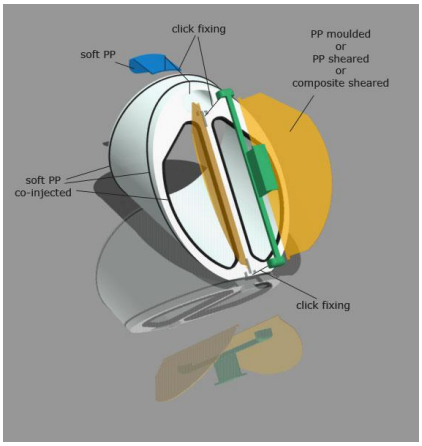
Almeva cascade system with dampers for condensing appliances

In connection with the increased use of condensing technology, Almeva keeps adding new s its range of products and offers ever better technical solutions to manufacturers of appliances, which in turn simplifies and expedites installation of flue gas paths for installation companies. These components include for example the tube part with a 87° branch and a damper. This part is one of ca 200 elements of the modern comprehensive Almeva flue gas exhaust system and it has been developed especially for the systems of flue gas exhaust from appliances connected in a cascade and for appliances in apartment houses connected to common chimneys.

Application of a damper is conditioned by meeting of two requirements:

- prevent reflux of flue gas into boilers, which are not operational or broken down and thus prevent any damage to these appliances (in particular their sensitive electronics) by moist flue gas
- prevent possible leak of flue gas into residential premises via the boiler and thus protect health and lives of people there.

However, the use of dampers is generally well known and that is why I would like to highlight particularly the variety of applications and the exquisite technical parameters, which make the Almeva damper so unique and indispensable.



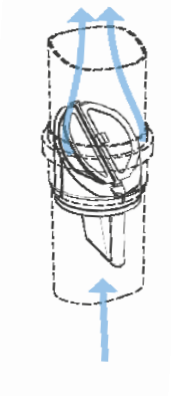
Almeva damper design:

- damper body (white)
- wings (yellow)
- wing fixing clip (green)
- siphon or plug (blue)

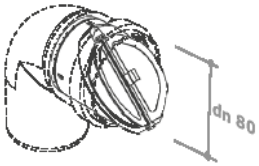
Unique Almeva damper design
is patent protected!

Damper location in practical cases:

Unlike most of the competing dampers, Almeva damper offers two installation positions with 100% operability:



- <u>vertical position</u> is used for dampers especially in AXIAL type cascade connected boilers. A siphon needs to be used here, through which condensate flows directly into the boiler. If the boiler is out of service, the damper is automatically closed and the water column in the siphon works as a pressure closure. In this way the appliance is protected against flue gas reflux.

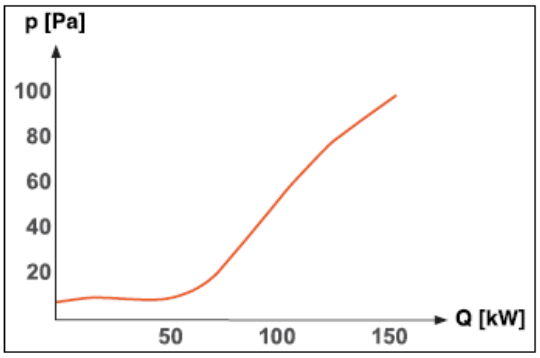


- <u>horizontal position</u> is used especially for dampers in flue branches for common chimneys, e.g. in apartment houses or in OFFSET type cascade connected boilers. In this case it is necessary to use a plug instead of a siphon, which provides the pressure closure when the damper is closed.

- the unique feature is the possibility to mount Almeva damper into orifices of all DN80 STARR system elements. In this way the installation workers are offered a range of possible applications of the damper at almost any place within the whole Almeva flue gas path.

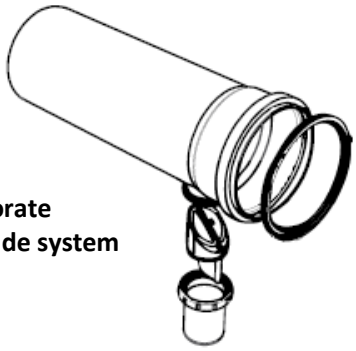
Specifications:
(or some advantages compared to common dampers)

	Common damper	**Almeva damper**
Opening pressure	25 Pa	**7 Pa**
Pressure loss at 50kW	70 Pa	**15 Pa**
Installation height	200 mm	**in the orifice**
Condensate flow design	external siphon	**integrated siphon**
Operating temperature	120 °C	**PVDF 160 °C**
Closing time	15 sec	**1 sec**
Installation position	vertical	**horizontal and vertical**



Damper pressure loss depending on the rated power of the appliance

The damper was placed into a standardized one-metre tube for the cascade creating a unique tube part with a 87° branch and a damper saving place, installation time and investment costs of the whole equipment for flue gas exhaust.



Elaborate cascade system

A wide range of diameters

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