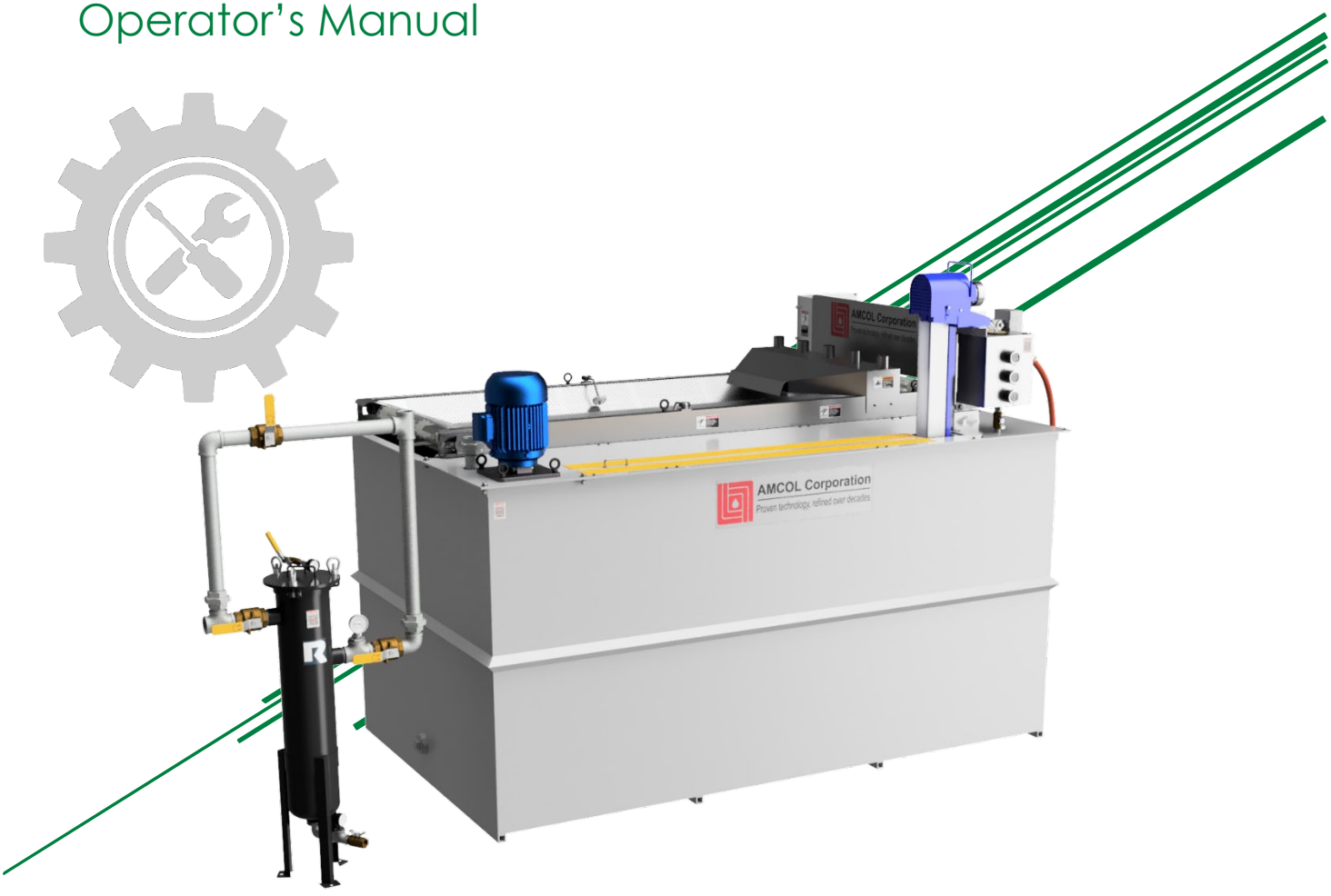
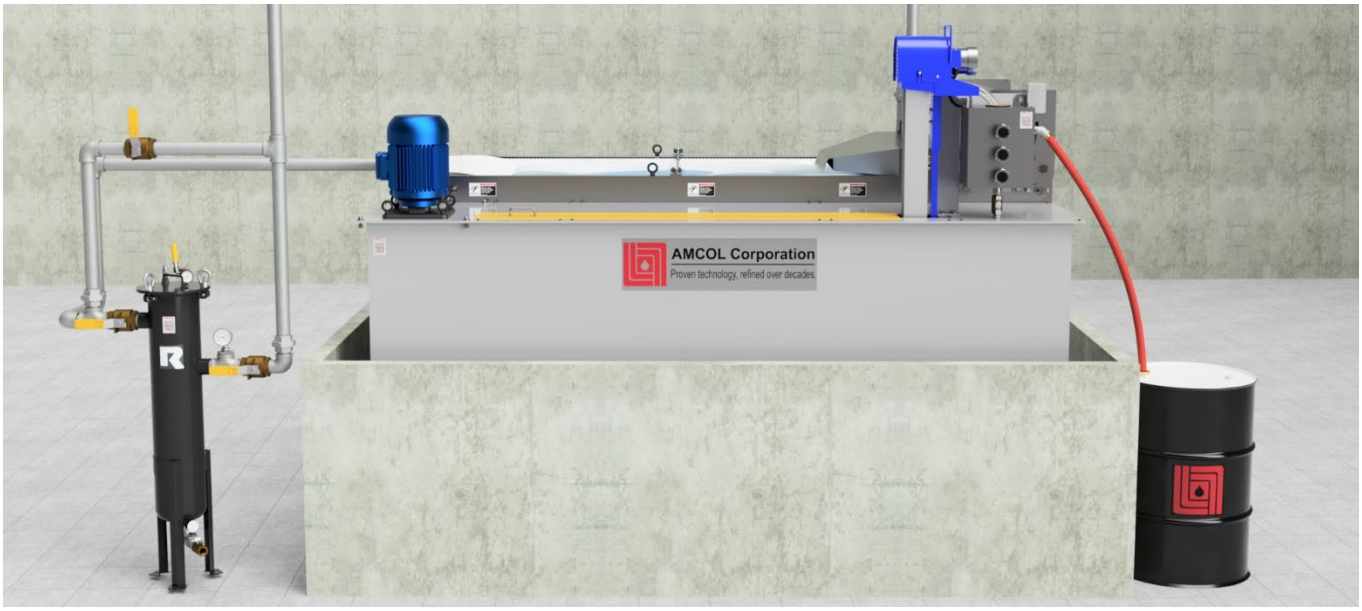
AMCOL CORPORATION

3076 COOLANT PURIFICATION SYSTEMS

Operator's Manual



Contents



AMCOL Corporation

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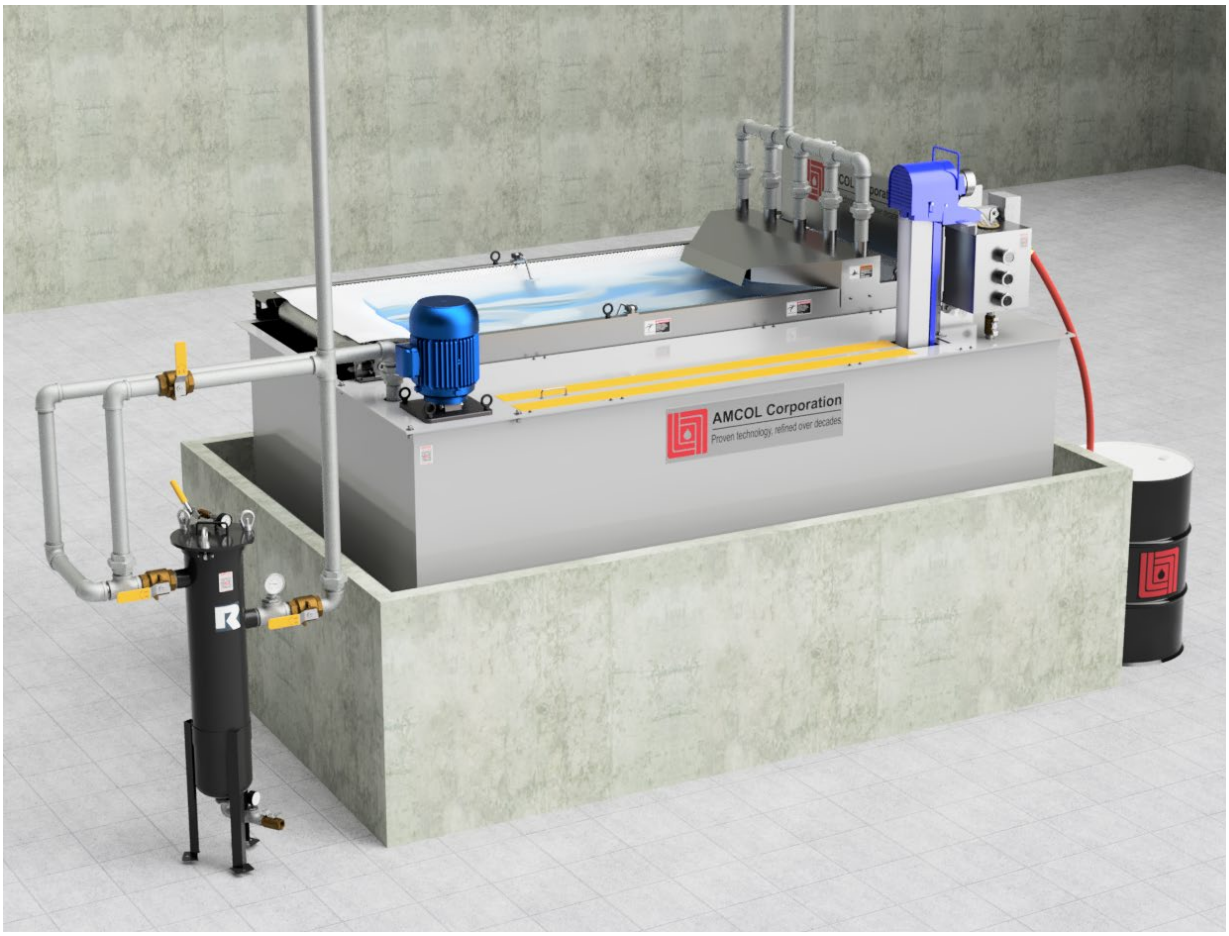
1 Introduction

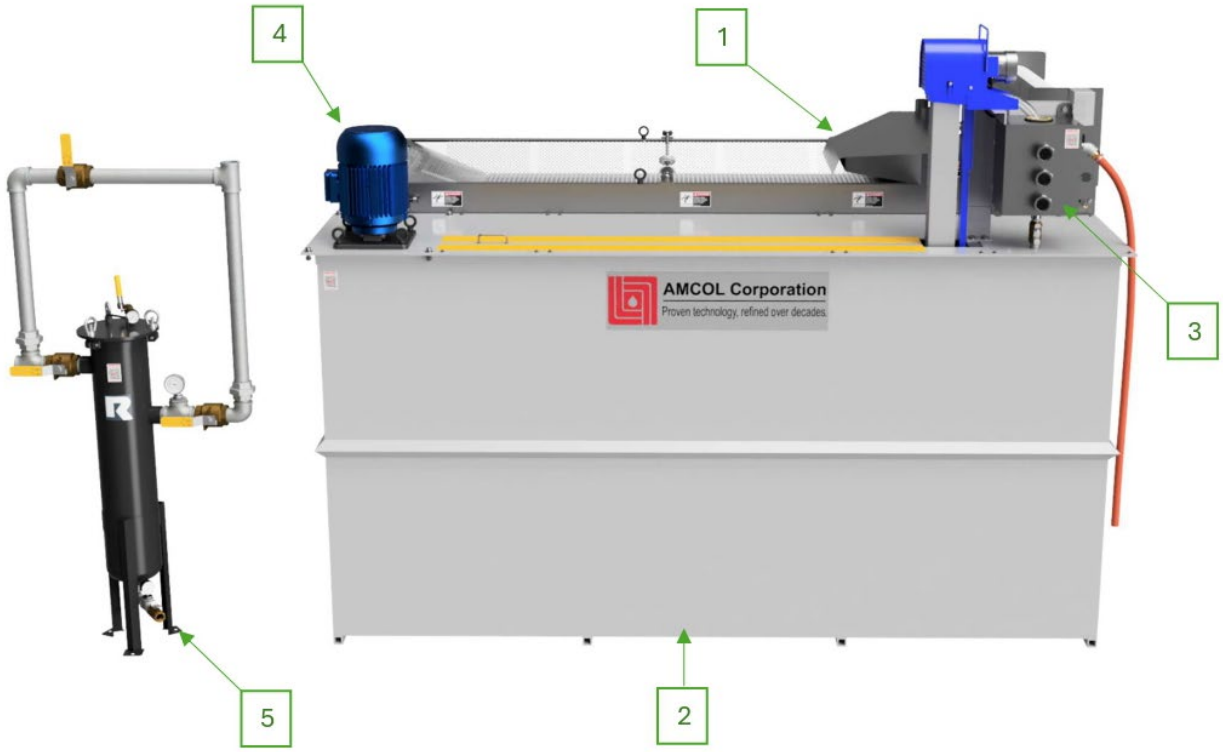
This manual provides instructions for the installation, operation, and maintenance of the AMCOL 3076 Coolant Purification System. For additional details about the system and its components, please refer to the AMCOL 3076 Coolant Purification Technical Description.



2 Included Components

Each 3076 system comes standard with the following components:

1. Automatically Indexing Media Filter (AIMF)
2. Coolant Reservoir
3. Oil Skimming with Decanting Tank (OSD)
4. Transfer Pump
5. In-line Bag Filter (ILBF)



3 3076 System

3076 Installation

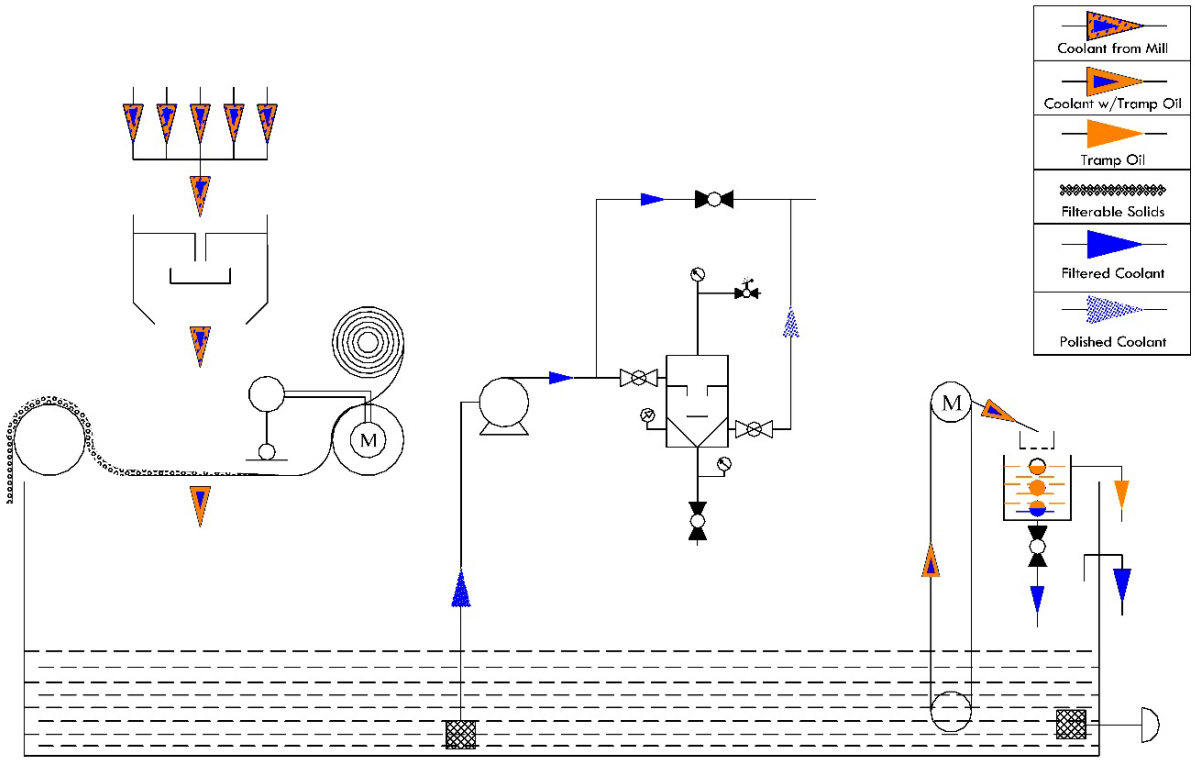
PRIOR TO GETTING STARTED

- ***WARNING! This system operates on High Voltage. Only trained personnel can perform maintenance and repair on this equipment. System power should be locked and tagged before any maintenance or repair is performed.***
- ***WARNING! Conveyors are inherently dangerous. The AIMF conveyor may spontaneously advance without notice. The conveyor should be properly guarded from inadvertent contact.***
- ***WARNING! Pressurized liquid is inherently dangerous. Be sure that all electrical connections are properly protected from becoming wet. Always wear full face shields when working in the vicinity of this equipment.***
- ***WARNING! Use only authorized walking and working surfaces when accessing this tank.***
- ***WARNING! This reservoir is considered a confined space. Do not enter the reservoir without proper training and permitting when available.***
- ***WARNING! Other than changing the in-line bag filter, the main system power must be turned off and isolated during any maintenance and repair. This includes, but is not limited to, all sump pumps feeding the system.***

Installation Procedure

1. Review each assembly to ensure there is no damage from shipment.
2. Identify the location where the system will be placed. This area must be level and capable of supporting the load associated with this system and the fluid contents.
3. The reservoir for this system should be diked to a volume no less than two-thirds of the coolant reservoir capacity.
4. This system is generally installed somewhere behind the mill. The pump flow rate and capacity assume a short and direct travel distance from the pump and in-line filter to the mill coolant supply network.
5. Be sure to include flow and/or pressure monitors to components such as welding impeders that can be damaged because of reduced or stopped flow from this system.
6. Generally, these systems are shipped in separate assemblies that are fully assembled components as described in the 3076 Technical Description. Instructions for installing each major component are featured in upcoming sections.

3076 Schematics



4 Automatically Indexing Media Filter (AIMF)

AIMF Installation

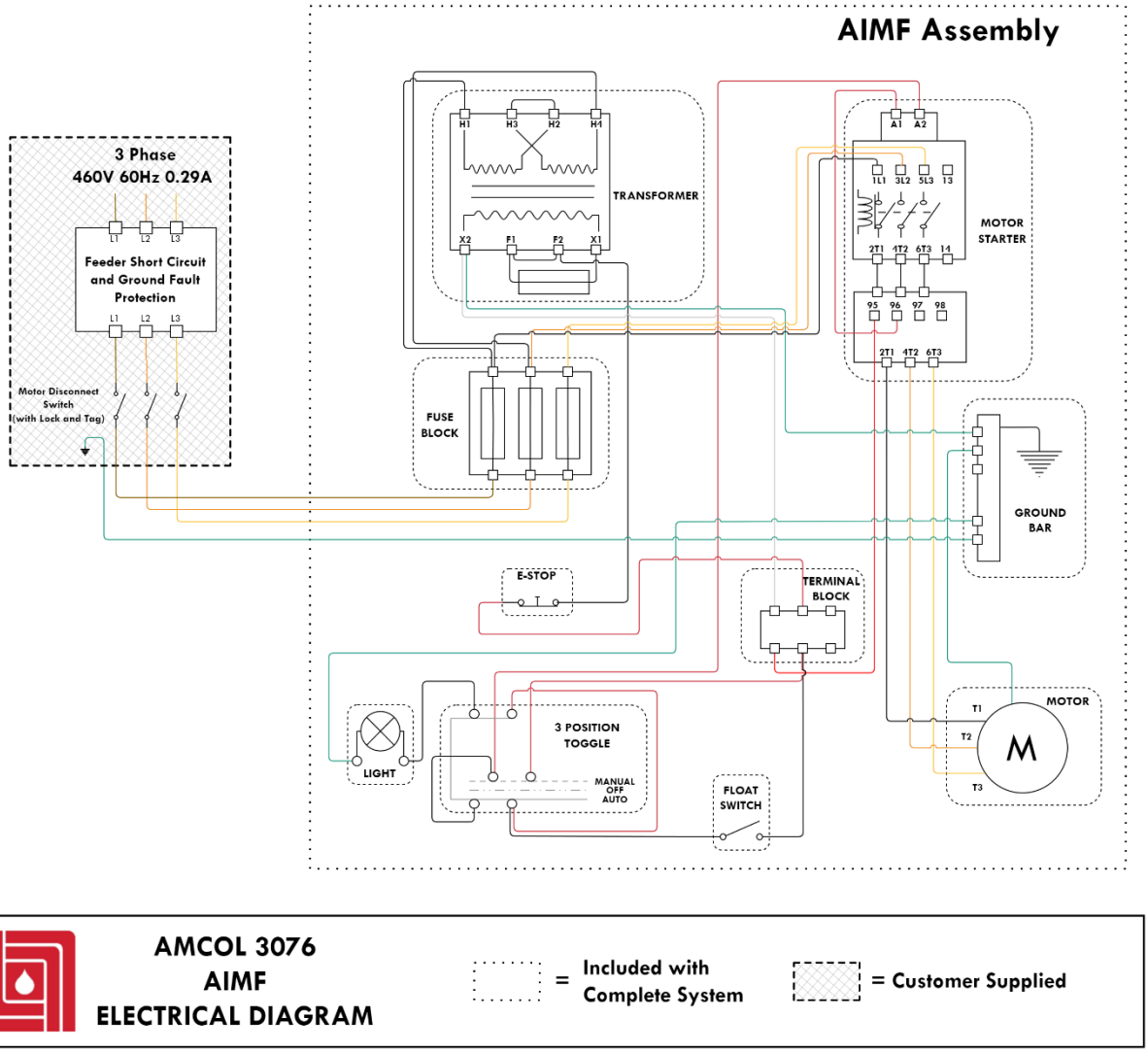
PRIOR TO GETTING STARTED

- ***WARNING! High Voltage. All system power input, connections, and control enclosures are to be at least splash resistant (NEMA 12). Never enter the control enclosure without de-energizing and locking the system controls. Signage has been placed to identify these hazards. Replace labels if damaged or missing.***
- ***WARNING! Conveyors are inherently dangerous. The conveyor may spontaneously advance without notice. The conveyor should be properly guarded from inadvertent contact. Never wear loose clothing when working in or around this system. Signage has been placed to identify these hazards. Replace labels if damaged or missing.***
- ***WARNING! These systems are very heavy and must be lifted and lowered using mechanical rigging methods by qualified individuals.***
- ***WARNING! Coolant system electrical controls must be shut-off and locked out during any routine maintenance or repair, including, but not limited to, roll fabric changing.***

Installation Procedure

1. Review the system to ensure that bolts and assemblies have not been loosened or damaged in shipment.
2. Identify the location that the AIMF will be placed. The mounting location must be capable of supporting this system. The AIMF must be completely level to properly operate. This location is already predetermined when installing on a 3076 Coolant Reservoir.
3. When not mounted on a 3076 Coolant Reservoir, the AIMF must be located over the reservoir in such a way that the liquid will drain properly from the filter to the reservoir.
4. Special attention must be given to the electrical control box and gear motor. These controls must be protected from coolant splashing. The system electrical controls must be accessible from the front of the enclosure that address local codes.

AIMF Electrical Diagram

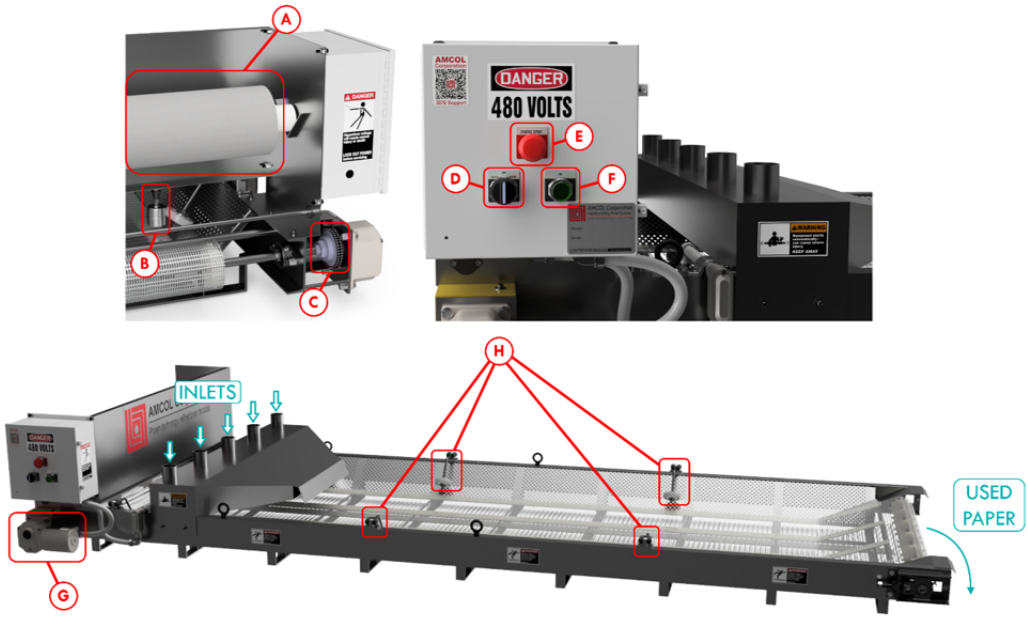


AIMF Settings and Maintenance

OVERLOAD PROTECTION SETTINGS

The AIMF drive motor is protected by a Dalton "OSD" torque-limiter that disengages when set load is reached. When the overload is eliminated, the unit re-engages. The torque-limiter is equipped with a single torque adjusting nut that can be adjusted with a torque wrench to the required torque setting. The standard OSD Model OSDC-225-3/4x7/8 can be set to a maximum of 420 in-lbs, which is well below the standard drive motor capacity of 491 in-lbs.

AIMF RECOMMENDED SETTINGS



Item ID	Description	Recommended Settings
A	Filter Media Roll	—
B	Float Switch	—
C	Torque Limiter	3076B: 15ft-lbs 3076C: 25ft-lbs 3076D: 25ft-lbs
D	Control Switch	"Auto" during normal operation. The conveyor will move when the Float Switch (B) is active. "Off" disables the conveyor. "Hand" manually advances the conveyor.
E	E-Stop Button	Disengaged during normal operation.
F	Indicator Light	On when the conveyor is advancing.
G	Drive Motor	—
H	Roller Guides	Engaged during normal operation.

DAILY MAINTENANCE

- Check the paper quantity left on the roll.
- Ensure the media fabric is centered on the dowel and is held in position by the fabric guides in the bowl.
- Check if the used media fabric is properly exiting the system to the used fabric hopper (customer supplied).

Before each shift, manually advance the conveyor to ensure the motor and belt system are operational. Motion should be smooth and consistent.

CHANGING MEDIA FILTER ROLLS

1. Shut off and lock out all coolant system main electrical controls and AIMF system power. Attempt to manually advance the conveyor to ensure the system is not powered.
2. Flip the fabric guides up so the fabric can be easily advanced.
3. Manually remove any roll media still present from the existing roll.
4. Place the new roll on the fabric dowel between the end caps to ensure the fabric is centered.
5. Pull approximately one foot of fresh fabric off the roll.
6. Slide the fabric under the hold-down rod located above the conveyor chain.
7. Pull the fresh fabric across the conveyor chain until the fresh fabric has completely cleared the end of the bed filter and is hanging, allowing gravity to feed the used fabric collection hopper.
8. Flip the fabric guides back into place. The fabric should be completely flat on the conveyor chain with few or no kinks at the entry and exit.
9. The system is ready to operate.

Before operation, ensure all persons and obstructions are clear from the area. Power the system on and manually advance the conveyor. The fabric will not move as it requires the weight of the liquid on the fabric to advance.

AIMF System Troubleshooting

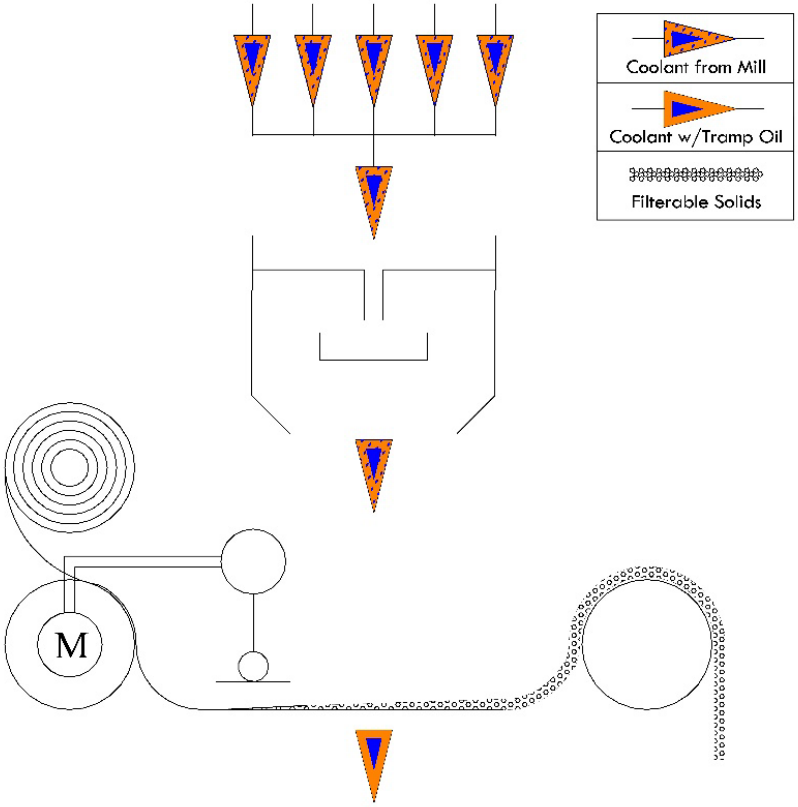
Filter Paper is not Advancing

- Attempt to manually advance the filter paper.
- Check system power.
- Check float switch operation inside the bowl.
- Check the torque limiter setting.
- Check wiring connections inside control enclosure.

AIMF Consumables & Spares

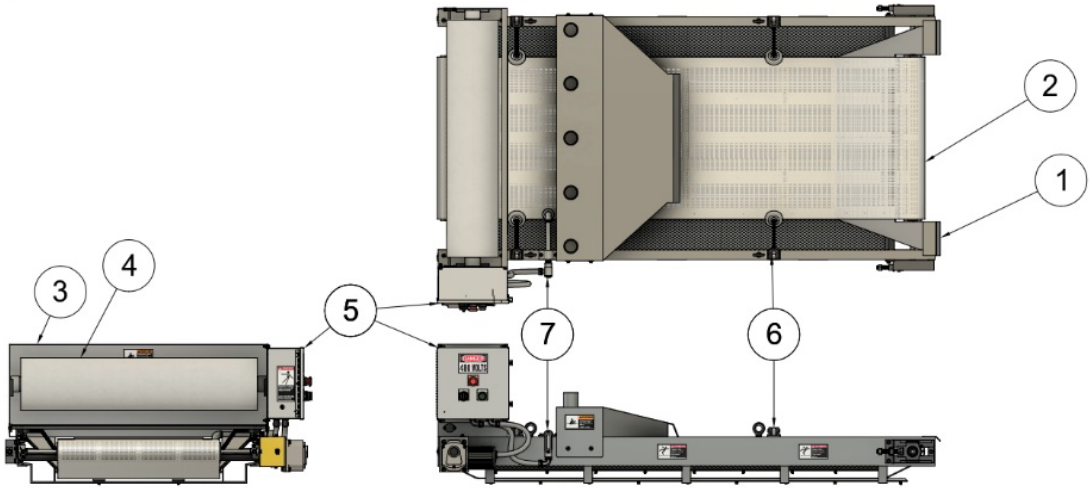
Description	Part Number	Image
Fuse for 440v AIMF Controller	FNQ-R3/4	
Brother Drive Motor for AIMF	HFMR-120H4A	
Filter Media for AIMF 75A (2.0 OPY / 40 Micron - 41" x 375')	17-FM20-41-375	
Filter Media for AIMF 105A1 (2.0 OPY / 40 Micron - 45" x 375')	17-FM20-45-375	
Filter Media for AIMF 150A (2.0 OPY / 40 Micron - 47" x 375')	17-FM20-47-375	

AIMF Schematics & Drawings



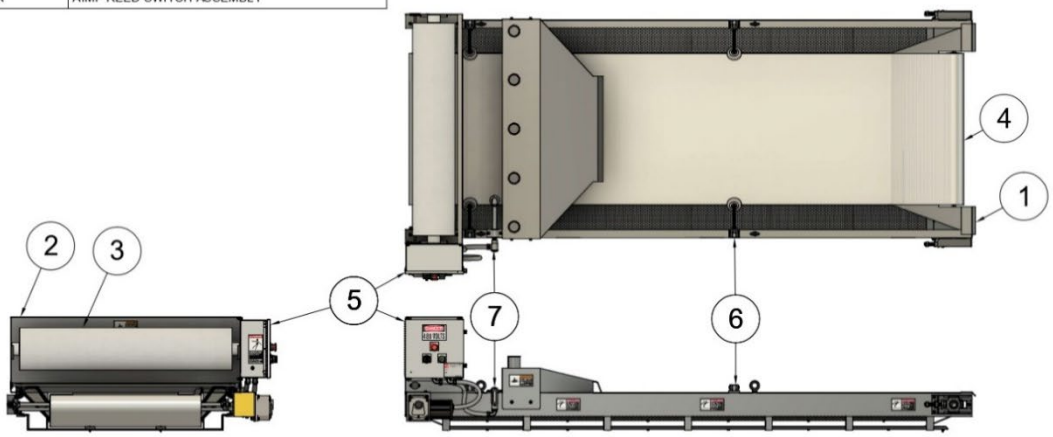
AIMF 75A

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	17-AIMF-75A-F-AC	AIMF-75A FRAME ASSEMBLY
2	1	18-AIMF-BA-75A	BELT ASSEMBLY FOR AIMF-75A
3	1	17-AIMF-F-J75A-AC	MEDIA FILTER COVER ASSEMBLY FOR AIMF-75A
4	1	17-FM20-41-375	FILTER MEDIA (2.0 OPY / 40 MICRON - 41" X 375')
5	1	18-AIMF-C-440	AIMF CONTROLLER 440V
6	4	18-AIMF-MSR	MEDIA SUPPORT ROLLER
7	1	18-AIMF-RSA	AIMF REED SWITCH ASSEMBY



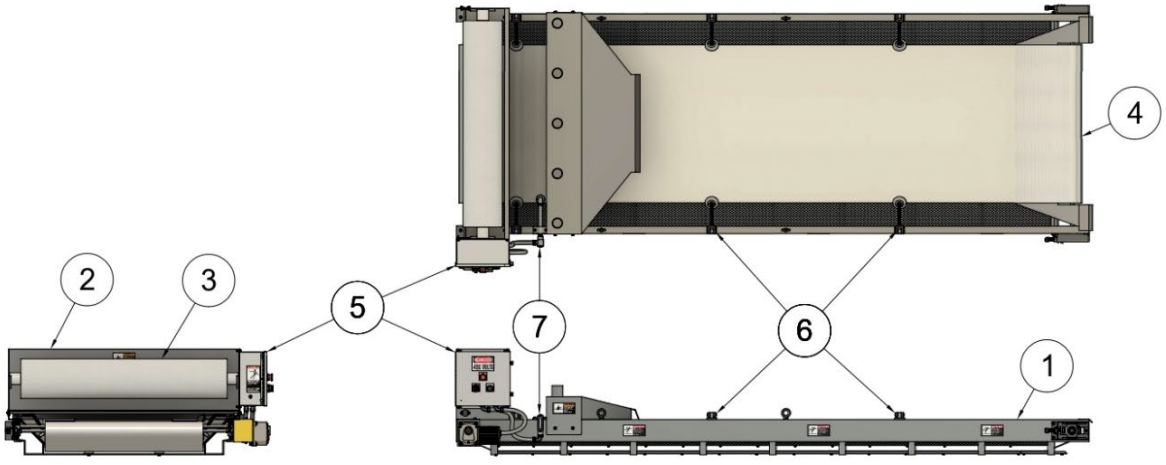
AIMF 105A1

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	17-AIMF-105A1-F-AC	AIMF-105A1 FRAME ASSEMBLY
2	1	17-AIMF-F-J105A1-AC	MEDIA FILTER COVER ASSEMBLY FOR AIMF-105A1
3	1	17-FM20-45-375	FILTER MEDIA (2.0 CPY / 40 MICRON - 45" x 375')
4	1	18-AIMF-BA105A1	BELT ASSEMBLY FOR AIMF-105A1
5	1	18-AIMF-C-440	AIMF CONTROLLER 440V
6	4	18-AIMF-MSR	MEDIA SUPPORT ROLLER
7	1	18-AIMF-RSA	AIMF REED SWITCH ASSEMBLY



AIMF 150A

Item	Qty	Part Number	Description
1	1	17-AIMF-150A-F-AC	AIMF-150A FRAME ASSEMBLY
2	1	17-AIMF-F-J-150-AC	MEDIA FILTER COVER ASSEMBLY FOR AIMF-150A
3	1	17-FM20-47-375	FILTER MEDIA (2.0 OPY / 40 MICRON - 47" X 375')
4	1	18-AIMF-BA150	BELT ASSEMBLY FOR AIMF-150A
5	1	18-AIMF-C-440	AIMF CONTROLLER 440V
6	6	18-AIMF-MSR	MEDIA SUPPORT ROLLER
7	1	18-AIMF-RSA	AIMF REED SWITCH ASSEMBLY



5 Coolant Reservoir

Coolant Reservoir Installation

PRIOR TO GETTING STARTED

- ***WARNING! This reservoir is considered a confined space. Do not enter the reservoir without proper training and permitting when available.***

Installation Procedure

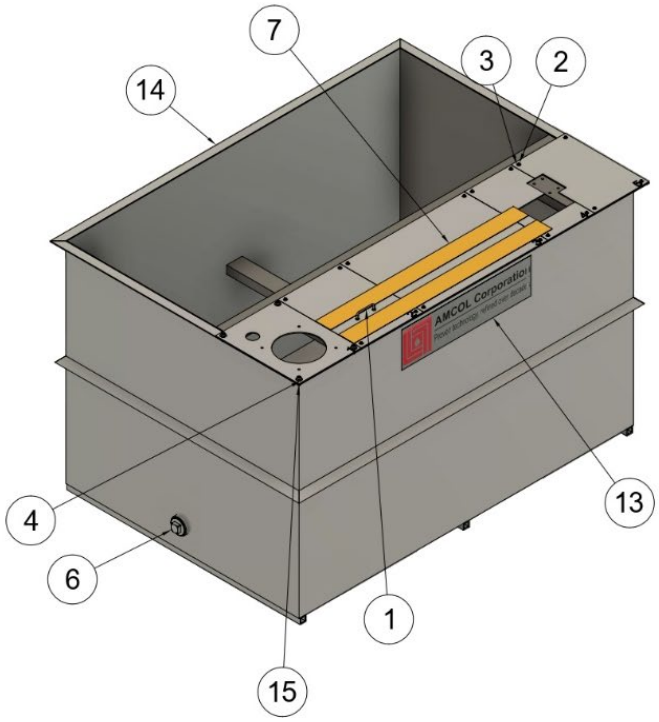
1. Review the reservoir to ensure there is no damage from shipment.
2. Identify the location (generally somewhere behind the mill) where the reservoir will be placed. This area must be level and capable of supporting the load associated with this system and the fluid contents.
3. The reservoir should be diked to a volume no less than two-thirds of the coolant reservoir capacity.

Coolant Reservoir Daily Maintenance

- Observe the coolant level in the reservoir to be at or above the pump impeller housing and skimmer belt when the system is not running.

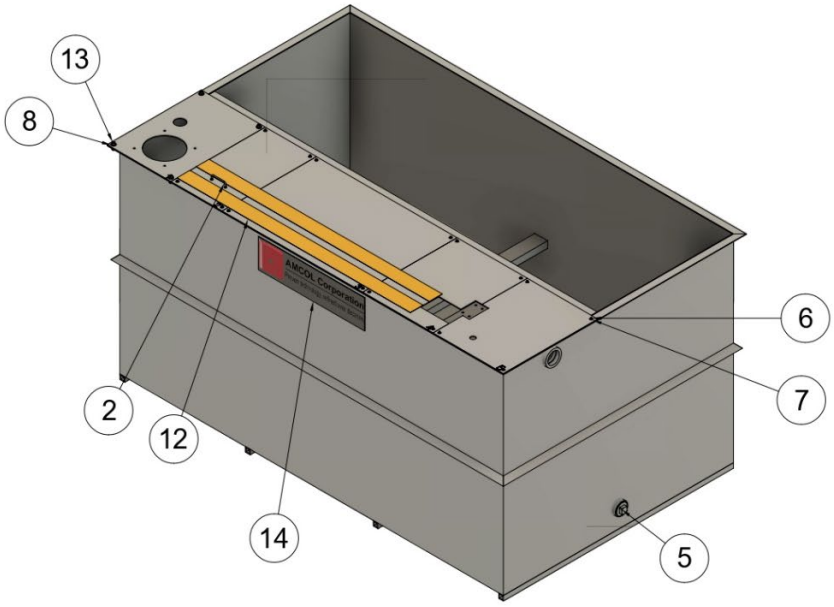
Coolant Reservoir Drawings

17-3076B-R-1000-A (1000 Gallon)



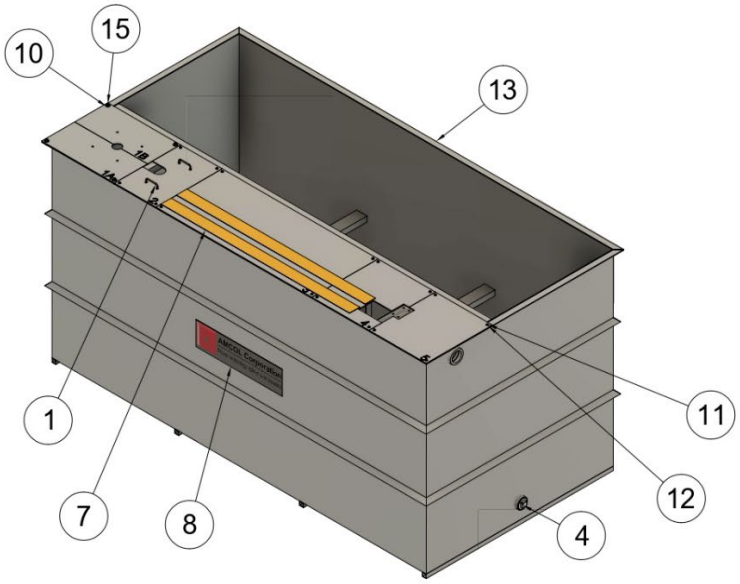
PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	11665A21
2	16	25C62SHC
3	16	25NUFW
4	4	50NUFW
5	4	50CNNEZ
6	1	003005
7	2	6970T25
8	1	001510
9	1	005366
10	1	005367
11	2	31CNNEZ
12	1	4413K3
13	2	AIMF-DECAL
14	1	17-3076B-1000
15	4	50C125SHC

17-3076C1-R-2000-A (2000 Gallon)



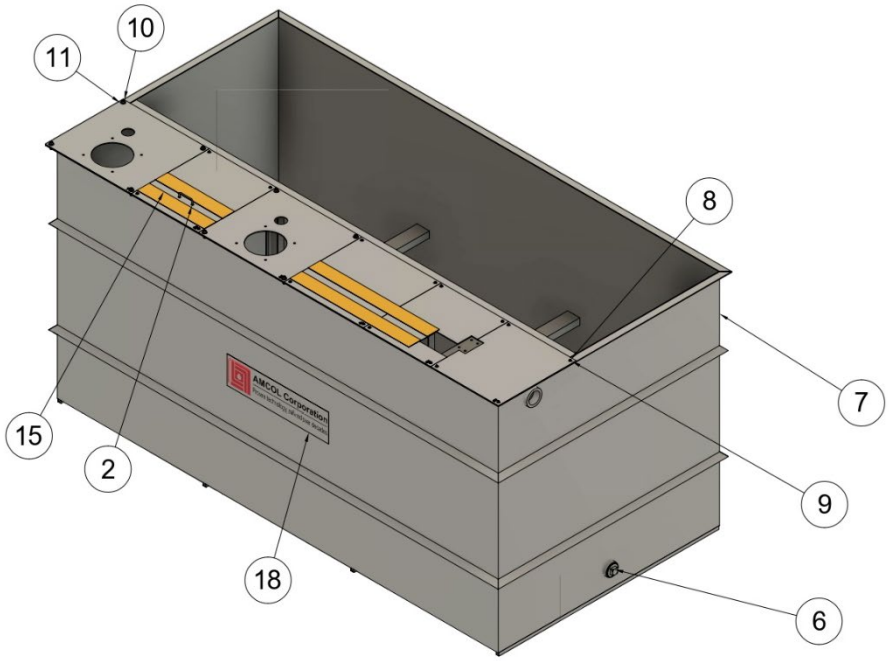
PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	4413K3
2	1	11665A21
3	2	31CNNEZ
4	1	005367
5	2	003005
6	16	25C62SHC
7	16	25NUFW
8	4	43NUFW
9	4	50CNNEZ
10	1	001512
11	1	005380
12	2	6970T25
13	4	50C125SHC
14	2	AIMF-DECAL
15	1	17-3076C1-R-2000

17-3076D-R-3000-A (3000 Gallon)



PARTS LIST		
ITEM	QTY	PART NUMBER
1	2	11665A21
2	4	31CNNEZ
3	1	005367
4	2	003005
5	1	001512
6	1	005380
7	2	6970T25
8	2	AIMF-DECAL
9	1	4413K3
10	4	50NUFW
11	16	25C62SHC
12	16	25NUFW
13	1	17-3076D-R-3000
14	4	50CNNEZ
15	4	50C125SHC

17-3076D-R-3000x2-A (2 pump 3000 Gallon)



PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	4413K3
2	1	11665A21
3	2	31CNNEZ
4	1	005366
5	1	005367
6	2	003005
7	1	17-3076D-R-3000X2
8	16	25C62SHC
9	16	25NUFW
10	8	50C150SHC
11	8	50NUFW
12	8	50CNNEZ
13	1	001512
14	1	005380
15	2	6970T25
16	2	AIMF-DECAL

6 Oil Skimmer with Decanting Tank (OSD)

OSD Installation

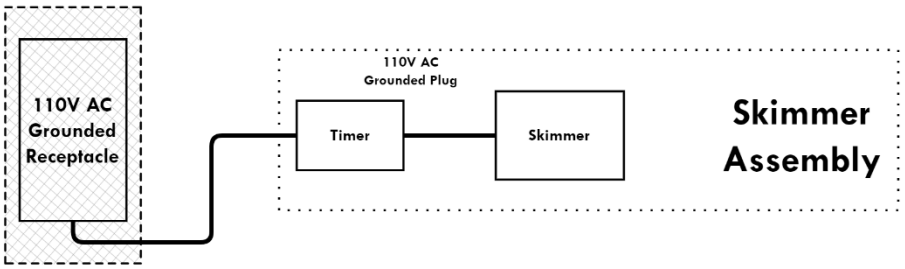
PRIOR TO GETTING STARTED

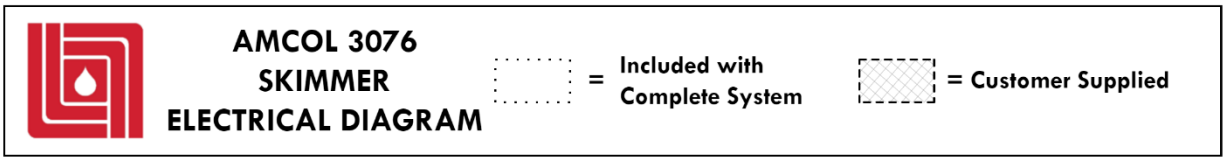
- ***WARNING! This system operates on 110V AC. The power input should be ground fault protected. Be sure that the motor is properly protected from inadvertent coolant splashing.***
- ***WARNING! The belt is sharp. Do not handle without safety glasses and protective gloves.***
- ***WARNING! Completely read and understand the Abanaki manual before operating the skimmer.***
- ***WARNING! The belt must enter the coolant when in operation to avoid overheating or premature wear of the belt and wipes.***

Installation Procedure

1. Review the system to ensure that bolts and assemblies have not been loosened or damaged in shipment.
2. Identify the location that the oil skimmer with decanting will be placed. This system must be mounted in a level position where all four mounting bolts can be utilized. This location is already predetermined when installing on a 3076 Coolant Reservoir.
3. Install the stainless-steel band on the skimmer as per the Abanaki Manual.
4. Plug in system power. Ensure there is a ground fault interrupter connected to the circuit. A timer is included for situations where tramp oil is generated below the capacity of the skimmer (12 gallons per hour).
5. Manually operate the skimmer to test.

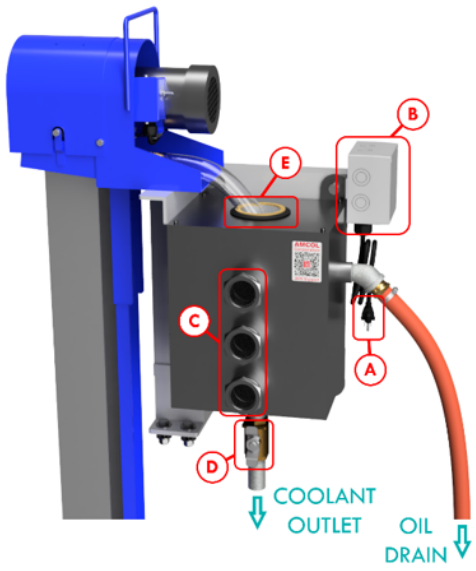
OSD Electrical Diagram





OSD Settings and Maintenance

OSD RECOMMENDED SETTINGS



Item ID	Description	Recommended Settings
A	Power Cord	—
B	Timer	Set when tramp oil is generated less than 12gph.
C	Sight Windows	—
D	Drain Valve	Closed during operation. Open to drain separated coolant from the reservoir.
E	Inlet Strainer	Clean during operation

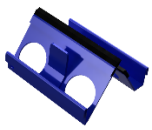
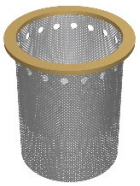
DAILY MAINTENANCE

- Drain separated coolant from decanting reservoir to the coolant reservoir.
    - Coolant should be drained back after reaching the first window.
    - Coolant MUST be drained after reaching the middle window.
- Clean strainer located on top of the decanting reservoir.
- Observe oil wiper to be properly functioning.

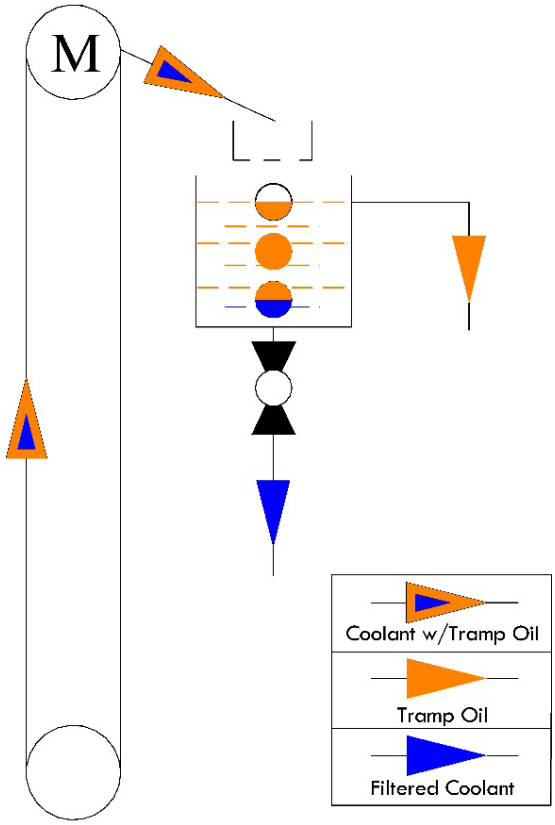
OSD Troubleshooting

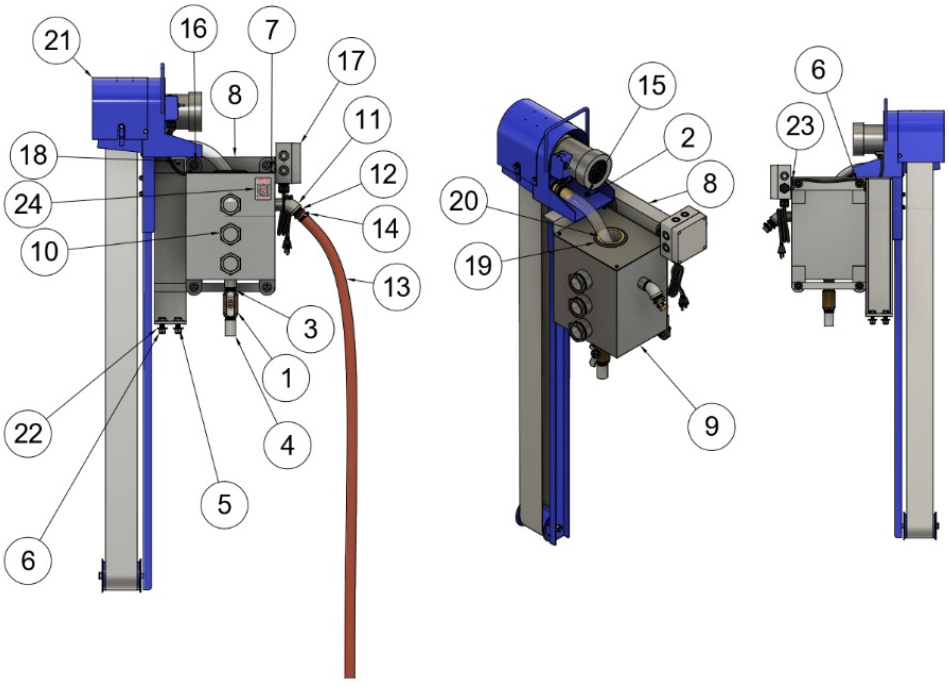
- Check system power.
- Check decanting reservoir level. If fluid is visible at the top window, the overflow is clogged.
- Check wiper and belt condition.

OSD Consumables & Spares

Description	Part Number	Image
Corrosion Resistant Steel Belt 60"	BT4S-0060	
Skimmer Wiper	PT4WBCOO	
Fluid Basket Strainer	01387	
1" ID Rubber Hose (Orange)	7094-100304	
Discharge Hose (Clear)	PTI-10	

OSD Schematics & Drawings





PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	V500P-16-04
2	4	31NUFW
3	1	005319
4	1	034329-AC03S
5	4	50C125HCS5Z
6	8	50CNNEZ
7	4	10F50SHC
8	1	17-OSSB-MB4
9	1	17-OST-PH
10	3	3277K27
11	1	001571
12	1	125HBL-16-16
13	1	7094-100304
14	1	MC 20
15	2	37C100HCS5Z
16	4	50C150HCS5Z
17	1	E23D
18	2	37CNNEZ
19	1	8451A47
20	1	01387-AC
21	1	STR4CR-F-60
22	16	43NUFW
23	1	33038
24	1	LABEL-3076 SUPPORT

7 Transfer Pump

Transfer Pump Installation

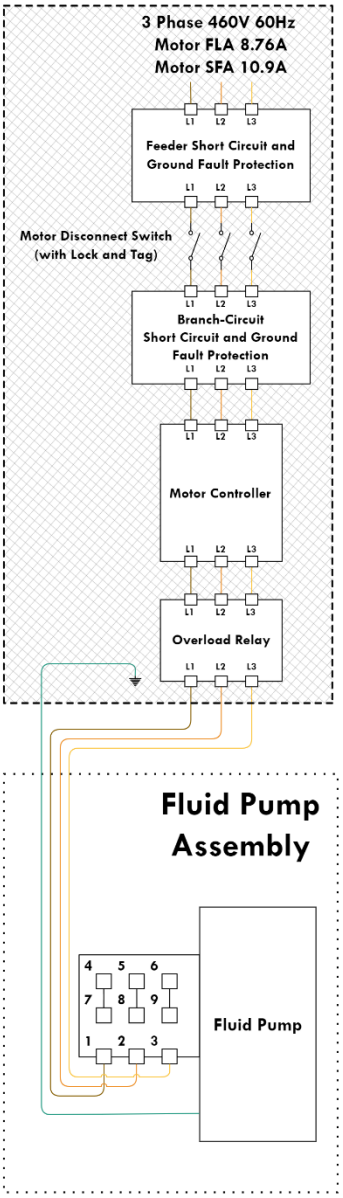
PRIOR TO GETTING STARTED

- ***WARNING! Before starting the pump, fill the coolant reservoir to a level that completely submerges the pump impeller. Running the pump dry for any extended period may result in serious damage.***

Installation Procedure

1. Review each assembly to ensure there is no damage from shipment.
2. When purchasing a system the pump will come pre-installed to the coolant reservoir, confirm all mounting connections are tight.
3. The Gusher vertical centrifugal pump is designed to draw coolant from the reservoir during operation. Ensure proper installation according to the electrical schematic found on pages 22 and 23—reversing L1 and L3 will cause the pump to rotate in the wrong direction and prevent it from functioning correctly.
4. All plumbing leading to the mill coolant nozzle network should be constructed using pipes, valves, and fittings that maintain full flow at the pump's outlet dimensions (e.g., 2" NPT). This plumbing must be properly supported to avoid stress on the system.
5. Verify that all plumbing connections to the coolant mill network are tight and that the system is fully assembled. Ensure any sump pumps within the network are operational before performing any testing or initiating pump operation.

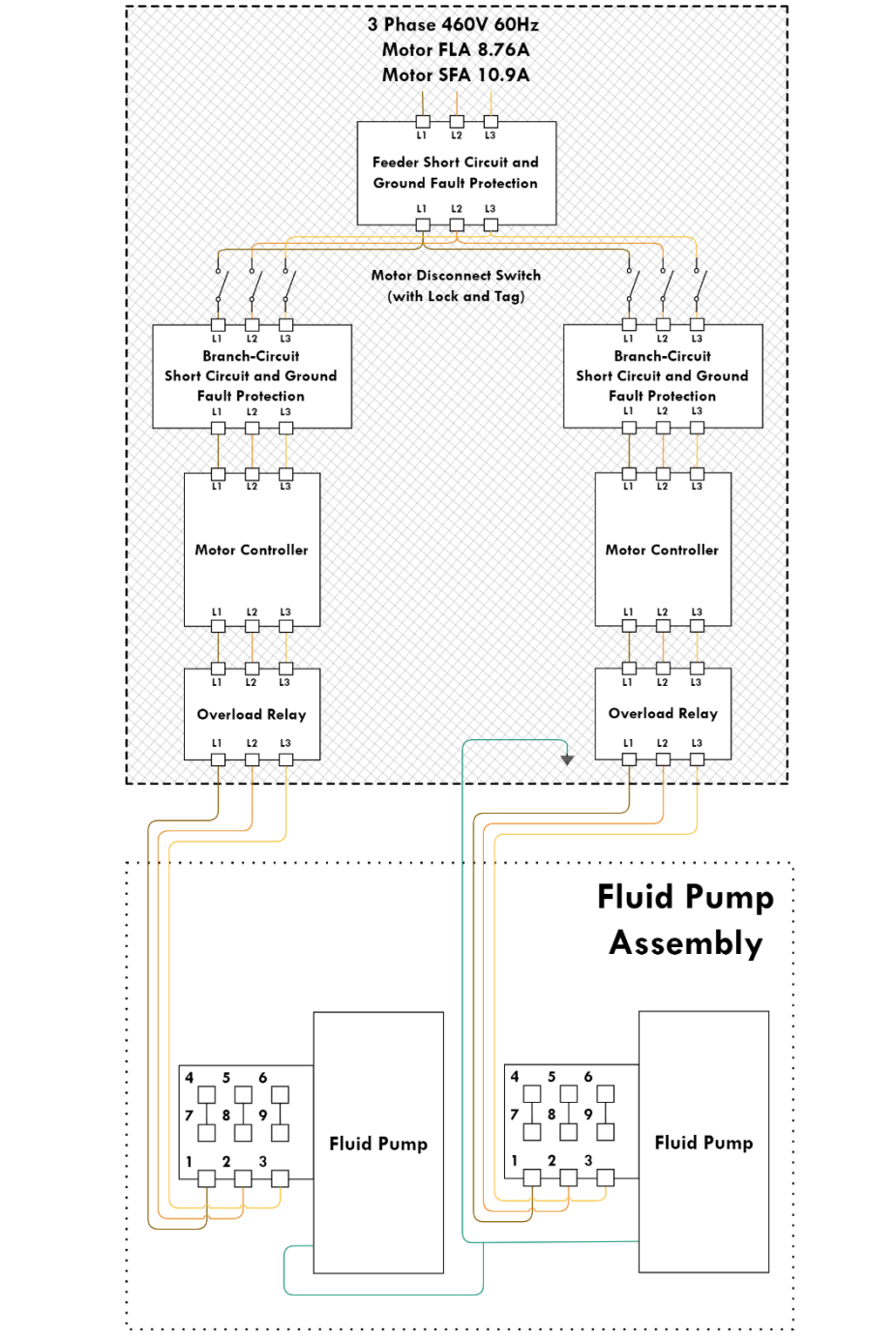
Transfer Electrical Diagram



AMCOL 3076
SINGLE PUMP
ELECTRICAL DIAGRAM

= Included with Complete System

= Customer Supplied


3 Phase 460V 60Hz
Motor FLA 8.76A
Motor SFA 10.9A
L1 L2 L3
Feeder Short Circuit and Ground Fault Protection
Motor Disconnect Switch (with Lock and Tag)
Branch-Circuit Short Circuit and Ground Fault Protection
Motor Controller
Overload Relay
Fluid Pump Assembly
4 5 6
7 8 9
1 2 3
Fluid Pump
AMCOL 3076
DUAL PUMP
ELECTRICAL DIAGRAM
= Included with Complete System
= Customer Supplied

Transfer Pump Maintenance

- Gusher vertical centrifugal pumps are typically durable and require minimal maintenance. However, it is highly recommended to keep a spare pump on hand, as lead times for delivery and repairs may be lengthy.
- The pump inlet features a suction strainer that should always remain in place, as it serves to protect the impeller and housing from damage.
- Inspect the motor housing and all electrical connections regularly while the pump is running, using an infrared camera. If excessive temperatures are detected, have the issue addressed by a qualified electrician.

Transfer Pump Troubleshooting

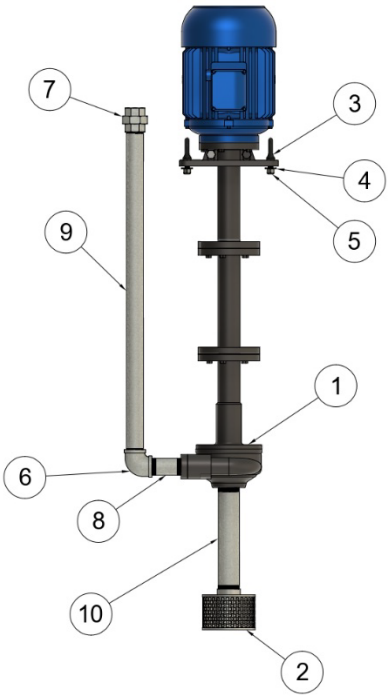
- A reduction in flow may result from various issues, including damage or wear to the pump impeller, housing, or motor. However, check for clogs in the coolant network downstream of the pump before proceeding with any pump repair or replacement.
- Excessive noise or vibration from the pump is a warning sign and should not be ignored. Replace the unit with a spare and send the original pump to Gusher for inspection and repair.

Transfer Pump Spares

Description	Part Number	Image
Gusher Pump with 24" Extension (75 GPM) (5HP/3450 RPM/230-460/5" Imp) with 34000 Mtg. Bracket	11019NS-SE-A24	
Gusher Pump with 12" Extension (105 GPM) (7.5HP/3450RPM/230-460,3 phase/5.5Imp) with 34000 Mtg. Bracket	11031-NS-12	
Gusher Pump with 24" Extension (150 GPM) (5HP/3450 RPM/230-460/5" Imp) with 34000 Mtg. Bracket	CL-3x4-7-SEV-24-15HP	

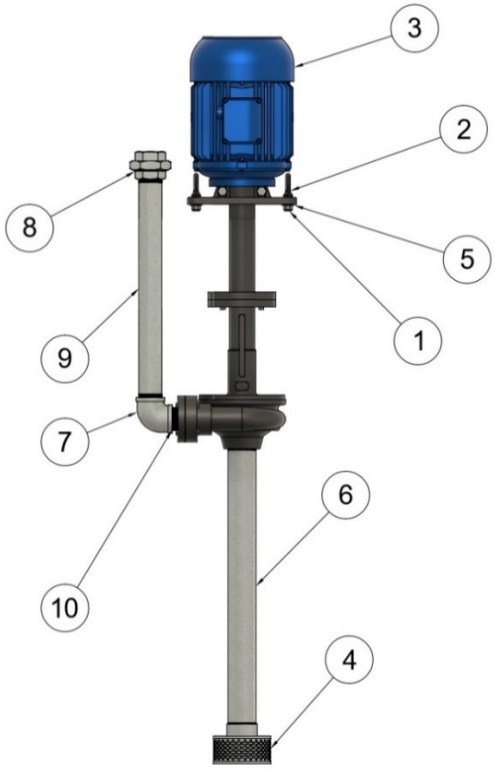
Transfer Pump Drawings

19-PA-3076B (75 GPM)



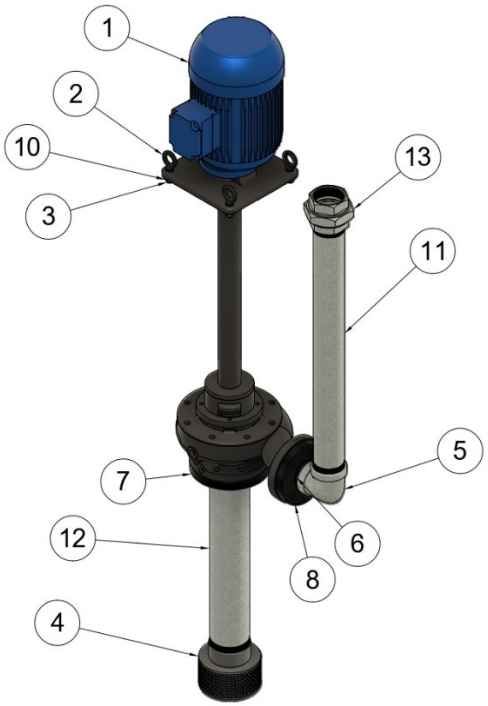
PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	11019NS-SE-A24
2	1	4413K2
3	4	50N-SEB
4	4	43NUFW
5	4	50CNNEZ
6	1	001507
7	1	001825
8	1	034331-AC04.5
9	1	034331-AC37.25
10	1	034332-AC12.75

19-PA-3076C1 (105 GPM)



PARTS LIST		
ITEM	QTY	PART NUMBER
1	4	50CNNEZ
2	4	50N-SEB
3	1	11031-NS-12
4	1	4413K9
5	4	43NUFW
6	1	019500-AC2.5X30.5
7	1	001508
8	1	001826
9	1	034332-AC24
10	1	005349

19-PA-3076D (150 GPM)



PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	CL-3X4-7-SEV-24-CC-A
2	4	50N-SEB
3	4	50CNNEZ
4	1	4413K4
5	1	001510
6	1	005366
7	1	033858
8	1	DM0623162
9	1	008684
10	4	50NCUWZ
11	1	019500-G3X35
12	1	019500-G4X26
13	1	001828

8 In-Line Bag Filter (ILBF)

ILBF Installation

PRIOR TO GETTING STARTED

- ***WARNING! Read and understand the NCO Filter Housings Installation, Operation, and Maintenance Manual, as well as all labels affixed to the filter housing.***
- ***WARNING! Observe the performance charts of the associated pumps to ensure the Filter Housing Pressure Limitations are not exceeded. Excess pressures and temperatures should be monitored with automated shutoffs to protect the filter housing. Low pressure monitoring devices of the filtrate are also recommended.***
- ***WARNING! Ball valves included with this system are to be operated in the fully open or fully closed positions only. Using these valves to adjust flow will lead to unexpected results, including the premature failure of the valve seals.***
- ***WARNING! The filter vessel and related plumbing must be located and contained within the associated reservoir's secondary diking system.***

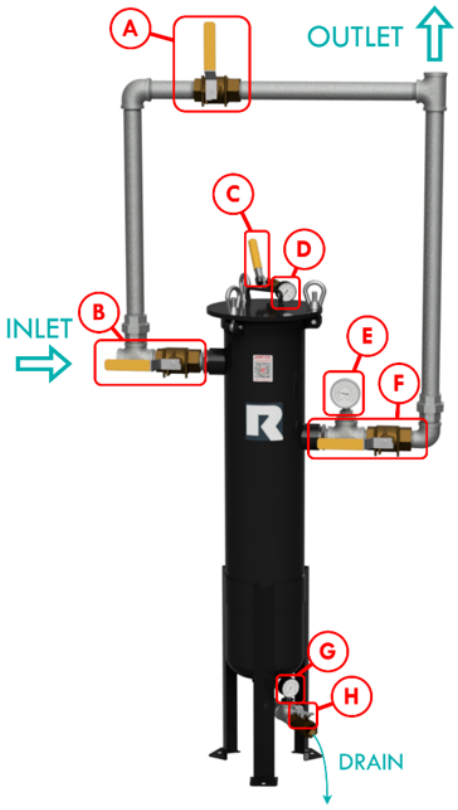
Installation Procedure

1. Review the system to ensure that bolts and assemblies have not been loosened or damaged in shipment.
2. Identify the location that the in-line bag filter will be placed. This location is already predetermined when installing on a 3076 Coolant Reservoir.
3. Remove all attached plumbing from the filter housing and place the filter housing in its mounting location.
4. Connect the plumbing from the reservoir pump to the housing.
5. Connect the plumbing from the housing to the mill supply network.
6. Reattach and tighten all unions within the inlet/outlet/bypass plumbing network.
7. Plumb the bottom drain outlet back to the reservoir, or to an integral sump pump within the secondary diking system. 3076 Coolant Reservoirs have a through hole near the mounting location for this purpose.
8. Tighten the housing legs to the mounting location.
9. Close all valves, and lock and tag inlet and outlet shut-off valves.
10. Open the bypass valve and operate.

Close the bypass valve and operate according to the NCO Filter Housings Installation, Operation, and Maintenance Manual.

ILBF Settings and Maintenance

RECOMMENDED SETTINGS



Item ID	Description	Recommended Settings
A	Bypass Valve	Closed during normal operation.
B	Inlet Valve	Open during normal operation.
C	Pressure Relief Valve	Closed during normal operation.
D	Inlet Pressure Gauge	Approximately the same as fluid pressure at the pump outlet.
E	Temperature Gauge	—
F	Outlet Valve	Open during normal operation.
G	Drain Pressure Gauge	No more than 10psi less than the Inlet Pressure Gauge (C).
H	Drain Valve	Closed during normal operation.

DAILY MAINTENANCE

- Observe the inlet and outlet pressure gauges. Replace the bag filter if the pressure difference is greater than 10 PSI.

CHANGING THE BAG FILTER

1. Open the bypass ball valve.
2. Close, lock, and tag the filter entry and exit ball valves.
3. Depressurize the filter vessel by opening the spring return valve on top of the filter housing. When fully depressurized, the top and bottom pressure gauges should read 0 PSI.
4. Open the lid by loosening each eye bolt.
5. Open the bottom valve to drain the filter housing.
6. When the filter housing is drained, remove the used bag filter.
7. Install a fresh filter into the housing according to the NCO Manuals.
8. Check the gasket on the lid prior to closing. Replace if damaged.
9. Place the lid in position and retighten the eye bolts.
10. Close the drain valve on the bottom of the housing.
11. Slowly tighten each eye bolt in a crossing pattern to avoid damage to the lid gasket.
12. Remove the lock and tag on the entry and exit valves.
13. With the transfer pump operating, slowly open the entry and exit valves. Gauges on the top and bottom of the vessel should read the pressure generated by the pump (approximately 30 PSI for 3076 Systems).
14. Observe all connections, gauges, drains, fittings, and the lid gasket to be leak free. If there are any leaks, shut down, lock, and tag the pump and repair the leakage.

Close the bypass valve after confirming correct operation and operate according to the NCO Filter Housings Installation, Operation, and Maintenance Manual.

ILBF Troubleshooting

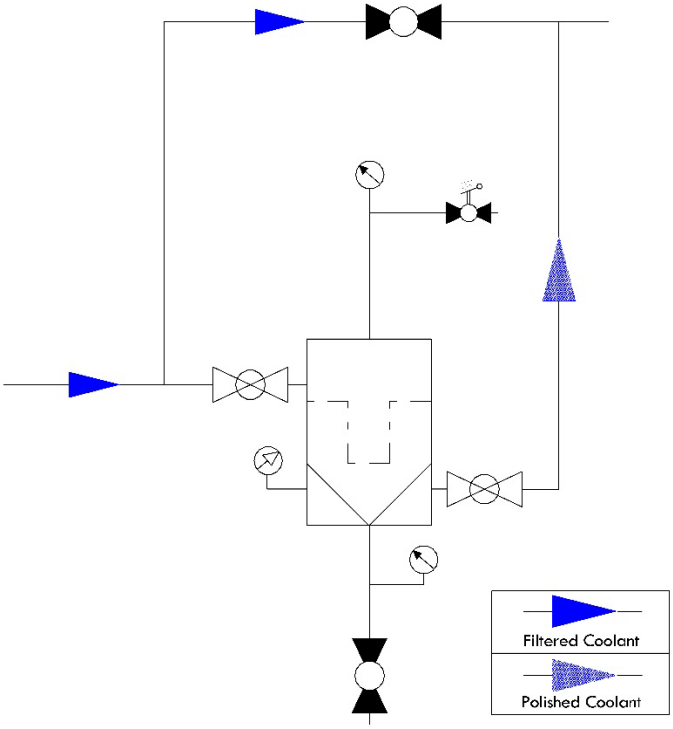
- Expected gauge pressures will vary depending on your coolant network and pump capacity. Once baseline pressure readings are established, any gauges showing signs of malfunction should be promptly replaced. Keep in mind that abnormal readings may also indicate issues elsewhere in the system.
- Several valves within the system may require replacement over time. Malfunctioning valves or unexpected leakage are often discovered during de-energization and bypassing of the housing for filter maintenance.
- Leaks from the top of the filter housing are typically due to a worn or improperly seated O-ring, or incorrect installation of the filter and its supporting strainer. Ensure all components are correctly assembled, and replace any damaged parts as needed.

ILBF Consumables & Spares

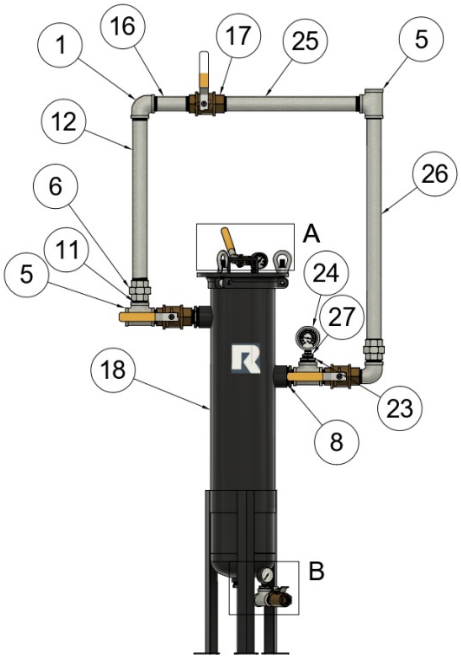
Description	Part Number	Image
LF14S-1 x ¼ CBM 0-60 Pressure Gauge	035671	
¼" Low Mount Gauge 0-60 PSI	35686	
NPT Threaded Thermometer with Bottom Connection. 4" Long Stem, 3" Dial Diameter (20 to 240 Degrees)	3956K14	
5 Micron Bag Filter Size 2 for Rosedale Filter	PE-5-P2S	
5 Micron Bag Filter Size 2 for Pall/FSI Filter*	PONG5P2PWE*	
Viton Cover Seal for Rosedale Filter	8150CG-V	
Viton Lid Gasket for Pall/FSI Filter FSPN-85*	EGL30007V1*	

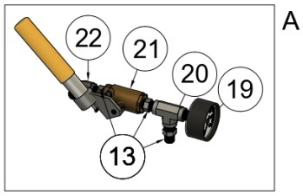
*For systems purchased prior to 2021

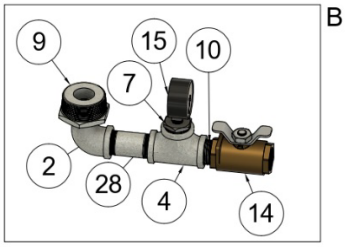
ILBF Schematic & Drawings



3076-ILBF-R15

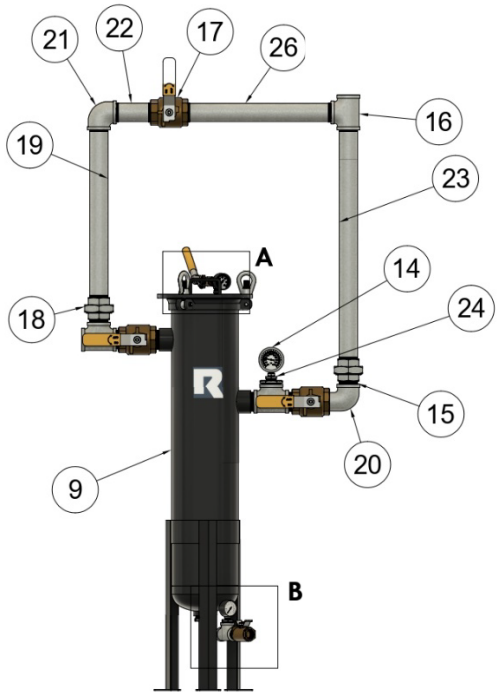


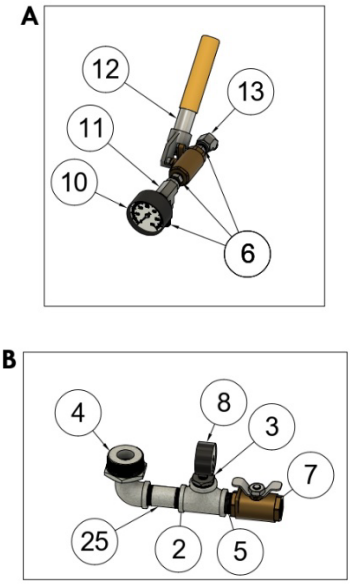




PARTS LIST			PARTS LIST		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
25	1	034331-AC19.5	1	1	001507
26	1	034331-AC31	2	1	001545
27	1	002883	3	1	001547
28	1	005323	4	1	001582
			5	3	001584
			6	2	001825
			7	1	002885
			8	2	002898
			9	1	002900
			10	1	005319
			11	6	005339
			12	1	034331-AC23.25
			13	3	4-PC-11
			14	1	V500P-16-04
			15	1	35686
			16	1	034331-AC06
			17	3	77-107-46
			18	1	NCO8-30-2P-0-150-C-B-PB
			19	1	035671
			20	1	4-PC-25
			21	1	4171K21
			22	1	4-PC-15
			23	1	002893
			24	1	3956K14

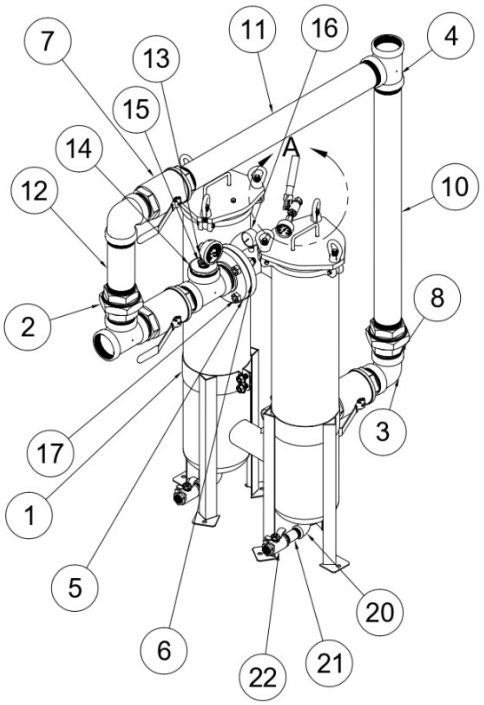
3076-ILBF-R20

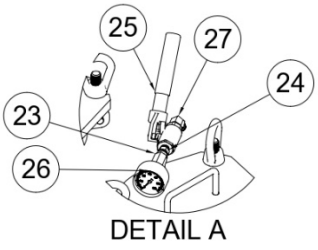




PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	001545
2	1	001582
3	1	002885
4	2	002900
5	1	005319
6	3	4-PC-11
7	1	V500P-16-04
8	1	35686
9	1	NCO8-30-2P-0-150-C-B-PB
10	1	035671
11	1	4-PC-25
12	1	4171K21
13	1	4-PC-15
14	1	3956K14
15	6	005349
16	3	001585
17	3	037041
18	2	001826
19	1	034332-AC23.25
20	1	001548
21	1	001508
22	1	034332-AC06
23	1	034332-AC31.25
24	1	002883
25	1	005323
26	1	034332-AC20

3076-ILBF-R30





PARTS LIST		
ITEM	QTY	PART NUMBER
27	1	4-PC-15

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	82-30-3F-1-150-C-V-S-PB
2	2	001828
3	2	001510
4	3	001587
5	2	013812
6	2	008684
7	3	46495K28
8	7	005366
9	1	019500-G3X7
10	1	019500-G3X39.5
11	1	019500-G3X36
12	1	019500-G3X10
13	1	3956K14
14	1	4464K177
15	1	002883
16	2	35686
17	2	033912
18	2	PE5-P2S
19	2	8150CG-V
20	2	001545
21	2	005323
22	2	V500P-16-04
23	1	4-PC-25
24	3	4-PC-11
25	1	4171K21
26	1	035671

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