

# KOOLAIR



Thermo-adjustable  
blade swirl diffuser



**DFRE-GR-TR**

Installation  
instructions

[www.koolair.com](http://www.koolair.com)

# **DFRE-GR-TR**

## **Installation instructions**



# DFRE-GR-TR

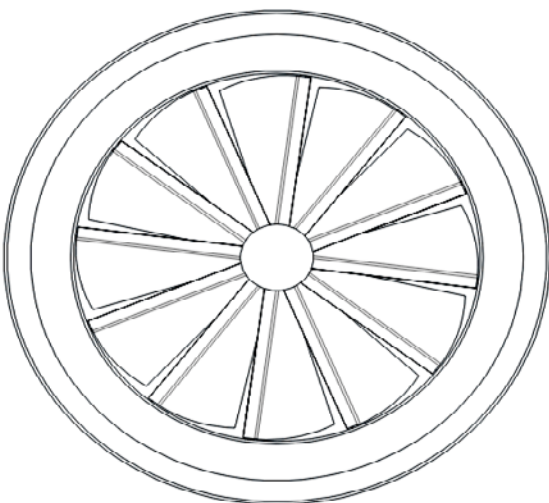
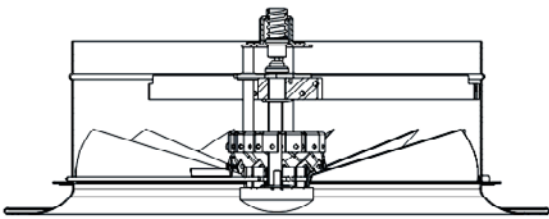
## Installation instructions

### DFRE-GR-TR BLADE ANGLE

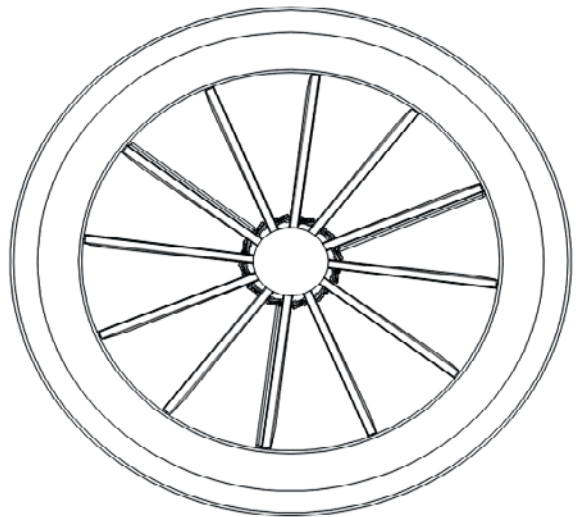
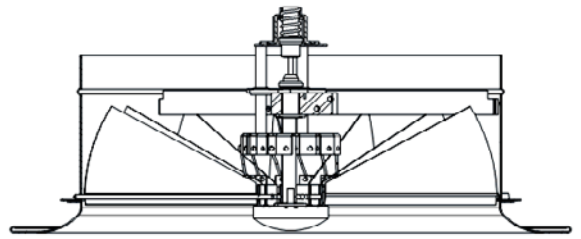
The DFRE-GR-TR diffuser blades are adjusted at an angle with respect to horizontal that ranges from  $32^\circ$ , when the diffuser distributes air at an air temperature  $\leq 20^\circ\text{C}$ , to a maximum of approximately  $80^\circ$  for an air temperature  $\geq 28^\circ\text{C}$ , increasing the angle as the air temperature increases.

The blade orientation angle is designed for optimal air distribution under the conditions listed in the catalogue. The angle can be adjusted according to the required vertical throw.

BLADE ANGLE POSITION OF  
 $32^\circ$  FOR COLD AIR  $\leq 20^\circ\text{C}$



BLADE ANGLE POSITION OF  $32^\circ$  to  $80^\circ$   
FOR WARM AIR  $\geq 28^\circ\text{C}$   
(Adjustable by mechanic stop)



# DFRE-GR-TR

## Installation instructions

### SETTING THE OPTIMUM ANGLE FOR HOT / COLD AIR

Under standard conditions, the angular displacement of the blades is from 32° to 80° approximately. For the blade to travel through this range, dimension “B” shown in the attached image must be 35 mm, giving a blade angle of 80° and dimension “A” must be less than 20 mm, giving an angle of 32°.

To change the angular stroke of the blades, the two limit screws, marked 1 (Heating) and 4 (Cooling) in the attached drawing must be set. To do this, first loosen the corresponding lock nuts, marked as lock nuts 2 and 5, for heating and cooling respectively, and the lower lock nut on screw 1 (Heating). Then tighten or loosen the screw that screws into the threaded insert to increase or decrease the blade stroke respectively.

In the attached diagram the length of the screws in relation to the fixed plate 3 are expressed as dimension “B” for the case of the screws in (Heating) and “A” for the screws in (Cooling).

In the case of screw 1 (Heating) the following table gives the dimensions that “B” should be set to in order to obtain the desired maximum blade angle:

<b>Blade Angle</b>	32°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
<b>“B” (mm)</b>	24	26	27	27	28	30	31	32	33	34	35

In the case of screw 4 (Cooling) the following table gives the dimensions that “A” should be set to in order to obtain the desired maximum fin angle:

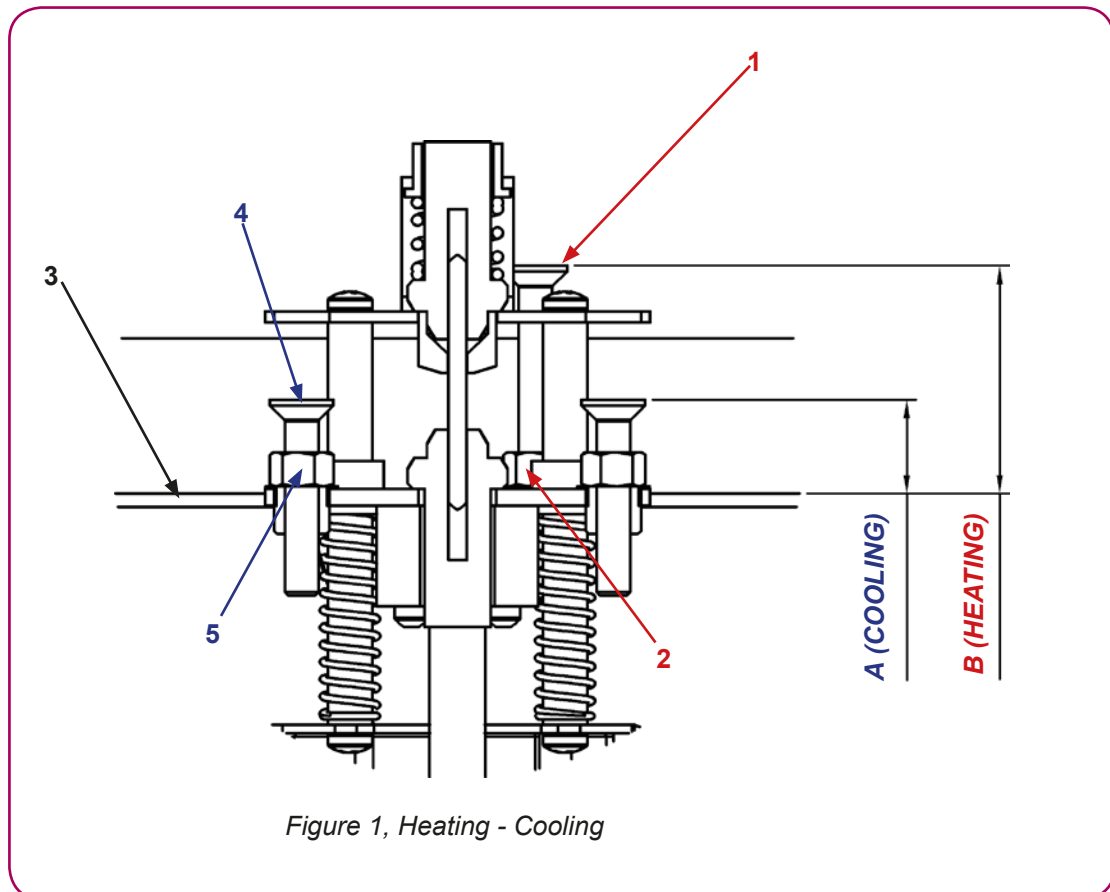
<b>Blade Angle</b>	32°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
<b>“A” (mm)</b>	20	21	22	24	25	26	27	28	29	30	31

## DFRE-GR-TR

### Installation instructions

Dimension “B” must never exceed 35 mm as this could cause the rotation mechanism of the blades to seize or lock at extreme high temperatures.

While installing the diffuser it is necessary to visually check that none of the blades are positioned more than 80° from the horizontal as this will result in diffuser malfunction.



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