
SAFETY-KLEEN FLUIDKLEEN[®] II AND FLUIDKLEEN III FLUID MANAGEMENT SYSTEMS Operator Booklet



FluidKleen II



FluidKleen III

The customer should read and keep this booklet.

LOCAL SAFETY-KLEEN BRANCH

OFFICE ADDRESS

PHONE NUMBER

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SAFETY MEASURES



Safety in the workplace is dependent upon the proper use of the FluidKleen. Carefully follow all safety instructions and operational procedures outlined in this booklet. Failure to do so may create a dangerous working environment.

Keep a copy of this booklet near the FluidKleen for quick and easy reference.

Important Safety Instructions

1. In an emergency, disconnect air supply.
2. Keep fingers clear of the shelf's magnetic edge when attaching the shelf to a piece of machinery.
3. Read and understand this booklet before using the FluidKleen. Operate only as described in this booklet.
4. Use only manufacturer's supplied attachments.
5. Do not modify the FluidKleen. Modification may cause personal injury and/or property damage and will void the warranty.
6. Always wear the proper personal protective equipment (PPE) i.e., gloves, apron, eyewear, respirator (where required) to meet OSHA and WHMIS protection standards. Always wear safety glasses. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
7. Do not use the FluidKleen if a leak is apparent or occurs during use. Slippery conditions can result. Use caution when trying to stop the leak. Only try if possible to do so without risk.
8. Do not smoke, eat, or drink in the work area. Use good personal hygiene. Wash hands thoroughly with soap and water after handling. Make sure clean water is available in the work areas for flushing the eyes and skin.

Save These Instructions

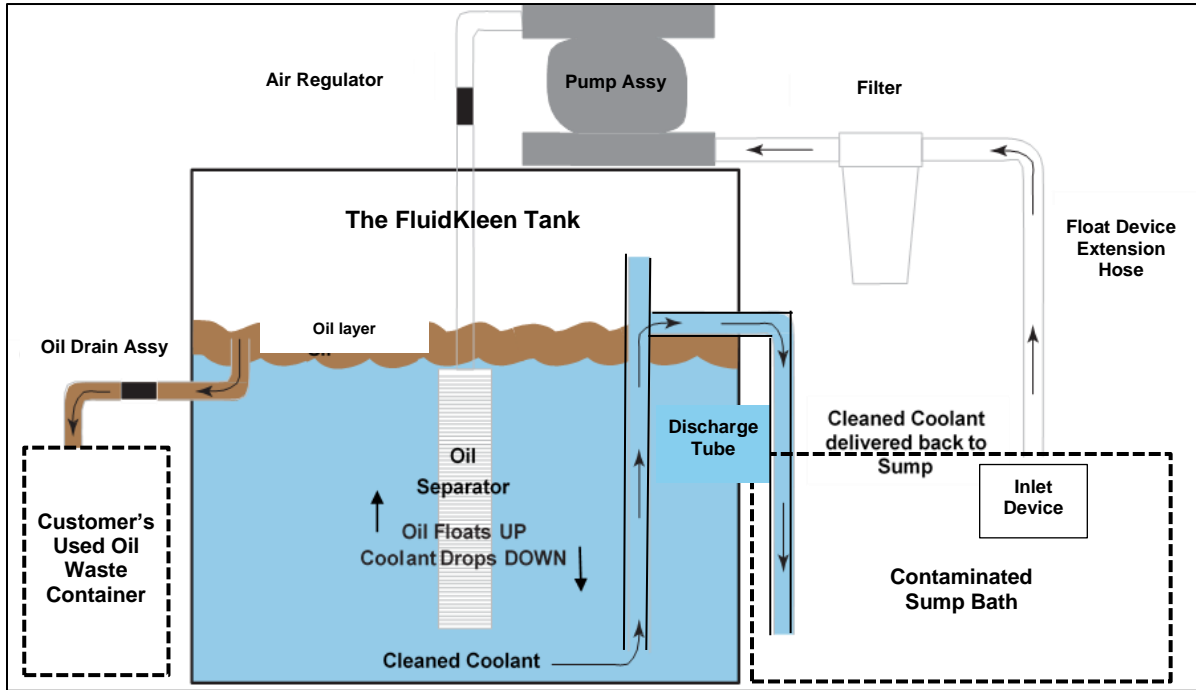
THE FLUIDKLEEN II AND FLUIDKLEEN III

The FluidKleen II and III are designed to simply and continuously clean contaminated, aqueous based sump solutions which likely include machining coolants and tramp oil. The FluidKleen II, with a 5-gallon tank, is intended for cleaning lower volume sumps. The FluidKleen III holds 12 gallons and is intended for larger volume sumps. Neither unit, however, is intended to remove emulsified or rim-layer oils that attach to the sump walls or floor.

Other than the collection tank size difference, the FluidKleen II and III are identically designed, and follow the same assembly and operation procedures.

PROCESS

1. Via the inlet device, the FluidKleen pump draws sump solution (which includes tramp oil and coolant) through the FluidKleen filter, removing any chips and debris.
2. The sump solution then flows through the Oil Separation Element, to be separated, and then released into the collection tank.
3. The coolant settles to the bottom of the tank and is returned to the sump via the discharge tube.
4. The released oil gathers at the top of the solution in the collection tank to be manually siphoned off as needed into a side waste container via the oil drain assembly.



SPECIFICATIONS

	FluidKleen II	FluidKleen III
Width	14" (36 cm)	14" (36 cm)
Length	14" (36 cm)	14" (36 cm)
Height	24" (61 cm)	36" (91 cm)
Maximum Tank Fill	5 gal (19L)	12 gal (45L)
Sump Size	25 - 150 gal (95 - 568L)	50 - 250 gal (189 - 946L)
Operation Type	Pneumatic	Pneumatic
Compressed Air Requirement	0.5 SCFM @ 20 psig	0.5 SCFM @ 20 psig
Shipping Weight	35 lb (16kg)	43 lb (20kg)
Filled Weight	83 lb (38kg)	155 lb (70kg)
Operating Temperature	Ambient	Ambient
Filter Rating	5 - 150 micron	5 - 150 micron

APPLICATIONS

- Intended for use in the automotive or other manufacturing industries
- Provides general cleaning and sump solution separation
- Designed for use with:
 - aqueous parts washers
 - mop water tanks
 - vibratory applications
- aqueous based synthetic, semi-synthetic, or soluble oil sump coolant solutions
- **WARNING!**
 - NOT recommended for use with sulfur-based contaminants
 - NOT recommended for use with heavy greases
 - Do NOT use with industrial paints, gasolines or straight oils (must be water soluble oils)

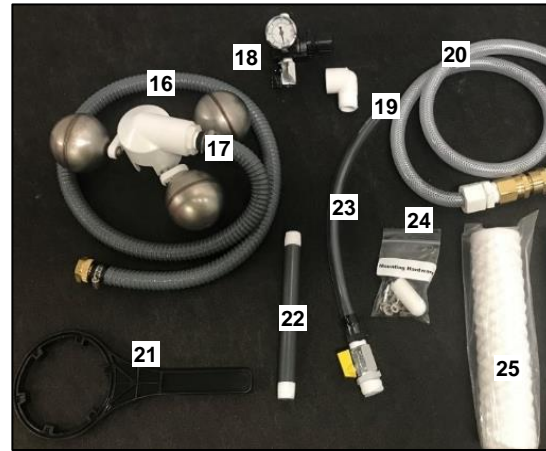
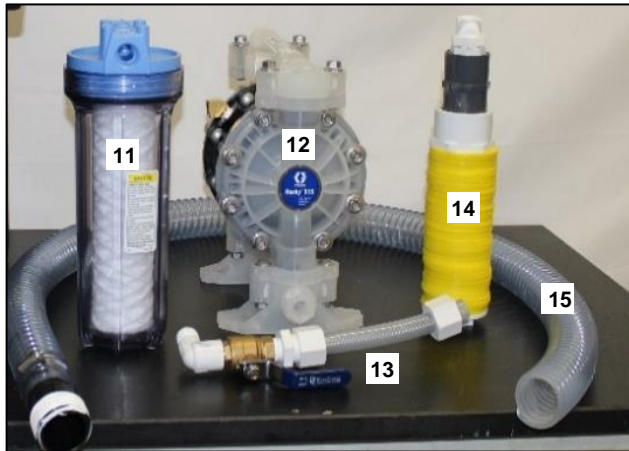
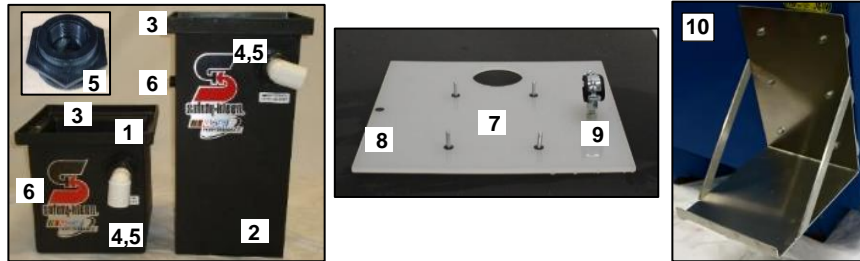
DEFINITIONS

TERM	DESCRIPTION
Alignment Marker	A white dot on the Collection Tank's left upper edge, and a black dot on the Lid's left side that is used to align the Lid with the Collection Tank.
Clamp, Nipple	The Nipple slides through this bracket and supports the Nipple's attachment to the Pump and to the Filter Housing.
Filter	A porous, tube-shaped device, contained in the filter housing assembly, that removes particulates from the sump solution before it enters the pump. The unit includes a 150-micron, string wound filter. There are additional filters, of differing sizes and compositions, available for optional purchase.
Filter Housing Assembly	The group of components that include the Filter Housing, the Filter Housing Cap, the Filter and the O-ring. The Filter Housing must be filled with fresh coolant before operating the unit.
Hose, Inlet Extension	The hose that connects the Filter Housing to the Inlet Device hose.
Hose, Inlet Device	The hose that connects the Inlet Device to the Inlet Extension Hose.
Hose, Pump Short	The hose that attaches the Oil Separator to the Pump.
Inlet Device	The device that floats atop the surface of the sump solution, drawing in the solution and sending it to the Filter Housing. There are inlet devices of various sizes and designs available for optional purchase. The unit includes the RSM-3 Inlet Device and Hose.
Muffler, Pump	The small white PVC component that attaches to the right-side of the pump and muffles the pump noise.
Nipple	The gray PVC pipe that connects the Filter Housing Assembly to the Pump
Oil Separator	The device that, attached to the pump, dangles beneath the lid and is submerged into the collection tank solution. It collects the used oil from the sump solution, releasing the used oil and coolant, separated, back into the collection tank.
O-ring, Filter Housing	The device that sits in the bowl of the Filter Housing, just underneath the threads, creating an air-tight seal in the housing.
Port, Discharge	The opening located on the Tank's front wall and includes a gasket, o-ring and elbow fitting. The discharge tube attaches to this port.
Port, Oil Drain	The opening located on the Tank's upper left wall into which the Oil Drain Fitting is attached. The Oil Drain Assembly attaches to this port.
Pump	The pneumatic device that controls the flow of sump solution through the FluidKleen.


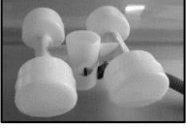



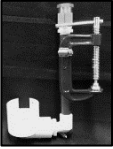
Regulator, Air	Controls the air pressure delivered to the Pump.
Shelf, FluidKleen II	The magnetic shelf that attaches to the side of the customer's machine and holds the FluidKleen II.
Sump	A CNC machine container that is usually located underneath the machine, which collects the used coolant solution.
Tank, Collection	The container that collects the separated sump solution: used oil to be drained and coolant to be discharged back to the sump.
Tramp Oils	Oils not formulated into the coolant concentrate. Examples include hydraulic oils, gear oils, spindle oils and way oils.
Tube, Discharge	The hose that delivers coolant from the Collection Tank back to the sump.

COMPONENTS AND REPLACEMENT PARTS LIST

The FluidKleen II and FluidKleen III use the same components and assemble identically. Other than the shop-provided, compressed air-line and fitting, all the necessary components are included with the unit.



Part Number	Name	Name	Part Number
NA	(1) Tank, Collection FluidKleen II	(19) Fitting, Oil Drain Port	NA
NA	(2) Tank, Collection FluidKleen III	(20) Hose, Filter Assembly	230179
NA	(3) Alignment Marker, Tank	(21) Wrench, Filter	NA
NA	(4) Port, Discharge	(22) Nipple, Filter Housing (230199)	230200
230186	(5) Gasket, Discharge Port	(23) Valve w/ Hose Assy, Oil Drain	NA
NA	(6) Port, Oil Drain	(24) Muffler, Pump & Hardware	230183
230184	(7) Lid Assy, Collection Tank	(25) Filter, 150-micron, string wound	230172
NA	(8) Alignment Marker, Lid	O-ring, Filter Housing	230174
NA	(9) Clamp, Nipple	Liquid Side Kit, Pump	230181
NA	(10) Shelf, FK II Magnetic	Air Side Kit, Pump	230182
230199	(11) Housing, Filter Assy	Hose w/out fittings, Inlet Device	230173
230180	(12) Pump	Filter, 5 Micron, polypropylene	8429
NA	(13) Short Hose Assy, Pump	Filter, 20 Micron, polypropylene	8430
230175	(14) Oil Separation Element, FK II	Filter, 50 Micron, polypropylene	8431
230177	Oil Separation Element, FK III	Filter, 100 Micron, polyester	8432
230185	(15) Tube, Discharge	Aluminum Filter Housing Assembly	230192
230191	(16) Hose w/ Fittings, Inlet Device	Magnetic Rod, 230192	230193
230178	(17) Inlet Device & Hose Assy	Bag Filter, 25 micron, 230192	230194
230202	(18) Regulator, Air	O-ring, Aluminum Filter Housing (230192)	230201

INLET DEVICE ASSEMBLIES AVAILABLE FOR SEPARATE PURCHASE <i>(includes hose and fittings)</i>			
230187			<ul style="list-style-type: none"> • 7"W x 12"L • Floats • Automatic adjustments as the sump fluid level changes
230188			<ul style="list-style-type: none"> • 7"W x 7"L • Floats • Compact Footprint • Tolerates higher concentrations of floating solids in the sump (aluminum)
230189			<ul style="list-style-type: none"> • 2"W x 12"L • Floats • Automatic adjustments as the sump fluid level changes • Accommodates sumps with a narrow access point
230190			<ul style="list-style-type: none"> • 2 ½ " Dia • Fixed, attaches to the sump • Manual adjustments as the sump fluid level changes • Accommodates sumps with a narrow access point (up to 3")
230197 (BT-12)			<ul style="list-style-type: none"> • 3"W x 12"L • Floats • Compact Footprint • Automatic adjustments as the sump fluid level changes • Accommodates sumps with a narrow access point (ie, conveyors)
230198 (YAZ-8)			<ul style="list-style-type: none"> • 2 ½" Dia • Fixed, attaches to sump • Manual adjustments as the sump fluid level changes • Accommodates sumps with a narrow access point (up to 3")
FILTERS AVAILABLE FOR SEPARATE PURCHASE			
8429	Filter	5 micron	<ul style="list-style-type: none"> • polypropylene
8430	Filter	20 micron	<ul style="list-style-type: none"> • polypropylene
8431	Filter	50 micron	<ul style="list-style-type: none"> • polypropylene
8432	Filter	50 micron	<ul style="list-style-type: none"> • polyester
230192	Filter	25 micron	<ul style="list-style-type: none"> • in-line bag filter for use w/ aluminum filter housing

PLACEMENT

Both the FluidKleen II and FluidKleen III must be accessible to the customer's compressed air-line and within ~ 4' of the machine's sump.

CAUTION! *The FluidKleen II can be placed on a magnetic shelf that is attached to the machine's exterior. The shelf's magnetic force is very powerful, and care should be taken when adjusting the shelf's position. Use the side brackets to re-position or remove the shelf from the machine. Keep hands and fingers clear from the shelf's edge when attaching it to the machine.*



THE FLUIDKLEEN II

1. Grasp the magnetic shelf by the side brackets, situate the shelf over the machine's preferred exterior wall, and then release. The magnetic force holds it in place.
2. Holding the collection tank with the discharge port facing forward, and the oil drain port facing left, set the tank into the shelf. Ensure the tank is level in the shelf, placed directly below the two nuts protruding from the shelf's back wall.

THE FLUIDKLEEN III

1. The FluidKleen III is a stand-alone unit and should be permanently placed on a level, smooth surface near the machine's sump.

ASSEMBLY

IMPORTANT! Hand tighten all connections. DO NOT overtighten.

TOOL REQUIREMENT

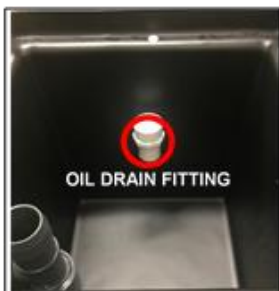
- 7/16" Wrench
- Phillips Head #3 Screwdriver
- Air-line fitting (customer supplied)

THE OIL DRAIN ASSEMBLY AND THE DISCHARGE TUBE



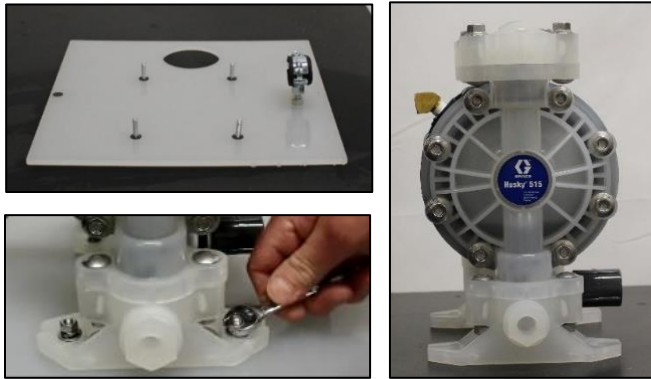
1. Thread the oil drain assy into the port found on the collection tank's exterior left wall.
2. Attach the discharge tube to the port found on the collection tank's exterior front wall.
3. Place the other end of the discharge tube into the machine's sump.

THE COLLECTION TANK FILL



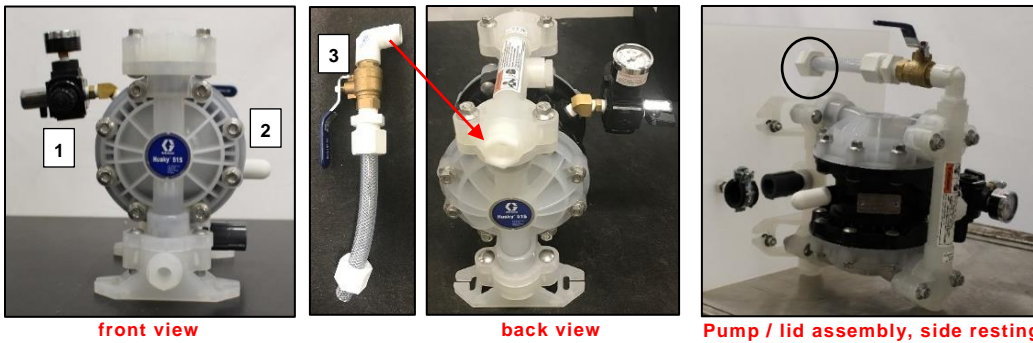
1. Fill the collection tank with the customer's clean sump solution, to the tank's oil drain fitting (FluidKleen II ~ 5 gal, FluidKleen III ~12 gal).

THE PUMP/LID ASSEMBLY



1. Set the collection tank lid on a firm, flat surface. Make sure the lid's extended screws are upward, pipe-clamp is on the right, and the black alignment dot is on the left,
2. Hold the pump, facing forward, and align each pump foot around each extended screw. Then rest the pump on the lid. The gray coupler on the pump should face towards the pipe nipple clamp on the lid, and the 45° elbow should face towards the alignment dot.
3. Attach the lid assy hardware (flat washer first, lock washer, and then nut), around each extended screw.
4. Use the 7/16" wrench to tighten the hardware, securing the pump to the lid.

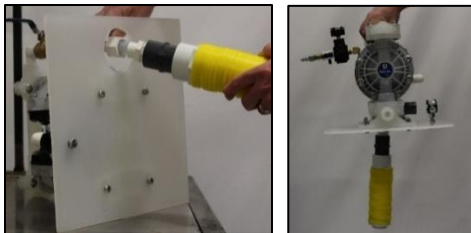
THE PUMP ASSEMBLY



1. Thread the air regulator onto the pump's upper brass fitting.
2. Thread the white muffler into the pump's air outlet port found on the opposite side of the air regulator, just above

the nipple coupler.

3. Attach the pump valve assembly to the pump. The assembly's short hose will extend through the lid hole.
4. Working from underneath the lid, connect the oil separator to the short hose.
5. Grasp the pump/lid assembly, and note the oil separator, one end attached to the short hose, and the other end free and suspended beneath the lid hole.



THE LID / COLLECTION TANK ASSEMBLY



1. Position the lid / pump assembly with the lid's black alignment marker on the left and align the black marker with the collection tank's white alignment marker. Once aligned, set the lid/pump assembly in place atop the collection tank.

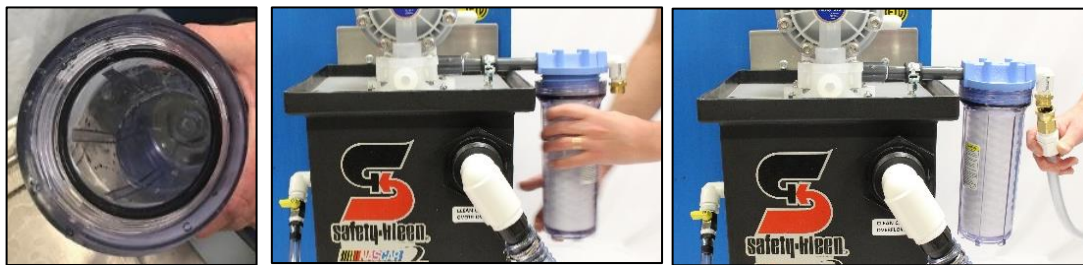
THE NIPPLE / FILTER ASSEMBLY



1. With the pump/lid assembly atop the collection tank, slide the free end of the nipple through the pipe clamp found on the lid's right side. Thread and hand tighten the nipple into the gray fitting just underneath the pump muffler. Use the Phillips #3 screwdriver to tighten the pipe clamp once the nipple is securely attached to the fitting.

2. Remove the filter cap from the filter housing and attach the cap to the nipple.
3. With the filter installed, fill the filter housing with coolant. Ensure the filter housing o-ring is still firmly seated, and screw the filter housing onto the cap.
4. Attach the extension hose to the filter cap.

Available for separate purchase:
 Aluminum Bag Filter Housing SK 230192



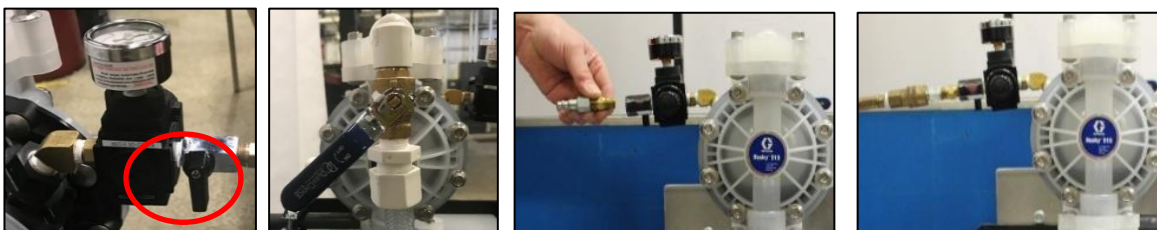
THE INLET DEVICE



NOTE: Ensure the inlet device is placed right-side up in the sump bath, as shown. The device's empty manifold, with the open sides, should be right-side up so to take on the sump.

1. Place the inlet device assembly into the sump. Connect the inlet hose and the filter extension hose to each other.

THE AIR-LINE



1. Ensure the air regulator is closed and close the pump ball valve.
2. Attach the customer's compressed air-line fitting to the FluidKleen air regulator. Then attach the compressed air-line to the fitting.

OPERATION

IMPORTANT! To avoid turbulence and air bubbles in the collection tank, the pump should strike approximately once per second. If the pump strikes do not settle within 1-2 minutes of start-up, **and** the collection tank solution shows air bubbles, adjust the pump valve up or down to adjust the pump strikes. If the solution does not settle by adjusting the pump valve, adjust the air regulator. The air regulator is factory set to 20-25 psi, and the air pressure may be adjusted by pulling out and turning the air regulator knob. A counterclockwise turn decreases the air pressure, a clockwise turn increases the air pressure.

1. Fill the filter housing assembly clean coolant.
 - While the pump is self-priming, this is the recommended practice and helps initiate a smooth operation.

NOTE: DO NOT fill the filter housing with solution from the sump. At the initial start-up, the filter housing should be filled with clean coolant, (supplied by the customer) in order to facilitate optimum pump performance.

2. Open the air regulator valve.
3. Very slowly, open the pump ball valve, drawing the sump solution into the FluidKleen.
4. Adjust the pump ball valve to a 25° - 45°, so the pump reaches optimal performance, striking approximately once per second.

NOTE: The pump may be somewhat erratic until fully primed, but it should settle within 1-2 minutes of operation and achieve a steady rhythm of approximately one strike per second.

DRAINING THE USED OIL

When the released (used) oil gathers on the top surface of the collection tank, it can be manually siphoned from the tank via the oil drain assembly.

NOTE: The FluidKleen pump must be running in order for the used oil to drain from the collection tank. When the pump is shut down, the tank's solution level drops below the oil drain port, making the oil layer drainage from the collection tank impossible.

1. Place a waste container underneath the oil drain assembly.
2. With the FluidKleen pump running, open the oil drain valve to drain the oil layer from the collection tank into a side waste container.
3. Continue to siphon the oil layer until coolant begins to flow from the oil drain port as well.
4. When coolant begins to flow from the oil drain port, close the oil drain valve.

IMPORTANT! Manage waste oil and coolant in accordance with federal and local regulations.

TROUBLESHOOTING

The pump strikes erratically or too quickly.	<ul style="list-style-type: none"> ▪ Ensure the filter housing assembly is filled with coolant. ▪ Ensure the filter is not clogged. If so, replace the filter. ▪ Slowly close the pump valve until the pump strikes approximately once per second.
The pump malfunctions.	<ul style="list-style-type: none"> ▪ Ensure the air line fitting and connection is secure. ▪ Adjust the air regulator. ▪ Adjust the pump valve.
The pump functions but does not draw in the sump solution.	<ul style="list-style-type: none"> ▪ Ensure the inlet device is upright in the sump. ▪ Check for a loose connection, build up or damage in the: <ul style="list-style-type: none"> ○ The inlet device and extension hose ○ The filter housing cap inlet and outlet ports ○ The filter ○ The filter housing o-ring ▪ Adjust the pump ball valve.
The sump solution does not separate in the collection tank.	<ul style="list-style-type: none"> ▪ Clean the oil separation element.
The released oil layer does not drain from the collection tank.	<ul style="list-style-type: none"> ▪ Before draining the used oil layer, ensure sure the FluidKleen is running. When the unit is running, the used oil layer will rise and reach the oil drain port. ▪ Clean the oil drain assembly.
The separated coolant does not discharge from the collection tank.	<ul style="list-style-type: none"> ▪ Ensure the discharge port and discharge tube are free and clear of build up or debris.
The collection tank is leaking.	<ul style="list-style-type: none"> ▪ Ensure the discharge gasket and o-ring are secure. If either component shows damage, replace. ▪ Ensure the oil drain assembly is securely attached to the oil drain port.

SAFETY-KLEEN SERVICE

- A Safety-Kleen Technician will install and assemble the FluidKleen.
- A Safety-Kleen Technician will explain operation and provide the Operator Booklet.
- A Safety-Kleen Technician will service the unit
- A Safety-Kleen Technician will order replacement parts and repair the FluidKleen.

Safety-Kleen branch contact information is provided at the beginning of this booklet.

Questions and service/repair requests can be directed to either the branch or 1-800-669-5740. Information is also available at www.safety-kleen.com.



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