VOLUME CONTROL DAMPERS
CONSTRUCTION FEATURES
FRAME Roll formed 16 gauge galvanized steel channel with welded corners. X-Standard, Z-optional

BLADE Roll formed 18 gauge galvanized steel.

AXLES 1/2" Round chrome plated steel at bearing ends.

BEARINGS Nylon; Bronze, Oilite (Optional) bearings.

REGULATOR Positive locking at any damper position, Full open thru full closed.

FINISH Mill galvanized, Painted (optional).

APPLICATION: Air modulation control in rectangular ducts up to 12 inch height.
STANDARD CONSTRUCTION

FRAME: Roll formed 16 gauge galvanized steel channel with welded corners. X-Standard, Z-optional

BLADES: Roll formed 16 gauge galvanized steel.
Min. width-4", Max. width-8"

BEARINGS: Nylon; Bronze oilite (optional)

AXLES: 1/2" Round chrome plated steel.

LINKAGE: Purpose made, swing type bracket and steel rod.

FINISH: Mill galvanized; Painted (optional).

MIN. SIZE: 4"x4" (Dampers 8" or less in height furnished as single blade model)

MAX. SIZE: 48"x72" (single section) Unlimit for multiple sections.

APPLICATION: Air control application where two position control is desirable.

FRAME STYLE

<table>
<thead>
<tr>
<th>DESIGN FEATURES</th>
<th>OPTIONAL/ACCESSORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAME</td>
<td>Heavy gauge steel, internal welded corners prevent from deforming in transit or on site.</td>
</tr>
<tr>
<td>BLADES</td>
<td>Design assure uniform blades interlocking; minimize leakage and blades rattling</td>
</tr>
<tr>
<td>BEARINGS</td>
<td>Press fitted to minimize wear</td>
</tr>
<tr>
<td>LINKAGE</td>
<td>Purpose made bracket and rod provide uniform pressure to blades for tight close and reduce operational torque requirement.</td>
</tr>
<tr>
<td>AXLES</td>
<td>Blade axles positively locked to blade</td>
</tr>
</tbody>
</table>

MODEL: GCD-PB
VOLUME CONTROL DAMPERS
OPPOSED BLADE - STEEL

STANDARD CONSTRUCTION
FRAME Roll formed 16 gauge galvanized steel channel with welded corners. X-Standard, Z-optional
BLADES Roll formed 16 gauge galvanized steel. Min.width-4”, Max.width-8”
BEARINGS Nylon; Bronze oilite(optional) AXLES 1/2”

Round chrome plated steel.

LINKAGE Purpose made, swing type bracket and steel rod assembly.
BLADE STOP Roll formed 16 gauge galvanized steel FINISH

Mill galvanized; Painted(optional).

MIN.SIZE 4”x4”(Dampers 8” or less in height furnished as single blade model)
MAX.SIZE 48”x72” (single section) Unlimit for multiple sections.

APPLICATION:
Air control application where modulation control is desirable.

<table>
<thead>
<tr>
<th>DESIGN FEATURES</th>
<th>OPTIONAL/ACCESSORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAME Heavy gauge steel, internal welded</td>
<td>Heavy gauge construction</td>
</tr>
<tr>
<td>corners prevent from deforming in transit</td>
<td></td>
</tr>
<tr>
<td>or on site.</td>
<td>Aluminum or stainless steel construction</td>
</tr>
<tr>
<td>BLADES Design assure uniform blades.</td>
<td>Aluminum jamb seal for low leakage application.</td>
</tr>
<tr>
<td>BEARINGS Press fitted to minimize wear</td>
<td>Polyurethane foam blade seals</td>
</tr>
<tr>
<td>LINKAGE Purpose made bracket and link</td>
<td>Manual damper regulator</td>
</tr>
<tr>
<td>assembly provide uniform pressure to</td>
<td>Factory mounted Electric/Pneumatic damper</td>
</tr>
<tr>
<td>blades for tight close and reduce</td>
<td>operator</td>
</tr>
<tr>
<td>operational torque requirement.</td>
<td>Heavy duty jack shaft for multiple</td>
</tr>
<tr>
<td>AXLES Blade axles positively locked to</td>
<td>damper assembly operation</td>
</tr>
<tr>
<td>blade</td>
<td>Linkage assembly out of air stream</td>
</tr>
<tr>
<td></td>
<td>External blade linkage assembly</td>
</tr>
</tbody>
</table>
NOTE:
Standard factory location of damper operator illustrated. Operator can be mounted at any side or in air stream up on request.

- Careful attention shall be given while selecting damper operator torque considering face area and velocity for satisfactory operation.

SPECIAL MULTI SECTION ASSEMBLY WITH HEAVY DUTY JACK SHAFT

Leakage chart is based on damper with standard construction having aspect ratio of 1:1 and in extreme close position.

Greater in damper aspect ratio will reduce leakage shown in this chart.
Above chart is based on damper in fully open position. Static pressure and Face velocities are corrected to 0.075 lb/cu.ft air density.

ACCESSORIES (Electric / Pneumatic Actuator)

### SPRING RETURN ACTUATOR
Damper returns to its selected fail safe position when the power supply is interrupted. (Max. 2m²)
- TORQUE: Appx. 15 Nm
- Opening: Appx. 150 S
- Closing: Appx. 16 S
- Power: AF-24-24VDC/AC
- Auxiliary Switch: S1 1-SPDT
- S2 2-SPDT
- Suffix S1/S2 denotes the model for Auxiliary Switch.

### MODULATING DAMPER ACTUATOR
Modulating control application of opposed blade damper up to 2.0m²
- TORQUE: 15Nm
- POWER: 24 VAC
- Control signal: 0-10VDC
- Running time: 100-200 S
- Auxiliary Switch: S1 1-SPDT
- S2 2-SPDT
- Suffix S1/S2 denotes the model for Auxiliary Switch.

### 2 POSITION ACTUATOR
2 Position On/Off application of damper up to approx. 3m²
- TORQUE: Appx. 15Nm (50Hz)
- Running time: 90-150 S
- Power consumption: 1.8W(24V)
- Auxiliary Switch: S1 1-SPDT
- S2 2-SPDT
- Suffix S1/S2 denotes the model for Auxiliary Switch.

### PNEUMATIC ACTUATOR
Modulating, or On/Off control application of damper up to 2m² @ 1000rpm
- STROKE: 4 inches
- BODY: Die-cast zinc
- Spring Ring: 3-12,5-10, 8-13,10-15&48
- Supply pressure: 20PSI
- Note: Higher capacity model and positioner available
VOLUME CONTROL DAMPERS
ROUND - STEEL CONSTRUCTION

STANDARD CONSTRUCTION
CASING  20 gauge galvanized steel with longitudinal
‘ACME’ seam lock or butt welded
continuously.

BLADE  20 gauge galvanized steel (std.) Perforated,
galvanized blade having 50% free
area. (optional)

BEARINGS  Snap-fit, spring bearing.

REGULATOR  Stamped, zinc coated steel with damper
position indicator and wing nut.

MIN.SIZE  4” Dia.

MAX.SIZE  9” Dia.

FINISH  Mill galvanized; Aluminum Painted (optional).

APPLICATION:
Generally employed as a balancing damper in
low velocity round air duct system where
maximum static pressure not exceeding
2”w.g.

DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>NOMINAL SIZE</th>
<th>A-DIA</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3-7/8</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>4-7/8</td>
<td>4</td>
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<tr>
<td>6</td>
<td>5-7/8</td>
<td>4</td>
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<td>7-7/8</td>
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<td>10</td>
</tr>
<tr>
<td>9</td>
<td>8-7/8</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

All dimensions are in inches

DESIGN FEATURES

- Heavy gauge casing construction provide
dimensional stability.
- Heavy gauge blade; prevent rattling, thus noise free even
damper at partially open position.
- Snap-fit spring bearing; smooth blade
movement, yet low gland leak
- Damper position indicator and positive locking facility at
any desired angle from full open thru full closed.
STANDARD CONSTRUCTION

CASING  16 gauge galvanized steel with longitudinal ‘ACME’ seam lock or butt welded continuously.

BLADE  16 gauge galvanized steel.

BEARINGS  Spring loaded type.

REGULATOR  Duro-dyne wedge-loc or equivalent type.

MIN. SIZE  4” Dia.

MAX. SIZE  20” Dia.

FINISH  Mill galvanized; Aluminum Painted (optional).

OPTION  Actuator for zone control application. (VAVT system)

APPLICATION:
Generally employed as a balancing damper in medium velocity round air duct system where maximum static pressure not exceeding 3” w.g.

DIMENSIONAL DATA

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<td>7</td>
<td>6-7/8</td>
<td>6</td>
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<td>17-7/8</td>
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<td>20</td>
</tr>
<tr>
<td>20</td>
<td>19-7/8</td>
<td>18</td>
<td>22</td>
</tr>
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All dimensions are in inches

DESIGN FEATURES

Heavy gauge casing construction provide dimensional stability.

Heavy gauge blade; prevent rattling, thus noise free even damper at partially open position.

Spring loaded bearings; smooth blade movement, yet low gland leak.

Damper position indicator and positive locking facility at any desired angle from full open thru full closed.
STANDARD CONSTRUCTION
MODEL GCD-RZ
FRAME  12 gauge roll formed steel channel with welded longitudinal seam 4" wide.
BLADE  18" and below 12 gauge steel. Above 18"-10 gauge steel.
BEARINGS Steel sleeve pressed in to frame. Bronze oilite sleeve (optional).
AXLE  1/2"x1/2" steel up to 20"
      3/4"x3/4" steel for above 20".
MIN.SIZE 4" Dia.
MAX.SIZE 40" Dia.
FINISH  Aluminum Painted.

"MODEL GCD-OL
FRAME  12 gauge roll formed steel channel with welded longitudinal seam 4" wide.
BLADE  A-dimension 6" thru 20" 12 gauge steel.
                  A-dimension above 20". 10 gauge steel.
BEARINGS Steel sleeve pressed in to frame. Bronze oilite sleeve (optional).
AXLE  1/2"x1/2" steel up to A-dimension 20"
      3/4"x3/4" steel for above 20".
MIN.SIZE B-dimension 6".
MAX.SIZE B-dimension up to 24".
                  A-dimension -36"(without center million)
                  A-dimension 72" (with center million)
FINISH  Aluminum Painted.

APPLICATION:
Generally employed as a balancing damper in high velocity round/oval air duct system where maximum static pressure not exceeding 6" w.g.

ACCESSORIES/OPTIONAL
- Heavy duty damper regulator
- Blade stop with foam rubber for low leakage application.
- Special finishes.
- Special materials construction.
- Actuator ON/OFF or spring return type.
STANDARD CONSTRUCTION
MODEL GCD-RH
FRAME 10 gauge or equivalent thickness roll formed steel channel with welded longitudinal seam 6” wide.
BLADE 8 gauge or equivalent thickness steel plate up to 40”. 1/4” thick steel plate above 40” up to 72”.
BEARINGS Ball bearing bushings fitted to damper frame.
AXLE 5/8”x5/8” steel bar up to 40”. 3/4”x3/4 steel bar up to 60”. 1”x1” steel bar above 60”
MIN.SIZE 8” Dia.
MAX.SIZE 72” Dia.
FINISH Aluminum Painted.

MODEL GCD-OH
FRAME 10 gauge or equivalent thickness roll formed steel channel with welded longitudinal seam 6” wide.
BLADE A-dimension up to 40”-10 gauge or equivalent steel plate. A-dimension above 40”-8 gauge or equivalent thick steel plate.
BEARINGS Ball bearing bushings fitted to damper frame.
AXLE 5/8”x5/8” steel bar up to A-dimension 40”. 1”x1” steel bar above A-dimension 40”.
MIN.SIZE B-dimension 8”.
MAX.SIZE A-dimension - 40” (without center million). A-dimension -72”(without center million)
FINISH Aluminum Painted.

APPLICATION:
Generally employed as a control damper in high velocity air distribution/material handling system where maximum pressure not exceeding 10” w.g.

ACCESSORIES/OPTIONAL
Heavy duty damper regulator
Electric/Pneumatic operator
Blade seal for low leakage application.
Special finishes.
Heavier / Special materials construction.
Pre-drilled flange holes.
Actuator ON/OFF or spring return type.
PRESSURE DROP CHART

LEAKAGE CHART

PRESSURE DROP CHART IS BASED ON STANDARD AIR WITH DAMPER IN FULLY OPEN POSITION.

LEAKAGE CHART IS BASED ON DAMPERS WITHOUT BLADE SEAL AND IN FULLY CLOSED POSITION.