

E.F. SIEGFRIED CO., INC.

"HOT AIR" NEWSLETTER

WELCOME! to the first edition of the "Hot Air" Newsletter of the new millennium! The New Year has brought some exciting new products for us already as well as a new Duct Silencer line. Once again we have some application tips for you as well so, Enjoy!

Please distribute to all mechanical designers



The year 2000 has gotten off to a strong start as we welcome **Dynasonics/Transonics, Inc.** as the manufacturer of our **new line of sound attenuation** products. Transonics brings 30 years of sound attenuation expertise to the table as well as a **full line of products** including **duct silencers** (packed and packless), **acoustical panels and enclosures**, **acoustical louvers**, and much more. Their new, state-of-the-art NVLAP accredited lab and reverberation room is one of the largest in the industry and will help Transonics continue to develop the **accurate and repeatable acoustical data** that they are known for. We look forward to a strong and lasting relationship with them.



In our first Newsletter (May 1, 1999) we introduced the **Vector**, the new **radial pattern laminar flow diffuser** from **Tuttle & Bailey**. Since then Tuttle & Bailey has introduced two new **critical environment** products: the **Radian**, and the **Tensor**. The Radian is an **adjustable pattern version of the Vector** and has many of the same characteristics as its cousin. The Tensor is an **all new double chambered laminar flow diffuser** that has **replaced the CRD**. The Tensor is available in cold-rolled steel, aluminum, and 304 stainless steel. It also comes in a **HEPA filter version**. Please call us for more information.



This edition's **application section** deals with the **selection** of the **proper air diffusion device** to bring air **down from a high ceiling** (a high ceiling will be defined here as any ceiling **above 20 ft.** in height). This subject was chosen because we are often asked which air device will work best in this situation. Certain factors (height, throw, cfm, etc.) will affect the answer to this question. Several product options will be given and their pros and cons weighed (it may be of interest that a **ceiling diffuser is often not the best choice**). The final selection, however, will ultimately boil down to which characteristic of the device is most important to you.

Several variables must be addressed first, however. Most catalog throw data is based on **isothermal air**. If the air being supplied is tempered, the throw will be affected by at least **±10%**. Another, often overlooked, factor is whether or not the throw data for a particular device is based upon having a **ceiling/wall within 1 foot of the air outlet**. If a ceiling/wall is present for testing but not in your application, the catalog throw data will be **reduced by about 30%**. Tuttle & Bailey ceiling diffusers, supply registers, and slot diffusers are generally tested with ceilings and the data is expressed as horizontal throw (Note: a **supply register's throw data** can be interpreted as either **horizontal or vertical**, but a ceiling diffuser's horizontal throws cannot

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be applied to vertical applications). Drum grilles, and spot diffusers are tested without ceilings/walls so their data applies to **vertical and horizontal throw**. In addition, the **quantity of air** to be delivered will greatly affect which device is selected; some products are designed for higher cfm's, some for lower cfm's, and some accommodate both (see Features on table below). Lastly, the **height of the installed device** will play a significant role in your selection because some products simply throw farther than others.

HIGH CEILING AIR DISTRIBUTION

<u>PRODUCTS</u>	<u>FEATURES</u>	<u>PROS</u>	<u>CONS</u>
SPOT DIFFUSERS Seiho PK, NT Tuttle & Bailey GJ	Low to high volume Long throw	Good performance Architectural appearance Low noise	Little lateral air spread Size limitations Higher price
DRUM GRILLE Tuttle & Bailey Roto-Jet	Low to high volume Long throw	Good performance Aesthetically pleasing Laterally adjustable	Size limitations Higher price
SUPPLY REGISTERS Tuttle & Bailey T647, AIG & TIG (industrial) Seiho RHV	Low to high volume Short to long throw	Good performance Laterally adjustable, Lots of sizes, Lowest cost Low noise	None
SLOT DIFFUSERS Tuttle & Bailey 6000/7000	Low volume Long throw	Architectural appearance Continuous distribution Good perimeter coverage	Usually won't work in high ceiling applications (low cfm per linear foot to meet noise and pressure drop limitations) Higher price
LINEAR BAR GRILLE Tuttle & Bailey 4000, T	Low to high volume Short to long throw	Architectural appearance Continuous distribution Lots of sizes	Not adjustable Higher price Little lateral spread
ROUND DIFFUSERS Tuttle & Bailey P3, VJ, VB	Low to high volume Short to long throw	Good performance. Specifically designed for horizontal/vertical throw Low noise	Round face not compatible with ceiling grid Little lateral spread
SQUARE DIFFUSERS Tuttle & Bailey 1300A, MAE	Low to medium volume Short throw	Aesthetically pleasing Low cost	Not designed for high ceiling application (doesn't throw air down as well as it does across ceiling and has little lateral spread)

As you can see, the double deflection **supply register** is one of the best choices for high ceiling air distribution. It is a versatile product that has all of the characteristics one needs for such an application. It is an often overlooked but **highly effective device**.

Hopefully this table will help you with making a selection. Ultimately, the simultaneous weighing of **performance, cost, and aesthetics** will give you the best selection for your needs.

Keep a lookout for our next installment!
If you have any questions, call me at 215-887-7244.
Robert L. Kugler

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