

SALIENT FEATURES OF RIGID CEILING DIFFUSERS

Square Diffusers supply large volumes of conditioned air at reasonable pressure drop and satisfactory sound levels.

Square diffusers are popularly used when overall dimensions are limited or some times architectural design considerations and by the choice of the client.

Square diffusers have pleasing appearance and synchronize with the ceiling.

In square diffusers, the uniform horizontal jet from outer core guides effective air distribution for wide range of air volumes.

A range of square ceiling diffusers designed to produce 4 way directional air pattern.

Material and construction:

Outer frame is extruded aluminium section cut to length and joined at corners / Deep drawn Alu. sheets

Core is multiframe aluminium sections assembled on aluminium pipe reinforcement.

Core is assembled in outer frame with two diffuser springs for easy removal.

Easy removal of core is necessary to adjust opposed blade damper operation by screw.

Square diffusers sizes are designated by the duct size where they are to be fixed.

Duct size may be 5 mm more than the neck size of diffuser.

Opening size in the ceiling shall be as per column(6) of table given below.

Popular sizes of square diffusers, duct size, neck size and opening size on ceiling are given below for reference.

SQUARE DIFFUSER				DUCT SIZE	CEILING OPENING SIZE
NOMINAL SIZE		NECK SIZE	OUTER SIZE		
Ds mm (1)	Ds inch (2)	Dn mm (3)	Do mm (4)	Ds mm (5)	Co mm (6)
150x150	6"x6"	145x145	293x293	150x150	233x233
225x225	9"x9"	220x220	368x368	225x225	308x308
300x300	12"x12"	295x295	443x443	300x300	383x383
375x375	15"x15"	370x370	518x518	375x375	458x458
450x450	18"x18"	445x445	593x593	450x450	533x533
525x525	21"x21"	520x520	668x668	525x525	608x608
600x600	24"x24"	595x595	743x743	600x600	683x683

Though above sizes are popular and widely used in U A E and GCC countries, other sizes may be manufactured upon customer request.

Tolerances

Following tolerances are recommended to have trouble free assembly and fixing of diffusers.

Diffuser neck size - 5, + 0

Duct size - 3, + 3

Ceiling opening - 0, + 5

RIGID RETURN AIR DIFFUSER (EXTRACT AIR DIFFUSER) - RAD

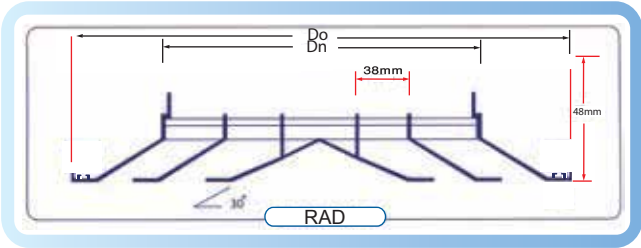


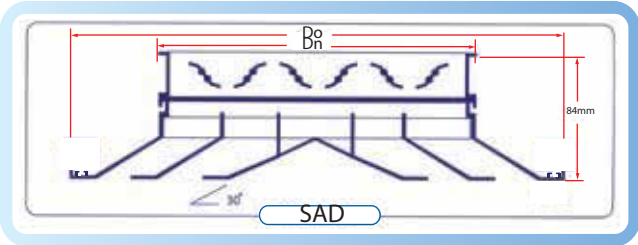
Fig. 8-1

RIGID model RAD is used as Return Air Diffuser
 Product is available in mill finish and all RAL colours

RIGID SUPPLY AIR DIFFUSER - SAD



Fig. 8-2



RIGID model supply air diffuser comes with a screw operated opposite blade damper.
 Diffuser is available in mill finish and all RAL colours.
 Damper is available in mill finish or black matt colour(RAL 9005).

ACCESSORIES FOR USE WITH RIGID SQUARE DIFFUSERS

OPPOSITE BLADE VOLUME CONTROL DAMPER

Air volume control damper with opposite blades is available in all sizes for use with square diffusers. Damper design is such that blade arrangement ensures uniform distribution of air flow through diffuser throat.

It also provides perfect control of air volume from complete open position to complete closed position of blades as shown in figure 8.3 and 8.4.

Opposite blades may be opened or closed by operating a lever with screw driver. Screw operation is illustrated in figure 8.5

This damper is assembled to the diffuser either by aluminium rivets or sheet metal screws or by spring clips.

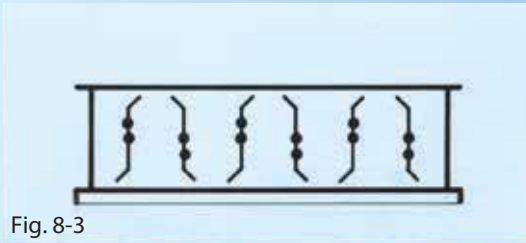


Fig. 8-3

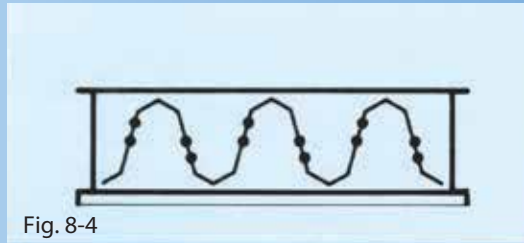


Fig. 8-4

Opposite blade damper - Blades open position

Opposite blade damper - Blades closed position

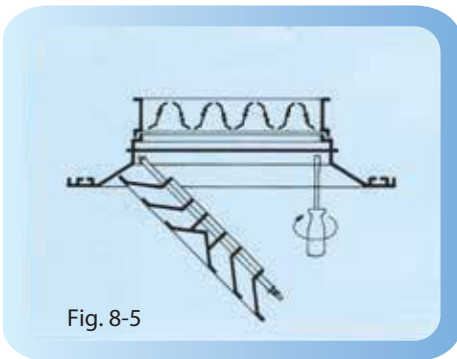
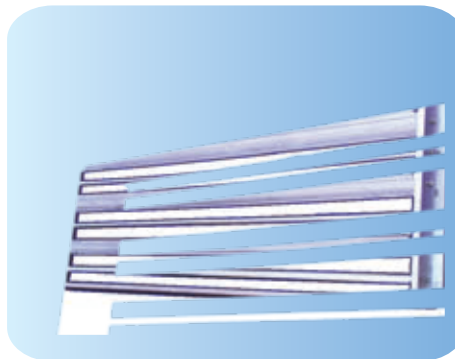


Fig. 8-5

Adjustment of damper blades position with screw driver



ALUMINIUM AIR FILTER

Square diffusers are available with designed aluminium filter fixed. Aluminium filters are available in varying thickness from 20mm to 100mm as per customer requirement.

Efficiency rating of filter	
Particles size	efficiency %
150 - 700	90
75 - 150	60

Application of these diffusers with air filter

Submicroscopic clean areas such as in the electronic, computer, pharmaceutical industry or similar application where hygiene is priority.

Aluminium air filter

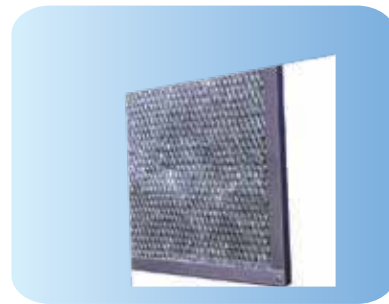


Fig. 8-6

EQUALISING GRID

Equalising grid is made of extruded aluminium frame assembled with individually adjustable louvres, secured in nylon bushes to hold their set position and provide rattle free performance. This accessory equalizes flow of air into neck of diffuser or duct. It also gives directional control of air flow with minimum noise and turbulence.

This accessory can be supplied in all sizes. RIGID Equalizing grids are available in mill finish and black matt finish frame.

RIGID Equalizing grid

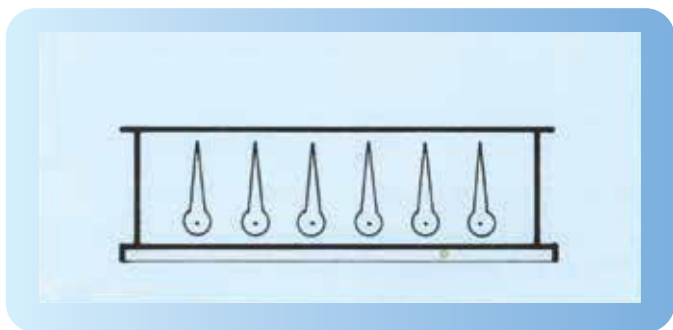
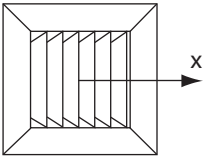
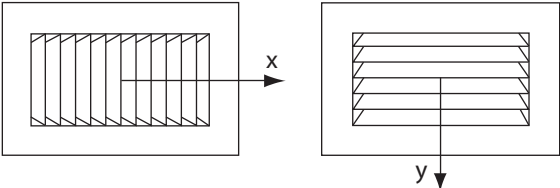
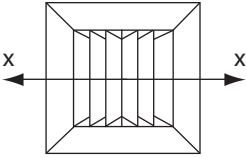
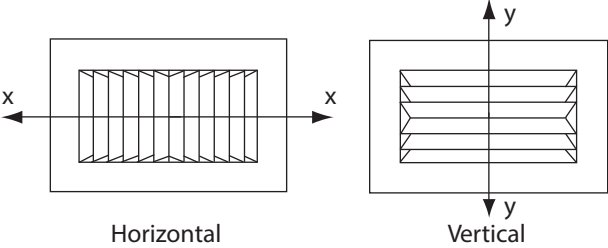
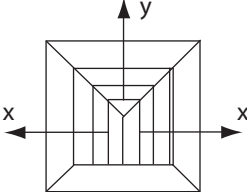
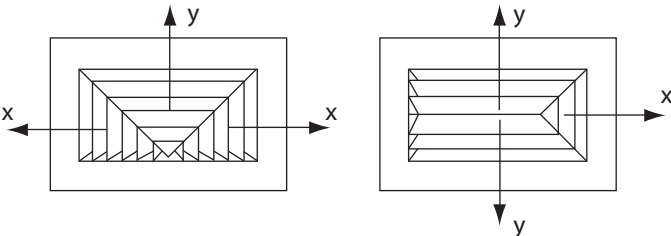


Fig. 8-7

CORE PATTERN FOR CEILING DIFFUSERS (SQUARE AND RECTANGULAR) ONE WAY, TWO WAY, THREE WAY, FOUR WAY

Air pattern	Square	Rectangular
One way	 <p data-bbox="496 837 608 864">Horizontal</p>	 <p data-bbox="836 837 948 864">Horizontal</p> <p data-bbox="1174 837 1254 864">Vertical</p>
Two way	 <p data-bbox="496 1227 608 1254">Horizontal</p>	 <p data-bbox="836 1227 948 1254">Horizontal</p> <p data-bbox="1174 1227 1254 1254">Vertical</p>
Three way		
Four way	