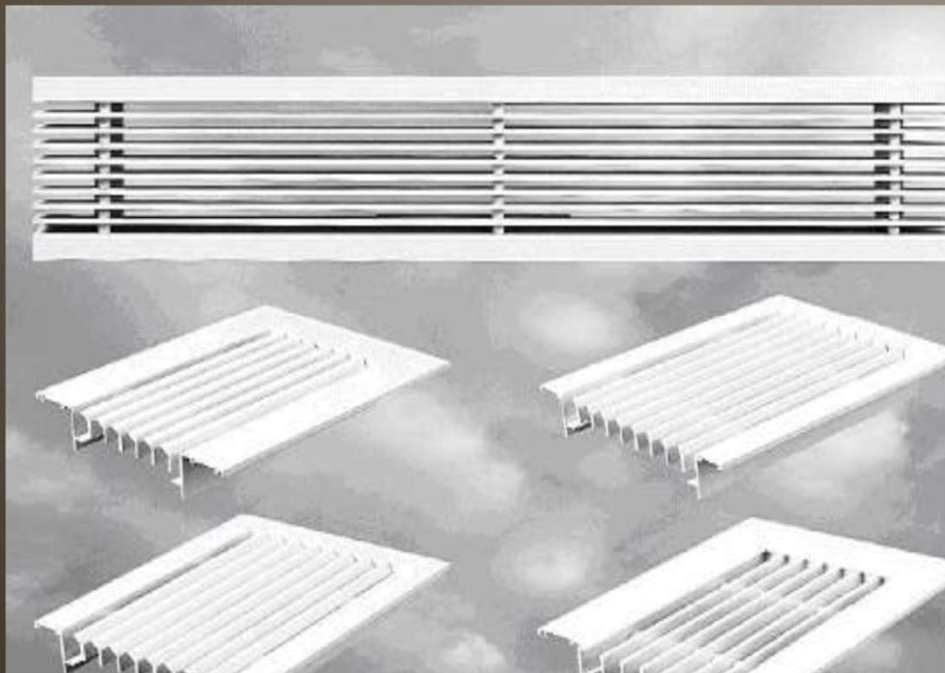


CHAPTER 5
Air Diffusion and Extraction
Equipment

Grill and Diffusers

- **Grill** is a device for supplying or extracting air vertically without any deflection.
- **Diffusers** are defined as air terminal devices that distribute conditioned air in various directions through the use of its deflecting vanes.
- Material used for grill –Aluminum , Mild Steel ,Stainless steel ,Plastic



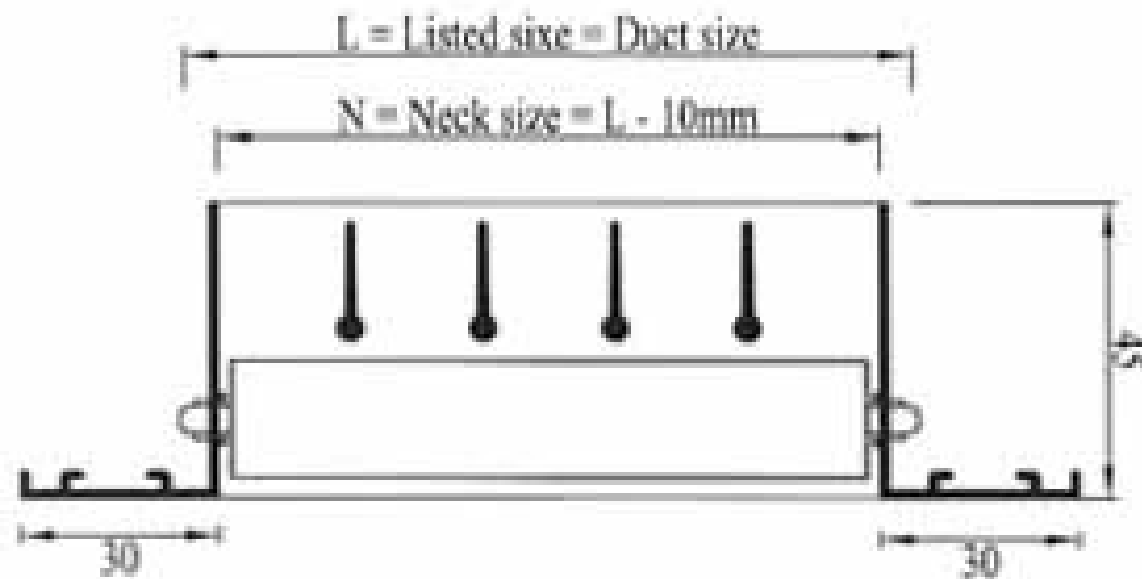
Introduction

- **Diffusers are suitable for supplies fresh air, return air or extracts**
- **Grills are suitable for extraction of used air**
- **Diffusers are used for supply and extraction due aesthetic reasons**
- **Supply diffuser are selected based on throw length and noise level depending on application using flow rate.**
- **For extraction sound level is more important**

Grills



- Supply air Grill



Supply Air Grill

- **Frame:** High quality extruded aluminium profile with 30 mm flange width as standard. 12,16,24 mm flange widths are optional.
- **Blades:** Aerofoil blades from aluminium profiles.
- **Blade spacing:** 20 mm as standard.

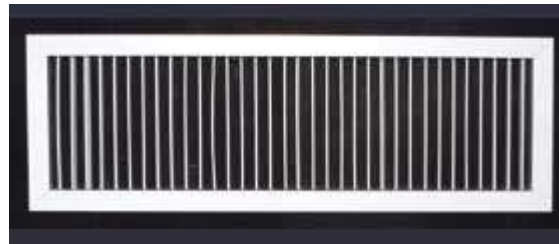
Grills

- Return bar air grill (Horizontal)



Grills

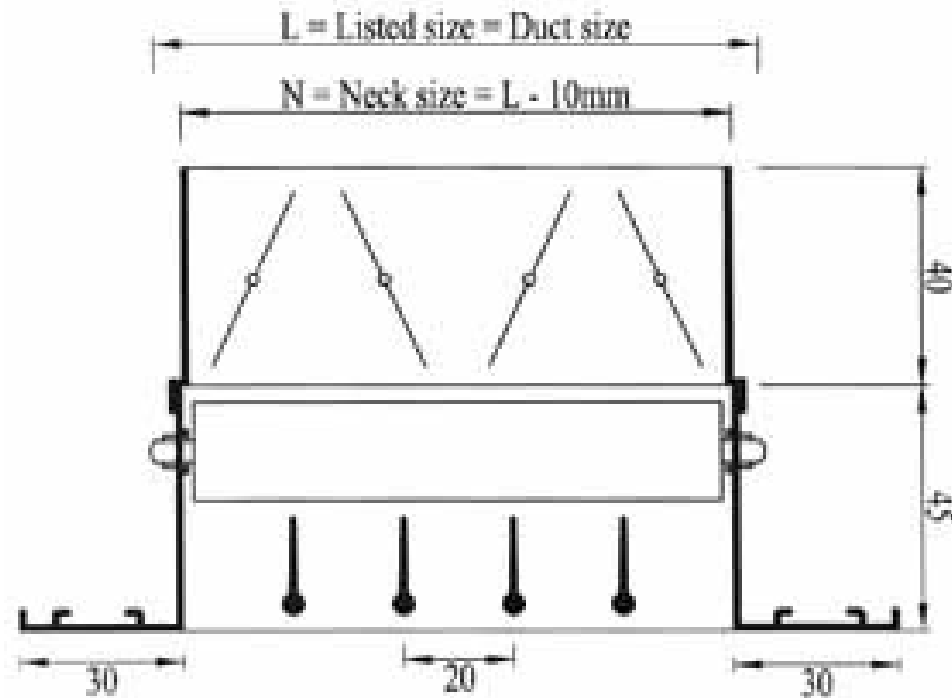
- Return bar air Grill (vertical)



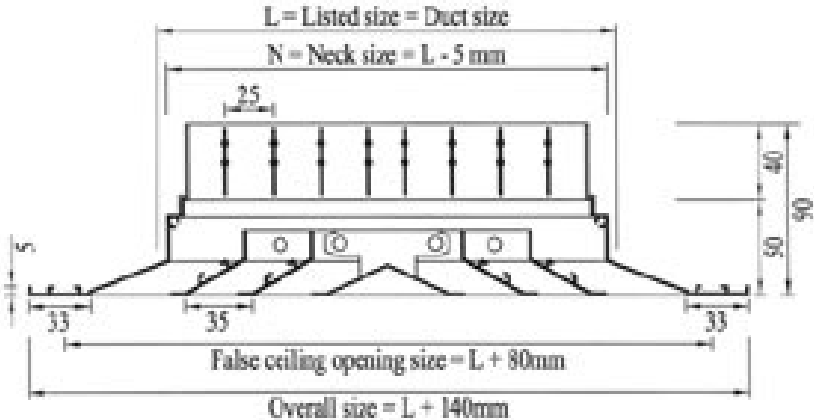
Registers(Grills with Dampers)



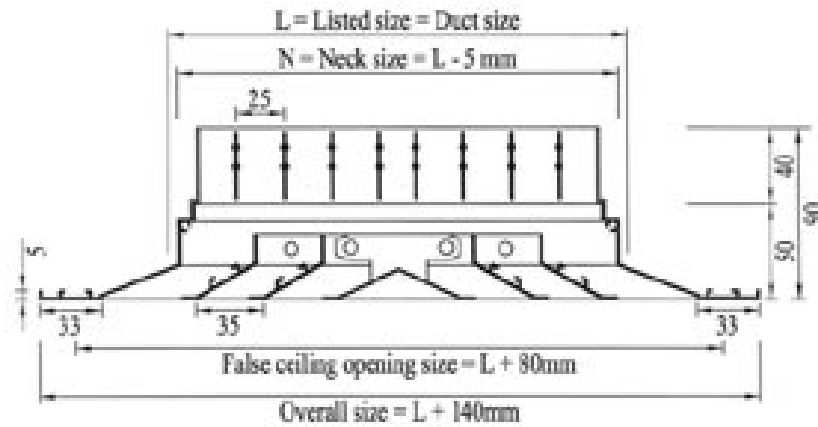
•Supply air Register



Square Ceiling Diffuser

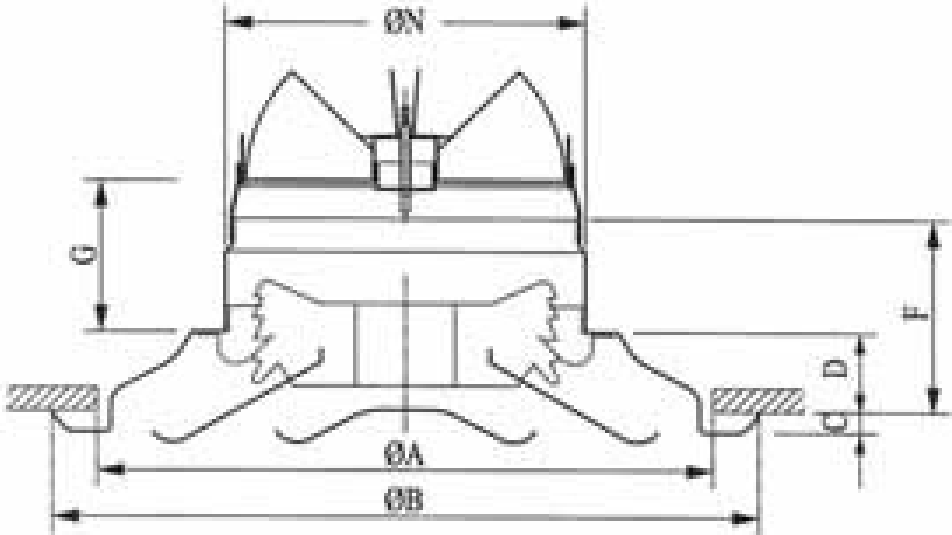


Square Diffuser

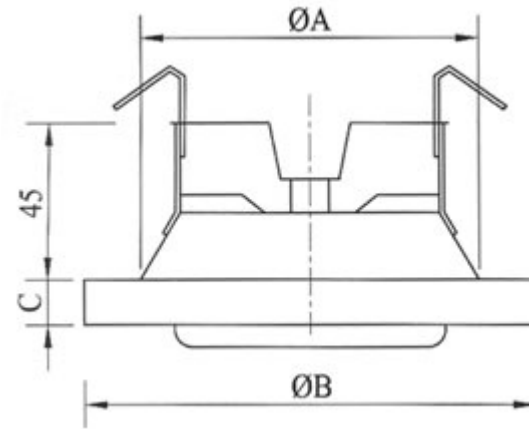
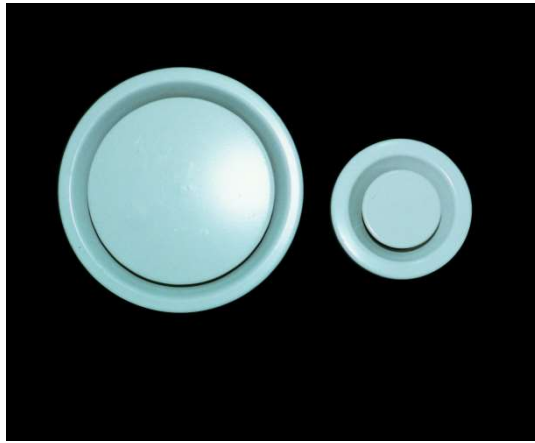


- **ACD4 +D** Four way ceiling diffuser for Damper – Supply air
- **ACD4** Four way ceiling diffuser – Return Air

Round diffuser

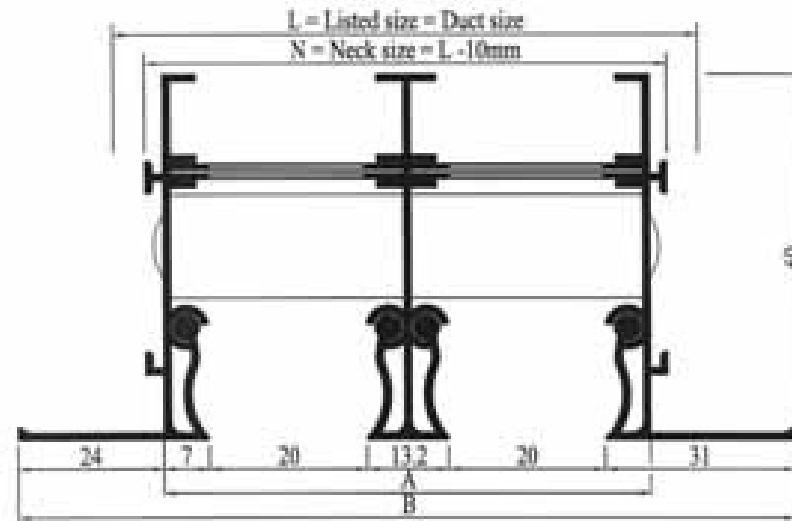


Disc valve



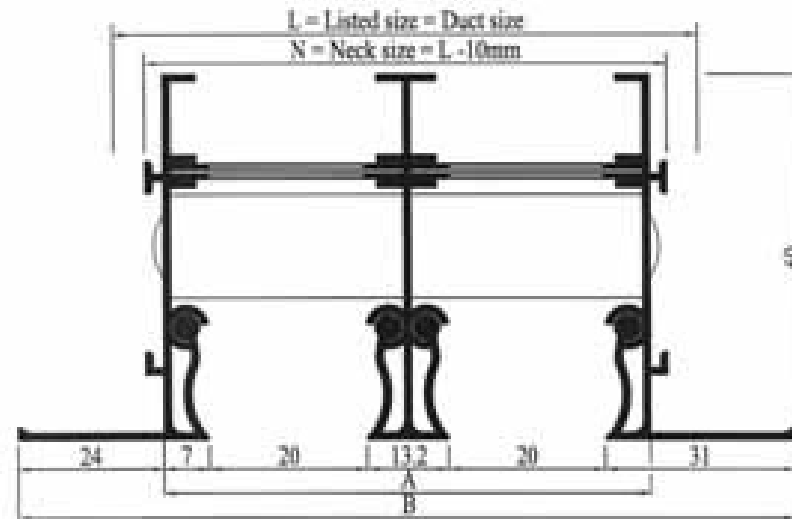
Disc valve are used to regulate exhaust or supply by turning the cone

Square Diffuser



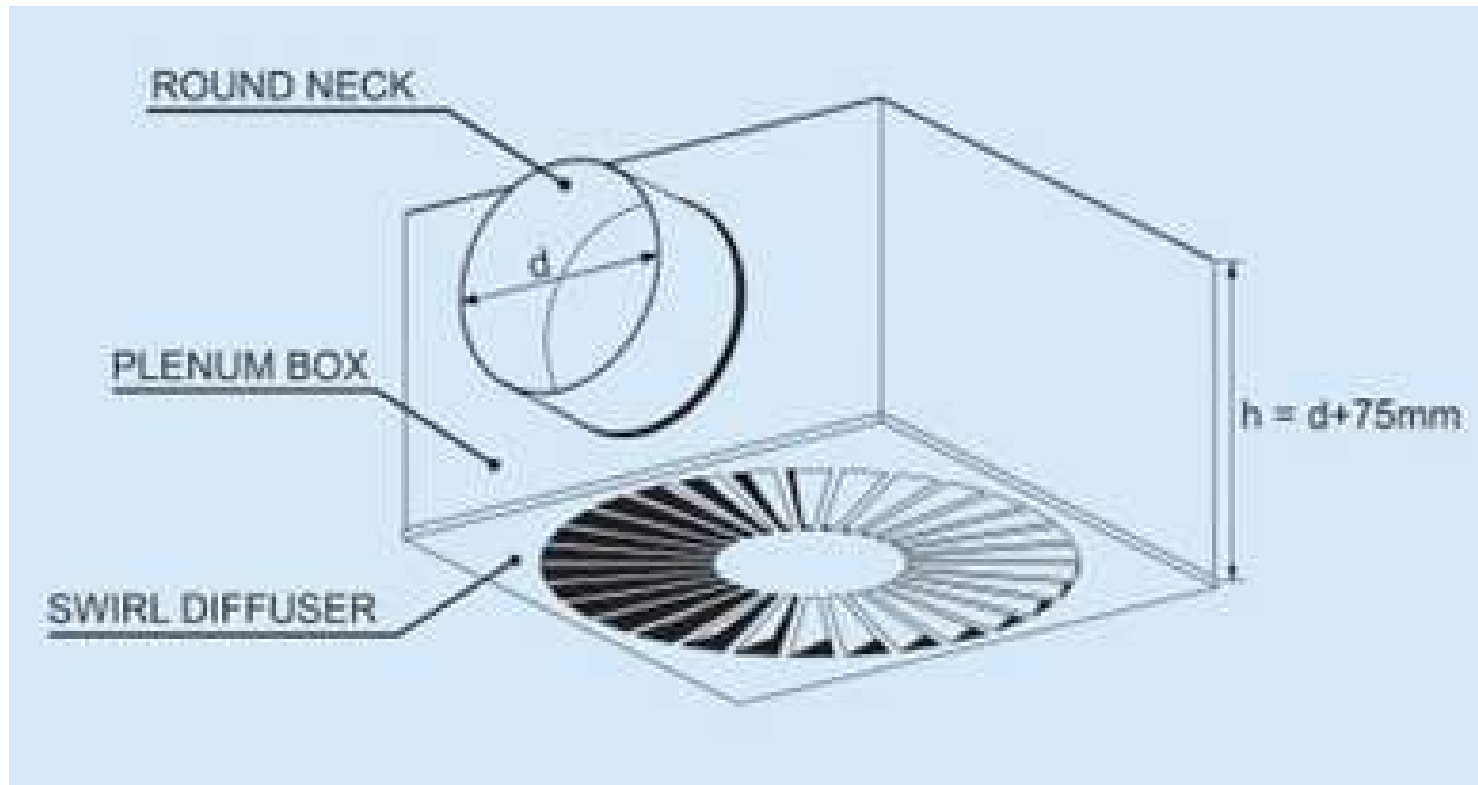
- **Slot width:** 20 mm as standard. 16 mm, 25 mm and non standard sizes available as option.
- **Number of slots available:** 1, 2, 3, 4, 5, 6, 7, 8
- **Length:** Up to 5.8 m available in a single piece.

Slot diffuser

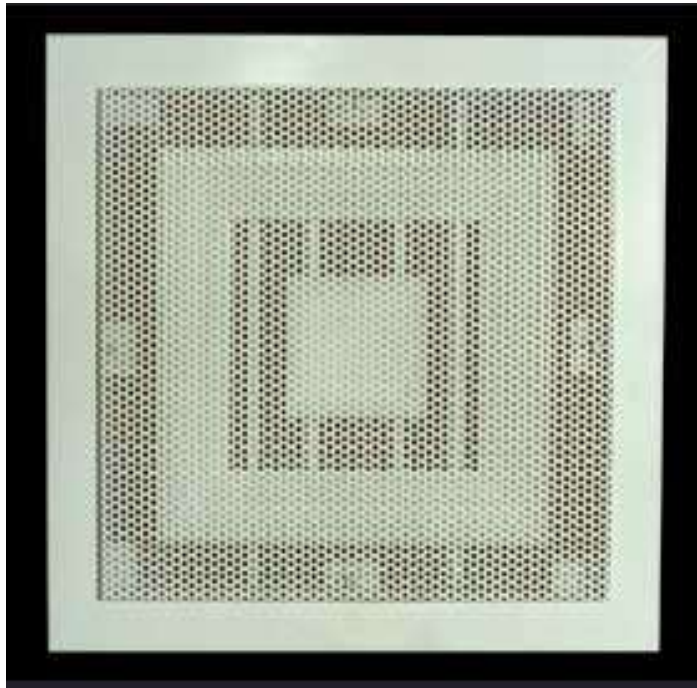


- **Slot width:** 20 mm as standard. 16 mm, 25 mm and non standard sizes available as option.
- **Number of slots available:** 1, 2, 3, 4, 5, 6, 7, 8
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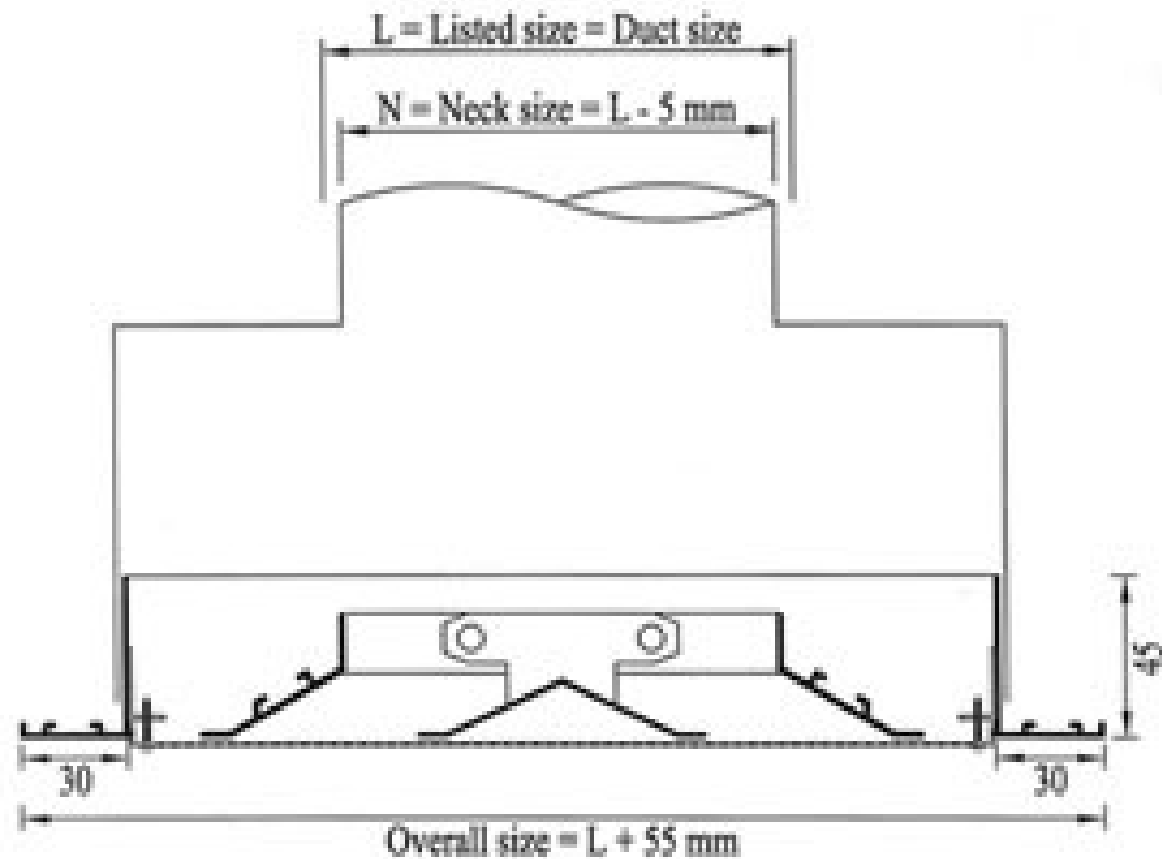
Swirl Diffuser



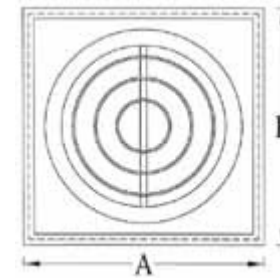
Perforated Ceiling Diffuser



Perforated Ceiling Diffuser



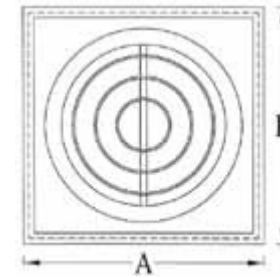
Jet diffuser



- Used in areas where the ceiling is high and large air velocities are needed to reach the occupied space.
- The high volume and long throw of these diffusers makes them suitable for large halls

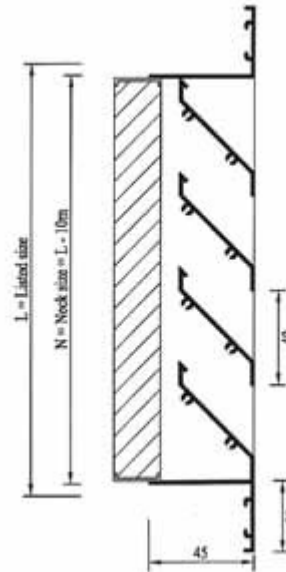
- **For very high ceiling in halls**
- **Long throw**
- **Conical jet**

Exhaust Air Louver



- Prevent rain and dust entering into exhaust duct or fan

Fresh Air Louver

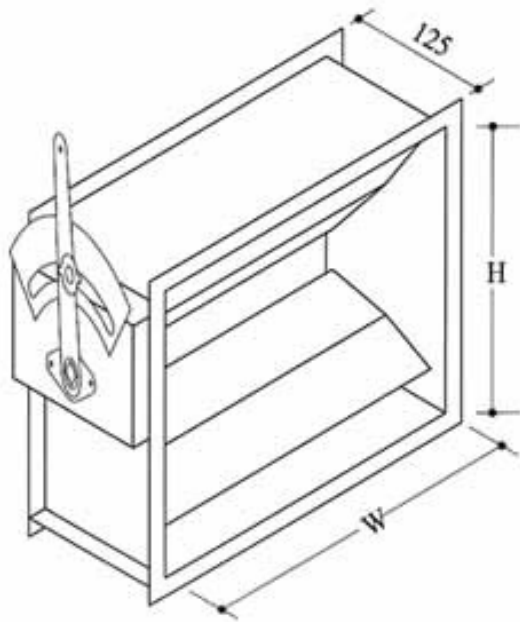


- Prevent rain and dust entering to duct inlet

Volume Dampers

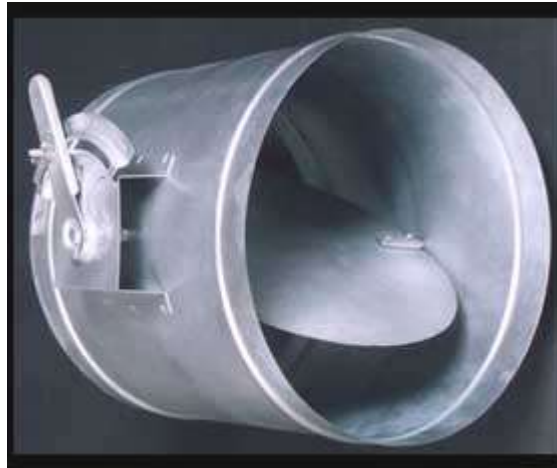
Volume Control Dampers have been designed, engineered for quiet operation for field test and balance. The square design which provides exceptional control of air flow in duct work. Typical applications for the VCD would be handler units, intake, exhaust, mixed air applications. The damper allows the damper to be installed in either direct or reverse operation with the gear driven blades is completely clear free flow area.

Rectangular Volume Dampers



- Controls volume flow rate of air through duct

Circular Damper



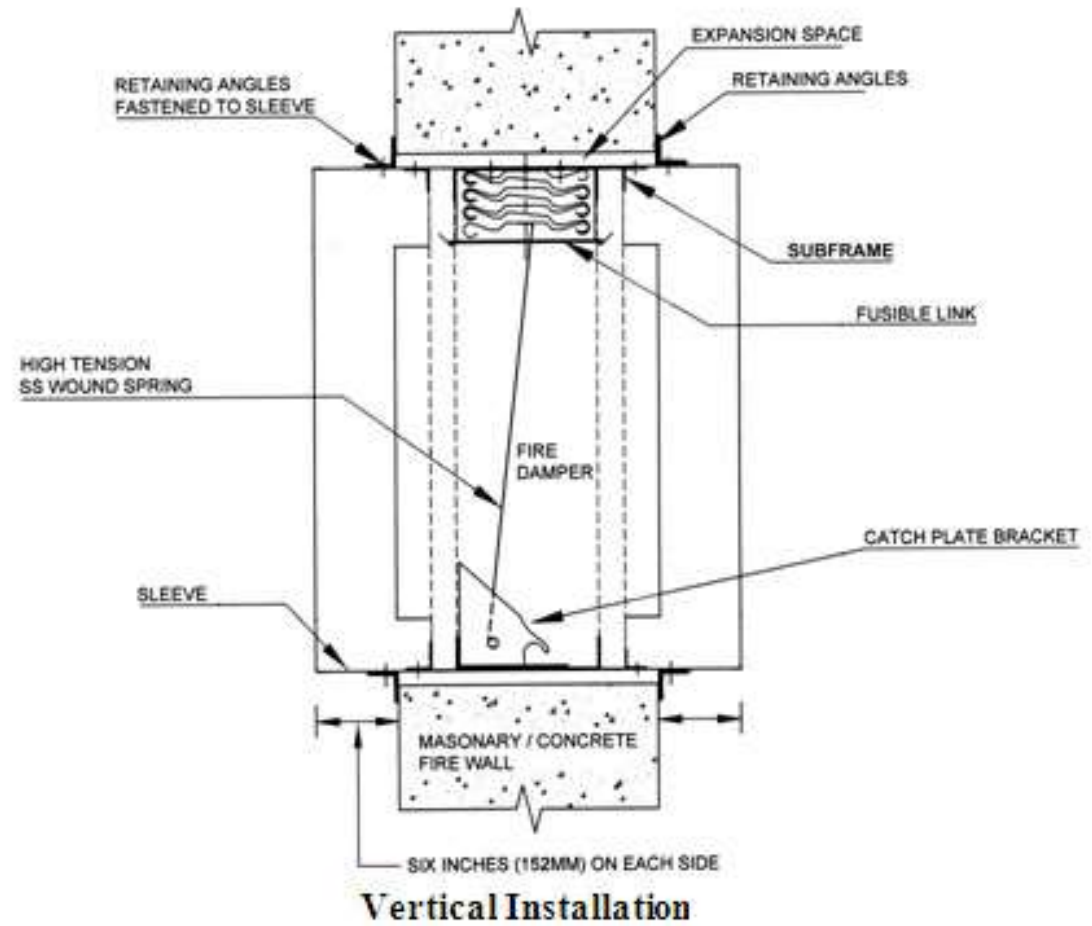
- Controls volume flow rate of air through circular duct

Fire Damper

Fire dampers are passive fire protection products used in HVAC ducts to prevent the spread of fire inside the ductwork through fire-resistance rated walls and floors. A fire damper works when the heat from the fire causes the normal temperature of a room to rise to about 165 degrees Fahrenheit. The fusible link attached to the damper would then melt, causing the damper's door to close. In rooms where the normal temperature of the room is consistently higher, a higher degree fusible link would be attached to the damper. These particular fusible links would melt at a temperature about 212 Fahrenheit. There are two types of fire damper designs used to help prevent the spread of flames, a dynamic fire damper and a static fire damper.



Fire Damper



Fire Damper

- Damper close when fusible link melts
- Link melts at about 70 oC during fire
- The damper prevents the fire from propagating from a room

Sound Attenuator



- Reduces sound level created by fan or AHU

Sound Attenuator Detail

