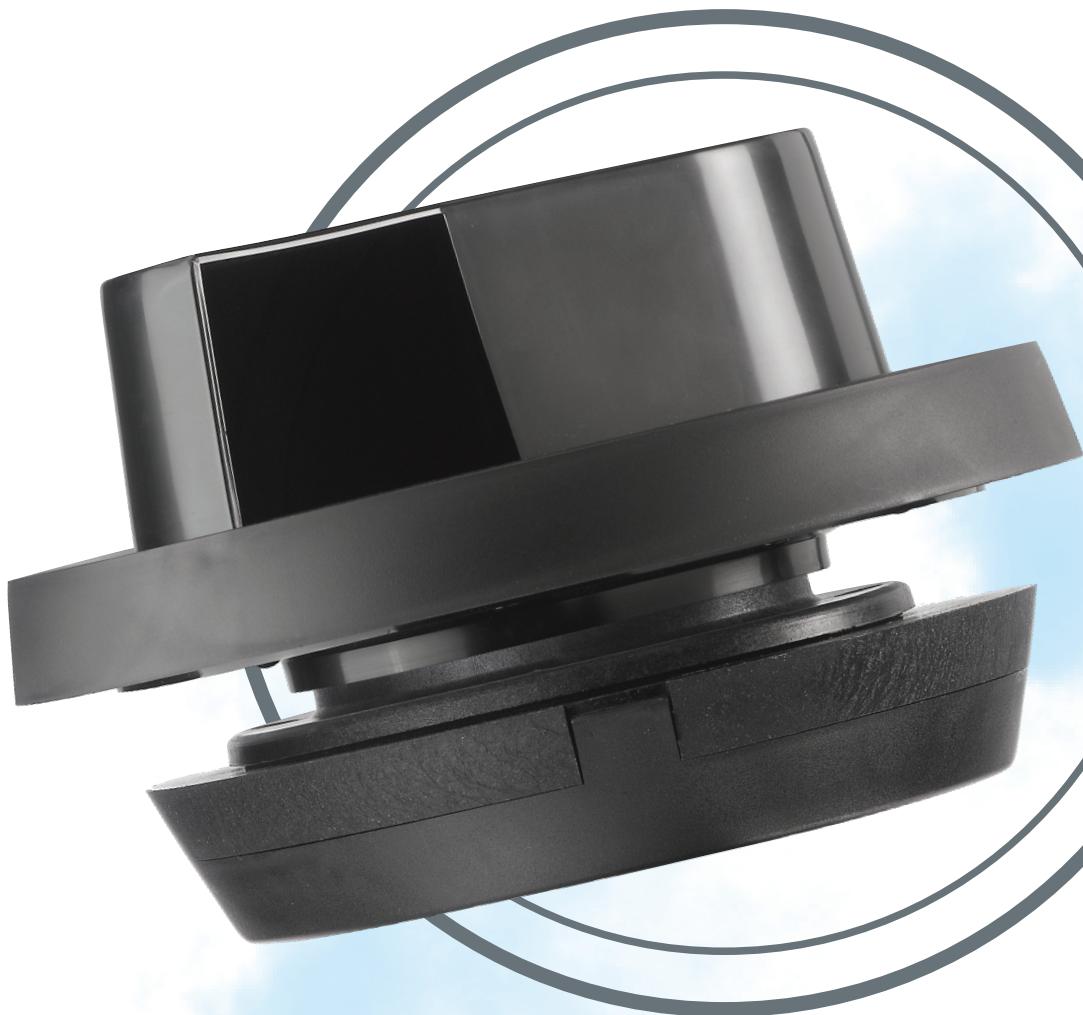


# Flettner '2000'

The definitive roof ventilator  
Le ventilateur de toit ultime  
El ventilador de techo definitivo



#### Extracts:

- Fumes
- Flammable gases

#### Extrait:

- Émanations
- Gaz inflammables

#### Extractor de:

- Humos
- Gases inflamables

#### Combats:

- Excess heat
- Condensation
- Odours

#### Combat:

- Excès de chaleur
- Condensation
- Odeurs

#### Combate:

- Calor Excesivo
- Condensación
- Malos Olores



- Because safety matters
- La sécurité avant tout
- La seguridad es esencial



# **Safety is no accident**

## **Always fit a Flettner**

Good ventilation is vital ....

- Fumes and flammable gases can kill.
- Excessive heat causes driver fatigue.
- Condensation compromises all-round vision.

Owners and operators of commercial vehicles have a duty of care to their employees and a legal responsibility for the safety of the public.

The provision of adequate ventilation is mandatory in most countries.

The Flettner 2000 roof ventilator is a simple, easy to fit and highly cost-effective solution.

Never compromise with safety - fit a Flettner!

- |                  |   |
|------------------|---|
| <b>Extracts:</b> | <ul style="list-style-type: none"><li>• Fumes</li><li>• Flammable gases</li></ul>                     |
| <b>Combats:</b>  | <ul style="list-style-type: none"><li>• Excess heat</li><li>• Condensation</li><li>• Odours</li></ul> |

# **Priorité à la sécurité**

## **Choisissez Flettner**

Une ventilation adéquate est vitale....

- Les vapeurs et les gaz inflammables peuvent être mortels.
- La chaleur excessive épuise le conducteur.
- La condensation obstrue la vue.

Les propriétaires et opérateurs de véhicules commerciaux ont un devoir de diligence envers leurs employés et une responsabilité légale pour la sécurité du public.

Une ventilation adéquate est obligatoire dans la plupart des pays.

Le ventilateur Flettner 2000 est une solution simple, facile à installer et très économique.

Prenez la sécurité au sérieux – installez un ventilateur Flettner!

- |                 |  |
|-----------------|--|
| <b>Extrait:</b> | <ul style="list-style-type: none"><li>• Émenations</li><li>• Gaz inflammables</li></ul>                    |
| <b>Combat:</b>  | <ul style="list-style-type: none"><li>• Excès de chaleur</li><li>• Condensation</li><li>• Odeurs</li></ul> |

## **Flettner - World Leader**

Flettner Ventilator Limited is the world leader in wind-powered ventilators.

Known for their amazing reliability Flettner vents are used around the globe on virtually every kind of vehicle not to mention dozens of other application from motor caravans to mountain cabins.

Engineered for sheer durability and toughness, the ventilators can cope with extreme conditions from equatorial downpours to Antarctic ice.

Always look for the 'Genuine Flettner' logo - the badge of reliability.

### **The Flettner 2000 Ventilator**

- **Tough**
- **Durable**
- **Dependable**
- **Cost-effective**

## **Flettner – Le Leader Mondial**

Flettner Ventilator Limited est le leader dans le domaine des ventilateurs de toit.

Reconnus pour leur incroyable fiabilité, les ventilateurs Flettner sont utilisés partout dans le monde sur tous les types de véhicules, et pour des douzaines d'autres applications comme les caravanes motorisées et les chalets de montagne.

Conçus pour une durabilité et une endurance absolues, les ventilateurs peuvent affronter des conditions extrêmes, des pluies équatoriales aux grands froids de l'Antarctique.

L'authentique logo Flettner : un gage de fiabilité.

### **Le Ventilateur Flettner 2000:**

- **Résistant**
- **Durable**
- **Fiable**
- **Économique**



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**www.flettner.co.uk**  
**sales@flettner.co.uk**



## Seguridad ante todo Instale siempre Flettner

La buena ventilación es vital ....

- El humo y los gases inflamables pueden matar.
- El exceso de calor fatiga al conductor.
- La condensación nubla la visibilidad.

Tanto dueños como operadores de vehículos comerciales son responsables por el bienestar de sus empleados y de la seguridad del público.

La ventilación adecuada es obligatoria en la mayoría de los países.

El ventilador Flettner 2000 es una solución efectiva, de bajo costo y fácil instalación

¡Cuide su integridad física instalando un Flettner!

<b>Extractor de:</b>	<ul style="list-style-type: none"><li>• Humos</li><li>• Gases inflamables</li></ul>
<b>Combate:</b>	<ul style="list-style-type: none"><li>• Calor excesivo</li><li>• Condensación</li><li>• Malos olores</li></ul>



**THINK SAFETY -  
FIT A FLETTNER!**

**PENSEZ SÉCURITÉ -  
CHOISISSEZ FLETTNER!**

**PIENSE EN SU SEGURIDAD -  
¡INSTALE UN FLETTNER!**



## Flettner – Líder Mundial

La empresa Flettner Ventilator Ltd. es líder mundial en ventilación propulsada por el viento.

Bien conocidos por su sorprendente durabilidad, los ventiladores Flettner son utilizados internacionalmente en todo tipo de vehículos así como otras aplicaciones tales como caravanas motorizadas y cabañas.

Diseñados para aguantar y durar bajo condiciones extremas desde tormentas tropicales hasta el hielo antártico.

Siempre busque el logotipo genuino de Flettner, la marca de la confiabilidad.

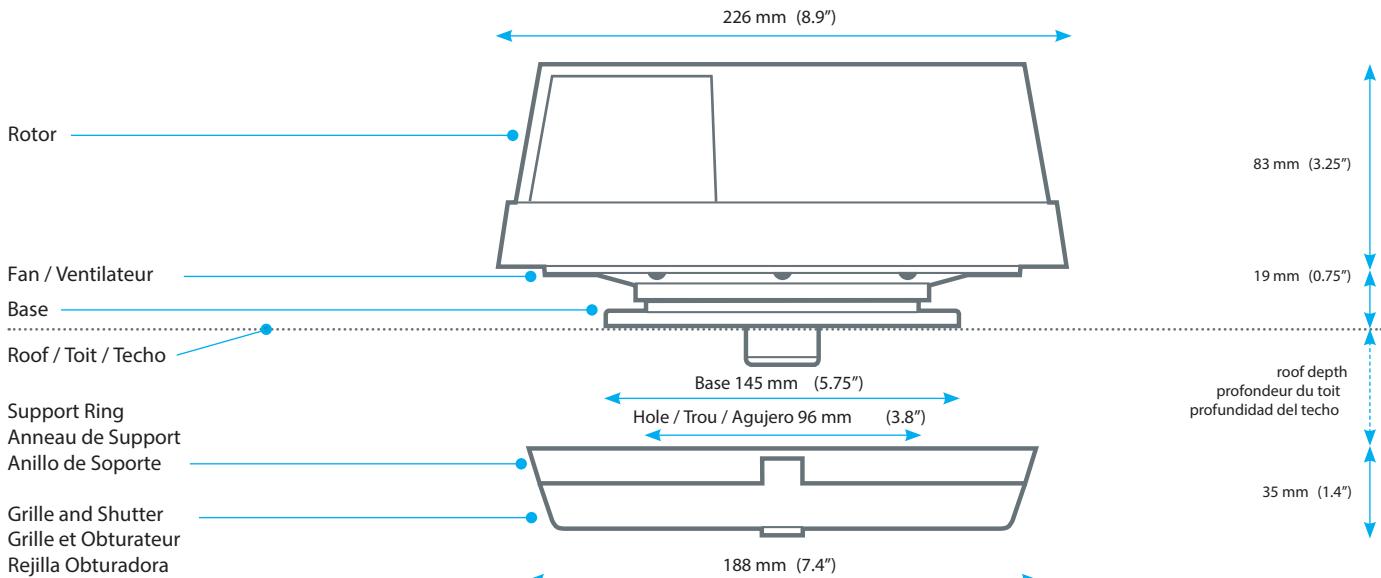
### El Ventilador Flettner 2000:

- Fuerte
- Durable
- Fiable
- Valor por su dinero



[www.flettner.co.uk](http://www.flettner.co.uk)  
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## Dimensions / Dimensiones



## Extraction Figures / Chiffres d'Extraction / Tasas de Extracción

Wind speed Vitesse du vent Velocidad del viento		Air extraction rate Taux d'extraction d'air Tasa de extracción de aire			
MPH	km/h	CFM	ft <sup>3</sup> /h	m <sup>3</sup> /min	m <sup>3</sup> /h
10	16	8	480	0.23	13.8
20	32	19	1144	0.54	32.4
30	48	30	1780	0.84	50.4
40	64	41	2460	1.16	69.6
50	80	52	3136	1.48	88.8
60	96	63	3793	1.79	107.4
70	112	75	4513	2.13	127.8

Source: MIRA Ltd

## Ribbed Roofs / Toits Nervurés / Techos Acanalados

The Flettner '2000' can be fitted to vehicles with ribbed roofs provided that the gap between each rib is at least 145mm / 5.75". An alternative model, the Flettner TCX-2™ with a narrow base option, can be fitted to roofs where the gap between ribs is as small as 108mm / 4.25".

Le Flettner '2000' peut être adapté aux véhicules à toits nervurés, à condition que l'espace entre chaque nervure mesure au moins 145 mm ou 5,75 po. Un autre modèle à base étroite, le Flettner TCX-2™, peut être installé sur des toits où l'espace entre les nervures est aussi petit que 108 mm ou 4,25 po.

El ventilador Flettner '2000' puede montarse en vehículos con techo acanalado siempre y cuando el espacio entre canales sea de por lo menos 145mm / 5.75". Existe un modelo alternativo, el Flettner TCX-2™ el cual tiene una base angosta, puede montarse en techos donde el espacio mínimo entre canales sea de 108mm / 4.25".

Air extraction rates may vary according to the positioning of the ventilator. It is the responsibility of the customer to ensure that the extraction rate achieved is adequate for the application.

Les taux d'extraction d'air peuvent varier selon la façon dont le ventilateur est placé. Il est de la responsabilité du client de s'assurer que le taux d'extraction soit adéquat pour l'application.

La tasa de extracción de aire puede variar dependiendo del lugar donde se haya instalado el ventilador. Es responsabilidad del cliente el asegurarse de que la tasa de extracción obtenida sea la adecuada para cada aplicación.



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# Flettner '2000' Ventilator

Thank you for purchasing the definitive wind powered rotary ventilator. The Flettner '2000' provides maintenance-free air extraction and is designed to be tough and durable. Properly installed, it will provide years of problem-free ventilation.

## VERY IMPORTANT -

### Read this first

Adequate ventilation is vital. It is the responsibility of the fitter and the customer to establish the amount of air extraction that is required for each application, and to ensure that the positioning and the number of ventilators fitted are suitable

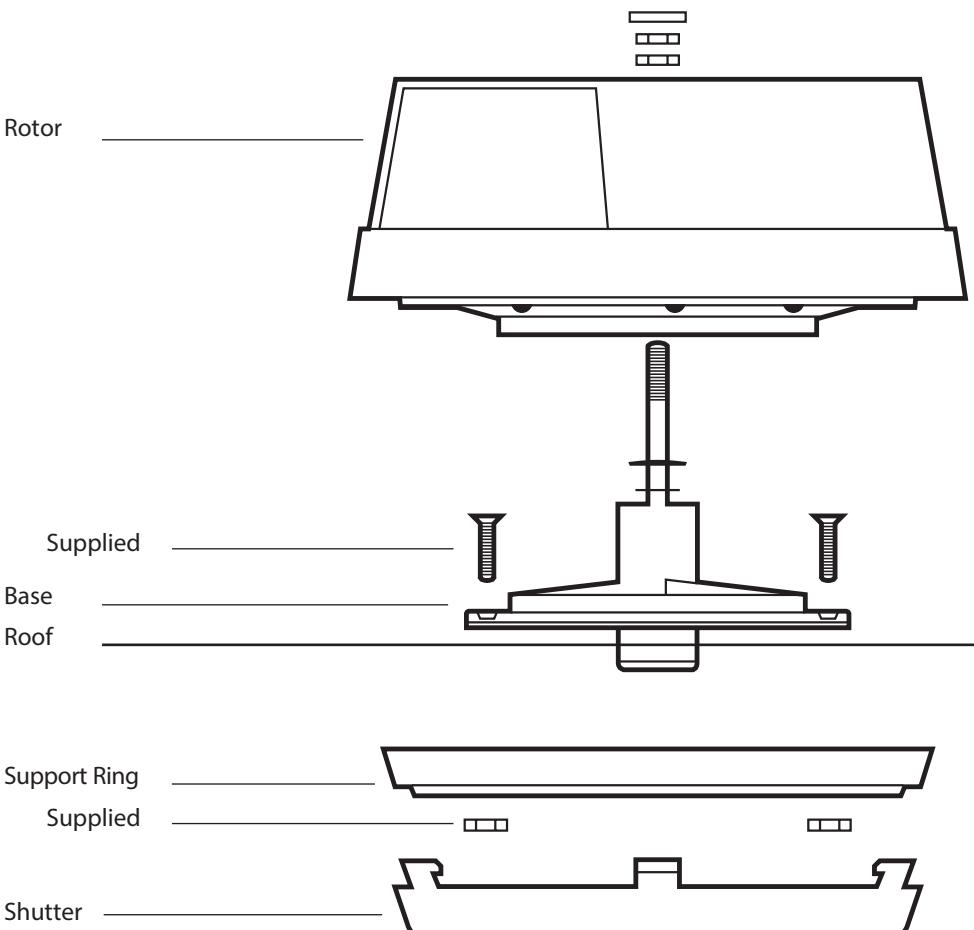
As a guideline only air extraction rates measured by MIRA Ltd. are published on the Flettner Ventilator web site: [www.flettner.co.uk](http://www.flettner.co.uk). These are provided purely for illustrative purposes as the extraction rates achieved are dependent upon the precise configuration of each application.

The performance of the Flettner '2000' will be impaired if it is fitted to a sealed vehicle compartment or to a building with no independent air inlet. In such situations an air inlet such as a grille should be fitted in addition to the Flettner '2000' in order to provide an adequate path for air extraction to occur.

If the ventilator is used to extract hazardous vapours then continuous ventilation is required. In such circumstances the shutter should not be fitted in order to prevent accidental closure.

## Figure 1 - Contents

The following items are supplied as part of the Flettner 2000 Ventilator.



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## Fitting Instructions

If the ventilator is to be fitted to a ribbed section of a roof ensure that the base of the ventilator can sit flush on the roof surface between the ribs, and that the position chosen will permit the support ring (if fitted) to sit flush with the underside of the roof.

The Flettner '2000' ventilator cannot be fitted without adaptation to roofs where the spacing between raised ribs is less than 5.75" (145mm). However an alternative model, the Flettner TCX-2™ ventilator (narrow base version), can be fitted to roofs where the spacing between raised ribs is as small as 4.25" (108mm). See [www.flettner.co.uk](http://www.flettner.co.uk) for details.

For double skinned roofs an adaptor (optional extra) should be used.

1. Prise the grey disc from the top of the rotor using a small screwdriver
2. Remove the locking nut using a 1/2 inch or 13mm socket spanner (socket wrench) or box spanner. To facilitate disassembly the locking nut has not been tightened down fully. However it must be fully tightened when the ventilator is fitted.
3. Hold rotor and unscrew second nut using a screwdriver inserted in the slot at the top of the spindle.  
**IMPORTANT** : Turn the screwdriver clockwise to release the nut.
4. Using the template provided (figure 2 ) mark out on a flat section of the roof the hole pattern - four fixing holes and one large central hole. Ensure that the position chosen allows sufficient clearance in each direction for the base and rotor to be located properly.
5. Cut the large 3.78"(96mm) diameter circular hole as shown on figure 2 . Remove any burr from the cut edges.
6. Drill the four 0.2" (5mm) diameter fixing holes. The centres of the opposite pairs of holes should be 4.88" (124mm) apart, equally spaced on either side of the large hole on a line passing through the centre of it.
7. Use an appropriate rust-inhibiting preparation to treat any bare metal surfaces.
8. Place the base (with gasket in place) on the roof and push the four bolts provided through the fixing holes. The length of the bolts should be chosen to avoid their obstructing the shutter, if fitted.
9. Offer up the support ring, if fitted, to the underside of the roof passing the bolts through the four holes. Where roof is double skinned an adaptor (optional extra) or collar can be used to bridge the roof cavity between the ventilator and the support ring.
10. Tighten the four bolts using the nuts provided.
11. Clip shutter to the support ring.  
(Note: the shutter is not essential to the operation of the ventilator and can be omitted if continuous ventilation is required).
12. Place rotor on the shaft and secure with both nuts. The lower nut should be hand threaded onto the spindle clockwise and then gently tightened into position by turning the spindle anti-clockwise with a screwdriver. Firmly tighten the locking nut (upper nut) clockwise onto the lower nut.
13. Press the grey disc home into position.



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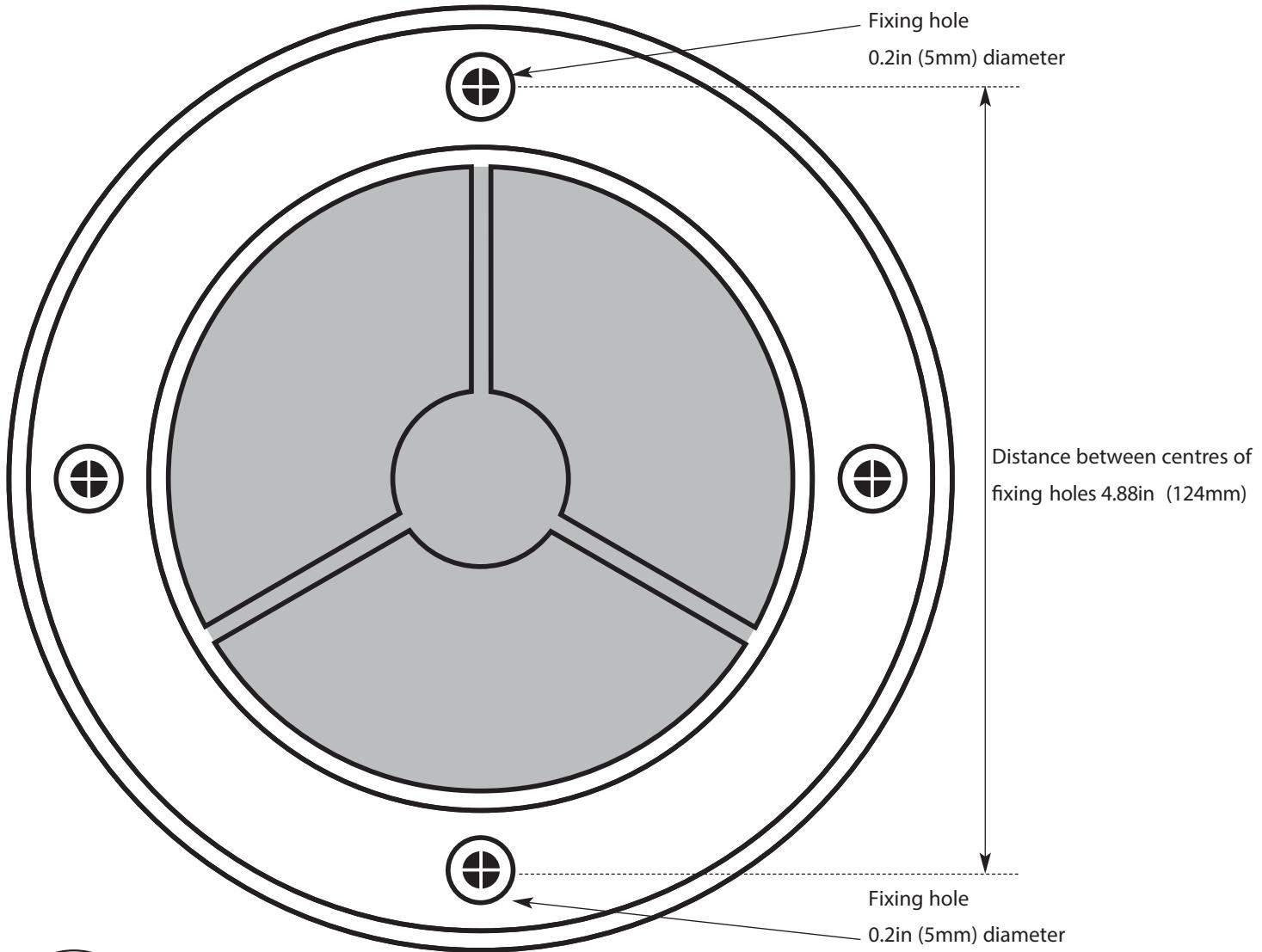
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Figure 2 - Actual Size Template for Flettner '2000' Base

Key

⊕ Small fixing holes

Extent and position of large hole to be cut



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