CostGard™ Condensate Drain Seal

Commercial – Up To 100+Tons—**Drain Sizes:** 1-1/4”, 1-1/2” & 2.0”

INSTALLATION FUNDAMENTALS

MODELS: C-XXBV-XX-12-XX-20-25

GENERAL

This CostGard™ Kit includes all non-standard components necessary for installation. It is designed for ducted air handlers, whether unitary or split. The kit provides flexibility for up-flow, downflow, and horizontal left or right applications. It replaces the p-trap on draw-through HVAC air handlers and is suitable for HVAC units with the following characteristics:

- Drain Size 1.25". 1.5" & 2.0"
- Up to 100+ Tons
- Drain Pan Pressures to -5.0" w.g.

As shown in Figure 1, one other piping connection is required in addition to the drain pan connection. The connection at point A must connect to the discharge side of the fan (supply plenum or supply duct). A 1-7/8" hole saw penetrates the cabinet.

PIPE CONNECTIONS

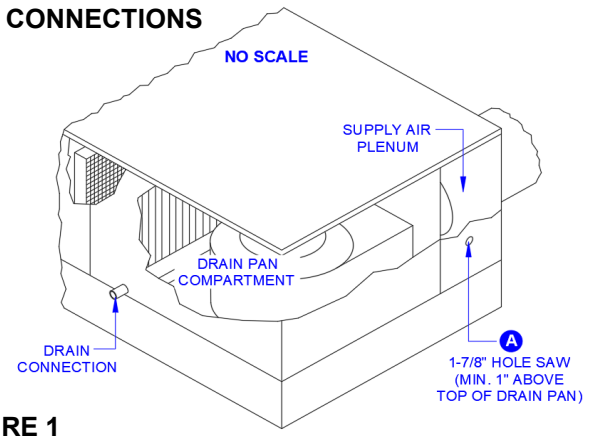


FIGURE 1

One primary requirement for a successful installation is routing all connecting pipes to avoid interference with service access panels. Consider this requirement before finalizing the installation—before drilling holes, cementing PVC connections, or securing supports. Piping arrangements can vary greatly; Figure 2 is an example. More detailed drawings of possible installations for specific HVAC brands and models can be made available or prepared to simplify installation further. Contact Trent Technologies with questions regarding this installation.

PIPING & SUPPORTS

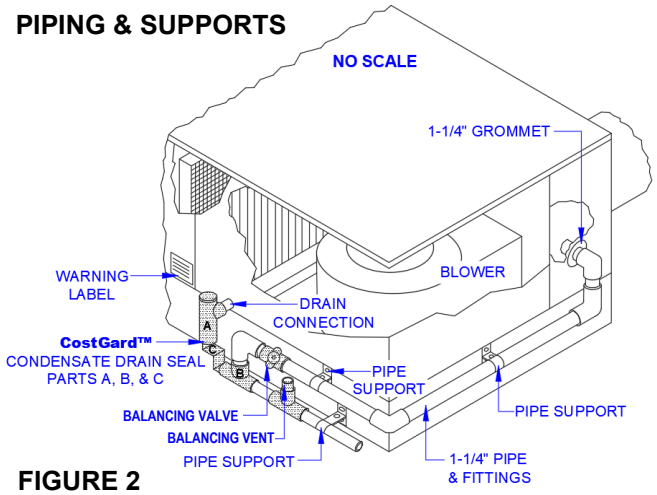


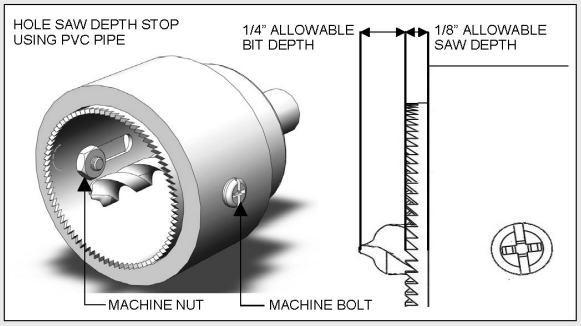
FIGURE 2

INSTALLATION

STEP 1: At point A (Figure 1), penetrate the side panel with a 1-7/8" hole saw and insert the rubber grommet provided. This hole must be at least 1" above the top of the condensate drain pan and open to the supply air plenum. Alternatively, point B can be moved to the supply duct.

CAUTION

TO PREVENT POSSIBLE DAMAGE TO INTERNAL COMPONENTS, EQUIP HOLE SAW WITH DEPTH STOP SUCH AS ILLUSTRATED BELOW.

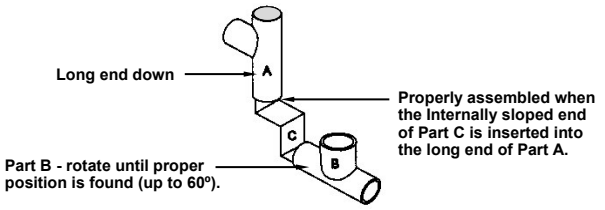


SUGGESTED HOLE SAW CONFIGURATION

GROMMET SIZE	HOLE SAW	PVC PIPE
1-1/4”	1-7/8”	2” SCH 80

STEP 2: Install adapters as necessary to connect the female PVC slip joint of the CostGard™ Condensate Drain Seal to the condensate drain pan connection.

STEP 3: Identify the three (3) parts of the CostGard™ Condensate Drain Seal, designated as A, B, and C, as shown below. Connect Part A to the drain pan connection as indicated in Figure 2. Part A is correctly installed when the more extended segment of Part A is pointed down. Next, insert the internally sloped end of Part C into the lower port of Part A. Then connect Part B to Part C with the tee port pointing upward. Part B can be rotated up to 60° if necessary.



STEP 4: Install 1-1/4” piping, as shown in Figure 2. The rubber grommet installed at point A provides an airtight seal where the PVC pipe penetrates the side panel. All pipe connections must be firm and watertight. Use PVC cleaner and cement at ALL connections.

STEP 5: Install support brackets on pipes, as shown in Figure 2.

STEP 6: Balance the pneumatic seal as described on page 2.

STEP 7: Attach the included yellow informative warning label.

NOTE: DO NOT CONNECT DRAIN PIPE DIRECTLY TO SANITARY SEWER. PROHIBITED BY PLUMBING CODES.

INSTALLATION NOTES

1. Prior to installing the CostGard™ Condensate Drain Seal on existing . Prior to installing the CostGard™ Condensate Drain Seal on existing systems, the condensate drain pan and outlet port should be cleaned and flushed to remove all accumulated algae, fungi, and other debris.
2. The condensate drain line must be securely fixed in place and supported using pipe supports as illustrated in Figure 2. This is essential to prevent excessive line movement from damaging the CostGard™ Condensate Drain Seal and connecting pipes. Also, in accordance with the various mechanical codes, the condensate drain line must not be less than 1” pipe size or 1” tubing size. The drain line must have a slope not less than 1/8" per foot, and it must be supported as necessary to ensure uniform drainage and that no condensate is trapped in the line.
3. In some installations, the CostGard™ Condensate Drain Seal and connecting piping may need to be insulated to prevent condensate formation on outside surfaces.
4. This model custom-built CostGard™ Condensate Drain Seal will operate over a wide range of pressure conditions in the drain pan compartment and the supply air plenum or duct. All Commercial models included an orifice or pneumatic balancing valve installed in the air supply pipe, as shown in Figure 3c.
5. In rare instances, some systems may have low pressure in the supply plenum or duct. A ram air scoop may be placed in the blower discharge stream to achieve adequate pressure. Figure 3a illustrates the installation of an elbow-type scoop. If installing an elbow-type scoop is inconvenient, an alternate scoop constructed, as shown in Figure 3b, may be used.
6. With each custom-built device, Trent Technologies provides installation drawings to assist the installer.

BALANCE THE PNEUMATIC SEAL

Install the Balancing Valve in the closed position, as shown in Figure 3c. Keep it closed during the test and balancing operation. The system will drain successfully when the valve is closed.

With the air handler operating at its rated condition, gradually open the valve before condensate formation and drainage until air starts to flow from the drain line vent. You can identify the proper valve setting when the air from the Balancing Vent slightly deflects the lighter's flame, as shown in Figure 4.

FIGURE 4

IMPORTANT: Once you have identified the correct valve setting, secure the balancing valve in place using the red-topped set screw. No further adjustments will be needed.

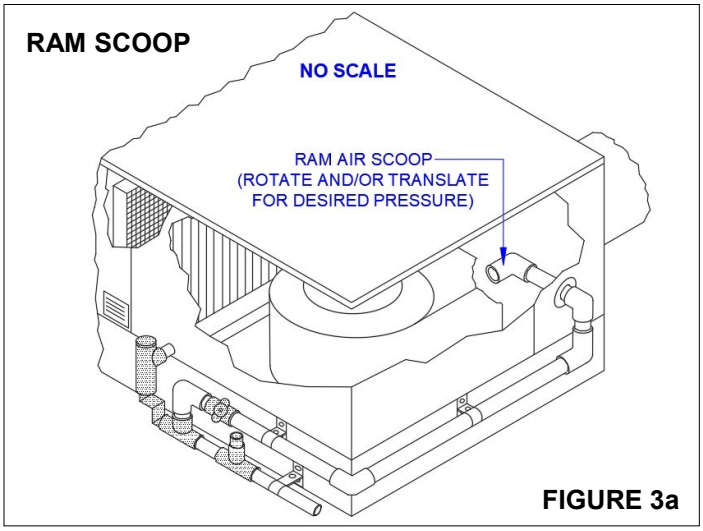


FIGURE 3a

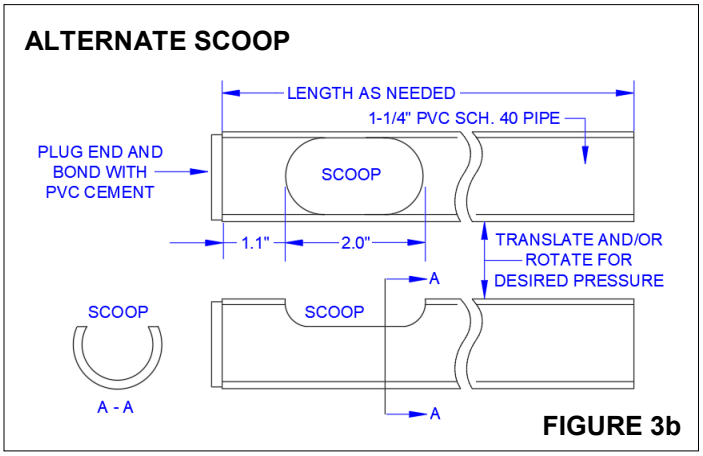


FIGURE 3b

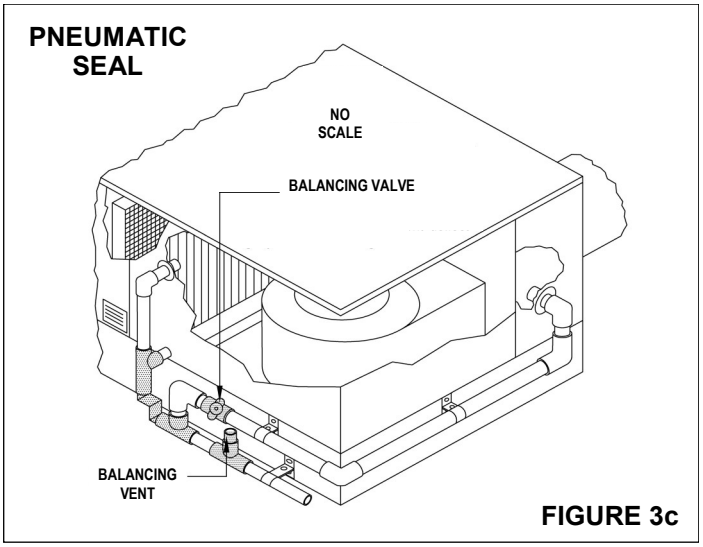


FIGURE 3c

NOTE: The CostGard™ Condensate Drain Seal design includes a unique self-cleaning, pulsing feature, which like any active HVAC element (such as flowing air) produces an audible sound. In some above-ceiling and closet installation arrangements, this sound may be amplified and become objectionable. In the unlikely event that this happens, contact *Trent Technologies* for resolution.