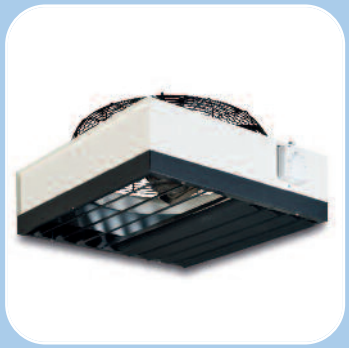
Winterwarm WCU-series

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:

- Energy saving
- Extra recirculation
- More even distribution of heat
- Increased comfort
- Temperature gradient decreases

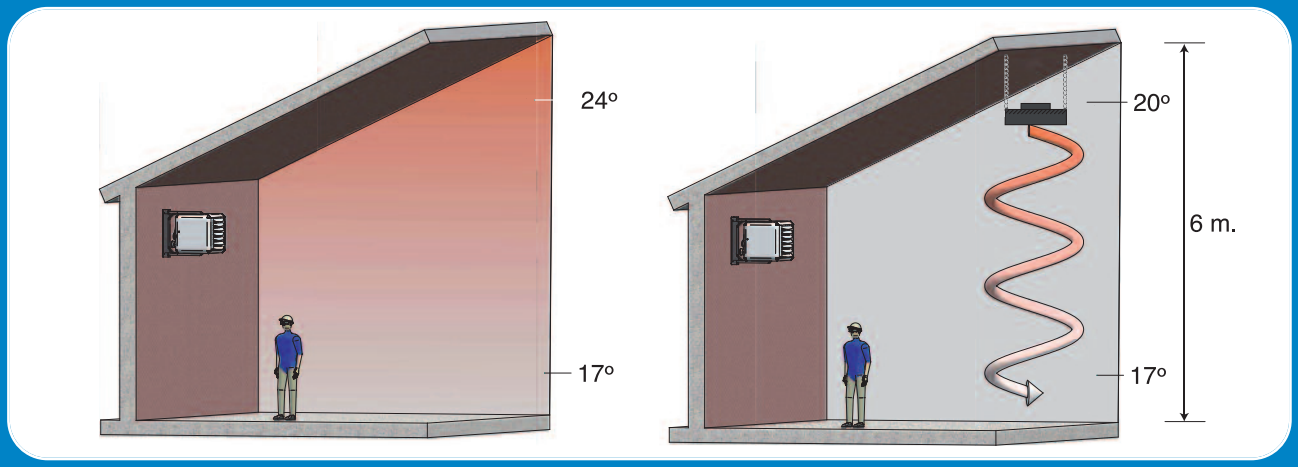
Stricter building regulations and increasing energy prices have resulted in industrial buildings which are increasingly better insulated. As a consequence of this, less heating capacity is required to heat up a building. For energy saving purposes this is very positive. However, the relevance of an efficient 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 TR.

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

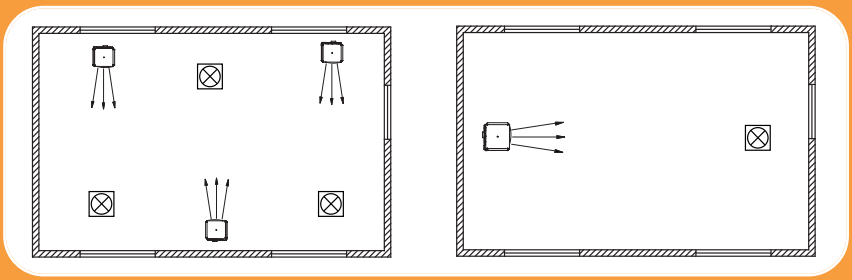
Energy saving

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 300m^2) 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.



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

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 300m^2. Always place the circulation units at the end of the throw to prevent whirling of air.

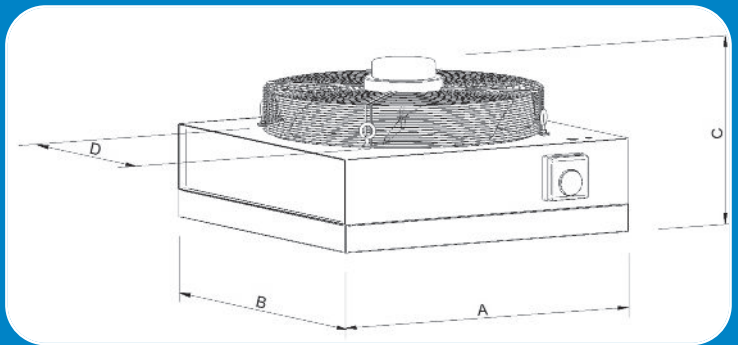
Example:

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

WCU range

The WCU range consists of 4 types with air outputs from 3,200 m^3 to 10,000 m^3. 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 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.



Measurements WCU (in mm)

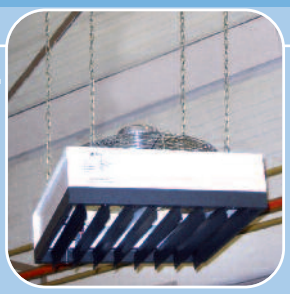
Type	A	B	C	D
40	470	470	260	300
60	600	600	320	375
80	600	600	320	400
100	800	800	440	740

Technical data destratification fans

Type	Unit	WCU40	WCU60	WCU80	WCU100
Article no.		**GW401400**	**GW601400**	**GW801400**	**GW101400**
Air output	m^3/h	3.200	5.600	7.000	10.000
Diameter fan	cm	350	450	500	650
Distance fan to ceiling	cm	35	45	50	65
Throw	m	5-8	7-10	8-12	12-15
Power consumption	W	170	365	540	730
Absorbed current	A	0.95	1.9	2.4	3.2
Electrical supply	V	230	230	230	230
Revolutions per minute	rpm	1300	1280	1300	1000
Sound level (@ 6 m.)	dBA	46	51	56	60
Sound level (@ 8 m.)	dBA	44	49	54	57
Weight	kg	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 radiant tubes, rooftops, water heaters, destratification fans and direct fired heaters for the agricultural and horticultural industry.



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