



LETTER OF TRANSMITTAL

SHP
312 Plum Street, Suite 700
Cincinnati, OH 45202

Phone: 513-381-2112
Fax: 513-381-5121
eMail: cbragg@shp.com

TO: Marcus Pickworth
COMPANY: Shook Construction
2000 W. Dorothy Lane
Moraine, OH 45439

FROM: Caitlyn Bragg
RE: Dayton Regional STEM New
Elementary School (K-5)

DATE: 9/30/2024

COMM NO.: 2024026.01

We are Sending You the Following Items

Attached Under a Separate Cover VIA _____

- Copy of Letter Prints Specifications
- Shop Drawings Change Order Pay Application
- Plans Samples Other..

| COPIES | DIV. NO. | DESCRIPTION |
|--------|-----------|----------------------------------|
| 1 | 233423-27 | HVAC Power Ventilators (PD & SD) |

EF-1 PAGE 5
EF-2,6 PAGE 15
EF-3 PAGE 25
EF-4 PAGE 35
EF-5 PAGE 39
EF-7 PAGE 49
EF-8 PAGE 59

THESE ARE TRANSMITTED as checked below

- For Approval Reviewed as Submitted Resubmit copies for approval
- For Your Use Reviewed as Noted Submit copies for approval
- For Review & Comments Returned for Corrections Return corrected prints

REMARKS

“Reviewed”

 Thanks,
 Caitlyn

IF ENCLOSURES ARE NOT AS NOTED, PLEASE NOTIFY SIGNEE

COPIED TO

.....

Caitlyn Bragg

SIGNED _____
 Caitlyn Bragg
 Construction Administrator

Built-in cover page

27-0:HVAC Power Ventilators - Product Data & Shop Drawings



| | |
|-------------------------------|--|
| Status | Open Submitted |
| Spec section | 233423 HVAC Power Ventilators |
| Manager | Caitlin Erbacher (Shook Construction) |
| Responsible contractor | Caitlin Erbacher (Shook Construction) |
| Reviewers step 01 | Kate Bartolovich (SHP) Brock Rossel (SHP) |

| | |
|--|---|
| <input checked="" type="checkbox"/> Reviewed | Fabrication/Installation may be undertaken. Reviewed does not authorize changes to the Contract Sum or Contract Time. |
| <input type="checkbox"/> Reviewed as Noted | |
| <input type="checkbox"/> Revise and Resubmit | Fabrication and/or Installation MAY NOT be undertaken. In resubmitting limit corrections to items marked. |
| <input type="checkbox"/> Rejected | |
| Reviewed neither extends nor alters any contractual obligations of the Architect or Contractor. | |
|  312 Plum Street Suite 700 Cincinnati, OH 45202 | |
| By: Hunter Gregory | Date: 9/26/2024 |

STARCO, Inc.



Submittal Review

PO BOX 170160 • DAYTON OH 45417-0160 • PHONE 937/461-2422 • FAX 937/461-2922

| |
|---|
| STARCO, INC. JOB No. 202426 |
| SUBMITTAL NUMBER: 10 |
| Project: Dayton STEM School |
| PROJECT I.D. |
| PRODUCT DESCRIPTION: HVAC Power Ventilators Product Data Shop Drawings |
| SPEC SECTION: 23 34 23 - 1.2A & 1.2B |
| SPEC PAGE: All |
| SPEC PARAGRAPH: All |
| DATE: 9-12-24 |
| Reviewed By: Allen Cruze |

**Starco Inc. certifies
the specifications
have been read,
complied with and
has been checked
by Allen Cruze**

SUBMITTAL

Job Name: Dayton Regional STEM K-5 Bldg

Architect: SHP

Engineer: SHP

Contractor: Starco, Inc

Elevation: (ft) 499

Date: 9/04/2024

Submitted By: Kyle Dullaghan

Email: kdullaghan@eapnet.com

Phone: (513)332-2082

EAP INC - 370

3930 VIRGINIA AVE

CINCINNATI, OH 45227

US

Phone: (513)489-9494

Fax: (513)489-6448

Email Address: kdullaghan@eapnet.com

SUBMITTAL NOTES:

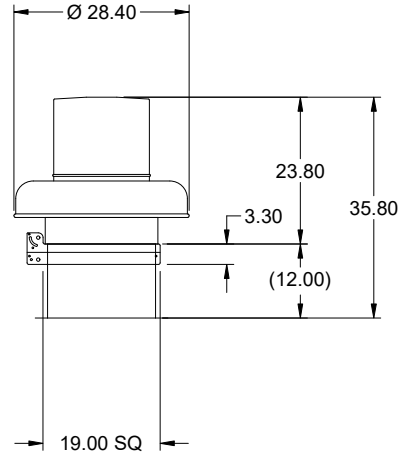
Exhaust Fans



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

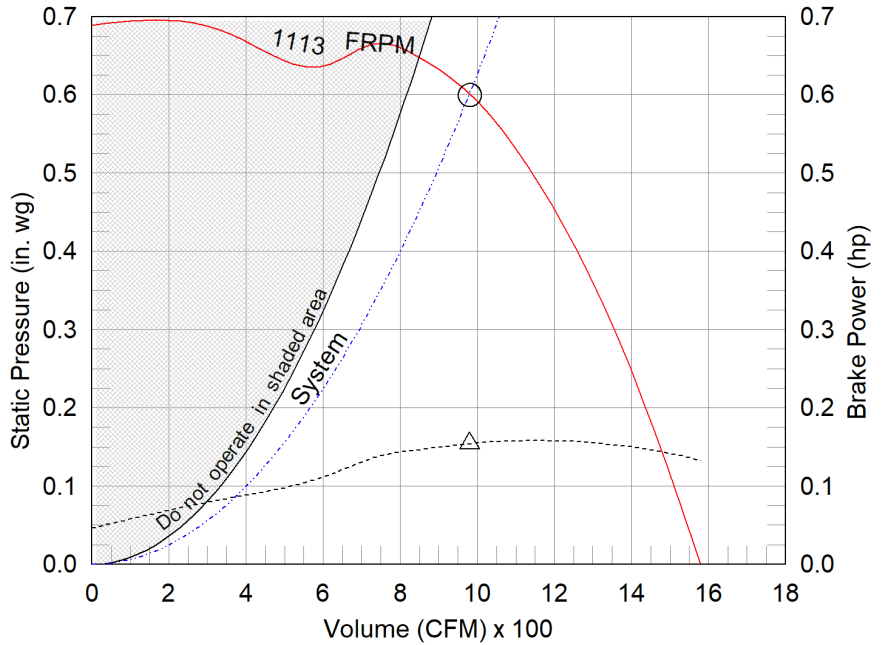
Model: G-130-VG
Direct Drive Centrifugal Roof Exhaust Fan

| Dimensional | |
|-------------------------------|-------------|
| Quantity | 1 |
| Weight w/o Acc's (lb) | 44 |
| Weight w/ Acc's (lb) | 51 |
| Weight w/ Acc's and Curb (lb) | 67 |
| Standard Curb Cap Size (in.) | 19 x 19 |
| Optional Damper (in.) | 12 x 12 |
| Roof Opening (in.) | 15.5 x 15.5 |



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

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 980 |
| Actual Volume (CFM) | 980 |
| Total External SP (in. wg) | 0.6 |
| Fan RPM | 1113 |
| Operating Power (hp) | 0.15 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 3,823 |
| Static Eff. (%) | 60 |



| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 875 |

| Motor | |
|-----------------------------------|----------|
| Motor Mounted | Yes |
| Size (hp) | 1/4 |
| Voltage/Cycle/Phase | 115/60/1 |
| Enclosure | TENV |
| Motor RPM | 1150 |
| Efficiency Rating | High |
| Windings | 1 |
| FLA (Amps) | 3.5 |
| 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

Notes:

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

Sound Power by Octave Band

| Sound Data | 62.5 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA | dBA | Sones |
|------------|------|-----|-----|-----|------|------|------|------|-----|-----|-------|
| Inlet | 72 | 71 | 71 | 65 | 62 | 59 | 52 | 45 | 68 | 57 | 8.1 |



Model: G-130-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
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
Hinge, (PN 918379), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-19-12-G12

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

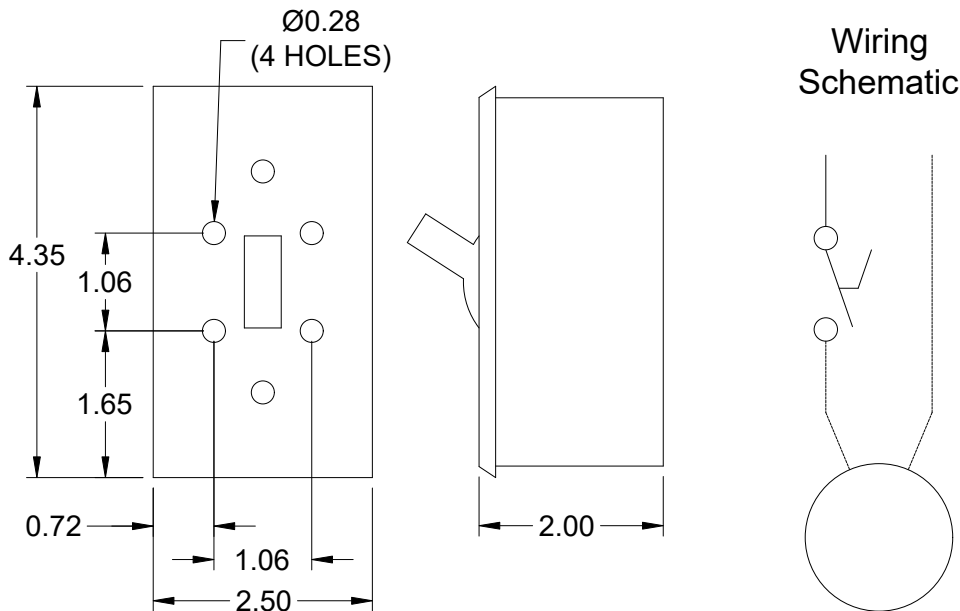
Standard Construction Features:

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: | 1150 | Exp. Resist. Wiring: | None | | |
| Switch Mounting: | Shipped With Unit | | | | | | |

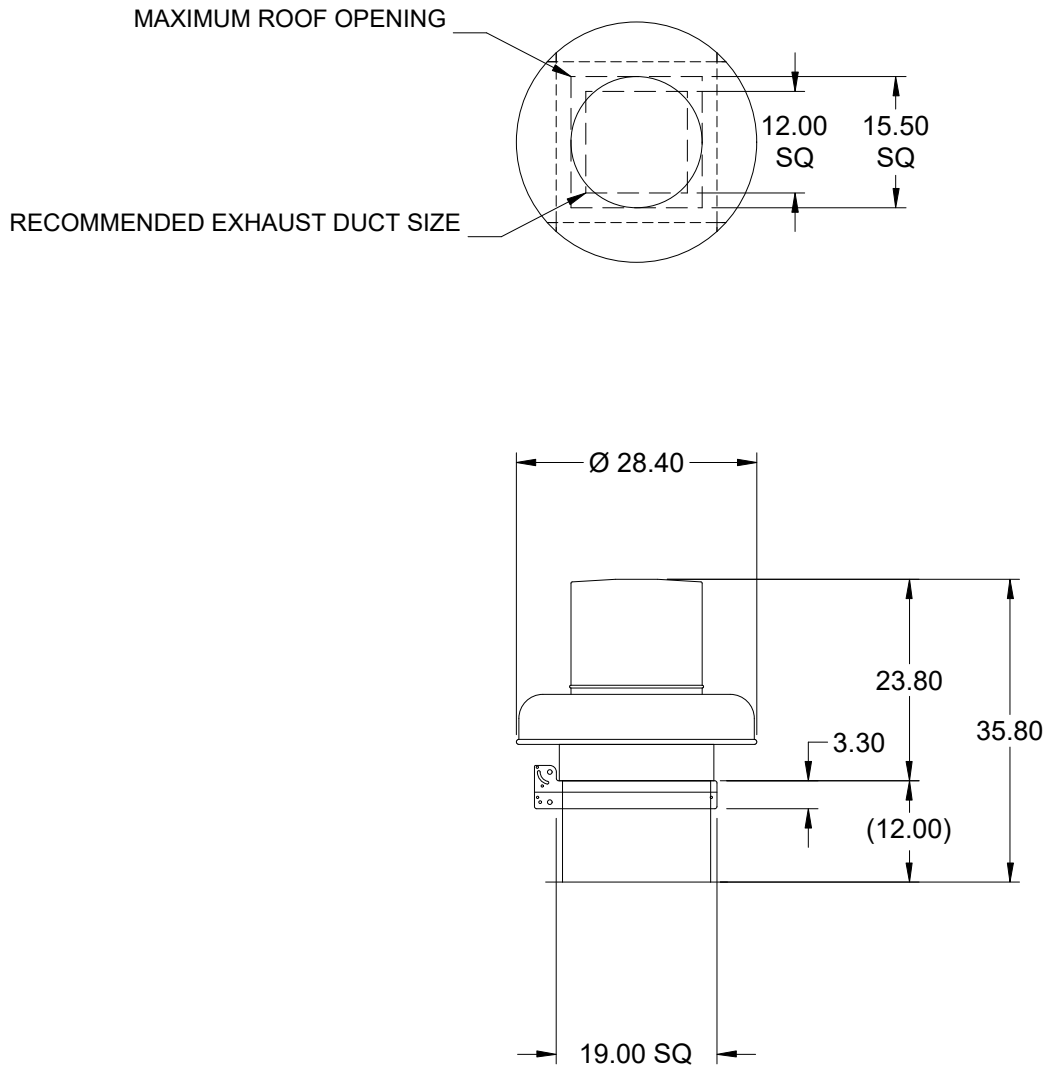
Electrical Drawing Details



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

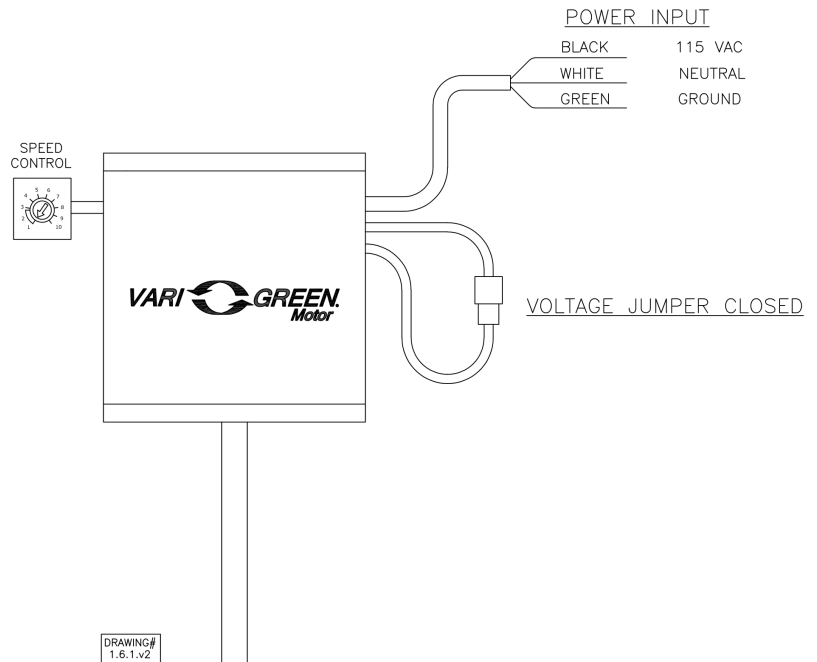
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

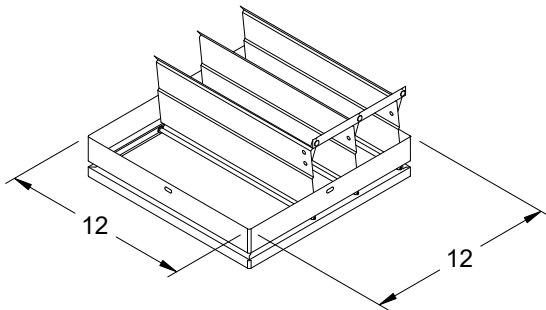
Model: BD-100

Standard Construction Features:

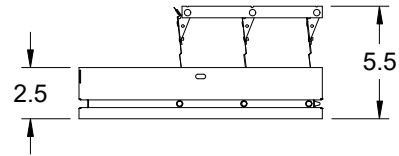
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

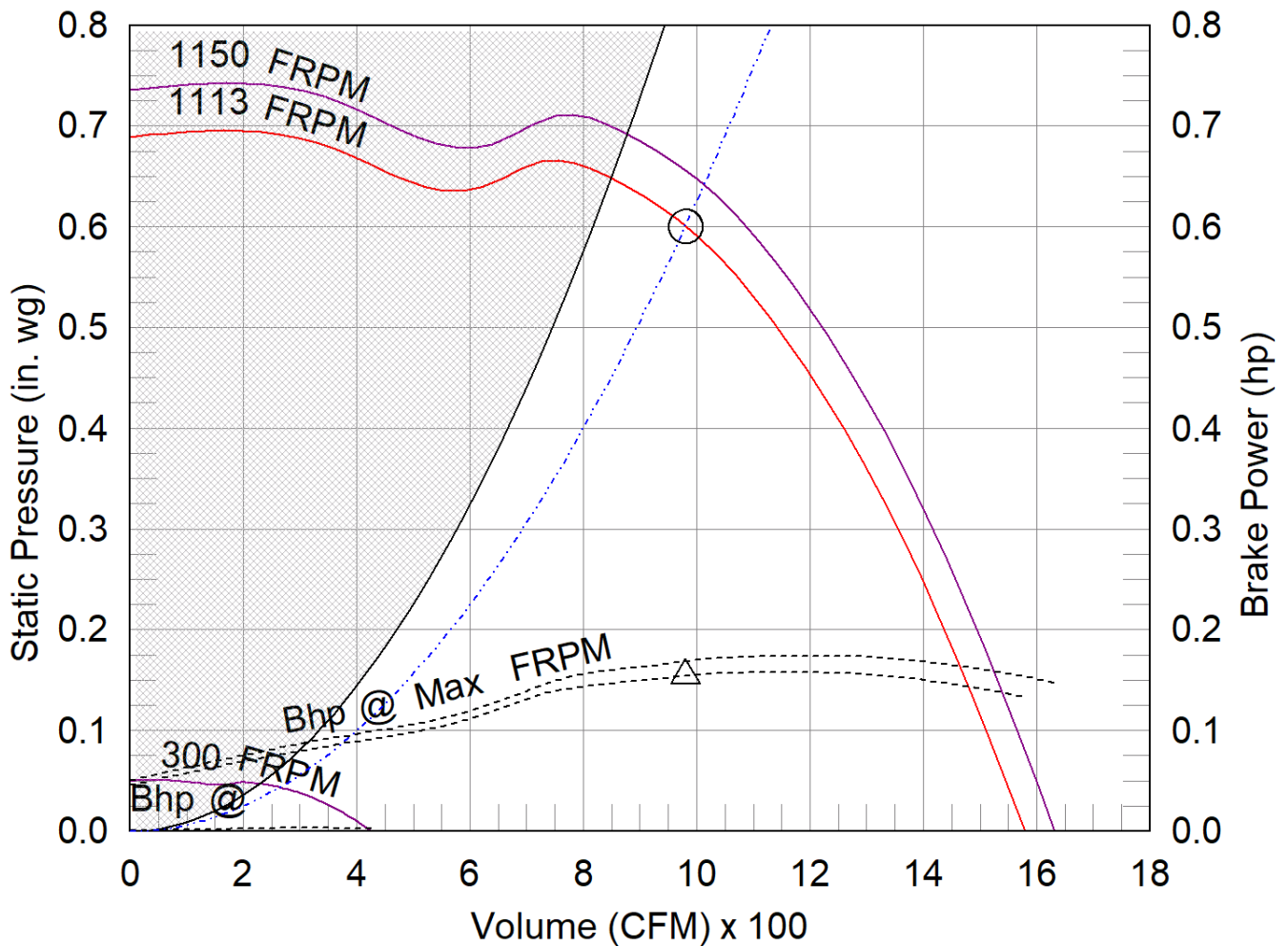
Notes: All dimensions shown are in units of in.

G-130-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 980 | 980 | 0.6 | 1113 | 0.15 |



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

Warranty

1 Yr (Standard)

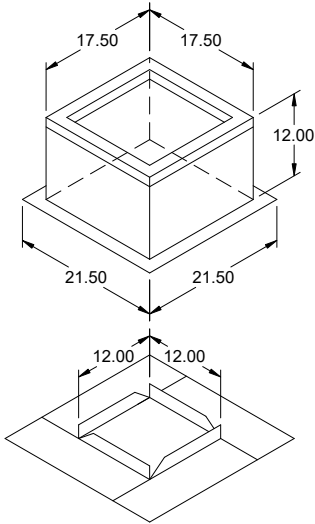
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

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 | 16 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 19 | 19 | 17.5 | 17.5 | 14 | 14 | 18 | 18 |

*May not be applicable

Damper Tray

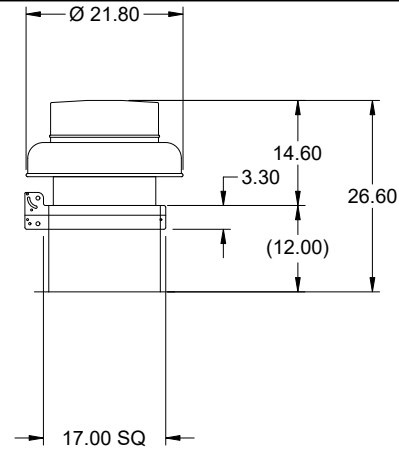
| Damper Tray Width (in.) | Damper Tray Length (in.) |
|-------------------------|--------------------------|
| 12 | 12 |

Accessories

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

Model: G-080-VG
Direct Drive Centrifugal Roof Exhaust Fan

| Dimensional | |
|-------------------------------|-------------|
| Quantity | 2 |
| Weight w/o Acc's (lb) | 24 |
| Weight w/ Acc's (lb) | 30 |
| Weight w/ Acc's and Curb (lb) | 44 |
| Standard Curb Cap Size (in.) | 17 x 17 |
| Optional Damper (in.) | 10 x 10 |
| Roof Opening (in.) | 13.5 x 13.5 |

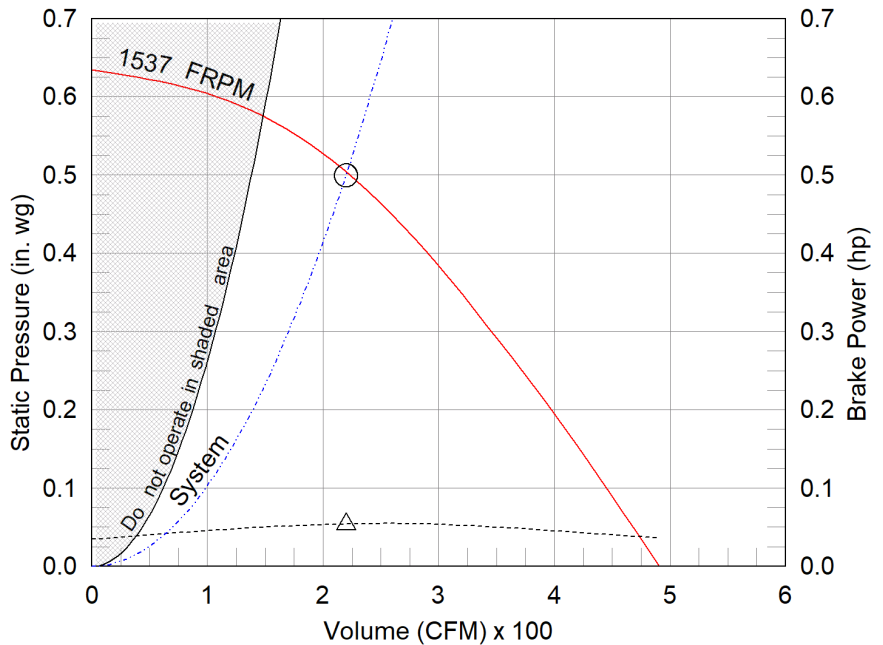


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 220 |
| Actual Volume (CFM) | 220 |
| Total External SP (in. wg) | 0.5 |
| Fan RPM | 1537 |
| Operating Power (hp) | 0.05 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 4,377 |
| Static Eff. (%) | 32 |

| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 550 |

| Motor | |
|-----------------------------------|----------|
| Motor Mounted | Yes |
| Size (hp) | 1/10 |
| Voltage/Cycle/Phase | 115/60/1 |
| Enclosure | TENV |
| Motor RPM | 1725 |
| Efficiency Rating | High |
| Windings | 1 |
| FLA (Amps) | 1.38 |
| Min. Circuit Ampacity (MCA) | 2 |
| 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 | 74 | 68 | 62 | 60 | 57 | 50 | 46 | 66 | 55 | 7.5 |



Model: G-080-VG

Direct Drive Centrifugal Roof Exhaust Fan

Tags: EF-2 EF-6

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
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
Hinge, (PN 918378), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Composite Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-17-10-G12

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

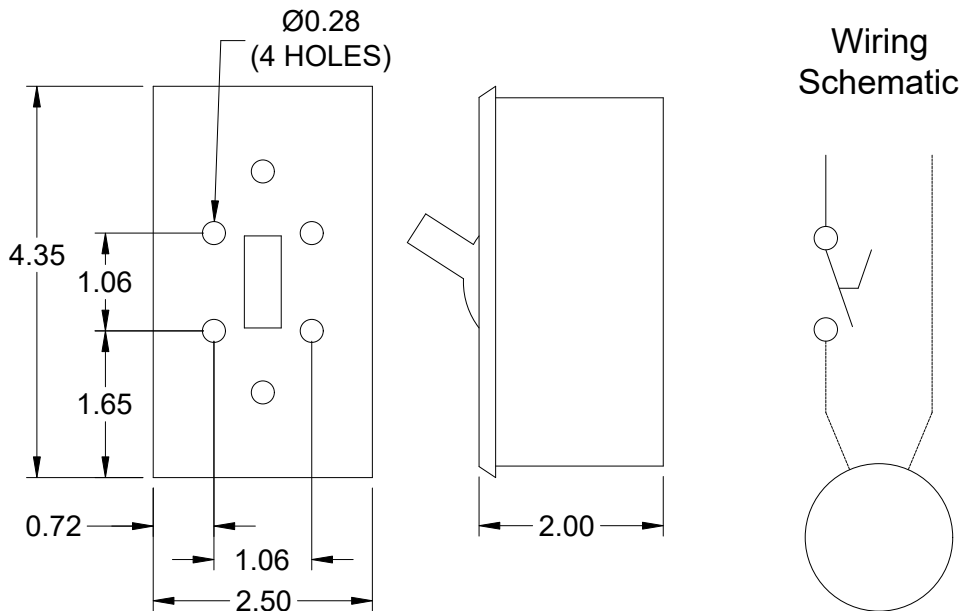
Standard Construction Features:

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: | 1/10 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 | | | | | | |

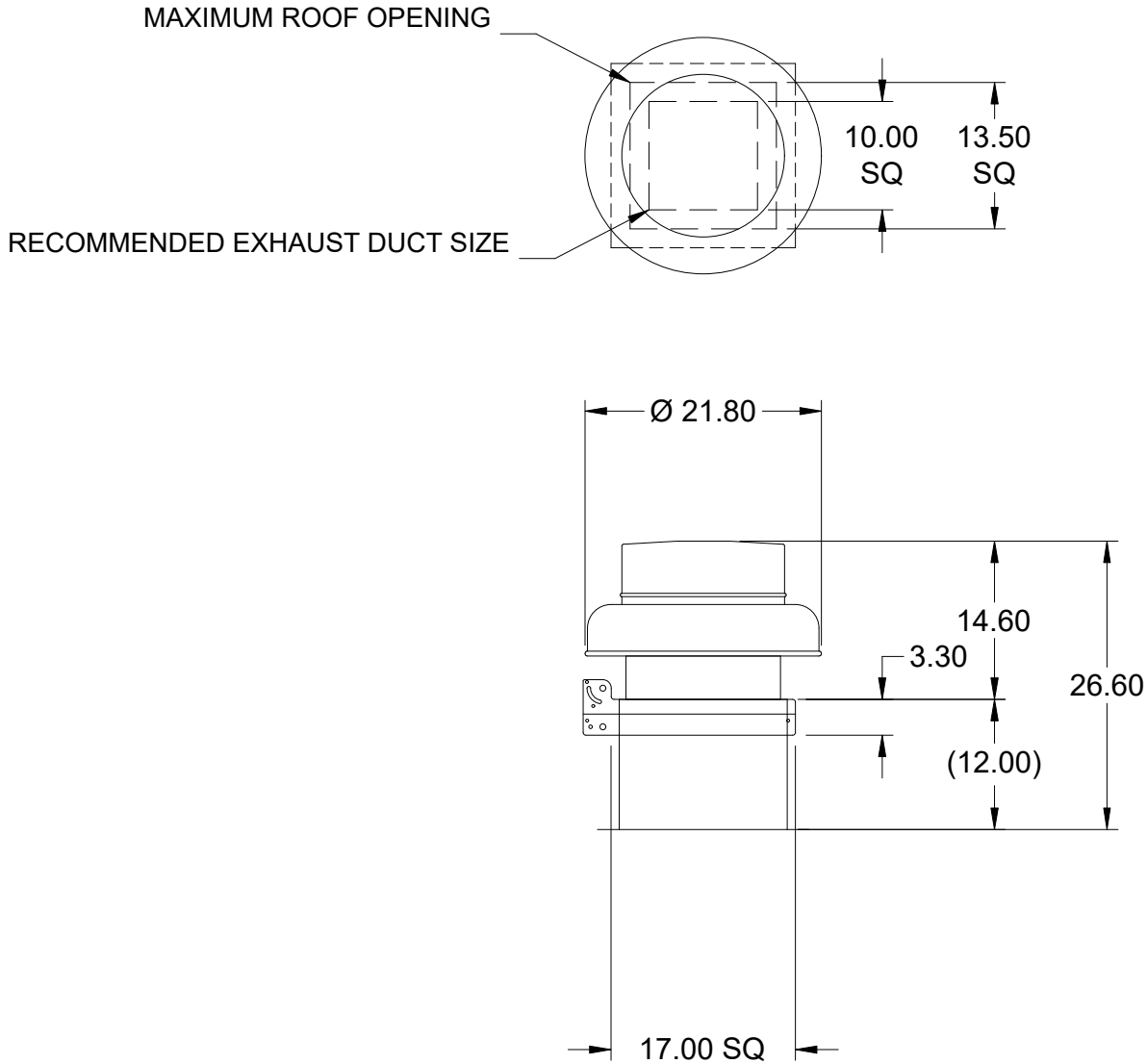
Electrical Drawing Details



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

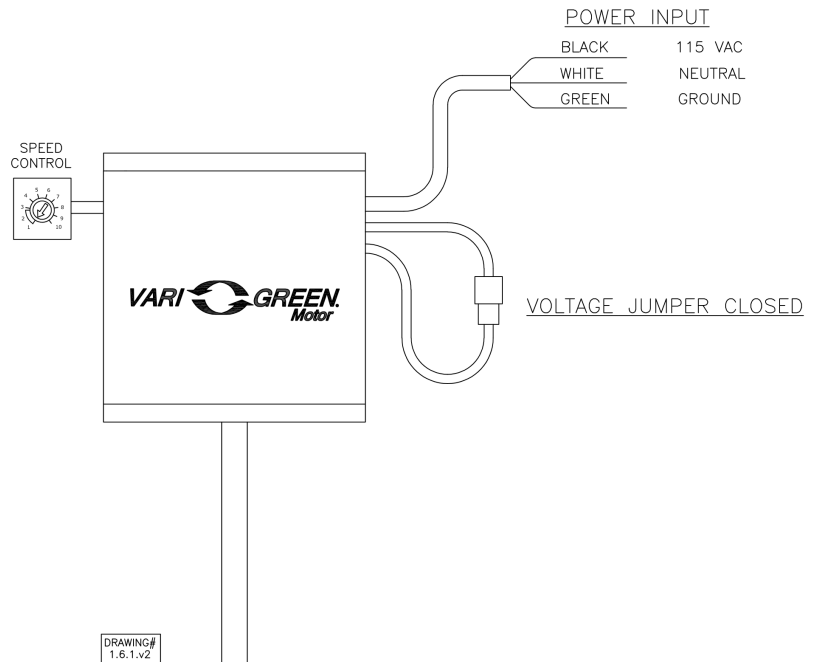
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

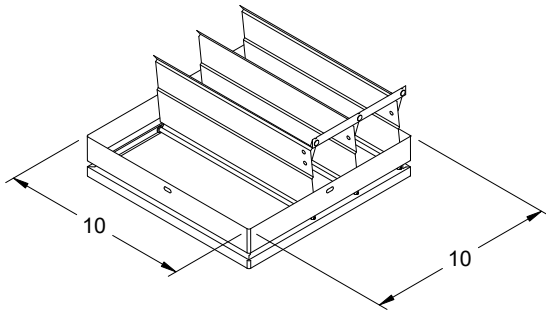
Model: BD-100

Standard Construction Features:

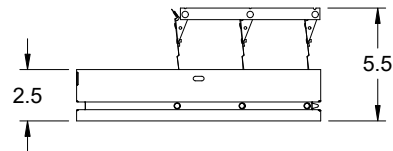
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

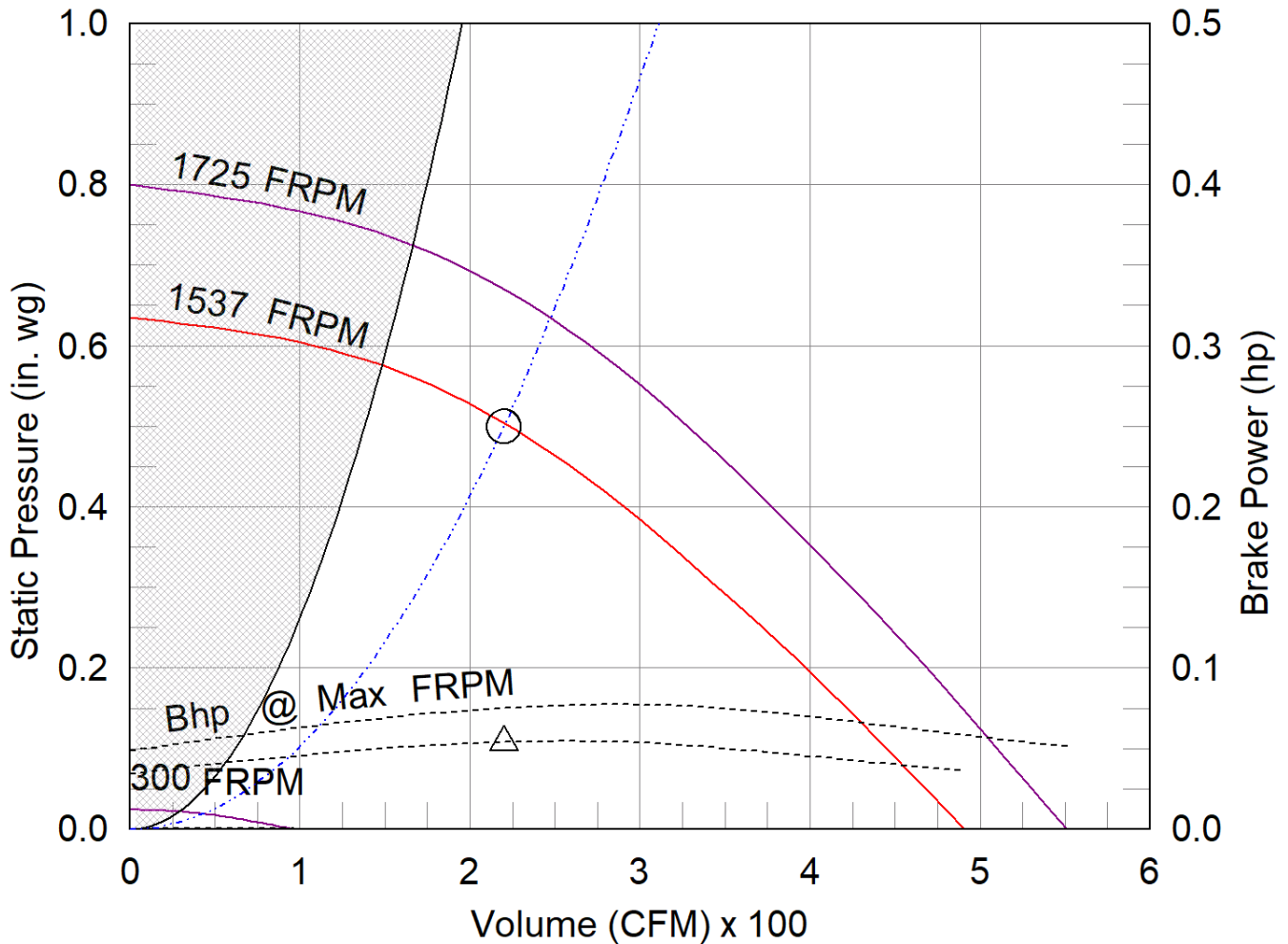
Notes: All dimensions shown are in units of in.

G-080-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 220 | 220 | 0.5 | 1537 | 0.05 |



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

Warranty

1 Yr (Standard)

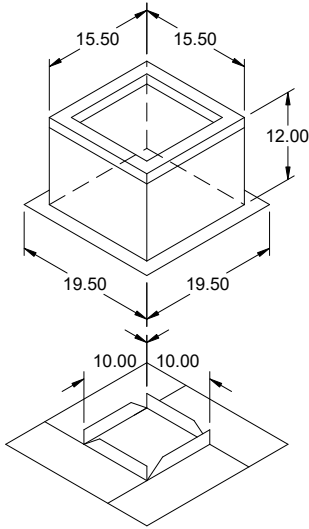
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

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

Tags:

EF-2 EF-6

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 |
|-----|-----|--------|---------------|-------------------|-------------|-------------------|---------------|
| | 2 | GPI-17 | Nominal | 1.5 | 14 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 17 | 17 | 15.5 | 15.5 | 12 | 12 | 16 | 16 |

*May not be applicable

Damper Tray

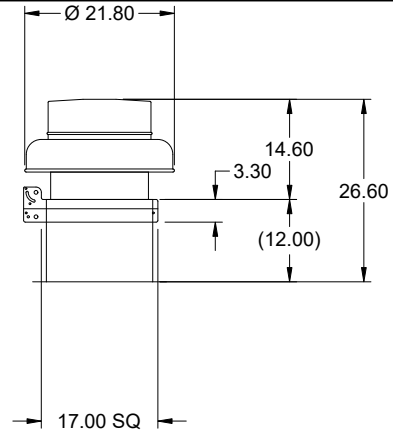
| Damper Tray Width (in.) | Damper Tray Length (in.) |
|-------------------------|--------------------------|
| 10 | 10 |

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) | 34 |
| Weight w/ Acc's and Curb (lb) | 48 |
| Standard Curb Cap Size (in.) | 17 x 17 |
| Optional Damper (in.) | 10 x 10 |
| Roof Opening (in.) | 13.5 x 13.5 |

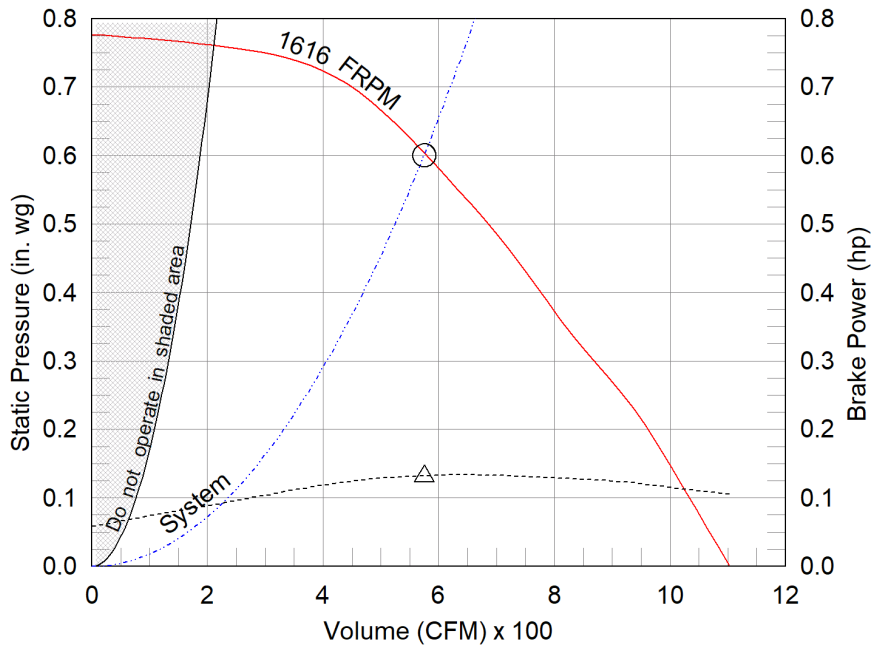


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 575 |
| Actual Volume (CFM) | 575 |
| Total External SP (in. wg) | 0.6 |
| Fan RPM | 1616 |
| Operating Power (hp) | 0.13 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 4,600 |
| Static Eff. (%) | 41 |

| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 496 |

| 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 | 82 | 80 | 71 | 65 | 63 | 58 | 47 | 48 | 70 | 58 | 10.0 |



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
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
Hinge, (PN 918378), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Composite Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-17-10-G12

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

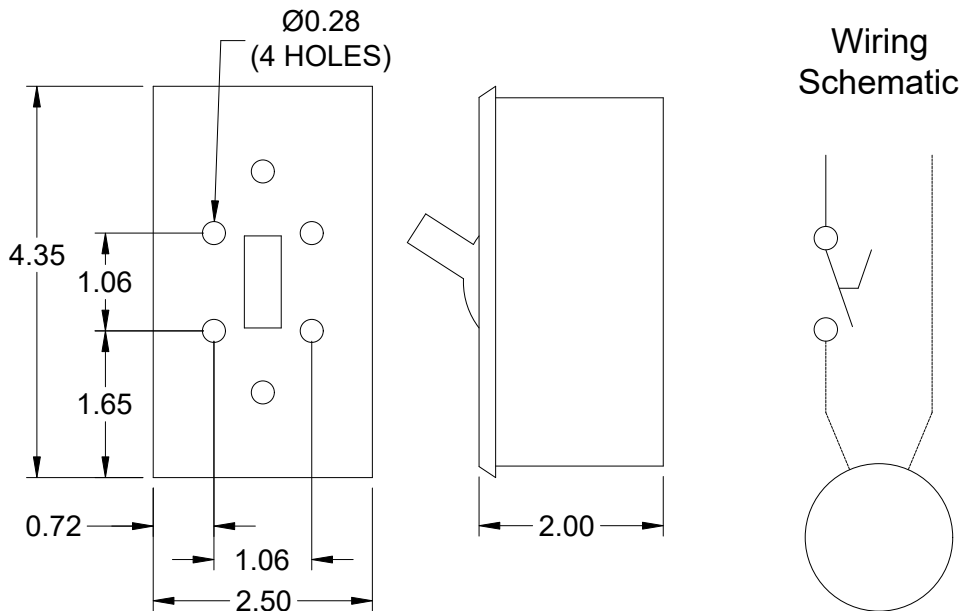
Standard Construction Features:

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 | | | | | | |

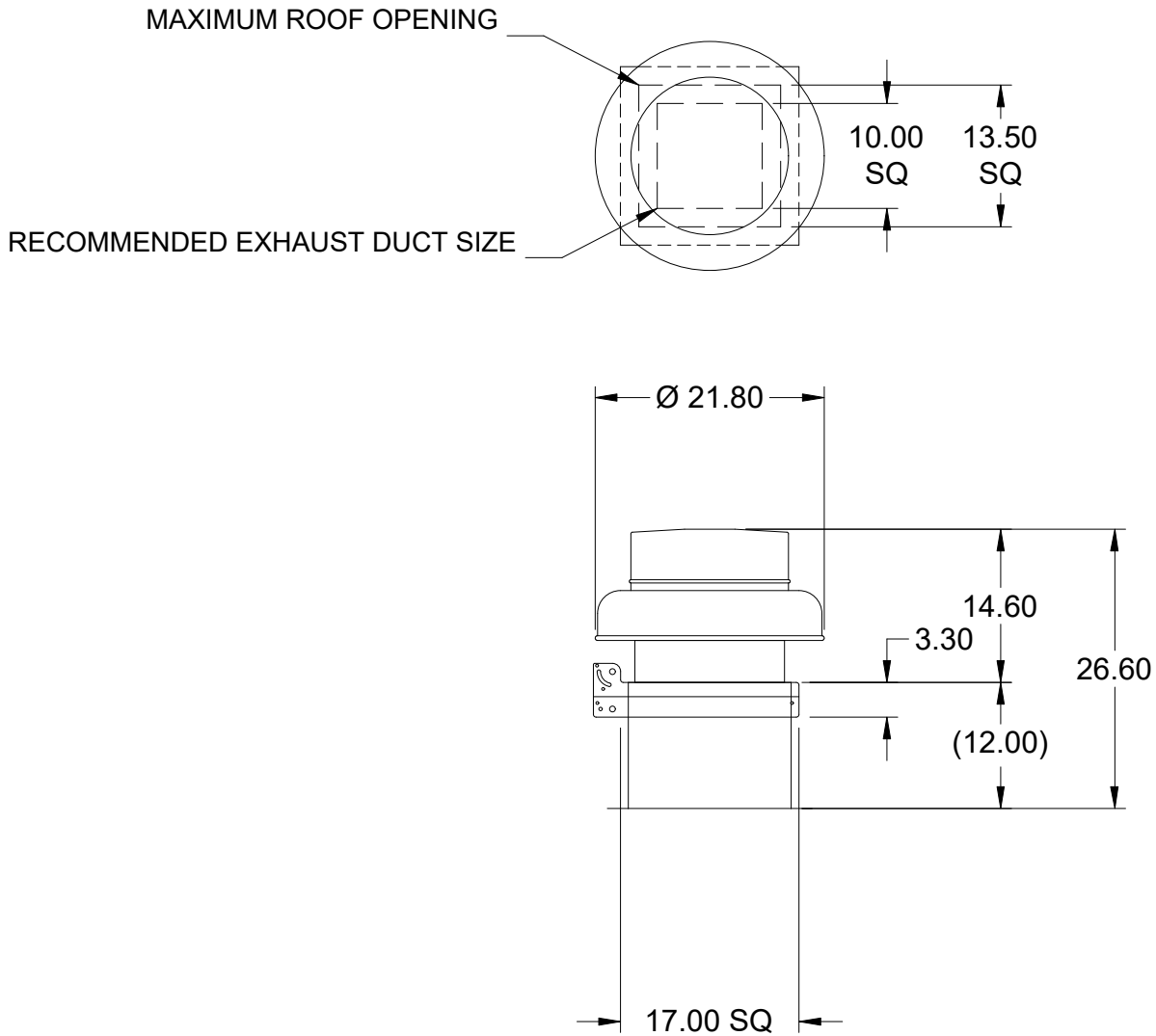
Electrical Drawing Details



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

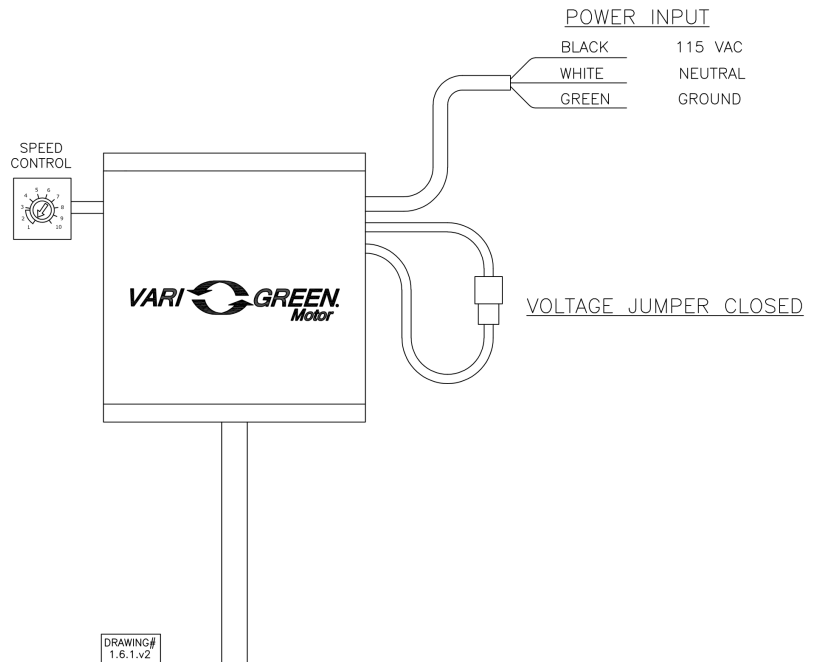
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

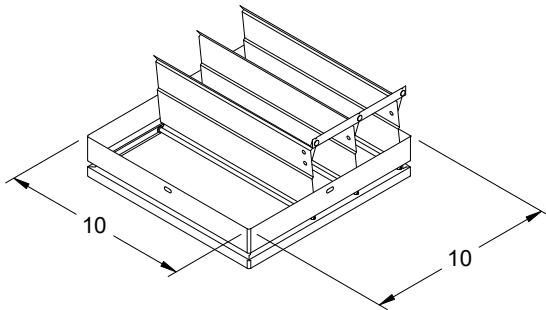
Model: BD-100

Standard Construction Features:

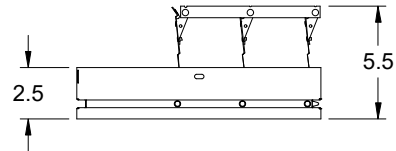
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

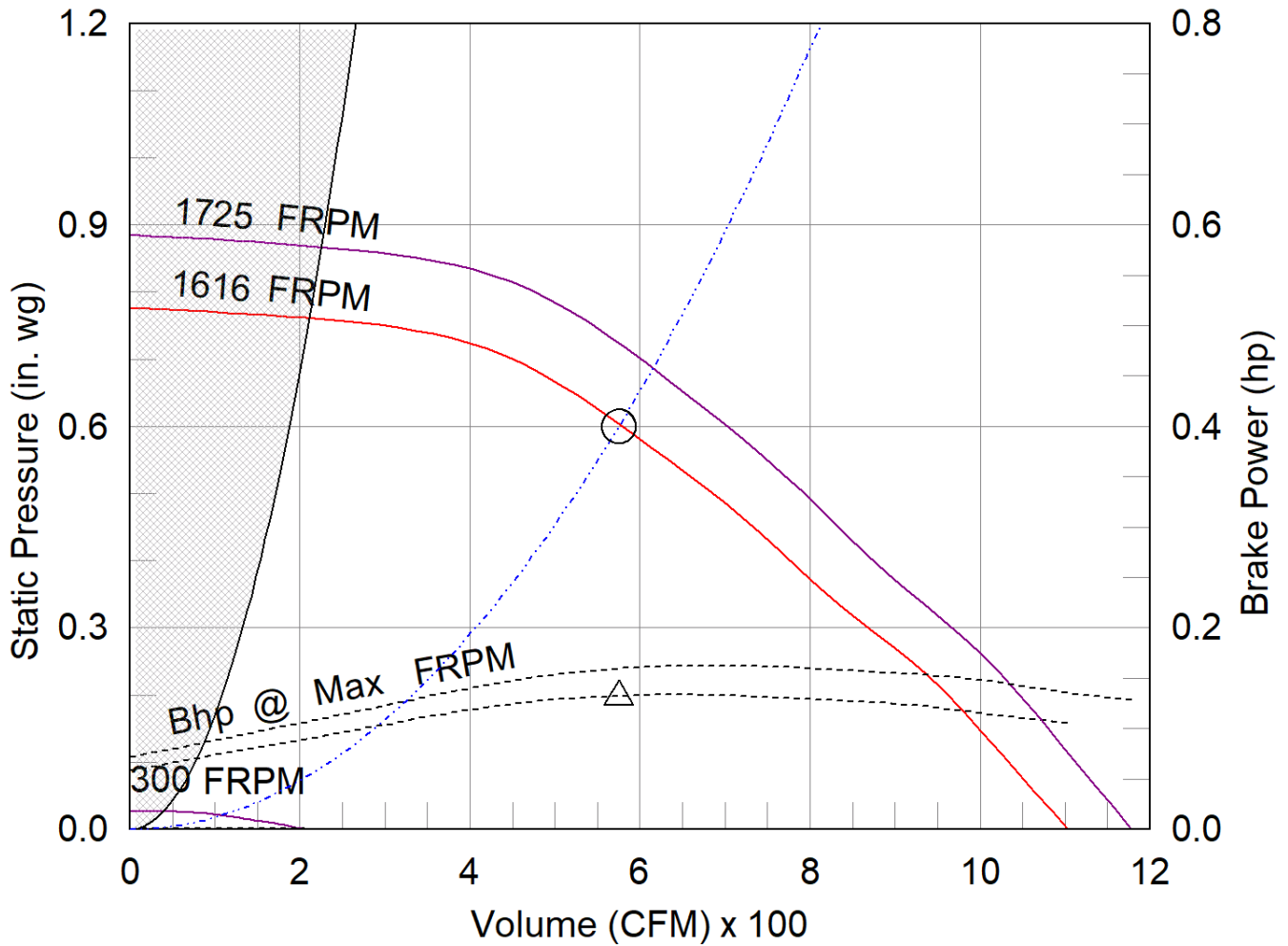
Notes: All dimensions shown are in units of in.

G-095-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 575 | 575 | 0.6 | 1616 | 0.13 |



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

Warranty

1 Yr (Standard)

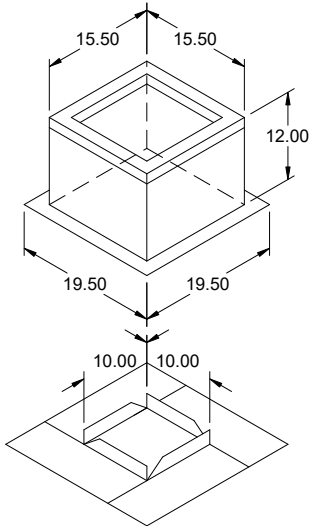
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

AMCA



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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 | 14 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 17 | 17 | 15.5 | 15.5 | 12 | 12 | 16 | 16 |

*May not be applicable

Damper Tray

| Damper Tray Width (in.) | Damper Tray Length (in.) |
|-------------------------|--------------------------|
| 10 | 10 |

Accessories

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

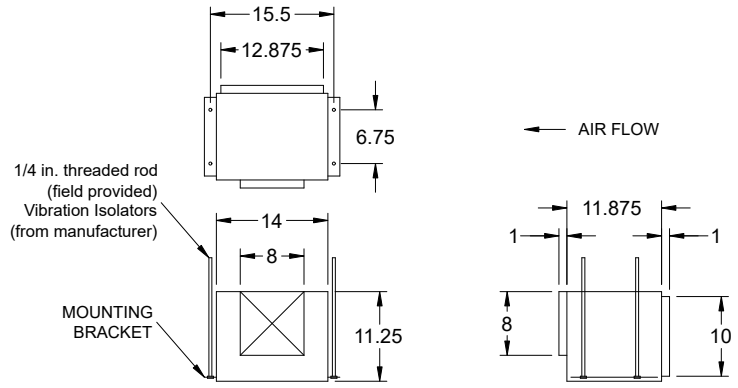
Model: CSP-A250
Inline Cabinet Fan

Standard Construction Features:

- Corrosion resistant galvanized steel scroll and housing - Sound absorbing insulation - Rectangular inlet and outlet duct collar - Outlet with integral spring loaded back draft damper - Double inlet forward curved wheel - Plug type disconnect - Adjustable mounting brackets - Field rotatable discharge

Selected Options & Accessories:

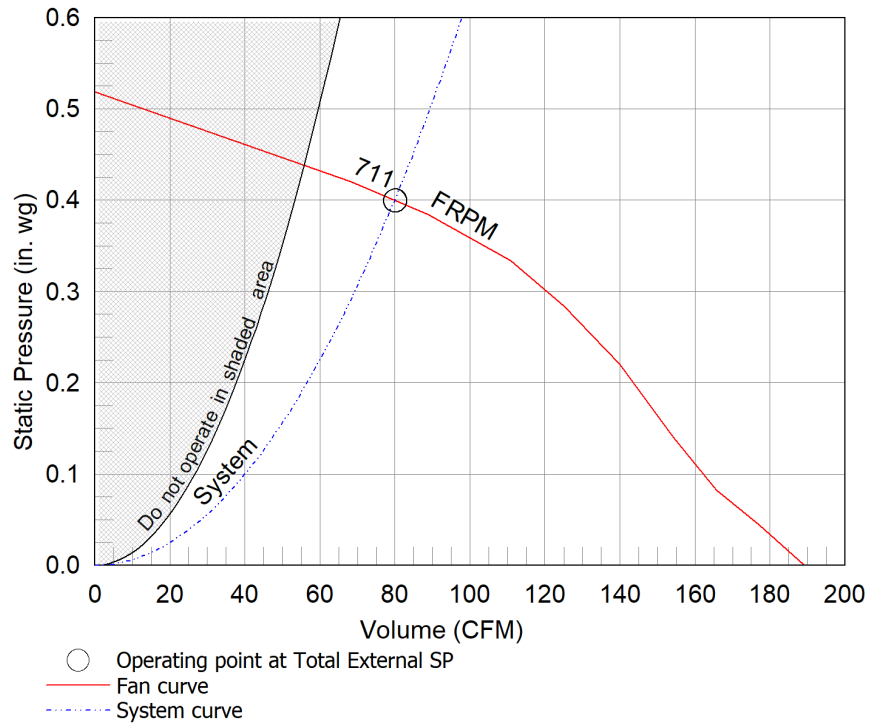
- Motor rated for continuous use
- Motor with Thermal Overload
- Motor with CSA Approval
- Motor with 40 Degree C Ambient Temperature
- UL/cUL 507 Listed - Electric Fan
- Solid State Speed Control, 6 Amp, Shipped Loose
- Flat Roof Flashing Flange (PN: RFC-7) Shipped Loose
- Isolation Kit, (PN: VI KIT-SP/CSP), Shipped Loose
- Adjustable easy installation mounting bracket
- Polypropylene Wheel Material
- Can Be Used to Comply with: ASHRAE 62.2 and Washington State Energy Code



| Dimensional | |
|-----------------------|----|
| Quantity | 1 |
| Weight w/o Acc's (lb) | 23 |
| Weight w/ Acc's (lb) | 32 |

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 80 |
| Actual Volume (CFM) | 80 |
| Total External SP (in. wg) | 0.4 |
| Fan RPM | 711 |
| * FLA (A) | 0.56 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Sones | < 0.3 |

| Motor | |
|---------------------|----------|
| Motor Mounted | Yes |
| ** Input Watts (W) | 19 |
| Voltage/Cycle/Phase | 115/60/1 |
| Enclosure | ODP |



Notes:

- All dimensions shown are in units of in.
- *FLA is approximate and will vary slightly with the motor.
- Sones - calculated using AMCA 301 at 5 ft
- ** Wattage is approximate and may vary between motors.

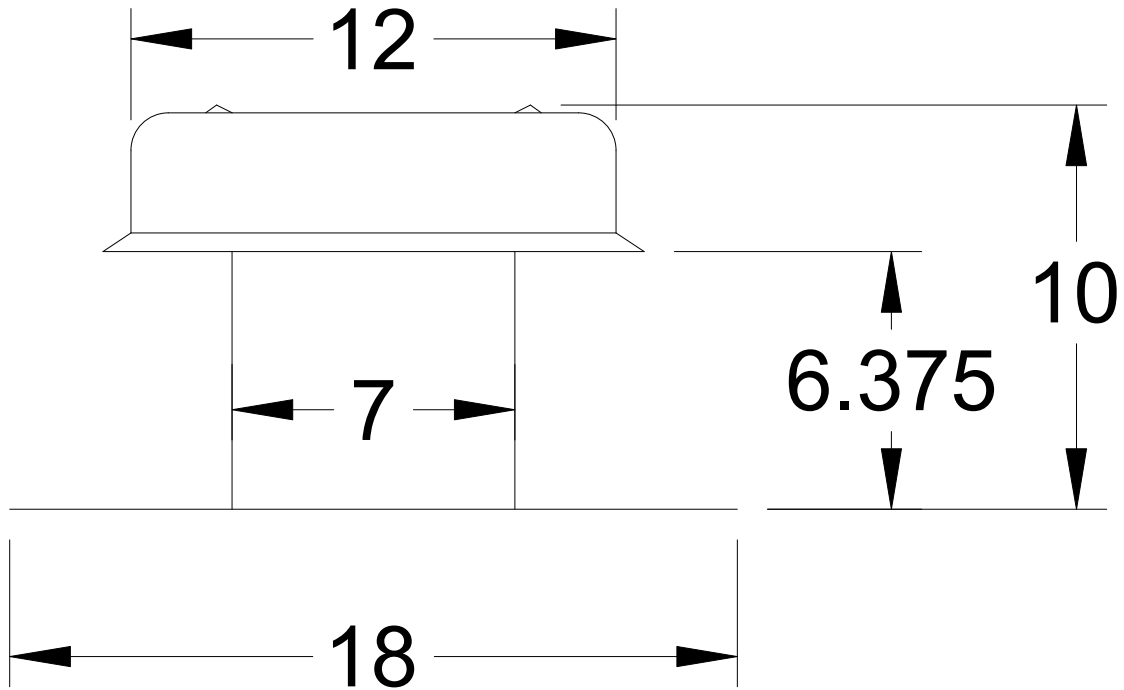


Discharge Accessory

Type: Roof Cap Flashed

Standard Construction Features:

- Aluminum Construction - Integral Birdscreen - Built-in Flashing Flange



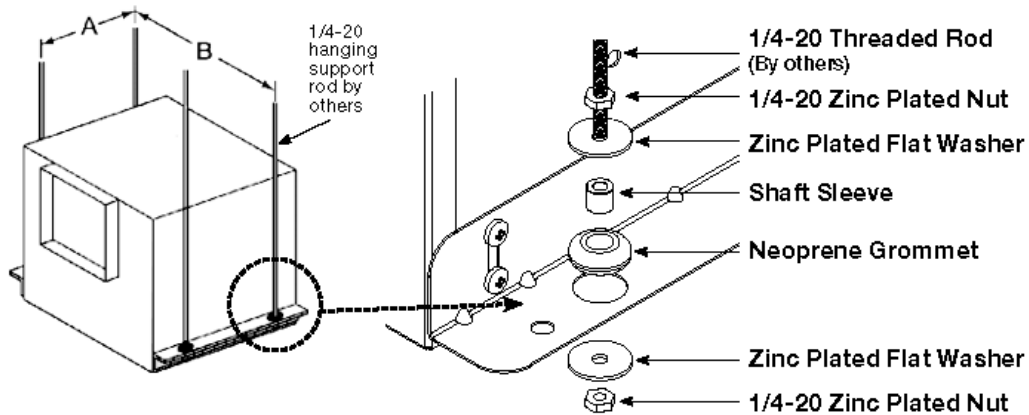
Notes: All dimensions shown are in units of in.

Isolation Kit

Type: Hanging

Standard Construction Features:

- Neoprene vibration isolation for hanging installation - Kit includes four isolators and all hardware necessary for mounting one unit except for the 0.25 in. x 20 in. threaded rod to be supplied by others - Fan mounting brackets include prepunched mounting holes for ease of installation



| Unit Size | A | B |
|---|-------------|---------------|
| B50-B200 | 4 1/2 (114) | 15 5/8 (397) |
| A50-A190 | 5 1/2 (140) | 14 5/8 (371) |
| A200-A390 | 6 3/4 (171) | 15 1/2 (394) |
| A410, A510, A710, A780 | 9 1/4 (235) | 19 5/8 (498) |
| A700 | 5 1/2 (140) | 25 1/8 (638) |
| A900 - A1050, A1410 - A1550 | 9 1/4 (235) | 25 3/8 (645) |
| A1750, A2150 | 9 1/4 (235) | 36 3/4 (933) |
| A3600 | 9 1/4 (235) | 48 5/8 (1235) |
| All dimensions shown in inches (millimeters). | | |

| Description | Qty |
|--------------------------|-----|
| Neoprene Grommets | 4 |
| 1 x 32 Zinc Plated Nuts | 8 |
| Zinc Plated Flat Washers | 8 |
| 3/8 x 3/16 Shaft Sleeves | 4 |

AMCA



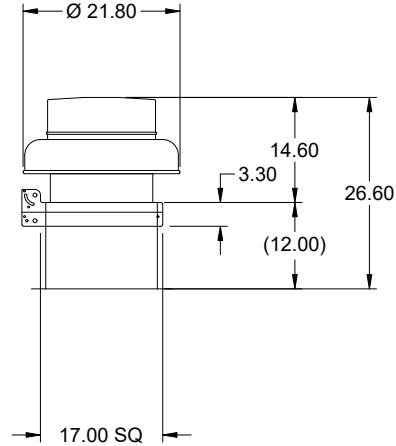
AMCA Licensed for Air Performance Without Appurtenances and Accessories. Power rating (BHP/kW) does not include transmission losses.

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 comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to air performance ratings only. Performance certified is for installation type D: Ducted inlet, Ducted outlet. Performance ratings include the effects of a backdraft damper. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in spherical sones at 5 ft. (1.5m) in a spherical free field calculated per Annex B of AMCA 311. Values shown are for installation type D: ducted inlet spherical sone levels. Ratings do not include the effects of duct end correction. Ratings are based on 10 ft. of insulated duct.

The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

Model: G-080-VG
Direct Drive Centrifugal Roof Exhaust Fan

| Dimensional | |
|-------------------------------|-------------|
| Quantity | 1 |
| Weight w/o Acc's (lb) | 24 |
| Weight w/ Acc's (lb) | 30 |
| Weight w/ Acc's and Curb (lb) | 44 |
| Standard Curb Cap Size (in.) | 17 x 17 |
| Optional Damper (in.) | 10 x 10 |
| Roof Opening (in.) | 13.5 x 13.5 |

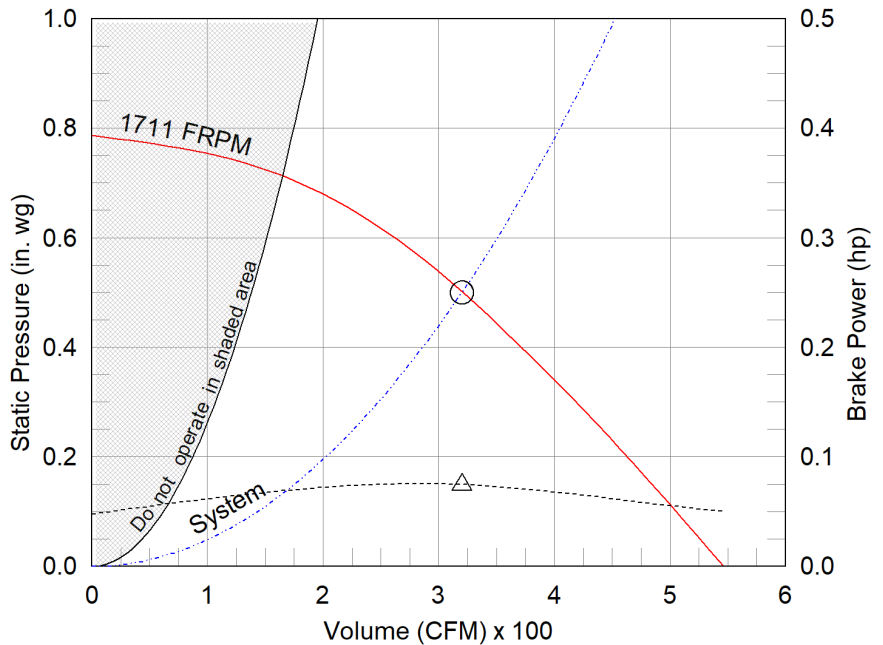


OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 320 |
| Actual Volume (CFM) | 320 |
| Total External SP (in. wg) | 0.5 |
| Fan RPM | 1711 |
| Operating Power (hp) | 0.07 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 4,872 |
| Static Eff. (%) | 34 |

| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 800 |

| Motor | |
|-----------------------------------|----------|
| Motor Mounted | Yes |
| Size (hp) | 1/10 |
| Voltage/Cycle/Phase | 115/60/1 |
| Enclosure | TENV |
| Motor RPM | 1725 |
| Efficiency Rating | High |
| Windings | 1 |
| FLA (Amps) | 1.38 |
| Min. Circuit Ampacity (MCA) | 2 |
| 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 | 69 | 75 | 71 | 64 | 62 | 60 | 55 | 49 | 69 | 57 | 8.6 |



Model: G-080-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
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
Hinge, (PN 918378), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Composite Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-17-10-G12

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

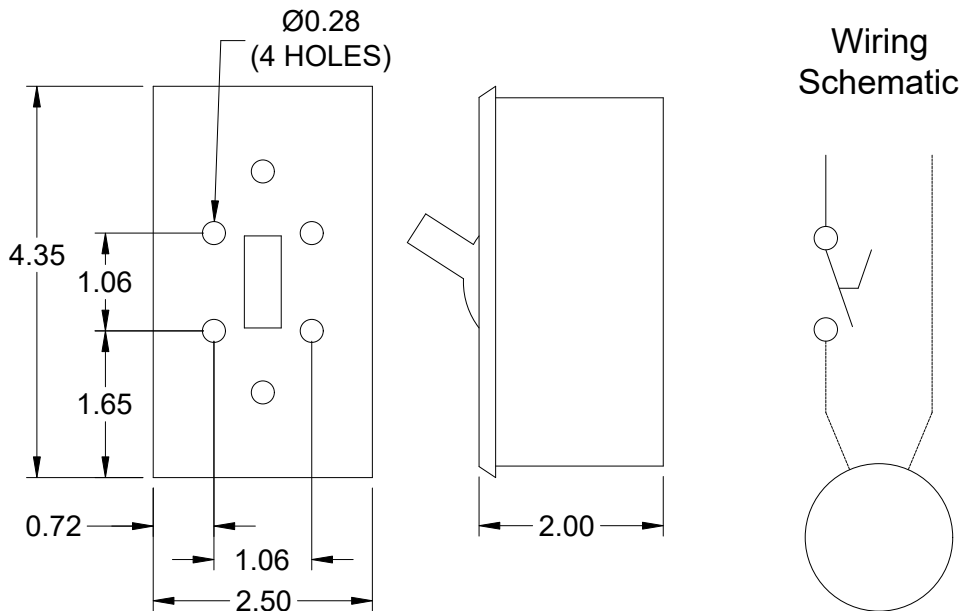
Standard Construction Features:

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: | 1/10 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 | | | | | | |

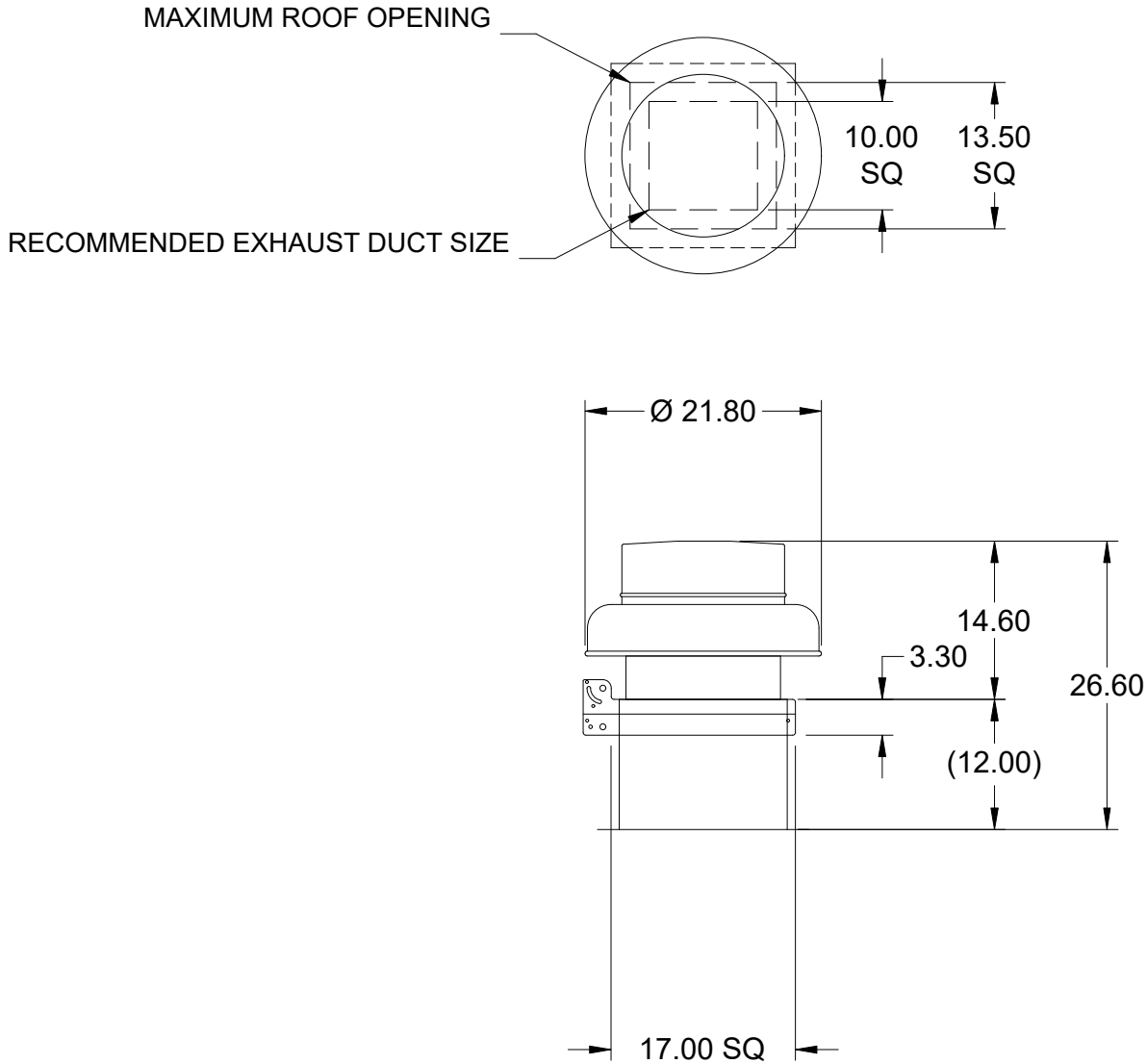
Electrical Drawing Details



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

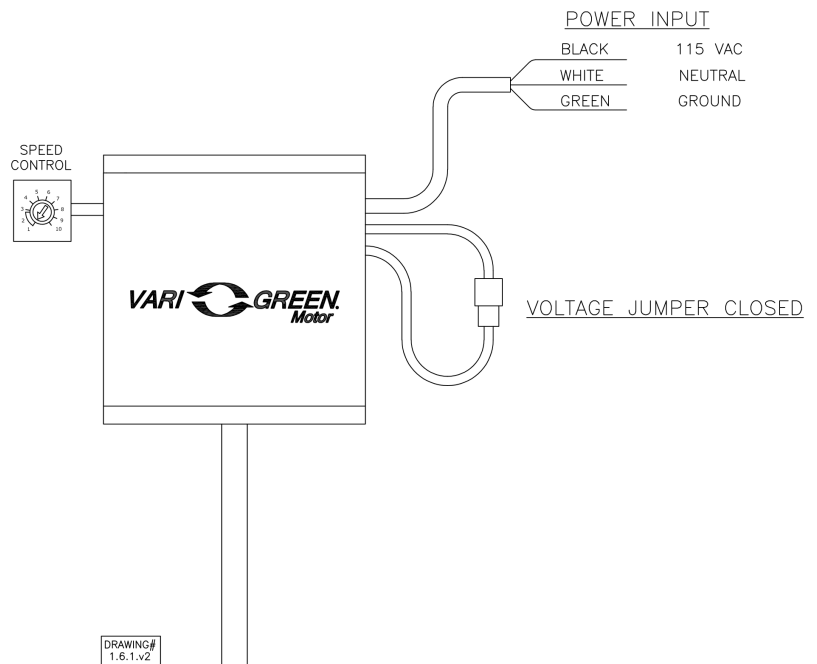
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

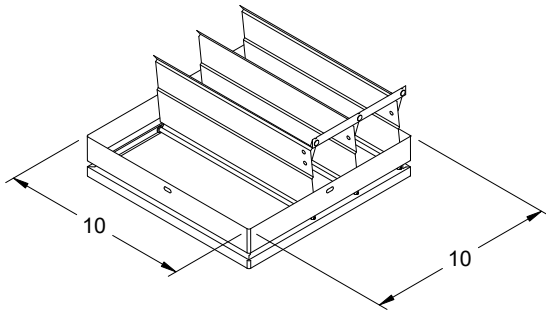
Model: BD-100

Standard Construction Features:

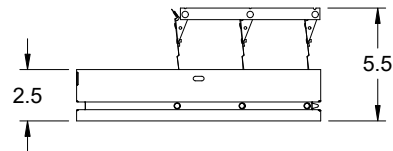
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

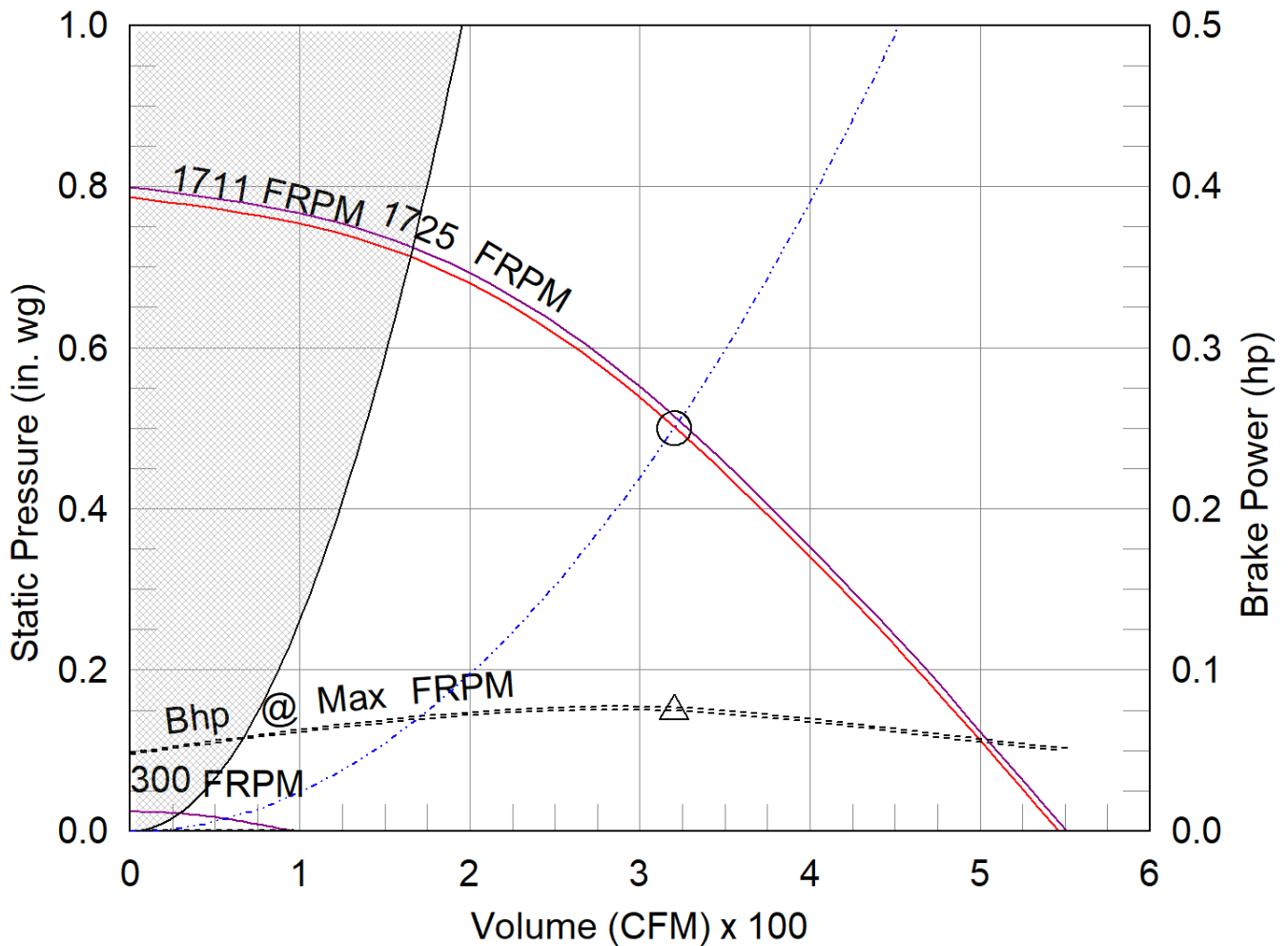
Notes: All dimensions shown are in units of in.

G-080-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 320 | 320 | 0.5 | 1711 | 0.07 |



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

Warranty

1 Yr (Standard)

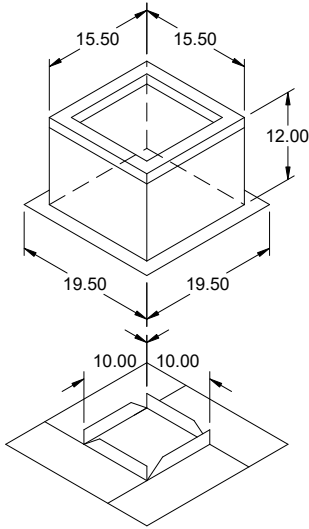
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

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 | 14 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 17 | 17 | 15.5 | 15.5 | 12 | 12 | 16 | 16 |

*May not be applicable

Damper Tray

| Damper Tray Width (in.) | Damper Tray Length (in.) |
|-------------------------|--------------------------|
| 10 | 10 |

Accessories

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

Model: G-090-VG
Direct Drive Centrifugal Roof Exhaust Fan

| Dimensional | |
|-------------------------------|-------------|
| Quantity | 1 |
| Weight w/o Acc's (lb) | 25 |
| Weight w/ Acc's (lb) | 31 |
| Weight w/ Acc's and Curb (lb) | 45 |
| Standard Curb Cap Size (in.) | 17 x 17 |
| Optional Damper (in.) | 10 x 10 |
| Roof Opening (in.) | 13.5 x 13.5 |

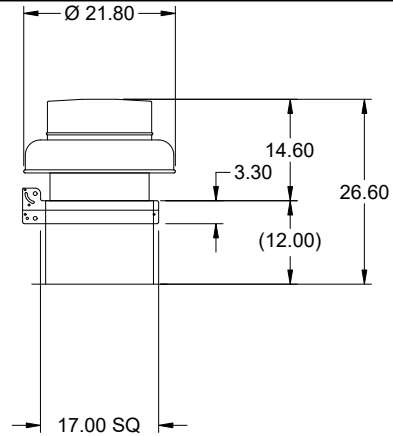
| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 460 |
| Actual Volume (CFM) | 460 |
| Total External SP (in. wg) | 0.5 |
| Fan RPM | 1542 |
| Operating Power (hp) | 0.07 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 4,391 |
| Static Eff. (%) | 49 |

| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 657 |

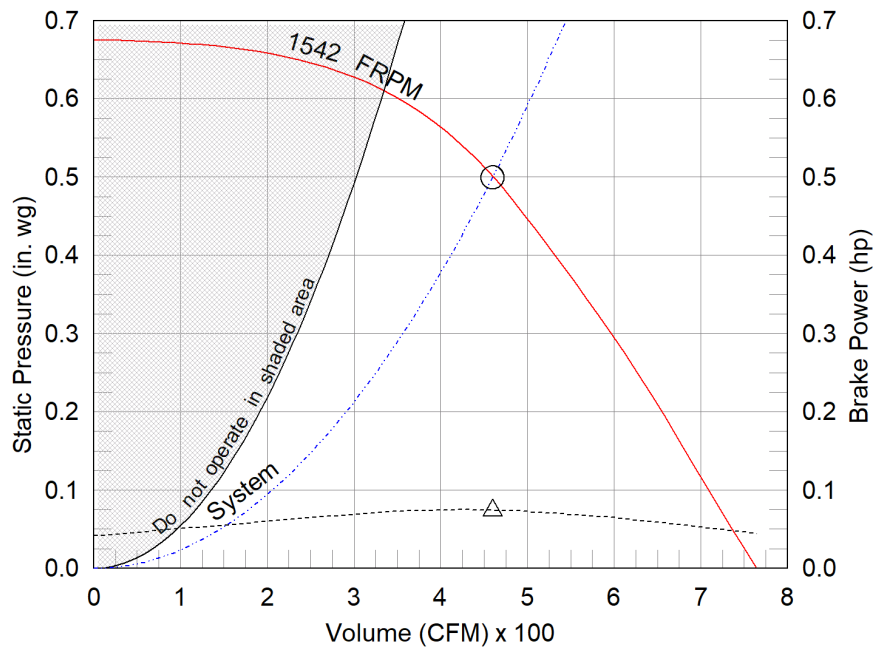
| Motor | |
|-----------------------------------|----------|
| Motor Mounted | Yes |
| Size (hp) | 1/10 |
| Voltage/Cycle/Phase | 115/60/1 |
| Enclosure | TENV |
| Motor RPM | 1725 |
| Efficiency Rating | High |
| Windings | 1 |
| FLA (Amps) | 1.38 |
| Min. Circuit Ampacity (MCA) | 2 |
| Max. Overcurrent Protection (MOP) | 15 |
| Short Circuit Current Rtg (SCCR) | 5 kA |

Sound Power by Octave Band

| Sound Data | 62.5 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA | dBA | Sones |
|------------|------|-----|-----|-----|------|------|------|------|-----|-----|-------|
| Inlet | 76 | 73 | 68 | 62 | 58 | 54 | 51 | 44 | 66 | 54 | 7.3 |



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



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

Notes:

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



Model: G-090-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
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
Hinge, (PN 918378), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Composite Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-17-10-G12

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

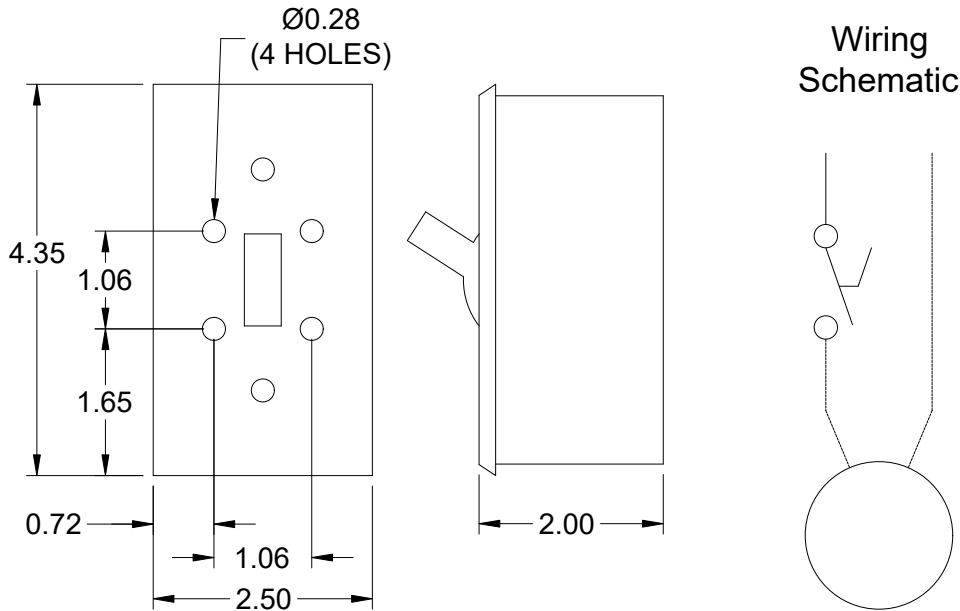
Standard Construction Features:

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: | 1/10 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 | | | | | | |

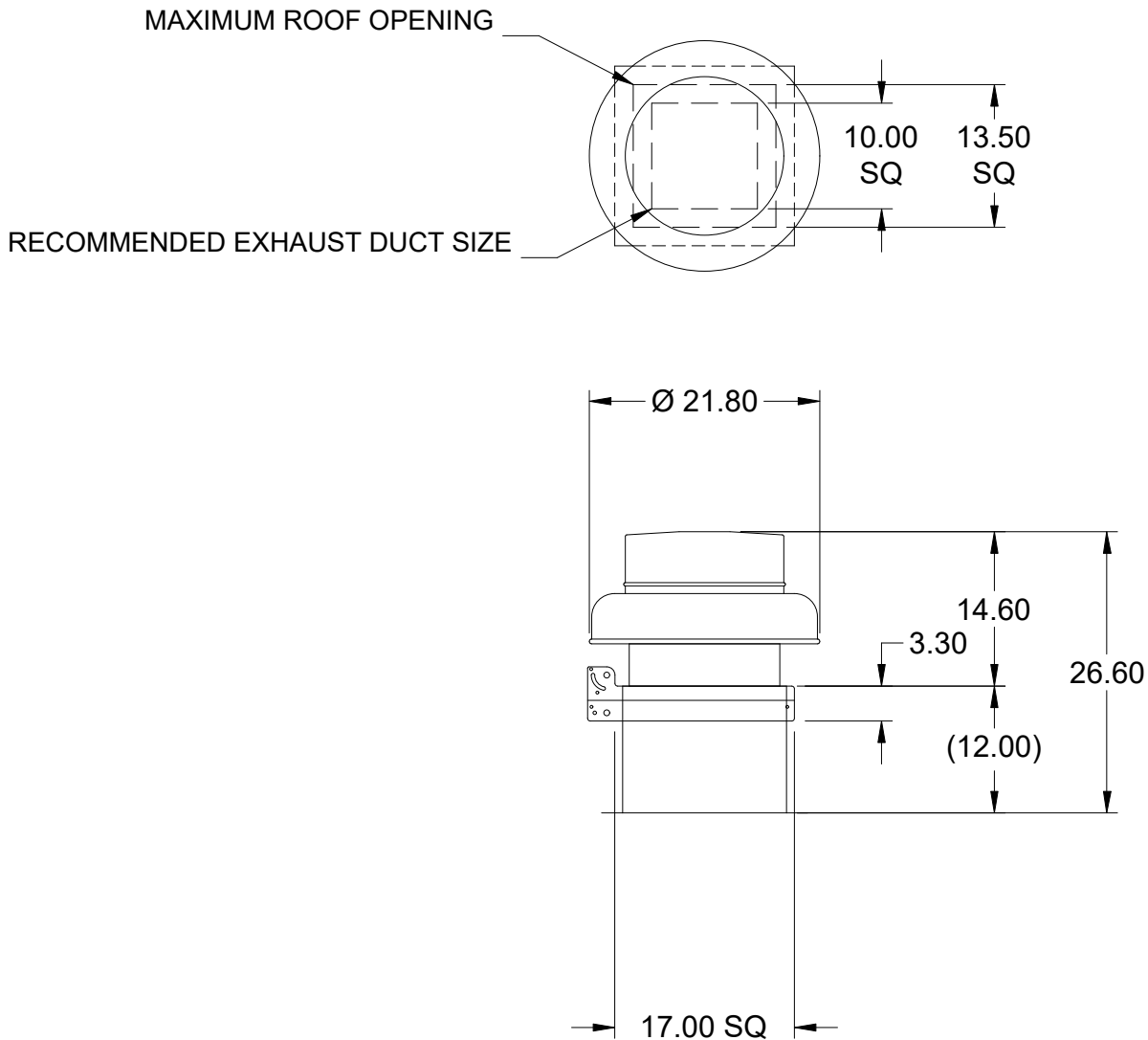
Electrical Drawing Details



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

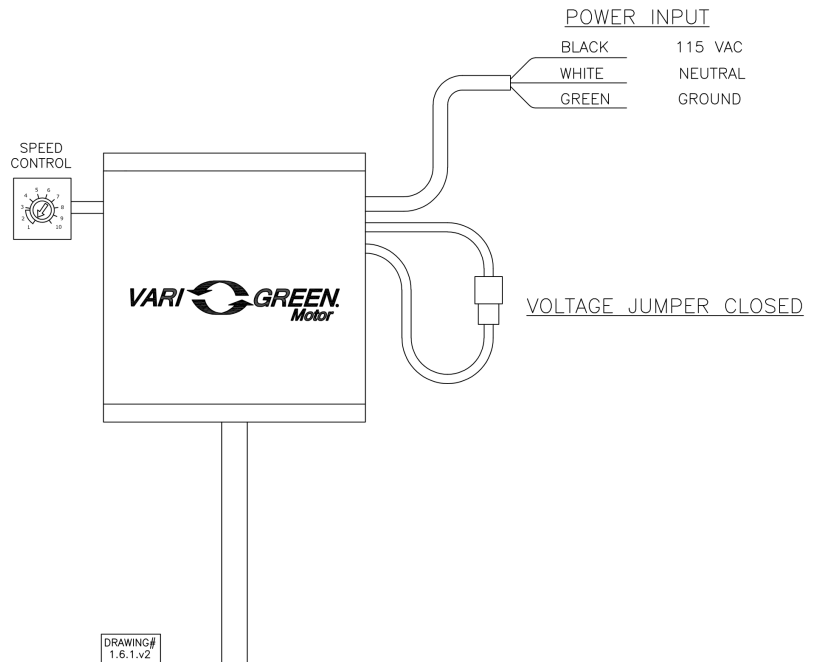
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

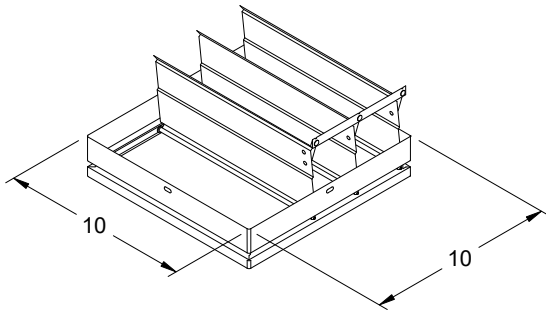
Model: BD-100

Standard Construction Features:

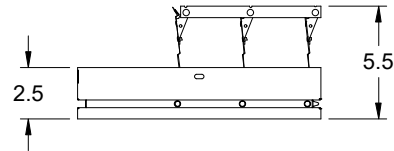
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

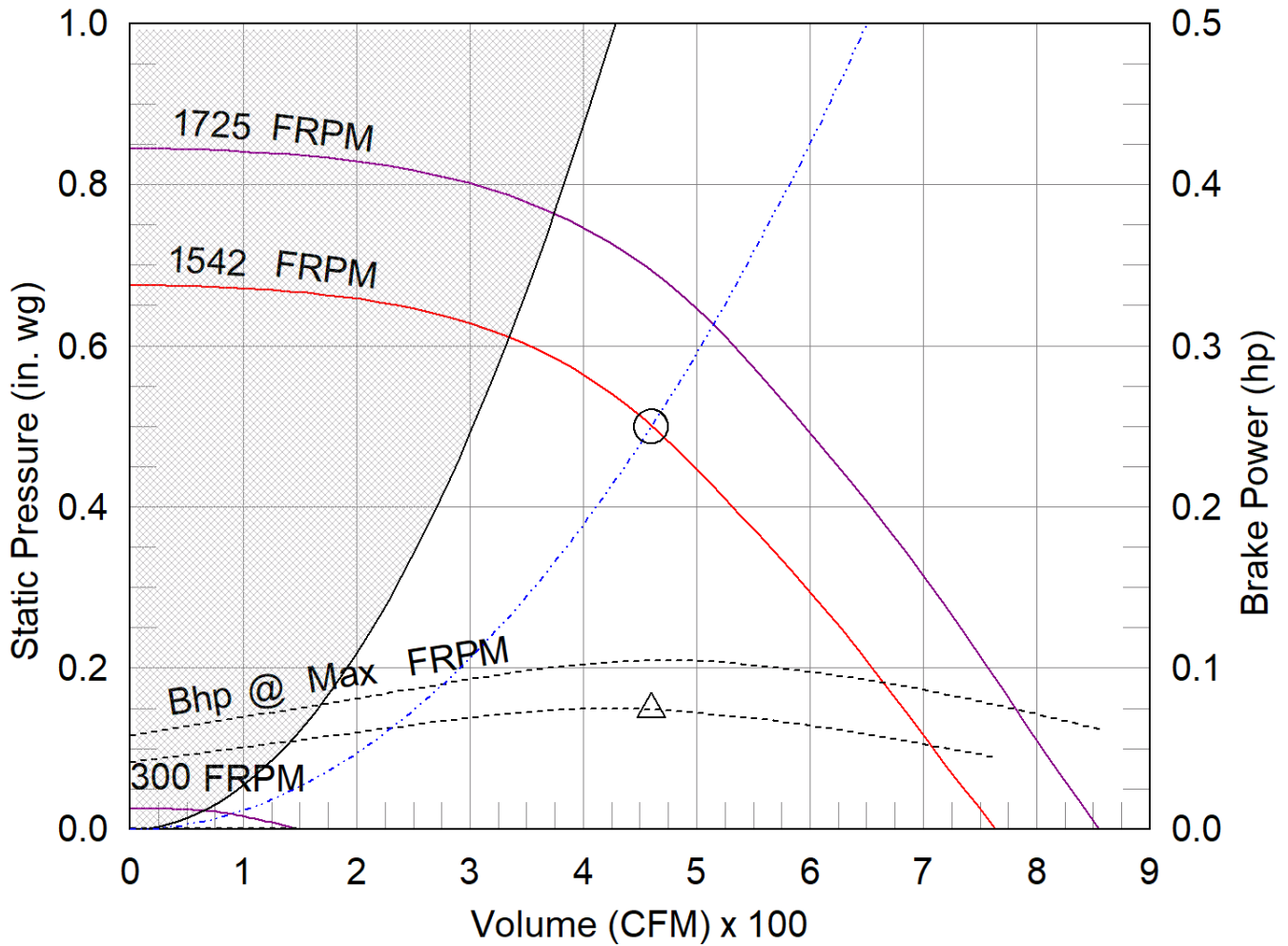
Notes: All dimensions shown are in units of in.

G-090-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 460 | 460 | 0.5 | 1542 | 0.07 |



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

Warranty

1 Yr (Standard)

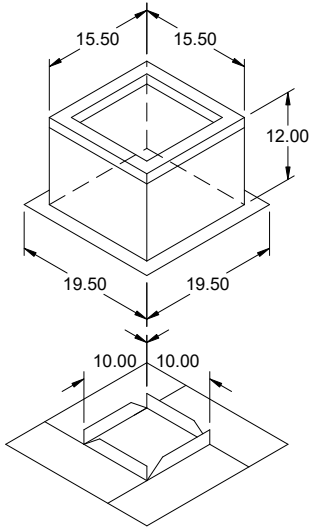
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

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 | 14 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 17 | 17 | 15.5 | 15.5 | 12 | 12 | 16 | 16 |

*May not be applicable

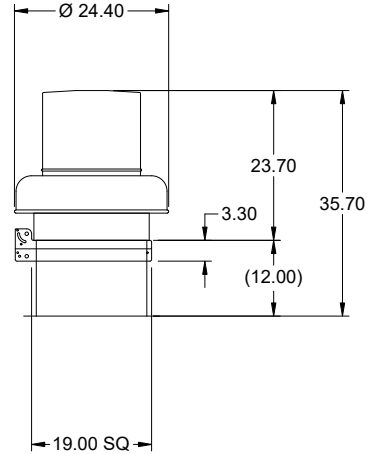
Damper Tray

| Damper Tray Width (in.) | Damper Tray Length (in.) |
|-------------------------|--------------------------|
| 10 | 10 |

Accessories

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

Model: G-097-VG
Direct Drive Centrifugal Roof Exhaust Fan



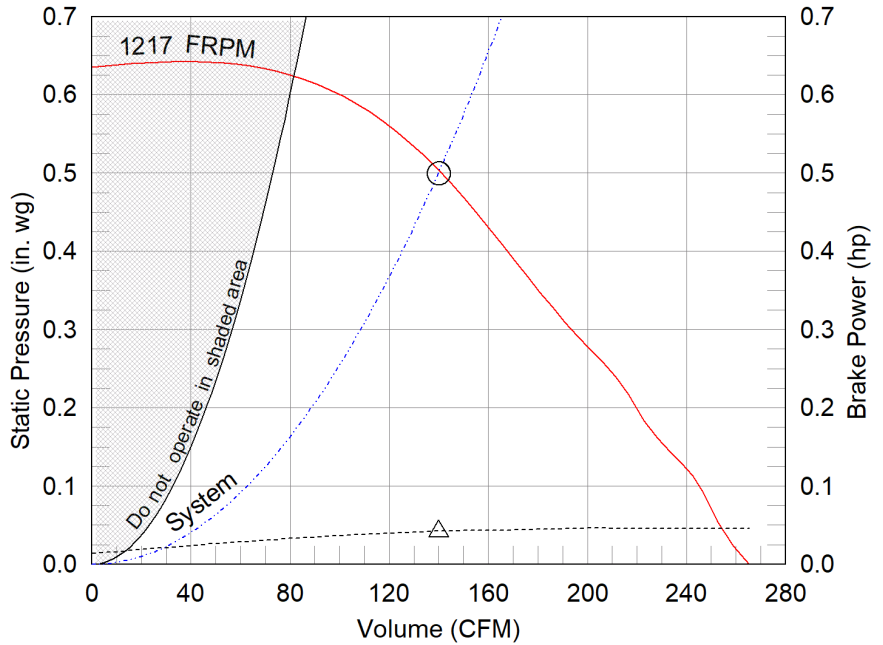
| Dimensional | |
|-------------------------------|-------------|
| Quantity | 1 |
| Weight w/o Acc's (lb) | 38 |
| Weight w/ Acc's (lb) | 45 |
| Weight w/ Acc's and Curb (lb) | 61 |
| Standard Curb Cap Size (in.) | 19 x 19 |
| Optional Damper (in.) | 12 x 12 |
| Roof Opening (in.) | 15.5 x 15.5 |

| Performance | |
|----------------------------|-------|
| Requested Volume (CFM) | 140 |
| Actual Volume (CFM) | 140 |
| Total External SP (in. wg) | 0.5 |
| Fan RPM | 1217 |
| Operating Power (hp) | 0.04 |
| Elevation (ft) | 499 |
| Airstream Temp.(F) | 70 |
| Air Density (lb/ft3) | 0.074 |
| Tip Speed (ft/min) | 3,565 |
| Static Eff. (%) | 26 |

| Misc Fan Data | |
|--------------------------|-----|
| Fan Energy Index (FEI) | - |
| Outlet Velocity (ft/min) | 146 |

| 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) | 3.5 |
| 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

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 | 69 | 67 | 67 | 57 | 52 | 46 | 42 | 37 | 61 | 50 | 5.5 |



Model: G-097-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
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
Hinge, (PN 918379), (Shipped Loose)
Birdscreen: Galvanized, nom. 84% Free Area
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, BD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-19-12-G12

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

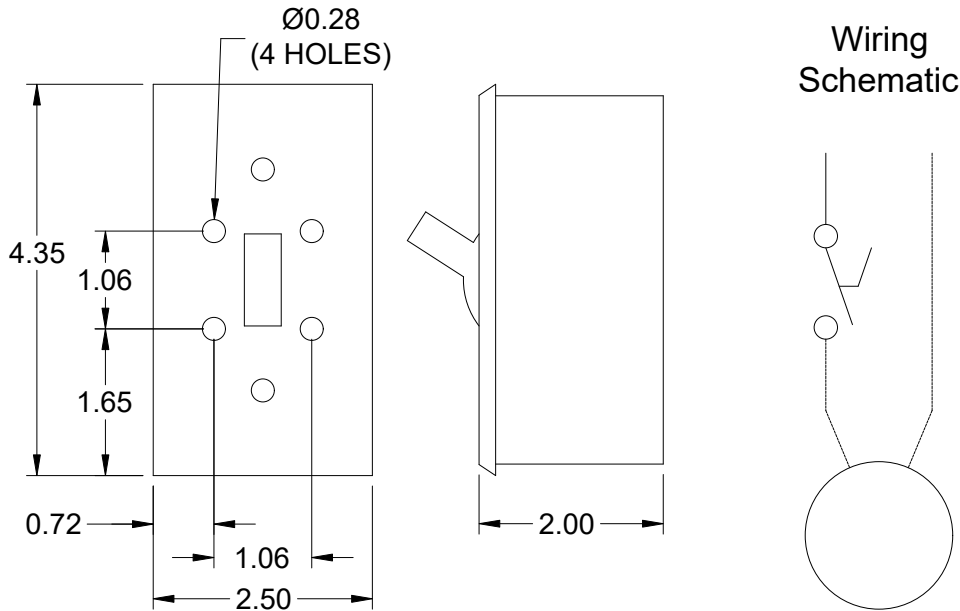
Standard Construction Features:

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 | | | | | | |

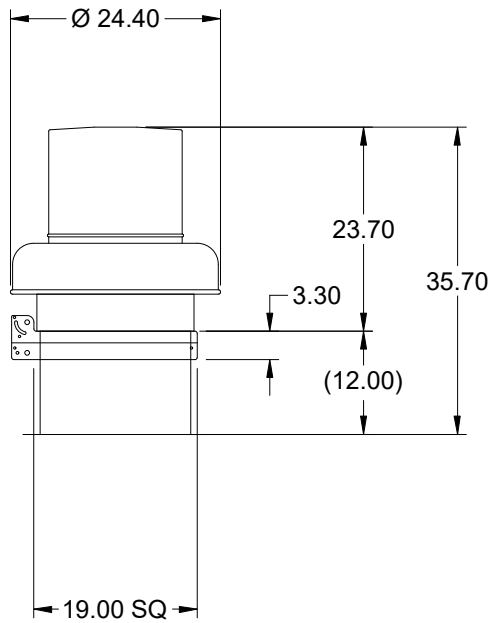
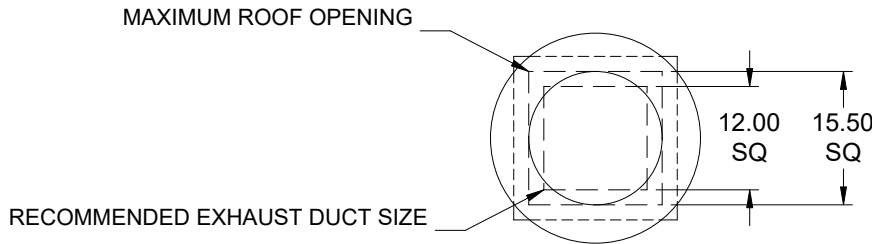
Electrical Drawing Details



Notes: All dimensions shown are in units of in.

Assembly Drawing

Type: Direct Drive 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

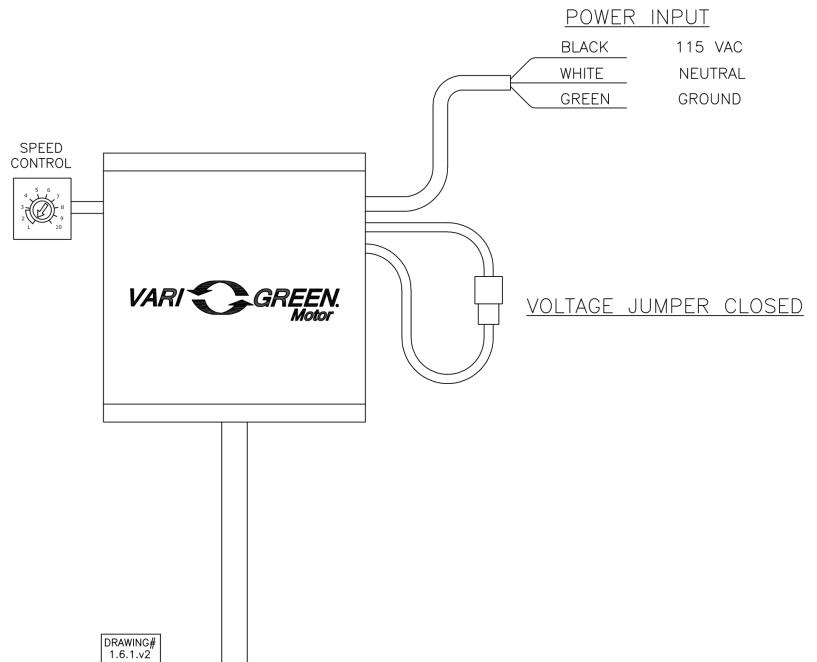
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated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

Motor Configuration

Input Voltage: 115
Speed Reference: Dial on Motor
Permanent Dial: Yes

Control Configuration

Control Type: Dial on Motor
Transformer: None



Horizontal Mount Exhaust Damper

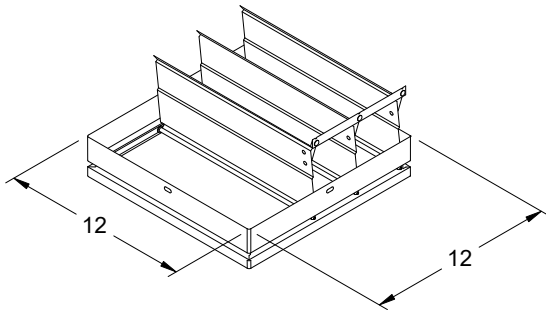
Model: BD-100

Standard Construction Features:

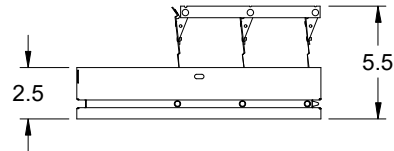
- Model BD-100 is a horizontal mount exhaust damper (air flow up) and is constructed of 24 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.016 in. roll formed aluminum with vinyl seals on the closing edge, and spring assisted for ease of opening
- Axle/bearing is constructed of fiberglass reinforced nylon



Greenheck Fan Corporation certifies that the models BD-100 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.



DAMPER



TYP. SECTION VIEW

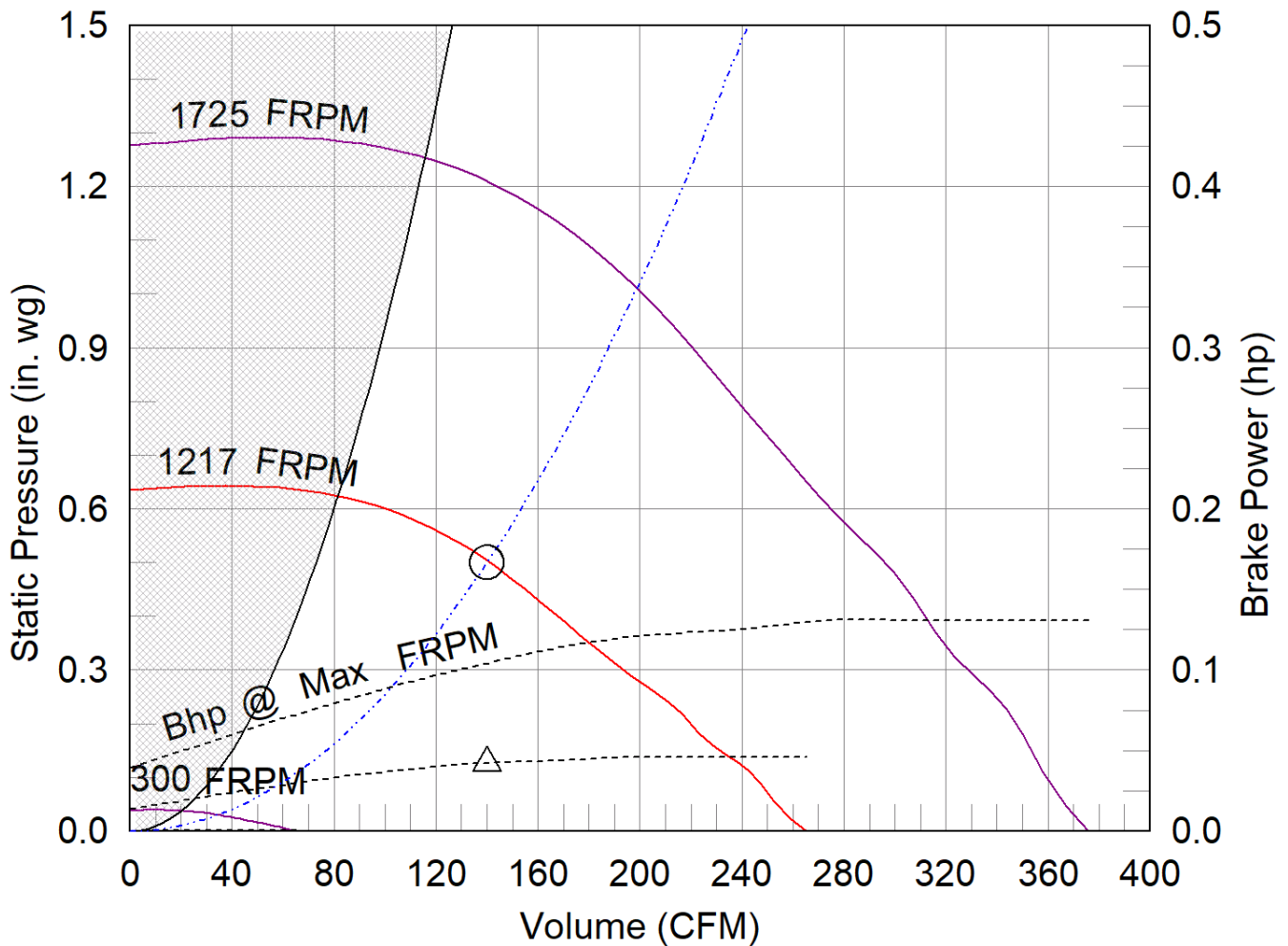
Notes: All dimensions shown are in units of in.

G-097-VG

Min/Max Fan Curve

Performance

| Requested Volume (CFM) | Actual Volume (CFM) | Total External SP (in. wg) | Fan RPM | Operating Power (hp) |
|------------------------|---------------------|----------------------------|---------|----------------------|
| 140 | 140 | 0.5 | 1217 | 0.04 |



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

Warranty

1 Yr (Standard)

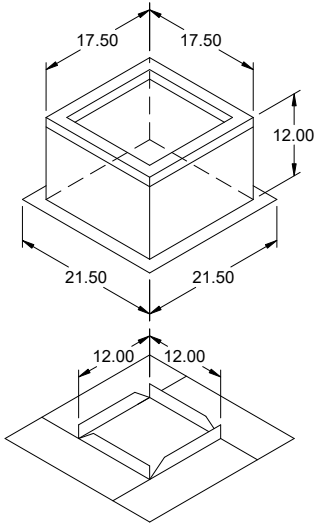
WARRANTY AND LIABILITY: SELLER warrants to Buyer that products manufactured are free from defects in material and workmanship for a period of 1 Yr (Standard) from the date of shipment. SELLER's obligations and liabilities under this warranty are limited to furnishing FOB factory or warehouse at SELLER's designated shipping point, freight allowed to Buyer's city, (or point of export for shipments outside the conterminous United States) replacement equipment (or at the option of SELLER parts therefore) for all Seller's products not conforming to this warranty and which have been returned to the manufacturer. No liability whatever shall attach to SELLER until said products have been paid for and such liability shall be strictly limited to the purchase price of the equipment shown to be defective. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by SELLER prove defective during this period, they should be returned to the nearest authorized motor service station. SELLER will not be responsible for any removal or installation costs. Electrical components, excluding motors, are warranted only to the extent warranted by the original manufacturer. To the extent that SELLER is entitled to pass through a warranty of the original equipment manufacturer of the electrical goods sold, SELLER will pass through such warranties to Buyer. The legal remedies described in this Warranty are the sole exclusive remedy of Buyer. SELLER MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, REGARDING ITS PRODUCTS, OR ITS SELECTION AND APPLICATION, INCLUDING, BUT NOT LIMITED TO, COMPLIANCE WITH BUILDING CODES, SAFETY CODES, LAWS, MERCHANTABILITY OR FITNESS OR A PARTICULAR PURPOSE. This warranty is extended solely to the Buyer. It is nontransferable and non-assignable, and the Buyer shall not permit or authorize its employees, agents, representatives or customers to claim, represent or imply that this limited warranty extends or is available to anyone other than the Buyer. ANY MISUSE, NEGLIGENCE, FAILURE TO FOLLOW INSTRUCTIONS OR MANUALS OF INSTALLATION OF MAINTENANCE REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS. THE WARRANTY AND LIABILITY SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. SELLER PROVIDES NO INDEPENDENT WARRANTY FOR THIRD PARTY PRODUCTS OR COMPONENTS SOLD TOGETHER OR INCORPORATED WITH SELLER'S PRODUCT(S). THE SELLER HAS THE RIGHT TO SETTLE ANY AND ALL DISPUTES REGARDING THE WARRANTY.

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 | 16 | 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.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|---------------------------|----------------------------|-------------------------|--------------------------|
| 12 | 19 | 19 | 17.5 | 17.5 | 14 | 14 | 18 | 18 |

*May not be applicable

Damper Tray

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

Accessories

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