AYSU
HVAC SYSTEMS

DAMPERS · TECHNICAL DATASHEET

Product code: **AYS-DMP-CV**

CAV DAMPER



Mechanical flow regulator that keeps the set airflow constant as duct pressure varies. Needs no power; airflow is set on an external scale.

CONTROL Mechanical	ADJUSTMENT External scale
SIZE Made to project	POWER Not required

FEATURES

- Keeps set airflow constant as duct pressure varies
- Self-acting: blade, spring and damping mechanism
- Airflow set on external scale, also after installation
- No actuator, sensor or electrical connection
- Horizontal or vertical installation
- Circular casing; rectangular version available

TECHNICAL SPECIFICATIONS

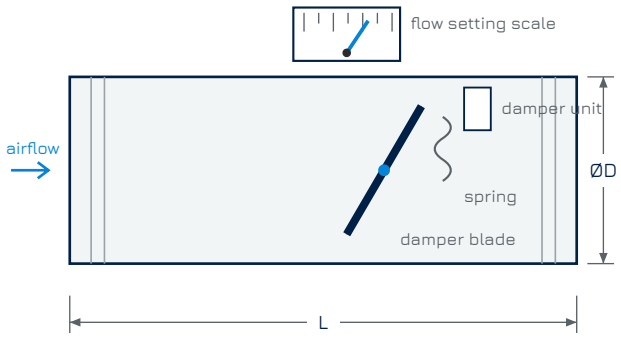
Unit type CAV, mechanical	**Operation** pressure independent
Flow setting external scale, stepless	**Power** not required
Installation horizontal or vertical	**Connection** spigot with seal
Size made to project	**Casing** circular / rectangular

APPLICATIONS

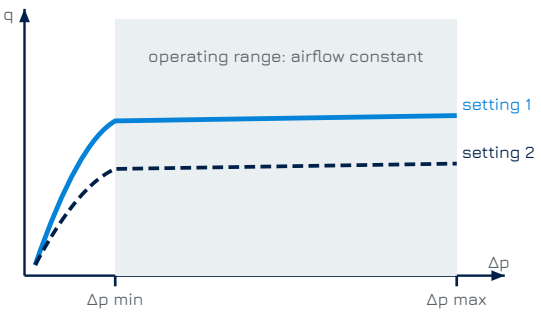
Hotel rooms, hospitals, offices, fresh air distribution; supply and extract ducts that must deliver constant airflow to each room.

TECHNICAL DRAWINGS

sizes to project · not to scale



LONGITUDINAL SECTION



OPERATING CHARACTERISTIC

ORDERING INFORMATION

Size	ØD and L to project; for rectangular casing state W × H
Airflow	state design airflow when ordering; factory-set on the scale
Installation	horizontal or vertical; flow per arrow on casing
Order code	AYS-DMP-CV-[ØD], e.g. AYS-DMP-CV-200

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CAV DAMPER

OPERATING PRINCIPLE

CAV damper · AYS-DMP-CV

1. **Adjustment:** The design airflow is set on the external scale, which changes the spring preload.
2. **Pressure rise:** As duct pressure rises, the air force pushes the blade towards closed and the free area shrinks.
3. **Pressure drop:** As pressure falls, the spring opens the blade and the free area grows.
4. **Result:** Within the operating range airflow stays at the setting regardless of duct pressure; the damping unit prevents oscillation.

APPLICATION NOTES

To hold airflow constant the regulator needs at least the minimum pressure difference stated by the maker; include this loss in fan selection. Provide straight duct upstream and do not install directly after a bend or branch. Check the setting by measuring airflow at commissioning and correct it on the scale if needed.

SELECTION TABLE

ρ = 1.2 kg/m³ · calculated · sizes are examples

ØD	A m²	AIRFLOW [m³/h] · by duct velocity		
		q_{min} · 2 m/s	q_{nom} · 5 m/s	q_{max} · 8 m/s
Ø100	0.0079	57	141	226
Ø125	0.0123	88	221	353
Ø160	0.0201	145	362	579
Ø200	0.0314	230	570	900
Ø250	0.0491	350	880	1,410
Ø315	0.0779	560	1,400	2,240
Ø355	0.0990	710	1,780	2,850
Ø400	0.1257	900	2,260	3,620
Ø450	0.1590	1,150	2,860	4,580
Ø500	0.1963	1,410	3,530	5,650
Ø560	0.2463	1,770	4,430	7,090
Ø630	0.3117	2,240	5,610	8,980

INSTALLATION AND MAINTENANCE

1. **Installation:** Spigots are inserted into the duct and fixed with clamps or rivets; flow must follow the arrow on the casing.
2. **Straight duct:** For correct operation, at least 3 · ØD of straight duct is recommended at the inlet, away from bends and branches.
3. **Adjustment:** Check the airflow on the scale; lock the scale after setting.
4. **Maintenance:** Check the blade, spring and damping unit for free movement periodically.

VALIDITY

Diameters in the table are examples; the unit is made to project, also with a rectangular casing. Airflows are calculated from duct velocity; confirm the actual range and pressures with manufacturer data for the regulator model.

SYMBOLS

CAV	constant air volume
Δp min / max	operating pressure range
q_{nom}	set airflow
A	duct cross-section
ØD	nominal duct diameter