

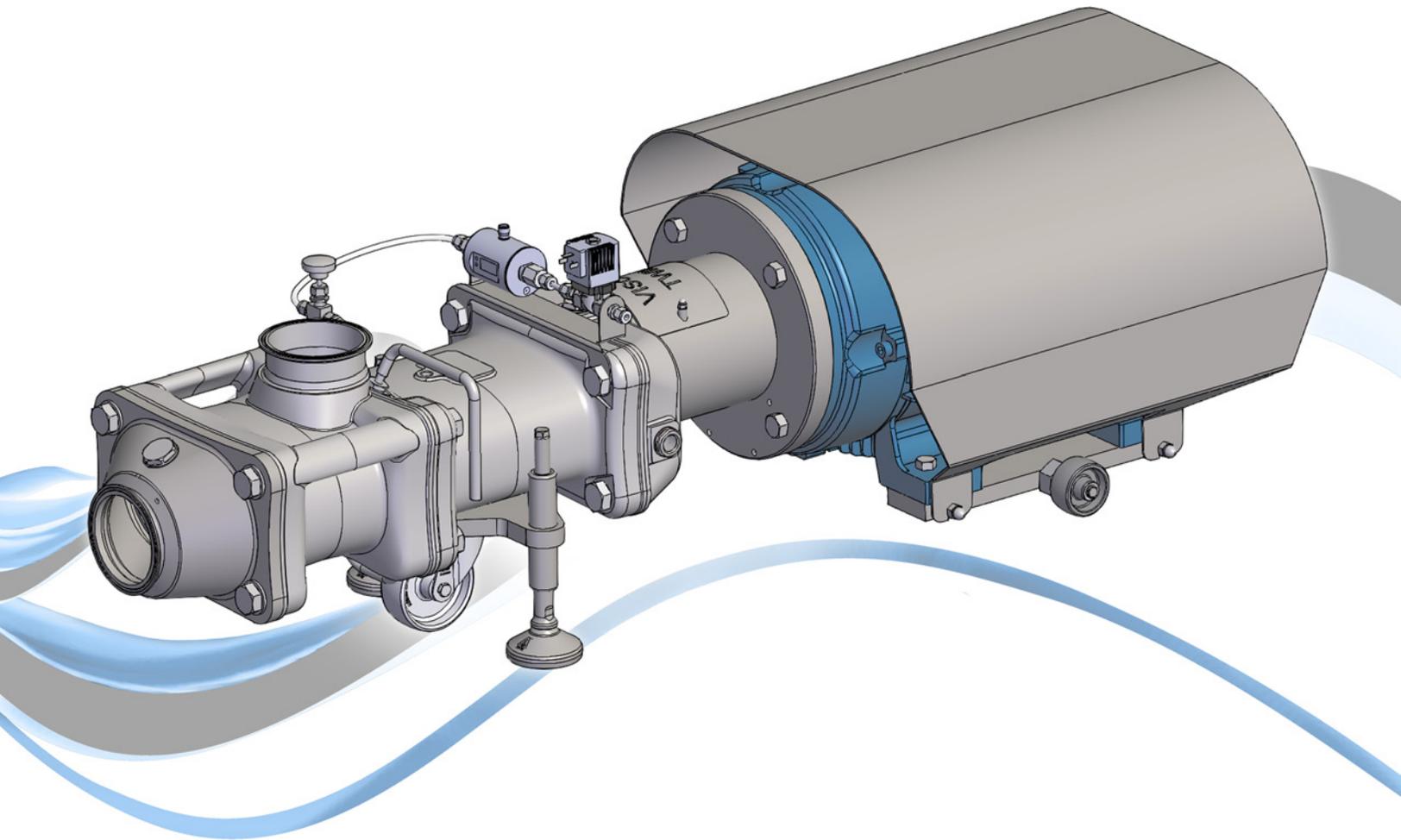
PROCESSTEC

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Frame #6

Operation & Maintenance Manual

Published December 19th, 2025



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1. ABOUT FRAME #6

1.1 Safety Notes

This manual contains instructions which should be heeded to ensure personal safety and prevent damage to property. These instructions are highlighted by a warning triangle and a color to indicate the degree of the hazard. The following warnings should be observed when working around Frame #6, as well as when working around Twin Screw pumps in general:



ROTATING PARTS

Indicates rotating parts that can cause injury. Only perform work on or near these parts when it is locked to prevent rotation. It is advised to have a protective barrier surrounding the rotating part to prevent injury or property damage during operation.



CRUSHING PARTS

Indicates moving parts that can crush and cut. Perform work with awareness of how parts move and where these crushing parts can be encountered.



SUSPENDED LOAD

Indicates a suspended or overhung load, where parts can fall, slip, or tip over if not properly secured. Do no work on any part that is suspended and avoid being directly under or near a suspended load. Do not stand between a stationary object and a suspended load.



LIFTING OBJECTS

Indicates heavy objects that can cause muscle strain or back injury. Lifting aids and proper lifting techniques should be used to prevent injury.



HOT SURFACE

Indicates a surface is hot to the touch and can cause burn injury. Do not maintain or touch a hot surface until the pump is turned off and allowed to cool. If immediate repair is necessary, it is advised to wear protective gloves while handling a hot part.



CAUTION

When operating Frame #6, it is essential to wear appropriate protective equipment.

NOTE!

Commissioning and operating the **ViscoTwin** pump mounted on Frame #6 may only be performed by qualified personnel. Qualified personnel in terms of the safety instructions in this operating and safety manual are persons who have completely read this manual, as well as the **ViscoTwin** Operation & Maintenance Manual that accompanies this Frame and pump.

Furthermore, maintenance can only be performed by qualified maintenance technicians. Qualified maintenance technicians in terms of the maintenance instructions in this operating and safety manual are persons who have read Chapter 4 "Maintenance" of the **ViscoTwin** Operation & Maintenance Manual and have been trained by **Processtec** in the use and maintenance of the **ViscoTwin** pump. In lieu of in-person training by **Processtec** personnel, a qualified maintenance technician may also review the online maintenance movies available at <http://processtec.com>. **WARNING: ANY MAINTENANCE LEVEL 2 PERFORMED ON THE PUMP BY UNTRAINED PERSONNEL WITHOUT THE EXPRESS WRITTEN CONSENT OF PROCESSTEC WILL RELEASE PROCESSTEC OF ANY LIABILITY AND VOID ANY WARRANTY CLAIMS ON THE PUMP.**

In addition to this operating manual, general on-site regulations as well as city, state, and federal regulations applicable to accident prevention must be made available and followed.

The **ViscoTwin** may only be used in the applications as specified in Chapter 3 "Operation", in the **ViscoTwin** Operation & Maintenance Manual, and only in connection with the spare parts recommended by **Processtec, Inc.**

1.2 Working Principle

Frame #6 was designed to innovate the overall steps of installing, operating and maintaining **ViscoTwin** pumps. This Frame #6 was the culmination of many years of field experience, and was developed as a solution to problems that were not being addressed by others in the industry.

First, we wanted to engineer a **ViscoTwin** pump support system that was compact and durable. Secondly, we wanted this pump support system to be able to fit into small spaces easily, in addition to being easily removed and moved around. Not only is Frame #6 saving time and energy, it dramatically increases **WORKPLACE SAFETY**.

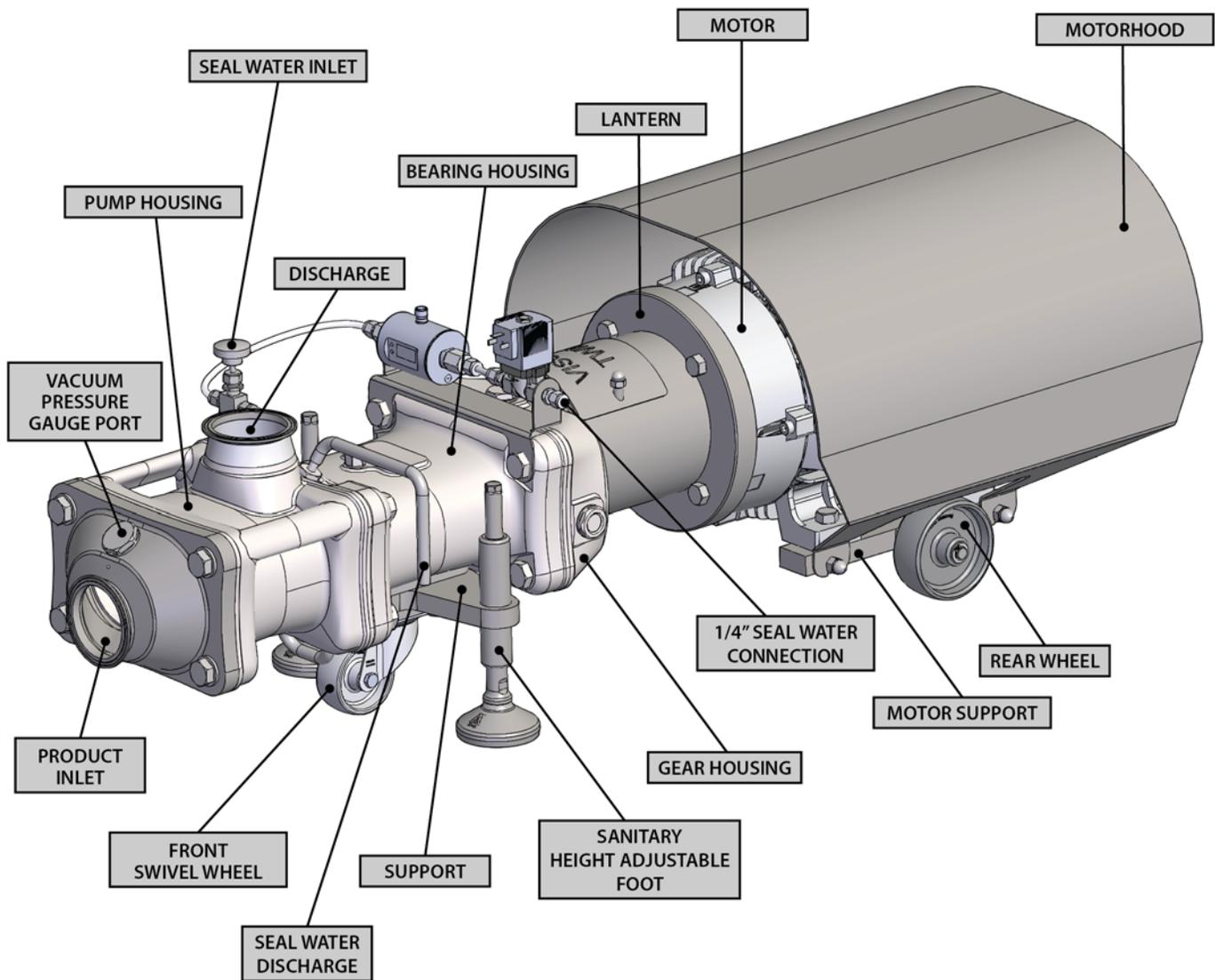
Previously, tear-down and maintenance on a pump required forklift or overhead access where space was extremely limited. However, with Frame #6, the entire Pump and Motor assembly can be wheeled away for maintenance in a matter of minutes!

An added bonus to this design is that the removal and re-installation of the Spindles can now be achieved with only one technician on site! Since Frame #6 facilitates the use of **Processtec's** Shaft Blocking Tool (a custom tool designed to lock the Drive Shaft in place), the Spindle Screw Bolts can be removed without the need of decoupling the motor, thus eliminating the need for a 2nd technician to hold a locking bar in place on the coupler.

In addition to these features, **ViscoTwin** pumps that are shipped with Frame #6 include **Processtec's** latest innovation, the **Gear Housing Inspection Port**. This access port allows for gapping and timing of the spindles without the need to remove the Gear Housing, or even drain the Gear Oil, resulting in safe handling during pump maintenance.

Since Frame #6 is easily accessible from either side, it allows for pump inspection or maintenance from all possible angles without having to transport the pump to another location.

1.3 General Overview

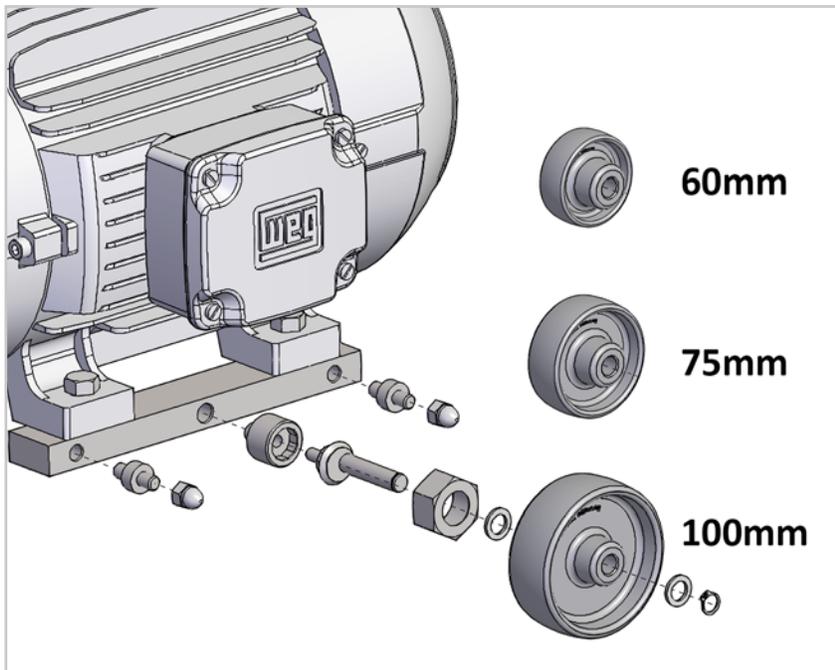


1.4 Options

Processtec's Frame #6 is shipped with these options as standard:



Processtec's Frame #6 is able to accommodate 3 different wheel sizes on the rear axles.



1.5 Introductory Video

Processtec has created an Introductory Video for Frame #6, showing its features and functionality.

Please use the QR Code to the right to view the video on your mobile device.



2. INSTALLATION

2.1 Unpacking

Check the contents and all wrapping when unpacking the pump. Inspect the entire shipment carefully for any damage that may have occurred during shipping. Immediately report any damage to the carrier. Keep the protective caps over the pump inlet and outlet in place until the pump is installed.

If possible, save the wooden pallets that Frame #6 arrived on for potential future use, in case the Frame and pump needs to be shipped back to **Processtec** for special services.

2.2 Inspection / Technical Documentation

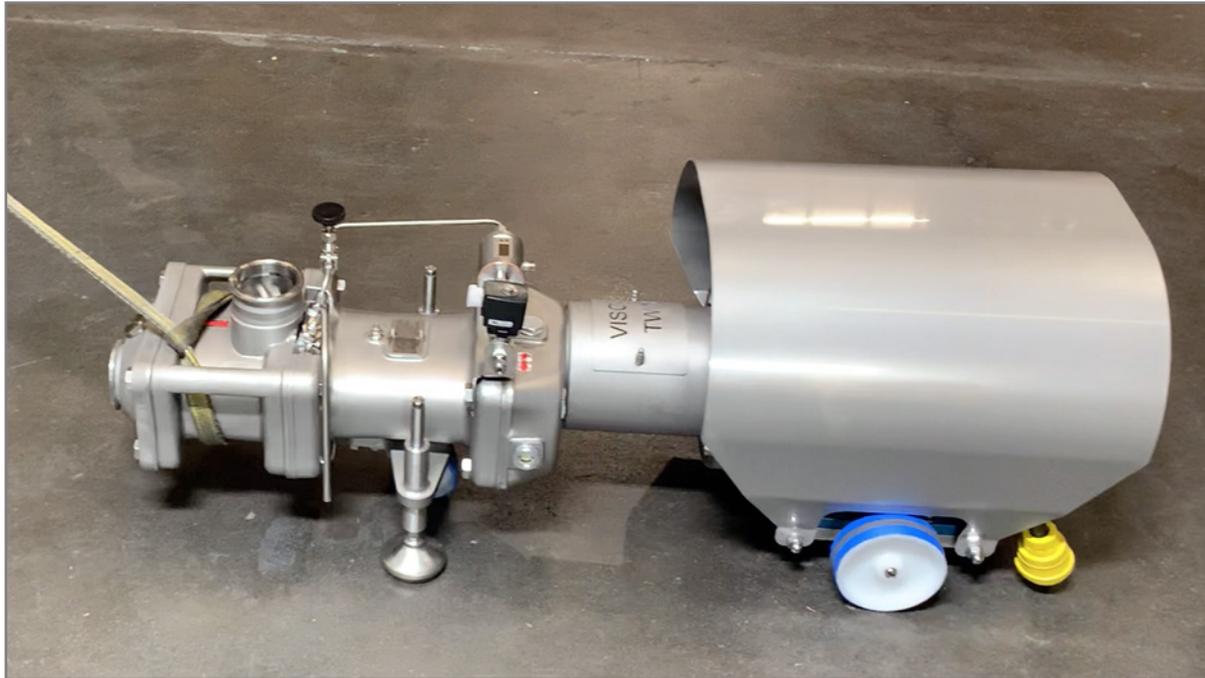
Inspect the pump for visible shipping damages on pump head, lantern with coupling, motor, and feet. Locate the technical documentation that is shipped with the pump including:

0. Pump Shipping Documents
1. **ViscoTwin** Configuration Key
2. Commissioning Protocol
3. Pictures
 - 3.1 Pin Installation (1/2/3)
 - 3.2 Spindle Arrangement (V/A)
 - 3.3 Pump Housing (FH/HF)
4. Spindle and Pin Configuration
5. User Manuals
 - 5.1 Frame #6 Manual
 - 5.2 **ViscoTwin** Manual
6. Spare Parts Catalog
7. Recommended Tools Catalog

Use these documents to ensure the pump is shipped as ordered, and store these documents safely for future reference. All **ViscoTwin** pumps are labeled with an engraved metal plate that contains the pump model, serial number and Component ID which identifies the building plan of the pump at **Processtec**.

2.3 Hoisting and Transportation

Frame #6 along with the **ViscoTwin** pump that is mounted to it, were designed to be transported as one entire unit, without needing to move the Pump and the Frame independently from each other, except where warranted by the circumstances.

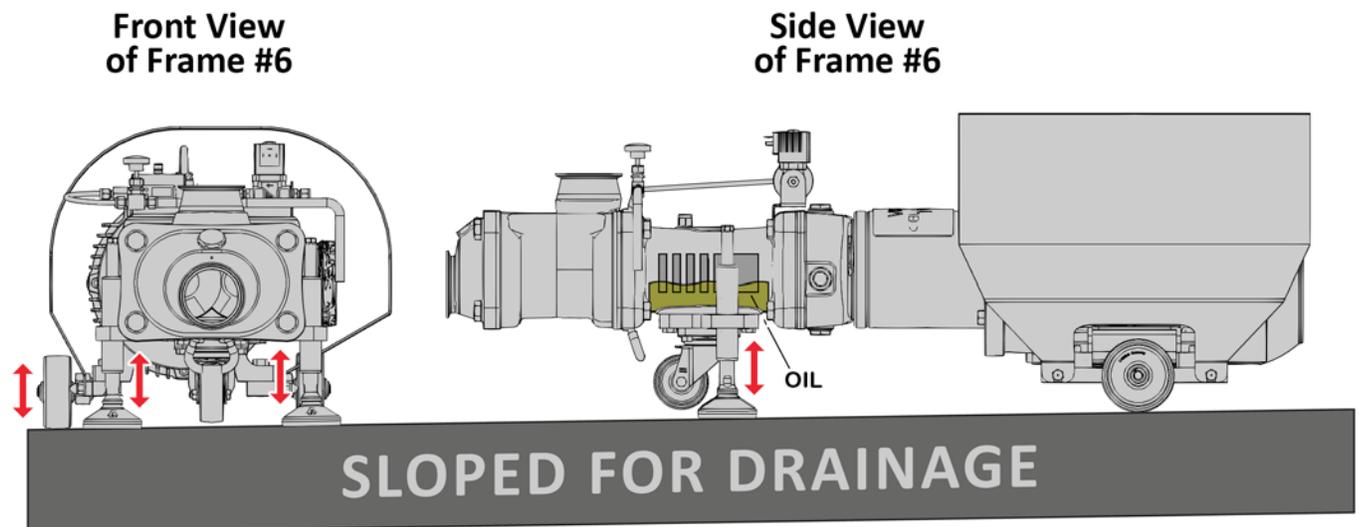


When installed in the final location the **ViscoTwin** pump should be operated as normal, but when it is time for maintenance, or dismantling of the pump, Frame #6 is designed to be easily pulled around the floor with a hoisting strap secured on the properly attached pump housing. The swivel wheel in the front, and the two wheels in the rear should be the only thing in contact with the floor while moving.

2.4 Installation

The following points need to be considered while installing the pump in the system:

1. Frame #6 is delivered with height adjustable feet and height adjustable wheels to level on sloped floors. The entire Pump and Motor assembly needs to be installed leveled to ensure that the bearings remain coated with oil. To level Frame #6, adjust the height-adjustable feet on the Frame individually (see red arrows), until the entire Frame is level. The complete steps to Level Frame #6 are covered in Chapter #3 Operation.



2. No excess forces should be exerted on the pump from piping systems, platforms etc.
3. Ensure good access to both sides of the Frame #6, so that the pump can be inspected from either side of the Frame during pump maintenance, sanitary inspection and oil changes.
4. Ensure good access to the oil sight glass at the Gear Housing for regular inspection from operators and maintenance personnel.
5. Ensure good access to the bolts (Pos. 1016) to easily remove the Pump Housing with a extended torque wrench for sanitary inspection.
6. Connect the Seal Water if the pump is equipped with a double seal that requires seal water. It is recommended that the seal water automatically starts and stops with the pump to save water.
7. Ensure that the electric wiring can easily be disconnected for maintenance and is not a safety hazard or dirt trap. Also ensure that no wiring is capable of being pinched or crushed as the motor assembly is moved.

2.5 Piping Before and After the Pump

Sizing the correct upstream and downstream piping including valves and fittings is very involved and depends on the experience of the application engineer. **Processtec** developed a sizing program that accounts for kV values of common sanitary valves and pipe fittings at various sizes and port arrangements. The program requires the input of a valid apparent viscosity value. Please consult **Processtec** engineering if you need support to verify your piping arrangement.



2.5.1 Upstream Piping

The upstream piping of the pump requires the utmost attention. The NPSH available from the system (NPSHa) needs to be higher (higher absolute pressure) than the NPSH required (NPSHr) by the pump (lower absolute pressure).

The NPSHa must be less than the NPSHr or cavitation occurs. The pumped media creates vaporized bubble that immediately collapse & damage both the product & the pump.

The **ViscoTwin** has excellent suction capabilities and will maintain it throughout its life cycle if operated per design. Since **ViscoTwin** pumps can be used with very viscous media, any flow restrictions preventing the product from arriving at the pump suction nozzle at the desired flowrate must be removed. If the pump is sped up faster than the product can enter the pump, the pump cavitates, and will damage the pumped media, and the pump itself.

Typical installation errors that create cavitation:

- Product has a higher apparent viscosity than anticipated. Typically, colder product results in a higher apparent viscosity.
- The upstream pipe is undersized in diameter as well as the associated valves, fittings, elbows, and tees.
- Too many restricting devices in the suction line like valves, tees, elbows, or other pipe restrictions.
- The suction pipe is too long.
- Particulates in the product are caught in valves, restricting the flow

2.5.2 Downstream Piping

The max discharge pressure on standard **ViscoTwin** models depends on the pump configuration and the pumped media. Pump configurations with the largest possible spindle pitch max out between 12 bar and 14 bar. Pumps equipped with the smaller spindle pitches (consult the options table) have a max discharge pressure of 25 bar (362 psi). The max temperature with standard elastomers is 130° C (266° F).

If the desired discharge pressure can not be met with the **ViscoTwin 104 NG** due to spindle pitch restriction, **Processtec** recommends using the **ViscoTwin 130 NG** with a smaller spindle pitch.

For higher discharge pressures and temperatures, please consult **Processtec** Engineering to customize a durable pump setup for pressures up to 45 bar (692 psi) and 200° C (390° F). Our customized pumps are engineered for the longevity of the bearings, elastomers, mechanical seals, and spindles. We can calculate the expected bearing life with optimized configurations for temperatures up to 180° C.

2.5.3 Piping Before and After the Pump

The **ViscoTwin** pump operates like a hybrid pump between a centrifugal pump and an absolute positive displacement pump, primarily due to slip between the left and right hand spindles and between the spindles and the pump housing. Due to this fact bypasses are generally not needed, allowing for a deadzone-free piping arrangement. **ViscoTwin** pumps can be installed in series without a bypass if proper engineering principles are applied.

In case the pump is cleaned with an external CIP supply pump for a higher flowrate than the **ViscoTwin** is designed for, the pushing CIP solution will propel the **ViscoTwin** pump at a relatively low flow restriction, making a bypass obsolete. The pump will start to spin, even if it is not started. No damage will occur if correct engineering principles are applied.

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3. OPERATION

3.1 Leveling of Frame #6

3.1.1 Wheel Height Adjustment

STEP 1)

MOVE FRAME #6 INTO PLACE

Push the Frame #6 into it's final position, where the Front Pump Housing is in the exact location it will need to be when it is connected to the fixed pipes.



STEP 2)

MARK THE FLOOR

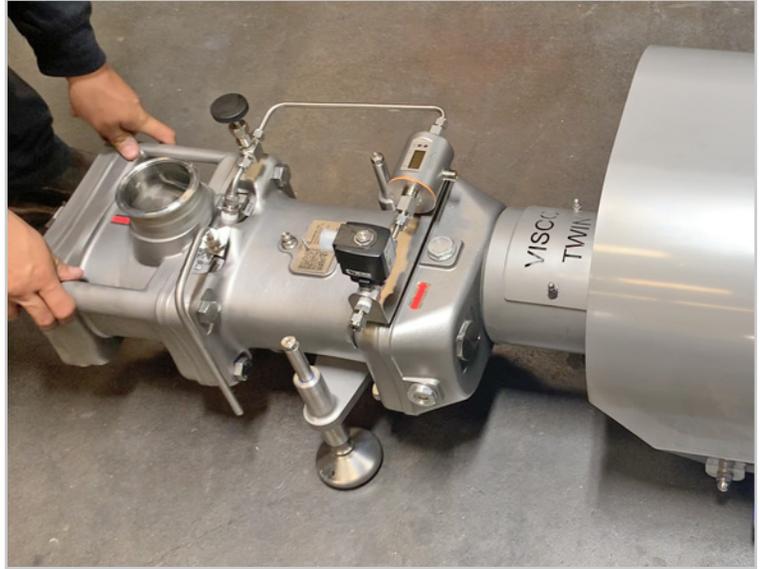
Mark the floor location where the rear wheels are located. The center lines of the each wheel should be marked, as well as the center location of the wheel axis, which will help you to place Frame #6 back into the exact same location each time.



STEP 3)

REMOVE FRAME #6

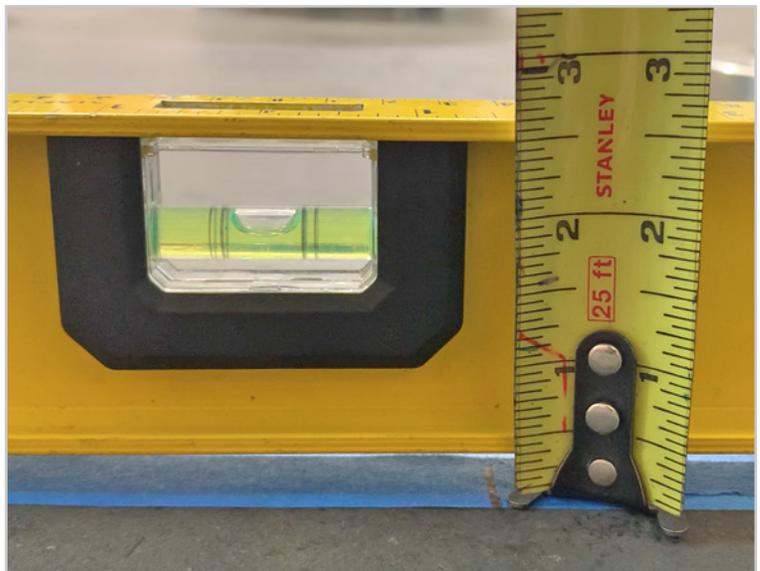
Remove the Frame #6 from the location, and into an area where it can be accessed from all sides.



STEP 4)

CHECK THE SLOPE OF THE FLOOR

Place one side of a level on the ground at the cross-hairs of the highest wheel location, and hold it level as it extends towards the other wheel location. The difference between the bottom of the level and the floor is the exact distance that needs to be compensated for with the axle & wheel adjustment.



STEP 5)

ADJUST WHEEL AXLE

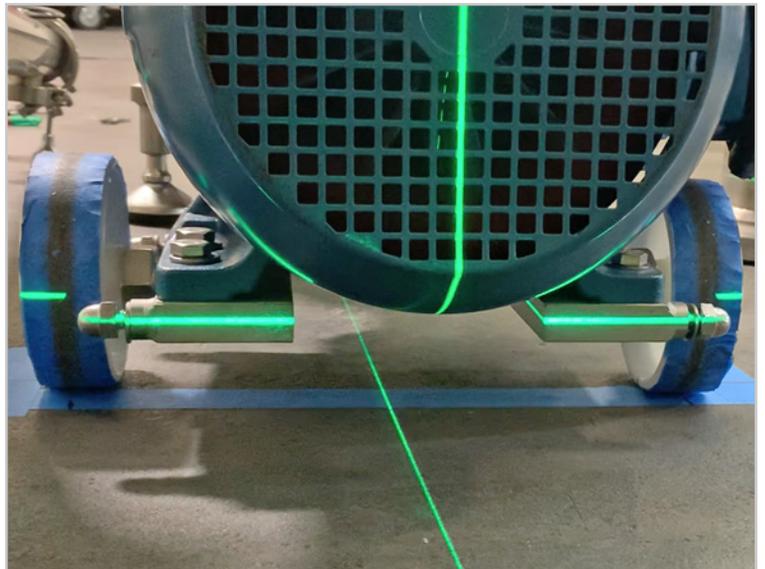
Using the Quick Reference Guide on Page 26, adjust the Frame #6 Axle until the desired difference in height is achieved. It is possible that a larger or smaller wheel must be utilized in order to achieve the proper height, which makes up for the height difference due to the slope of the floor.



STEP 6)

RETURN FRAME #6 INTO PLACE

Roll Frame #6 back into place, taking care to align the wheels with the marks made in step #2, and check for level along the underside of the motor, using a level placed on the underside of the Motor Support Brackets (you can also use a laser leveller to determine that level has been achieved).



3.1.2 Pump Housing Leveling Adjustment

STEP 1)

CHECK FOR HORIZONTAL LEVEL

Use a small level on the top flange of the Pump Housing to check for Horizontal Level



STEP 2)

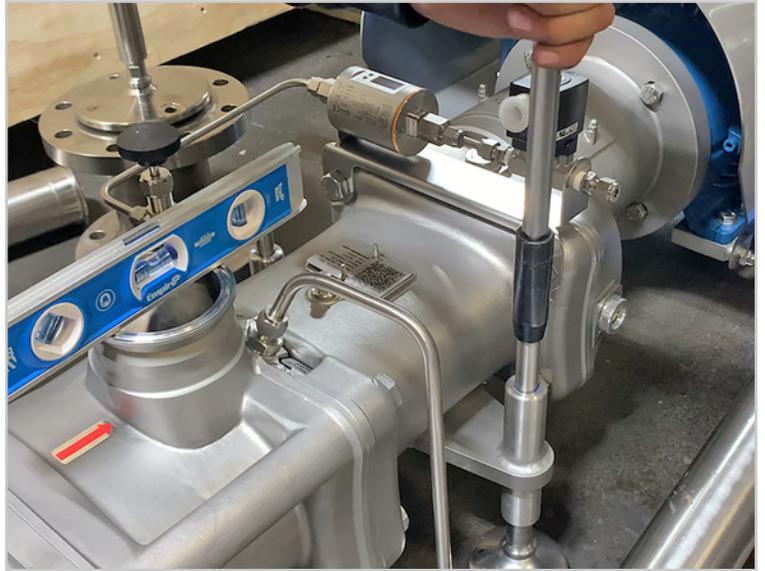
CHECK FOR AXIAL LEVEL

Rotate the level 90 degrees, and check for Axial Level.



STEP 3)
ADJUST THE FEET

Adjust one of the feet to raise the pump housing until Axial Level is much closer to level.



STEP 4)
ADJUST FOR FINAL HORIZONTAL LEVEL

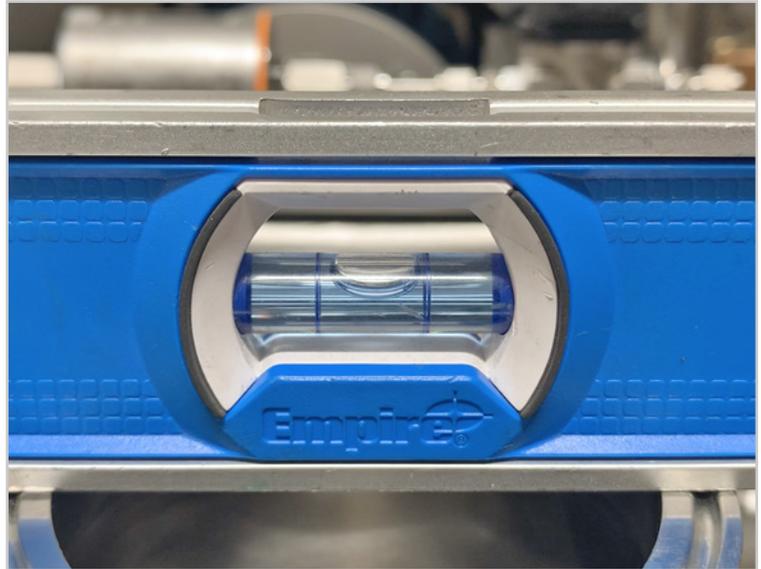
Adjust the other foot until Horizontal Level is nearly achieved..



STEP 5)

MAKE SMALL ADJUSTMENTS

Minute adjustments can be made here to both of the feet until Axial Level and Horizontal Level are both accurate.



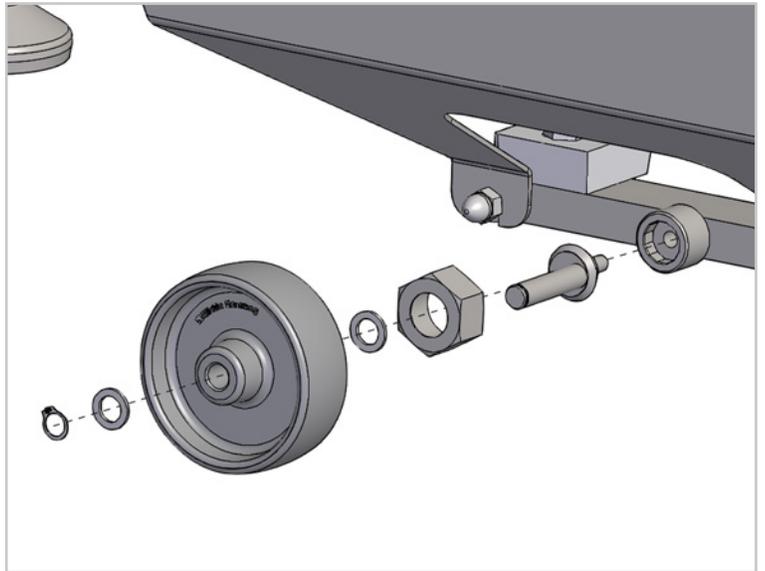
3.1.3 Additional Leveling Procedures

STEP 1)

ADJUSTING BOTH AXLES

In the event of a heavily sloped floor, one or both axles may need to be adjusted for height.

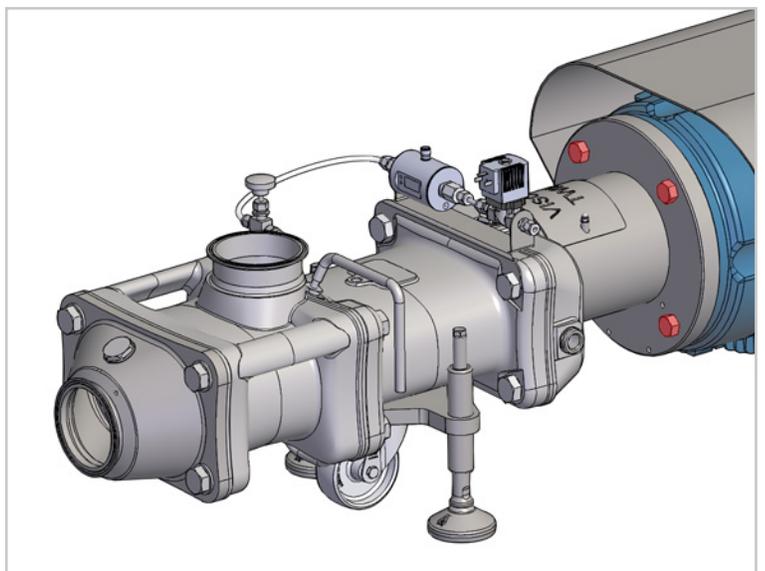
See the Quick Reference Guide on page 26 for more information about how the Axle Position changes the height of the Motor at the Rear Wheels.



STEP 2)

LOOSEN THE LANTERN BOLTS

If more Horizontal rotation is needed in the Pump, the Lantern bolts can be loosened, and the entire Pump can be rotated slightly in relation to the motor, and then retightened (this is for extreme cases only).



3.2 Connecting & Disconnecting Frame #6

3.2.1 Connecting Frame #6

STEP 1)

CONNECT THE DOWN PIPE

Line up the Down Pipe with the Port opening on the topside of the Pump Housing.



STEP 2)

SECURE THE DOWN PIPE WITH A CLAMP

Secure the down pipe with a clamp to connect the Down Pipe to the Pump Housing.



STEP 3)
CONNECT THE PUMP FACE PIPE

Line up the Pump Face Pipe with the Port on the Pump Face.



STEP 4)
SECURE THE PUMP FACE PIPING WITH A CLAMP

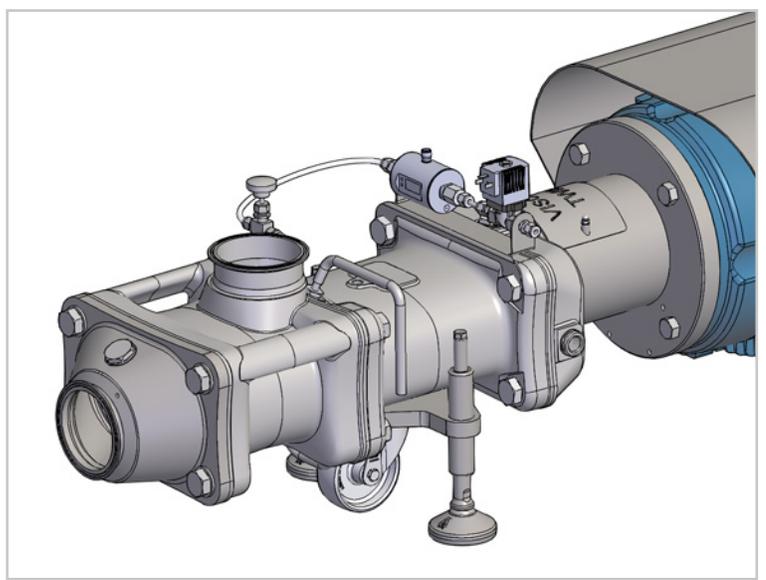
Secure the Pump Face Pipe with a clamp to connect it to the Port on the Pump Face.



STEP 5)

**CONNECT THE POWER CABLE AND
OTHER CONNECTIONS**

Double check that the power has been shut-off, and carefully connect the Power Cable to the Motor, and also connect the Seal Water, and any other wiring that is connected to the ViscoTwin Pump.

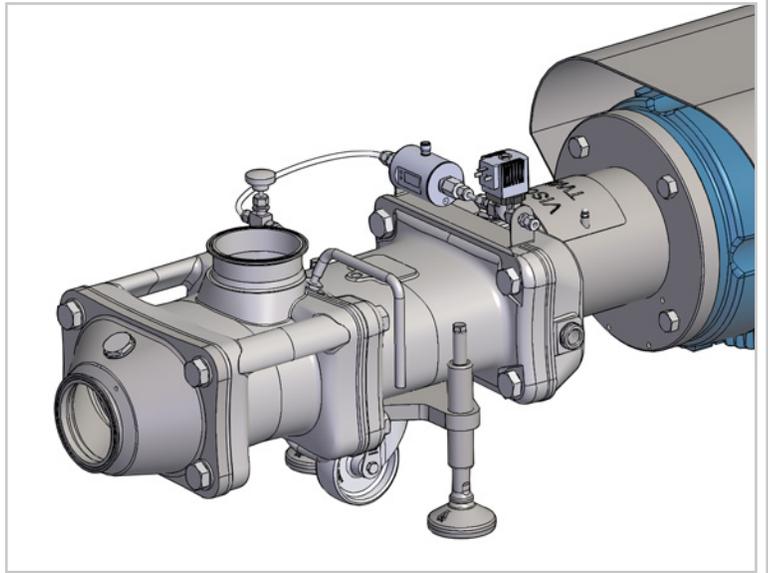


3.2.2 Disconnecting Frame #6

STEP 1)

DISCONNECT THE POWER CABLE AND OTHER CONNECTIONS

Double check that the power to the pump has been shut-off, and carefully disconnect the Power Cable, Seal Water, and any other wiring that is connected to the ViscoTwin Pump.



STEP 2)

REMOVE THE CLAMP ON THE PUMP FACE PIPING

Disconnect the clamp that attaches the Pump Face Piping to the Pump Face.



STEP 3)

REMOVE THE PUMP FACE PIPING

Now you can decouple the Pump Face Piping from the Pump Face.



STEP 4)

REMOVE THE CLAMP ON THE DOWN PIPE

Disconnect the clamp that attaches the Down Pipe to the top of the Pump Housing.



STEP 5)

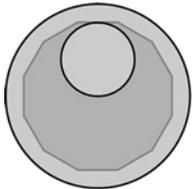
REMOVE THE DOWN PIPE

Disconnect the Down Pipe that is attached to the top of the Pump Housing, and remove it.



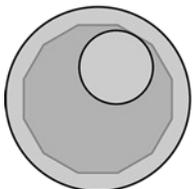
3.3 Frame #6 Axle Position

Use this **Quick Reference Guide** below to determine the proper Axle Position for adjusting the rear of Frame #6 to your desired height.



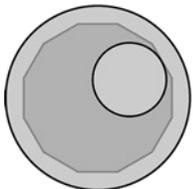
12 O’Clock Position

Raises the wheel center, dropping the height of the motor flange closer to the floor by 5.00 mm



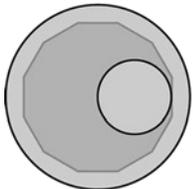
1 O’Clock Position

Raises the wheel center, dropping the height of the motor flange closer to the floor by 4.33 mm



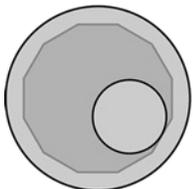
2 O’Clock Position

Raises the wheel center, dropping the height of the motor flange closer to the floor by 2.5 mm



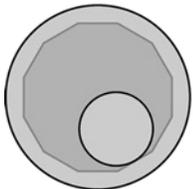
3 O’Clock Position

Default Axle Position upon arrival.



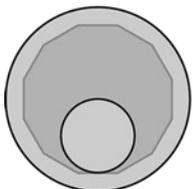
4 O’Clock Position

Lowers the wheel center, raising the height of the motor flange off the floor by 2.5 mm



5 O’Clock Position

Lowers the wheel center, raising the height of the motor flange off the floor by 4.33 mm



6 O’Clock Position

Lowers the wheel center, raising the height of the motor flange off the floor by 5.00 mm

4. MAINTENANCE

4.1 Maintenance Preparation

Before doing Maintenance on the **ViscoTwin** attached to Frame #6, please observe the following precautions:

- Follow LOTO (Lock Out, Tag Out) Procedure.
- Practice workplace safety AT ALL TIMES.
- Observe the immediate area for potential spills and leakages that may create slip hazards, or electrical hazards.
- Read through the entire steps of the Maintenance Procedure to ensure a full understanding before beginning on step 1.
- Have the proper tools neatly arranged for quick and easy access.

4.2 Cleaning Frame #6

Frame #6 itself can be cleaned and sanitized by using standard cleaning chemicals for the surface cleaning of Stainless Steel. Complete attention to detail is recommended for maintaining overall pump hygiene.

Standard CIP procedures can be carried out on the **ViscoTwin** Pump when attached to Frame #6. Consult the Operational Manual for **ViscoTwin** Pumps for detailed cleaning procedures.

4.3 Notes About Longevity

Following specified operating procedures will ensure that your **ViscoTwin** Pump has a maximum lifespan. Improperly trained technicians, unsafe shortcuts, and other improper uses of the pump may contribute to an overall shorter lifespan. Take proper care of the pump to maximize its operational longevity.

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5. TOOL-BOX

5.1 Spare Parts for Frame #6

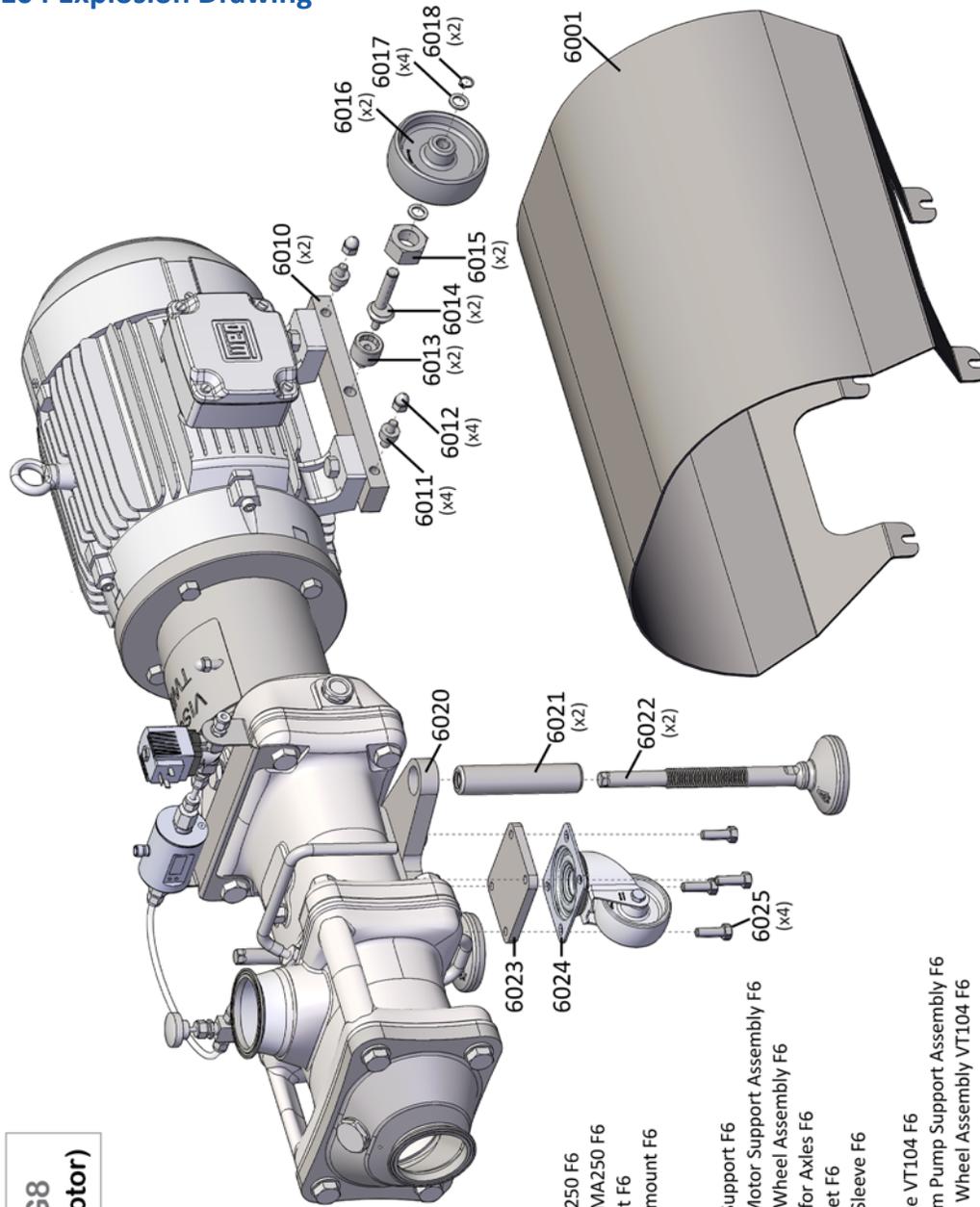
Below are all of the Spare Parts available from **Processtec** for use on Frame #6.

C-ID #	REQUIRED PER FRAME	DESCRIPTION	POSITION #	IMAGE
23310	4	Cap Nut for Motormount_F6	6012	
23218	2	Union Nut Motor Support_F6	6015	
22461	2	Wheel 60mm for Motor Support Assembly_F6	6016	
22462		Wheel 75mm for Motor Support Assembly_F6		
22463		Wheel 80mm for Motor Support Assembly_F6		
22464		Wheel 100mm for Motor Support Assembly_F6		
22465		Wheel 125mm for Motor Support Assembly_F6		
23219	4	Washer for Motor Wheel Assembly_F6	6017	

C-ID #	REQUIRED PER FRAME	DESCRIPTION	POSITION #	IMAGE
23115	2	Locking Snap Ring for Axles_F6	6018	
23216	2	Pump Leg_F6	6022	
22466	1	Swivel Wheel 75mm Pump Support Assembly_F6	6024	
22467	1	Swivel Wheel 100mm Pump Support Assembly_F6	6024	
23221	4	Hex Bolt for Swivel Wheel Assembly_VT104_F6	6025	
23222	4	Hex Bolt for Swivel Wheel Assembly_VT130_F6	6025	

5.2 Explosion Drawings

5.2.1 104 Explosion Drawing



**ViscoTwin 104 G8
FRAME #6 (N250 Motor)**

5-25

Pos#	Part#	Name
	6001	23188 Motorhood NEMA250 F6
	6010	23189 Motor Support NEMA250 F6
	6011	23309 Motor Support Bolt F6
	6012	23310 Cap Nut for Motormount F6
	6013	23308 Axle Base F6
	6014	23307 Axle F6
	6015	23218 Union Nut Motor Support F6
	6016	22461 Wheel 60mm for Motor Support Assembly F6
	6017	23219 Washer for Motor Wheel Assembly F6
	6018	23115 Locking Snap Ring for Axles F6
	6020	23192 Pump Support Sheet F6
	6021	23217 Pump Leg-Weidin Sleeve F6
	6022	23216 Pump Leg F6
	6023	23191 Pump Support Plate VT104 F6
	6024	22466 Swivel Wheel 75mm Pump Support Assembly F6
	6025	23221 Hex Bolt for Swivel Wheel Assembly VT104 F6

5.2.2 130 Explosion Drawing

