



# AIR CONTROL DAMPER MODEL KVCD-3V10 or 20 FLANGED FRAME AIR CONTROL DAMPER

## STANDARD CONSTRUCTION

### FRAME:

18 Ga galvanized steel Flanged frame construction with 35mm flanges.

### BLADES:

16 Ga galvanized steel 3V type blades

Parallel blades model KVCD-3V10

Opposed blades model KVCD-3V20

### BEARINGS:

Nylon bearings

### AXLES:

0.47"(12mm) Square zinc plated steel stud

### LINKAGE:

Concealed in frame 10Ga (3mm) zinc plated steel

### MANUAL HAND-QUADRANT:

Galvanized steel die cast hand-quadrant plated for square or round shaft installed on an elevated bearing bracket

### BRACKET:

1" (25mm) elevated hand bracket

### FINISH:

Mill galvanized

## OPTIONS:

### 1) FRAME CONSTRUCTION

- Aluminum or stainless steel frame construction.
- Frame thickness 0.8mm or 1mm or 1.5mm (for 0.8 or 1 mm thickness not available for Aluminum construction)

### 2) FLANGES:

Variable size of frame flanges sizes: 20, 25, 30 or 40mm.

### 3) BLADES CONSTRUCTION

- Aluminum or stainless steel blades construction.
- Blade Thickness 0.8 or 1 or 1.2 mm

### 4) Single edge rubber foam blade seals. (-BS)

### 5) BEARINGS:

Bronze bearings (std for motorized dampers) or stainless steel bearings.

### 6) ACTUATORS:

- Electric (24,120 & 230V) or pneumatic.
- Spring return or non spring return.
- With or without auxiliary switch.

### 7) Blades indicator switch - BIS

### 8) EXTENDED SHAFT (without Hand Quadrant):

4.7" (120mm) extended shaft (round or square) beyond the air control frame.

### 9) 2" Elevated hand bracket.



## APPLICATION

KVCD volume dampers series are designed to provide superior air control with high performance and heavy duty construction. KVCD-3V10 or 20 Dampers are specifically designed for manual balancing applications. They are suitable for use in the majority of commercial medium to high pressure and velocity HVAC systems requiring flanged frame. They are designed and built to provide cost effective and reliable dampers with high free area with a very low pressure drop.

## MINIMUM SIZES:

- SINGLE BLADE TYPE:  
4"W(101mm) x 4"H(101mm).
- MULTI-BLADES :  
4"W(101mm) x 10"H(254mm)

## MAXIMUM SIZES:

- SINGLE BLADE TYPE:  
48"W(1219mm) x 9"H(229mm)
- MULTI-BLADES SINGLE SECTION:  
48"W(1219mm)x 48"H(1219mm)

MULTI-SECTIONS: UNLIMITED



# AIR CONTROL DAMPER MODEL KVCD-3V11 or 21 FLANGED FRAME LOW LEAKAGE DAMPER

## STANDARD CONSTRUCTION

### FRAME:

18 Ga galvanized steel Flanged frame construction with 35mm flanges.

### BLADES:

16 Ga galvanized steel 3V type blades

Parallel blades model KVCD-3V11

Opposed blades model KVCD-3V21

### SEALS:

Stainless Steel Jamb Seal

### BEARINGS:

Nylon bearings

### AXLES:

0.47"(12mm) Square zinc plated steel stud

### LINKAGE:

Concealed in frame 10Ga (3mm) zinc plated steel

### MANUAL HAND-QUADRANT:

Galvanized steel die cast hand-quadrant plated for square or round shaft installed on an elevated bearing bracket

### BRACKET:

1" (25mm) elevated hand bracket

### FINISH:

Mill galvanized



## APPLICATION

KVCD volume dampers series are designed to provide superior air control with high performance and heavy duty construction. KVCD-3V11 or 21 Dampers are specifically designed for manual balancing applications. They are suitable for use in the majority of commercial medium to high pressure and velocity HVAC systems requiring flanged frame. They are designed and built to provide cost effective and reliable dampers with high free area with a very low pressure drop.

## OPTIONS:

### 1) FRAME CONSTRUCTION

- Aluminum or stainless steel frame construction.
- Frame thickness 0.8mm or 1.0mm or 1.5mm (for 0.8mm & 1mm thickness not available for Aluminum Construction)

### 2) FLANGES:

Variable size of frame flanges sizes: 20, 25, 30 or 40mm.

### 3) BLADES CONSTRUCTION

- Aluminum or stainless steel blades construction.
- Blade Thickness 0.8 or 1 or 1.2 mm

### 4) Single edge rubber foam blade seals. (-BS)

### 5) BEARINGS:

Bronze bearings (std for motorized dampers) or stainless steel bearings.

### 6) ACTUATORS:

- Electric (24,120 & 230V) or pneumatic.
- Spring return or non spring return.
- With or without auxiliary switch.

### 7) Blades indicator switch - BIS

### 8) EXTENDED SHAFT (without Hand Quadrant):

4.7" (120mm) extended shaft (round or square) beyond the air control frame.

### 9) 2" Elevated hand bracket.

## MINIMUM SIZES:

- SINGLE BLADE TYPE:**  
4"W(101mm) x 4"H(101mm).
- MULTI-BLADES :**  
4"W(101mm) x 10"H(254mm)

## MAXIMUM SIZES:

- SINGLE BLADE TYPE:**  
48"W(1219mm) x 9"H(229mm)
- MULTI-BLADES SINGLE SECTION:**  
48"W(1219mm)x 48"H(1219mm)

MULTI-SECTIONS: UNLIMITED



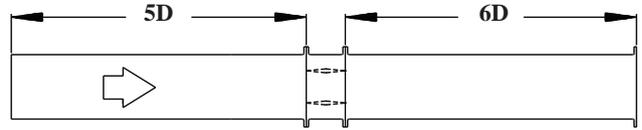
# AIR CONTROL DAMPER

## MODEL KVCD-3V10, 20, 11 & 21

### PERFORMANCE DATA

#### AMCA Test Figures

Figure 5.3 Illustrates a fully ducted damper. This configuration has the lowest pressure drop of the test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Damper in Fully open position

48"x12" (1219x305mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
500	0.01
1000	0.04
1500	0.09
2000	0.16
3000	0.38

12"x48" (305x1219mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
500	0.005
1000	0.02
1500	0.04
2000	0.07
3000	0.16

12"x12" (305x305mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
1000	0.02
1500	0.04
2000	0.08
2500	0.15
3000	0.24

24"x24" (610x610mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
800	0.01
1000	0.02
1500	0.05
2000	0.09
3000	0.19

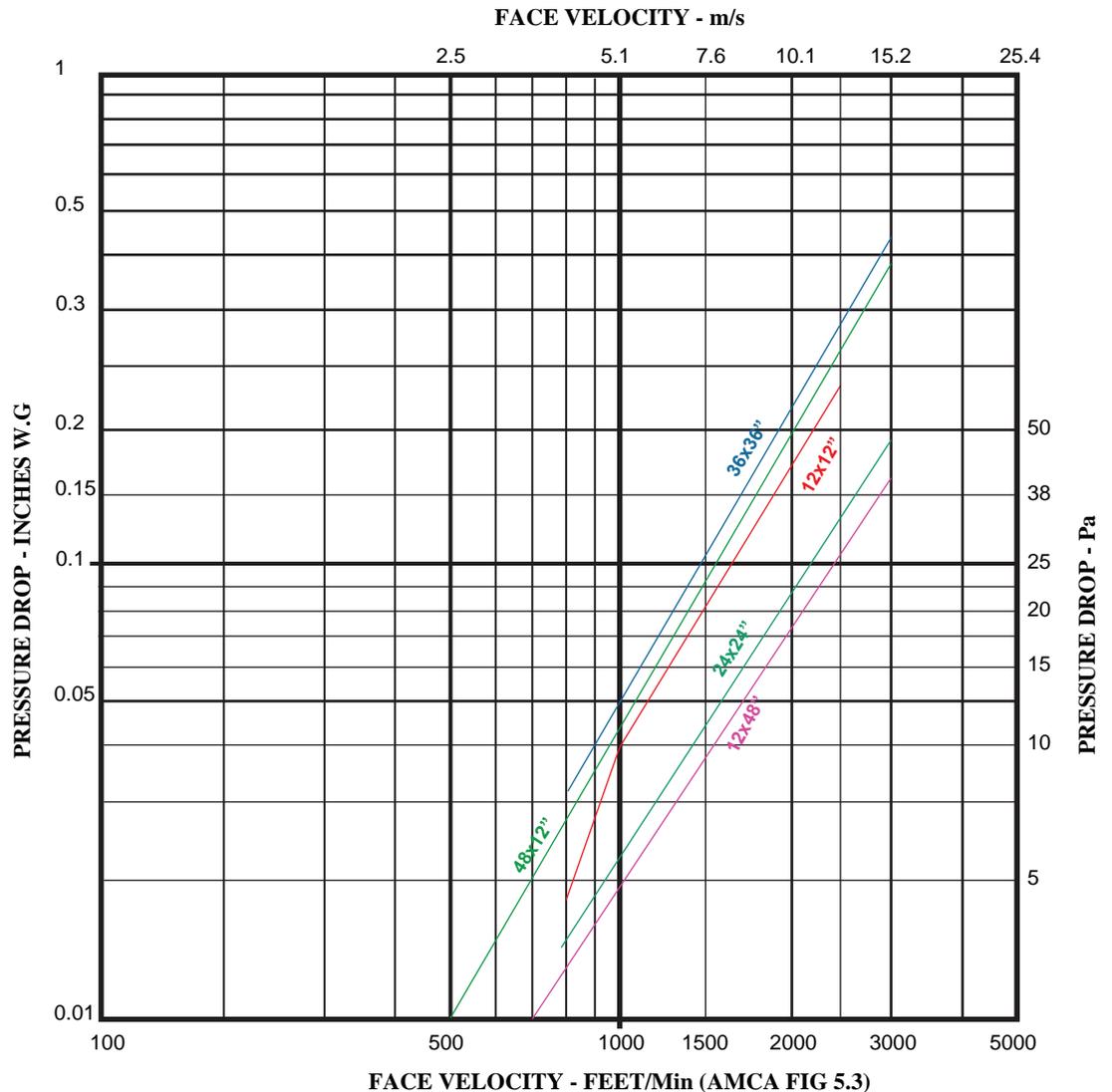
36"x36" (914x914mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
800	0.03
1000	0.05
1500	0.11
2000	0.20
3000	0.46

Tested for Air Performance in accordance with ANSI/AMCA Standard 500-D, Figure 5.3. Air performance testing was conducted using opposed blade dampers; the same results can be applied to parallel blade dampers. All data has been corrected to represent standard air density .075 lb/ft



KBE International certifies that the model KVCD-3V shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to Air Performance ratings.

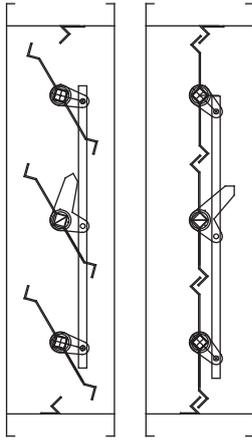
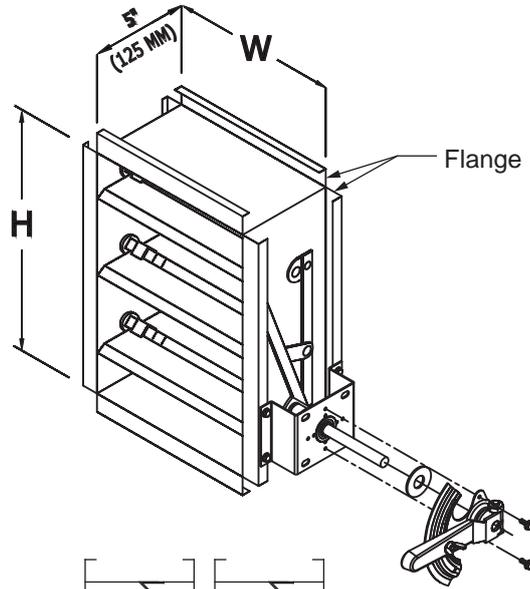




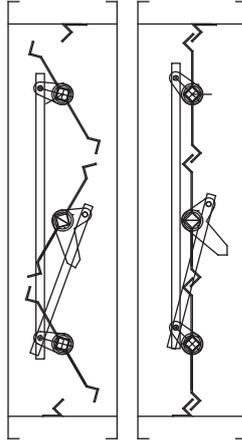
# AIR CONTROL DAMPER

## MODEL KVCD-3V10,11, 20 or 21

### DETAILS



Parallel Blades



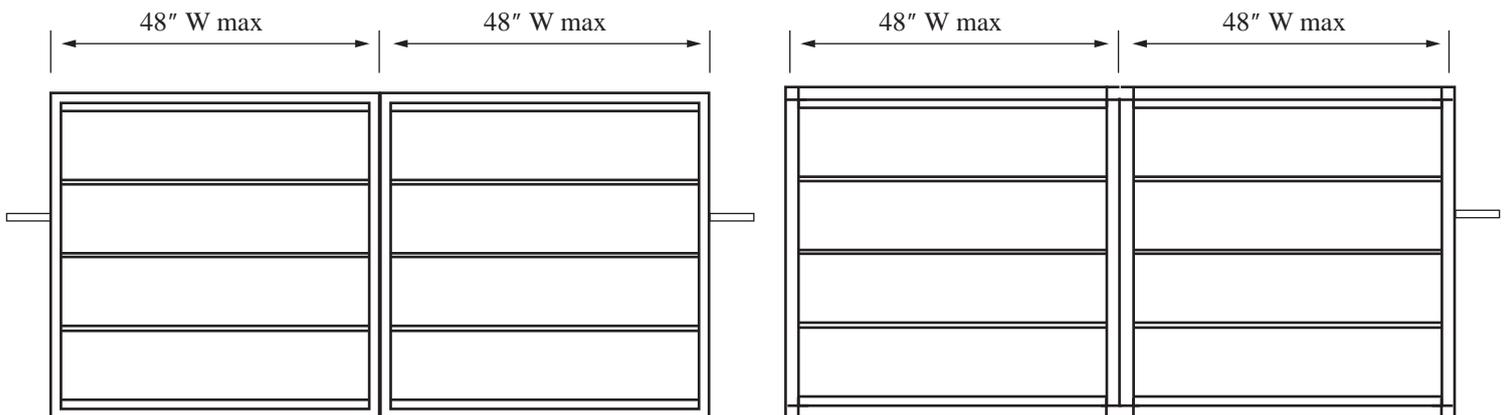
Opposed Blades



Motorized Damper

### Multi-Section Assembly

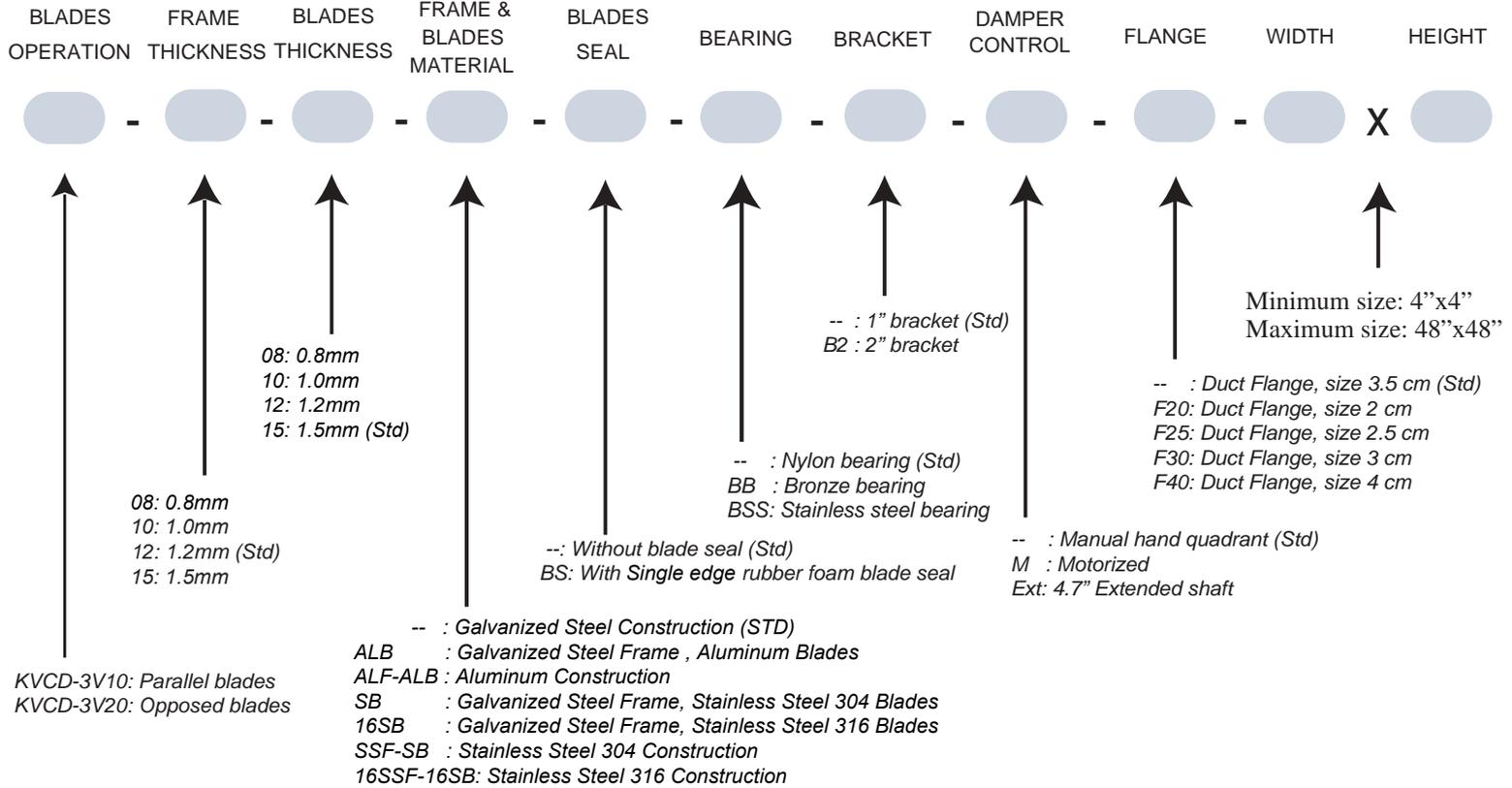
Dampers larger than maximum single section size, will be made up of multiple equal sections. Sections to be assembled on site (as standard) by sheet metal screw or #10 bolts & nuts with hand-quadrant on each side of the damper. Damper can be factory assembled with single side hand-quadrant as optional with limited assembly of 2 sections --limitation is required to avoid damage during transportation.



Standard 2 sections assembly with Hand-quadrant (or Motor) on each side

Optional 2 sections assembly with Hand-quadrant (or Motor) on 1 side

# AIR CONTROL DAMPER MODEL KVCD-3V ORDERING INFORMATION



**Example** KVCD-3V10-10-F30-36x36

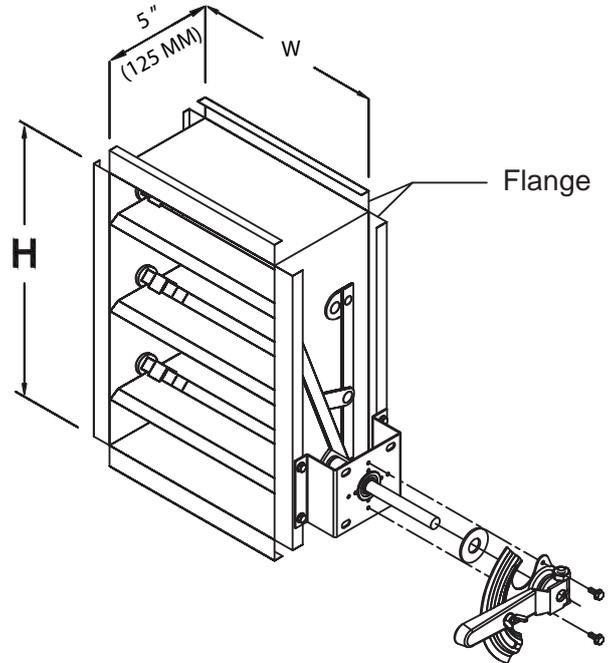
### ACTUATOR SELECTION:

Please select the specifications needed for the actuator:

Electric	<input type="checkbox"/>	Pneumatic	<input type="checkbox"/>
24 VAC	<input type="checkbox"/>	230VAC	<input type="checkbox"/>
Spring return	<input type="checkbox"/>	Non spring return	<input type="checkbox"/>
On/Off	<input type="checkbox"/>	Modulating	<input type="checkbox"/>
With auxiliary switch	<input type="checkbox"/>	Without auxiliary switch	<input type="checkbox"/>

### SIZE LIMITATION / THICKNESS:

UP TO 24" x 24" / 0.8mm Frame / 0.8mm Blade  
 UP TO 36" x 36" / 0.8mm Frame / 1.0mm Blade  
 UP TO 48" x 48" / 1.0mm Frame / 1.2mm Blade



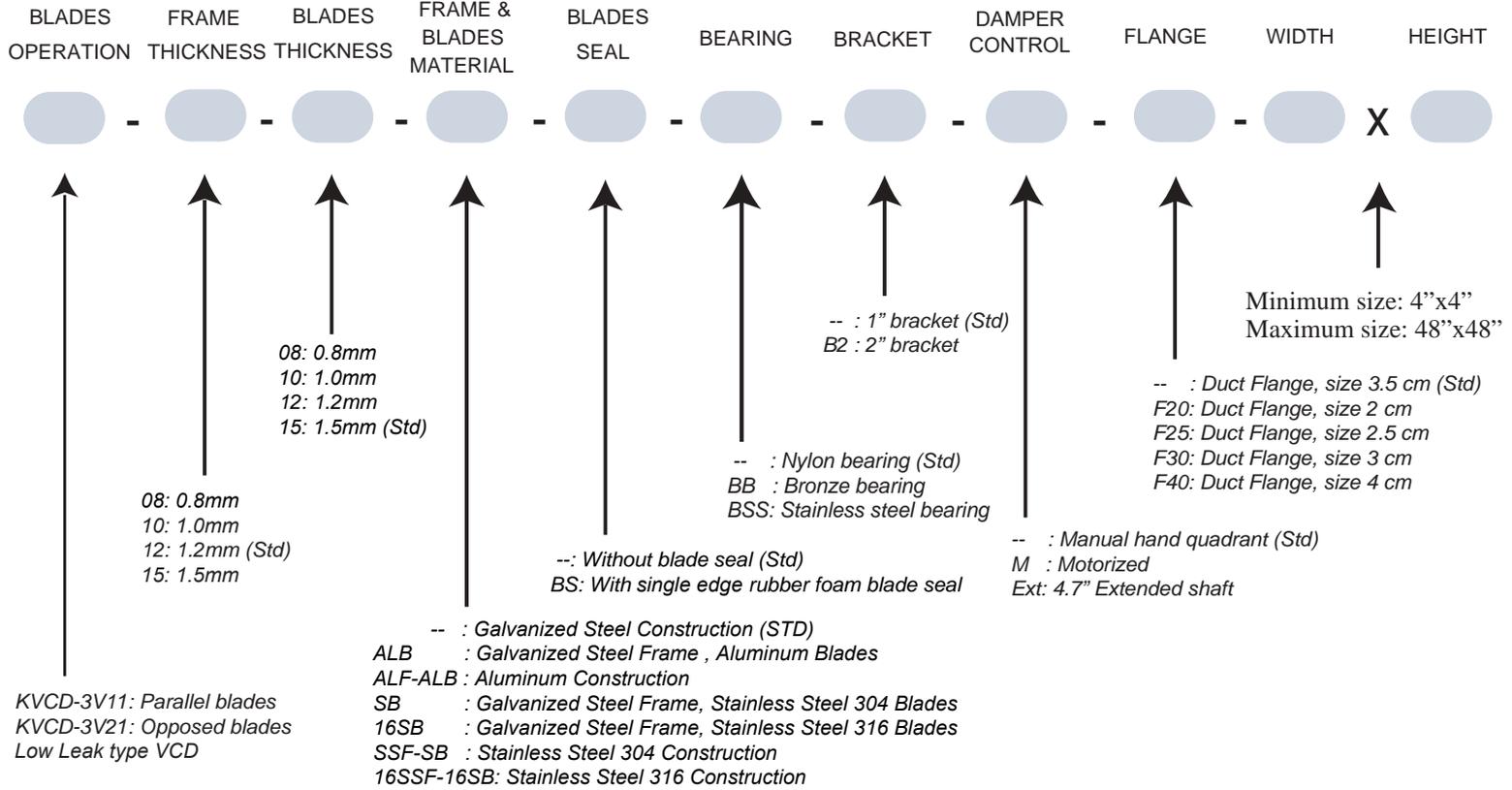
### Note:

- Volume Dampers with width or height that exceeds 48" (1200mm) are manufactured as multiple section and field assembled by others.
- SSB (Stainless Steel Bearing) is already included in SSF-SB & 16SSF-16SB (Stainless Steel Construction)
- Bronze Bearing is already included in the Motorized Volume Damper.

# AIR CONTROL DAMPER

## MODEL KVCD-3V-11 & 21

### ORDERING INFORMATION



**Example** KVCD-3V11-10-F30-36x36

**ACTUATOR SELECTION:**

Please select the specifications needed for the actuator:

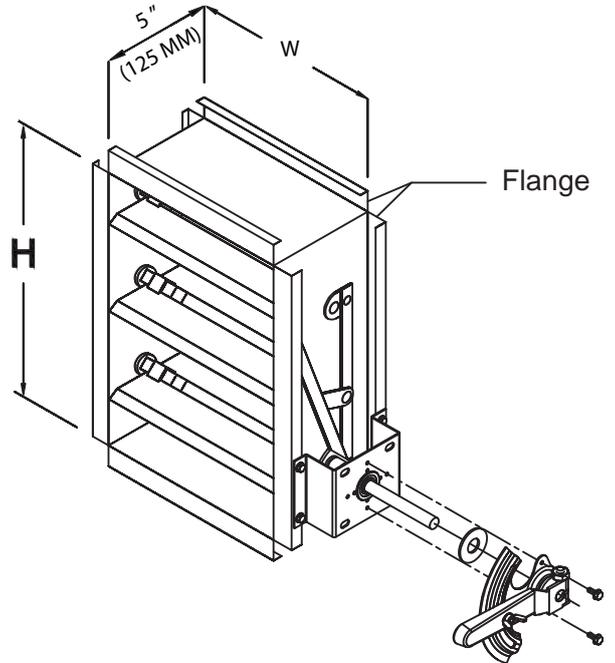
Electric	<input type="checkbox"/>	Pneumatic	<input type="checkbox"/>
24 VAC	<input type="checkbox"/>	230VAC	<input type="checkbox"/>
Spring return	<input type="checkbox"/>	Non spring return	<input type="checkbox"/>
On/Off	<input type="checkbox"/>	Modulating	<input type="checkbox"/>
With auxiliary switch	<input type="checkbox"/>	Without auxiliary switch	<input type="checkbox"/>

**SIZE LIMITATION / THICKNESS:**

- UP TO 24" x 24" / 0.8mm Frame / 0.8mm Blade
- UP TO 36" x 36" / 0.8mm Frame / 1.0mm Blade
- UP TO 48 x 48" / 1.0mm Frame / 1.2mm Blade

**Note:**

- Volume Dampers with width or height that exceeds 48" (1200mm) are manufactured as multiple section and field assembled by others.
- SSB (Stainless Steel Bearing) is already included in SSF-SB & 16SSF-16SB (Stainless Steel Construction)
- Bronze Bearing is already included in the Motorized Volume Damper.





# AIR CONTROL DAMPER MODEL KVCD-3V12 or 22 FLANGED FRAME LEAKAGE RATED DAMPER

## STANDARD CONSTRUCTION

### FRAME:

18 Ga galvanized steel Flanged frame construction with 35mm flanges.

### BLADES:

16 Ga galvanized steel 3V type blades

Parallel blades model KVCD-3V12

Opposed blades model KVCD-3V22

### SEALS:

Stainless Steel Jamb Seal

Rubber Foam Blade Seal

### BEARINGS:

Nylon bearings

### AXLES:

0.47"(12mm) Square zinc plated steel stud

### LINKAGE:

Concealed in frame 10Ga (3mm) zinc plated steel

### MANUAL HAND-QUADRANT:

Galvanized steel die cast hand-quadrant plated for square or round shaft installed on an elevated bearing bracket

### BRACKET:

1" (25mm) elevated hand bracket

### FINISH:

Mill galvanized

## OPTIONS:

### 1) FRAME CONSTRUCTION

- Aluminum or stainless steel frame construction.
- Frame thickness 1.5mm or 1mm (for 1mm thickness not available for Aluminum construction & for Galvanized & stainless steel construction Maximum size is 24"x24").

### 2) FLANGES:

Variable size of frame flanges sizes: 20, 25, 30 or 40mm.

### 3) BLADES CONSTRUCTION

Aluminum or stainless steel blades construction.

### 4) BEARINGS:

Bronze bearings (std for motorized dampers) or stainless steel bearings.

### 5) ACTUATORS:

- Electric (24,120 & 230V) or pneumatic.
- Spring return or non spring return.
- With or without auxiliary switch.

### 6) Blades indicator switch - BIS

### 7) EXTENDED SHAFT (without Hand Quadrant):

4.7" (120mm) extended shaft (round or square) beyond the air control frame.

### 8) 2" Elevated hand bracket.



## APPLICATION

KVCD-3V12 or 22 is an Ultra low leakage damper designed to provide superior air control with high performance and heavy duty construction. Dampers are especially designed for manual & motorized balancing & shut off applications. They are suitable for use in the majority of commercial medium to high pressure and velocity HVAC systems.

They comply to IECC (International Energy Conservation Code) with a leakage rating of 3cfm/ft<sup>2</sup> at 1"Wg pressure (55cmh/m<sup>2</sup> at 0.25Kpa) or less.

## MINIMUM SIZES:

- SINGLE BLADE TYPE:  
4"W(101mm) x 4"H(101mm).
- MULTI-BLADES :  
4"W(101mm) x 10"H(254mm)

## MAXIMUM SIZES:

- SINGLE BLADE TYPE:  
48"W(1219mm) x 9"H(229mm)
- MULTI-BLADES SINGLE SECTION:  
48"W(1219mm)x 48"H(1219mm)

MULTI-SECTIONS: UNLIMITED



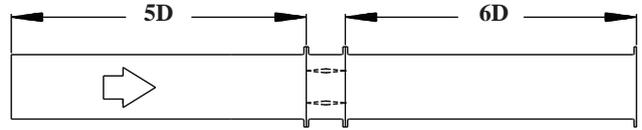
# AIR CONTROL DAMPER

## MODEL KVCD-3V12 & 22

### PERFORMANCE DATA

#### AMCA Test Figures

Figure 5.3 Illustrates a fully ducted damper. This configuration has the lowest pressure drop of the test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Damper in Fully open position

48"x12" (1219x305mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
500	0.01
1000	0.04
1500	0.09
2000	0.16
3000	0.38

12"x48" (305x1219mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
500	0.005
1000	0.02
1500	0.05
2000	0.08
3000	0.19

12"x12" (305x305mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
1000	0.02
1500	0.04
2000	0.08
2500	0.15
3000	0.24

24"x24" (610x610mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
800	0.01
1000	0.02
1500	0.05
2000	0.09
3000	0.19

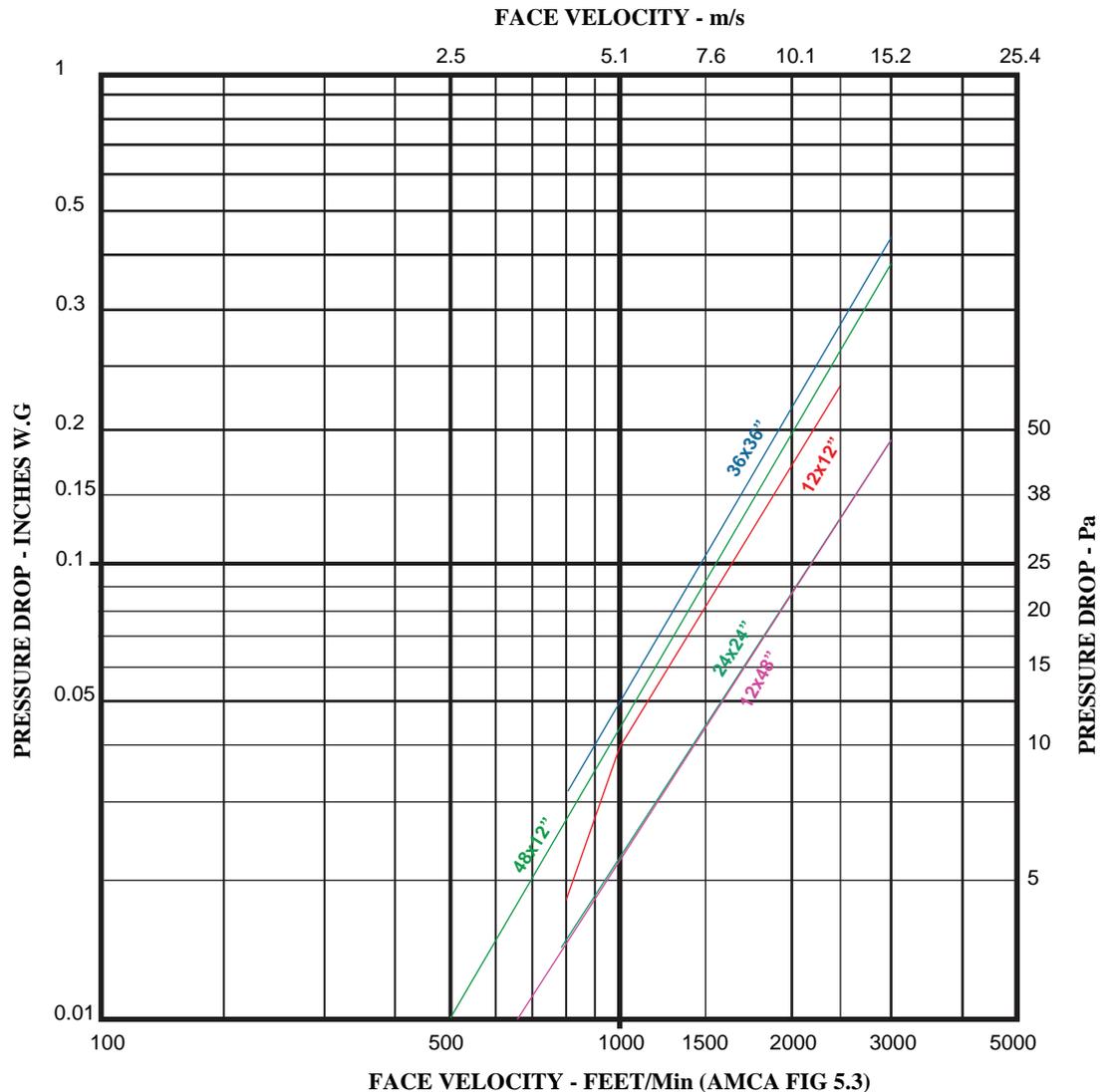
36"x36" (914x914mm)

Velocity (Fpm)	Pressure Drop (In.Wg)
800	0.03
1000	0.05
1500	0.11
2000	0.20
3000	0.46

Tested for Air Performance in accordance with ANSI/AMCA Standard 500-D, Figure 5.3. Air performance testing was conducted using opposed blade dampers; the same results can be applied to parallel blade dampers. All data has been corrected to represent standard air density .075 lb/ft



KBE International certifies that the model KVCD-3V12 & 22 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.





# AIR CONTROL DAMPER

## MODEL KVCD-3V12 or 22

### LEAKAGE

#### AMCA Certified Leakage

Maximum Damper Width	Leakage Class at:	
	1 in.Wg (0.25Kpa)	4 in.Wg (1.0 Kpa)
48 in. (1219mm)	1	1

#### Leakage Class Definitions:

Leakage Class 1A - 3 cfm/ft<sup>2</sup> @ 1 in. wg (0.015 m<sup>3</sup>/s/ m<sup>2</sup> @ 0.25 kPa)

Leakage Class 1 - 4 cfm/ft<sup>2</sup> @ 1 in. wg (0.020 m<sup>3</sup>/s/ m<sup>2</sup> @ 0.25 kPa)

Leakage Class 1 - 8 cfm/ft<sup>2</sup> @ 4 in. wg (0.041 m<sup>3</sup>/s/ m<sup>2</sup> @ 1.0 kPa)

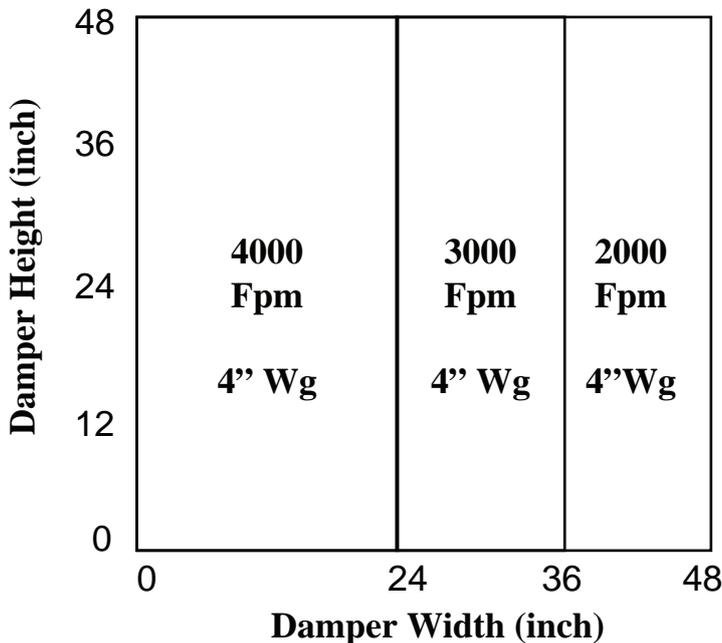


KBE International certifies that the model KVCD-3V12 & 22 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

Air leakage is based on operation between 32°F (0°C) and 120°F (49°C). Tested for leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.5.

Data Are based on a Torque of 19.5in.lb/ft<sup>2</sup> applied to close & seat the damper during the test for Width above 36inch & on a Torque of 13.3 in.lb/ft<sup>2</sup> applied to close & seat the damper during the test for Width 36inch and less

#### Velocity & Pressure Limitations

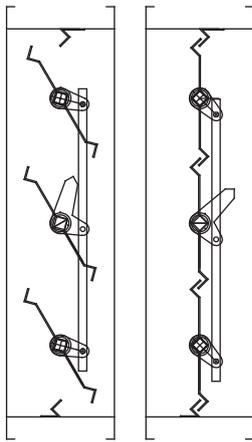
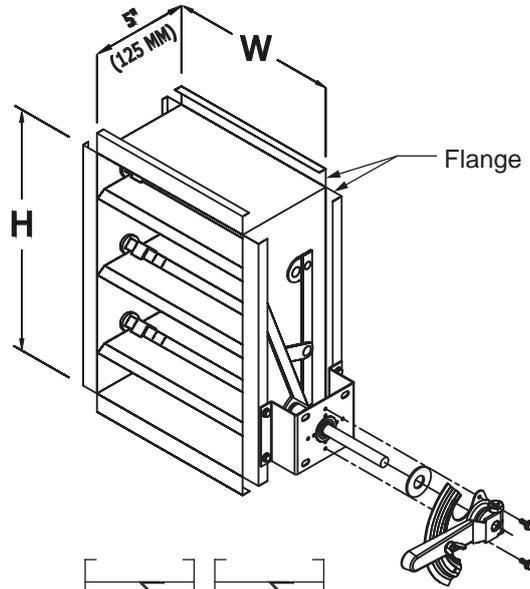




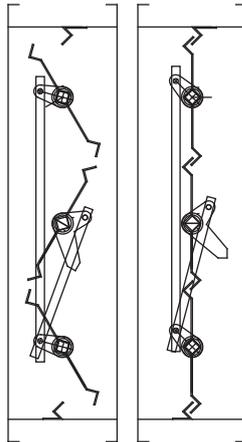
# AIR CONTROL DAMPER

## MODEL KVCD-3V12 or 22

### DETAILS



Parallel Blades



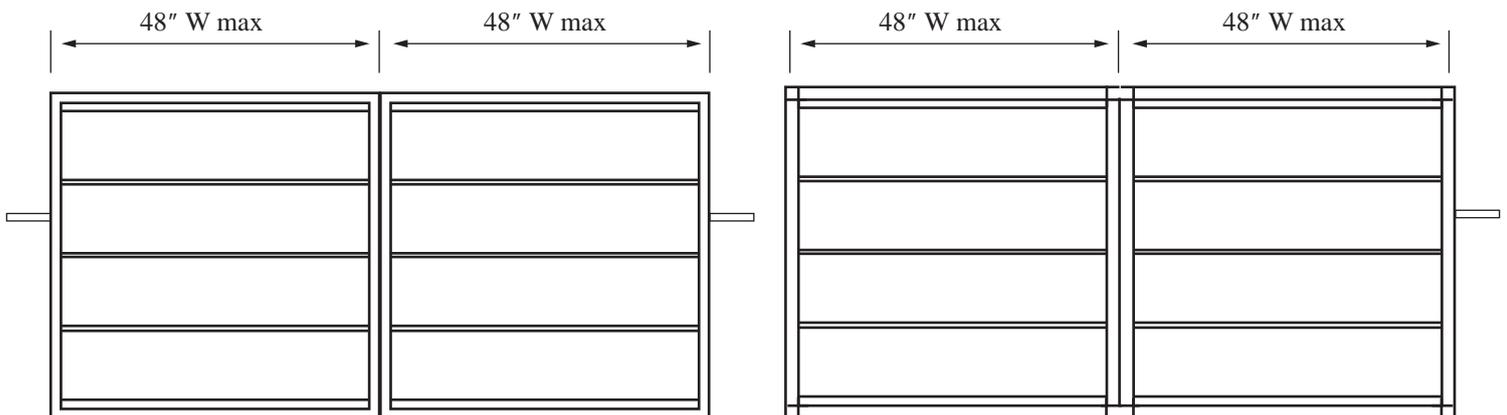
Opposed Blades



Motorized Damper

### Multi-Section Assembly

Dampers larger than maximum single section size, will be made up of multiple equal sections. Sections to be assembled on site (as standard) by sheet metal screw or #10 bolts & nuts with hand-quadrant on each side of the damper. Damper can be factory assembled with single side hand-quadrant as optional with limited assembly of 2 sections --limitation is required to avoid damage during transportation.

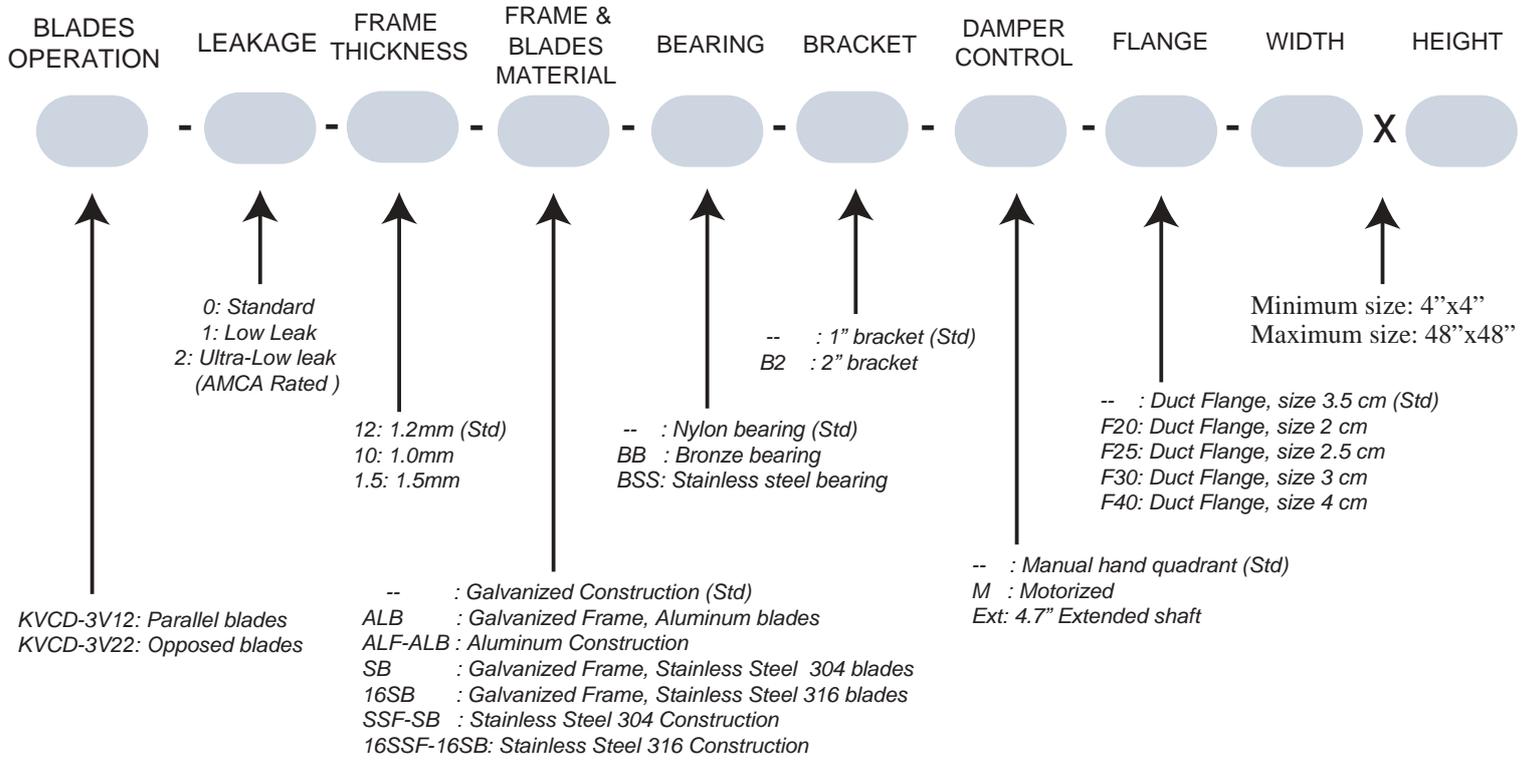


Standard 2 sections assembly with Hand-quadrant (or Motor) on each side

Optional 2 sections assembly with Hand-quadrant (or Motor) on 1 side

# AIR CONTROL DAMPER MODEL KVCD-3V - 12 & 22 LEAKAGE RATED DAMPER

## ORDERING INFORMATION

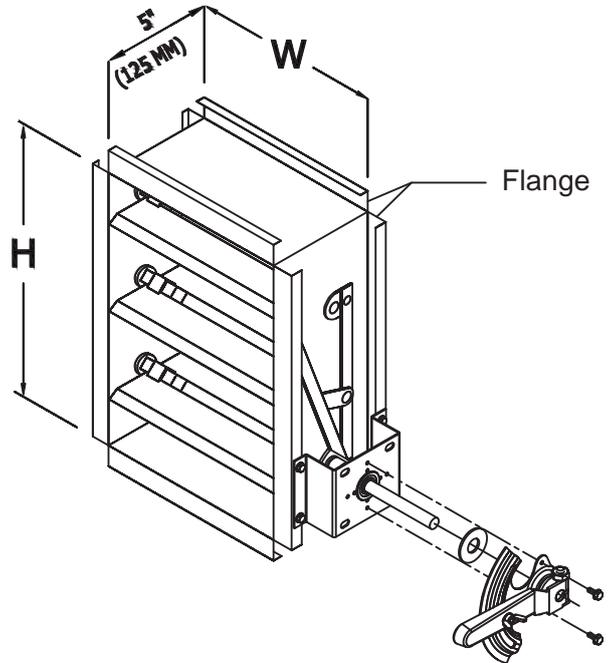


**Example** KVCD-3V12-10-F30-36x36

### ACTUATOR SELECTION:

Please select the specifications needed for the actuator:

Electric <input type="checkbox"/>	Pneumatic <input type="checkbox"/>
24 VAC <input type="checkbox"/> 230VAC <input type="checkbox"/>	Spring return <input type="checkbox"/>
Spring return <input type="checkbox"/> Non spring return <input type="checkbox"/>	Non spring return <input type="checkbox"/>
On/Off <input type="checkbox"/> Modulating <input type="checkbox"/>	
With auxiliary switch <input type="checkbox"/> Without auxiliary switch <input type="checkbox"/>	



### Note:

- Volume Dampers with width or height that exceeds 48" (1200mm) are manufactured as multiple section and field assembled by others.
- SSB (Stainless Steel Bearing) is already included in SSF-SB & 16SSF-16SB (Stainless Steel Construction)
- Bronze Bearing is already included in the Motorized Volume Damper.