

# CARNES LOUVERS AND DAMPERS

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*This section contains product and technical information only.*  
 For additional information and product pricing please contact your local ECCO Supply Sales Branch.

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# CARNES LOUVERS AND DAMPERS

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## INTRODUCTION — LOUVERS AND DAMPERS

The Carnes Company gives you a complete line of top quality products. Stationary blade, adjustable blade and specialty louvers are available in a variety of blade types and in frame depths from 2 through 6 inches. Extruded aluminum or galvanized steel construction is available, as well as a wide selection of corrosion resistant coatings and custom colours. Intake and exhaust backdraft dampers and motorized dampers are available, as well as low leakage control dampers in aluminum or galvanized construction. 120v, 230v and 24v actuators are available for Carnes control dampers, as well as the hand quadrant operator. Contact your ECCO Supply sales representative for more information on actuators.

### FLAT ("I") BLADE LOUVERS

#### STATIONARY FLAT BLADE

Stationary flat blade louvers are designed to repel water by draining the water off the front of the louver blades. Water runs easily off of the smooth surface of the blades and drains on the exterior of the building.

Model FFWC / FJWC – Galvanized, 2" deep × 3-1/2" blade spacing



### "J" BLADE LOUVERS

#### STATIONARY "J" BLADE

Stationary "J" blade louvers are built with a J shaped rainhook in each blade. The rainhook is designed to hook the water and drain it off the front of the louver blade.

- Model FLDC / FKDC – Aluminum, 4" deep × 4.625" blade spacing
- Model FLGC / FKGC – Aluminum, 6" deep × 4.625" blade spacing
- Model FFAC / FJAC – Galvanized, 4" deep × 4" blade spacing
- Model FFJC / FJJC – Galvanized, 6" deep × 6" blade spacing



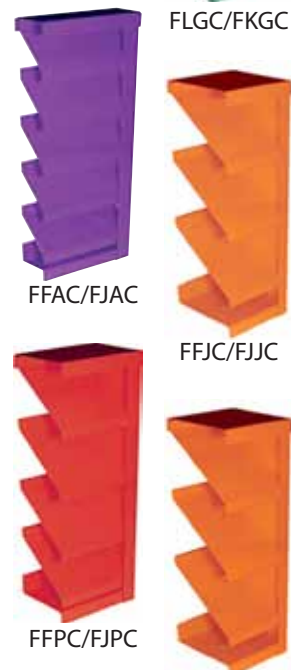
FLDC/FKDC

FLGC/FKGC

#### ADJUSTABLE "J" BLADE

Adjustable "J" blade louvers are available with manual or motor operators. Manual operators include hand quadrant, worm gear with hand or chain wheel, pull chain and handcrank. Motor operators are available in 120v, 240v and 230v. Jackshifting and several different linkage and axle options are also available.

- Model FFPC / FJPC – Galvanized, 4" deep × 4" blade spacing
- Model FFKC / FJKC – Galvanized, 6" deep × 6" blade spacing



FFAC/FJAC

FFJC/FJJC

FFPC/FJPC

FFKC/FJKC

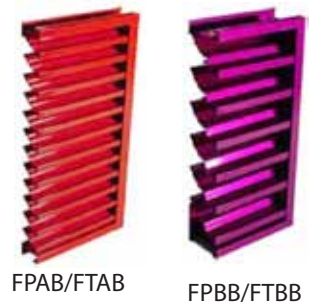
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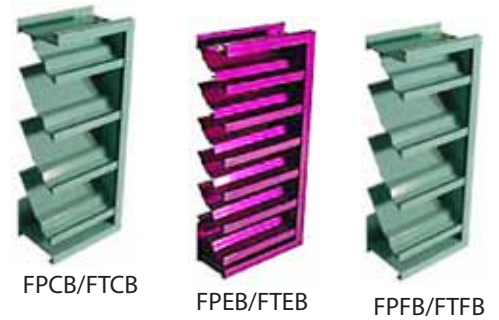
### DRAINABLE BLADE LOUVERS (EXTRUDED ALUMINUM)

The drainable blade louver is designed to minimize water penetration through the louver. This is accomplished by positioning a gutter at the outer edge of the louver blades. The gutters help to reduce the cascading of water from blade to blade. Drain spouts are located at the jambs to collect the water from the louver blades and channel it away to the louver sill. Extruded aluminum drainable blade louvers are available in 2", 4" and 6" depths. Stationary or adjustable blade models can be chosen, to meet all of your ventilating needs. Model FPBB 4" drainable blade louver has one of the top performances in today's louver industry.



### ALUMINUM STATIONARY DRAINABLE BLADE LOUVERS

Model FPAB / FTAB – 2" deep × 2" blade spacing  
 Model FPBB / FTBB – 4" deep × 3" blade spacing  
 Model FPCB / FTCB – 6" deep × 4-1/2" blade spacing



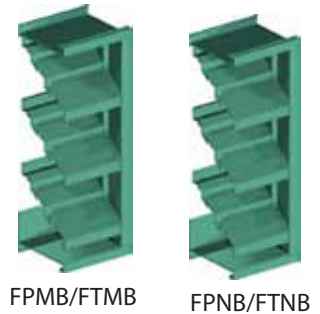
### ALUMINUM ADJUSTABLE DRAINABLE BLADE LOUVERS

Model FPEB / FTEB – 4" deep × 3" blade spacing  
 Model FPFB / FTFB – 6" deep × 4-1/2" blade spacing

### DOUBLE DRAINABLE BLADE LOUVERS (EXTRUDED ALUMINUM)

The double drainable blade louver is designed to minimize water penetration through the louver. This is accomplished by positioning a gutter at the outer edge of the louver blades. The gutters help to reduce the cascading of water from blade to blade. Dual drain spouts are located at the jambs to collect the water from the louver blades and channel it away to the louver sill.

Double drainable blade louvers are available in 4" and 6" depths. A wide variety of accessories and finishes can be chosen, to meet all of your ventilating needs.

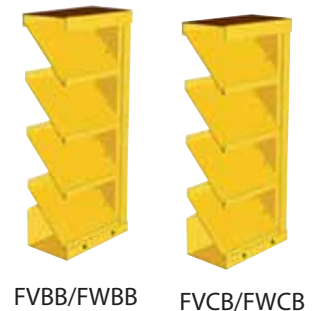


### ALUMINUM STATIONARY DOUBLE DRAINABLE BLADE LOUVERS

Model FPMB / FTMB – 4" deep × 4.25" blade spacing  
 Model FPNB / FTNB – 6" deep × 6" blade spacing

### DRAINABLE BLADE LOUVERS (GALVANIZED STEEL)

The drainable blade louver is designed to minimize water penetration through the louver. This is accomplished by positioning a gutter at the outer edge of the louver blades. The gutters help to reduce the cascading of water from blade to blade. Drain spouts are located at the jambs to collect the water from the louver blades and channel it away to the louver sill. Galvanized steel drainable blade louvers are available in 4" and 6" depths. A variety of accessories and finish options can be chosen, to meet all of your ventilating needs.



### GALVANIZED STATIONARY DRAINABLE BLADE LOUVERS

Model FVBB / FWBB – 4" deep × 4" blade spacing  
 Model FVCB / FWCB – 6" deep × 6" blade spacing

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### COMBINATION LOUVERS / DAMPERS

#### COMBINATION LOUVER / MOTORIZED DAMPER

High performance combination louver/motorized dampers incorporate the drainable blade design with drain spouts located at the jambs of the louver to channel water out and away from the building. Combination louver/motorized dampers are ideal for use where space is limited, and there may not be enough room for installing a separate damper in behind the louver. Manual operators as well as 120v, 24v and 230v electric actuators are available with the combination louver/damper. Carnes louver/motorized damper comes as one complete unit within a solitary frame, and is available in 4" (FPJB/FTJB) and 6" (FPGB/FTGB) widths.

Model FPJB / FTJB – 4" deep × 1-1/2" blade spacing

Model FPGB / FTGB – 6" deep × 3-1/2" blade spacing



FPJB/FTJB

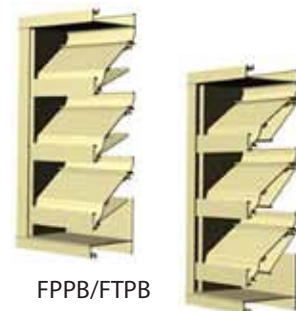
FPGB/FTGB

#### COMBINATION LOUVER / BACKDRAFT DAMPER

Combination louver/backdraft damper incorporates a stationary "J" blade louver in front of either an exhaust or intake backdraft damper. Combination louver/backdraft dampers are ideal where space is limited, and there may not be enough room for installing a separate damper in behind the louver. 4" deep exhaust (FPPB/FTPB) and intake (FPQB/FTQB) models of the Carnes combination louver/backdraft damper are available.

Model FPPB / FTPB – Louver/Backdraft damper, exhaust

Model FPQB / FTQB – Louver/Backdraft damper, intake



FPPB/FTPB

FPQB/FTQB

### SIGHT PROOF LOUVERS

#### "Y" BLADE

Model FYYB and FZYB utilizes sight proof "Y" style blades. The louver blades are drainable, with down spouts located at the louver jambs. The down spouts collect the water from the louver blades and channel it away to the louver sill. Model FYYB is a high performance louver, which may be used for exhaust or intake air.

Model FYYB / FZYB – 4" deep, sight proof "Y" blades

#### CHEVRON BLADE

Model FYKB and FZKB utilizes sight proof chevron blades (V shaped). The flat surface of the louver blade is designed to repel water out and away from the building. Water runs straight off of the front of the louver blades, draining to the exterior of the building. Model FYKB may be used for exhaust or intake air.

Model FYKB / FZKB – 2" deep, sight proof chevron blades



FYYB/FZYB

FYKB/FZKB

**WIND DRIVEN RAIN LOUVERS****HORIZONTAL BLADE**

Model FRWB and FSWB incorporates horizontal rain resistant style blades positioned on approximately 2-1/4" centers within a 5" deep frame. Louver sections up to a maximum of 84"W x 120"H will withstand wind loading of 30 pounds per square foot (110 mph wind equivalent). Special construction to withstand higher wind speeds is also available. Carnes Model FRWB louver carries a Class B water penetration classification based on a ventilation core of 499 fpm at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

Carnes FRWB and FSWB wind driven rain louver is licensed to bear the AMCA certified rating seal for water penetration, air performance and wind driven rain.

Model FRWB / FSWB – horizontal blade for wind driven rain



FRWB/FSWB

**VERTICAL BLADE**

Model FRVB and FSVB is a MIAMI-DADE APPROVED wind driven rain and hurricane louver. The FRVB incorporates stationary vertical blades designed to prevent the penetration of wind driven rain. Louver blades are positioned on approximately 1-1/2" centers within a 6" deep frame. Louver sections up to a 5 foot span between visible mullions will withstand wind loading of 25 pounds per square foot (100 mph wind equivalent). Special construction to withstand higher wind speeds is also available. Model FRVB louver carries a Class A water penetration classification based on a ventilation core of 689 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

Carnes FRVB and FSVB wind driven rain and hurricane louver is licensed to bear the AMCA certified rating seal for air performance and wind driven rain.

Model FRVB / FSVB – vertical blade for hurricane and wind driven rain



FRVB/FSVB

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### HURRICANE LOUVERS

#### HORIZONTAL BLADE

Model FHLB and FGLB is a MIAMI-DADE APPROVED hurricane louver. The FHLB utilizes stationary drainable blades within a 6" deep frame. Built in rain gutters on each blade help to minimize the cascading of water from blade to blade. Drain spouts are located at the jambs to collect the water from the louver blades and channel it away to the louver sill. The design of the FHLB louver incorporates structural supports which will withstand a wind load of 25 pounds per square foot (100 mph equivalent).

Carnes FHLB and FGLB hurricane louver is licensed to bear the AMCA certified rating seal for air performance and water penetration.

Model FHLB / FGLB – hurricane louver



FHLB/FGLB

#### VERTICAL BLADE

Model FRVB and FSVB is a MIAMI-DADE APPROVED wind driven rain and hurricane louver. The FRVB incorporates stationary vertical blades designed to prevent the penetration of wind driven rain. Louver blades are positioned on approximately 1-1/2" centers within a 6" deep frame. Louver sections up to a 5 foot span between visible mullions will withstand wind loading of 25 pounds per square foot (100 mph wind equivalent). Special construction to withstand higher wind speeds is also available. Model FRVB louver carries a Class B water penetration classification based on a ventilation core of 689 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

Carnes FRVB and FSVB wind driven rain and hurricane louver is licensed to bear the AMCA certified rating seal for air performance and wind driven rain.

Model FRVB / FSVB – vertical blade for hurricane and wind driven rain



FRVB/FSVB

### VOLUME CONTROL DAMPERS

Volume control dampers (Model FD\_\_) are available with a wide variety of features, options and accessories. Airfoil blade control dampers are now available with an optional insulated blade.

#### Standard Features

Construction:	Extruded Aluminum or Galvanized Steel Low Leakage
Blades:	Opposed Blade or Parallel Blade Optional Insulated Blade
Frame:	Channel Frame or Flanged Frame
Operators:	Manual or Motor Operators

Model FDCB, Fddb, FDHB, FDLB – aluminum, low leakage, channel frame

Model FDGB, FDMB, FDSB, FDTB – aluminum, low leakage, flanged frame

Model FDNB, FDQB – galvanized, channel frame

Model FDPB, FDRB – galvanized, flanged frame

Model FAAA, FABA – aluminum, airfoil blade w/optional insulated blade

Model FACA, FADA – galvanized, airfoil blade w/optional insulated blade



### BACKDRAFT DAMPERS AND MOTORIZED DAMPERS

Model JDHAA & JDHAM dampers are suitable for use with the full line of louvers and penthouses. The JDHA damper may be used in both horizontal and vertical applications. A wide selection of voltages and transformer options are available on the JDHAM motorized dampers.

Model JDHAA – Backdraft Damper

Model JDHAM – Motorized Damper



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### COUNTERBALANCED BACKDRAFT DAMPERS

Counterbalanced backdraft dampers, designed to allow vertical or horizontal airflow and prevent reverse airflow. The damper blades on Carnes counterbalanced dampers can be fully opened to a full 180 degree angle. Many options are available, including aluminum, galvanized or stainless steel construction and channel or flange frame construction.

Model FAKA – Aluminum counterbalanced backdraft dampers

Model FAMA – Galvanized counterbalanced backdraft dampers

Model FANA – 304 Stainless Steel counterbalanced backdraft dampers

Model FAPA – 316 Stainless Steel counterbalanced backdraft dampers



FAKA

FAMA/  
FANA/FAPA

### LOUVER AND DAMPER OPERATORS

#### VOLUME CONTROL DAMPERS — GALVANIZED

Model FDNB Opposed Blade Channel Frame

Model FDQB Parallel Blade Channel Frame

Model FDPB Opposed Blade Flanged Frame

Model FDRB Parallel Blade Flanged Frame

#### VOLUME CONTROL DAMPERS — ALUMINUM — LOW LEAKAGE

Model FDCB Opposed Blade Channel Frame

Model FDHB Parallel Blade Channel Frame

Model FDSB Opposed Blade Flanged Frame

Model FDTB Parallel Blade Flanged Frame

#### BACKDRAFT DAMPERS AND MOTORIZED DAMPERS

Horizontal or vertical exhaust dampers for all Models of Louvers and Penthouses

Model JDHAA Automatic/Gravity

Model JDHAM Motorized

Model JDHAC Chain Operated

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### LOUVER AND DAMPER OPERATORS (cont'd)

#### MANUAL OPERATORS FOR LOUVERS AND DAMPERS

##### Hand Quadrant Operator #1

1/2" round shaft only

##### Hand Quadrant Operator #2

Heavy Duty

1/2" and 3/4" round shafts

##### Worm Gear with Hand Wheel Operator #3

Heavy Duty

1/2" and 3/4" round shafts

##### Worm Gear with Chain Wheel Operator #4

Heavy Duty

1/2" and 3/4" round shafts

##### Pull Chain Operator #5

10 ft. chain standard

##### Heavy Duty Rotary Hand Crank Operator #6

Mounted in the airstream

Primarily used on louvers

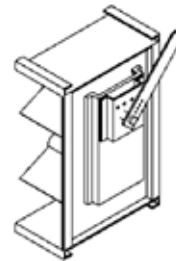
**NOTE:** For ACTUATOR SIZING CHARTS see end of section.

##### Opposed Blade Control Dampers

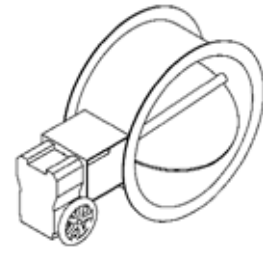
##### Parallel Blade Control Dampers and Louvers



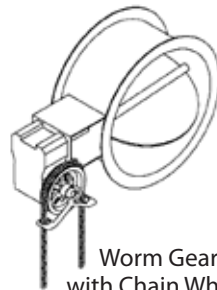
Hand Quadrant Operator #1



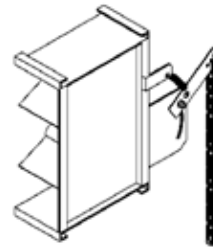
Hand Quadrant Operator #2



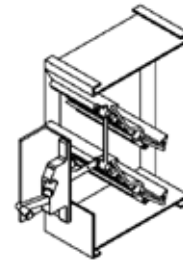
Worm Gear with Hand Wheel Operator #3



Worm Gear with Chain Wheel Operator #4



Pull Chain Operator #5



Heavy Duty Rotary Hand Crank Operator #6

### ROUND DAMPERS

Round backdraft dampers, manual balancing dampers and control dampers have been added to the Carnes damper line. Galvanized, 304 stainless steel and all aluminum construction is available.

Model FAFA – Round Manual Balancing Damper

Model FAHA – Round Control Damper

Model FAJA – Round Backdraft Damper



FAFA



FAHA



FAJA

### MANUAL BALANCING DAMPERS

Model FAEA manual balancing damper is an ideal, economical damper for duct sizes up to 36" x 12".

#### Standard Features

Frame: 0.081" aluminum, 4-1/2" deep

Blades: 0.125" aluminum

Bearing: nylon 6/6

Hand Quadrant: 1/2" cast zinc

Maximum Velocity: 2000 fpm



Model FAEA – Manual Balancing Dampers

## CARNES LOUVERS AND DAMPERS

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### EXTRUDED PENTHOUSES (FLAT BLADE) — ALUMINUM

High performance penthouses are available with both mitered corner and post corner construction. The flat blade louver design is utilized, with 4" blade spacing and 4" deep louver walls.

#### Coatings

- Epoxy
- Prime Coat
- Clear Anodize
- Dark Bronze Anodize
- Baked Enamel
- Heresite
- Kynar

#### Options and Accessories

- Burglar Bars
- Filter Racks
- Duct Liner
- Hinged Roof
- Curb Cap
- Backdraft Dampers
- Motorized Dampers
- Roof Curbs



Model PMAB – Mitered Corner

Model PLAB – Post Corner

### PENTHOUSES (“J” BLADE) — GALVANIZED STEEL

Carnes high performance galvanized penthouses are available with post corner construction. The “J” blade louver design is utilized, with 4" blade spacing and 4" deep louver walls.

#### Coatings

- Epoxy
- Prime Coat
- Baked Enamel
- Kynar

#### Options and Accessories

- Burglar Bars
- Filter Racks
- Duct Liner
- Hinged Roof
- Curb Cap
- Backdraft Dampers
- Motorized Dampers
- Roof Curbs



Model PFAB – Galvanized, Post Corner

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## DRAINABLE BLADE PENTHOUSES

Carnes high performance drainable blade penthouses are comprised of extruded aluminum post corner construction. Drainable blades with built in rain gutters are utilized, which minimizes water penetration through the louver. Blades are positioned on approximately 3" centers within a 4" deep frame.

### Coatings

- Epoxy
- Prime Coat
- Clear Anodize
- Dark Bronze Anodize
- Baked Enamel
- Heresite
- Kynar

### Options and Accessories

- Burglar Bars
- Filter Racks
- Duct Liner
- Hinged Roof
- Curb Cap
- Backdraft Dampers
- Motorized Dampers
- Roof Curbs

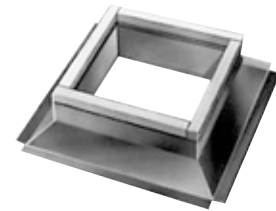


Model PDBB – Drainable Blade, Post Corner

## ROOF CURBS FOR PENTHOUSES — MODEL JC

Carnes offers a wide selection of roof curbs (Model JC\_) for the full line of penthouses. Curbs are available with aluminum or galvanized construction, with heights from 8" up to 36".

Flat roof curbs (Model JCFA) and pitched roof curbs (Model JCPA) are available, to meet all of your penthouse needs.



JCFA

### Standard Construction

Heavy gauge galvanized steel, unitized full mitered corners, all seams welded, 1-1/2" thick rigid fiberglass insulation, wood nailer strip. All curbs are internally reinforced in larger size dimensions.

### Curb Size Designation

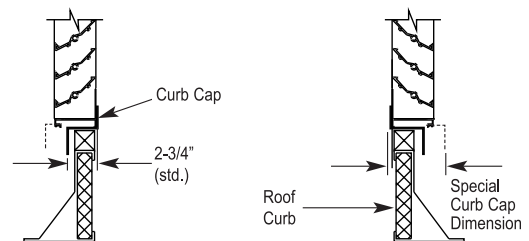
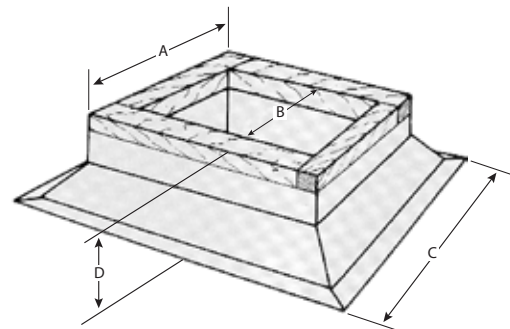
First 2 digits equal "A" dimension in inches; 4th digit number equals eighths in fraction (1/2 is 4 eighths). Size 24-1/2" 36" would be size 02440360.

Model JCFA G – Galvanized

Model JCFA A – Aluminum

### DIMENSIONS

CURB DIMENSION	PENTHOUSE INSTALLATION
A* (Curb Size)	W1 + 3-1/4" × W2 + 3-1/4"
B (Curb I.D.)	A - 3"
C (Base O.D.)	A + 7"
D (Curb Height)	8" up to 36"



Installation View – Curb Cap

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# CARNES LOUVERS AND DAMPERS

## ACTUATOR SIZING CHARTS

### OPPOSED BLADE CONTROL DAMPERS

WITH JAMB SEALS	WITHOUT JAMB SEALS
<b><input type="checkbox"/> Type A Actuator</b> Models: Max. Sq. Ft. – 3 S.F. FXMBB (120V) Spring Return FXMBC (24V) 18# Torque	<b><input type="checkbox"/> Type A Actuator</b> Models: Max. Sq. Ft. – 7 S.F. FXMBB (120V) Spring Return FXMBC (24V) 18# Torque
<b><input type="checkbox"/> Type B Actuator</b> Models: Max. Sq. Ft. – 6 S.F. FXMBD (120V) Spring Return FXMBE (24V) 35# Torque	<b><input type="checkbox"/> Type B Actuator</b> Models: Max. Sq. Ft. – 14 S.F. FXMBD (120V) Spring Return FXMBE (24V) 35# Torque
<b><input type="checkbox"/> Type C Actuator</b> Models: Max. Sq. Ft. – 14 S.F. FXMBF (120V) Spring Return FXMBG (24V) 60# Torque	<b><input type="checkbox"/> Type C Actuator</b> Models: Max. Sq. Ft. – 30 S.F. FXMBF (120V) Spring Return FXMBG (24V) 60# Torque
<b><input type="checkbox"/> Type D Actuator</b> Models: Max. Sq. Ft. – 36 S.F. FXMBH (120V) Spring Return FXMBJ (24V) 133# Torque	<b><input type="checkbox"/> Type D Actuator</b> Models: Max. Sq. Ft. – 65 S.F. FXMBH (120V) Spring Return FXMBJ (24V) 133# Torque
<b><input type="checkbox"/> Type E Actuator</b> Models: Max. Sq. Ft. – 50 S.F. FXMBK (120V) 175# Torque FXMBL (230V) FXMBM (24V)	<b><input type="checkbox"/> Type E Actuator</b> Models: Max. Sq. Ft. – 85 S.F. FXMBK (120V) 175# Torque FXMBL (230V) FXMBM (24V)

#### Options for Actuators

1. End switch
2. Explosion-proof housing
  - CSA and UL Class I, II, III, Group C, D, E, F, G
  - Nema 7 Class I, Group C and D
  - Nema 9 Class II, Group E, F, G

#### Contact your ECCO Supply Sales Representative for other actuators.

Sq. ft. based on under 2" w.g. or 1200 FPM. For applications at 3" w.g. or 2500 FPM torque loading, reduce sq. ft. by 25%. At 4" w.g. or 3000 FPM, reduce sq. ft. by 35%.

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### ACTUATOR SIZING CHARTS *(cont'd)*

#### PARALLEL BLADE CONTROL DAMPERS AND LOUVERS

WITH JAMB SEALS		WITHOUT JAMB SEALS	
<b><input type="checkbox"/> Type A Actuator</b> Models: FXMBB (120V) FXMBC (24V)	Max. Sq. Ft. – 2.5 S.F. Spring Return 18# Torque	<b><input type="checkbox"/> Type A Actuator</b> Models: FXMBB (120V) FXMBC (24V)	Max. Sq. Ft. – 5 S.F. Spring Return 18# Torque
<b><input type="checkbox"/> Type B Actuator</b> Models: FXMBD (120V) FXMBE (24V)	Max. Sq. Ft. – 5 S.F. Spring Return 35# Torque	<b><input type="checkbox"/> Type B Actuator</b> Models: FXMBD (120V) FXMBE (24V)	Max. Sq. Ft. – 10 S.F. Spring Return 35# Torque
<b><input type="checkbox"/> Type C Actuator</b> Models: FXMBF (120V) FXMBG (24V)	Max. Sq. Ft. – 12 S.F. Spring Return 60# Torque	<b><input type="checkbox"/> Type C Actuator</b> Models: FXMBF (120V) FXMBG (24V)	Max. Sq. Ft. – 22 S.F. Spring Return 60# Torque
<b><input type="checkbox"/> Type D Actuator</b> Models: FXMBH (120V) FXMBJ (24V)	Max. Sq. Ft. – 25 S.F. Spring Return 133# Torque	<b><input type="checkbox"/> Type D Actuator</b> Models: FXMBH (120V) FXMBJ (24V)	Max. Sq. Ft. – 50 S.F. Spring Return 133# Torque
<b><input type="checkbox"/> Type E Actuator</b> Models: FXMBK (120V) FXMBL (230V) FXMBM (24V)	Max. Sq. Ft. – 33 S.F. 175# Torque	<b><input type="checkbox"/> Type E Actuator</b> Models: FXMBK (120V) FXMBL (230V) FXMBM (24V)	Max. Sq. Ft. – 65 S.F. 175# Torque

#### Options for Actuators

1. End switch
2. Explosion-proof housing
  - CSA and UL Class I, II, III, Group C, D, E, F, G
  - Nema 7 Class I, Group C and D
  - Nema 9 Class II, Group E, F, G

#### Contact your ECCO Supply Sales Representative for other actuators.

Sq. ft. based on under 2" w.g. or 1200 FPM. For applications at 3" w.g. or 2500 FPM torque loading, reduce sq. ft. by 25%. At 4" w.g. or 3000 FPM, reduce sq. ft. by 35%.