

Destratification Fans

Industrial & Commercial Heating Systems



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Powrmatic CECx Calecon Fans

The Powrmatic CECx is a high velocity heat recovery unit with low running costs and requiring minimal maintenance. It is a basic law of physics that hot air rises and in high roofed buildings this will cause a temperature gradient with hot air at roof level and cooler air closer to the floor.

The CECx range of destratification fans are designed for higher level mounting and will automatically recirculate high level hot air, reducing stratification and associated heat losses. CECx fans are specifically designed to lower the fuel consumption of space heating systems and at the same time, improve comfort levels.

The displacement of warm air from the roof void down into the working zone converts wasted heat into useful heat reducing fuel consumption up to 15% depending upon the building height and type of heating system.



Models Available

- CECx 1400
- CECx 2250
- CECx 3350
- CECx 4500
- CECx 6500

Peace Of Mind

- More than sixty years experience in warm air technology
- 1 year parts only warranty
- Full technical support

Application

CECx destratification fans are often used in conjunction with Powrmatic warm air heating systems. Mounted at high level via the optional fixing kit the fans are light in weight and discharge downwards via the four-way adjustable louvred grille.

Automatic Controls

Automatic thermostatic controls inhibit fan operation until the roof space temperature reaches a pre-determined level, preventing the premature discharge of cold air.

Construction

CECx Calecon fans comprise of a panel box construction onto which is a resiliently mounted axial fan set which discharges warm air through an four-way adjustable louvred grille.

Hot Air Recirculation

CECx destratification fans will automatically recirculate high level hot air, reducing stratification and associated heat losses, returning useful heat back into the working zone and saving on energy and operating costs.

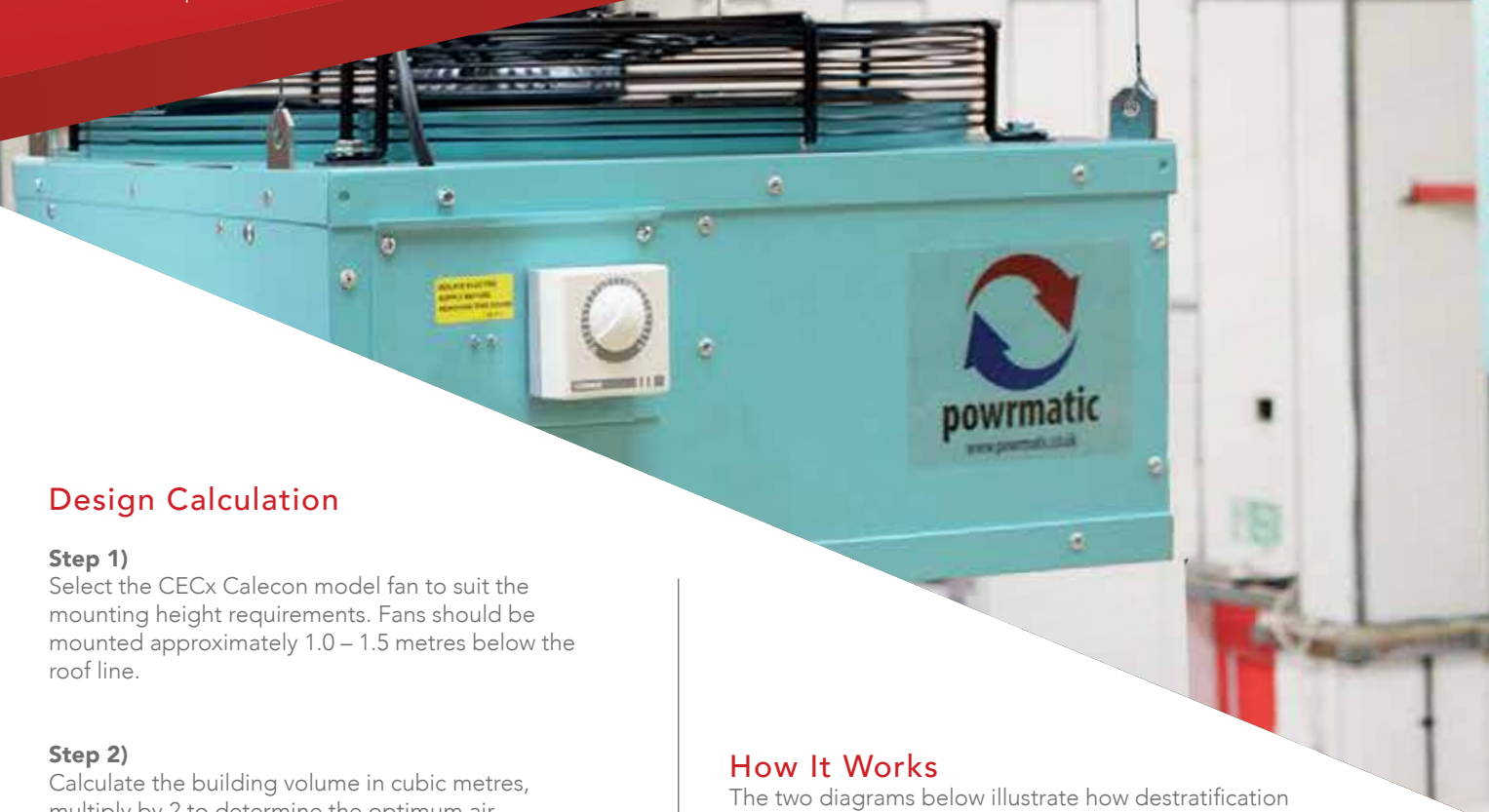
Installation

The CECx fans can be suspended via the optional CECx Fixing kit which can be installed up to six times faster than traditional hanging systems. There is no requirement for nuts, bolts, clamps or other accessories. These fixing kits are strong, safe, industry approved with a 5:1 safety factor load rating and aesthetically discreet and lightweight.

The CECx fans are supplied ready for operation and after mounting require only the connection of a suitable electrical supply.

TYPICAL APPLICATIONS

- Warehouses
- Factories
- Garage Workshops
- Distribution / Logistic Centres
- Aircraft Hangars
- Horticultural & Garden Centres
- Showrooms
- Retail Shops



Design Calculation

Step 1)

Select the CECx Calecon model fan to suit the mounting height requirements. Fans should be mounted approximately 1.0 – 1.5 metres below the roof line.

Step 2)

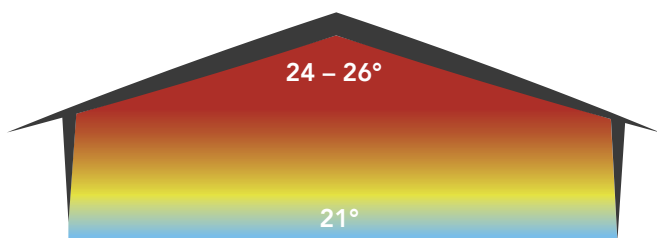
Calculate the building volume in cubic metres, multiply by 2 to determine the optimum air displacement.

Step 3)

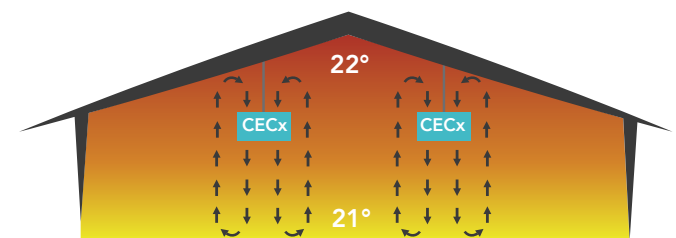
To calculate the number of fans required divide the result of Step Two by the fan displacement (m³/h) shown in the table on page 6.

How It Works

The two diagrams below illustrate how destratification fans can effectively distribute heat throughout the space so that stratification is minimised and there is only a very small temperature gradient between the working zone and the roof space. The ability of the destratification system to reduce the temperature of the air in the roof space also reduces the rate of heat loss through the roof.



ENVIRONMENT WITHOUT DESTRATIFICATION



ENVIRONMENT WITH DESTRATIFICATION

Temperatures shown are for a typical building

(The diagrams above are for illustration purposes)

CUSTOMER BENEFITS

- Improved comfort for workforce
- Significantly reduce building heating and cooling costs
- Recycles heating from internal processes
- Colour (RAL) options
- Fast and easy to install, with no ducting required
- Simple, quiet and low-maintenance
- Manufactured in the UK

Powrmatic HCF Sweep Fan

HCF low velocity impeller de-stratification fans are specifically designed to lower the fuel consumption of space heating systems. The gentle displacement of warm air from roof level down into the working zone converts wasted heat into useful heat reducing fuel consumption.

An additional benefit is the ability of the fans to enhance comfort levels by creating a uniform pattern of heat throughout the area within which they are installed.

HCF low velocity impeller de-stratification fans comprise of a high quality die cast motor hub housing an external squirrel cage rotor, 2 x alternative length drop rods and a set of three impeller blades, the latter produced from high grade steel with an epoxy powder coating, factory matched and dynamically balanced.



Controls

Each fan is supplied with a speed controller suitable for operating one fan. For multiple fan control Powrmatic offer an optional reversible speed controller which will control up to 10 fans.



Supplied HCF Speed Controller

Model Available

- HCF1400

Peace Of Mind

- More than sixty years experience in warm air technology
- 1 year parts only warranty
- Full technical support

Application

The HCF fans are also used in conjunction with Powrmatic warm air heating systems. Suspended from the ceiling, fans are attached to the building structure via a purpose made boss and drop rod which has the benefit of an additional safety retaining wire.

Reverse Fan Direction

Clockwise in winter and anticlockwise in summer. By reversing the direction of the fan blades in winter, you'll be able to draw cool air up and forces warm air down into the working environment, which enables you can to turn your heating down and save on your energy bills.

Construction

HCF fans are manufactured with a robust design and steel blades which provide additional protection in harsh environments.

Hot Air Recirculation

HCF fans will automatically recirculate high level hot air, reducing stratification and associated heat losses. It is a basic law of physics that hot air rises and in high roofed buildings this will cause a temperature gradient with hot air within the roof void and cooler air at floor level.

Installation

The HCF fans are supplied with 2 drop-rod lengths. A 400mm down-rod is fitted providing a 610mm overall drop whilst a 150mm down-rod is supplied loose offering a 360mm drop.

The fans are supplied with a fixing kit which includes ceiling J-hook purlin clips.

TYPICAL APPLICATIONS

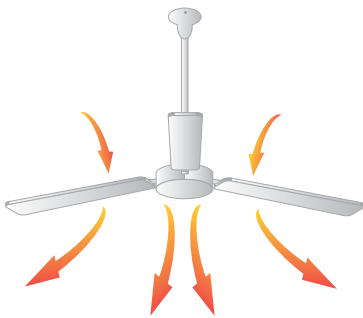
- Warehouses
- Factories
- Garage Workshops
- Distribution / Logistic Centers
- Aircraft Hangars
- Horticultural & Garden Centres
- Showrooms
- Retail Outlets



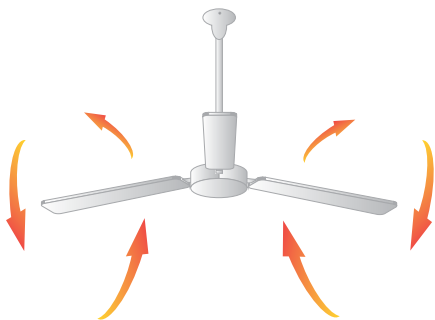
How It Works

The two diagrams below illustrate how the HCF Sweep Fans effectively distribute heat throughout the space.

The HCF Sweep fan will rotate counter clockwise forcing the wasted warm air at roof level down into the working zones improving the climate control energy efficiency.



When used with a reversible controller the HCF fan can rotate clockwise drawing the room air up towards the ceiling and forcing the warm air back down into the working zones.



Design Calculation

Each fan is supplied with a speed controller suitable for operating one fan. For multiple fan control Powrmatic offer an optional reversible speed control which will control up to 10 fans

Step 1)

Calculate the building floor area in m^2 and divide the result by $130m^2$. This will give you the number of fans you require.

Step 2)

Check that all fans are at least 2.3m from floor level and not sited in a position where they are a danger to personnel, or where accidental contact will constitute a hazard.

CUSTOMER BENEFITS

- Can be reversed for heat destratification or summer cooling
- Significant reduction in heating costs
- Easy to control
- Recycles heats from internal processes
- Simple, quiet and very low-maintenance
- Fast and easy to install, with no ducting required

CECx Technical Specification

Model		CECx 1400	CECx2250	CECx3350	CECx4500	CECx6500	
Air displacement	m ³ /s	0.77	1.2	1.8	2.3	3.1	
	m ³ /h	2800	4467	6410	8100	11025	
Mounting Height (maximum)	m	6	12	15	17	25	
Mounting Height (suggested minimum)	m	2.1	2.8	3.8	4.1	6.0	
Electrics	Supply	V/ph/Hz					230/1/50
	Start Current	amps	1.3	2.9	3.1	5.6	5.7
	Run Current	amps	0.7	0.8	1.2	2.2	2.1
Dimensions	Width	mm	498	599	654	807	807
	Depth	mm	498	599	654	807	807
	Overall Height	mm	380	380	390	390	400
Nett weight	kg	16	22	25	29	33	
Noise Level (sound power level)	dB(A)	59	66	66	66	68	
Noise Level (sound pressure level @5m)	dB(A)	34	4	41	41	43	

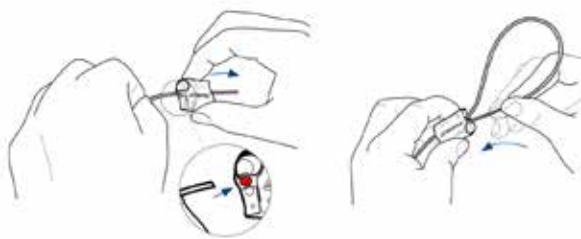
CECx Fixing Kit

The CECx fixing kit is a fast locking solution for quick and easy suspension of our CECx destratification fans.

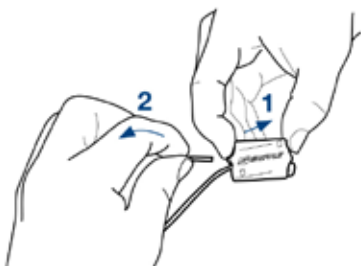
Features

- Up to 6 times faster to install than traditional methods
- Key-less - no tool required for adjustment
- Ergonomic buttons allow rapid adjustment
- Discreet and aesthetic design
- Load rated at 45 kg per wire with a 5:1 safety factor
- Supplied as a ready-to-use kit

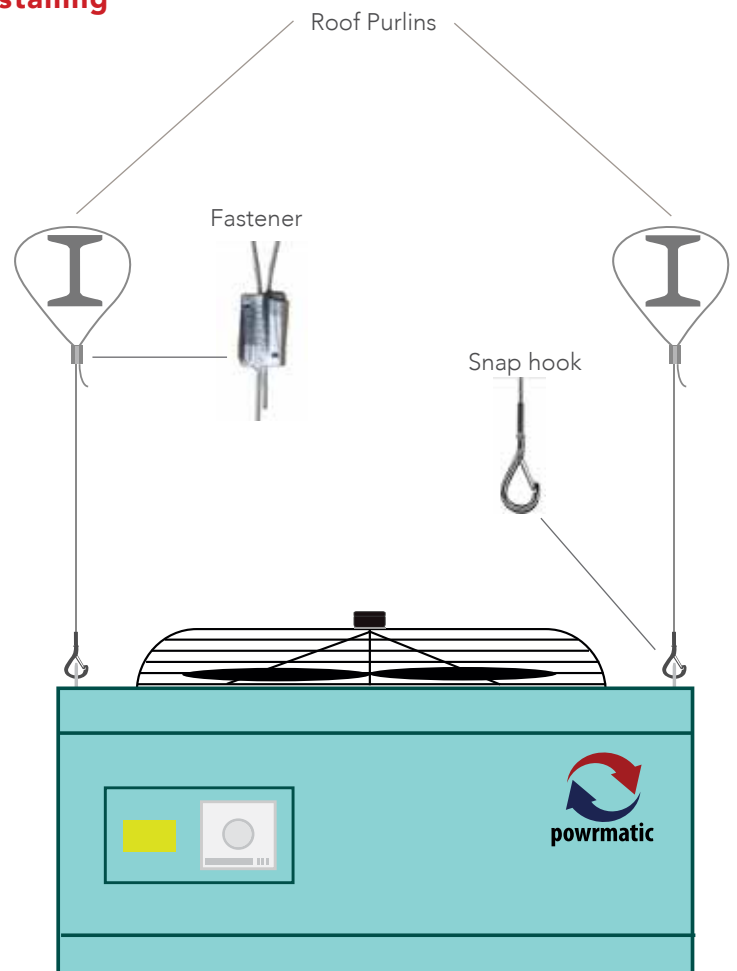
Connecting



Releasing



Installing



Model		HCF 1400	
Air Displacement (At Maximum Speed)		M ³ /h	10,000
Mounting Height	Maximum	M	12
	Minimum	M	2.3
Floor Coverage At Maximum Height		M ²	130
Electrical Data (Load At Maximum Speed)	Supply	V/ph/Hz	230/1/50
	Motor Rating	Watts	60.0
	Load Current	Amps	0.263
Overall Dimensions	Height (Max)	Mm	610
	Blade Sweep	Mm	1400
Nett Weight		Kg	5.4

Notes:

- When siting the fans care must be taken to ensure that the impellers are kept are kept well clear of personnel at all times

Optional Control Systems CECx & HCF Units

1AMP HCF Speed Controller



The REB 1 is an optional electronic speed controller designed to be used with single phase motors suitable for electronic speed control of the Powrmatic HCF sweep fan. The REB 1 controller is wall mounted with a fusible cut-out and switching output of 230v/50Hz.

3 AMP HCF / CECx 1400 Speed Controller



The REB 3 is an optional electronic speed controller designed to be used with a single phase motor suitable for electronic speed control of the Powrmatic HCF sweep fan and the CECx 1400. The REB 3 controller is wall mounted with a minimum speed adjustment setting and separate On/Off switch.

Reversible HCF Fan Controller



The optional Powrmatic reversible controller allows you to change the direction of airflow the for the Powrmatic HCF Sweep.

Powrmatic are a leading British manufacturer of industrial and commercial heating equipment. With over 60 years of experience in the HVAC industry, our products are built with integrity, and characterised by high quality and energy-saving designs, delivering exceptional performance and facilitating compliance with energy and emission regulations.

Powrmatic are also a specialist British manufacturer of natural, powered and smoke ventilation products working closely with a wide range of architects and consultants whilst also a supplier of a range of air conditioning and evaporative cooling equipment.

We provide a full product application advice service for architects, mechanical engineers, installers and end users to ensure the best products are selected to meet the required budget, design and regulatory requirements. Our heating and ventilation engineers are also supported by distribution partners and a network of installers who are knowledgeable in the supply, installation and maintenance of all of our equipment.

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