the impellers is shown by the GREEN ARROWS.

Spinning in the opposite direction could damage and/or break the impeller and shaft.

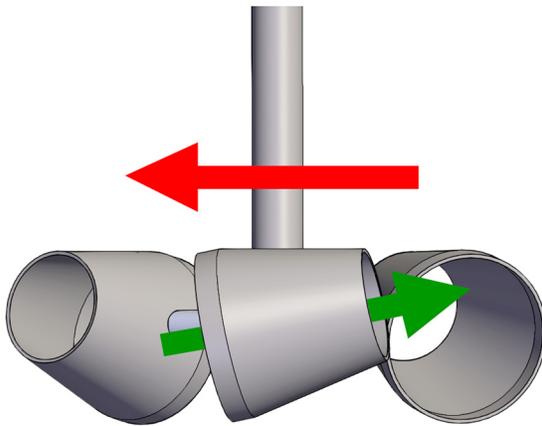


Diagram 1
Side View

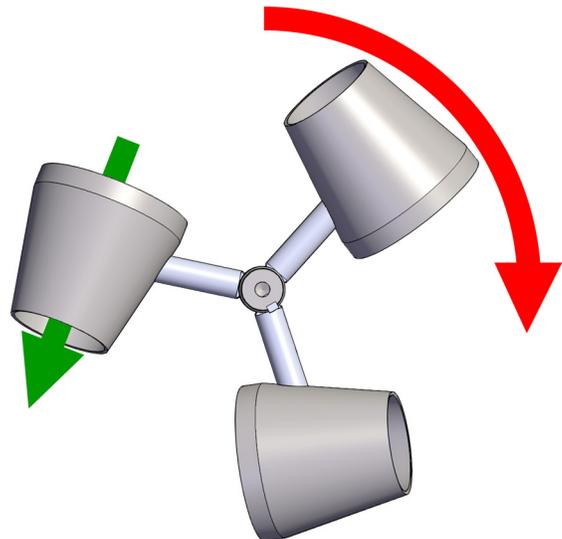


Diagram 2
Top View

Damage to the Agitator

- 1.) To avoid damage to the agitator, ensure that no objects can enter the container.
- 2.) When working with the agitator, for example during cleaning or inspection work, always lock and/or secure the drive against accidental activation.

Maximum Output Speed (nMax) and Critical Speed (nCrit)

- 3.) The maximum output speed (nMax) is limited because of the potential for motor overload or excessive stress to the shaft. This information is noted in the Section 3 "Technical Specifications", found on page 6.
- 4.) The critical speed (nCrit) is usually above the maximum speed. If not, this area must always be passed quickly. This information is also noted in Section 3 "Technical Specifications", found on page 6.



NOTE:

The on-site controller must be set to the values described in the agitator specifications.



CAUTION!

Do not operate the **ViscoMix VM1 Agitator** with little or no product at nominal rotation speed. This could damage the vessel.



WARNING:

No changes, additions or conversions may be made which may effect the safety or function of the machine. Failing to properly inspect the machine and mounted components, safety equipment, etc. can seriously impact their function and lead to serious injury to personnel and damage to the machine.



NOTE:

Start-up and operation of the machine may only be performed by qualified personnel. Qualified personnel in terms of the safety instructions in this operating manual are persons trained in the use of and familiar with the system that is being installed. Before starting work, all personnel must have read and understood the operating manual and applicable regulations regarding safety measures (see Section 2 "Safety Notes" on page 2).

7.2 Storage

To keep an agitator that is not in use over a long period in working order, the following points must be observed and/or arranged:

- The storage space must be clean and dry.
- The machine must not be exposed to extreme cold (below 40° F or 5° C) or heat (105° F or 40° C)
- The entire machine must be kept clean to prevent deterioration and corrosion.



NOTE:

Processtec provides no warranty for corrosion damage caused by improper storage; for example, storing the agitator in a damp room.

8. OPERATION

8.1 Switching ON your ViscoMix VM1

Please note the following during and after switching on the agitator:

- The agitator should not be running at max speed in air or during flow-through.
- The agitator must be brought up to operating speed with a start-up ramp.



WARNING!

Do not keep tools in or around the mixing container. To avoid damage to the agitator, ensure that no objects can enter or fall into the vessel. During the mixing process ensure that there is nobody in the immediate vicinity of the mixing element. Safety equipment used during the assembly must be replaced and in good working order.



WARNING!

Never touch the rotating agitator shaft, doing so could cause serious injuries.



CAUTION!

When operating the **ViscoMix VM1** Agitator there is always a risk that the mixture will be ejected from the container. It is essential to wear appropriate protective equipment.



WARNING!

Before turning on the agitator, make sure that there are no personnel or objects in the vicinity of any rotating parts.

8.1.1 Switching OFF your ViscoMix VM1

Please note the following when switching OFF the agitator:

- Gradually reduce the speed before switching OFF the agitator.



HAZARD!

The requirements of the international installation standard EN IEC 60079-14 must be followed strictly for the electrical installation in potentially explosive atmospheres.

9. CLEANING

9.1 CIP Cleaning

If there is a risk of the product sticking to the mixing element, it must be cleaned as often as necessary.



CAUTION!

If product remains stuck to the mixing element after the agitator is shut down, the mixing element can be damaged when the agitator is restarted at high speeds.

The agitator is cleanable with CIP. The vessel must be filled up with CIP solution until the cones are submerged.

ViscoClean! An Efficient Solution

Processtec offers an effective solution to clean the interior of your new impellers called the **ViscoClean**. If you would like to know more, further details can be found at <http://processtec.com/viscoclean-overview--.html>



9.2 Visual Inspection

After cleaning the vessel, have a weekly inspection for wear and tear on the shaft and seals. Look thoroughly to make sure there is no dirt built up, or damage to these parts. This insures that the parts are in working order and allows the operator to determine when it's time to order replacement.



WARNING:

No changes, additions or conversions may be made which may effect the safety or function of the machine. Failing to properly inspect the machine and mounted components, safety equipment, etc. can seriously impact their function and lead to serious injury to personnel and damage to the machine.

10. MAINTENANCE

10.1 Inspection and General Review

ViscoMix VM1 Agitator

YEARLY INTERVAL	HOURS	REPLACEABLE SPARE PART
1/4 Year	500 Hours	Agitator Drive (see drive manufacturer's documentation)
1/4 Year	500 Hours	Slinger Disc with O-Ring
Yearly	2000 Hours	Agitator Shaft and Mixing Element (check for wear and tear)

10.2 Maintenance and Scheduling

Below are charts specifying hourly/yearly intervals to check and/or replace any damaged or work spare parts.

Replacement of Specified Parts

ViscoMix VM1 Agitator

YEARLY INTERVAL	HOURS	REPLACEABLE SPARE PARTS
Yearly	After Failure	Agitator Drive (see drive manufacturer's documentation)
Yearly	2000 Hours	O-Ring Seal

1/4 year = quarterly / Hours = Operating Hours

The operating hours or the specified intervals are applied, whichever occurs first.



NOTE:

When removing and installing the agitator shaft, secure it against falling.

Screw Connections

Check all bolts that connect the Drive Motor to the Support Flanges, and tighten if necessary.

10.3 Operating Log

We recommend keeping an operating log for the agitator, which may include the following records:

- Inspections carried out in accordance with Section 10.1 "Inspection" on page 23.
- Maintenance work carried out in accordance with Section 10.2 "Maintenance and Scheduling" on page 24.

11. ERRORS AND ASSISTANCE

11.1 Service Assistance and Contact Information

In the event of problems or questions which are not described here or cannot be resolved, please contact the Processtec Service Department:

Address: **Processtec, Inc.**
9938 West Legacy Avenue
Visalia, CA 93291

E-mail: sales@processtec.com
Phone: +1 (559) 429-4227
Fax: +1 (559) 429-4228
Website: http://processtec.com

Connecting Errors

Below is a list of fixable errors, possible causes, and advice on how to correct the issue at hand:

ERROR	POSSIBLE CAUSE	SOLUTION
Agitator not running	Power supply not available	Have mixer checked by qualified electrician
Drive is moving, producing vibrations	Screw connection is loose	Tighten the connection
Abnormal noise in the drive	Bearings, motor or gearbox defective	Please contact PROCESSTEC
Drive overheating	Motor or gearbox defective	Please contact the motor or gearbox manufacturer
Agitator vibrating	Shaft is knocking	Please contact PROCESSTEC
Knocking noises inside the mixing container	Foreign body in container	Check the container, remove any foreign bodies

12. FULL PRODUCT IMAGE

ViscoMix VM1 Agitator Image

