



\* 225 and 450 Series Filters do not have external drain sump  
 \*\* 800 Series filters do not have a mounting bracket available, all others, mounting bracket is available separately

Water Separator	Part Number	Oil Coalescing Filter	Part Number
225 Series	21999-1150	225 Series	21999-1150-Z-FD
300 Series	21999-1096	300 Series	21999-1096-Z-FD
450 Series	21999-1160	450 Series	21999-1160-Z-FD
600 Series	21999-1120	600 Series	21999-1120-Z-FD
800 Series	21999-0960	800 Series	21999-0960-Z-FD

Water Separator	Part Number	Oil Coalescing Filter	Part Number
225 Series	21999-1150-ED	225 Series	21999-1150-Z-ED
300 Series	21999-1096-ED	300 Series	21999-1096-Z-ED
450 Series	21999-1160-ED	450 Series	21999-1160-Z-ED
600 Series	21999-1120-ED	600 Series	21999-1120-Z-ED
800 Series	21999-0960-ED	800 Series	21999-0960-Z-ED

Water Separator	Part Number	Oil Coalescing Filter	Part Number
225 Series	21999-1150-MM	225 Series	21999-1150-Z-MM
300 Series	21999-1096-MM	300 Series	21999-1096-Z-MM
450 Series	21999-1160-MM	450 Series	21999-1160-Z-MM
600 Series	21999-1120-MM	600 Series	21999-1120-Z-MM
800 Series	21999-0960-MM	800 Series	21999-0960-Z-MM

\* MM versions come with pneumatic drain and pneumatic drain controller



**WARNING**

Your safety is important. System pressure must be released prior to any installation or service. Failure to follow instructions could result in operating failure or product damage. Always install filters with the arrows indicating the direction of airflow. Use only appropriate thread sealant on all connection fittings unless otherwise specified. Do not alter the filter from its original design as this may cause failure in its operational parameters.

**DESCRIPTION**

Tsunami filters are machined from the highest quality materials & anodized inside & out to ensure ultimate durability against trapped contaminants. Our cutting-edge technology is rigorously tested to outperform your expectations regardless of the industry or application.

- Water Separators remove bulk water and filters particulate down to 10 micron.
- Oil Coalescing Filters remove oil aerosols down to .001 ppm & traps particulates down to .01 micron.

There are three drain types available; automatic float drain, electronic drain valve, and pneumatic drain with pneumatic drain controller.

- Float drains automatically discharge condensate when the internal float mechanism is lifted by the fluid level allowing the collected condensate to discharge.
- Electronic drains use a timer with ON/OFF controls. ON time refers to how long the drain is open to discharge condensate and the OFF time refers to the interval between drain discharge actuation. See instructions on Page 2 for recommended ON/OFF settings.
- Pneumatic drains with the pneumatic drain controller operate efficiently with an air signal from the controller operating the drain piston to allow condensation to collect in the external reservoir. When the air signal is removed by the controller, the condensate is discharged out the bottom port of the drain. The drain controller timer has an ON/OFF setting with the ON time representing how long the controller sends the pilot signal and the OFF time is the interval between actuation settings. See instructions on Page 3 for recommended ON/OFF settings.

**FILTER SPECIFICATIONS**

Maximum Inlet Air Temperature: 175°F      Maximum Pressure: 200 psi

Filter Series	Max Flow	Port (NPT)	Height*	Service Clearance Height*	Width	Depth**	Weight*** (lbs)
225 Series	225 CFM	1 ½"	21 ¾"	37"	4 ¼"	4 ¼"	11
300 Series	300 CFM	1 ½"	27 ¾"	43"	4 ¼"	4 ¼"	12
450 Series	450 CFM	2"	25 ¾"	43"	5 ¼"	5 ¼"	13
600 Series	600 CFM	2"	31 ¾"	49"	5 ¼"	5 ¼"	19
800 Series	800 CFM	3"	43 ¾"	66"	6"	6"	46

\* Add 4" to height measurement for ED and MM drain versions  
 \*\* Add 2" to depth measurement for MM drain versions  
 \*\*\* Add 2 lbs to weight measurement for ED and MM drain versions

**INSTALLATION & SERVICE REQUIREMENTS**

**IMPORTANT: Before beginning installation, it is important to determine the direction of air flow which best meets your installation application requirements. Failure to follow required maintenance schedule will void warranty.**

Installation Instructions ..... pg. 2  
 Recommended Service Interval ..... pg. 2  
 Service Parts ..... pg. 3  
 Service Instructions ..... pg. 3

- Inspect Water Separator Element
- Replace Oil Coalescing Filter Element
- Drain Replacement

## INSTALLATION & SERVICE REQUIREMENTS

**IMPORTANT:** The following maintenance schedule is recommended for all Tsunami Filters. **Failure to follow instructions could result in operating failure or product damage.**

### Service Requirements

- Water Separator - Zero Maintenance Required; clean mesh or replace as needed
- Oil Coalescing Filter - Mandatory Every 6 Months

Tsunami filters come standard with automatic float drains. If ordered with pneumatic or electronic drains, follow the respected installation and user procedures listed here:

- Pneumatic: See Drain Minder Controller Instructions Section
- Electronic: See User Instructions Section

*Note: It is always recommended to install union fittings before and after the filter; it makes for easy removal of the filter or to pivot the filter 30° for service clearance.*

**Your safety is very important. Read all instructions before beginning any service or installation of your Tsunami Filter. Always wear safety eye protection when working with compressed air products. Failure to follow maintenance instructions could result in operating failure or product damage. System pressure must be released prior to any installation or service. Follow all Federal, State, and Local regulations when disposing of compressed air condensate.**

### FILTER INSTALLATION - OPTION 1 - MOUNTING BRACKET

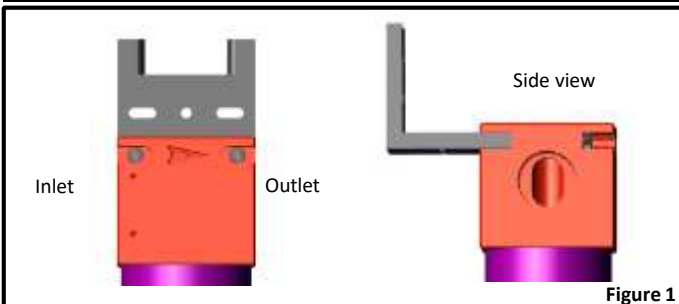


Figure 1

1. When using a Tsunami filter *Mounting Bracket*, secure bracket to wall prior to plumbing filter into air system.
2. Using supplied hardware, attach Tsunami filter to mounting bracket.
3. Using arrow on filter head, plumb unit into system piping in the desired direction of airflow. Use appropriate thread sealant.

### FILTER INSTALLATION - OPTION 2 - MOUNTING INLINE

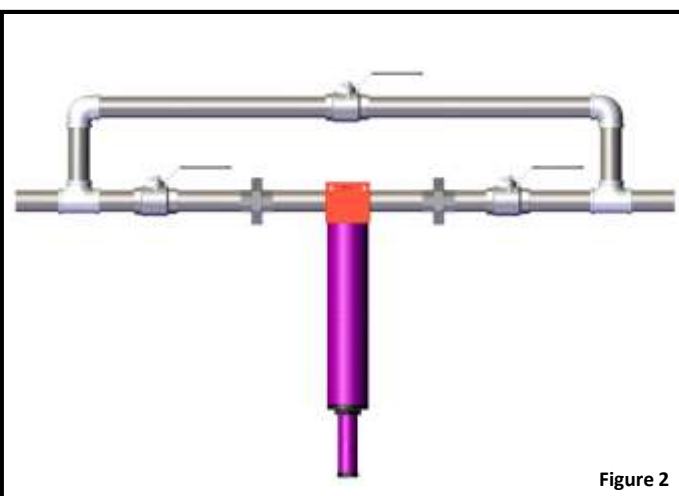


Figure 2

1. When installing filter directly inline with air system plumbing, verify that there is adequate support to hold weight of filter. For filter models including electronic drains, verify there is adequate space between the wall and filter to allow for removal of filter tube during maintenance.
2. Using arrow on filter head, plumb unit into system piping in the desired direction of airflow. Use appropriate thread sealant.

## INSTALLATION INSTRUCTIONS – DRAIN MINDER CONTROLLER FOR PNEUMATIC DRAIN PILOT SIGNAL

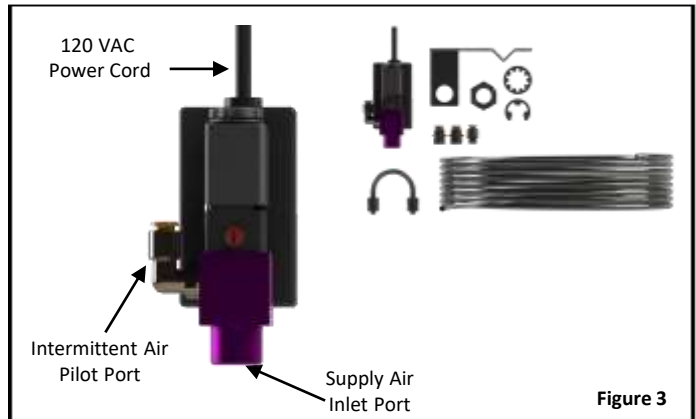


Figure 3

1. Remove all system pressure.
2. Mount bracket to a wall, or on air piping using the u-bolt assembly. Installation should be within 6ft to a 120 VAC outlet and within 14ft of the drain to receive the pilot signal. If installing further away, purchase the necessary length of 1/4" nylon tubing for your installation.
3. Mount the Drain Minder to the bracket using the supplied lock washer and nut.
4. Route supply air from the air system to the Inlet Port; supply air **MUST** be filtered to 20 micron or better. Use the supplied push connect fittings and tubing or hard plumb directly into the air system.
5. Connect supplied 1/4" nylon tubing to the elbow of the intermittent pilot signal port and route to the Intermittent Pilot Signal port on the pneumatic drain mounted to the filter.
6. Plug the Drain Minder into 120 VAC outlet.
7. Set the timer: It is recommended to set the ON time between 8-10 seconds and the OFF time to 5 minutes. \*The further away or number of drains used may require more ON Time 15-20 seconds.

*Note: Only adjust the OFF time to accommodate for the variable amount of condensation to be removed. For large amounts of moisture removal, adjust the OFF time to .5 to 1 minute; for smaller amounts, adjust the timer to 15 to 30 minutes.*

*Note: It is recommended to open the strainer ball valve on the bottom of the filter at least monthly to keep debris from blocking the condensate tube routed to the pneumatic drain.*

## USER INSTRUCTIONS – ELECTRONIC DRAIN VALVE

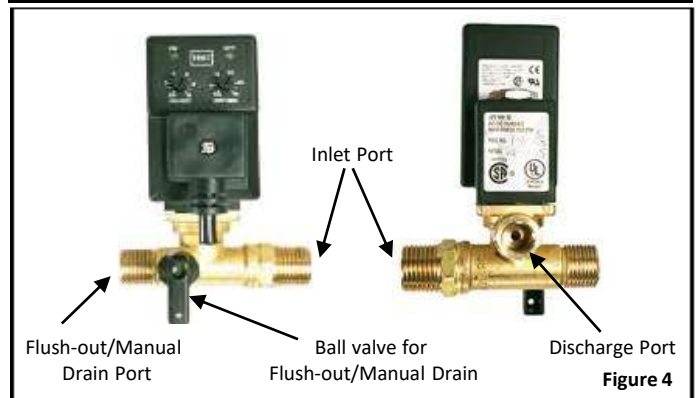


Figure 4

1. Figure 4 shows the location of the inlet port, the outlet port, and the strainer flush out port, and flush out ball valve/manual drain.
2. Route the 1/4" NPT outlet port to an appropriate condensate collection tank or disposal drain.
3. Route the 1/4" NPT flush-out port to an appropriate condensate collection tank or disposal drain.
4. Plug the EDV into 120 VAC outlet
5. Set the timer; it is recommended to initially set the ON time to 1/2 to 2 seconds and the OFF time to 5 minutes.

*Note: Only adjust the OFF time to accommodate for the variable amount of condensation to be removed. For large amounts of moisture removal, adjust the OFF time to .5 to 1 minute; for smaller amounts, adjust the timer to 15 to 30 minutes.*

## TSUNAMI WATER SEPARATOR AND OIL COALESCING FILTER SERVICE PARTS

Water Separator



Oil Coalescing Filter



\*Baffle sizes may vary based on filter model  
 \*\* 225 and 450 Series Filters do not have external drain sump

Filter Series	Water Separator Service Kit	Oil Coalescing Filter Service Kit	(3 Pack) Float Drain	Electronic Drain	Pneumatic Drain
225 Series	21999-1098	21999-1099	21999-0868	21999-0177	152-0000
300 Series	21999-1098	21999-1099	21999-0868	21999-0177	152-0000
450 Series	21999-1121	21999-1122	21999-0868	21999-0177	152-0000
600 Series	21999-1121	21999-1122	21999-0868	21999-0177	152-0000
800 Series	21999-1005	21999-1069	21999-0868	21999-0177	152-0000

### WARNING

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### WATER SEPARATOR MAINTENANCE

1. Release system pressure.
2. Remove tube from filter head by holding filter head and rotating tube counter-clockwise.
3. Using a 5/16" or 3/8" wrench, remove baffle from threaded rod below element.
4. Remove bottom baffle, filter element, top adaptor and O-ring.
5. Clean stainless steel mesh with soapy water or replace entire element with service kit. Refer to Service Chart shown above.
6. Replace filter element and hardware in reverse order from previous steps. Tighten baffle until filter element can no longer spin freely. DO NOT OVER TIGHTEN!
7. Reinstall outer tube by rotating clockwise onto filter head.
8. Slowly pressurize the unit

### OIL COALESCER / ACTIVATED CARBON MAINTENANCE

1. Release system pressure.
2. Remove tube from filter head by holding filter head and rotating tube counter-clockwise.
3. Using a 5/16" or 3/8" wrench, remove baffle from threaded rod below element.
4. Remove bottom baffle, filter element (element gaskets, 20 Series only), top adaptor, and O-ring.
5. Replace filter element and hardware in reverse order from previous steps. Tighten baffle until filter element can no longer spin freely. DO NOT OVER TIGHTEN!
6. Reinstall outer tube by rotating clockwise onto filter head.
7. Slowly pressurize the unit.

### DRAIN REPLACEMENT INSTRUCTIONS

#### Float Drain

1. Release system pressure.
2. Remove bottom cap by holding filter tube and rotating bottom cap counter-clockwise.
3. Grasp float drain by stem and rotate counter-clockwise.
4. Reinstall new float drain by spinning in clockwise direction until O-ring contacts the end cap. Tighten an additional 1/4 turn. DO NOT OVER TIGHTEN!
5. Reinstall end cap on filter tube.
6. Slowly pressurize system.

#### Pneumatic Drain

1. Release system pressure.
2. Disconnect pilot line tubing.
3. Remove pneumatic drain by holding filter tube and rotating pneumatic drain counter-clockwise.
4. Reinstall new drain by spinning in clockwise direction. DO NOT OVERTIGHTEN!
5. Reconnect pilot line tubing.
6. Slowly pressurize system.

#### Electronic Drain

1. Release system pressure.
2. Drain from power source.
3. Remove electronic drain by holding filter end cap and rotating counter-clockwise.
4. Reinstall new drain by spinning in clockwise direction. DO NOT OVERTIGHTEN!
5. Reconnect to power source.
6. Slowly pressurize system