

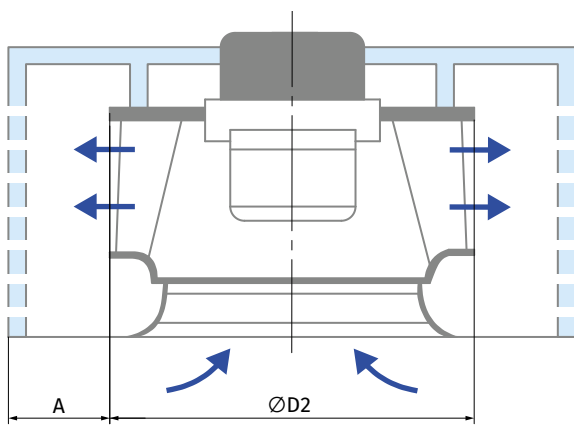
# INSTALLATION AND SAFETY INSTRUCTIONS

## CENTRIFUGAL FANS

The fans are intended for ventilation equipment and shall be operated in strict compliance with their intended use, the installation instructions, and DIN EN 292/294 equipment safety regulations.

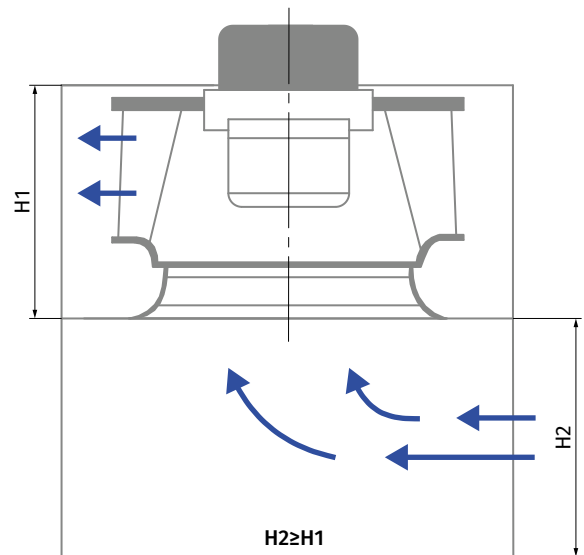
### EXAMPLES FOR INSTALLATION SYSTEMS

#### BL-B / SL-B / GL-B MOTORISED IMPELLER

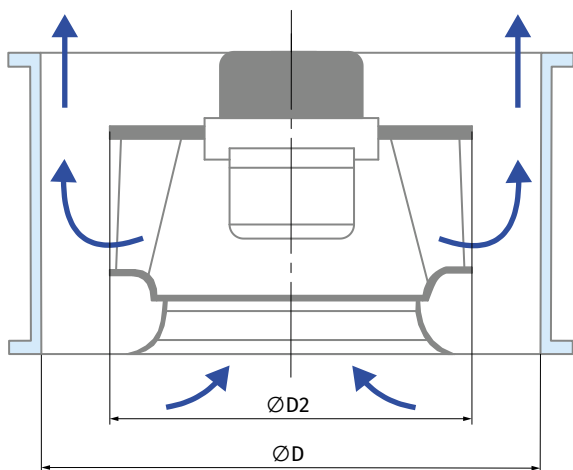


$$A \geq 0.2 \times D2$$

Ventilation box

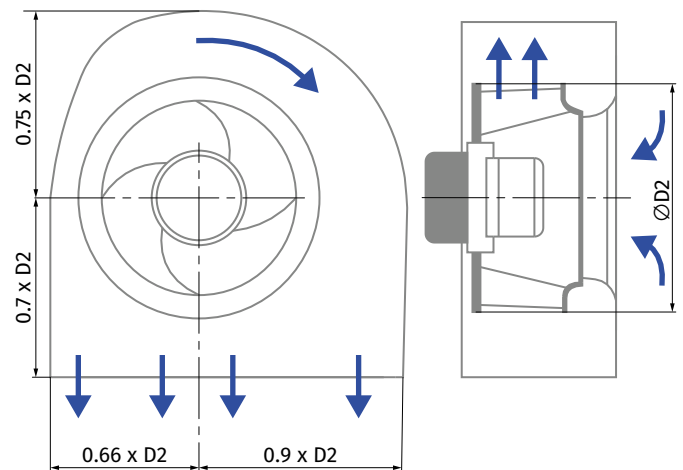


Duct fan



$$D = 1.8 \times D2$$

Pipe fan



Centrifugal fan in a scroll casing

# INLET RING

## DEFINING AIR FLOW RATE FOR INLET RINGS WITH PRESSURE RELIEF

The differential pressure method is based on comparing the static pressure upstream of the inlet ring to the static pressure in the inlet ring.

Pressure is measured at 1 to 4 points on the inlet ring circumference.

The connection on the client side is provided with an integral T-shaped hose fitting.

The coupling is suitable for pneumatic hoses with the internal diameter of 4 mm.

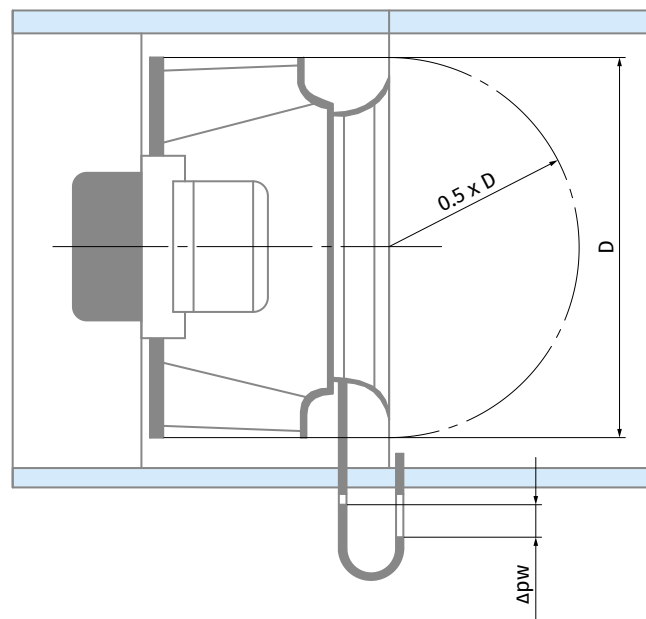
The air flow rate can be defined using the pressure differential (i.e. static pressure difference) based on the following equation:

$$qv = k \cdot \sqrt{\Delta p} \quad qv \text{ in [m}^3/\text{h]} \text{ and } \Delta p \text{ in [Pa]}$$

If the air flow must be reduced to a constant level, the pressure at the inlet ring must be constant:

$$\Delta p = qv^2 : k^2$$

$k$  accounts for the specific properties of the inlet ring.

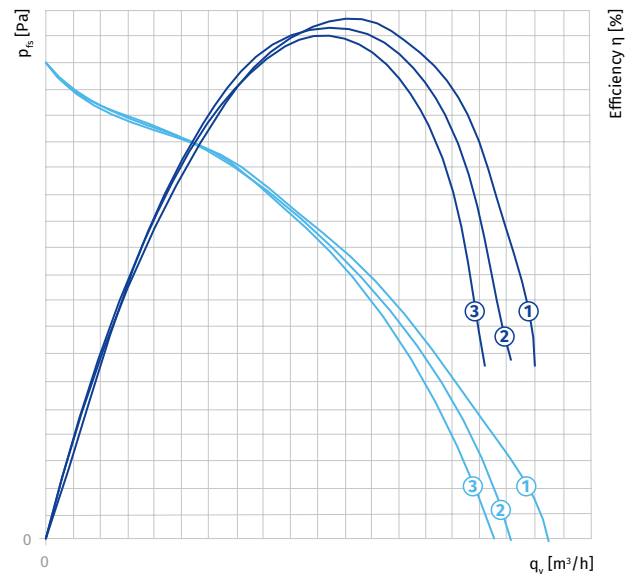
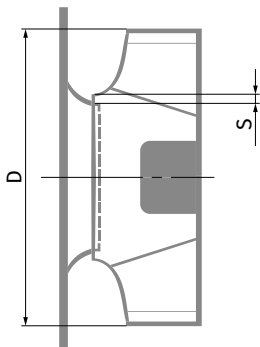


# AIR GAP AND OVERLAP

## EFFECTS OF CENTRIFUGAL AIR GAP CHANGE

The centrifugal air gap between the inlet ring and the impeller cover affects centrifugal fan air flow and operation efficiency. Changes in the size of the inlet ring air gap affects the following curve:

- ①  $s / D = 0.4\%$
- ②  $s / D = 1.0\%$
- ③  $s / D = 1.4\%$

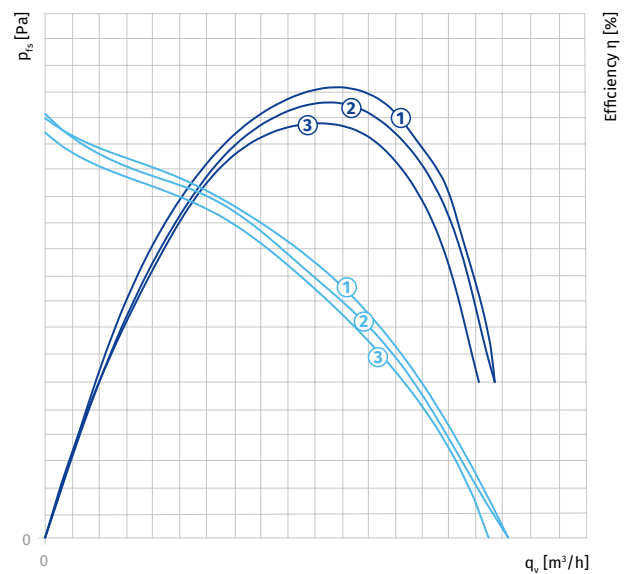
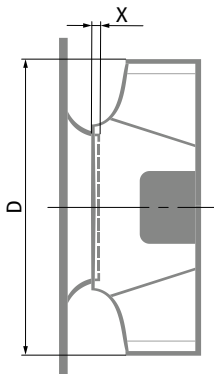


## CHANGES IN AXIAL OVERLAP

The axial overlap between the inlet ring and the impeller cover affects centrifugal fan air flow and operation efficiency.

Overlap changes affect the following curve:

- ①  $x / D = 0.6\%$
- ②  $x / D = 0\%$
- ③  $x / D = -0.8\%$



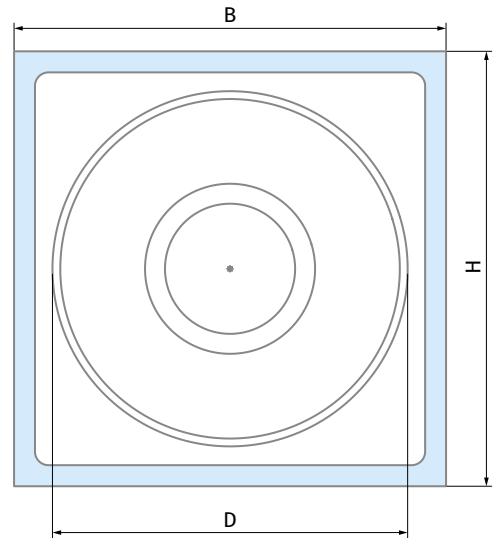
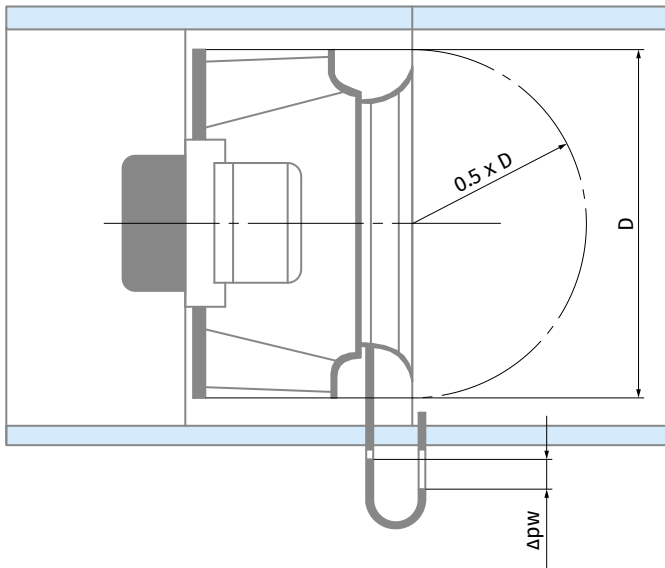
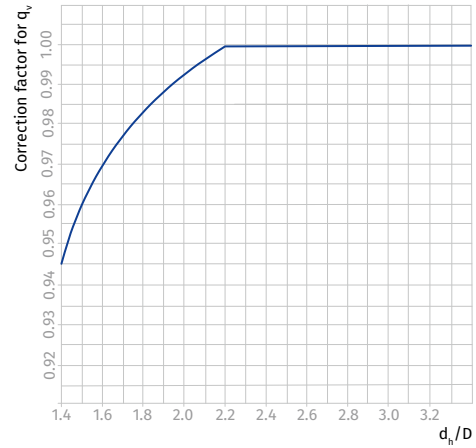
# MOUNTING SPACE

## MOUNTING SPACE EFFECTS

Mounting-specific losses may be caused by installing the centrifugal fan in a ventilation block with insufficient space. The effects on fan performance are evident from the following curve. For boxes with a square cross section the hydraulic diameter is calculated based on the box width and height divided by the impeller diameter.

$d_h$  Hydraulic size  
 $d_h = 2 \cdot B \cdot H / (B + H)$   
**B** Box width

**H** Box height  
**D** Fan outer size



### Zentri-PAC centrifugal fan series

**Zentri-PAC** helps to minimise the additional noise resulting from limited mounting space. This eliminates the need for extra protection from secondary noise.

**Zentri-PAC** attachment in the inlet area of the centrifugal fan is simple and straightforward.

