



Doc #:	EI-800-062	Rev:	02	Rev Date:	04/22/2026
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Congratulations on your purchase and receipt of an OverWatch® Direct In-Line Pump System, by Industrial Flow Solutions™.

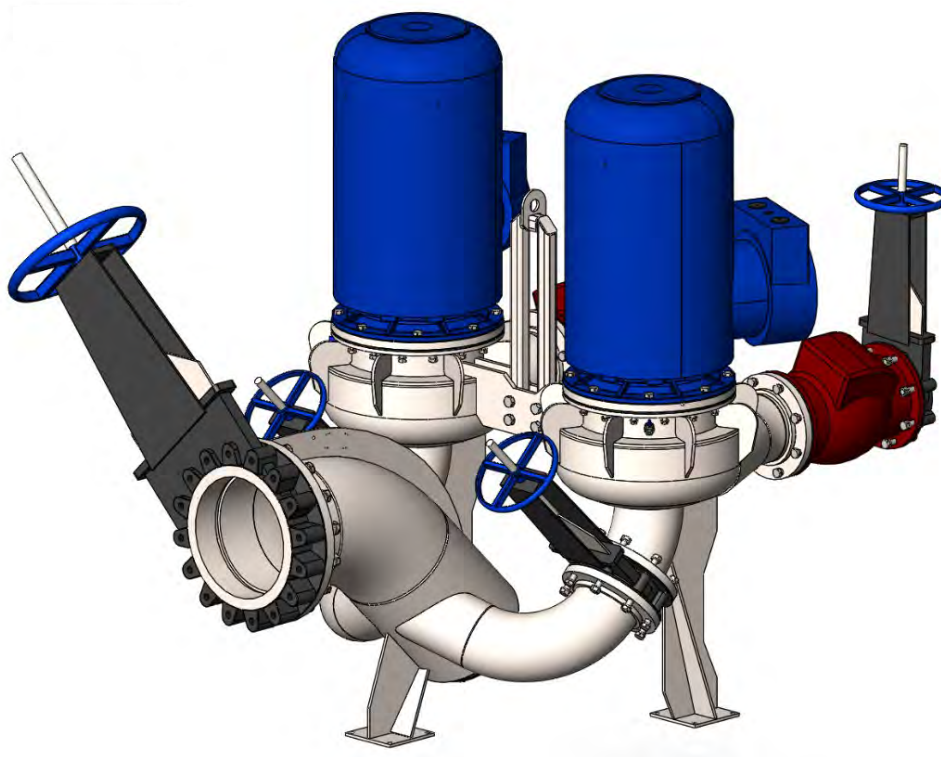
The OverWatch is a modular welded pump design, which can be shaped & scaled to retrofit into a customer's existing plumbing or be custom fitted for a new site. Most pumps can be shipped fully assembled to drop into the customer's pipework and easily connected to the control. At the large end of the product's design, for industrial and municipal customers, constraints related to lifting, palletization, and shipping require the OverWatch units to be broken down into smaller pieces to be re-assembled on site.

This instruction will guide you through a basic overview of the assembly process for:

OW 61H, 101H, 151, 201, or 301 System.

Since each OverWatch can have slightly different design features: this instruction may not exactly match what you have received, but the core sequence & intent of the assembly process is always the same for all OverWatch Pumps.

Read through this entire instruction. If you have any questions, please contact Industrial Flow Solutions' customer support: applications@flowsolutions.com.





Inventory Parts Received

Depending on the specific OverWatch® model, you will receive several pallets of parts for mechanical assembly of the pump, additional valves & accessories, and the control system Cabinet. These may be consolidated into fewer pallets if possible.

The following should be received:

- 1 – 4 x Motor Assembly with Impeller Hydraulics
 - o Number of Motor Assemblies determined by pump type (OWM 1, Duplex 2, Triplex 3, Quadruplex 4)
 - o Must be Labeled with Pump # (1,2,3,4)
 - o Motor Cable may be attached with leads terminated
 - Explosion Proof pumps will have an additional set of smaller thermal cables wired into the motor.
 - Exception: UL778 Certified pumps must ship with separate unconnected motor cables & cable entries for regulatory compliance.
- Welded Pump Bodies: Upper (volute & discharge) and Lower (suction)
 - o These will be pictured later for reference. The OverWatch is usually separable at the branch between the “upper” and “lower” bodies.
 - o The Upper Body contains the volute where the motor & impeller are installed, the discharge connection, and the lifting point for the pump.
 - o The Lower Body has the very large suction intake, level sensor location, & “stone-trap” clean out.
 - o A set of knife-gate branch valves is included for ‘C’ models of OverWatch
- Control System Cabinet
 - o Normally a single cabinet, requiring no assembly; only placement/mounting.
 - o Depending on the need, this could be split into smaller cabinets. Typically, a Companion Panel with Deragger PRO display, and separate VFD Drive cabinets.
- Additional Accessories, as ordered
 - o Closing Plate – To cover pump volute during maintenance
 - o Knife Gates Valves for Suction & each Discharge (*standard option*)
 - o Swing Check Valves for each Discharge (*standard option*)
 - o Optional – Additional spare Level Transducer(s)
 - o Optional - Sump Pump Kit, Flow Meter, And/or Float Switches

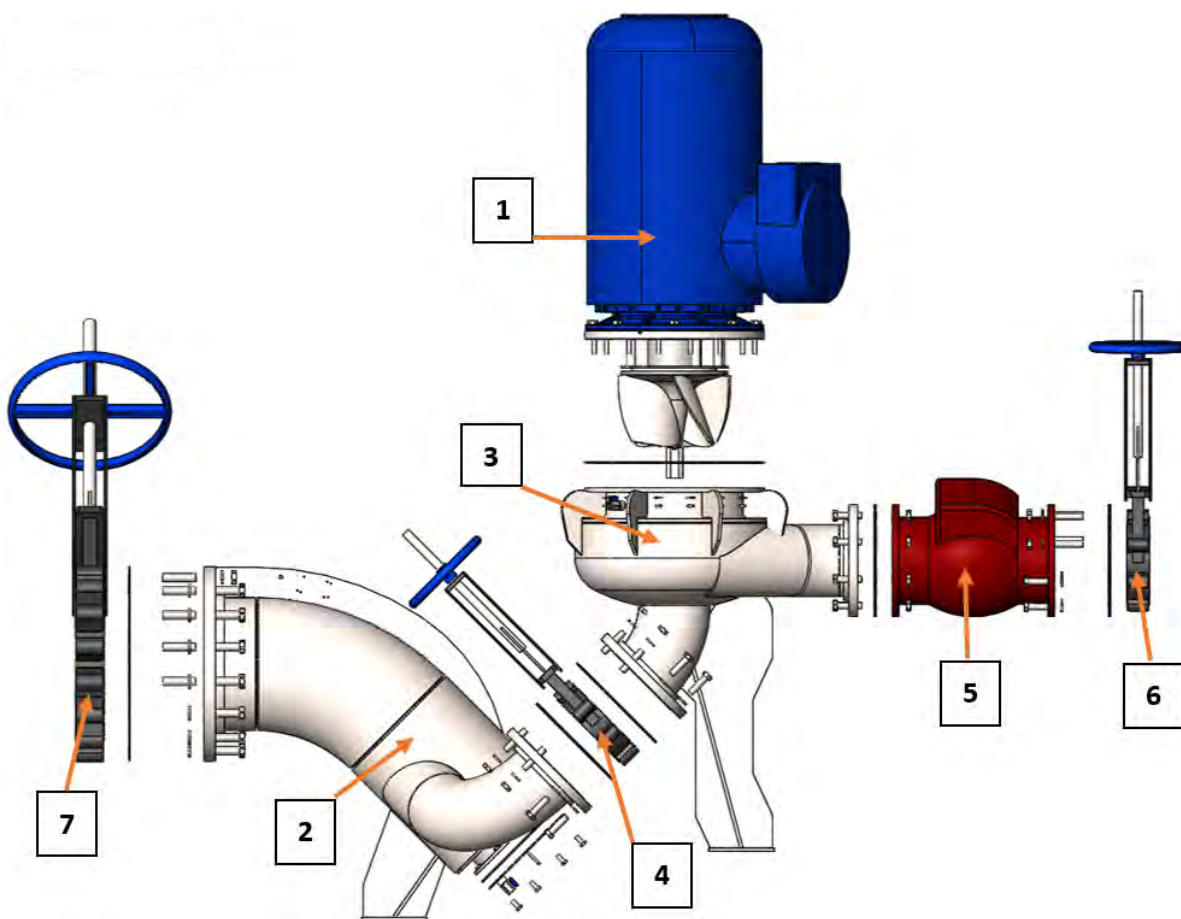
Review the Sales Order paperwork to confirm that the parts received match what was ordered, and contact Industrial Flow Solutions™ or your distributor if there is a discrepancy.

Note: Record the Serial Numbers of the Control Cabinet, and of the OverWatch pump.

These are found on attached engraved nameplates.

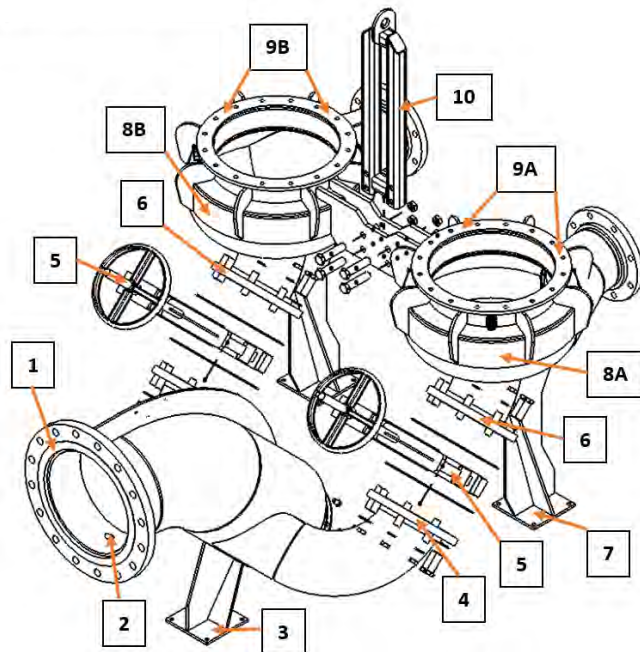


OverWatch® Parts Diagrams



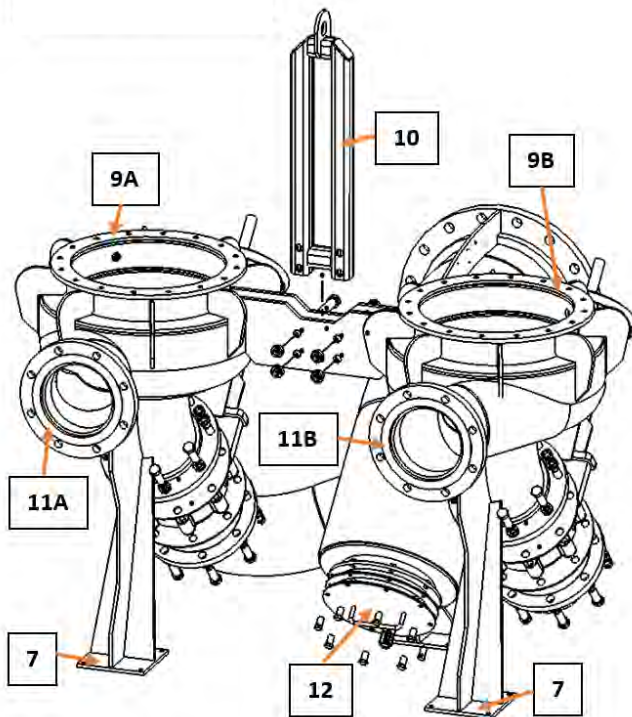
OverWatch® Pump Components

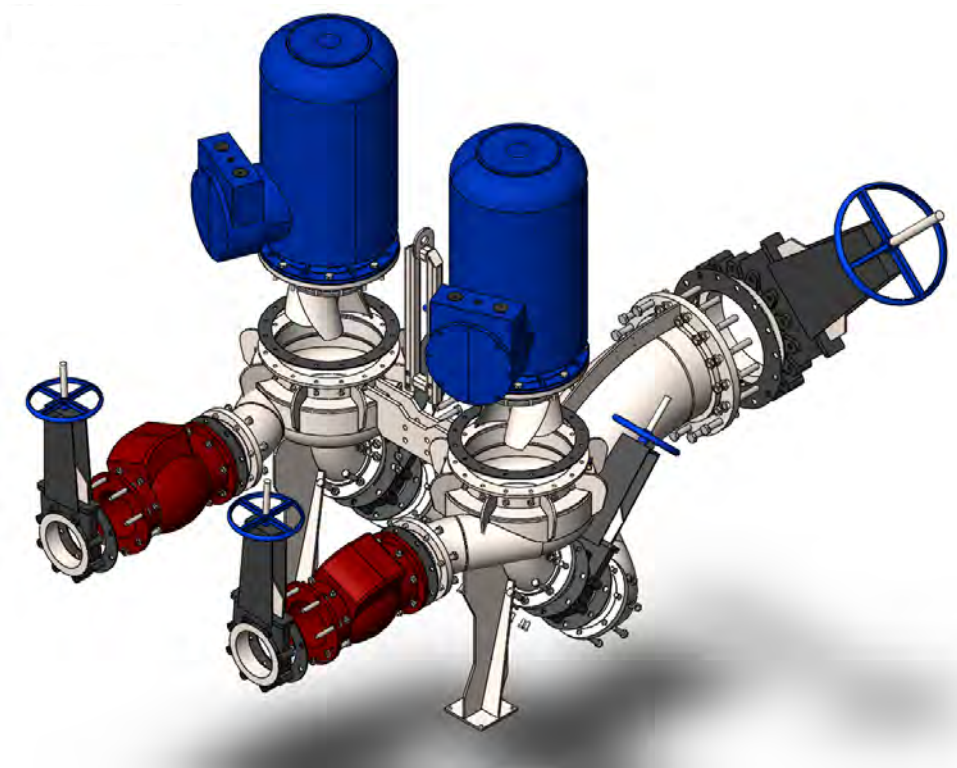
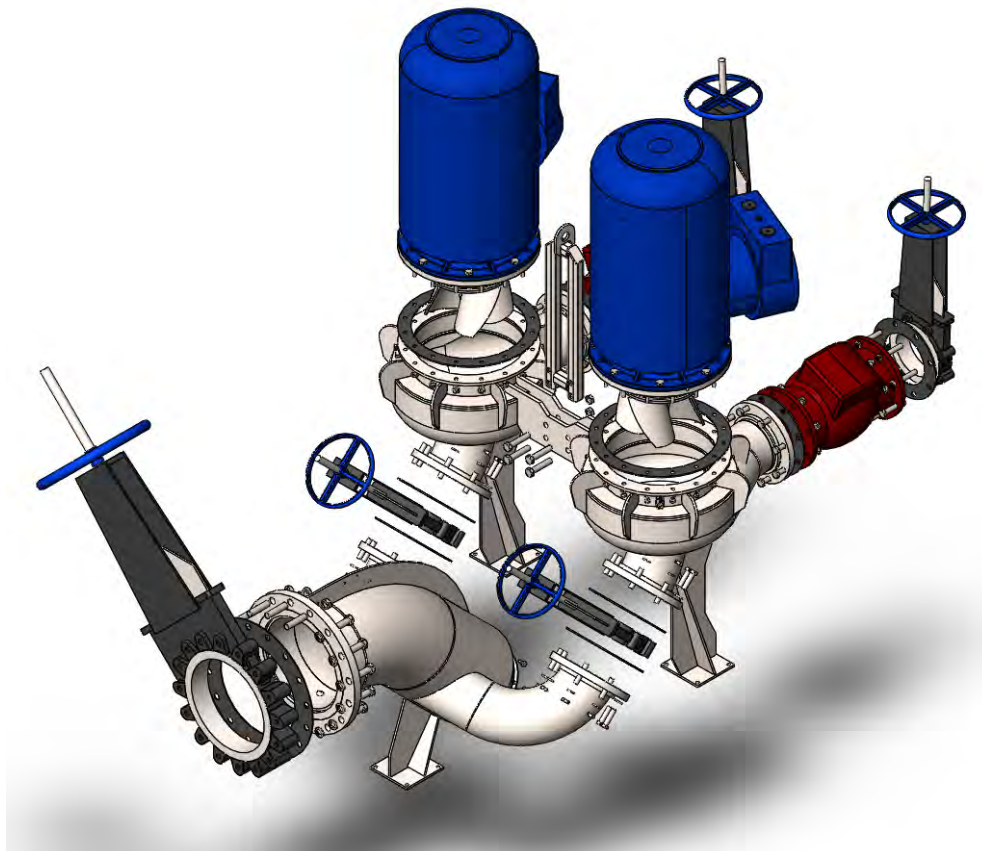
1	Motor Assembly - Impeller Hydraulics
2	Lower Body - Pump Suction + Clean-out
3	Upper Body – Pump Volute bowl + Discharge
4	Knife Gate Valve – Pump Branch
5	Swing Check Valve – Discharge
6	Knife Gate Valve - Discharge
7	Knife Gate Valve - Suction



OverWatch® Body Parts

1	Flange – Suction
2	Level Transducer Port
3	Foot – Front
4	Flange – Branch - Lower
5	Knife Gate Valve - Branch
6	Flange – Branch - Upper
7	Foot - Rear
8A	Volute Bowl – Alpha – Pump 1
8B	Volute Bowl – Beta – Pump 2
9A	Volute Flange – Alpha – Pump 1
9B	Volute Flange – Beta – Pump 2
10	Lifting Bail
11A	Flange – Discharge – Pump 1
11B	Flange – Discharge - Pump 2
12	Clean Out Plate







Disclaimers, Warnings, and Advisories:

Before proceeding with the unpacking and assembly of the OverWatch® system **PLEASE READ THIS SECTION ENTIRELY**. Failure to adhere to the advice given here can risk damaging the system or cause serious injury & death to personnel.

Disclaimer: System Variability

The OverWatch series of direct inline pumps is a modular pump design, scalable in performance, size and selected for each customer's site requirements. With this in mind: each model may deviate from the generalization in this installation instruction guide. If any questions or uncertainty arise, please reach out to customer support for guidance.

Warning: Risk of Electrocution

The OverWatch pump and control system utilizes potentially lethal electricity, ranging from 230 to 690 Volts. Only qualified and electric-hazard trained personnel should ever engage in electrical work on the Pump, Control, or connection to the utility/electrical service.

Advisory: Lock-Out-Tag-Out

Always follow the requirements of the local Authority-having-jurisdiction (AHJ) on mechanical and electrical assembly work / construction.

Industrial Flow Solutions™ Strongly Recommends utilization of a Lock-Out-Tag-Out Process (LOTO) for both electrical work and mechanical plumbing.

Warning: Confined Space

If the OverWatch system is installed in an underground basin or vault, it is essential that proper precautions are taken to ensure the safety of any personnel working in that confined space. Ensure multiple methods of communication with personnel & above ground team, means of emergency egress from the confined space, and never lift or move heavy equipment directly overhead of personnel.

Warning: Working at Heights

If the OverWatch system is installed in an underground basin or vault, it is essential that proper precautions are taken to ensure the safety of any personnel working at Heights around that space. There must be adequate guard rails around the edges of the pit, to prevent falling, and visual indication said risk. Personnel should be trained in the safe usage of ladders, scaffolds, or lifts utilized to enter and exit the below-ground area.

Advisory: Vibration Mitigation

To reduce sympathetic vibrations throughout system pipework and plumbing stress; Industrial Flow Solutions recommends the installation of vibration-reducing Expansion joints at one flanged connection along both the pump's suction & discharge lines.



Warning: Component Weight and Lifting

The body components and Motor rotating assemblies vary in weight from several hundred lbs. to several thousand. Consult the pump's data sheet (*also available in submittals*) for the pump system's total weight, as well as the motor nameplate, and control cabinet nameplate. Always ensure lifting equipment and tools are rated for a lifting capacity in excess of the components weight.

Similarly, freestanding valves/pipes or other heavy equipment must be supported with adequate straps, stands, or bracing rated for the component's weight during partial assembly. Never rely on the flanges of the OverWatch® alone to support heavy piping and accessories or precariously balance partially assembled pieces.

Advisory: Torque specifications

Torque specs for standard metal-to-metal fastening can be provided through Industrial Flow Solutions™ document 'EI-420-007-1 OW Assembly Torque Specs'.

The OverWatch uses primarily stainless-steel fasteners, and thus **application of a lubricant such as 'anti-seize' is highly recommended to avoid galling of fasteners.**

For fastening involving compressible gaskets, necessary torques will vary considerably. The recommended methodology is to always utilize hand-tools or low-torque electric drivers to tighten fasteners in a star-pattern. Apply pressure to gaskets evenly across the sealing surfaces. Fasteners should be tightened only to the extent necessary to prevent leakage and avoid over-compression of sealing gaskets. Generally, this is accomplishable with the correct crescent wrench size and applying torque with only 1 hand (*for an average strength technician*).

Disclaimer:

Consult the terms of the Industrial Flow Solutions Standard Warranty in the contract paperwork.

Damage to Industrial Flow Solutions' systems and products resulting from failure to follow the recommendations and warnings in these instructions will not be covered by our Manufacturer's warranty, and you agree to assume the necessary costs for replacement of any damaged equipment resulting from incorrect use. Similarly, Industrial Flow Solutions is not responsible for damage to customers or 3rd party property, or injuries to personnel, resulting from failure to follow the recommendations and warnings specified herein.

These Installations Instructions will apply only to the OverWatch System. The scope of the OverWatch System is defined as the Control Cabinet and all original parts within, as well as the complete pump body and Motor Assemblies, which these instructions pertain to. Industrial Flow Solutions is not responsible for the customer's building, plumbing, electrical, or communications infrastructure connected to the OverWatch Pump or Control or any parts not supplied by Industrial Flow Solutions. We recommend seeking out the relevant manufacturers' guidance on installation of their products.

Customers installing an OverWatch System should ALWAYS adhere to local Codes & Regulation, as applies and specified by their Authority Having Jurisdiction (AHJ).

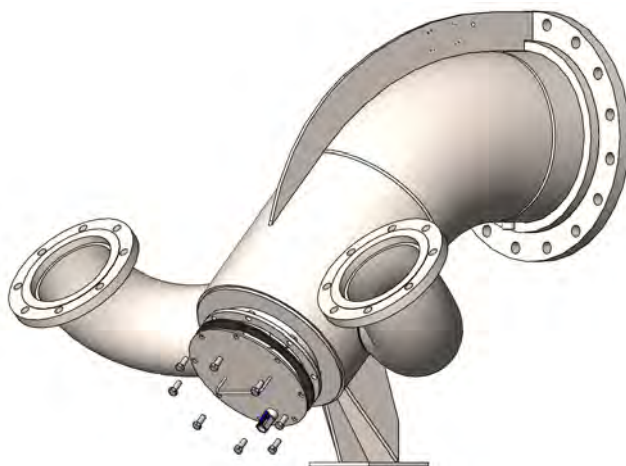


Assembly of body

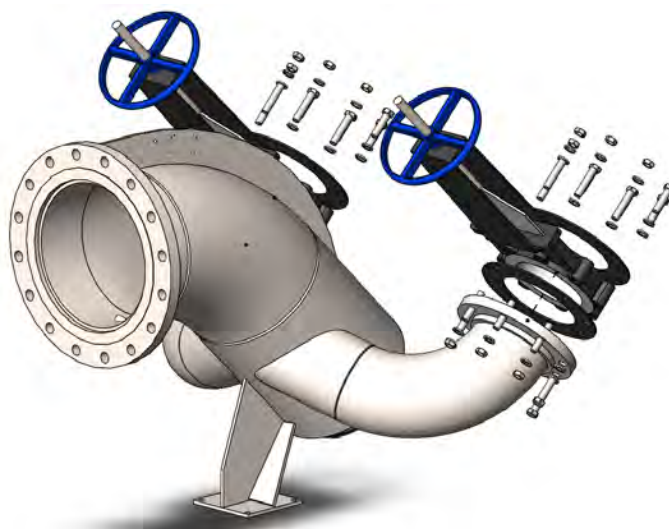
Unpack the welded bodies and accessories from their pallets and begin re-assembly of the OverWatch® pump. All hardware and gaskets needed are provided for assembly of the OverWatch, but additional hardware will be needed for attachment to customer piping.

These instructions will outline the maximum-assembly case, where the pump is entirely disassembled into components. Depending on the size of the unit, some of these assembly stages may already be completed prior to shipping.

- 1) Attach the Clean-out Plate to the flange onto the bottom of the Lower Body, if not already installed with gasket, bolts, & nuts.
 - a. Orient the ball valve downwards for easy draining.

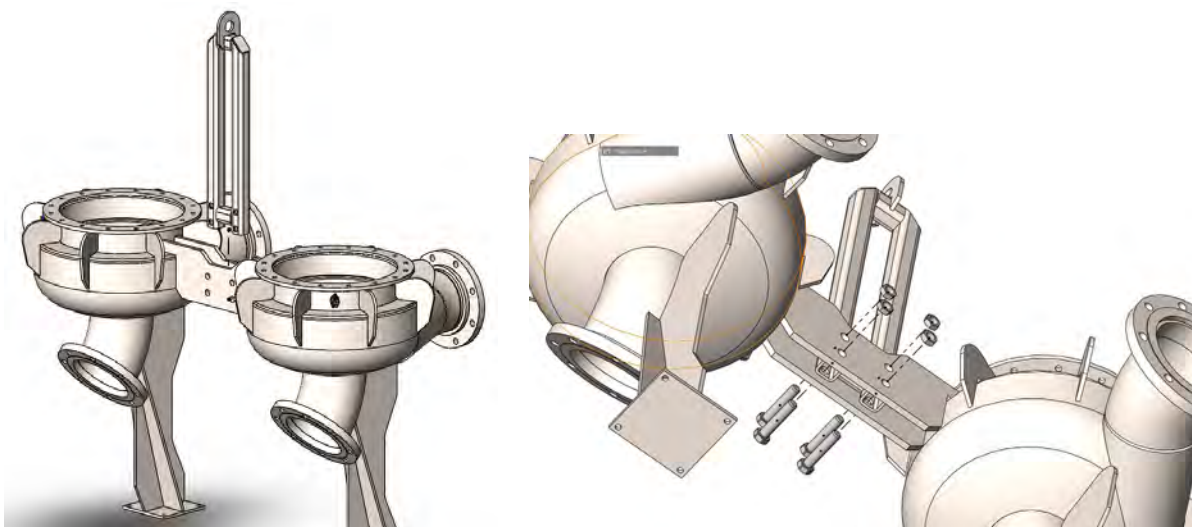


- 2) Attach the Knife Gate valves to the branch flanges of the lower body, with gaskets and hardware.
 - a. The threaded studs need to be pre-installed into the blind holes on the knife gates before mounting.

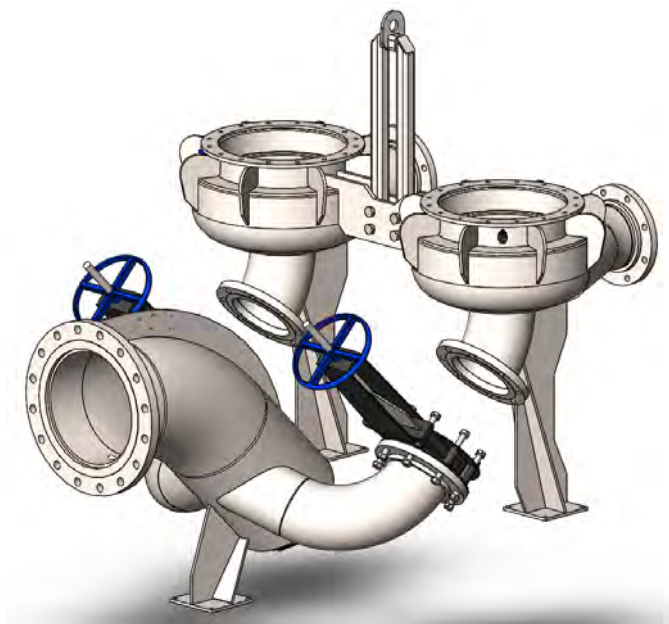




- 3) Attach the lifting bail to the Upper Body, with required hardware. Do so while the Upper is laying on its side, on the ground, to avoid tipping/falling risk.
 - a. On smaller units, fasten the lifting bail screws onto the central support plate bridging between the pump volutes.
 - b. On larger units, the lifting bail slips between 2 central support plates, and is pinned with bolts that pass through and are retained with nuts. The images below show this 2nd case.

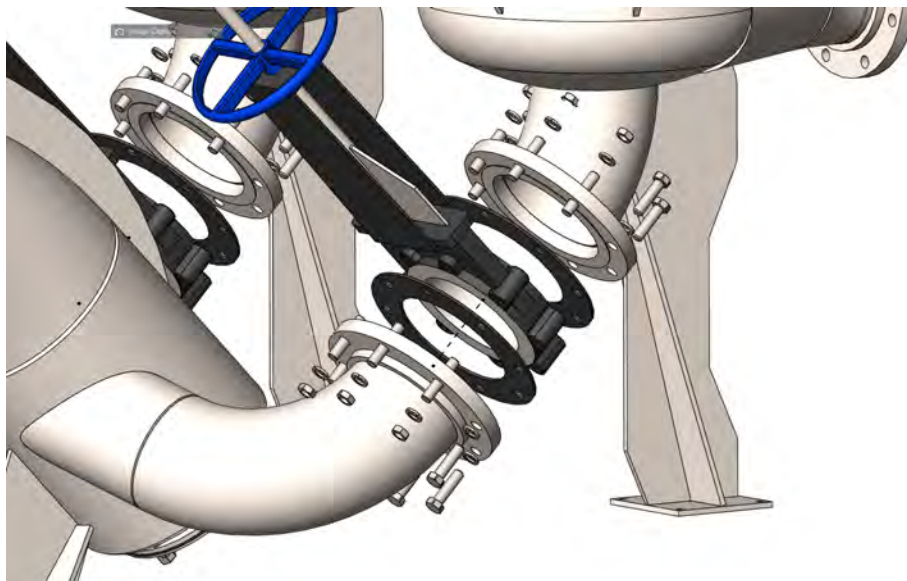


- 4) Brace the Lower Body in position standing up on its front foot (Chock the branch arms with jacks/wood shimming/etc.)
Lift the Upper Body via the lifting bail to raise it vertically, and position behind the Lower Body with the branch flanges aligned.



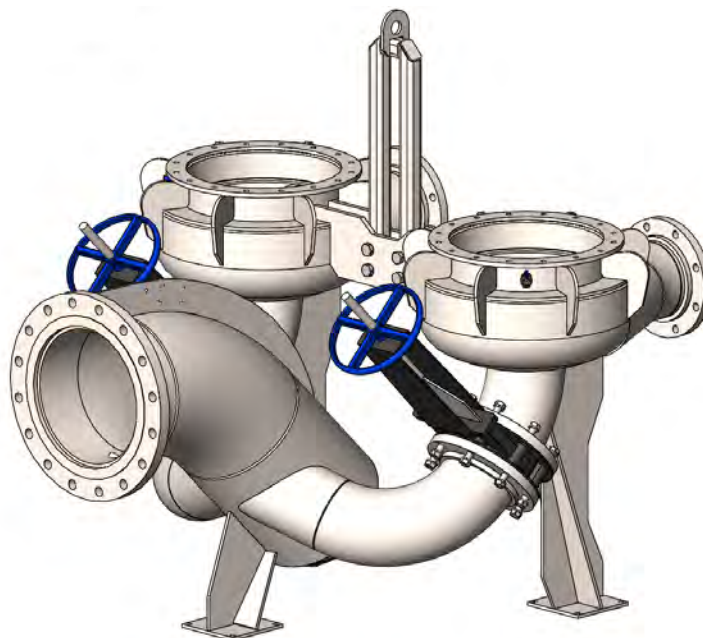


- 5) Lower the Upper Body onto the studs of the branch knife gate valves and then fasten the Upper's branch flange onto the valve, with gaskets & hardware.
 - a. The connection angle can cause the bolts to bind; apply an even level of light torque to all fasteners and avoid tightening only one side. Gradually tighten in a star-pattern on both valves together.



The OverWatch® Body is now assembled and can stand on its own.

Warning: The lifting bail is designed for moving the OverWatch body + valves ONLY, lifting the system with motors installed will cause catastrophic failure of the lifting bail leading to the unit falling. Do NOT attempt to lift the pump by the lifting bail with the motor's Installed onto the OverWatch body.



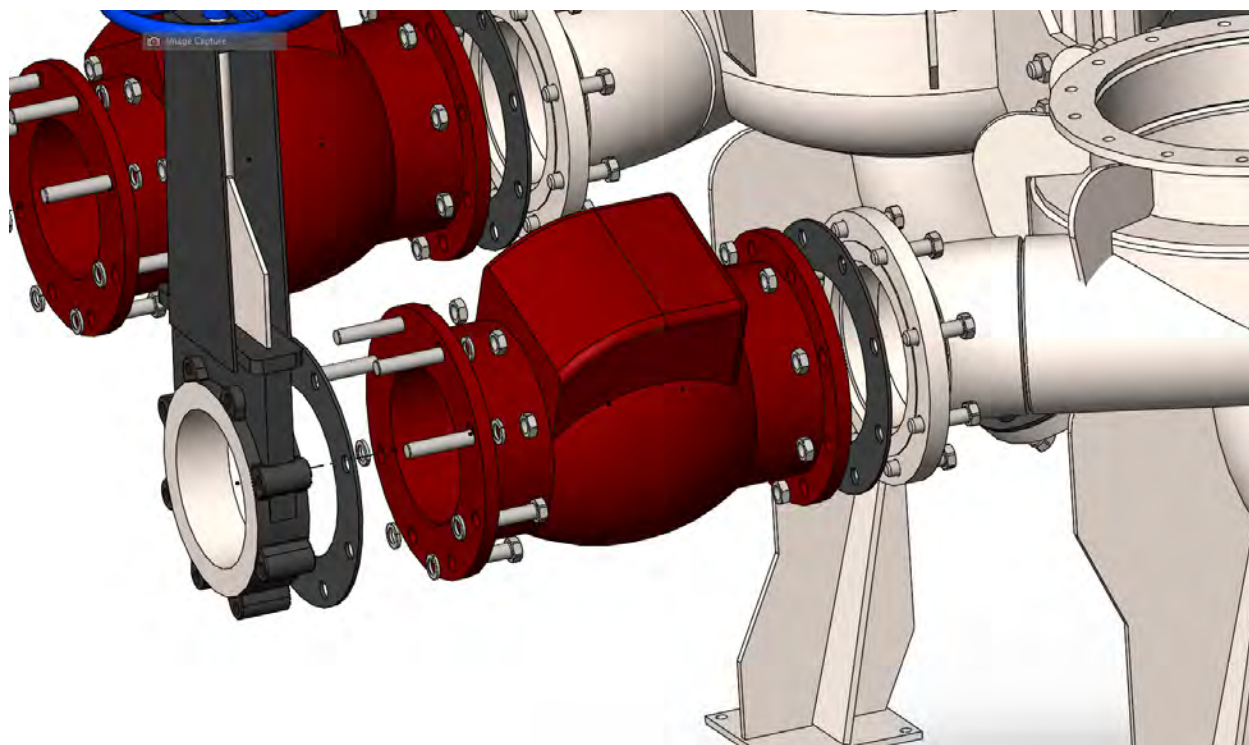


Connect to Piping

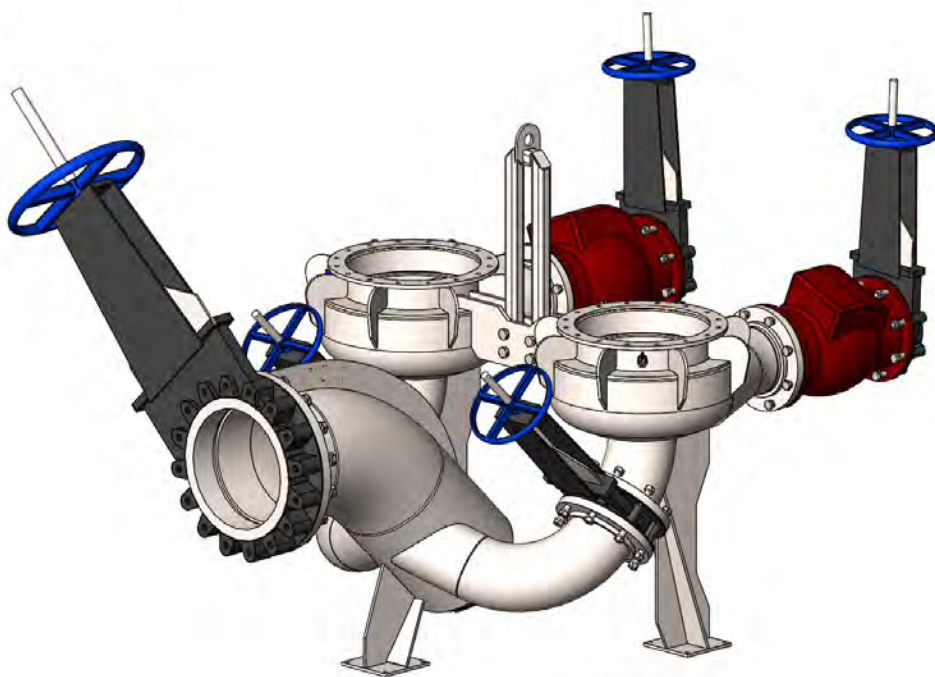
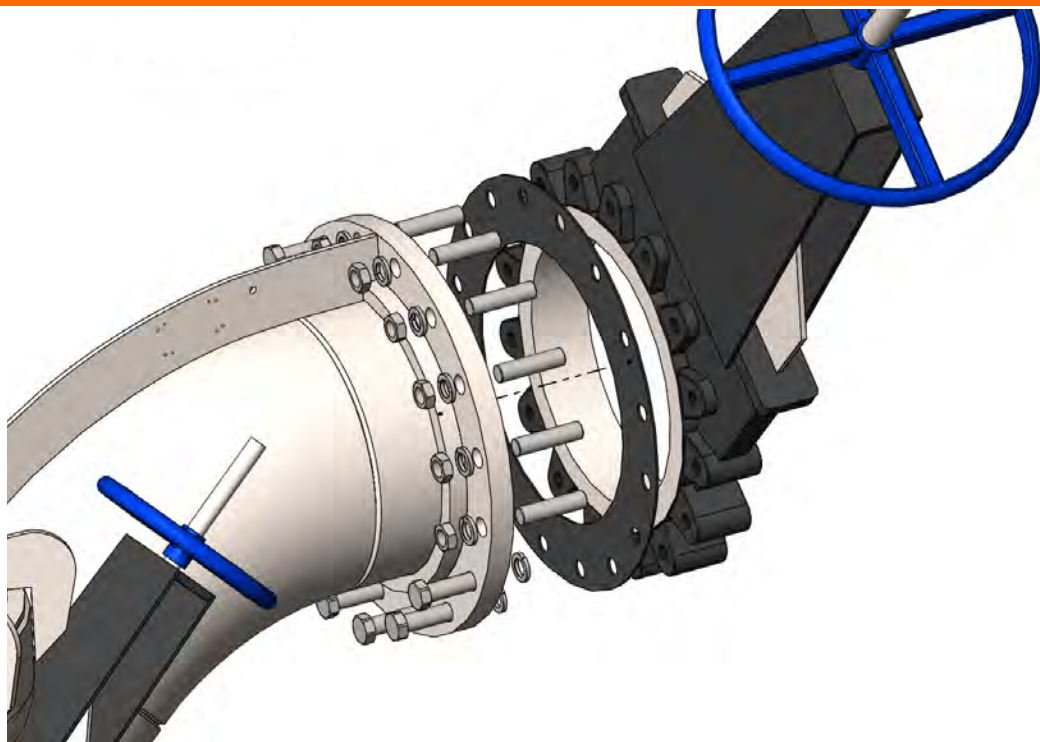
Note: The accessory valves can be installed onto the OverWatch® before or after placing the pump body into final position for your site's piping. Here we will describe attaching the valves first, and then placing and anchoring the pump in place, in a typical installation configuration. But the order of operations as described is flexible, and you are free to arrange the suction & discharge valves in a layout & position that is most suitable for the site conditions.

Install the check valves and discharge knife gate valves onto the pump discharge with provided gaskets and hardware. Ensure the swing checks are oriented correctly, so the internal check plunger opens AWAY from the pump body (AVK swing check valves have a directional arrow embossed on the side for quick reference). The check valve should be clocked so that it closes with gravity (hinge pointed upwards).

Knife gate valves can be clocked in any orientation, just ensure that the handles for operation are an accessible height for personnel.



Install the suction knife gate valves onto the pump suction flange with provided gasket and hardware. The studs must be installed before mounting onto the pump flanges. This knife gate can also be clocked in any orientation that is accessible to personnel. If you choose to orient, it hanging towards the side (2-4 o'clock or 8-10 o'clock) be sure to put in some type of bracing or support for the free-hanging weight.



Install any additional piping-related accessories as needed.

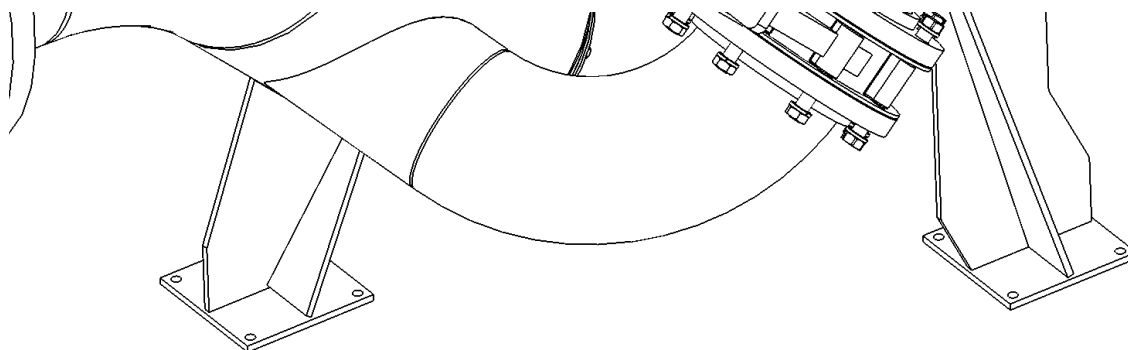
Place the OverWatch® body into its final position and connect it to the site's pipework. The OverWatch body can be lifted and moved by the central lifting bail.



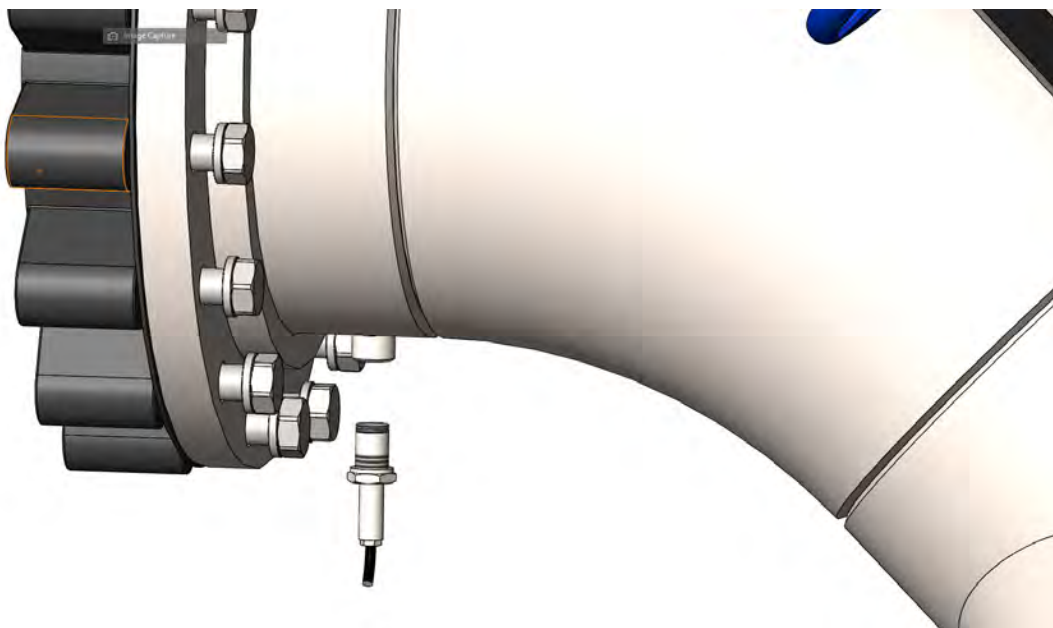
Warning:

The lifting bail is designed for moving the OverWatch® body + valves **ONLY**, without motors installed. Do **NOT** attempt to lift the pump by the lifting bail with the motor's installed onto the OverWatch body.

Once in place, anchor the foot plates of the pump to the ground, through the mounting holes. Typically, this is done via concrete anchors.



If the pressure transducer is not already installed on the lower body, install it by applying a wrap of PTFE thread tape to the sensor's thread, & threading it into the ½" BSPP coupling on the underside of the lower body suction. The sensors should fully thread into the coupling but may require a wrench.





Install Motor Assembly

Preparing the Motors

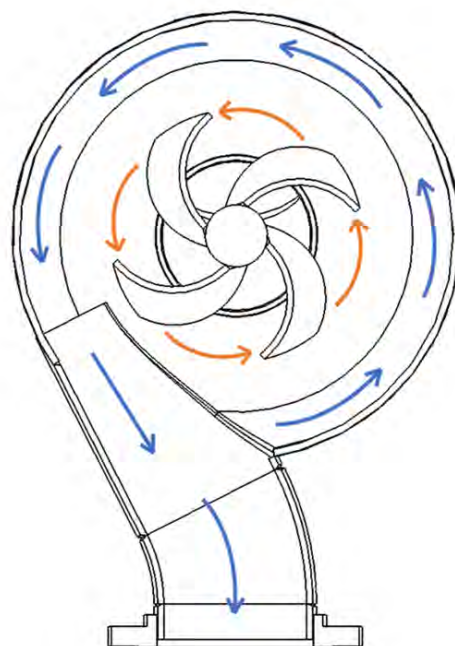
The OverWatch® motor assemblies have a specific rotation direction that must match the orientation of the pump volute. On the outside of the pump's volute bowl will be a sticker, labeling it as P1, P2, etc. and indicating the correct rotation direction.

On the terminal box of the motor assembly will be a corresponding label for P1, P2, Etc. Note the # identity of each motor & pump volute, and stage them to install as matching sets. It is also recommended that this pump number matches the ID of the control system VFD drives.



IE: Motor P1 mounts to Pump 1 on the OverWatch body and electrically connects to Drive 1 in the Control System.

Note: When motor, volute, and rotation direction are correctly matched, for a high-efficiency impeller: the Impeller's vanes should rotate towards its convex side and follow the volute's outer wall into the discharge pipe. The vane tip / trailing edge should appear to “drag” or “sweep” away from the rotation direction. If it appears to “scoop” into the discharge pipe with the concave side, that is an incorrect pairing.

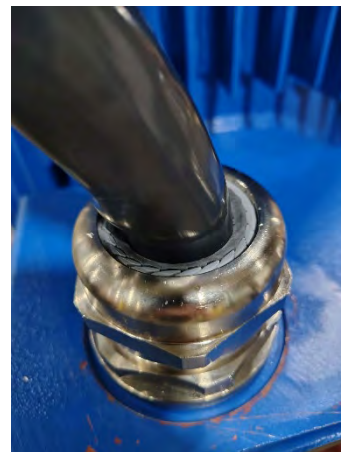




Check the cable entry glands where the electrical cable enters the motor terminal box, to confirm that it is still correctly fastened after shipping. The cable entry should be tight, fully gripping onto the cable's insulation, with no gaps, or exposed wire shielding.

These glands prevent water ingress directly into the motor's electrical terminal box from weather, leaks, or temporary immersion; it is essential that they are properly fastened to prevent a short-circuit and/or damage to the motor windings.

If the cable has pulled itself out of the cable entry gland, use a large adjustable wrench to loosen the cable entry cap, re-insert the cable fully through the entry, and then re-tighten the cap as much as possible. There must be sufficient insulation inserted through for the gland to grip against and seal.



(This is easiest with 2 people: 1 pulling/supporting the cable, 1 tightening)

If the motor has additional thermal cables, perform the same inspection of those cable entries as well.

Special UL778: Wiring the Motor

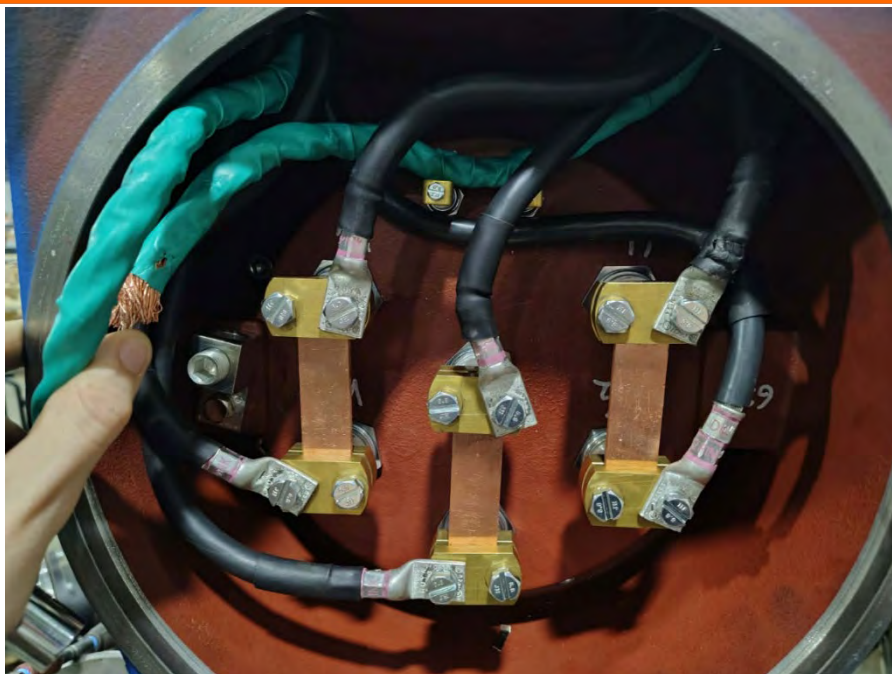
For OverWatch® pumps subject to UL778 Certification, regulations require that the motors be shipped without attached cable, which **must be installed on-site by a qualified electrician**.

The provided cable should still be terminated and labeled, albeit shipped separately. Similarly, the cable entries may not be pre-installed on the motor.

- 1) Remove the screws retaining the lid of the motor terminal box and open the terminal box.
- 2) Cable entry gland assembly like the picture to the right is what should be shipped with the system

For dual-voltage motors, the busbars will already be arranged for the correct Wye/Delta configuration. No modification is needed as per the picture on the next page.





- 3) Ensure cable glands are fitted as per the manufacturer's instructions
- 4) Ensure the grounding wires are connected to the labeled location.
- 5) Wire the motor correctly as per the drawings.
- 6) Place the lid back onto the motor terminal box, and re-thread the screws back in place to seal the terminal box closed.

A plug on the top of the terminal box may need to be loosened, to equalize the internal air pressure. If so, retighten the plug after the lid is installed.



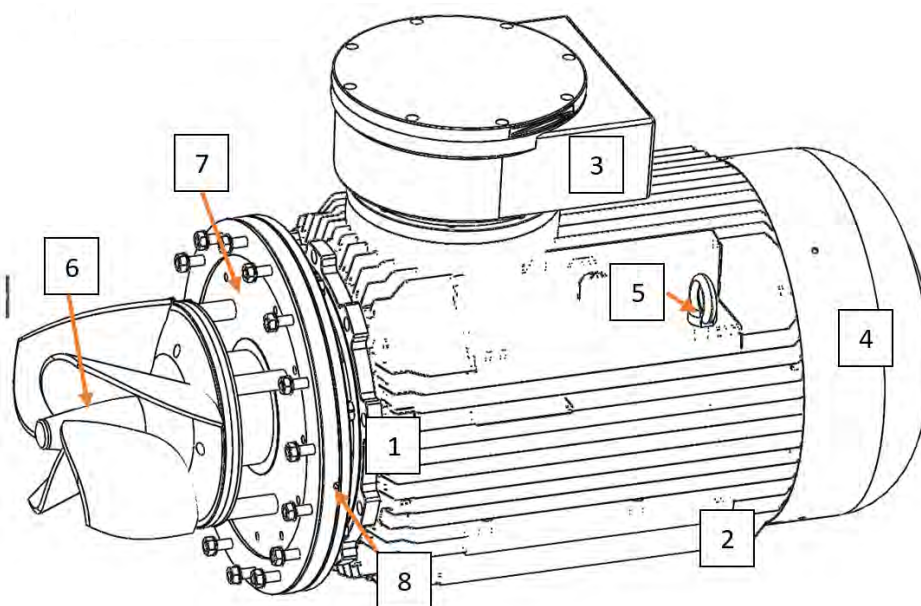
Lifting & Safely Flipping the Motor Assembly

The motor assembly will arrive on its side, attached to a cradle & pallet. However, to be installed, it must be held vertically and placed down onto the volute flange of the pump body from above. This can be a difficult and sometimes dangerous process, due to the heavy weight of these components. Here we will provide guidance on how to flip and install the motor assembly safely.



Warning:

During the installation of the Motor assembly, NEVER allow the impeller to contact the ground, strike a hard surface, or otherwise bear the motor's weight. Doing so will damage or possibly destroy the impeller & mechanical seal, rendering the pump inoperable.



OverWatch® Pump Components

1	Motor Flange Side
2	Motor Fan Side
3	Motor Terminal Box
4	Fan Cover
5	Lifting Eye
6	Impeller
7	Casing Cover Plate
8	Casing Cover Weep Channel



Hooks/straps needed

The motor will come in various forms depending on size and manufacturer. But regardless, 2 lifting devices will be needed to perform the flip. One to lift the motor from the flange side, and the other to lift and move the motor from the fan side. These can be overhead cranes, chain falls, booms on a tow-motor forklift, or some other combination of over-head lifting devices.

A large lifting strap will be needed to go around the motor flange and slipped through one of the strap's end loops to 'choke' around the flange.

In most cases, the motor will arrive with 2 lifting eyes, and 8 threaded mounting locations for those lifting eyes along its frame. In this case, thread the 2 lifting eyes onto 2 opposing holes, on the fan-end of motor. These will act as the vertical lift points from the "top" of the motor.

In other cases, the motor will not have detachable lifting eyes. For a welded-frame construction (*as pictured on the next page*), remove the top fan cover from the motor. A welded-frame motor will have tabs welded between the motor's cooling vanes. Lifting hooks can be slipped around these tabs, to lift the motor.

In rare cases, a cast body motor may have lifting eye attachment points underneath the fan cover.

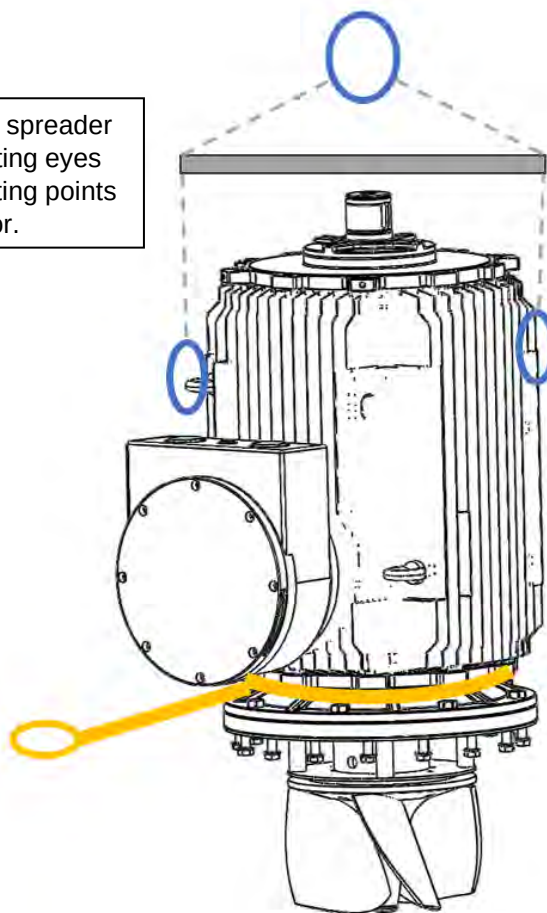
Regardless, some form of attachable lifting chains and shackles will be needed to lift the motor assembly from the fan side.

Advisory:

As stated earlier, always ensure that the lifting equipment is rated for at least the FULL WEIGHT of the item being lifted. The weight listed on the motor nameplate is for the motor ONLY and DOES NOT account for the additional weight of the casing cover, impeller, cable, and other components attached.

Lifting Chains with spreader bar, attached to lifting eyes on opposite mounting points of fan-side of motor.

Lifting strap wrapped around motor flange in a "choke", with free end for lifting.





Lift / Flip Process

The motor assembly lift & flip process can be summarized as:

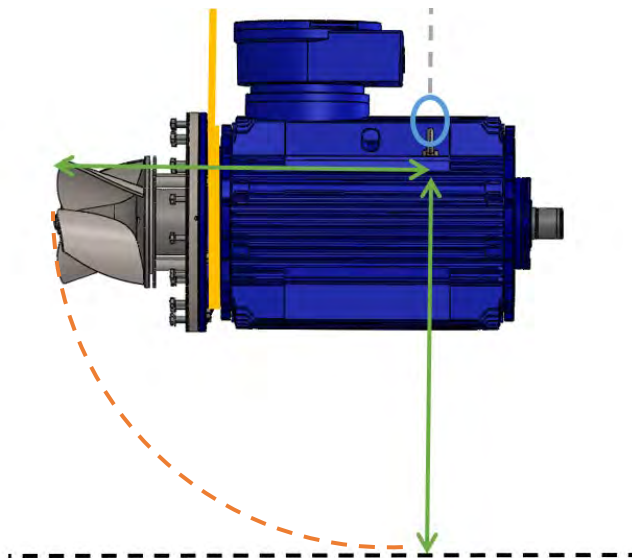
Raising the motor off the pallet with two lifting devices horizontally, then while mid-air, slowly release the tension from the front lifting device: fully shifting the load onto the rear lifting device; which will cause the motor to hang vertically downwards.

Below is the more-detailed step-by-step process. Please read this through in entirety before attempting, as it is the most potentially dangerous part of the OverWatch® installation.

- 1) Remove the fan cover from the motor, as this is likely to interfere with lifting. Keep the cover removed until after the rotation check later.
- 2) Install the lifting eyes, chains, & straps as described above, and attach to the lifting devices. Attach a strap “choked” around the motor flange as one lift point. Attach lifting chains to the lifting eyes/hooks on the fan side as the other lifting point.
 - a. Keep in mind the fan side lifting chains will need to rotate 90 degrees and should be clear of obstruction. A spreader bar for the lifting chains may be needed.
 - b. Cut any straps and remove any fasteners holding the motor assembly to the shipping pallet. Unspool any wrapped motor cable that may risk tangling during the lifting process.
- 3) Raise the motor with both lifting devices simultaneously, several feet off the ground, so the motor is suspended in the air horizontally.

Note: To ensure the motor assembly has sufficient clearance to avoid the impeller striking the ground as it rotates, apply the following.

The motor must be raised above the ground a vertical distance, greater than or equal to, the horizontal length from the tip of the impeller to the rear lifting point.





- 4) Gradually release tension from the lifting device holding the strap around the motor flange. This will allow the assembly to slowly swing downwards until only the lifting device on the fan side is holding the weight.
 - a. Be mindful never to allow the impeller to contact the ground or bear the weight of the motor, as previously warned.
 - b. While flipping, depending on the spread of the lifting chains/equipment, it is normal for them to “pop” or “skip” as they travel over the cooling vanes of the motor body.
 - c. If at any point in this process the lifting equipment binds up or becomes stuck on a part of the motor, **IMMEDIATELY STOP**.
 - i. Tension the motor flange lifting device, lift with the strap and bring the motor back into horizontal orientation.
 - ii. Set the motor down on the ground horizontally and adjust the lifting equipment to avoid that obstruction.
 - iii. Then return to step 3 & try again. This process should be as smooth as possible.
- 5) With the motor fully vertical, disconnect the lifting device from the motor flange strap, and proceed to installation on the OverWatch® Body.

On the right, is a picture of a motor assembly lift & flip in-process.

Here a boom on a tow motor forklift is holding the motor. Lifting chains are attached to the fan-side, at the near-end of the boom. The flange-side is held by a strap attached to a chain-fall on the far end of the boom.

The rigger pictured here, is slowly lowering the flange-end of the motor via the chain-fall, allowing it to swing from horizontal down into a vertical orientation.

They will then be able to drive the tow motor forklift over to the OverWatch body and place the motor onto the volute flange.



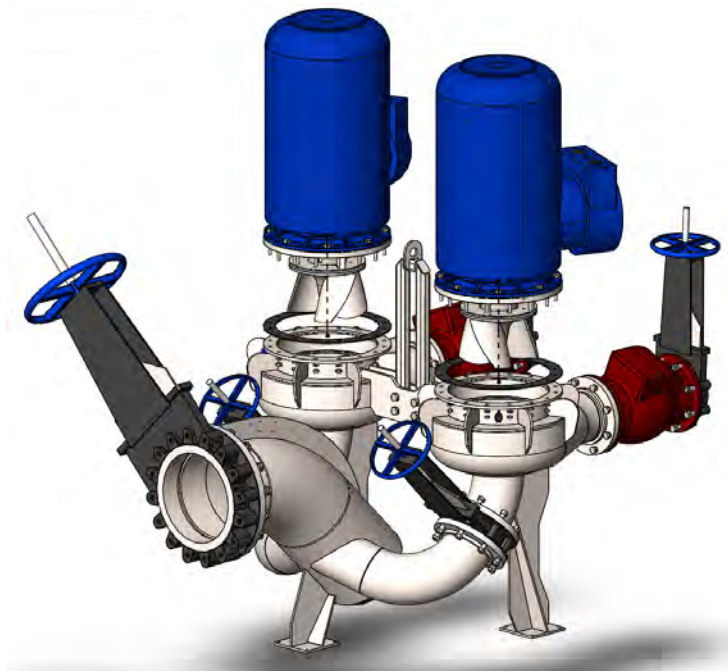


Install onto the upper body

Place the gasket onto the volute flange, and line up the bolt circle holes.

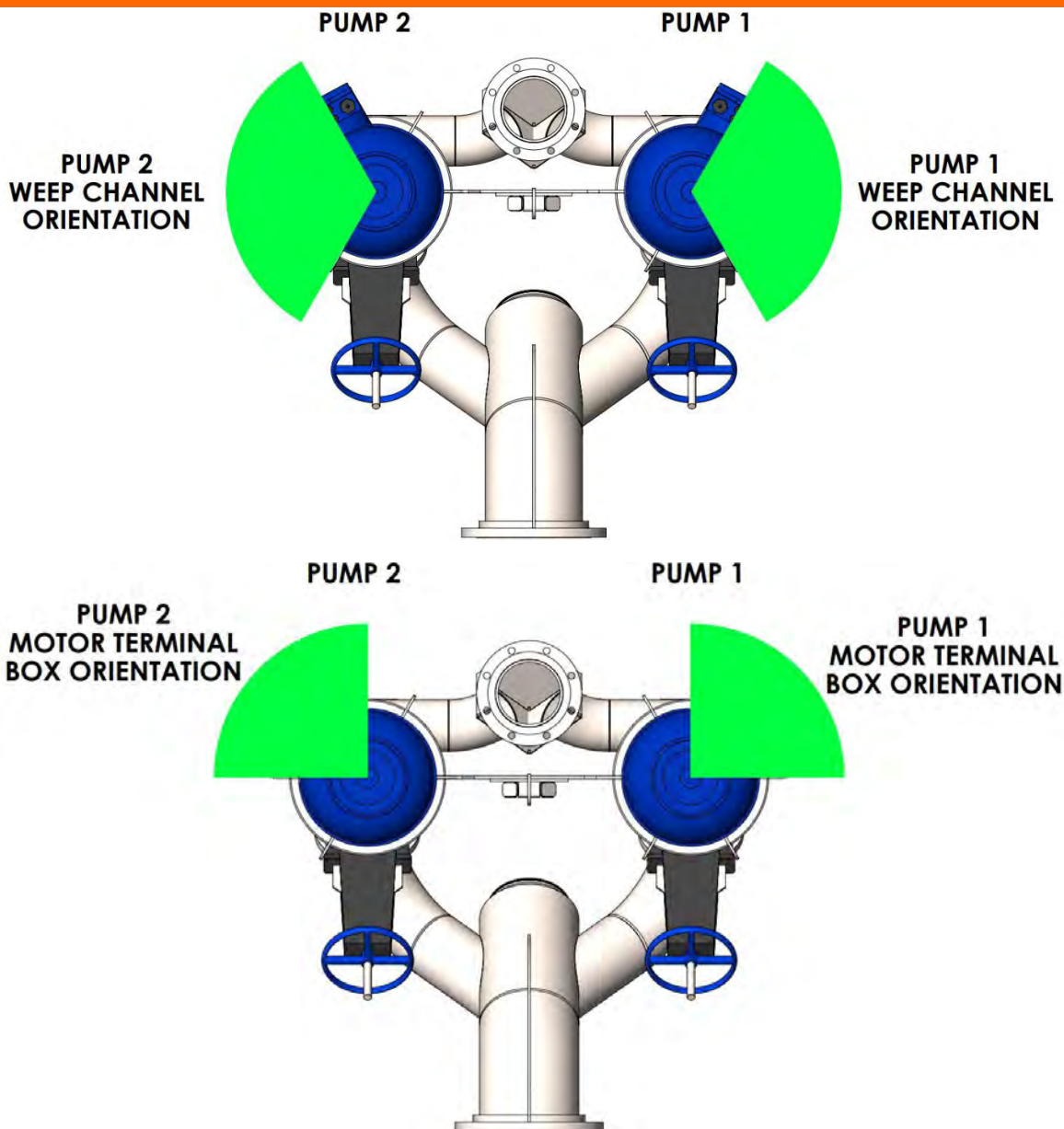
Then bring the motor over the top of the pump body, on the correctly matching pump volute (P1, P2, Etc) until it is centered co-axially with the volute flange.

It is helpful at this stage to have personnel next to the pump to help guide the motor into place.



Slowly insert the Impeller into the pump volute and rotate the motor into the desired clocking.

It is recommended to have the weep-channel hole on the casing cover pointing outwards from the pump and generally recommended for the motor terminal box facing towards the discharge of the pumps.



Once oriented, continue slowly descending, and align the studs with the bolt circle holes. Try to keep the motor level during this step to avoid binding on the casing cover studs' threads.

Once the weight is fully onto the pump body, fasten the motor assembly with the provided nylon lock nuts and washers. Tighten in a star-pattern to apply torque evenly across the surface.

Disconnect the lifting equipment from the motor assembly once it is tightened in place, and repeat this process for each motor assembly.

After the motors are wired into the panel in the next instruction section, rotation will be confirmed, and then the fan covers will be reinstalled.



Install Control Panel



The control system will come in a UL certified enclosure(s), designed for the site's requirements. Place the panel in your site's designated location and fasten in place according to local code requirements. Pictured above is a single control cabinet for a large duplex OverWatch® system, but it is not uncommon for a very large OverWatch control to have multiple smaller cabinets instead.

Every Industrial Flow Solutions™ control panel will come with a set of schematics, on the interior of the panel door, along with some other helpful documentation. Refer to these schematics, layouts, and wiring diagrams as the primary source of information when conducting electrical work on the control system.

Wire Panel to Grid

Consult the control schematics and sales order documentation, to confirm that the panel's designed Input voltage & frequency matches the line supply voltage and frequency.

If so, wire power into the panel's fusible disconnect (typically top right corner) in the panel, in accordance with local electrical code. Ensure conductors are properly sized for the rated amperage of the panel.



The output from the VFD to the motor, may be different than the input power into the panel, so do not be alarmed if there is a minor discrepancy on the output side. For instance, a panel may have a 208V 60hz input power, while the drives are outputting synthetic AC to a 230V 50hz motor.

Wire Motors to VFD

The VFD drives in the control system are arranged Pump1, Pump 2, etc. from left to right. Identify the motor cable coming from the matching pump number and bring it into the panel in accordance with local electrical code.

On smaller OverWatch® pumps, there is a set of terminal blocks to connect the motor cable leads, but on larger motors these will need to wire directly into the terminals on the VFD Drive.

Remove the VFD cover and fasten the 3 conductors for motor power into the corresponding drive output terminals.

It is recommended for pump 1 to connect the motor wires 1, 2, 3, to VFD output L1, L2, L3. For Pump 2 connect the motor wires 2, 1, 3 to VFD output L1, L2, L3.



Here on this drive, we can see the supply Input power pre-wired on the left side, with open output terminal on the right side for the motor cable. This drive uses a dual-conductor output, and so it has 2 terminals for each 'phase' of the output power (from left to right, 1,2,3,1,2,3)



Make sure to also connect the green ground wire and cable shielding to the grounding location on the drive, or the panel ground bus bar, in accordance to local electrical code for EMC compliance.

After the Wires are connected, for a DERAGGERPro™ system, connect the current transformer loop sensors (CTs) around each output phase. Ensure correct direction of the CTs.



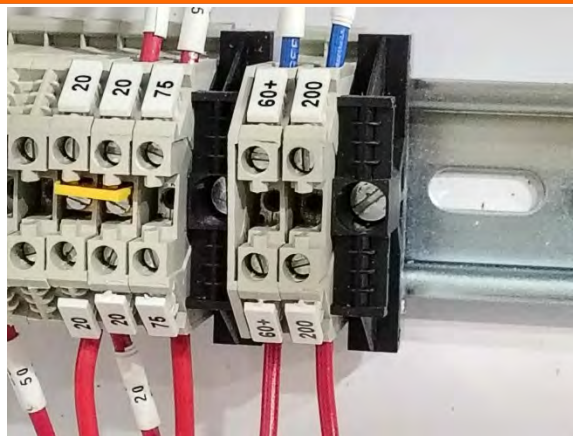
This is simple for single conductor power output, but, as pictured above, it can be difficult in a dual-conductor setup.

Connect Level Transducer

Take the cable from the level transducer and bring it into the panel in accordance with local electrical code.

The Transducer has a 4-20ma DC signal loop, with 2 leads. White for + Yellow for -

Consult the control system schematics for the exact terminal locations where the transducer should be connected.



XP: Wire Thermals to Relays

For explosion proof pumps, bring the cables into the panel in accordance with local code requirements.

Consult the controls schematics for the connection points and wire them into the labeled position on the terminal blocks.

Optional Accessories

Emergency High Level Float

The emergency high level float, that will fault the pump in the event of the basin/vault/pit when the pump is installed, becoming catastrophically flooded. This prevents the motors from short-circuiting due to fluid ingress from a temporary immersion, so that they can be re-started once the basin/vault/pit is drained.

Install the float at a position in the site, below the top of the motor. Then bring the float cables into the panel in accordance with local code requirements. Review the control schematics on which # positions to connect the float to the dry contacts.

Sump Pump

The Sump Pump is designed to remove water from the area where an OverWatch® is installed, in the event of unwanted water ingress to the site. Generally, the sump pump is installed in a recessed cut-out in a low spot on the floor, and its discharge connected via plumbing back into the OverWatch pump's lower pressure suction line.

Note: Sometimes the sump pump is controlled from a separate companion panel.

Bring the pump cable into the panel in accordance with local code requirements. In the bottom section of the panel there will be simple contactor with 3 terminals for the pump motor leads, review the control schematics, and connect the pump cables' leads there. Ensure to connect the ground wire & shielding to the ground bus.

Sump Pumps will come with 2 float switches, for high and low level, on and off. Install the floats at desired positions in the site. Then bring the float cables into the panel in accordance with



local code requirements. Review the control schematics on which # positions to connect the float to the dry contacts.

Once power is applied to the panel, verify whether the sump pump is rotating in the correct direction. If not, switch the locations of 2 of the 3 leads from the contactor. This should reverse the polarity of the 3-phase signal, causing the pump to spin correctly.

Flow Meter

Install the flow meter at the desired position along the discharge piping, in accordance with the manufacturer's installation manual guidance. The flow meter will require power to the meter, and possibly data back into the control system or simply to an external display. Consult the manufacturer's documentation on proper connection for power & data.

For analog signal input from the meter into the control system: bring the data cables into the panel in accordance with local code requirements. Review the control schematics on which # positions to connect the wires to the terminal blocks for sensor input.

Additional Sensors/Features

For any additional sensors or features follow a similar process for bringing in power or signals into the control. Bring the data cables into the panel in accordance with local code requirements. Review the control schematics on where to connect the wires for a sensor or other feature's input.

Check Motor Rotation

Once the electrical work is done in the panel, power on the VFD drives and check for correct motor rotation.

After the drives are powered up, have someone observing the pump from above, watching the fan. Take the HOA switch for the pump and flip it to 'hand' for 2 seconds' then flip it back to 'off'. The observer should note which direction the pump's fan is spinning, when activated.

The correct rotational direction should follow along the outside of the volute bowl and into the curvature of the discharge pipe. See graphic below or diagram on pg.14 for a visual example.

This rotation direction should match the pump numbering and the curvature of the impellers installed earlier. Repeat to check this on all pumps.

If a pump is spinning in the opposite rotation: disconnect power to the control panel and swap the terminal positions of 2 out of the 3 leads on the motor cable. This should reverse the polarity of the 3 phase signal and change the motor's rotation direction.

Re-check the rotation direction to confirm it has been corrected.



Reinstall Fan Cover

When the rotation direction is confirmed as correct for all pumps, re-install the motor fan covers, and fasten them in place.





Flood with Water

The OverWatch® Direct In-Line Pump System is now fully assembled, integrated into your piping, secured, and electrically connected. Verify the integrity of the pump by checking for leaks.

Go around the pump, and double-check the following:

- Fasteners on all flange connections are tight, and there is a gasket in each flanged connection.
- The level transducer is installed in the port on the lower body
- The ½" ball valve on the cleanout plate is closed
- The ½" ball valves on each pump volute are closed
- Both branch-valves are fully open
- All downstream piping is complete, OR the discharge valves are closed.

If good, slowly open the suction valve (or another isolation valve upstream) to allow water into the body. Open this only a small amount to allow a controlled stream of water into the pump. To allow air to escape, crack open a ½" ball valve on one of the pump volutes. There will be an audible whistling from air leaving the pump body. When water begins to come out of the ball valve, close it. Repeat for each pump.

Check for Leaks

While the pump is filling with water, stay vigilant for leaks at all connection points. If a leak is connected shut the valve to stop the incoming water and address the leak's origin.

- Leaks in flange gaskets
 - o Attempt to tighten the fasteners around the flanges with a higher torque.
 - o If a leak persists, try loosening the bolts on the opposite side from the leak first, then tightening those near the leak and re-tightening the opposite side.
- Leaks at threaded fittings
 - o Attempt tightening an additional ½ to full turn
 - o If leak persists, fitting may need to be removed and apply thread sealing tape before re-threading.
- Leaks at volute disk gasket
 - o Continue to tighten nuts in a star pattern. Often when tightening one side, the opposite side nuts will become loosened.
- Leaks through casing cover weep channel
 - o Water dripping or pooling out from this small hole indicates that water is bypassing the mechanical seal and reaching the surface of the motor flange.
 - o Something has gone wrong with the shipping or installation process, and the motor assembly must be removed for mechanical inspection.



If all leaks have been addressed, open the suction valve fully. The pump is now flooded with water and is ready for system commissioning.

Ready for Commissioning

Contact your local distributor or Industrial Flow Solutions™ to inform them that the pump and control have been installed and that the site is ready for commissioning. They will schedule a time for a commissioning agent to come to your site and put the finishing touches on your pump & control.

The commissioning process will involve the following:

- Verifying that the installation was correct.
- Confirming pump performance for the site
- Programming the control system's software parameters
 - o Including level regulation setpoints and pump protection features
- Testing the automatic operation of the pump system, and ensuring there are no issues
- Training staff on how to operate the pump's control system.

To have successful commissioning, you will need to ensure the following:

- 1) There is enough water in the plumbing system for the pumps to operate for at least 1 hour.
 - a. Without water, the commissioning agent will not be able to tune or test the system's functions and performance. Leading to a poorly configured and potentially malfunctioning pump.
- 2) The installation & utility connections must be finished, or at least in a fully operable state, before the commissioning agent's arrival.
- 3) Staff who are to be trained in the monitoring and operation of the OverWatch® pump's control system must be present for the scheduled time.
- 4) Keep a set of site plans on-hand or easily accessible, to give the commissioning agent measurements/information about the upstream and downstream piping at the site.
- 5) Create permanent copies of the paperwork provided with the OverWatch system, to stay on the inner door of the control panel. As well as copies of the serial numbers of the pump and control cabinet.



Revisions

ECN	Rev	Description	Date	Created By	Reviewed By	Approved By
-	01	Initial Release	04/20/2026	RMc	NF, LR, FA	GMI
	02	Marketing Approval	04/22/2026	RMc	AL, CA	AL, CA

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