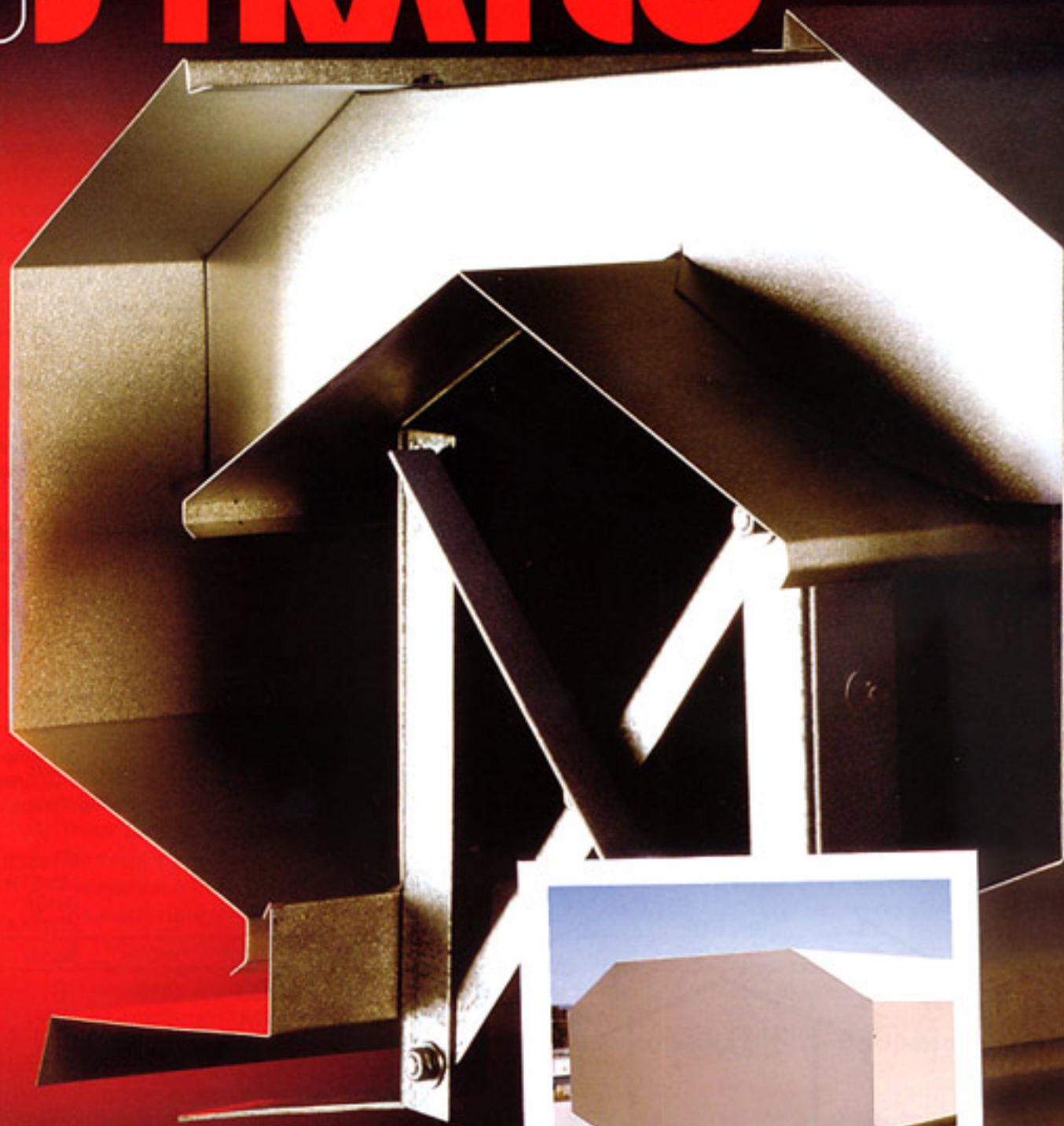


 **STRATCO**



STRATFLO VENTRIDGE

STRATCO

APPLICATIONS

Stratflo Ventrige provides continuous natural ventilation with effective weather protection, under normal weather conditions.

The Ventrige is designed to effectively remove heat, smoke and fumes on an ongoing basis from factories and industrial buildings.

DESIGN THEORY

The Stratflo Ventrige takes maximum advantage of natural stack action, which is a result of temperature differences between the inside and outside of the factory causing pressure variations resulting in air movement. Heat from plant, personnel and also solar heat radiating through the roof and walls, warm the inside air which rises and flows out of the building through the ventrige. It is for this reason that the ventrige should be mounted on the ridge of a sloping structure or above areas of concentrated heat on flat roofed buildings. This hot air is then replaced by cooler air which must be allowed to enter the building through openings at its base.

NOTE: It is important to provide adequate intake openings to assure constant feeding of vents. Free inlet area should equal or exceed 150% of ventilator free area. Locate these inlets at the lowest possible level.

PROFILE

The Stratflo Ventrige has been designed to operate very efficiently. Its design also blends in with different building and structure styles due to its low profile and it is virtually free from maintenance.

ADAPTABILITY

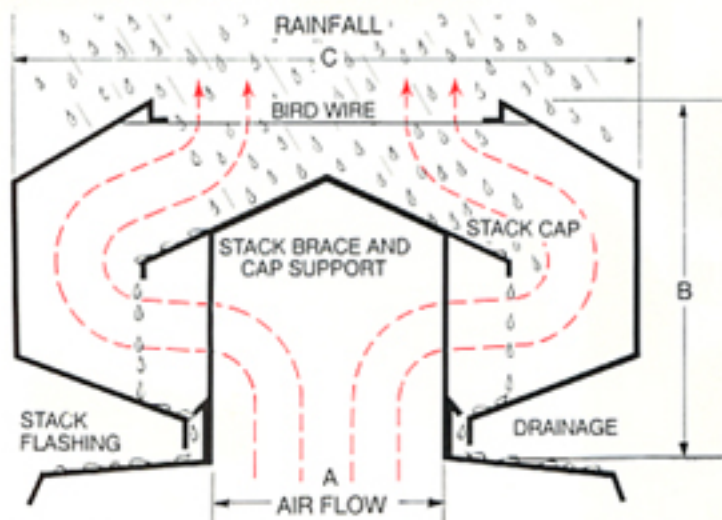
The Ventrige can be fitted to almost any part of the roof, providing the roof supports are installed at the recommended spacings (refer diagram). Numerous units could be fitted over a concentrated area where an exhaust system is essential or it can be installed continuously along the ridge.



The clear spacing 'A' between top purlins must be the ventrige throat width with a tolerance of -0mm to +40mm eg for a 380mm throat ventrige the clear space must be between 380mm and 420mm.

LENGTHS

Lengths are available to suit all applications and should be ordered to make the most efficient use of the designed bracket spacing of 1500mm. Optimum length is 4600mm and maximum recommended length is 7600mm. Consideration should be given to handling and transportation of the material when ordering the required length.



MODEL			MASSES/UNIT LENGTH OF RIDGE VENTILATORS (kg/m)
A THROAT	B HEIGHT	C WIDTH	
150	230	390	8
225	325	575	12
300	425	760	16
380	520	960	18
450	605	1130	25
600	810	1510	31
750	1010	1885	52
900	1210	2260	62

ACCESSORIES

Birdwire mesh can be fitted to the Stratflo Ventrige to stop birds or vermin entering the building through the Ventrige.

MATERIALS

Available in either Zincolume, Galvanised Steel or Colour finish.

ENGINEERED DESIGN

The Stratflo Ventrige has been designed and tested by qualified engineers.

The strength of the Stratflo Ventrige has been designed and tested in accordance with the appropriate Australian Standards (AS 1170 Pt 2 wind loading code, AS 1250 Steel Structure Code). The testing results apply to buildings with a roof pitch of less than 10 degrees and height up to 10 metres.

ADJUSTABILITY

A unique feature of the Stratflo Ventrige is the height adjustable internal bracket. The bracket can be adjusted to compensate for any variations in the roof line caused by sagging due to the distance between support beams. As a result, an attractive horizontal ridge line can be achieved.

MAXIMIZING EFFECTIVENESS

The effectiveness of the Stratflo Ventrige is not dependant on wind power, however wind will further increase the extraction rate.

The most suitable ventridge is dependant on the number of air changes required per hour and the size of the building.

To calculate the suitable ventridge size the usage of the building should firstly be determined and then the relevant number of air changes specified (see table 1). For example a building that is being used as a boiler room will require approximately 25-40 air changes per hour compared to 4-8 air changes per hour for a warehouse.

It is then appropriate to calculate the ventilation rate:

$$\text{FORMULA:} \\ Q = \frac{L \times W \times H \times A}{3600}$$

Where Q = required volume flow rate in m³ per second.
 L = Length of building in metres.
 W = Width of building in metres.
 H = average height of building in metres $\frac{\text{(wall height + ridge height)}}{2}$
 A = required air changes per hour.
 3600 = conversion constant.

For example: to ventilate a building 60 metres long, 30 metres wide and 6 metres high with a required air change rate of 10 air changes per hour (for building to be used for light manufacturing)—

$$Q = \frac{60 \times 30 \times 6 \times 10}{3600} \quad Q = 30 \text{ m}^3 \text{ per second}$$

To select ventilator size of throat FORMULA =

$$\frac{Q}{\text{Length of Ventrige} \times \text{Exhaust Velocity}}$$

Assume effective stack height = 6 metres,
 Assume length of ventridge as 55 metres,
 Temperature difference between outside and inside of ventridge of 6°C,

Then refer to (Table 2) for the exhaust velocity,
 Assuming a wind velocity of 2 m/s.
 Then use 1.32 metres per second, for exhaust velocity

$$\text{FORMULA} = \frac{30}{55 \times 1.32} \quad \text{Ventilator size} = 413\text{mm} \quad \text{Therefore use throat size } 450\text{mm}.$$

SUGGESTED AIR CHANGE RATES FOR TYPICAL BUILDINGS EXHAUST CAPACITIES

TYPES OF BUILDING	AIR CHANGES PER HOUR	KITCHENS AND FOOD PROCESSING	HEAVY MANUFACTURING INDUSTRIES	
PUBLIC HALLS		Bakeries 25-40	Engine and Motor Rooms 15-20	
Assembly Hall	15-20	Breweries 20-30	Forge Shops — cold 16	
Auditoriums	10-15	Commercial Kitchens 20-30	— hot 25-40	
Bowling Alley	10-20	Packing Houses 15-20	Foundries — moulding 40-50	
Churches	10-15	POWER PLANT AND ASSOCIATED BUILDINGS		
Class Rooms	15-20	Boiler Rooms 25-40	Pouring and Core Room 60-70	
Restaurants	20-30	Power Houses (factor of power steam loss) 12-15	Furnace Rooms (factor of heat loss)	
Theatres and Cinemas	15-20	Sub-stations (factor of power loss)	Galvanising Shops 12-20	
Toilet Rooms	12-15	Transformer bays (factor of power loss)	Heat Treatments 30-40	
POULTRY SHEDS		CLOTHING INDUSTRIES		
Brooder Houses (factor of bird numbers)		Dry Cleaning 30-40	Machine Shops 6-10	
Hen Houses (factor of bird numbers)		Dye Houses 40	Rolling Mills 30-40	
Incubator Rooms 8-10		Laundries — ironing 30-40	GENERAL INDUSTRIES	
		— washing 20-30	Motor Garages 10-12	
			Light Manufacturing 10-12	
			Warehouses 4-8	

EXHAUST VELOCITY (m/s)

T diff. Exhaust k(°C)	Effective Stack Height m	Wind Velocity m/s				T diff. Exhaust k(°C)	Effective Stack Height m	Wind Velocity m/s			
		0	1	2	3			0	1	2	3
3	3	0.31	0.66	1.01	1.37	9	3	0.53	0.88	1.24	1.59
	6	0.43	0.79	1.14	1.50		6	0.75	1.10	1.46	1.81
	9	0.53	0.88	1.24	1.59		9	0.91	1.27	1.62	1.98
	12	0.61	0.96	1.32	1.67		12	1.06	1.41	1.77	2.12
	15	0.68	1.04	1.39	1.75		15	1.18	1.54	1.89	2.25
6	3	0.43	0.79	1.14	1.50	12	3	0.61	0.96	1.32	1.67
	6	0.61	0.96	1.32	1.67		6	0.86	1.22	1.57	1.93
	9	0.75	1.10	1.46	1.81		9	1.06	1.41	1.77	2.12
	12	0.86	1.22	1.57	1.93		12	1.22	1.57	1.93	2.28
	15	0.97	1.32	1.68	2.03		15	1.36	1.72	2.07	2.43

The above velocities are indicative only and when used in the formula shown will determine approximate ventridge throat sizes.

MANY COLOUR OPTIONS

Stratco's Stratflo Ventridge is available in galvanised and zincalume finish. A full range of colour finishes are also available to suit any building design.

Off White

Bronze Olive

Gold

Mist Green

Weathered Copper

Autumn Red

Light Brown

Beige

NOTE: Please contact your nearest Stratco office for other colours as colour availability varies between states.

INSTALLATION INSTRUCTIONS

Stratflo Ridge Ventilators are supplied in an unassembled form for ease of transport, and are erected on site at the time of roof construction.

The various ventridge components are fixed to the roof by means of brackets located at a maximum of 1500mm centres.

The assembly procedure is as follows:

1. The brackets are bolted together using 8mm dia. x 25mm hex head bolts as detailed in Fig. 1.

The brackets are slotted to allow adjustment of the height of the ventridge.

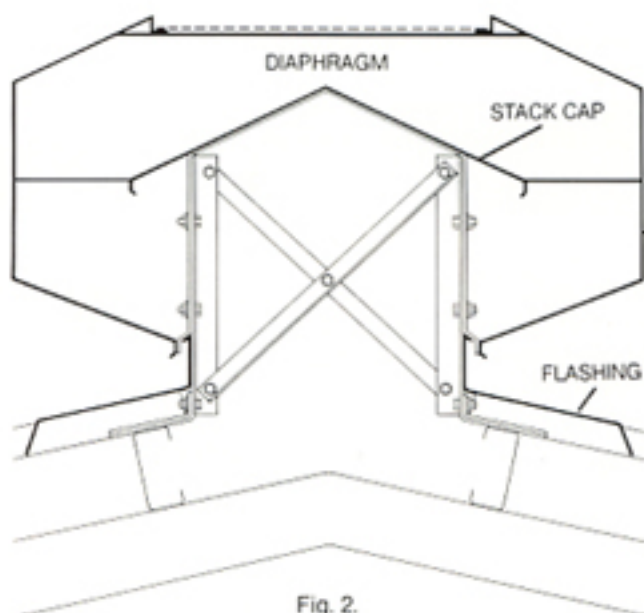


Fig. 2.

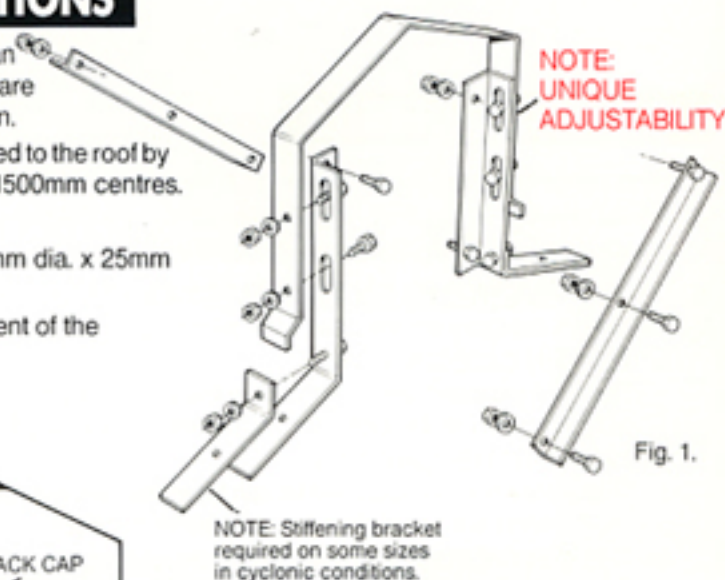


Fig. 1.

2. The brackets are screwed to the purlins using two 12-14 x 20 Teks® screws to each side through predrilled clearance holes in the bracket.

The brackets are fixed at maximum centres of 1500mm.

3. When all the brackets are fixed in position, the height is adjusted to a string line.

The sheetmetal-components of the ventridge are now attached to the bracket as shown in Fig. 2.

3a. Notch the apron flashing to suit the roofing profile and fix to both the bracket and the roof sheeting.

Fixings. 1 only 10 x 16mm TekS® screw to each bracket.
1 only 10 x 16mm TekS® screw to every second rib of roof sheeting.

The apron flashing upstand must be located hard up against the underside of the bracket tab as shown in Fig. 3.

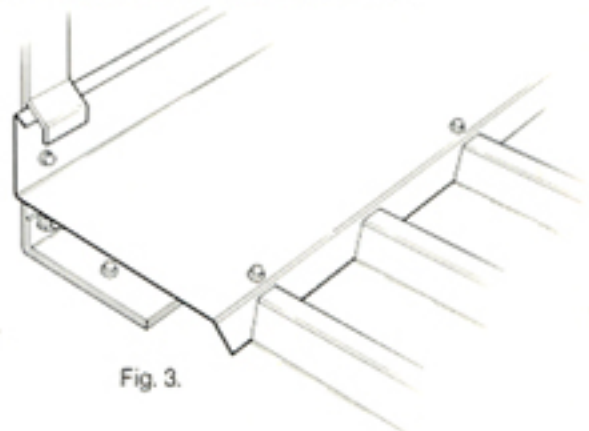


Fig. 3.

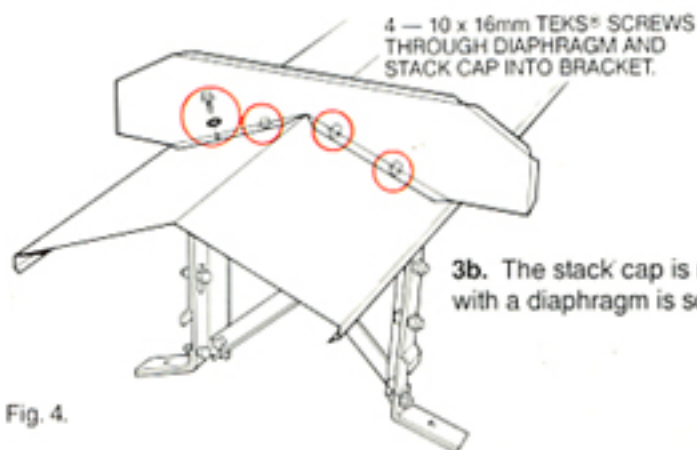


Fig. 4.

3b. The stack cap is now placed on top of the brackets and together with a diaphragm is screwed to each bracket as shown in Fig. 4.

3c. The shrouds are attached at point A to the diaphragm and at point B to the bracket tab as shown in Fig. 5.

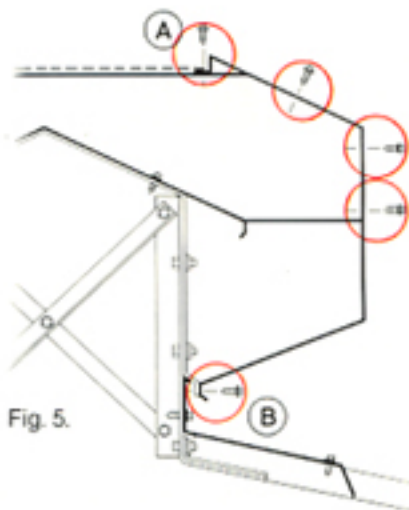


Fig. 5.

ORDERING DETAILS

When ordering your Stratflo VentrIDGE please state the:

A) Throat size that is required, B) The location, C) Terrain category where it will be installed, D) Pitch of roof.

1. The throat size is easily determined from information contained in this brochure.

2. The location is the town, city and state where it will be installed.

3. The terrain category will be one of the following:

a) TERRAIN CATEGORY ONE

This is an exposed terrain with only a few or no buildings or obstructions. The average height of any obstruction or building would be less than 1.5 metres surrounding the structure or proposed site.

b) TERRAIN CATEGORY TWO

This is also open or exposed terrain however, has well scattered buildings or obstructions. These buildings or obstructions are generally 1.5 to 10 metres in height.

c) TERRAIN CATEGORY THREE

This terrain has many closely spaced buildings or obstructions, usually the size of domestic houses.

d) TERRAIN CATEGORY FOUR

This terrain has many large high closely spaced buildings or obstructions.

4. The pitch of the roof in degrees.

DRAFT SPECIFICATION

"Ventilators shall be Stratco's Stratflo VentrIDGE of the sizes and lengths indicated on the drawings (or state size) supplied by Stratco.

Ventilators shall be weather resistant under normal operating conditions capable of withstanding a wind loading of _____ m/s in wind category 1/2/3/4 under cyclonic/non cyclonic conditions. Water entering the top of the ventridge under normal wind conditions will be carried to the outside through drainage passages.

Ventilators shall be manufactured to the required lengths and material thicknesses in accordance with manufacturer's instructions.

Birdwire will (will not) be fitted."