



BACKSIDE VERTICAL 9-PART SYSTEM
which includes TWO HUMIDIFIERS
INSTALLATION INSTRUCTIONS

NOTE: Please read these instructions completely before beginning, as some of the later steps are affected by earlier steps.

This Backside Vertical System was developed for use in Steinway uprights, player pianos, Disklaviers, and any other vertical where the bottom front cavity is so narrow it will not accommodate a standard Humidifier tank. With this System, two small Humidifier tanks are joined by means of a large diameter tube. As one tank is being filled, it drains into the other tank until the levels in both tanks are the same. Throughout usage, the water level in both tanks will remain the same. The low water warning light will blink when the level in both tanks drops below the sensor probes located in just one of the tanks. There is just one fill water tube for the interconnected System.

TOOLS REQUIRED: This System includes 1/4" hexhead screws. To install the System, you will need:

- screw starter
- cordless drill
- pliers
- manual driver
- 1-1/4-inch hole saw
- scissors
- small hammer
- stapler

The following is a list of components:

		Purpose
4	18-inch Dehumidifiers	Remove excess moisture from the piano
1	Humidistat	Controls the Humidifiers and Dehumidifiers
2	Humidifiers	Bring moisture into the piano
1	Low Water Sensor Probe	Measures water depth in Humidifier
2	Humidifier Heater Bars	Warms pads to aid evaporation
1	Two-light Panel	Shows System is energized and when to add water
1	Single-Light Cube	Signals when Humidifier pads are dry
1	Smart Bracket	Attached to Humidifier heater bar, senses when pads are dry
1	6-inch Aluminum Tube	Used to anchor the Humidistat under the keybed
1	Watering Tube (Small Diameter Plastic Tube)	Enables the delivery of water to the Humidifier
2	Humidifier Pads	Used to vaporize moisture throughout the piano
2	Moisture Distribution Baffles	Dispense moisture throughout the piano
1	4-foot Large Diameter Plastic Tube	Joins two Humidifiers
1	Watering Can	For adding water to the Humidifier
1	Bottle of Humidifier Treatment	Additive that prolongs the life of the pads
1	Hardware Kit	Described below
1	System Care and Maintenance Sheet / 5-Year Warranty Certificate	

The hardware kit includes the following:		
8	Angle brackets	Used to mount the 18-inch Dehumidifiers
25	1/2-inch #8 screws	Used to mount clamps and clips
2	3/4-inch #8 screws	Used to attach the light panel
2	2-inch #6 screws	Used to mount Humidistat
4	Alcohol pads	Used to clean piano before mounting Velcro
8	1/4-inch clamps	Used to anchor wires, cords, and cord bundles
2	5/8-inch clamps	
1	3/4-inch clamp	
3	Half clamps	Attaches the end of the watering tube for easy use
3	Serrated washers	Anchor half-clamps by biting into the wood
2	7/16-inch clamps	Anchor watering tube
2	Stand-off C-Clips	Mount Humidistat on 6-inch tube
4	C-Clips	Mount 6-inch tube and anchor tube between tanks
4	Pin pegs	Used to mount Moisture Distribution Baffle above Humidifiers
4	Add-an-Outlets	Used to join Humidifier and Dehumidifier cords

While we make every effort to ensure that all components are included, it is a good idea to check that none are missing prior to arriving at the installation location. In the unlikely event that a part is missing, please call 800-438-1524 with information from the end of the box and the assembler's name. We will provide same-day shipment of the replacement part.

To the Piano Technician Installer

CAUTION

You are responsible for making a proper System installation by carefully following these instructions.

PLEASE PAY STRICT ATTENTION TO THE FOLLOWING ISSUES:

- 1) The vertical piano can be exposed to excessive condensation from the Humidifier if the baffle is not installed.
- 2) If a cord/wire in the System is installed in direct contact with a Dehumidifier heating rod, over time, the cord/wire could dry out and crack, posing a fire or shock hazard. Carefully anchor cords/wires away from the Dehumidifiers with the ties and clamps provided with the System.
- 3) Do not use a Dehumidifier in the action of the piano without a Humidistat to control it. To dehumidify the action, we recommend you install a 36-inch, 25 watt Dehumidifier outside the case, under the keybed, and plug this Dehumidifier into the System's Humidistat.
- 4) Advise your clients that they should only use the Damp-Chaser brand of Humidifier Treatment in the Humidifier. Other brands of humidifier treatment may contain acids which can corrode strings and metal parts in the piano. Use of another brand of treatment voids the System's warranty and may also void the piano manufacturer's warranty.

OTHER IMPORTANT INFORMATION

- 1) The newly-installed Piano Life Saver System will alter the piano's wood-moisture content and, therefore, alter the tuning. Ideally, the System should be installed 3 weeks BEFORE the piano is tuned.
- 2) A frayed or cracked electrical cord/wire can cause a fire or shock. If the piano runs over the power cord it can be damaged. Inspect the System's cords/wires each time you service the piano.
- 3) Installation of the Piano Life Saver System must be made by a professional Piano Technician or Tuner. Any warranties stated or otherwise implied are void if the installation is made by someone other than a professional Piano Technician or Tuner.

Warranty Service Call Policy: The 5-Year Warranty for this System covers parts only. Damp-Chaser Corp. assumes no responsibility for piano technician labor in maintenance, repair or warranty service calls related to the Piano Life Saver System. When Systems are priced according to the manufacturer's guidelines, most installers agree there is sufficient compensation to cover a possible warranty service call. At the time you install the System, please explain any post-installation fees to the System owner.



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STEP 1.

Move the piano into a position that enables you to reach both the front and back without having to move the piano. When you unpack the System box, you will notice items inside one of the Humidifiers. To remove those items, first, remove the heater bar which is mounted across the top of the Humidifier, then remove the Humidistat, the Two-Light Panel, and the Single-Light Cube which is in a separate plastic bag. Notice the Low Water Sensor Probe mounted on the side of the Humidifier.

Replace the heater bar on the Humidifier. A Smart Bracket (SB) is attached to this heater bar. The SB signals via a red light (the Single-Light Cube) when the pads no longer wick water and require replacement. The SB also turns off the Humidifier heater bar when the pads fail or when the Humidifier runs out of water.

The blue Humidifier pads are designed to wick water over the heater bar, producing warm moist air currents which rise and are circulated throughout the piano. Be sure all cords are outside the Humidifiers then drape a pad across each heater bar and push the pads down into the tanks as shown in **Figure 1**.

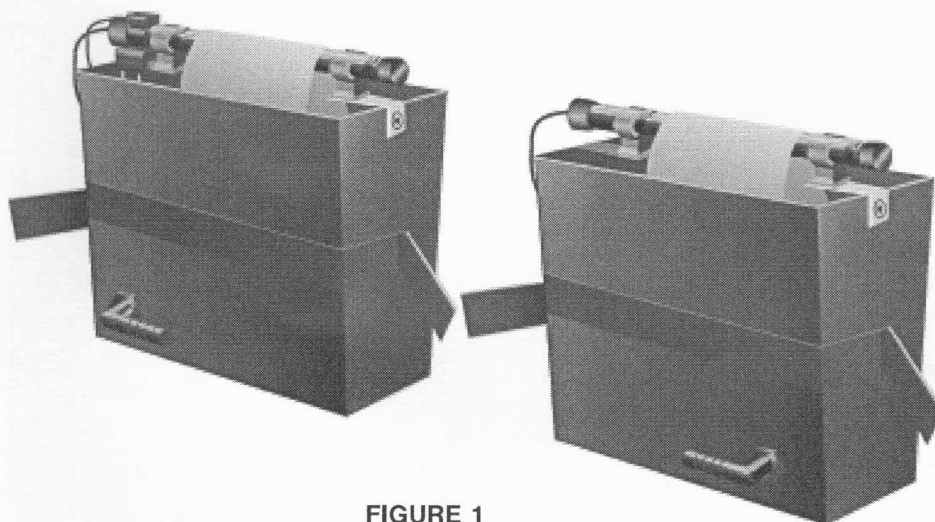


FIGURE 1

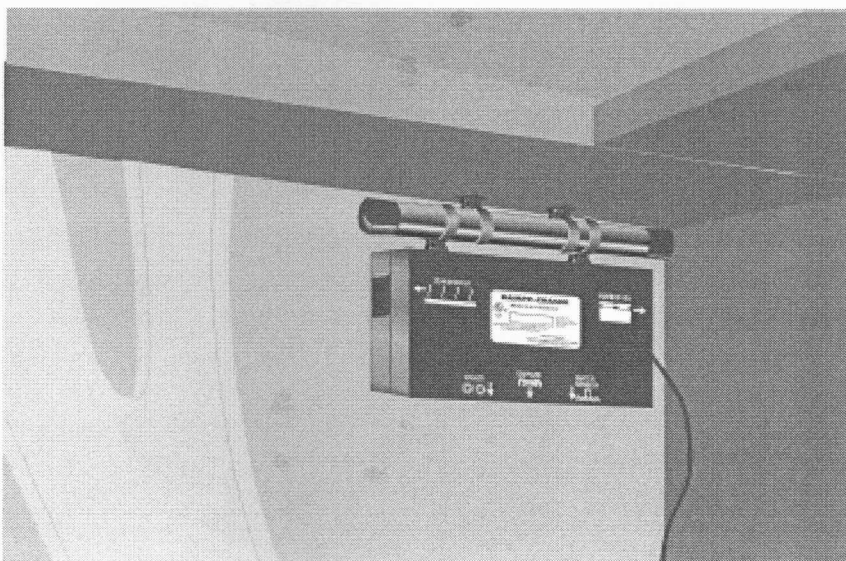


FIGURE 2

STEP 2. HUMIDISTAT INSTALLATION

It should be noted that the two end vent holes on the top of the Humidistat (above the Humidifier outlet) act as a "chimney" to vent heat from the Humidistat. The holes should not be obstructed in any way in the final installation.

Later in the installation you will need to plug the Water Sensor probes telephone jack, the Smart Bracket phono jack, and the Light Panel telephone jack into the jack outlets at the bottom of the Humidistat. The Dehumidifier and Humidifier will also be plugged into the Humidistat.

Remove the bottom board. Read all of STEP 2 before deciding where to locate the Humidistat.

Figure 2 shows the Humidistat hanging from the 6-inch tube provided. To install the 6-inch tube, use 1/2" screws to mount two C-Clips (**Figure 3**) 1 1/2" apart anywhere along the right side of the keybed. Note: There should be at least 3 inches of space on each side of the Humidistat to allow space for plugging in cords.

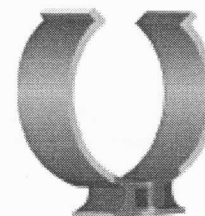


FIGURE 3

Attach two stand-off C-Clips to the top of the Humidistat by inserting the rectangular base of the clips into the rectangular holes on either side of the 4 vent slots (**Figure 4**). Rotate the clips 1/4 turn. You will feel the clips lock into place. Now snap the clips onto the 6-inch tube (**Figure 2, page 3**).

You may prefer mounting the Humidistat on the side of the piano (**Figure 5**) using velcro and the 2-inch screws. Clean the area on the side wall with the alcohol pad. Let the area dry thoroughly.

Attach the two velcro strips to the Humidistat (**Figure 6**). Remove the backing from the strips and push the Humidistat firmly against the wall. Insert the 2-inch screws through the Humidistat case and into the wall. Use the screws to mount the Humidistat. Do not use the velcro for permanent mounting.

Drill a 1-1/4-inch hole (**Figure 5**) with a 1-1/4-inch hole saw through the soundboard at a position that will enable you to

run cords from the Humidistat at the front of the piano to the rear of the piano. The hole is also used to run the Humidifier and Dehumidifier cords from the back of the piano to the Humidistat. Typically, the hole is drilled in the lower right corner of the piano soundboard. (This hole will not affect the tone or integrity of the soundboard).

It is easier drilling from back to front, but please be sure you are not drilling into the plate or player mechanism. Use a dust buster or vacuum to clean up the wood chips generated.

If you prefer not to drill into the soundboard: Drill a hole into the bottom board, in the front cavity of the piano, and run the cords to and from the back of the piano through this hole (**Figure 5**). In moving the cords through the hole, some installers find it helpful to elevate the piano by placing a thick phone book or similar device under the end of the piano where the hole is located (**Figure 7**). Elevating the piano also helps to ensure that you don't drill into the floor.

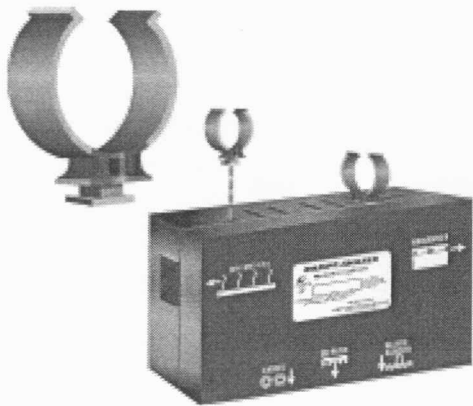


FIGURE 4

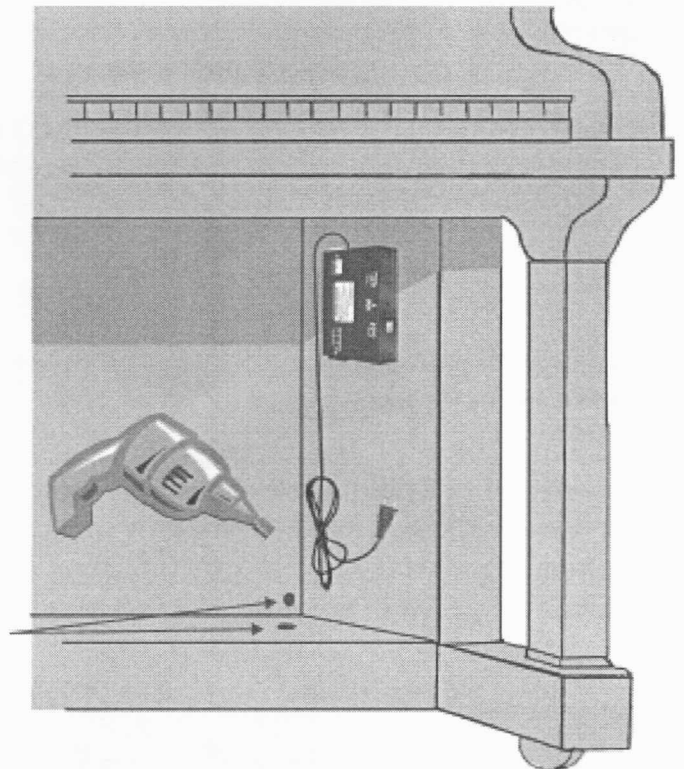


FIGURE 5
Either drill a hole in the corner of the soundboard or in the bottom board

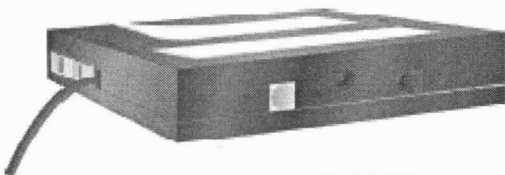


FIGURE 6

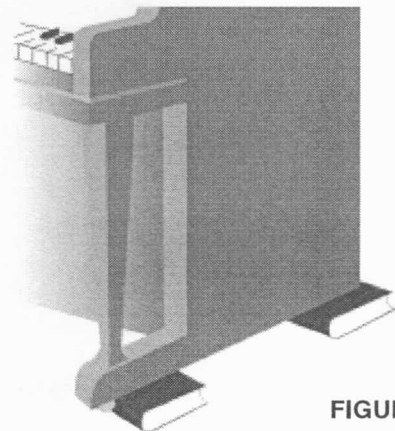


FIGURE 7

STEP 3. HUMIDIFIER INSTALLATION

Install the Humidifiers (**Figure 8**) on the back side of the piano. Make sure the elbow openings are facing each other as in **Figure 1**. The tank with the watering tube should be placed at the bass end of the piano. Some pianos will have 4 bays (4 openings contained by 5 beams or posts). Some will have 5 bays (5 openings contained by 6 beams). In the case of the 4-bay piano, use the 2 inner bays. In the case of the 5-bay piano, use bays 2 and 4 counting from either side.

Mount the large diameter tube on the elbow of each Humidifier. The elbows are sealed at the factory to make sure they do not leak and tightening or loosening them may destroy this seal. Once you are assured that you have the best, level route between the Humidifiers for the tube, mark the tube for cutting, making absolutely sure there is enough tubing to go over both elbows. Note: the use of C-Clips (**shown in Figure 8**) to support the tube will require 1 or 2 inches additional length of tube so allow for this before cutting. Remove the locking rings from the ends of the tube before cutting.

Return the locking rings to the ends of the cut tubing. Position them 2 inches from each end. Slip the tube end over the elbow on each Humidifier. It's important that you support the elbow when pushing on it to avoid breaking the seal between the elbow and the tank. It may be easier to support the elbows with the Humidifiers outside the piano. A little water on the inside of the tube ends will provide some lubricant to enable the tube to slip over the elbow.

Slip the locking rings over the tube ends. The prongs for the locking rings should face outward (**Figure 9**). With the tube mounted on the tanks, measure where the tube will lie across the beams and then mount the supporting C-Clips accordingly on the beams, using 1/2-inch screws (**Figure 10**).

Now you are ready to secure the Humidifier in the bays with the velcro which is attached to the sides and bottoms of the tanks. Note the attachment of the Velcro on the beams in **Figure 8**. Use alcohol pads to clean the outside of the beams 4 to 5 inches up from the baseboard and also clean the baseboard where the Humidifier rests. When dry, remove the white

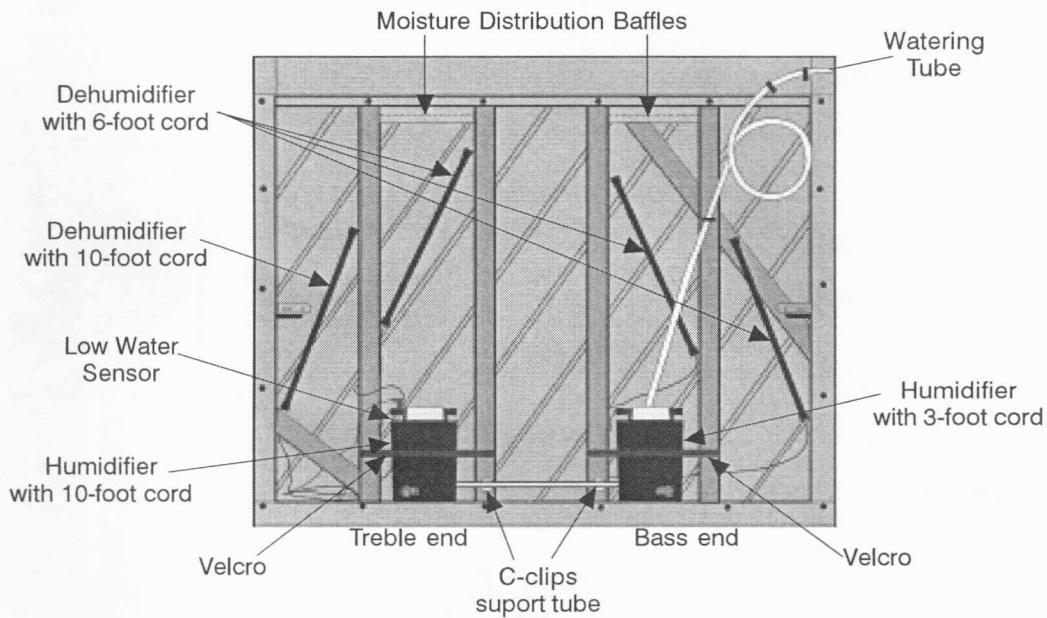


FIGURE 8

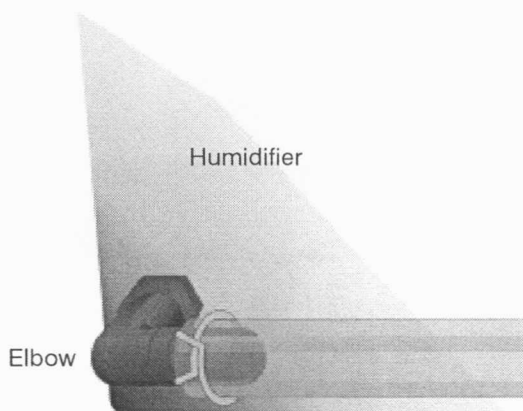


FIGURE 9

The prongs for the locking rings should face outward

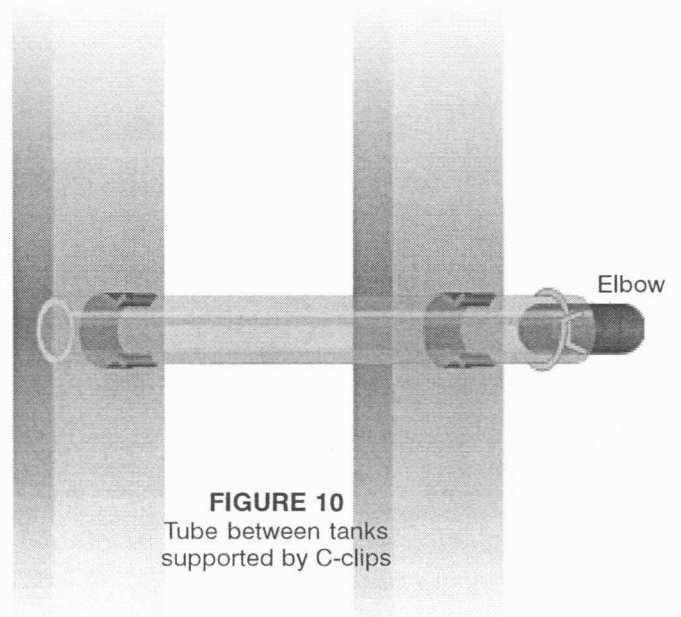


FIGURE 10

Tube between tanks supported by C-clips

backing from the velcro attached to the tank (3 pieces) and place the tank in the center of the bay. The white foam on the Humidifiers faces the piano. Attach the Velcro on the sides of the tank with the exposed adhesive to the beams. Repeat this procedure with the second Humidifier. Insert the tube in the supporting C-Clips on the beams.

The Humidifier heater bar with the Smart Bracket and the 10-foot cord, should be mounted on the Humidifier which is located at the treble end of the piano. Attach the 3-foot long Humidifier heater bar cord from the Humidifier (on the bass end) to the 10-foot long cord with an Add-an-Outlet (Figure 11).

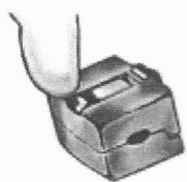
Run the 10-foot cord (with the super plug attached) to the hole previously drilled in the soundboard or bottom board. Remove the super plug, push the cord through the hole, then reconnect the plug on the cord. Plug this Humidifier cord into the HUMIDIFIER outlet on the Humidistat inside the piano. **Please Note: The Humidifier Cord has a section of tape attached near the super plug. The tape is to help you remember to plug the Humidifier plug into the correct white Humidifier outlet on the Humidistat.** Run the Smart Bracket cord (from the treble end Humidifier heater bar) and the Low Water Sensor cord through the hole and attach the jacks in the appropriate outlets on the bottom of the Humidistat (Figure 12).

STEP 4. BAFFLE INSTALLATION

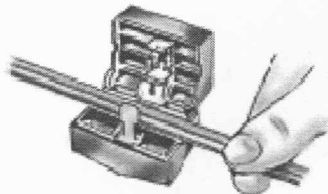
Install the moisture distribution Baffles above the Humidifiers between and at the top of the bays as shown in Figure 8, page 5. Properly installed, the baffle should resemble a small roof. The baffle is attached to the piano with two pin pegs pushed through the top of the baffle roof, one at each end, into the wood of the piano (Figure 13).

STEP 5. DEHUMIDIFIER INSTALLATION

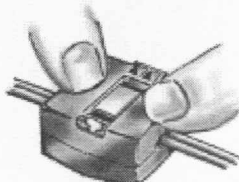
Four 18-inch Dehumidifiers are provided. Three Dehumidifiers have 6-foot cords and the fourth Dehumidifier has a 10 foot cord. Dehumidifiers must be installed with the cords at the lower end. Notice the placement of the Dehumidifiers in Figure 8, page 5. The Dehumidifier with the 10-foot cord should be positioned at the far treble end. Eight angle brackets will be used to mount the Dehumidifiers (Figure 14). The angle brackets are bent to fit 9-inch wide bays. You can bend them more, if necessary to fit the bays on the piano. Just be careful not to break the rivet holding the clip to the bracket. Mount an angle bracket to secure each Dehumidifier at both ends. Use the 1/2-inch screws to attach the angle brackets to the beams.



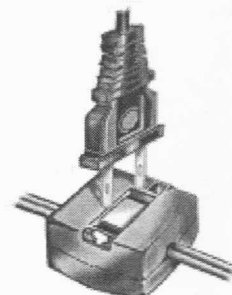
To open, use fingernail to pull metal spring back.



Place wire from heater bar in groove. Be sure it lies flat without twist.



To close, press hard until spring snaps shut. Pliers work great.



Plug second heater bar into AAO.

FIGURE 11
Add-an-Outlet

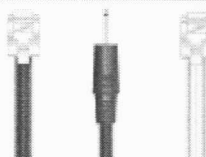
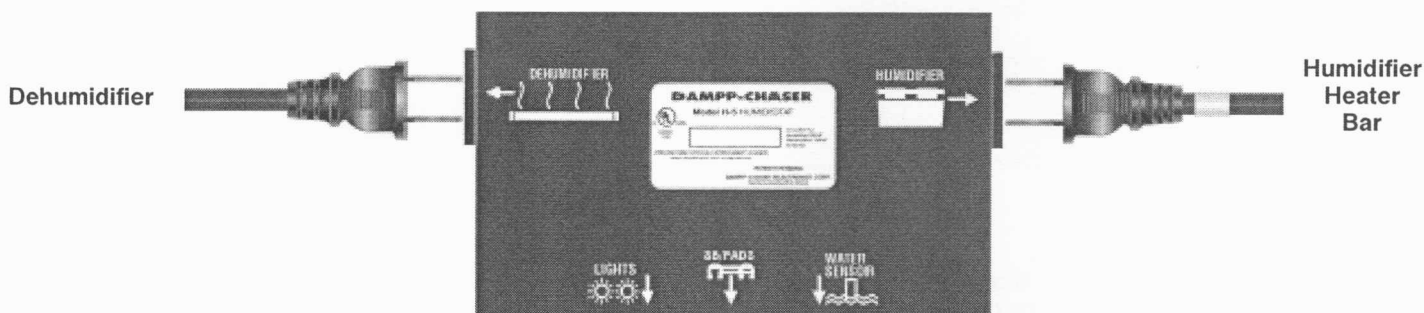


FIGURE 12

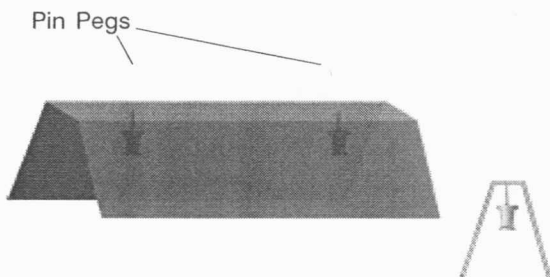
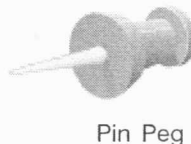


FIGURE 13



Pin Peg

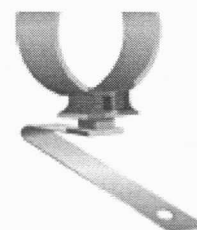


FIGURE 14

Begin at the bass end, moving left, attach the first Dehumidifier cord (6 feet long) to the 6-foot cord of the next Dehumidifier end by using an "Add -an-Outlet" on the cord (Figure 11, page 6). Do this with the next Dehumidifier until all four of the Dehumidifiers are attached together. Then, remove the super plug from the 10-foot cord, push the cord through the hole in the soundboard or bottom board, reconnect the super plug and plug it into the DEHUMIDIFIER outlet on the Humidistat (Figure 12, page 6).

STEP 6. ROUTING THE HUMIDISTAT POWER CORD

Route the main power cord for the Humidistat out of the piano through the 1-1/4-inch hole previously drilled in the piano. To provide strain relief for the cord, knot it and secure the knot to an appropriate wood area with one of the 1/4-inch clamps and a 1/2-inch screw.

You may prefer another method of running the power cord out of the piano. Run the cord up beside the action and out the lid (Figure 15).

After you have completed installation of the System, plug the Humidistat into a non-switchable wall outlet.

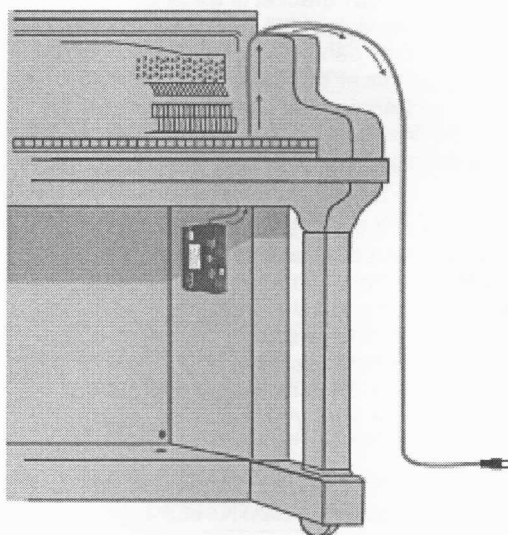


FIGURE 15

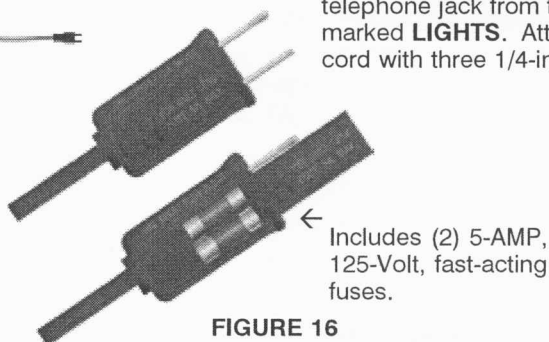


FIGURE 16

For several years we have included fused plugs on all Systems which protect pianos in the United Kingdom and "blown" plug fuses are a rare occurrence.



Two-light panel

SB light

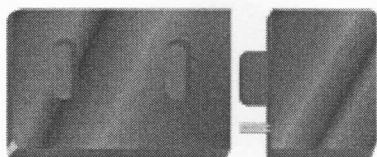


FIGURE 17

Tongue-latch and prongs insert in openings

Notice the new Fused Plug on the Humidistat Power Cord in Figure 24. In the event of damage to the cord, or a direct lightning strike, the fuse in the plug will "blow out" and prevent the flow of electricity through the power cord, thus preventing any further damage. The plug contains two 5-AMP, 125-Volt glass fuses. If the green POWER light is not on, advise the piano owner to unplug the System and inspect the cord for damage. If there is no damage, remove the fuse from the brass clips inside the plug and replace it with the spare fuse in the plug. If the cord is damaged, the Humidistat should not be plugged into an electrical outlet. Call our technical support number for instructions, (800) 438-1524 or (828) 692-8271.

Only 5-AMP, 125-Volt, 5 mm x 20 mm, fast-acting, glass fuses should be used in the plug. Never use a fuse with greater amperage than 5 AMPS. These fuses are readily available at electronics stores such as Radio Shack. In the event you cannot find the fuses, Damp-Chaser has a supply.

STEP 7. LIGHT PANEL INSTALLATION

The Two-Light Panel (Figure 17) features a green light marked POWER, to indicate the System has electrical power, and a yellow light marked WATER, which blinks when the Humidifier needs water. The Single-Light Cube is controlled by the Smart Bracket (SB). The red SB light, marked PADS, will blink when the pads need to be replaced. Connect the two-light panel and the single-light cube together by inserting the tongue-latch and two prongs (on the side of the single-light cube) into the corresponding openings on the two-light panel. Insert the metal prongs first while firmly pushing the panels together. NOTE: the tongue-latch is slightly bent to create a snug fit between the two panels.

To mount the light panel select two 3/4-inch screws and three 1/4-inch clamps with three 1/2-inch screws.

Run the light panel cord so that the panel is at an appropriate location under the keybed. Usually this is at the extreme treble end beside the leg of the piano. Use the two 3/4-inch screws to attach the light panel under the keybed (Figure 18). Plug the telephone jack from the light-panel into the Humidistat outlet marked LIGHTS. Attach the light panel cord with three 1/4-inch clamps and three 1/2-inch screws.

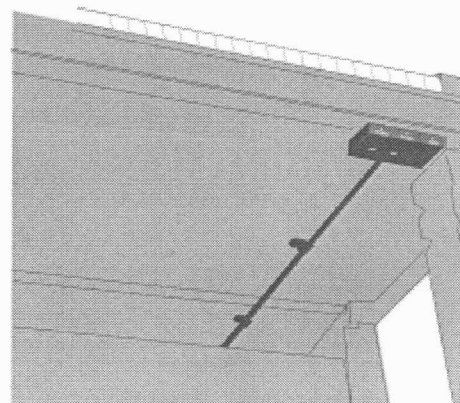


FIGURE 18

Placement of Light Panel

STEP 8. WATERING TUBE INSTALLATION

Run the Watering Tube to the top of the piano as shown in **Figure 8**. It's important to curve the tube so it can be pulled out freely for watering. **Figure 19** shows the two types of watering tube clamps included with the System, the 7/16-inch clamp and the half-clamp. At the top of the piano, mount half-clamps to hold the end of the tube so it can be removed easily. Use 1/2-inch screws with serrated washers to anchor the half-clamps and washers (the serrated washers bite into the wood to stabilize the clamp). Use the 7/16-inch clamps with 1/2-inch screws to hold the watering tube between the half clamps and the Humidifier.

MAKE A NEAT INSTALLATION:

Bundle and secure excess cords in the front and back of the piano by using the remaining clamps mounted with 1/2-inch screws.

STEP 9. BACKSIDE COVER INSTALLATION

Install the Cover according to the instructions found in the Cover box.

After the Piano Life Saver System and the Cover are completely installed, plug the Humidistat into a non-switchable wall outlet where it cannot be turned off and therefore will be fully energized at all times.

STEP 10. WATERING THE SYSTEM

Add 3 Cans with the initial watering of the Backside Vertical System. Then, add 2 Cans each time the yellow Low Water Light blinks.

The final step is to fill the Humidifier with water. **FILL THE WATERING CAN TO THE RED LINE ON THE LABEL.** Instruct the piano owner to add two watering cans filled to the full can mark whenever the yellow low water warning light blinks. Also instruct the piano owner to add one capful of Humidifier Treatment to each full watering can. Humidifier Treatment inhibits mildew in both the watering tube and the Humidifier tank and increases the life of Humidifier pads.

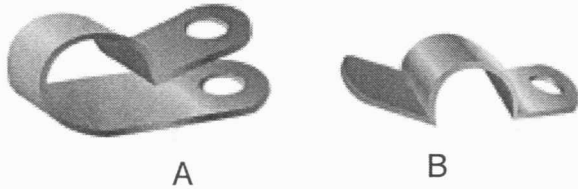


FIGURE 19

Two types of clamps for Watering Tube
(A) 7/16-inch clamp
(B) half clamp

Warning: Add only the Damp-Chaser brand of Humidifier Treatment to the Humidifier water. Other brands of humidifier treatment may contain acids which may corrode strings and metal parts in the piano. The use of other humidifier treatment preparations will void the warranty of the Piano Life Saver System and may void the warranty of the piano manufacturer.

If tap water comes from a well or is "hard" water, meaning containing significant minerals, we recommend using distilled water. If distilled water is used, add Humidifier Treatment (according to the label instructions) to insure there are adequate electrolytes in the Humidifier to support operation of the low water warning light. Without sufficient electrolytes, the light will blink continuously, even when the tank is full. **Do not put salt in the Humidifier, as it is corrosive.**

To fill the Humidifier tank, simply pull the watering tube out of the half clamps, connect the watering tube inside the spout, raise the watering can, and add water. Then, disconnect the watering can from the tube and push the tube back into the half clamps. The System is designed so siphoning will not occur. This completes the installation of the System.

Humidifier Maintenance: To ensure a properly functioning Humidifier, the pads should be changed at least twice each year. This applies whether a Smart Bracket is used or not. Change them during the fall service of the piano and then again in the spring. Replacement pads can be obtained from Damp-Chaser or from any Damp-Chaser distributor. Clean the Humidifiers once yearly by changing the liner. Be sure that the watering tube is inside the liner when it is replaced. The holes in the new liner may be enlarged with a pair of scissors to make installation easier.

Smart Bracket Maintenance: If the System includes the optional Smart Bracket, the sensor wires operate more effectively if the wires are kept free from corrosion and minerals. During pad changing, remove the Bracket from the heater bar. Remove the mineral residue on the wires by scraping with the dull edge of a knife held perpendicular to the wire. Alternatively, it may be simpler to bring a new SB to replace the old one. Replacement SB's are available from your Damp-Chaser distributor.

DAMPP-CHASER'S TECHNICAL SERVICE DEPARTMENT IS AVAILABLE TO ANSWER ALL INSTALLATION QUESTIONS AT 800-438-1524.



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