

EKP Drop Eliminators

Application

Drop eliminators are intended for the separation of condensate drops from the air, from simple venting installations to sophisticated air-handling systems. They are designed to be installed directly in square air ducts. Ideally, they can be used along with other components of the Vento modular system, which ensure inter-compatibility and balanced parameters.

Operating Conditions

Eliminated air must be free of solid, fibrous, sticky, or aggressive impurities, and without corrosive chemicals or chemicals aggressive to zinc. The air must be free of corrosive chemicals or chemicals aggressive to zinc.

Fig. 1 – dimensions

A x B [mm]	
400-200	40-20
500-250	50-25
500-300	50-30
600-300	60-30
600-350	60-35
700-400	70-40
800-500	80-50
900-500	90-50

Dimensional Range

EKP drop eliminators are manufactured in a range of eight sizes according to the A x B dimensions of the connecting flange (see fig. #1). Drop eliminators can be connected to air ducts in the same way as any other Vento duct system component. Drop eliminators enable designers to cover the full air flow range of Vento fans.

Position and Location

When projecting the layout of the drop eliminator in the air-handling system, we recommend observing the following principles:

- Drop eliminators can work only in any position in which condensate draining is possible (tray at the bottom).

Fig. 2 – Description of Drop Eliminator Components

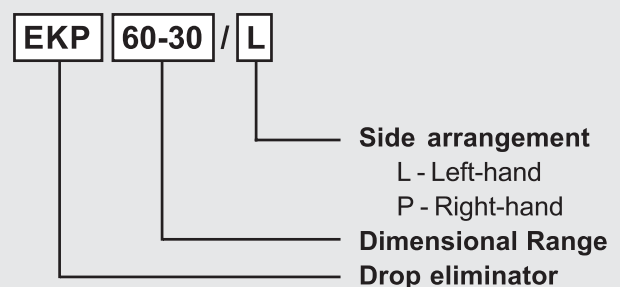


- It is necessary to keep easy access to the drop eliminator, especially to the condensate drainage, to enable inspections and service.
- It is advisable to situate the drop eliminator behind the cooler (providing it is not a part of it) or heat exchanger.
- The connections between the cooler (heat exchanger) and drop eliminator should be watertight.

Materials and design

The external casing of the drop eliminators is made of galvanized steel sheets insulated against moisture condensation.

Fig. 3 – type designation



All used materials are carefully checked so they ensure long service life and reliability. As standard, drop eliminators are delivered in a left-hand version, looking at the air flow direction, and are equipped with an insulated condensate drainage tray.

Drop Eliminator Designation

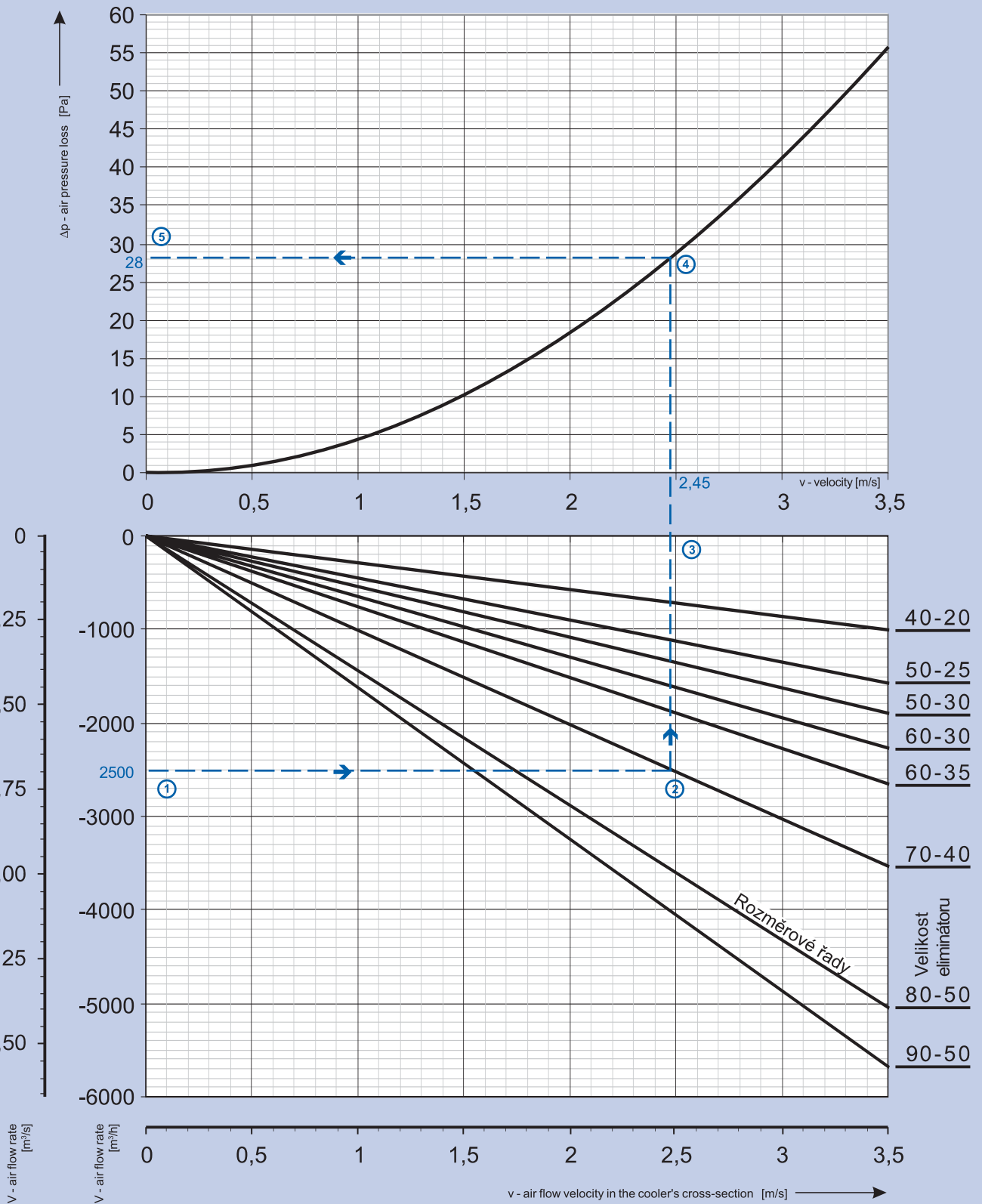
The type designation of coolers in projects and orders is defined by the key in figure # 3.

The above-mentioned specification without an ordering code corresponds to the stock configuration of the product, i.e. the left-hand arrangement. The drop eliminator is a configured product which should be preferably ordered using AeroCAD software, which will generate its ordering code.

Air Pressure Losses in a Drop Eliminator

Nomogram of air pressure losses for all drop eliminators

The curve of pressure losses is valid for all drop eliminators. The air pressure loss depends on the air flow velocity, and it is calculated for the air velocity in a free cross section of all Vento system dimensional ranges.



The nomogram of pressure losses is valid for all VO drop eliminators. For the selected air flow rate ①, the air flow velocity ③ in the free drop eliminator's cross-section ②, can be read in the lower graph, and then the drop eliminator's corresponding air pressure loss ⑤ at the known velocity can be determined in the upper part ④.

Example:

At an air flow rate of 2,500 m³/h, the velocity of the air flow in the EKP 70-40 drop eliminator will be 2.45 m/s. The drop eliminator's air pressure loss for the above-mentioned air flow rate will be 28 Pa

Drop Eliminator Parameters

Dimensions and Weights

For important dimensions and weights of drop eliminators, refer to figure # 4 and table # 1.

The connection of the drop eliminator depends on the selected dimensional range.

Figure 4 - Drop eliminator dimensions

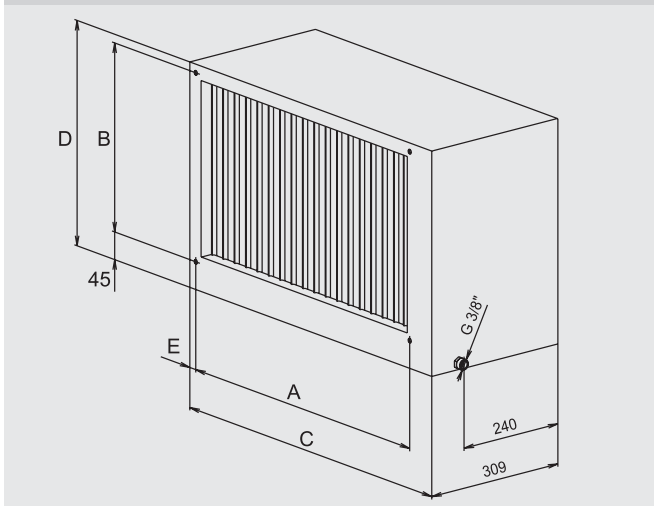


Table 1 - Drop eliminator dimensions

Size	Dimensions (mm)				
	A	B	C	D	E
EKP 40-20	420	220	508	281	100
EKP 50-25	520	270	608	331	150
EKP 50-30	520	320	608	381	150
EKP 60-30	620	320	708	381	200
EKP 60-35	620	370	708	431	200
EKP 70-40	720	420	808	481	200
EKP 80-50	820	520	908	581	250
EKP 90-50	930	530	1014	597	250

Installation, Service and Maintenance

Installation, servicing and maintenance can be performed only by a specialized company possessing the appropriate tools.

- There is no need for individual suspensions when installing the EKP drop eliminator. The drop eliminator can be inserted into the duct line, but it must not be exposed to any strain or torsion caused by the connected duct line.

- Before installation, paste self-adhesive sealing onto the connecting flange face. To connect individual parts of the Vento units, use galvanized M8 screws and nuts. It is necessary to ensure conductive connection of the flange using fan-washers placed on both sides at least on one flange connection, or use Cu conductor wiring.

Drop Eliminator Dimensioning

To dimension the drop eliminator, select the corresponding size of the drop eliminator from the dimensional range of Vento duct units.

The air pressure loss for all drop eliminators can be determined from the nomogram on page 243.

As the design of the drop eliminators is standardized, the pressure loss only depends on the air flow velocity through the drop eliminator. The nomogram also includes air flow rate - velocity conversion curves for all drop eliminator sizes.