

Linear  
Slot Diffusers  
Models SLAD/Free Flo/Pro Jet  
Installation  
Operation  
and Maintenance

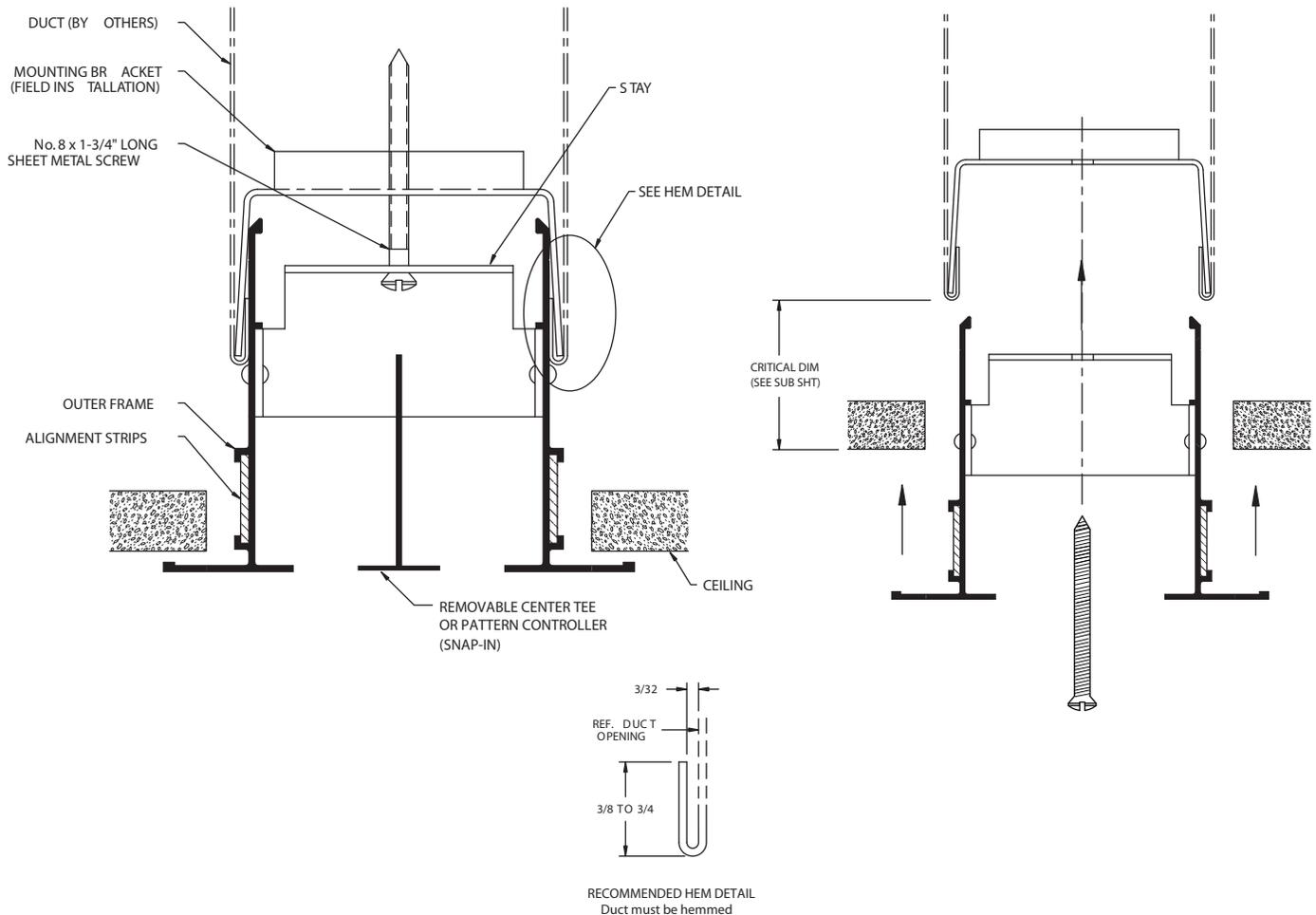
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# Model SLAD / FF (Free Flo) / PJ (Pro Jet) Installation Instructions

## A. Hemmed Plenum / Duct Installation

- Duct supports diffuser
  - Drywall / GWB is pre-installed
1. Position and secure the plenum above the ceiling opening. Note that the dimension from the finished ceiling plane to the lower edge of the plenum must be within the allowable range as shown on the product submittal.
  2. Position the included mounting brackets in the hemmed edges of the plenum so that they line up with the linear diffuser cross members / stays. The mounting brackets include a hole which may be used so that the hem edge can be crimped with pliers to help retain the bracket in position as the mounting screws are attached.
  3. Before positioning the diffuser in the ceiling opening, remove the pattern controllers from a 1-slot diffuser, or remove the center tees from a 2+ slot diffuser to expose the mounting holes in the diffuser cross member / stay. The center tees are held into the diffuser by friction clips and are simply pulled out from the clip. Model SLAD pattern controllers are held in by friction clips as well. Models FF and PJ diffusers use phillips head screws to retain the controllers. Removing the appropriate center tees or controllers are more easily done at the floor level.
  4. Position the diffuser in the ceiling opening and install the #8 x 1-3/4" sheet metal screws (provided) through the diffuser cross members and screw into the mounting brackets that were previously located in the plenum hem. Put the screws in loosely and do not tighten until all of the screws are engaged in all of the mounting brackets. Sequentially tighten the screws at each end of the diffuser and then the center screws until the diffuser outer flanges are pulled snug to the finished ceiling plane.
  5. Re-install the pattern controllers / center tees removed in step #3. The pattern controllers can be adjusted at this point for the desired blow pattern / direction as scheduled.

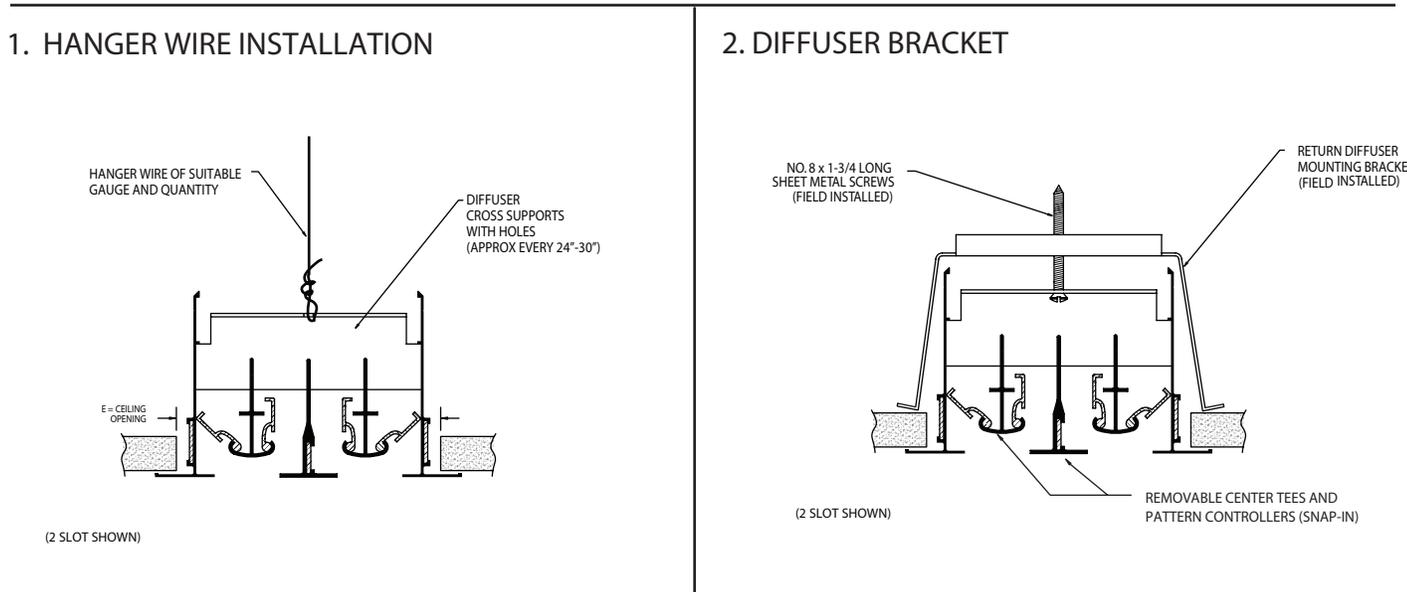


# Models SLAD / FF (Free Flo) / PJ (Pro Jet) Installation Instructions

## B. RETURN OR BLANKED-OFF UNITS (NO PLENUM)

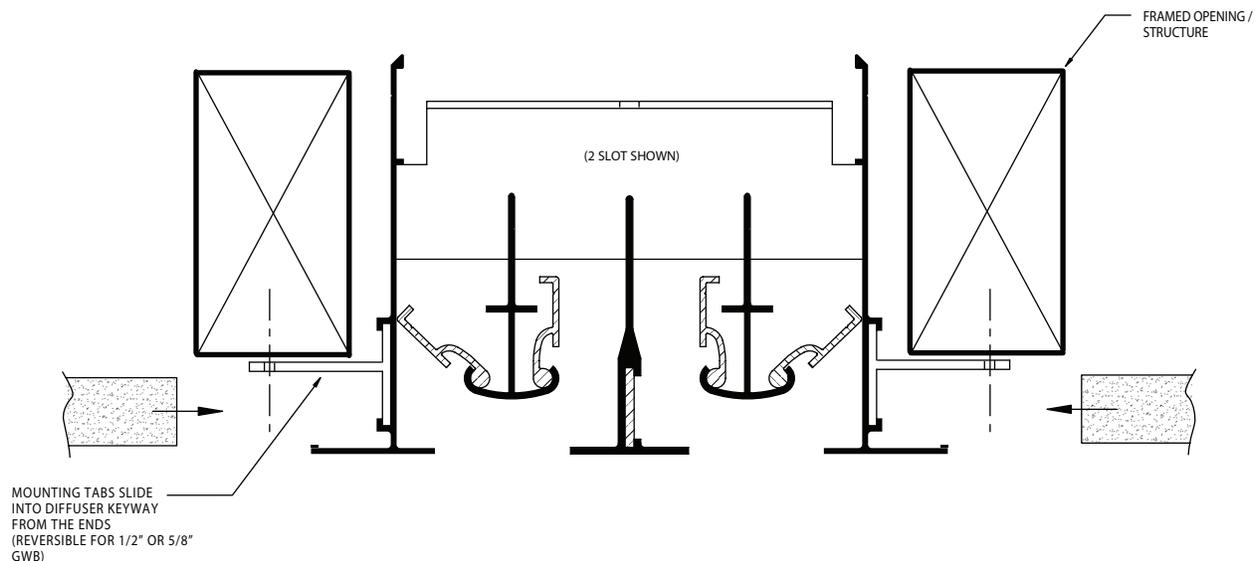
Model SLAD Linear Diffuser Center Tees AND Pattern controllers in each slot are removable from the diffuser cross supports (Stays) by simply pulling them from the friction clips holding them in place. Model SLAD is shown below.

Models FF (Free Flo) and PJ (Pro Jet) diffuser Center Tees are held in with friction clips and are removable by simply pulling them from the friction clips holding them in place. The pattern controllers are held in place with Phillips head screws at each end of the deflectors.



### 3. ATTACH TO STRUCTURE WITH MOUNTING TABS

Diffuser attaches to the framed opening prior to the installation of the GWB ceiling.

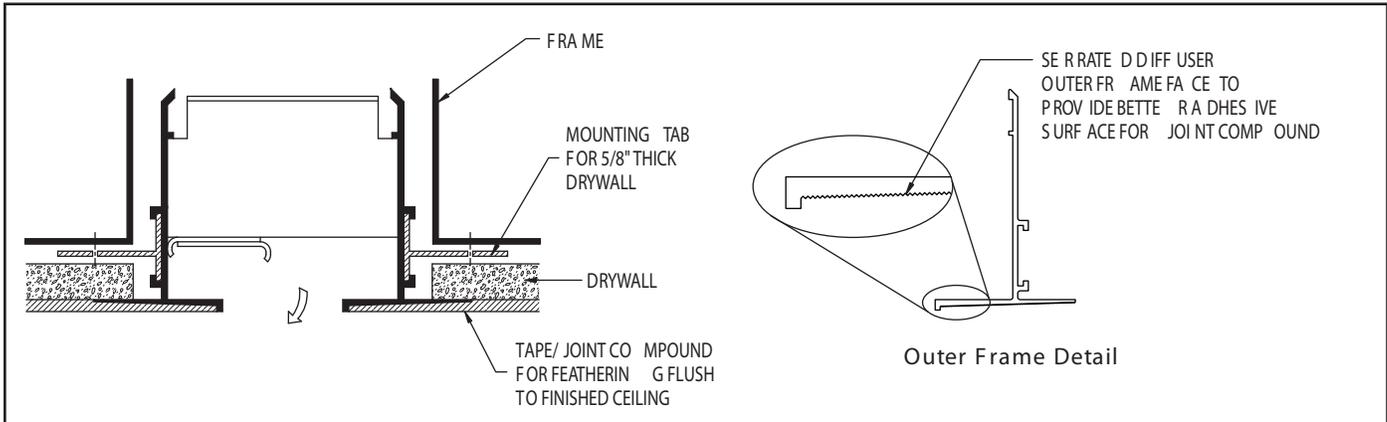


## Free Flo / Pro Jet Installation Instructions

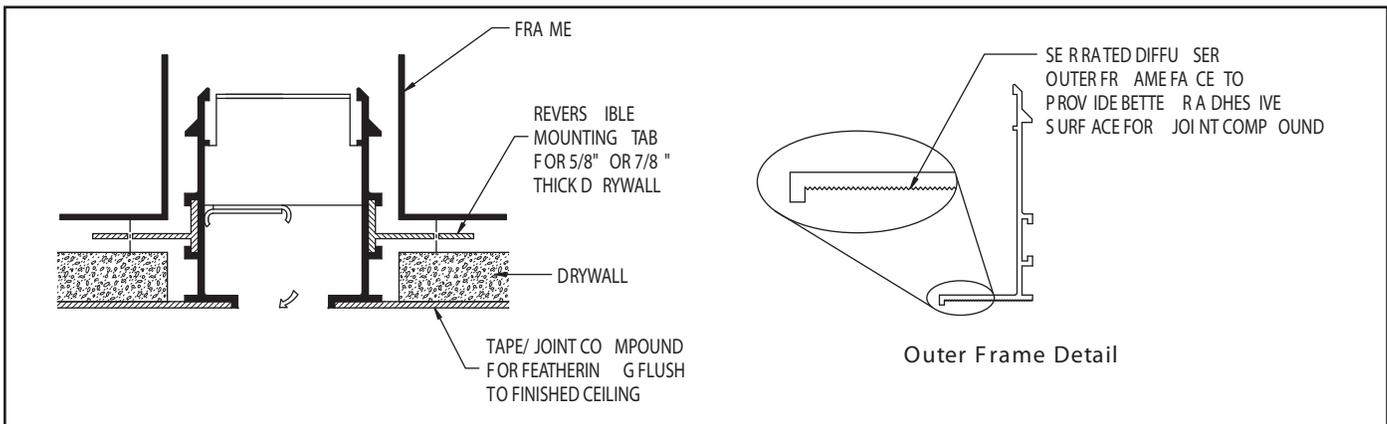
### B. Ceiling Supported

- Installed prior to drywall installation

#### Models FFBF / PJBFB Installation Detail



#### Models FFCM / PJCM Installation Detail

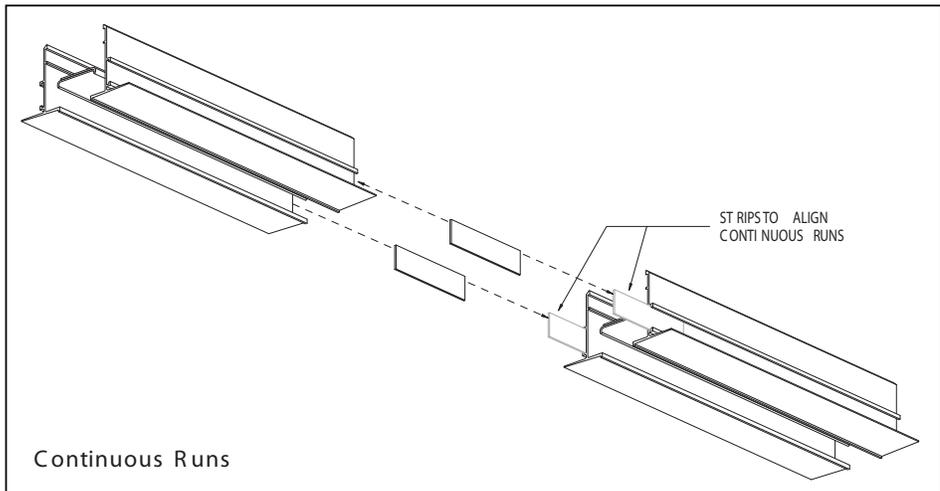
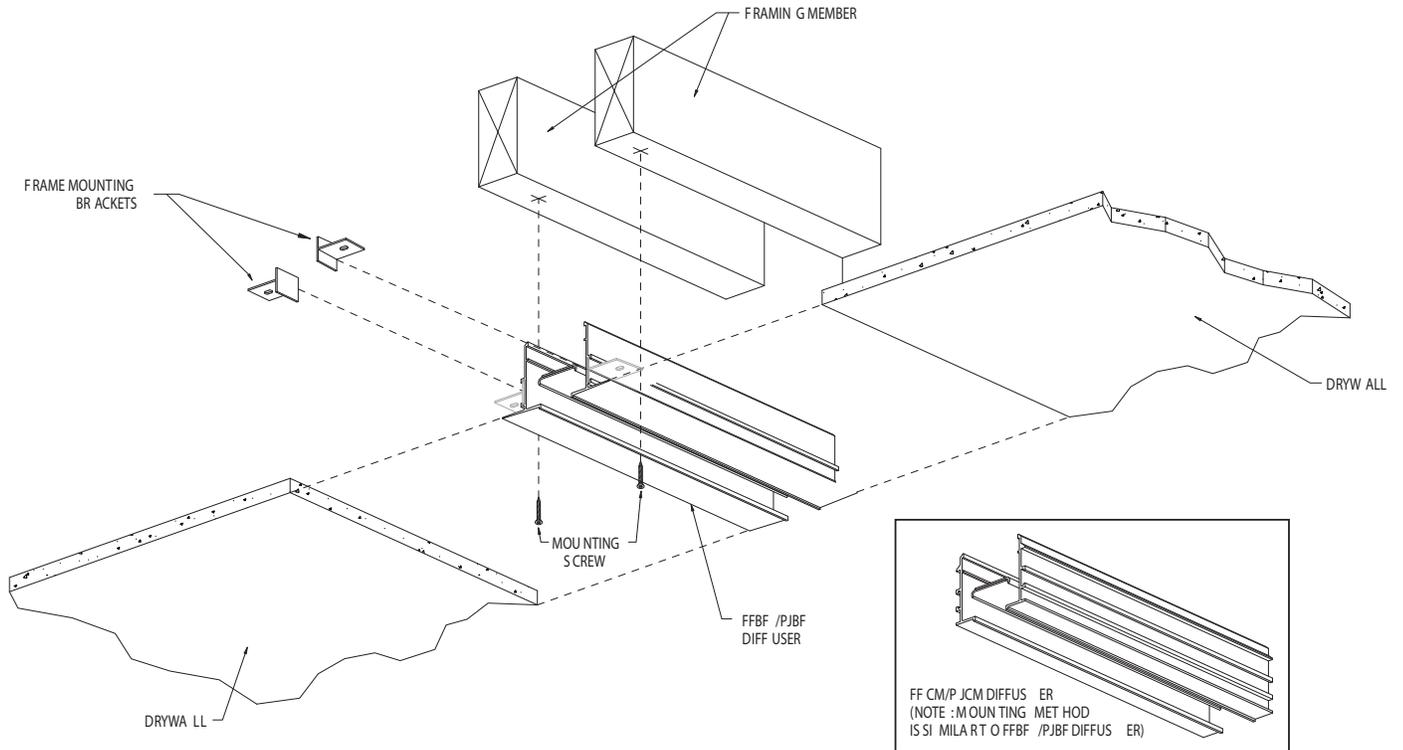


### Diffuser Face Preparation Notes

- Thoroughly remove any oil, dust, dirt, or residue from the entire diffuser face using a solvent or degreaser. Rust-oleum manufactures quality cleaners and degreasers.
- Diffuser outer frames comes serrated for better adhesion of joint compound. It is highly recommended that a bonding agent be used prior to application of the tape/mesh and joint compound. A strong bond will eliminate delamination of the compound from the diffuser face. Remember that the aluminum diffuser will expand and contract with temperature change, so adhesion is very important. Apply the bonding agent along the entire diffuser face. Be sure to allow sufficient drying time before applying joint compound. Eucoweld (Euclid Chemical Co.) and Plaster Weld (Larsen Products Corp.) or any equivalent bonding agent are readily available from supply houses.
- Embed mesh or paper tape into the first coat consistent with standard practice. Use a high bond, low shrink setting compound such as Sheetrock™ Durabond or equivalent for this first coat. Apply additional coats to feather the joint (standard joint compound may be preferred as it is easier to sand in preparation for primer).

# Free Flo / Pro Jet Installation Instructions

## During Hard Ceiling Installation



### BF/CM Frame Style Installation

- Slide mounting brackets into diffuser outer frame channels. Make sure brackets are appropriately spaced to evenly distribute diffuser weight (approximately 20" - 24").
- Lift Free Flo/Pro Jet diffuser up to the framing members. Secure into place using mounting screws appropriate for the framing material. Screws are field supplied.
- Position drywall between diffuser frame mounting brackets and flanged face of diffuser.
- Apply joint compound to face of diffuser and feather to drywall ceiling for a clean, finished look. (See "Diffuser Face Preparation Notes", page 4)

## Expansion & Contraction of Aluminum Linear Diffusers

The expansion and contraction of aluminum linear diffusers, due to temperature differential, is shown below. Supply air temperature differentials can be in the 50F range from cooling to heating for typical HVAC applications. Consider installing with some spacing between linear diffusers that form a continuous run.

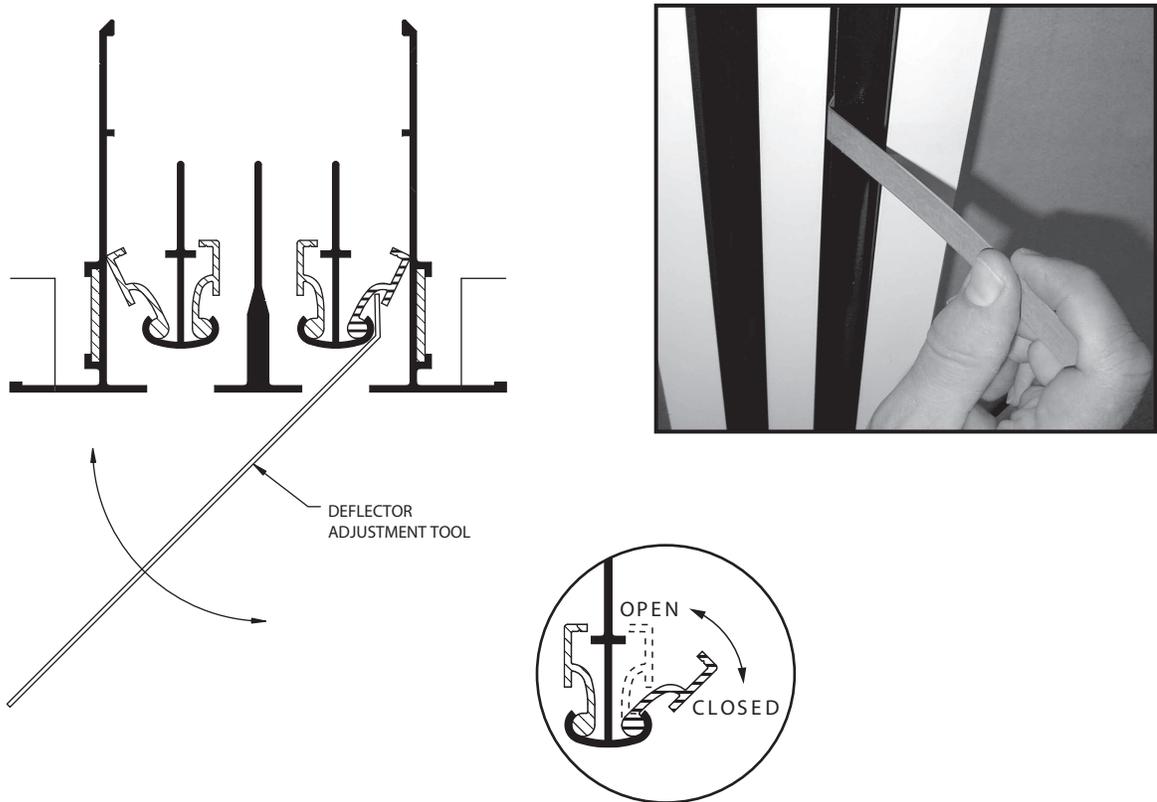
5°

GRILLE LENGTH (ft.)	TEMPERATURE DIFFERENTIAL										
	5°	10°	15°	20°	30°	40°	50°	60°	70°	80°	90°
5'	.004	.008	.012	.016	.024	.032	.039	.048	.054	.062	.070
10'	.008	.016	.024	.031	.048	.060	.078	.096	.110	.120	.160
20'	.016	.031	.047	.062	.093	.130	.160	.190	.220	.250	.320
30'	.024	.047	.070	.093	.140	.190	.230	.280	.330	.380	.470
40'	.031	.062	.093	.130	.190	.250	.310	.380	.440	.500	.630
50'	.040	.080	.120	.160	.240	.310	.390	.470	.550	.620	.700
60'	.047	.093	.140	.190	.280	.380	.470	.560	.650	.750	.840
80'	.060	.130	.190	.250	.380	.500	.620	.750	.870	1.000	1.120
100'	.080	.160	.230	.310	.470	.620	.780	.930	1.090	1.250	1.400
120'	.093	.190	.280	.380	.560	.750	.940	1.120	1.310	1.490	1.680
140'	.110	.220	.330	.440	.660	.880	1.090	1.310	1.530	1.750	1.970
160'	.130	.250	.380	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250
180'	.140	.280	.420	.560	.840	1.120	1.400	1.670	1.950	2.230	2.520
200'	.160	.310	.470	.620	.930	1.250	1.560	1.870	2.170	2.500	2.810

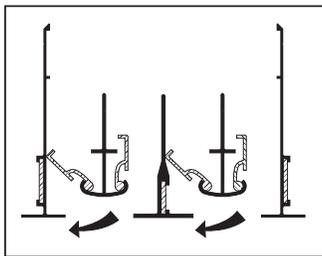
# SLAD

## How to use Adjustment Tool

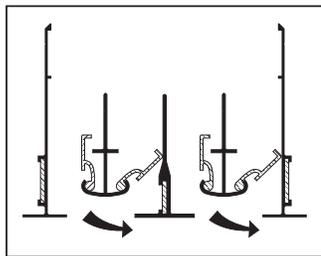
A deflector adjustment tool is provided with each SLAD shipment. The adjustable vanes include an integral slot to allow the tool to engage the vane, and by rotating the tool as shown, position the vane as required for the pattern and air volume required for the application.



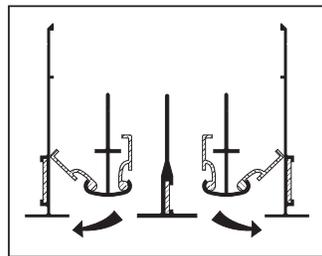
## Pattern Control Flexibility (2 Slot Shown)



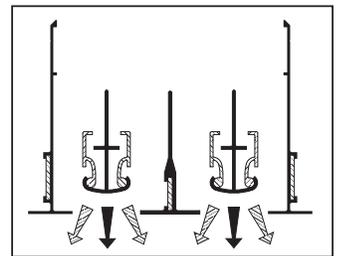
1 WAY LEFT - HORIZONTAL



1 WAY RIGHT - HORIZONTAL



2 WAY OPPOSITE - HORIZONTAL



VERTICAL PROJECTION  
(and other angles)

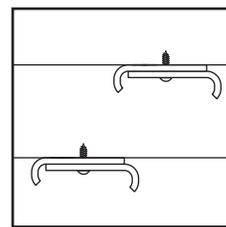
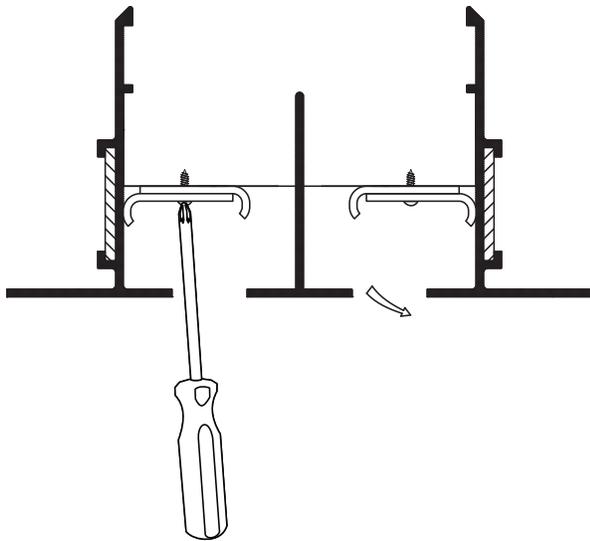
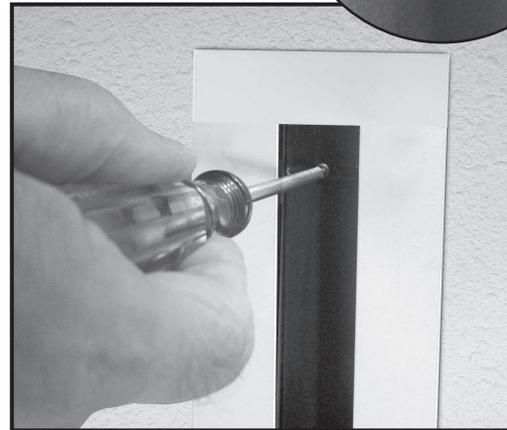
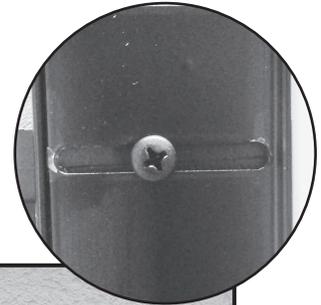
# Free Flo

## Supply Air Pattern & Volume Adjustment

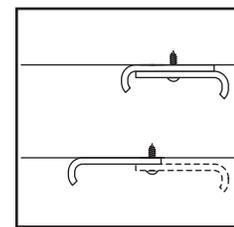
The Free Flo diffuser is designed for maximum adjustability, for both direction and volume control. Each individual diffuser slot includes (1) pair of internal control vanes (see cross section view). Further, the vanes are segmented (typically 24" to 30" long) to allow adjustment to the pattern down the length of the diffuser.

The "deflector pair" can move together as a pair, and can also be spread apart to achieve the desired air discharge pattern for the space. The volume can be changed by spreading the pair "apart", effectively blanking off a portion of the active neck area of the diffuser. However, balancing at the neck of the plenum or at the duct take-off is preferred for lowest pressure drop and noise.

To adjust the deflector pair, slightly loosen the screw at the end of the deflectors with a screw driver. Move the pair to the desired position, and re-tighten the holding screws. Repeat the procedure for each pair for the desired pattern.

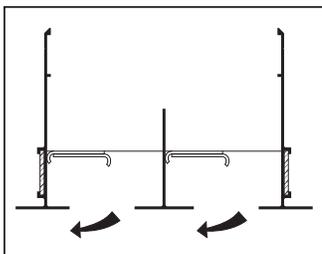


Move as a Pair

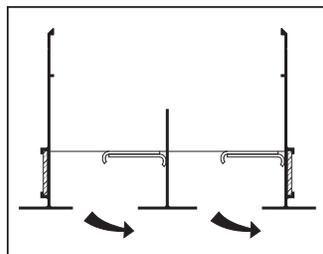


Spread or Collapse

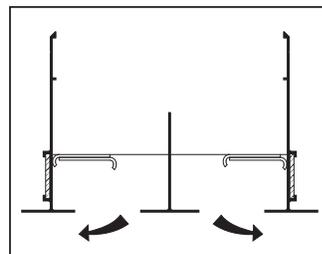
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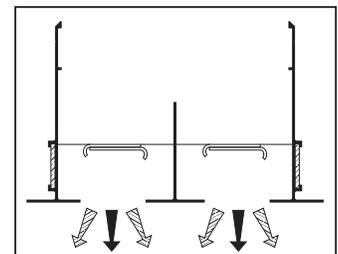
1 WAY LEFT - HORIZONTAL



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VERTICAL PROJECTION  
 (and other angles)

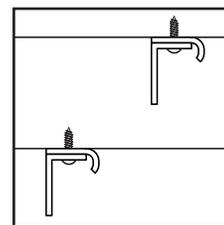
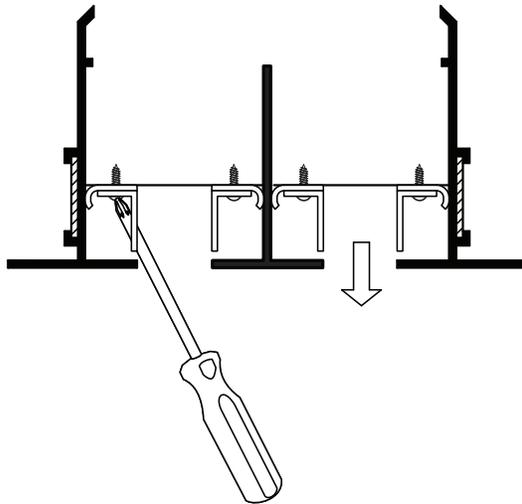
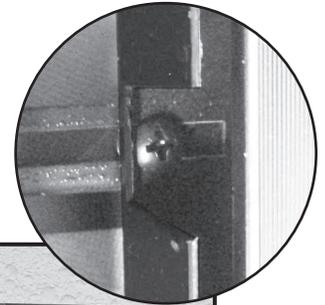
# Pro Jet

## Supply Air Pattern & Volume Adjustment

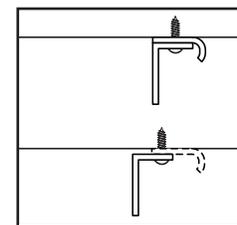
The Pro Jet diffuser is designed for maximum adjustability, for both direction and volume control. Each individual diffuser slot includes (2) pairs of internal control vanes (see cross section view). Further, the vanes are segmented (typically 24" to 30" long) to allow adjustment to the pattern down the length of the diffuser.

The "deflector pair" can move together as a pair, and can also be spread apart to achieve the desired air discharge pattern for the space. The volume can be changed by spreading the pair "apart", effectively blanking off a portion of the active neck area of the diffuser. However, balancing at the neck of the plenum or at the duct take-off is preferred for lowest pressure drop and noise.

To adjust the deflector pair, slightly loosen the screw at the end of the deflectors with a screw driver. There is an access slot adjacent to the screw, and the screw driver may need to be slightly angled. Move the pair to the desired position, and re-tighten the holding screws. Repeat the procedure for each pair for the desired pattern.

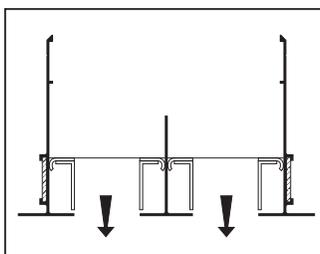


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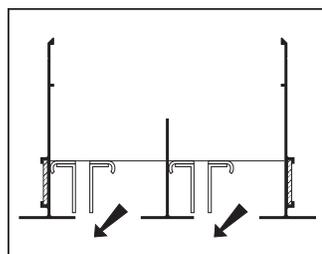


Spread or Collapse

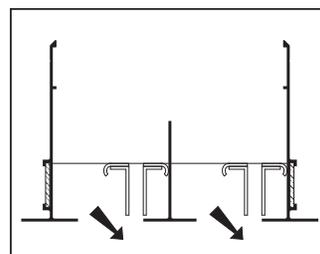
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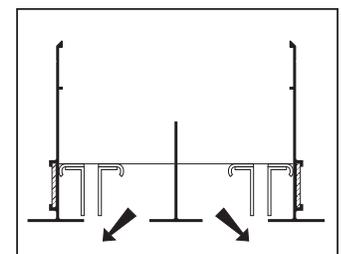
VERTICAL PROJECTION



1 WAY LEFT



1 WAY RIGHT



2 WAY OPPOSITE