

Desert Spring® Products

DS-PXL Flow Through Humidifier Installation & User Manual

IMPORTANT

Thank you for selecting the Desert Spring®. Carefully read this manual before starting your installation. Follow the step-by-step instructions as written.

Register your humidifier online at <http://www.desertspringproducts.com/desertspring/warrantyreg.asp>

CUSTOMER SERVICE

Toll-free: 1-888-486-4324

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WARNING

Electrocution and Chemical Hazard. Can cause death, blindness or electrical shock

- Disconnect electrical power to the furnace before starting electrical installation. Electrical shock could result in serious injury.
- Sharp edges may cause serious injury. Use care when making openings in ducts.
- Do not drill into air conditioning coil, refrigeration line or electrical accessory.
- Follow local standards and codes.



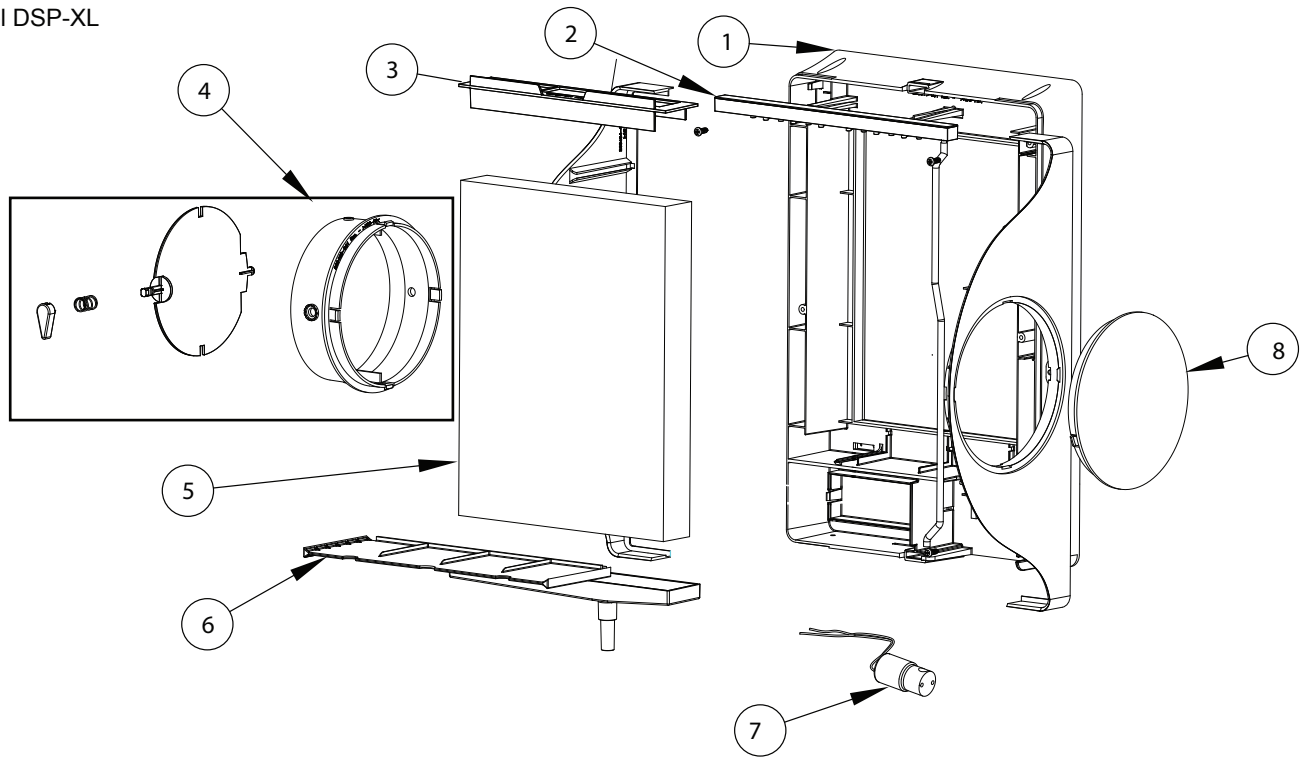
CAUTION

- Do not install the humidifier on the furnace jacket, only on the return air duct or plenum.
- Serious water damage may result if humidifier is exposed to freezing temperatures. Do not install humidifier in location where ambient temperatures may drop below 32° F / 0° C.
- If the heating system also has central cooling, the humidifier supply takeoff must have a damper. The damper should be closed during the cooling season.
- Do not connect the transformer directly to multi-speed furnace blower motors or blower motors other than 110 VAC.
- Turn off the water supply before starting water connection and release pressure in the system by opening a tap or flushing a toilet.
- Install the water supply valve on household water supply pressure only.
- Follow furnace manufacturer recommendations for electrical connections if provided.
- Incorrect use of any tool can cause injury to person or product. Be sure you understand how to use the required tools to avoid any hazards. Arrange for professional installation if required.
- To ensure that your new humidifier will provide maximum benefit, your furnace must be operating in accordance with the manufacturer's specifications. If your furnace is operating outside of its manufacturer's specifications, your Desert Spring warranty could be voided.
- Ensure that the hot air supply temperature does not exceed 150° F / 65° C.
- Ensure that unit is mounted level.

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Model DSP-XL



1. DS-PXL Main Body
2. Water Distributor
3. Filter Retainer
4. Damper Collar Assembly
5. Evaporator Pad
6. Drain Tray
7. Solenoid Valve
8. Blank Collar

1. Installation

Prior to installing this product:

- Read the instructions carefully and completely to ensure safe operation. Failure to follow the instructions could lead to damage to the product or cause a hazardous condition.
- Check the ratings given on the product to make sure it is suitable for your application.

Remember to select a location that is readily accessible for periodic inspection, cleaning, and service. The following table indicates the minimum allowable installation clearances. The illustrations on the right show some of the possible installation configurations and where the humidifier should be installed. This humidifier may be installed on the supply or return side of the furnace. Operation with the warmest possible air will maximize output capacity. Installation on the supply duct after the furnace discharge is recommended.

1.1 Recommended Minimum Installation Clearance

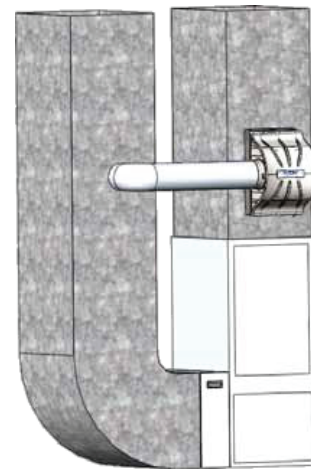
Left	3 inches
Right	3 inches
Top	2 inches
Bottom	6 inches
Back	12 inches

Side clearance (Left or Right) must be sufficient to accommodate the by-pass duct connection. Evaluate installation location as needed to ensure there is space available.

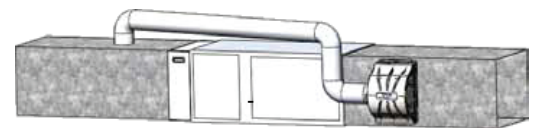
1.2 Mounting

The humidifier may be mounted directly to the warm air supply duct or the return duct of your HVAC system. Certain conditions must be met to ensure proper unit operation. Refer to the following list.

- Ensure that the duct surface is reinforced, if necessary, to allow the unit to remain level and plumb.
- Ensure that the humidifier has adequate clearance to allow for the removal and replacement of the evaporator pad.
- When installing the humidifier in an attic or above a ceiling, a drain tray must be installed under the unit as a precautionary measure to prevent water damage from occurring if a leak develops.
- The recommended humidistat range is 30-40% relative humidity. If condensation occurs on windows, the humidistat setting must be lowered to prevent condensation damage.
- DO NOT install the humidifier where freezing temperatures may occur.
- DO NOT install the humidifier where it interferes with the furnace access panels.
- DO NOT install the humidifier close to a flue pipe. Intense heat may damage the humidifier.
- DO NOT mount the humidifier in the jacket of a cased coil. It is preferable to mount the humidifier immediately downstream of the cased coil, if present. Ensure that the humidifier does not interfere with the coil ends.
- DO NOT mount the humidifier in a furnace jacket.
- DO NOT install on gravity hot air systems.



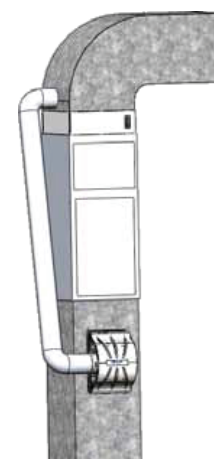
Upflow - Side Return



Horizontal flow



Upflow- Bottom Return

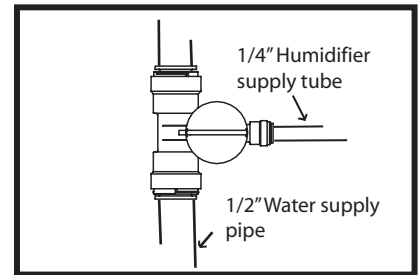


Down flow

1. Tape the mounting template to the duct so that it is flat and the top edge is level.
2. Carefully remove the center of the template by tearing along the perforated lines. Use a marker to trace on the duct along the cutout opening.
3. Drill the holes marked on the template. Remove the template from the duct and carefully cut the duct along the outside edge of the rectangle that was traced by the marker. Remove any burrs from the cut edge of the sheet metal taking care not to injure yourself.
4. Apply the gasket material found in the accessory bag to the duct around the rectangular cutout.
5. Lift the humidifier into the rectangular opening so that the plastic tabs engage the lower edge of the rectangular opening. The tabs should be on the inside of the duct. Tilt the upper edge of the humidifier against the duct so that the mounting holes line up with the drilled holes on the duct. Secure the humidifier with two #8 X 3/4" self-drilling-sheet metal screws from the accessory bag.
6. Refer to the section regarding pad replacement on page
8. Complete that section before proceeding to ensure that the internal components of the humidifier are properly aligned/installed as they may have become misaligned during shipment. Failure to complete this task may result in faulty operation or leaks.
7. Ensure that the humidifier is level and plumb before proceeding.

1.3 Plumbing- Installing the Quick-Connect valve

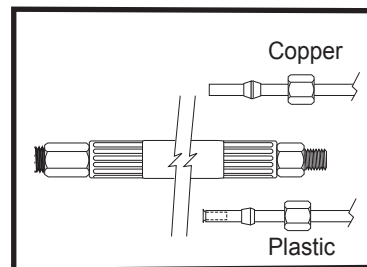
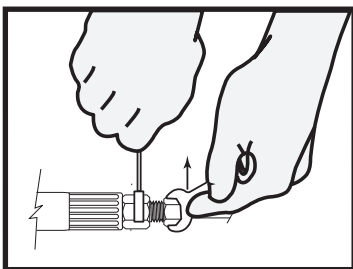
1. The water supply can be taken from the nearest suitable cold, hot, softened or unsoftened water line. The use of service hot water (140°F / 60°C Max) improves the evaporative capacity (this model reduces drained water by 80 %).
2. Cut the tubing and pipe to desired length. Make sure that the cuts are square and all burrs are removed.
3. Push the fitting onto the end of the pipe. The fitting will grip before it seals.
4. Ensure that the tubing /pipe is pushed into the fitting until the end is fully seated into the internal tube stop.



NOTE: Ensure that there are no scratches, gouges or any form of damage on the circumference of the tubing within 1" of the cut end. Damage in this area may cause leakage. Check the fitting for any signs of damage or foreign objects.

Connecting the water supply tubing to the water hammer absorber and the valve

1. Thread the 1/4" female end of the water hammer onto the inlet of the electric solenoid valve..
2. Install the water supply tubing on the other side of the rubber hose. That side has a compression fitting to receive the supply tubing. Slip the brass compression nut onto the plastic supply tube, then the nylon sleeve with its most tapered end towards the end of the tube. Finally, install a brass insert into the end of the plastic tubing.
3. Push the supply tube fully into the brass compression fitting. Tighten the brass compression nut with small wrenches, without stripping, using the double wrench method in order to apply the torque on the fitting only.



Connect the drain hose to the drain connection fitting and run this to an open gravity drain. The end of this line must not be submerged in water or trapped.

Open the shut-off valve, and ensure that no water is leaking from any of the fittings before proceeding.

1.4 Electrical

The humidifier requires a 24 VAC source of electrical power that may be taken from the HVAC system terminals. In order to access the wiring compartment press the release pads, as shown in Figure 6, and pull the cover off toward you.

1.5. Installing the electronic controller

1. The HSA055 is factory set at NO TEMP, with settings for HIGH TEMP and LOW TEMP.

The NO TEMP setting is used when the humidifier is supplied power from the furnace.

The unit will run as long as there is power AND the humidistat is calling for more humidity.

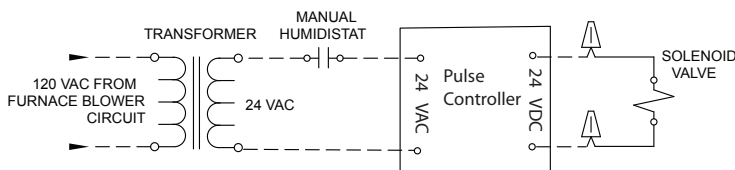
2. The LOW TEMP setting is used for furnaces that generate less heat, such as those with a heat pump. The unit may operate for a short while after the furnace has stopped due to residual heat in the duct.

3. The HIGH TEMP setting is used for furnaces that generate more heat, typically oil or gas furnaces. You may have to try both settings to see which one is right for you.

4. To choose the setting on the controller, set the dip-switches, as shown on the controller. For HIGH and LOW settings, the controller must be installed on the warm air duct with two screws (#8 x 1/2"). There are two lights on the controller: the green LED means there is power to the controller and the blue LED cycles on as the valve opens. When switched ON by the humidistat, the controller opens the electric valve. The duration of this 'ON CYCLE' can be adjusted by rotating the slotted dial clockwise to increase the cycle duration. An "On CYCLE" is then followed by an "OFF CYCLE" which is fixed at 30s. Please use the controller itself to mark and drill the 3 holes.

1.6 Installing the transformer.

The transformer supplied is for 120 volts operation only. Do not install it on a furnace supplied with another voltage. Connect the transformer primary to the relay activated when the furnace is in a heating cycle. Some furnaces have power terminals that can be used for accessories. Please refer to the furnace installation manual.



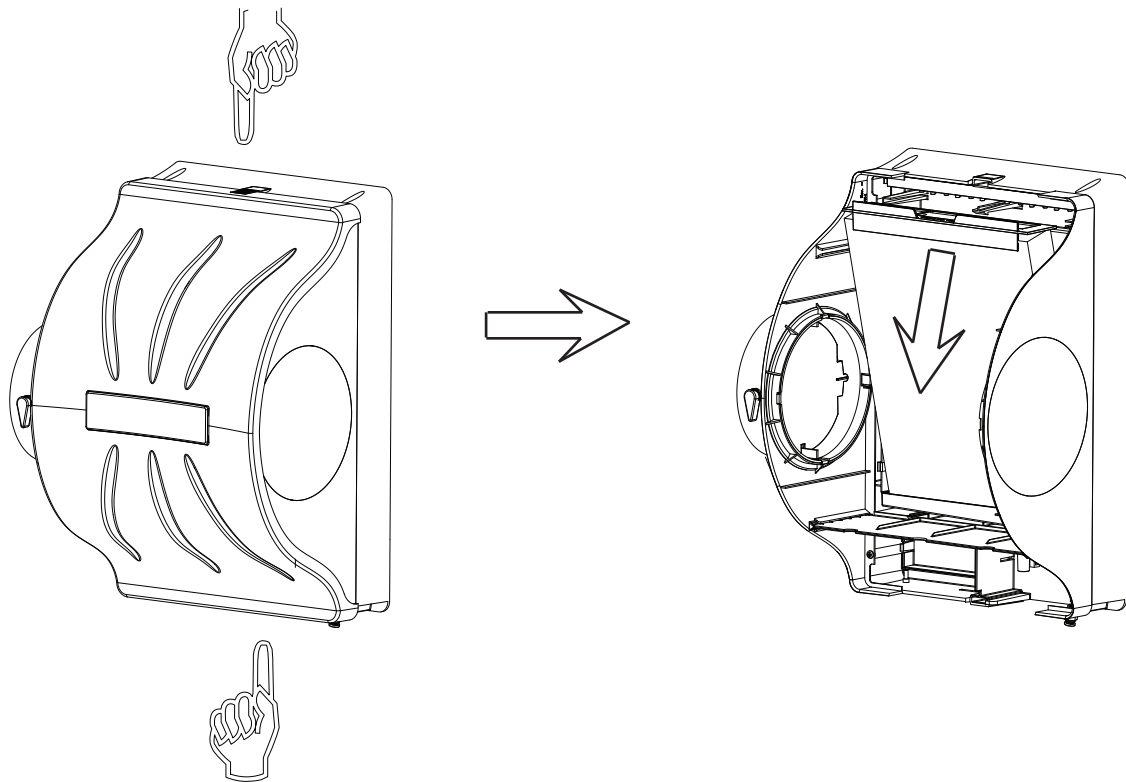
1.7 Installing the collar and the flex duct.

Install the 6" duct collar in a convenient location on the opposite duct with four screws (#8 x 3/8"). Using the gear clamps provided, fit the flexible duct onto the collar and tighten the clamp. Slide the damper assembly into the side opening of the humidifier until it snaps. Make sure to position the damper knob in front of the unit. Measure the required flex duct length to the duct collar so it does not sag. Cut the excess portion. Slide the flexible duct on the air take off collar and secure it using the second gear clamp. Install the blanking plate on the opposite side on the humidifier body.

2. Maintenance - Pad Replacement

It will become necessary to replace the pad inside your humidifier as time goes on. Please refer the following procedure.

1. Adjust Humidistat to the lowest setting to ensure that there is no call for humidity.
2. Ensure that power to the humidifier has been turned off so that the humidifier will not operate while service is being performed.
3. Close the water supply valve so that no water may flow to the humidifier during servicing.
4. To remove the humidifier cover, press the release pads as shown in Figure 11 and pull the cover toward you.
5. To remove the evaporator pad, push the retaining clips and pull the top pad retainer out from the base. The retainer and pad will come out together. The drain pan stays inside the unit.
6. Insert the pad retainer over the new pad and place into humidifier.
7. Reassemble the humidifier.



U.S. Patents 6,354,572, 2,312,402

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In the interest of continuous improvement the manufacturer reserves the right to change specifications without notice

