



BETEC CAD.

BREAKS FIRE & SMOKE PATH..

Introduction

BETEC CAD. has been leader for over 20 years, in designing, manufacturing, durable, high performance control Dampers for industrial and commercial building ventilation applications. Constructed from heavy-duty, high quality steel with the most advanced equipments in the industry. **BETEC CAD.** dampers can stand up to the toughest and most demanding environments and can be custom-built to meet the exact needs of virtually any ventilation or process applications.

BETEC CAD. manufactures, **UL** classified dampers to meet the standards of **NFPA** - National Fire Protection Authority, for human life and property safety. To meet the demands of fire and smoke protection, these dampers are available in a wide range of classifications and with a variety of custom built features and options.

BETEC CAD. fire dampers are designed to operate as an integral part of Engineered smoke management system for building controls, and are used in walls, ceiling and floors. They are suitable for both dynamic or static fan on systems. Fire Dampers are required by the International Uniform Building Code to maintain the required fire resistance rating of walls, partitions and floors when they are penetrated by air ducts or other ventilation openings.

A duct or ventilation openings in any of the fire rated partitions would permit a fire to spread from the compartment of origin to adjoining compartments or space. Fire Dampers or Fire-Smoke dampers are installed in these ducts or ventilation openings. They close automatically upon detection of heat by a Thermal responsive device (TRD), blocking the openings and preventing the spread of fire or smoke in to the adjoining compartment.

BETEC CAD's experienced and professional team provide quality products through continuous commitment to research and development and the introduction of new technologies.

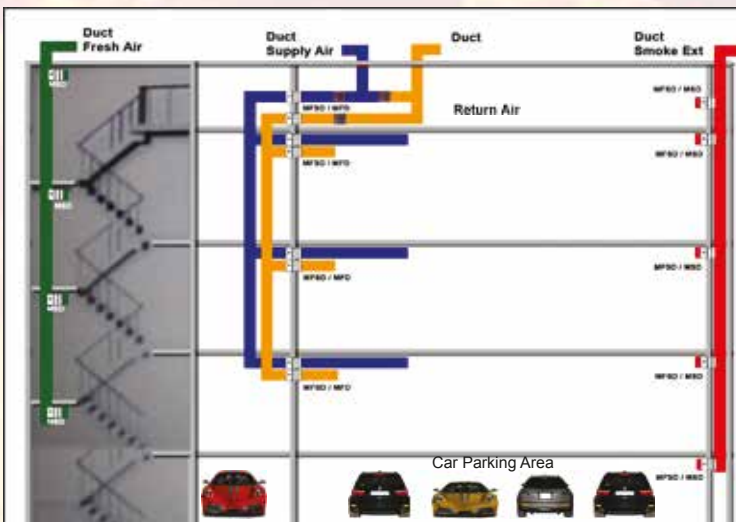
Standards and Codes.

Fire-resistive construction requirements usually are determined by the local or state code authority. Local and state codes are usually adaptations of the national and model codes, such as the International Building Code, published by the International Code Council, Inc. (ICC); BOCA National Building Code published by the Building Officials and Code Administrators International, Inc. (BOCA); the Uniform Building Code published by the International Conference of Building Officials (ICBO); and the Standard Building Code published by the Southern Building Code Congress International, Inc. (SBCCI).

The National Fire Codes published by the National Fire Protection Association (NFPA) contain recommended practices and technical data for determining fire-resistive requirements. Standards for fire-resistive tests may be found through the American National Standards Institute (ANSI), ASTM, UL, and the NFPA.

Testing of fire-resistive components and assemblies may be conducted by any of several independent testing laboratories. The most prominent testing laboratories evaluating fire resistive materials and assemblies are UL - Under Writers Laboratories of USA.

Engineered Fire & Smoke management system in a building.

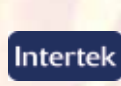


DISCLAIMER OF WARRANTIES

BETEC CAD's products are designed based on "SMACNA", "NFPA", technological data in the interest of improving the safety for the public benefit. **BETEC CAD.** disclaims any liability for any personal injury, loss of life, property damage, or other damage of any nature whatsoever, whether special, indirect, consequential or compensatory, direct or indirectly resulting from any accident, regardless of legal theory. In no event shall **BETEC CAD's** liability exceed the amount paid by customer / contractor to that individual product cost OR US\$1000/- which ever is lesser, regardless of legal theory.

Note: Damper once installed, needs to be strictly maintained for every month and operation performance should be recorded by trained engineer or concern department experts, as per the Operation and Maintenance manual.

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





Motorized Fire Damper

Series: MFD-GB/SB/SGB/GSB-20/30-A/R
MFD-GB-21/31-A/R

Construction: Stainless Steel / Galvanized Steel

Fire Rating : 1½ Hr. / 3 Hrs.

Application: Static / Dynamic

Motorized Fire Damper is a high performance UL 555 Classified damper with 1½ hr. / 3hr. fire rating , designed to be installed in HVAC systems with velocities of upto 2000 fpm and 4" w.g pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Size Limitations		
Module	Width x Height	Mounting Position
Single	24" x 48"	V/H
Single	36" x 36"	V/H
Single	48" x 48"	V/H
Multiple	72" x 72" / 144" x 96"	V/H



MFD- GB-30-A



MFD-GB-F-30-A

Motorized Fire Damper

Series: MFD-SB/GB/SGB/GSB-F-20/30-A/R

Construction: Stainless Steel / Galvanized Steel

Fire Rating : 1½ Hr. / 3 Hrs.

Application: Static / Dynamic

Motorized Fire Damper with DTRD is a high performance UL 555 Classified damper with 1½ hr. / 3hr. fire rating , designed to be installed in HVAC systems with velocities of upto 2000 fpm and 4" w.g pressure. Which is a combination of a melting fuse and TRD is installed to ensure complete closure of damper with fire resistance rating in either direction. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Size Limitations		
Module	Width x Height	Mounting Position
Single	4" x 4"	H
Single	36" x 36"	H

Fire Damper

Series: FD-GB-20/30/21/31-AS/BS/R

Construction: Galvanized Steel

Fire Rating : 1½ Hr. / 3 Hrs.

Application: Static / Dynamic

Fire Damper is a high performance UL 555 Classified damper with 1½ hr. / 3hr. fire rating , designed to be installed in HVAC systems that immediately shut down during an unexpected fire. The dampers are installed vertically or horizontally.

Size Limitations		
Module	Width x Height	Mounting Position
Single	4" x 4"	V/H
Single	36" x 36"	V/H
Single	30" x 48"	V/H
Multiple	144" x 96"	V/H



FD-GB-30-AS



Motorized Smoke Damper

Series: MSD-GB/GSB-20/21C1/C2/C3-A/R at 250°F

MSD-B-40C2-BG;MSD-B-40C3-BG at 350°F

Construction: Stainless Steel / Galvanized Steel

Leakage Rating: Class-I / Class-II at 250°F; Class-III at 350°F

Application: Dynamic

Motorized Smoke Damper is a high performance UL 555S Classified damper with Class I /Class II leakage rating at 250°F and Class-II/III 350°F , designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 2000 fpm and 4" w.g. pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Size Limitations		
Module	Width x Height	Mounting Position
Single	6" x 6"	V/H
Single	36" x 36" / 36" x 48"	V/H
Multiple	72" x 36" / 144" x 96" / 288" x 48"	V/H



MSD-GB-20C1-A



MSFD-GB-30C2-A

Motorized Fire Smoke Damper

Series: MSFD-GB/GSB-20/30C2/C3-A/R

MSFD-GB-21/31C2/C3-A/R

Construction: Galvanized Steel

Fire Rating: 1½ Hr./ 3 Hrs.

Leakage Rating: Class-II at 250°F / Class-III at 350°F

Application: Dynamic

Motorized Fire Smoke Damper is a high performance UL 555 / 555S Classified damper with 1½ hr. / 3hrs. fire rating and Class II /Class III leakage rating , designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 2000 fpm and 4" w.g. pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Size Limitations		
Module	Width x Height	Mounting Position
Single	Min x Min 9" x 9"	V/H
Single	Max Max 36" x 36" / 24" x 48" / 48" x 48"	V/H
Multiple	Max Max 72" x 36"	V
Multiple	Max Max 144" x 96"	V/H

Motorized Fire Smoke Damper

Series: MSFD-GB/GSB-20/30C1-A/R

MSFD-GB-21/31C1-A/R

Construction: Galvanized Steel

Fire Rating: 1½ Hr./ 3 Hrs.

Leakage Rating: Class-I at 250°F

Application: Dynamic

Motorized Fire Smoke Damper is a high performance UL 555 / 555S Classified damper with 1½ hr. / 3hr. fire rating and Class I leakage rating , designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 2000 fpm and 4" w.g. pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Size Limitations		
Module	Width x Height	Mounting Position
Single	Min x Min 6" x 6"	V/H
Single	Max Max 36" x 36" / 24" x 48" / 48" x 48"	V/H
Multiple	Max Max 72" x 36"	V
Multiple	Max Max 144" x 96"	V



MSFD-GB-30C1-A

Smoke Dampers can be used in two different applications, where they simply close and prevent the circulation of air and smoke through duct or a ventilation opening in a smoke barrier. Or they may be designed to control the spread of smoke using walls and floors as barriers and using the building's HVAC system and or dedicated fans to create pressure differences. Higher pressures surround the fire area and prevent the spread of smoke from the fire zone into other areas of the building. Smoke Dampers are motorized with electric actuator. They may be controlled by a smoke or heat detector signal, a fire alarm signal, or in a variety of ways by the building control system to accomplish the intent of the design.



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Industrial Ventilation Dampers

Tunnel Ventilation Damper

Series: TVD-SB / GB 40-B / TVD-B-40C2-BG*

Construction: Stainless Steel / Galvanized Steel

Fire Rating: 4 Hrs as per BS 476.

Leakage Rating: Class-I* / Class-II* / Class-III* at 350°F as per UL555S

Drive : Pneumatic* / Electric*

Tunnel Ventilation Damper is a high performance BS 476 Part 20-22 Classified damper with 4hrs. fire rating and Class I leakage rating, designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 4000 fpm and 24" w.g. (6000Pa) pressure. The dampers are installed vertically and are rated for airflow and leakage in either direction.

The dampers are designed to with stand the toughest and most demanding tunnel environments and can be custom-built to meet the needs of any tunnel or process applications.

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

* UL classified



BS476 Part 20-22
TVD-B-40C2-BG



GTD-B-40-B

Oil & Gas Damper

Series: GTD-GB/SB-40-B

Construction: Stainless Steel

Leakage Rating: As per KTA 3601 Standard

Drive : Pneumatic / Electric

Gas tight dampers are designed to isolate sections of a ventilation system with a very high level of sealing (gas tight). The dampers are designed to remain closed even during failure of power supply to the actuator by maintaining an air tight seal in accordance to KTA 3601 (Guidelines for Nuclear Plant) and A0/ A60 (type approval) for Marine, Oil & Gas applications. The compact design and robust actuator mechanisms enable the dampers to be installed in any orientation.

Coast Guard Marine Fire Damper

Series: CGFD- B-A60/A30/A0-GS/CGFD- B-A60/A30/A0-SS

Construction: Stainless Steel / Galvanized Steel

Fire Rating: 60/30/15/0 minutes.

Drive: Pneumatic / Electric

BETEC CAD's Coast Guard Fire Dampers A60/A30/A0 ABS type approved are suitable for use in Off-shore and marine ventilation systems. These fire dampers can be installed in rectangular or circular ducts. All fire dampers are equipped with TRD and they prevent the spread of fire within the ventilation duct work system. Those dampers are used under high pressure & velocity conditions to achieve, low pressure drop, low noise and rattle free operation. Fire dampers are set from out side and can be installed in any position. An open-closed indicator is visible on the out side of the damper. Fire Dampers with non standard dimensions and flange width are available on request.

Size Limitations		
Module	Width x Height	Position
Single	Max x Max 40" x 48"	Bulkhead/decks
Multiple	Max x Max 80" x 48"	Bulkhead/decks

Standard : IMO FTP code-Part 3 & SOLAS



CGFD- B-A60/A30/A0-GS



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Volume Control Dampers

Volume Control Damper

Series: VCD-10/20/40

Blade operation: A- Parallel , B- Opposed , C- Gear opposed

Construction: Galvanized Steel / Stainless Steel /Aluminium

Leakage Rating: Class-II

Drive : Manual Quadrant

Volume control damper is a high efficiency low leakage damper of square and rectangular type , having parallel / opposed blade operation with single skin design. The damper is designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 3000 fpm and 6" w.g pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.



Single Skin Damper



VCD-GB-21-B



Double Skin Damper

VCD-GAB-22-B

Volume control Dampers

Series: VCD-10/20/40

Blade operation: A- Parallel , B- Opposed , C- Gear opposed

Construction: z/Aluminium

Leakage Rating: Class-II

Drive : Manual Quadrant

Volume control damper is a high efficiency low leakage damper of square and rectangular type , having parallel / opposed blade operation with double skin (Aerofoil) design. The damper is designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 3000 fpm and 6" w.g pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.

Round Volume control Dampers

Series: VCD-GB-30

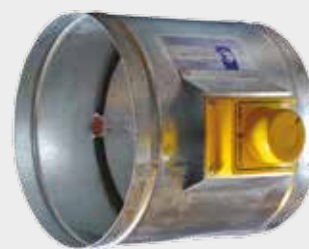
Blade operation: B- Opposed

Construction: Galvanized Steel / Stainless Steel

Leakage Rating: Class-III

Drive : Manual Quadrant

Volume control damper is a high efficiency low leakage damper of round type , having opposed blade operation with single skin or double skin (aerofoil) design. The damper is designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 3000 fpm and 6" w.g pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.



VCD-GB-30-B

Motorized Volume control Dampers

Series: MCD-10/20/40

Blade operation: A- Parallel , B- Opposed , C- Gear opposed

Construction: Galvanized Steel / Stainless Steel /Aluminium

Leakage Rating: Class-II

Drive : Electric / Pneumatic

Motorized Volume control damper is a high efficiency low leakage damper of square rectangular and round type , having parallel / opposed blade operation with single skin / double skin (Aerofoil) design. The damper is designed to ensure lowest resistance to airflow in HVAC systems with velocities of upto 3000 fpm and 6" w.g pressure. The dampers are installed vertically or horizontally and are rated for airflow and leakage in either direction.



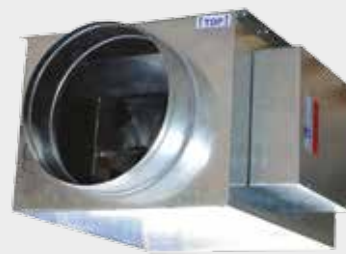
MCD-GAB-22-B



Variable Air Volume - By Pass

By-pass VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at lower cost from a single zone source. **BETEC CAD By-Pass VAVs** complement by providing excellent temperature control and central air distribution by individually by-passing excess conditioned air to the main unit.

The added costs of multi-zone systems can be avoided, and the need for duct mounted reheat coils can be minimized. Easy and simple to install, can be used with any air conditioning units in buildings or offices and can be easily modified or relocated as per interior requirements.



VAV-B-10



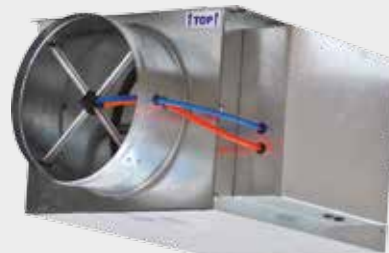
VAV-B-20

Variable Air Volume - Pressure Dependent

Pressure Dependent Type VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at lower cost from a single zone source.

These **VAVs** complement by providing excellent temperature control and central air distribution with unlimited zoning, combined with common by-passing with **VZD** - Variable Zone Damper. The added advantage of multi-zone systems are by supplying centralized air distribution from unwanted zones to demand related zones.

Easy and simple to install, can be used with packaged / ducted / air handling units in any buildings or offices and can be easily modified or relocated as per interior requirements.



VAV-B-30

Variable Air Volume - Pressure Independent

Pressure Independent Type VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at a medium cost from a single zone source.

These **VAVs** deliver variable / constant air volume as designed by providing excellent performance and temperature control for central air distribution with unlimited zoning, combined with common by-passing with **VZD** - Variable Zone Damper (or **VFD**).

The added advantage of multi-zone systems is by supplying centralized air distribution from unwanted zones to demand related zones. Easy and simple to install, can be used with packaged / ducted / air handling units in any buildings or offices and can be easily modified or relocated as per interior requirements.



VAV-B-40

Variable Air Volume - Induction VAV

Induction VAV's are terminals designed to provide the benefits of precise control of conditioned air supply to match the room temperature variations and simultaneously being highly energy efficient.

These VAV's combine ceiling plenum air with primary supply air to ensure satisfactory room conditioned air. The conditioned supply air (primary air) flowing through a carefully engineered variable aperture "flow grid" provides the induction of the warm plenum air without the use of integral fans.

With the added advantage of multi stage heating, an option for built in sound attenuator to minimise noise and easy and simple installation procedure, these VAV's are highly preferred for offices, buildings, malls, schools etc and can be modified and installed as per requirements.

Constant Air Volume

Pressure Independent Type CAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at a medium cost from a single zone source. These **CAVs** deliver constant air volume as designed by program, by providing excellent performance and temperature control for central air distribution systems with unlimited zoning capacity, by supplying constant air volumes to individual zones. The added advantage of multi-zone systems is by supplying centralized air distribution from unwanted zones to demand related zones.

Easy and simple to install, can be used with packaged / ducted / Air handling units in any buildings or offices and can be easily modified or relocated as interior requirements.



CAV-B-50



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Sound Attenuators

Sound Attenuator

Series: SA-GB/SB-20

Construction: Galvanized Steel / Stainless Steel

Sound attenuators are devices used to attenuate loud noises. The square and rectangular type attenuators are designed for handling maximum air capacities at minimum pressure drop. The attenuators can operate at velocities up to 1600 fpm (8 m/sec.) and 2" w.g. (500Pa) pressure. They are installed vertically or horizontally and rated for airflow and leakage as per DW-144 class C.

The shell noise radiation is minimized by double skin splitter construction and turbulence of the airflow is minimized due to the bell nose design of the splitter at the entrance of the air inlet.

Better results are obtained by using **BETEC CAD** factory calibrated and fabricated Sound Attenuators.

BETEC CAD's Sound Attenuators are tested for fire integrity of 2 Hrs @ 400°C.



Applus⁺
laboratories

SA-GB-20



CS-GB-30A

Sound Attenuators - Cylindrical Type

Series: CS-GB/SB-30

Construction: Galvanized Steel / Stainless Steel

Sound attenuators are devices used to attenuate loud noises. The cylindrical type attenuators are designed for handling maximum air capacities at minimum pressure drop. The attenuators can operate at velocities up to 1600 fpm (8 m/sec.) and 2" w.g. (500Pa) pressure. They are installed vertically or horizontally and rated for airflow and leakage as per DW-144 class C.

These attenuators are installed in the duct work between spaces, which provide noise reduction of air borne noise to at least match the sound transmission loss of the separating structure.

The cylindrical type Attenuators can be used where there is a demand for large amount of low frequency attenuation.

Sound Attenuators - Cross Talk

Series: CT-GB/SB-40A/B

Construction: Galvanized Steel / Stainless Steel

A - Square & Rectangular; B - Zig-Zag

BETEC CAD's manufactures square, rectangular, cylindrical and cross talk sound attenuators, which are used in commercial, industrial and residential buildings to reduce mechanical equipment noise transmitted through the ducted or un-ducted system achieving desired noise criteria in the occupied space. We design attenuators to achieve desired noise criteria in the occupied space or to reduce environmental noise for generator rooms, to meet project requirements without compromising attenuator performance.



CT-GB-40B



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Louvers

Weather Louver

Series: WL-B-10/20/30/40

Construction: Aluminium / Galvanized Steel

Mounting: Wall / Duct / Flush

BETEC CAD. manufactures weather louvers, which are designed for both intake and exhaust air applications. These weather louvers have been designed to ensure the basic parameters such as minimum pressure loss, low self-generated aerodynamic noise, minimum water ingress and aesthetical appearance are satisfied.

Closely spaced horizontal blades minimize the penetration of wind-driven rain, reducing damage and additional operating expenses. Aluminum construction is for low maintenance and high resistance to corrosion.

Low pressure drop performance with high free area performance as per AMCA 500-L.

Excellent pressure drop performance & Heavy duty durable construction.

High Efficient Wind driven rain louvers Tested as per EN13030:2001 Standard.



WL-AB-40-C

Sand Trap Louver

Series: STL-B-10/20/30/40

Construction: Aluminium / Galvanized Steel / Stainless steel

Mounting: Wall / Duct / Flush

BETEC CAD. manufactures Sand Trap Louvers for fresh air intake in HVAC systems, which are designed to separate sand and dust particles at low and medium air velocities thus avoiding excessive dust loading on conventional secondary stage filters. They give excellent performance for air filtration and moderate pressure drops at low air velocities.

Vision proof blades and low leakage frame construction make it the most suitable for various applications. The added advantage of drainage holes at the bottom of Sand Trap Louver makes it self cleaning and maintenance free.



STL-AB-22-C

Acoustic Louver

Series: AL-B-10/20/30

Construction: Aluminium / Galvanized Steel

Blade Construction: Single Bank / Double Bank

BETEC CAD. Acoustic louvers are used to reduce mechanical equipment noise transmitted through building openings or from openings in acoustic enclosures, generator rooms or barrier walls. Our acoustic louvers are available in Galvanized steel or Aluminium construction with various surface finishes in order to meet project architectural requirements.

Typical applications are silencing for outside air intake or exhaust air openings, ventilation openings in acoustical enclosures and barriers around cooling towers, air-cooled chillers and outdoor equipments.



AMCA Tested

AL-ADB-10-300A

Sunshade Louver

Series: MSL-AB-50

Construction: Aluminium

Motorized Sunshade Louvers are designed for zero solar heat gain by shutting out light. Easily managed by the buildings environmental control system, this product solves many light infusion issues.

Sunshades are an attractive means to obstruct undesired sun and heat gain while allowing natural light into your building.

The aerofoil type blades for sunshade louvers add an attractive design element to your building.



MSL-AB-50



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Grilles

Grilles (Square & Rectangular)

Series: B-10

Construction: Aluminium / Stainless Steel

Aerofoil Blades; Low Leakage Frame Styles.

BETEC CAD manufactures Grilles for air distribution in HVAC systems, they provide excellent performance for air distribution and low pressure drops at different air passage velocities.

All models of square or rectangular Grilles are designed to give full flexibility in volume and air pattern control. Air distribution pattern can be made horizontal or vertical along the wall or ceiling.

Deflecting vanes and opposed volume damper can be adjusted from the grill face. By adjusting the volume damper, flow volume can be adjusted. The volume damper is designed in a unique way that it can be used as an equalizing grid.

Single or multiple length arrangement will provide positive alignment of adjacent sections using alignment strips, provided with each linear sections.

The grille is constructed from high quality aluminium extruded profiles.



Linear Bar Grilles

Series: B-20

Construction: Aluminium / Stainless Steel

Aerofoil Blades; Low Leakage Frame Styles.

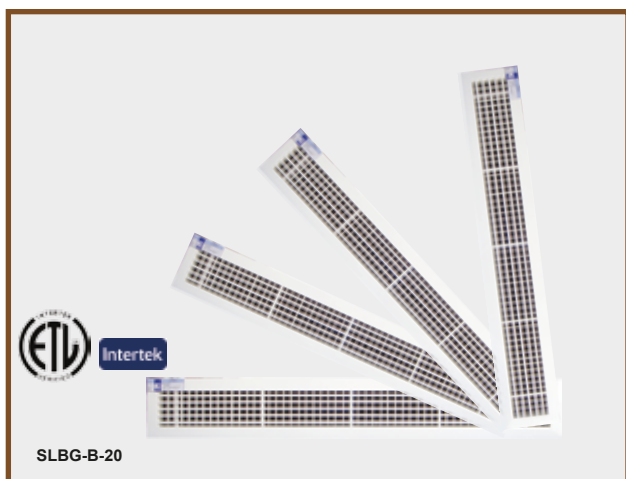
BETEC CAD manufactures Grilles for air distribution in HVAC systems, they provide excellent performance for air distribution and low pressure drops at different air passage velocities.

All models of Linear Grilles are designed to give full flexibility in volume and air pattern control. Air distribution pattern can be made horizontal or vertical along the wall or ceiling.

Deflecting vanes and opposed volume damper can be adjusted from the grill face. By adjusting the volume damper, flow volume can be adjusted. The volume damper is designed in a unique way that it can be used as an equalizing grid.

Single or multiple length arrangement will provide positive alignment of adjacent sections using alignment strips, provided with each linear sections.

The grille is constructed from high quality aluminium extruded profiles.



Perforated Grilles / Security Grilles

Series: B-10/20

Construction: Aluminium / Galvanized Steel

Aerofoil Blades; Low Leakage Frame Styles.

BETEC CAD manufactures perforated Grilles / Security Grilles for air distribution in HVAC systems, they provide excellent performance for air distribution and low pressure drops at different air passage velocities.

All models of Perforated Grilles are designed to give full flexibility in volume and air pattern control. Air distribution pattern can be made horizontal or vertical.

Opposed volume damper can be adjusted from the grill face. By adjusting the volume damper, flow volume can be adjusted.

The volume damper is designed in a unique way that it can be used as an equalizing grid.

The grille is constructed from high quality aluminium / GI materials and profiles.





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Diffusers

Diffusers

Series: B-10

Construction: Aluminium / Stainless Steel

Low Leakage Frame Styles.

BETEC CAD manufactures Diffusers for air distribution in HVAC systems, they provide excellent performance for air distribution and low pressure drops at different air passage velocities.

All models of Square Diffusers are designed to give full flexibility in volume and air pattern control.

Air distribution pattern can be made horizontal or vertical along the ceiling.

Deflecting vanes and opposed volume damper can be adjusted from the diffuser face. By adjusting the volume damper, flow volume can be adjusted.

The volume damper is designed in a unique way that it can be used as an equalizing grid.

The Diffuser is constructed from high quality aluminium extruded profiles.



SAD-B14

Jet Nozzles / Ball Diffusers

Series: B-10/20

Construction: Aluminium / Stainless Steel

Low Leakage Frame Styles.

BETEC CAD manufactures Jet Ball Diffusers, they provide excellent air performance, at low pressure drops at different air velocities. The supply of conditioned (cool / hot) air from the jet diffuser, has to travel a large distance to the occupied zone. Where the distribution of air via ceiling diffusers is not possible. The jet nozzles are placed in the corners and at high level areas.

Air distribution pattern can be made any desired angle.

Opposed butterfly damper can be adjusted from the nozzle face. By adjusting the volume damper, flow volume can be adjusted.

The Jet nozzle / Jet ball is constructed from high quality aluminium.

Jet Diffusers are designed to use mainly in HVAC applications. These are used normally in Malls, Airports, Auditoriums, Sports Arenas, Hyper markets, Zoo etc.



JN-B-20

JN-B-10

Linear Slot Diffusers

Linear Flow Diffusers B-20; Aluminium Construction.

Low Leakage Frame styles.

BETEC CAD manufactures Linear flow bar diffusers for air distribution in HVAC systems, they provide excellent performance for air distribution and low pressure drops at different air passage velocities.

All models of Linear flow diffusers are designed to give full flexibility in volume and air pattern control.

Air distribution pattern can be made horizontal or vertical along the wall or ceiling.

Deflecting vanes and integral volume damper can be adjusted from the diffuser face. By adjusting the volume damper, flow volume can be adjusted.

The volume damper is designed in a unique way that it can be used as an equalizing grid.

Single or multiple length arrangement will provide positive alignment of adjacent sections using alignment strips, provided with each linear sections.

The diffuser is constructed from high quality aluminium extruded profiles.



SLSD-B-20



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Plenums / Doors

Plenums

Linear Plenums B-10, Aluminium / GI Construction.

Aerofoil Vanes ; Insulated, Leakage proof Plenum styles.

BETEC CAD manufactures Square / Linear Plenums for air distribution in HVAC systems, they provide excellent air performance characteristics at low pressure drops at different air passage velocities.

Plenums are designed to ensure even distribution of air over surface of the associated diffuser or grill with minimum noise turbulence, there by are maintaining the correct airflow performance characteristics.

All models of Square or Linear Plenums are designed to give full flexibility in volume and air pattern control.

Deflecting vanes and volume damper can be adjusted from the grill / diffuser face. By adjusting the volume damper, flow volume can be adjusted.

Single or multiple length arrangement will provide positive alignment of adjacent sections using alignment strips, provided with each linear sections.

The grill / diffuser is constructed from high quality aluminium extruded profiles.



LP-B- 20



LPV-B-20

Variable Plenums

Variable Plenums B- 20, Aluminium / GI Construction.

Aerofoil Vanes ; Insulated, Leakage proof Plenum styles.

BETEC CAD manufactures Variable Square / Linear Plenums for air distribution in HVAC systems, they provide excellent air performance characteristics at low pressure drops at different air passage velocities.

Plenums are designed to ensure even distribution of air over surface of the associated diffuser or grill with minimum noise turbulence, there by are maintaining the correct airflow performance characteristics.

All models of Square or Linear Plenums are designed to give full flexibility in volume and air pattern control.

Single or multiple length arrangement will provide positive alignment of adjacent sections using alignment strips, provided with each linear sections.

The grill / diffuser is constructed from high quality aluminium extruded profiles.

Fire Rated Doors - FRD

FRD-B-10/20, Galvanized Steel / Stainless steel Construction.

Fire rating : 1 hr. / 2 hr.

Models : Single Door : FRD-GB-10S;

Double Door: FRD-GB-20D; UL10 C Classified

Fire doors play a vital role in keeping people safe and minimising property damage during unexpected fire accidents.

BETEC CAD manufactures Fire rated single or double doors that are designed for use in building systems to provide access for emergency exits or for regular maintenance works.

The strong and robust construction of the fire door guarantees leakage resistance for fire even with high positive or negative pressures. Double walled door panels filled with thick mineral rock wool insulation of density. 6.1 Pnds / Cu.ft (98kg/cu.met) will act as better resistance for transfer of heat.



BS 476 part 20/22



UL10 C Classified



AD-GB-10

Access Doors

AD B-10; Galvanized Steel / Stainless steel Construction.

Door rating : Leakage 0.2% at 4" w.g. (1000Pa)

Models: AD-B-10; Insulated, Leakage proof Frame styles.

BETEC CAD manufactures Access Doors that are designed for use in air conditioning ductwork systems to provide access for resetting of Fire Dampers, Heaters, Filters and product fire alarm panels or any other sensitive or security required equipment and for other maintenance works.

The strong and robust construction of the access door guarantees low leakage of air even with high duct pressures. Double walled door panel with mineral wool insulation will act as better resistance for transfer of heat.



Duct Heaters - DH

DH-B-10, Galvanized steel / Stainless steel Construction.
Voltage Rating : Single Phase / Three Phase
Models: DH-B-11

Slip in Heater

It is designed so flat that the frame dimensions are slightly smaller than the duct dimensions. The entire Heater except the terminal box slides through a rectangular opening in the side of the duct with 1/4" clearance all around. When installed, the face area of the heater is at right angle to the air stream. Slip in heater is widely used because it allows duct work to be installed before the heaters are available, simplified on changes, in heater location and it is easily installed into existing duct systems.

Furthermore, small slip-in heaters may be installed without any special arrangements for their support.



Duct Heaters - DH

DH- B-10, Galvanized steel / Stainless steel Construction.
Voltage Rating : Single Phase / Three Phase
Models: DH-B-12

Flanged Heater (With Removable Heater Section)

Flanged Heater consists of heater coils mounted in a flanged duct section. Frame dimensions are made to match exact duct dimensions. The frame is then attached directly to external flanges of the duct .

All controls are mounted in the terminal box.



VAV with Duct Heater

VAV-DH-B-10/20/30/40/50, Galvanized steel Construction.
Voltage Rating : Single Phase / Three Phase

VAV with Slip in Heater

The reheat coils are factory fitted in to the corresponding VAV or CAV.

It is designed so that the VAV or CAV followed by a heater battery are used in excessive humid places to avoid condensation of the equipment.

Slip in heater-VAVs are widely used because it allows the duct work to be installed before the VAVs & heaters are available and simplifies the design.

Furthermore, VAV with slip-in heaters may be installed without any special arrangements for their support.





Metallic Filters - BF 1

BF 1 - Aluminum / Galvanized steel / Stainless steel Frames.
Models: BF 1- 4" / 6". Leakage proof Frame styles.

BETEC CAD manufactures a complete line of metallic filters for various residential, commercial and industrial applications. These are available in a wide range of standard, special and custom sizes, designs and shapes to meet virtually every air filtration requirement. They are of the highest quality and efficiency obtainable and feature long lasting optimum performance.

BETEC CAD. manufactures a wide range of metallic filters with media as Aluminum or Stainless Steel, with frame styles, Aluminum / GI / Stainless steel frame construction to serve all kinds of air filtration requirements.



BF - 1



BF - 2

Synthetic Filters - BF 2

BF 2 - Aluminum / Galvanized steel / Stainless steel Frames.
Models: BF 2 - 4" / 6". Leakage proof Frame styles.

BETEC CAD manufactures a complete line of synthetic filters for various residential, commercial and Industrial applications. These are available in a wide range of standard, special and custom sizes, designs and shapes to meet virtually every air filtration requirement. They are of the highest quality and efficiency obtainable and feature long lasting optimum performance.

These synthetic filters , made of non-woven cotton, plus polyester which have been specially manufactured for high dust holding air filtration , with maximum efficiency rating. Frame styles, Aluminum / GI / Stainless steel frame construction , serve all kinds of air filtration requirements.

Bag Filters - BF 3

BF 3 - Galvanized steel / Stainless steel Frames.
Models: BF 3 - 4" / 6" / 8" . Leakage proof Frame styles.

BETEC CAD manufactures a complete line of bag filters for various residential, commercial and Industrial applications. These are available in standard, special and custom sizes, to meet virtually every air filtration requirement. They are the highest quality and efficiency obtainable and feature for long lasting optimum performance.

Bag filters, which are effective filters and are specially designed for applications in centralized air-conditioning systems for separating line dust where arduous operating conditions exist.

Strong ducted casing in galvanized / stainless sheet steel with standard cell frames is used for mounting bag filters. The filter medium is from high quality chemical fiber or glass fiber for separation of fine dust down to aerosols. The bag filters are fixed in to the casing by means of standard cell frames complete with perimeter sealing strips and quick release clamps. This system ensures accurate sealing between the frame and the bag. The material used, manufacture and finish of the bag filters provide good distribution of air and good corrosion resistance.



BF - 3



BETEC CAD.
Beyond the Comfort Air.

Certifications

Laboratory Tests and Certifications. (Tests Conducted at UL Head Quarters - Chicago, U.S.A)



UL 555 Laboratory Tests



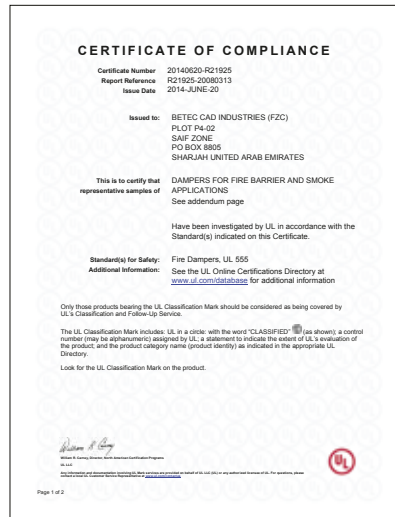
UL 555 Laboratory Tests Fire Damper After 2 hours - UL Laboratory



Fire Damper After 3 hours - UL Laboratory



Hose Stream Test - UL Laboratory



BETEC CAD's Tunnel Ventilation Damper 4 Hrs, Fire Resistance Tests
Conducted by - BRE - UK Test Standard : BS476 Part 20-22



Damper Condition after 2 Hrs



Damper Condition after 4 Hrs

BS476 Part 20-22. (4 hrs Fire Test)



BETEC CAD.

BREAKS FIRE & SMOKE PATH..

Introduction

BETEC CAD. has been leader for over 20 years, in designing, manufacturing, durable, high performance control Dampers for industrial and commercial building ventilation applications. Constructed from heavy-duty, high quality steel with the most advanced equipments in the industry. **BETEC CAD.** dampers can stand up to the toughest and most demanding environments and can be custom-built to meet the exact needs of virtually any ventilation or process applications.

BETEC CAD. manufactures, **UL** classified dampers to meet the standards of **NFPA** - National Fire Protection Authority, for human life and property safety. To meet the demands of fire and smoke protection, these dampers are available in a wide range of classifications and with a variety of custom built features and options.

BETEC CAD. fire dampers are designed to operate as an integral part of Engineered smoke management system for building controls, and are used in walls, ceiling and floors. They are suitable for both dynamic or static fan on systems. Fire Dampers are required by the International Uniform Building Code to maintain the required fire resistance rating of walls, partitions and floors when they are penetrated by air ducts or other ventilation openings.

A duct or ventilation openings in any of the fire rated partitions would permit a fire to spread from the compartment of origin to adjoining compartments or space. Fire Dampers or Fire-Smoke dampers are installed in these ducts or ventilation openings. They close automatically upon detection of heat by a Thermal responsive device (TRD), blocking the openings and preventing the spread of fire or smoke in to the adjoining compartment.

BETEC CAD's experienced and professional team provide quality products through continuous commitment to research and development and the introduction of new technologies.

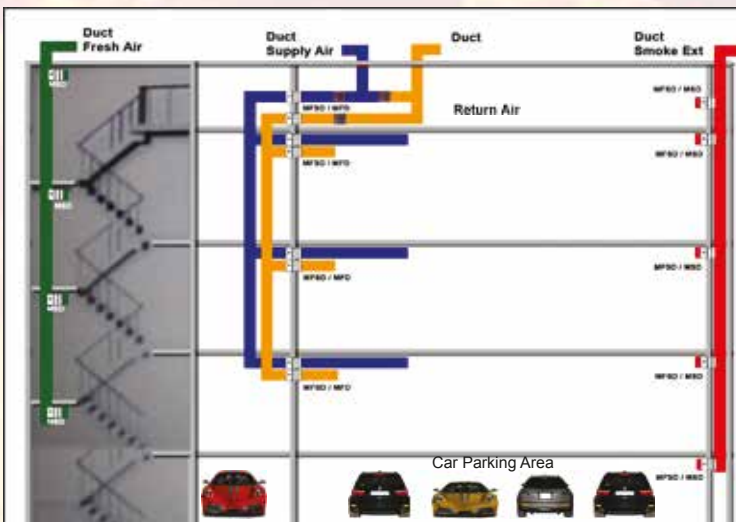
Standards and Codes.

Fire-resistive construction requirements usually are determined by the local or state code authority. Local and state codes are usually adaptations of the national and model codes, such as the International Building Code, published by the International Code Council, Inc. (ICC); BOCA National Building Code published by the Building Officials and Code Administrators International, Inc. (BOCA); the Uniform Building Code published by the International Conference of Building Officials (ICBO); and the Standard Building Code published by the Southern Building Code Congress International, Inc. (SBCCI).

The National Fire Codes published by the National Fire Protection Association (NFPA) contain recommended practices and technical data for determining fire-resistive requirements. Standards for fire-resistive tests may be found through the American National Standards Institute (ANSI), ASTM, UL, and the NFPA.

Testing of fire-resistive components and assemblies may be conducted by any of several independent testing laboratories. The most prominent testing laboratories evaluating fire resistive materials and assemblies are UL - Under Writers Laboratories of USA.

Engineered Fire & Smoke management system in a building.



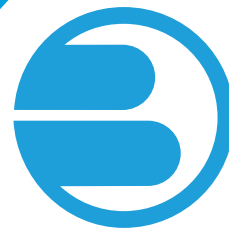
DISCLAIMER OF WARRANTIES

BETEC CAD's products are designed based on "SMACNA", "NFPA", technological data in the interest of improving the safety for the public benefit. **BETEC CAD.** disclaims any liability for any personal injury, loss of life, property damage, or other damage of any nature whatsoever, whether special, indirect, consequential or compensatory, direct or indirectly resulting from any accident, regardless of legal theory. In no event shall **BETEC CAD's** liability exceed the amount paid by customer / contractor to that individual product cost OR US\$1000/- which ever is lesser, regardless of legal theory.

Note: Damper once installed, needs to be strictly maintained for every month and operation performance should be recorded by trained engineer or concern department experts, as per the Operation and Maintenance manual.

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





BETEC CAD.

International Offices /manufacturing / Assembling / Distributors Locations:

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 KSA
 Kuwait
 Oman
 Qatar
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March-2022



BETEC CAD.



Motorized Fire Damper



Motorized Fire Smoke Damper



Coast Guard Marine Fire Damper



Sand Trap Louver



Grilles & Diffusers



Acoustic Louver



Variable Air Volume
Pressure Independent Type



Valves & Nozzles

Beyond the Comfort Air..
FOR
HVAC

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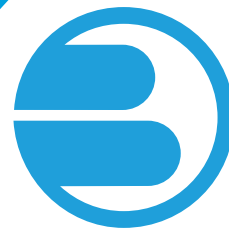




BETEC CAD.

Beyond the Comfort Air..

Fire Dampers



BETEC CAD.

International Offices /manufacturing / Assembling / Distributors Locations:

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 Bahrain
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 South Korea
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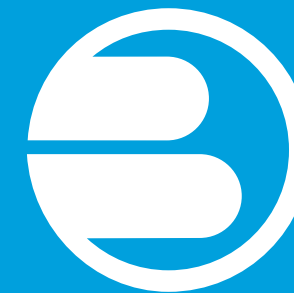
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March-2022



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Motorized Fire Damper



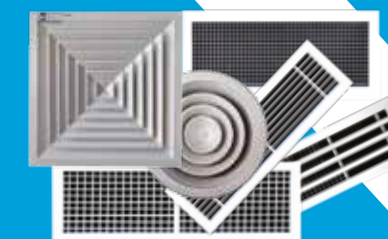
Motorized Fire Smoke Damper



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