

To: John Nimry GHAFARI Associates, L.L.C. 122 S Michigan Ave Chicago, IL 60603 Attn: Submittals Processing Phone: 313-984-2300 Fax: 313-984-8248 Email: jnimry@ghafari.com	From: Messer Construction Co. 9710 Bunsen Parkway, Louisville, KY 40299 Attn: Joe Metzger Phone: 502-918-0918 Fax: Email: jmetzger2@messer.com	3. Date Submitted: 9/30/24 4. Submittal No. 2 5. <input checked="" type="checkbox"/> New 6. Specification Section No. 233423 <input type="checkbox"/> Resubmittal 7. GHAFARI Project No. 2300218 8. Project Title: DHL Aircraft Maintenance Center Facility	
9. Copies	10. Item Description	11. Mfr/Contractor	12. Contractor's Remarks: 1. Messer Notes in Green 2. A/E to Verify Roofwall Openings
1	Exhaust Fans Product Data	Perfection Group	
The undersigned certifies that the above-submitted items have been reviewed in detail and are correct and in strict conformance with all requirements of the contract documents, except as otherwise noted. Note: Review of items submitted does not relieve contractor from complying with all requirements of the contract documents.			
13. Name of Contractor Messer Construction		Signature	

GHAFARI ASSOCIATES L.L.C - SUBMITTAL VERIFICATION SECTION			
If a discipline necessary for proper review is not listed, add to the distribution list and forward the submittal for review.		Comments: 1.) ROOFWALL OPENINGS TO BE COORD. BY THE CONTRACTOR WITH TRADE PARTNERS. See comments in red below.	
ACTION TAKEN			
	REVIEWED		
X	REVIEWED WITH COMMENTS		
	REVISE & RESUBMIT		
	FILE ONLY, NOT REVIEWED		
	NOT REQUESTED, NOT REVIEWED		
DISTRIBUTION			
	Architectural		Interior
	Civil		Landscape
	Structural		Tel/Data
X	Mechanical		Industrial
	Electrical		
Reviewed by & Date: V. Markovic 10/01/2024		REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. THIS OFFICE ASSUMES NO RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE SUBMITTAL. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ANY DEVIATION FROM THE CONTRACT DOCUMENTS. IF THIS SUBMITTAL DOES NOT CONFORM TO THE GHAFARI CONSTRUCTION DOCUMENTS, SUBMIT A WRITTEN EXPLANATION OF THE VARIANCE.	
GHAFARI, J.NIMRY 10/01/24			

Messer SUBMITTAL SHEET

WeAreBuilding.

Messer Construction Co.

243900-000 - DHL - Aircraft Maintenance Center

Project: 243900-000

DHL - Aircraft Maintenance Center

410 Wendell H. Ford Blvd

Erlanger, KY

41018

Spec Section Num: 233423

Submittal: 2

Revision:

Package:

Date: 9/30/24

Submittal Title: HVAC Power Ventilators - Exhaust Fans

Submittal Detail: Product Data for All EF's (Except 101-06)

Response Due By:

Contractor:
Joe Metzger
Messer Construction

Contractor's Stamp

REVIEWED FOR SUBMITTAL Messer <small>WeAreBuilding.</small>
Submittal Number: <u>2</u>
Messer Job #: <u>243900-000</u>
Date: <u>9/30/24</u>
Reviewed By: <u>Joe Metzger</u>

Architect:

Architect's Stamp

Response:

Comment:

SUBMITTAL SHEET

DHL – Hanger Addition

410 Wendell H. Ford Blvd.
Erlanger, KY 41018

Architect: NA

Engineer: Ghafari

GC: Messer Construction

Title: Exhaust Fan cut sheet submittal

 PERFECTION GROUP
<input type="checkbox"/> Approved as Submitted
<input checked="" type="checkbox"/> Submitted for Approval
<input type="checkbox"/> Revise and Resubmit
Job # 241054
Date: <u>9-30-24</u>
Signed: <u>Eric J. Rice</u>
Eric J. Rice

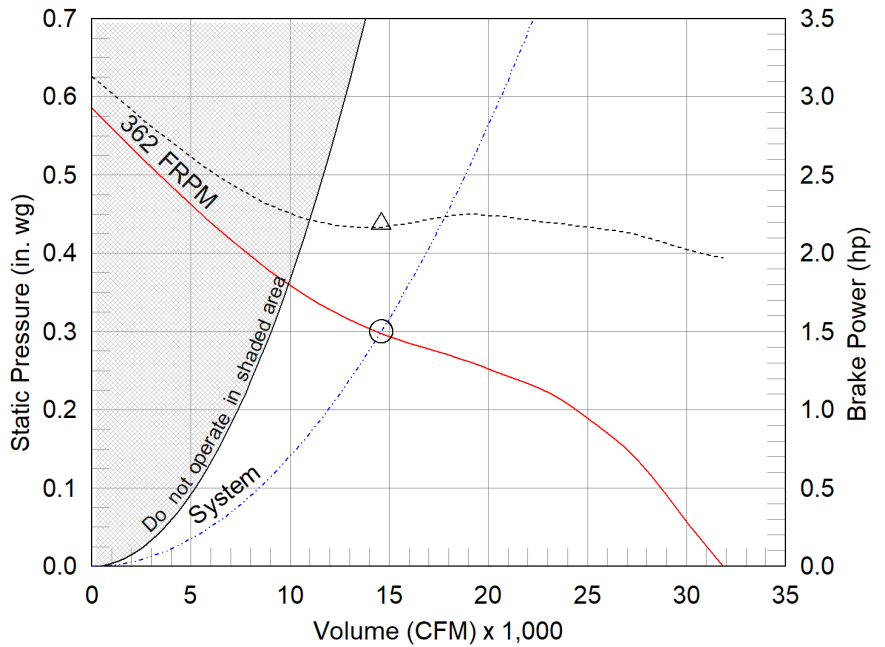
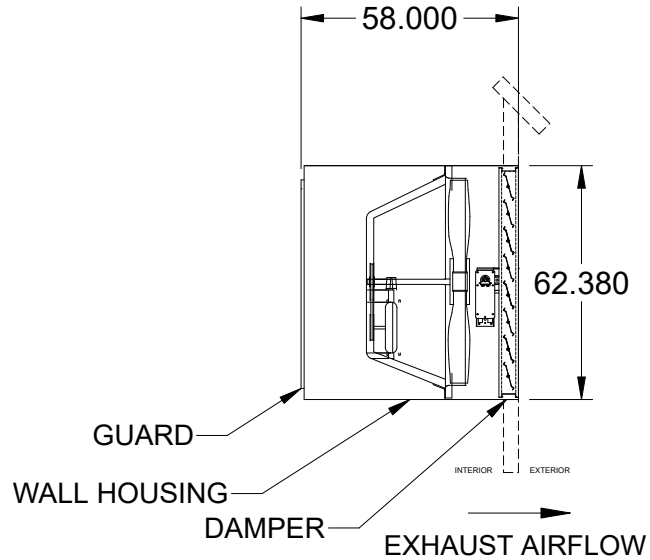
Model: SBE-2L54-20

Sidewall Belt Drive Fan
Motor Access From Int. of Bldg.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	228
Weight w/ Acc's (lb)	753
Max T Motor Frame Size	184
Optional Damper (in.)	56 x 56
Wall Opening (in.)	63.75 x 63.75

Performance	
Requested Volume (CFM)	14,600
Actual Volume (CFM)	14,600
Total External SP (in. wg)	0.3
Fan RPM	362
Operating Power (hp)	2.19
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	4.7
Tip Speed (ft/min)	5,123
Static Eff. (%)	33

Motor	
Motor Mounted	Yes
Size (hp)	2
Voltage/Cycle/Phase	460/60/3
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	NEMA Premium
Windings	1
NEC FLA* (Amps)	3.4



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	90	86	81	78	74	70	65	62	80	69	18.2



Model: SBE-2L54-20

Sidewall Belt Drive Fan

"Greenheck model BAER with a fabricated steel propeller meets or exceeds models SBE/SBS performance and can be considered a direct replacement for these models."

Standard Construction Features:

- Galvanized steel fan panel - Die formed, galvanized steel drive frame assembly
- Fabricated steel propeller for Levels 1 and 2, welded and painted steel for Level 3
- Adjustable motor pulley - Ball bearing motors - Fan shaft mounted in ball bearing pillow blocks - Static resistant belts - Corrosion resistant fasteners

Selected Options & Accessories:

"Greenheck model BAER with a fabricated steel propeller meets or exceeds models SBE/SBS performance and can be considered a direct replacement for these models."

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor with Thermal Overload

Spare Belt(s) - 1 Set (Attached)

UL/cUL 705 Listed - "Power Ventilators"

Airflow Direction: Exhaust

Long Wall Hsg, Flush Exterior, w/OSHA Grd., Factory Installed

Motor Access: From Int. of Bldg.

Switch, NEMA-1, Toggle,

Junction Box Mounted & Wired

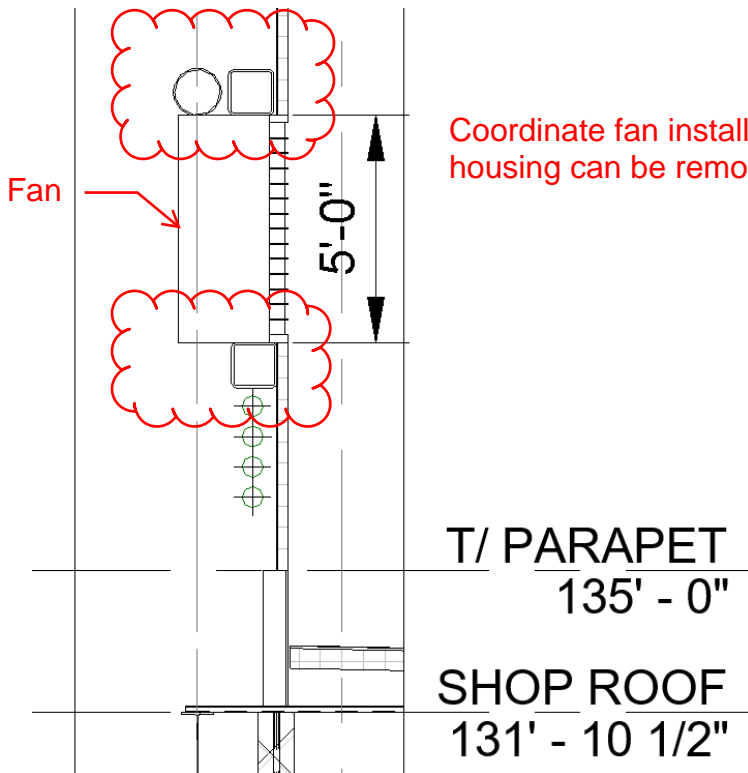
Bearings with Grease Fittings

Unit Warranty: 1 Yr (Standard)

Damper Mounted, VCD-23-PB-56X56, Not Coated

Damper Actuator (GVD226.1U), 115 VAC Actuated

End Switch



Coordinate fan installation with structural bracing and confirm housing can be removed if needed for the fan to fit.

Disconnect Switch

Enclosure Rating: NEMA-1

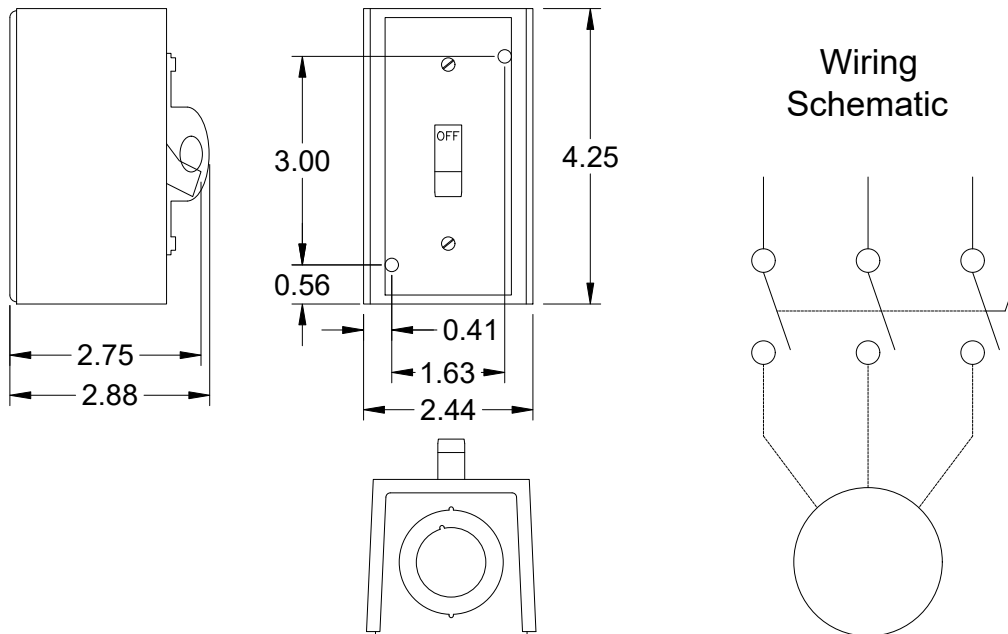
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

Disconnect Switch Configuration

Type:	Toggle	Motor Size:	2 hp	Voltage:	460	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	None	Phase:	3	Switch Pole(s):	3	Rating:	10 hp
Junction Box Mtg.:	Mounted and Wired	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

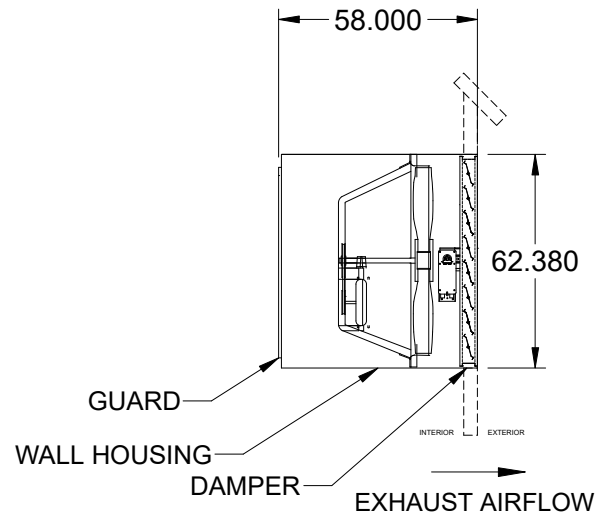
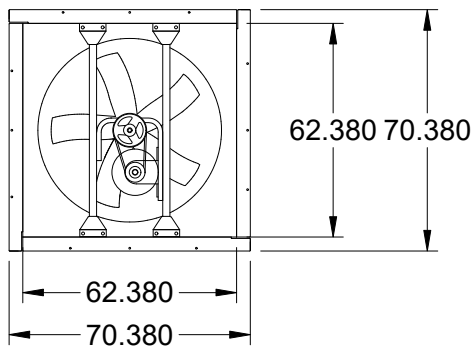
Electrical Drawing Details



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Sidewall Belt Drive Fan



END VIEWED FROM INTERIOR
END VIEW DIMENSIONS ARE FOR HOUSING NOT FAN PANEL
WALL OPENING 63.75 SQ.
MOTOR IS ACCESSIBLE FROM INTERIOR OF BUILDING
THIS IS AN EXHAUST FAN DUE TO MOTOR ORIENTATION

Coordinate fan installation with structural bracing and confirm housing can be removed if needed for the fan to fit.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

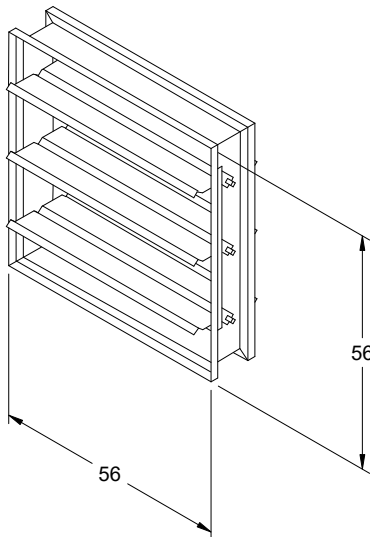
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

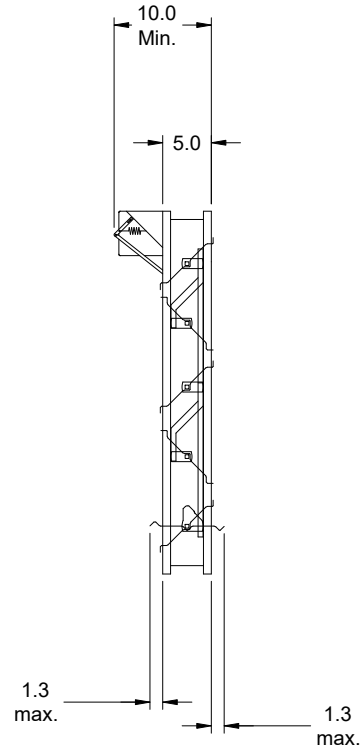
Model: GVD226.1U

Mounting: Internal

Quantity: 1



DAMPER



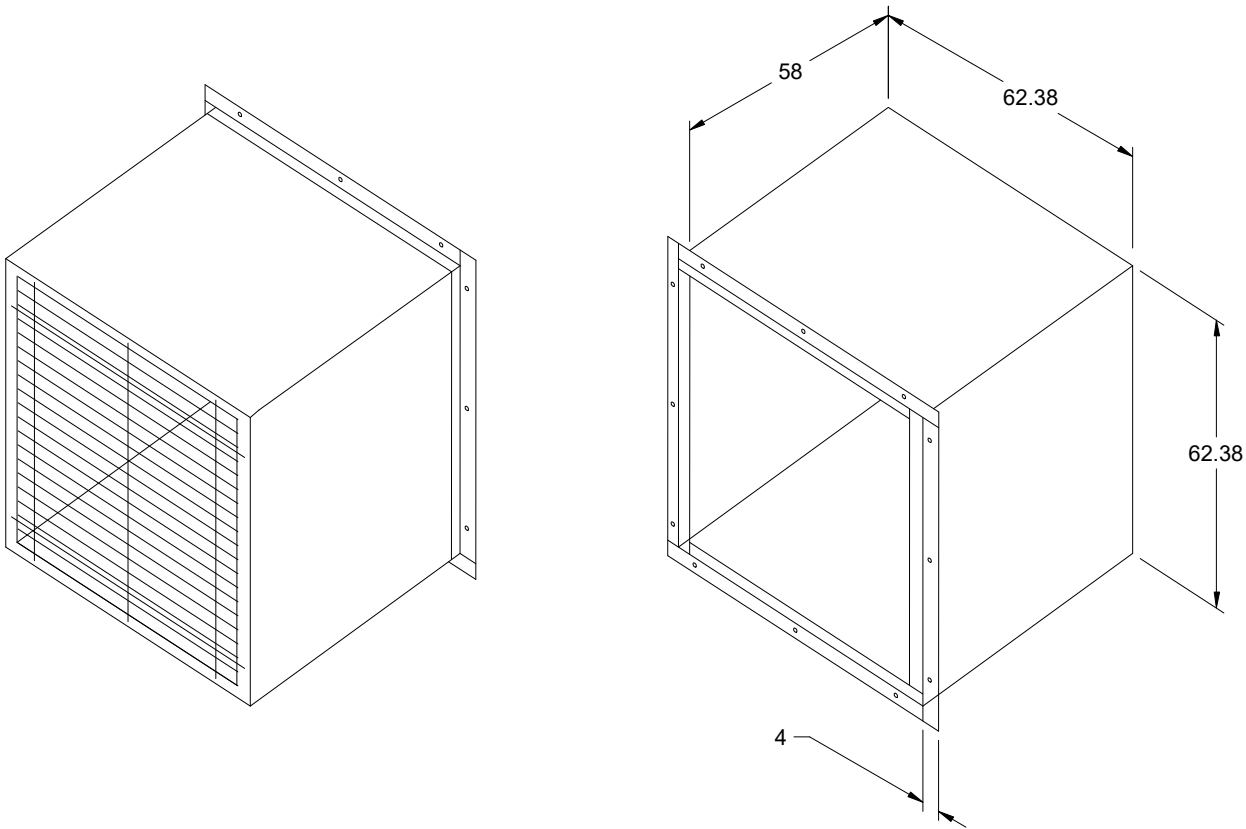
TYP. SECTION VIEW

Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

Long Wall Housing

Standard Construction Features:

- Galvanized steel construction - Heavy gauge mounting flanges - Pre-punched mounting holes - Inside flanges allow damper to be mounted - Overlapping weatherhood flange keeps rain out - OSHA Protective guard of welded steel wire completely protects the drive side of the wall housing.



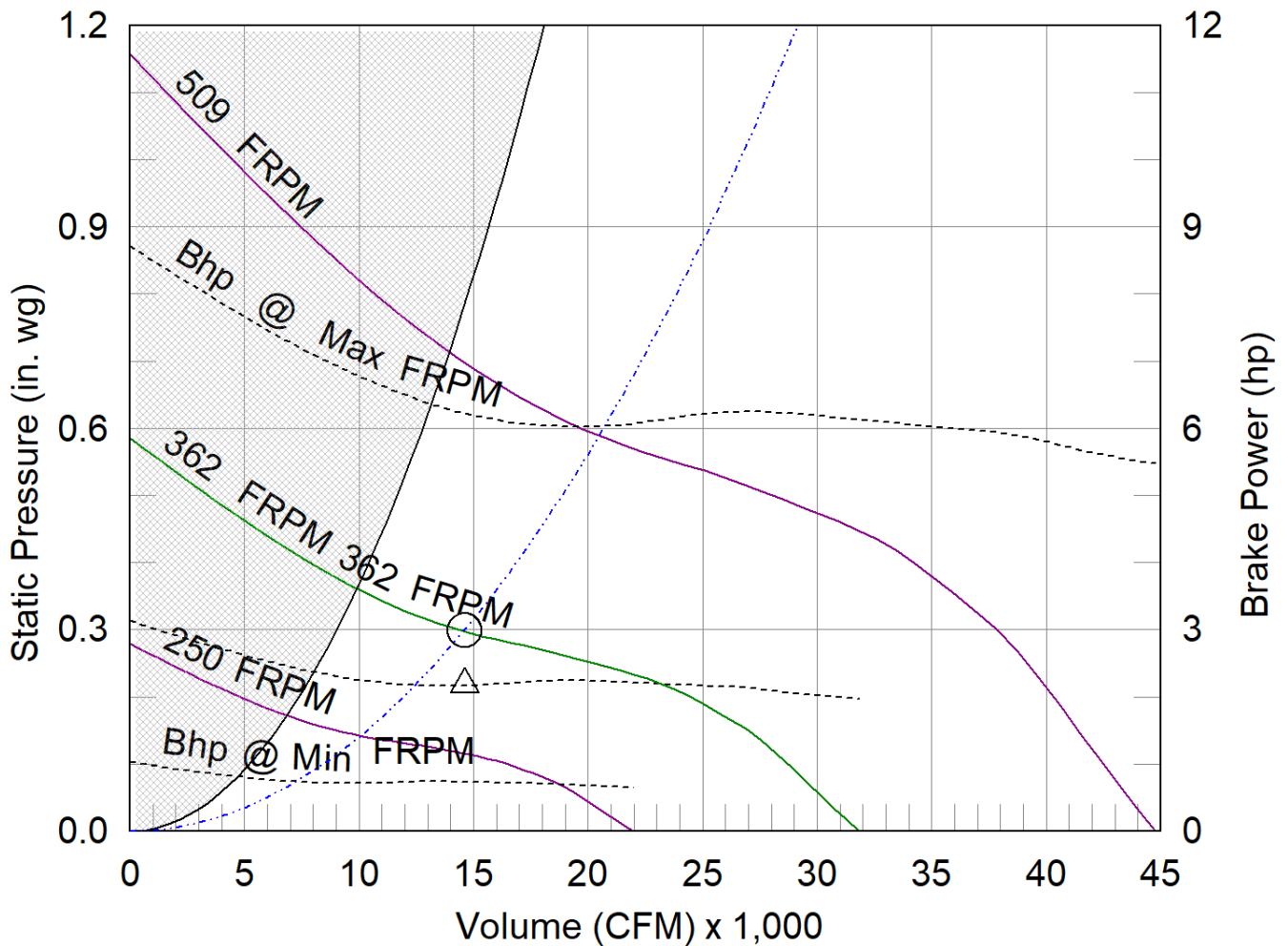
Notes: All dimensions shown are in units of in.

SBE-2L54-20

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
14,600	14,600	0.3	362	2.19



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance and FEI ratings. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA certified ratings seal applies to sound and air performance and FEI ratings only. FEI calculation is based on default motor calculation in accordance with ANSI/AMCA Standard 208. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. The A-Weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to LwiA and inlet sone ratings only.

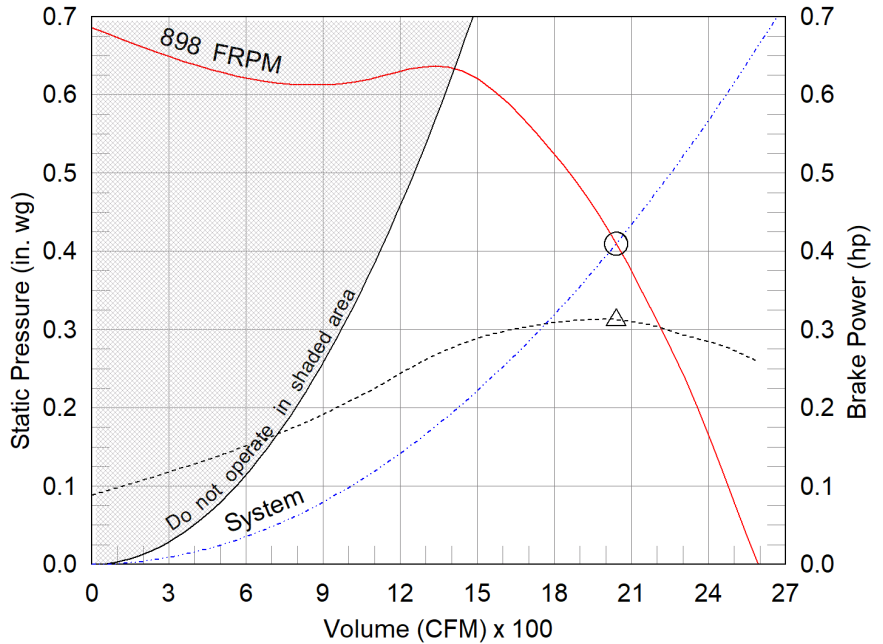
Model: BSQ-160
Belt Drive Centrifugal Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	131
Weight w/ Acc's (lb)	161
Max T Motor Frame Size	184

Performance	
Requested Volume (CFM)	2,040
Actual Volume (CFM)	2,040
Total External SP (in. wg)	0.41
Fan RPM	898
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.8
Tip Speed (ft/min)	3,909
Static Eff. (%)	47

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	568

Motor	
Motor Mounted	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- Brake horsepower curve

Nameplate Model: BSQ-160-X

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	74	76	72	68	60	58	52	47	69	58	8.7
Radiated	77	77	68	62	52	43	34	31	65	54	6.9

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft



Model: BSQ-160

Belt Drive Centrifugal Inline Fan

Greenheck model SQ Mixed Flow meets or exceeds legacy centrifugal models SQ/BSQ in performance and features. SQ Mixed flow is an approved equal and can be considered a direct replacement for these models.

Standard Construction Features:

- Galvanized steel housing - Backward inclined aluminum wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Static free belts - Corrosion resistant fasteners

Selected Options & Accessories:

Spare Belt(s) - 1 Set (Attached)

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Shipped Separate,

Motor Cover

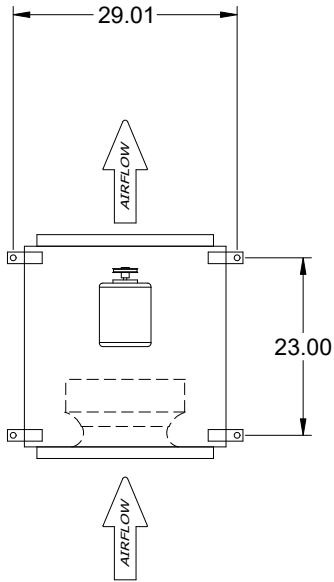
Fan: Spring, Hanging, 1 Inch Isolator PN: 850344, Incl. 4 isolators and 4 brackets

Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)

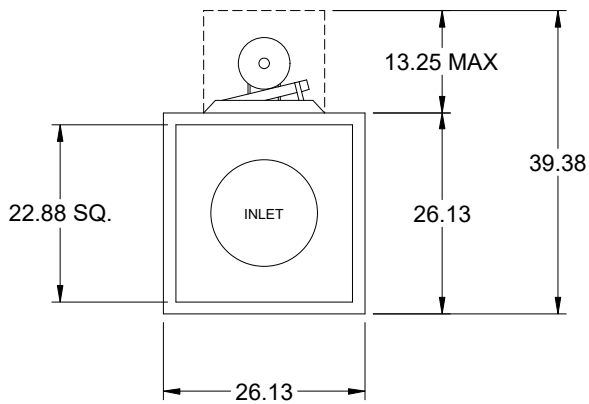
Unit Warranty: 1 Yr (Standard)

BSQ-160

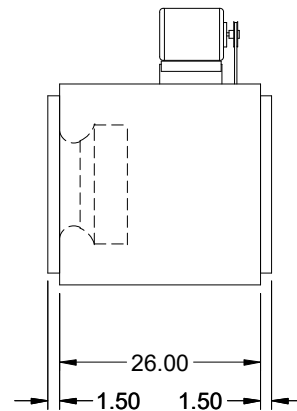
Belt Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

Disconnect Switch

Enclosure Rating: NEMA-1

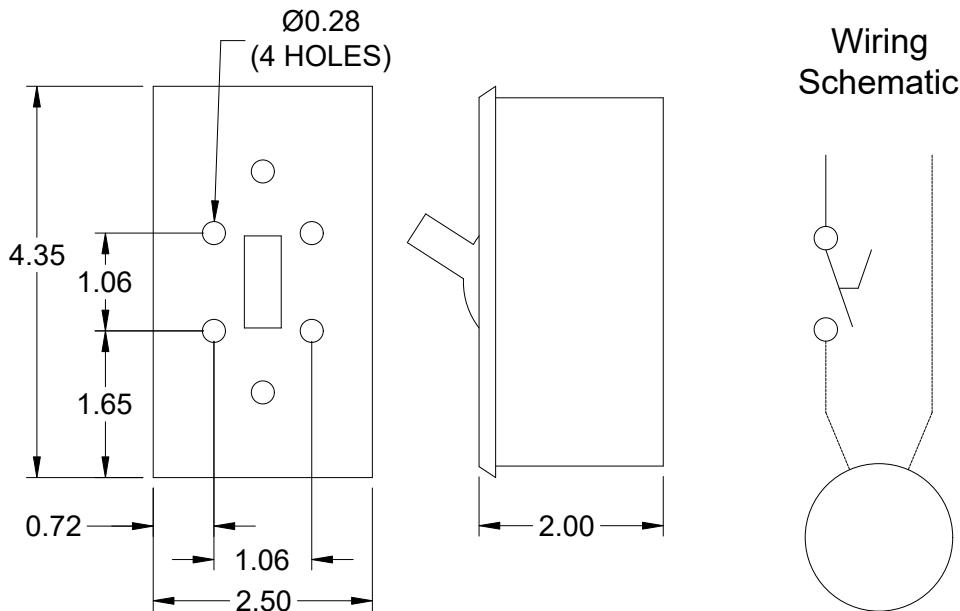
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Pass and Seymour	Cycle:	60	Amperage:	15	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	1	Rating:	1/2 hp
Junction Box Mtg.:	Ship Separate	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped Separate						

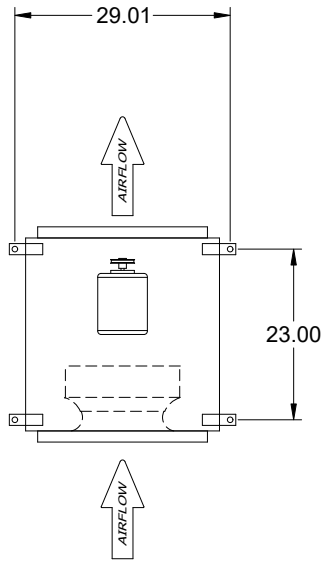
Electrical Drawing Details



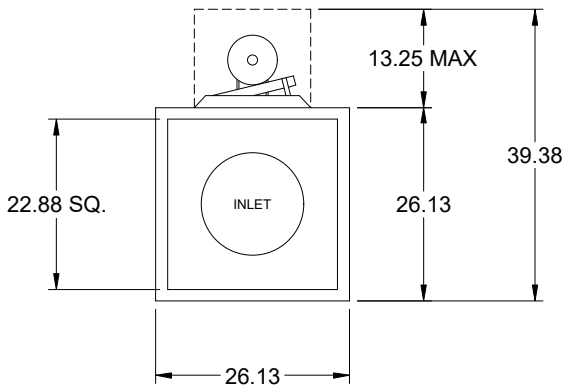
Notes: All dimensions shown are in units of in.

Assembly Drawing

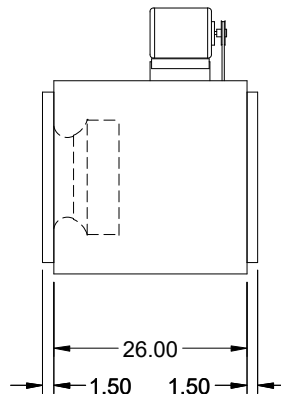
Type: Belt Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in..

Fan Isolator

Type: Spring, Hanging, 1 Inch

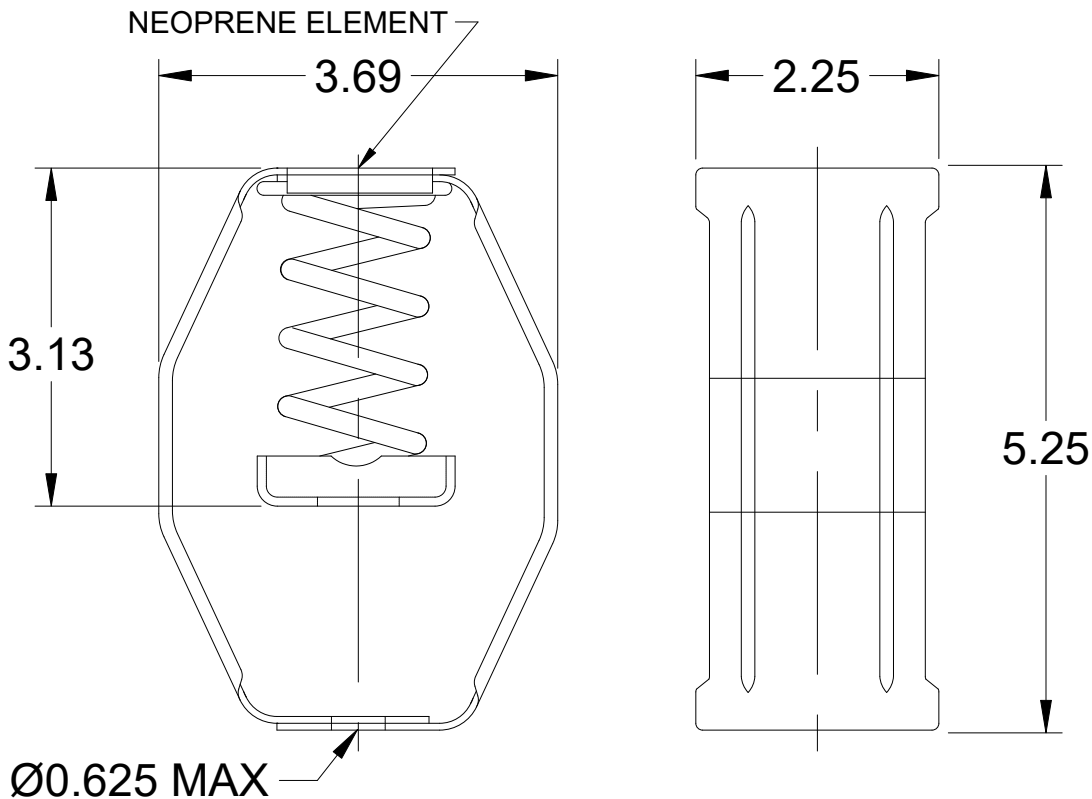
Standard Construction Features:

The spring hanging isolator is designed to reduce the transmission of vibration and noise produced by suspended equipment and piping. To assure stability, the spring element has a minimum lateral stiffness of 1.0 times the rated vertical stiffness. The hanger will allow a support rod misalignment through a 30 degree arc and the isolation brackets will carry a 500% overload without failure. The isolator has an epoxy powder coated bracket and spring coil which is color coded according to the load capacity and has a noise isolation pad, all which is assembled into a stamped or welded hanger bracket. This part number includes 4 isolators.

Isolator Configuration

Description:	SH-1-70	Color:	Green
Manufacturer:	Kinetics Noise Control	Mounting:	Hanging
Load Capacity:	70 lb	Kit Part Number:	850344
Deflection at Full Load:	1.36	Selection Deflection (in.):	0.33

Spring, Hanging, 1 Inch Deflection - Vibration Isolator



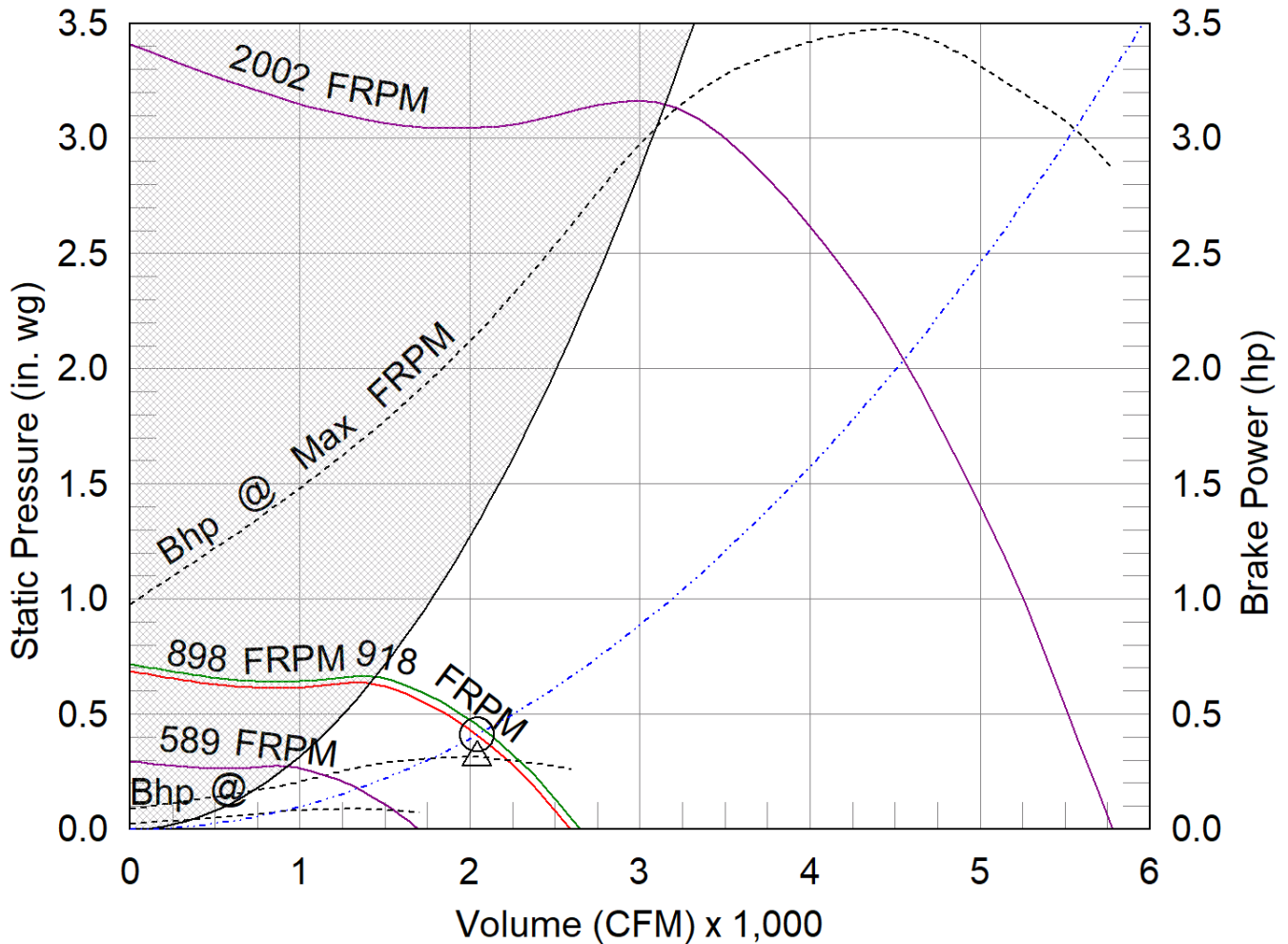
Notes: All dimensions shown are in units of in.

BSQ-160

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,040	2,040	0.41	898	0.31



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

AMCA

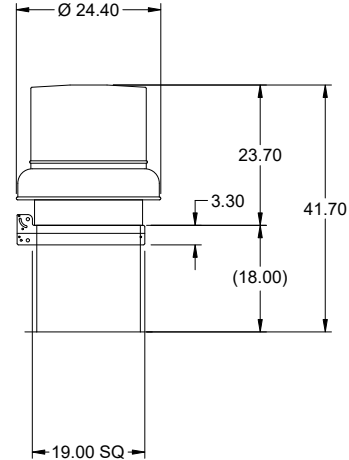


AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type B: Free inlet, Ducted outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The inlet sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to inlet sone ratings only. Radiated (casing) sound data is the sound generated through the fan housing when the fan is ducted on both the inlet and outlet.

Model: GB-100-4
Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-101-4



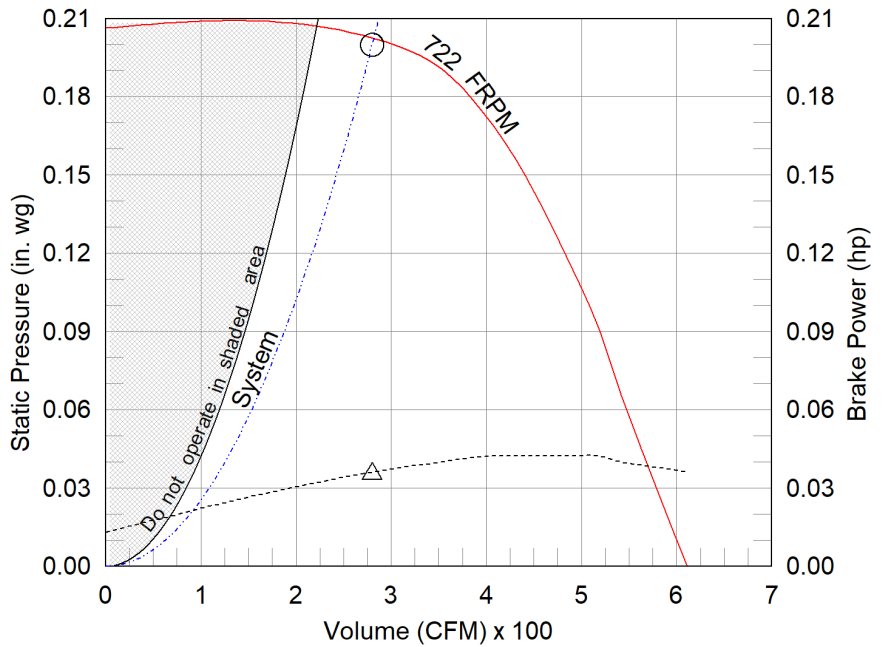
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	48
Weight w/ Acc's (lb)	68
Weight w/ Acc's and Curb (lb)	95
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	280
Actual Volume (CFM)	280
Total External SP (in. wg)	0.2
Fan RPM	722
Operating Power (hp)	0.04
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	50.0
Tip Speed (ft/min)	2,102
Static Eff. (%)	50

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	311

Motor	
Motor Included	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	5.8
Min. Circuit Ampacity (MCA)	7.25
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	55	46	59	40	34	32	23	12	51	39	1.9



Model: GB-100-4

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, WD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-19-G18

Disconnect Switch

Enclosure Rating: NEMA-1

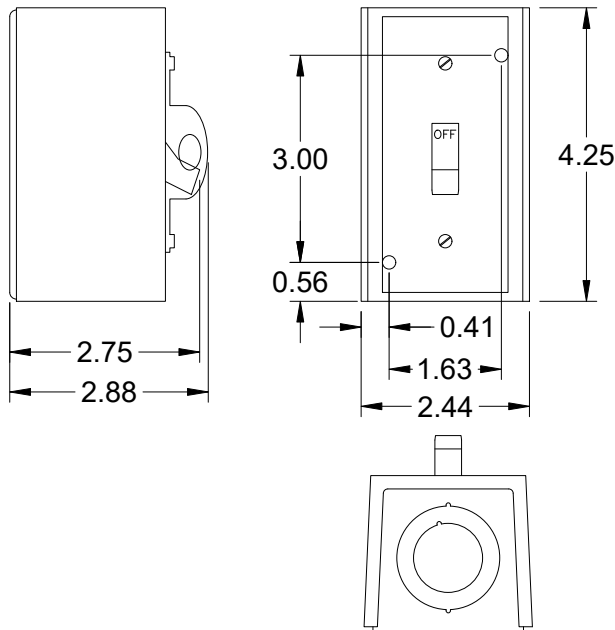
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

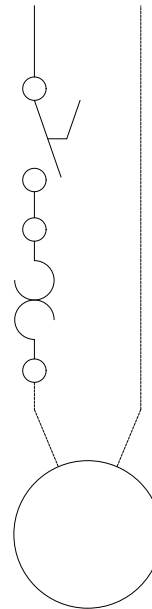
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



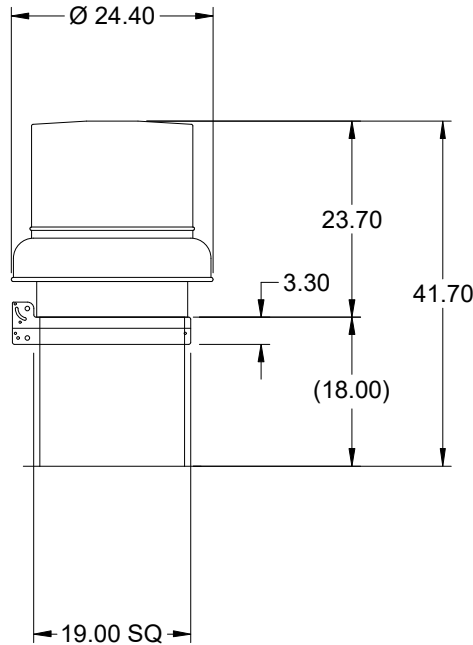
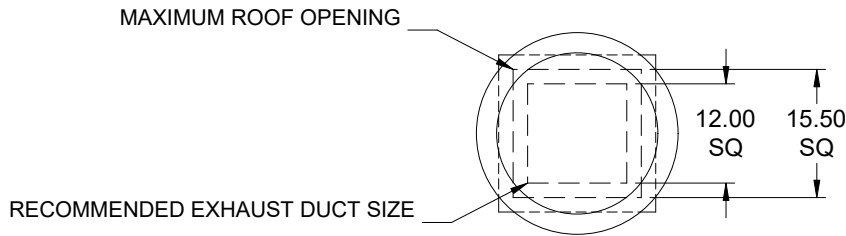
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

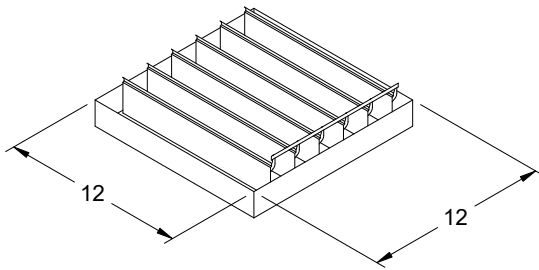
Notes: All dimensions shown are in units of in..

Horizontal Mount Exhaust Damper

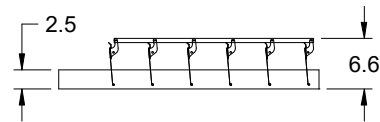
Model: WD-100

Standard Construction Features:

- Model WD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening - Steel axles are 0.188 in. diameter zinc plated mounted in nylon bushings - Synthetic axle bearings



DAMPER



TYP. SECTION VIEW

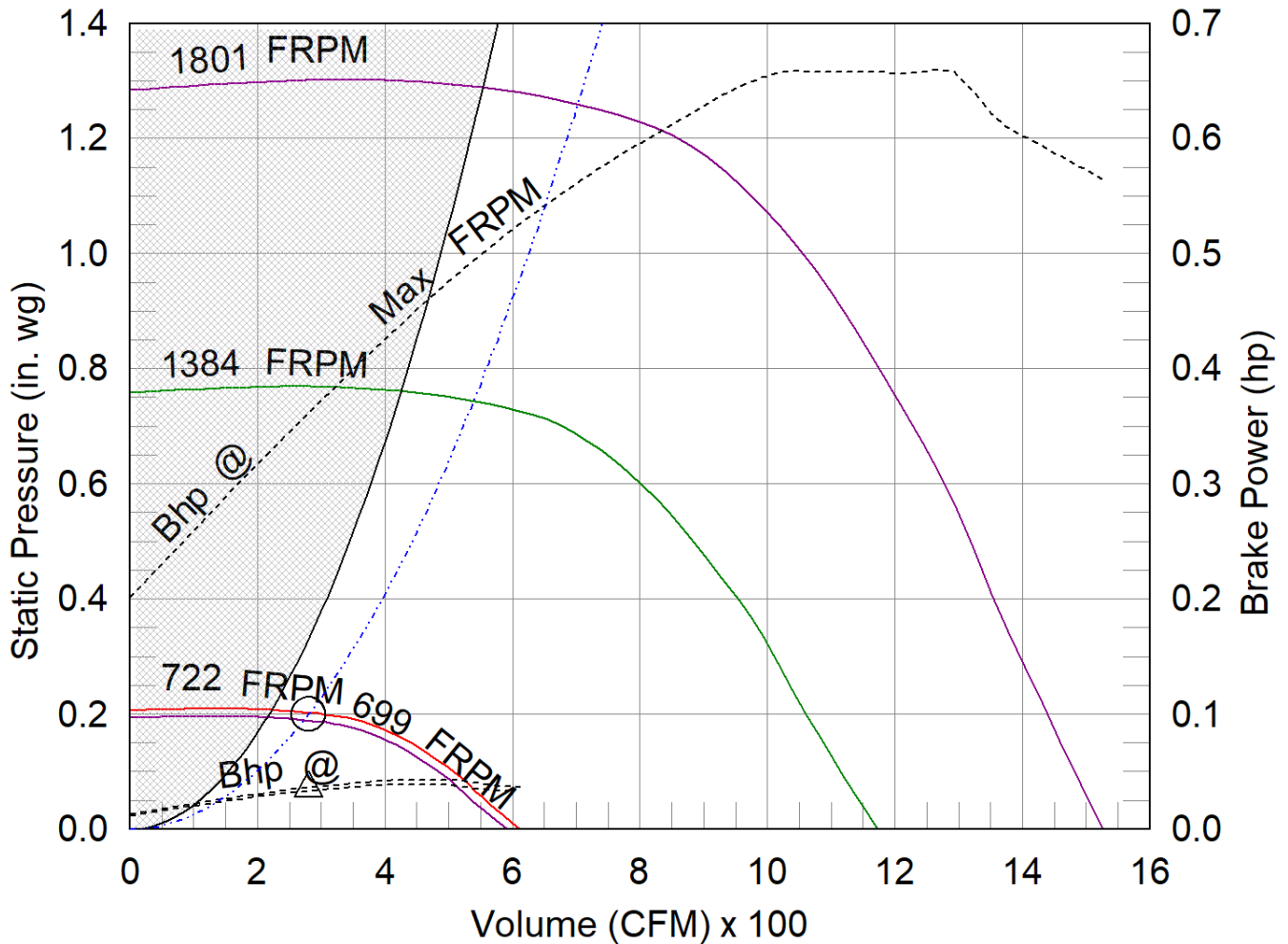
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.125 in. undersize

GB-100-4

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
280	280	0.2	722	0.04



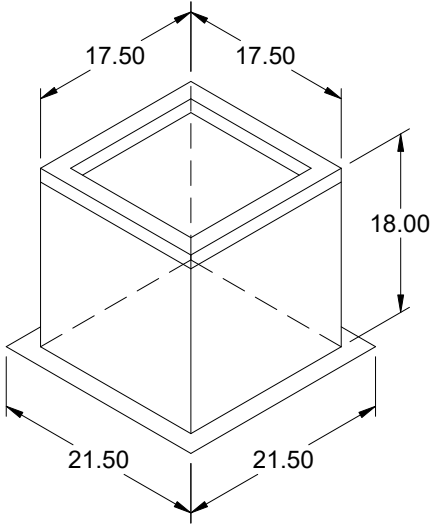
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

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Model: GPI Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

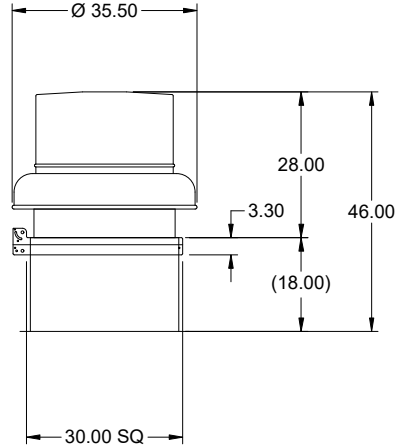
Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-180-3
Belt Drive Centrifugal Roof Exhaust Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	92
Weight w/ Acc's (lb)	156
Weight w/ Acc's and Curb (lb)	205
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,500
Actual Volume (CFM)	2,500
Total External SP (in. wg)	0.3
Fan RPM	759
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.9
Tip Speed (ft/min)	3,674
Static Eff. (%)	43

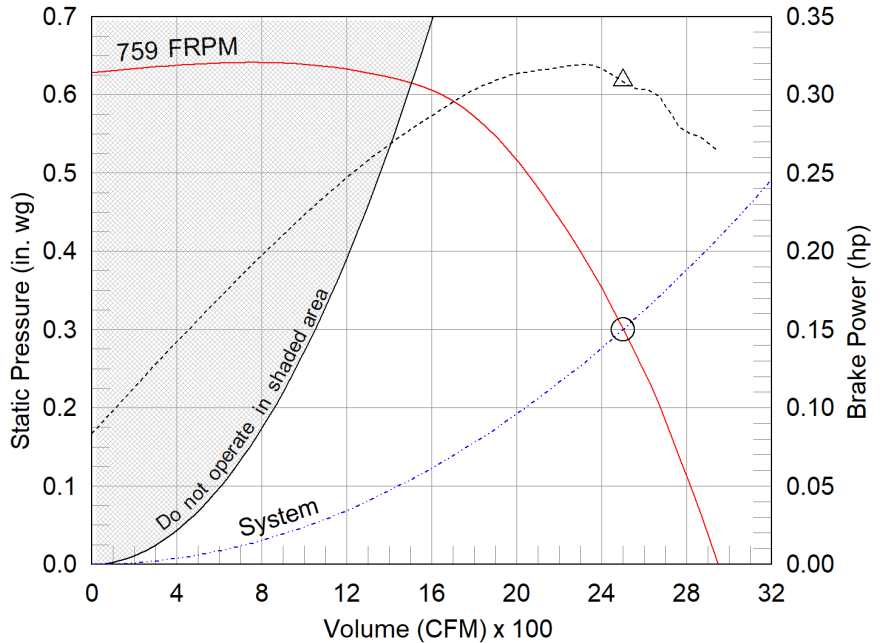
Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	1,208

Motor	
Motor Included	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	69	63	63	58	48	42	68	56	7.6

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-24X24, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See *individual submittals for full details*
GPI-30-G18

Disconnect Switch

Enclosure Rating: NEMA-1

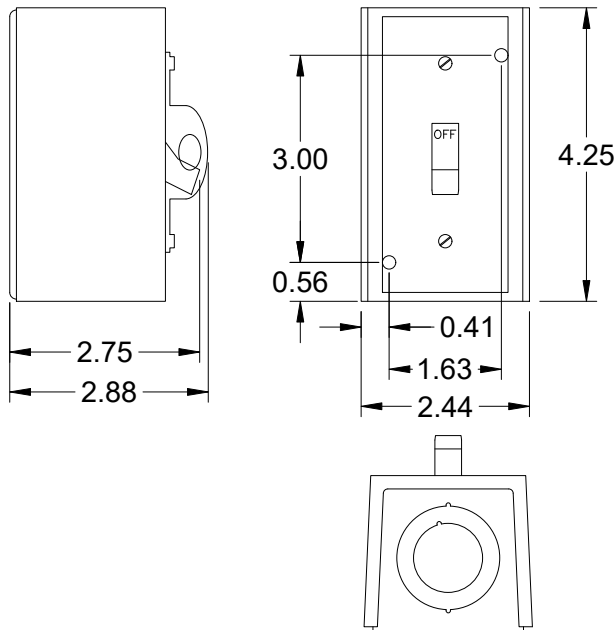
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

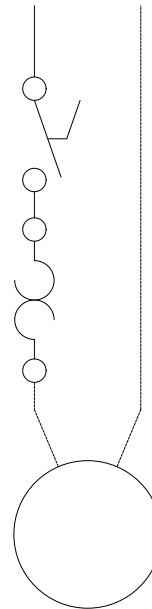
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



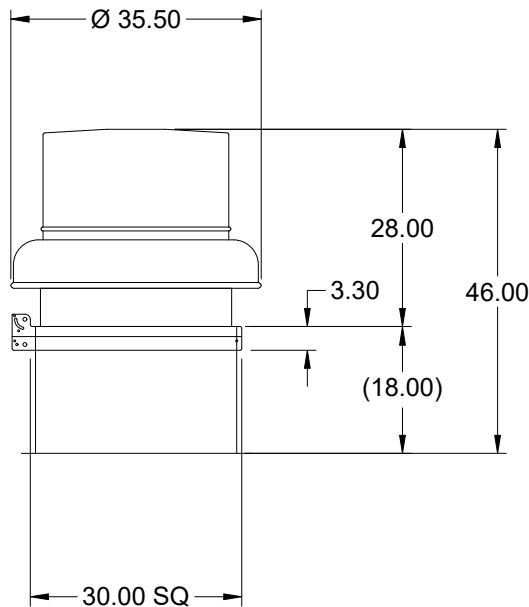
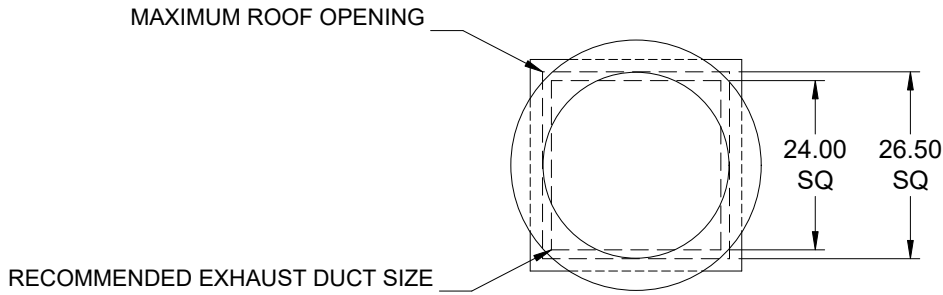
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

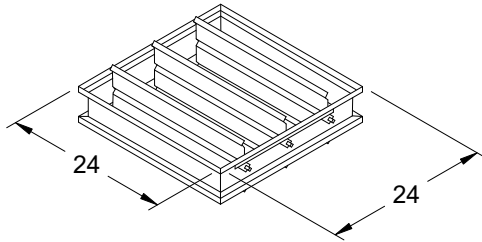
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

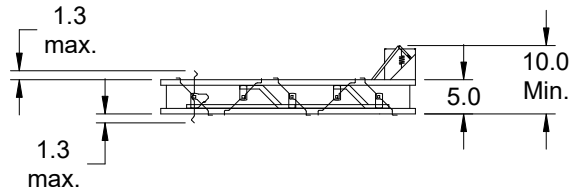
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

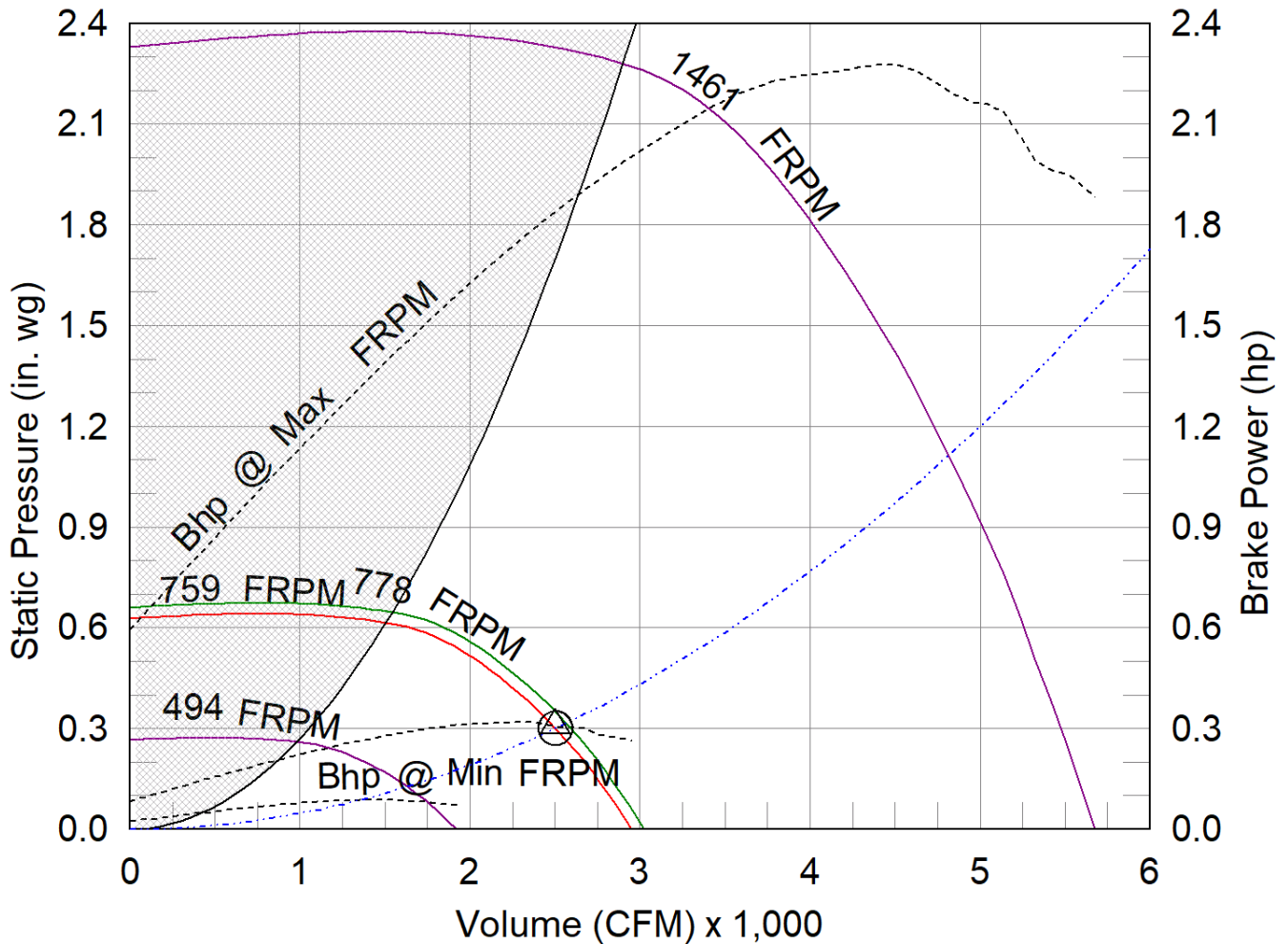
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-180-3

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,500	2,500	0.3	759	0.31



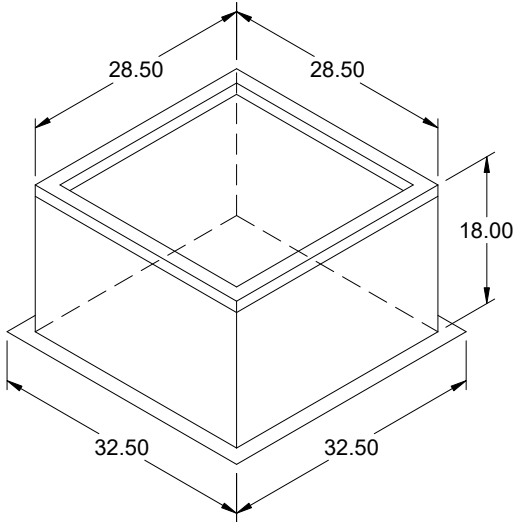
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

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Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

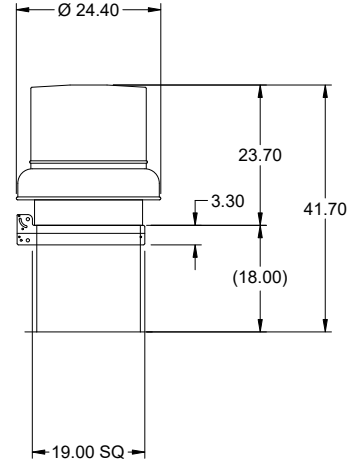
*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-100-4
Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-101-4



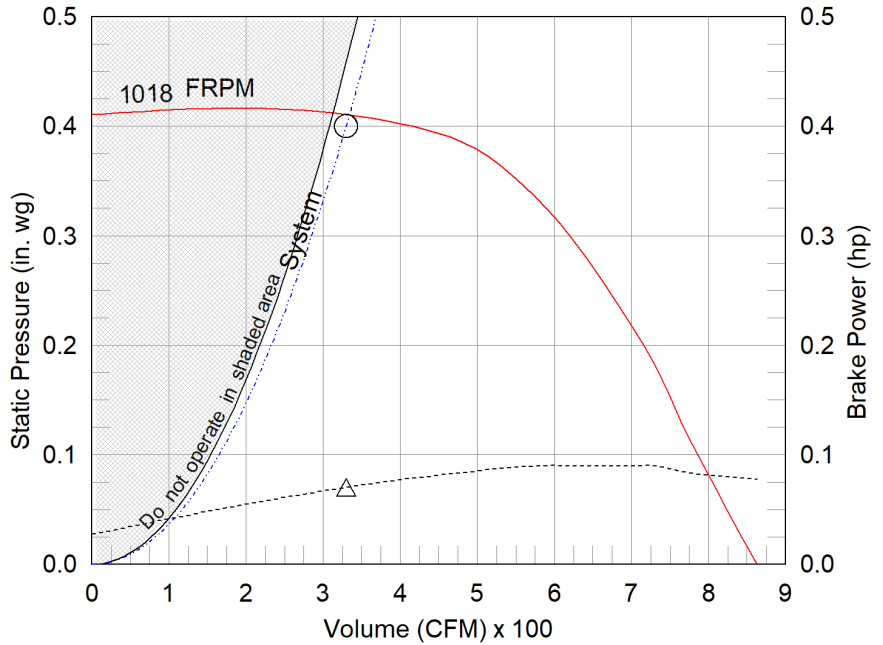
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	48
Weight w/ Acc's (lb)	85
Weight w/ Acc's and Curb (lb)	112
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	330
Actual Volume (CFM)	330
Total External SP (in. wg)	0.4
Fan RPM	1018
Operating Power (hp)	0.07
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	33.9
Tip Speed (ft/min)	2,965
Static Eff. (%)	47

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	367

Motor	
Motor Included	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	5.8
Min. Circuit Ampacity (MCA)	7.25
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	60	57	60	48	40	38	32	24	53	42	2.9



Model: GB-100-4

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-12X12, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-19-G18

Disconnect Switch

Enclosure Rating: NEMA-1

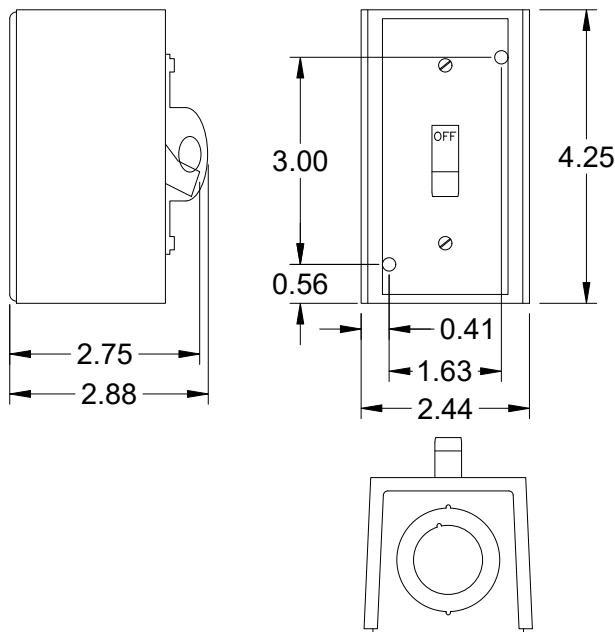
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

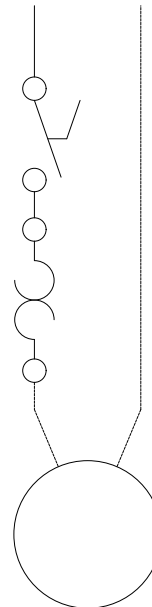
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



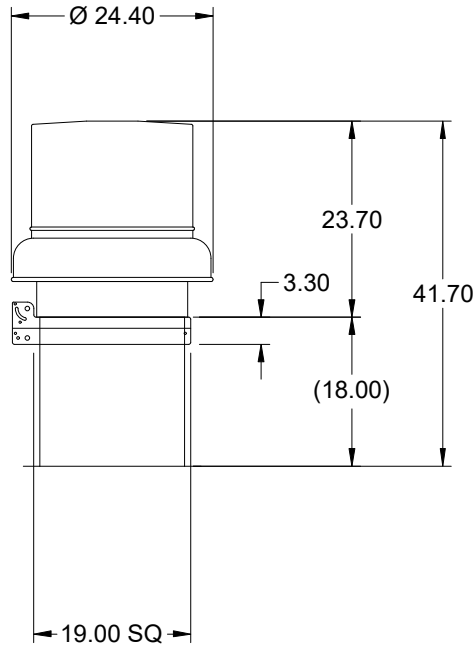
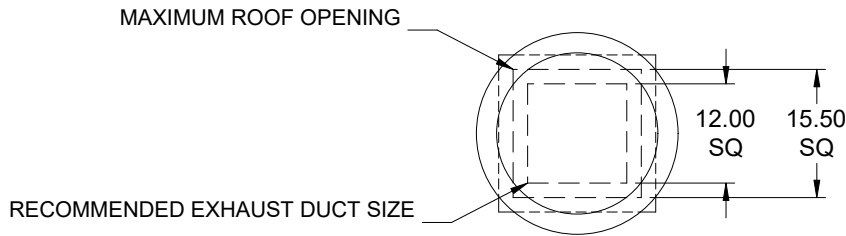
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

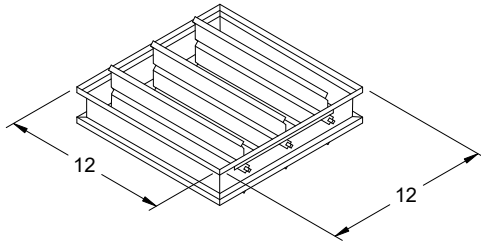
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

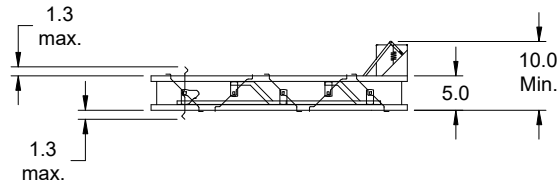
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

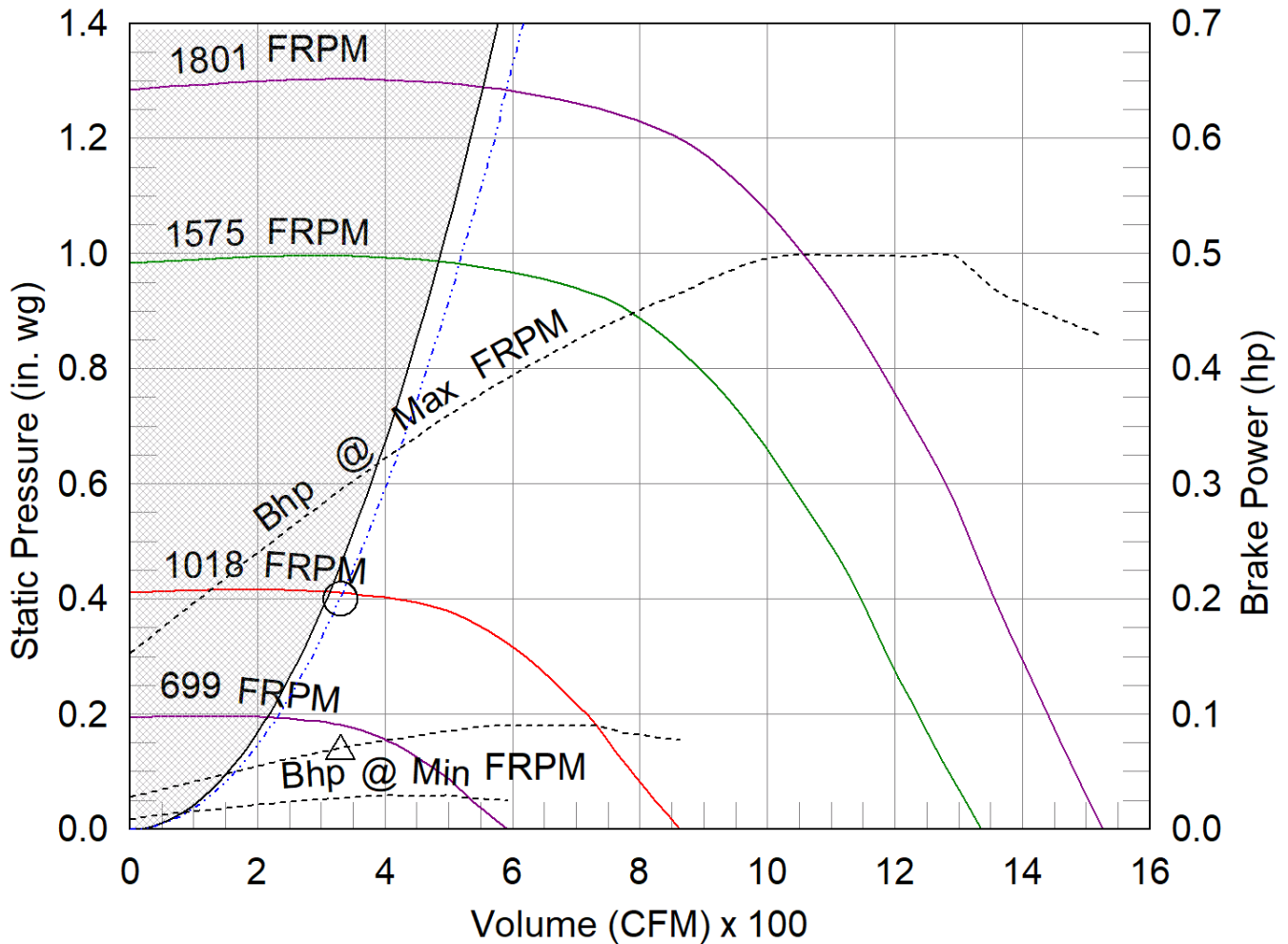
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-100-4

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
330	330	0.4	1018	0.07



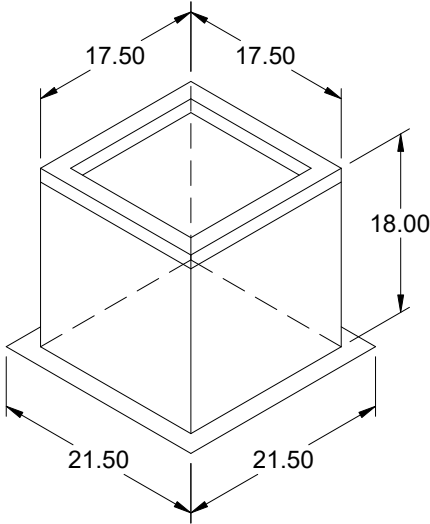
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

AMCA



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Model: GPI Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

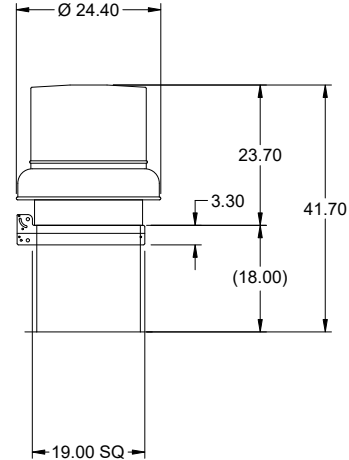
*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-100-4
Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-101-4



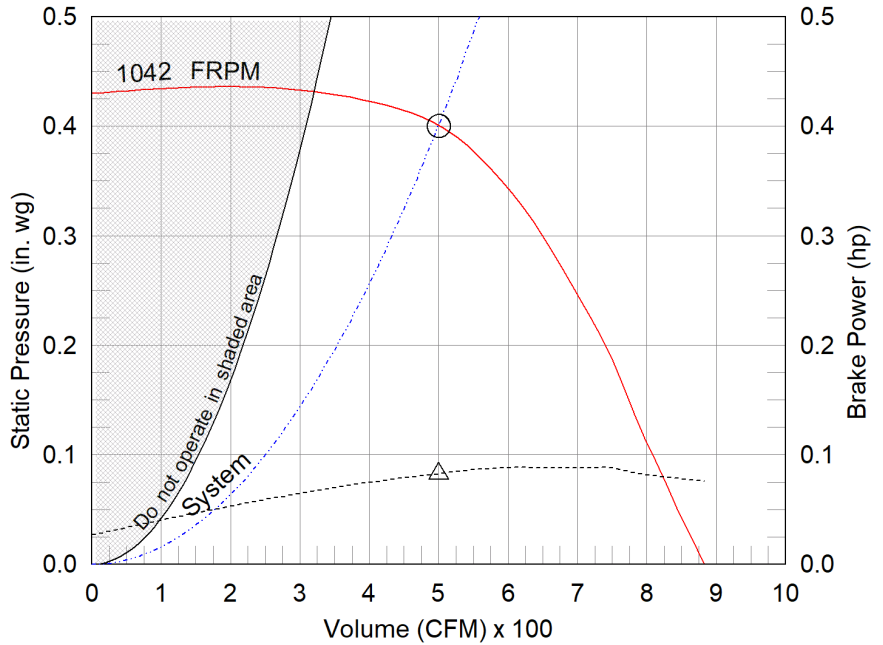
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	48
Weight w/ Acc's (lb)	68
Weight w/ Acc's and Curb (lb)	95
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	500
Actual Volume (CFM)	500
Total External SP (in. wg)	0.4
Fan RPM	1042
Operating Power (hp)	0.08
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	27.8
Tip Speed (ft/min)	3,034
Static Eff. (%)	53

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	556

Motor	
Motor Included	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	5.8
Min. Circuit Ampacity (MCA)	7.25
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	65	62	62	53	45	43	37	29	56	45	3.8



Model: GB-100-4

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, WD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-19-12-G18

Disconnect Switch

Enclosure Rating: NEMA-1

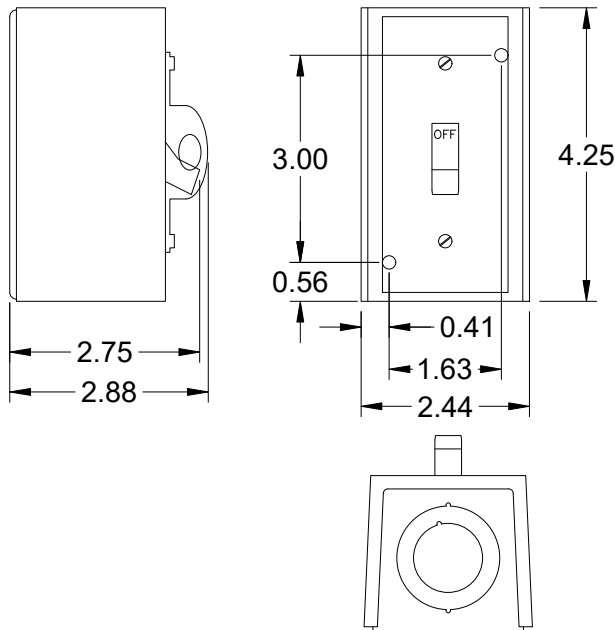
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

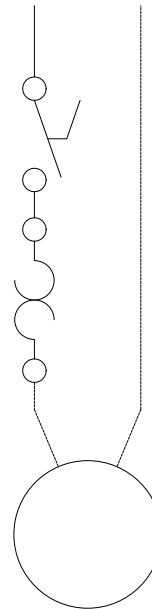
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



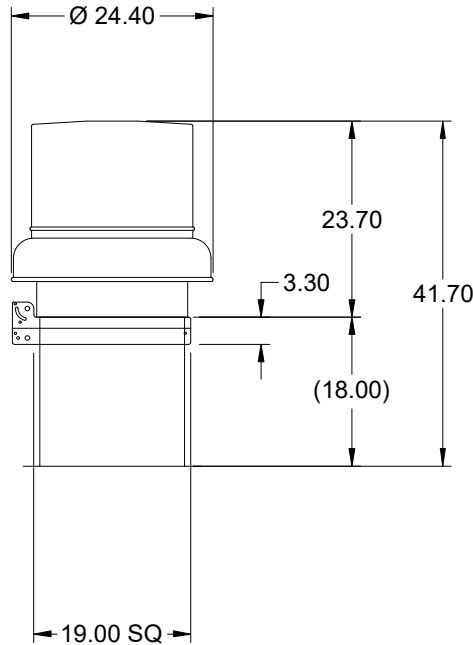
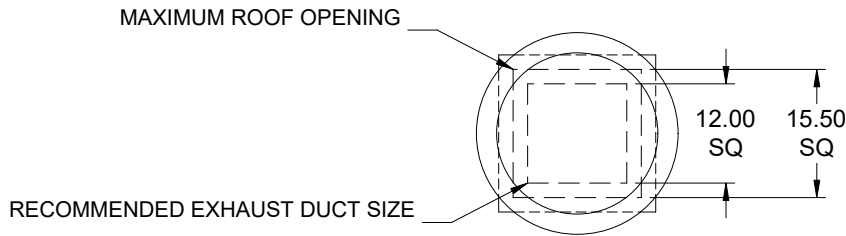
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

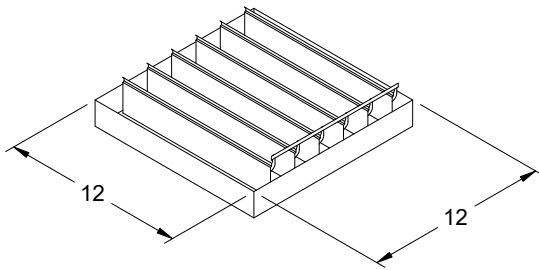
Notes: All dimensions shown are in units of in..

Horizontal Mount Exhaust Damper

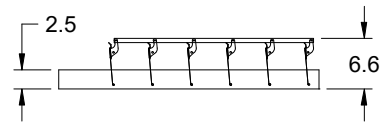
Model: WD-100

Standard Construction Features:

- Model WD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Steel axles are 0.188 in. diameter zinc plated mounted in nylon bushings
- Synthetic axle bearings



DAMPER



TYP. SECTION VIEW

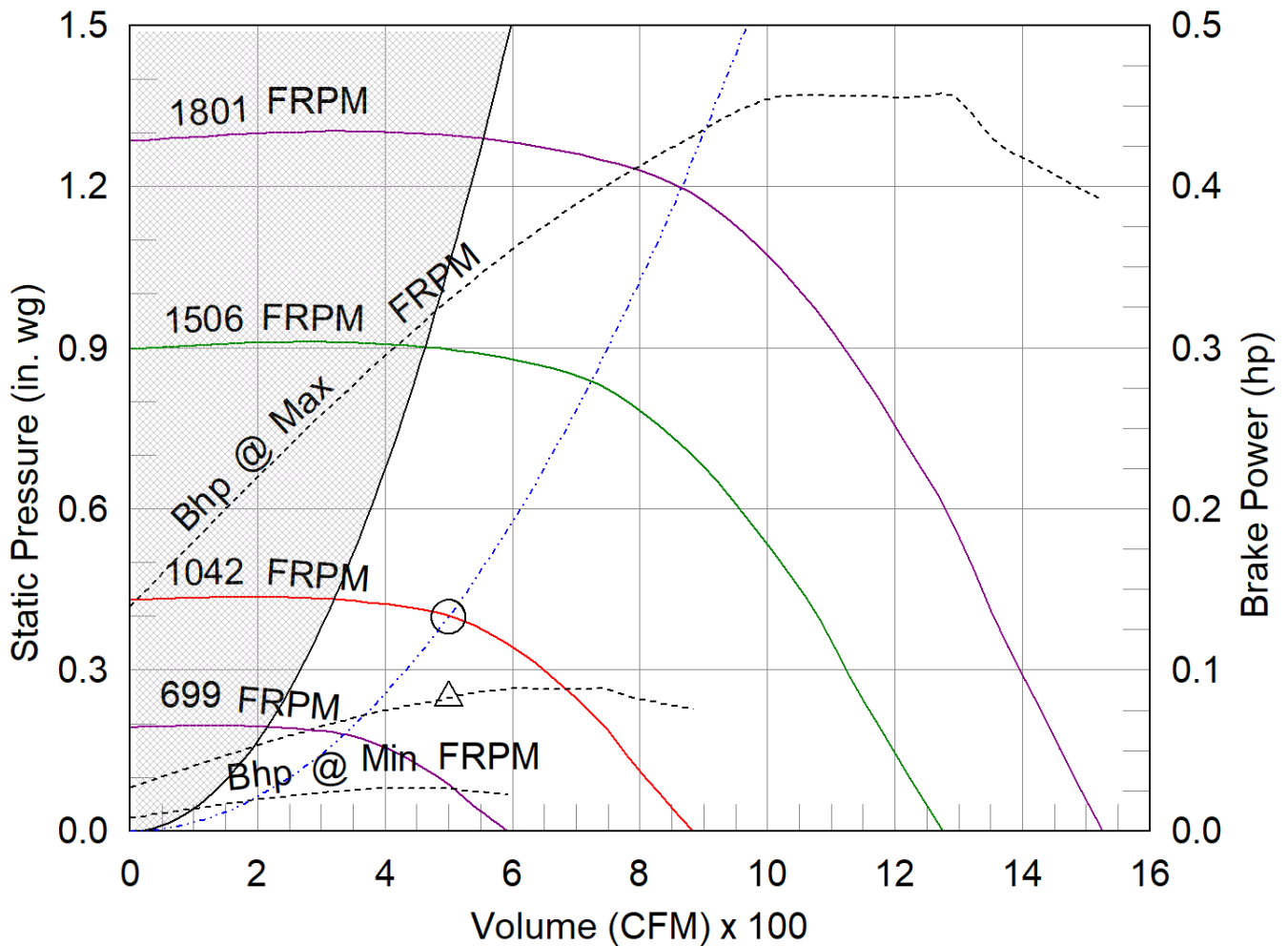
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.125 in. undersize

GB-100-4

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
500	500	0.4	1042	0.08



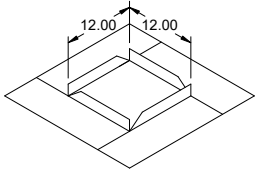
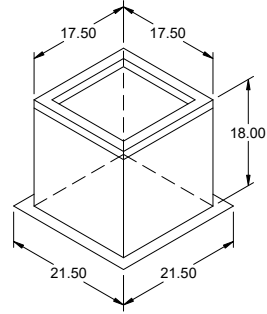
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- ... System curve
- ... Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

*May not be applicable

Damper Tray

Damper Tray Width (in.)	Damper Tray Length (in.)
12	12

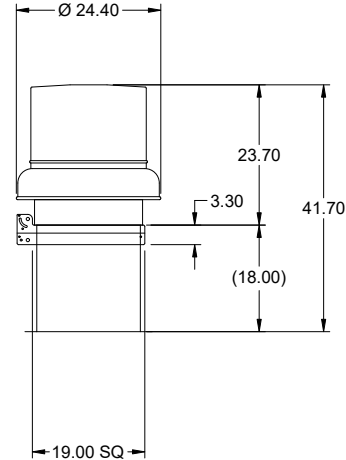
Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-097-6

Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-071-6



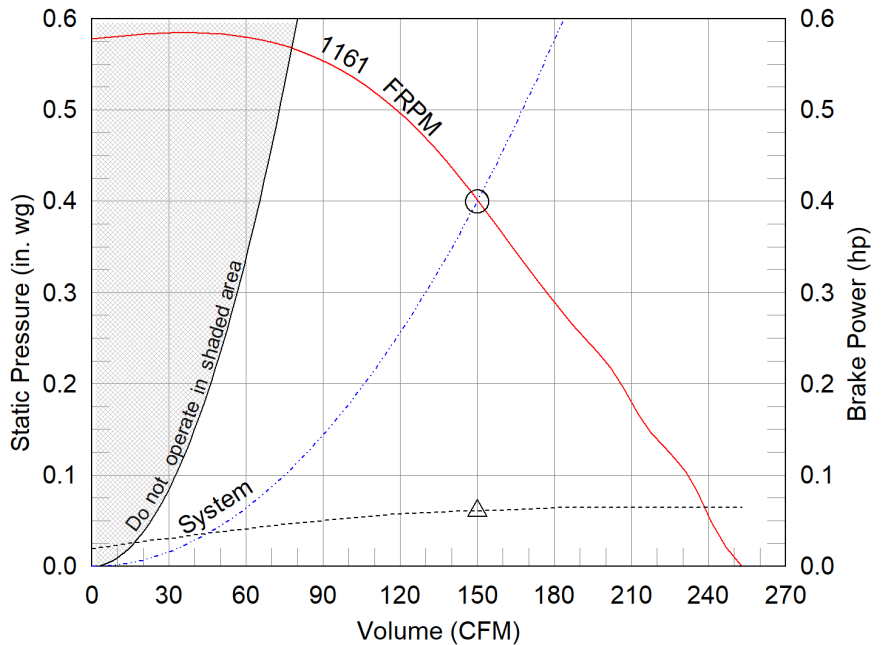
OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	52
Weight w/ Acc's (lb)	89
Weight w/ Acc's and Curb (lb)	117
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	150
Actual Volume (CFM)	150
Total External SP (in. wg)	0.4
Fan RPM	1161
Operating Power (hp)	0.06
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	38.1
Tip Speed (ft/min)	3,400
Static Eff. (%)	25

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	156

Motor	
Motor Included	Yes
Size (hp)	1/6
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	4.4
Min. Circuit Ampacity (MCA)	5.5
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	68	66	66	56	52	44	40	36	60	49	5.1



Model: GB-097-6

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-12X12, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-19-G18

Disconnect Switch

Enclosure Rating: NEMA-1

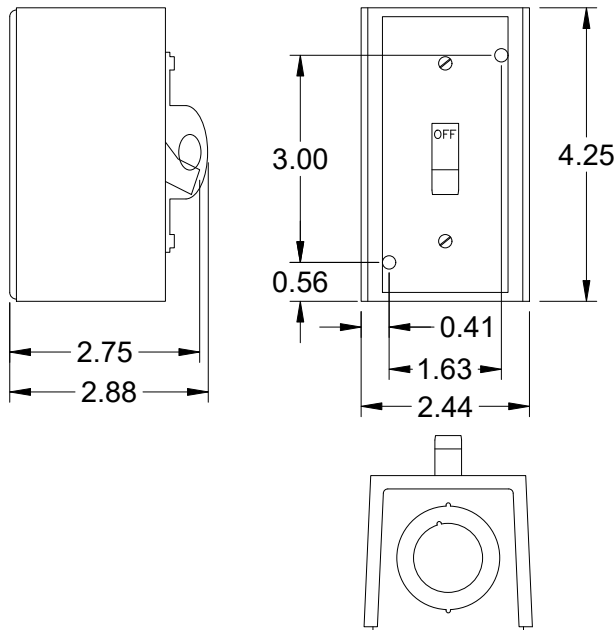
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

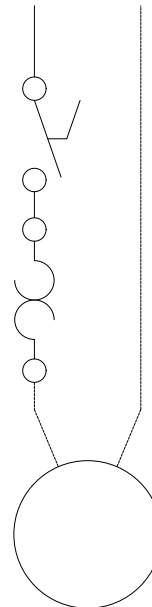
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/6 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



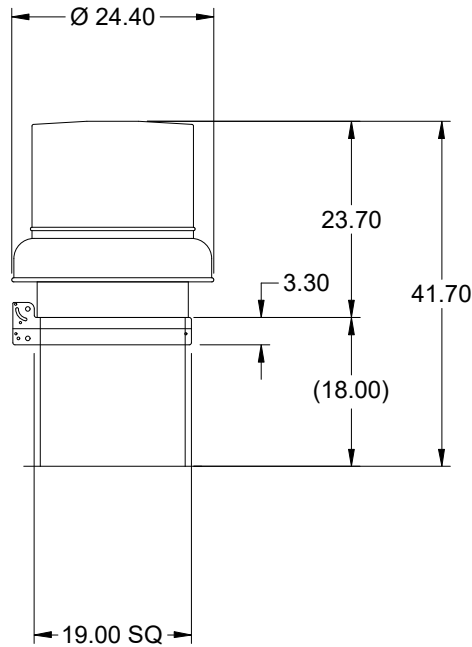
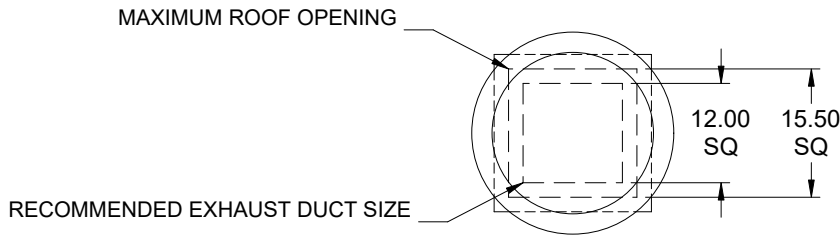
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

Include backdraft damper, not motorized.

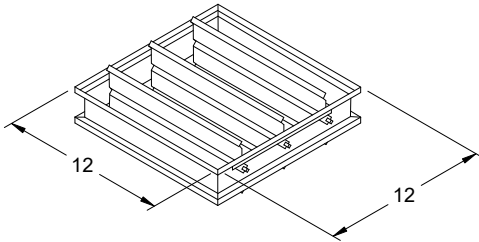
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

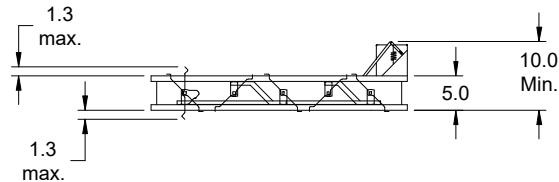
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

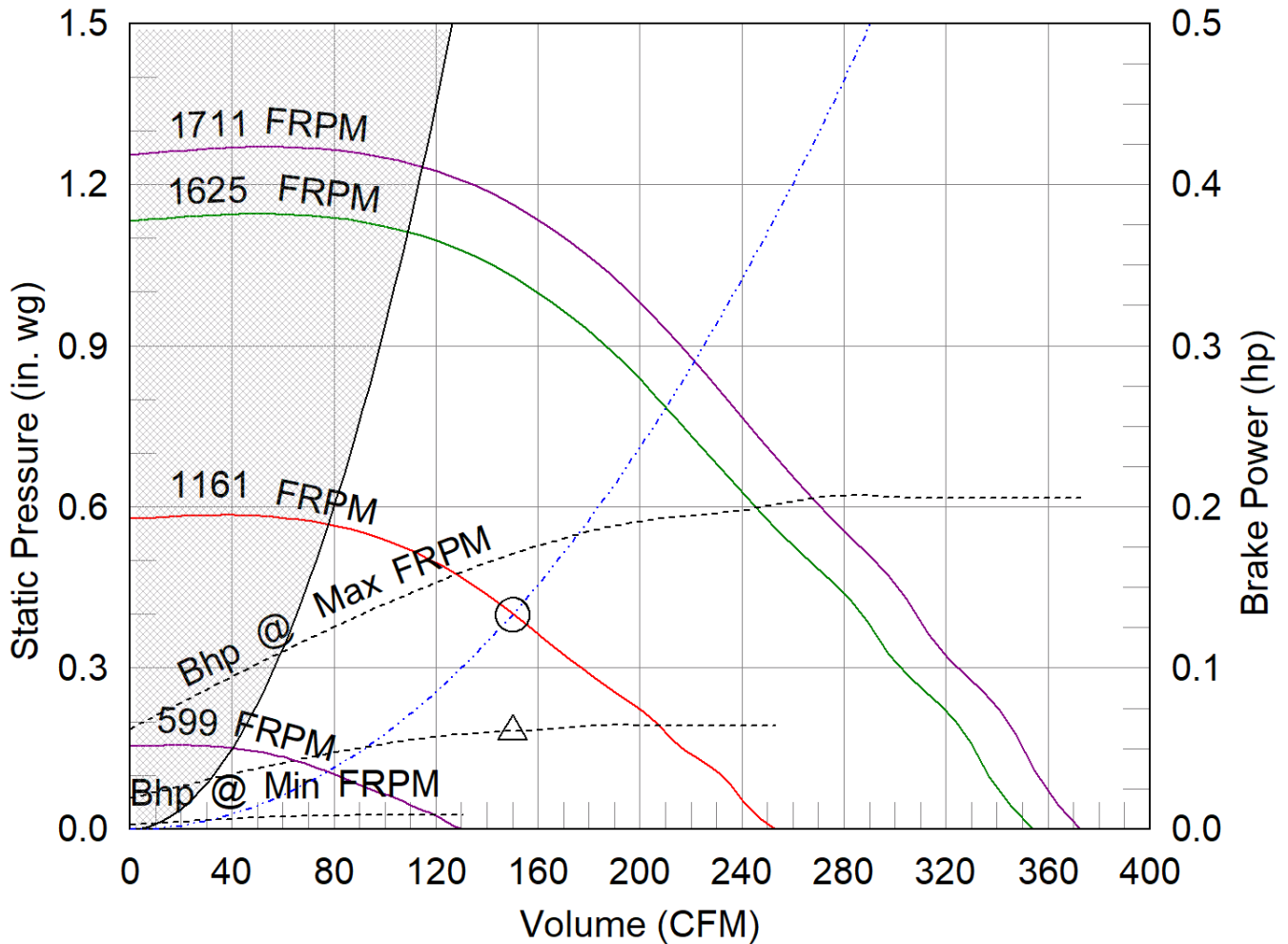
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-097-6

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
150	150	0.4	1161	0.06



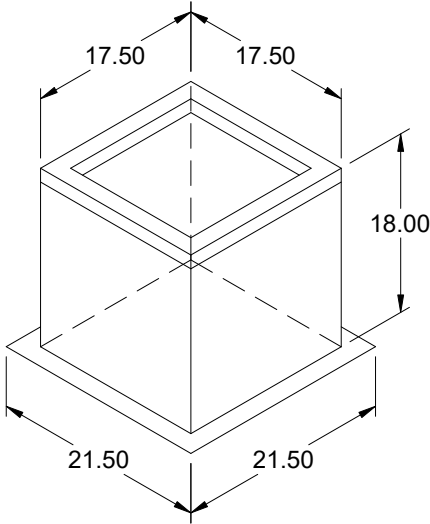
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- - - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

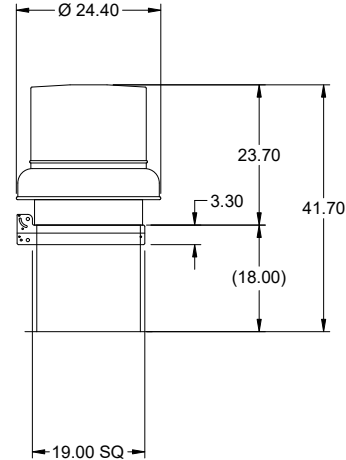
*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-097-6
Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-071-6



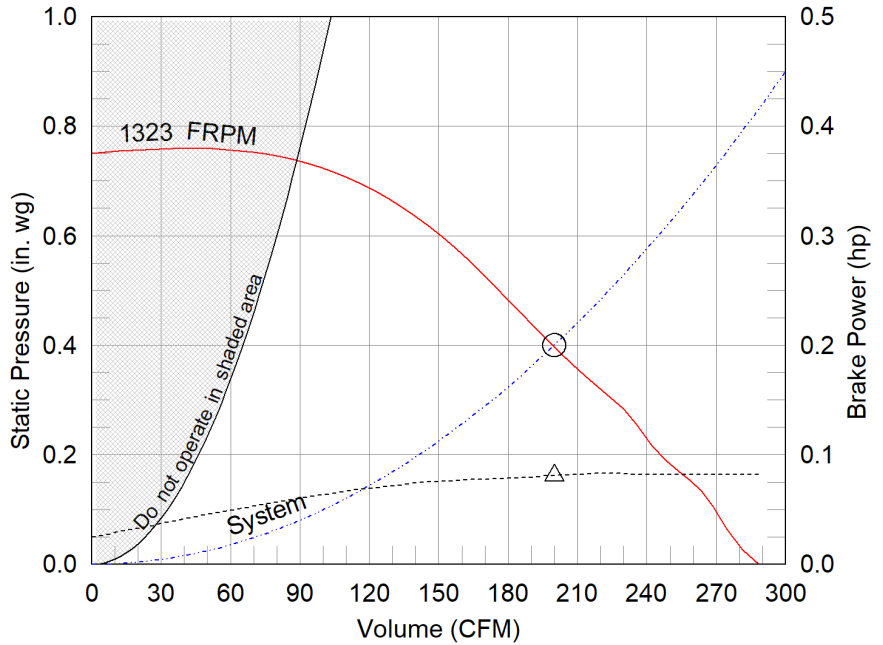
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	52
Weight w/ Acc's (lb)	89
Weight w/ Acc's and Curb (lb)	117
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	200
Actual Volume (CFM)	200
Total External SP (in. wg)	0.4
Fan RPM	1323
Operating Power (hp)	0.08
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	28.4
Tip Speed (ft/min)	3,875
Static Eff. (%)	22

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	208

Motor	
Motor Included	Yes
Size (hp)	1/6
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	4.4
Min. Circuit Ampacity (MCA)	5.5
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	72	70	70	59	56	48	44	40	64	53	6.5



Model: GB-097-6

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-12X12, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-19-G18

Disconnect Switch

Enclosure Rating: NEMA-1

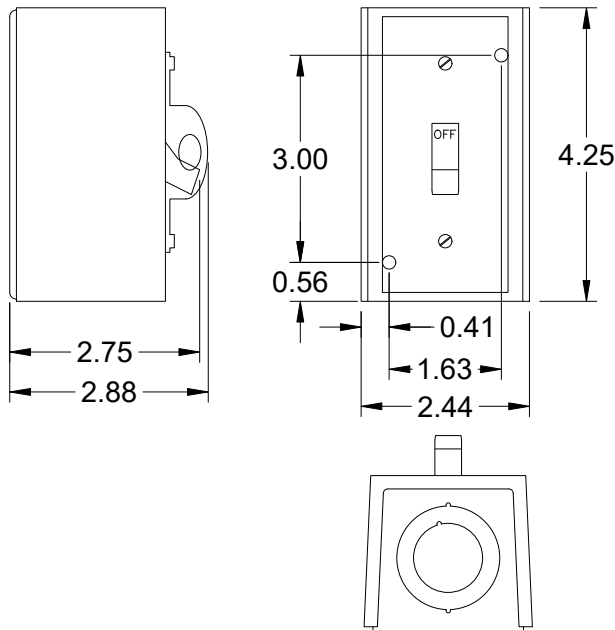
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

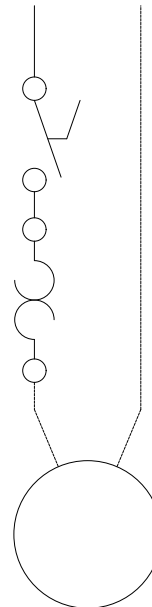
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/6 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



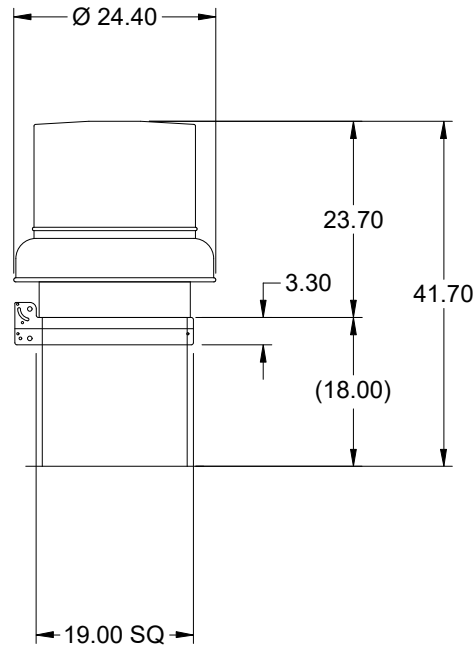
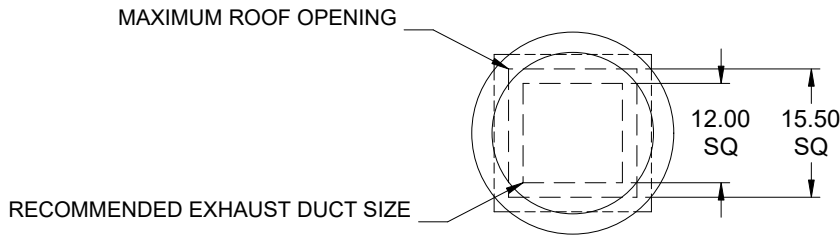
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

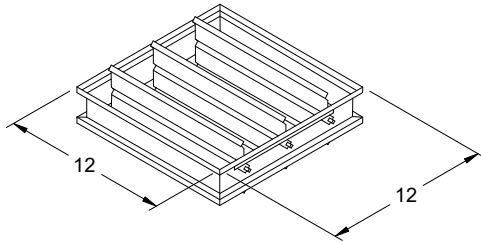
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

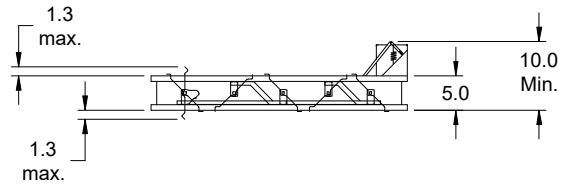
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

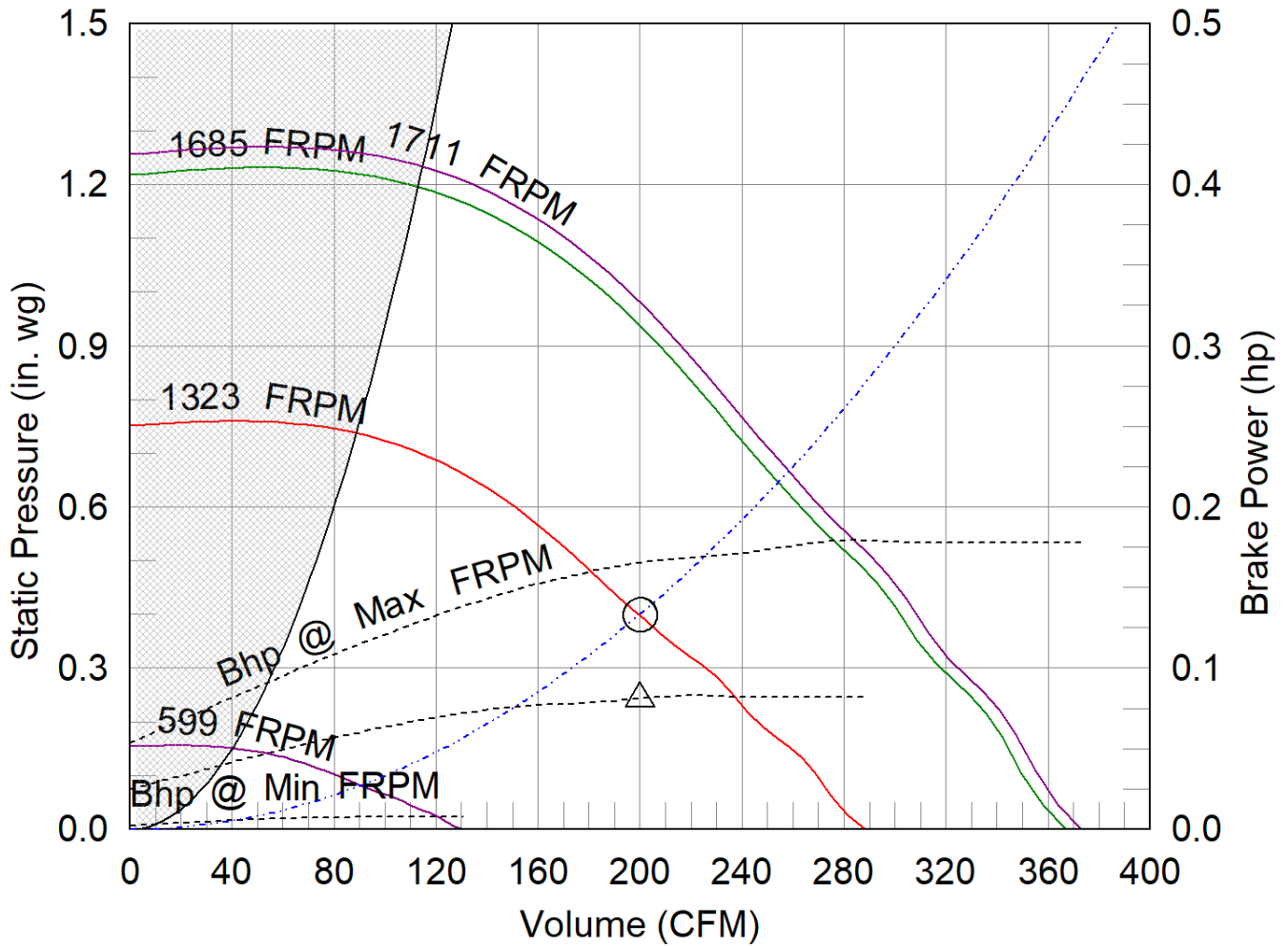
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-097-6

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
200	200	0.4	1323	0.08



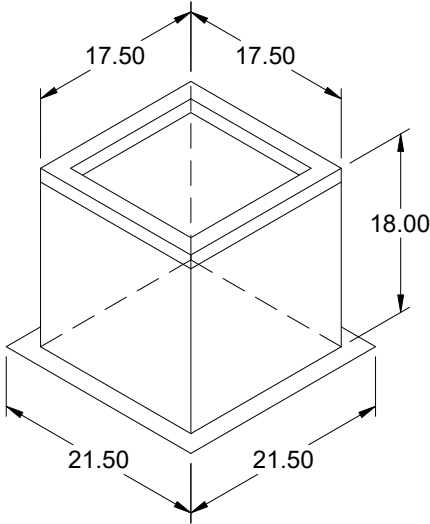
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- - - System curve
- - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

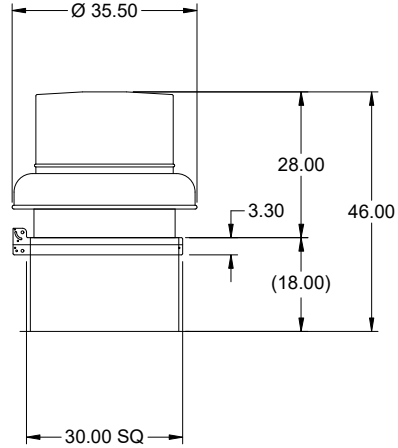
*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan



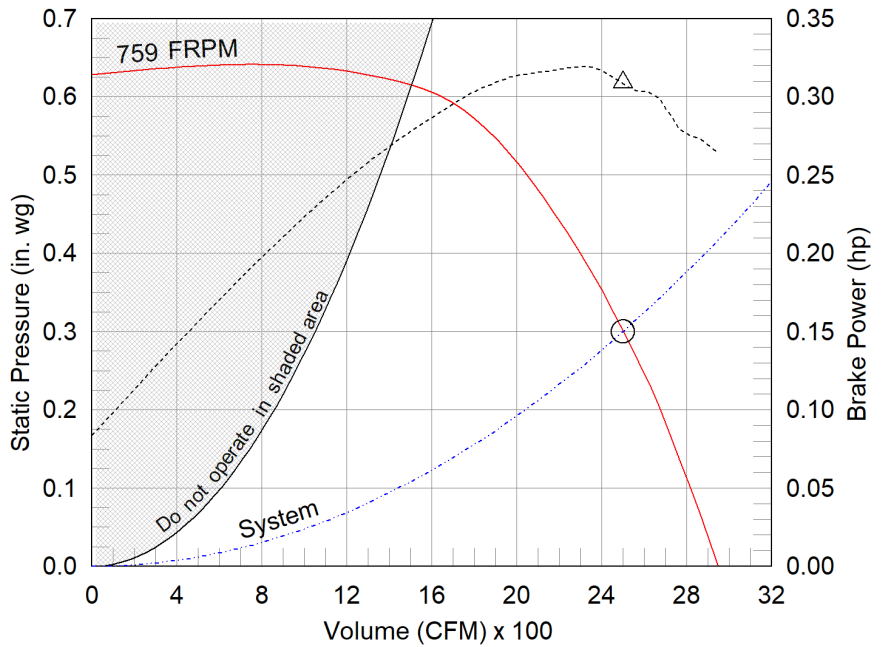
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	92
Weight w/ Acc's (lb)	156
Weight w/ Acc's and Curb (lb)	205
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,500
Actual Volume (CFM)	2,500
Total External SP (in. wg)	0.3
Fan RPM	759
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.9
Tip Speed (ft/min)	3,674
Static Eff. (%)	43

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	1,208

Motor	
Motor Included	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	69	63	63	58	48	42	68	56	7.6



Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-24X24, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See *individual submittals for full details*
GPI-30-G18

Disconnect Switch

Enclosure Rating: NEMA-1

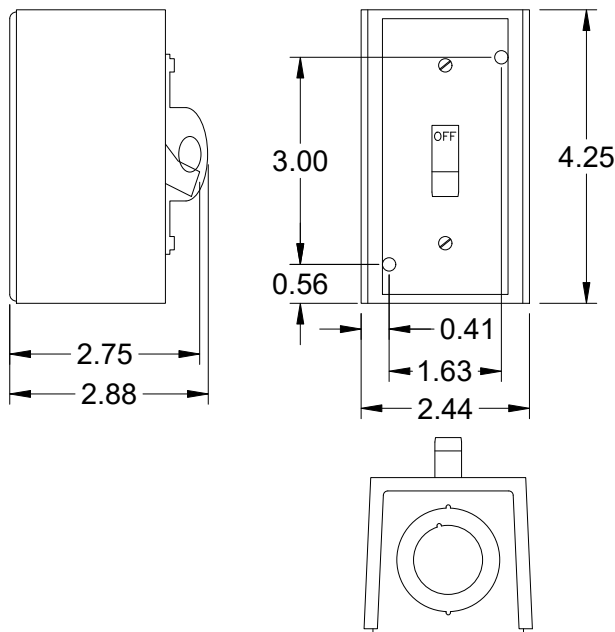
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

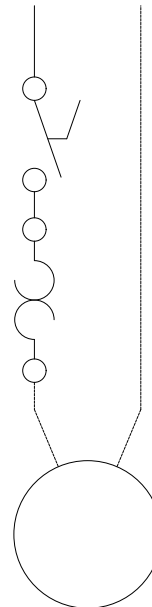
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



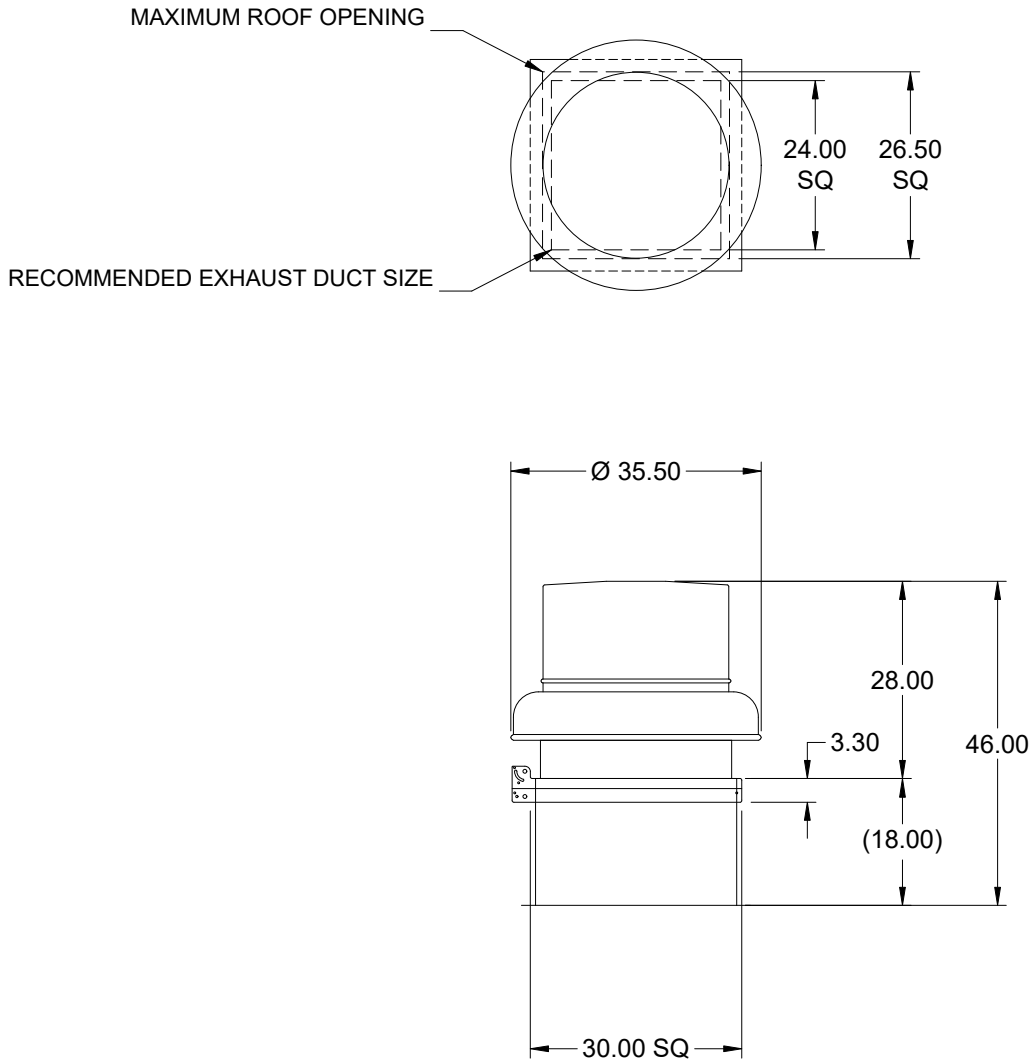
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

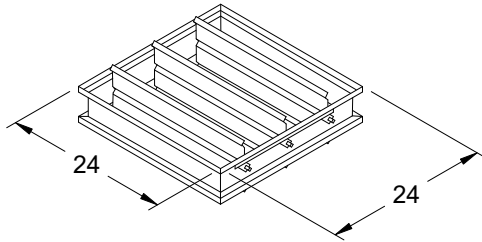
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

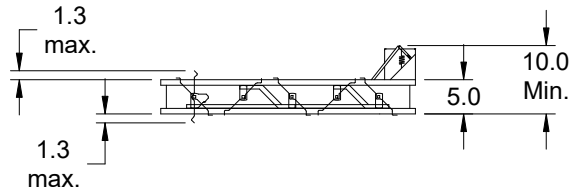
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

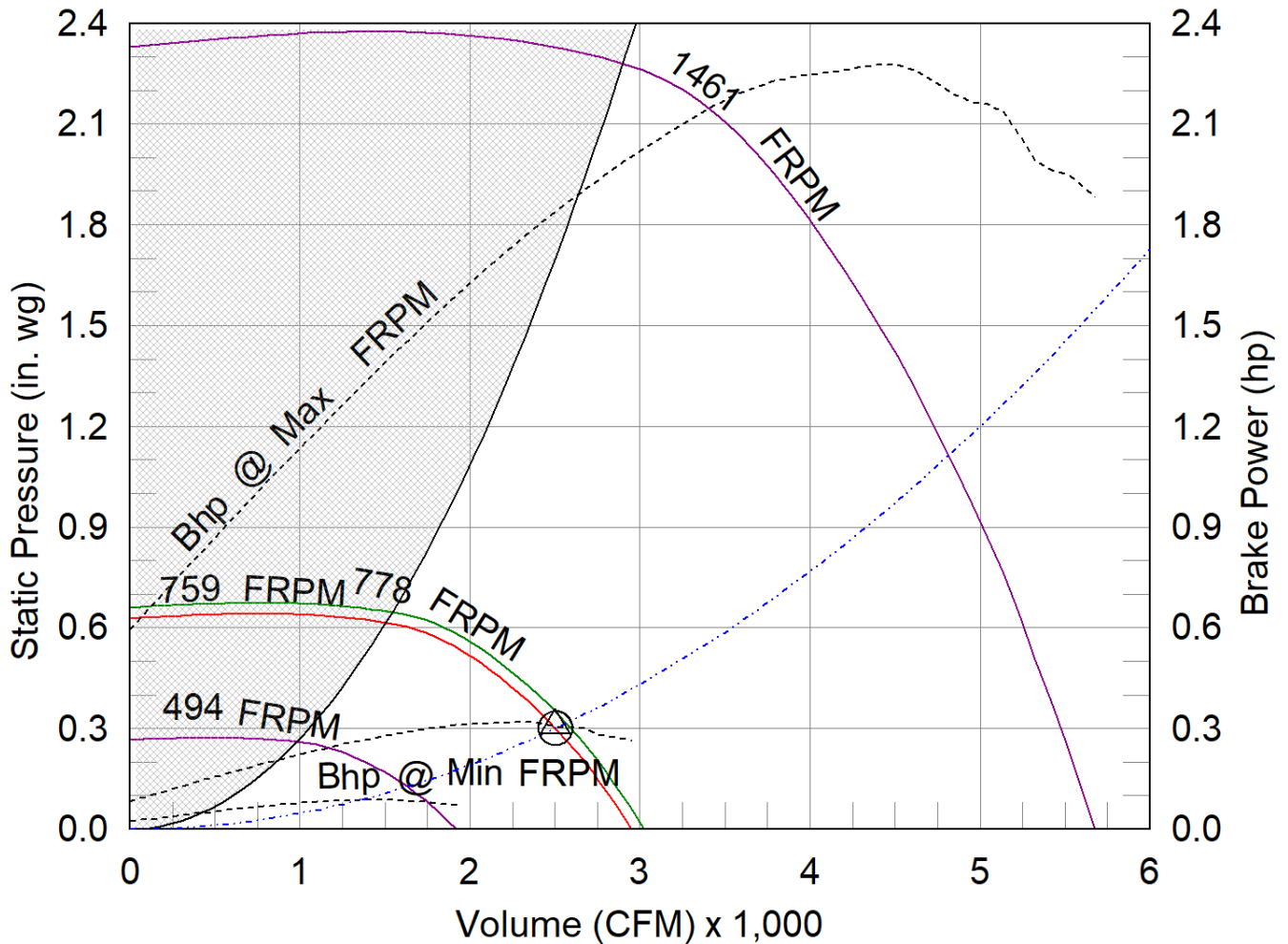
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-180-3

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,500	2,500	0.3	759	0.31



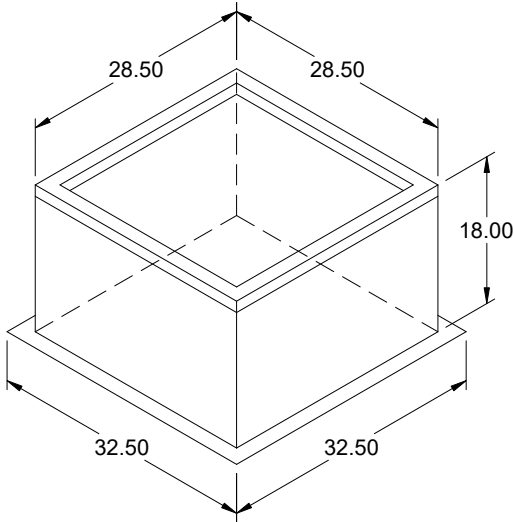
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- · - System curve
- · - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

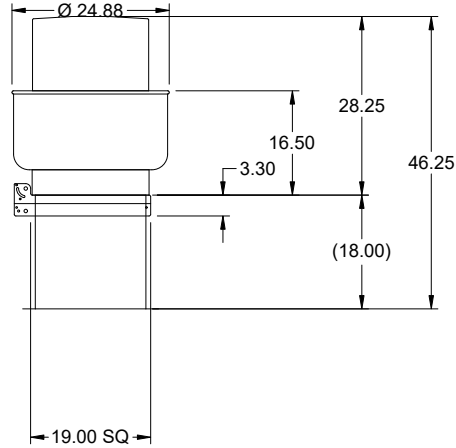
*May not be applicable

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: **CUBE-100-4**
Belt Drive Upblast Centrifugal Roof Exhaust Fan

Previously: CUBE-101-4



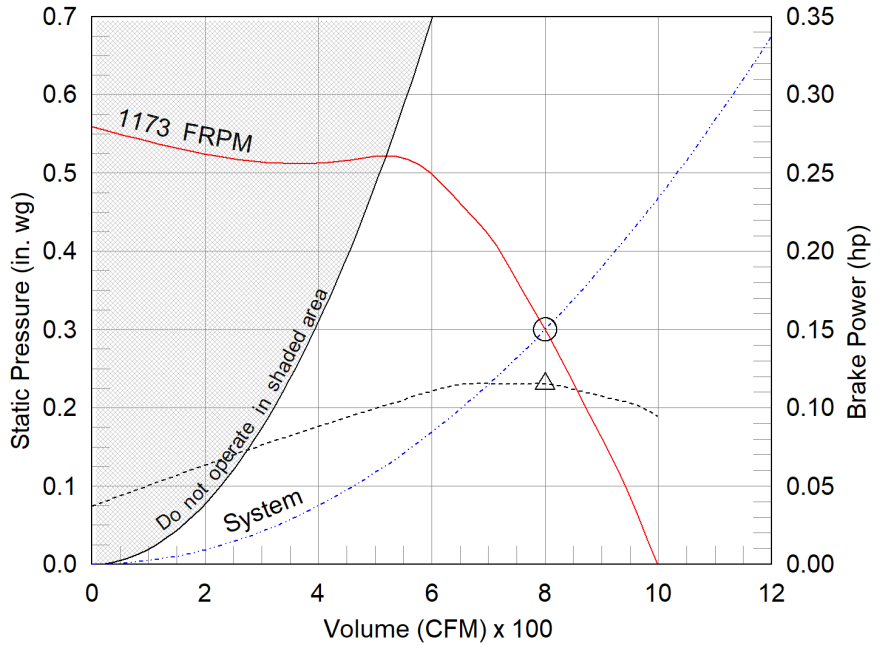
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	67
Weight w/ Acc's (lb)	85
Weight w/ Acc's and Curb (lb)	113
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	800
Actual Volume (CFM)	800
Total External SP (in. wg)	0.3
Fan RPM	1173
Operating Power (hp)	0.12
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	21.1
Tip Speed (ft/min)	3,416
Static Eff. (%)	42

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	625

Motor	
Motor Included	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	EXP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	5.8
Min. Circuit Ampacity (MCA)	7.25
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory. MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	65	69	69	61	55	54	48	43	64	53	6.5



Model: CUBE-100-4

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Spark B construction was selected.

Greenheck has included options and accessories for this product that meet the intent of AMCA 99 - spark resistant construction guidelines. Greenheck recommends, but does not require, an EXP motor for this product line. If an EXP motor is not selected, the engineer of record must determine if this is acceptable for the application. The resulting fan construction in no way implies a guarantee of safety for any level of spark resistance. Spark resistant construction does not prevent ignition of explosive gasses or vapors due to catastrophic failure or from any airstream material that may exist within in a system.

Selected Options & Accessories:

Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
Spark B Construction
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-7 and 9, Toggle, Shipped Separate,
Hinge, Factory Installed
Foam Curb Seal (Factory Applied)
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Stainless Steel, nom. 86% Free Area
Aluminum Rub Ring
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)

Selected Sub Marks

See *individual submittals* for full details
GPI-19-12-G18

Include spark resistant construction and explosion proof motor.

Disconnect Switch

Enclosure Rating: NEMA-7 and 9

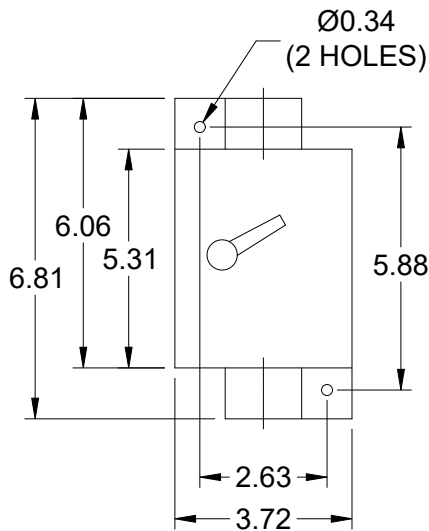
Standard Construction Features:

Enclosures are for indoor use in locations classified as Class I (flammable gases), Group A, B, C, or D and Class II (combustible dust), Group E, F, or G, as defined by the National Electrical Code. Enclosures shall be capable of preventing the entrance of dust and withstanding the pressure resulting from an internal explosion or specified gases. It shall contain such an explosion sufficiently so that an explosive gas-air mixture existing in the atmosphere surrounding the enclosure will not be ignited. Enclosed heat generating devices shall not cause external surfaces to reach temperatures capable of igniting or discoloring dust on the enclosure or igniting dust-air mixtures in the surrounding area. Enclosures shall meet designed tests for dust, explosion, hydrostatic, temperature, and aging gaskets. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

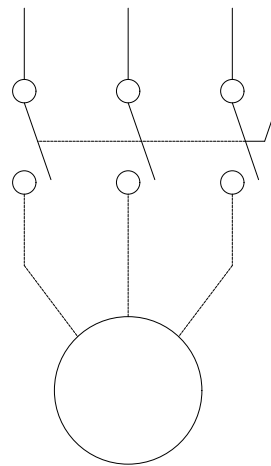
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	3	Rating:	15 hp
Junction Box Mtg.:	Ship Separate	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped Separate						

Electrical Drawing Details



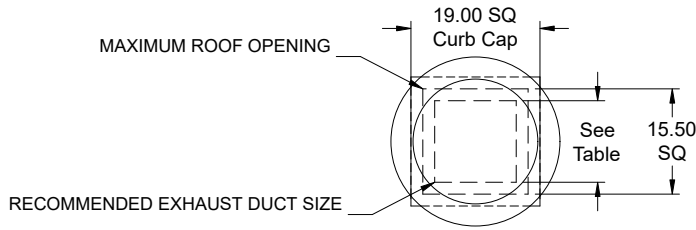
Wiring Schematic



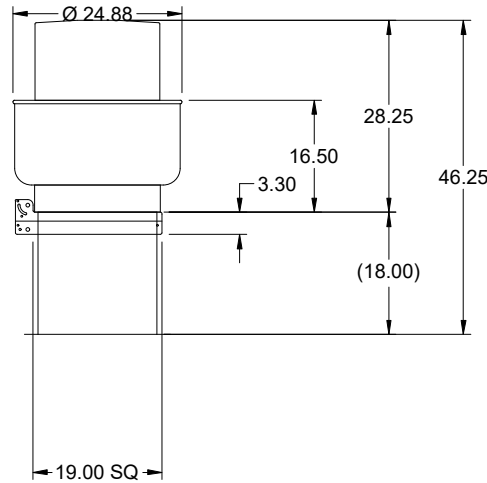
Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Upblast Centrifugal Roof Exhaust Fan



DUCT TYPE	SIZE
STANDARD	12 SQ
FIRE-WRAPPED	8 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON
MOTOR, ADAPTER, AND/OR HINGE BASE.

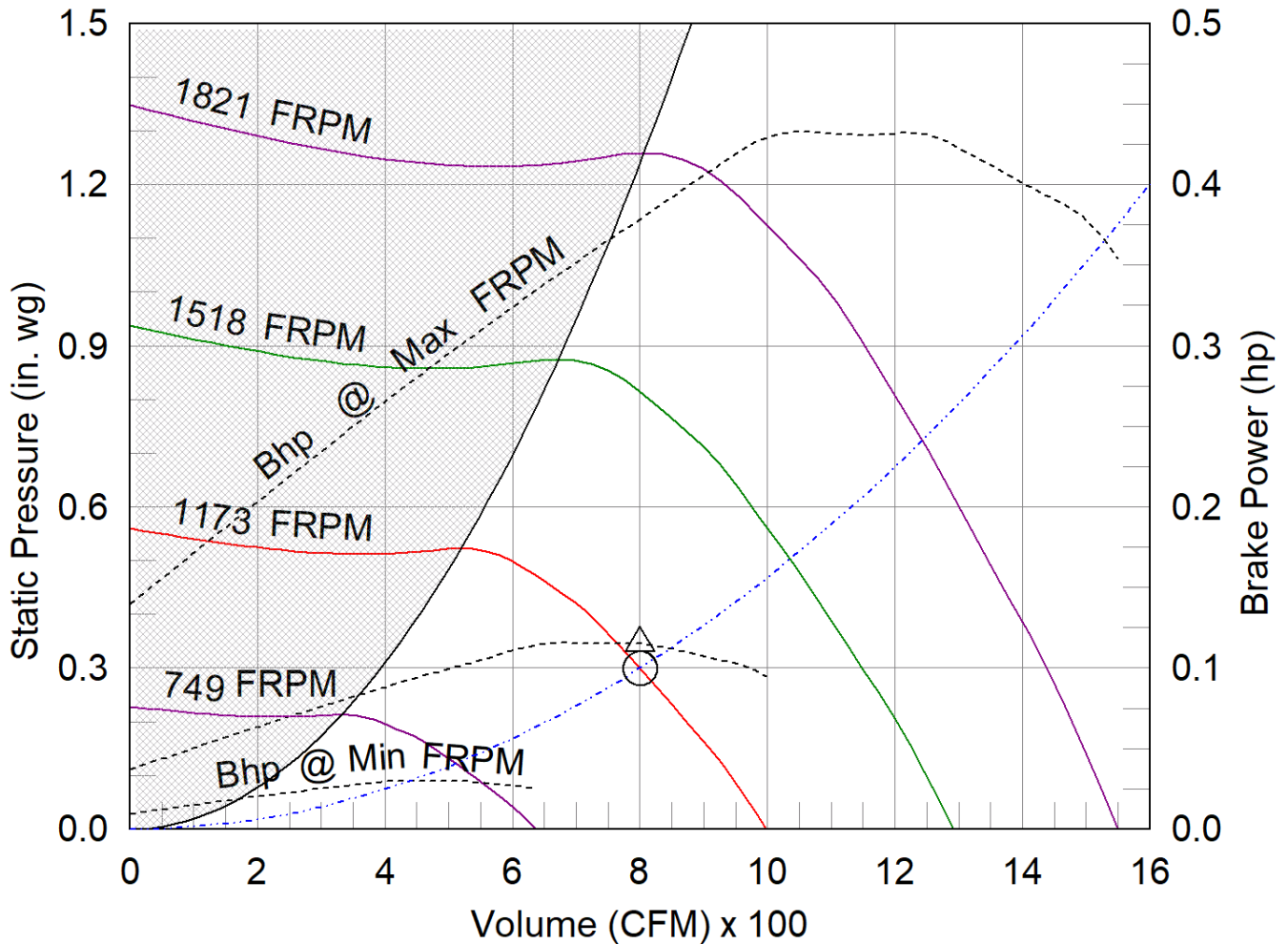
Notes: All dimensions shown are in units of in..

CUBE-100-4

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
800	800	0.3	1173	0.12



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

VCD-23 Low Leakage 3V Blade Volume Control Damper

APPLICATION & DESIGN

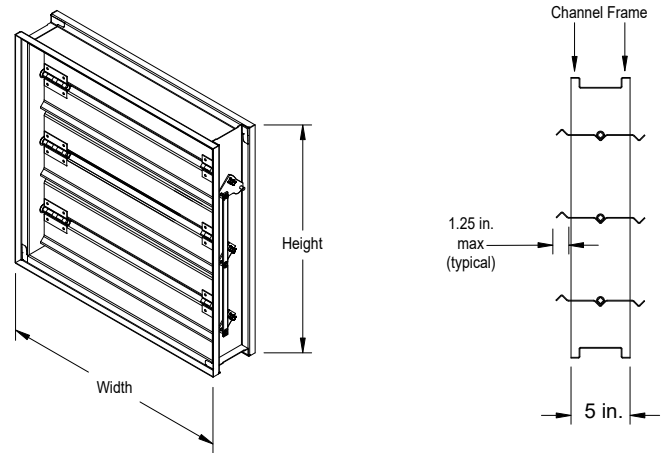
The VCD-23 is a ruggedly built low leakage control damper intended for applications in low to medium pressure and velocity systems. A wide range of electric actuators are available.

DAMPER RATINGS

Pressure:	Up to 5 in. wg - pressure differential
Velocity:	Up to 3,000 ft/min
Leakage:	Class 1A @ 1 in. wg Class 1 @ up to 5 in. wg
Temperature:	Up to 250 F

PRODUCT DETAILS

Frame Type:	Channel
Frame Thickness:	16 ga
Material:	Galvanized
Blade Type:	3V
Blade Action:	Opposed
Blade Seal:	Silicone
Axle/Linkage Material:	Steel
Axle Bearings:	Synthetic
Jamb Seal Material:	Stainless Steel
Damper Temp. Rating:	200 F
Jackshafting:	No Preference
Actuator Sizing:	Default SqFt
Ext. Shaft Length:	Standard (6 in.)
Multi-Section Fastening:	Standard
Sizing:	Nominal



- This drawing shows a general damper configuration and is not intended to depict the exact configuration of all dampers in this submittal.
- Width and height furnished approximately 0.250 in. undersize.
- Factory supplied actuators are sized for 1,500 fpm and a fully-closed differential pressure of 2 in. wc. Contact factory for actuator sizing on applications exceeding those levels.
- Installation instructions available at www.greenheck.com.

ACTUATOR INFORMATION

Actuator Type:	120 VAC
Operating Mode:	TwoPosition
Actuator Operation:	Spring Return
Fail Position:	Closed
NEMA Enclosure:	7
Auxiliary Switches:	Yes
Spring Return Time:	Standard

CODES APPROVED

IECC (International Energy Conservation Code) compliant
The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

OPTIONS & ACCESSORIES

Union Label:	No Preference
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SUMMARY

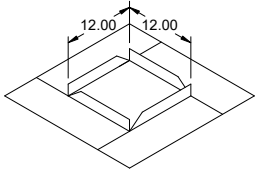
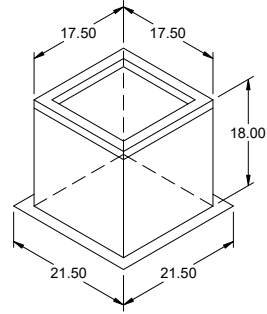
ID #	Tag	Qty	Width	Height	Configuration			
27-1	EF-R16	1	12.000 in.	12.000 in.	Drive Arrangement:	Actuator Mounting:	Actuator Location:	Actuator Qty:
					CC-11-1FER-0	External	Right Side	1
					Actuator Mfr:	Actuator Model:	Act. Orientation:	Standoff Size:
					Belimo	LF120-S	N/A	1.500 in.

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

*May not be applicable

Damper Tray

Damper Tray Width (in.)	Damper Tray Length (in.)
12	12

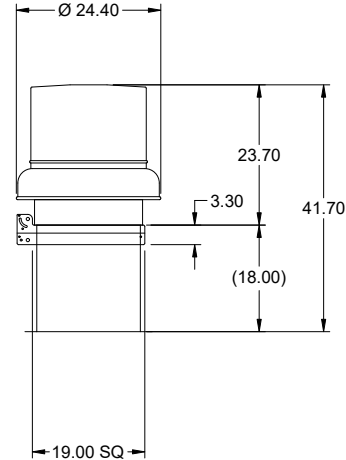
Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-097-6

Belt Drive Centrifugal Roof Exhaust Fan

Previously: GB-071-6



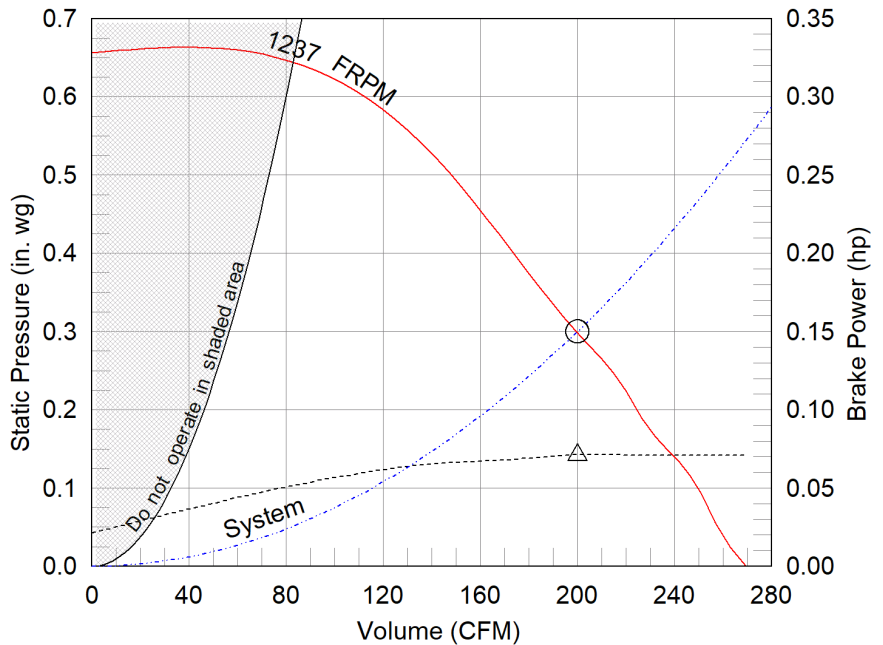
OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	52
Weight w/ Acc's (lb)	89
Weight w/ Acc's and Curb (lb)	117
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	200
Actual Volume (CFM)	200
Total External SP (in. wg)	0.3
Fan RPM	1237
Operating Power (hp)	0.07
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	32.2
Tip Speed (ft/min)	3,622
Static Eff. (%)	20

Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	208

Motor	
Motor Included	Yes
Size (hp)	1/6
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	4.4
Min. Circuit Ampacity (MCA)	5.5
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	69	69	58	55	47	43	38	63	51	6.1



Model: GB-097-6

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-12X12, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-19-12-G18

Disconnect Switch

Enclosure Rating: NEMA-1

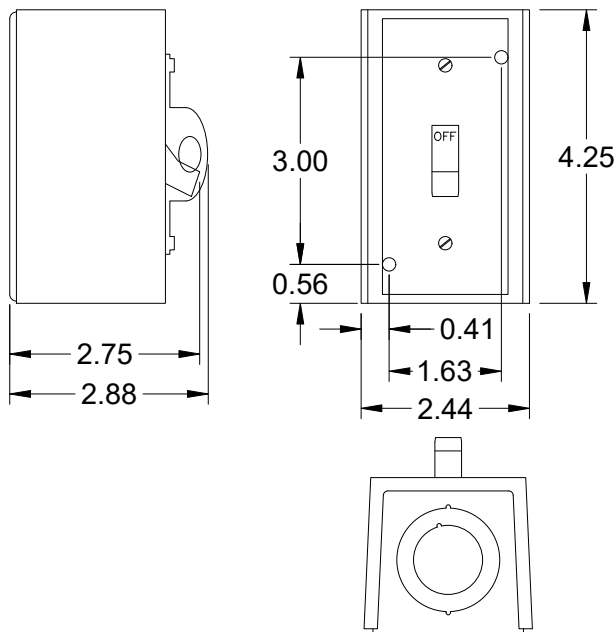
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

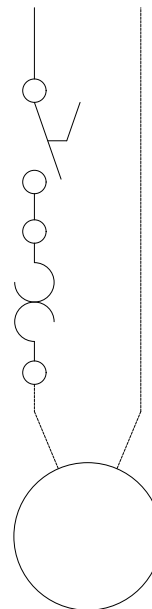
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/6 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



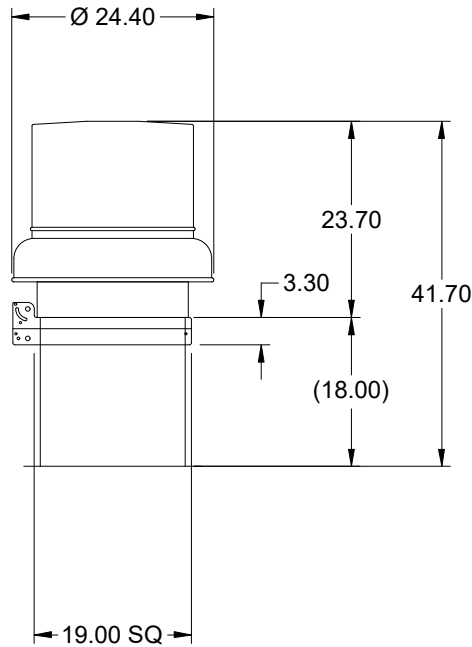
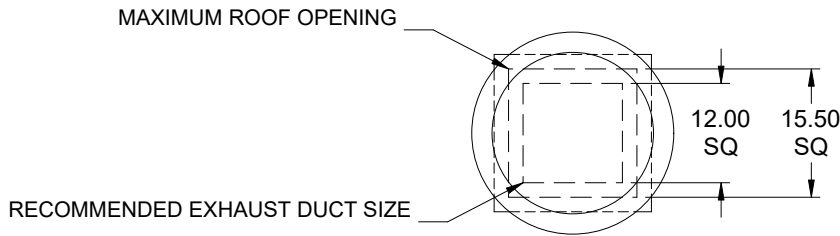
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

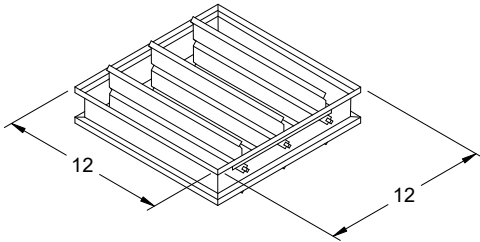
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

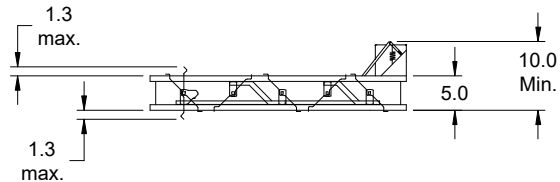
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

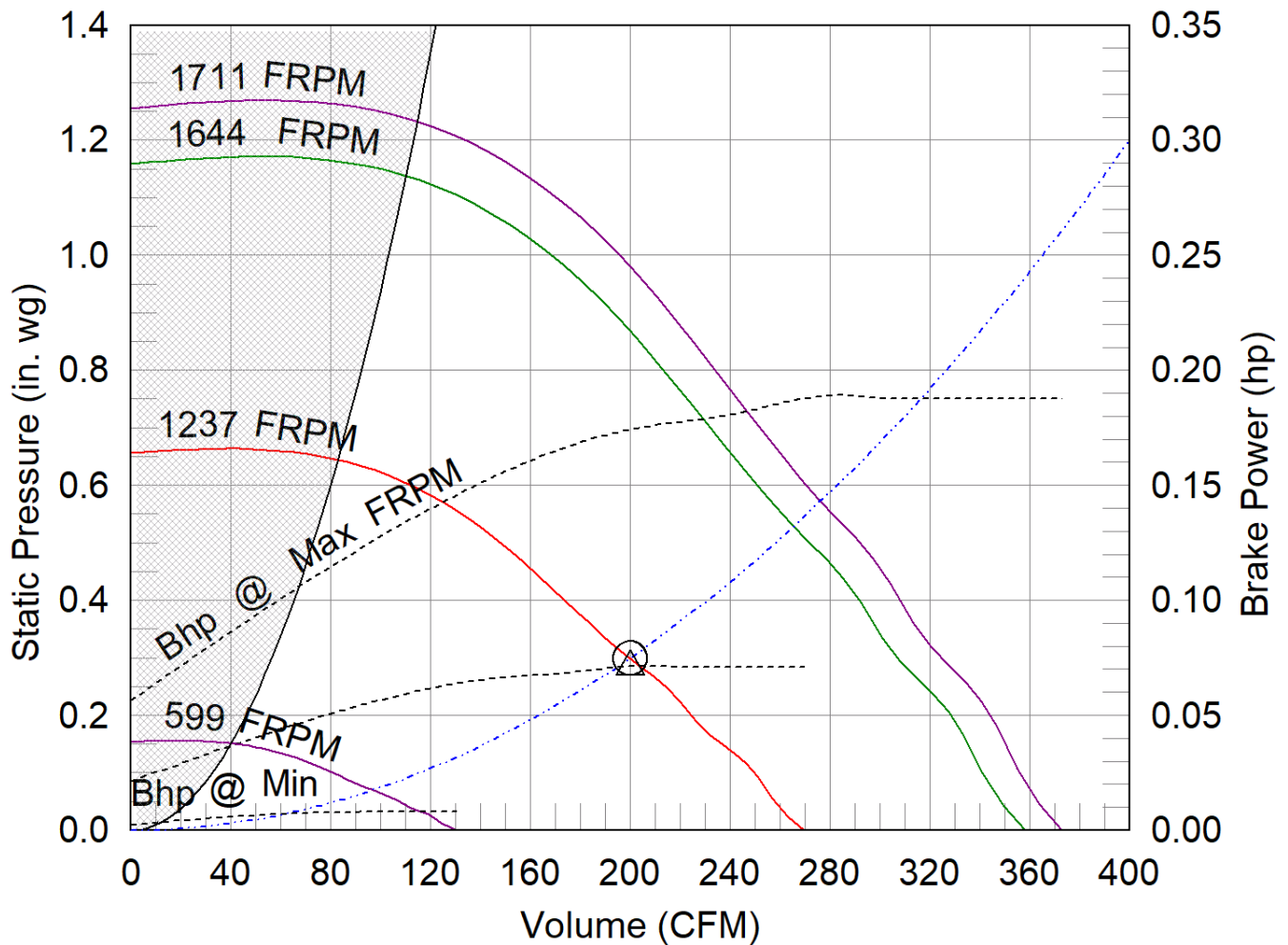
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-097-6

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
200	200	0.3	1237	0.07



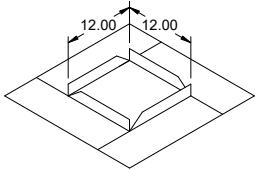
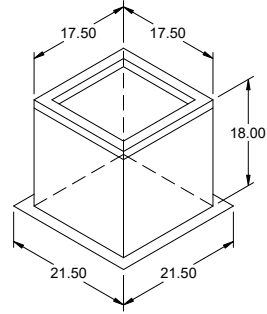
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

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Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

*May not be applicable

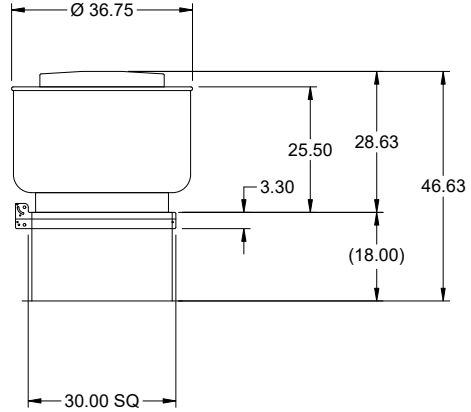
Damper Tray

Damper Tray Width (in.)	Damper Tray Length (in.)
12	12

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: **CUBE-180-5**
Belt Drive Upblast Centrifugal Roof Exhaust Fan



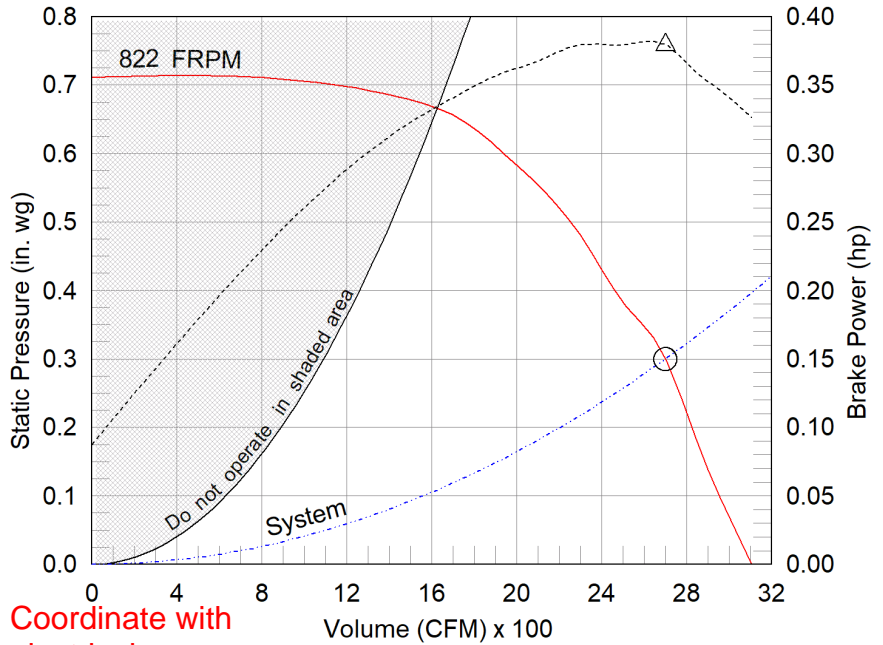
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	106
Weight w/ Acc's (lb)	130
Weight w/ Acc's and Curb (lb)	180
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,700
Actual Volume (CFM)	2,700
Total External SP (in. wg)	0.3
Fan RPM	822
Operating Power (hp)	0.38
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	9.7
Tip Speed (ft/min)	3,983
Static Eff. (%)	37

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	925

Motor	
Motor Included	Yes
Size (hp)	1/2
Voltage/Cycle/Phase	115/60/1
Enclosure	EXP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	9.8
Min. Circuit Ampacity (MCA)	12.25
Max. Overcurrent Protection (MOP)	25
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



Coordinate with electrical

- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory. MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	79	75	67	62	63	55	45	71	60	10.0



Model: CUBE-180-5

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Spark B construction was selected.

Greenheck has included options and accessories for this product that meet the intent of AMCA 99 - spark resistant construction guidelines. Greenheck recommends, but does not require, an EXP motor for this product line. If an EXP motor is not selected, the engineer of record must determine if this is acceptable for the application. The resulting fan construction in no way implies a guarantee of safety for any level of spark resistance. Spark resistant construction does not prevent ignition of explosive gasses or vapors due to catastrophic failure or from any airstream material that may exist within in a system.

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
Spark B Construction
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-7 and 9, Toggle, Shipped Separate,
Hinge, Factory Installed
Foam Curb Seal (Factory Applied)
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Stainless Steel, nom. 86% Free Area
Aluminum Rub Ring
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)

Selected Sub Marks

See individual submittals for full details
GPI-30-24-G18

Include spark resistant construction and explosion proof motor.

Disconnect Switch

Enclosure Rating: NEMA-7 and 9

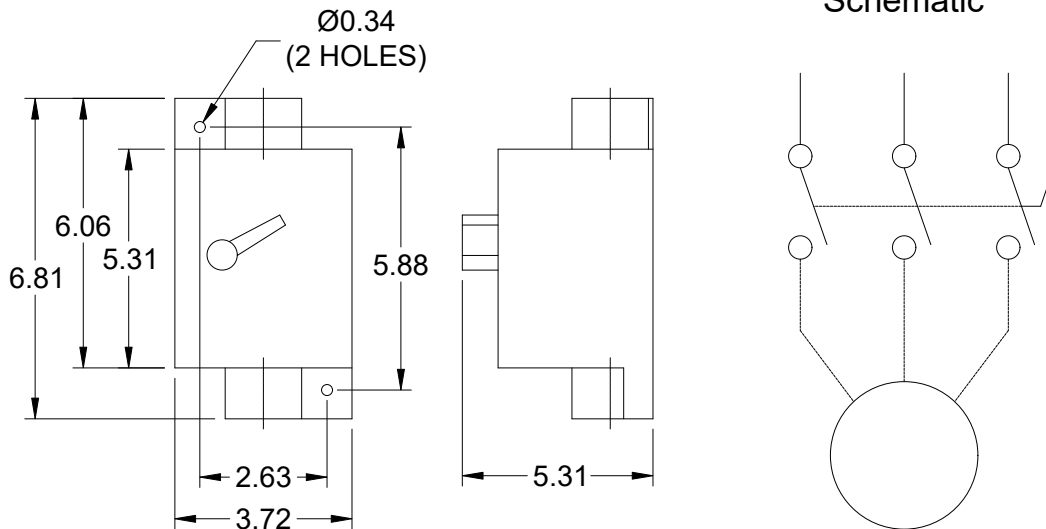
Standard Construction Features:

Enclosures are for indoor use in locations classified as Class I (flammable gases), Group A, B, C, or D and Class II (combustible dust), Group E, F, or G, as defined by the National Electrical Code. Enclosures shall be capable of preventing the entrance of dust and withstanding the pressure resulting from an internal explosion or specified gases. It shall contain such an explosion sufficiently so that an explosive gas-air mixture existing in the atmosphere surrounding the enclosure will not be ignited. Enclosed heat generating devices shall not cause external surfaces to reach temperatures capable of igniting or discoloring dust on the enclosure or igniting dust-air mixtures in the surrounding area. Enclosures shall meet designed tests for dust, explosion, hydrostatic, temperature, and aging gaskets. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/2 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	3	Rating:	15 hp
Junction Box Mtg.:	Ship Separate	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped Separate						

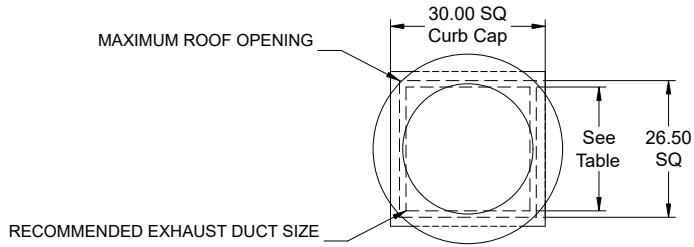
Electrical Drawing Details



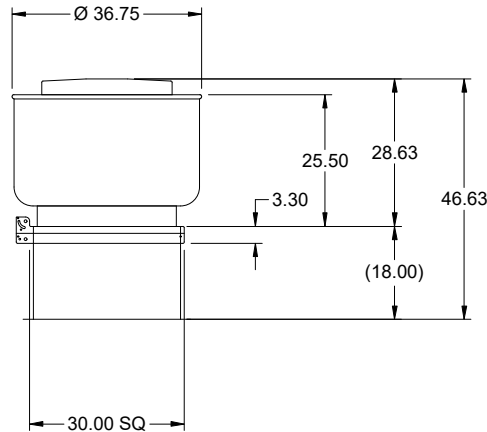
Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Upblast Centrifugal Roof Exhaust Fan



DUCT TYPE	SIZE
STANDARD	24 SQ
FIRE-WRAPPED	16 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON
MOTOR, ADAPTER, AND/OR HINGE BASE.

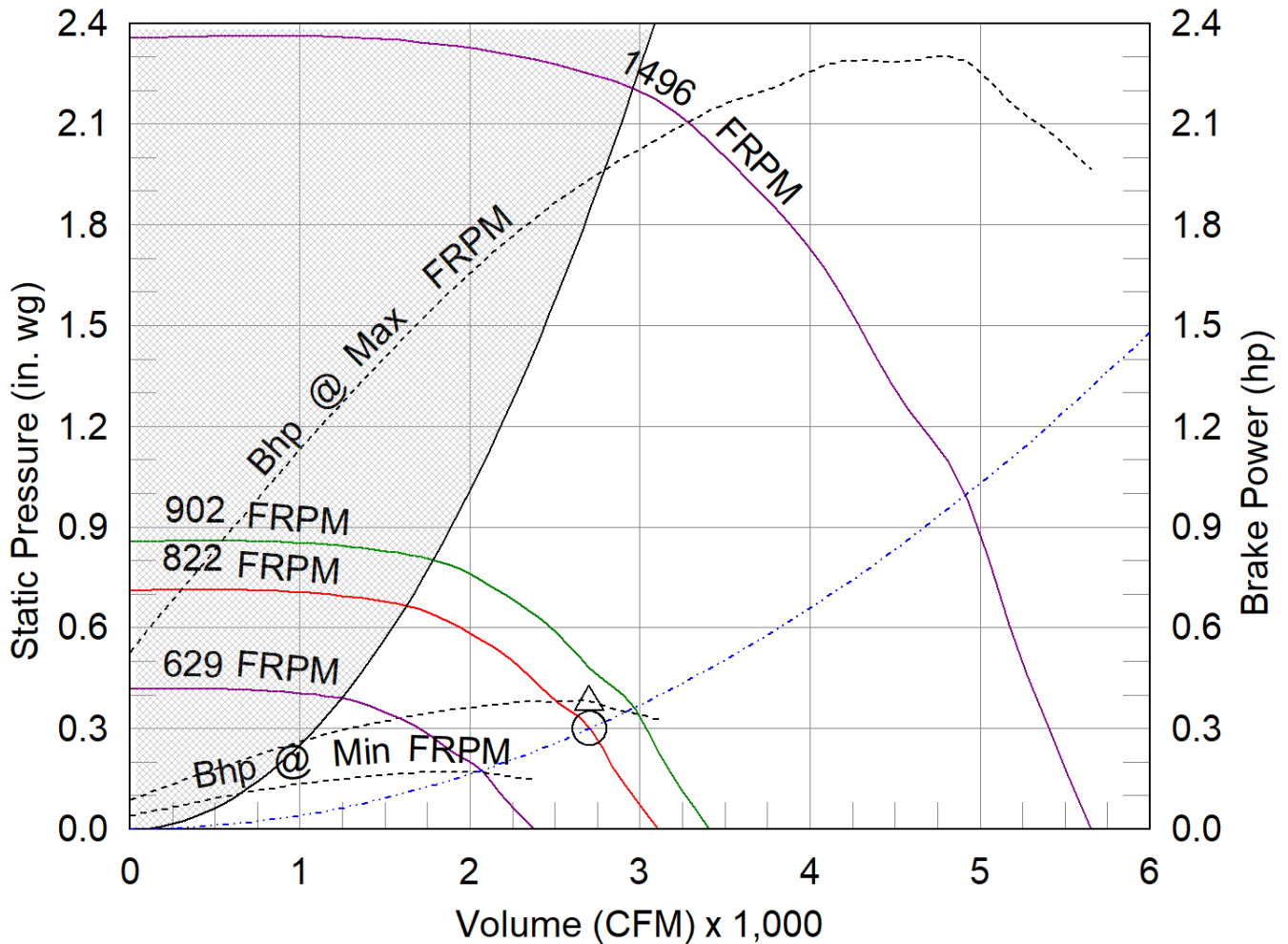
Notes: All dimensions shown are in units of in..

CUBE-180-5

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,700	2,700	0.3	822	0.38



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- ... System curve
- ... Brake horsepower curve

VCD-23 Low Leakage 3V Blade Volume Control Damper

APPLICATION & DESIGN

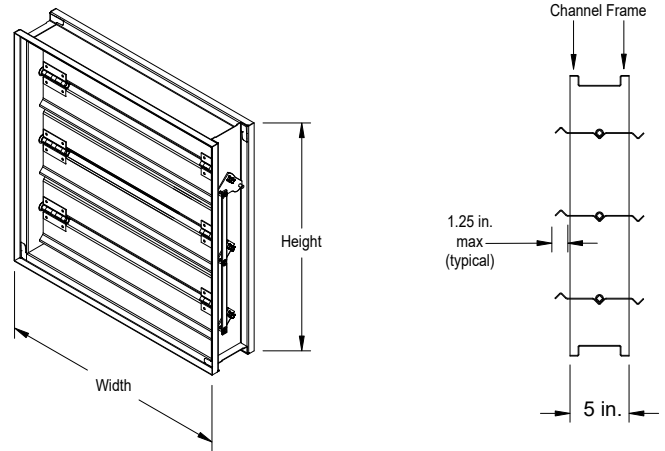
The VCD-23 is a ruggedly built low leakage control damper intended for applications in low to medium pressure and velocity systems. A wide range of electric actuators are available.

DAMPER RATINGS

Pressure:	Up to 5 in. wg - pressure differential
Velocity:	Up to 3,000 ft/min
Leakage:	Class 1A @ 1 in. wg Class 1 @ up to 5 in. wg
Temperature:	Up to 250 F

PRODUCT DETAILS

Frame Type:	Channel
Frame Thickness:	16 ga
Material:	Galvanized
Blade Type:	3V
Blade Action:	Opposed
Blade Seal:	TPE
Axle/Linkage Material:	Steel
Axle Bearings:	Synthetic
Jamb Seal Material:	Stainless Steel
Damper Temp. Rating:	180 F
Jackshafting:	No Preference
Actuator Sizing:	Default SqFt
Ext. Shaft Length:	Standard (6 in.)
Multi-Section Fastening:	Standard
Sizing:	Nominal



- This drawing shows a general damper configuration and is not intended to depict the exact configuration of all dampers in this submittal.
- Width and height furnished approximately 0.250 in. undersize.
- Factory supplied actuators are sized for 1,500 fpm and a fully-closed differential pressure of 2 in. wc. Contact factory for actuator sizing on applications exceeding those levels.
- Installation instructions available at www.greenheck.com.

ACTUATOR INFORMATION

Actuator Type:	120 VAC
Operating Mode:	TwoPosition
Actuator Operation:	Spring Return
Fail Position:	Closed
NEMA Enclosure:	7
Auxiliary Switches:	Yes
Spring Return Time:	Standard

CODES APPROVED

IECC (International Energy Conservation Code) compliant
The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

OPTIONS & ACCESSORIES

Union Label:	No Preference
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SUMMARY

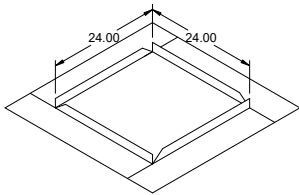
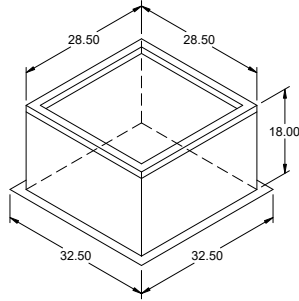
ID #	Tag	Qty	Width	Height	Configuration			
31-1	EF-R18	1	24.000 in.	24.000 in.	Drive Arrangement:	Actuator Mounting:	Actuator Location:	Actuator Qty:
					CC-11-1FER-0	External	Right Side	1
					Actuator Mfr:	Actuator Model:	Act. Orientation:	Standoff Size:
					Belimo	LF120-S	N/A	1.500 in.

AMCA



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Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

*May not be applicable

Damper Tray

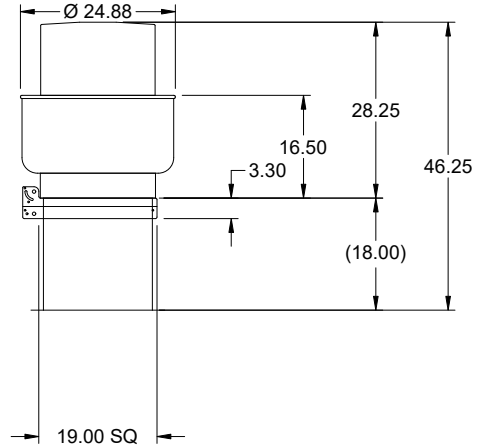
Damper Tray Width (in.)	Damper Tray Length (in.)
24	24

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: **CUBE-120-4**
Belt Drive Upblast Centrifugal Roof Exhaust Fan

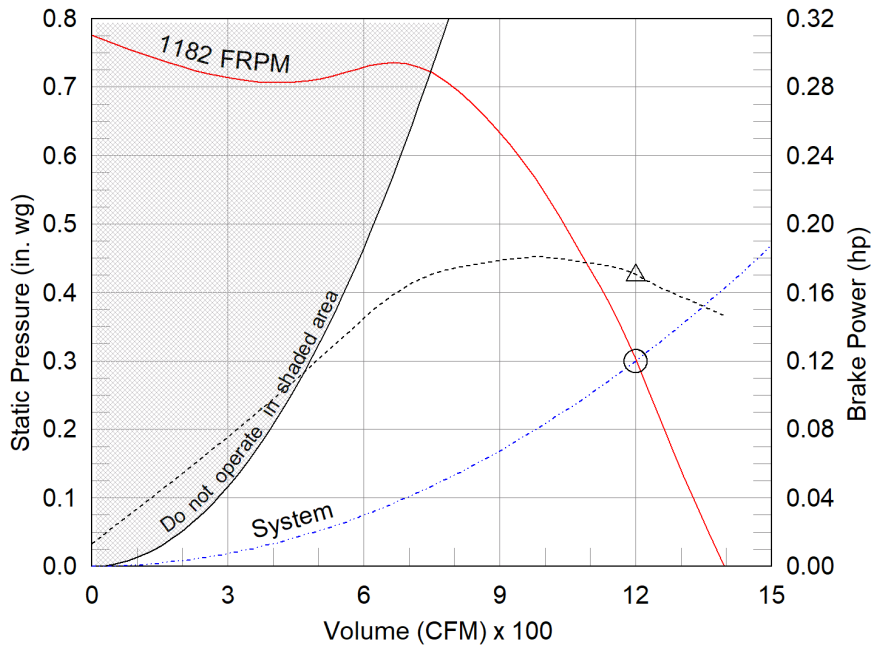
Previously: CUBE-121-4



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	67
Weight w/ Acc's (lb)	85
Weight w/ Acc's and Curb (lb)	113
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Roof Opening (in.)	15.5 x 15.5

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	1,200
Actual Volume (CFM)	1,200
Total External SP (in. wg)	0.3
Fan RPM	1182
Operating Power (hp)	0.17
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	15.9
Tip Speed (ft/min)	4,041
Static Eff. (%)	40



Misc Fan Data	
Fan Eff. Index (FEI)	
Outlet Velocity (ft/min)	938

Motor	
Motor Included	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	EXP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	5.8
Min. Circuit Ampacity (MCA)	7.25
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	73	75	63	59	61	51	44	69	58	8.8



Model: CUBE-120-4

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Spark B construction was selected.

Greenheck has included options and accessories for this product that meet the intent of AMCA 99 - spark resistant construction guidelines. Greenheck recommends, but does not require, an EXP motor for this product line. If an EXP motor is not selected, the engineer of record must determine if this is acceptable for the application. The resulting fan construction in no way implies a guarantee of safety for any level of spark resistance. Spark resistant construction does not prevent ignition of explosive gasses or vapors due to catastrophic failure or from any airstream material that may exist within in a system.

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 19 Square
Spark B Construction
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-7 and 9, Toggle, Shipped Separate,
Hinge, Factory Installed
Foam Curb Seal (Factory Applied)
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Stainless Steel, nom. 86% Free Area
Aluminum Rub Ring
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)

Selected Sub Marks

See individual submittals for full details
GPI-19-12-G18

Include spark resistant construction and explosion proof motor.

Disconnect Switch

Enclosure Rating: NEMA-7 and 9

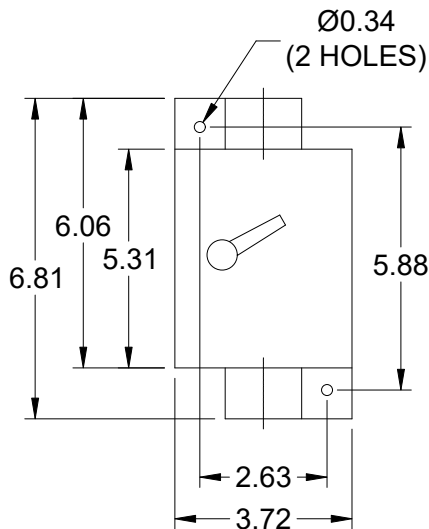
Standard Construction Features:

Enclosures are for indoor use in locations classified as Class I (flammable gases), Group A, B, C, or D and Class II (combustible dust), Group E, F, or G, as defined by the National Electrical Code. Enclosures shall be capable of preventing the entrance of dust and withstanding the pressure resulting from an internal explosion or specified gases. It shall contain such an explosion sufficiently so that an explosive gas-air mixture existing in the atmosphere surrounding the enclosure will not be ignited. Enclosed heat generating devices shall not cause external surfaces to reach temperatures capable of igniting or discoloring dust on the enclosure or igniting dust-air mixtures in the surrounding area. Enclosures shall meet designed tests for dust, explosion, hydrostatic, temperature, and aging gaskets. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

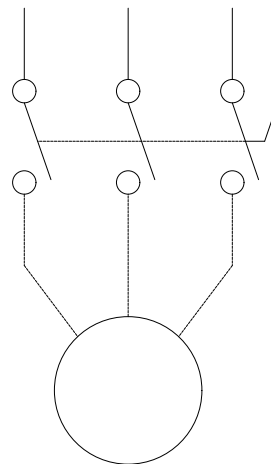
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	3	Rating:	15 hp
Junction Box Mtg.:	Ship Separate	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped Separate						

Electrical Drawing Details



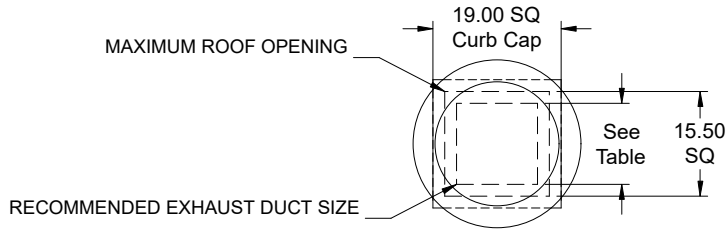
Wiring Schematic



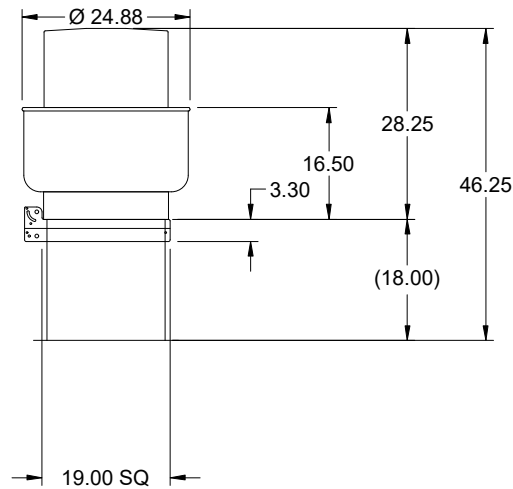
Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Upblast Centrifugal Roof Exhaust Fan



DUCT TYPE	SIZE
STANDARD	12 SQ
FIRE-WRAPPED	8 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON
MOTOR, ADAPTER, AND/OR HINGE BASE.

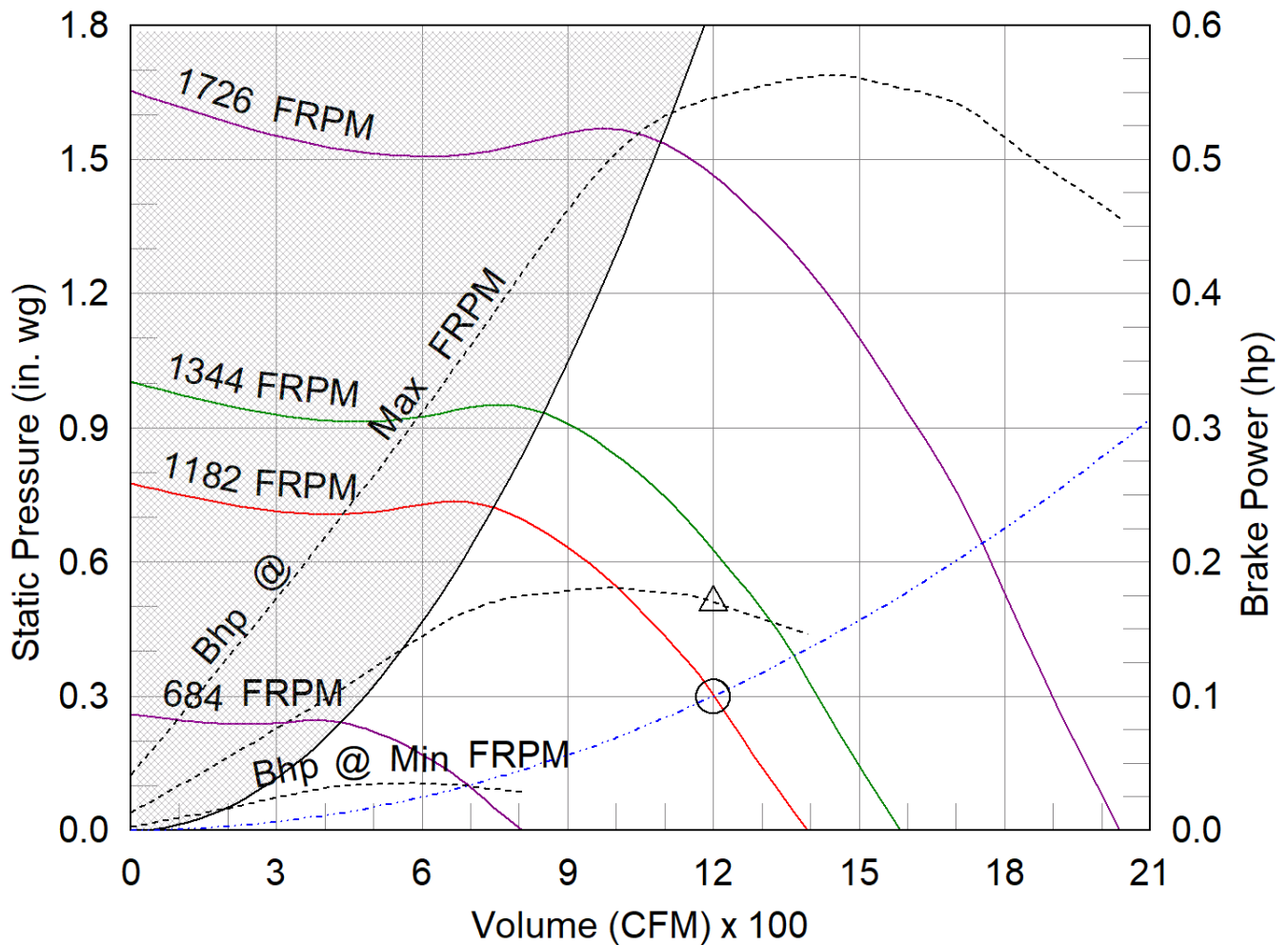
Notes: All dimensions shown are in units of in..

CUBE-120-4

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
1,200	1,200	0.3	1182	0.17



- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- - - System curve
- - - Brake horsepower curve

VCD-23 Low Leakage 3V Blade Volume Control Damper

APPLICATION & DESIGN

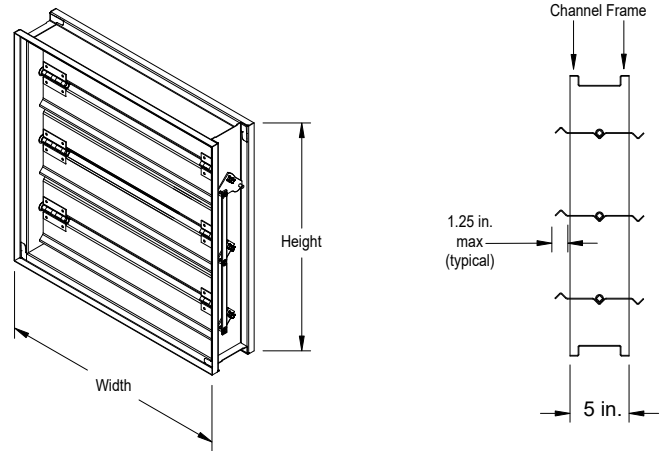
The VCD-23 is a ruggedly built low leakage control damper intended for applications in low to medium pressure and velocity systems. A wide range of electric actuators are available.

DAMPER RATINGS

Pressure:	Up to 5 in. wg - pressure differential
Velocity:	Up to 3,000 ft/min
Leakage:	Class 1A @ 1 in. wg Class 1 @ up to 5 in. wg
Temperature:	Up to 250 F

PRODUCT DETAILS

Frame Type:	Channel
Frame Thickness:	16 ga
Material:	Galvanized
Blade Type:	3V
Blade Action:	Opposed
Blade Seal:	TPE
Axle/Linkage Material:	Steel
Axle Bearings:	Synthetic
Jamb Seal Material:	Stainless Steel
Damper Temp. Rating:	180 F
Jackshafting:	No Preference
Actuator Sizing:	Default SqFt
Ext. Shaft Length:	Standard (6 in.)
Multi-Section Fastening:	Standard
Sizing:	Nominal



- This drawing shows a general damper configuration and is not intended to depict the exact configuration of all dampers in this submittal.
- Width and height furnished approximately 0.250 in. undersize.
- Factory supplied actuators are sized for 1,500 fpm and a fully-closed differential pressure of 2 in. wc. Contact factory for actuator sizing on applications exceeding those levels.
- Installation instructions available at www.greenheck.com.

ACTUATOR INFORMATION

Actuator Type:	120 VAC
Operating Mode:	TwoPosition
Actuator Operation:	Spring Return
Fail Position:	Closed
NEMA Enclosure:	7
Auxiliary Switches:	Yes
Spring Return Time:	Standard

CODES APPROVED

IECC (International Energy Conservation Code) compliant
The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

OPTIONS & ACCESSORIES

Union Label:	No Preference
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SUMMARY

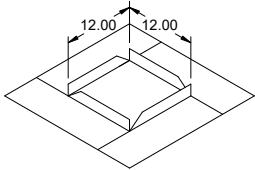
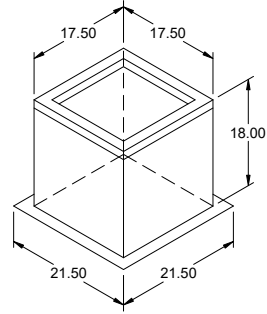
ID #	Tag	Qty	Width	Height	Configuration			
41-1	EF-R22	1	12.000 in.	12.000 in.	Drive Arrangement:	Actuator Mounting:	Actuator Location:	Actuator Qty:
					CC-11-1FER-0	External	Right Side	1
					Actuator Mfr:	Actuator Model:	Act. Orientation:	Standoff Size:
					Belimo	LF120-S	N/A	1.500 in.

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-19	Nominal	1.5	27	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	19	19	17.5	17.5	14	14	18	18

*May not be applicable

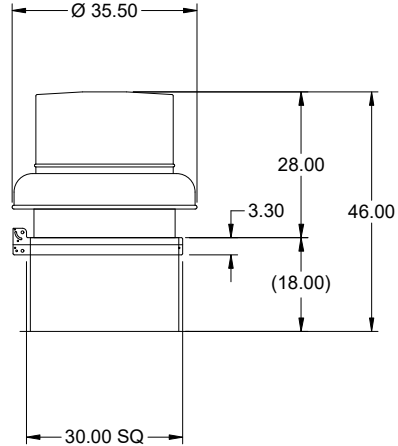
Damper Tray

Damper Tray Width (in.)	Damper Tray Length (in.)
12	12

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: **GB-180-3**
Belt Drive Centrifugal Roof Exhaust Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	92
Weight w/ Acc's (lb)	156
Weight w/ Acc's and Curb (lb)	205
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,500
Actual Volume (CFM)	2,500
Total External SP (in. wg)	0.3
Fan RPM	759
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.9
Tip Speed (ft/min)	3,674
Static Eff. (%)	43

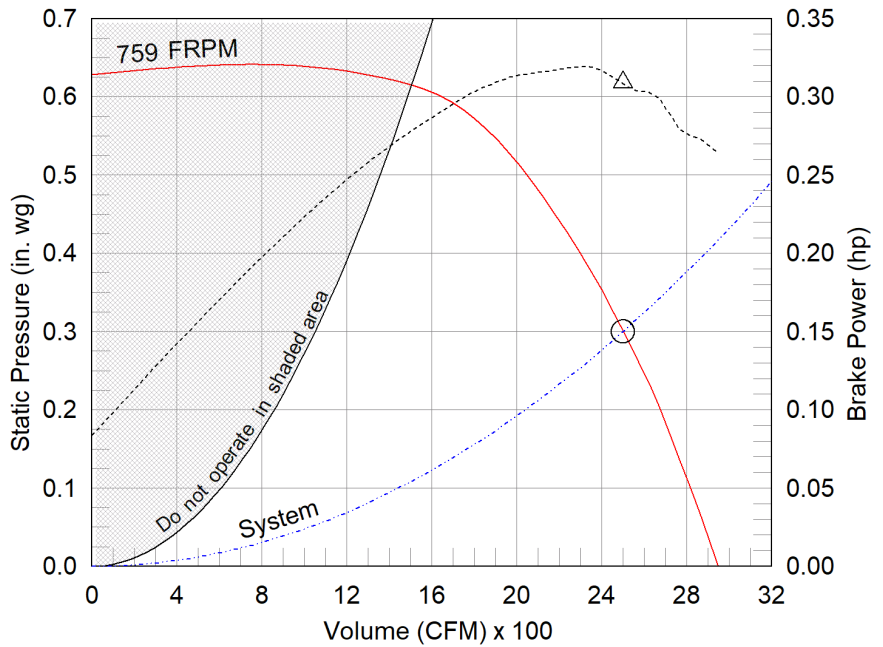
Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	1,208

Motor	
Motor Included	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	69	63	63	58	48	42	68	56	7.6

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-24X24, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-30-24-G18

Disconnect Switch

Enclosure Rating: NEMA-1

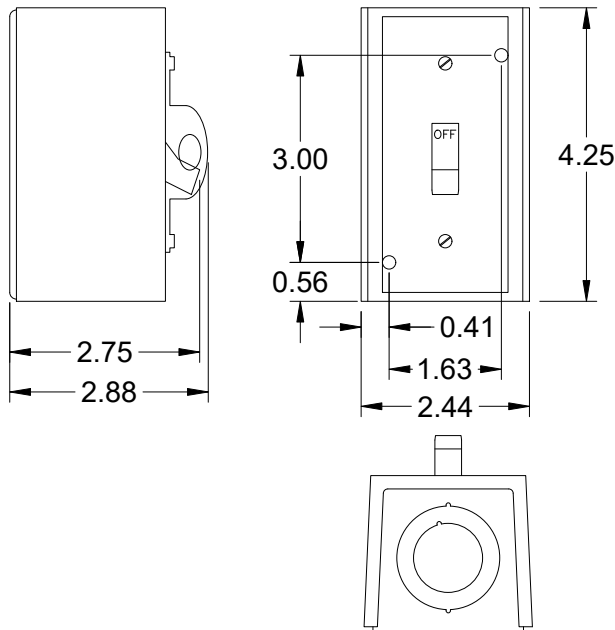
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

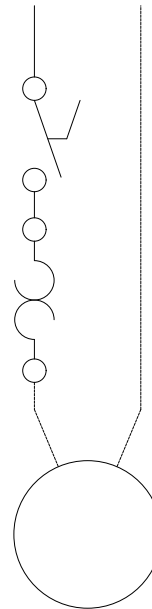
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



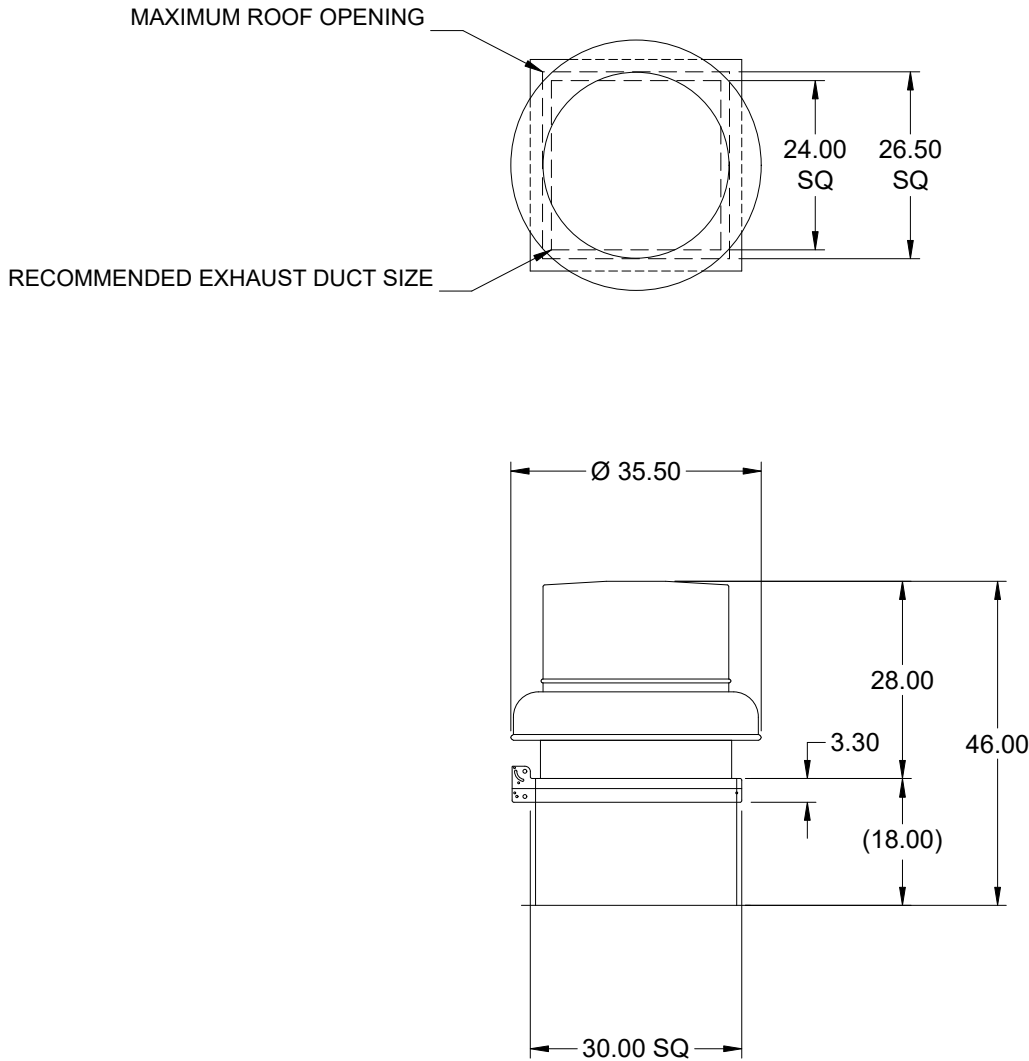
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

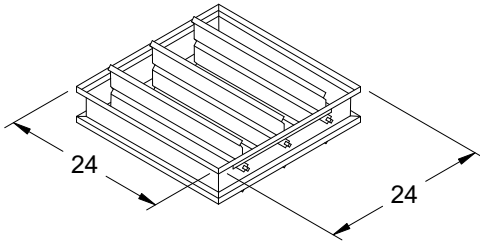
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

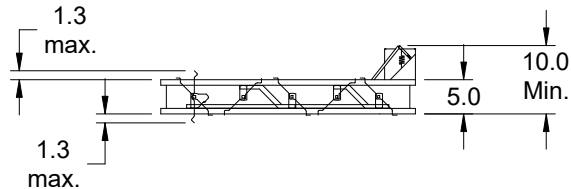
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

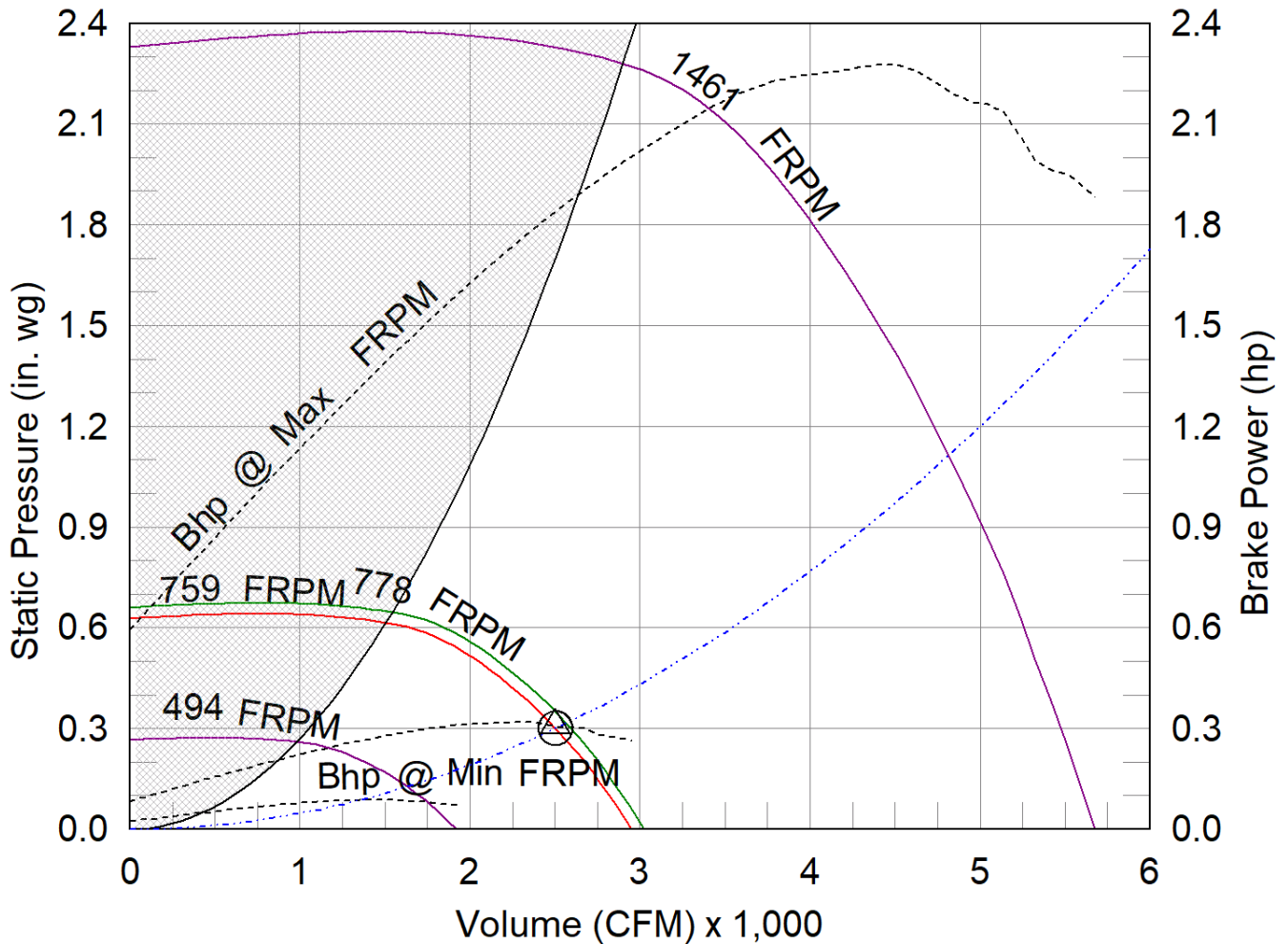
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-180-3

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,500	2,500	0.3	759	0.31



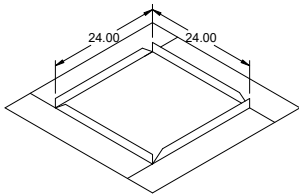
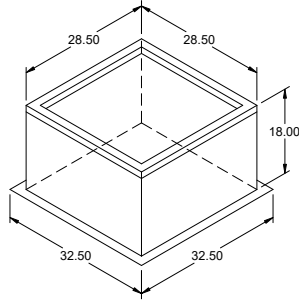
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- - - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

*May not be applicable

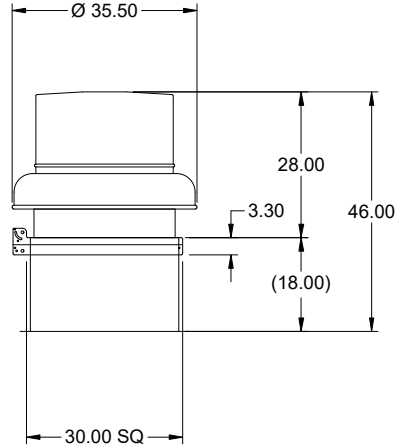
Damper Tray

Damper Tray Width (in.)	Damper Tray Length (in.)
24	24

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-180-3
Belt Drive Centrifugal Roof Exhaust Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	92
Weight w/ Acc's (lb)	156
Weight w/ Acc's and Curb (lb)	205
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,500
Actual Volume (CFM)	2,500
Total External SP (in. wg)	0.3
Fan RPM	759
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.9
Tip Speed (ft/min)	3,674
Static Eff. (%)	43

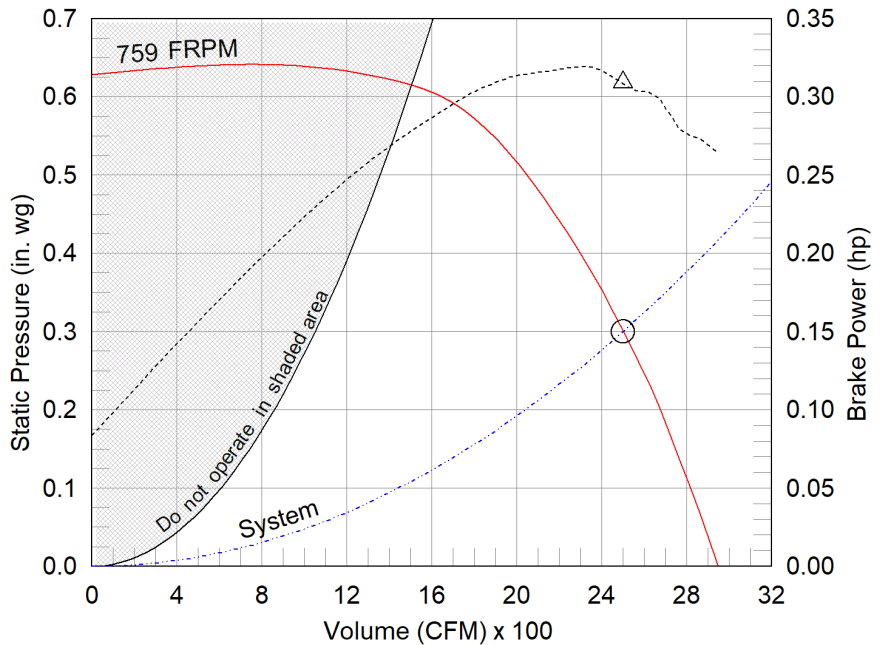
Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	1,208

Motor	
Motor Included	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	69	63	63	58	48	42	68	56	7.6

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-24X24, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See *individual submittals for full details*
GPI-30-24-G18

Disconnect Switch

Enclosure Rating: NEMA-1

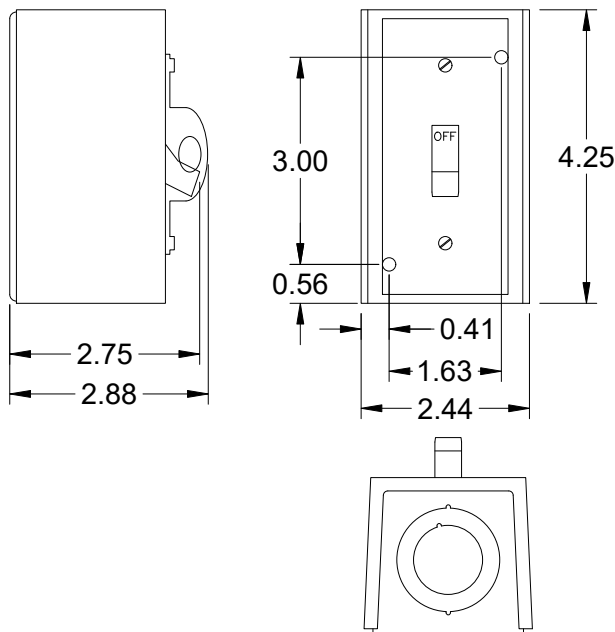
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

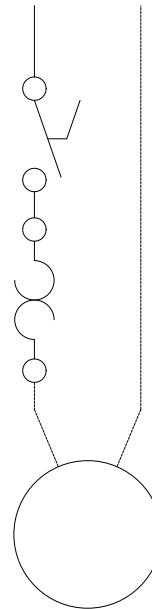
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



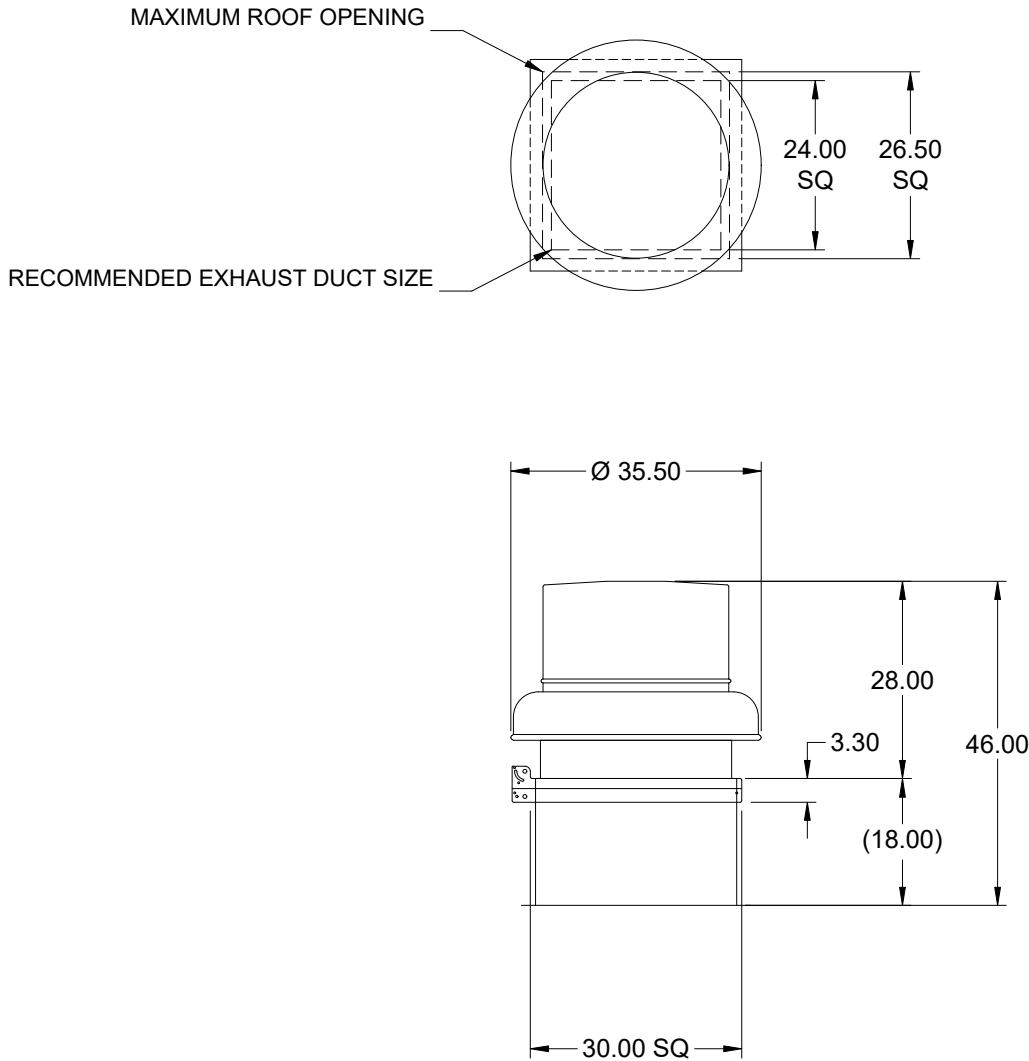
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

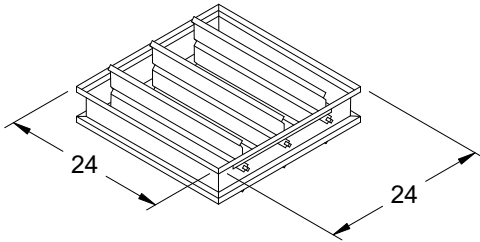
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

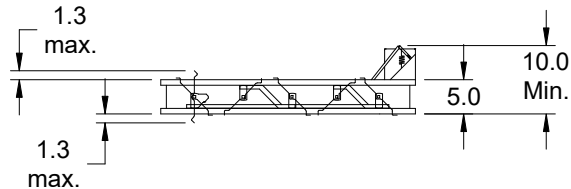
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

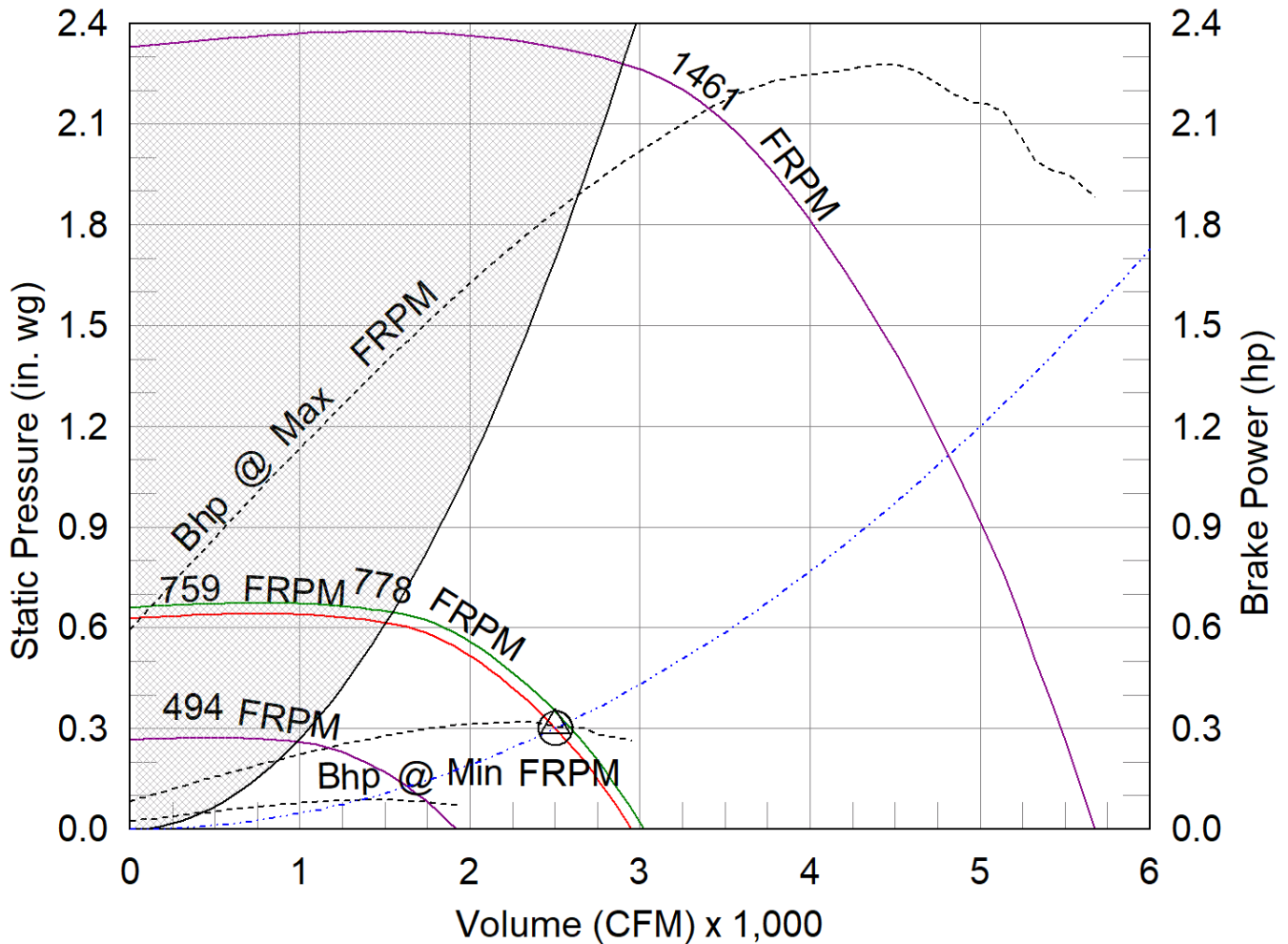
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-180-3

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,500	2,500	0.3	759	0.31



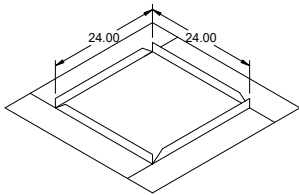
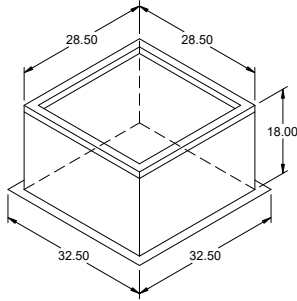
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- - - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI

Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

*May not be applicable

Damper Tray

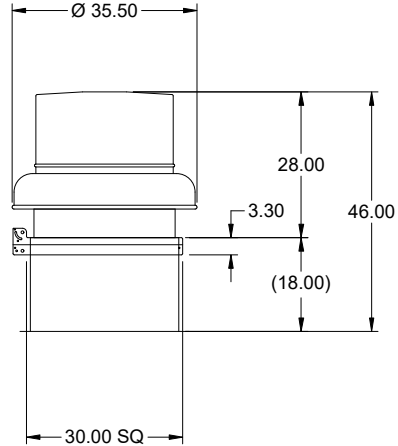
Damper Tray Width (in.)	Damper Tray Length (in.)
24	24

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	92
Weight w/ Acc's (lb)	156
Weight w/ Acc's and Curb (lb)	205
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,500
Actual Volume (CFM)	2,500
Total External SP (in. wg)	0.3
Fan RPM	759
Operating Power (hp)	0.31
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Drive Loss (%)	10.9
Tip Speed (ft/min)	3,674
Static Eff. (%)	43

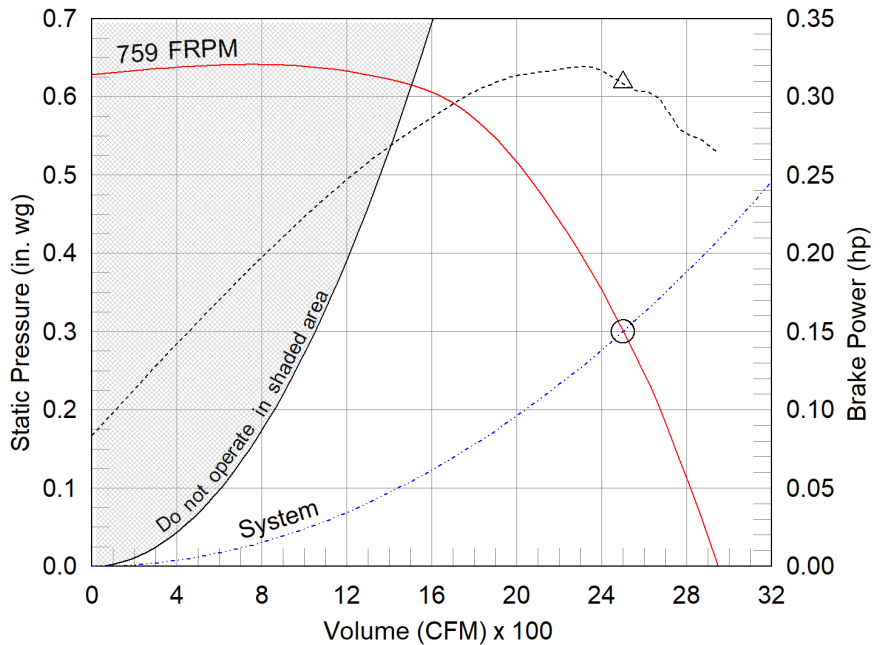
Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	1,208

Motor	
Motor Included	Yes
Size (hp)	1/3
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.2
Min. Circuit Ampacity (MCA)	9
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	69	63	63	58	48	42	68	56	7.6

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in.
 *NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
 LwA - A weighted sound power level, based on ANSI S1.4
 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: GB-180-3

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Motor with Thermal Overload
Spare Belt(s) - 1 Set (Attached)
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, T.O., Toggle, Shipped with Unit, ***Attn: Disconnect enclosure may be too large to fit in motor compartment.
Hinge, Factory Installed
Coated with Hi-Pro Polyester, Bone White (GF102), Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, VCD-23-PB-24X24, Not Coated, Nominal Size
Damper Actuator (GJD226.1), 115 VAC Actuated
End Switch

Selected Sub Marks

See individual submittals for full details
GPI-30-24-G18

Disconnect Switch

Enclosure Rating: NEMA-1

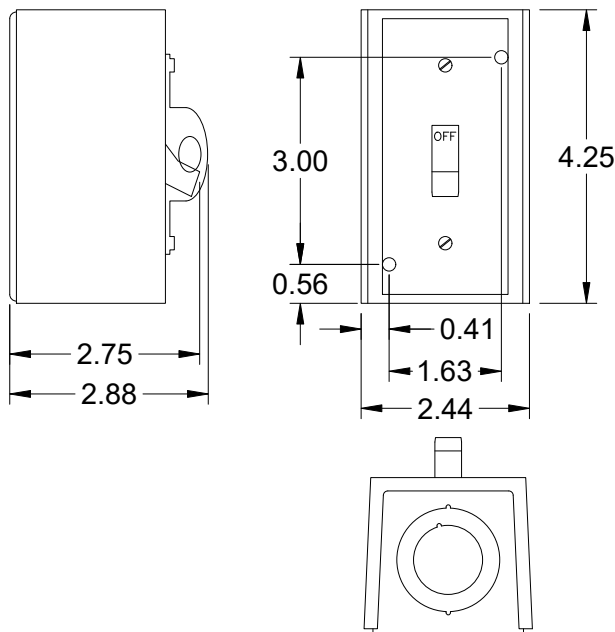
Standard Construction Features:

Enclosure constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dust. This enclosure meets the rod entry and the indoor corrosion protection design tests. The rod entry test is intended to simulate incidental contact with enclosure equipment. Enclosure is equipped with provision to lockout in the off position with customer supplied lock.

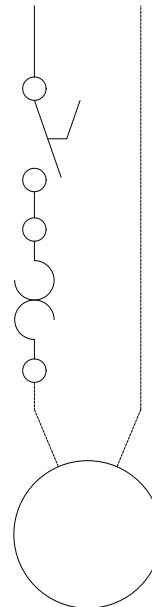
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1/3 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	Thermal Overload	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship With Unit	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



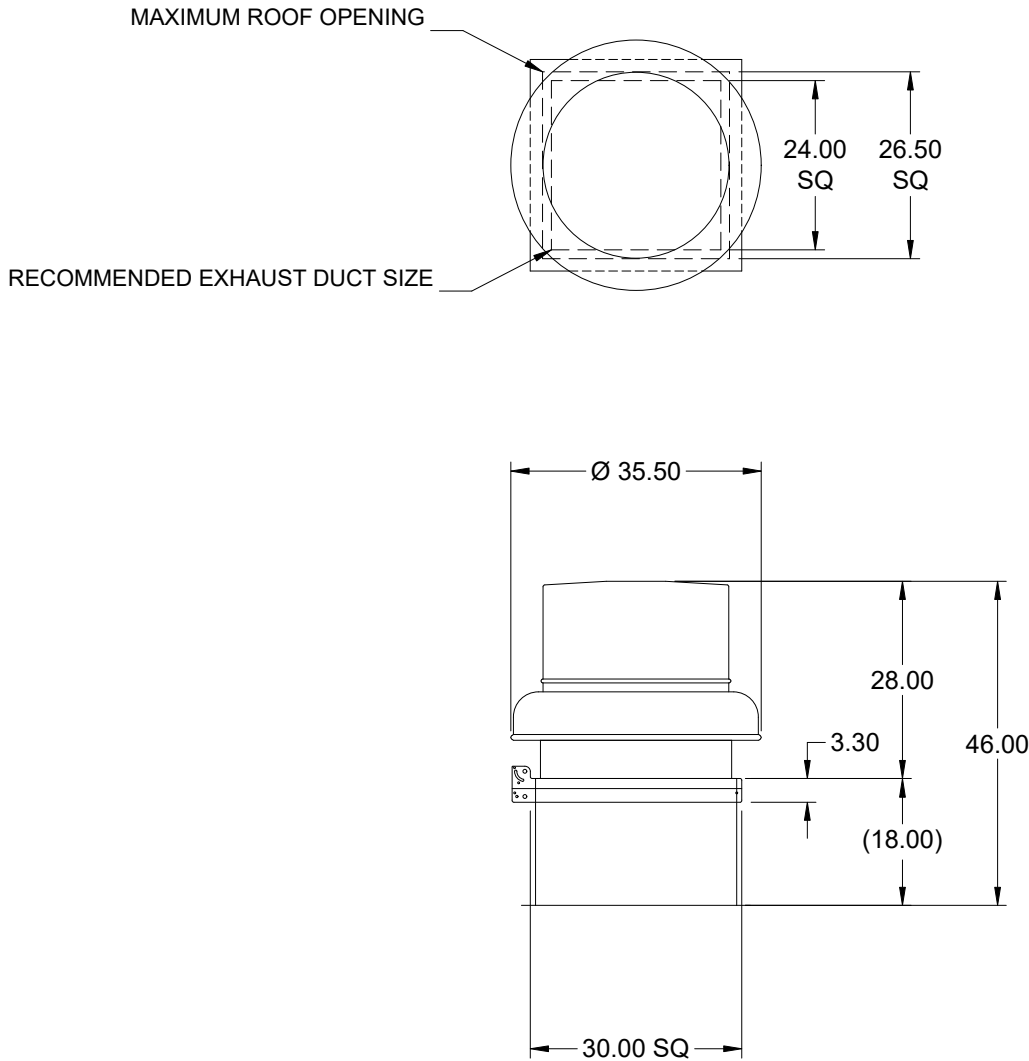
Wiring Schematic



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Belt Drive Centrifugal Roof Exhaust Fan



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR
HINGE BASE.

Notes: All dimensions shown are in units of in..

Control Damper

Model: VCD-23

Standard Construction Features:

- Model VCD-23 is a well built low leakage control damper for automatic control or manual balancing applications - Galvanized 16 ga channel frame - Galvanized blades with reinforcements - Side mounted steel linkage is concealed in the frame to prevent additional pressure drop - Axles are steel and 0.5 in. dia.- Synthetic axle bearings - Width and height furnished approximately 0.25 in. undersized - Field wiring is required to individual components

Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes

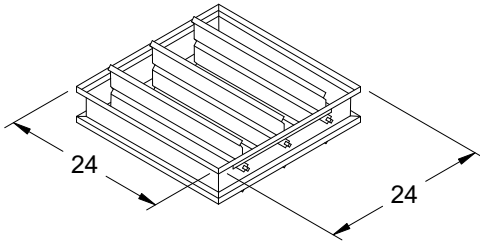
Actuator Configuration:

Manufacturer: Siemens Jackshaft Quantity: 0

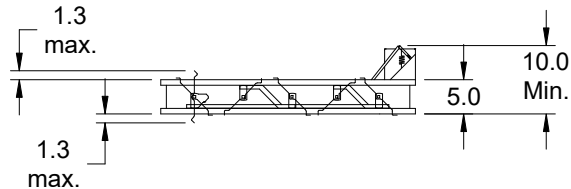
Model: GJD226.1

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

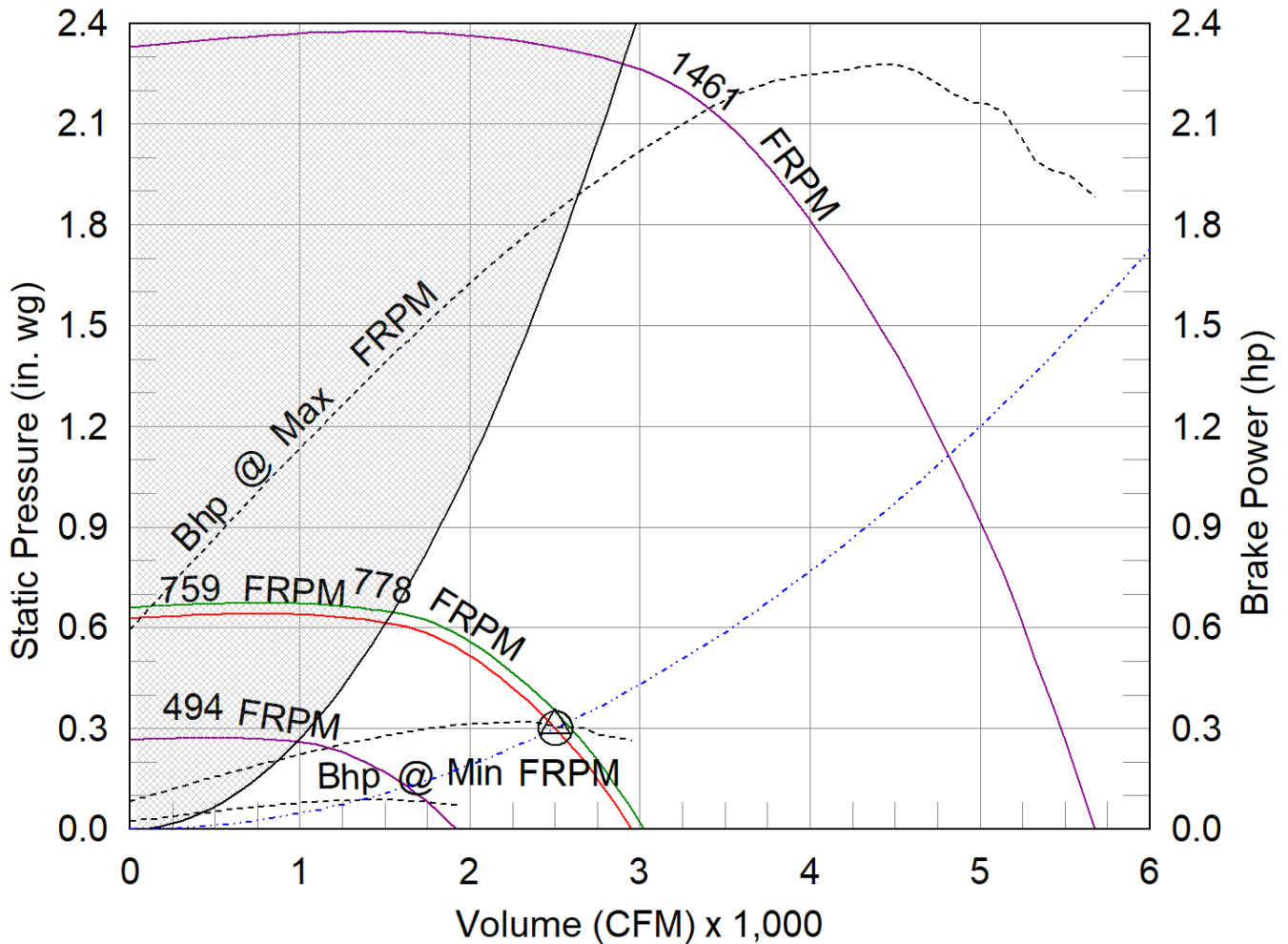
Notes: All dimensions shown are in units of in.
Width And height furnished approximately 0.25 in. undersize

GB-180-3

Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	Total External SP (in. wg)	Fan RPM	Operating Power (hp)
2,500	2,500	0.3	759	0.31



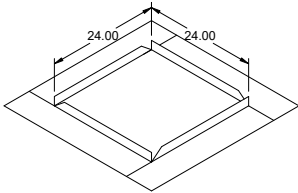
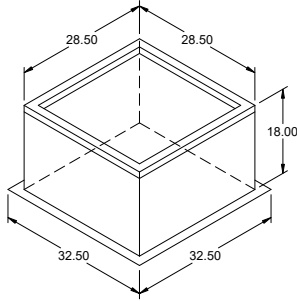
- △ Operating Bhp point
- Operating point at Total External SP
- Construction Limit
- Motor/System Limit
- Fan curve
- Min FRPM
- System curve
- - - Brake horsepower curve

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to some ratings only.



Model: GPI Coordinate with roof slope.

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	1	GPI-30	Nominal	1.5	49	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
18	30	30	28.5	28.5	25	25	29	29

*May not be applicable

Damper Tray

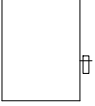
Damper Tray Width (in.)	Damper Tray Length (in.)
24	24

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

Damper Drive Arrangements Job Summary -Start-

Drive Arrangement: Drive-CC-11-1FER-0



Damper Drive Arrangements Job Summary -End-

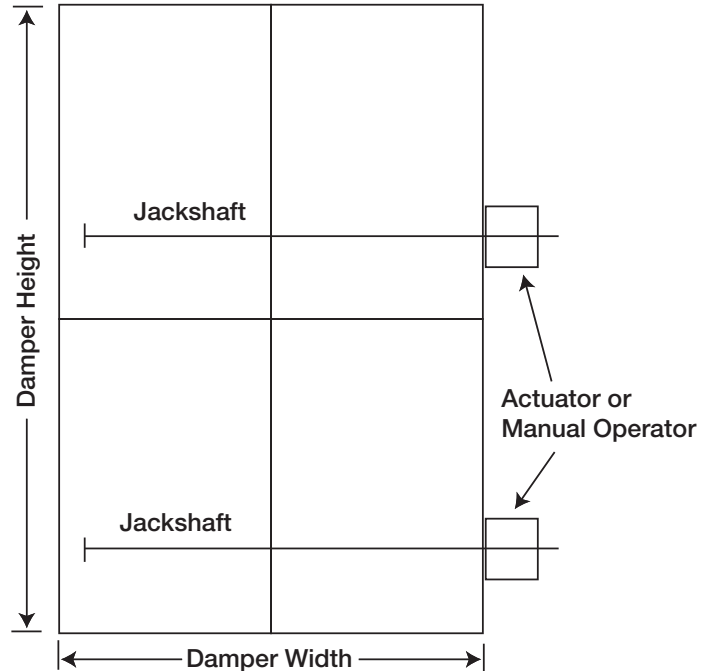
Drive Arrangement Definition

Actuator driven dampers are supplied with a drive arrangement code that helps describe the configuration of the damper. The following breaks down what each number and letter represents.

22-2FER-2

① ② ③④ ⑤⑥ ⑦

- ① Number of sections wide
- ② Number of sections high
- ③ Number of actuators or manual operators (such as quadrants, pull chain, etc.)
- ④ Who supplies the actuators or manual operators
F - Factory
C - Customer Supplied (field mounted)
- ⑤ Actuator or manual operators mounting
E - External
I - Internal
B - Both internal and external
- ⑥ Actuator or manual operators location
L - Left hand drive
R - Right hand drive
B - Both right and left
- ⑦ Number of jackshafts



Each damper is supplied with a Drive Arrangement Prefix to help describe its construction. See the following examples:

Model	Drive Arrangement Prefix
AMD series, AMD-TD series	AMD
FBH & FBV	FB
DFD-210; DFDAF-310, DFDAF-330; SEDFD-210 FSD, OFSD, CFSD, SMD, SEFSD, SSFSD, SESMD, SSSMD series (except vertical blade models)	MLS
ICD series, MBD-15 & VCD series (except vertical blade models)	CC
FSD-311V, SMD-301V, VCD-xxV	VB

Application

NEMA 7 and 9 enclosure are constructed for use in hazardous (classified) locations classified as defined in NFPA 70:

Class I, Division I, Groups C and D

Class II, Division II, Groups E, F and G.

They are designed to contain an internal explosion without causing an external hazard.

Nema 7 enclosure is designed to be used on Siemens, Honeywell, or Belimo direct drive actuators. This enclosure can be used on internal or external mount actuators.

Nema 7 housing: 29 lbs.

Certifications

XCE Series:

Class I, Division 1, Gas Groups BCD

Class II, Division 1, gas Groups EFG

Class III

NEMA Type 4, 7, 9

NEMA Type 4X (w/SS cover bolts)

UL1203

CSA C22.2 No. 3

