

CARNES®

Your Single Source For All Your HVAC Needs



SPECIALTY PRODUCTS BROCHURE - FQAA & FQBA CABLE OPERATED DAMPERS (Bowden Cable System)

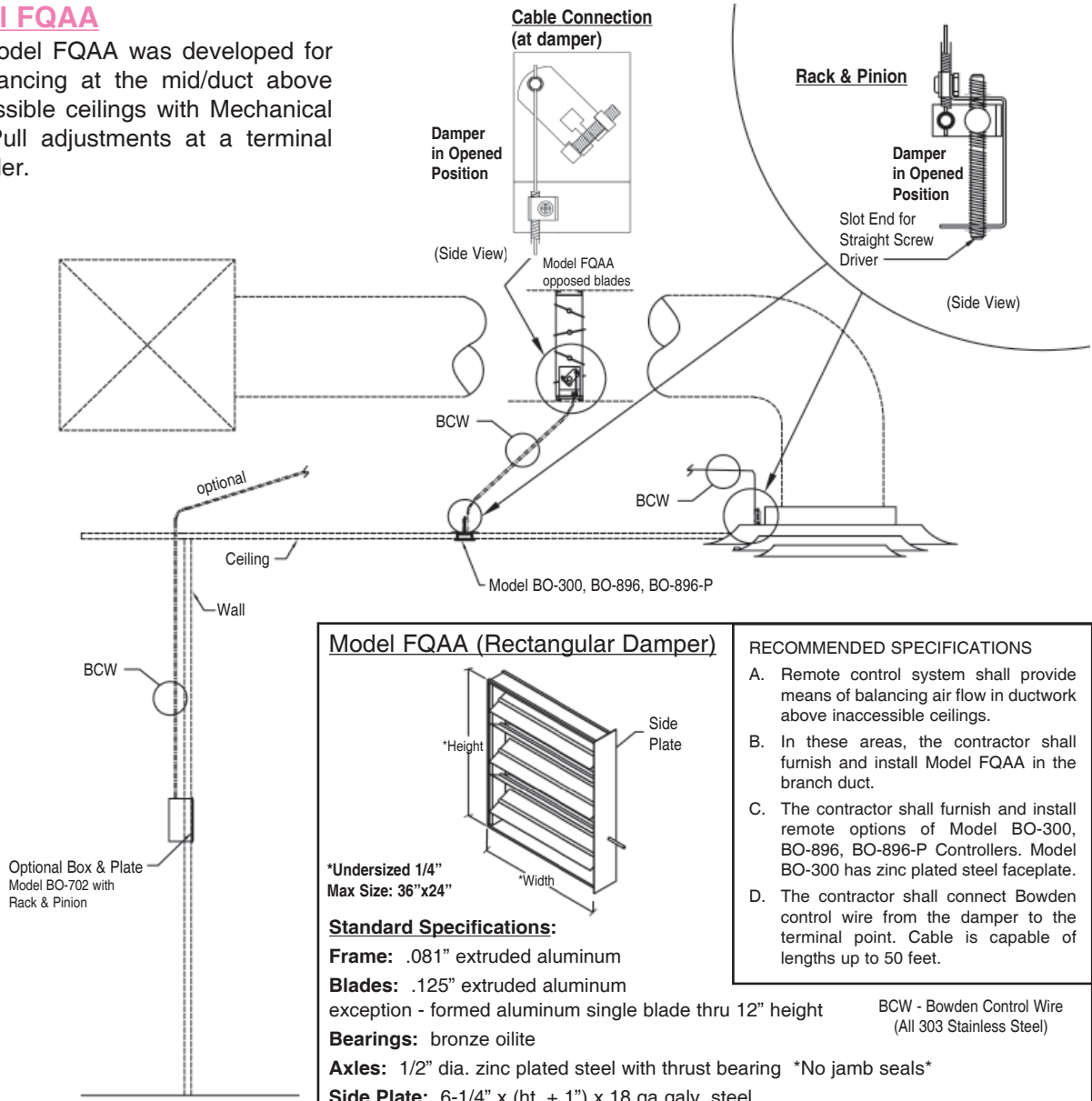
WWW.CARNES.COM

COPYRIGHT © 2014 CARNES COMPANY
ALL RIGHTS RESERVED

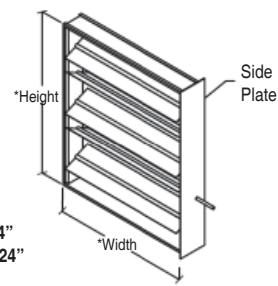
March 2014

Model FQAA

The Model FQAA was developed for air balancing at the mid/duct above inaccessible ceilings with Mechanical Push-Pull adjustments at a terminal controller.



Model FQAA (Rectangular Damper)



***Undersized 1/4"**
Max Size: 36"x24"

Standard Specifications:

- Frame:** .081" extruded aluminum
- Blades:** .125" extruded aluminum
 exception - formed aluminum single blade thru 12" height
- Bearings:** bronze oilite
- Axles:** 1/2" dia. zinc plated steel with thrust bearing *No jamb seals*
- Side Plate:** 6-1/4" x (ht. + 1") x 18 ga galv. steel
 (for performance see FDCB spec sheet 17166)

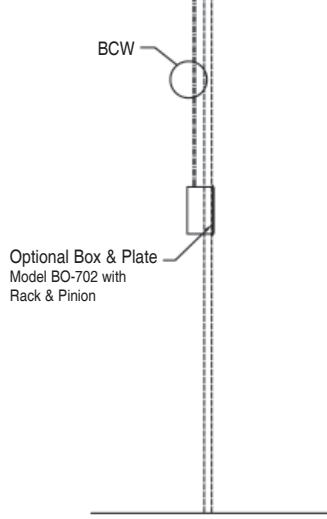
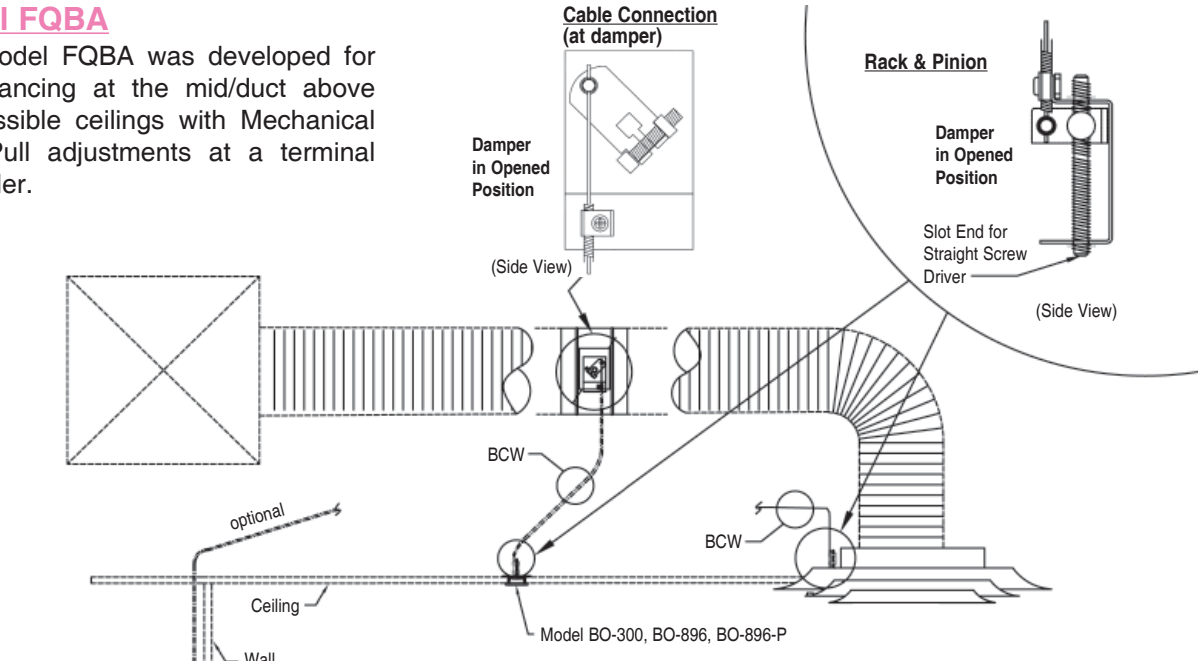
- RECOMMENDED SPECIFICATIONS**
- A. Remote control system shall provide means of balancing air flow in ductwork above inaccessible ceilings.
 - B. In these areas, the contractor shall furnish and install Model FQAA in the branch duct.
 - C. The contractor shall furnish and install remote options of Model BO-300, BO-896, BO-896-P Controllers. Model BO-300 has zinc plated steel faceplate.
 - D. The contractor shall connect Bowden control wire from the damper to the terminal point. Cable is capable of lengths up to 50 feet.

BCW - Bowden Control Wire
 (All 303 Stainless Steel)

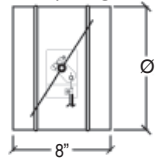
Due to continuing research, the Carnes Company reserves the right to change specifications without notice.

Model FQBA

The Model FQBA was developed for air balancing at the mid/duct above inaccessible ceilings with Mechanical Push-Pull adjustments at a terminal controller.



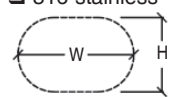
Model FQBA (Single Blade Damper)



- Standard Specifications:** Diameter
- Frame:** 24 ga galvanized steel (4" - 10"Ø)
 - Frame:** 20 ga galvanized steel (12" - 24"Ø)
 - Blade:** 24 ga galvanized steel (4" - 10"Ø)
 - Blade:** 20 ga galvanized steel (12" - 24"Ø)
 - Bearings:** nylon 6/6 molded synthetic
 - Axles:** zinc plated steel pins
 - Options:**
 - aluminum construction
 - stainless steel construction
 - 304 stainless 316 stainless
 - oval damper
- W = _____"
H = _____"

- RECOMMENDED SPECIFICATIONS**
- A. Remote control system shall provide means of balancing air flow in ductwork above inaccessible ceilings.
 - B. In these areas, the contractor shall furnish and install Model FQBA in the branch duct.
 - C. The contractor shall furnish and install remote options of Model BO-300, BO-896, BO-896-P Controllers. Model BO-300 has zinc plated steel faceplate. Cable is capable of lengths of up to 50 feet.
 - D. The contractor shall connect Bowden control wire from the damper to the terminal point.

BCW - Bowden Control Wire
(All 303 Stainless Steel)



Due to continuing research, the Carnes Company reserves the right to change specifications without notice.

The Carnes Company Bowden Cable System was developed to provide personal convenience and a positive means of individual room or zone temperature control.

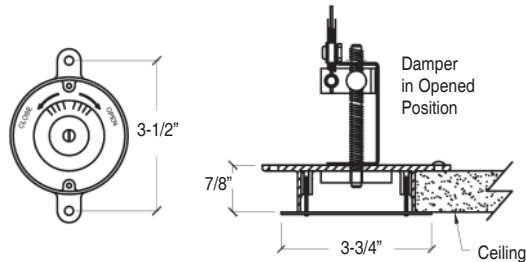
CONTROLLERS

Due to continuing research, the Carnes Company reserves the right to change specifications without notice.

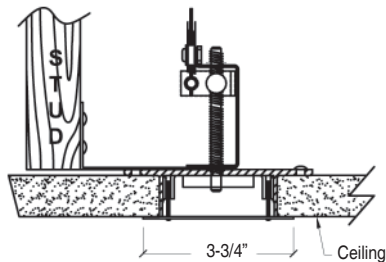
Model BO-300

(with rack & pinion)

- Concealed in ceiling
- Polished Zinc Covered Plate (std.)



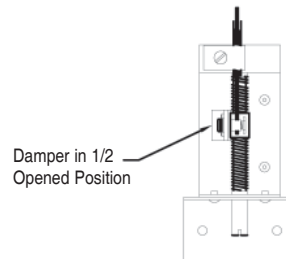
- Concealed in ceiling with mtg. bracket
- Polished Zinc Covered Plate (std.)



Model BO-R

(with rack & pinion)

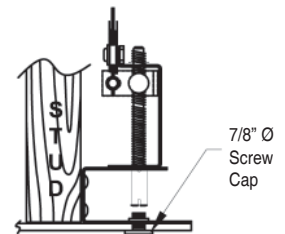
Ceiling joists, above lay in ceilings, internal plenum mount, etc.



Model BO-896

(with rack & pinion)

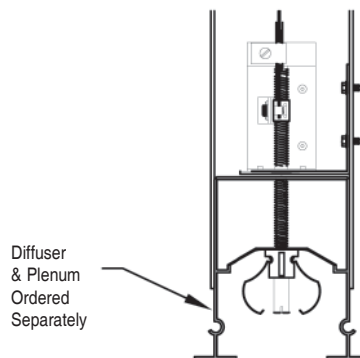
Concealed in ceiling



Model BO-PL

(with rack & pinion)

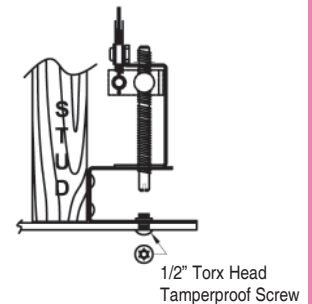
For Plenums of "Ice Tong" Style Diffusers



Model BO-896-P

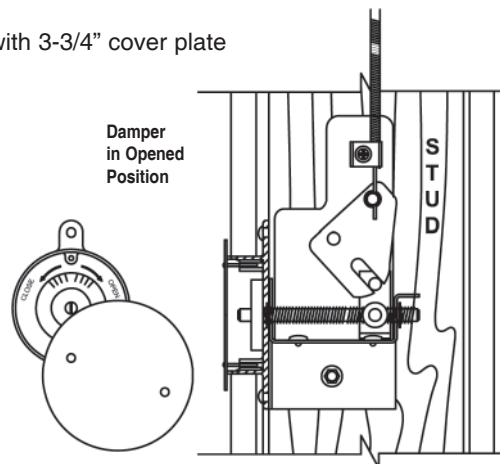
(with rack & pinion)

Tamper proof prison model can be used with steel ceilings

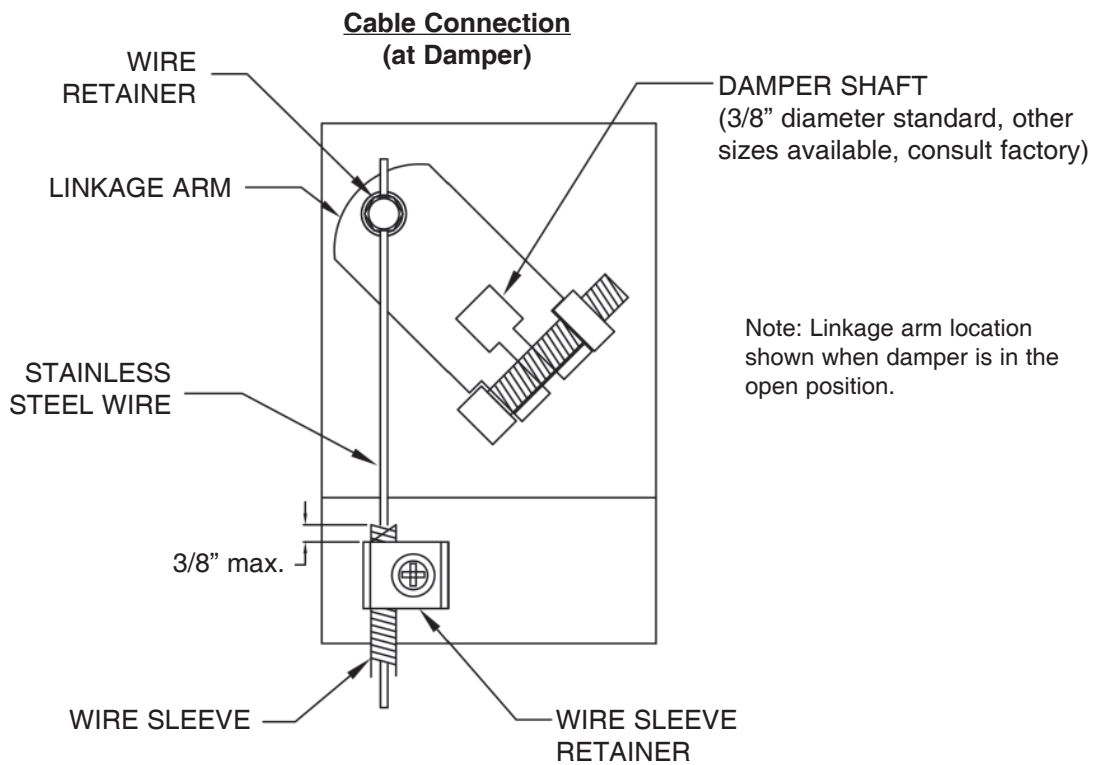


Model BO-702

Concealed in wall with 3-3/4 inch cover plate



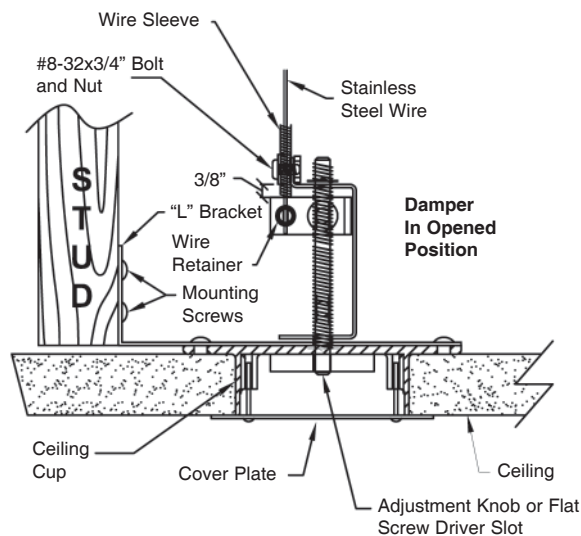
Bowden Cable System Installation Instructions — Connection at Damper For use with models FQAA and FQBA



- 1) Make sure linkage arm is in the location shown above (damper will be in full open position).
- 2) Slide wire sleeve under wire sleeve retainer leaving approximately 3" of the stainless wire exposed. Make sure wire sleeve does not extend more than 3/8" beyond the wire sleeve retainer (see drawing).
- 3) Slide stainless wire into wire retainer and tighten. Then tighten wire sleeve retainer securing the wire sleeve in place. Make sure damper remains in open position during this step.
- 4) Install damper as needed allowing cable to reach the controller with the fewest turns for optimum operation.
- 5) Connect cable to controller, if not already connected (see individual connection details for each controller).

NOTE: Minimize 90 degree bends in cable to one and try to locate controller as close to damper as possible to minimize play in total system. The more curves in the cable, the less responsive the damper will be to the controller. Wire and casing between damper and controller should be secured every 4 feet.

Bowden Cable System Installation Instructions — Controllers

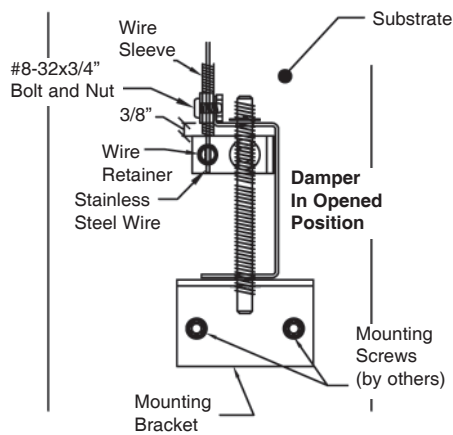


Model BO-300 Controller Installation

- 1) Cut a $\text{Ø}2\text{-}7/8$ " hole in ceiling. Install cup using "L" bracket and mounting screws (mounting screws by others).
- 2) Slide stainless wire into wire retainer and tighten. Then tighten the #8 bolt and nut, securing the wire sleeve in place. Make sure wire sleeve does not extend more than $3/8$ " beyond the wire sleeve retainer (see drawing).
- 3) Attach cover to ceiling cup with provided screws.

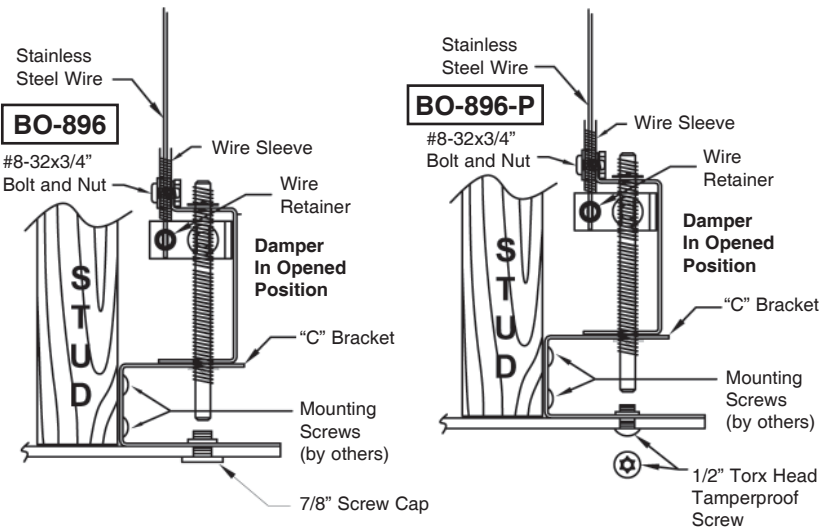
Note: BCW (Wire Sleeve & Stainless Steel Wire) must be in as straight a line as possible from damper to insure optimum performance.

Model BO-R Controller Installation



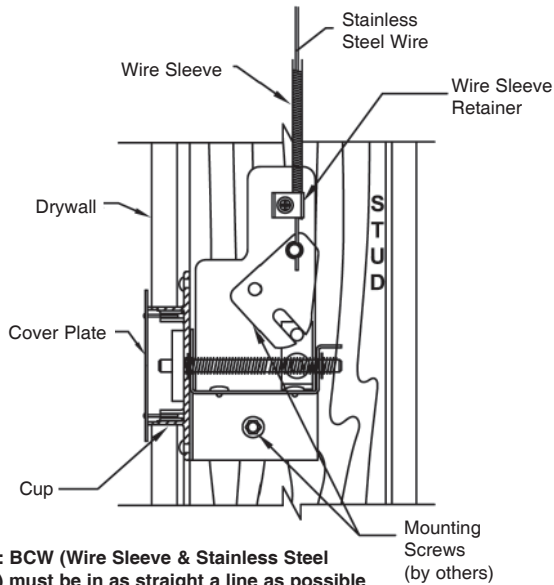
- 1) Attach mounting bracket with controller to desired surface (plenum, ceiling joist, diffuser or access panel). (Mounting screws by others.)
- 2) Slide stainless wire into wire retainer and tighten.
- 3) Then tighten the #8 bolt and nut, securing the wire sleeve in place. Make sure wire sleeve does not extend more than $3/8$ " beyond the wire sleeve retainer (see drawing).

Model BO-896 & BO-896-P Controller Installation



- 1) Attach "C" bracket with controller to ceiling joist (mounting screws by others).
- 2) Slide stainless wire into wire retainer and tighten.
- 3) Then tighten the #8 bolt and nut, securing the wire sleeve in place. Make sure wire sleeve does not extend more than $3/8$ " beyond the wire sleeve retainer (see drawing).
- 4) Install screw cap (model BO-896) or torx head tamperproof screw (model BO-896-P).

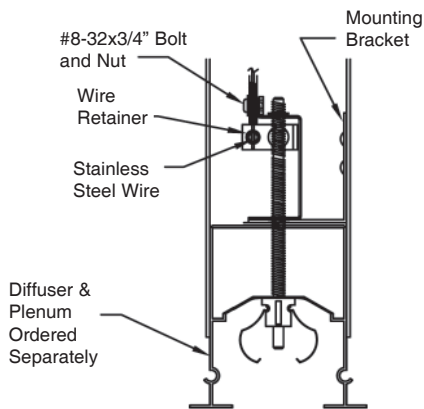
Bowden Cable System Installation Instructions — Controllers



Note: BCW (Wire Sleeve & Stainless Steel Wire) must be in as straight a line as possible from damper to insure optimum performance.

Model BO-702 Controller Installation (Damper In Open Position)

- 1) Remove cover plate from cup.
- 2) Connect controller (cup) to stud (mounting screws by others).
- 3) Attach controller to cup with rivets.
- 4) Slide wire sleeve under wire sleeve retainer leaving approximately 2" of the stainless wire exposed. Make sure wire sleeve does not extend more than 3/8" beyond the wire sleeve retainer (see drawing).
- 5) Slide stainless wire into wire retainer and tighten. Then tighten wire sleeve retainer securing the wire sleeve in place.
- 6) Replace cover plate.



Note: BCW (Wire Sleeve & Stainless Steel Wire) must be in as straight a line as possible from damper to insure optimum performance.

Model BO-PL Controller Installation (Damper In Open Position)

- 1) Drill 3/8"Ø hole in spine of directional diffuser at desired location.
- 2) Slide stainless wire into wire retainer and tighten. Then tighten the #8 bolt and nut, securing the wire sleeve in place.
- 3) Install controller directly above 3/8"Ø hole with mounting bracket (mounting screws or rivets by others).

CARNES COMPANY - Your Total Supplier In LOUVER AND DAMPERS PRODUCTS

Louvers



FPBB



FPAB



FLDC



FRWB



FRVB

Dampers



FDCB



FAAA



FAHA

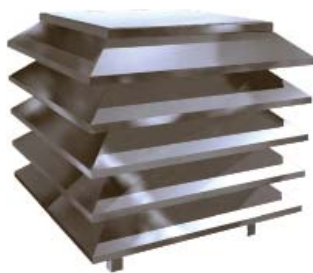


FAEA



FAKA

Penthouses



PMAB



PLAB with Pitched Roof

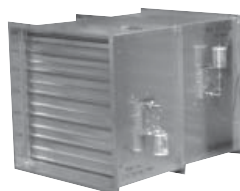


PEAB

Fire, Smoke & Ceiling Radiation Dampers



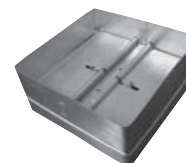
EADA



EFMA



ESZA



EDCA



EDAA

Visit Carnes website at www.carnes.com for a complete product listing.