



**NON-RETURN DAMPER,
VARIANT UL-1**



FRONT FRAME

Frame with fixing holes



**BLADES WITH
RESTRICTOR**

Blades with restrictor

UL

FOR INSTALLATION INTO WALLS OR RECTANGULAR DUCTS

Non-return dampers prevent unwanted airflows against the intended airflow direction when the system is not in operation

- Maximum differential pressure: 100 Pa
- Maximum width of 1600 mm, maximum height of 1615 mm
- Frame with fixing holes along the perimeter
- Available in standard sizes and intermediate sizes (in increments of 1 mm)
- Non-return damper with formed aluminium blades for normal requirements; blades are fitted with seals

Optional equipment and accessories

- Installation subframe
- Powder coating, RAL CLASSIC colour

General information



Application

- Type UL non-return dampers for installation into internal walls and rectangular ducts
- Prevention of unwanted airflows against the intended airflow direction when the system is not in operation
- Blades close automatically when the system is shut down
- Maximum differential pressure: 100 Pa

Special characteristics

- Any intermediate sizes within the standard size range are available
- operating temperature: -20 - 80 °C
- Maximum differential pressure: 100 Pa
- Non-return dampers are opened and closed by the airflow; no actuator is required
- Non-return damper with formed aluminium blades for normal requirements; blades are fitted with seals for sound attenuation

Nominal sizes

- B: 200, 400, 600, 800, 1000, 1200, 1400, 1600 mm (intermediate sizes: 201 - 1599 mm in increments of 1 mm)
- H: 215, 315, 415, 515, 615, 715, 815, 1015, 1215, 1415, 1615 mm (intermediate sizes: 216 - 1614 mm, in increments of 1 mm)
- Any combination of B × H

Variants

- UL-1: Non-return damper for airflows directed towards the installation side
- UL-2: Non-return damper for airflows directed towards the rear side (suction)

Parts and characteristics

- Frame
- Blades with low-friction bearings
- Blade restrictors
- Blade tip seals
- Bottom travel stop (angle section)
- Visible mullion from B = 997 mm

Parts and characteristics

- Border
- Blades with low-friction bearings
- Blade restrictors
- Blade tip seals
- Bottom travel stop (angle section)
- Visible mullion from B = 997 mm

Construction features

- Frame, material thickness 1.75 mm, with fixing holes
- Blades, material thickness 1.0 mm
- Additional side bar with fixing holes to accommodate the blade shafts and integral blade restrictors
- Blade restrictors prevent the blades from opening beyond a certain angle

Accessories

- Installation subframe: Installation subframe for the fast and simple installation of mechanically self-powered dampers

Technical data

- Nominal sizes: 200 × 215 to 1600 × 1615 mm
- Volume flow rate range: 110 – 6460 l/s or 396 – 23256 m³ /h at 2.5 m/s
- Total differential pressure: 25 Pa at 2.5 m/s
- Maximum differential pressure in closing direction: 100 Pa
- Operating temperature: -20 to 80 °C

Description



Variants

- UL-1: Non-return damper for airflows directed towards the installation side
- UL-2: Non-return damper for airflows directed towards the rear side (suction)

Parts and characteristics

- Border
- Blades with low-friction bearings
- Blade restrictors
- Blade tip seals
- Bottom travel stop (angle section)
- Visible mullion from B = 997 mm

Construction features

- Frame, material thickness 1.75 mm, with fixing holes
- Blades, material thickness 1.0 mm
- Additional side bar with fixing holes to accommodate the blade shafts and integral blade restrictors
- Blade restrictors prevent the blades from opening beyond a certain angle

Nominal sizes

- B: 200, 400, 600, 800, 1000, 1200, 1400, 1600 mm (intermediate sizes: 201 – 1599 mm in increments of 1 mm)
- H: 215, 315, 415, 515, 615, 715, 815, 1015, 1215, 1415, 1615 mm (intermediate sizes: 216 – 1614 mm, in increments of 1 mm)
- Any combination of B × H

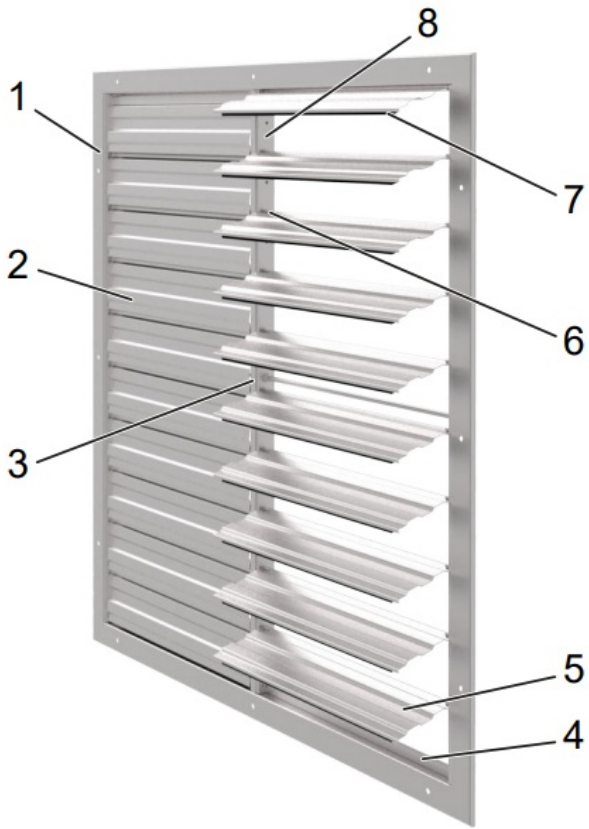
ТЕХНИЧЕСКА ИНФОРМАЦИЯ

Function, Technical data, Quick sizing, Specification text, Order code, Related products



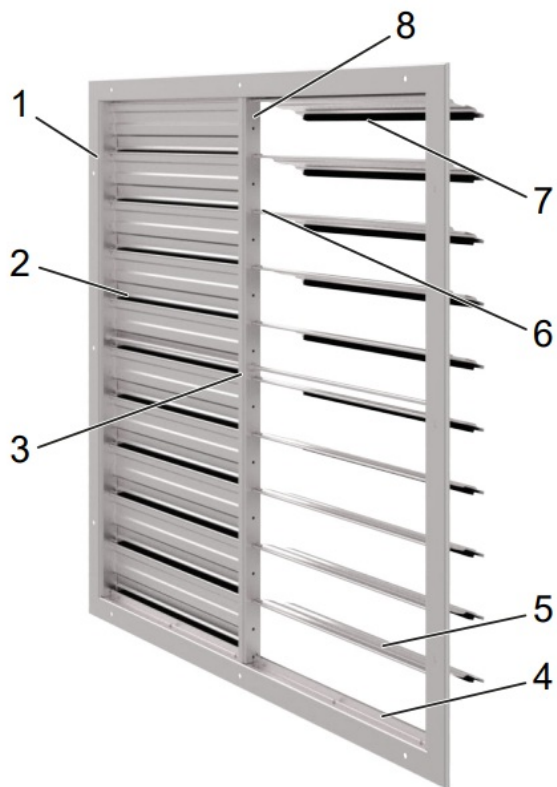
Non-return dampers open and close automatically. When the system is in operation, the blades open when air flows. When the system is shut down, the blades close due to their weight. They safely prevent air from flowing against the intended airflow direction.

Schematic illustration of UL-1



- 1 Frame
- 2 Blades (closed)
- 3 Mullion from B = 997 mm
- 4 Travel stop (angle section)
- 5 Blades (open)
- 6 Blade restrictor
- 7 Blade tip seals
- 8 Side bar

Schematic illustration of UL-2



- 1 Frame
- 2 Blades (closed)
- 3 Mullion from B = 997 mm
- 4 Travel stop (angle section)
- 5 Blades (open)
- 6 Blade restrictor
- 7 Blade tip seals
- 8 Side bar

| | |
|---|--|
| Nominal sizes | 200 × 215 - 1600 × 1615 mm |
| Volume flow rate range | 110 - 6460 l/s or 396 - 23256 m ³ /h at 2.5 m/s |
| Total differential pressure | 2.5 m/s at 23 Pa (UL-1) |
| Maximum permissible differential pressure in closing direction | 100 Pa |
| Operating temperature | -20 to 80 °C |

Quick sizing tables provide a good overview of the volume flow rates with an airflow velocity of 2.5 m/s. Intermediate values can be interpolated. Precise intermediate values can be calculated with our Easy Product Finder design program.

UL, width 200 – 600 mm, volume flow rate at 2.5 m/s

| H | B | | | | | | | | | |
|------|-----|------|------|------|------|------|------|------|------|------|
| | 200 | | 300 | | 400 | | 500 | | 600 | |
| | l/s | m³/h | l/s | m³/h | l/s | m³/h | l/s | m³/h | l/s | m³/h |
| 215 | 110 | 396 | 160 | 576 | 215 | 774 | 270 | 972 | 325 | 1170 |
| 315 | 160 | 576 | 235 | 846 | 315 | 1134 | 395 | 1422 | 475 | 1710 |
| 415 | 210 | 756 | 310 | 1116 | 415 | 1494 | 520 | 1872 | 625 | 2250 |
| 515 | 260 | 936 | 385 | 1386 | 515 | 1854 | 645 | 2322 | 775 | 2790 |
| 615 | 310 | 1116 | 460 | 1656 | 615 | 2214 | 770 | 2772 | 925 | 3330 |
| 715 | 360 | 1296 | 535 | 1926 | 715 | 2574 | 895 | 3222 | 1070 | 3852 |
| 815 | 410 | 1476 | 610 | 2196 | 815 | 2934 | 1020 | 3672 | 1220 | 4392 |
| 1015 | 510 | 1836 | 760 | 2736 | 1020 | 3672 | 1270 | 4572 | 1520 | 5472 |
| 1215 | 610 | 2196 | 910 | 3276 | 1220 | 4392 | 1520 | 5472 | 1820 | 6552 |
| 1415 | 710 | 2556 | 1060 | 3816 | 1420 | 5112 | 1770 | 6372 | 2120 | 7632 |
| 1615 | 810 | 2916 | 1210 | 4356 | 1620 | 5832 | 2020 | 7272 | 2420 | 8712 |

UL, width 800 – 1600 mm, volume flow rate at 2.5 m/s

| H | B | | | | | | | | | |
|------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | 800 | | 1000 | | 1200 | | 1400 | | 1600 | |
| | l/s | m³/h | l/s | m³/h | l/s | m³/h | l/s | m³/h | l/s | m³/h |
| 215 | 430 | 1548 | 540 | 1944 | 645 | 2322 | 755 | 2718 | 860 | 3096 |
| 315 | 630 | 2268 | 790 | 2844 | 945 | 3402 | 1100 | 3960 | 1260 | 4536 |
| 415 | 830 | 2988 | 1040 | 3744 | 1250 | 4500 | 1450 | 5220 | 1660 | 5976 |
| 515 | 1030 | 3708 | 1290 | 4644 | 1550 | 5580 | 1800 | 6480 | 2060 | 7416 |
| 615 | 1230 | 4428 | 1540 | 5544 | 1850 | 6660 | 2150 | 7740 | 2460 | 8856 |
| 715 | 1430 | 5148 | 1790 | 6444 | 2150 | 7740 | 2500 | 9000 | 2860 | 10296 |
| 815 | 1630 | 5868 | 2040 | 7344 | 2450 | 8820 | 2850 | 10260 | 3260 | 11736 |
| 1015 | 2030 | 7308 | 2540 | 9144 | 3050 | 10980 | 3550 | 12780 | 4060 | 14616 |
| 1215 | 2430 | 8748 | 3040 | 10944 | 3650 | 13140 | 4250 | 15300 | 4860 | 17496 |
| 1415 | 2830 | 10188 | 3540 | 12744 | 4250 | 15300 | 4950 | 17820 | 5660 | 20376 |
| 1615 | 3230 | 11628 | 4040 | 14544 | 4850 | 17460 | 5650 | 20340 | 6460 | 23256 |

Differential pressure

| v [m/s] | UL-1 | UL-2 |
|------------|-------------------|------|
| | Δp_t [Pa] | |
| 0.5 | 11 | 11 |
| 1 | 14 | 15 |
| 2 | 20 | 25 |
| 3 | 26 | 34 |

Rectangular non-return dampers to prevent air from flowing against the intended airflow direction; for installation into internal walls and into rectangular ducts.

Ready-to-install component which consists of a border, blades with low-friction bearings, and travel stop and sealing parts.

Special characteristics

- Any intermediate sizes within the standard size range are available
- operating temperature: -20 - 80 °C
- Maximum differential pressure: 100 Pa
- Non-return dampers are opened and closed by the airflow; no actuator is required
- Non-return damper with formed aluminium blades for normal requirements; blades are fitted with seals for sound attenuation

Accessories

- Installation subframe: Installation subframe for the fast and simple installation of mechanically self-powered dampers

Technical data

- Nominal sizes: 200 × 215 to 1600 × 1615 mm
- Volume flow rate range: 110 - 6460 l/s or 396 - 23256 m³/h at 2.5 m/s
- Total differential pressure: 23 Pa at 2.5 m/s
- Maximum differential pressure in closing direction: 100 Pa
- Operating temperature: -20 to 80 °C

Sizing data

- q_v [m³/h] volume flow rate
- Δp_t [Pa] total differential pressure
- v [m/s] airflow velocity

UL - 1 / 800 × 515 / ER / P1 - RAL 9010
| | | | |
1 2 3 4 5

1 TypeUL

Non-return damper

2 Airflow direction

- 1 Airflow directed towards the installation side
- 2 Airflow directed towards the rear side (intake)

3 Nominal size [mm]

B × H

4 Installation subframe

No entry required: None
ER With

5 Surface

No entry: standard construction
P1 powder-coated, RAL CLASSIC colour

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

Order example: UL-1/800×515/ER/P1-RAL9010

| | |
|-----------------------|--|
| Type | UL |
| Airflow direction | Airflow directed towards the installation side |
| Nominal size [mm] | Width 800, height 515 |
| Installation subframe | With installation subframe |
| Surface | Powder-coated RAL 9010, pure white |

Accessories

[Type Installation subframe](#)

Dimensions and weight, Product details



DIMENSIONS

- B: 200 – 1600 mm, intermediate sizes 201 – 1599 in increments of 1 mm
- H: 215 – 1615 mm, intermediate sizes 216 – 1614 mm in increments of 1 mm

Flow cross section to calculate the airflow velocity

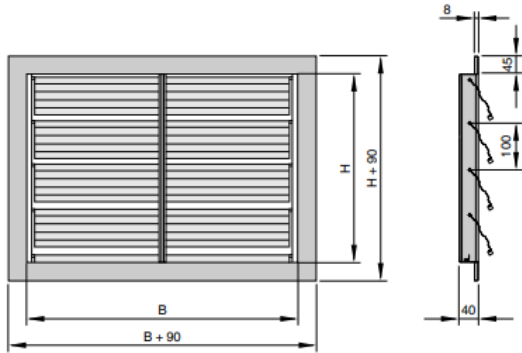
- $A = B \times H$

Unit of measure for B and H: m

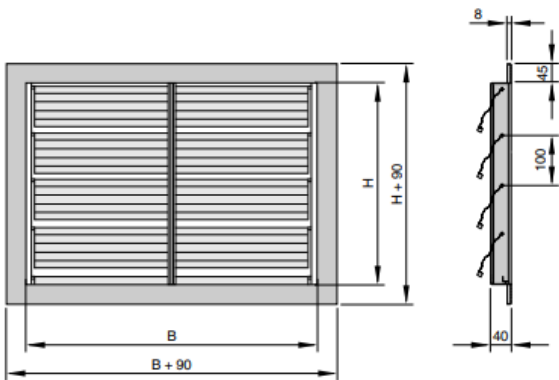
WEIGHT [KG]

| H | B | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|------|------|------|------|--|
| | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | |
| 215 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 315 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 415 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 515 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
| 615 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 715 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| 815 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| 1015 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| 1215 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
| 1415 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| 1615 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | |

UL-1



UL-1



UL, standard sizes, width, no. of flange holes

| B | No. of holes n | T ₁ | T ₂ |
|------|----------------|----------------|----------------|
| 200 | 1 | - | 100 |
| 300 | 1 | - | 150 |
| 400 | 2 | 303 | 48.5 |
| 500 | 2 | 403 | 48.5 |
| 600 | 3 | 252 | 48.5 |
| 800 | 3 | 352 | 48.5 |
| 1000 | 3 | 452 | 48.5 |
| 1200 | 3 | 552 | 48.5 |
| 1400 | 3 | 652 | 48.5 |
| 1600 | 4 | 501 | 48.5 |

UL, standard sizes, height, no. of flange holes

| H | No. of holes n | T ₃ | T ₄ |
|------|----------------|----------------|----------------|
| 215 | 1 | - | 107.5 |
| 315 | 1 | - | 157.5 |
| 415 | 1 | - | 207.5 |
| 515 | 1 | - | 257.5 |
| 615 | 2 | 320 | 147.5 |
| 715 | 2 | 420 | 147.5 |
| 815 | 3 | 260 | 147.5 |
| 1015 | 3 | 360 | 147.5 |
| 1215 | 3 | 460 | 147.5 |
| 1415 | 3 | 560 | 147.5 |
| 1615 | 4 | 440 | 147.5 |

UL, intermediate sizes, width, no. of flange holes

| B | No. of holes n | T ₁ | T ₂ |
|-------------|----------------|----------------|----------------|
| 201 - 396 | 1 | - | B/2 |
| 397 - 596 | 2 | B - 97 | 48.5 |
| 597 - 1596 | 3 | (B - 97)/2 | 48.5 |
| 1597 - 1599 | 4 | (B - 97)/3 | 48.5 |

UL, intermediate sizes, height, no. of flange holes

| H | No. of holes n | T ₃ | T ₄ |
|------------|----------------|----------------|----------------|
| 216 - 614 | 1 | - | H/2 |
| 616 - 814 | 2 | H - 295 | 147.5 |
| 816 - 1614 | 3 | (H - 295)/2 | 147.5 |

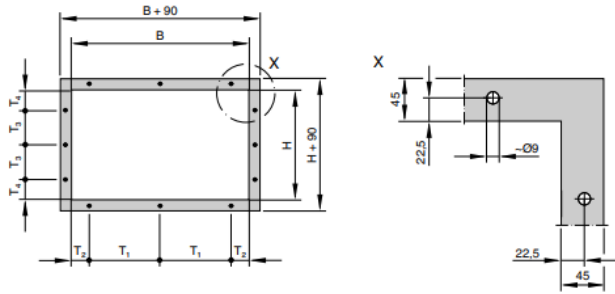
Installation and commissioning

- Horizontal airflow: vertical installation required
- Vertical airflow: installation into ceilings with upward airflow is possible; horizontal installation required
- Straight upstream section required (at least B + H) on the discharge side of fans
- Ensure a gradual start-up of fans to avoid a sudden pressure increase
- Only for installation in internal spaces

The airflow downstream of a fan is characterised by strong turbulence, and there is no uniform velocity profile. As a consequence, the blades of the non-return dampers are not uniformly subject to the airflow, and this may result in individual blades becoming subject to forces that might lead to mechanical damage.

Safe operation requires a straight upstream section of at least B + H.

Fixing holes in the frame - UL



Installation into an internal wall, without installation subframe

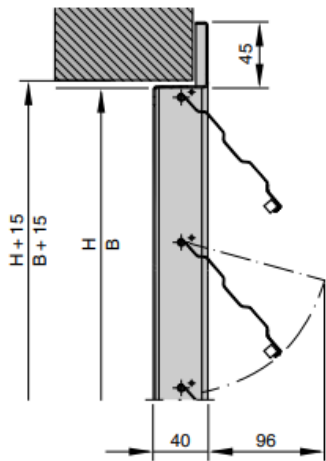
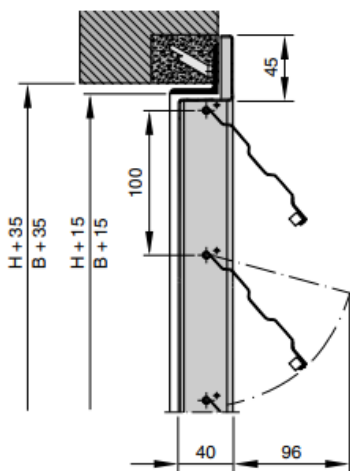
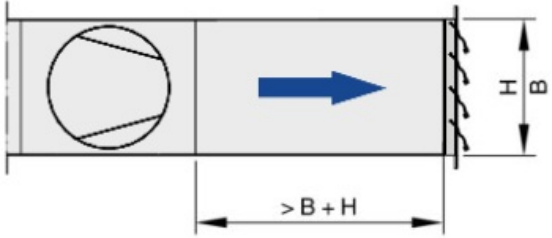


Illustration shows variant UL-1

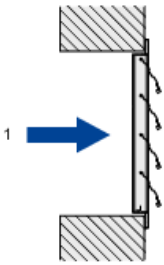
Installation into an internal wall, with installation subframe



Installation on the discharge side of a fan



UL-1, airflow direction



1 Positive pressure

UL-2, airflow direction



1 Negative pressure