

Daniel Mechanical Company

1939 West 11th Street Ste. E
Upland, CA 91786

Phone: (909) 982-1555
Fax: (909) 982-1855
danmech@sbcglobal.net
www.danielmechanical.com

Round Fiberglass Reinforced Plastic Air Control Dampers



MODEL 203 ROUND FRP AIR CONTROL DAMPER

DANIEL MECHANICAL COMPANY offers precision-engineered FRP butterfly dampers utilizing only highly corrosion resistant parts for air movement and controls. Dampers are fire retardant, corrosion resistant, and UV protected. Components are designed with replaceable parts for ease of disassembly. The options of having 316 SST or FRP blade shafts are available. Additionally, exotic and corrosion resistant elastomers such as Viton, Hypalon or EPDM may be selected depending on the process. Blades are equipped with circumferential seals for low leakage. Leakage rates are tested using AMCA

500 procedures and the certified ratings are authorized by AMCA. Damper blade is operated using hand lever with locking quadrant. Worm gear operators of the pneumatic, electric or hand-operated with chain-wheel types are also offered. Long life Teflon bearings and custom-designed molded plastic bushings, located on the exterior of damper, require minimal maintenance and ensure continuous free movement of the blade. Stops, (stiffeners as required), are used to support and seat the FRP blade. All metal parts are at a minimum 316 stainless steel. Dampers range from sizes 4" diameter to 60" diameter.

STANDARD CONSTRUCTION

FRAME Vinyl ester resin fabricated to ASME/ANSI RTP1

FLANGE NBS PS 15-69-3.4.7 – Integral to web lay-up. $\frac{3}{4}$ " thick with custom-made flange O.D. & I.D. dimensions to match mating pipe or duct

BLADE Vinyl ester resin similar to damper frame with EPDM blade seal and full circle back stop

AXLE 316 SST with nuts, bolts, and washers (FRP encapsulated if required) or FRP

BEARING TEFLON

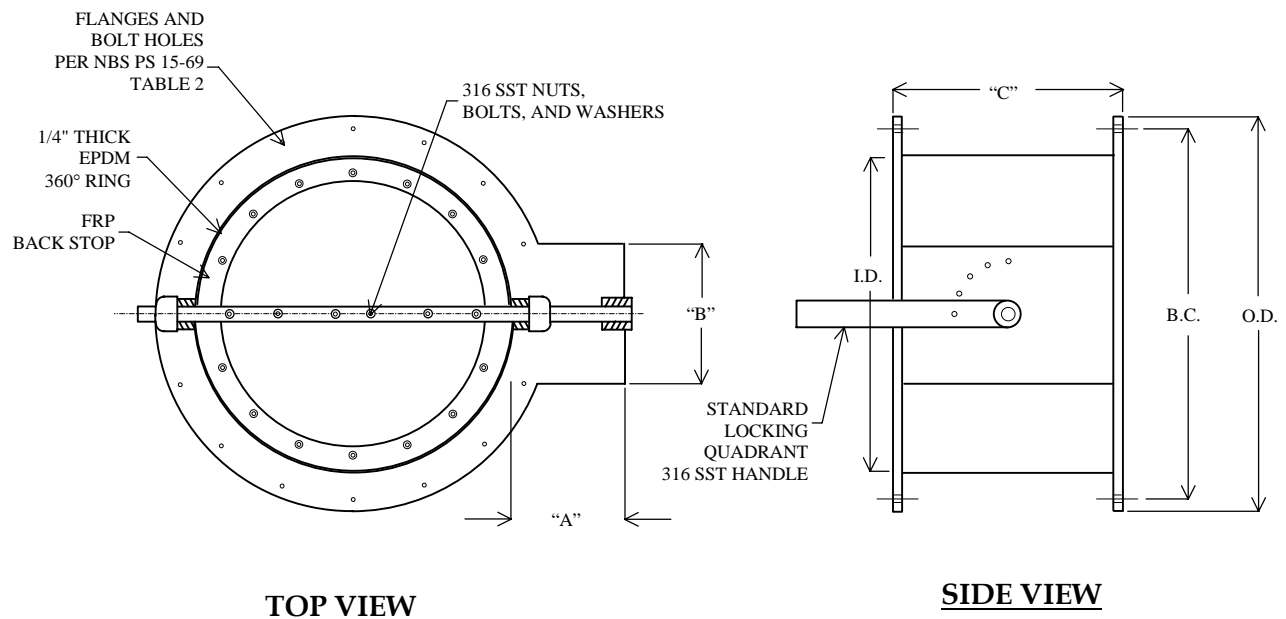
HAND LEVER 316 SST with FRP locking quadrant

COLOR White unless specified otherwise

MAXIMUM TEMPERATURE 200°F

MAXIMUM PRESSURE 30" w.g.

BUTTERFLY DAMPER DETAIL DRAWING



BUTTERFLY DAMPER DIMENSIONS

| SIZES | FLANGE THICKNESS | FLANGE O.D. | BOLT CIRCLE | BOLT HOLE DIA. | # OF BOLT HOLES | BLADE THICKNESS | AXLE DIA. | "A" | "B" | "C" |
|-------|------------------|-------------|-------------|----------------|-----------------|-----------------|-----------|------|-----|-----|
| 6" | 3/4" | 10 3/8" | 9" | 7/16" | 8 | 3/8" | 3/4" | 6.5" | 8" | 6" |
| 8" | 3/4" | 12 3/8" | 11" | 7/16" | 8 | 3/8" | 3/4" | 6.5" | 8" | 6" |
| 10" | 3/4" | 14 3/8" | 13" | 7/16" | 12 | 3/8" | 3/4" | 6.5" | 8" | 12" |
| 12" | 3/4" | 16 3/8" | 15" | 7/16" | 12 | 3/8" | 1" | 6.5" | 8" | 12" |
| 14" | 3/4" | 18 3/8" | 17" | 7/16" | 12 | 3/8" | 1" | 6.5" | 8" | 12" |
| 16" | 3/4" | 20 3/8" | 19" | 7/16" | 16 | 3/8" | 1" | 6.5" | 8" | 12" |
| 18" | 3/4" | 22 3/8" | 21" | 7/16" | 16 | 3/8" | 1 1/4" | 6.5" | 8" | 12" |
| 20" | 3/4" | 24 3/8" | 23" | 7/16" | 20 | 3/8" | 1 1/4" | 6.5" | 8" | 12" |
| 24" | 3/4" | 28 3/8" | 27" | 7/16" | 20 | 3/8" | 1 1/4" | 6.5" | 8" | 12" |
| 30" | 3/4" | 34 3/8" | 33" | 7/16" | 28 | 3/8" | 1 1/4" | 6.5" | 8" | 12" |
| 36" | 3/4" | 40 3/8" | 39" | 7/16" | 32 | 1/2" | 1 1/4" | 7.5" | 8" | 12" |
| 42" | 3/4" | 46 3/8" | 45" | 7/16" | 36 | 1/2" | 1 7/8" | 7.5" | 8" | 12" |
| 48" | 3/4" | 54 3/8" | 52" | 9/16" | 44 | 1/2" | 1 7/8" | 7.5" | 8" | 12" |
| 54" | 3/4" | 60 3/8" | 58" | 9/16" | 44 | 1/2" | 1 7/8" | 7.5" | 8" | 12" |
| 60" | 3/4" | 66 3/8" | 64" | 9/16" | 52 | 1/2" | 1 7/8" | 7.5" | 8" | 12" |

SUGGESTED SPECIFICATIONS FOR ROUND FRP AIR CONTROL DAMPERS

Dampers are installed as shown on plans and per specifications. Damper frame shall be of one-piece construction with a resin rich interior corrosion barrier minimum of 100 mils. A structural lay-up shall consist of alternate layers of chopped strand mat and woven roving to conform to ASME/ANSI RTP1 and NBS PS 15-69. The glass to resin ratio shall be a minimum of 35% and 65%, respectively.

The fiberglass flange dimensions shall be per NBS PS 15-69 Table 2 for diameters and bolthole drilling pattern. The flanges shall have a minimum thickness of 3/4 inch and shall be constructed integral to the cylindrical body of the damper, using the hand lay-up technique per ASME RTP-1-2000 standard Fig 4-7. The distance between the faces of the flanges shall be 6 inches for dampers having a

diameter size of 8 inches or less. All other sizes shall be 12 inches long. The damper blade and stiffeners shall be fabricated using the same resin as the damper frame. Blade axle shall be made of FRP or 316 SST.

Damper shall be provided with a stainless steel hand-locking quadrant or other actuation devices as required. All metal parts shall be at a minimum 316 SST.

Exterior surface of damper shall contain UV inhibitor, and be gel coated with color to match existing ducting.

FRP dampers shall be tested for pressure drop and leakage in accordance with AMCA Standard 500. Test results are shown in the section below.

CERTIFIED RATINGS AUTHORIZED BY AMCA



| Damper Diameter | Torque IN LBS (Blade Closed) | Leakage Class | Blade Fixed Open | |
|-----------------|---------------------------------|---------------|------------------|--------|
| | | | ΔPs | CFM |
| 4" | 68 | 1 | - | - |
| 12" | 210 | 1 | 2.42 | 3,238 |
| 24" | 525 | 1 | 1.91 | 11,171 |
| 36" | 788 | 1 | 2.76 | 27,960 |
| 48" | 1,053 | 1 | - | - |

Daniel Mechanical Company certifies that the Model 203 dampers shown herein are 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 Program. The AMCA Certified Ratings Seal applies to air performance and air leakage ratings.

Test method is per AMCA Standard 500-89 Figures 5.4 & 6.3 for blade fixed open, and Figures 5.5 & 6.5 for blade closed. Data are based on a seating torque of chart listed in-lbs applied to hold the damper in the closed position. Air leakage is based on operation between 50°F - 104°F.

Daniel Mechanical Company

1939 West 11th Street Ste. E

Upland, CA 91786

Phone: (909) 982-1555 Fax: (909) 982-1855

E-mail: danmech@sbcglobal.net

[Http://www.danielmechanical.com](http://www.danielmechanical.com)