



Winterwarm WCU-series

Winterwarm presents the WCU-series:
destratification fans which provide an effective recirculation of the warm air in a room.



Winterwarm 
heating solutions

Characteristics Winterwarm WCU-series:

- Energy saving
- Extra recirculation
- More even distribution of heat
- Increased comfort
- Temperature gradient decreases
- Optional: EC motor



Stricter building regulations and increasing energy prices have resulted in industrial buildings which are increasingly better insulated. As a consequence of this, less heating capacity is required to heat up a building. For energy saving purposes this is very positive. However, the relevance of an efficient and effective recirculation of the heat present in the building increases significantly. The Winterwarm Circulation Units are perfectly suitable for this purpose, especially in combination with the indirect fired heaters Winterwarm XR or HR.

Energy saving

Research carried out by Gasunie (dutch gasinstitute) has shown that gas consumption can drop by 20% to 30% when sufficient destratification fans (general advise: 1 fan per 300m²) have been installed. It appears that between ceiling and floor, the temperature can go up by 1,3°C per meter height when no destratification unit has been applied. If the temperature at 1.50 m. is 17°C then the temperature at 6 m. above floor level can be as high as 24°C. When destratification fans have been suspended the temperature will increase no more than 0,5°C per meter: the top of the building will get no warmer than 20°C. This cuts both ways: on one hand heat losses through the roof and wall drop, and on the other hand the floor level remains warm for a longer period. As a consequence of this it will take longer before the room thermostat will demand heat from the heater. Besides that, the room will warm up much faster in the morning.

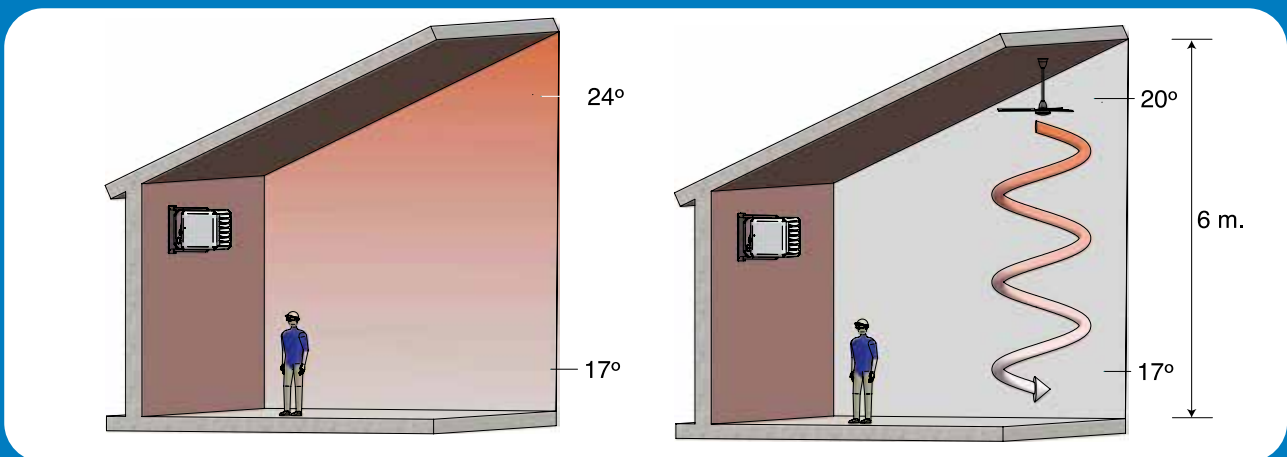
Optional: EC motor

In order to achieve higher energy efficiency, Winterwarm offers the option to provide the WCU fans with an EC motor. With such an "electronically communicated"(EC) motor the electricity consumption decreases with approximately 25% compared to the standard AC motor.



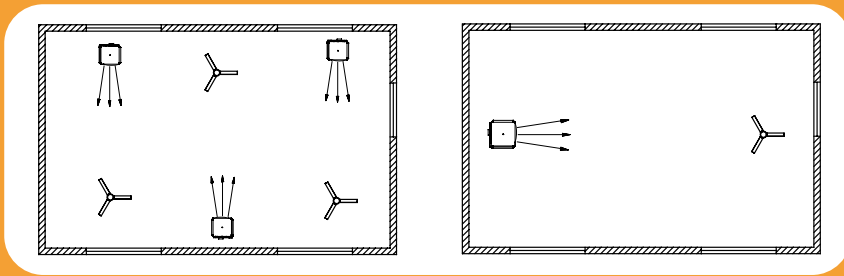
Advantages application of destratification fans:

- Decrease temperature gradient
- Less transmission losses
- Energy saving (10 to 30%!)
- More comfort
- Shorter heat up time
- Extra ventilation during summer
- Easy suspension



Room volume m ³	<1.000	2.000	3.000	5.000	7.000	9.000	12.000
Minimal desired recirculation multiple*	6	5	4	3	2.5	2	2

(in order to determine the number of necessary destratification fans, add the air output of the heater to that of the destratification fan(s))
 * (Source: ISSO publication 57)



Always position destratification fans at the end of the heater's throw (to avoid whirling of the air) or above an area where no air is blown to by the heater.



5-step switch



Speed controller
0-10 V. for WCU-EC

Selection and positioning

Selection of the right type of WCU depends on the height of the hall. Application of WCU's is always recommended in buildings higher than 5 meters. To determine the number of units, multiply the hall volume with the circulation rate. Deduct from the result the volume of recirculation already available, for example created by heaters.

Then divide the remaining air volume by the air output of the WCU selected. The outcome is the number of units needed to meet the desired circulation rate.

The advise resulting from the research Gasunie performed is 1 WCU per 300m². Always place the circulation units at the end of the throw to prevent whirling of air.

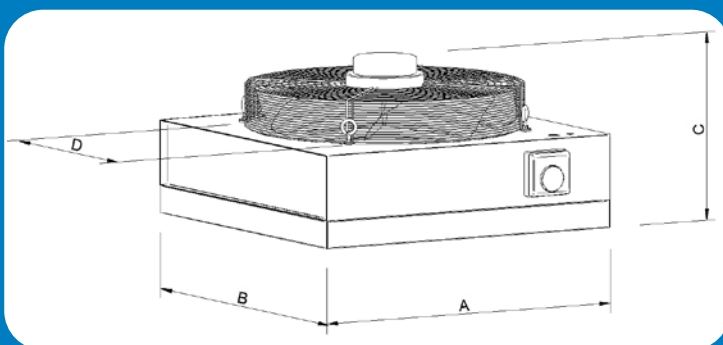
WCU range

The WCU range consists of 8 types with air outputs from 3,200 m³ to 10,000 m³. They are provided with a thermostat which switches the fan on when the temperature under the ceiling gets too high. Even when the heater is not in operation, the WCU will see to it that warm air is distributed instead of getting accumulated under the ceiling. The louvres of the grill are adjustable, enabling you to direct the air flow.

With a 5-steps switch or a stepless speed controller the user can set the speed of the fan motor. This also has the benefit of reducing noise level if required. Suspension of the WCU is easy by a set of chains fixed through 4 eye bolts.

Example:

Room - 55 x 30 x 8 = 13,200m³- calculated capacity 160 kW
 Selection of 4 x XR40 - total air output: 4 x 4,370 = 17,480 m³/h
 Advice: 2 x p/u recirculation of room volume, is 2 x 13,200 = 26,400 m³/h
 Recirculation 26,400 - air output heaters 17,480 = 8,920 m³/h
 compensation through destratification fans.
 2 choices: 3x WCU 40 (= total 9,600 m³/h) or 2 x WCU 60 (= total 11,200 m³/h).
 Recommendation: 1 unit per 300 m², in current situation choose 3 x WCU 40.



Measurements WCU (in mm)

Type	40	60	80	100
A	470	600	600	800
B	470	600	600	800
C	289	319	328	438
C (for EC)	255	269	269	396
D	300	375	400	740

Technical data destratification fans

Type	Unit	WCU40	WCU60	WCU80	WCU100	WCU40EC	WCU60EC	WCU80EC	WCU100EC
Air output	m ³ /h	3,200	5,600	7,000	10,000	3,300	5,700	7,000	10,000
Diameter fan	mm	350	450	500	650	350	450	450	650
Distance fan to ceiling	cm	35	45	50	65	35	45	50	65
Throw vertical	m	5-8	7-10	8-12	12-15	5-9	7-11	8-12	12-15
Voltage (50Hz)	V	230	230	230	230	230	230	230	230
Electrical power	W	155	290	400	480	136	320	490	550
Electrical current	A	0.75	1.3	1.85	2.1	1.1	1.4	2.1	2.5
Revolutions per minute	rpm	1,380	1,360	1,315	1,000	1,530	1,300	1,500	1,050
Sound level (@ 6 mtr), range dB(A)		33-56	35-59	37-59	39-58	33-55	33-59	37-59	37-55
Sound level (@ 8 mtr), range dB(A)		31-54	33-57	35-57	37-56	31-53	31-57	35-57	35-53
Weight	kg	11	18	18	43	11	18	18	43

Winterwarm: leading

Winterwarm has been engaged in the development, production and sales of industrial heating in Europe since 1936.

The company not only specialises in indirect fired unit air heaters, but also sells water heaters, electric heaters, destratification fans and gas and oil fired heaters for the agricultural and horticultural industry.



Winterwarm
heating solutions 

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Famous Winterwarm quality

- More than 85 years of experience
- ISO 9001
- Quick delivery
- Reliable