

## Tunnel Ventilation Damper

**B-40 Series**

**Type :** Tunnel Ventilation Fire / Smoke Damper

**Model :** TVD-GB-40-B;TVD-SB-40-B

**Fire Rating :** 4 hours as per BS 476

**Blade :** Aerofoil Type

**Construction :** Galvanized Steel (GI)  
Stainless Steel (SS)

**BETEC CAD's** Ventilation Dampers are designed to isolate sections of a ventilation system with very high level of sealing. The dampers are mounted in side of the tunnel or at tunnel ends to control the pressurized air, air intake and smoke exhaust in long tunnels without intermediate supplies.

In emergency situations , for fire and smoke control, the dampers pressurise the tunnel for safe egress of train, automobile, passengers to escape and creates a negative pressure in the area of the fire to remove smoke and gases.

**BETEC CAD's** Tunnel Ventilation Dampers are heavy duty and robust dampers requiring less maintenance and are suitable for high humidity, high pressure, dust laden environments making them ideal for installation and operation in Tunnels, Oil & Gas, Marine and Nuclear applications.

### Damper Ratings

**Fire Rating :** 4 hrs vertical / 3 hrs horizontal as per BS 476

**Leakage Rating :** Class I @ 350° F as per UL 555S

**Operational Rating :** 250° C for 2 hours. (as per HKFSD)

**Air Velocity :** 4000 fpm (20 m/sec)

**Pressure :** 8" water gauge (2KPa).

**Max . Holding Pressure :** 20" W.g (5Kpa)

**Fatigue cycles :** 3.5 million simulated transient pressure reversals (under process)

### Standard Construction

#### Frame

14 gauge (2 mm) thick stainless steel sheet with 2" (50 mm) external flanges.

#### Blade

Aerofoil blades of 14 gauge (2 mm) thick roll formed stainless steel.

#### Blade Seals

300°C high temp, resistant Silicon rubber blade seals.

#### Jamb Seals

Stainless Steel.

#### Bearings

High temperature resistant concealed ball bearings.

#### Axle

¾" (19 mm) diameter.

#### Actuator

Pneumatic.

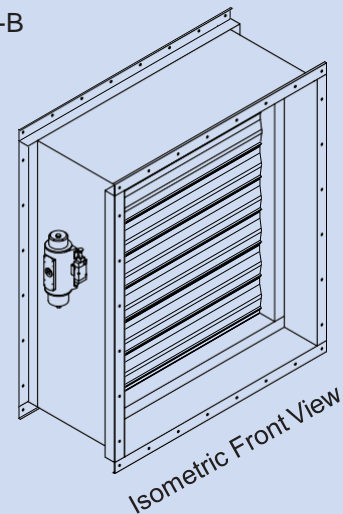
### Optinal Fittings

#### Limit Switches

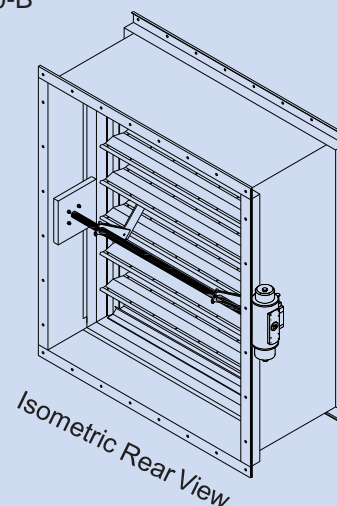
For Open / Close Indication.



TVD-SB-40-B



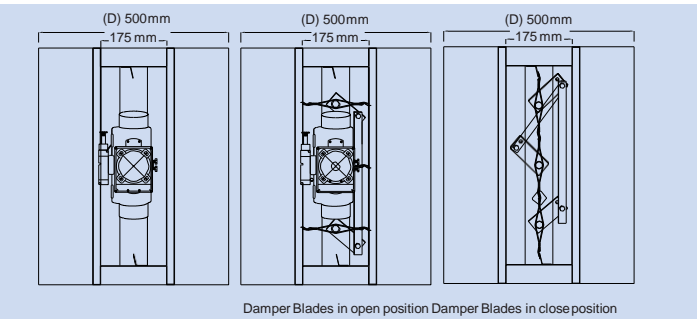
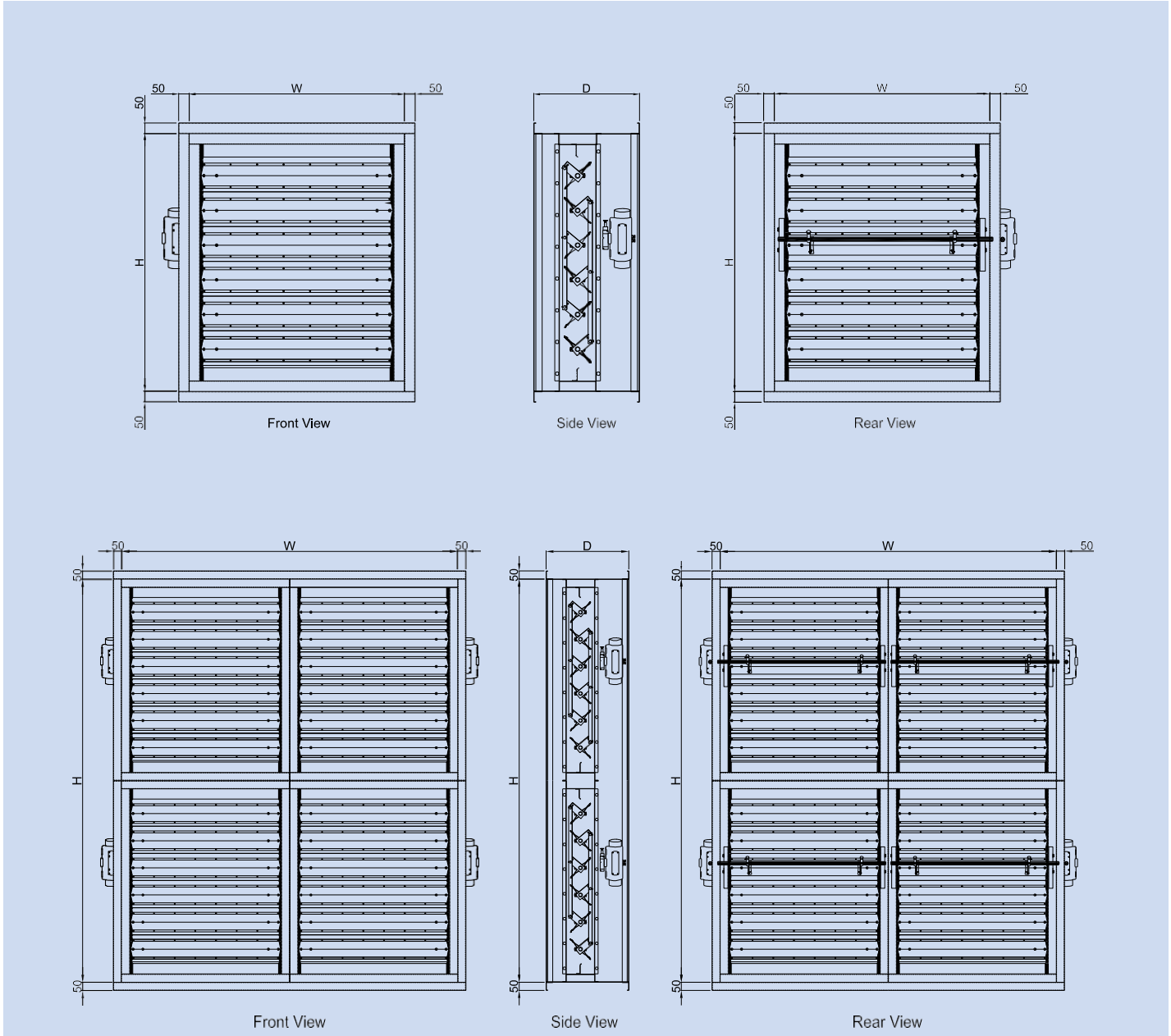
TVD-SB-40-B



## Tunnel Ventilation Damper Constructional Details

### B-40 Series

Model : TVD-GB-40-B; TVD-SB-40-B



Size Limitation		
Module	Size : Width X Height	Mounting Position
Single	Max X Max. 40" x 48"	V/H
Multiple	Max X Max 80" x 96"	V

Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



## Tunnel Ventilation Damper Engineering And Performance Data

**B-40 Series**

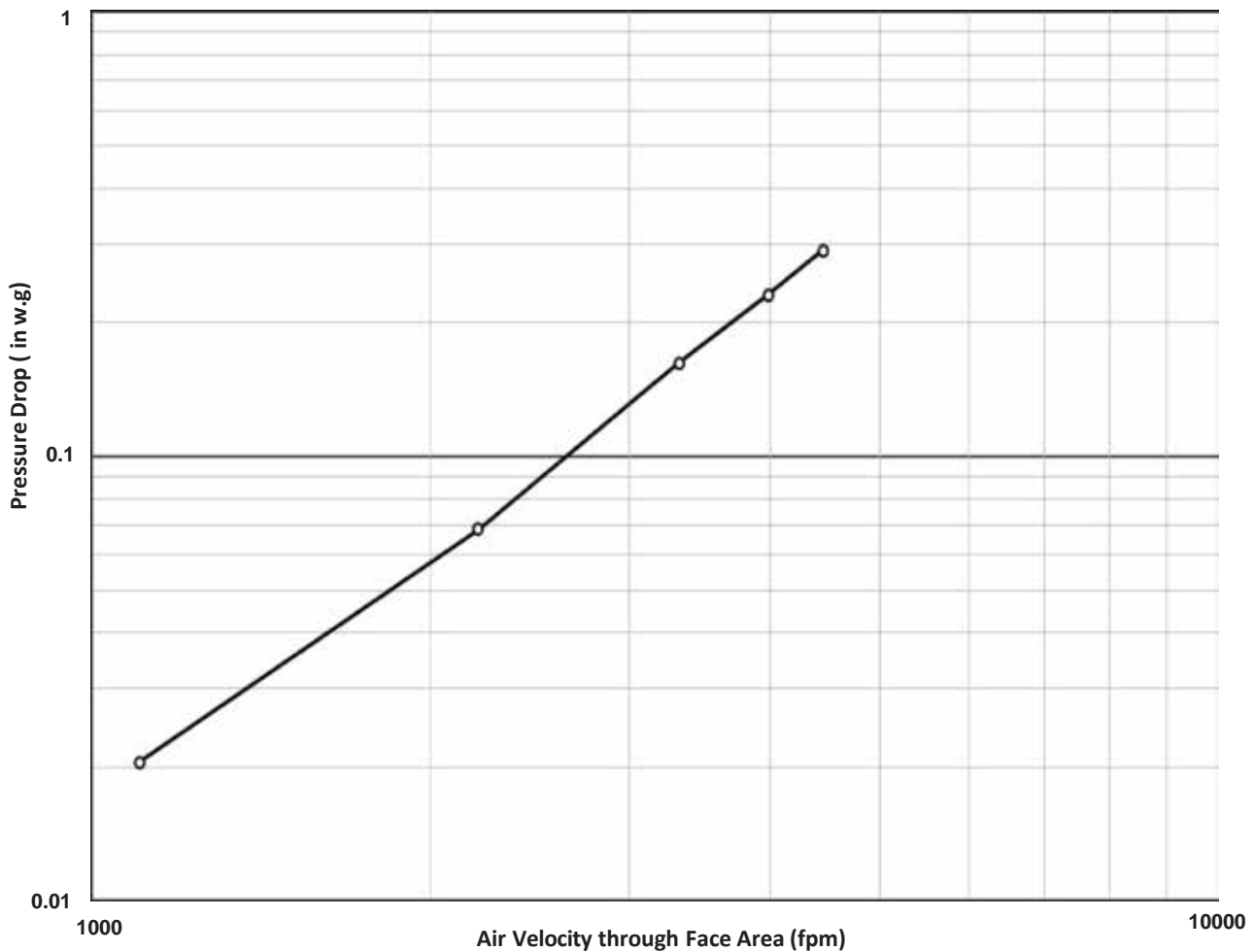
### Pressure drop for Dampers

- Pressure drop and resistance of multi- leaf damper is a function of airspeed and varies in relation to the system's total pressure.
- The pressure drop is indicated in graph for opposed blade damper in 100 % open position.
- The pressure drop indicated is the difference in measured pressure before and after the damper.



TVD-GB-40-B

**Pressure Loss Vs Face Velocity**  
Aerofoil Blade Construction



AMCA Standard 500 D -07, Fig . 5.3

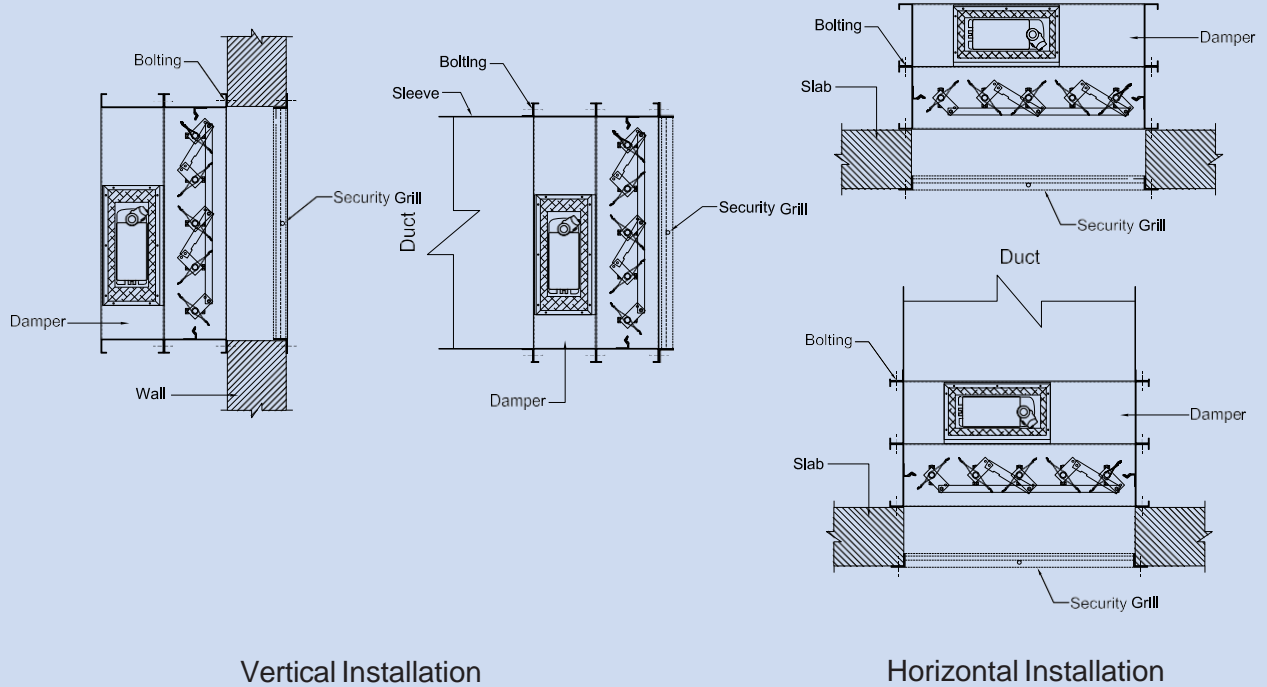
10 Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



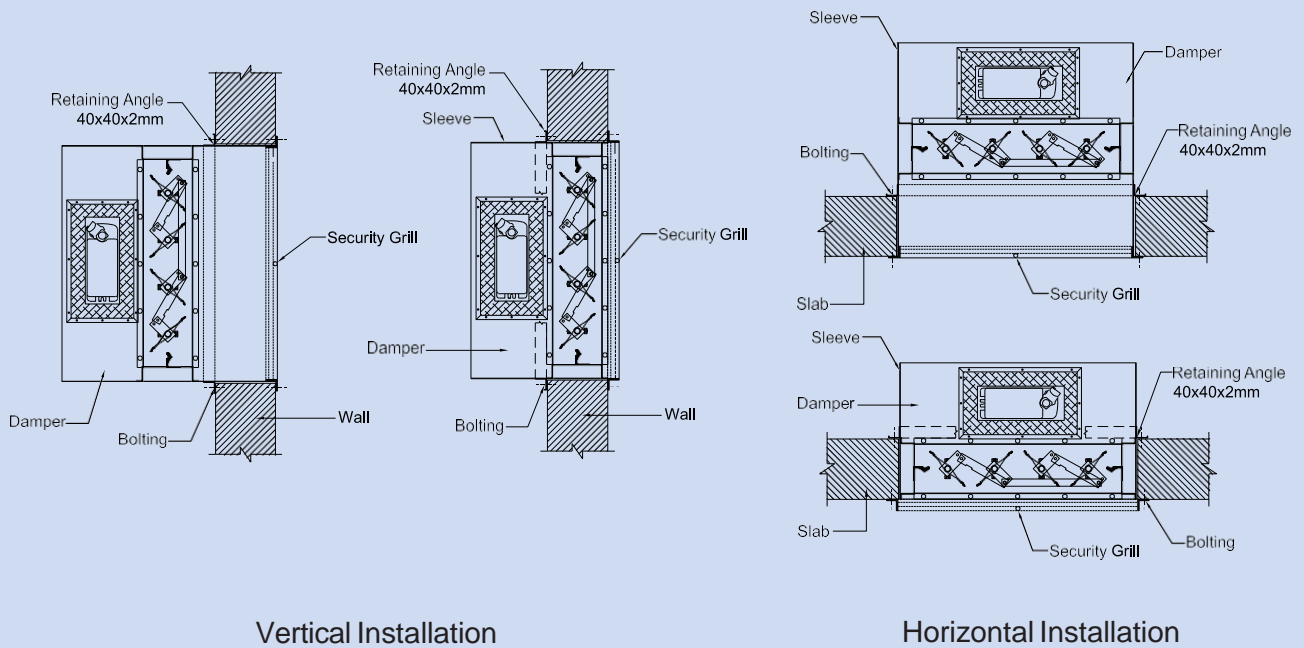
**Tunnel Ventilation Damper  
Installation Details**

**B-40 Series**

**Flange Type Dampers**



**Sleeve Type Dampers**



Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.

