SmartSkim® Coolant Recycling System

Installation and Operations Manual

(Updated January, 2024)

CL400

CL800

CL1200

CL2400

SmartSkim
BY SENTRY EQUIPMENT

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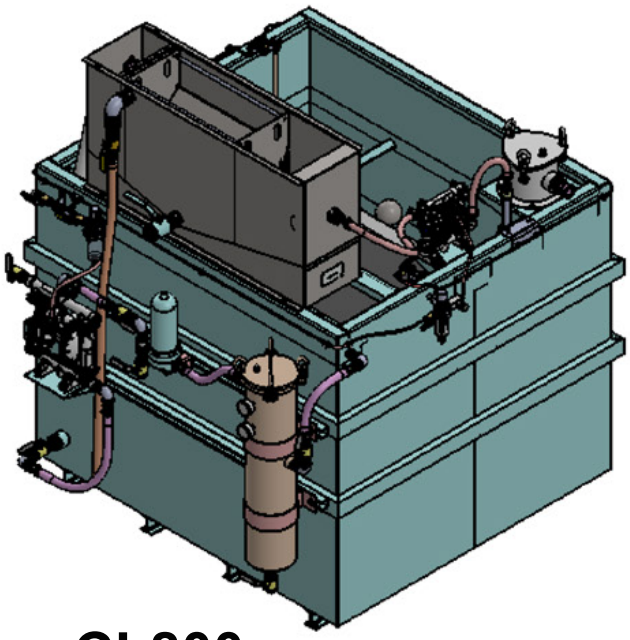
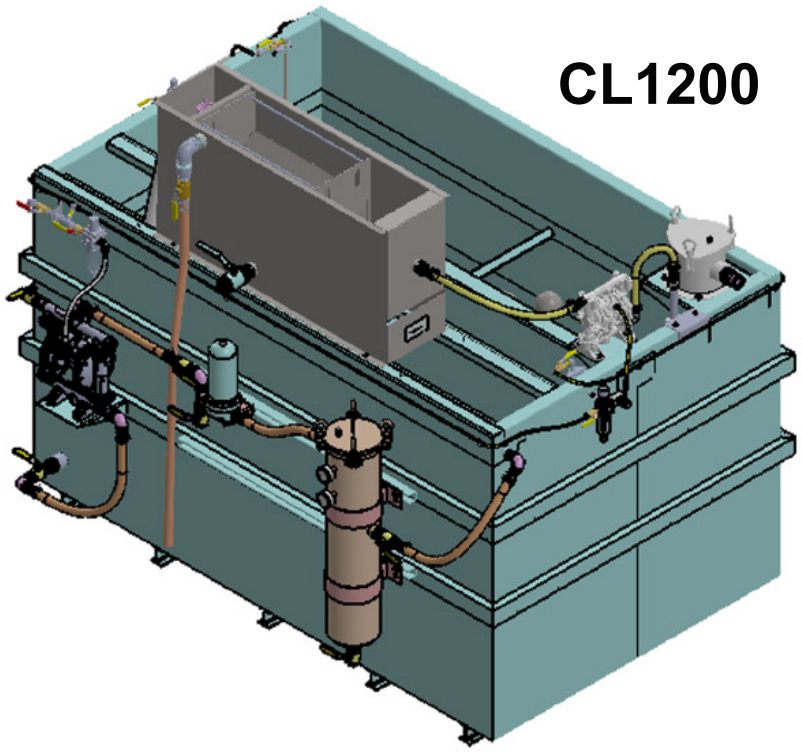
System Layout



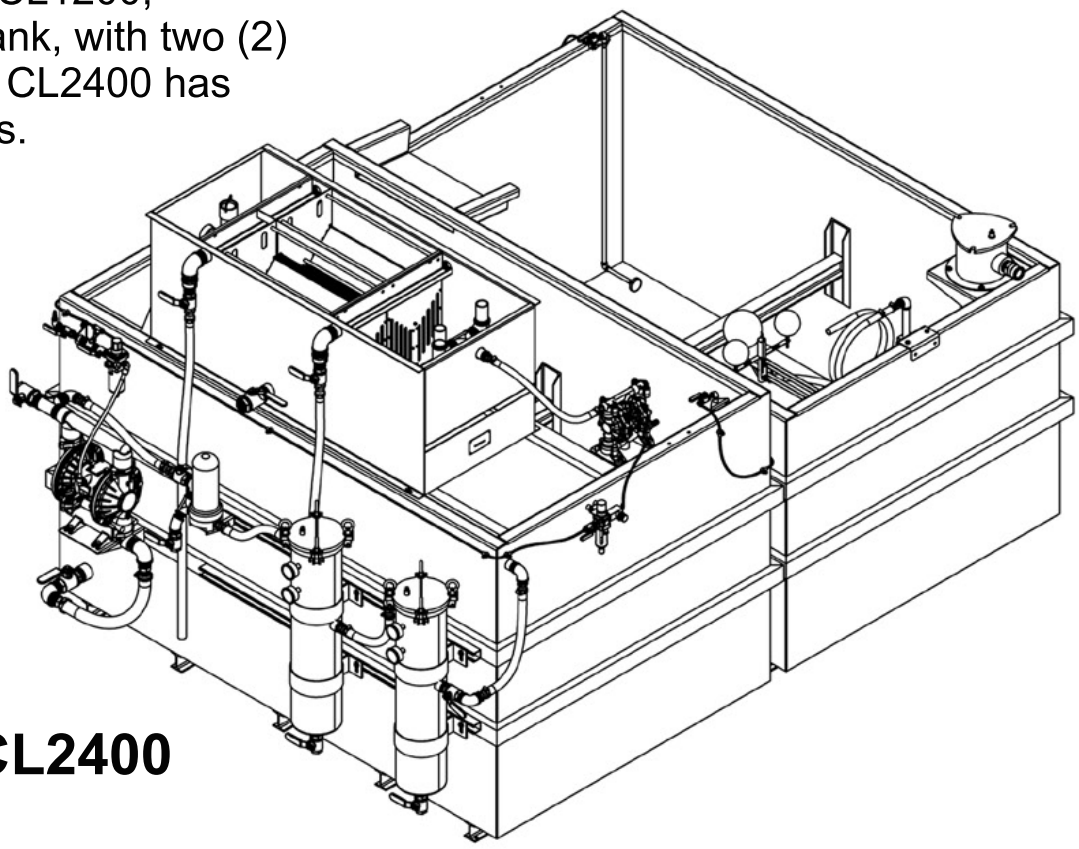
CL800



CL1200

Throughout the startup guide, we will be referring to both the dirty compartment (side) and the clean compartment (side) of the system.

For the CL800 and CL1200, the system is one tank, with two (2) compartments. The CL2400 has two (2) distinct tanks.

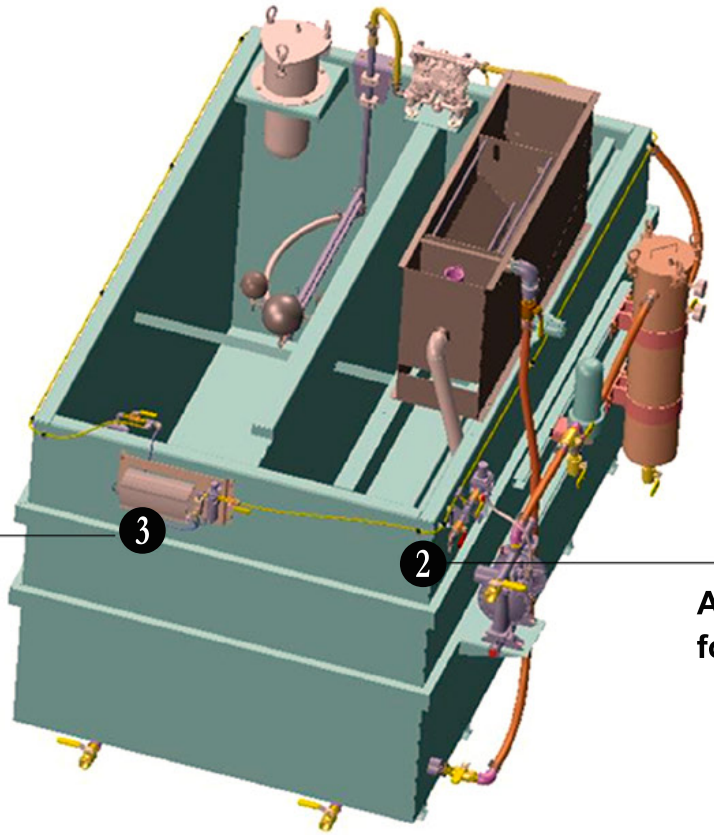


CL2400

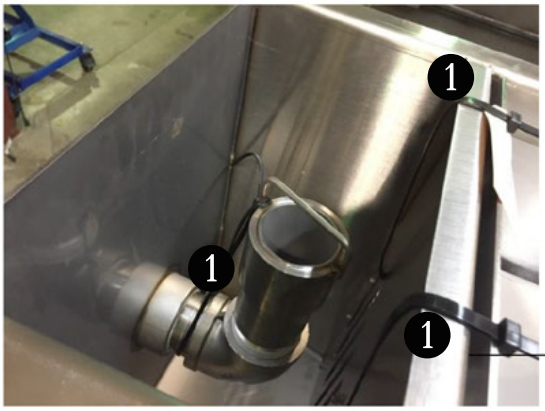
Section 1

System Placement and Utilities

1. Position the recycling system in a leveled area of the plant
2. Provide plant air service
3. Provide single-phase electrical service
4. Provide water source for coolant make-up system (location to be determined based on operation)
5. Accessibility to all four (4) sides of the system recommended



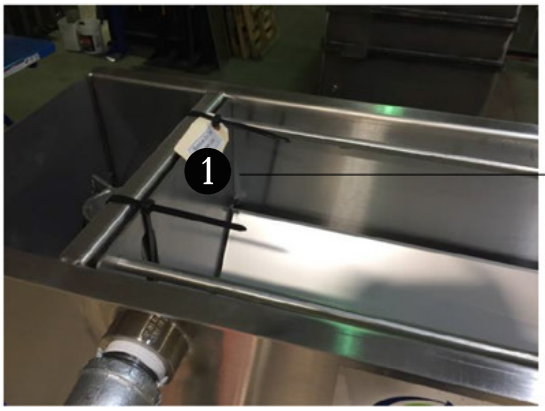
Equipment Prepping



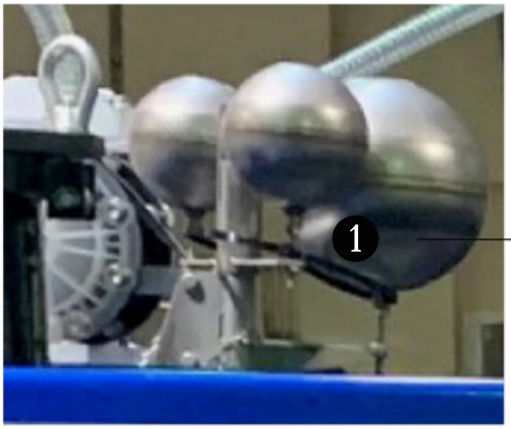
1. Remove zip-ties that were included for shipping purposes. These are located on top of the CrossFlow Separator and at the Pivot Arm Skimmer.

Note:
System skimmer may vary.
Some models include a mini tri-float.

Remove zip-ties



Remove zip-ties

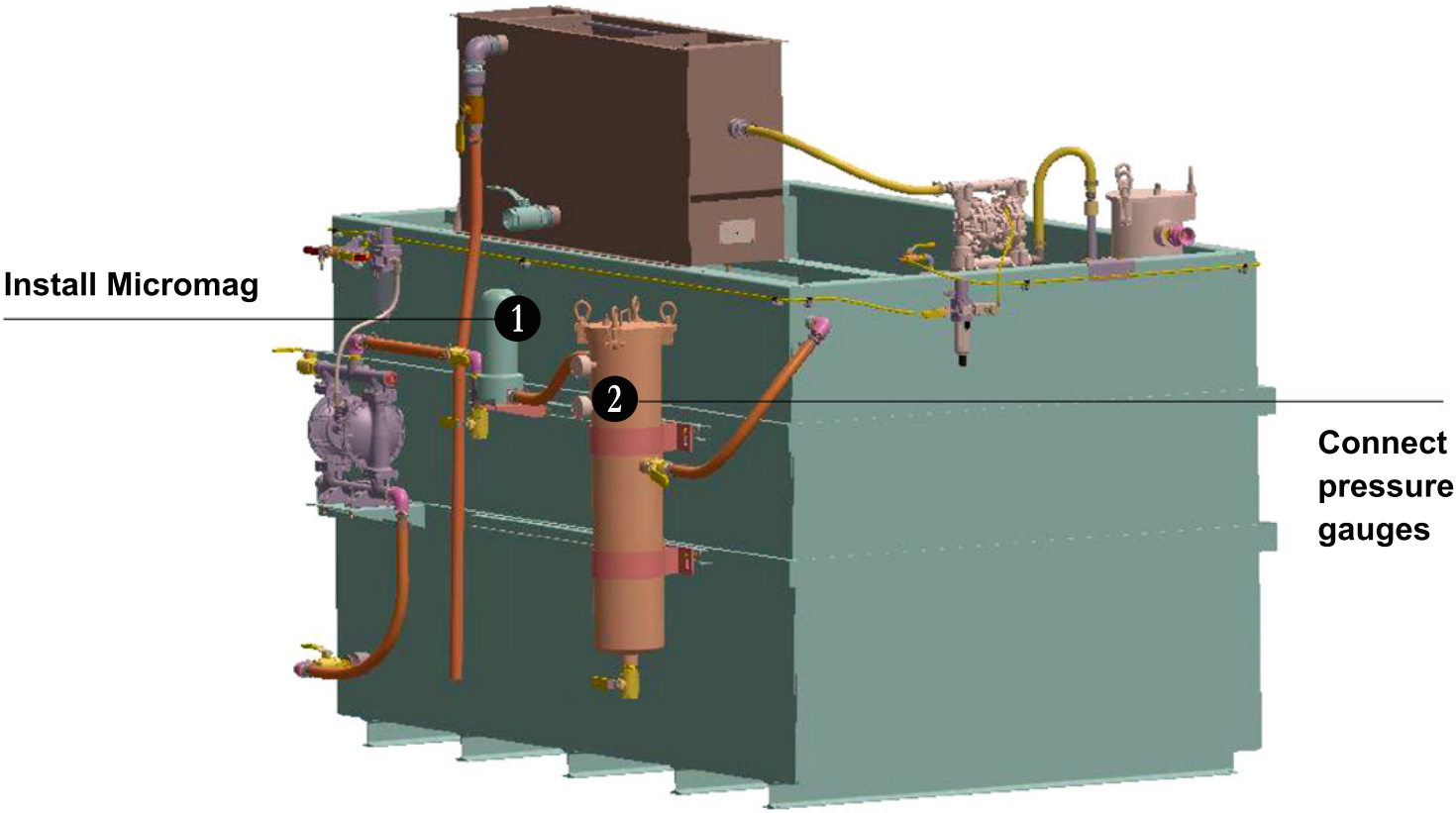


Remove zip-ties

Equipment Prepping

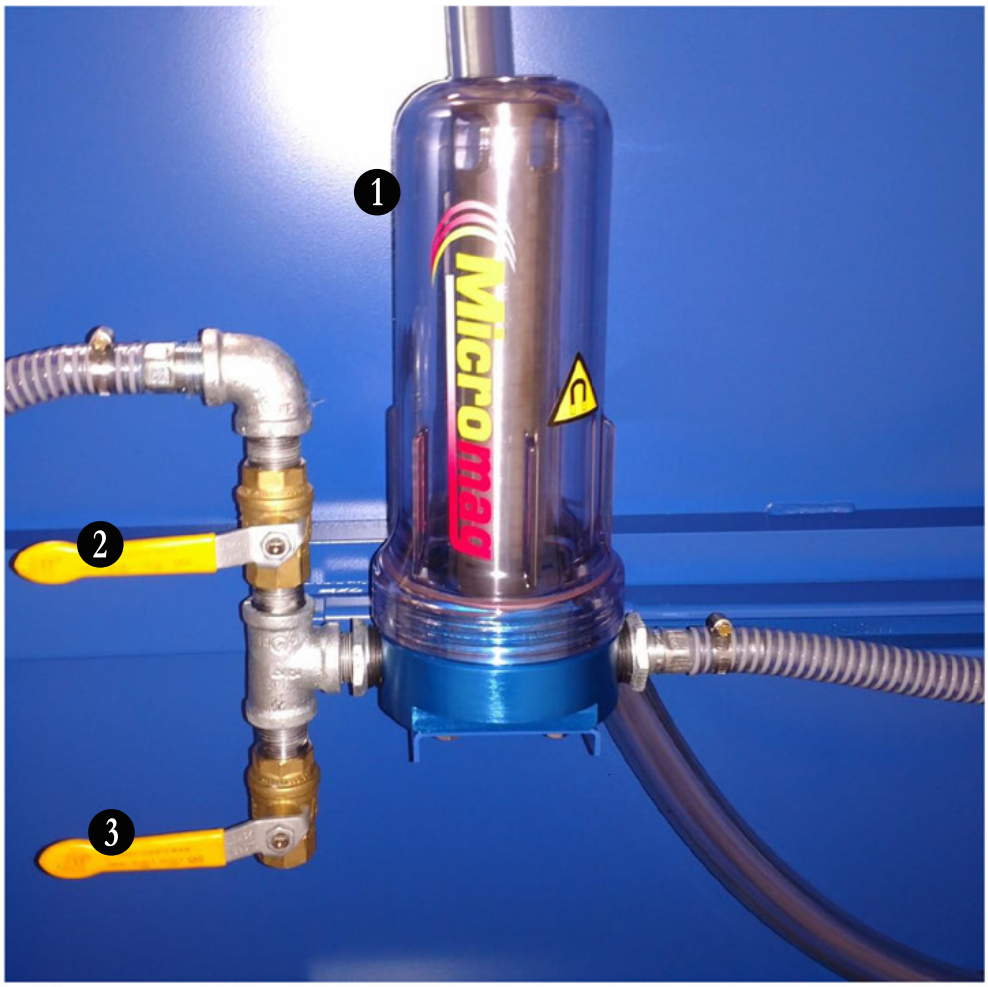
Section 2

1. Complete assembly of Micromag (see next page for proper installation).
2. Connect pressure gauges to filter housing and insert a 10 or 25 micron bag filter (Gauges & filter bags shipped in separate box).



Equipment Prepping

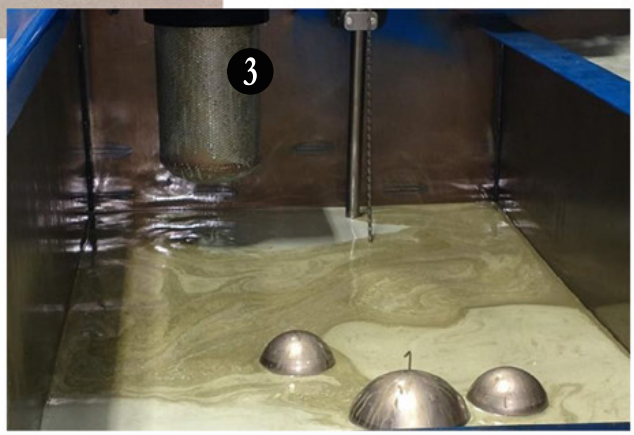
1. Close-up view showing proper installation of magnet inside of bowl
2. This valve is in the closed position. Needs to be in the opened position during operation. Always open slowly.
3. This valve is in the closed position and should only be opened to drain the magnetic separator while the pump is not in operation.



Warning: Only hand tighten when screwing the bowl onto the magnetic filter base.

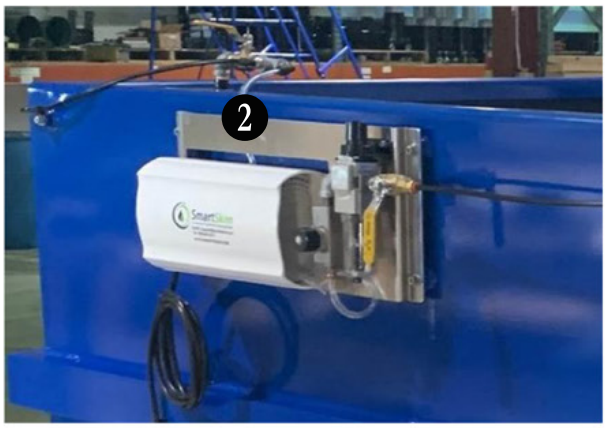
Equipment Prepping

1. Dirty coolant should ONLY always be introduced into the system via the dirty coolant inlet filter.
2. The standard filter bag is 100 micron. 250 micron bags are also available. These bags are typically reusable nylon (shipped in separate box).
3. Install perforated filter basket (shipped in separate box).



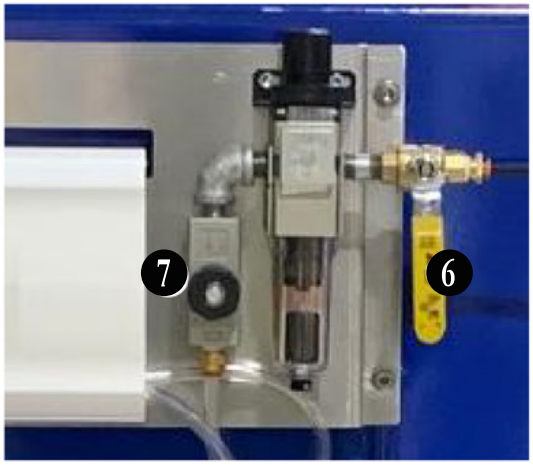
Ozone System Installation and Operation

Section 3



1. Install ozone system on pre-mounted welding slugs (shipped in separate box).
2. Connect hosing from the ozone generator to dispersion tubes.
3. Valve on the dispersion tube on the dirty compartment of the recycling system will need to be partially closed to allow for ozone to flow to the dispersion tube installed on the clean compartment of the system.
4. Make sure system is turned on when ready to operate. The switch on left hand side of ozone generator needs to be in the down possition.

5. Set regulator to 5 PSI; higher PSI can shorten the life of the ozone generator.
6. When ready to operate, open the ball valve (yellow handle) to allow air into the system.
7. Regulate air flow into the system with the needle valve.



Note: Too high of flow of bubbles in the dirty compartment from the ozone dispersion tube can negatively impact the effectiveness of the floating pivot are skimmer as the oils will be pushed away from the skimmer suction tube.

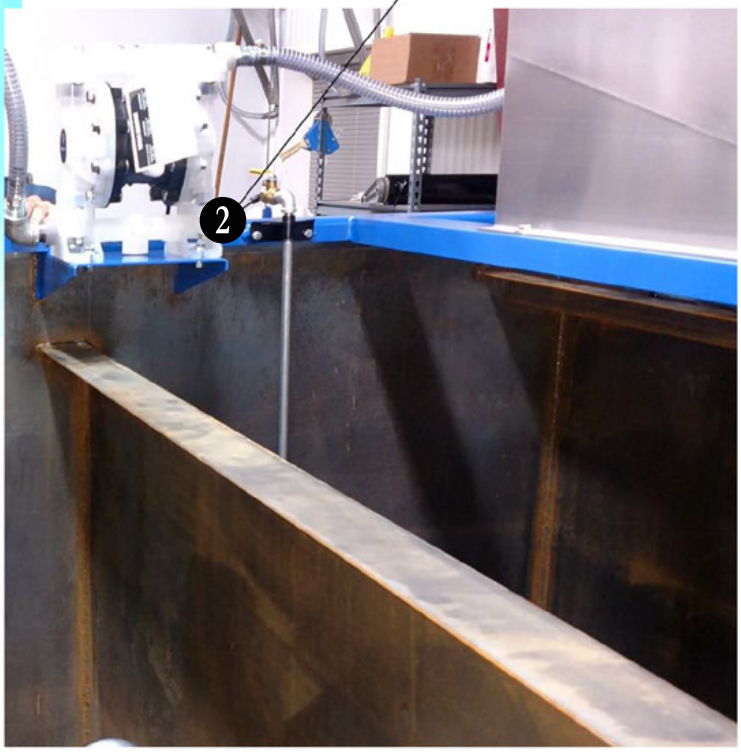
Ozone System Installation and Operation

Section 3

1. Install ozone dispersion tubes in both the dirty compartment and clean compartment. The assembly which includes a tee should be installed on the dirty side of the tank, while the assembly without the tee should be installed on the clean side of the tank (shipped in separate box).
2. Attach air hoses.

Install ozone dispersion tubes

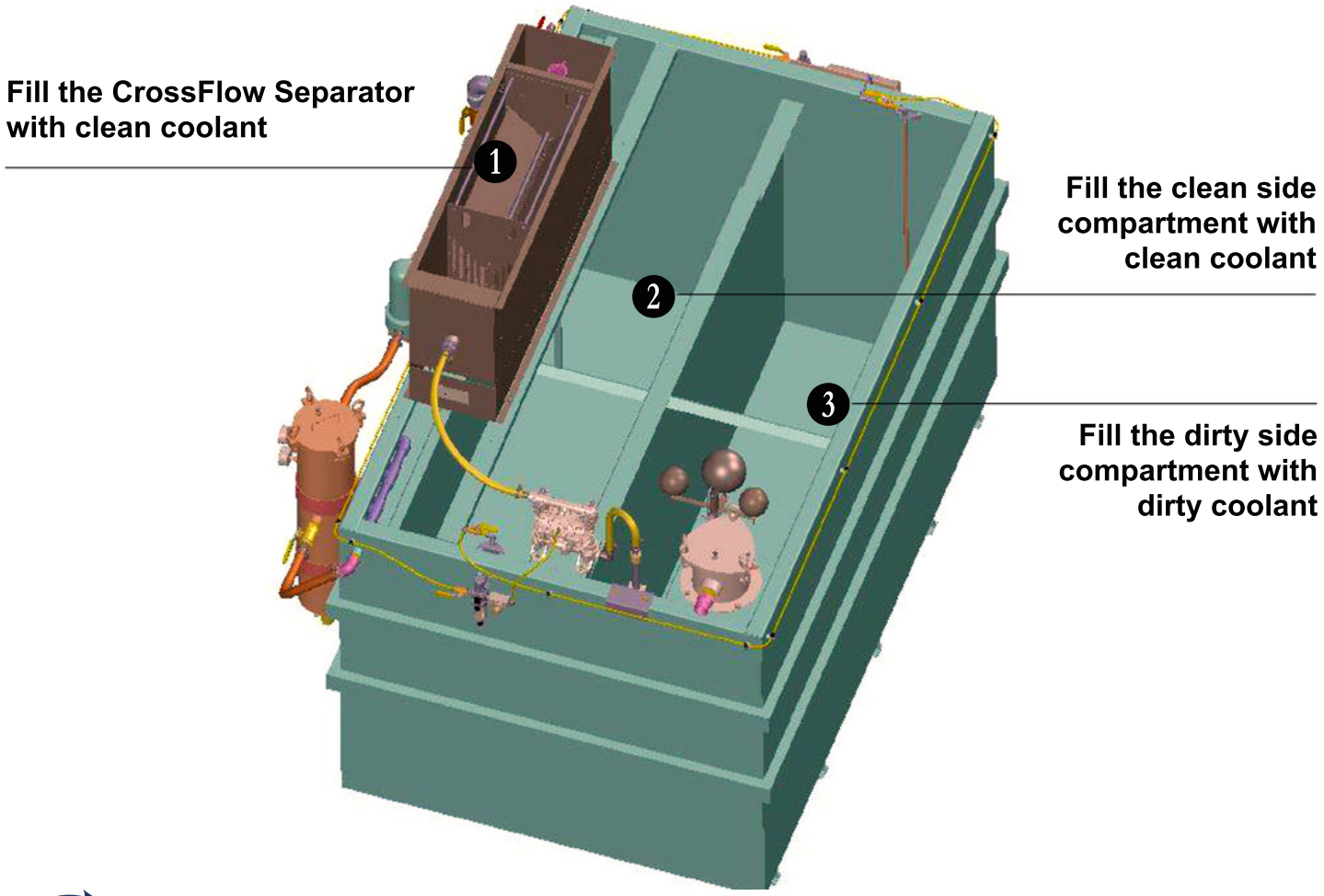
Attach air hoses



Section 4

Starting Coolant Recycling System

1. Fill the CrossFlow Separator with clean coolant.
2. Fill the clean side compartment with clean coolant. Fill the compartment until the coolant starts to overflow into the dirty compartment.
3. Fill the dirty side compartment with dirty coolant (clean coolant if not enough dirty coolant is available) through the inlet filet with the 100 micron bag in place. Fill the compartment between 1/3 to 2/3 full.



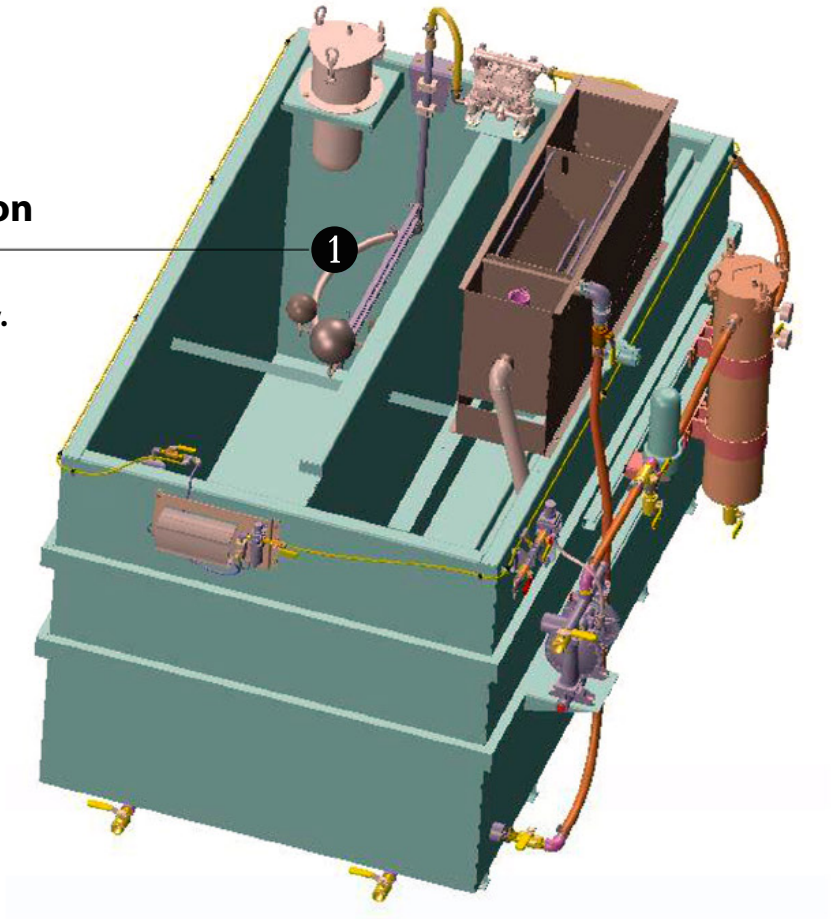
Starting Coolant Recycling System

Section 4

1. Prior to starting the system, make sure the Pivot Arm Skimmer is in a lowered position; the chain attached to the Pivot Arm Skimmer is designed to pull up the arm for maintenance purposes only; the chain is not intended for setting the skimmer level; the skimmer will float at the surface of the fluid.

Set the Skimmer in a lowered position

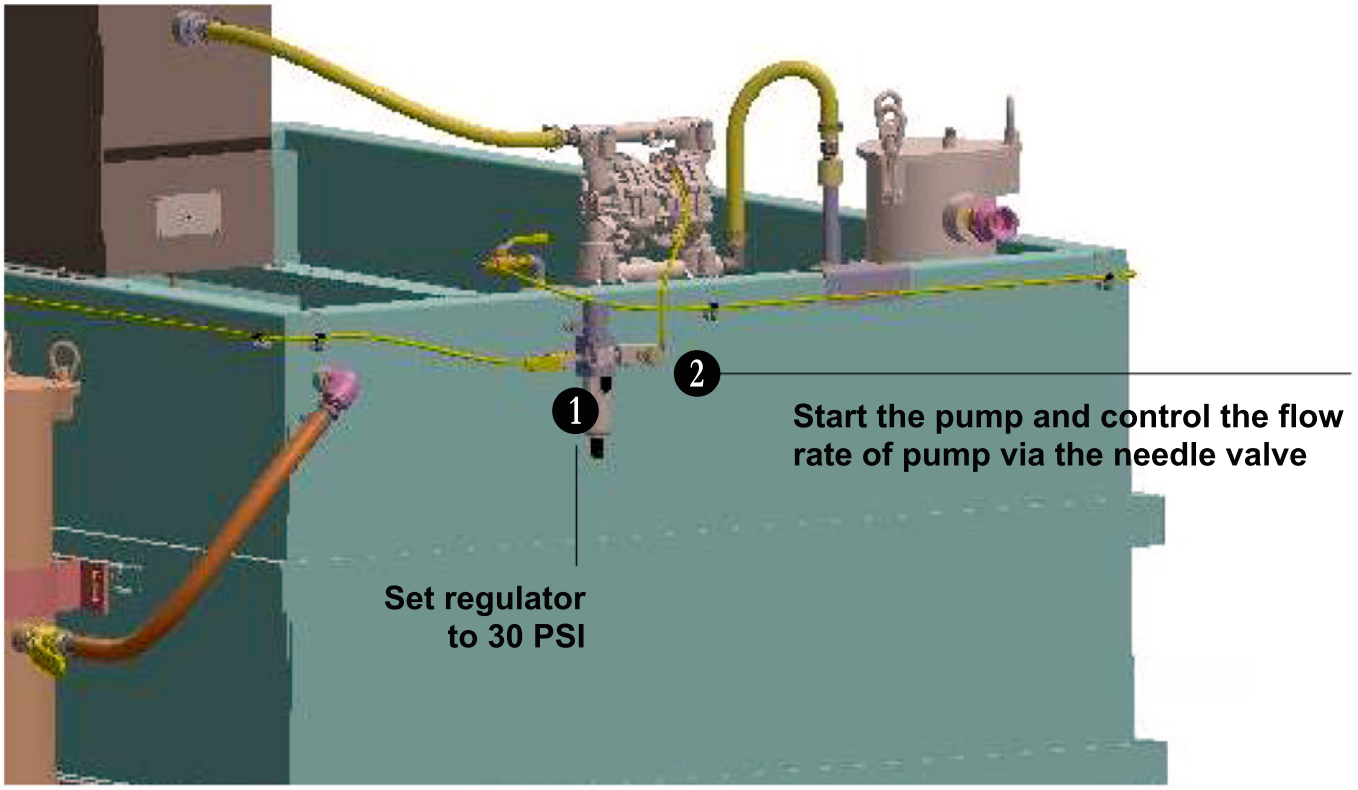
Note:
System skimmer may vary. Some models include a mini tri-float.



Starting Coolant Recycling System

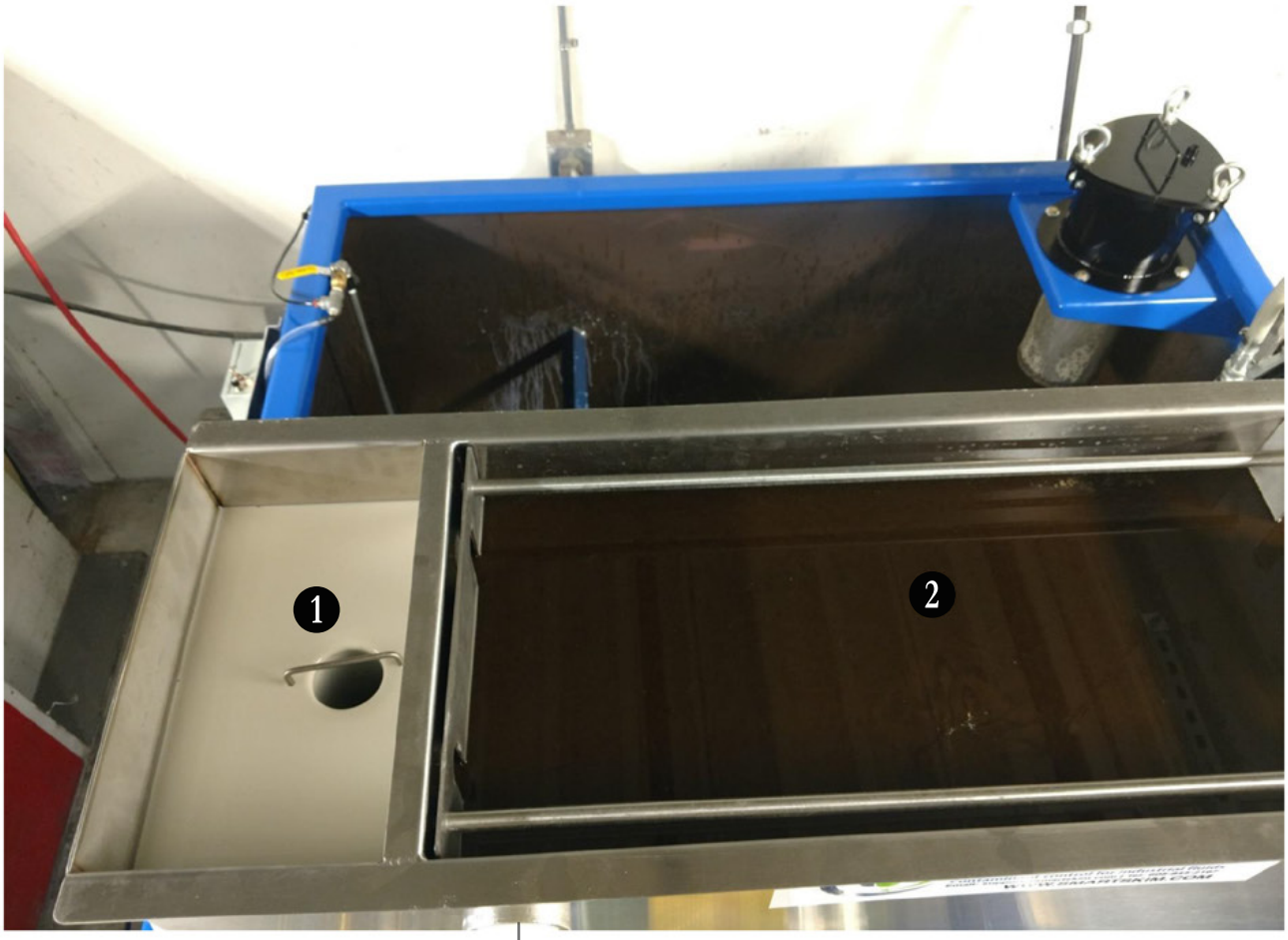
Section 4

1. Open the ball valve and set the regulator to 30 PSI.
2. Start running the pump for the skimmer/separator; control the flow rate of pump via the needle valve; pump should cycle approx. like a heartbeat; turn knob clockwise to lower the speed of the pump and counter-clockwise to increase the speed; running the pump slower will provide for better separation of the tramp oils inside of the separator tank.



Starting Coolant Recycling System

1. Weir should be in lowered position. Once a significant amount of tramp oil has accumulated, you can raise the fluid level by turning the adjustable weir counter-clockwise; Raising the fluid level will allow the tramp oil to exit the system through the tramp oil discharge port.
2. Once the recycling system has been in operation, the tramp oil will start to accumulate inside of the separator tank; the color and thickness of the tramp oil will vary based on your operations.

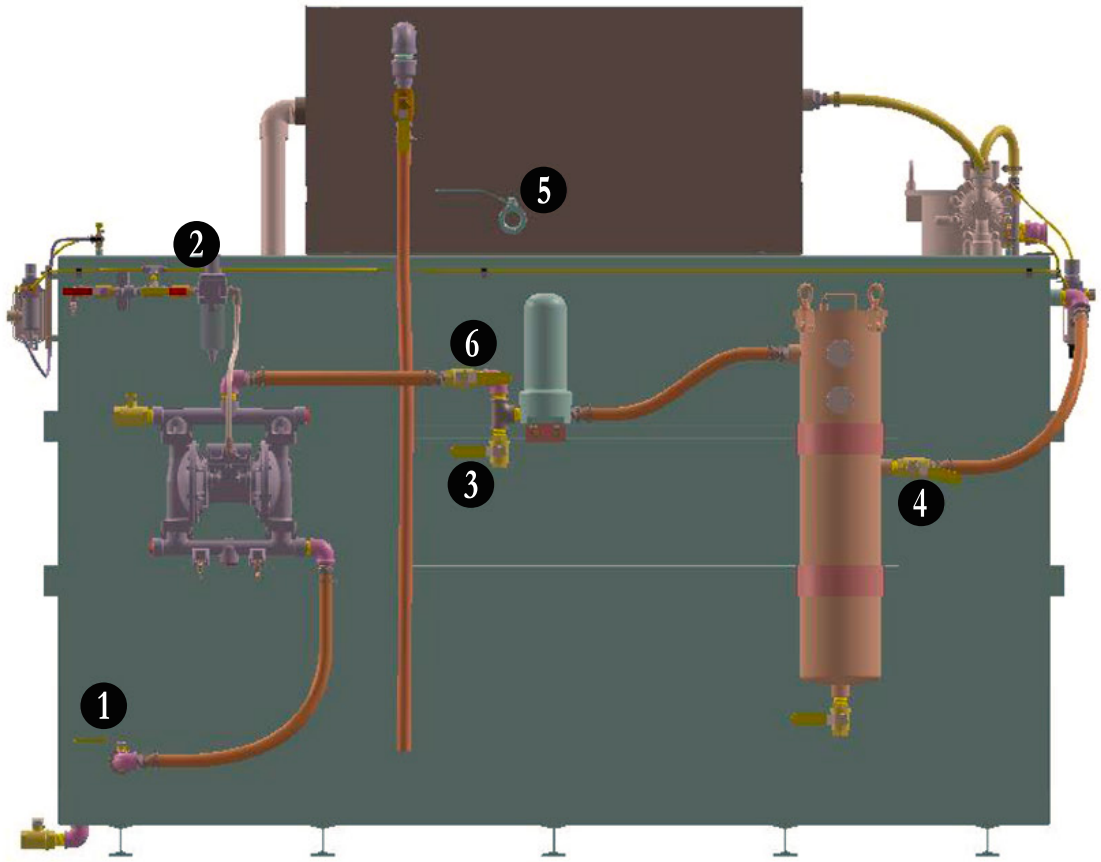


Tramp Oil Discharge Port

Operating the FilterLoop

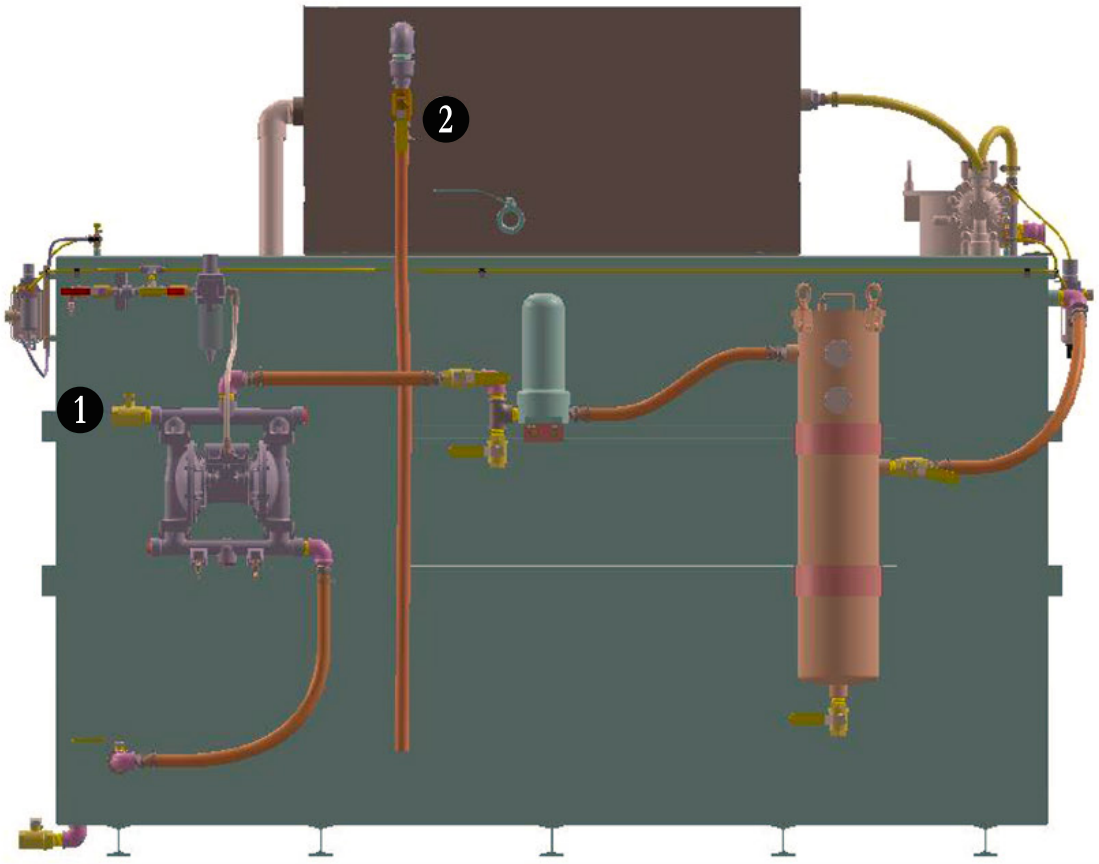
Section 5

1. To begin operation of the FilterLoop, open the bottom valve of the tank.
2. Set this regulator at approximately 25-30 psi.
3. This valve should always be closed; only open to clean out the magnetic separator when the pump is turned off.
4. This valve should be opened approximately 25-50%; this will allow for some back pressure on the filter housing; this valve controls the flow of the fluid coming back into the system.
5. The solids discharge port should be closed.
6. This valve should be opened.



Operating the FilterLoop

1. The clean coolant discharge port is where the clean/recycled fluid is pulled from the system; customer can either plumb a hose to this port or plumb into an overhead piping system for coolant to be returned to the CNC machines or distribution points within the facility.
2. This is the tramp oil discharge port; customer can drain this into a drum, tote or other waste oil reservoir; depending on your operations, the tramp oil can be continuously drained from the oil separator, or removed via a daily/weekly batch process; it's important to remove any accumulated tramp oil.



Operating the FilterLoop

Section 5

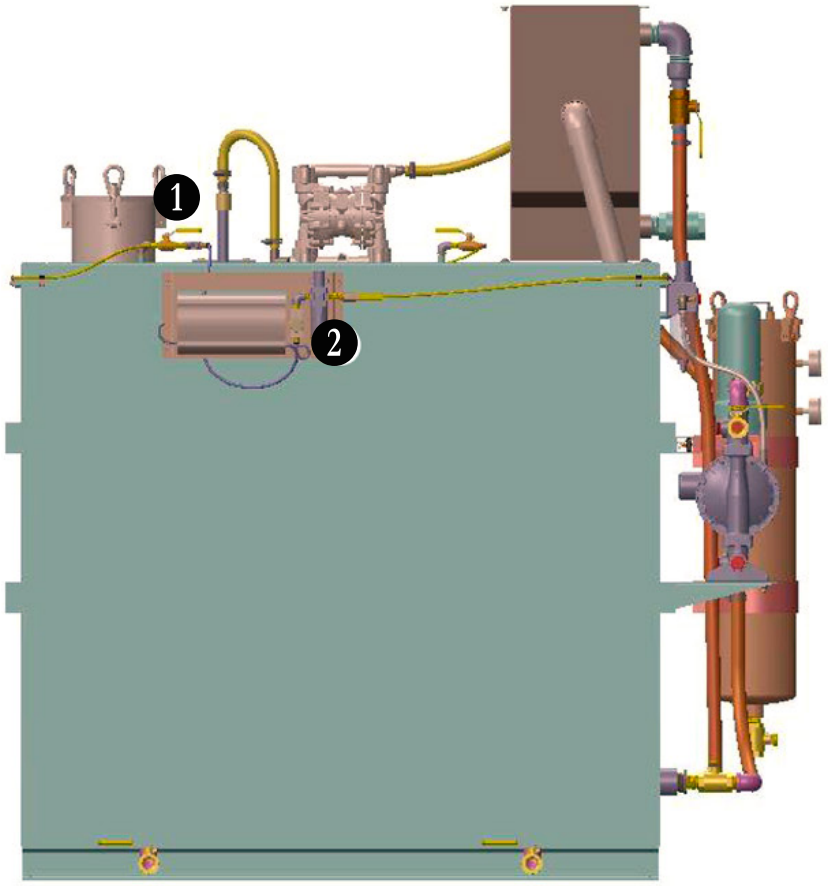
1. Single 1/4” plant air connection that feeds air into the entire system.

2. Example of a tramp oil collection container.

Operating the Ozone Generator

Section 6

1. Remember to partially close this valve so that there is air-pressure feeding the ozone dispersion on the clean compartment.
2. Once the system is running with fluids, you can turn on the ozone generator system; the regulator should be set at 5 psi.



Section 7

Installing the Coolant Make-up System

- A Hydrominder is used as a fluid level control device when fluids need to be added to a tank. It is also used as a coolant proportioner/mixer. The unit is shipped loose for installation in the field after determining location of coolant concentrate drum or tote. You can clamp or bolt it to the sidewall of the dirty side of the system.

- When the level in the dirty compartment drops, the float activates the HydroMinder water valve and replenishes the compartment with mixed coolant. When the level reaches the preset fill level, the HydroMinder automatically shuts off. This keeps the system from running dry. Minimum water pressure needed is 25 psi and 4 – 8 gpm. Select the proper metering tip per the chart on the HydroMinder instruction page.

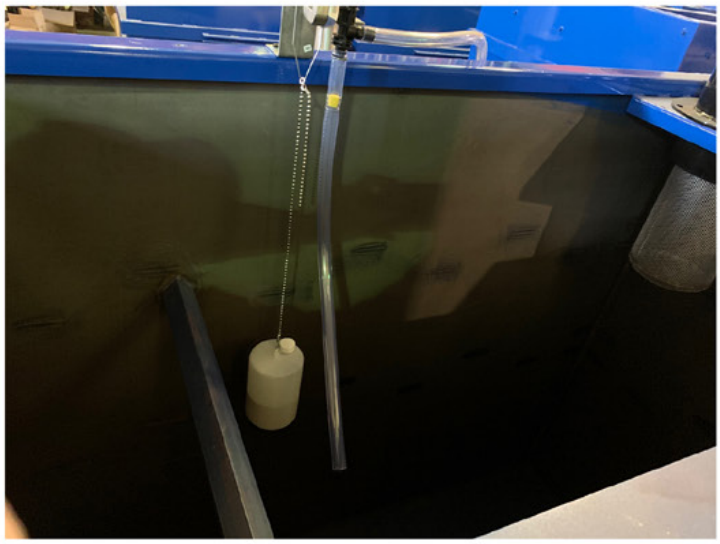
- An Optional Dosatron precision metering and mixing device can be added to the HydroMinder. Various mounting options are available. A Mounting bracket can be included to mount as seen in picture. In this set up the HydroMinder is used as an automatic water valve which feeds the Dosatron. See the Dosatron manual for more details (shipped in separate box).

Photos of the Coolant Make-up System installation shown on following pages

Section 7

Installing the Coolant Make-up System

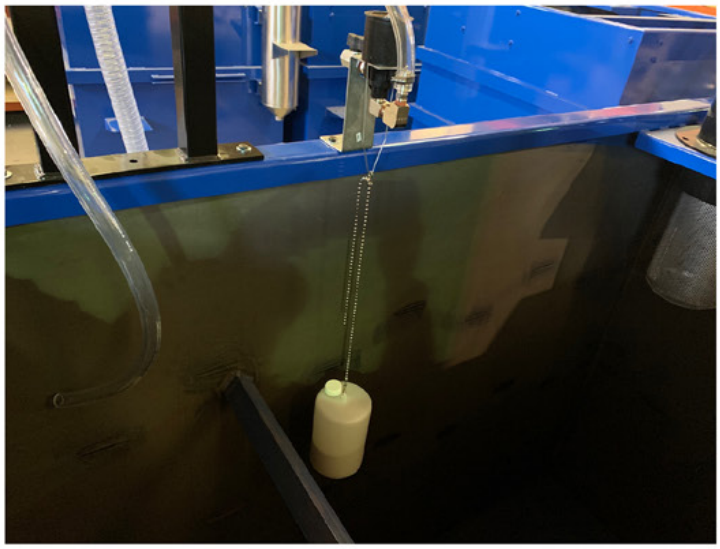
Scenario 1:
Hydrominder as the complete coolant mixing system



Section 7

Installing the Coolant Make-up System

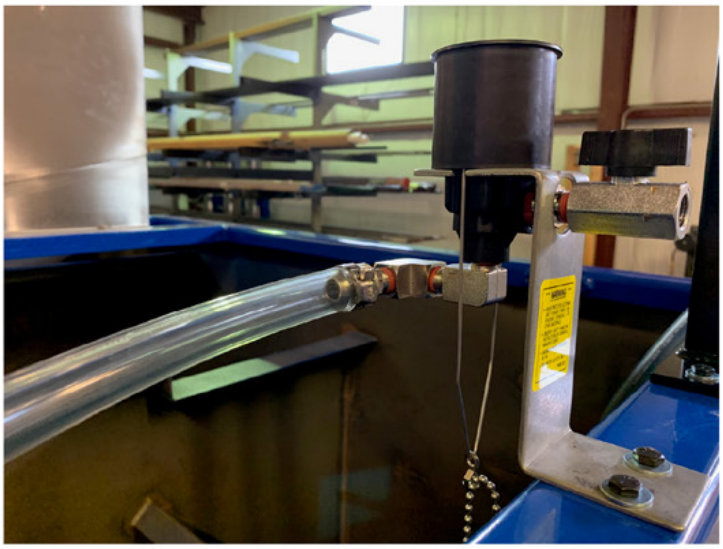
Scenario 2:
Hydrominder as the water source for the Dosatron coolant mixing system

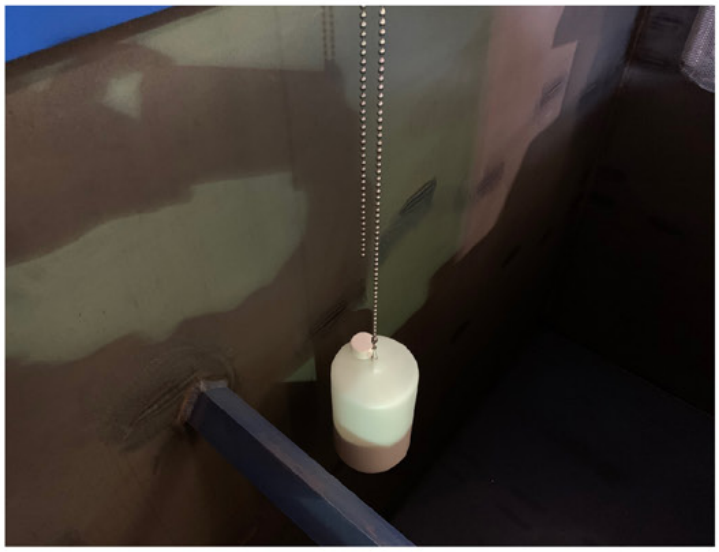


Section 7

Installing the Coolant Make-up System

Scenario 3:
Hydrominder as the water source for the Dosatron with IPK Kit coolant mixing system





Coolant Recycling System Spare Parts

Section 8

Part #	Description
1757	Air Service Assembly (1/4" connection)
1823	Air Service Assembly (1/2" connection)
2035	Repair Kit for Husky 515 Pump (buna)
3230	Repair Kit for Husky 1050 Pump (buna)
3218	Repair Kit for Husky 1590 Pump (buna)
1871	Husky 515 Pump (buna)
1931	Husky 1050 Pump (buna)
1931	Husky 1590 Pump (buna)
1348	Size#2 Filter Bags (5, 10 or 25 micron)
BN1	Filter Bag for Inlet Filter (100-250 micron)
1594	Coalescing Platepack Assembly
1624	HydroMinder Mixing System
3294	HydroMinder Water Only System
2040	Tramp Oil Discharge Connection Kit
1310	Ozone Diffuser Stone
1538	Replacement Bowl for 10" MicroMag
1360	Replacement Bowl for 20" MicroMag