

Submittal Review

Corrections or comments made to the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents.

The contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

- Approved, no exceptions
- Approved, with comments
- Resubmit
- Rejected

Dave M. Saarem, P.E.

Engineer's Review:

The MEP drawing set is currently at revision 4 and is stamped with a date of 27 Oct 2023. Please get the latest set of drawings from the architect and re-submit.

1 Nov 2023

Thank you,
Dave M. Saarem, P.E.



Submittal

8420 Washington Place NE
 Albuquerque, NM 87113
 Ph: 505.268.6776 Fx: 505.255.1329

PROJECT DATA	
PROJECT NAME	ABQ Pet Care Hospital
LOCATION	2801 Eubank Blvd.
ENGINEER	Saarem Consulting Engineers
CONTRACTOR	Hausermann Mechanical
DATE	7/14/2023
SUBMITTED BY	Joe Gutierrez Varitec Solutions 8420 Washington Place NE Albuquerque, NM 87113

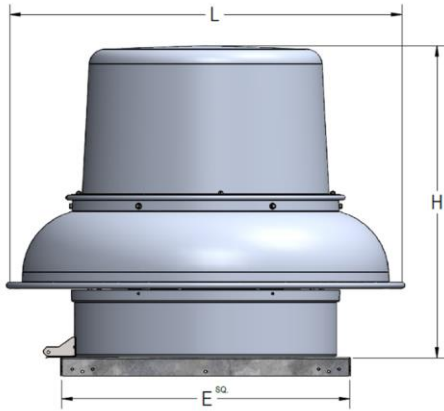
HVAC Power Roof Ventilators: Division 23, Spec Section 23 34 00				
Symbol	Manufacturer	Qty	Model	Notes:
EF-4	PennBarry	1	DX16	Roof Exh Fan with ECM Gplus motor
EF-5	PennBarry	1	DX13	Roof Exh Fan with ECM Gplus motor
EF-6	PennBarry	1	DX13	Roof Exh Fan with ECM Gplus motor
EF-7	PennBarry	1	DX13	Roof Exh Fan with ECM Gplus motor

REVISION HISTORY		
Rev 0	7/14/2023	Original

DX16Q2GP

Quantity: 1

Dimensions



Unit Size	Motor Speed	Motor Efficiency
16	S - 1725 RPM	G - Green Plus ECM

E	H	L	Weight
20.5	22.5	28.5	70

Standard Construction Features

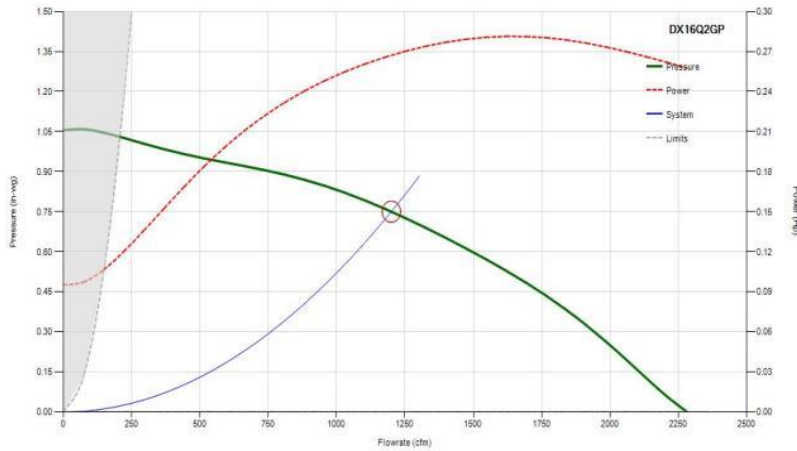
- Weatherproof Housing
- Heavy Gauge Spun Aluminum Construction
- Aluminum Centrifugal Fan Wheels Statically & Dynamically balanced
- Spark-resistant, Non-overloading
- Aluminum spun venturis
- Continuous Duty Motors
- AMCA Licensed Ratings Seal for Air & Sound Performance (DX)
- UL and cUL Listed

Accessories

Temperature: 70
 UL / ETL Listing: 1 - UL 705
 Unit Size: 16
 Drive Type: D - Direct
 Motor Efficiency: G - Green Plus ECM
 Motor Speed: S - 1725 RPM
 Service Switches: C - NEMA 1 - mounted
 Internal Wiring: 1 - NEMA 1
 Spark Resistance Construction: C - AMCA C Spark Resistance
 Model Parent: DX16D
 Damper Holding Plate: P - Plate
 Damper Type: BD - Backdraft Damper
 Application: E - Exhaust

(continued)

Performance



Operating Point

Volume (CFM)	1200
Static Pressure (in. wg)	0.75
Fan RPM	1305
Horse Power (BHP)	0.27
Elevation (ft)	5300
Temperature (°F)	70
Drive Loss (%)	N/A
FEI	1.51

Motor Information

Motor HP	0.75 - 3/4 HP
Volt/Ph/Hz	115V /1/ 60
Enclosure	4 - OPAO
NEC FLA*	13.8
Weight+ (lbs)	C/F

* NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary depending on motor manufacturer.
 + Motor weight may vary depending on supplier

SOUND POWER

OCTAVE POWER CENTER FREQUENCY (hz)

63	125	250	500	1000	2000	4000	8000
69	72	73	61	58	57	53	46

LWA	dBA	Sones
67	55.9	8.11

LwA - Weighted sound power, based on ANSI S1.4, dBA - Weighted sound pressure, based on 11.5 dB attenuation per Octave band at 5 ft. Sones - calculated using AMCA 301 at 5 ft.



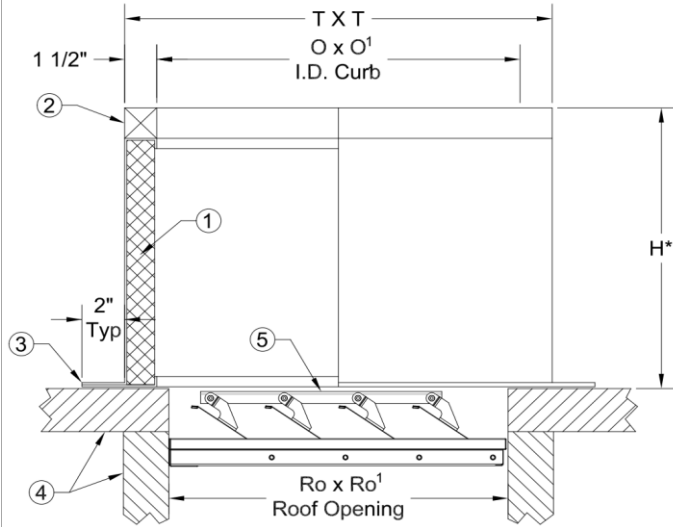
Roof Curb

Quantity: 1

Prefabricated Roof Curbs

Product Image

Roof Curb



- Curb Model: UG18
- Heavy-gauge steel with welded corner seams shall cover 1-1/2" thick 3 lb. density fiberglass insulation.
- A 1-1/2" wide wood nailer (Unibeam) with top surface is provided for fan installation and/or roofing paper.
- Flat (single or double pitch optional) curb fastening flange shall be Cantless.
- Optional vented sides available without fiberglass insulation.

Model Parent	T	T'	O	O'	H	Ro	Ro'
DX16D	19	19	16	16	18	16	16

Options or Accessories Listing

Model Parent DX16Q2GP
Style F - Flat
Material G - Galvanized
Height 18

Damper Holding Plate P - Plate
Wood Nailer W - Wooden Nailer
Roof Anchor 0 - None

Schedule

ID	Quantity	Tag
1	1	SYM EF-4

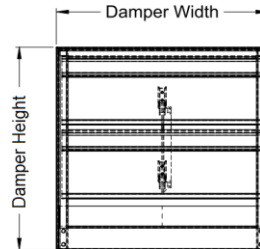
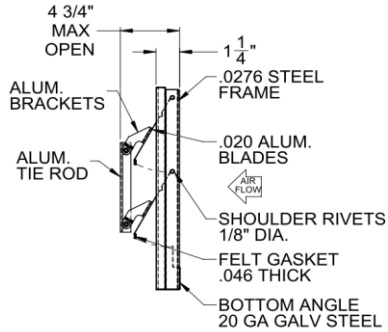
Damper

Quantity: 1

Control or General with various blade type dampers

Product Image

Damper



- Sensitive and responsive to low velocities up to 1500 FPM range.
- Square galvanized steel frame,
- Multi-leaf, roll formed aluminum blades; with
- Nylon bearings; and
- Felt Edges for quiet operation

Model Parent	Size	Part Number	Height	Width	No Blades	No Sections
DX16D	19	25006-0	15.75	15.75	3	1

Options or Accessories Listing

Model Parent DX16Q2GP
Application E - Exhaust
Damper Type BD - Backdraft Damper

Damper Material A - Aluminum
Flange 0 - None
Coating 0 - None

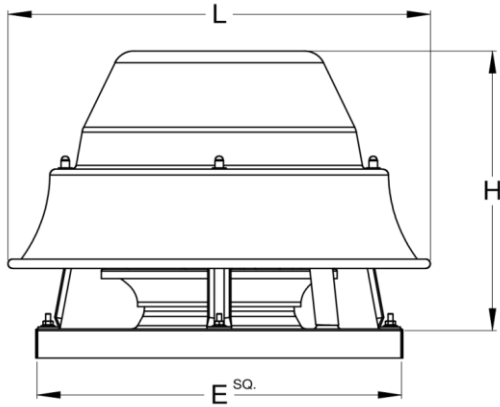
Schedule

ID	Quantity	Tag
1	1	SYM EF-4

DX13QGP

Quantity: 1

Dimensions



Unit Size	Motor Speed	Motor Efficiency
13	S - 1725 RPM	G - Green Plus ECM

E	H	L	Weight
18.5	18.5	21.44	51

Standard Construction Features

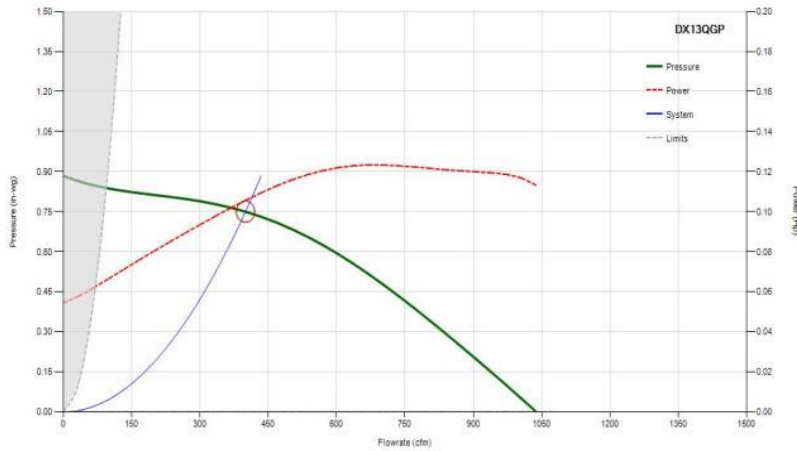
- Weatherproof Housing
- Heavy Gauge Spun Aluminum Construction
- Aluminum Centrifugal Fan Wheels Statically & Dynamically balanced
- Spark-resistant, Non-overloading
- Aluminum spun venturis
- Continuous Duty Motors
- AMCA Licensed Ratings Seal for Air & Sound Performance (DX)
- UL and cUL Listed

Accessories

Temperature: 70
 UL / ETL Listing: 1 - UL 705
 Unit Size: 13
 Drive Type: D - Direct
 Motor Efficiency: G - Green Plus ECM
 Motor Speed: S - 1725 RPM
 Service Switches: C - NEMA 1 - mounted
 Internal Wiring: 1 - NEMA 1
 Spark Resistance Construction: C - AMCA C Spark Resistance
 Model Parent: DX13D
 Damper Holding Plate: P - Plate
 Damper Type: BD - Backdraft Damper
 Application: E - Exhaust

(continued)

Performance



Operating Point

Volume (CFM)	400
Static Pressure (in. wg)	0.75
Fan RPM	1399
Horse Power (BHP)	0.11
Elevation (ft)	5300
Temperature (°F)	70
Drive Loss (%)	N/A
FEI	1.49

Motor Information

Motor HP	0.33 - 1/3 HP
Volt/Ph/Hz	115V /1/ 60
Enclosure	4 - OPAO
NEC FLA*	7.2
Weight+ (lbs)	C/F

* NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary depending on motor manufacturer.
 + Motor weight may vary depending on supplier

SOUND POWER

OCTAVE POWER CENTER FREQUENCY (hz)

63	125	250	500	1000	2000	4000	8000
68	73	69	62	58	55	52	45

LWA	dBA	Sones
66	54.1	7.17

LwA - Weighted sound power, based on ANSI S1.4, dBA - Weighted sound pressure, based on 11.5 dB attenuation per Octave band at 5 ft. Sones - calculated using AMCA 301 at 5 ft.



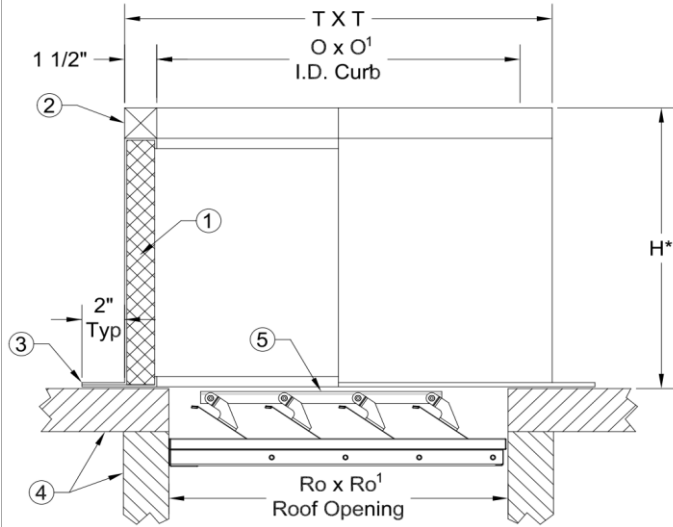
Roof Curb

Quantity: 1

Prefabricated Roof Curbs

Product Image

Roof Curb



- Curb Model: UG18
- Heavy-gauge steel with welded corner seams shall cover 1-1/2" thick 3 lb. density fiberglass insulation.
- A 1-1/2" wide wood nailer (Unibeam) with top surface is provided for fan installation and/or roofing paper.
- Flat (single or double pitch optional) curb fastening flange shall be Cantless.
- Optional vented sides available without fiberglass insulation.

Model Parent	T	T'	O	O'	H	Ro	Ro'
DX13D	17	17	14	14	18	11.5	11.5

Options or Accessories Listing

Model Parent DX13QGP

Style F - Flat

Material G - Galvanized

Height 18

Damper Holding Plate P - Plate

Wood Nailer W - Wooden Nailer

Roof Anchor 0 - None

Schedule

ID	Quantity	Tag
1	1	SYM EF-5

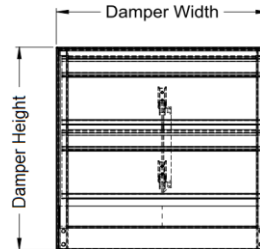
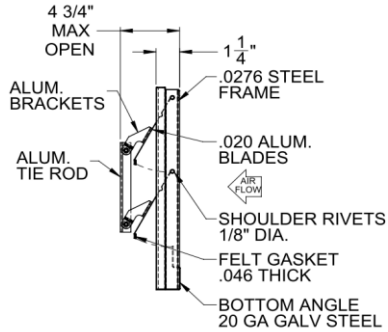
Damper

Quantity: 1

Control or General with various blade type dampers

Product Image

Damper



- Sensitive and responsive to low velocities up to 1500 FPM range.
- Square galvanized steel frame,
- Multi-leaf, roll formed aluminum blades; with
- Nylon bearings; and
- Felt Edges for quiet operation

Model Parent	Size	Part Number	Height	Width	No Blades	No Sections
DX13D	13	25003-0	11.25	11.25	2	1

Options or Accessories Listing

Model Parent DX13QGP

Application E - Exhaust

Damper Type BD - Backdraft Damper

Damper Material A - Aluminum

Flange 0 - None

Coating 0 - None

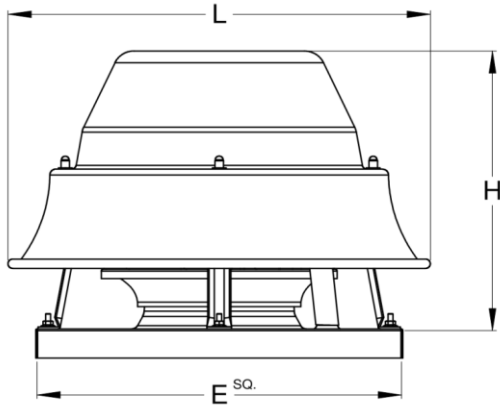
Schedule

ID	Quantity	Tag
1	1	SYM EF-5

DX13QGP

Quantity: 1

Dimensions



Unit Size	Motor Speed	Motor Efficiency
13	S - 1725 RPM	G - Green Plus ECM

E	H	L	Weight
18.5	18.5	21.44	51

Standard Construction Features

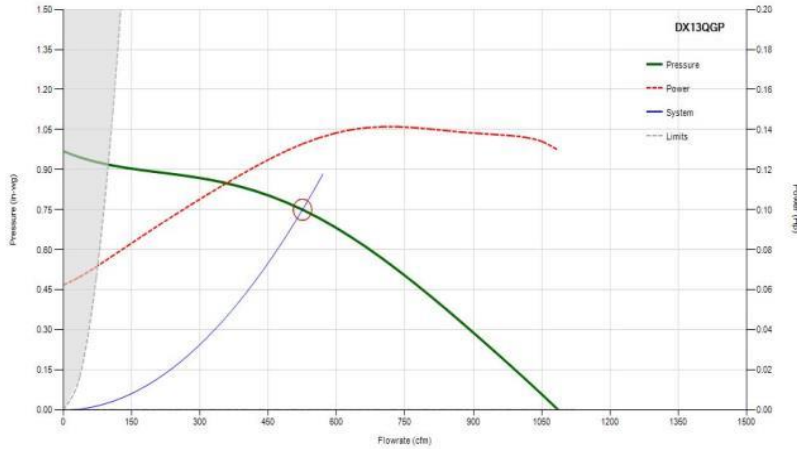
- Weatherproof Housing
- Heavy Gauge Spun Aluminum Construction
- Aluminum Centrifugal Fan Wheels Statically & Dynamically balanced
- Spark-resistant, Non-overloading
- Aluminum spun venturis
- Continuous Duty Motors
- AMCA Licensed Ratings Seal for Air & Sound Performance (DX)
- UL and cUL Listed

Accessories

- Temperature: 70
- UL / ETL Listing: 1 - UL 705
- Unit Size: 13
- Drive Type: D - Direct
- Motor Efficiency: G - Green Plus ECM
- Motor Speed: S - 1725 RPM
- Service Switches: C - NEMA 1 - mounted
- Internal Wiring: 1 - NEMA 1
- Spark Resistance Construction: C - AMCA C Spark Resistance
- Model Parent: DX13D
- Damper Holding Plate: P - Plate
- Damper Type: BD - Backdraft Damper
- Application: E - Exhaust

(continued)

Performance



Operating Point

Volume (CFM)	525
Static Pressure (in. wg)	0.75
Fan RPM	1464
Horse Power (BHP)	0.13
Elevation (ft)	5300
Temperature (°F)	70
Drive Loss (%)	N/A
FEI	1.54

Motor Information

Motor HP	0.33 - 1/3 HP
Volt/Ph/Hz	115V /1/ 60
Enclosure	4 - OPAO
NEC FLA*	7.2
Weight+ (lbs)	C/F

* NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary depending on motor manufacturer.
 + Motor weight may vary depending on supplier

SOUND POWER

OCTAVE POWER CENTER FREQUENCY (hz)

63	125	250	500	1000	2000	4000	8000
68	74	70	63	59	56	53	46

LWA	dBA	Sones
67	55.3	7.72

LwA - Weighted sound power, based on ANSI S1.4, dBA - Weighted sound pressure, based on 11.5 dB attenuation per Octave band at 5 ft. Sones - calculated using AMCA 301 at 5 ft.



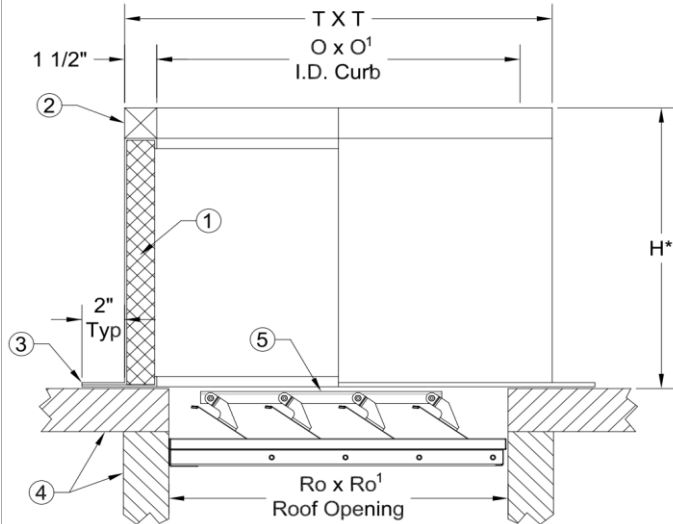
Roof Curb

Quantity: 1

Prefabricated Roof Curbs

Product Image

Roof Curb



- Curb Model: UG18
- Heavy-gauge steel with welded corner seams shall cover 1-1/2" thick 3 lb. density fiberglass insulation.
- A 1-1/2" wide wood nailer (Unibeam) with top surface is provided for fan installation and/or roofing paper.
- Flat (single or double pitch optional) curb fastening flange shall be Cantless.
- Optional vented sides available without fiberglass insulation.

Model Parent	T	T'	O	O'	H	Ro	Ro'
DX13D	17	17	14	14	18	11.5	11.5

Options or Accessories Listing

Model Parent DX13QGP

Style F - Flat

Material G - Galvanized

Height 18

Damper Holding Plate P - Plate

Wood Nailer W - Wooden Nailer

Roof Anchor 0 - None

Schedule

ID	Quantity	Tag
1	1	SYM EF-6

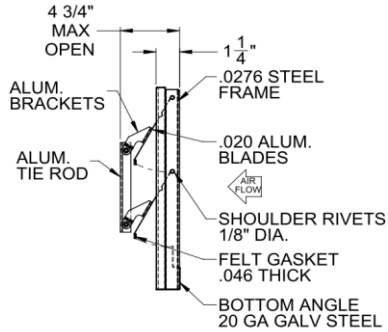
Damper

Quantity: 1

Control or General with various blade type dampers

Product Image

Damper



- Sensitive and responsive to low velocities up to 1500 FPM range.
- Square galvanized steel frame,
- Multi-leaf, roll formed aluminum blades; with
- Nylon bearings; and
- Felt Edges for quiet operation

Model Parent	Size	Part Number	Height	Width	No Blades	No Sections
DX13D	13	25003-0	11.25	11.25	2	1

Options or Accessories Listing

Model Parent DX13QGP

Application E - Exhaust

Damper Type BD - Backdraft Damper

Damper Material A - Aluminum

Flange 0 - None

Coating 0 - None

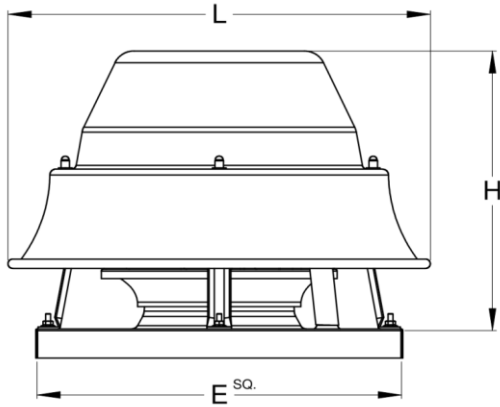
Schedule

ID	Quantity	Tag
1	1	SYM EF-6

DX13QGP

Quantity: 1

Dimensions



Unit Size	Motor Speed	Motor Efficiency
13	S - 1725 RPM	G - Green Plus ECM

E	H	L	Weight
18.5	18.5	21.44	51

Standard Construction Features

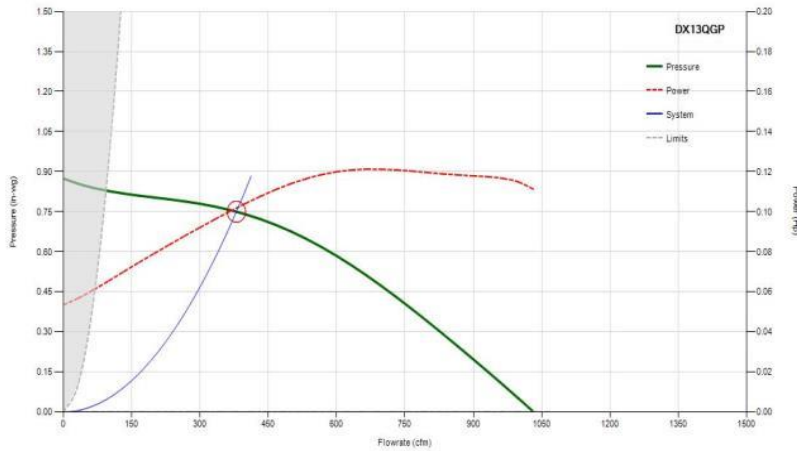
- Weatherproof Housing
- Heavy Gauge Spun Aluminum Construction
- Aluminum Centrifugal Fan Wheels Statically & Dynamically balanced
- Spark-resistant, Non-overloading
- Aluminum spun venturis
- Continuous Duty Motors
- AMCA Licensed Ratings Seal for Air & Sound Performance (DX)
- UL and cUL Listed

Accessories

Temperature: 70
 UL / ETL Listing: 1 - UL 705
 Unit Size: 13
 Drive Type: D - Direct
 Motor Efficiency: G - Green Plus ECM
 Motor Speed: S - 1725 RPM
 Service Switches: C - NEMA 1 - mounted
 Internal Wiring: 1 - NEMA 1
 Spark Resistance Construction: C - AMCA C Spark Resistance
 Model Parent: DX13D
 Damper Holding Plate: P - Plate
 Damper Type: BD - Backdraft Damper
 Application: E - Exhaust

(continued)

Performance



Operating Point

Volume (CFM)	380
Static Pressure (in. wg)	0.75
Fan RPM	1391
Horse Power (BHP)	0.1
Elevation (ft)	5300
Temperature (°F)	70
Drive Loss (%)	N/A
FEI	1.54

Motor Information

Motor HP	0.33 - 1/3 HP
Volt/Ph/Hz	115V /1/ 60
Enclosure	4 - OPAO
NEC FLA*	7.2
Weight+ (lbs)	C/F

* NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary depending on motor manufacturer.
 + Motor weight may vary depending on supplier

SOUND POWER

OCTAVE POWER CENTER FREQUENCY (hz)

63	125	250	500	1000	2000	4000	8000
68	73	69	62	57	55	52	44

LWA	dBA	Sones
65	53.9	7.11

LwA - Weighted sound power, based on ANSI S1.4, dBA - Weighted sound pressure, based on 11.5 dB attenuation per Octave band at 5 ft. Sones - calculated using AMCA 301 at 5 ft.



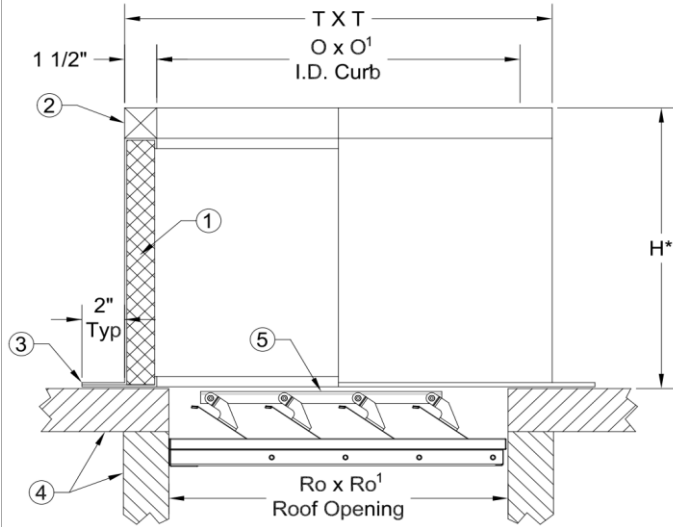
Roof Curb

Quantity: 1

Prefabricated Roof Curbs

Product Image

Roof Curb



- Curb Model: UG12
- Heavy-gauge steel with welded corner seams shall cover 1-1/2" thick 3 lb. density fiberglass insulation.
- A 1-1/2" wide wood nailer (Unibeam) with top surface is provided for fan installation and/or roofing paper.
- Flat (single or double pitch optional) curb fastening flange shall be Cantless.
- Optional vented sides available without fiberglass insulation.

Model Parent	T	T'	O	O'	H	Ro	Ro'
DX13D	17	17	14	14	12	11.5	11.5

Options or Accessories Listing

Model Parent DX13QGP

Style F - Flat

Material G - Galvanized

Height 12

Damper Holding Plate P - Plate

Wood Nailer W - Wooden Nailer

Roof Anchor 0 - None

Schedule

ID	Quantity	Tag
1	1	SYM EF-7

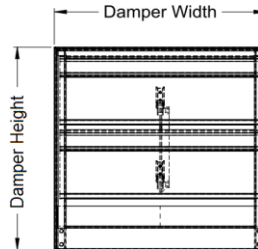
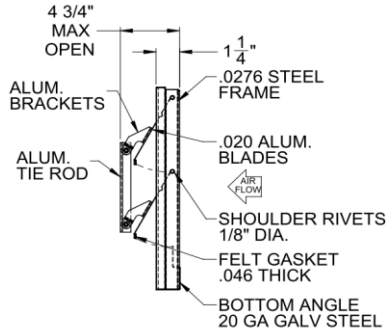
Damper

Quantity: 1

Control or General with various blade type dampers

Product Image

Damper



- Sensitive and responsive to low velocities up to 1500 FPM range.
- Square galvanized steel frame,
- Multi-leaf, roll formed aluminum blades; with
- Nylon bearings; and
- Felt Edges for quiet operation

Model Parent	Size	Part Number	Height	Width	No Blades	No Sections
DX13D	13	25003-0	11.25	11.25	2	1

Options or Accessories Listing

Model Parent DX13QGP

Application E - Exhaust

Damper Type BD - Backdraft Damper

Damper Material A - Aluminum

Flange 0 - None

Coating 0 - None

Schedule

ID	Quantity	Tag
1	1	SYM EF-7



Submittal

8420 Washington Place NE
 Albuquerque, NM 87113
 Ph: 505.268.6776 Fx: 505.255.1329

PROJECT DATA	
PROJECT NAME	ABQ Pet Care Hospital
LOCATION	2801 Eubank Blvd.
ENGINEER	Saarem Consulting Engineers
CONTRACTOR	Hausermann Mechanical
DATE	7/14/2023
SUBMITTED BY	Joe Gutierrez Varitec Solutions 8420 Washington Place NE Albuquerque, NM 87113

Air Outlets and Inlets: Division 23, Spec Section 23 37 00				
Symbol	Manufacturer	Qty	Model	Notes:
SD-1	Krueger	22	1400	Ceiling Diffuser - Lay-in Ceiling
SD-1	Krueger	6	1400	Ceiling Diffuser - Plaster Frame (5HCF23)
SD-2	Krueger	14	1400	Ceiling Diffuser - Lay-in Ceiling
SD-2	Krueger	3	1400	Ceiling Diffuser - Plaster Frame (5HCF23)
ER-1	Krueger	5	S80P	Return Grille - Perforated face - Lay-in
ER-2	Krueger	9	S80P	Return Grille - Perforated face - Lay-in
RG-1	Krueger	10	S80P	Return Grille - Perforated face - Lay-in
RG-1	Krueger	2	S80P	Return Grille - Plaster Frame (5HCF23)
RG-3	Krueger	1	S80P	Return Grille - Perforated face - Lay-in

REVISION HISTORY		
Rev 0	7/14/2023	Original

SUBMITTAL PACKAGE

Louvered Diffusers - 1400 Type
1400 - 4 Cone, Drop Face, Steel

ID#	Tag	Qty	Round Neck Size	Ceiling Type
1400-1	SYM CD-1	6	06	Lay-in T-Bar
1400-2	SYM CD-1	7	08	Lay-in T-Bar
1400-3	SYM CD-1	7	10	Lay-in T-Bar
1400-4	SYM CD-1	2	14	Lay-in T-Bar
1400-5	SYM CD-1	6	12	Hard Ceiling

Louvered Diffusers - 1400 Type
1400 - 4 Cone, Drop Face, Steel

ID#	Tag	Qty	Round Neck Size	Ceiling Type
1400-1	SYM CD-2	11	06	Lay-in T-Bar
1400-2	SYM CD-2	3	08	Lay-in T-Bar
1400-3	SYM CD-2	3	06	Hard Ceiling

Return Grilles
S80P - Perforated Face, Steel

ID#	Tag	Qty	Width	Height	Ceiling Type
S80P-1	SYM ER-1	5	22	22	Lay-in T-Bar

Return Grilles
S80P - Perforated Face, Steel

ID#	Tag	Qty	Width	Height	Ceiling Type
S80P-1	SYM ER-2	9	10	10	Lay-in T-Bar

Return Grilles
S80 - ¾" Spacing, 0° or 35° Deflection, Steel

ID#	Tag	Qty	Width	Height	Ceiling Type
S80-1	SYM RG-1	10	22	22	Lay-in T-Bar
S80-2	SYM RG-1	2	22	22	Hard Ceiling

Return Grilles
S80 - ¾" Spacing, 0° or 35° Deflection, Steel

ID#	Tag	Qty	Width	Height	Ceiling Type
S80-1	SYM RG-3	1	12	12	Lay-in T-Bar

Note:

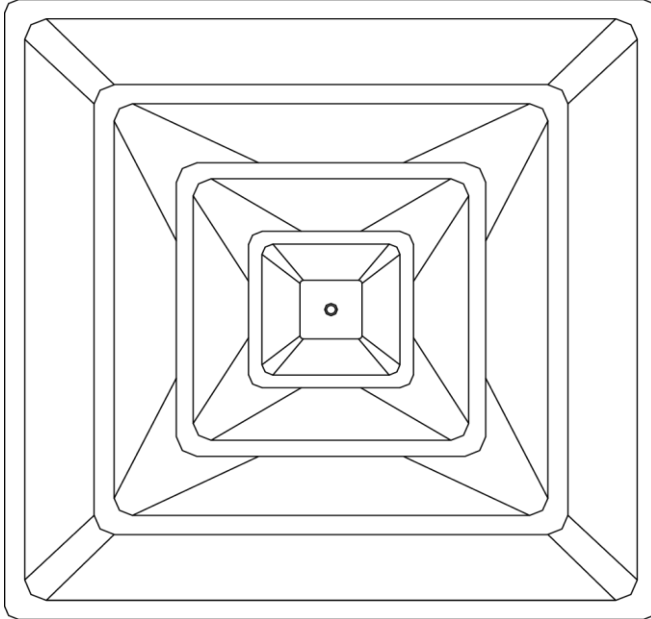
- Quantities and Sizes listed are for submittal purposes only, to be verified prior to order.
- Submittal information is deemed correct at time of printing, however in the interest of product improvement krueger reserves the right to make changes without notice.

1400 - Lay-in Ceiling

4 Cone, Drop Face, Steel

Main Product

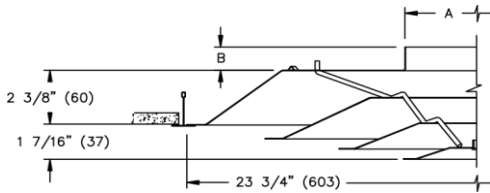
1400



- Construction is steel.
- Damper to be ordered separately.
- Comes with two earthquake tabs.

Feature Benefits

F23 - LAY-IN T-BAR



ID	Quantity	Tag	Round Neck Size	Panel	A	B
1	6	SYM CD-1	06 - 6 IN ROUND	24X24	5.875	1
2	7	SYM CD-1	08 - 8 IN ROUND	24X24	7.875	1
3	7	SYM CD-1	10 - 10 IN ROUND	24X24	9.875	1.5
4	2	SYM CD-1	14 - 14 IN ROUND	24X24	13.875	1.5

Option Schedule

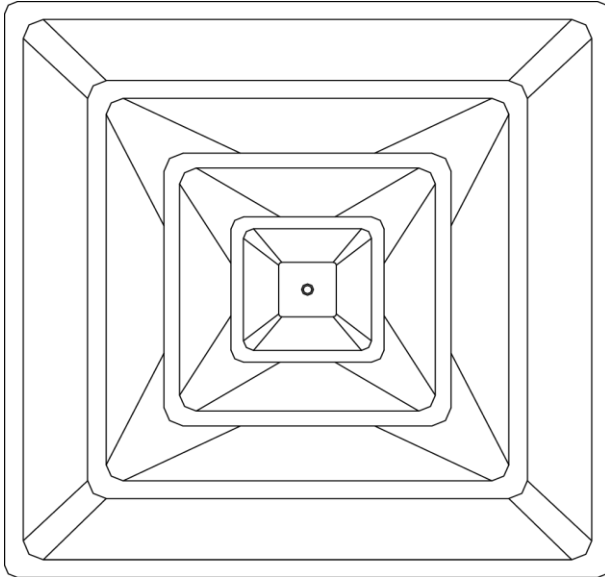
Frame F23 - LAY-IN T-BAR
 Panel 24X24
 Accy 1 00 - NONE
 Finish 44 - BRITISH WHITE

1400 - Hard Ceiling

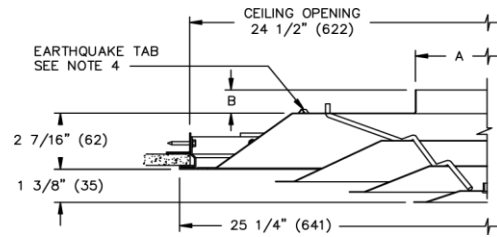
4 Cone, Drop Face, Steel

Main Product

1400



- Construction is steel.
- Damper to be ordered separately.
- Comes with two earthquake tabs.
- Finish #44 - British white
- Frame 22 includes a 5HCF23 surface mounting frame.

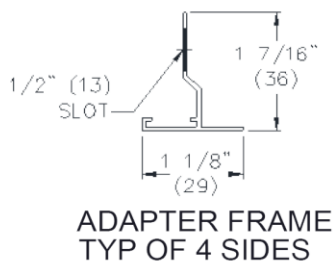


Dimension Table

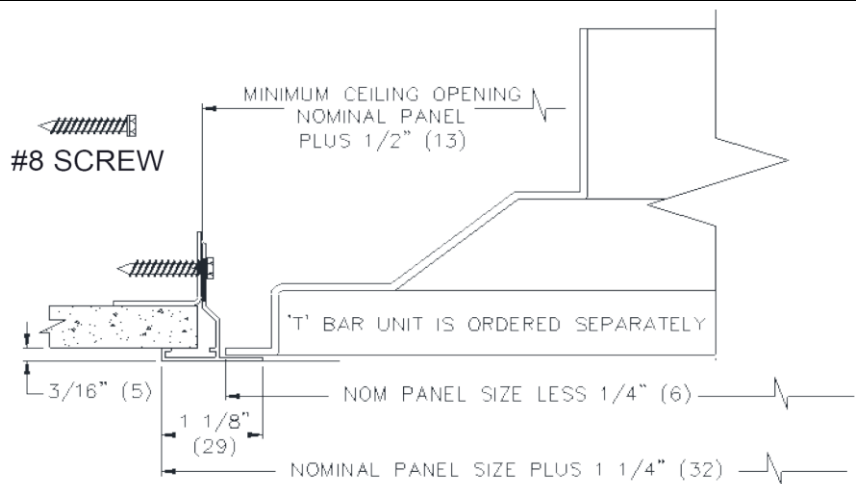
ID	Quantity	Tag	Round Neck Size	Panel	A	B	Min Ceiling Opening
5	6	SYM CD-1	12 - 12 IN ROUND	24X24	11.875	1.5	24.5 x 24.5

Construction Detail

5HCF23 Mounting



ASSEMBLY PARTS



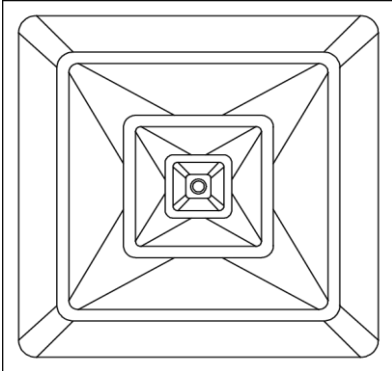
FRAME ASSEMBLY & INSTALLATION

1400 - Lay-in Ceiling

4 Cone, Drop Face, Steel

Main Product

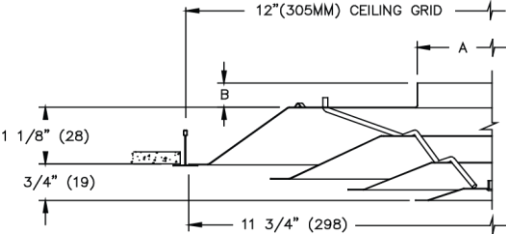
1400



- Construction is steel.
- Damper to be ordered separately.
- Comes with two earthquake tabs.

Feature Benefits

F23 - LAY-IN T-BAR



Round Neck Size	Panel	A	B
06 - 6 IN ROUND	12X12	5.875	1.5
08 - 8 IN ROUND	12X12	7.875	1.5

Option Schedule

Frame F23 - LAY-IN T-BAR
Panel 12X12
Accy 1 00 - NONE
Finish 44 - BRITISH WHITE

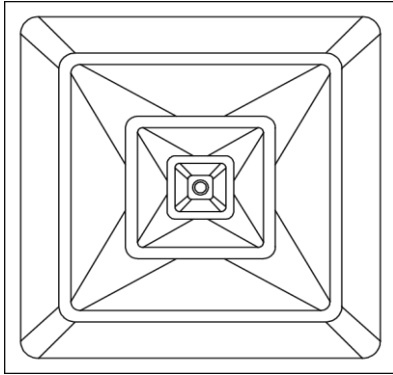
ID	Quantity	Tag	Round Neck Size
1	11	SYM CD-2	06 - 6 IN ROUND
2	3	SYM CD-2	08 - 8 IN ROUND

1400

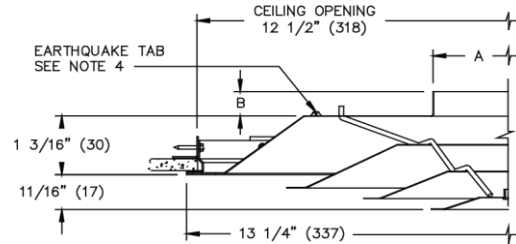
4 Cone, Drop Face, Steel

Main Product

1400



- Construction is steel.
- Damper to be ordered separately.
- Comes with two earthquake tabs.
- Finish #44 - British white
- Frame 22 includes a 5HCF23 surface mounting frame.

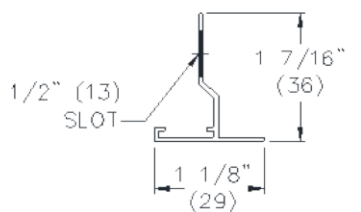


Dimension Table

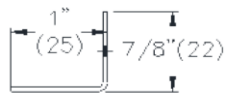
ID	Quantity	Tag	Round Neck Size	Panel	A	B	Min Ceiling Opening
3	3	SYM CD-2	06 - 6 IN ROUND	12X12	5.875	1.5	12.5 x 12.5

Construction Detail

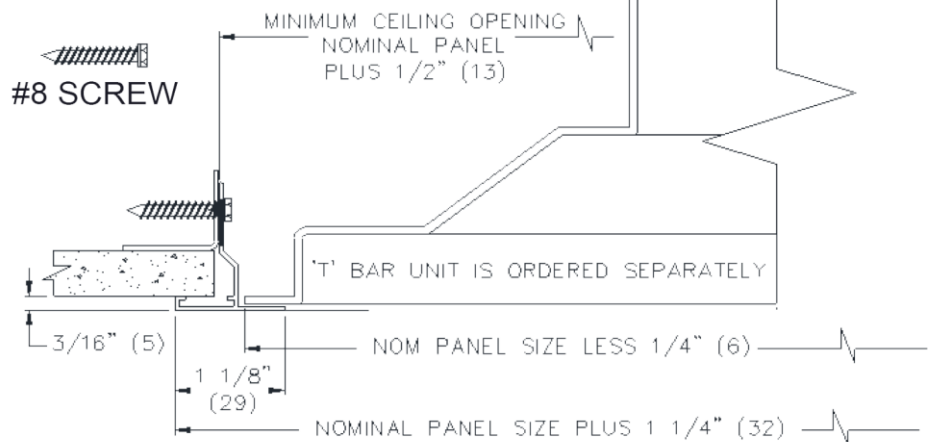
5HCF23 Mounting Details



ADAPTER FRAME
 TYP OF 4 SIDES



ASSEMBLY PARTS



FRAME ASSEMBLY & INSTALLATION

S80P - Lay-in Ceiling

Perforated Face, Steel

Main Product

S80P

• Construction is steel.

Feature Benefits

Option Schedule

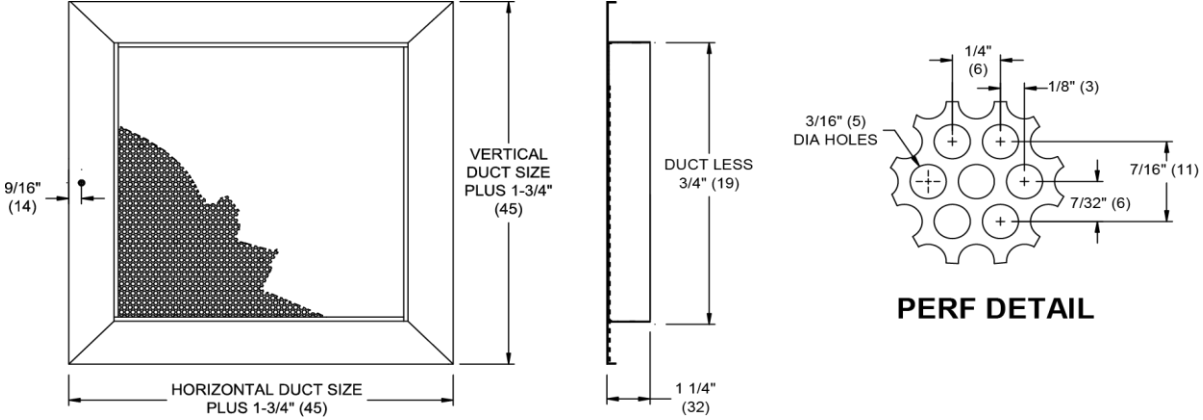
Frame F23 - LAY-IN T-BAR
 Panel 24X24
 Fastening 00 - NO SCREW HOLES
 Damper 00 - NONE
 Accy 1 00 - NONE
 Accy 2 00 - NONE
 Accy 3 00 - NONE
 Finish 44 - BRITISH WHITE

ID	Quantity	Tag	Width	Height	Frame	Face (W)	Face (H)	Stack (W)	Stack (H)
1	5	SYM ER-1	22	22	F23 - LAY-IN T-BAR	23.75	23.75	21.25	21.25

S80P - Lay-in Ceiling

Perforated Face, Steel

Main Product
S80P



• Construction is steel.

Option Schedule

Frame F22 - LAY-IN T-BAR
Panel 00 - NONE
Fastening 00 - NO SCREW HOLES
Damper 00 - NONE
Accy 1 00 - NONE
Accy 2 00 - NONE
Accy 3 00 - NONE
Finish 44 - BRITISH WHITE

ID	Quantity	Tag	Width	Height
1	9	SYM ER-2	10	10

Dimension Table

Width	Height	Frame	Panel	Face (W)	Face (H)	Stack (W)	Stack (H)
10	10	F22 - LAY-IN T-BAR	00 - NONE	11.75	11.75	9.25	9.25

S80 - Lay-in Ceiling

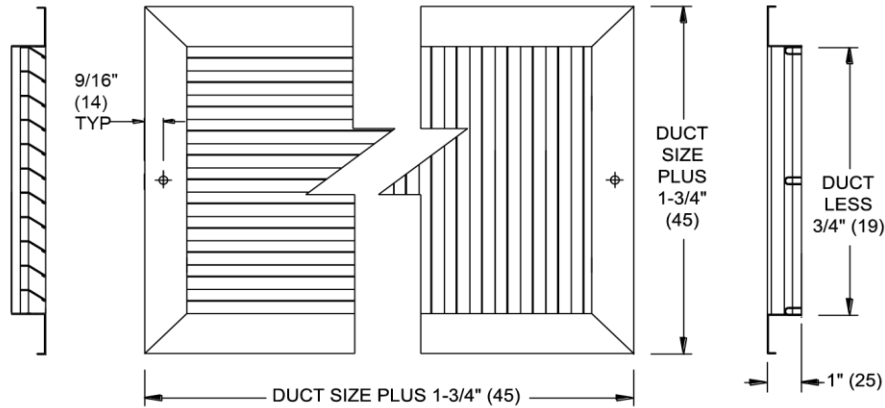
3/4" Spacing, 0° or 35° Deflection, Steel

Main Product

S80

35° HORIZONTAL BLADES
 3/4" (19) O.C.

35° VERTICAL BLADES
 3/4" (19) O.C.

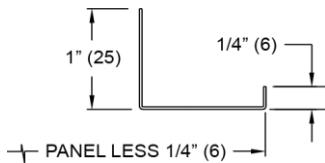


S80H

S80V

- Construction is steel.
- Support mullions are on 8 inch centers.

Feature Benefits



Option Schedule

Deflection Pattern H - HORIZONTAL
 Frame F23 - LAY-IN T-BAR
 Panel 24X24
 Fastening 00 - NO SCREW HOLES
 Damper 00 - NONE
 Finish 44 - BRITISH WHITE

Dimension Table

ID	Quantity	Tag	Width	Height	Frame	Face (W)	Face (H)	Stack (W)	Stack (H)
1	10	SYM RG-1	22	22	F23 - LAY-IN T-BAR	23.75	23.75	21.25	21.25

S80 - Hard Ceiling

3/4" Spacing, 0° or 35° Deflection, Steel

Main Product

35° HORIZONTAL BLADES
3/4" (19) O.C.

S80H

35° VERTICAL BLADES
3/4" (19) O.C.

S80V

- Construction is steel.
- Support mullions are on 8 inch centers.
- Finish #44 - British white
- Frame 22 includes a 5HCF23 surface mounting frame.

Dimension Table

ID	Quantity	Tag	Width	Height	Frame	Face (W)	Face (H)	Stack (W)	Stack (H)
2	2	SYM RG-1	22	22	F22 - SURFACE MNT	23.75	23.75	21.25	21.25

Construction Detail

5HCF23 Mounting

ADAPTER FRAME
TYP OF 4 SIDES

FRAME ASSEMBLY & INSTALLATION

ASSEMBLY PARTS

Min Ceiling Opening

24.5 x 24.5

S80 - Lay-in Ceiling

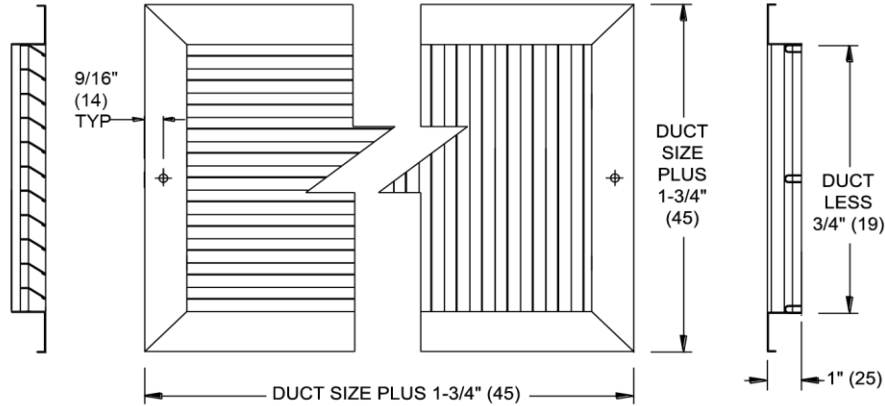
3/4" Spacing, 0° or 35° Deflection, Steel

Main Product

S80

35° HORIZONTAL BLADES
 3/4" (19) O.C.

35° VERTICAL BLADES
 3/4" (19) O.C.



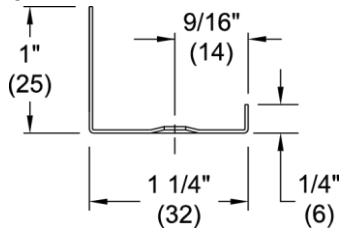
S80H

S80V

- Construction is steel.
- Support mullions are on 8 inch centers.

Feature Benefits

F22 - SURFACE MNT



Option Schedule

Deflection Pattern H - HORIZONTAL
 Frame F22 - LAY-IN T-BAR
 Panel 00 - NONE
 Fastening 00 - NO SCREW HOLES
 Damper 00 - NONE
 Finish 44 - BRITISH WHITE

Dimension Table

ID	Quantity	Tag	Width	Height	Frame	Face (W)	Face (H)	Stack (W)	Stack (H)
1	1	SYM RG-3	12	12	F22 - LAY-IN T-BAR	13.75	13.75	11.25	11.25



Submittal

8420 Washington Place NE
 Albuquerque, NM 87113
 Ph: 505.268.6776 Fx: 505.255.1329

PROJECT DATA	
PROJECT NAME	ABQ Pet Care Hospital
LOCATION	2801 Eubank Blvd.
ENGINEER	Saarem Consulting Engineers
CONTRACTOR	Hausermann Mechanical
DATE	7/14/2023
SUBMITTED BY	Joe Gutierrez Varitec Solutions 8420 Washington Place NE Albuquerque, NM 87113

<i>Air Duct Accessories: Division 23, Spec Section 23 33 00</i>				
Symbol	Manufacturer	Qty	Model	Notes:
BD	Ruskin	32	MD25	Balance Dampers for Rect duct.
BD	Ruskin	2	MD35	Balance Dampers for Rect duct.

REVISION HISTORY		
Rev 0	7/14/2023	Original

SUBMITTAL PACKAGE

Manual Dampers

Model: MD25 - Galvanized Manual Damper

ID#	Tag	Qty	Width (A)	Height (B)	Size	Construction	Axle Size	Blade Gauge	Bracket	Bearings
MD25-1	SYM BD	20	6	6	Deduct 1/4	STANDARD GALV	3/8 INCH SQUARE	STANDARD	2 Inch STAND OFF	LEXAN GE141
MD25-2	SYM BD	4	8	8	Deduct 1/4	STANDARD GALV	3/8 INCH SQUARE	STANDARD	2 Inch STAND OFF	LEXAN GE141
MD25-3	SYM BD	2	10	10	Deduct 1/4	STANDARD GALV	3/8 INCH SQUARE	STANDARD	2 Inch STAND OFF	LEXAN GE141
MD25-4	SYM BD	6	12	12	Deduct 1/4	STANDARD GALV	3/8 INCH SQUARE	STANDARD	2 Inch STAND OFF	LEXAN GE141

Model: MD35 - Manual Balancing Damper

ID#	Tag	Qty	Width (A)	Height (B)	Size	Bracket	Bearings	Operator Shaft	Actuator Type
MD35-1	SYM BD	1	14	14	Deduct 1/4	2 Inch STAND OFF	LEXAN GE141	3/8 Inch SQ SHAFT	HAND QUAD
MD35-2	SYM BD	1	16	16	Deduct 1/4	2 Inch STAND OFF	LEXAN GE141	3/8 Inch SQ SHAFT	HAND QUAD

Note:

- Quantities and Sizes listed are for submittal purposes only, to be verified prior to order.
- Submittal information is deemed correct at time of printing, however in the interest of product improvement Ruskin reserves the right to make changes without notice.

MD25

Galvanized Manual Damper



CONSTRUCTION

PERFORMANCE RATINGS

Frame	24 GA Galvanized Steel
Blade	22 GA Galvanized Steel
Bearings	Synthetic
Axle	3/8 inch square plated steel
Bracket	2 Inch Stand off

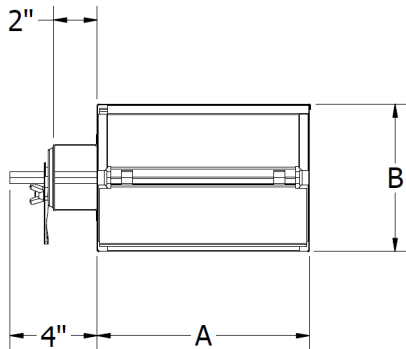
Velocity:	Up to 1,500 FPM
Temperature:	- 40°F to +250°F
Airflow	Both directions



SCHEDULE

ID#	Tag	Qty	Dimensions (Inches)			Sections		Axle Size
			Width (A)	Height (B)	Size	Wide	High	
MD25-1	SYM BD	20	6	6	Deduct 1/4	1	1	3/8 INCH SQUARE
MD25-2	SYM BD	4	8	8	Deduct 1/4	1	1	3/8 INCH SQUARE
MD25-3	SYM BD	2	10	10	Deduct 1/4	1	1	3/8 INCH SQUARE
MD25-4	SYM BD	6	12	12	Deduct 1/4	1	1	3/8 INCH SQUARE

CONSTRUCTION DETAILS



MD35

Manual Balancing Damper

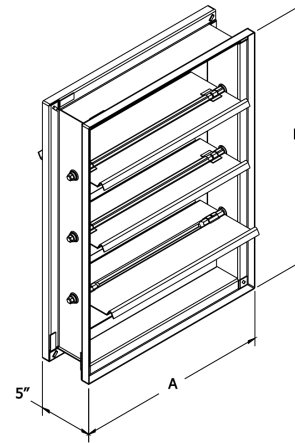


CONSTRUCTION

PERFORMANCE RATINGS

Frame	16 GA Galvanized Steel
Blades	16 GA Galvanized Steel
Blade Action	Opposed
Axles	1/2" dia. hex, plated steel
Bearings	Synthetic
Linkage	Plated steel, concealed

Velocity	Up to 1,500 FPM
Pressure	Up to 5 in. w.g.
Temperature	-40°F to +240°F
Airflow	Both directions



SCHEDULE

ID#	Tag	Qty	Dimensions (Inches)			Sections		Side Plate	Blade Stop	Operator Shaft	Actuator Type	Actuator
			Width (A)	Height (B)	Size	Wide	High					
MD35-1	SYM BD	1	14	14	Deduct 1/4	1	1	NO	YES	3/8 Inch SQ SHAFT	HAND QUAD	HQS375B
MD35-2	SYM BD	1	16	16	Deduct 1/4	1	1	NO	YES	3/8 Inch SQ SHAFT	HAND QUAD	HQS375B