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ENGINEERING BULLETIN

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Subject: Noise in B-Vent Systems

Generally, noise in Type B gas vent is caused by the relative movement of parts in the system with adjacent parts, with part of the structure, or because of additions or changes to the parts and system. The movement occurs due to expansion during heating and contraction during cooling of the vent. The Hart & Cooley type b-vent is designed to minimize rubbing or binding if it is installed according to our instructions and is not modified in some way.

Unfortunately, noise is not always noticed until after the vent is totally enclosed, the walls are finished, and the new owner takes possession. And, it seems the vent always passes up through the owner's bedroom wall. Noise has an adverse effect on the perceived quality and value of our product. It is much harder to diagnose and solve over the phone than to prevent with additional knowledge of installation details.

Past experience indicates the majority of noise problems may be caused by one of several things. The following suggestions may assist the installer in prevention or in locating the source should noise occur.

- Do not assemble the vent using screws in the joints, supports, flashings, or any other place where penetration of the pipe is possible. Even a short screw may have its point touch the inner liner even if it doesn't penetrate. The aluminum inner liner heats up quickly and feels more heat than the galvanized outer jacket. In addition, aluminum has twice the thermal expansion as steel.
- The aluminum inner and steel outer pipes are connected together at the upper end of each pipe and fitting. The lower end of the inner must be able to "float" in the piece beneath it. Any damage to pipe sections or tube ends may cause binding and subsequent noise during movement.
- Any means of system support other than the listed Hart & Cooley support assembly can create a potential noise source.
- The vent must not contact any part of the structure. Some only consider the safety issues concerning clearances to combustibles and not the potential noise issues with lack of clearance to a noncombustible.
- Where fire-stops are required at floors or ceilings, sufficient clearance should be provided so that rubbing does not occur. A hole 1/8-inch larger than the outside diameter of the pipe is permitted in the fire-stop.
- The roof flashing should never be screwed, soldered, or otherwise attached to the vent pipe. The pipe must be free to move vertically in the flashing if necessary. The storm collar is sealed to the pipe only immediately above the flashing opening.

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- Hanger straps used to support offsets or horizontal runs must not slip on the pipe or restrain lengthwise expansion.
- Binding of vertical sections can occur if an offset length is too long or too short and forced to fit. Adjustable length sections are available for such occurrences.
- Type b-vent pipe is constructed so that the inner liner telescopes with the piece beneath it to accommodate changes in length caused by temperature change. This is not true of single wall connector pipe, which by code is also required to be fastened together by sheet metal screws. The connector pipe assembly is a potential source of noise. When fastening single wall pipe to b-vent with screws, use the draft hood connector. Always fasten the connector pipe to Type B-Vent through the aluminum inner liner only.
- A homeowner may inadvertently create a noise problem while hanging clothes bars, shelving units or pictures by using long nails or screws or wall anchors that protrude far enough into a cavity to contact the pipe.
- Noise will reverberate throughout the vent system, making it difficult to locate the source. Isolation by sections should be employed to locate the area of noise generation. Physically disengage system sections one section at a time while holding it immediately adjacent to the next section so the hot gases continue up the vent (single wall connector section, attic offset section, etc.). Continue to isolate accessible sections while cycling the appliance until the section causing the noise is identified. Expansion noises will occur while the system heats up and will stop when the maximum temperature is reached. Contraction noises will occur after shut-off while the temperature is falling. Mechanical noises from an appliance will usually occur throughout operation.

A properly installed system rarely causes noise. A few minutes spent checking during installation is very rewarding. Once a noise complaint is made, the homeowner will develop a supercritical attitude which is very difficult to overcome because they listen more intently and constantly.