

OIL FILTRATION SYSTEMS, INC.

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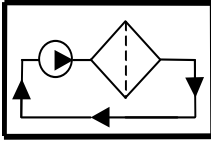
OPERATORS MANUAL

10 GPM 840X FILTER CART

MODEL#: FC-10-840X-120-N4-V

SERIAL#: 080609-02





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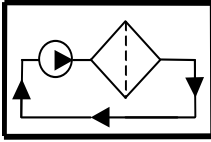
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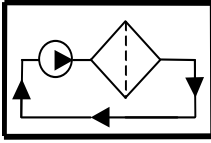
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1. GENERAL INFORMATION

The Filter Cart is designed to filter a wide variety of hydraulic and lubrication oils to meet or exceed new oil cleanliness specifications. The system is designed to remove particulate contamination through the utilization of high efficiency pleated micro glass filter elements.

The fluid is drawn from an existing reservoir to the filtration system by means of a self-priming positive displacement gear pump. The oil passes through the filter elements before being discharged to the outlet, at which point it is pumped back to the existing reservoir. The system has a differential pressure gauge to show when the elements need to be changed (40 PSID). Heavy-duty petroleum transfer hoses are used at both the inlet and outlet.



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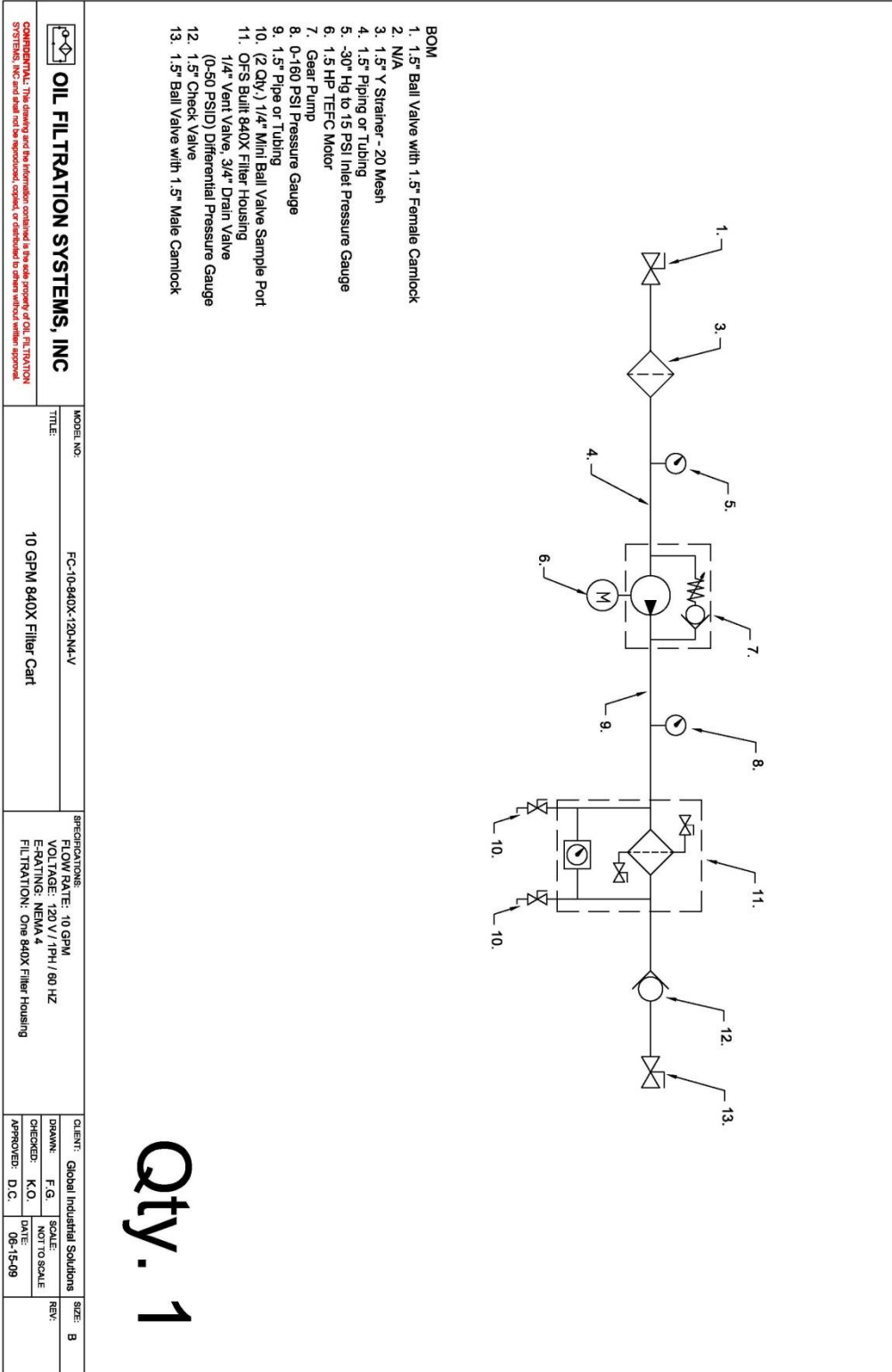
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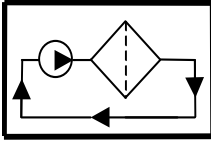
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Figure 1. Flow Schematic



Qty. 1



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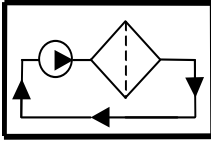
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2. STANDARD FEATURES

FEATURES	ADVANTAGES	EFFECTS
Differential Pressure Gauge	•Precise Filter Life Indication	•Less Filter Waste •Reduced Filter Costs
Compact size & weight	•Ease of portability •Ease of on-site orientation	•Increased Usage
System Pressure Gauge (Pump Outlet Pressure Gauge)	•Overall System Pressure Indication	•Increased User Efficiency
Inlet Gauge (Pump Inlet Pressure Gauge)	•Exact Measurement of Pump Performance	•Increased User Efficiency
Positive Displacement Pump	•No Need to Prime System	•Less Operator Labor •No Additional Equipment Required
High Grade Petroleum Transfer Hose	•Longer Life	•Reduced Replacement costs
Rigid Steel Construction	•Increased Durability	•Longer System Life
In-Line Sample Port Valves	•Quick and Easy Oil Sampling	•No System Downtime for Oil Sampling
Inlet Strainer	•Protects Pump from Large Particles	•Longer Pump Life



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3. MODEL CODE

MODEL NUMBER: FC-10-840X-120-N4-V		
CLASSIFICATION	CODE	DESCRIPTION
Product Type	FC	Filter Cart
Flow Rate	10	10 Gallons Per Minute
Housing Size and Style	840X	840X Carbon Steel Housings
Electrical Requirements	120	120 Volts / 1 Phase / 60 Hertz
NEMA Rating	N4	NEMA 4 (Weather Proof)
Seal Material	V	Viton



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Improving System Reliability

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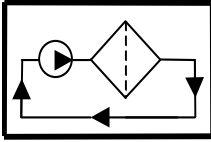
FILTER CART

MODEL #: FC-10-840X-120-N4-V
120 VAC/1 PH/60 HZ
FLOW RATE: 10 GPM
FULL LOAD AMPS: 19 @ 120 VOLTS

SERIAL #: 080609-02
SEALS: VITON

REPLACEMENT FILTER ELEMENT:
REPLACEMENT O-RING:

QTY - 1 P/N: OFS-840X (SERIES)
QTY - 1 P/N: OR-8.75-3/16-27.49



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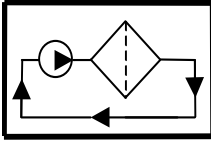
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4. SPECIFICATION SHEET

Installation Requirements	
Input Voltage	120 V / 1 Phase / 60 Hz
Designed FLA (Full Load Amps)	19 AMPS @ 120 V
Inlet Connection Size	1.5" Ball Valve Female Camlock
Outlet Connection Size	1.5" Ball Valve Male Camlock
Electrical Operating Specifications	
Oil Pump Motor	(See Motor Nameplate Rating)
Mechanical Operating Specifications	
Flow Rate	10 GPM
Maximum Discharge Pressure	100 PSI (689.5 kPa)
Maximum Oil Viscosity	1500 SSU (600 cSt)
Seal Material	Viton
Product Restrictions	
<p>IMPORTANT: This system should never be used to remove particulates from volatile fluids such as gasoline since the pump cannot be used for solvents with low lubricity. In addition, the unit should not be used on liquids with a flash point below 200°F (93°C).</p>	



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5. ENGINEERING PRODUCT WARRANTY

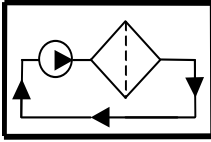
For a period of one (1) year from the date of delivery, Oil Filtration Systems, Inc. (Seller) engineered products are warranted to be free from defects in materials and workmanship when properly installed, maintained, and operated within the specified working parameters for which the equipment was designed. If the engineered product does not perform as warranted, it will be repaired or replaced at the Seller's discretion. The Seller will provide parts and labor, free of charge if the defect had occurred within the first year.

This warranty does not apply to consumable components such as filter elements, light bulbs, etc. This warranty shall not apply to product altered by anyone other than Seller or their representative.

At the Purchaser's option, the defect may be handled by one of the following methods:

- Ship (freight pre-paid) the unit in its entirety to Seller for repair or replacement.
- Remove the defective component and ship (freight pre-paid) to Seller for inspection and test. Upon completion of the evaluation, typically fourteen (14) business days, Seller will notify Purchaser if the claim is warranty related. If the claim is valid, a replacement component will be immediately shipped. If the claim is found to be due to improper installation, maintenance, or operation, a Purchase Order will be required for the replacement component.
- Remove the defective component and ship (freight pre-paid) to Seller with an open Purchase Order. Seller will immediately ship a replacement component and begin evaluation concurrently. Upon completion of the evaluation, typically fourteen (14) business days, Seller will notify Purchaser if the claim is warranty related. If the claim is valid, the open Purchase Order will be returned without any charges. If the claim is found to be due to improper installation, maintenance, or operation, the open Purchase Order will be invoiced for the amount of the replacement component.

SELLER SHALL NOT BE RESPONSIBLE OR LIABLE FOR DOWNTIME, LOSS OF INCOME, LIVING EXPENSES, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT MAY ARISE OUT OF THE USE OF THIS PROPERTY. THIS WARRANTY IS THE SOLE WARRANTY MADE BY OIL FILTRATION SYSTEMS, INC. IN REGARDS TO THIS EQUIPMENT. OIL FILTRATION SYSTEMS, INC. MAKES NO OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.



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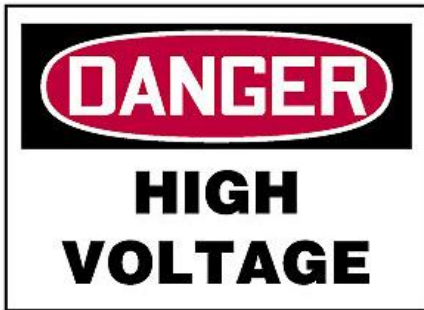
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6. SAFETY INSTRUCTIONS

This system has been examined and tested for safety. If there is any possibility that the oil being purified is contaminated with a solvent or materials which could be considered hazardous, either with toxicant or flammable explosives, the purifier should not be used unless precautions are taken to vent the vapors in a safe manner according to local, state, and federal codes and the flash point is above 200°F (93°C). This caution is necessary to prevent the possibility of fire, explosion, or toxic injury to persons and property.

NOTE: Normal safety practices and common sense should always be exercised when operating this unit.



This unit was manufactured to use 120VAC/1PH/60Hz input electrical power. The main power disconnect on the electrical panel door must be in the OFF position to gain access to the electrical panel. Supply power to the unit should be disconnected before the electrical panel door is opened. Only authorized and trained personnel should open the electrical cabinet to attempt service.

7. FLUID COMPABILITY

Depending on the model number the following seals apply:

The process fluid must be compatible with Viton seal material. Viton is good in the temperature range of -15 F to +400F. It is generally recommended for lubricating, fuel and hydraulic oils. The unit may be ordered with other seals to provide compatibility with specialty fluids.

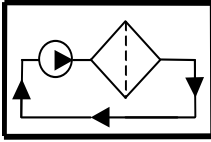
The process fluid must be compatible with Buna seal material. Buna N is generally recommended for petroleum, water, diester and water glycol. This unit may be ordered with other seals to provide compatibility with specialty fluids. Buna N is good in the temperature range of -65°F to +250°F.

8. INSTALLATION AND START UP PROCEDURES

8.1. Unpacking

This system is delivered with maximum protection during transportation and handling.

NOTE: All damage attributed to the handling and delivery of the unit must be recorded and brought to the attention of the shipper immediately.



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This unit has been thoroughly tested for a minimum of two (2) hours run time. Fluid used to test the unit is matched as closely as possible to that listed on the application sheet completed by the customer and supplied with the order. The unit has been thoroughly inspected for defects prior to the delivery. All connections, however, should be checked prior to operating this unit, vibration and/or rough handling during delivery could adversely affect component alignment and/or connection tightness.

8.2. Mechanical Installation

With the system in place, connect the inlet and outlet hoses from the reservoir to the system. The inlet port has been sized to provide enough flow to operate the unit in the automatic mode using oil with a maximum viscosity of 1500 SSU (600 cSt). A hose diameter equal to inlet/outlet port size (see specification sheet) is required to provide adequate oil supply to this unit.

NOTE: Use of a smaller diameter line will restrict the flow and will adversely effect the automatic operation of the unit.

The inlet/outlet connections have been sized for maximum hose lengths of 20 feet. Use of longer hose lengths must be approved prior to installation. Use of a "quick disconnect" on the inlet line is not recommended. This can restrict flow to the unit in specific applications. Oil is drawn into the unit by vacuum created by the system and is capable of pulling oil with up to 8-ft. (2.4 m) of negative head. For applications that exceed this, please consult the factory.

8.3. Operating Instructions

Connect inlet and outlet hoses to oil supply reservoir and the system (connect power supply cord to power source)

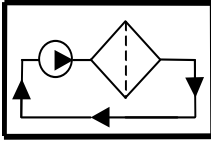
CAUTION: Main Power Disconnect should be located within a line of sight to the power source

Supply power to system, turn the system On/Off switch to the ON position.

With the flow bypass valve closed, the system will run at the rated gallons per minute. By opening the bypass valve, the flow will be diverted back to the inlet of the system depending on the amount the valve is opened.

The inlet gauge on the system should indicate between $\bar{10}$ " Hg to 10 PSI depending on the fluid viscosity and inlet condition. A reading below $\bar{10}$ " Hg, indicates that there is probably a restriction on the inlet and the inlet strainer may need to be cleaned.

The system is up and running, slowly open the filter housing air vent valves (on top of the filter housings) and bleed off the air in the filter vessels. Be sure that a container is placed under the valve while bleeding the air, as oil will come out after the air is purged.



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8.4. Filter Replacement Procedures

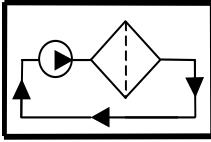
For 840X Filter Housing:

Before replacing the filter elements, first drain the housing by opening the drain (with a container below) and then open the air purge valve. This will allow the atmospheric pressure to push down on the fluid inside the vessel. After draining the housing, loosen lid bolts in a counter-clockwise direction.

For micro-glass filter elements:

- Loosen t-nuts to remove the used filter elements.
- Install new filters so that they seat properly at the bottom of the housing.
- Tighten the t-nut to secure the new filter.
- Make sure o-ring gasket is seated properly on the lid.
- Seal the filter housing by tightening all the bolts for a proper seal.





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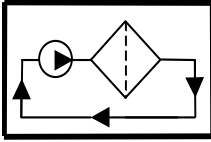
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9. TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Unit fails to start when start switch is activated	<ul style="list-style-type: none"> •Improper external power connection, •Breaker at main power source tripped 	<ul style="list-style-type: none"> •Check input power. •Make sure it matches machine specifications. •Make sure the power cord is the right size.
Unit fails to pump fluid	<ul style="list-style-type: none"> •Inlet valve is partially or fully closed 	<ul style="list-style-type: none"> •Position inlet valve to full open. •Valve should be “full port” type valve to reduce restrictions and should be sized as large as the inlet hose.
	<ul style="list-style-type: none"> •Air leak on inlet supply line 	<ul style="list-style-type: none"> •Check all fittings to insure no air leaks exist.
	<ul style="list-style-type: none"> •Y Strainer screen blocked 	<ul style="list-style-type: none"> •Remove encasement housing from Y strainer assembly. Remove screen and clean with clean lint free rag or blow with air.
	<ul style="list-style-type: none"> •Outlet valve partially or fully closed 	<ul style="list-style-type: none"> •Insure that outlet valves on both filtration system and reservoir are fully open.
Unit pump making excessive noise	<ul style="list-style-type: none"> •Inlet valves partially or fully closed 	<ul style="list-style-type: none"> •Insure that all inlet valves on system and reservoir are fully open.
	<ul style="list-style-type: none"> •Y Strainer obstructed 	<ul style="list-style-type: none"> •Remove and clean Y screen with air.
	<ul style="list-style-type: none"> •Inlet hose sized incorrectly 	<ul style="list-style-type: none"> •Inlet hose should be sized to a minimum of 1.5” diameter with maximum length of 20’. In the event of a longer inlet hose is needed a 2” diameter should be used to insure proper supply to the system.



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10. SPARE PARTS

ITEM	PART NUMBER	QTY	DESCRIPTION
1	OFS-840X (SERIES)	1	Replacement Filter Element
2	OR-8.75-3/16-27.49	1	Replacement Housing O-Ring

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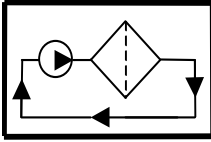
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FILTER CART

MODEL #: FC-10-840X-120-N4-V
 120 VAC/1 PH/60 HZ
 FLOW RATE: 10 GPM
 FULL LOAD AMPS: 19 @ 120 VOLTS

SERIAL #: 080609-02
 SEALS: VITON

REPLACEMENT FILTER ELEMENT: QTY - 1 P/N: OFS-840X (SERIES)
 REPLACEMENT O-RING: QTY - 1 P/N: OR-8.75-3/16-27.49



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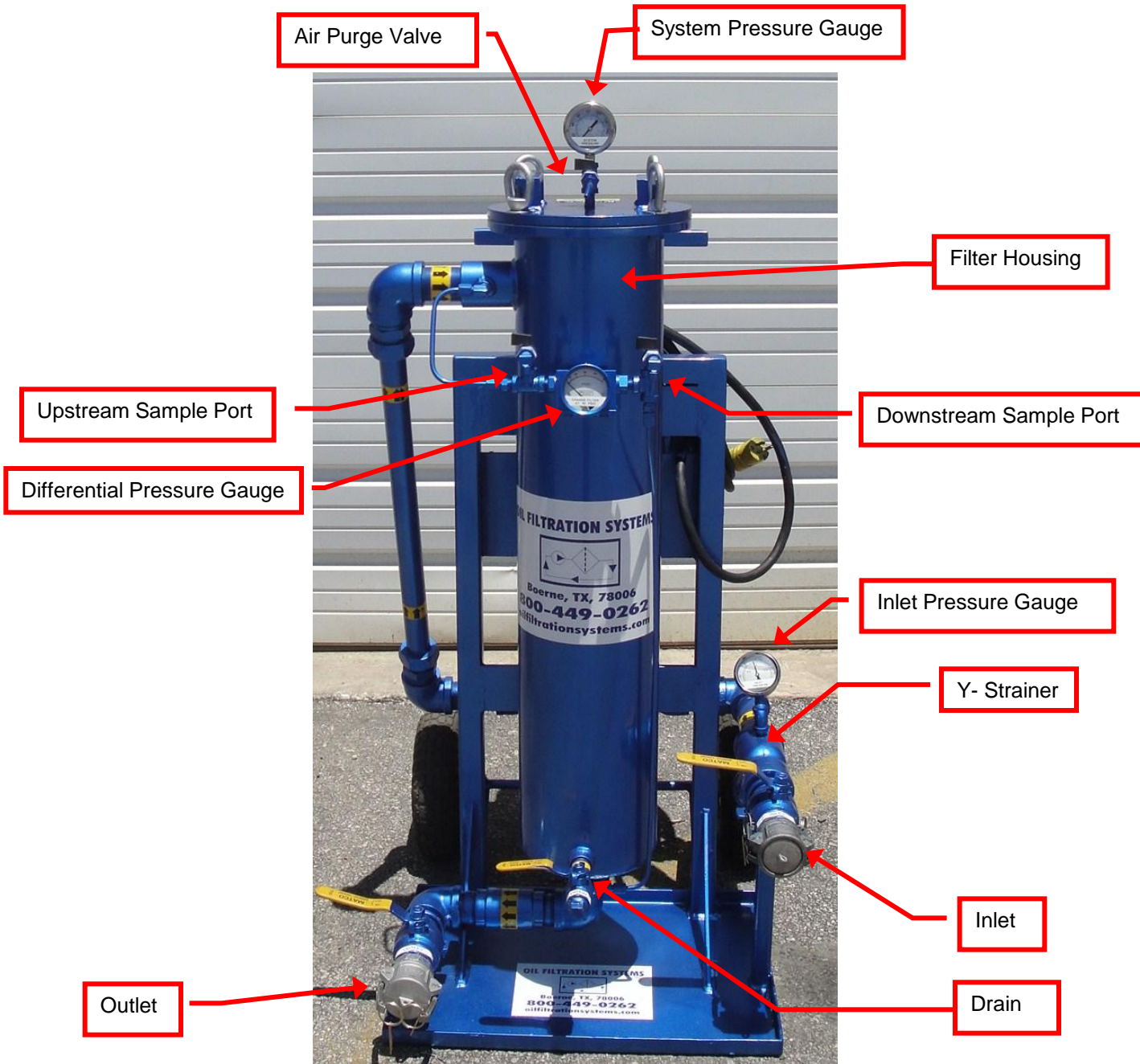
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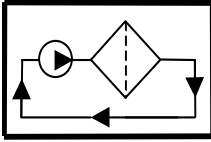
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11. SYSTEM COMPONENTS





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