

Description

The type CVC-01 inlet vane control damper has been designed for mounting onto the inlet flanges of centrifugal fans.

To ease installation these dampers can be supplied with pre-mounted controls.

These dampers are also suitable for operation up to 150°C.

Specification

Casing

The damper casing is formed from 3.0 mm thick sheet steel into a drum section with flat bar or angle flanges. The damper insertion length is 300 mm and the range of diameters is from Ø300 mm to Ø2000mm

Blades

The blades are a formed single-skin plate of 3.0 mm sheet metal which operate by rotating radially to allow the flow of air into the fan inlet in the direction of rotation to increase the efficiency of the fan.

Shafts

Stub Ø 19.05 mm with blades welded at each end.

Linkage

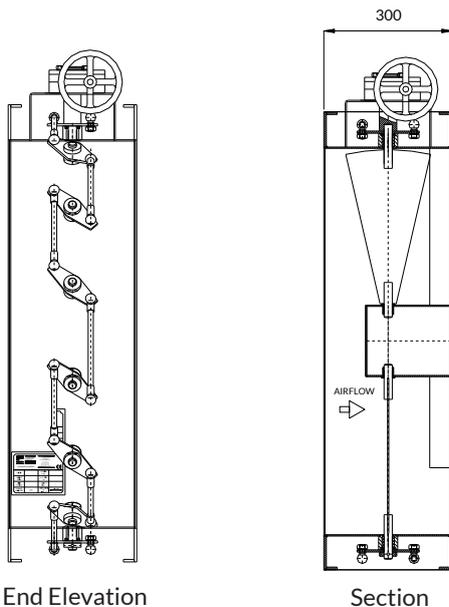
Radial action linkage consisting of drive levers and bosses connected by flat bar link bars, driven through stainless steel ball joints. All linkage is contained within the depth of the damper casing.

Bearings

Phosphor bronze self lubricated 'Oilite' flanged bushes.

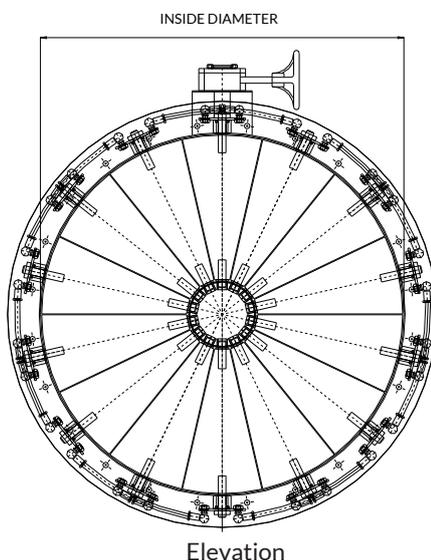
Operation

Manual Reset Mechanism, Pneumatic Actuator, Electric Actuator, Solenoid Release.



End Elevation

Section



Elevation

Options

- Materials can be stainless steel, galvanized mild steel or other materials to suit the clients' specific requirements.
- Earth continuity bosses.
- Lifting lugs.
- Integral or removable enclosures for housing control equipment.
- High temperature bearings.
- Shaft seals to provide airtight casings.
- Other variations to suit clients' specific requirements are also available.

Inlet Vane Control Damper

CVC-01

How Inlet Vane Control Dampers affect the fan performance

Inlet Vane Control Dampers are used when it is necessary to move the air entering the venturi of a centrifugal fan in the same direction as the rotation of the impeller.

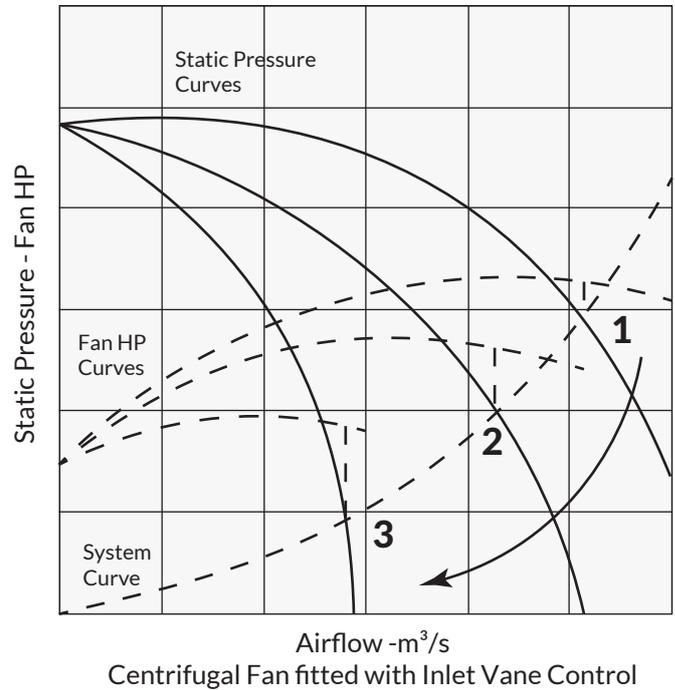
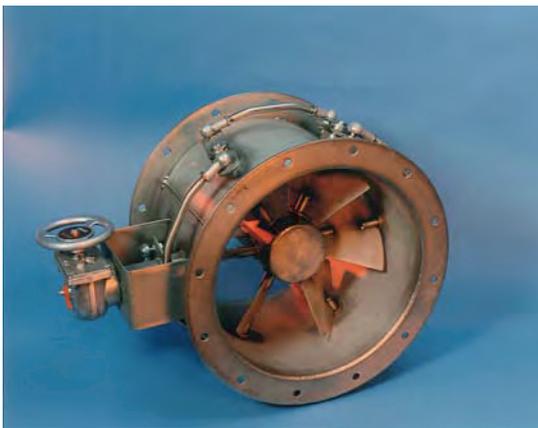
This allows the air entering the fan to increase its efficiency by reducing its energy requirements and consequently the running costs.

The damper rotations are normally viewed from the air inlet side of the fan and can be either clockwise or anti-clockwise.

Conversely the rotation of the fan impeller is normally viewed from the drive side, not the air inlet side, and will be the opposite of the damper. If the wrong orientation of the damper is applied there will be an increase in the pressure and energy requirement levels.

A gasket between the joining flanges must be suitable for the duty of the fan. (i.e. Temperature, pressure and contaminants)

Care must also be taken to ensure that the information Stated in the enquiry documents stipulate the correct direction of rotation of the impeller as the wrong direction of radial rotation of damper blades will affect the efficiency of the fan.



Centrifugal fans fitted with inlet vane control dampers will display different characteristics depending upon the radial position of the blades. As the blade rotates between open and closed the operation of the system will create new operating points designated as 1, 2 & 3 on the graph shown on the left. Point 1 being fully open and 3 being fully closed. The static pressure and the fan horsepower will alter according to the blade position. The graph displays that the more the damper blades are closed, the less the airflow and consequently the lower the horsepower will be reducing the power requirements of the fan.