



WATERWHEEL – 2UP, 3UP, 4UP, 5UP, & 6UP

Owners Manual

Part Numbers: 2UPWW, 3UPWW, 4UPWW, 5UPWW, 6UPWW

U.S. Patent No. 5906297

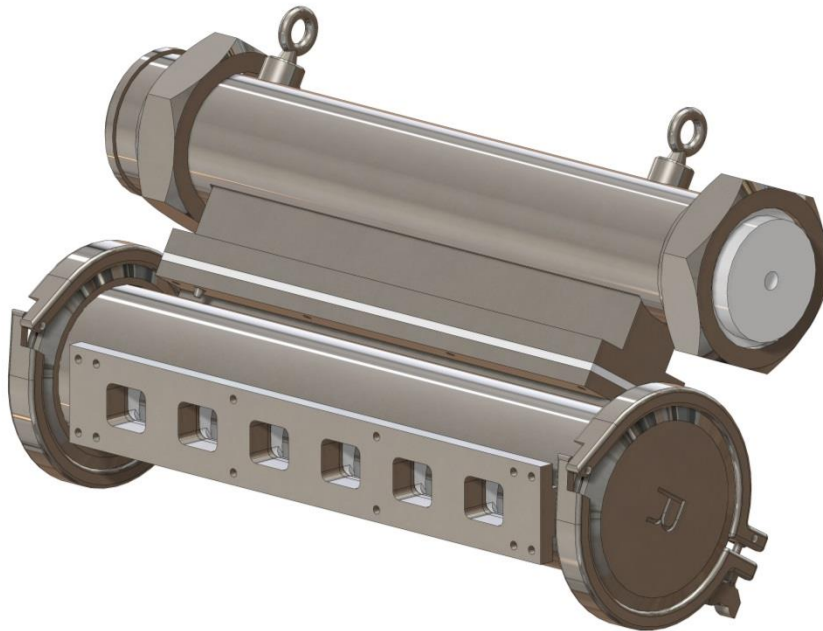


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1. DESCRIPTION

Multilane production from a single Vemag filler has never been easier thanks to the Reiser Waterwheel flow divider. The Waterwheel takes a single product stream and divides it evenly and accurately across multiple outlets. Portioning accuracy is easily maintained through all outlets, regardless of size or shape.

The Waterwheel incorporates stacked chamber and vane arrangements that are locked together using a set of rods. The Vemag filler pumps product into each of the separate chambers. Once the pressure equalizes across the chambers, the Waterwheel will turn, dispensing equal portions from each of the outlets.

The Waterwheel relies on the product pressure to operate, so there are no motorized or air-driven parts to wear out. This makes the Waterwheel very cost-effective and highly reliable.

Reiser stocks 2, 3, 4, 5, and 6 outlet Waterwheels, each on 3" centerlines. Custom Waterwheels can be designed by our engineering department to meet your product needs.

If you have any questions related to the operation or service of this attachment, please contact Reiser customer service.

REISER
725 DEDHAM STREET
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2. SAFETY INSTRUCTIONS

The Waterwheel:

- is supplied as an attachment for the Vemag V500, DP, HP, Robby, and Robby II machines.
- is designed and built for portioning food products.
- is intended to process raw materials at a temperature between -4°C and 50°C (25°F and 120°F) (high temperature models are available).
- should only be operated by trained operators.
- should only be cleaned by trained cleaning staff.
- should only be serviced by trained maintenance staff.

2. SAFETY INSTRUCTIONS

ATTENTION – IMPORTANT SAFETY WARNINGS REGARDING THIS PRODUCT



WATERWHEEL CAN CAUSE SERIOUS INJURY INCLUDING AMPUTATION

THE FILLING MACHINE MUST BE TURNED OFF, ANY ATTACHMENTS MUST BE DISCONNECTED, AND AIR SUPPLY (IF APPLICABLE) MUST ALWAYS BE DISCONNECTED DURING SETUP, CLEANING, AND SERVICING.



ATTACHMENTS CAN CAUSE SERIOUS INJURY INCLUDING AMPUTATION

THE WATERWHEEL IS TYPICALLY USED IN CONJUNCTION WITH OTHER ATTACHMENTS. FOLLOW ANY SAFETY INSTRUCTIONS IN THE ATTACHMENT MANUAL IN ADDITION TO ALL INSTRUCTIONS STATED IN THIS MANUAL.

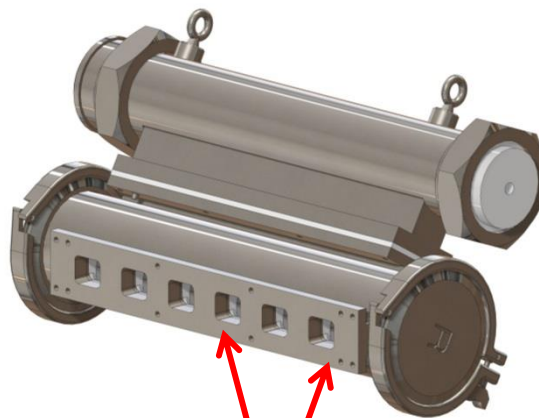


LOCKOUT/TAGOUT

BE SURE TO FOLLOW ALL PROCEDURES FOR CONTROLLING ALL HAZARDOUS ENERGY SOURCES ESTABLISHED BY THE EMPLOYER.

2. SAFETY INSTRUCTIONS

- 1. ALWAYS TURN OFF THE VEMAG FILLER BEFORE ATTEMPTING TO SET UP, SERVICE, OR CLEAN THE WATERWHEEL.**
- 2. PRIOR TO TURNING ON THE VEMAG FILLER, THE OUTLETS OF THE WATERWHEEL MUST BE SAFEGUARDED TO PREVENT ACCESS TO THE INTERNAL COMPONENTS. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY INCLUDING AMPUTATION.**



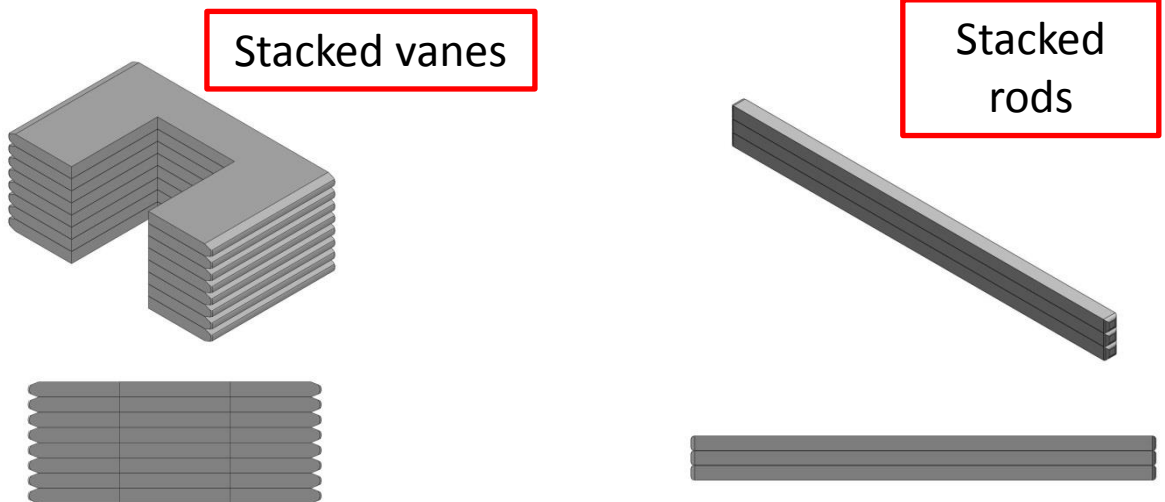
Waterwheel
outlets

3. SETUP

Before assembling the Waterwheel, it is important to inspect the internal components for wear or damage. A worn drive hub, bent vane, or damaged drive rod will seriously affect the performance of the Waterwheel.

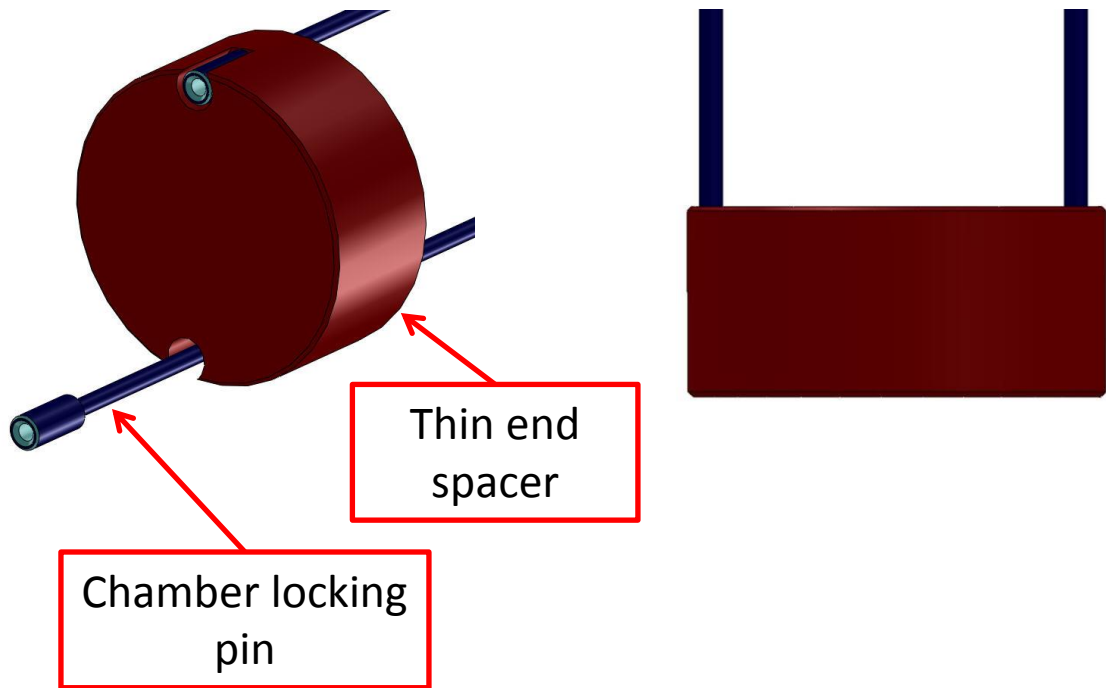
Visually inspect the chambers and hubs for grooves, dents, scratches, and nicks. If minor damage is detected, it can usually be remedied with some emery cloth. If the component cannot be repaired, discard the component and replace it with a new one.

On a flat surface, stack the vanes, one on top of another and inspect for bent vanes. Do the same with the square drive rods, and inspect for twisting. If any component is found to be defective, discard the component and replace it with a new one.



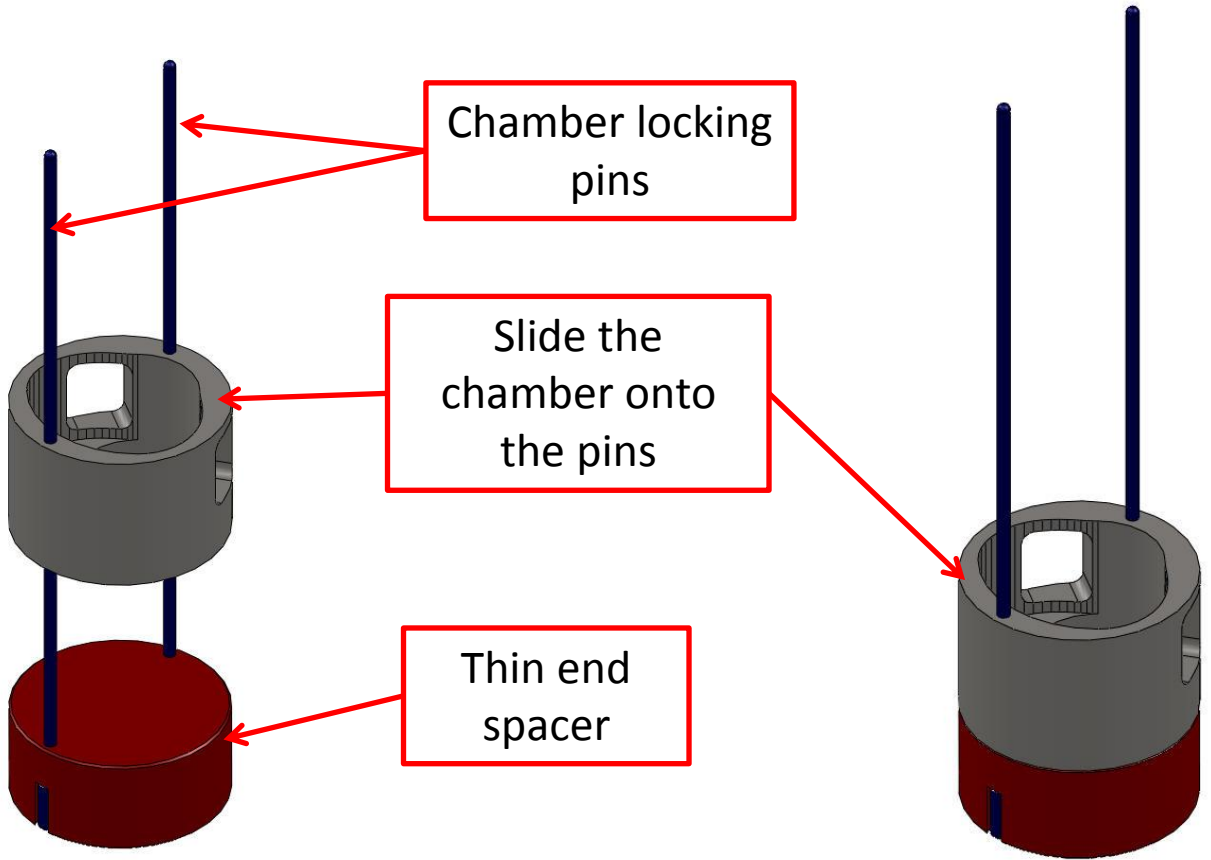
3. SETUP

1. Insert the chamber locking pins into the **THIN** end spacer, and stand the assembly upright.



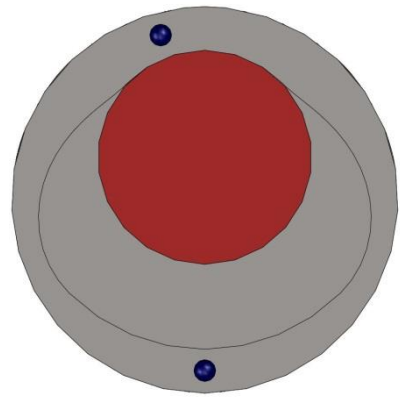
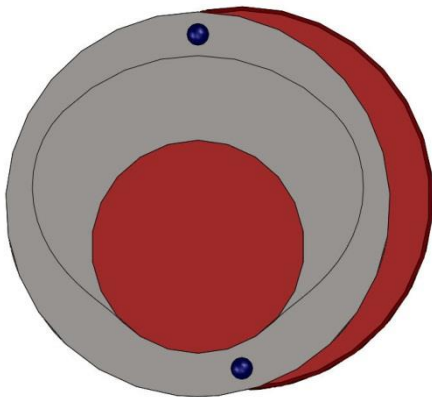
2. Slide a chamber over the locking pins with the open side of the chamber facing up. The chamber should be centered on the thin end spacer. If it is not, remove the chamber and reverse the holes onto the pins.

3. SETUP



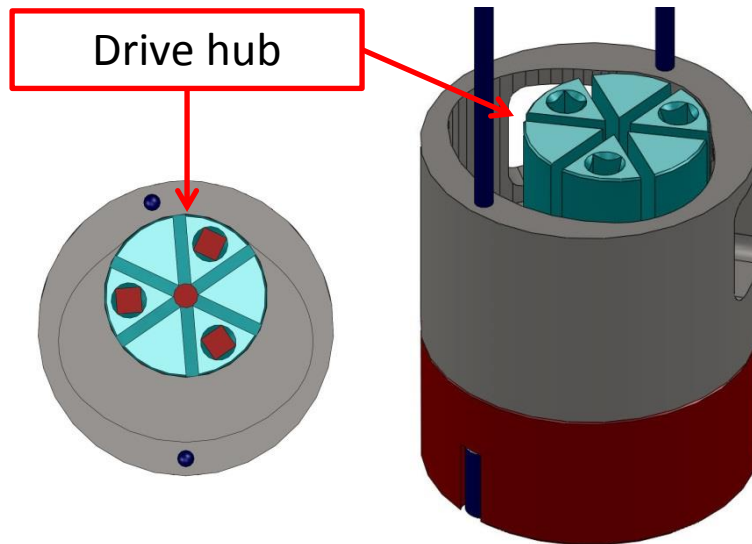
Incorrect assembly; reverse the holes onto the pins

Correct assembly



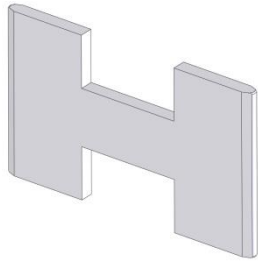
3. SETUP

3. Place a drive hub into the chamber with the slots facing upward.

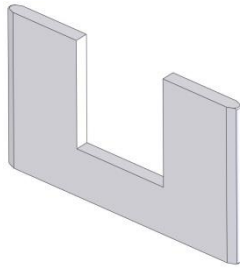


4. Install the vanes into the drive hub. The drive hub will require a total of three (3) vanes. Two of the vanes are shaped like a “U”, and one of them is shaped like an “H”. Install one of the “U” shaped vanes into one of the slots in the drive hub, with the notch facing upward. Next, install the “H” shaped vane into one of the slots in the drive hub. Lastly, install the remaining “U” shaped vane into the remaining slot in the drive hub, with the notch facing downward.

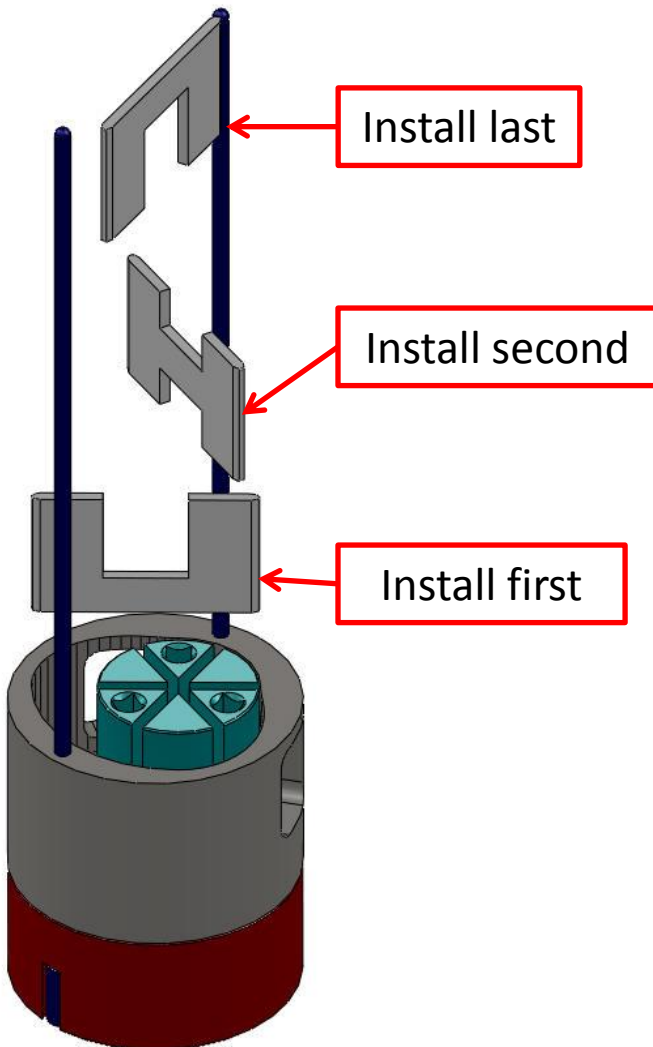
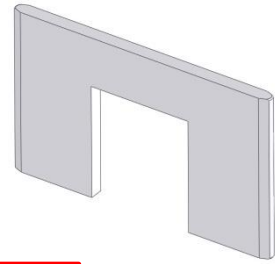
3. SETUP



"H" vane



"U" vanes

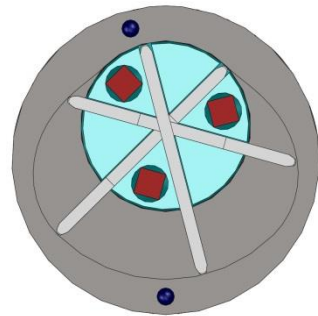


Install last

Install second

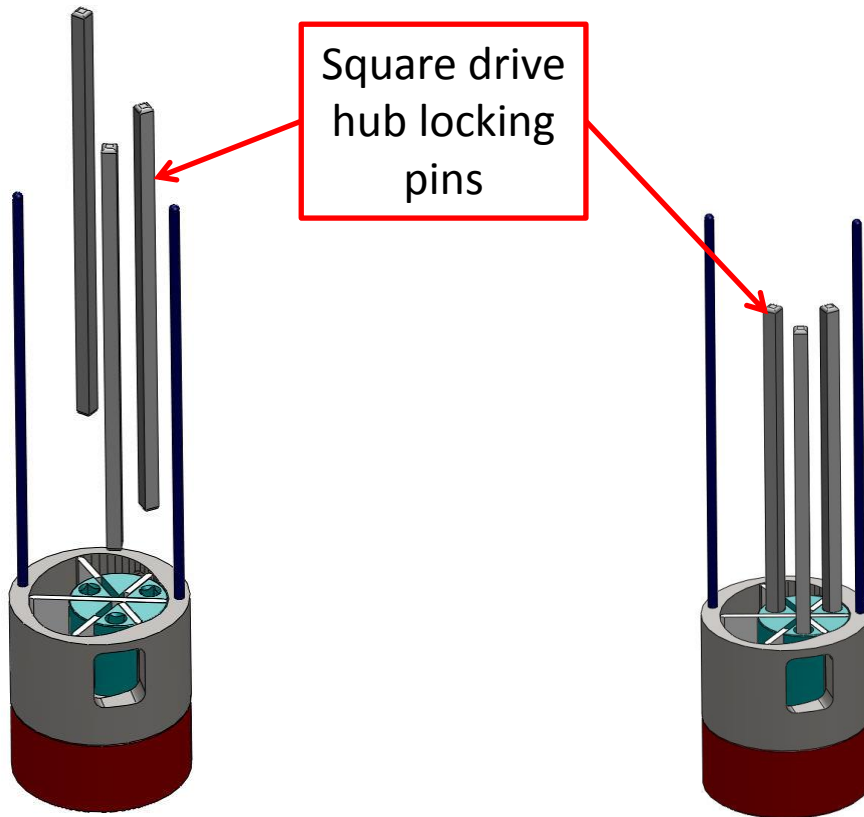
Install first

All vanes
installed



3. SETUP

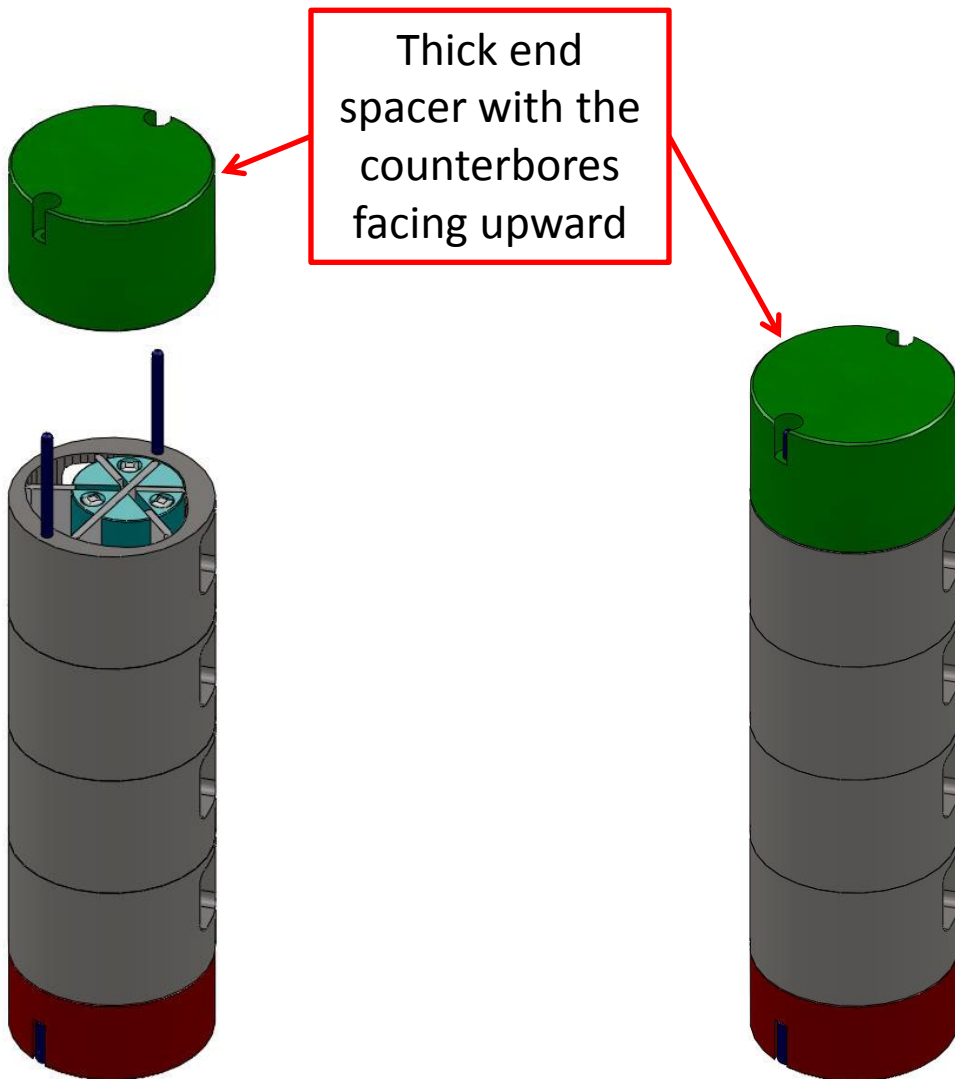
5. Install the square hub locking pins into the square holes in the drive hub. Three (3) pins are required.



6. Repeat steps 2 thru 4 to install the remaining chamber assemblies. Once installed, ensure that the chambers fit together with no gaps in between. Turn the drive hubs and vanes together using the three square locking pins. Ensure that there is no binding between the vanes and the inner walls of the chambers.

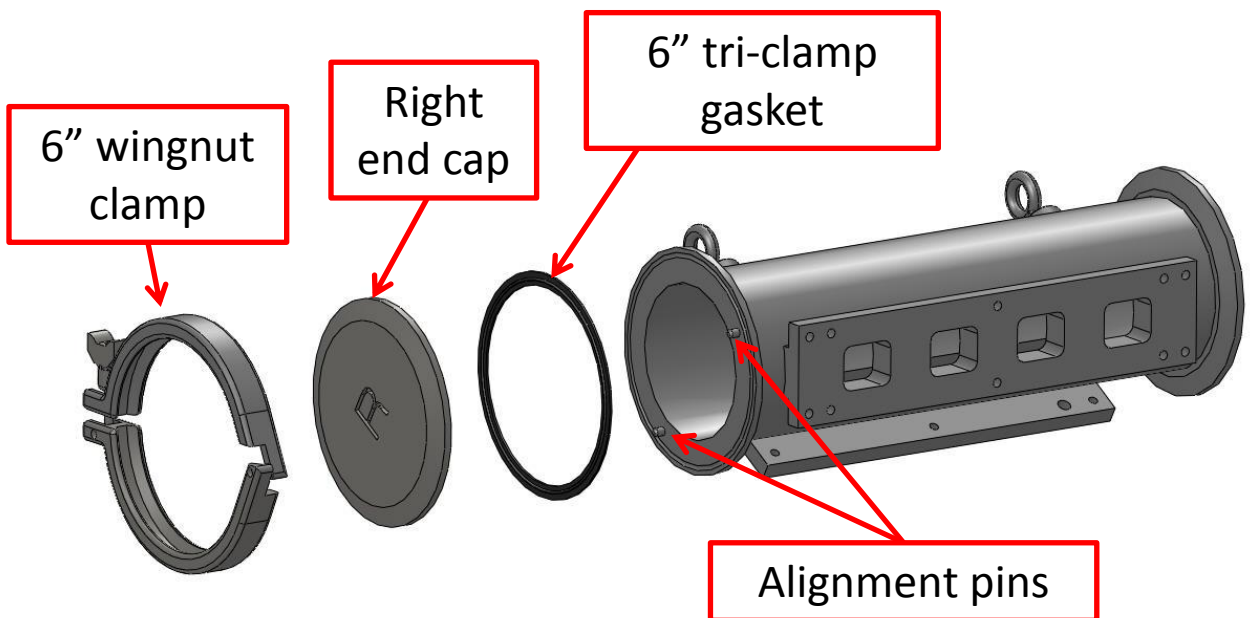
3. SETUP

- Slide the **THICK** end spacer over the chamber locking pins, onto the last chamber. Ensure that the thick end spacer is oriented with the counter bores facing upward, away from the previously assembled chambers.



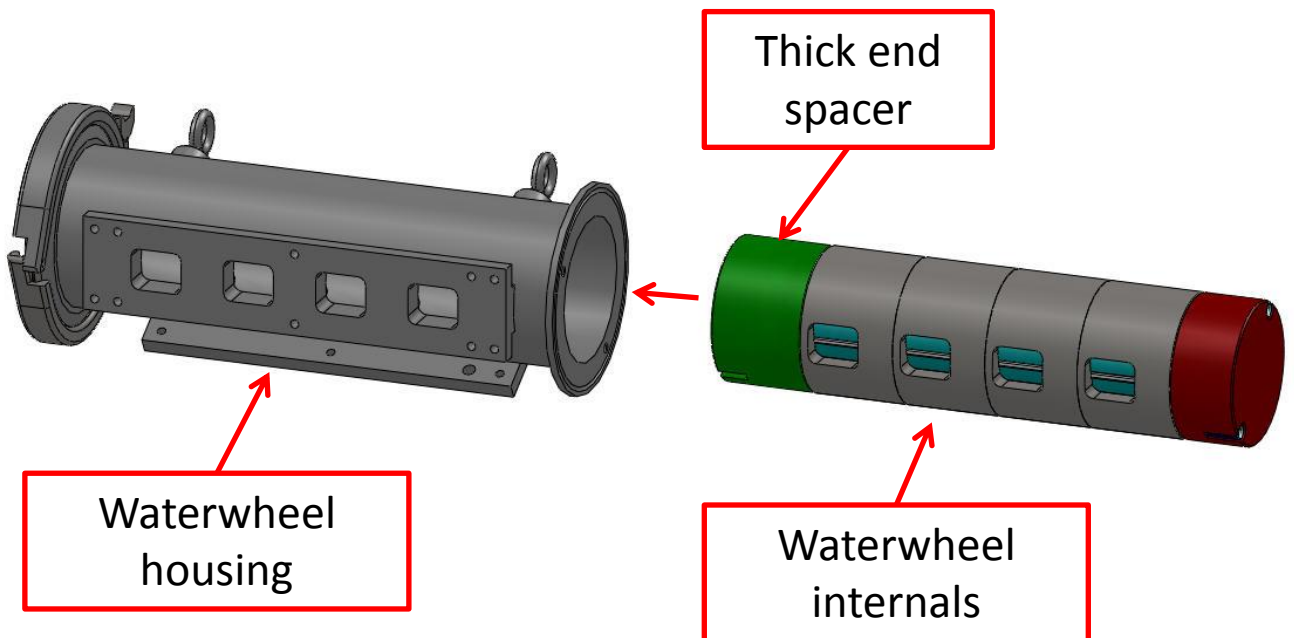
3. SETUP

8. Orient the Waterwheel housing as shown in the figure below. Place a 6" tri-clamp gasket on the end of the Waterwheel housing which contains the 2 alignment pins. The gasket will fit onto the groove on the end of the housing. Place the right end cap, labeled with a "R", onto the end of the housing with the gasket. The right end cap contains alignment holes that will receive the pins on the end of the housing. Clamp the right end cap onto the housing using a 6" wingnut clamp.

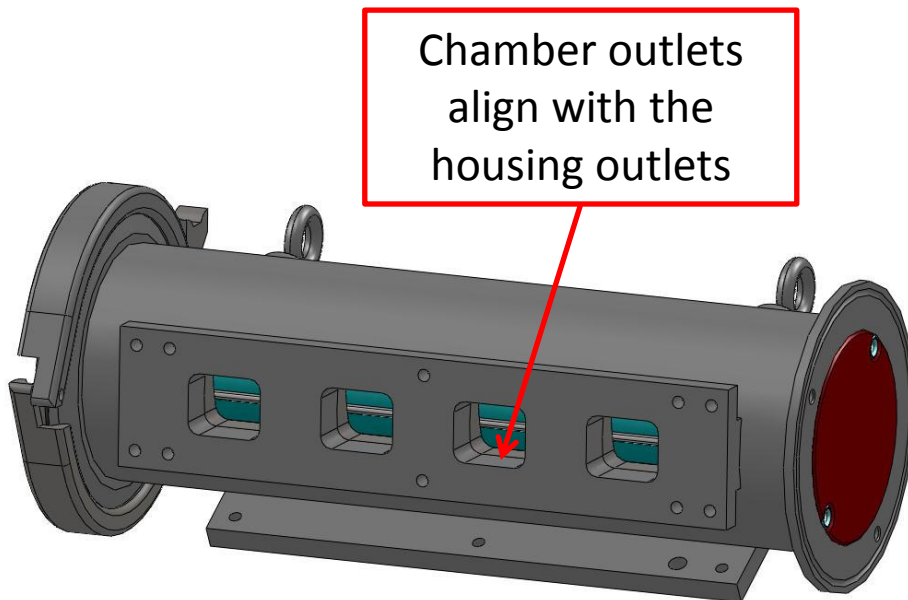
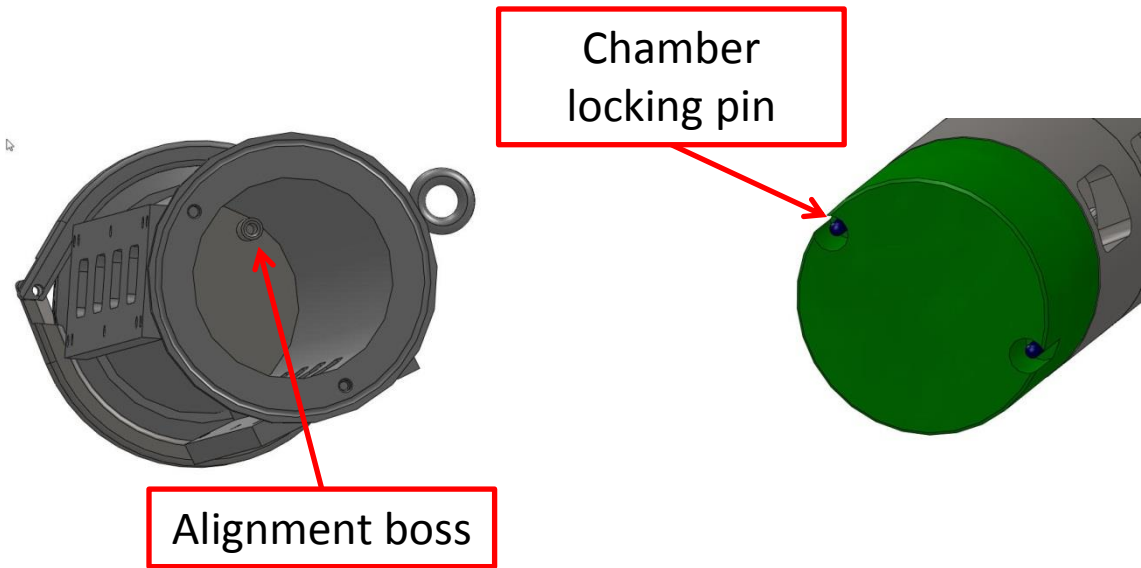


3. SETUP

9. Install the Waterwheel internals into the housing. Slide the previously assembled internals into the housing, with the **THICK** end spacer leading into the housing. Once the internals have been placed into the housing, slowly rotate the internals so that the counterbores on the thick end spacer will receive the bosses that are on the right end plate. This will ensure that the outlets on each of the chambers will align with the outlets on the housing. Once the bosses engage, you will be able to slide the internals all the way into the housing.

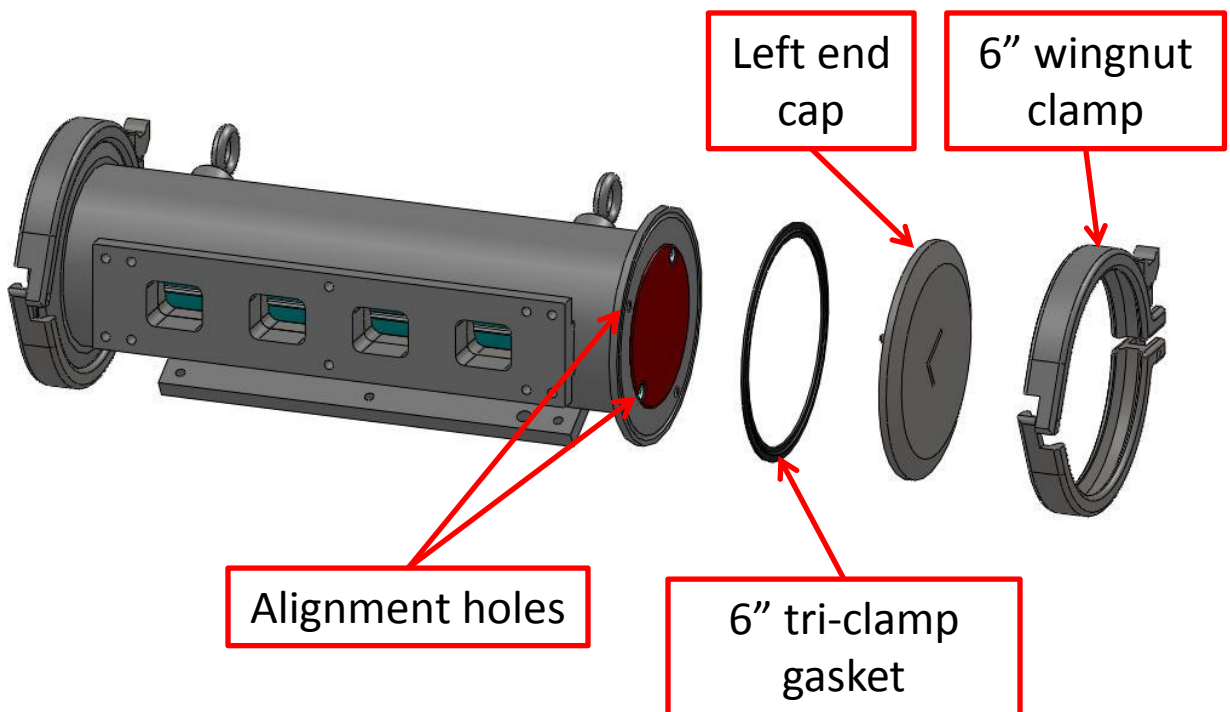


3. SETUP



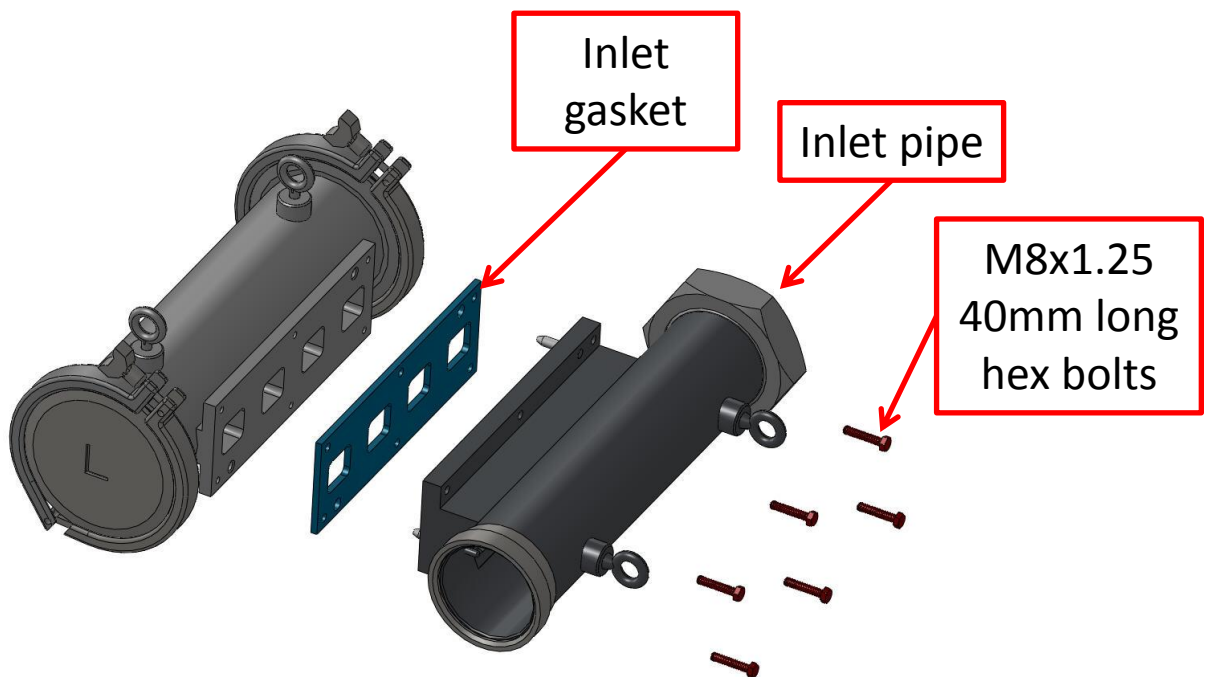
3. SETUP

10. Place a 6" tri-clamp gasket on the open end of the Waterwheel housing. The gasket will fit onto the groove on the end of the housing. Place the left end cap, labeled with an "L", onto the end of the housing which contains the gasket that was previously installed. The left end cap contains a set pins that will align with the holes on the end of the housing and a set of pins that will align with the internals. Clamp the left end cap onto the housing using a 6" wingnut clamp.



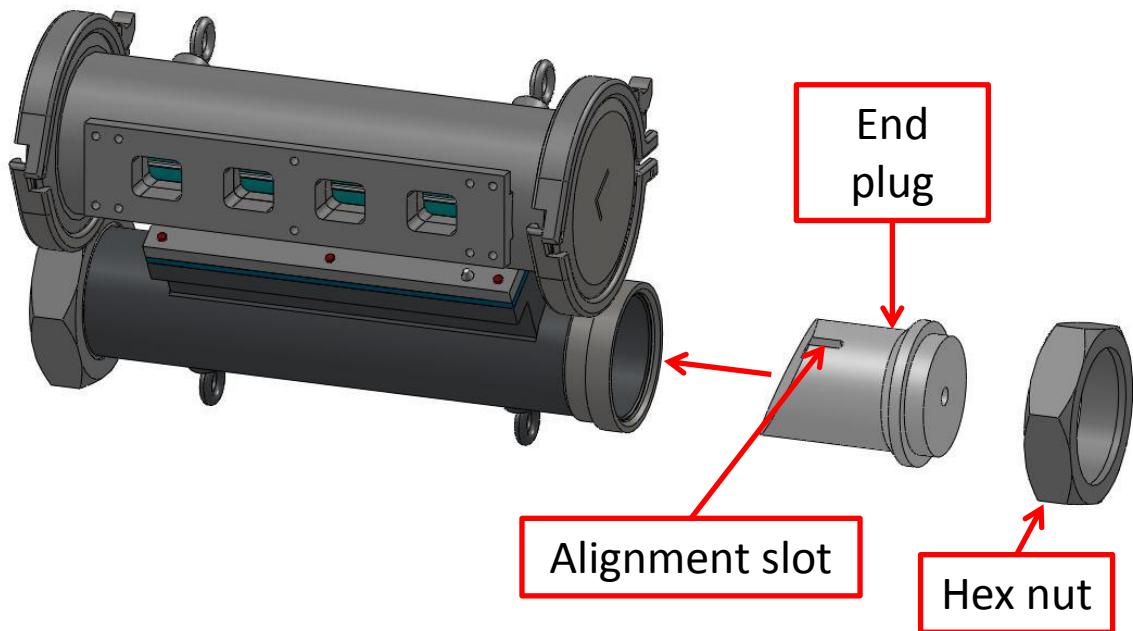
3. SETUP

11. If applicable, place the assembled housing into the support brackets that have been provided for your specific application.
12. Fasten the inlet gasket and the inlet pipe (4UP, 5UP, and 6UP) or inlet horn (2UP and 3UP) to the housing, using the supplied hex bolts. Apply a food-grade anti-seize lubricant to the threads on each of the bolts prior to assembly. The inlet pipe and inlet gasket are capable of being installed such that the Waterwheel can be supplied with product from either the left or right side.



3. SETUP

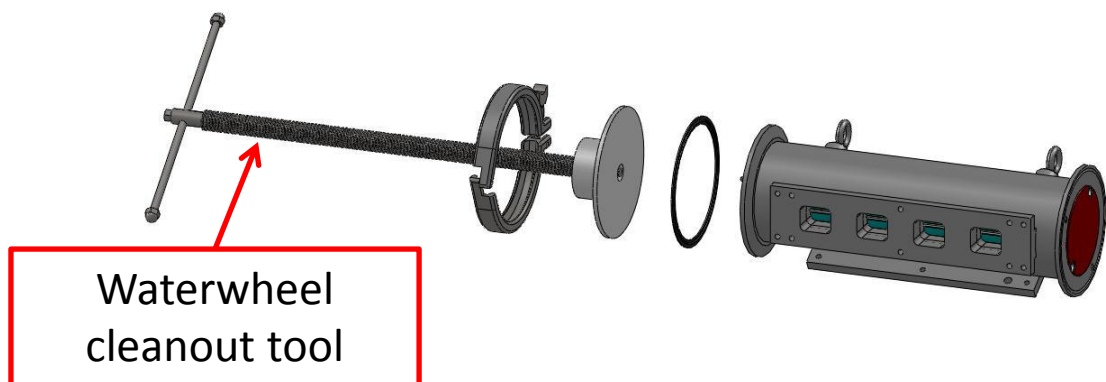
13. For Waterwheels with inlet pipes, slide the end plug into the threaded end of the inlet pipe. The inlet pipe contains a pin that will engage the slot in the end plug, ensuring that it is properly aligned. Fasten the end plug onto the inlet pipe using the supplied hex nut.



14. Connect the pipework from the Vemag filler to the Waterwheel.
15. Connect any attachments. Refer to the user's manual for your specific attachment for instructions pertaining to safety, setup, and operation of the attachment, as well as pneumatic and electrical requirements.

4. CLEANING

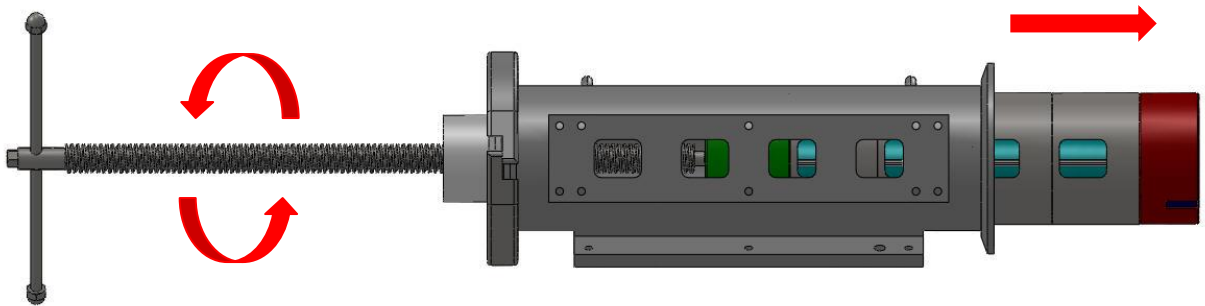
- 1. Remove power from the Vemag filler, disconnect the accessory plug (if applicable) and disconnect the air supply from the cutoff (if applicable). Apply lockout/tagout protocols.**
2. Disconnect all pipework from the Vemag filler to the Waterwheel.
3. Remove the end plug from the inlet pipe.
4. Remove the inlet pipe from the Waterwheel housing.
5. Remove the 6" wingnut clamp, the end plate, and the 6" tri-clamp gasket from both ends of the Waterwheel housing. This will expose the Waterwheel's internal components on both ends of the housing.
6. Attach a 6" tri-clamp gasket to either end of the waterwheel housing, and attach the cleanout tool to the Waterwheel housing using a 6" wingnut clamp. The cleanout tool is used to push the internal components out of the Waterwheel, and can be attached to either end of the housing for convenience.



4. CLEANING

7. With the cleanout tool installed, turn the handle on the screw clockwise to advance the screw into the Waterwheel. The screw will push the internals out of the Waterwheel housing.

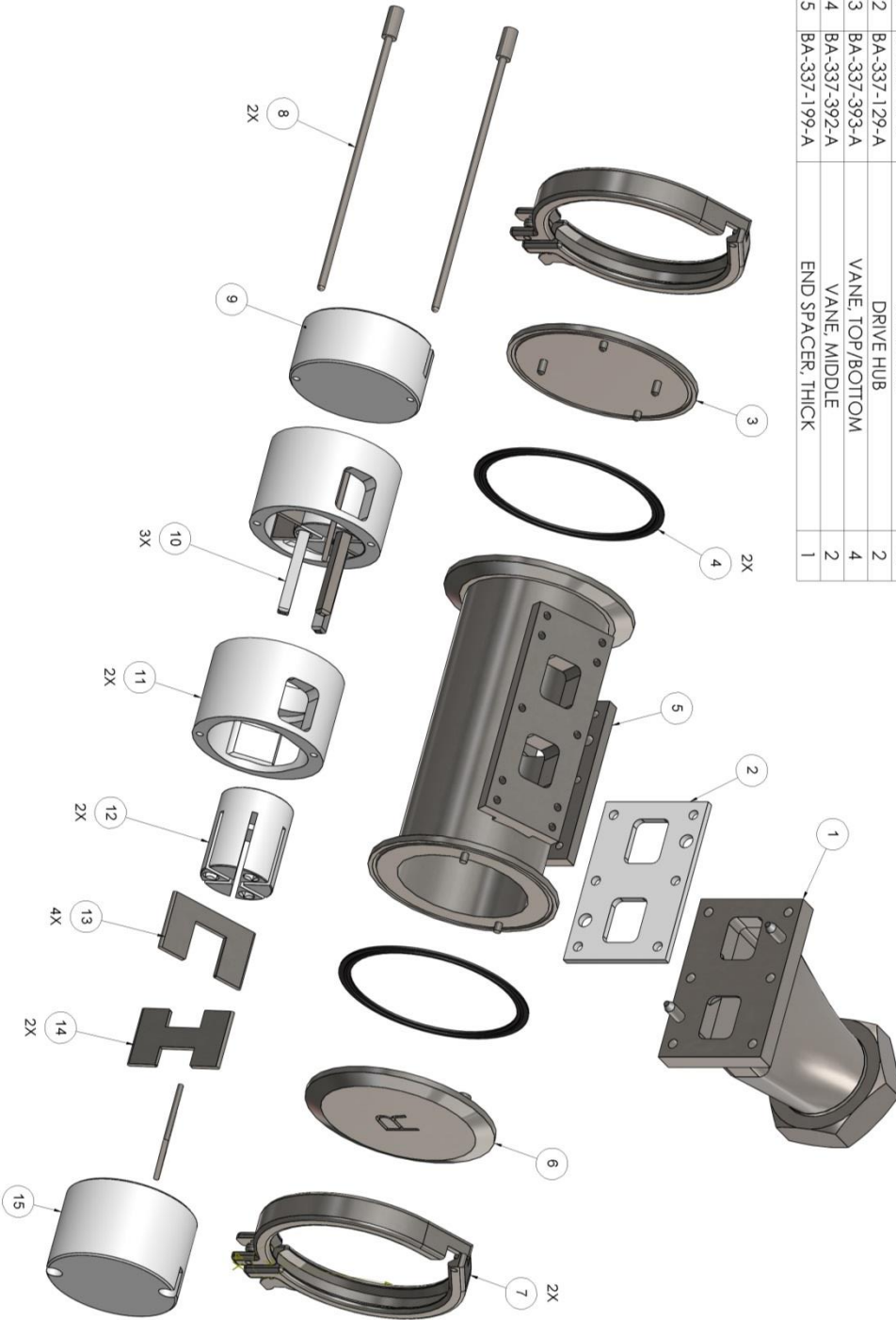
Have a coworker stand on the opposite side of the Waterwheel to support the internals as they are pushed out of the housing. This will prevent the internals from falling to the floor and sustaining significant damage.



8. Remove the cleanout tool from the housing and disassemble the Waterwheel's internal components.
9. Individual parts can now be washed.

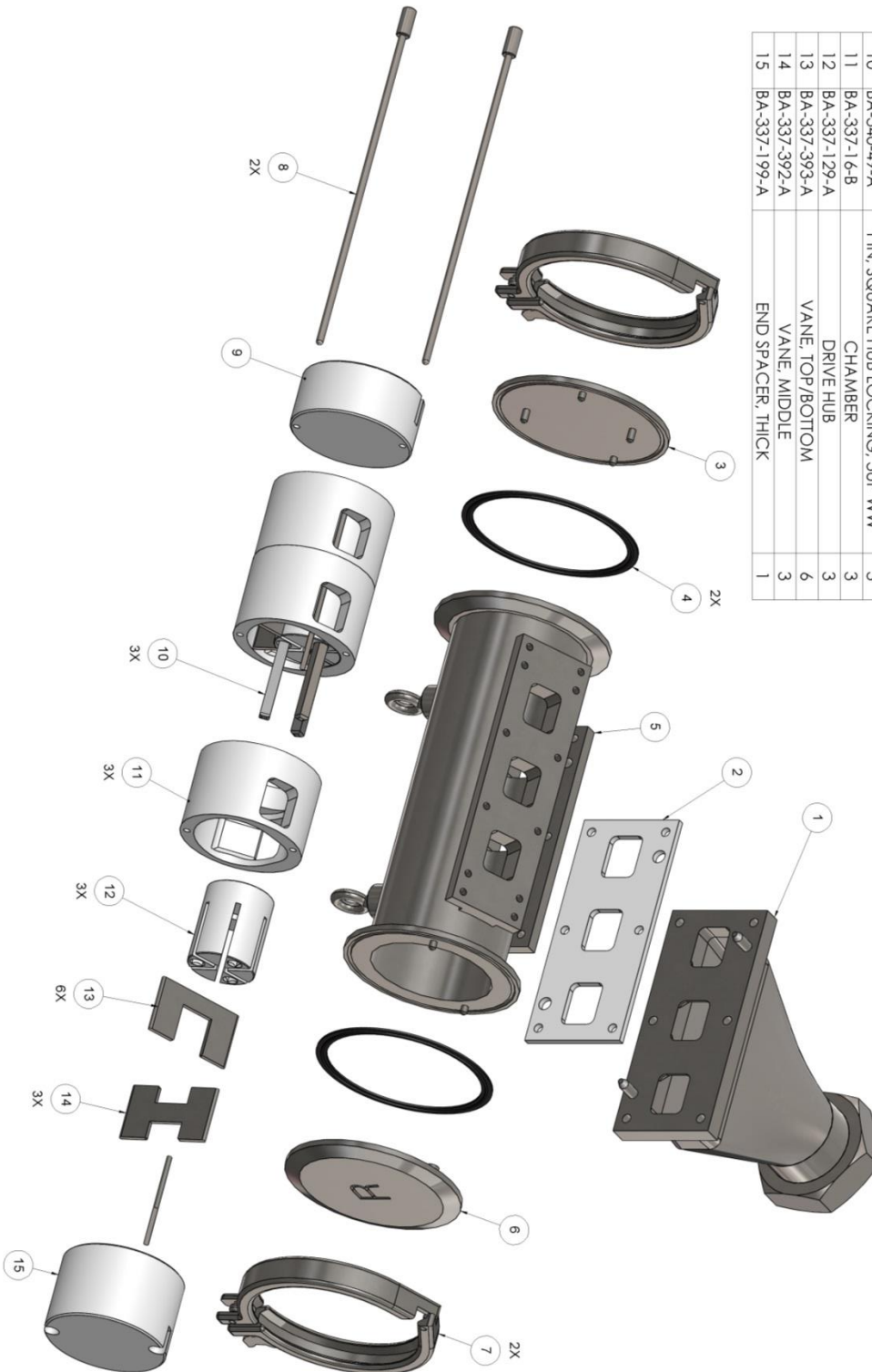
5. PARTS CALL OUT – 2UP

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-341-03-B	INLET HORN, 2UP WW	1
2	BA-341-13-B	INLET GASKET, 2UP WW	1
3	BA-353-17-B	LEFT HAND WW END CAP	1
4	40MOU-600	6" SANITARY GASKET	2
5	BA-341-12-D	WATERWHEEL HOUSING, 2UP WW	1
6	BA-353-16-B	RIGHT HAND WW END CAP	1
7	P13MHM-6	6" SANITARY CLAMP	2
8	BA-341-14-A	PIN, CHAMBER LOCKING, 2UP WW	2
9	BA-345-03-A	END SPACER, THIN	1
10	BA-341-50-A	PIN, SQUARE HUB LOCKING, 2UP WW	3
11	BA-337-16-B	CHAMBER DRIVE HUB	2
12	BA-337-129-A	VANE, TOP/BOTTOM	2
13	BA-337-393-A	VANE, MIDDLE	4
14	BA-337-392-A	VANE, MIDDLE	4
15	BA-337-199-A	END SPACER, THICK	2

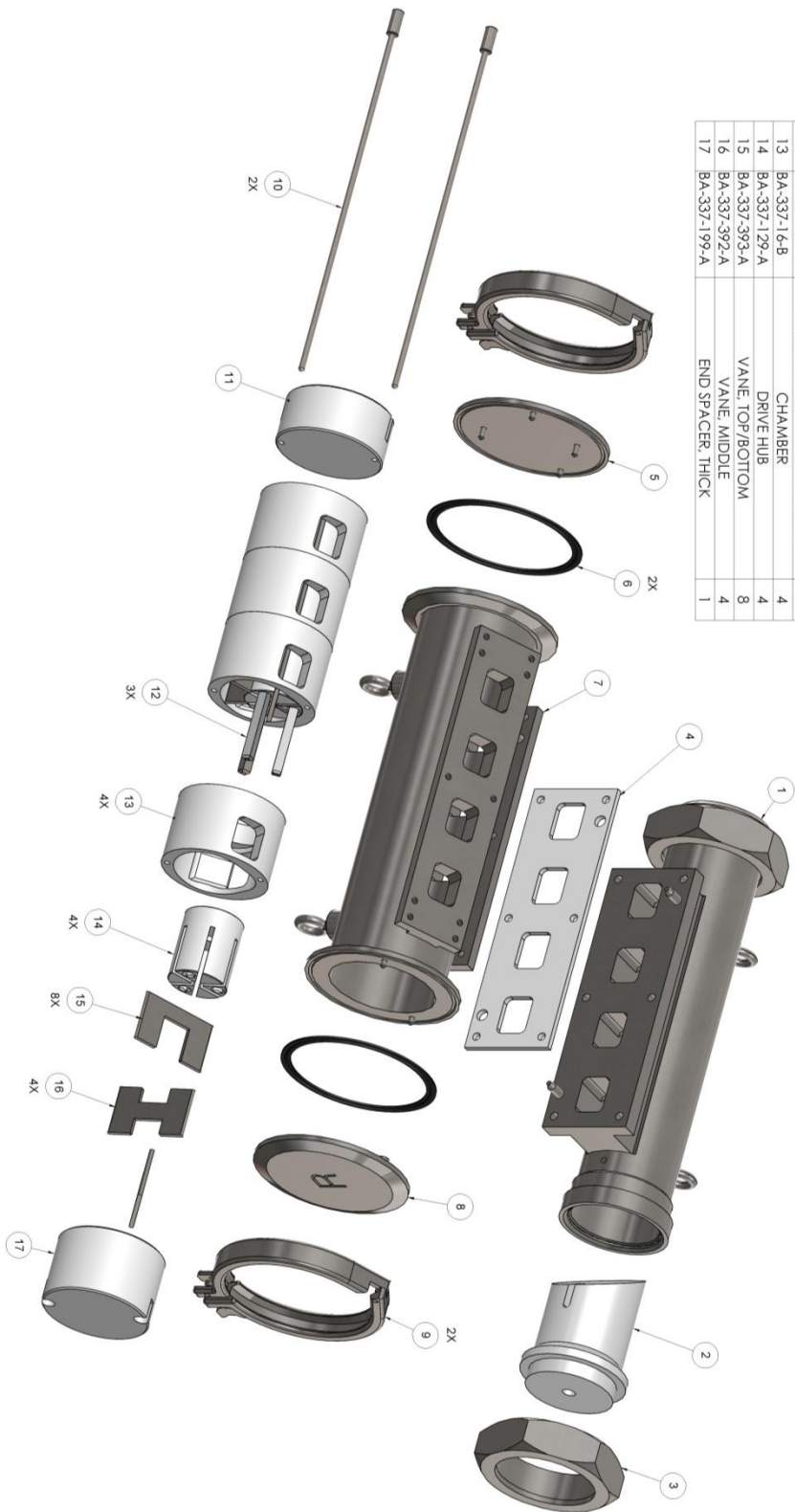


5. PARTS CALL OUT – 3UP

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-340-03-B	INLET HORN, 3UP WW	1
2	BA-340-21-B	INLET GASKET, 3UP WW	1
3	BA-353-17-B	LEFT HAND WW END CAP	1
4	40MOU-600	6" SANITARY GASKET	2
5	BA-340-14-D	WATERHEEL HOUSING, 3UP WW	1
6	BA-353-16-B	RIGHT HAND WW END CAP	1
7	P13MHM-6	6" SANITARY CLAMP	2
8	BA-340-22-A	PIN, CHAMBER LOCKING, 3UP WW	2
9	BA-345-03-A	END SPACER, THIN	1
10	BA-340-49-A	PIN, SQUARE HUB LOCKING, 3UP WW	3
11	BA-337-16-B	CHAMBER	3
12	BA-337-129-A	DRIVE HUB	3
13	BA-337-393-A	VANE, TOP/BOTTOM	6
14	BA-337-392-A	VANE, MIDDLE	6
15	BA-337-199-A	END SPACER, THICK	3

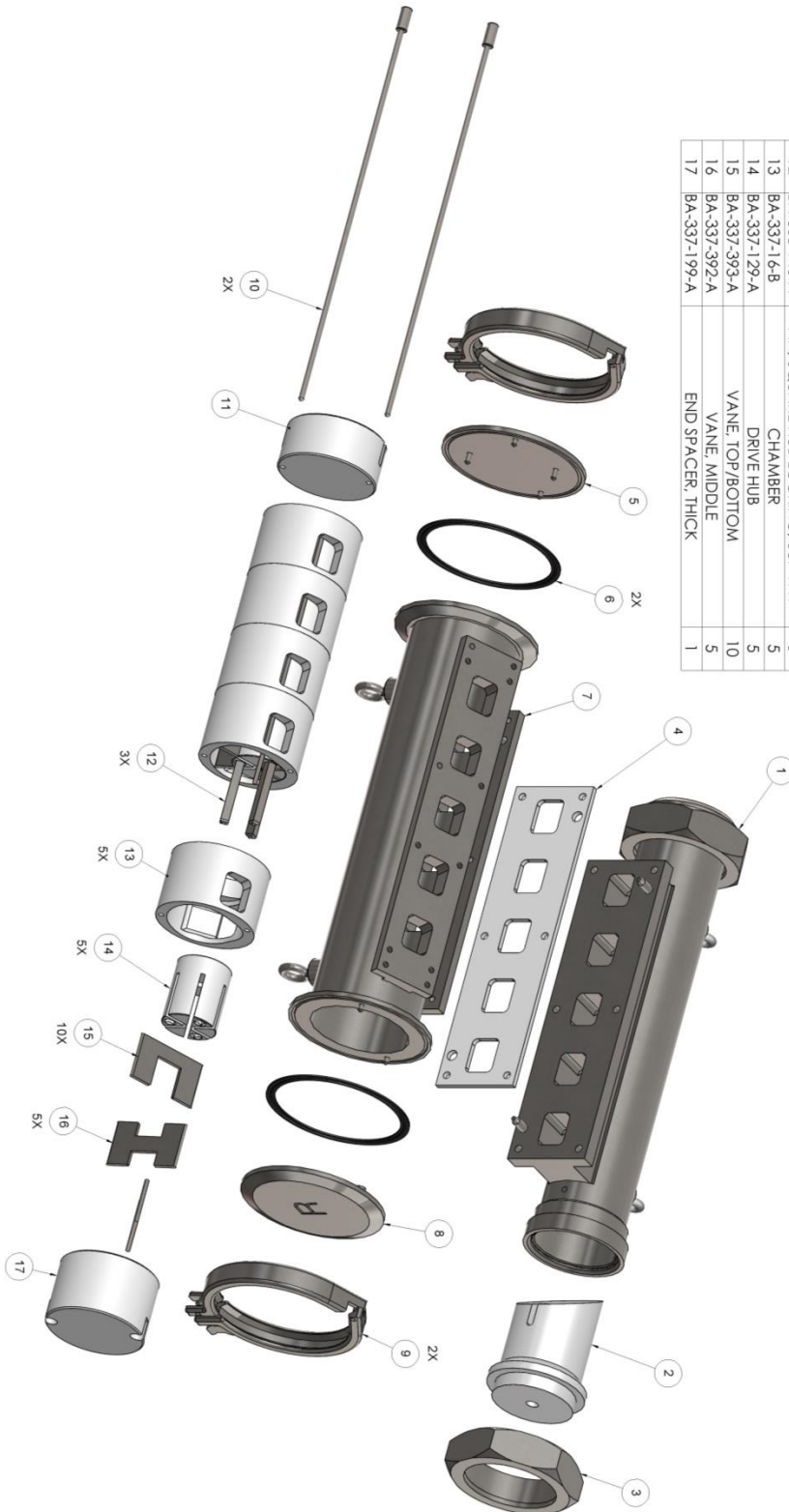


5. PARTS CALL OUT – 4UP



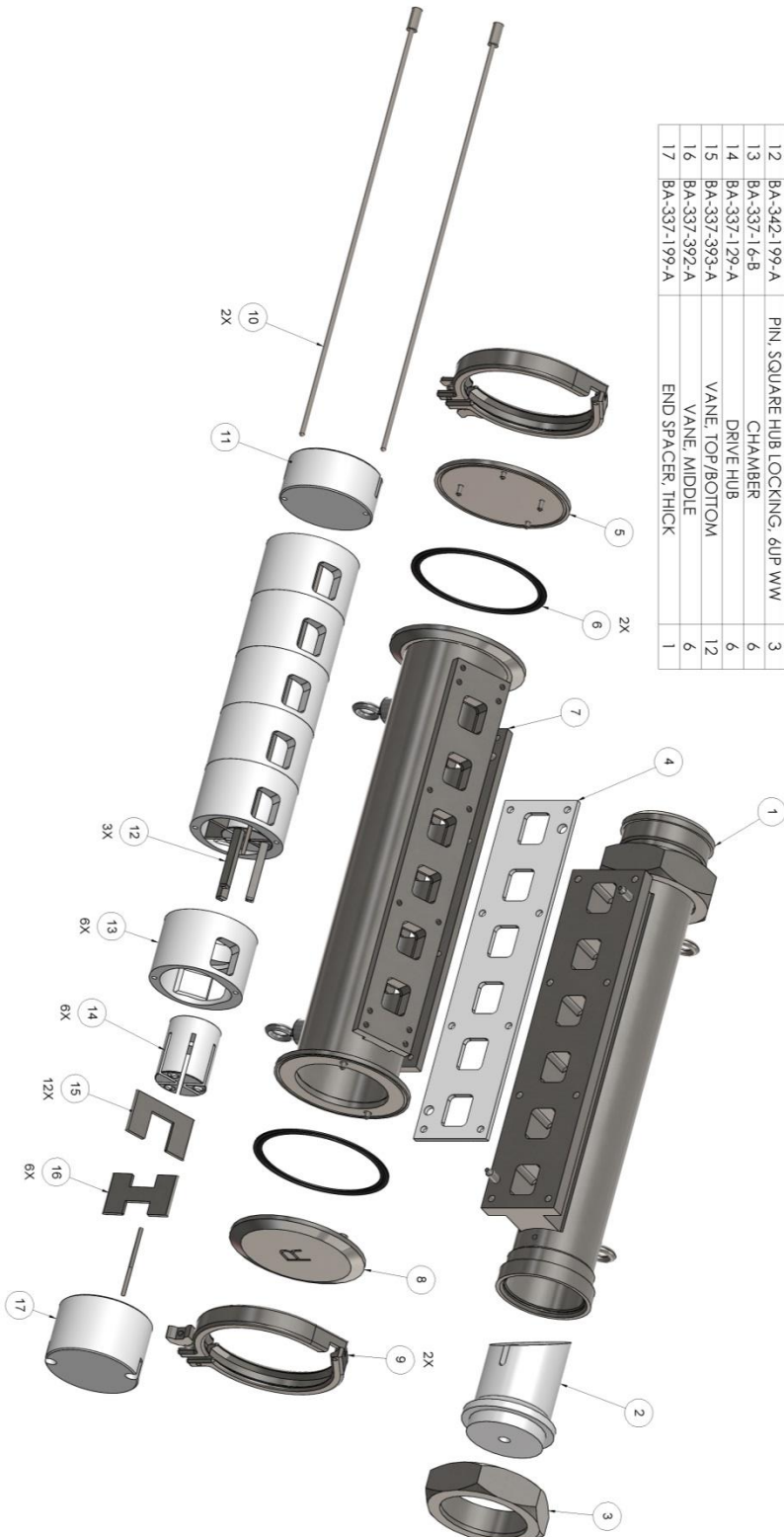
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-337-117-D	4" INLET PIPE, 4UP WW	1
2	BA-337-284-C	END PLUG, 4" INLET PIPE	1
3	13H-4	SANITARY NUT	1
4	BA-337-33-B	INLET GASKET, 4UP WW	1
5	BA-353-117-B	LEFT HAND WW END CAP	1
6	40MOU-600	6" SANITARY GASKET	2
7	BA-337-46-D	WATERWHEEL HOUSING, 4UP WW	1
8	BA-353-16-B	RIGHT HAND WW END CAP	1
9	P13MHHM-6	6" SANITARY CLAMP	2
10	BA-337-86-A	PIN, CHAMBER LOCKING, 4UP WW	2
11	BA-345-03-A	END SPACER, THIN	1
12	BA-337-201-A	PIN, SQUARE HUB LOCKING, 4UP WW	3
13	BA-337-16-B	CHAMBER	4
14	BA-337-129-A	DRIVE HUB	4
15	BA-337-393-A	VANE, TOP/BOTTOM	8
16	BA-337-392-A	VANE, MIDDLE	4
17	BA-337-199-A	END SPACER, THICK	1

5. PARTS CALL OUT – 5UP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-338-45-D	4" INLET PIPE, SUP WW	1
2	BA-337-284-C	END PLUG, 4" INLET PIPE	1
3	13H-4	SANITARY NUT	1
4	BA-338-25-B	INLET GASKET, SUP WW	1
5	BA-353-17-B	LEFT HAND WW END CAP	1
6	40MOU-600	6" SANITARY GASKET	2
7	BA-338-14-D	WATERWHEEL HOUSING, SUP WW	1
8	BA-353-16-B	RIGHT HAND WW END CAP	1
9	P13MHHM-6	6" SANITARY CLAMP	2
10	BA-338-26-A	PIN, CHAMBER LOCKING, SUP WW	2
11	BA-345-03-A	END SPACER, THIN	1
12	BA-338-140-A	PIN, SQUARE HUB LOCKING, SUP WW	3
13	BA-337-16-B	CHAMBER DRIVE HUB	5
14	BA-337-129-A	VANE, TOP/BOTTOM	5
15	BA-337-393-A	VANE, MIDDLE	10
16	BA-337-392-A	VANE, SPACER, THICK	5
17	BA-337-199-A		1

5. PARTS CALL OUT – 6UP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-342-52-D	4" INLET PIPE, 6UP WW	1
2	BA-337-284-C	END PLUG, 4" INLET PIPE	1
3	13H-4	SANITARY NUT	1
4	BA-342-11-B	INLET GASKET, 6UP WW	1
5	BA-353-17-B	LEFT HAND WW END CAP	1
6	40MOU-600	6" SANITARY GASKET	2
7	BA-342-06-D	WATERWHEEL HOUSING, 6UP WW	1
8	BA-353-16-B	RIGHT HAND WW END CAP	1
9	P13MHM-6	6" SANITARY CLAMP	2
10	BA-342-23-A	PIN, CHAMBER LOCKING, 6UP WW	2
11	BA-345-03-A	PIN, SQUARE HUB LOCKING, 6UP WW	3
12	BA-342-199-A	END SPACER, THIN CHAMBER	6
13	BA-337-16-B	DRIVE HUB	6
14	BA-337-129-A	VANE, TOP/BOTTOM	6
15	BA-337-393-A	VANE, TOP/MIDDLE	12
16	BA-337-392-A	VANE, TOP/BOTTOM	6
17	BA-337-199-A	END SPACER, THICK	1

5. PARTS CALL OUT –CLEANOUT TOOL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BA-337-208-B	HANDLE, CLEANOUT TOOL	1
2	BA-458-31-D	CAP, CLEANOUT TOOL	1

6. RECOMMENDED SPARE PARTS

PART NUMBER		DESCRIPTION	QTY				
			2UP	3UP	4UP	5UP	6UP
40MOU-600		6" SANITARY GASKET	2				
BA-337-129-A		DRIVE HUB	2	3	4	5	6
BA-337-16-B		WW CHAMBER	2	3	4	5	6
BA-337-392-A		VANE, MIDDLE	2	3	4	5	6
BA-337-393-A		VANE, TOP/BOTTOM	4	6	8	10	12
2UP	BA-341-50-A	SQR HUB LOCKING PIN	3				
3UP	BA-340-49-A						
4UP	BA-337-201-A						
5UP	BA-338-140-A						
6UP	BA-342-199-A						