

**THE FOLLOWING USER MANUAL APPLIES TO ALL TSUNAMI DRAINS**

\* Includes All Models: Float, Electronic, and Pneumatic \*



Float



Electronic



Pneumatic



**WARNING**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Drain Valve. 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. Use appropriate thread sealant on all connection fittings unless otherwise specified. Do not alter the drain from its original design as this may cause failure in its operational parameters. Follow all Federal, State, and Local regulations when disposing of compressed air condensate.

**DESCRIPTION**

Congratulations on the purchase of your Tsunami Drain Valve! By adhering to the specifications and maintenance schedule listed in the manual, your drain system will provide years of service with minimal maintenance.

Each automatic drain type functions differently:

- **Float type drain:** When the moisture level within the filter housing reaches a level high enough to lift the float head up, an internal orifice is opened, allowing a pilot signal to push an internal piston down. When the piston is depressed, condensate and extremely fine particulates are allowed to be discharged. As the condensate level decreases and the pilot orifice is closed, the internal piston is then lifted up with system pressure, closing off the internal discharge port.
- **Electronic Drain Valve:** This drain type using a timer/coil assembly to control when the drain actuates to discharge condensate. When the timer switches to the ON position, it energizes the coil causing an internal armature to lift off the discharge orifice allowing condensate to be dispelled. When the timer switches to the OFF position, the coil is de-energized and the armature seals off the orifice thus closing off the discharge of condensate. The Moisture Minder EDV also has an internal strainer to trap large particulates, preventing clogging of the discharge orifice. Opening the integrated ball valve allows system pressure to sweep the trapped particulates out of the strainer screen which prevents build up and blockage by the larger trapped debris.
- **Pneumatic drain valve:** These drains require an internal pilot signal from some outside source to actuate an internal piston to open up the water port while blocking off the discharge port. With the water port open, condensate collects in either an internal or external reservoir. When the pilot signal is taken away, the piston spring returns to its normal position, sealing off the water inlet and opens the discharge port releasing the trapped condensate.

**DRAIN SPECIFICATIONS**

Maximum Inlet Air Temperature: 175°F

Drain P/N	Drain Type	Inlet (NPT)	Outlet (NPT)	Max Pressure	Voltage	Hertz	Amp Draw	Filter Series
21999-0868*	Float	N/A	N/A	250	N/A	N/A	N/A	All
21999-0177	Electronic	1/4" ID / 1/2" OD	1/4"	230	120 VAC	60	.17	All
21999-0177-230	Electronic	1/4" ID / 1/2" OD	1/4"	230	230 VAC	60	.08	All
21999-0177-24	Electronic	1/4" ID / 1/2" OD	1/4"	230	24 VDC	N/A	.8	All
21999-0177-12	Electronic	1/4" ID / 1/2" OD	1/4"	230	12 VDC	N/A	2.0	All
152-0000	Pneumatic	1/4"	1/4"	250	N/A	N/A	N/A	300, 600, 800 ***
21999-0792	Pneumatic	N/A	1/4"	250	N/A	N/A	N/A	20
21999-0795	Pneumatic	N/A	1/4"	250	N/A	N/A	N/A	50
21999-0805	Pneumatic	N/A	1/4"	250	N/A	N/A	N/A	120
144-0001 **	Electronic	1/4"	1/4"	150	120 VAC	60	.08	N/A

\* Float drains are sold in a 3-pack of drains

\*\* Drain Minder Controller provides the needed pilot signal for all pneumatic drains; **Max PSI: 150**

\*\*\* Requires the use of P/N 144-0001 and 21999-0300 when upgrading from a float drain option

**DRAIN APPLICATION/LOCATION**

Each drain type can be used in conjunction with all Tsunami filter and dryer assemblies; see specific product manuals for more information. In general, the following outlines typical applications / locations.

- **Float Drain:** All Tsunami compressed air filters come standard with float drains. Most filter manufacturers offer float drains as an option; if wanting to use this float in a competitor's filter, the Tsunami float will fit wherever the float thread is 1/8" NPT.
- **Electronic Drain Valve:** Electronic drain valves are most commonly used to drain condensate from compressor receiver tanks. These drains can also be plumbed directly at the bottom of all Tsunami filters (20 Series filters require the use of a 1/4" NPT to 1/8" NPT male reducer nipple). They can also be retrofitted to drain other manufacturers' filters although it may require the use of tubing and fittings to accommodate. Install on drip legs in the air system or on additional storage tanks found in some air systems.
- **Pneumatic Drain Valve:** Pneumatic drains are primarily used on compressor receiver tanks and pull their pilot signal from the compressor's unloader line (see compressor manual to locate). They can also be used directly on Tsunami filters; some filters use a specifically integrated drain while others use our general pneumatic drain along with our drain controller which provides the required intermittent pilot signal. Install on drip legs or other compressed air filters; simply use tubing to route condensate to the drain and the Drain Minder Controller to operate.

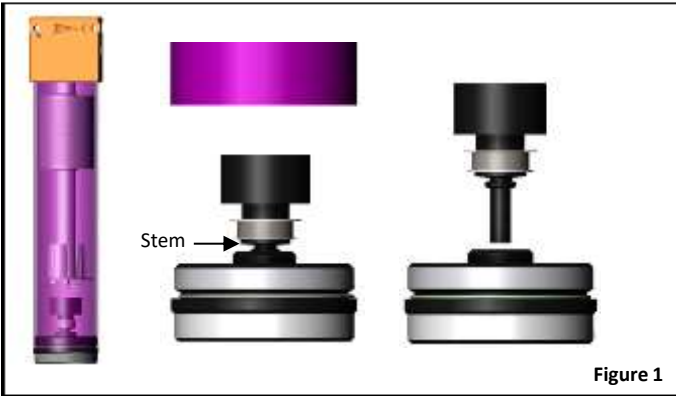
**INSTALLATION REQUIREMENTS**

**Electronic Drain Valve Installation** ..... pg. 2

**Pneumatic Drain Valve Installation** ..... pg. 3

**INSTALLATION INSTRUCTIONS – Float Drain**

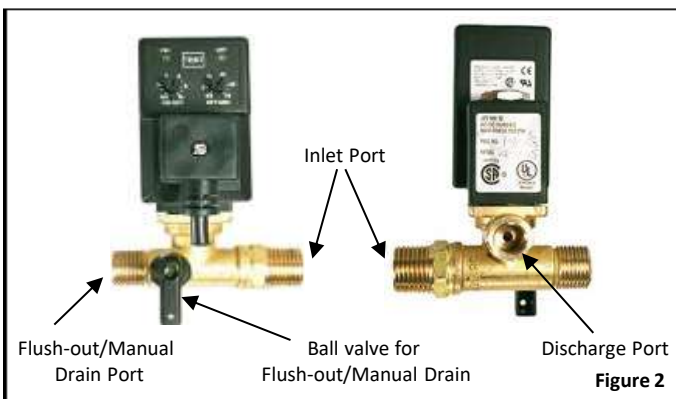
Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Float Drain. Always wear safety eye protection when working with compressed air products. Failure to follow maintenance instructions could result in operating failure or product damage. System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



1. Remove the bottom cap from the Tsunami filter. *Figure 1*
2. Grasp the bottom stem of the float drain and unscrew from bottom cap. *Note: If you have difficulty grasping the stem securely, you can flip the bottom cap and, using a needle nosed pliers, grab the float tip and turn clockwise to remove float from bottom cap.*
3. Install your new float drain into the bottom cap; do not overtighten.
4. Install the bottom cap back onto the filter housing. The cap should thread on easily; do not cross-thread the cap and tube.

**INSTALLATION INSTRUCTIONS – Electronic Drain Valve**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Electronic Drain Valve. 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.

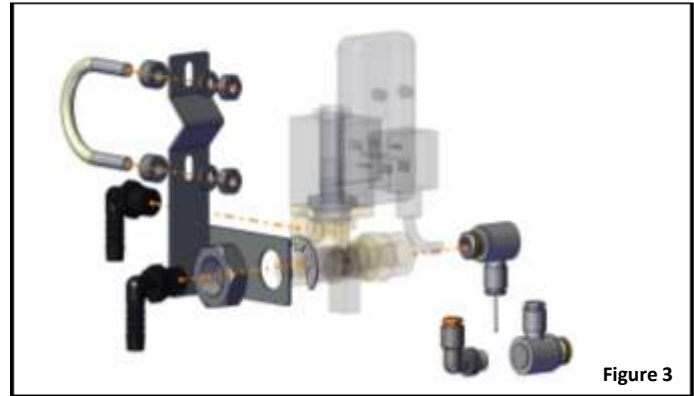


1. Figure 2 shows the location of the inlet port, the outlet port, and the strainer flush out port, and flush out ball valve/manual drain.
2. Mount directly to the receiver tank or filter using appropriate plumbing materials for the application; connect the inlet port via the 1/4" NPT I.D. thread or the 1/2" NPT O.D. thread.
3. Route the 1/4" NPT outlet port to an appropriate condensate collection tank or disposal drain.
4. Route the 1/4" NPT flush-out port to an appropriate condensate collection tank or disposal drain.
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.*

**INSTALLATION INSTRUCTIONS – EDV Installation w/ 21999-0316 Install Kit**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Electronic Drain Valve. 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.



1. Remove all system pressure.
2. Using the supplied hardware, install mounting bracket on system plumbing in desired location. Bracket can be mounted on standard piping (1/2", 3/4", or 1") or mounted to a wall or panel.
3. Snap e-ring onto groove located on flush-out port side of EDV.
4. Insert flush-out port of the EDV through hole in mounting bracket. Secure with lock washer and nut.
5. Install barbed elbow fitting on flush-out port of drain.
6. Install barbed elbow fitting on the discharge port of EDV.
7. Install 1/4" push-to-connect swivel fitting on inlet side of electronic drain valve.
8. Using the supplied 1/4" nylon tubing, route condensate from the tank or filter to the push-to-connect inlet fitting on EDV.
9. 3/8" nylon tubing has been supplied to route discharge from barbed drain fittings to condensate collection tank or disposal drain.
10. 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.

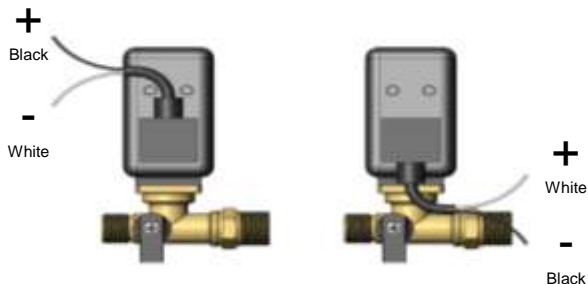
*Note: Only adjust the OFF time to accommodate for the variable amount of condensation to be removed. For large amounts of moisture removal, adjust the OFF time to .5 to 1 minute; for smaller amounts, adjust the timer to 15 to 30 minutes.*

**Power Connection– Electronic Drain Valve**

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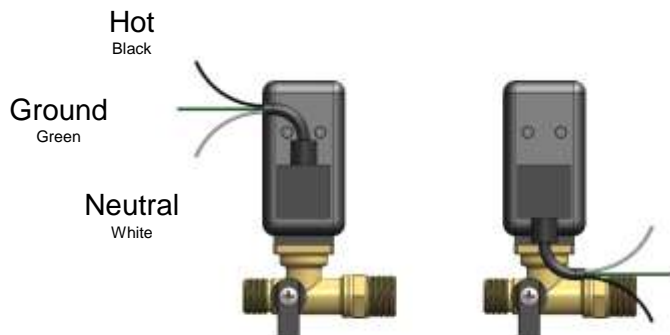
*For 12v and 24v DC Drains*

- The direction the wire connector harness is attached to the timer will affect the wire polarity for installation



*For 230v AC Drains*

- The direction the wire connector harness is attached to the timer will not affect the wire polarity for installation



*For 120v AC Drains*

- The direction the wire connector harness is attached to the timer will not affect the wire polarity for installation.
- Simply plug into standard North American 120v wall outlet

**INSTALLATION INSTRUCTIONS – Pneumatic Drain Valve**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Pneumatic Drain Valve. 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.

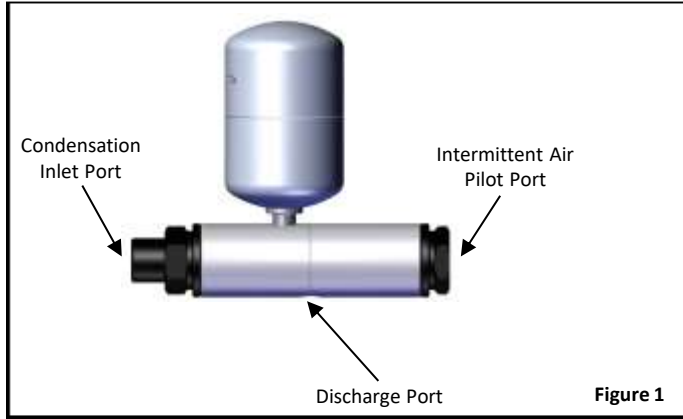


Figure 1

1. Remove all system pressure.
2. Directly mount the drain to the compressor tank drain port or filter drain sump; appropriate hardware to plumb.
3. Route piping or tubing from the compressor unloader or other source of intermittent pilot signal air to actuate the drain.
4. Install drain tubing from Discharge Port and route to a condensation collection tank or disposal drain.

**INSTALLATION INSTRUCTIONS – Drain Minder Controller for Intermittent Pilot Signal to Pneumatic Drain Valve**

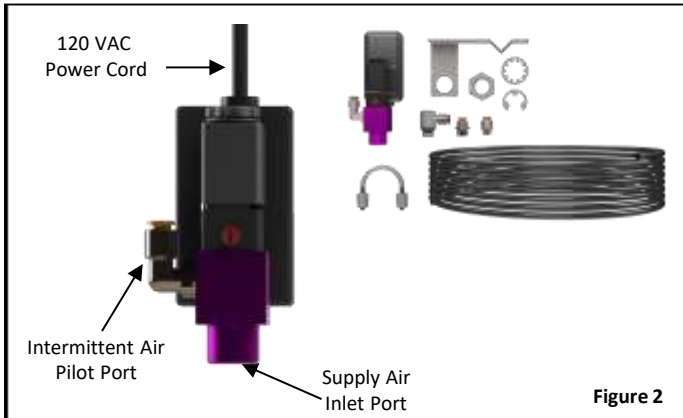


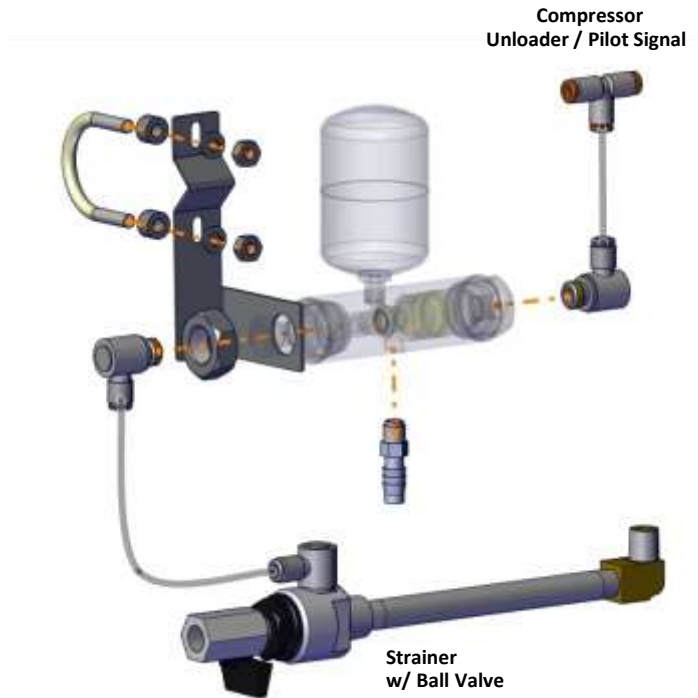
Figure 2

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.
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.*

**INSTALLATION INSTRUCTIONS – Pneumatic Drain Installation w/ 21999-0317 Install Kit**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Pneumatic Drain Valve. 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.



1. Remove all system pressure.
2. It is highly recommended that the supplied strainer and ball valve be installed up stream of the pneumatic drain. Pre-installed fittings are supplied for installation on bottom of compressor tank.
3. Using the supplied hardware, install mounting bracket on system plumbing in desired location.
4. Insert male end of pneumatic drain through hole in mounting bracket. Secure drain using lock nut.
5. Install push-to-connect swivel fittings each side of pneumatic drain.
6. Install barbed drain fitting on bottom side of pneumatic drain.
7. Using the supplied 1/4" nylon tubing, route pilot signal from compressed air source to the intermittent air side of the pneumatic drain. Reference schematic below for centrifugal unloader or unloading pressure switch compressor configurations.
8. Using supplied 1/4" nylon tubing, route condensate from strainer to male side of pneumatic drain.
9. 3/8" nylon tubing has been supplied to route discharge from drain port to sump.

