



# Middletown Fire Station 83


Pepper Job No. 2301497

Submittal: 83-233400-001

Type: Product Data

Fan & Roof Ventilators

- EF-1 PAGE 3
- EF-2 PAGE 12
- EF-3 PAGE 21
- EF-5 PAGE 30
- EF-6 PAGE 39
- EF-7 PAGE 48
- EF-8 PAGE 57
- IF-1 PAGE 68

 Pepper Construction Tomorrow Transformed		
<input checked="" type="checkbox"/>	<b>REVIEWED FOR APPROVAL</b>	<small>Review of this shop drawing does not relieve the Architect, Engineer or Subcontractor of their contractual design responsibilities. Pepper Construction's review is not, nor is it responsible for, an engineering or architectural analysis of design elements, load or dimension calculations, or similar matters. The Subcontractor is responsible to furnish additional material or work as required by the Contract and review of these documents, as well as dimensions to be confirmed and correlated at the job site.</small>
<input type="checkbox"/>	<b>REVIEWED AS NOTED FOR APPROVAL</b>	
<input type="checkbox"/>	<b>FOR RECORD</b>	
<b>JOB:</b> 2301497	<b>BY:</b> clewis	<b>DATE:</b> 3/4/2024
<b>SUBMITTAL#</b> 83-233400-001	<b>Rev #</b> 0	

**IF-1 HAS INCORRECT AIRFLOW.  
NZ 3/7/24**

<input type="checkbox"/> REVIEWED
<input type="checkbox"/> REVIEWED AS NOTED
<input checked="" type="checkbox"/> REVISE & RESUBMIT
REVIEWED FOR GENERAL CONFORMANCE WITH CONTRACT DOCUMENT CONCEPTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR:
COORDINATING EQUIPMENT DIMENSIONS WITH ACTUAL FIELD CONDITIONS TO INSURE FIT FOR INSTALLATION, MAINTENANCE AND CODE CLEARANCES
COORDINATING/VERIFYING SERVICE CONNECTIONS AND CAPACITIES
PERFORMING INSTALLATION IN ACCORDANCE WITH CONTRACT DOCUMENTS AND EQUIPMENT MANUFACTURERS REQUIREMENTS
PROVIDING MISCELLANEOUS APPURTENANCES FOR COMPLETE, FUNCTIONAL OPERATION
BY: <u>David Zelinski</u> DATE: <u>03/07/2024</u> NAUMAN & ZELINSKI LLC

# ***SUBMITTAL***

**Job Name:** Middletown Fire Station No 83

**Engineer:** Nauman & Zelinski

**Contractor:** Mechanical Optimizers

**Elevation: (ft)** 499

**Date:** 2/13/2024

**Submitted By:** Josh Wolfe

EAP INC - 370  
3930 VIRGINIA AVE  
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US

Phone: (513)489-9494

Fax: (513)489-6448

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**SUBMITTAL NOTES:**

Fan & GRV Submittals



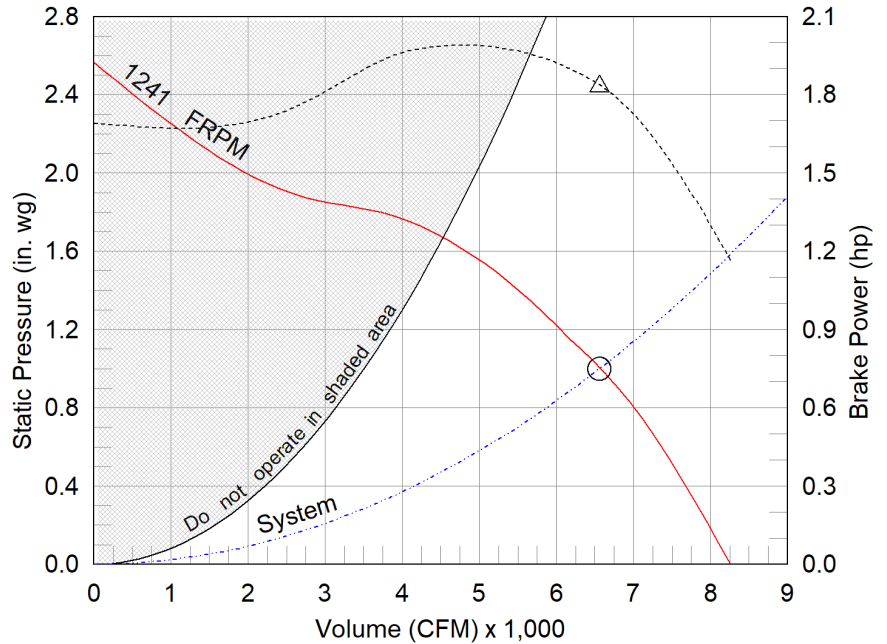
P.O. Box 410 Schofield, WI 54476 (715) 359-6171 FAX (715) 355-2399 [www.greenheck.com](http://www.greenheck.com)

**Model: SQ-20-VG**  
Direct Drive Mixed Flow Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	202
Weight w/ Acc's (lb)	232
Optional Damper (in.)	29 x 29

Performance	
Requested Volume (CFM)	6,560
Actual Volume (CFM)	6,560
Total External SP (in. wg)	1
Fan RPM	1241
Operating Power (hp)	1.83
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	7,961
Static Eff. (%)	56

Misc Fan Data	
Fan Eff. Index (FEI)	1.44
Outlet Velocity (ft/min)	1,110



Motor	
Motor Mounted	Yes
Size (hp)	5
Voltage/Cycle/Phase	480/60/3
Enclosure	TEFC
Motor RPM	1550
Windings	1
FLA (Amps)	7.1
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

Static Pressure Calculations	
External SP	1 in. wg
Direct Drive RPM Adjustment	0 in. wg
Total External SP	1 in. wg

**SUBMITTED HORSEPOWER GREATER THAN DESIGN. COORDINATE ELECTRICAL REQUIREMENTS WITH E.C. NZ 3/7/24**

**Nameplate Model: SQ-20-M2-VG-X**

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	81	77	76	74	73	71	65	80	68	16.9
Outlet	76	76	77	78	77	74	73	67	82	70	18.4
Radiated	80	75	71	64	64	58	56	55	69	58	9.3

**Notes:**

All dimensions shown are in units of in.  
\*Please consult factory for actual motor amp draw  
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: SQ-20-VG

### Direct Drive Mixed Flow 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:

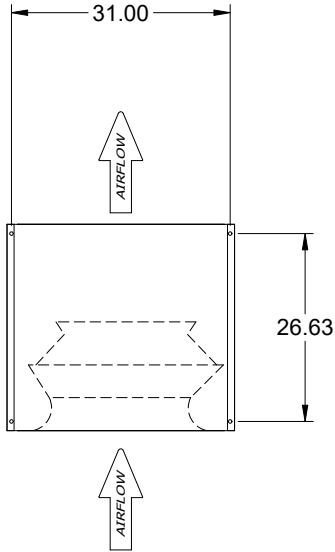
Galvanized steel housing – Mixed flow aluminum wheel – Two bolted access panels – Slip-in duct connection flange – Ball bearing motors – Corrosion resistant fasteners

#### Selected Options & Accessories:

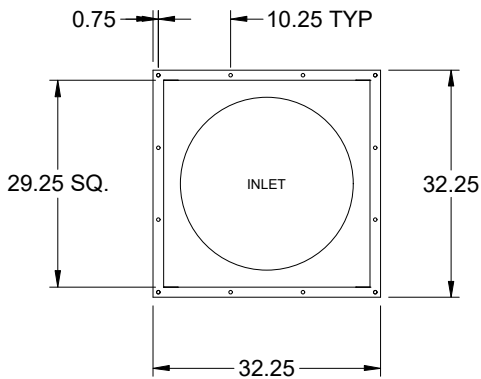
Motor - Vari-Green EC motor  
Hand/Off/Auto, Shipped Loose (PN: 387186)  
UL/cUL 705 Listed - "Power Ventilators"  
Junction Box Mounted and Wired  
Switch, NEMA-1, Toggle, Shipped with Unit,  
Aluminum Wheel Material  
Galvanized Inlet Cone Material  
Fan: Spring, Hanging, 1 Inch Isolator PN: 850344, Incl. 4 isolators and 4 brackets  
Damper Shipped Loose, Inline, WD-330-PB-29X29, Not Coated  
Damper Actuator (MP-310), 115 VAC Actuated, Ext. Mnt  
End Switch  
Unit Warranty: 1 Yr (Standard)

SQ-20-VG

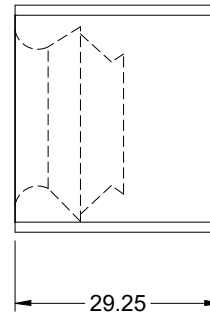
Direct Drive Mixed Flow Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

# Disconnect Switch

## Enclosure Rating: NEMA-1

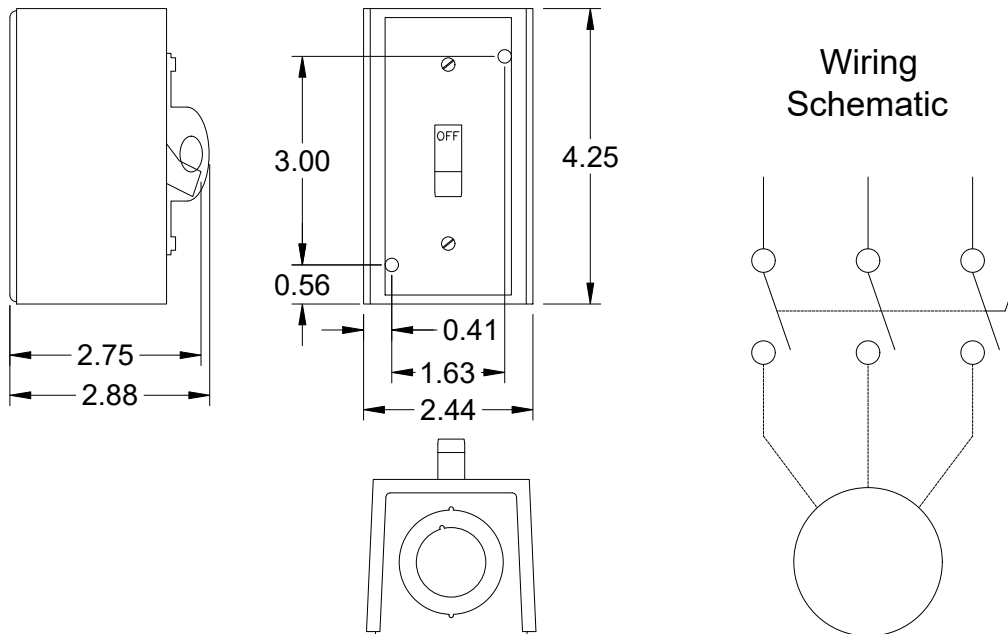
### Standard Construction Features:

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:	5 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.:	Ship With Unit	RPM:	1550	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

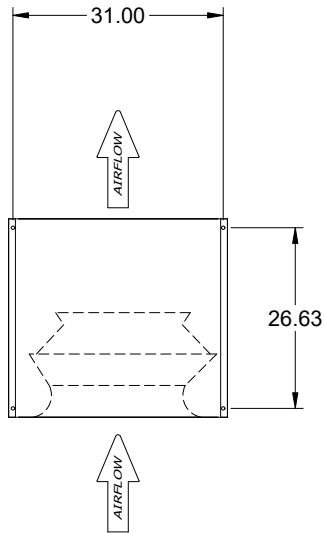
### Electrical Drawing Details



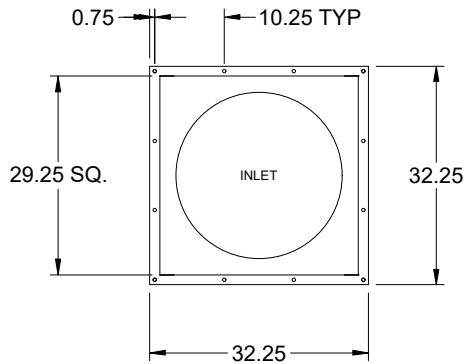
Notes: All dimensions shown are in units of in.

# Assembly Drawing

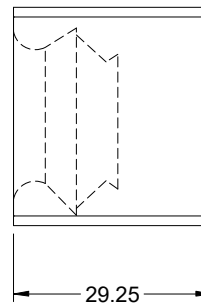
Type: Direct Drive Mixed Flow Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

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

# Vari-Green

## Motor & Control Options

An EC motor that uses AC input power and internally converts it to DC power. Motor accepts a 0-10VDC control signal. Motor is operable in the 2-10VDC range and off while in the 0-1.9VDC range. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the fan housing adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

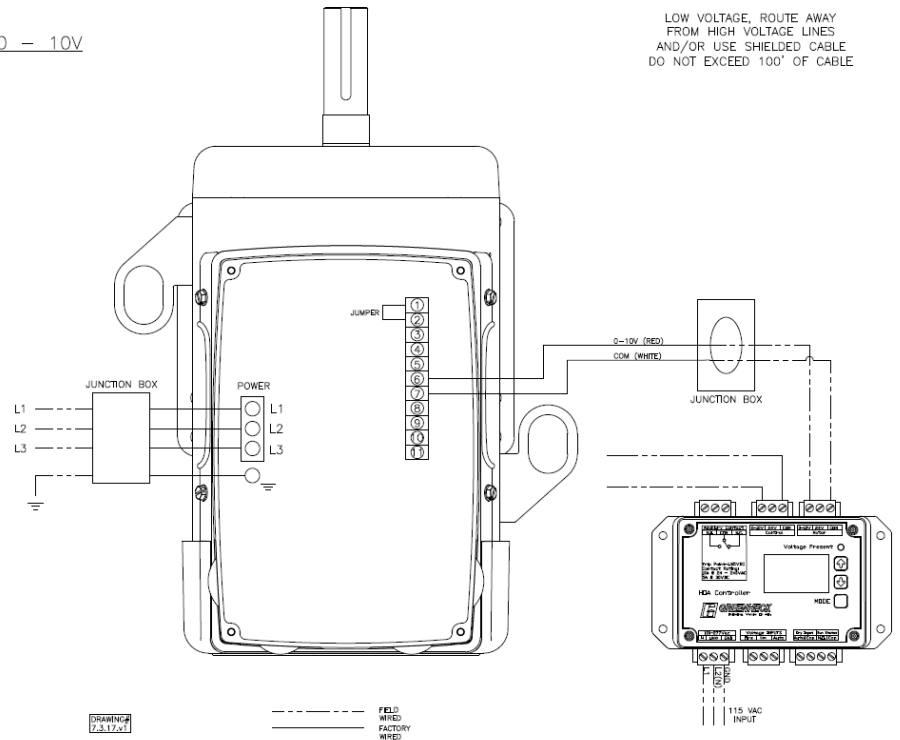
Input Voltage: 460  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: N/A

0 - 10V

### Control Configuration

Control Type: Dial on Fan  
Transformer: HOA Loose

## Vari-Green



# Vertical Mount Exhaust Damper

Model: WD-330

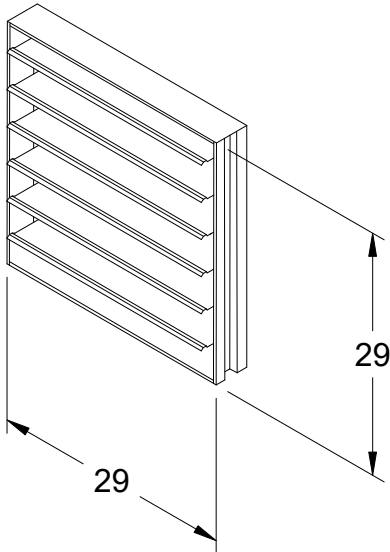
## Standard Construction Features:

- Model WD-330 is a vertical mount exhaust damper and is constructed of galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Nylon type bushings

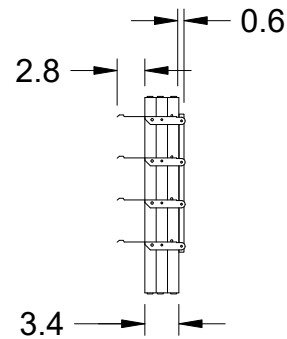
## Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes



DAMPER



TYP. SECTION VIEW

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

# Fan Isolator

Type: Spring, Hanging, 1 Inch

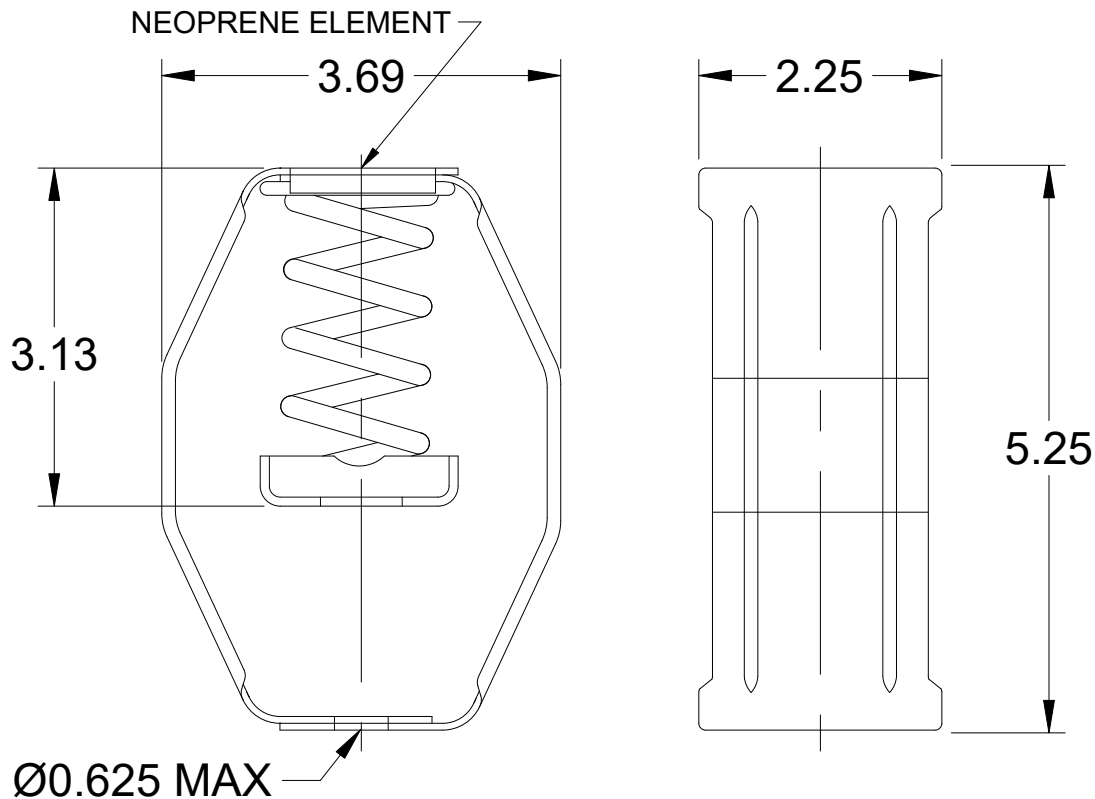
## Standard Construction Features:

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.):	0.98

## Spring, Hanging, 1 Inch Deflection - Vibration Isolator



Notes: All dimensions shown are in units of in.

## AMCA

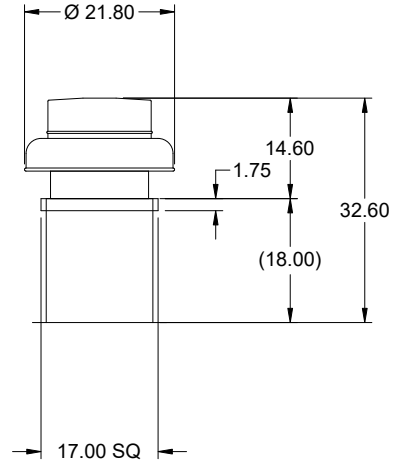


AMCA Licensed for Sound and Air Performance and FEI ratings. Power rating (BHP/kW) does not include transmission losses.

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 air, sound and FEI performance ratings only. Performance certified is for installation type B: Free inlet, Ducted outlet. Power rating (bhp) does not include transmission losses. The sound power level ratings are shown in decibels, referred to 10-12 watts, calculated per AMCA Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet Lwi, LwiA and outlet Lwo, LwoA, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The AMCA Certified Ratings Seal for Sound applies to inlet LwiA 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 (Installation type D). The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances (accessories), etc. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

**Model: G-095-VG**  
Direct Drive Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	28
Weight w/ Acc's (lb)	42
Weight w/ Acc's and Curb (lb)	66
Standard Curb Cap Size (in.)	17 x 17
Optional Damper (in.)	10 x 10
Roof Opening (in.)	13.5 x 13.5

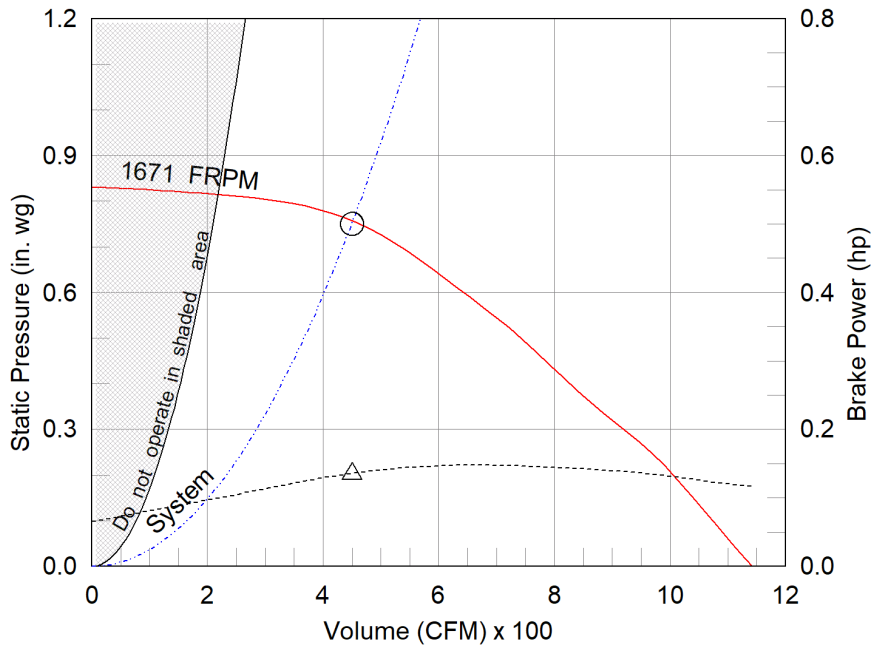


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	450
Actual Volume (CFM)	450
Total External SP (in. wg)	0.75
Fan RPM	1671
Operating Power (hp)	0.13
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	4,759
Static Eff. (%)	39

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	388

Motor	
Motor Mounted	Yes
Size (hp)	1/6
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Efficiency Rating	High
Windings	1
FLA (Amps)	2.2
Min. Circuit Ampacity (MCA)	3
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	83	80	72	66	64	58	48	49	71	59	10.6



## Model: G-095-VG

### Direct Drive Centrifugal Roof Exhaust Fan

#### Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor  
Control - Dial for balancing  
Hand/Off/Auto, Shipped Loose (PN: 387186)  
Standard Curb Cap Size - 17 Square  
UL/cUL 705 Listed - "Power Ventilators"  
Switch, NEMA-1, Toggle,  
Junction Box Mounted & Wired in weather-protected motor compartment  
Birdscreen: Galvanized, nom. 84% Free Area  
Composite Wheel Material  
Conduit Chase Qty 1  
Unit Warranty: 1 Yr (Standard)  
Damper Shipped Loose, WD-100-PB-10X10, Not Coated, Nominal Size  
Damper Actuator (MP-100A), 115 VAC Actuated  
End Switch

#### Selected Sub Marks

See individual submittals for full details  
GPI-17-G18

***The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.***

***If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.***

# Disconnect Switch

## Enclosure Rating: NEMA-1

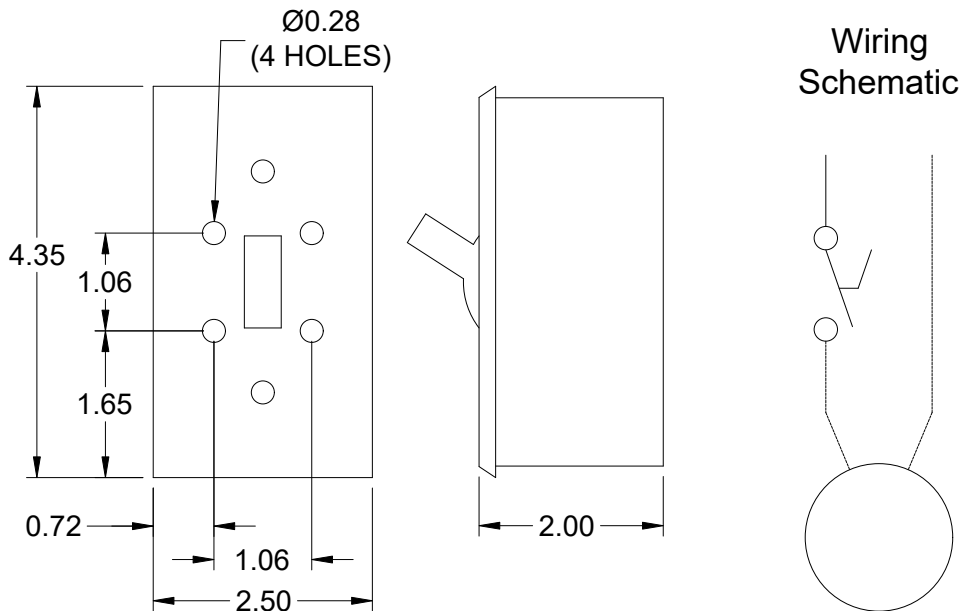
### Standard Construction Features:

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:	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.:	Mounted and Wired	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

### Electrical Drawing Details



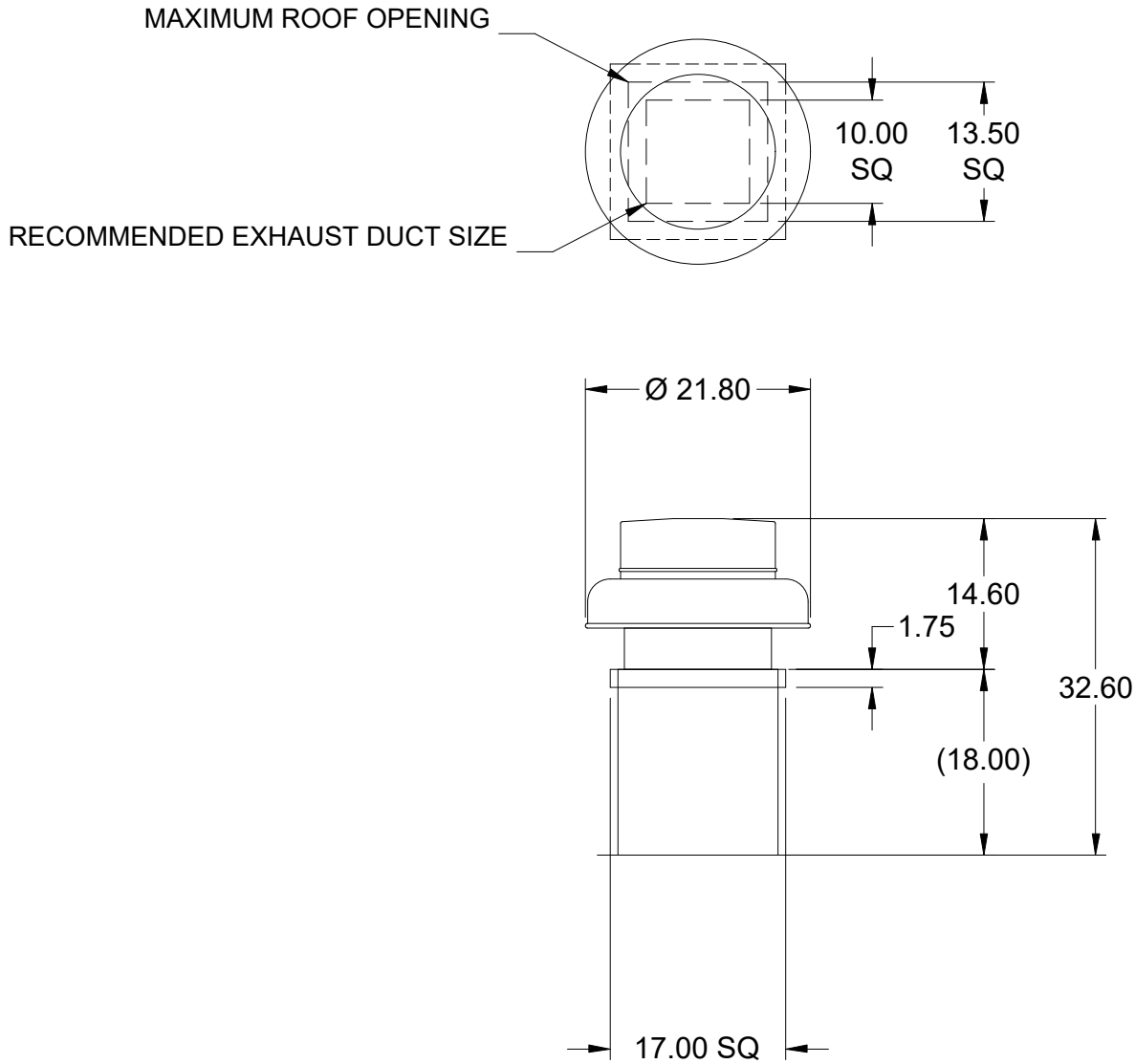
Notes: All dimensions shown are in units of in.

W:\Jobs\Josh Wolfe's Projects\Mechanical Optimizers\Middletown Fire Station No 83.gfcj

Generated by: jwolfe@eapnet.com

# Assembly Drawing

Type: Direct 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..

# Vari-Green Motor & Control Options

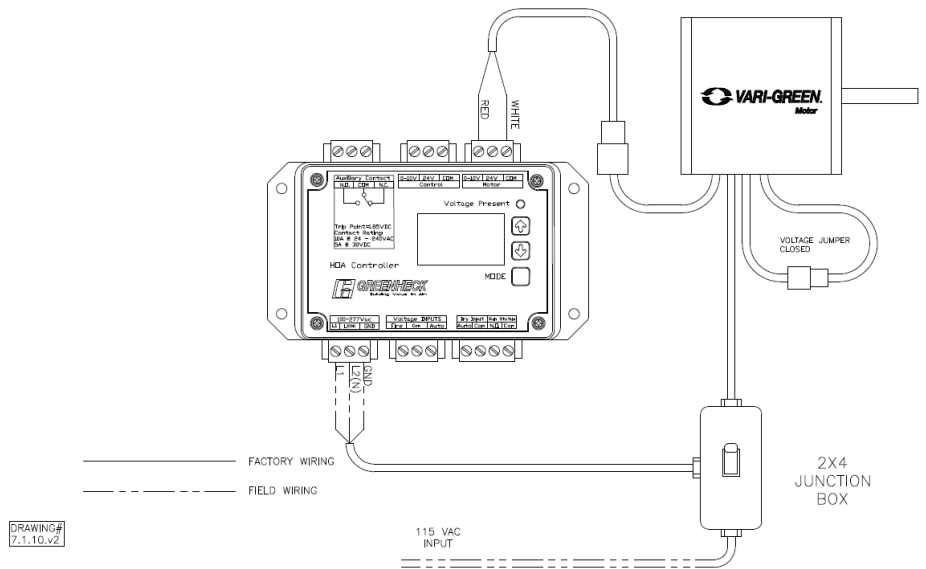
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: Yes

### Control Configuration

Control Type: N/A  
Transformer: HOA Loose



## Vari-Green Hand/Off/Auto (HOA) Control

### Features:

**Hand Mode:** Set motor speed manually in the HOA keypad. Can be used for balancing, troubleshooting or to operate fan before external controls are installed/operational.

**Auto-Local Mode:** Set motor speed using HOA control. Motor can be started/stopped remotely via dry input and/or voltage input.

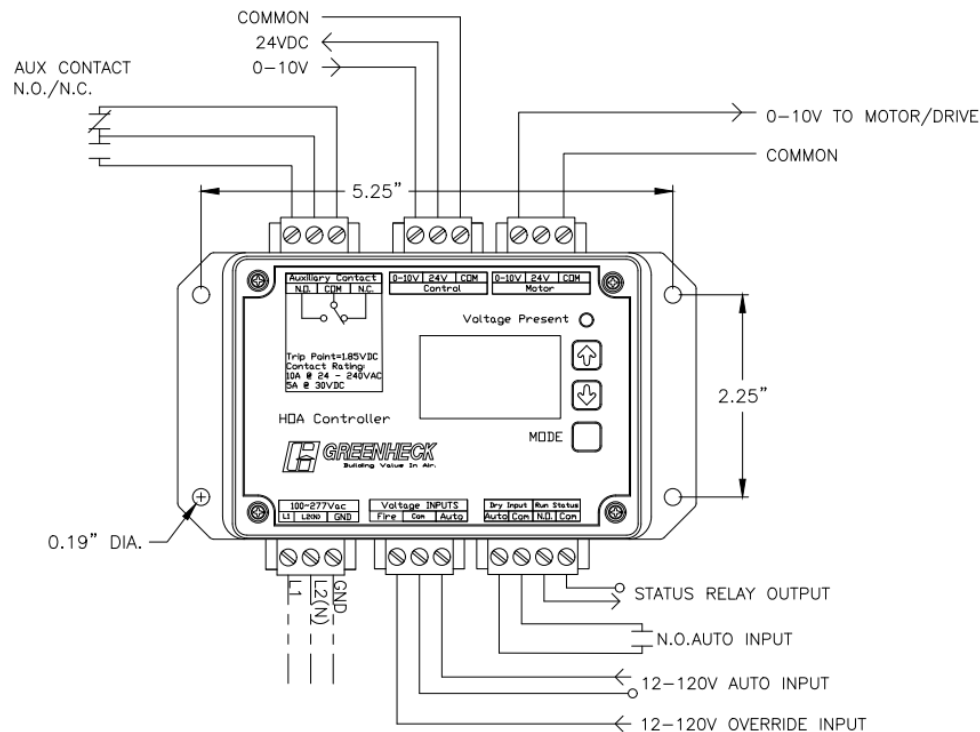
**Auto-Remote Mode:** Remote device provides 0-10V signal for speed reference. Motor can be started/stopped remotely via dry input and/or voltage input.

**Override:** Override: Voltage input will run motor at speed set in the HOA keypad. This input will take precedence over every other signal/mode.

**Auxiliary Contact:** N.O./N.C. contact will change states when the motor is being sent above 1.85VDC. Useful to signal a damper actuator to open/close.

**Status Output:** N.O. contact will close when the motor is being sent above 1.85VDC. Useful to signal BMS or other device motor is being commanded to run. Does NOT prove motor is running.

**24VDC Power Supply:** 500mA of current available to power Vari-Green controls or other devices



DRAWING#  
7.5.v2

Specifications and Contact Ratings	
Power Input	100-277 VAC
Voltage Input	12-120VAC/VDC
Override Input	12-120VAC/VDC
Auxiliary Contact (N.O./N.C.)	10A @ 24-240VAC / 5A @ 30VDC
Status Output (N.O.)	400 VAC/VDC @ 120mA
24VDC Output	500mA
Speed Reference Output	0-10VDC

# 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 Configuration:

Actuator Type: 115 VAC

End Switch: Yes

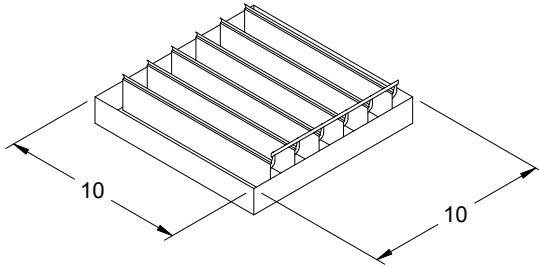
## Actuator Configuration:

Manufacturer: Greenheck Jackshaft Quantity: 0

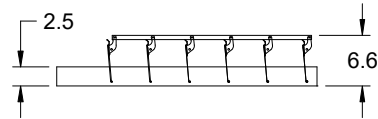
Model: MP-100A

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

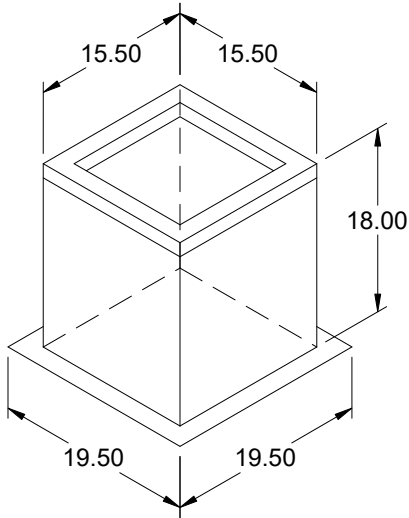
Notes: All dimensions shown are in units of in.  
Width And height furnished approximately 0.125 in. undersize

## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include 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

### 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-17	Nominal	1.5	24	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	17	17	15.5	15.5	12	12	16	16

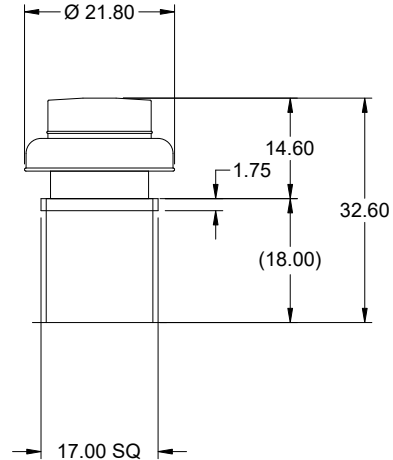
\*May not be applicable

#### Accessories

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

**Model: G-095-VG**  
Direct Drive Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	28
Weight w/ Acc's (lb)	42
Weight w/ Acc's and Curb (lb)	66
Standard Curb Cap Size (in.)	17 x 17
Optional Damper (in.)	10 x 10
Roof Opening (in.)	13.5 x 13.5

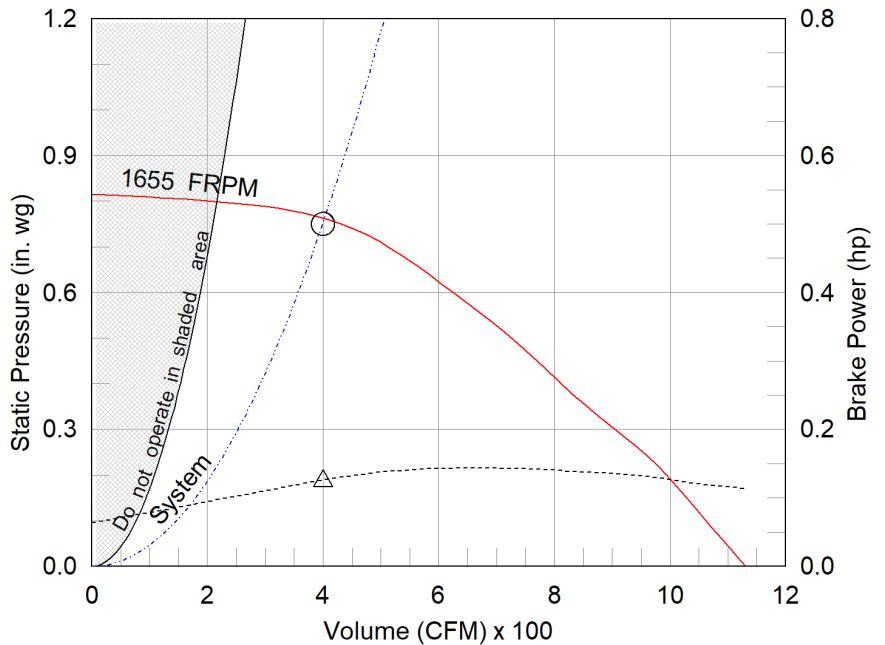


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	400
Actual Volume (CFM)	400
Total External SP (in. wg)	0.75
Fan RPM	1655
Operating Power (hp)	0.12
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	4,713
Static Eff. (%)	38

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	345

Motor	
Motor Mounted	Yes
Size (hp)	1/6
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Efficiency Rating	High
Windings	1
FLA (Amps)	2.2
Min. Circuit Ampacity (MCA)	3
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	83	81	71	66	65	58	46	52	71	59	10.7



## Model: G-095-VG

### Direct Drive Centrifugal Roof Exhaust Fan

#### Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor  
Control - Dial for balancing  
Hand/Off/Auto, Shipped Loose (PN: 387186)  
Standard Curb Cap Size - 17 Square  
UL/cUL 705 Listed - "Power Ventilators"  
Switch, NEMA-1, Toggle,  
Junction Box Mounted & Wired in weather-protected motor compartment  
Birdscreen: Galvanized, nom. 84% Free Area  
Composite Wheel Material  
Conduit Chase Qty 1  
Unit Warranty: 1 Yr (Standard)  
Damper Shipped Loose, WD-100-PB-10X10, Not Coated, Nominal Size  
Damper Actuator (MP-100A), 115 VAC Actuated  
End Switch

#### Selected Sub Marks

See individual submittals for full details  
GPI-17-G18

***The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.***

***If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.***

# Disconnect Switch

## Enclosure Rating: NEMA-1

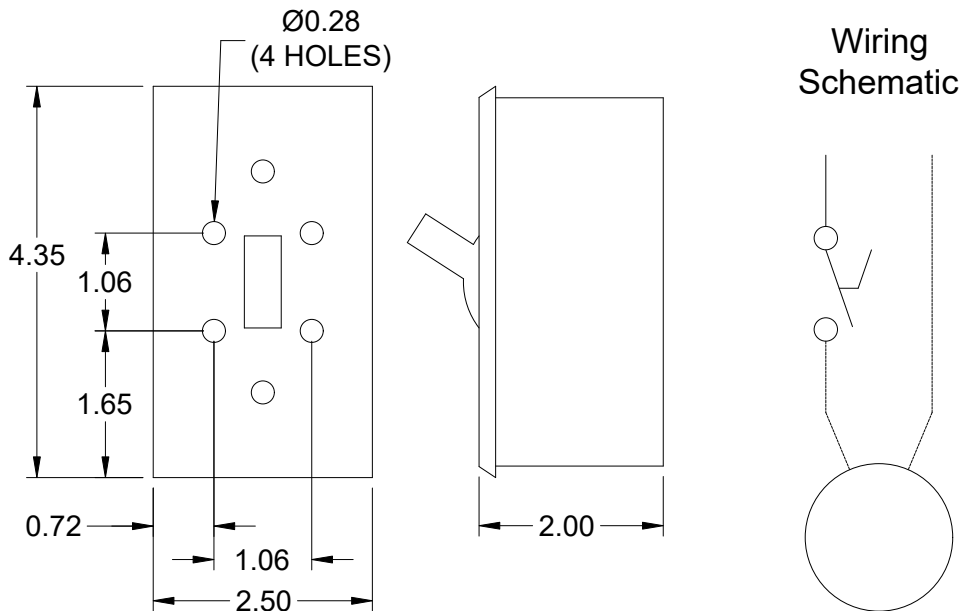
### Standard Construction Features:

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:	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.:	Mounted and Wired	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

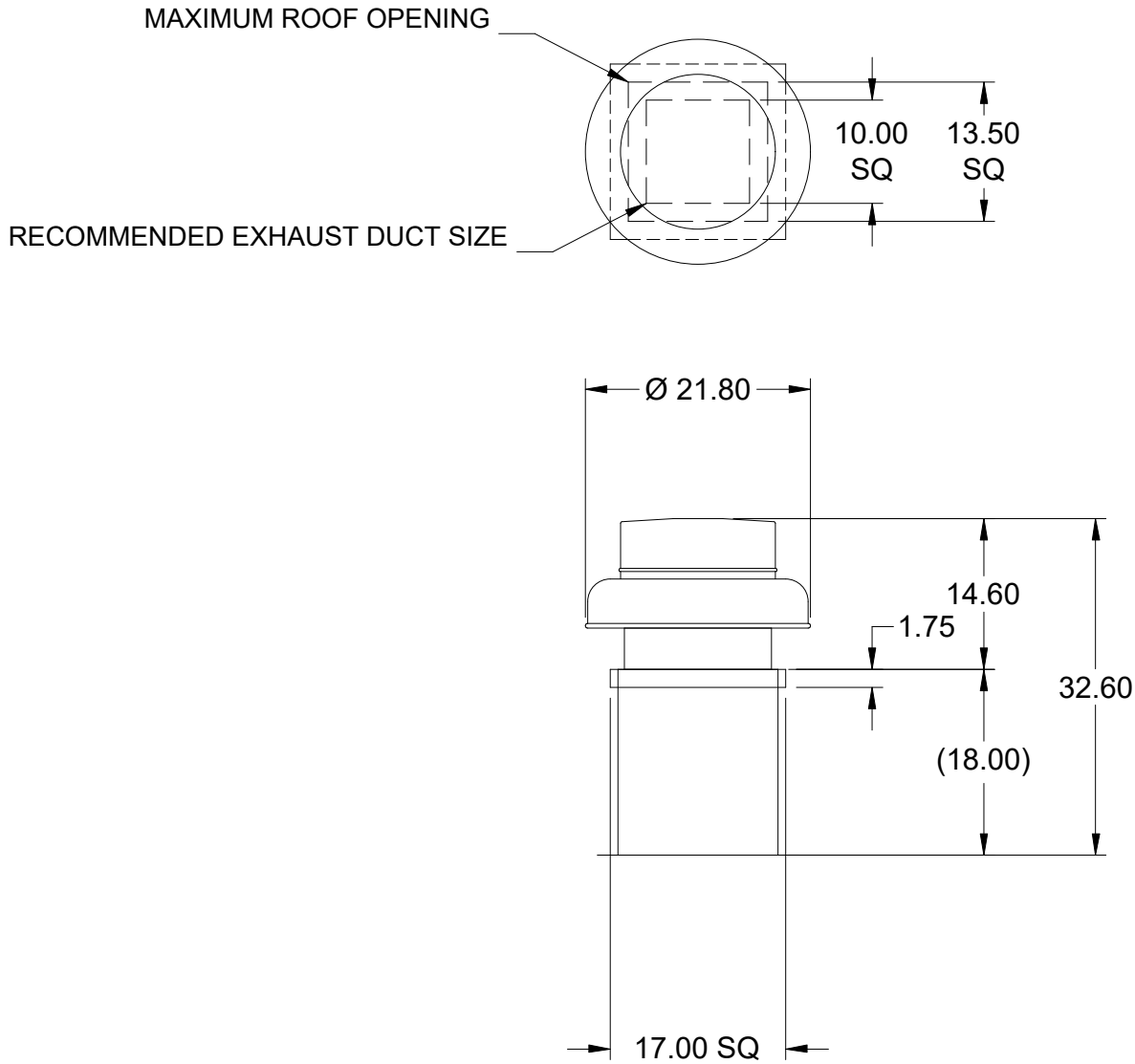
### Electrical Drawing Details



Notes: All dimensions shown are in units of in.

# Assembly Drawing

Type: Direct 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..

# Vari-Green Motor & Control Options

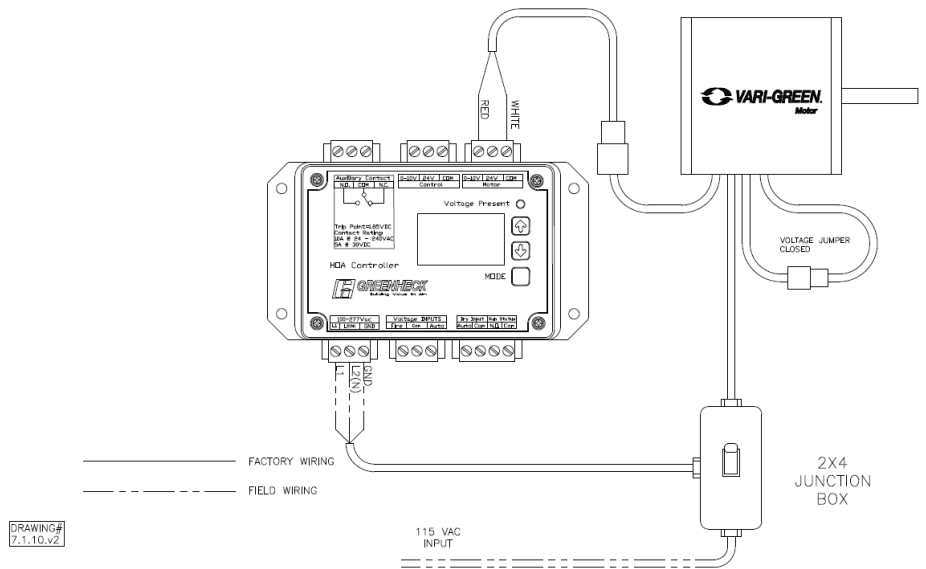
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: Yes

### Control Configuration

Control Type: N/A  
Transformer: HOA Loose



## Vari-Green Hand/Off/Auto (HOA) Control

### Features:

**Hand Mode:** Set motor speed manually in the HOA keypad. Can be used for balancing, troubleshooting or to operate fan before external controls are installed/operational.

**Auto-Local Mode:** Set motor speed using HOA control. Motor can be started/stopped remotely via dry input and/or voltage input.

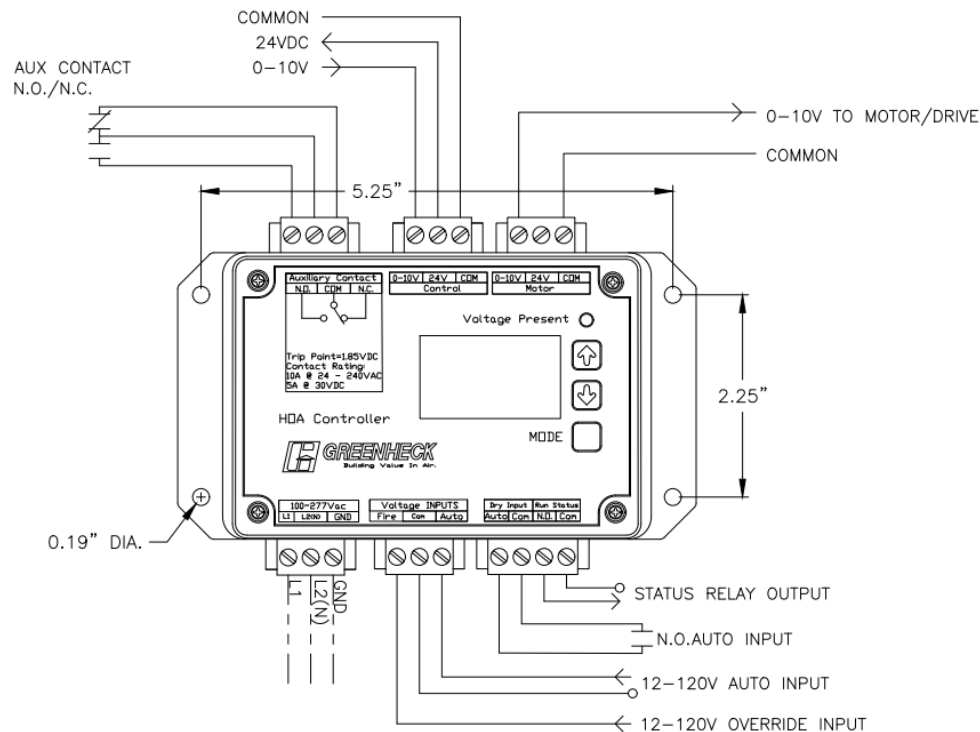
**Auto-Remote Mode:** Remote device provides 0-10V signal for speed reference. Motor can be started/stopped remotely via dry input and/or voltage input.

**Override:** Override: Voltage input will run motor at speed set in the HOA keypad. This input will take precedence over every other signal/mode.

**Auxiliary Contact:** N.O./N.C. contact will change states when the motor is being sent above 1.85VDC. Useful to signal a damper actuator to open/close.

**Status Output:** N.O. contact will close when the motor is being sent above 1.85VDC. Useful to signal BMS or other device motor is being commanded to run. Does NOT prove motor is running.

**24VDC Power Supply:** 500mA of current available to power Vari-Green controls or other devices



DRAWING#  
7.5.v2

Specifications and Contact Ratings	
Power Input	100-277 VAC
Voltage Input	12-120VAC/VDC
Override Input	12-120VAC/VDC
Auxiliary Contact (N.O./N.C.)	10A @ 24-240VAC / 5A @ 30VDC
Status Output (N.O.)	400 VAC/VDC @ 120mA
24VDC Output	500mA
Speed Reference Output	0-10VDC

# 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 Configuration:

Actuator Type: 115 VAC

End Switch: Yes

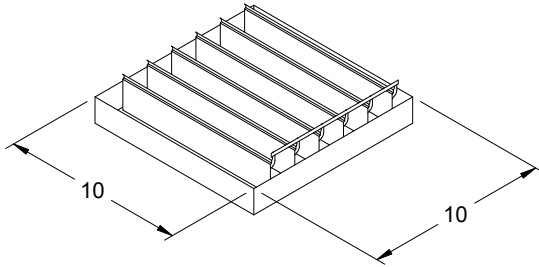
## Actuator Configuration:

Manufacturer: Greenheck Jackshaft Quantity: 0

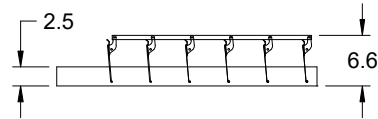
Model: MP-100A

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

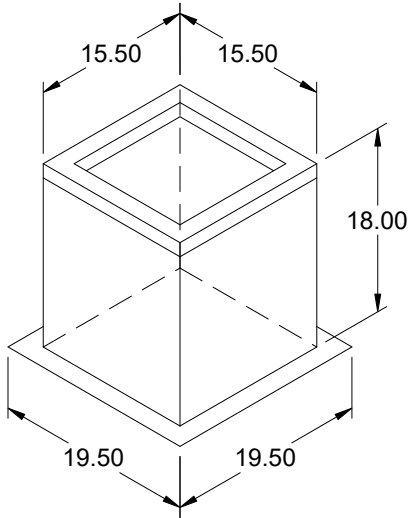
Notes: All dimensions shown are in units of in.  
Width And height furnished approximately 0.125 in. undersize

## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include 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

### 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-17	Nominal	1.5	24	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	17	17	15.5	15.5	12	12	16	16

\*May not be applicable

#### Accessories

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

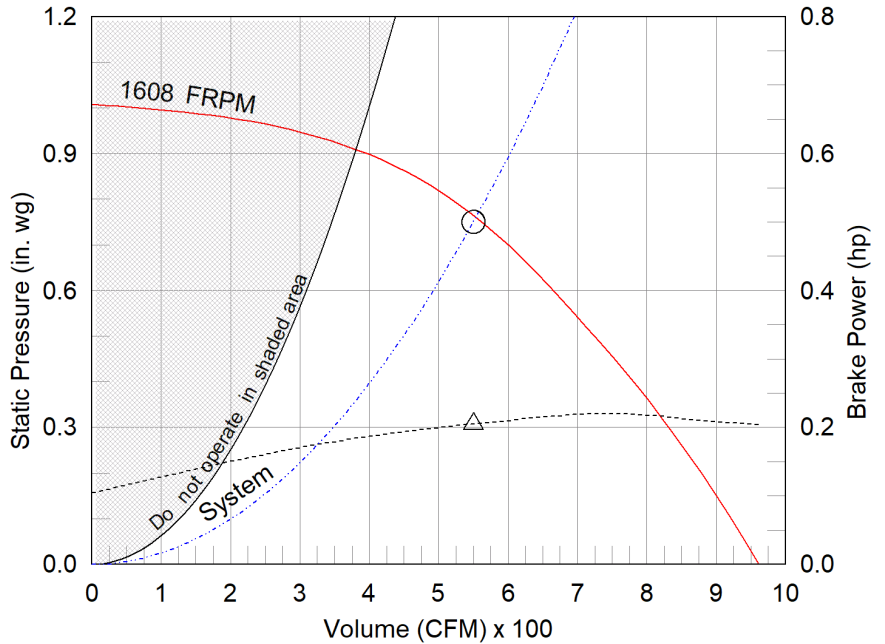
**Model: SQ-99-VG**  
Direct Drive Centrifugal Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	50
Weight w/ Acc's (lb)	70
Optional Damper (in.)	12 x 12

Performance	
Requested Volume (CFM)	550
Actual Volume (CFM)	550
Total External SP (in. wg)	0.75
Fan RPM	1608
Operating Power (hp)	0.2
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	4,711
Static Eff. (%)	32

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	420

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Windings	1
FLA (Amps)	2.85
Min. Circuit Ampacity (MCA)	4
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

**Nameplate Model: SQ-99-VG-X**

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	79	83	72	71	63	59	58	52	73	61	12.0
Radiated	80	85	66	65	58	53	52	48	71	59	11.2

**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: SQ-99-VG

### Direct 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 composite (sizes 60-95) or aluminum (sizes 97-160) wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 97-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor

Hand/Off/Auto, Shipped Loose (PN: 387186)

UL/cUL 705 Listed - "Power Ventilators"

Junction Box Mounted and Wired

Switch, NEMA-1, Toggle, Shipped Separate,

Aluminum Wheel Material

Fan: Spring, Hanging, 1 Inch Isolator PN: 850343, Incl. 4 isolators and 4 brackets

Damper Shipped Loose, Inline, WD-330-PB-12X12, Not Coated

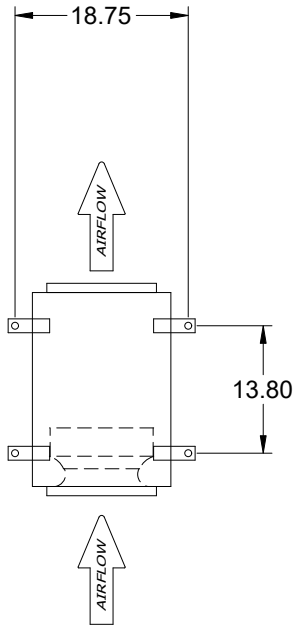
Damper Actuator (MP-310), 115 VAC Actuated

End Switch

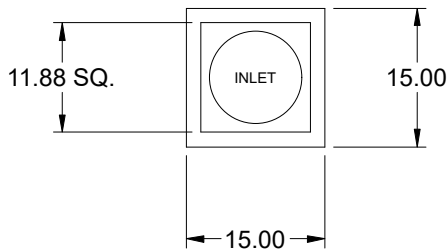
Unit Warranty: 1 Yr (Standard)

SQ-99-VG

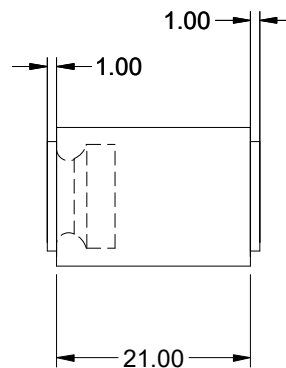
Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

# Disconnect Switch

## Enclosure Rating: NEMA-1

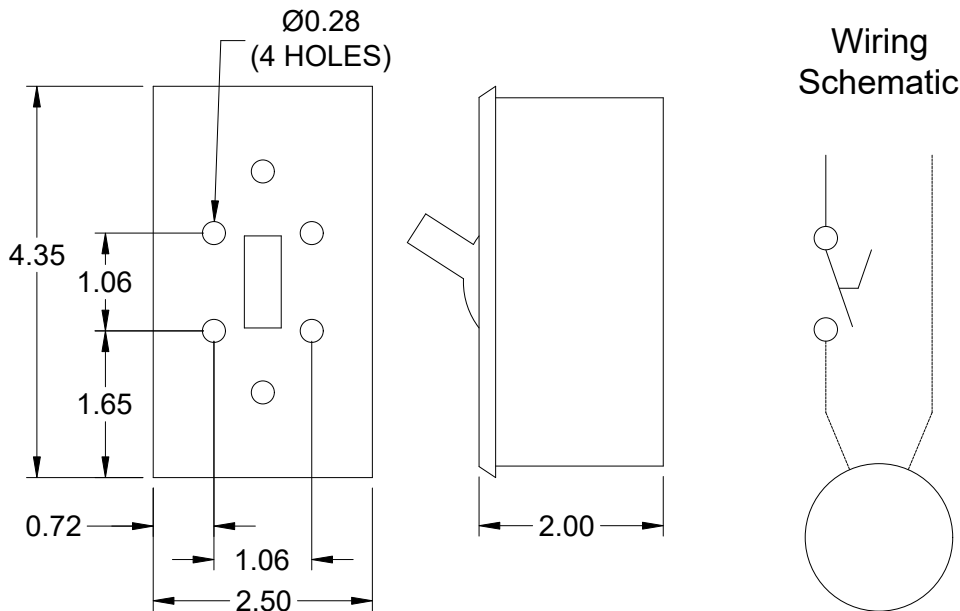
### Standard Construction Features:

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:	1/4 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



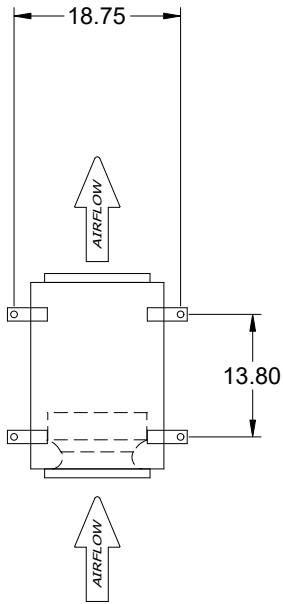
Notes: All dimensions shown are in units of in.

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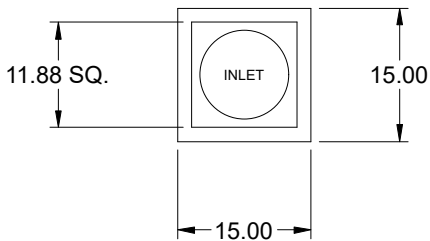
Generated by: jwolfe@eapnet.com

# Assembly Drawing

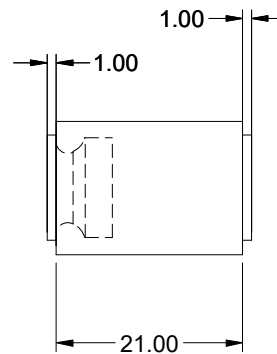
Type: Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

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

# Vari-Green Motor & Control Options

An EC motor that uses AC input power and internally converts it to DC power. Motor accepts a 0-10VDC control signal along with a 24V source to power controls in the motor. Motor is operable in the 2-10VDC range and off while in the 0-1.9VDC range. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the fan housing adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

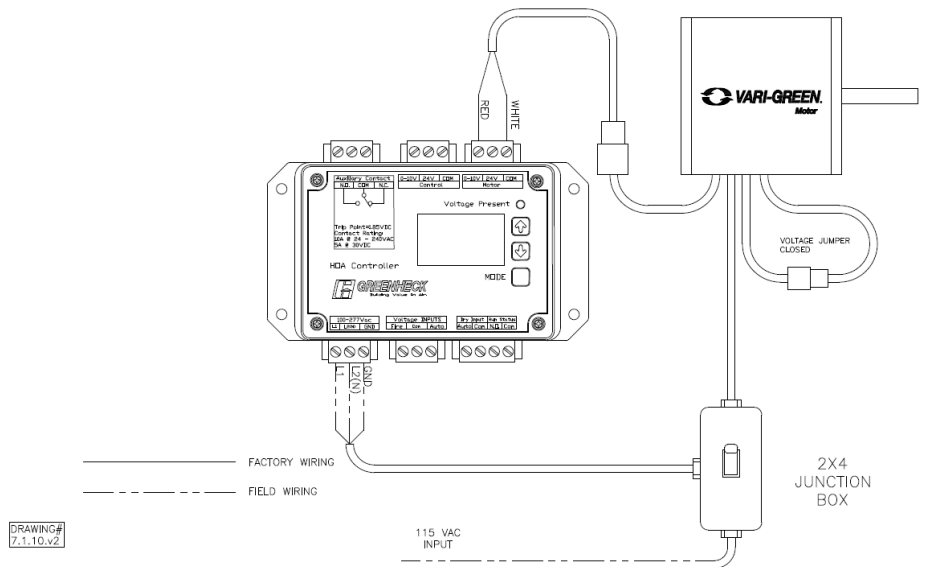
### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: N/A

### Control Configuration

Control Type: Dial on Fan  
Transformer: HOA Loose

## Vari-Green



# Vertical Mount Exhaust Damper

Model: WD-330

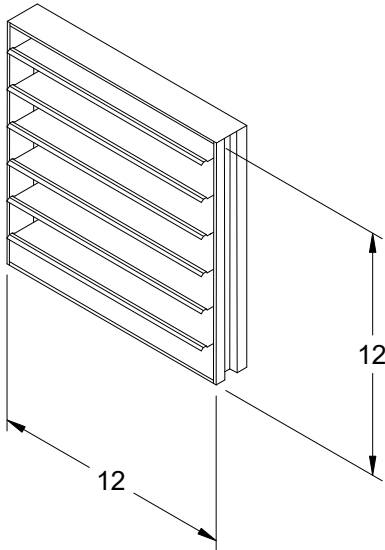
## Standard Construction Features:

- Model WD-330 is a vertical mount exhaust damper and is constructed of galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Nylon type bushings

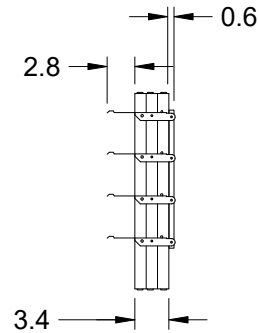
## Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes



DAMPER



TYP. SECTION VIEW

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

# Fan Isolator

Type: Spring, Hanging, 1 Inch

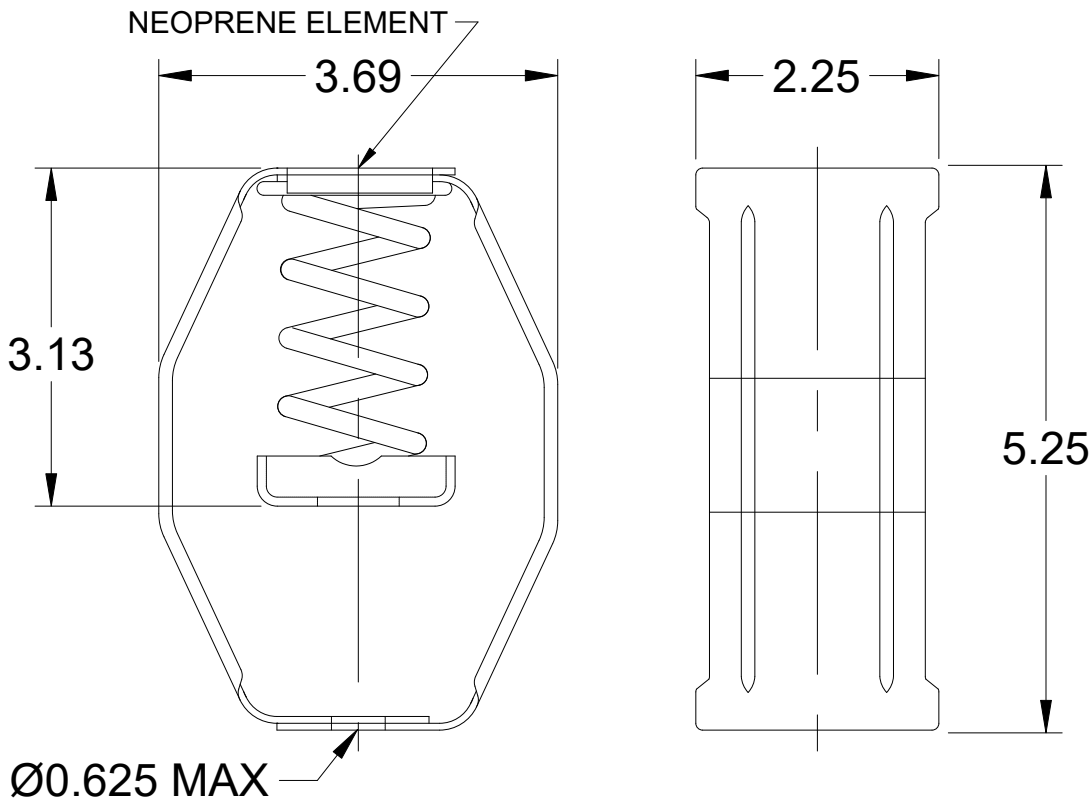
## Standard Construction Features:

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-1-35	Color:	Blue
Manufacturer:	Kinetics Noise Control	Mounting:	Hanging
Load Capacity:	35 lb	Kit Part Number:	850343
Deflection at Full Load:	1.52	Selection Deflection (in.):	0.54

## Spring, Hanging, 1 Inch Deflection - Vibration Isolator



Notes: All dimensions shown are in units of in.

## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include transmission losses.

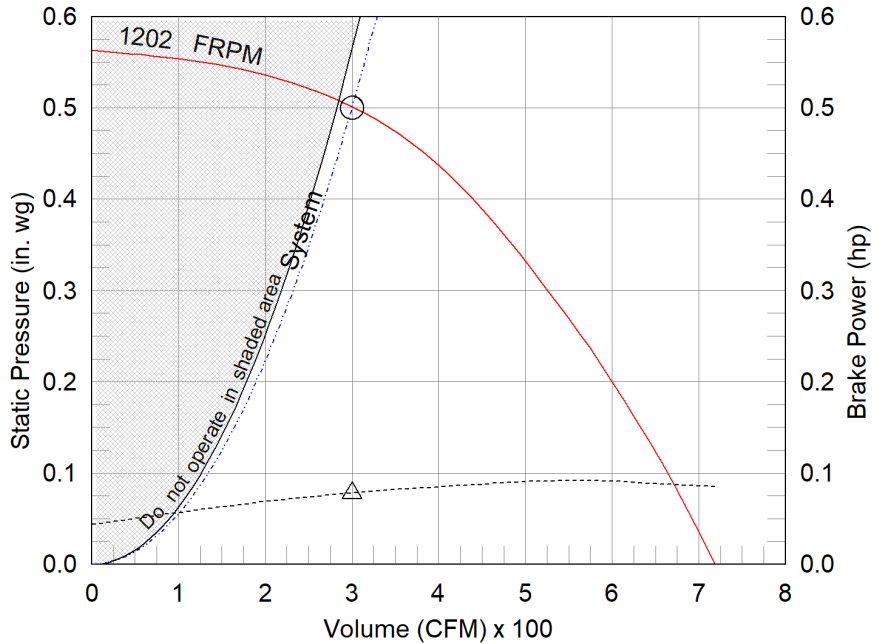
Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type B: Free inlet, Ducted outlet. Power rating (BHP/kW) does not include 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: SQ-99-VG**  
Direct Drive Centrifugal Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	50
Weight w/ Acc's (lb)	70
Optional Damper (in.)	12 x 12

Performance	
Requested Volume (CFM)	300
Actual Volume (CFM)	300
Total External SP (in. wg)	0.5
Fan RPM	1202
Operating Power (hp)	0.08
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	3,522
Static Eff. (%)	30

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	229



Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Windings	1
FLA (Amps)	2.85
Min. Circuit Ampacity (MCA)	4
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

**MOTOR HORSEPOWER GREATER THAN DESIGN. COORDINATE ELECTRICAL REQUIREMENTS WITH E.C. NZ 3/7/24**

**Nameplate Model: SQ-99-VG-X**

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	79	79	65	62	54	50	47	42	66	55	8.2
Radiated	80	81	59	56	49	44	41	38	66	55	7.9

**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: SQ-99-VG

### Direct 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 composite (sizes 60-95) or aluminum (sizes 97-160) wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 97-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor

Hand/Off/Auto, Shipped Loose (PN: 387186)

UL/cUL 705 Listed - "Power Ventilators"

Junction Box Mounted and Wired

Switch, NEMA-1, Toggle, Shipped Separate,

Aluminum Wheel Material

Fan: Spring, Hanging, 1 Inch Isolator PN: 850343, Incl. 4 isolators and 4 brackets

Damper Shipped Loose, Inline, WD-330-PB-12X12, Not Coated

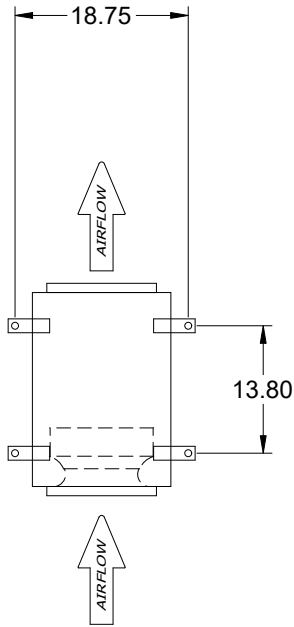
Damper Actuator (MP-310), 115 VAC Actuated

End Switch

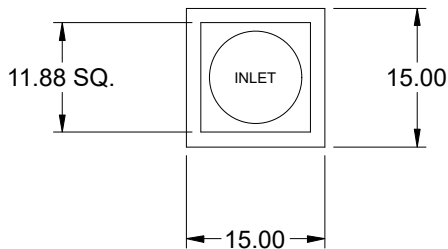
Unit Warranty: 1 Yr (Standard)

SQ-99-VG

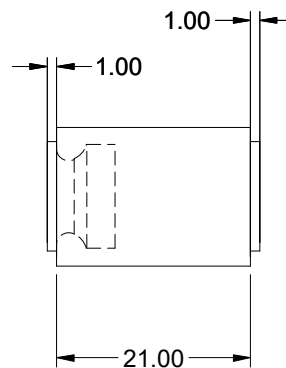
Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

# Disconnect Switch

## Enclosure Rating: NEMA-1

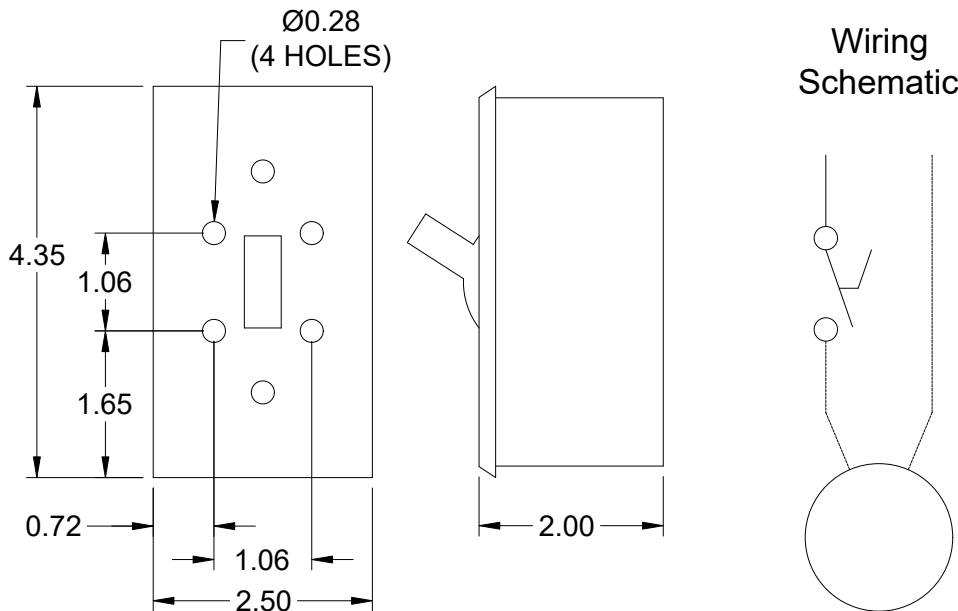
### Standard Construction Features:

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:	1/4 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						

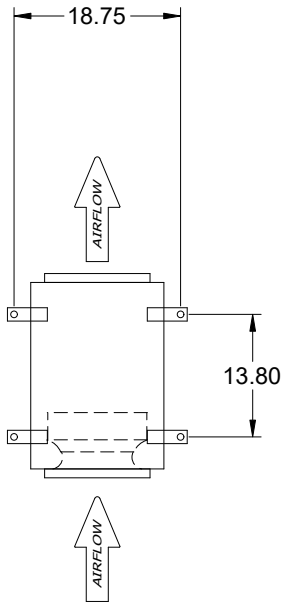
### Electrical Drawing Details



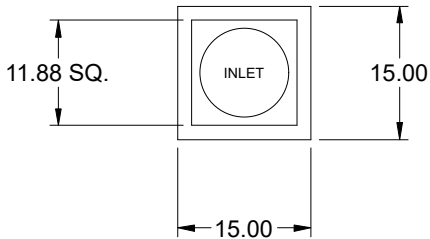
Notes: All dimensions shown are in units of in.

# Assembly Drawing

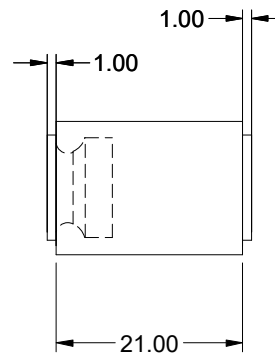
Type: Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

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

# Vari-Green Motor & Control Options

An EC motor that uses AC input power and internally converts it to DC power. Motor accepts a 0-10VDC control signal along with a 24V source to power controls in the motor. Motor is operable in the 2-10VDC range and off while in the 0-1.9VDC range. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the fan housing adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

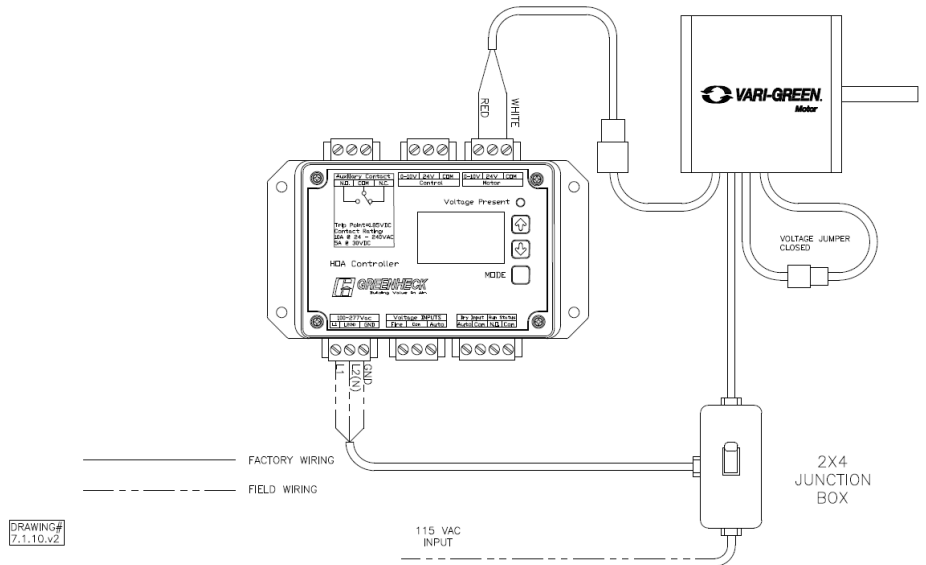
### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: N/A

### Control Configuration

Control Type: Dial on Fan  
Transformer: HOA Loose

## Vari-Green



# Vertical Mount Exhaust Damper

Model: WD-330

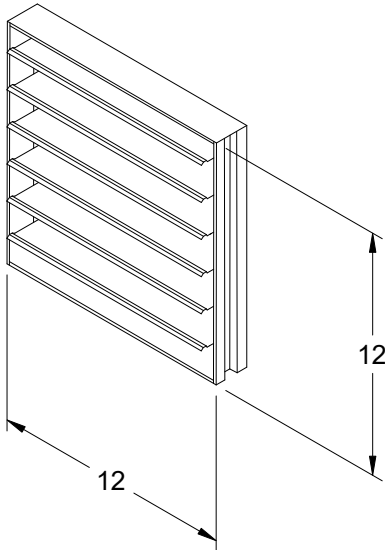
## Standard Construction Features:

- Model WD-330 is a vertical mount exhaust damper and is constructed of galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Nylon type bushings

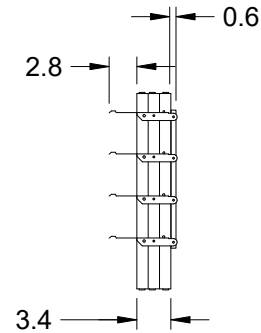
## Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes



DAMPER



TYP. SECTION VIEW

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

# Fan Isolator

Type: Spring, Hanging, 1 Inch

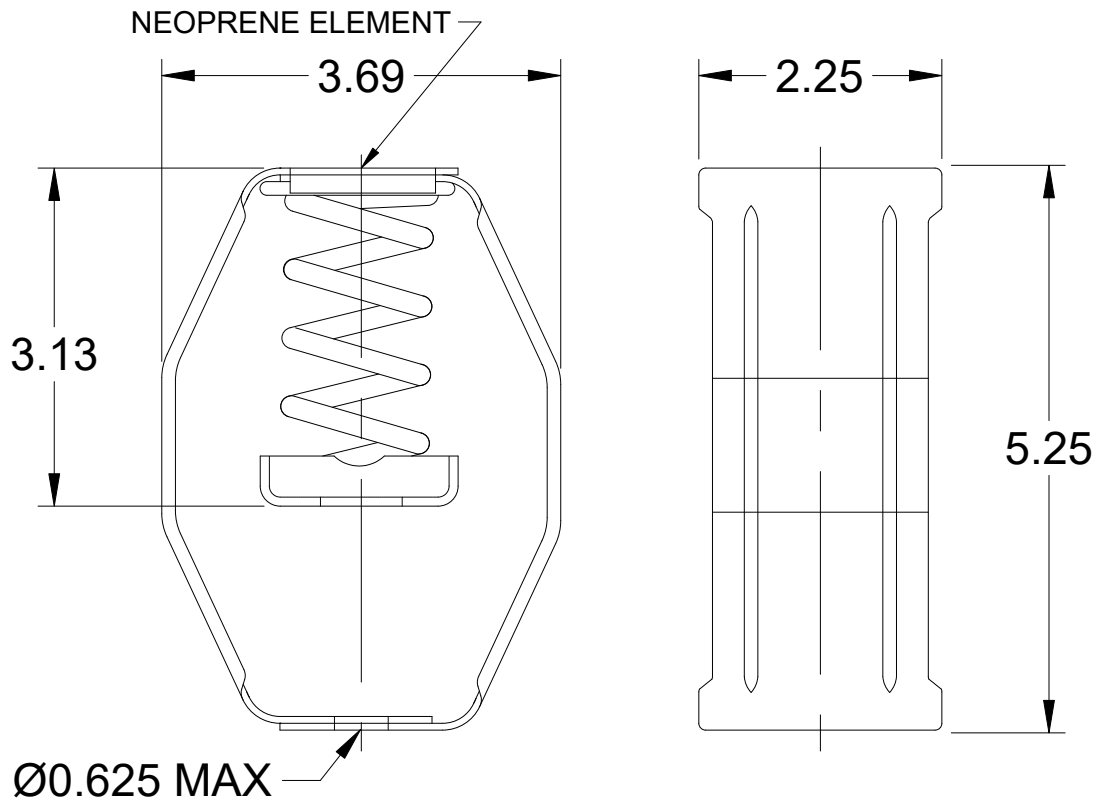
## Standard Construction Features:

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-1-35	Color:	Blue
Manufacturer:	Kinetics Noise Control	Mounting:	Hanging
Load Capacity:	35 lb	Kit Part Number:	850343
Deflection at Full Load:	1.52	Selection Deflection (in.):	0.54

## Spring, Hanging, 1 Inch Deflection - Vibration Isolator



Notes: All dimensions shown are in units of in.

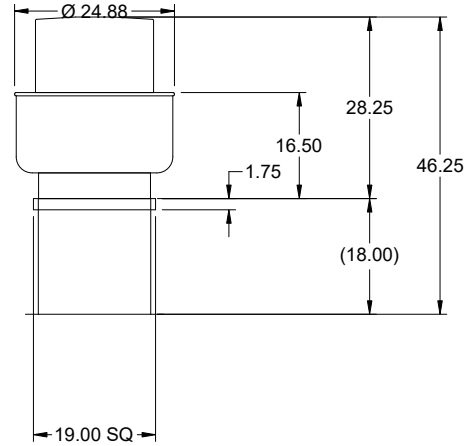
## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include 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) does not include 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: CUE-099-VG**  
Direct Drive Upblast Centrifugal Roof Exhaust Fan



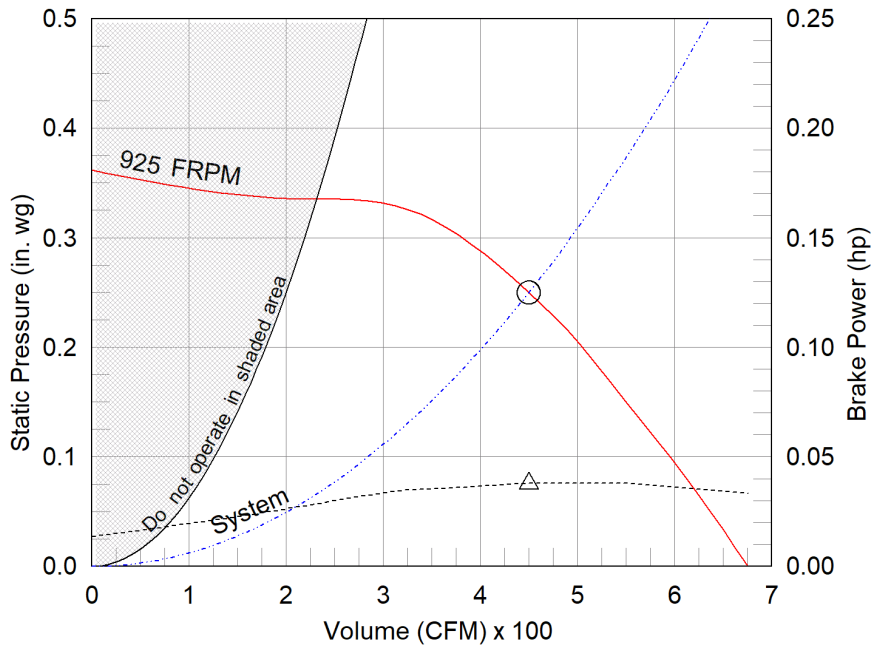
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	38
Weight w/ Acc's (lb)	53
Weight w/ Acc's and Curb (lb)	80
Standard Curb Cap Size (in.)	19 x 19
Optional Damper (in.)	12 x 12
Roof Opening (in.)	15.5 x 15.5

Performance	
Requested Volume (CFM)	450
Actual Volume (CFM)	450
Total External SP (in. wg)	0.25
Fan RPM	925
Operating Power (hp)	0.04
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	2,709
Static Eff. (%)	47

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	352

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Efficiency Rating	High
Windings	1
FLA (Amps)	2.85
Min. Circuit Ampacity (MCA)	4
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

**MOTOR HORSEPOWER GREATER THAN DESIGN. COORDINATE ELECTRICAL REQUIREMENTS WITH E.C. NZ 3/7/24**

**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	73	66	62	53	50	50	40	34	59	47	4.7



## Model: CUE-099-VG

### Direct Drive Upblast Centrifugal Roof Exhaust Fan

#### Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Aluminum curb cap with prepunched mounting holes - Drain trough - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor  
Control - Dial for balancing  
Hand/Off/Auto, Shipped Loose (PN: 387186)  
Standard Curb Cap Size - 19 Square  
UL/cUL 705 Listed - "Power Ventilators"  
Switch, NEMA-1, Toggle,  
Junction Box Mounted & Wired in weather-protected motor compartment  
Birdscreen: Stainless Steel, nom. 86% Free Area  
Conduit Chase Qty 1  
Unit Warranty: 1 Yr (Standard)  
Damper Shipped Loose, WD-100-PB-12X12, Not Coated, Nominal Size  
Damper Actuator (MP-100A), 115 VAC Actuated  
End Switch

#### Selected Sub Marks

See individual submittals for full details  
GPI-19-G18

***The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.***

***If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.***

# Disconnect Switch

## Enclosure Rating: NEMA-1

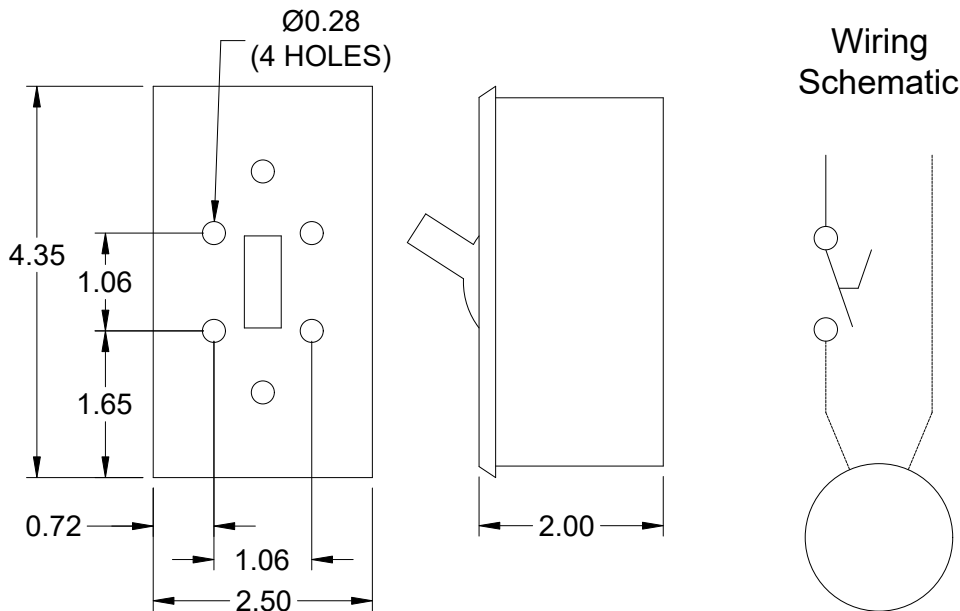
### Standard Construction Features:

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:	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.:	Mounted and Wired	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

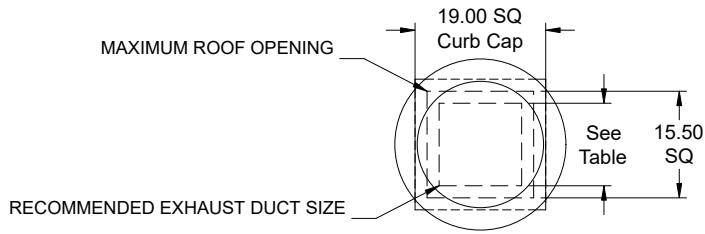
### Electrical Drawing Details



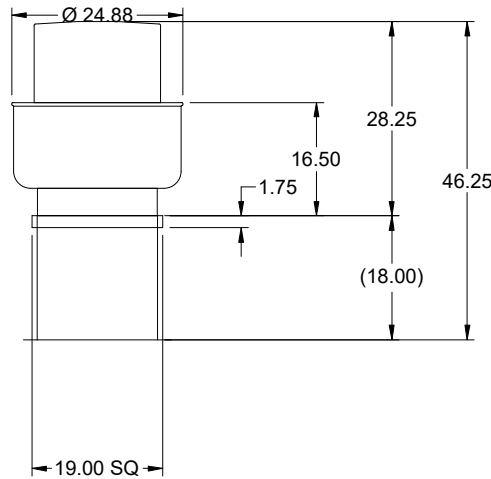
Notes: All dimensions shown are in units of in.

# Assembly Drawing

Type: Direct 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..

# Vari-Green Motor & Control Options

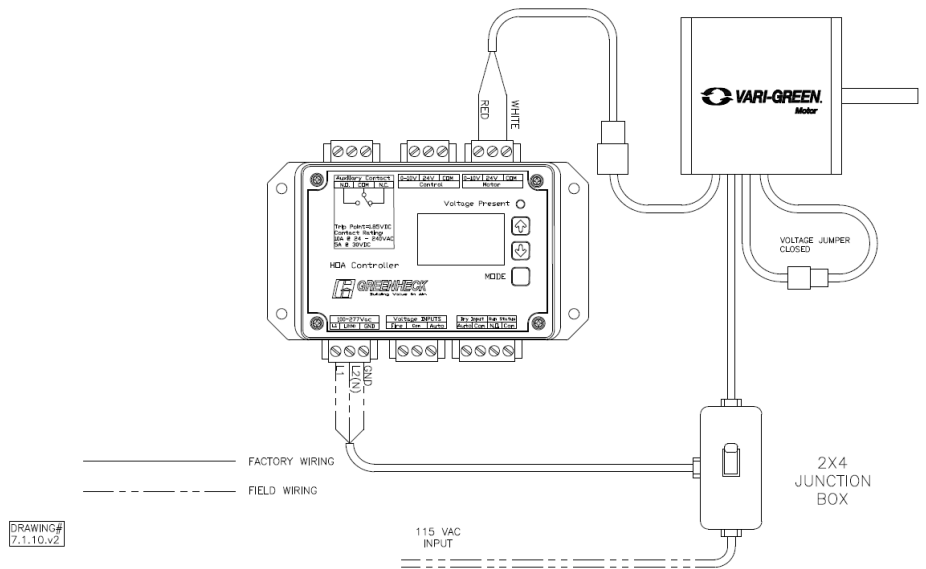
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: Yes

### Control Configuration

Control Type: N/A  
Transformer: HOA Loose



## Vari-Green Hand/Off/Auto (HOA) Control

### Features:

**Hand Mode:** Set motor speed manually in the HOA keypad. Can be used for balancing, troubleshooting or to operate fan before external controls are installed/operational.

**Auto-Local Mode:** Set motor speed using HOA control. Motor can be started/stopped remotely via dry input and/or voltage input.

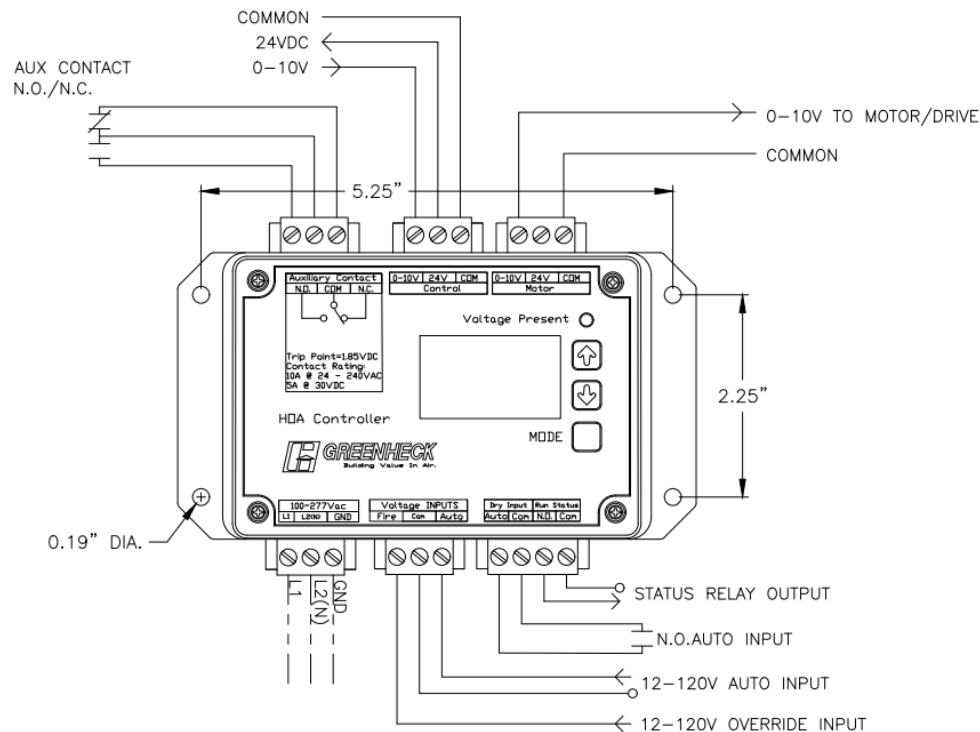
**Auto-Remote Mode:** Remote device provides 0-10V signal for speed reference. Motor can be started/stopped remotely via dry input and/or voltage input.

**Override:** Override: Voltage input will run motor at speed set in the HOA keypad. This input will take precedence over every other signal/mode.

**Auxiliary Contact:** N.O./N.C. contact will change states when the motor is being sent above 1.85VDC. Useful to signal a damper actuator to open/close.

**Status Output:** N.O. contact will close when the motor is being sent above 1.85VDC. Useful to signal BMS or other device motor is being commanded to run. Does NOT prove motor is running.

**24VDC Power Supply:** 500mA of current available to power Vari-Green controls or other devices



DRAWING#  
7.5.v2

Specifications and Contact Ratings	
Power Input	100-277 VAC
Voltage Input	12-120VAC/VDC
Override Input	12-120VAC/VDC
Auxiliary Contact (N.O./N.C.)	10A @ 24-240VAC / 5A @ 30VDC
Status Output (N.O.)	400 VAC/VDC @ 120mA
24VDC Output	500mA
Speed Reference Output	0-10VDC

# 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 Configuration:

Actuator Type: 115 VAC

End Switch: Yes

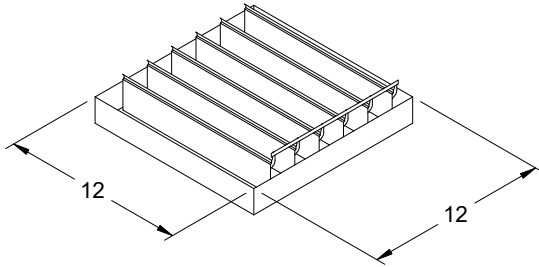
## Actuator Configuration:

Manufacturer: Greenheck Jackshaft Quantity: 0

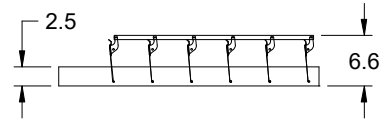
Model: MP-100A

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

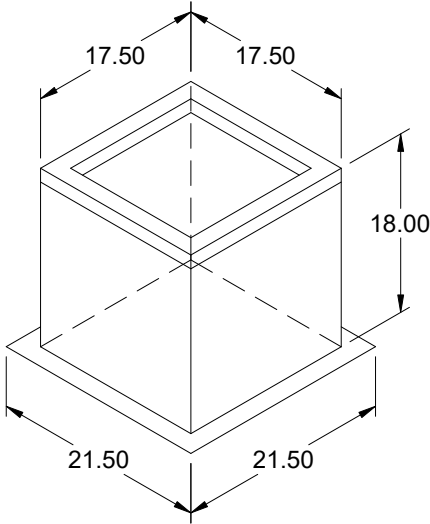
Notes: All dimensions shown are in units of in.  
Width And height furnished approximately 0.125 in. undersize

## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include 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

### 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

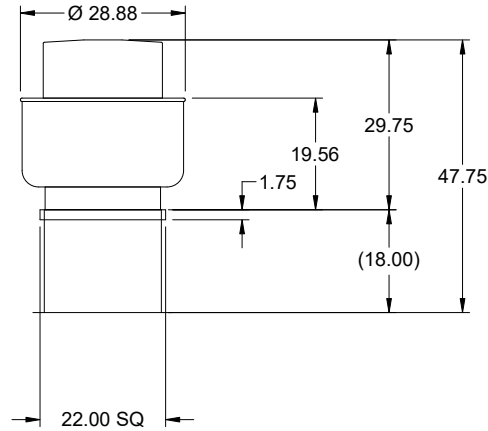
#### Accessories

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

**Model: CUE-160-VG**  
Direct Drive Upblast Centrifugal Roof Exhaust Fan

Previously: CUE-161-VG

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	74
Weight w/ Acc's (lb)	92
Weight w/ Acc's and Curb (lb)	124
Standard Curb Cap Size (in.)	22 x 22
Optional Damper (in.)	16 x 16
Roof Opening (in.)	18.5 x 18.5

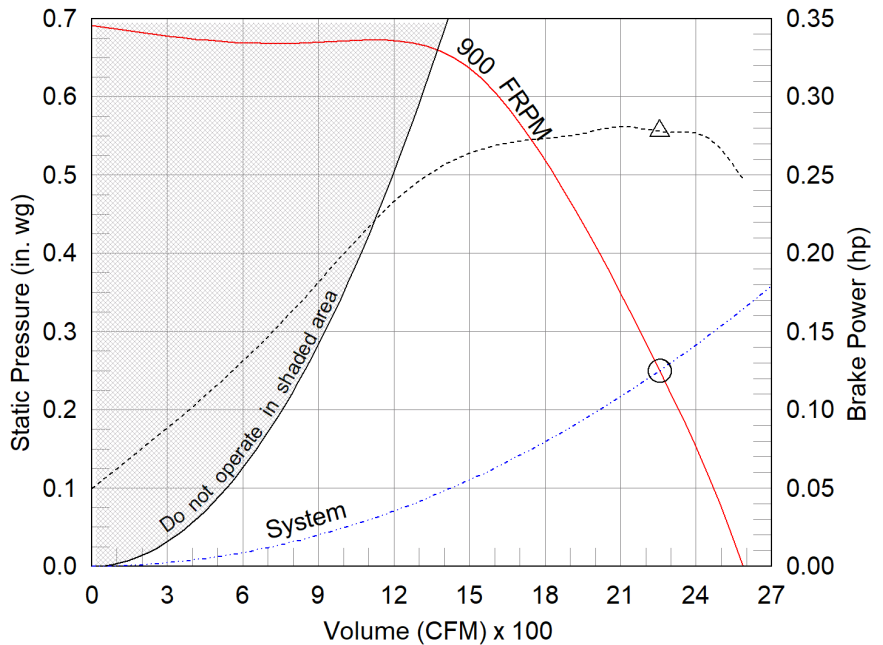


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	2,255
Actual Volume (CFM)	2,255
Total External SP (in. wg)	0.25
Fan RPM	900
Operating Power (hp)	0.28
Elevation (ft)	499
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.074
Tip Speed (ft/min)	3,918
Static Eff. (%)	32

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	1,311

Motor	
Motor Mounted	Yes
Size (hp)	1/2
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1000
Efficiency Rating	High
Windings	1
FLA (Amps)	6.2
Min. Circuit Ampacity (MCA)	8
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	78	74	69	67	64	58	54	73	61	10.5



## Model: CUE-160-VG

### Direct Drive Upblast Centrifugal Roof Exhaust Fan

#### Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Aluminum curb cap with prepunched mounting holes - Drain trough - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor  
Control - Dial for balancing  
Hand/Off/Auto, Shipped Loose (PN: 387186)  
Standard Curb Cap Size - 22 Square  
UL/cUL 705 Listed - "Power Ventilators"  
Switch, NEMA-1, Toggle,  
Junction Box Mounted & Wired in weather-protected motor compartment  
Birdscreen: Stainless Steel, nom. 85% Free Area  
Conduit Chase Qty 1  
Unit Warranty: 1 Yr (Standard)  
Damper Shipped Loose, WD-100-PB-16X16, Not Coated, Nominal Size  
Damper Actuator (MP-100A), 115 VAC Actuated  
End Switch

#### Selected Sub Marks

See individual submittals for full details  
GPI-22-G18

***The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.***

***If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.***

# Disconnect Switch

## Enclosure Rating: NEMA-1

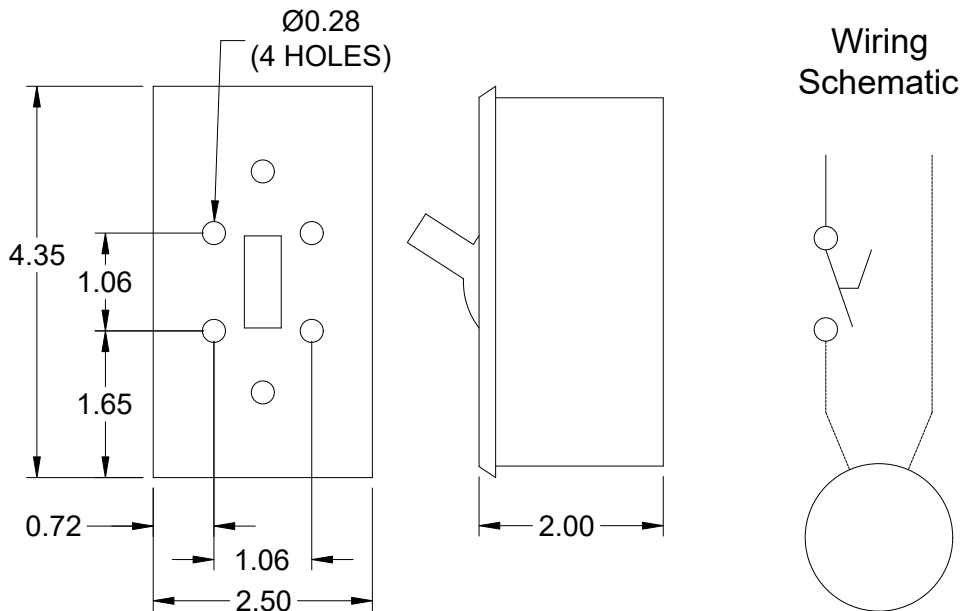
### Standard Construction Features:

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:	1/2 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.:	Mounted and Wired	RPM:	1000	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

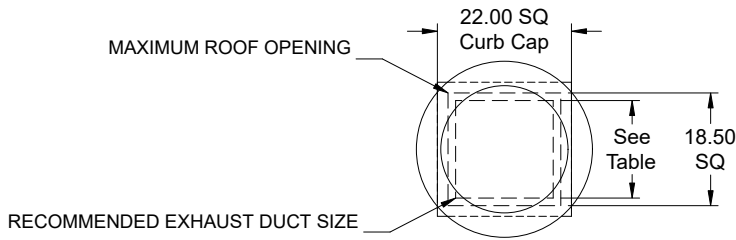
### Electrical Drawing Details



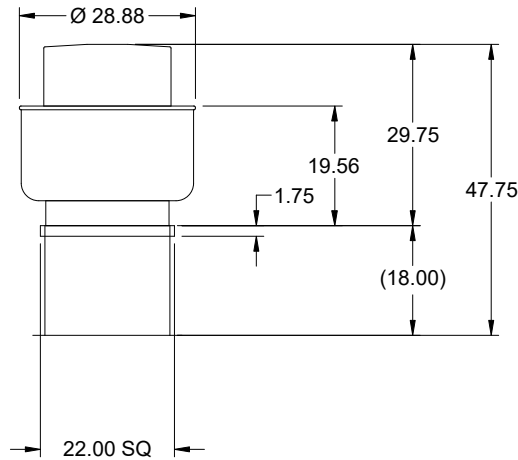
Notes: All dimensions shown are in units of in.

# Assembly Drawing

Type: Direct Drive Upblast Centrifugal Roof Exhaust Fan



DUCT TYPE	SIZE
STANDARD	16 SQ
FIRE-WRAPPED	12 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..

# Vari-Green Motor & Control Options

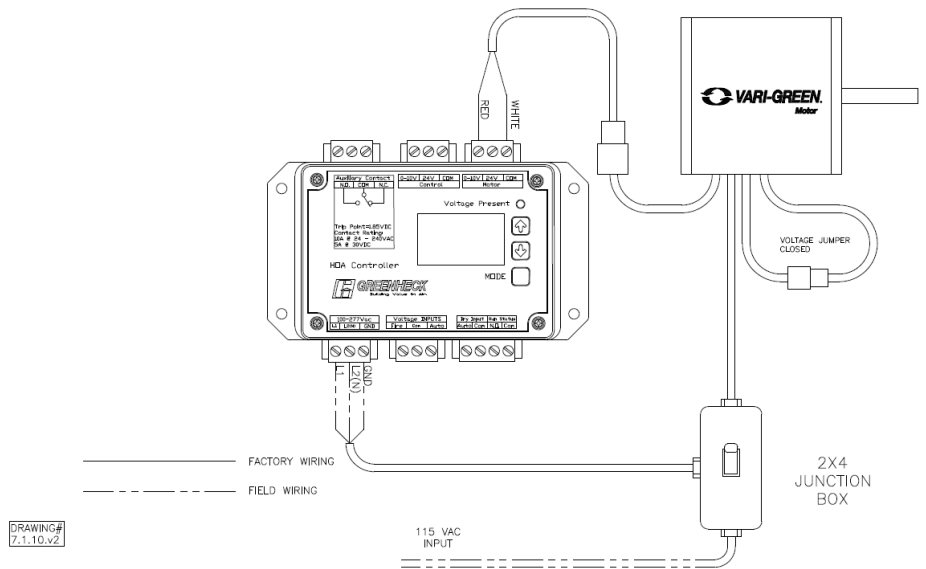
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: Yes

### Control Configuration

Control Type: N/A  
Transformer: HOA Loose



## Vari-Green Hand/Off/Auto (HOA) Control

### Features:

**Hand Mode:** Set motor speed manually in the HOA keypad. Can be used for balancing, troubleshooting or to operate fan before external controls are installed/operational.

**Auto-Local Mode:** Set motor speed using HOA control. Motor can be started/stopped remotely via dry input and/or voltage input.

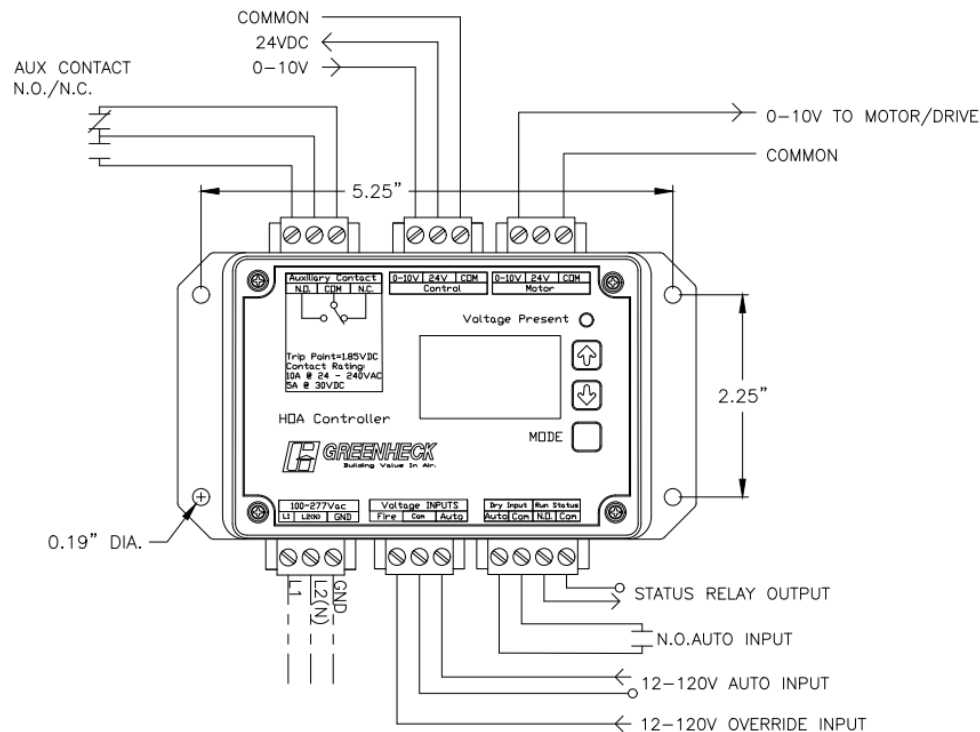
**Auto-Remote Mode:** Remote device provides 0-10V signal for speed reference. Motor can be started/stopped remotely via dry input and/or voltage input.

**Override:** Override: Voltage input will run motor at speed set in the HOA keypad. This input will take precedence over every other signal/mode.

**Auxiliary Contact:** N.O./N.C. contact will change states when the motor is being sent above 1.85VDC. Useful to signal a damper actuator to open/close.

**Status Output:** N.O. contact will close when the motor is being sent above 1.85VDC. Useful to signal BMS or other device motor is being commanded to run. Does NOT prove motor is running.

**24VDC Power Supply:** 500mA of current available to power Vari-Green controls or other devices



DRAWING#  
7.5.v2

Specifications and Contact Ratings	
Power Input	100-277 VAC
Voltage Input	12-120VAC/VDC
Override Input	12-120VAC/VDC
Auxiliary Contact (N.O./N.C.)	10A @ 24-240VAC / 5A @ 30VDC
Status Output (N.O.)	400 VAC/VDC @ 120mA
24VDC Output	500mA
Speed Reference Output	0-10VDC

# 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 Configuration:

Actuator Type: 115 VAC

End Switch: Yes

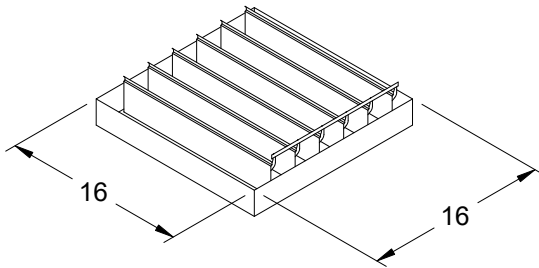
## Actuator Configuration:

Manufacturer: Greenheck Jackshaft Quantity: 0

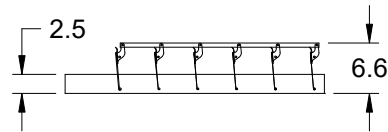
Model: MP-100A

Mounting: Internal

Quantity: 1



DAMPER



TYP. SECTION VIEW

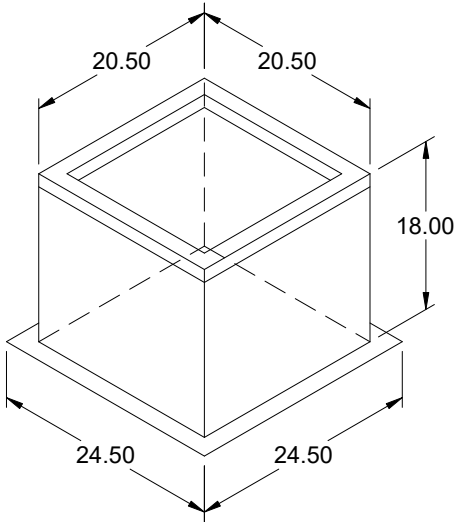
Notes: All dimensions shown are in units of in.  
Width And height furnished approximately 0.125 in. undersize

## AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include 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

### 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-22	Nominal	1.5	32	Yes	No Preference

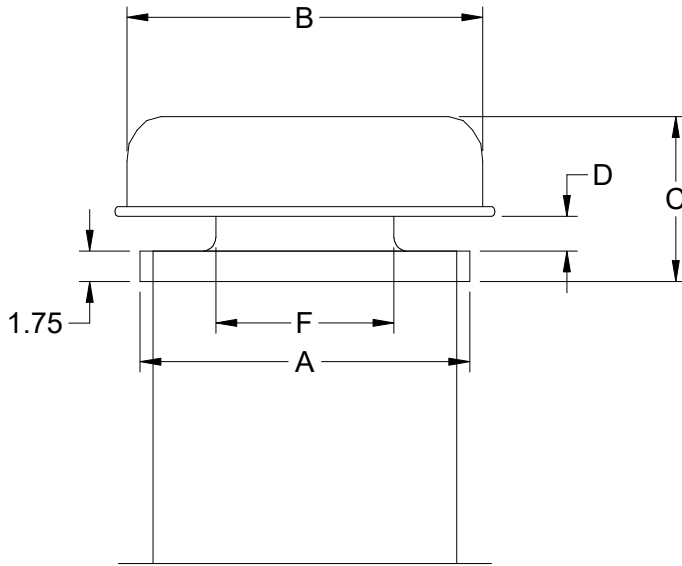
#### Dimensions

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	22	22	20.5	20.5	17	17	21	21

\*May not be applicable

#### Accessories

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



**Model: GRSR**

**Standard Construction Features:**

- Aluminum housing.
- Aluminum curb cap with prepunched mounting holes.
- Recommended roof opening dimension is at least 2.5 in. larger than the damper size.

**Dimensions**

ID#	Tag	Qty	Model	Model Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Curb Cap Width (in.)	Curb Cap Length (in.)	Weight (lb)
17-1		1	GRSR-10	10	19	20.5	9.5	2	N/A	10.25	19	19	8

**Construction**

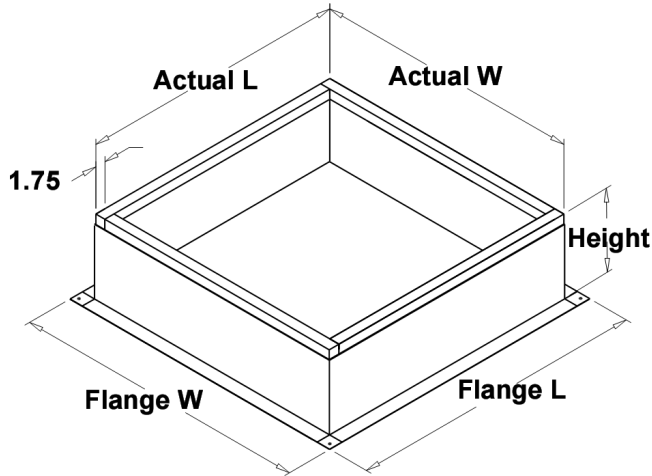
ID#	Flashing Flange	Installation Type	Insect Screen	Birdscreen Material	Unit Material
17-1	No	Non-Ducted	No	Galvanized	Aluminum

**Accessories**

ID#	Hinged Curb Cap	Curb Seal	Hood Insulation (in.)	Tie Down Points
17-1	No	No	None	No

**Roof Curbs**

ID#	Model	Height (in.)	Width (in.)	Length (in.)
17-1	GPI	18	19	19



## Model: GPI

### 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

ID#	Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Made
17-1		1	GPI-19-G18	Nominal	1.5	27	Yes	No Preference

#### Dimensions

ID#	Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)
17-1	18	19	19	17.5	17.5

\*May not be applicable

#### Accessories

ID#	Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
17-1	Galvanized	No	No	1	R4.3

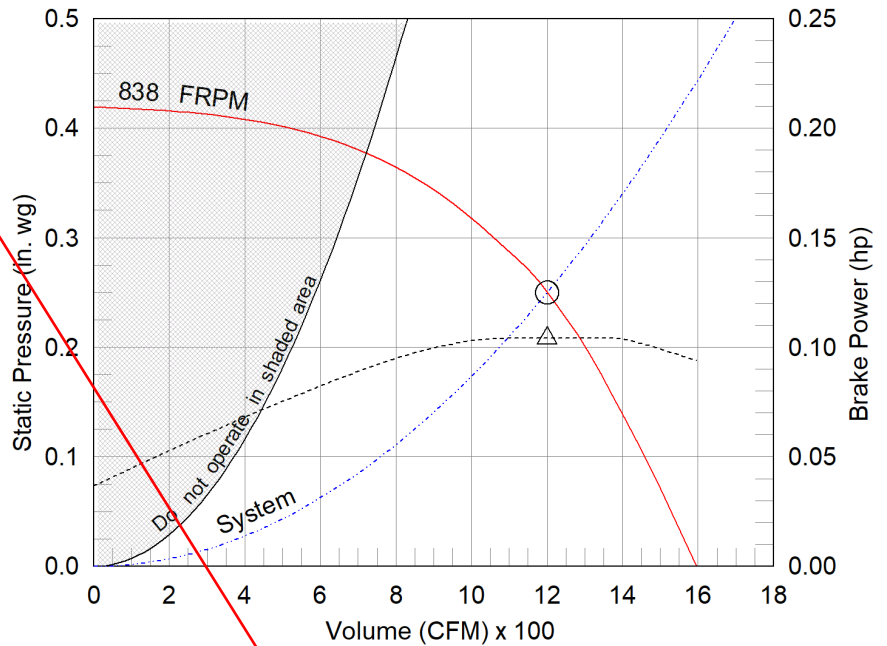
**Model: SQ-140-VG**  
Direct Drive Centrifugal Inline Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	88
Weight w/ Acc's (lb)	119
Optional Damper (in.)	20 x 20

Performance	
Requested Volume (CFM)	1,200
Actual Volume (CFM)	1,200
Total External SP (in. wg)	0.25
Fan RPM	838
Operating Power (hp)	0.1
Elevation (ft)	499
Airstream Temp.(F)	130
Air Density (lb/ft3)	0.066
Tip Speed (ft/min)	3,195
Static Eff. (%)	45

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	443

Motor	
Motor Mounted	Yes
Size (hp)	3/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1500
Windings	1
FLA (Amps)	8.8
Min. Circuit Ampacity (MCA)	11
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

**INCORRECT  
AIRFLOW. 900 CFM  
REQUIRED.  
NZ 3/7/24**

**Nameplate Model: SQ-140-VG-X**

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	64	67	65	61	56	53	45	40	63	51	5.7
Radiated	68	70	62	56	49	39	28	24	59	47	4.3

**Notes:**

All dimensions shown are in units of in.  
\*Please consult factory for actual motor amp draw  
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: SQ-140-VG

### Direct 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 composite (sizes 60-95) or aluminum (sizes 97-160) wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 97-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

#### Selected Options & Accessories:

Motor - Vari-Green EC motor

Hand/Off/Auto, Shipped Loose (PN: 387186)

UL/cUL 705 Listed - "Power Ventilators"

Junction Box Mounted and Wired

Switch, NEMA-1, Toggle, Shipped Separate,

Aluminum Wheel Material

Motor Cover

Fan: Spring, Hanging, 1 Inch Isolator PN: 850343, Incl. 4 isolators and 4 brackets

Damper Shipped Loose, Inline, WD-330-PB-20X20, Not Coated

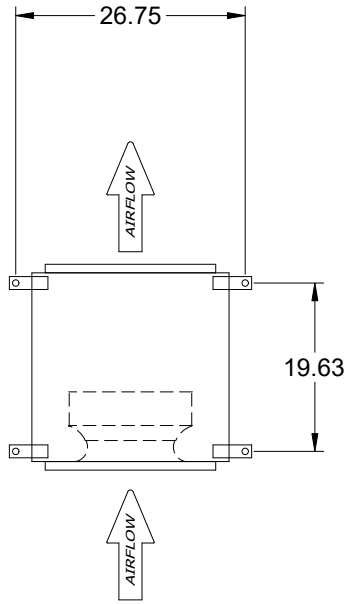
Damper Actuator (MP-310), 115 VAC Actuated

End Switch

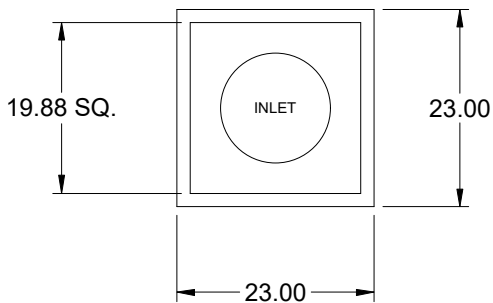
Unit Warranty: 1 Yr (Standard)

SQ-140-VG

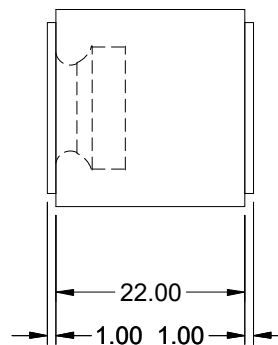
Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

Notes: All dimensions shown are in units of in.

# Disconnect Switch

Enclosure Rating: NEMA-1

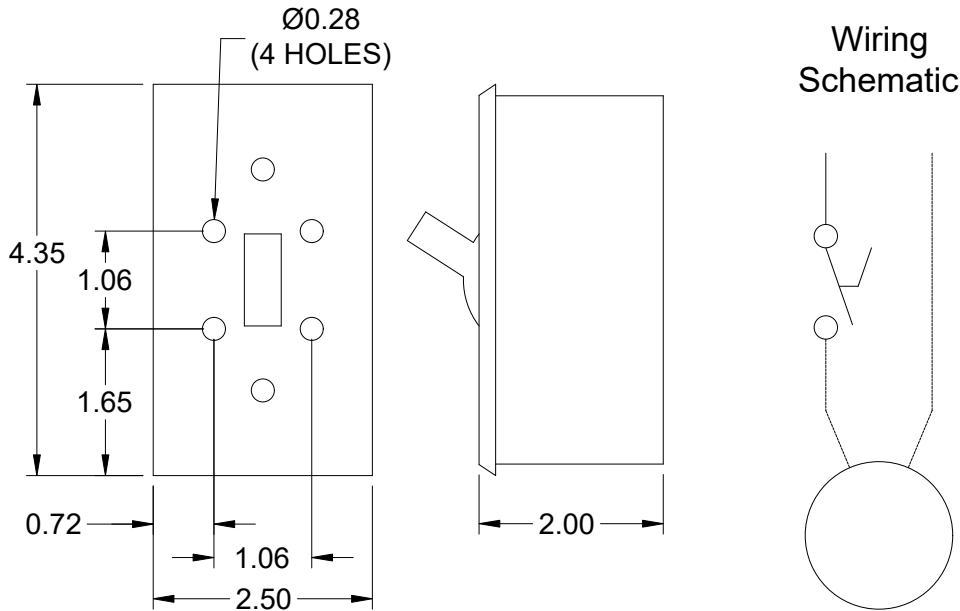
**Standard Construction Features:**

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.

**Disconnect Switch Configuration**

Type:	Toggle	Motor Size:	3/4 hp	Voltage:	115	UL Listed:	Yes
Manufacturer:	Pass and Seymour	Cycle:	60	Amperage:	20	CSA Approved:	Yes
Overload Protection:	None	Phase:	1	Switch Pole(s):	1	Rating:	1 hp
Junction Box Mtg.:	Ship Separate	RPM:	1500	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped Separate						

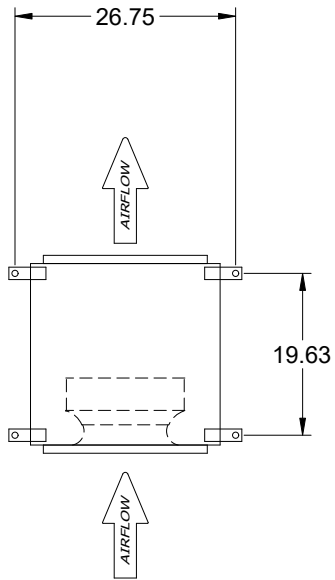
Electrical Drawing Details



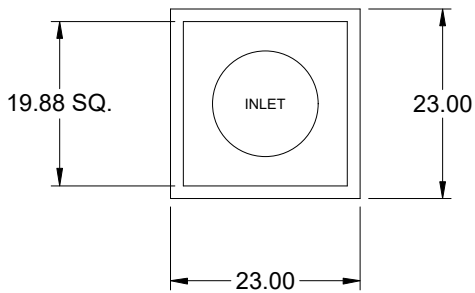
Notes: All dimensions shown are in units of in.

# Assembly Drawing

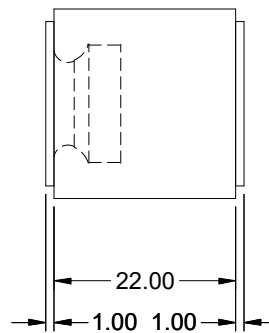
Type: Direct Drive Centrifugal Inline Fan



TOP VIEW



END VIEW



SIDE VIEW

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

# Vari-Green Motor & Control Options

An EC motor that uses AC input power and internally converts it to DC power. Motor accepts a 0-10VDC control signal along with a 24V source to power controls in the motor. Motor is operable in the 2-10VDC range and off while in the 0-1.9VDC range. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the fan housing adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

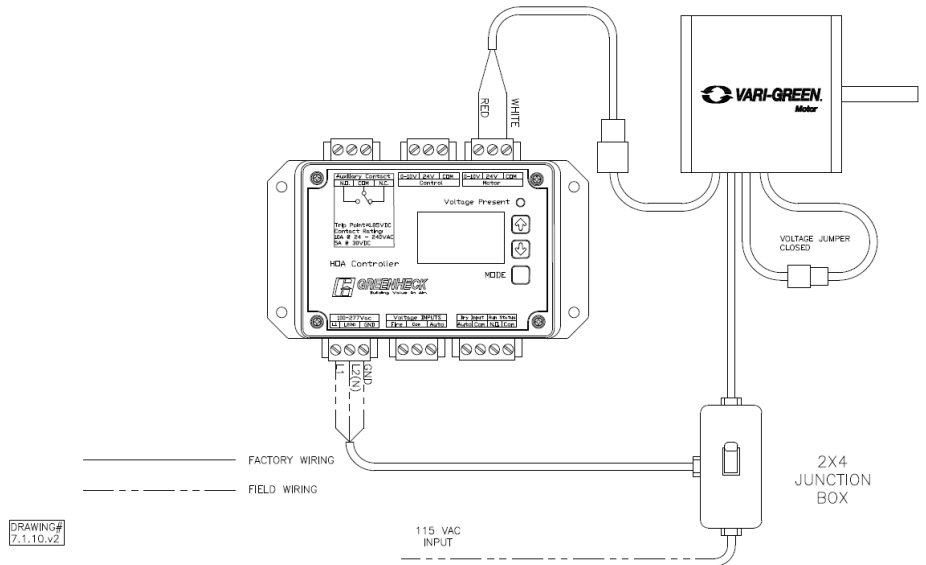
### Motor Configuration

Input Voltage: 115  
Speed Reference: 0-10VDC  
Permanent Dial: No  
Balance Dial Included: N/A

### Control Configuration

Control Type: Dial on Fan  
Transformer: HOA Loose

## Vari-Green



# Vertical Mount Exhaust Damper

Model: WD-330

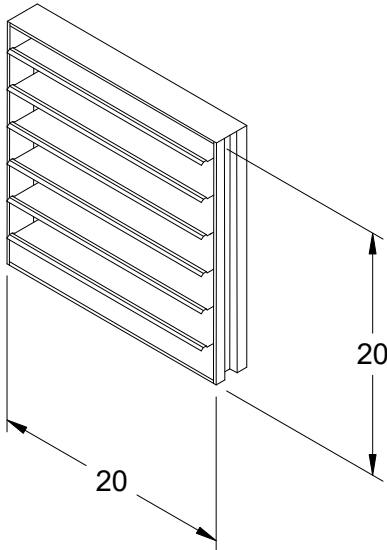
## Standard Construction Features:

- Model WD-330 is a vertical mount exhaust damper and is constructed of galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Nylon type bushings

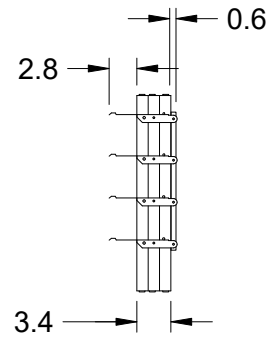
## Damper Configuration:

Actuator Type: 115 VAC

End Switch: Yes



DAMPER



TYP. SECTION VIEW

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

# Fan Isolator

Type: Spring, Hanging, 1 Inch

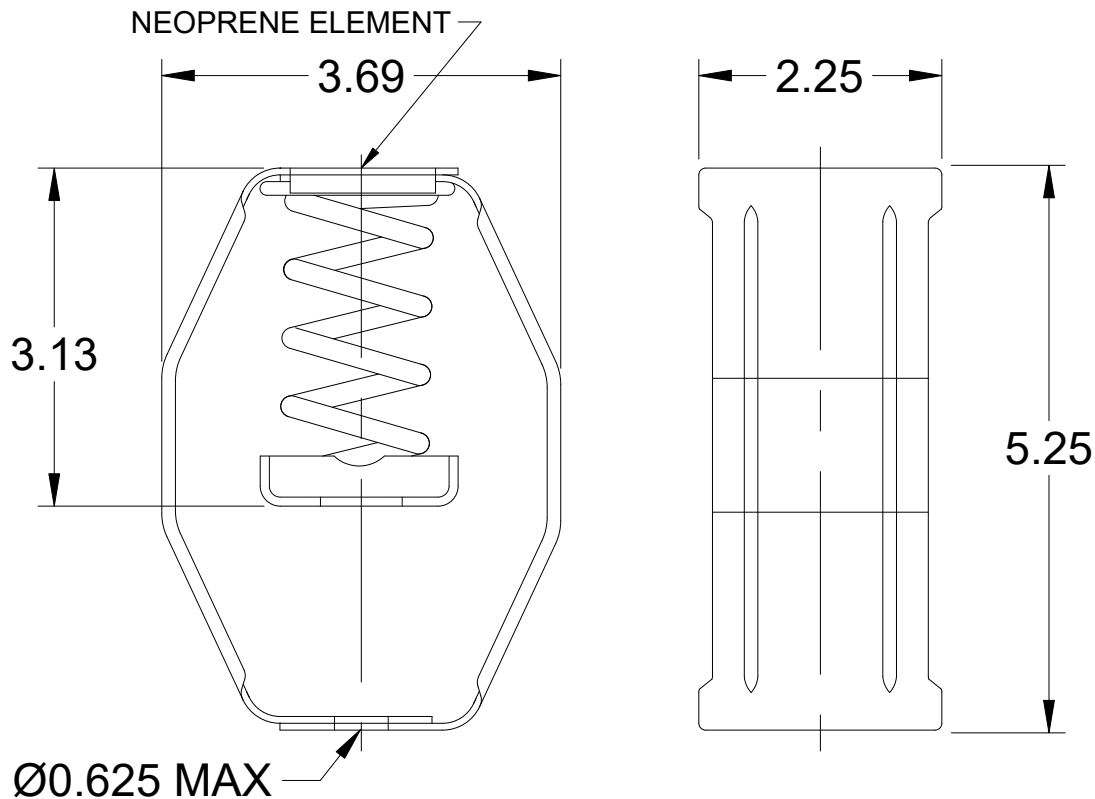
## Standard Construction Features:

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-1-35	Color:	Blue
Manufacturer:	Kinetics Noise Control	Mounting:	Hanging
Load Capacity:	35 lb	Kit Part Number:	850343
Deflection at Full Load:	1.52	Selection Deflection (in.):	0.43

## Spring, Hanging, 1 Inch Deflection - Vibration Isolator



Notes: All dimensions shown are in units of in.

## AMCA



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