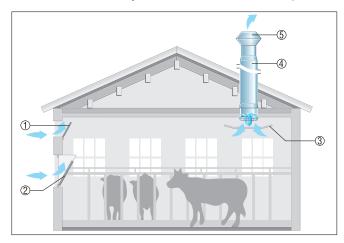
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# Stable air extraction via the roof: Recommendations for measures and accessories to be used by the customer

- A good stable climate is an important pre-requisite for healthy livestock, better food utilization, efficient working animal performance and quicker fattening.
- Long-term humidity and harsh stable vapours can cause serious damage to buildings.
- Natural ventilation through open windows and doors as well as gravity ventilation through shafts is uncertain and insufficient as it is dependent on atmospheric influences.
- Advantages of a mechanical ventilation device:
- Sufficient ventilation at all times as output and effectiveness are adapted to the size of the stable and the stocking.
- Independent of atmospheric influences.
- The air volume is adjusted to the corresponding area by output control.
- Prevention of draughts.
- Air flow rates are adjusted to seasonal conditions (summer/winter operation).



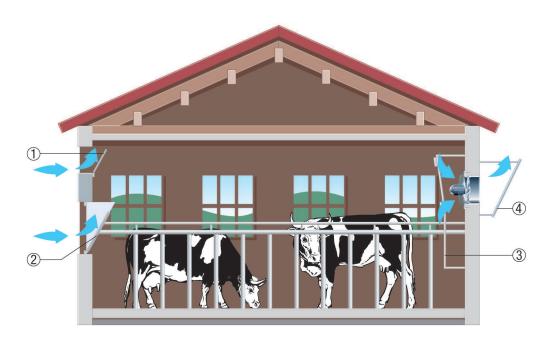
- ① Supply air shutter
- ② Tilting window
- 3 Baffle plate
- ④ Insulated folded spiral-seams duct
- ⑤ Deflector hood

## Stable ventilation via exterior wall: Recommendations for measures and accessories to be used by the customer

- Winter operation: Supply air using adjustable shutter in the cornice
- Summer operation: Supply air using tiltable windows with lateral panel

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- ① Adjustable shutter
- ② Tilting window
- 3 Exhaust air box
- 4 Wind deflector

#### Determination of the required air volume

- Determination of the minimum air volume/animal according to air flow rate table DIN 18910. An extract is shown below.
- Maximum air volume/hour = minimum air volume / animal x number of animals

| Buildings for cattle           | Summer temperature above 25°C        | Summer temperature below 25°C |
|--------------------------------|--------------------------------------|-------------------------------|
| Weight of individual animal kg | Minimum air quantity per animal m³/h | Minimum air volume<br>m³/h    |
| 60                             | 65                                   | 48                            |
| 100                            | 94                                   | 70                            |
| 150                            | 129                                  | 97                            |

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| Buildings for cattle        | Summer temperature above 25°C    | Summer temperature below 25°C |
|-----------------------------|----------------------------------|-------------------------------|
| 200                         | 163                              | 122                           |
| 300                         | 223                              | 167                           |
| 400                         | 275                              | 206                           |
| 500                         | 319                              | 239                           |
| 600                         | 354                              | 266                           |
| 800                         | 400                              | 300                           |
| Buildings for pigs          | Summer temperature above 25°C    | Summer temperature below 25°C |
| Weight of individual animal | Minimum air quantity per animal  | Minimum air volume            |
| kg                          | m³/h                             | m³/h                          |
| 10                          | 25                               | 17                            |
| 20                          | 37                               | 25                            |
| 30                          | 47                               | 31                            |
| 60                          | 75                               | 50                            |
| 100                         | 106                              | 71                            |
| 150                         | 145                              | 97                            |
| 200                         | 184                              | 123                           |
| 300                         | 263                              | 175                           |
| Poultry houses              | Summer temperature above 25°C    | Summer temperature below 25°C |
| Weight of individual animal | Minimum air flow rate per animal | Minimum air volume            |
| kg                          | m³/ h                            | m³/ h                         |
| 0,055                       | 0,6                              | 0,38                          |
| 0,165                       | 1,7                              | 1,06                          |
| 0,310                       | 2,8                              | 1,75                          |
| 0,520                       | 4,1                              | 2,56                          |

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| Poultry houses | Summer temperature above 25°C | Summer temperature below 25°C |
|----------------|-------------------------------|-------------------------------|
| 0,700          | 5,1                           | 3,19                          |
| 1,130          | 7,0                           | 4,38                          |
| 1,630          | 8,9                           | 5,56                          |
| 2,200          | 10,2                          | 6,38                          |