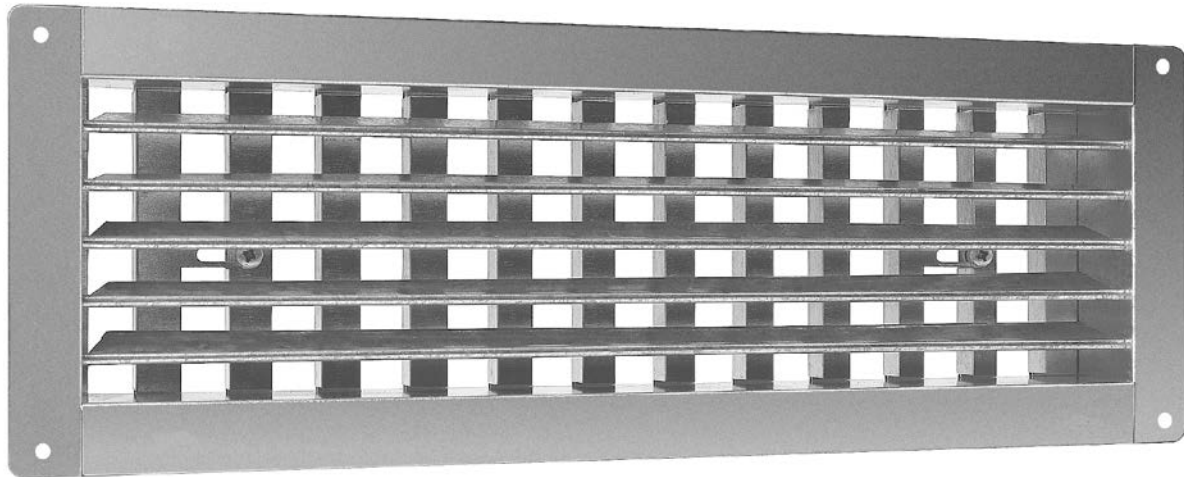


# SK duct grille with hit-and-miss damper

Steel, galvanized



## Duct grille for ventilation ducts

**SK duct grille** for supply and exhaust air, made of galvanized sheet steel, with drilled front frame, individually adjustable, horizontal or vertical air blades and front-side adjustable volume flow regulation by hit-and-miss damper with 60% free cross-section and with integrated equalizing blades.

**SK** with horizontal air blades

**SKS** with vertical air blades

### Sizes:

Width B x Height H

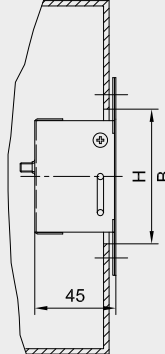
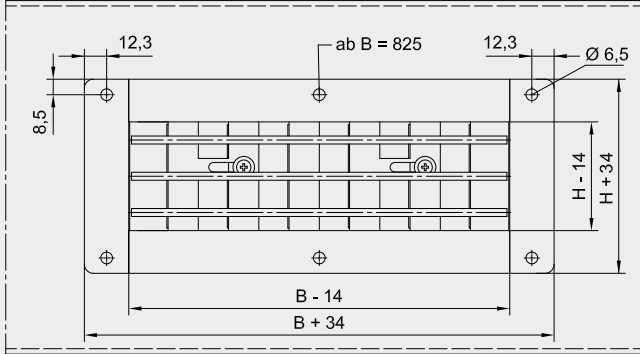
B [mm]					H [mm]
425	525	625	825	1025	125
425	525	625	825	-	225
425	525	625	825	-	325

SK duct grilles are ventilation grilles punched from galvanized sheet steel for direct installation in ventilation ducts. The direction of the airflow outlet can be adjusted with the horizontally or vertically arranged air blades. The hit-and-miss damper, which is firmly connected to the front frame and equipped with vertical bars, optimally restricts the air flow with its relatively large, free cross-section; it also enables volume flow regulation and supports horizontal jet control. A sufficiently even distribution of outgoing supply air is ensured. The galvanized surface of the duct grille is the same as the duct surface, necessary on-site painting is not a problem.

# SK duct grille with hit-and-miss damper

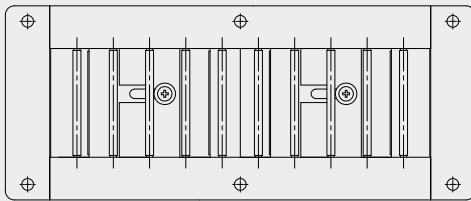
Data sheet, dimensioning

SK



B x H = Duct section

SKS

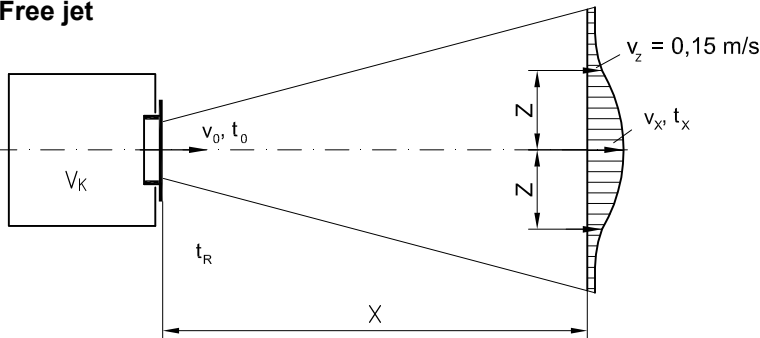


Free grille surface  $A_{free}$  [m<sup>2</sup>]

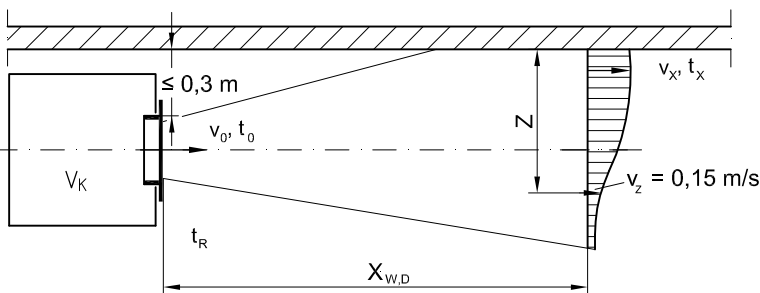
H / B [mm]	425	525	625	825	1025
125	0.036	0.045	0.054	0.071	0.089
225	0.068	0.085	0.101	0.134	-----
325	0.100	0.124	0.149	0.197	-----

Free hit-and-miss damper surface in OPEN position: 60% of  $A_{free}$

## Free jet



## Wall or ceiling jet



## Volume flow measurement with the impeller anemometer\*)

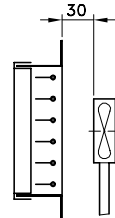
Correction factors

$$k = v_0 / v_{\text{Measurement}}$$

Supply air Exhaust air

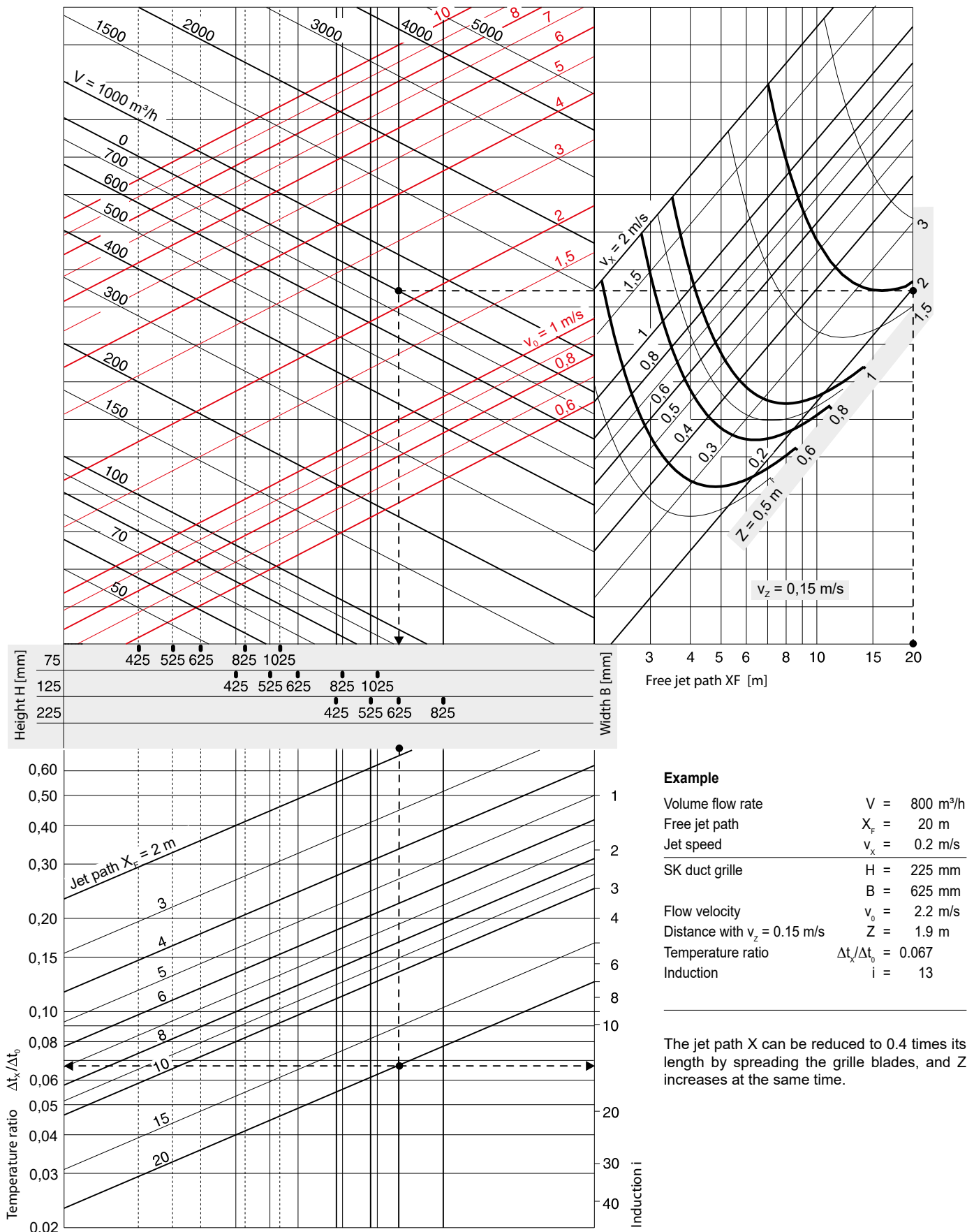
k	0.8	1.8
---	-----	-----

\*) Impeller diameter possibly  $\geq 60$  mm



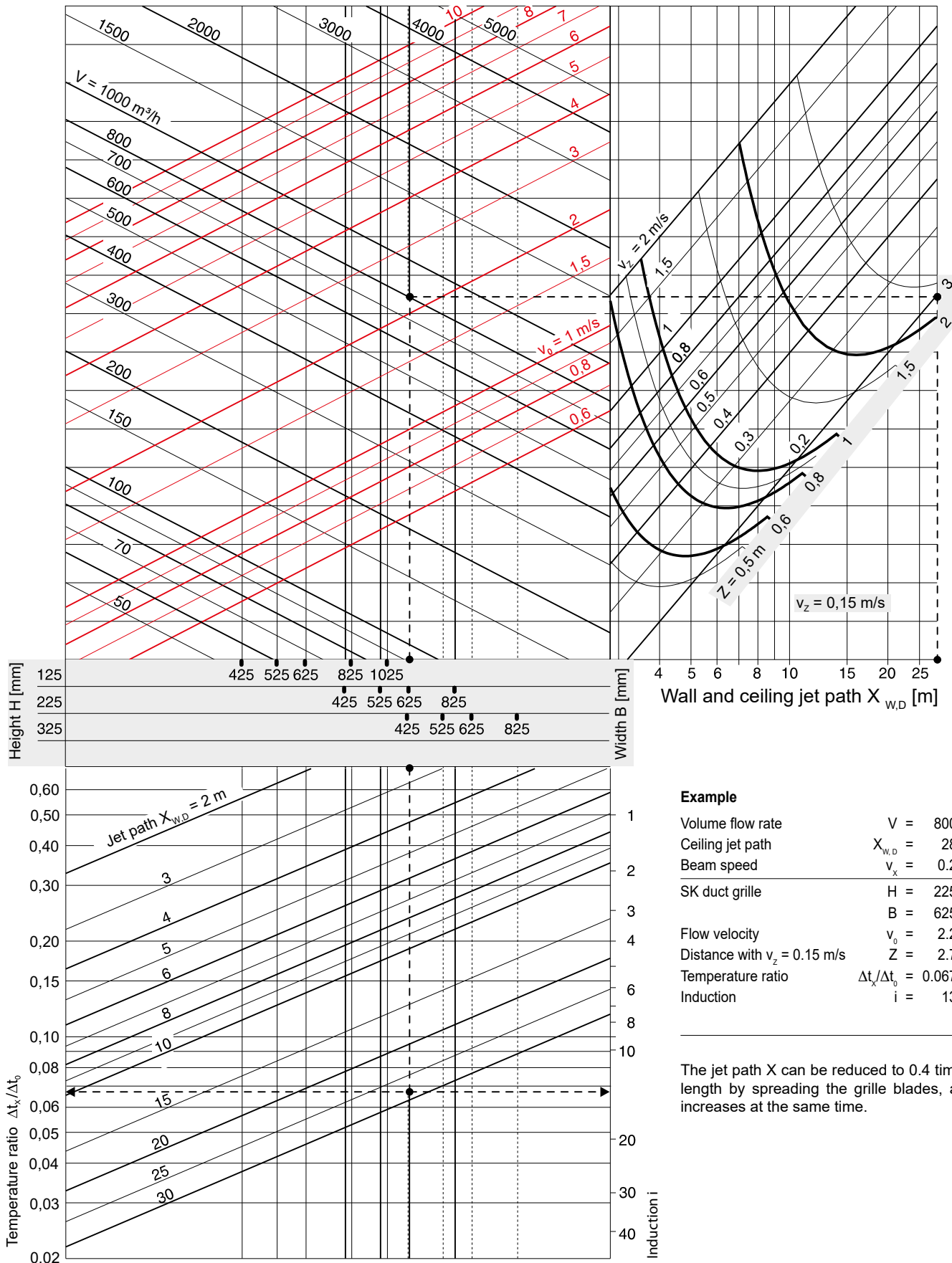
# SK duct grille with hit-and-miss damper

Room air flow: Free jet



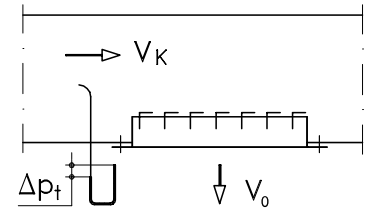
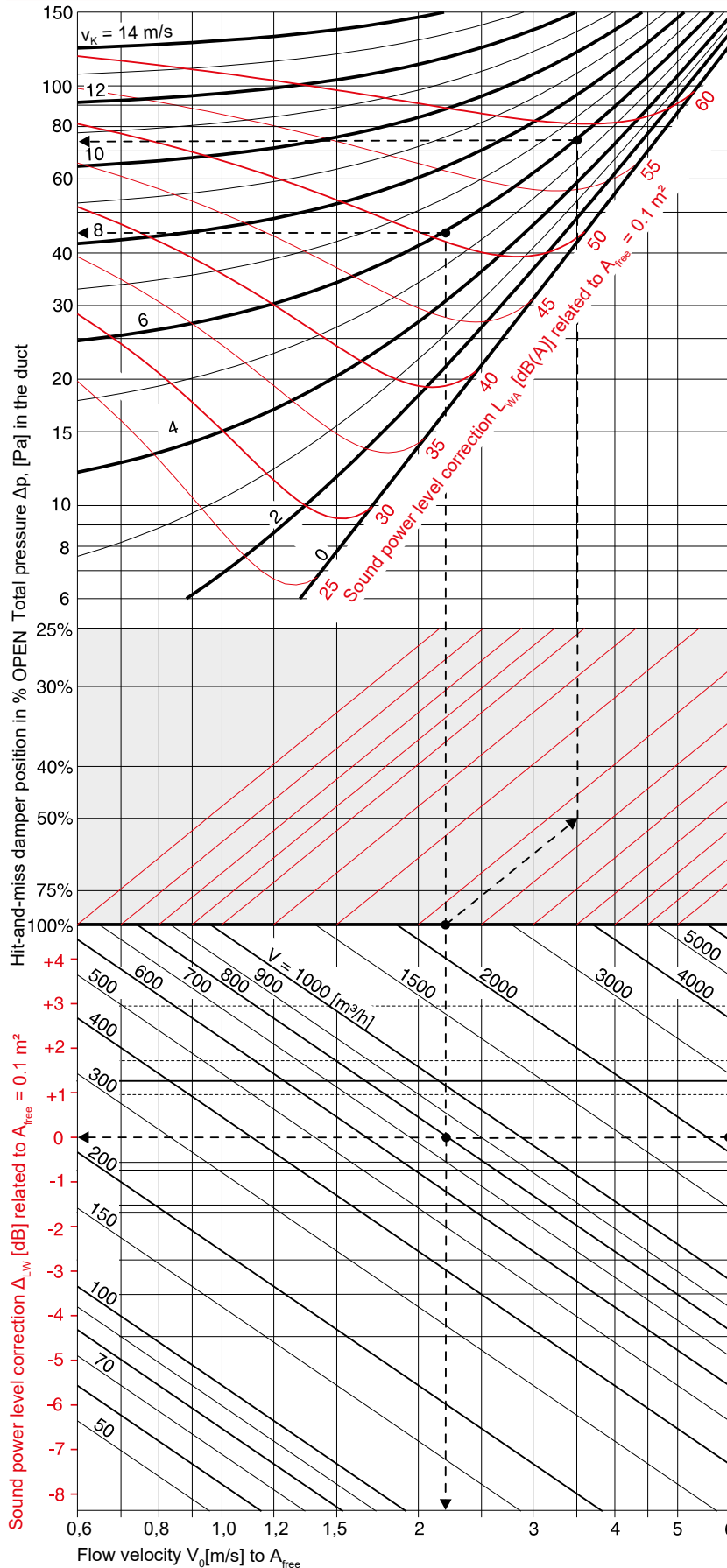
# SK duct grille with hit-and-miss damper

Room air flow: Wall or ceiling jet



# SK duct grille with hit-and-miss damper

Pressure loss, sound power for supply air



**Example**

Volume flow rate  $V = 800 \text{ m}^3/\text{h}$   
 Speed in duct  $v_K = 6 \text{ m/s}$   
 SK duct grille  $H = 225 \text{ mm}$   
 $B = 625 \text{ mm}$

Flow velocity  $v_0 = 2.2 \text{ m/s}$   
 Hit-and-miss damper 100% OPEN:  
 Total pressure in the duct  $\Delta p_t = 45 \text{ Pa}$   
 Sound power level\*)  $L_{WA} = 51 \text{ dB(A)}$   
 Size correction value  $\Delta L_W = 0 \text{ dB}$   
 Sound power level  $L_{WA-Tot} = 51 \text{ dB(A)}$   
 Hit-and-miss damper 50% OPEN: Total  
 pressure in the duct  $\Delta p_t = 74 \text{ Pa}$   
 Sound power level\*)  $L_{WA} = 59 \text{ dB(A)}$   
 Size correction value  $\Delta L_W = 0 \text{ dB}$   
 Sound power level  $L_{WA-Tot} = 59 \text{ dB(A)}$

\*) Sound power level correction for other grille sizes:  
 $L_{WA-Tot} = L_{WA} + \Delta L_W$

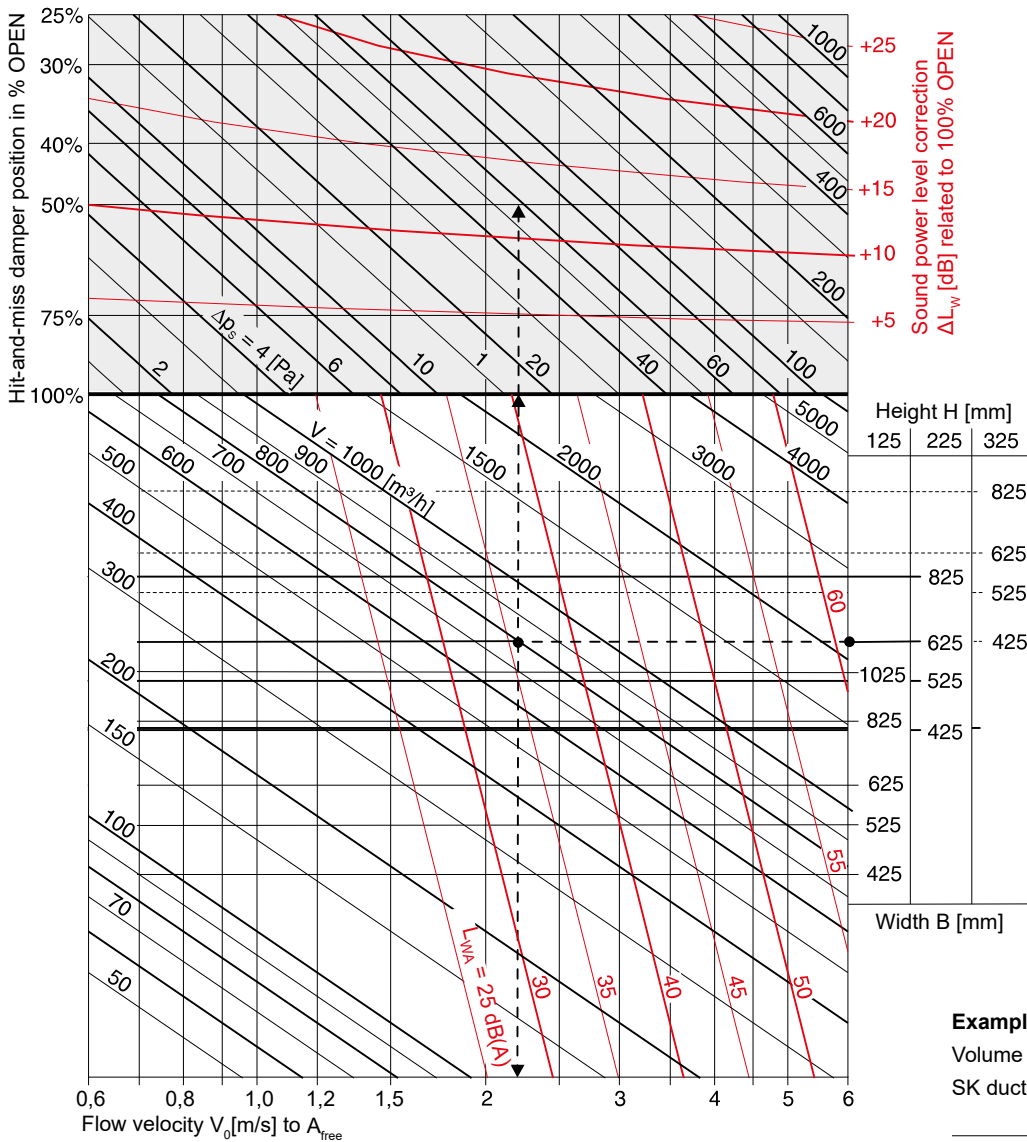
Height H [mm]

125	225	325
		825
		625
		825
		525
		625
		425
		1025
		525
		825
		425
		625
		525
		425

Width B [mm]

# SK duct grille with hit-and-miss damper

Pressure loss, sound power for exhaust air



**Example**

Volume flow rate  $V = 800 \text{ m}^3/\text{h}$   
 SK duct grille  $H = 225 \text{ mm}$   
 $B = 625 \text{ mm}$

Flow velocity  $v_0 = 2.2 \text{ m/s}$   
 Hit-and-miss damper 100% OPEN<sup>\*)</sup>:  
 Static pressure loss  $\Delta p_s = 16 \text{ Pa}$   
 Sound power level  $L_{WA} = 36 \text{ dB(A)}$   
 Hit-and-miss damper 50% OPEN:  
 Static pressure loss  $\Delta p_s = 58 \text{ Pa}$   
 Sound power level<sup>\*)</sup>  $L_{WA} = 36 \text{ dB(A)}$   
 Correction value 50% OPEN+  $\Delta L_w = 12 \text{ dB}$   
 $L_{WA-Tot} = 48 \text{ dB(A)}$

<sup>\*)</sup> Sound power level correction for hit-and-miss damper positions:

$$L_{WA-Tot} = L_{WA} + \Delta L_w$$

**Legend**

- $A_{free}$  [m<sup>2</sup>] Free grille surface  $v_z = 0.15 \text{ m/s}$
- $0.60 \cdot A_{free}$  Free hit-and-miss damper surface in OPEN position
- $V$  [m<sup>3</sup>/h] Volume flow rate
- $v_K$  [m/s] Flow velocity
- In the duct
- $v_0$  [m/s] Flow velocity
- Related to  $A_{free}$  "Grille outlet speed"
- $X_f$  [m] Jet path for free jet
- $X_{w,D}$  [m] Jet path for wall and ceiling jet
- $v_x$  [m/s] Flow velocity after the jet path X
- $v_{x-median} = 0.3 \cdot v_x$
- $Z$  [m] Distance perpendicular to the jet axis, at which the flow velocity is
- $t_0$  [°C] Supply air temperature
- $t_R$  [°C] Room temperature
- $t_x$  [°C] Temperature after the jet path X
- $\Delta t_x / \Delta t_0$  Temperature ratio
- $t_x = (\Delta t_x / \Delta t_0) \cdot (t_0 - t_R) + t_R$
- $i$  Induction
- $V_s$  [m<sup>3</sup>/h] Secondary volume flow rate  $V_s = i \cdot V$
- $\Delta p$  [Pa] Pressure loss for supply air:  
Total pressure loss  $\Delta p_t$   
Pressure loss for exhaust air:  
Static pressure loss  $\Delta p_s$
- $L_{WA}$  [dB(A)] A-rated sound power level
- $\Delta L_w$  [dB] Sound power level correction
- $L_{WA-Tot}$  [dB(A)] Total A-rated sound power level

# SK duct grille with hit-and-miss damper

Order data, tender text

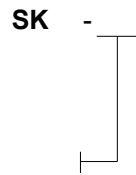
**Duct grille**

with **horizontal** blades

**Size**

Width B [mm] x Height H [mm]

⇒ see page 1

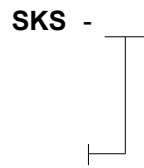
**Duct grille**

with **vertical** blades

**Size**

Width B [mm] x Height H [mm]

⇒ see page 1



duct grille for supply and exhaust air, made of galvanized sheet steel, with drilled front frame, individually adjustable, horizontal or vertical air blades and front-side adjustable volume flow regulation by hit-and-miss damper with 60% free cross-section and with integrated equalizing blades.

.... pc(s)    **Width:**        .....        mm  
                  **Height:**        .....        mm  
                  **Manufacturer:**        WILDEBOER  
                  **Type:**            SK / SKS

**deliver:**                    .....

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