



OPP PUMP STAND START-UP PROCEDURES

Operator Pro Start-Up Guide

PRE-REQUISITE

Do not begin this checklist *until* all main electrical and plumbing connections to the stand have been fully completed.

PHASE 1 Initial Mechanical & Plumbing Checks

Before applying utility water or electrical power, verify the physical connections to the equipment.

- ☐ **1. Check Pump Oil Levels:** Ensure all high-pressure pump crankcases are filled to the center of the sight glass with manufacturer-approved pump oil.
- ☐ **2. Secure Hose Connections:** Inspect all suction and supply hoses connected to the tanks and pumps.

CRITICAL

Always use secure hose clamps on all water-side connections to prevent air from entering the system, which causes cavitation and pump damage.

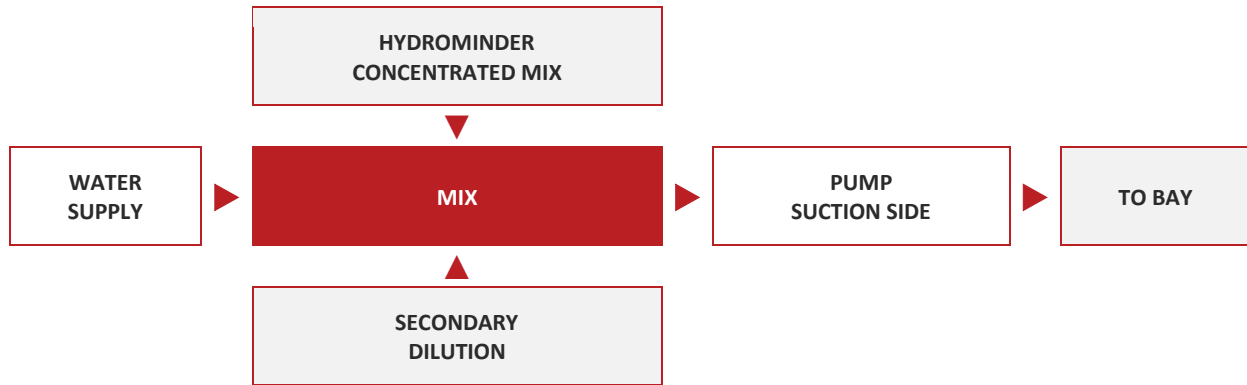
- ☐ **3. Inspect Overflows:** Double-check all tank overflow and overflow pipes to ensure they are clear, secure tightened down, and piped to an open drain if desired.
- ☐ **4. Introduce Utility Water:** Open the city water supply to the system. Fill all chemical and freshwater holding tanks.
 - Verify that all water float valves shut off completely at the desired levels.
 - Confirm that initial tank dilutions are set up.

Because chemicals are diluted in the holding tanks and then diluted a *second* time at the suction side of the pump head, you will likely need a richer mixture than what is standard.

CHEMICAL PRO-TIP

It is highly advised to install a metering tip that is **1 to 2 sizes larger** than what is recommended by the chemical manufacturer to compensate for this dual-stage dilution.

Chemical Dilution Flow



PHASE 2 Electrical Start-Up & Verification

Perform these steps with extreme caution. Ensure proper personal protective equipment (PPE) is worn when testing live enclosures.

1. Initial Power-Up: Breakers ON, MCPs OFF.

Turn on the main power supply at the breaker panel. **Keep all Motor Control Protectors (MCPs) switched OFF at this stage.**

Verify that the incoming voltage matches the unit's nameplate specifications.

2. High-Voltage Terminal Verification: Verify Leg-to-Leg Power.

Using a multimeter, verify that the appropriate, balanced voltage is present across incoming terminals:

- 10003L1
- 10003L2
- 10003L3
- L1/L2/L3 of all MCPs

3. Control Voltage Check: 24VAC Verification.

Measure the control voltage circuit. Confirm there is **24VAC** present between terminal **24VAC** and terminal **24V-C**.

4. VFD Power Check:

Switch on **one Bay MCP at a time**. Confirm that the corresponding VFD powers up and begins flashing **60.00** on its display.

PHASE 3 Pump Bleed-Out Process

Running high-pressure pumps dry will quickly destroy the seals. This air-bleeding procedure must be performed on every pump before running it under pressure.

1. Locate and remove the **1/2" brass plug** from the inlet (suction) side of the pump head.

2. Temporarily jump a wire from the **24V Hot** terminal to the **Cold Water Solenoid Valve** terminal of the pump you are working on to open the water flow.
3. Allow water to flow freely out of the open 1/2" port, flushing out all trapped air.
4. **While water is still actively flowing** out of the port, carefully thread the 1/2" brass plug back in and tighten it. This ensures zero air is trapped.
5. Remove the temporary jumper wire. Repeat this process for all pumps on the stand.

PHASE 4 Setting Up High, Medium, & Low Pressures

Perform this sequence for **each individual bay**.

- ☐ 1. **Preset the CAT Relief Valve:** Tighten down (clockwise) the CAT relief valve using a 1/4" Allen wrench until the adjustment screw is almost fully bottomed out.
- ☐ 2. **Set High Pressure (KR Regulator):**
 - Turn on the bay to **High Pressure Rinse**.
 - Adjust the **KR regulator** by turning the brass hex head at the stem of the regulator until the desired pressure is reached.
 - **Recommended Pressure: 1000– 1300 PSI** (depending on site specs).
- ☐ 3. **Calibrate the CAT Relief Valve:**
 - With the pump still running in High Pressure Rinse, slowly loosen (counter-clockwise) the **CAT relief valve 1/4" Allen screw** until water just begins to drip/bypass out of the valve's discharge port.
 - Once the drip starts, turn the Allen screw back **clockwise exactly one full turn** to set the safety limit.
- ☐ 4. **Verify VFD Pressures:**
 - Test the **Medium** and **Low Pressure** functions for that bay.
 - *Note: These pressures are controlled electronically via VFD speed reduction. Do not readjust the mechanical KR regulator or CAT relief valve during these tests.*
- ☐ 5. **Repeat:** Perform steps 1 through 4 for all remaining bays on the stand.

PHASE 5 Dosatron & Foaming Setup

- ☐ 1. **Physical Setup:** Ensure the Dosatron siphon tube and weighted screen filter are clean and fully submerged in the designated chemical concentrate.
- ☐ 2. **Initial Minimum Setting:** Turn on the bay located **furthest away** from the equipment room to a foaming function. Leave the Dosatron adjustment stem set to its **minimum** setting.
- ☐ 3. **Set Water Pressure:** Adjust the main water regulator feeding the Dosatron loop to **40 PSI**.
- ☐ 4. **Prime the Line:** Run the function for **two minutes** to fully pull raw chemical up through the siphon tube, into the Dosatron, and fill the delivery lines to the bay.

- ☐ **5. Adjust Chemical Concentration:** Unlock the Dosatron dilution stem and turn it to match the chemical manufacturer's recommended dilution rate. Allow the system to run for another **two minutes** for this mix to reach the bay.
- ☐ **6. Adjust Air (Foam Quality):**
 - Set the air regulator to **35 PSI** as a baseline starting point.
 - Observe the foam quality at the bay.
 - *If the foam is too runny:* Increase air pressure slightly.
 - *If the foam is pulsing, spitting, or too dry:* Slightly decrease air pressure.

PHASE 6 Setting the Change-Over

- ☐ Setting the timing for Medium and Low chemical change-over will only need to be done once per pressure pre bay. It is important to start this process after the entire line is flushed with Rinse water.

Medium / Low Pressure Timing Change:

- Flush Line with Rinse Water
- Select a medium / low pressure chemical application
- Once selected watch for delivery to change from clean rinse water to chemical. Countdown how long it takes for the VFD to ramp from High pressure down to medium pressure once the chemical is dispensed from the HP gun.
- Adjust timing relay accordingly (*CW* to increase delay / *CCW* to decrease delay) to pressure change via the blue adjustment screw on the side of the relay body.

PHASE 7 Final Walkthrough

- ☐ Run **every bay** on **every function** for several consecutive minutes. This stabilizes system pressures and ensures chemical consistency.
- ☐ Thoroughly inspect the entire pump stand, manifolds, solenoid valves, and tank connections for any signs of leaks.