

# KOOLAIR

## S-90

Variable geometry  
units

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Displacement

ISO 9001

BUREAU VERITAS  
Certification

Sistema de Gestión



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

## **INDEX**

General characteristics	2
Operation	3
Dimensions	4
Technical data	5
Codification	8

## General characteristics



### Description

The S-90-GV diffusers are variable geometry units for installation at considerable heights. They consist of a perforated cylinder, inner discs, and a damper to change the discharge air flow. The unit is connected by means of a circular spigot in the upper cover. It also incorporates installation brackets for safety. The diffusers may be suspended or fixed to columns or walls. They are made of galvanised steel sheet with built-in equalizing air discs.



### Application

The S-90-GV variable geometry diffusers are used in industrial environments, in both heating and cooling systems. A built-in damper allows the air discharge to be changed from vertical (heating configuration) to horizontal (cooling configuration). The damper can be adjusted manually, by motor-driven means or by a temperature-adjustable item. Good penetration into the occupied zone in both heating and cooling mode with low residual air velocity in the area. Depending on the size, the units can also supply large air volumes without generating air draughts in the occupied zone. The air is supplied by a temperature differential of -10 K (horizontal discharge) to + 12K (vertical discharge).

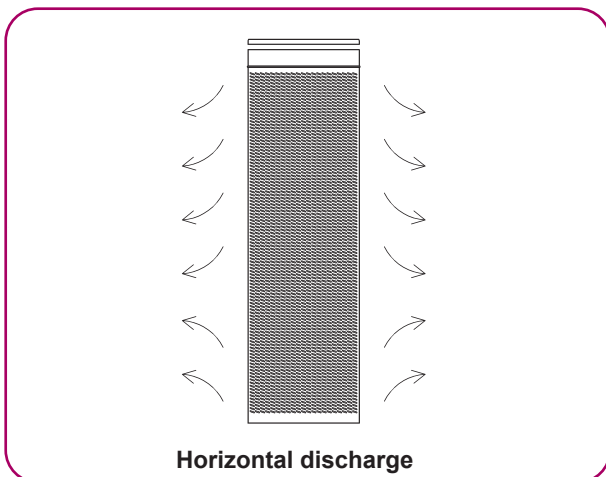


### Finishes

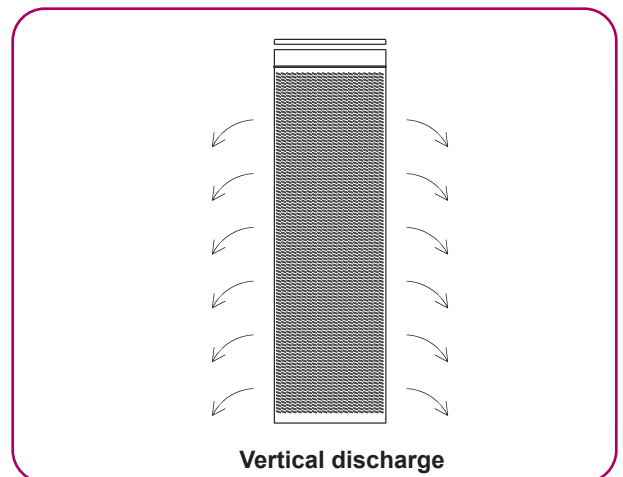
Cylinder in perforated plate, inner equalizing air discs and damper in galvanized steel plate. The standard treatment is painted white RAL 9010, but any RAL color is available upon request. Stainless steel finish and lateral connection are available as options.

## Operation

The diffuser comprises a perforated cylinder with a built-in damper and orifice plates. The air flows into the cylinder guide through the orifice plate, when contacting the damper changes the discharge air stream.

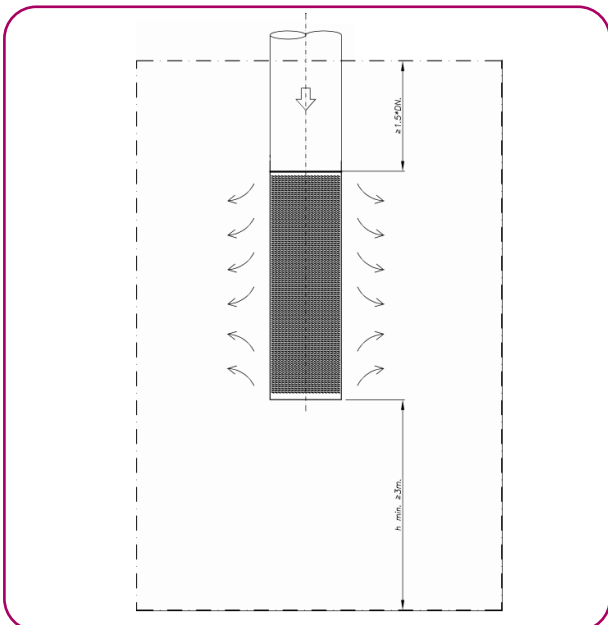


**Horizontal discharge**



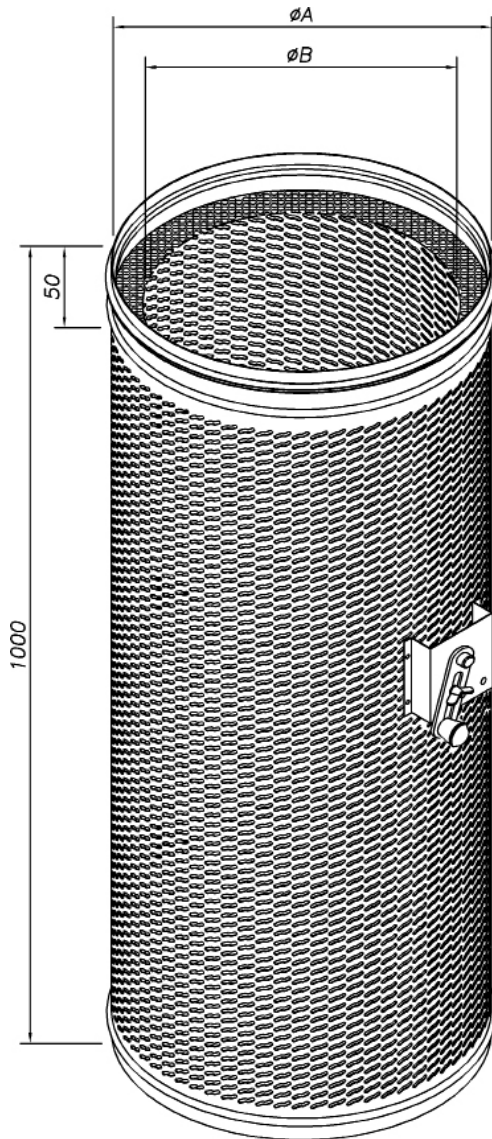
**Vertical discharge**

In cooling mode, the air is discharged horizontally and spreads in a radial pattern.  
In heating the damper is closed and the air is discharged downwards.



The diffuser can be mounted on a duct bend or take-off below the main duct.  
Recommended installation height range between 2.4 m and 5 m.

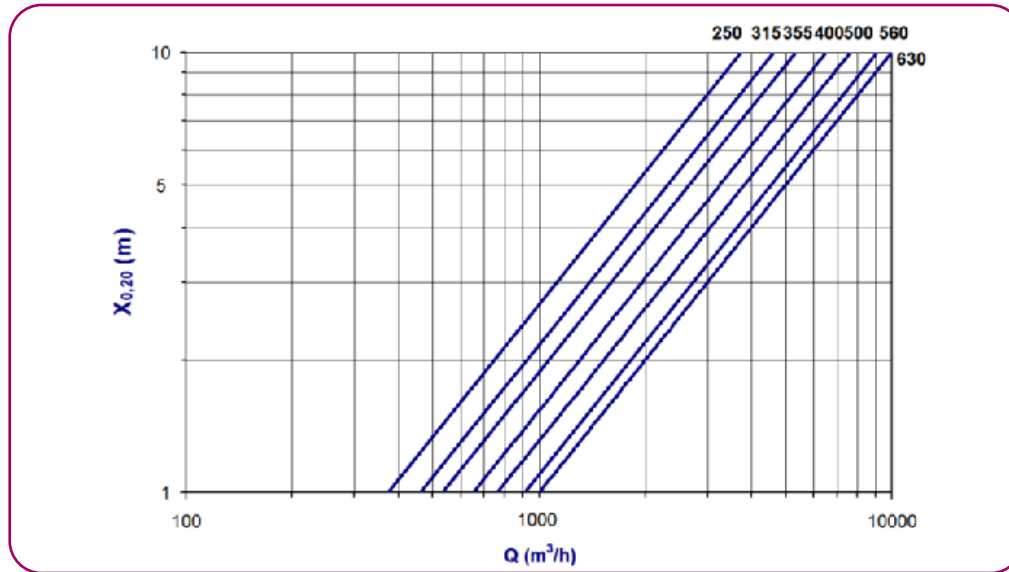
## Dimensions



Model	ØA	ØB
250	248	194
315	313	259
355	353	299
400	398	344
450	448	394
500	498	444
560	558	504
630	628	574

## Technical data

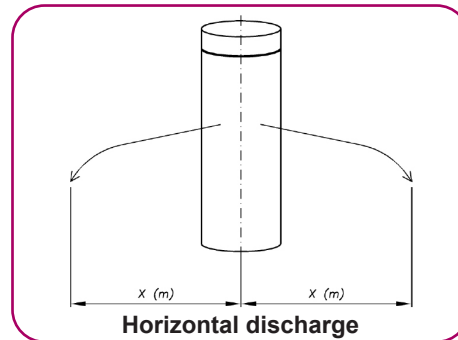
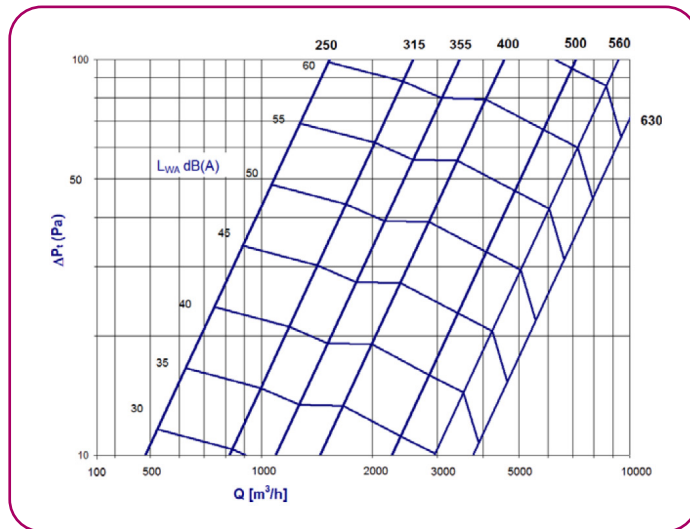
### Horizontal throw



**Symbols:**

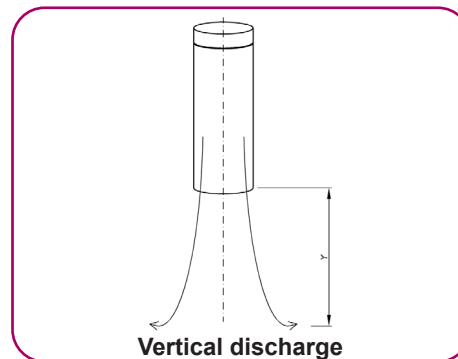
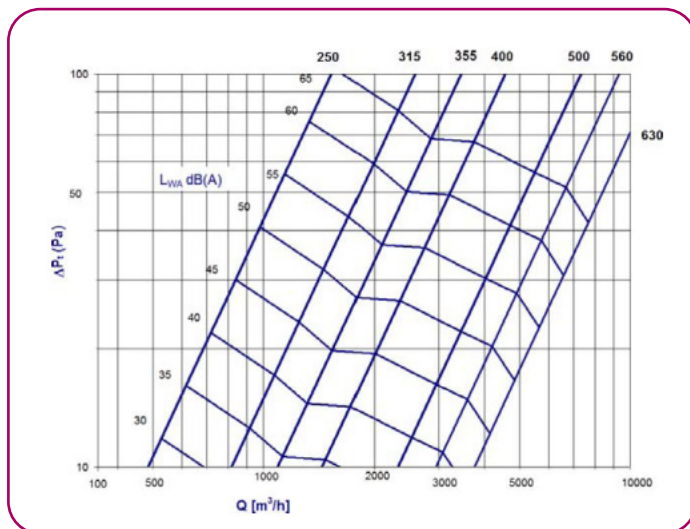
$Q$  (m<sup>3</sup>/h): Air flow  
 $X_{0.20}$  (m): Horizontal throw of the air jet, when the velocity in the occupied area is 0.20 m/s for a temperature difference of  $\Delta T = -6K$

### Pressure drop and sound level selection charts



**Symbols:**

$Q$  (m<sup>3</sup>/h): Air flow  
 $\Delta P$  (Pa): Pressure drop  
 $L_{WA}$  (dB(A)): Sound power level

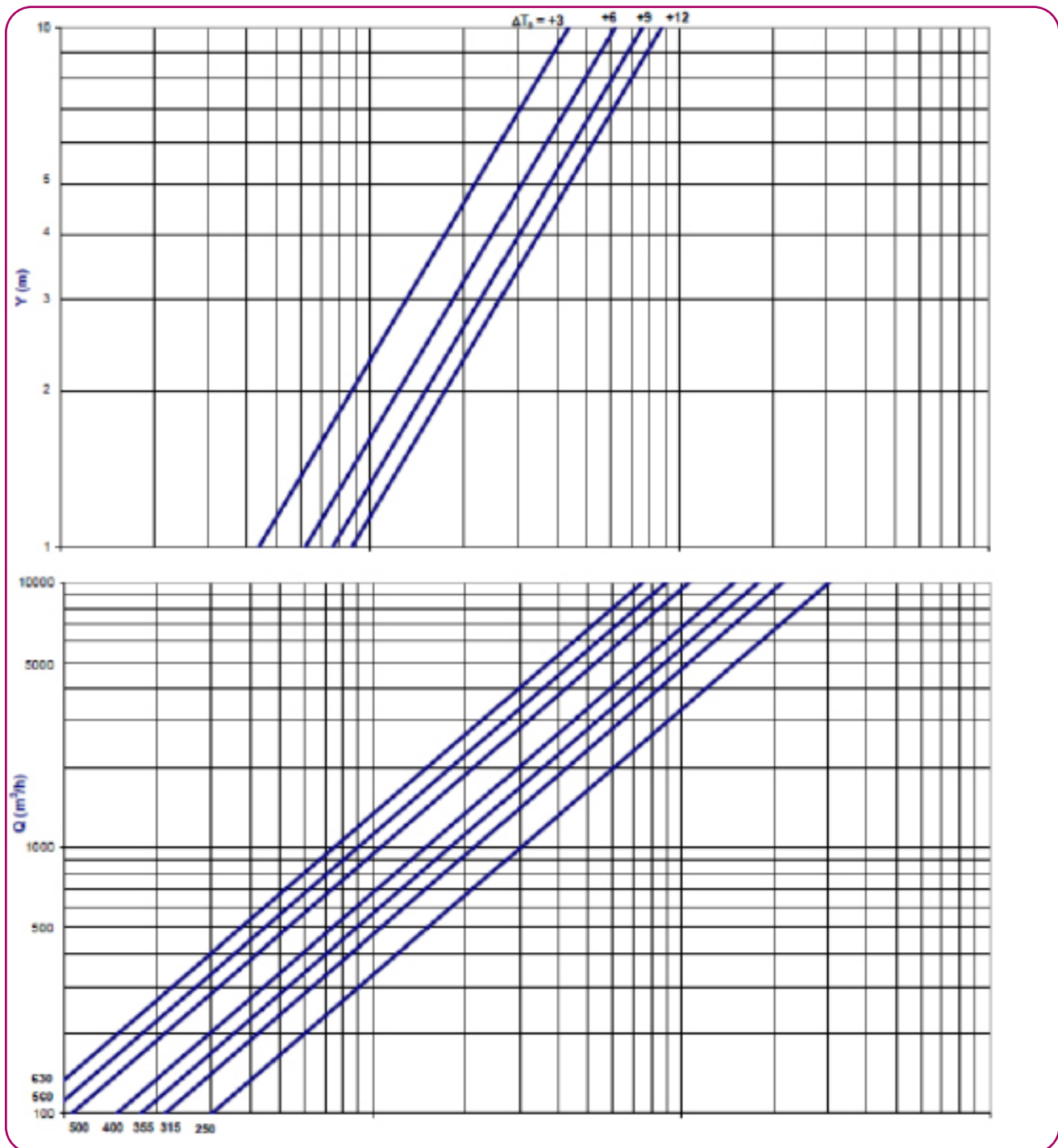


**Symbols:**

$Q$  (m<sup>3</sup>/h): Air flow  
 $\Delta P$  (Pa): Pressure drop  
 $L_{WA}$  (dB(A)): Sound power level

## Technical data

### Maximum vertical penetration depth

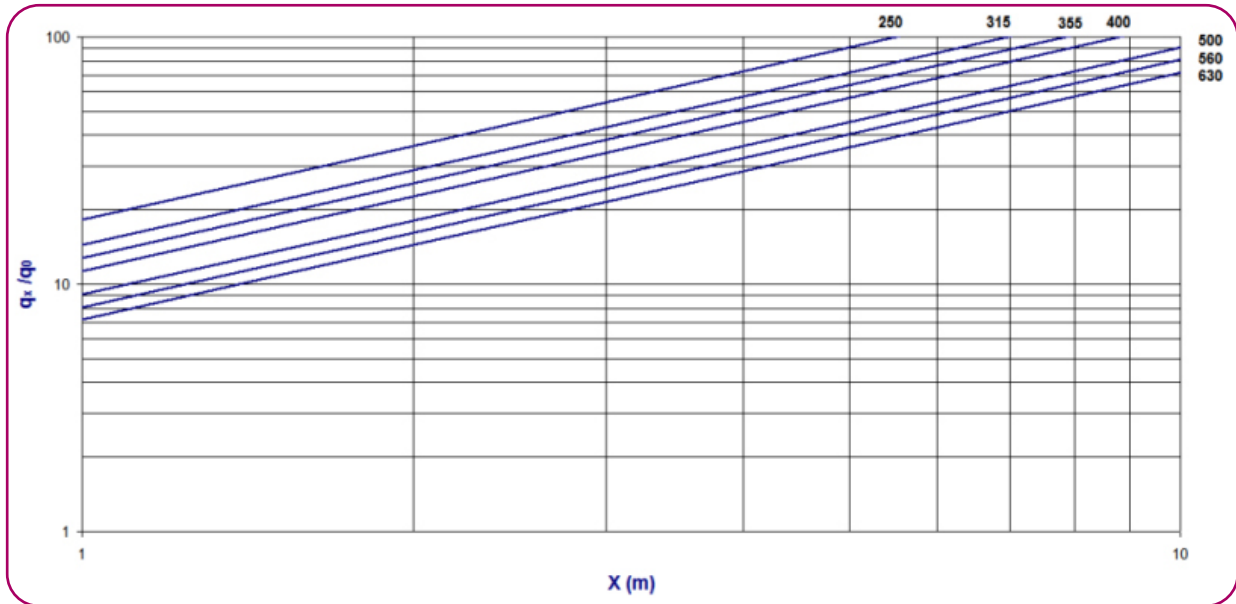


**Symbols:**

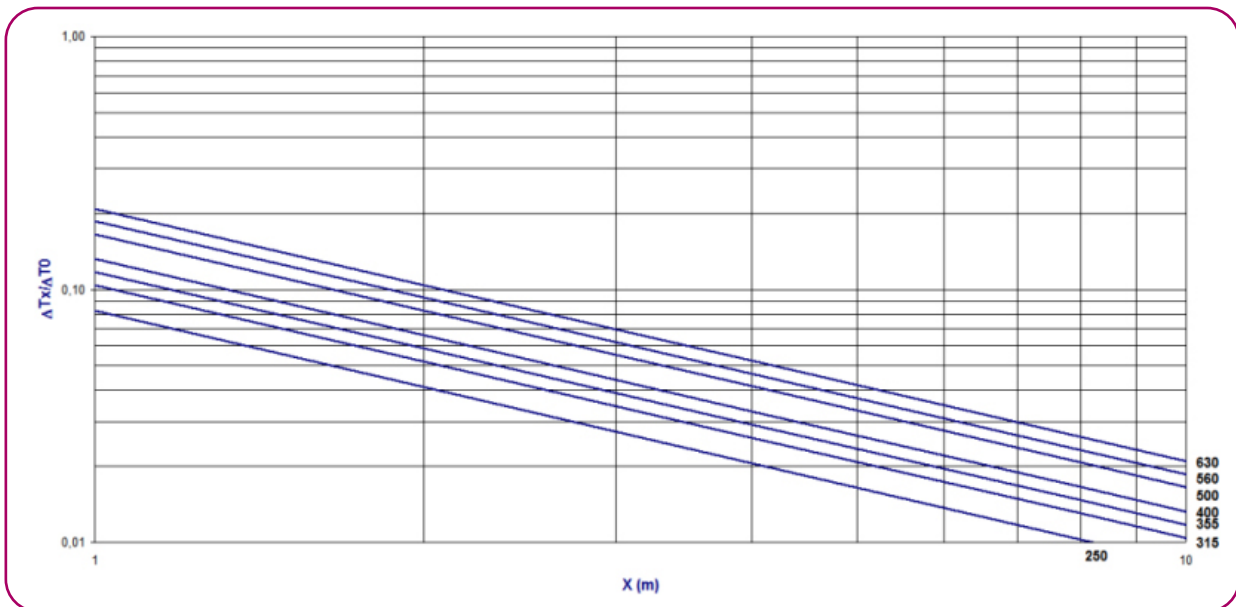
$Q$  ( $m^3/h$ ): Air flow  
 $Y_{max}$  (m): Maximum vertical penetration depth for a temperature difference of  $\Delta T$

## Technical data

### Induction rate



### Temperature ratio





## Codification

S-90-GV-TR - 450 - FP - RAL-9010 shine

1                      2                      3                      4

### 1. Diffuser type:

**S-90-GV-TR** - Variable geometry diffuser thermoregulated

**S-90-GV-MT (without actuator)** - Variable geometry diffuser motor-driven operation

**S-90-GV-MT (with actuator)** - Variable geometry diffuser motor-driven operation

**S-90-GV with chain** - Variable geometry diffuser with chain

**S-90-GV-44** - Variable geometry diffuser for higher flow rates

**S-90-GV-44-TR** - Variable geometry diffuser thermoregulated for higher flow rates

**S-90-GV-44-MT (without actuator)** - Variable geometry diffuser motor-driven operation for higher flow rates

**S-90-GV-44-MT (with actuator)** - Variable geometry diffuser motor-driven operation for higher flow rates

**S-90-GV-44 with chain** - Variable geometry diffuser with chain for higher flow rates

### 2. Model:

250  
315  
355  
400  
450  
500  
560  
630

### 3. Accessories:

**-SA** - without accessory

**-FP** - with fixing system for wall

### 4. Treatment:

RAL-9003 shine

RAL-9003 matt

RAL-9005 shine

RAL-9005 matt

RAL-9006 shine

RAL-9006 matt

RAL-9010 shine

RAL-9010 matt

RAL-9016 shine

RAL-9016 matt

Galvanized

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