

KOOLAIR

series

CEVH

Smoke Evacuation Damper

ISO 9001

BUREAU VERITAS
Certification

Sistema de Gestión



www.koolair.com

CEVH Smoke Evacuation Damper



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CEVH Smoke Evacuation Damper



Description

Smoke evacuation damper with 2-blade (2P), double door type swiveling closure, designed to be used for the supply of primary air and smoke evacuation in buildings with high levels of public footfall and in high-rise buildings. Approved in accordance with test standard UNE EN 1366-10 and classified according to EN 13501-4: EI120 (ved i↔o) S 1500 AA multi.

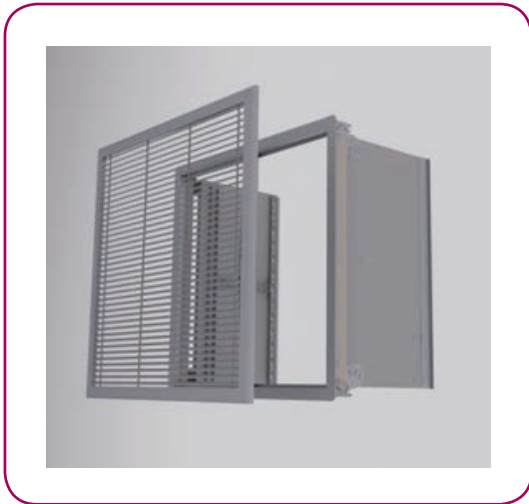
Designed according to EN 12101-8 specifications. Composed of a structure with a refractory material externally, sheet steel internally and two hinged doors made of a refractory material.

Installed vertically within the wall or in a vertical smoke evacuation duct, with the optional of a metal mounting frame previously fastened to the duct.

Includes an RPK protective and decorative grille, specific for smoke evacuation and manufactured with anodised aluminium profiles, fitted to the front side of the damper, i.e. the side on display in the building.

Can be used for smoke extraction and air intake (air flow in either direction).

CEVH smoke evacuation dampers carry CE marking No. 0370-CPR-1687 in accordance with the Construction Product Directive 89/106/EEC, according to EN12101-8.



Operation

Operation (opening) by means of electric shunt release coil with manual reset (closing) (CE and NF marking). Optional limit switch/es:

Types of coil (electromagnet) available:

- 24V electric shunt release coil DC
- 48V electric shunt release coil DC
- 24V electric shunt release coil AC
- 48V electric shunt release coil AC

The operating and reset mechanism is incorporated in the central part of the damper where it is protected from smoke and high temperatures.

CEVH Smoke Evacuation Damper

CE Marking

The Koolair CEVH smoke evacuation damper, carries CE marking, no. 0370-CPR-1687 in compliance with RPC-305/2011/EU, according to EN15650:2010.

NF Marking

The Koolair CEVH smoke evacuation damper, is certified for NF marking. (NF264 Certification Standard, NF S 61-937-10 smoke evacuation dampers).

Standard

The CEVH damper is approved according to the European Test Standard UNE-EN 1366-10 and European classification standard UNE-EN 13501-4, where EI 120 (ved i↔o) S 1500 AA multi:

(E) Integrity

(I) Isolation

(120) 120 minute resistance (ved)

Installed vertically in duct

(i ↔ o) Symmetric. Suitable for fire in both directions (interior-exterior and exterior-interior)




(S) Airtightness. Leakage through the damper closing blades <math>< 200 \text{ m}^3/\text{h}\cdot\text{m}^2</math>

(1500) Suitable for a working pressure range from 1500 Pa negative (extract) to 500 Pa positive (supply). (AA) Automatic intervention.

(multi) Suitable for multi-compartment systems.

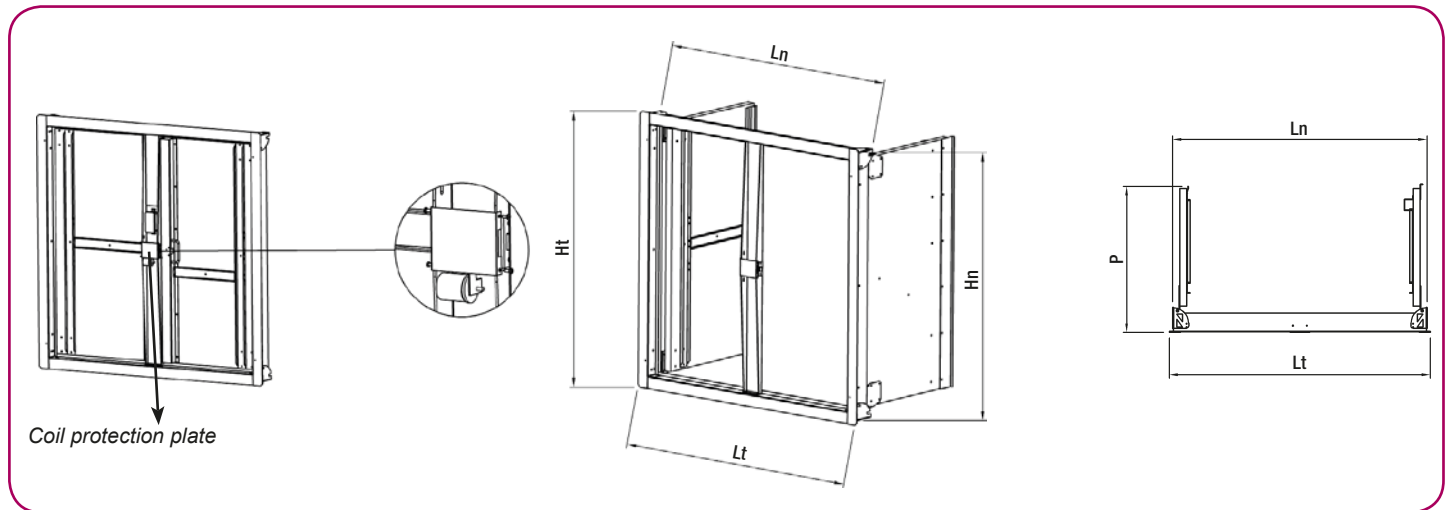
To guarantee correct fire damper operation, it is essential to read and follow the recommendations in the installation and operation manual. In addition, the installation must comply with all current national standards. Further information and updates, as well as the installation and operating manual, can be found on our website (www.koolair.com).

Declared smoke extraction performance

CEVH CPR-1687		Dimensions (mm)	Installation location	Installation	Classification
 		L: 400 → 1100 H: 400 → 1100	Smoke extract duct	1366-8 certified vertical duct	EI-120 (ved i↔o) S 1500 AA multi (500 Pa)

CEVH Smoke Evacuation Damper Dimensions

Damper Drawing

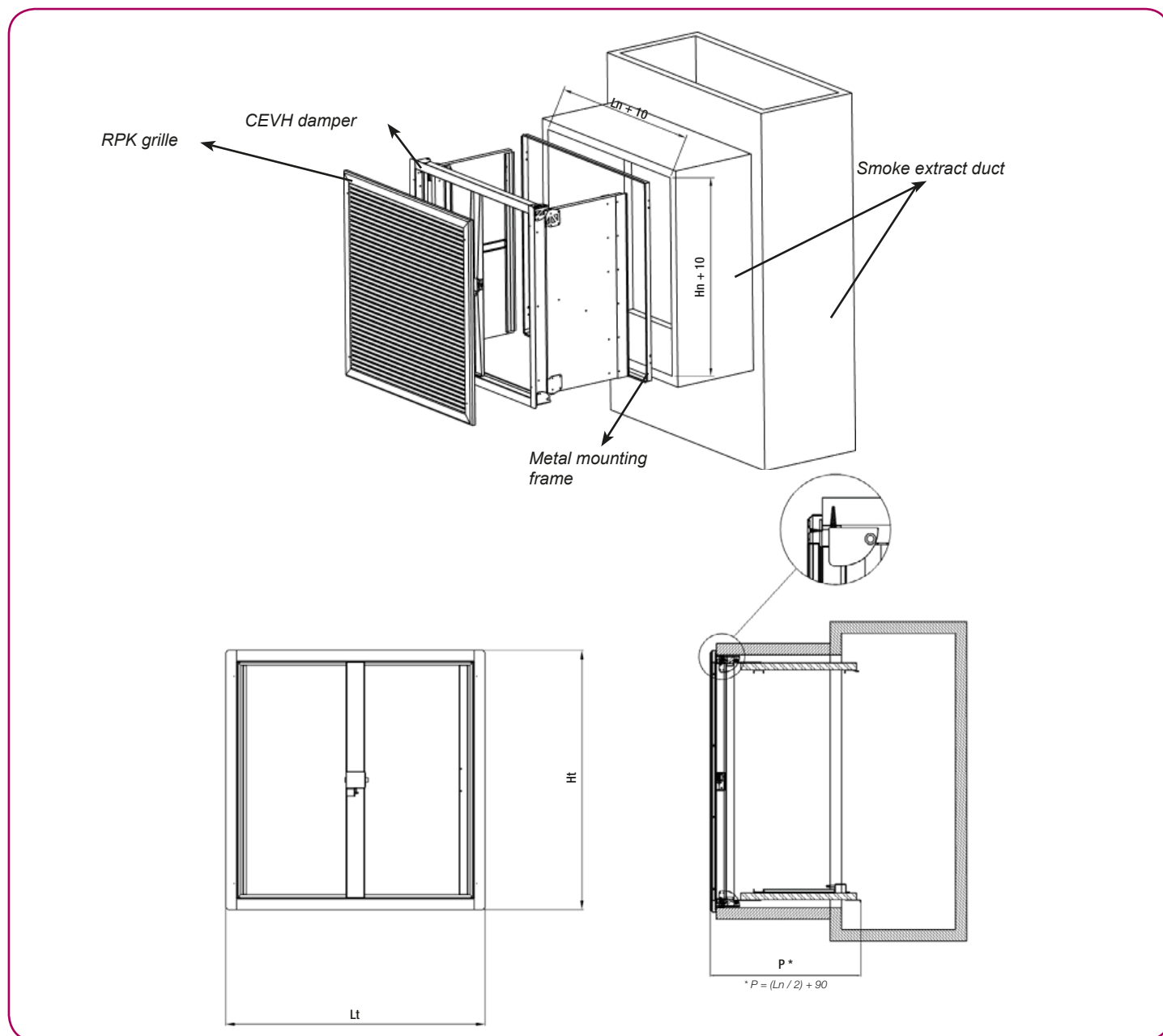


Dimensions and openings

Nominal length L_n (mm)	Exterior length L_t (mm)	Nominal height H_n (mm)	Exterior height H_t (mm)
400	429	400	429
450	479	450	479
500	529	500	529
550	579	550	579
600	629	600	629
650	679	650	679
700	729	700	729
750	779	750	779
800	829	800	829
850	879	850	879
900	929	900	929
950	979	950	979
1000	1029	1000	1029
1050	1079	1050	1079
1100	1129	1100	1129

Dimensions in mm

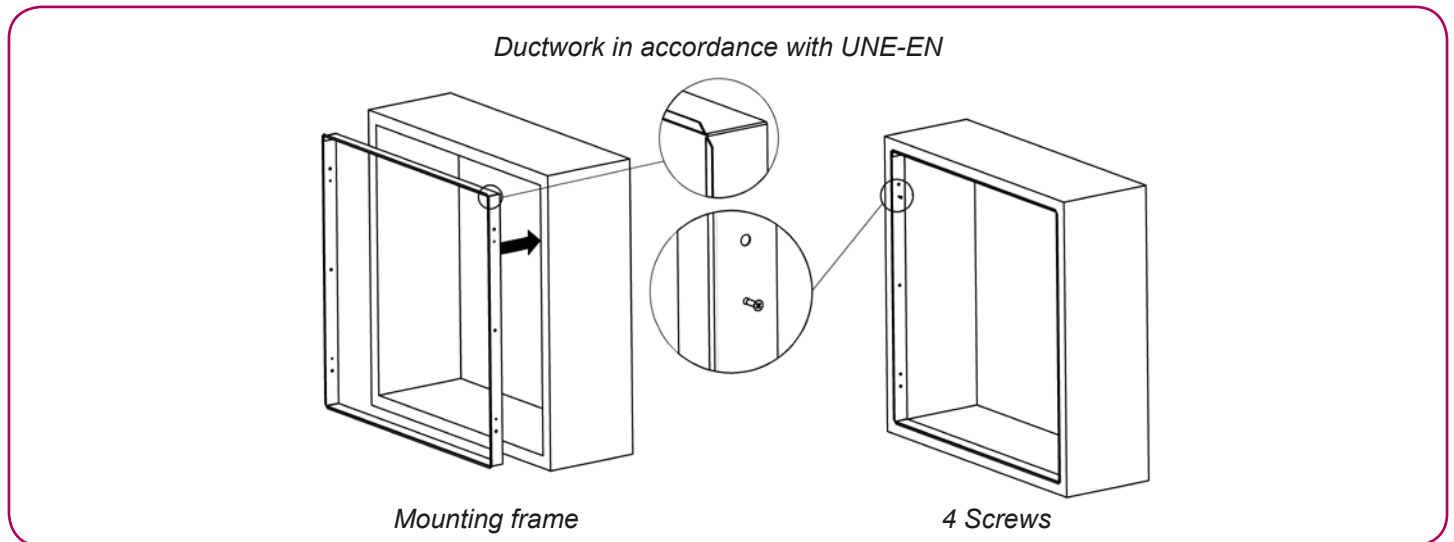
CEVH Smoke Evacuation Damper Installation



CEVH damper application in installations which employ ductwork different from that which has been submitted for certification testing: CEVH smoke control dampers, for use in multi-compartment systems (multi), are applicable in ducts that are tested in accordance with EN1366-8 as appropriate for each particular case or manufactured from materials with the same density or greater thickness than those used in the certification test. Ductwork must be installed in accordance with the manufacturer's latest drawings.

CEVH Smoke Evacuation Damper Assembly

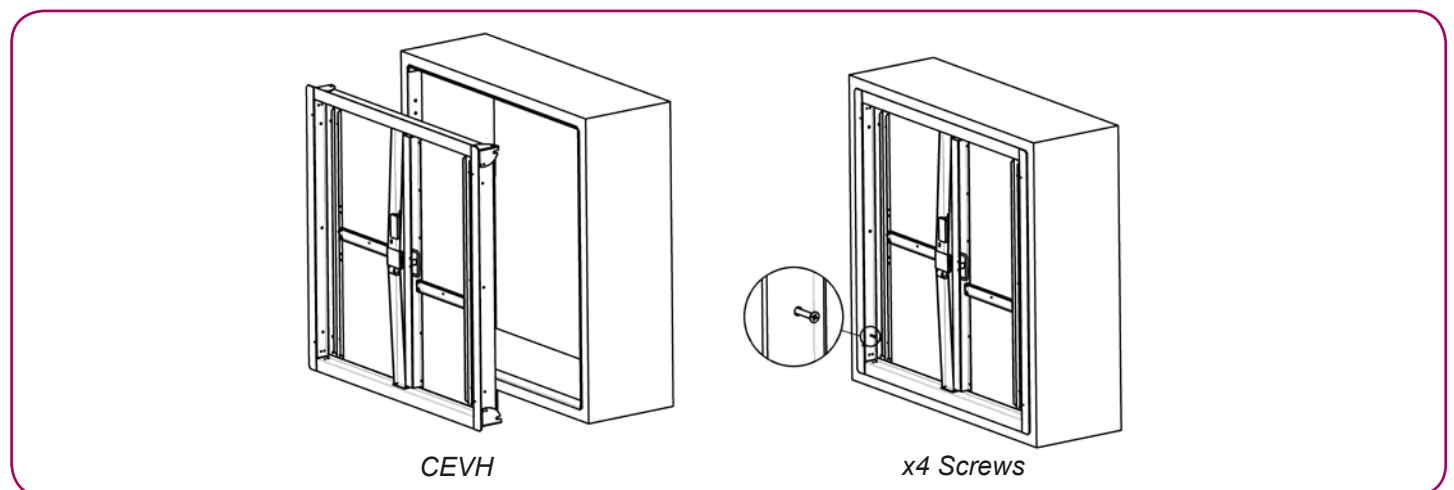
Use of mounting frame



Precautions:

- Make sure the mounting frame is perpendicular before installation.
- Fix the frame to the duct using the 4 screws provided with the frame.
- Drill a hole to allow ductwork connections to pass.

CEVH damper installation



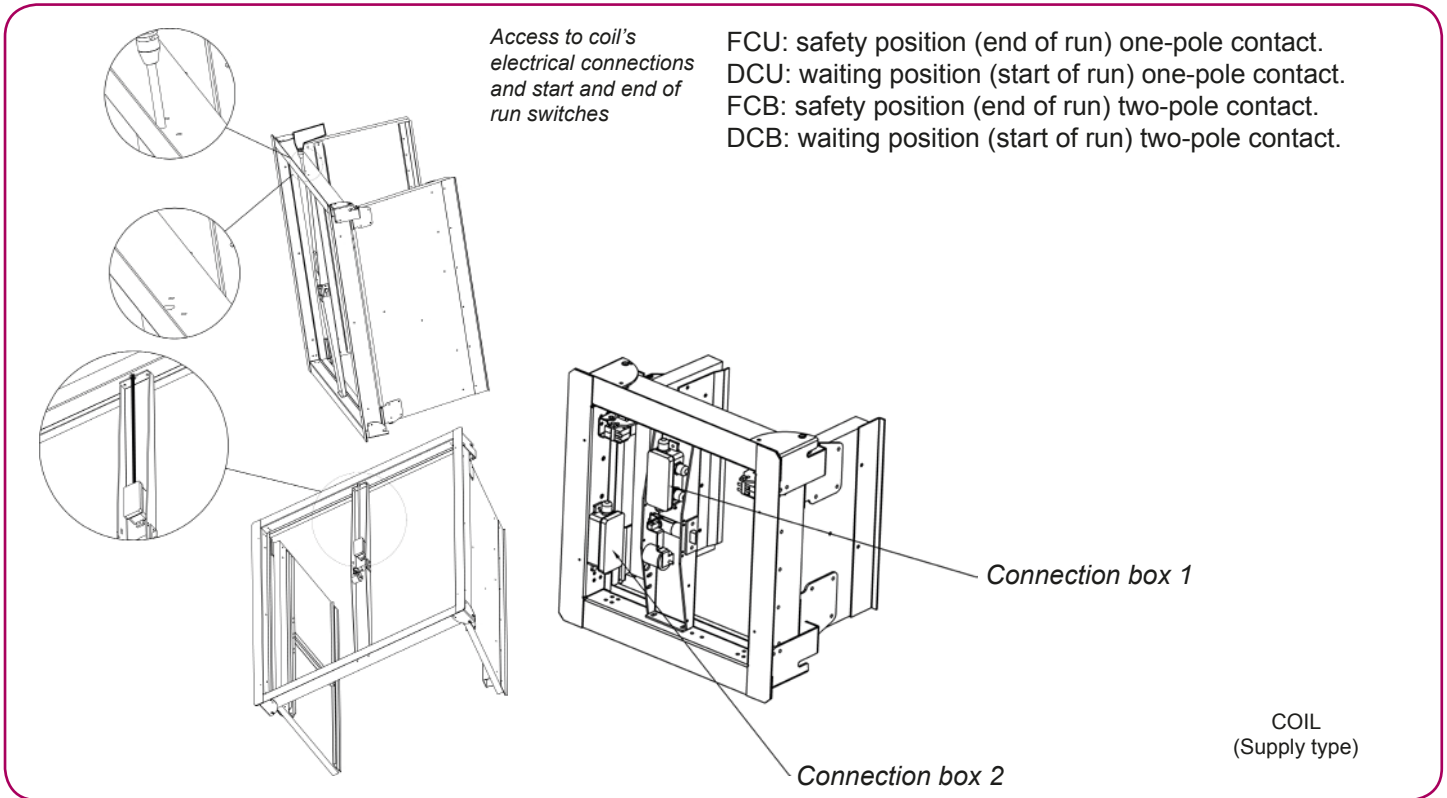
- Install the damper in the mounting frame or duct. Use the collapsible pins included in the damper frame as a stop.
- Fasten the damper to the frame using the 4 screws provided with the damper.
- Complete the assembly by filling all the screw holes with intumescent putty.

As it is a critical safety item, the damper must be stored and handled with care. Precautions:

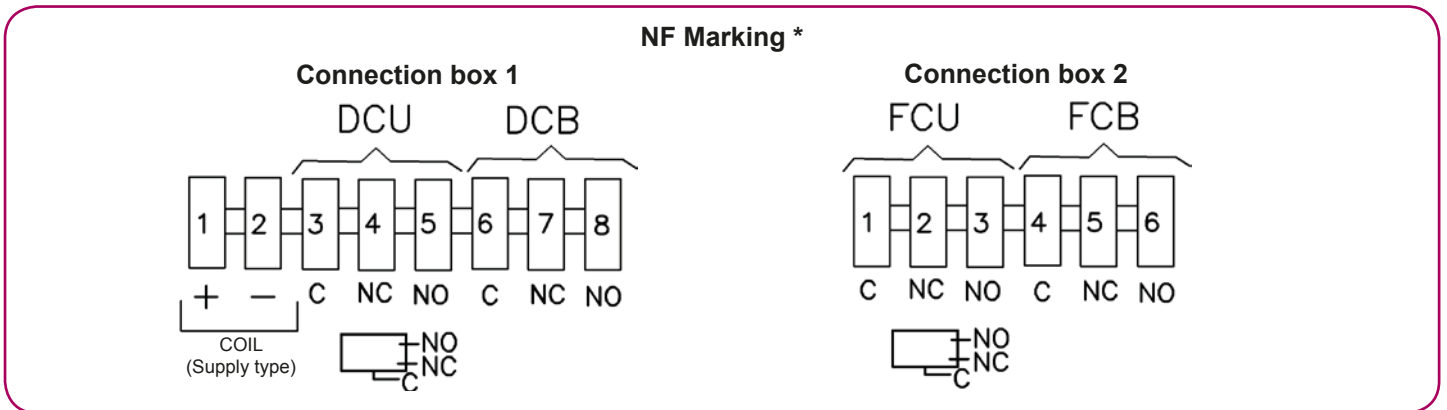
- Store in a place protected from moisture.
- Avoid contact with water.
- Avoid deformation of the damper body during installation and sealing.
- Prevent the damper from being knocked or swung during transport.
- Use of the metal mounting frame is recommended to make damper installation easy.

CEVH Smoke Evacuation Damper Connections

Electrical connections

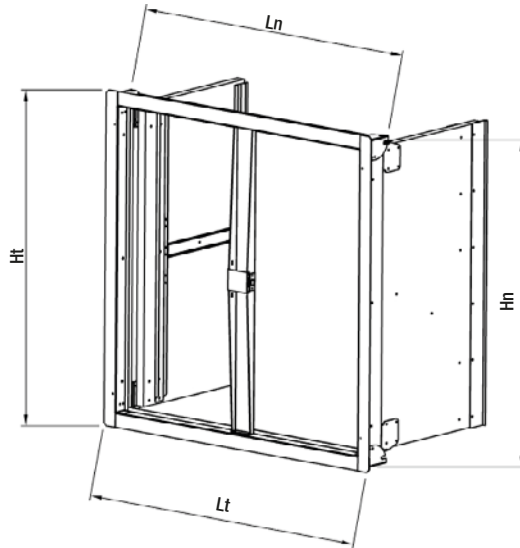


- Activation by electric shunt release (current driven) coil:
 - Power supply options
 - 24V DC electric shunt release coil
 - 48V DC electric shunt release coil
 - 24V AC electric shunt release coil
 - 48V AC electric shunt release coil



* CE Marking does not require duplication of the start (DCU, DCB) and end of run limit switch (FCU, FCB).

CEVH Smoke Evacuation Damper Technical Data



Free area table (dm²)

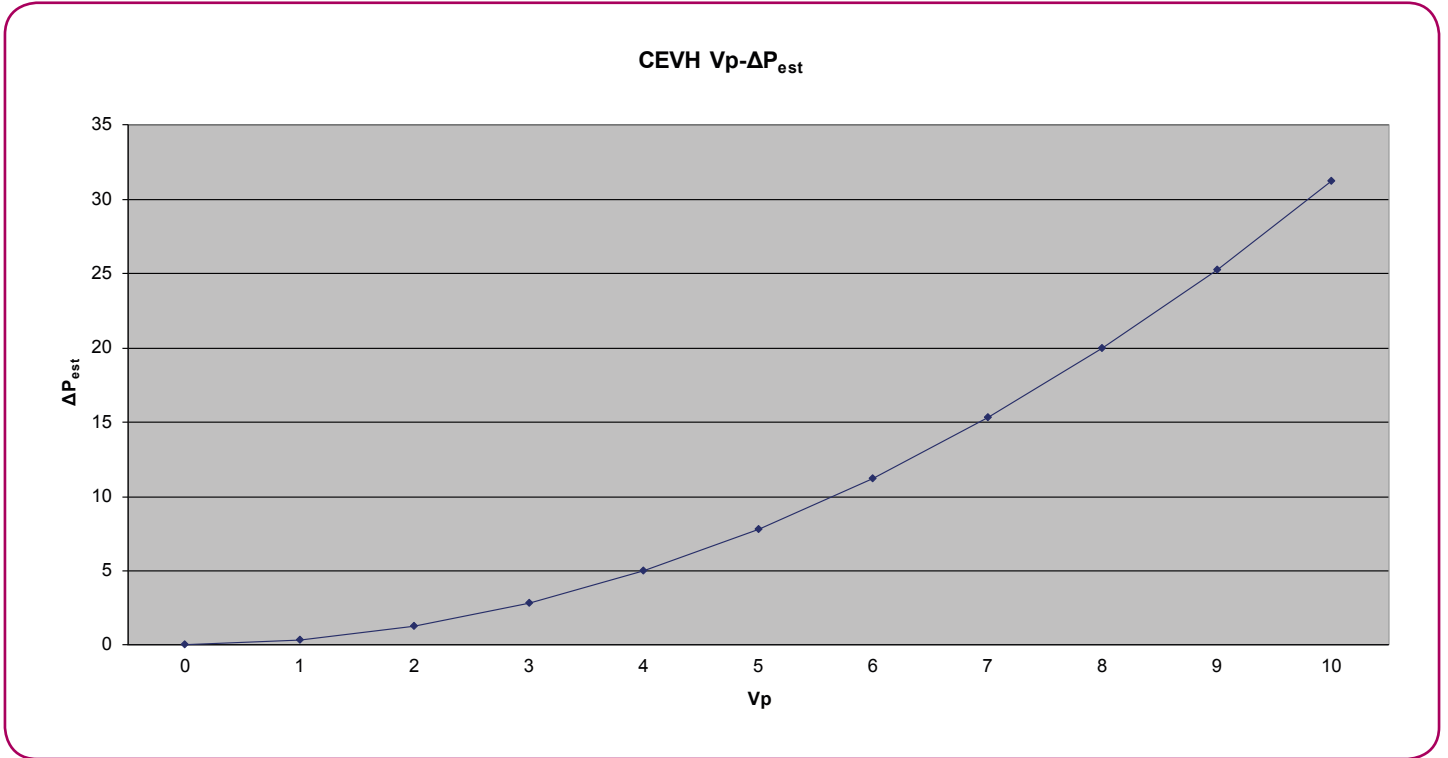
	Length Ln (in mm)														
	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
400	9,24	10,76	12,28	13,80	15,3	16,8	18,4	19,9	21,4	22,9	24,4	26,0	27,5	29,0	30,5
450	10,76	12,53	14,30	16,07	17,8	19,6	21,4	23,2	24,9	26,7	28,5	30,2	32,0	33,8	35,5
500	12,28	14,30	16,32	18,34	20,4	22,4	24,4	26,4	28,4	30,5	32,5	34,5	36,5	38,5	40,6
550	13,80	16,07	18,34	20,61	22,9	25,2	27,4	29,7	32,0	34,2	36,5	38,8	41,0	43,3	45,6
600	15,32	17,84	20,36	22,88	25,4	27,9	30,4	33,0	35,5	38,0	40,5	43,0	45,6	48,1	50,6
650	16,84	19,61	22,38	25,15	27,9	30,7	33,5	36,2	39,0	41,8	44,5	47,3	50,1	52,9	55,6
700	18,36	21,38	24,40	27,42	30,4	33,5	36,5	39,5	42,5	45,5	48,6	51,6	54,6	57,6	60,6
750	19,88	23,15	26,42	29,69	33,0	36,2	39,5	42,8	46,0	49,3	52,6	55,9	59,1	62,4	65,7
800	21,40	24,92	28,44	31,96	35,5	39,0	42,5	46,0	49,6	53,1	56,6	60,1	63,6	67,2	70,7
850	22,92	26,69	30,46	34,23	38,0	41,8	45,5	49,3	53,1	56,9	60,6	64,4	68,2	71,9	75,7
900	24,44	28,46	32,48	36,50	40,5	44,5	48,6	52,6	56,6	60,6	64,6	68,7	72,7	76,7	80,7
950	25,96	30,23	34,50	38,77	43,0	47,3	51,6	55,9	60,1	64,4	68,7	72,9	77,2	81,5	85,7
1000	27,48	32,00	36,52	41,04	45,6	50,1	54,6	59,1	63,6	68,2	72,7	77,2	81,7	86,2	90,8
1050	29,00	33,77	38,54	43,31	48,1	52,9	57,6	62,4	67,2	71,9	76,7	81,5	86,2	91,0	95,8
1100	30,52	35,54	40,56	45,58	50,6	55,6	60,6	65,7	70,7	75,7	80,7	85,7	90,8	95,8	101

KEY

- P** = Blade depth.
- Lt** = Total exterior length.
- Ht** = Total exterior height.
- Lh** = Interior duct length.
- Hh** = Interior duct height.
- Ln** = Nominal damper length.
- Hn** = Nominal damper height.

CEVH Smoke Evacuation Damper Technical Data

CEVH Graph



Key:

V_p damper air velocity in m/s. damper static pressure.
 ΔP_{est} loss in Pa.

Selection example:

To calculate the static pressure loss across a CEVH damper for a given flow rate $Q(m^3/h)$ the air velocity $V_p(m/s)$ is calculated in relation to the damper air passage (dm^2) as free area table. Using this area and a given flow rate, the air velocity is obtained, which, when introduced in the previous graph gives the pressure loss.

Example:

A damper with nominal dimensions of 600x600 mm we will have a free area of 25.4 dm^2 . For a design flow rate of 5000 m^3/h^3 , the flow velocity is calculated using the formula $V_p = (Q / \text{air pass}) / 36$.

In this case the $V_p = 5.46$ m / s that introduced in the previous table would give us a static load loss $\Delta P_{est} = 9Pa$.

CEVH Smoke Evacuation Damper Coding

Damper dimensions and model

CEVH – L x H (mm)

Activation. Components

- + SHUNT RELEASE 24 V DC + ER/SR LS
- + SHUNT RELEASE 48 V DC + ER/SR LS
- + SHUNT RELEASE 24 V AC + ER/SR LS
- + SHUNT RELEASE 48 V AC + ER/SR LS

Accessories

MM (Metal mounting frame)
RPK (protective smoke evacuation grille)

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