

Nozzle supply air ceiling diffusers



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NOZZLE AIR DIFFUSERS

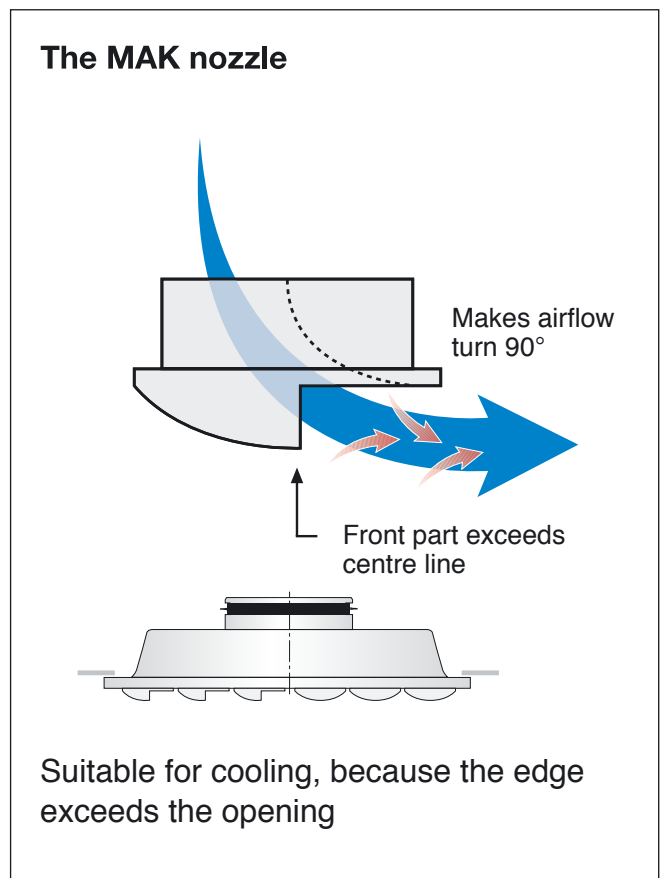
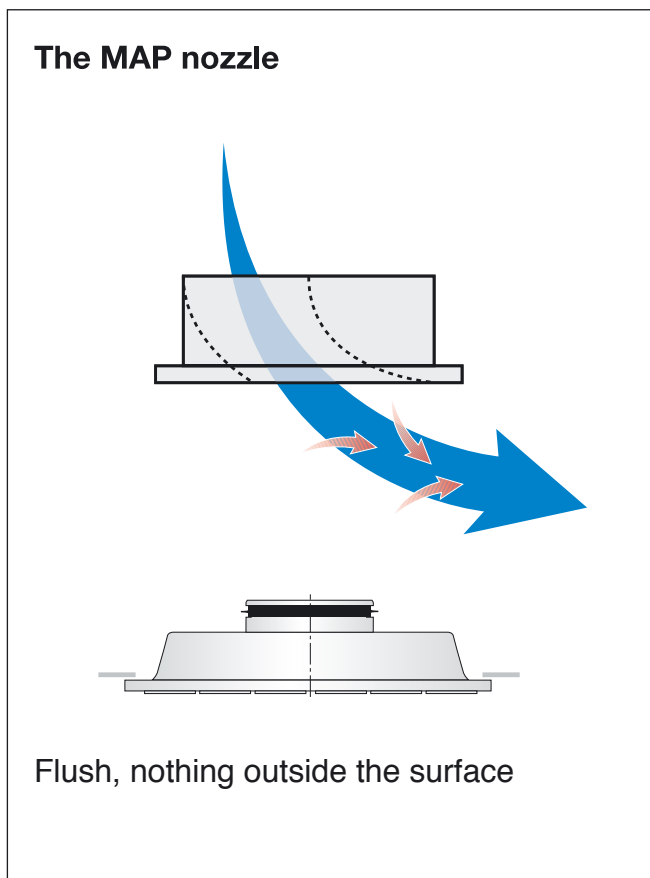


For rooms without suspending ceilings. Look at the MEK-brochure..

The air flow pattern is 100 % flexible. The pattern can be directed by rotating the nozzles. Suitable for both constant and variable air flow. The supply air can be at over- or under-temperature, and both horizontal and vertical spread patterns are possible.

Balancing plenum box TAK has a low construction height. It includes a removable adjustment and measurement unit. The unit is easy to remove without changing the settings.

The differences between MAP and MAK nozzles



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Material and surface treatment

Manufactured from sheet steel, the nozzles are plastic. As standard painted white RAL 9010. Other RAL colours are available at additional costs (not the nozzles).
 Colour options for the plastic nozzles are white or black.
 Plenum box TAK is made of galvanised sheet steel with acoustic lining.

Order key

Nozzle diffuser MAP - 125 + TAK 100 / 125

1 2 3 4 5

- 1 = nozzle diffuser type:
MAP, MAP+KL, MAK, MAK+KL
- 2 = diffuser size
- 3 = balancing plenum box TAK
- 4 = duct size of the plenum box
- 5 = diffuser size of the plenum box

Quick facts

| Diffuser type → | MAP | | MAK | |
|-----------------------------|------|-----|------|-----|
| | min. | max | min. | max |
| Installation level (m) | | | | |
| - horizontal throw | 2,6 | 4,0 | 2,6 | 3,5 |
| - vertical throw | | 6,0 | | 5,0 |
| Max. cooling temp. °C | | | | |
| - ceiling installation | | 8 | | 12 |
| - without suspended ceiling | | 4 | | 10 |

Quick guide

Nozzle air diffuser with balancing plenum box TAK

| Size | MAP+TAK | | MAK+TAK | |
|---------|-------------|-----|---------|-----|
| | Airflow l/s | | | |
| | min. | max | min | max |
| 100/125 | 10 | 25 | 20 | 35 |
| 125/160 | 15 | 35 | 25 | 45 |
| 160/200 | 20 | 55 | 40 | 70 |
| 200/250 | 35 | 90 | 55 | 110 |

The flow pattern is flexible

Twist throw = standard 4-way throw 360° Vertical throw Directed throw

Rotation of the nozzles does not affect airflow or sound level.

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Performance

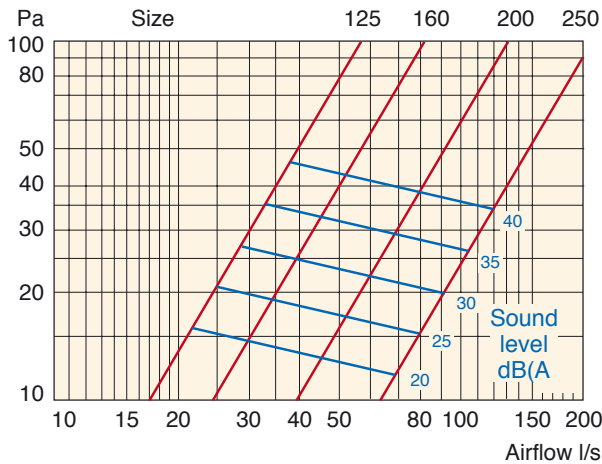
Nozzle air diffuser **MAP** without balancing plenum box **TAK**

The sound level increases if the distance after fitting is shorter than $3 \times \varnothing d$:

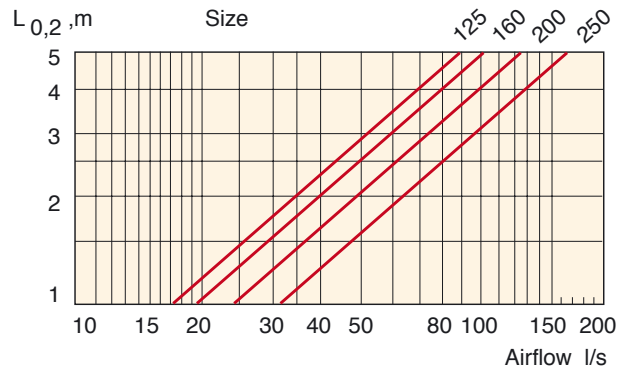
- after bend +4 dB (A)
- after T-bend +8 dB (A)

Valid for isothermal supply air, twist throw and ceiling installation.

Airflow - pressure drop - sound level



Airflow - throw



The pattern and vertical throw are shown on page 10.

Directional throw extension

| Throw direction | Throw length $L_{0,2}$ |
|-----------------|------------------------|
| 4-way | 1,5 x |
| 3-way | 2,0 x |
| 2-way | 2,5 x |
| 1-way | 4,0 x |

Sound power level L_w

Correction factor K_{okt}

| Size | Hz | | | | | | | |
|------|----|-----|-----|-----|----|-----|-----|-----|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| 125 | -5 | -4 | -3 | 0 | 2 | -7 | -18 | -24 |
| 160 | -4 | -4 | -3 | 0 | 2 | -7 | -19 | -25 |
| 200 | -4 | -4 | 0 | 1 | 3 | -10 | -21 | -25 |
| 250 | -6 | -3 | 0 | 2 | 2 | -10 | -20 | -25 |

Sound attenuation ΔL , dB

| Size | Hz | | | | | | | |
|------|----|-----|-----|-----|----|----|----|----|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| 125 | 19 | 13 | 8 | 2 | 1 | 2 | 2 | 3 |
| 160 | 18 | 12 | 7 | 2 | 1 | 2 | 2 | 3 |
| 200 | 18 | 10 | 4 | 1 | 4 | 3 | 3 | 5 |
| 250 | 15 | 9 | 3 | 1 | 4 | 2 | 3 | 5 |

$$L_w = L_{A10} + K_{okt}$$

Performance

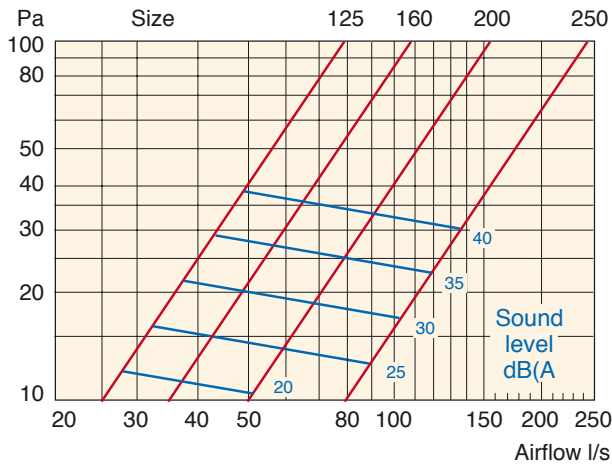
Nozzle air diffuser **MAK** without balancing plenum box **TAK**

The sound level increases if the distance after fitting is shorter than $3 \times \varnothing d$:

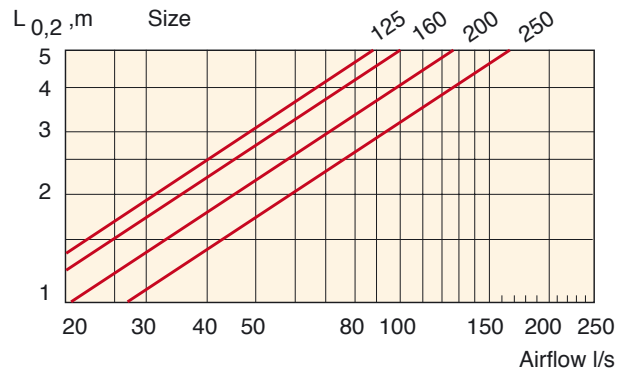
- after bend +4 dB (A)
- after T-bend +8 dB (A)

Valid for isothermal supply air, twist throw and installation against ceiling.

Airflow - pressure drop - sound level



Airflow - throw



The pattern and vertical throw are shown on page 10.

Directional throw extension

| Throw direction | Throw length L _{0,2} |
|-----------------|-------------------------------|
| 4-way | 1,5 x |
| 3-way | 2,0 x |
| 2-way | 2,5 x |
| 1-way | 4,0 x |

Sound power level L_w

Correction factor K_{okt}

| Size | Hz | | | | | | | |
|------|----|-----|-----|-----|----|-----|-----|-----|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| 125 | -4 | -3 | 1 | 0 | 1 | -7 | -15 | -24 |
| 160 | -3 | -3 | 1 | 0 | 1 | -7 | -16 | -25 |
| 200 | -1 | -3 | 1 | 3 | 2 | -10 | -17 | -25 |
| 250 | -1 | -1 | 1 | 1 | 4 | -9 | -15 | -28 |

Sound attenuation ΔL, dB

| Size | Hz | | | | | | | |
|------|----|-----|-----|-----|----|----|----|----|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| 125 | 18 | 13 | 8 | 1 | 0 | 2 | 2 | 3 |
| 160 | 17 | 12 | 7 | 1 | 0 | 2 | 2 | 3 |
| 200 | 17 | 10 | 4 | 0 | 3 | 3 | 3 | 6 |
| 250 | 14 | 9 | 2 | 0 | 3 | 2 | 3 | 6 |

$$L_w = L_{A10} + K_{okt}$$

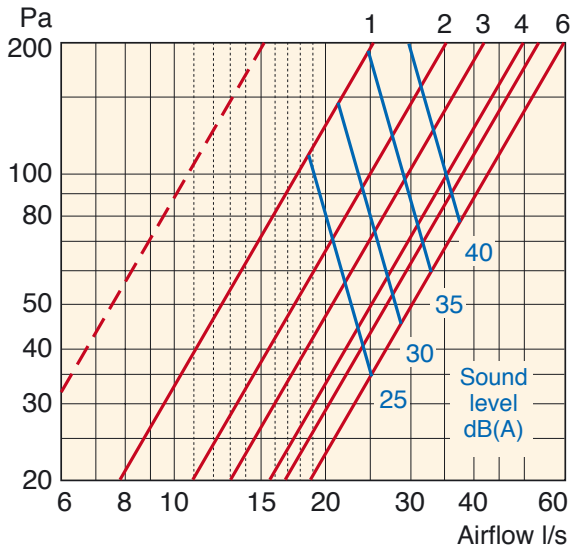
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Performance

Nozzle air diffuser MAP with balancing plenum box TAK.

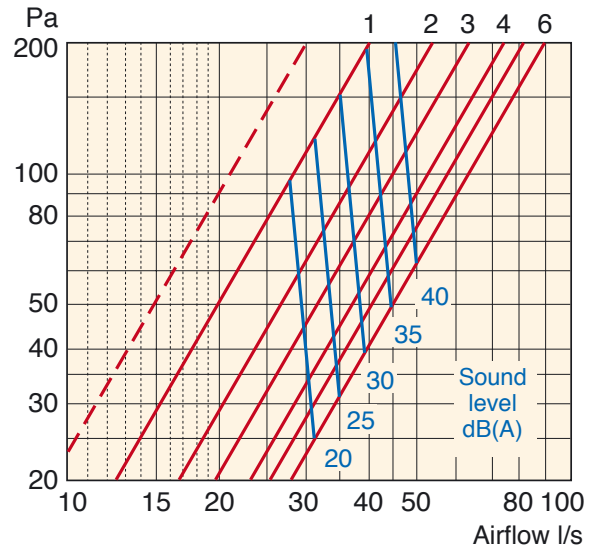
The graphs are not to be used for commissioning.

MAP 125 + TAK-100/125



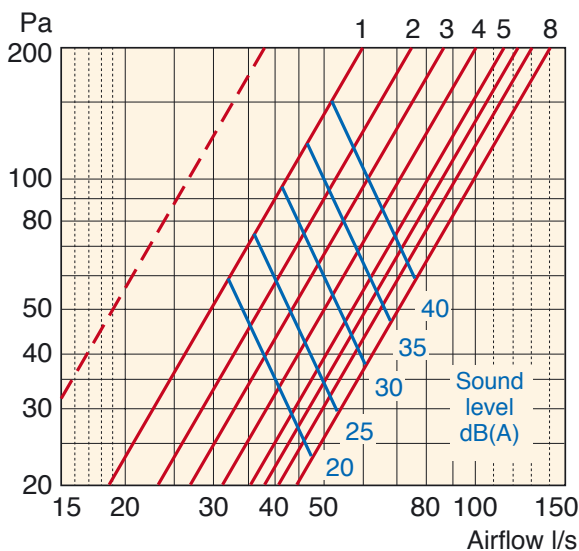
| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 2 | 11 | 7 | 1 | -2 | -8 | -11 | -14 |
| Sound attenuation ΔL , dB | | | | | | | |
| 21 | 14 | 10 | 9 | 10 | 9 | 7 | 3 |

MAP 160 + TAK-125/160



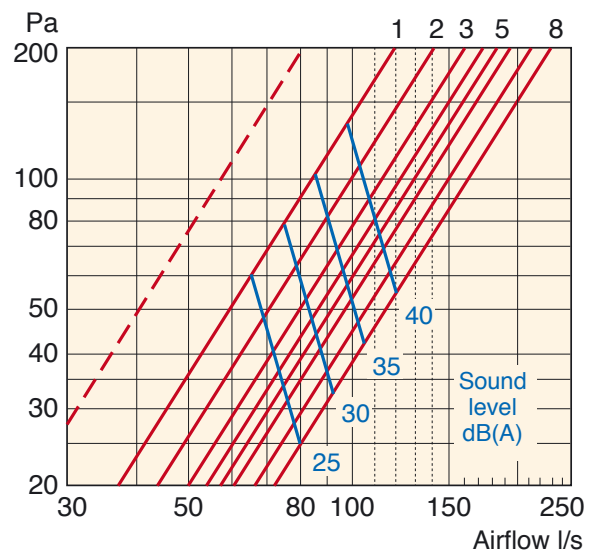
| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 3 | 9 | 6 | -1 | -1 | -6 | -12 | -20 |
| Sound attenuation ΔL , dB | | | | | | | |
| 19 | 12 | 9 | 13 | 20 | 13 | 15 | 12 |

MAP 200 + TAK-160/200



| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 5 | 11 | 4 | 1 | -1 | -6 | -12 | -16 |
| Sound attenuation ΔL , dB | | | | | | | |
| 18 | 4 | 8 | 13 | 20 | 12 | 16 | 5 |

MAP 250 + TAK-200/250



| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 7 | 12 | 4 | 2 | -2 | -8 | -12 | -16 |
| Sound attenuation ΔL , dB | | | | | | | |
| 15 | 3 | 10 | 13 | 13 | 12 | 14 | 4 |

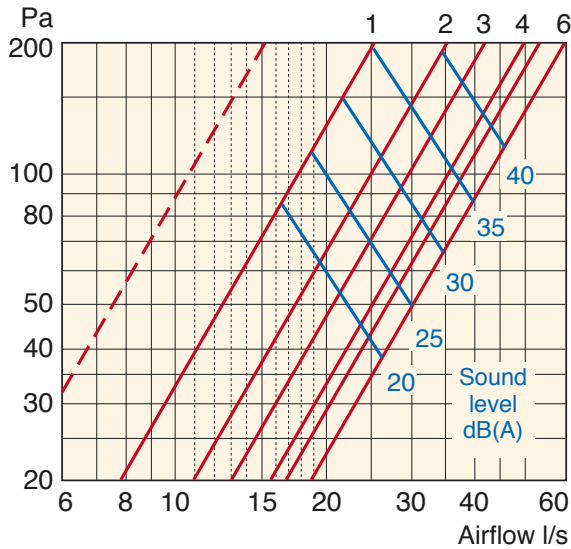
NOZZLE AIR DIFFUSERS

Performance

Nozzle air diffuser MAK with balancing plenum box TAK.

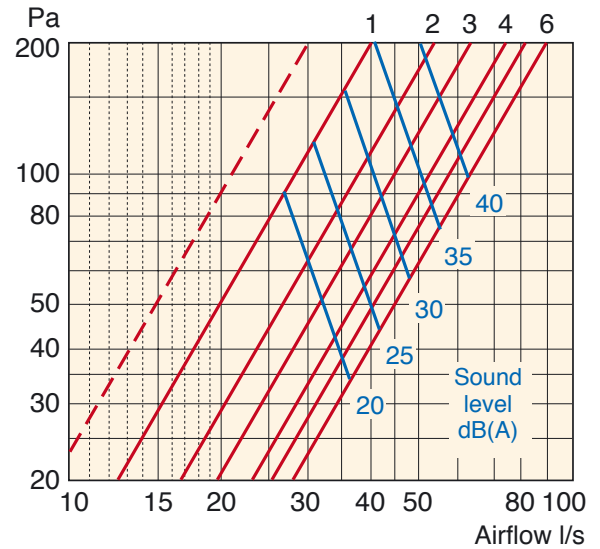
The graphs are not to be used for commissioning.

MAK 125 + TAK-100/125



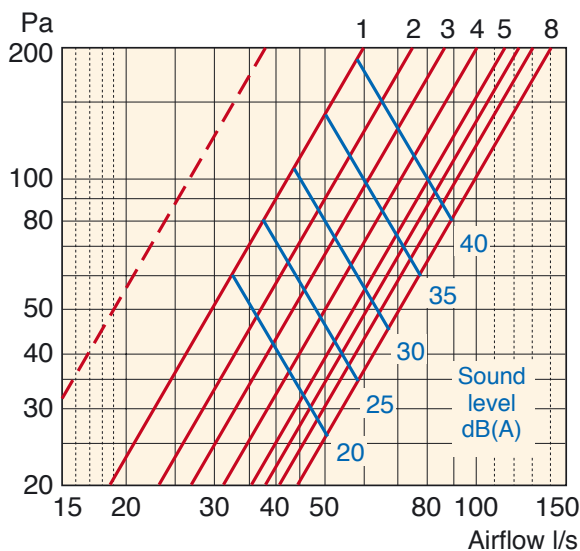
| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 2 | 11 | 7 | 1 | -2 | -8 | -11 | -14 |
| Sound attenuation ΔL , dB | | | | | | | |
| 21 | 14 | 10 | 9 | 10 | 9 | 7 | 3 |

MAK 160 + TAK-125/160



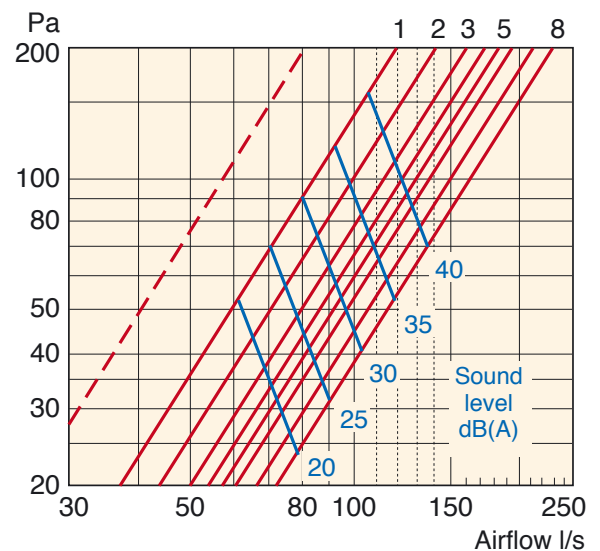
| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 3 | 9 | 6 | -1 | -1 | -6 | -12 | -20 |
| Sound attenuation ΔL , dB | | | | | | | |
| 19 | 12 | 9 | 13 | 20 | 13 | 15 | 12 |

MAK 200 + TAK-160/200



| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 5 | 11 | 4 | 1 | -1 | -6 | -12 | -16 |
| Sound attenuation ΔL , dB | | | | | | | |
| 18 | 4 | 8 | 13 | 20 | 12 | 16 | 5 |

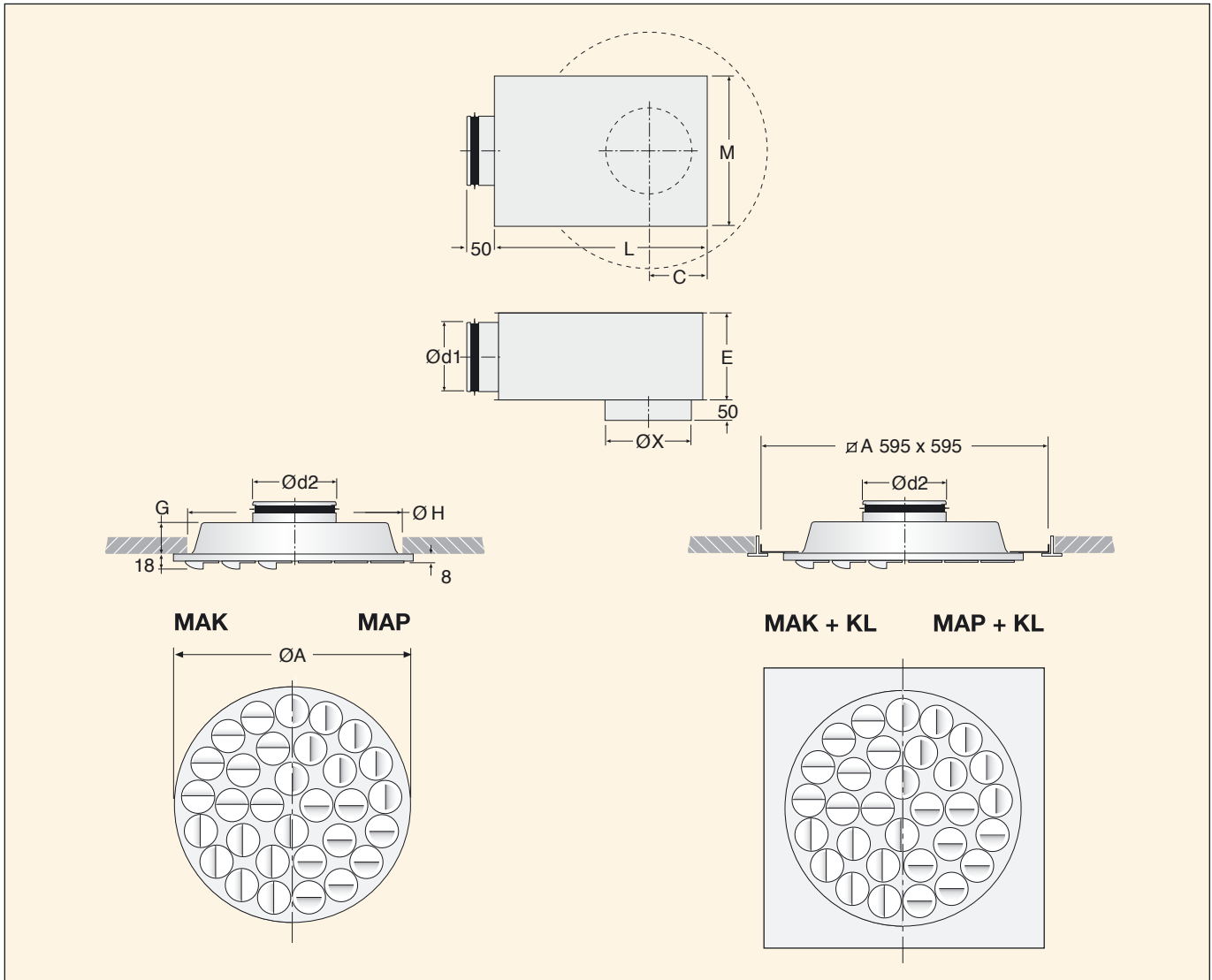
MAK 250 + TAK-200/250



| Sound power level L_w | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 63 | 125 | 250 | 500 | 1 k | 2 k | 4 k | 8 k |
| 7 | 12 | 4 | 2 | -2 | -8 | -12 | -16 |
| Sound attenuation ΔL , dB | | | | | | | |
| 15 | 3 | 10 | 13 | 13 | 12 | 14 | 4 |

NOZZLE AIR DIFFUSERS

Dimensions



| Nozzle air diffusers MAP / MAP+KL / MAK / MAK+KL | | | | | | Balancing plenum box TAK | | | | | | |
|--|-----|-----|-----------|-----|----|--------------------------|-----|-----|-----|-----|-----|-----|
| Size | ød2 | øA | ∅A | øH | G | Size | ød1 | øX | L | M | E | C |
| 125 | 124 | 340 | 595 x 595 | 310 | 40 | 100/125 | 99 | 125 | 450 | 270 | 140 | 92 |
| 160 | 159 | 340 | 595 x 595 | 310 | 40 | 125/160 | 124 | 160 | 450 | 270 | 165 | 110 |
| 200 | 199 | 430 | 595 x 595 | 400 | 50 | 160/200 | 159 | 200 | 500 | 340 | 200 | 130 |
| 250 | 249 | 520 | 595 x 595 | 490 | 60 | 200/250 | 199 | 250 | 570 | 400 | 240 | 155 |

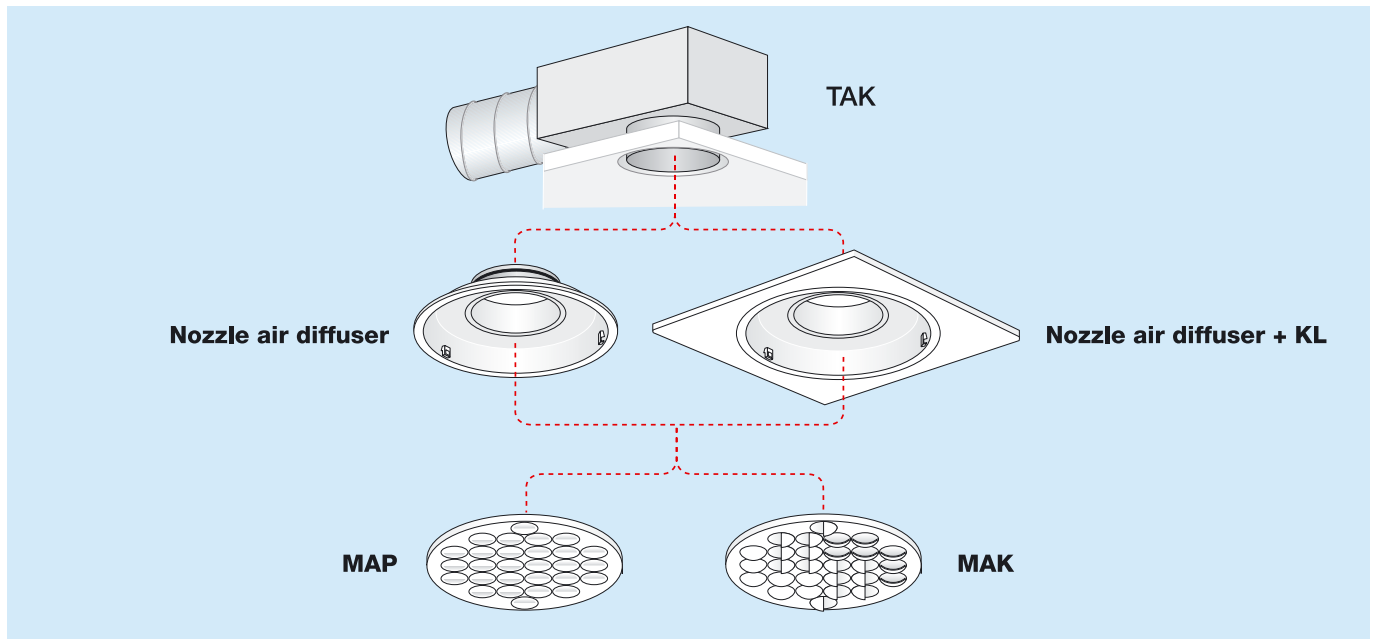
Weight kg

| Size | MAP / MAK | MAP+KL / MAK+KL |
|------|-----------|-----------------|
| 125 | 1,2 | 3,6 |
| 160 | 1,2 | 3,6 |
| 200 | 1,9 | 3,9 |
| 250 | 2,8 | 4,2 |

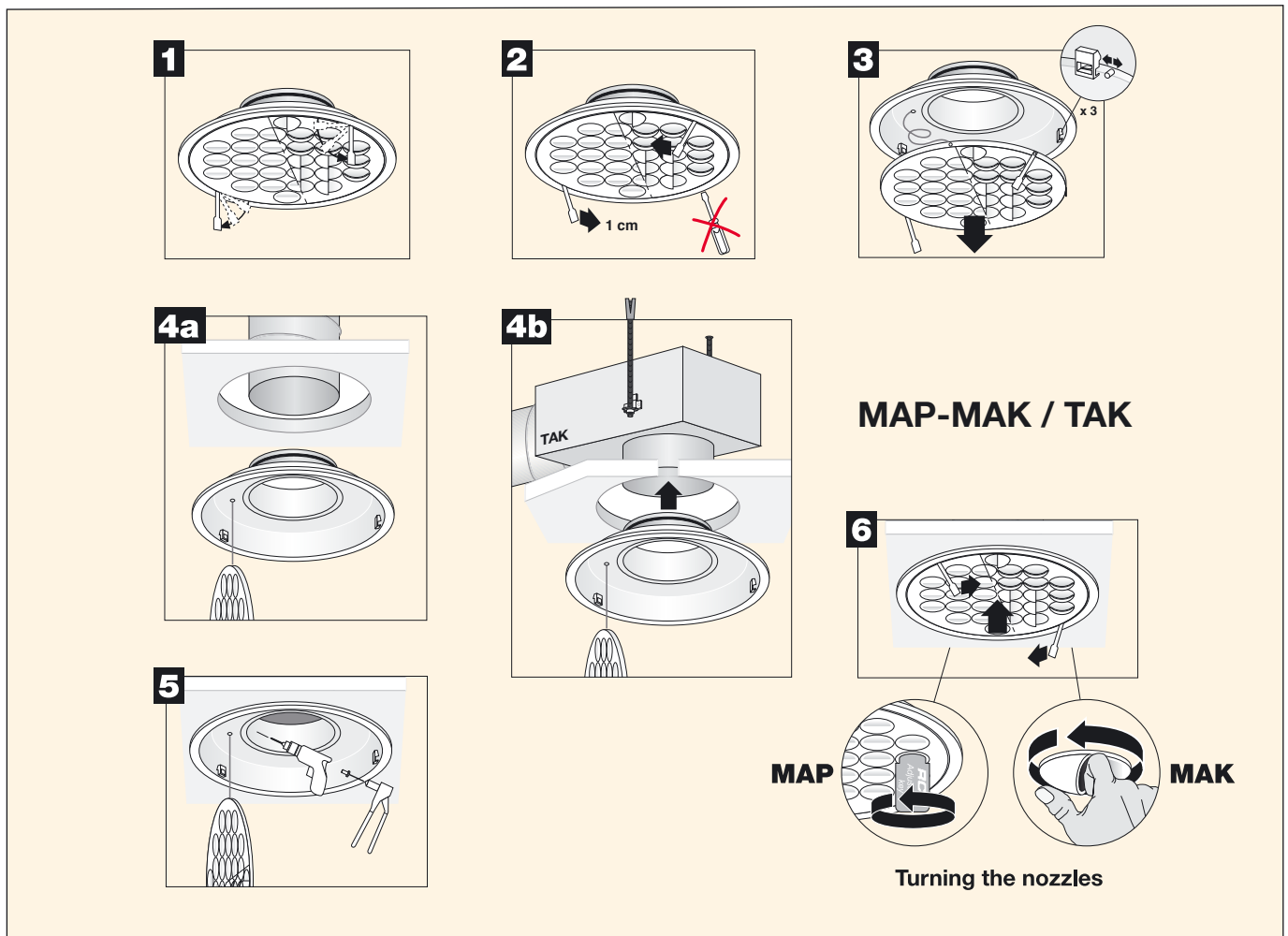
| Size | Balancing plenum box TAK |
|-----------|--------------------------|
| 100 / 125 | 3,7 |
| 125 / 160 | 4,0 |
| 160 / 200 | 5,3 |
| 200 / 250 | 7,4 |

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Structure

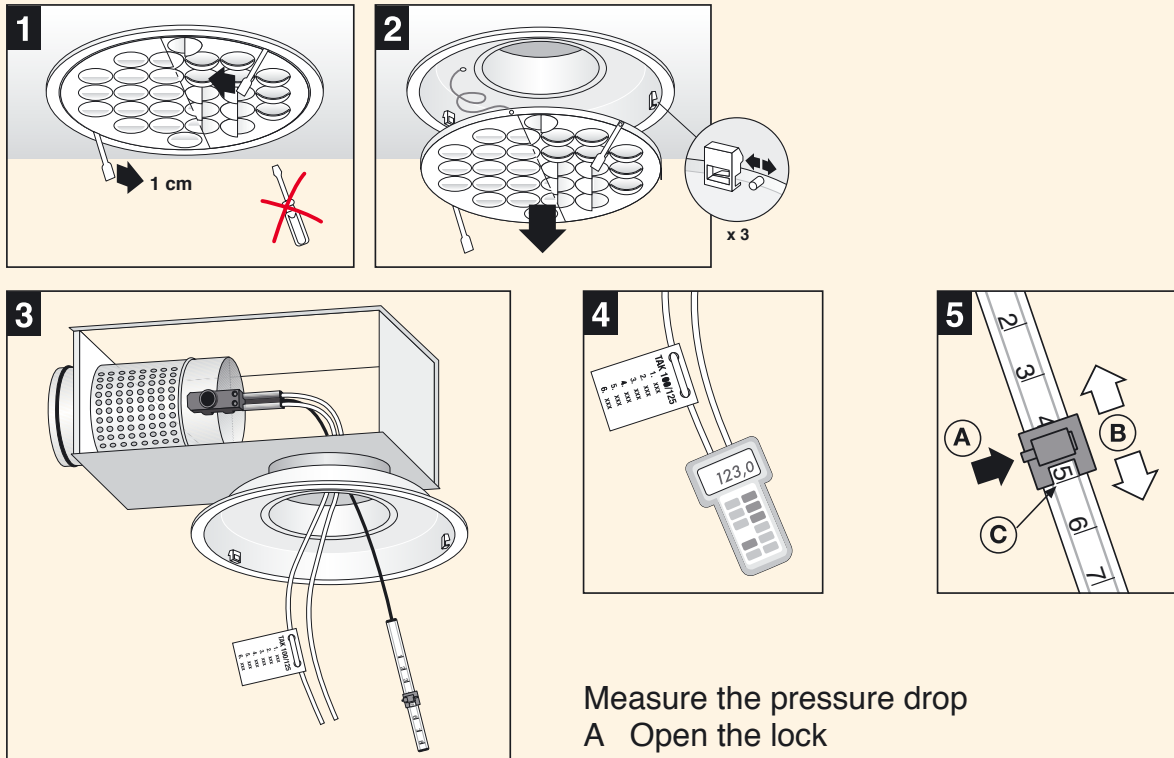


Installation



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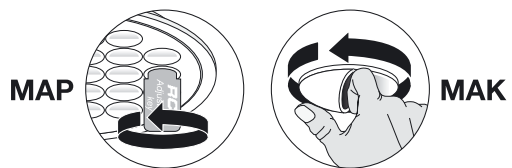
Commissioning



Measure the pressure drop

- A Open the lock
- B Regulate the airflow
- C Adjust to the line
- D Lock

Turning the nozzles



The k-factors are connected to the measuring tube