

Project Name: Press Hotel, Portland, Maine

Architect: Archetype Architects
48 Union Wharf
Portland, Maine 04101

Contractor: Wright Ryan Construction, Inc.
10 Danforth Street
Portland, Maine 04101

Subcontractor: Warren Mechanical, Inc.
P.O. Box 149
Westbrook, Maine 04098-0149

Supplier: Buckley Assoc.

Manufacturer: Greenheck

Section: 15830 Power Roof Ventilators

Contractor Review

Architect's Review



Press Hotel

Section 15830
Power Roof Ventilator

SUBMITTAL

Job Title: **PRESS HOTEL**

Contractor: AERO HEATING AND VENTILATING

Elevation: (ft) 62

Date: 01/29/14

Submitted By: Ed Sawyer

BUCKLEY ASSOCIATES INC

498B WOODFORD STREET

PORTLAND , ME 04103-2461

US

Phone: (207)773-0078

Fax: (207)773-0074

Email Address: esawyer@buckleyonline.com

SUBMITTAL NOTES:

FANS / ROOF HOOD

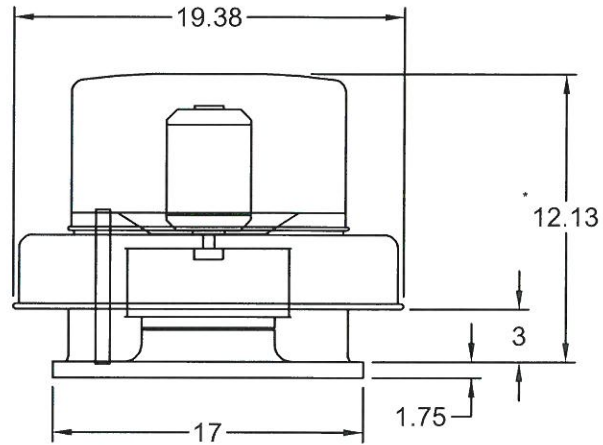


P.O. Box 410 Schofield, WI 54476 (715) 359-6171 FAX (715) 355-2399 www.greenheck.com

Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

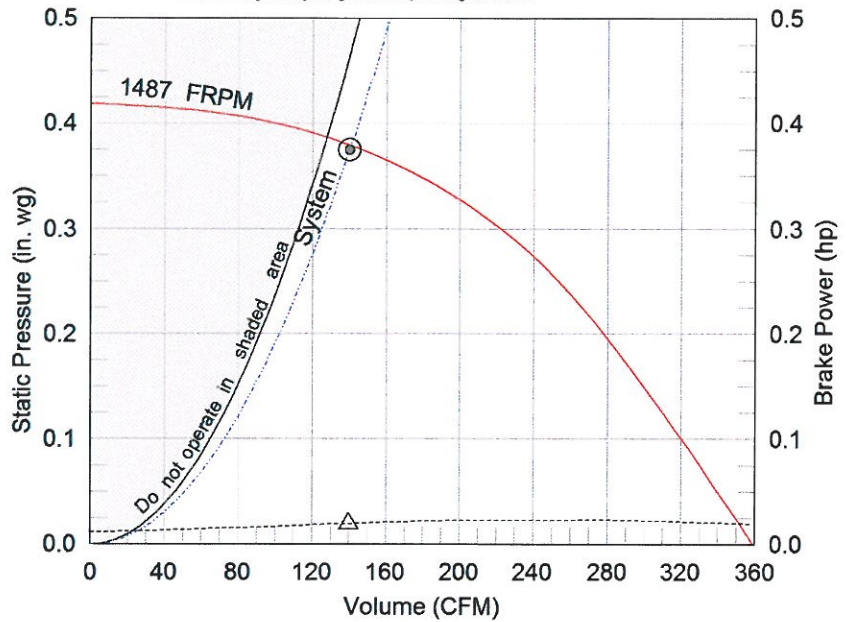
Dimensional	
Quantity	4
Weight w/o Acc's (lb)	13
Weight w/ Acc's (lb)	47
Optional Damper (in.)	8 x 8
Roof Opening (in.)	10.5 x 10.5



Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	140
Actual Volume (CFM)	140
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1487
Operating Power (hp)	0.02
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,163
Static Eff. (%)	42



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

Motor	
Motor Mounted	Yes
Size (hp)	1/30
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	66	66	62	49	43	41	37	33	57	45	3.9

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-90-PB-8X8, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

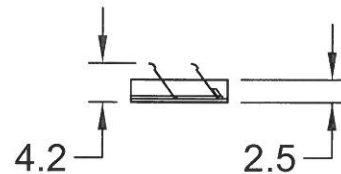
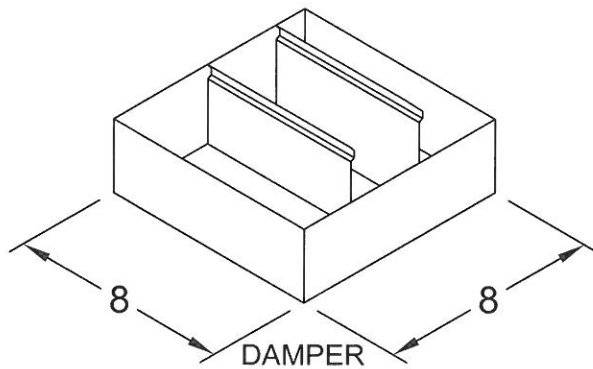
Horizontal Mount Exhaust Damper

Model: WD-90

Standard Construction Features:

- Model WD-90 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Synthetic axle bushings

NOTE: This damper is only available in an 8 in. x 8 in. size.



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

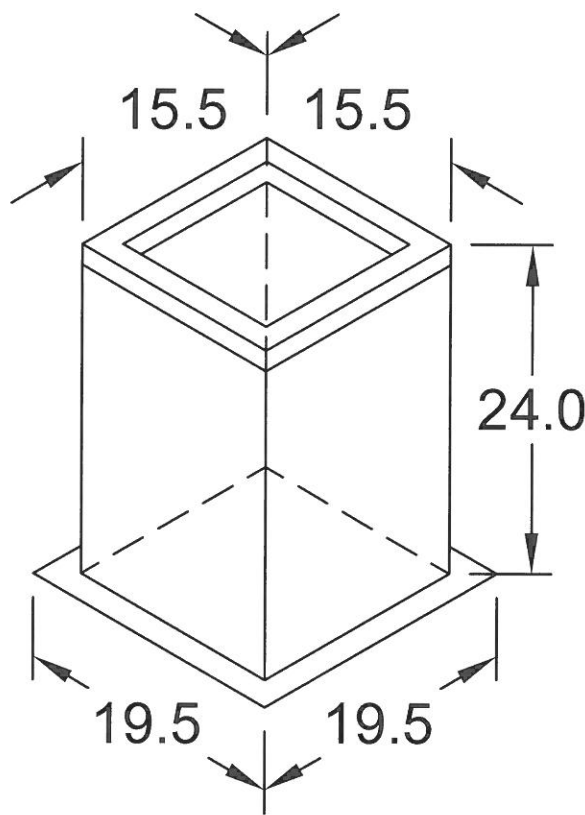
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatector coating.



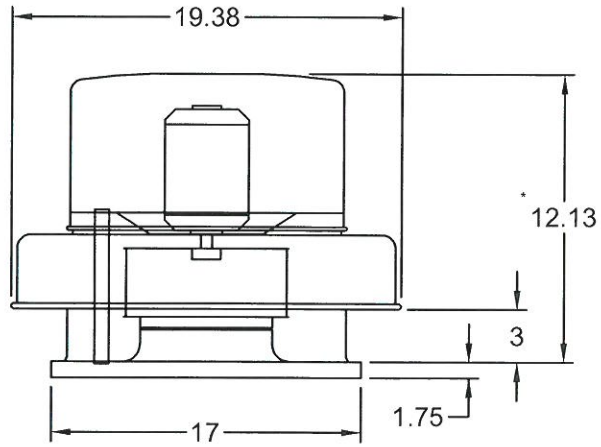
ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

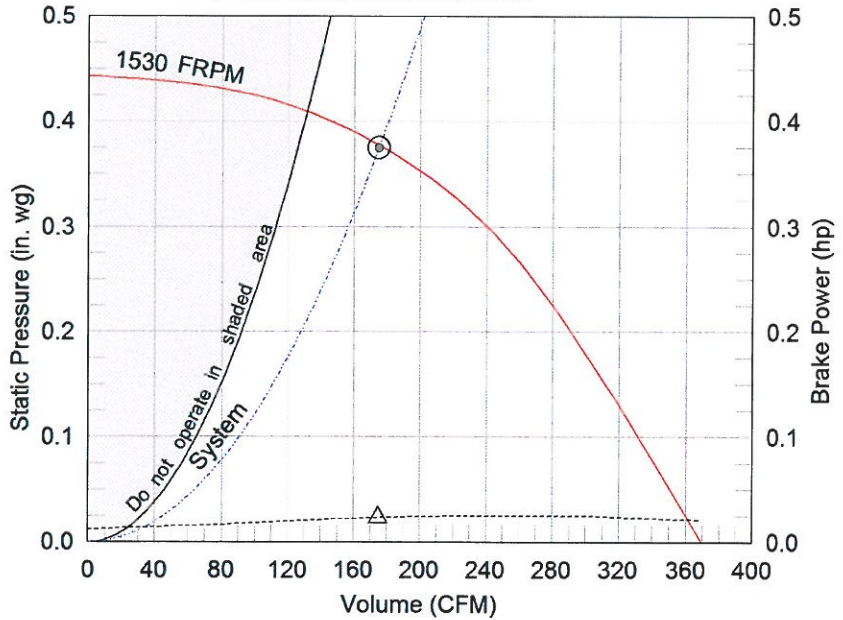
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	13
Weight w/ Acc's (lb)	47
Optional Damper (in.)	8 x 8
Roof Opening (in.)	10.5 x 10.5



Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	175
Actual Volume (CFM)	175
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1530
Operating Power (hp)	0.02
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,254
Static Eff. (%)	44



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

Motor	
Motor Mounted	Yes
Size (hp)	1/30
VIC/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	66	67	63	50	44	43	38	34	58	46	4.3

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-90-PB-8X8, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

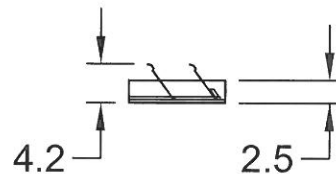
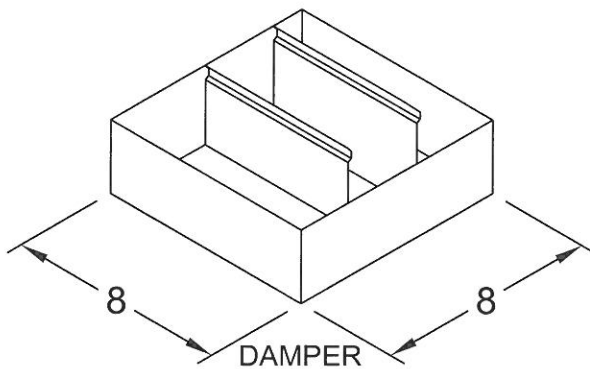
Horizontal Mount Exhaust Damper

Model: WD-90

Standard Construction Features:

- Model WD-90 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes - Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge - Steel axles are 0.188 in. diameter zinc plated steel - Synthetic axle bushings

NOTE: This damper is only available in an 8 in. x 8 in. size.



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

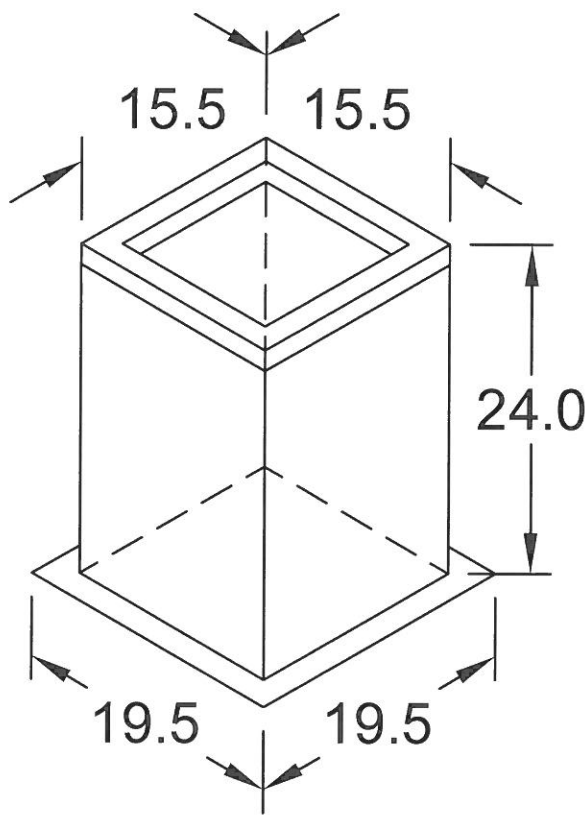
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permator coating.



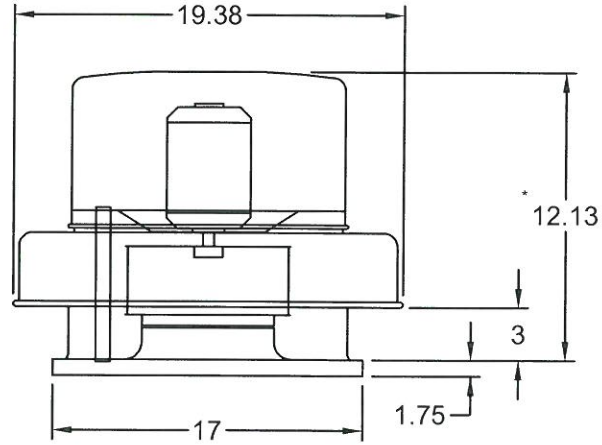
ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

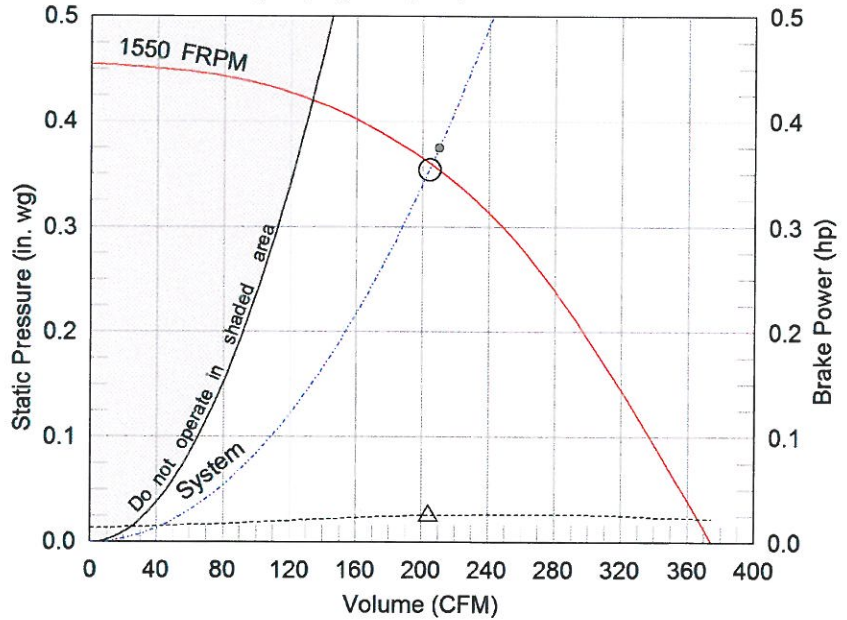
Dimensional	
Quantity	2
Weight w/o Acc's (lb)	13
Weight w/ Acc's (lb)	47
Optional Damper (in.)	8 x 8
Roof Opening (in.)	10.5 x 10.5



Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	210
Actual Volume (CFM)	204
External SP (in. wg)	0.375
Total SP (in. wg)	0.354
Fan RPM	1550
Operating Power (hp)	0.03
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,297
Static Eff. (%)	45



△ Operating Bhp point	External SP	0.375 in. wg
○ Operating point at Total SP	Direct Drive RPM Adjustment	-0.021 in. wg
● Operating point at External SP	Total SP	0.354 in. wg
— Fan curve		
⋯ System curve		
----- Brake horsepower curve		

Motor	
Motor Mounted	Yes
Size (hp)	1/30
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	67	68	64	50	45	43	39	34	58	47	4.4

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-070-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-90-PB-8X8, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

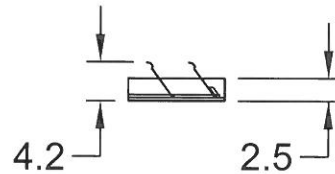
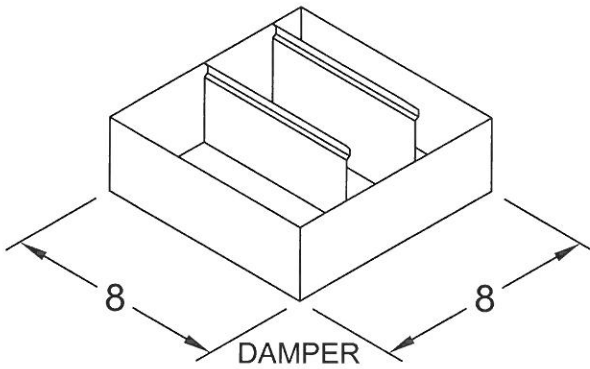
Horizontal Mount Exhaust Damper

Model: WD-90

Standard Construction Features:

- Model WD-90 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge
- Steel axles are 0.188 in. diameter zinc plated steel
- Synthetic axle bushings

NOTE: This damper is only available in an 8 in. x 8 in. size.



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

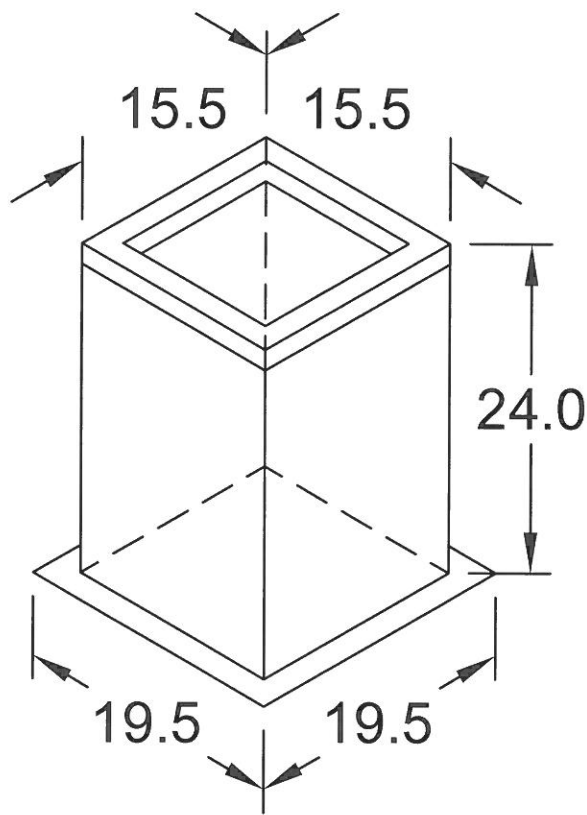
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatecor coating.

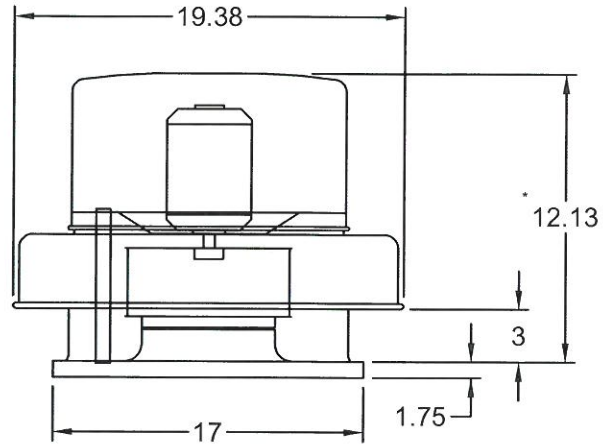


ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-075-D

Direct Drive Centrifugal Roof Exhaust Fan

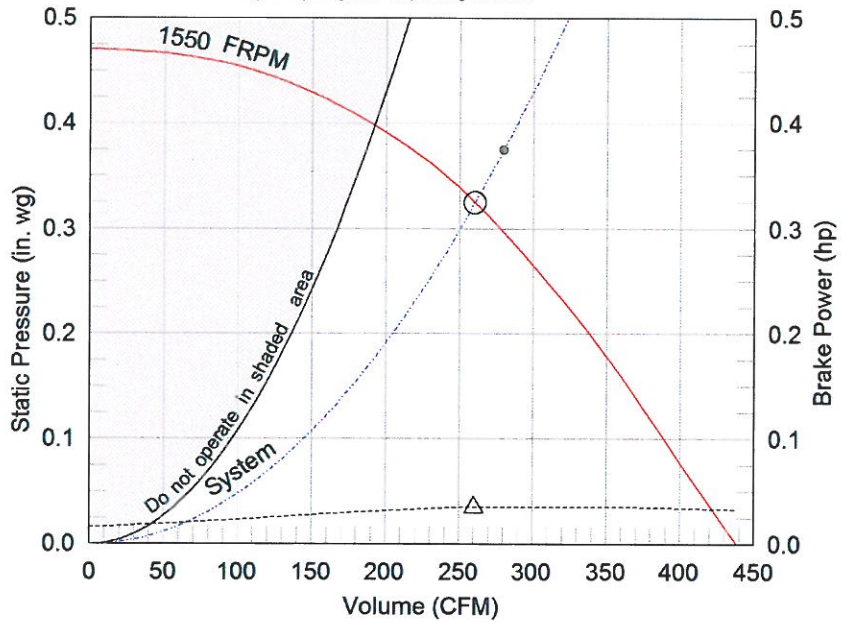


Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Dimensional	
Quantity	2
Weight w/o Acc's (lb)	13
Weight w/ Acc's (lb)	47
Optional Damper (in.)	8 x 8
Roof Opening (in.)	10.5 x 10.5

Performance	
Requested Volume (CFM)	280
Actual Volume (CFM)	260
External SP (in. wg)	0.375
Total SP (in. wg)	0.324
Fan RPM	1550
Operating Power (hp)	0.03
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,297
Static Eff. (%)	38



△ Operating Bhp point	External SP	0.375 in. wg
○ Operating point at Total SP	Direct Drive RPM Adjustment	-0.051 in. wg
● Operating point at External SP	Total SP	0.324 in. wg
— Fan curve		
····· System curve		
----- Brake horsepower curve		

Motor	
Motor Mounted	Yes
Size (hp)	1/25
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	68	70	63	52	49	46	39	35	59	48	4.8

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-075-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-90-PB-8X8, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

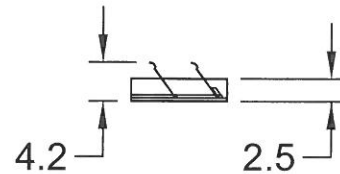
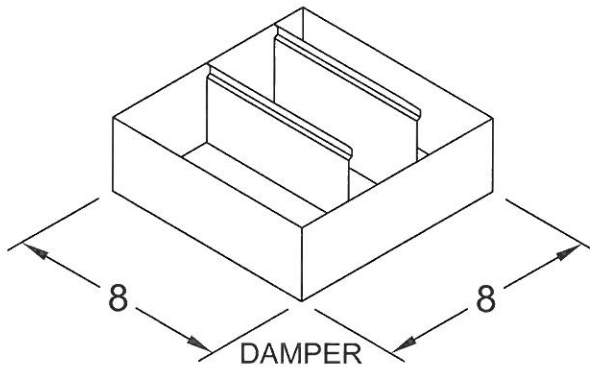
Horizontal Mount Exhaust Damper

Model: WD-90

Standard Construction Features:

- Model WD-90 is a horizontal mount exhaust damper (air flow up) and is constructed of 18 ga galvanized steel with pre-punched mounting holes
- Damper blades are 0.025 in. roll formed aluminum with vinyl seals on the closing edge
- Steel axles are 0.188 in. diameter zinc plated steel
- Synthetic axle bushings

NOTE: This damper is only available in an 8 in. x 8 in. size.



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

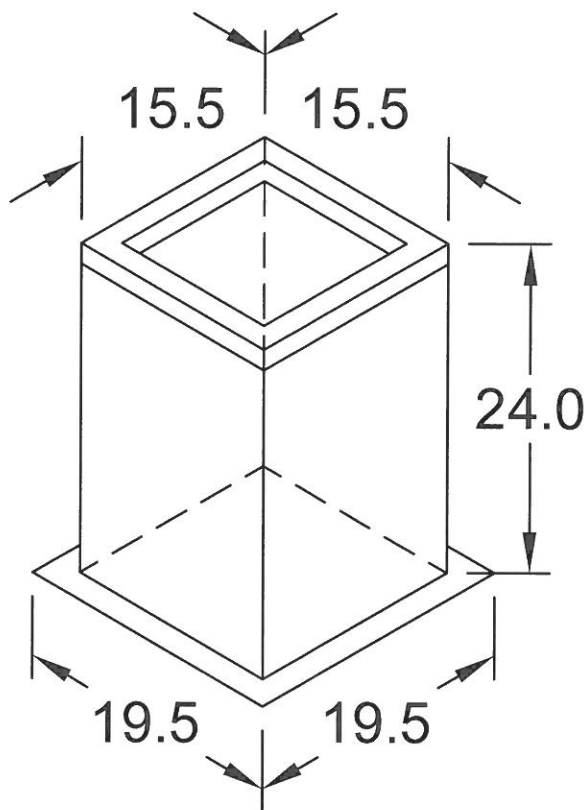
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 in. to 42 in. as specified in 0.5 in. increments.

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- 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 NOT be the Structural Opening Dimension.
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- Security bars are optional and must be specified. Frames and gridwork are all 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permator coating.



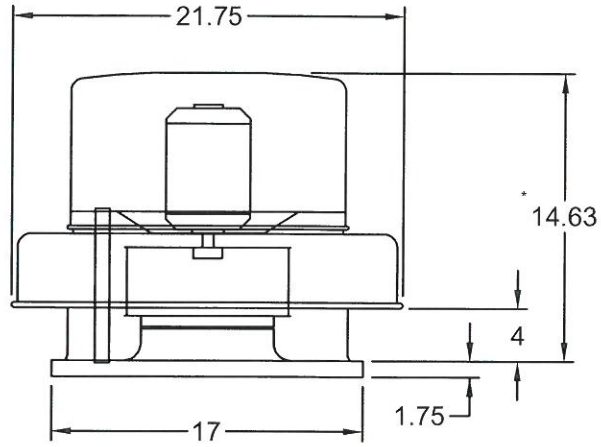
ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-080-D

Direct Drive Centrifugal Roof Exhaust Fan

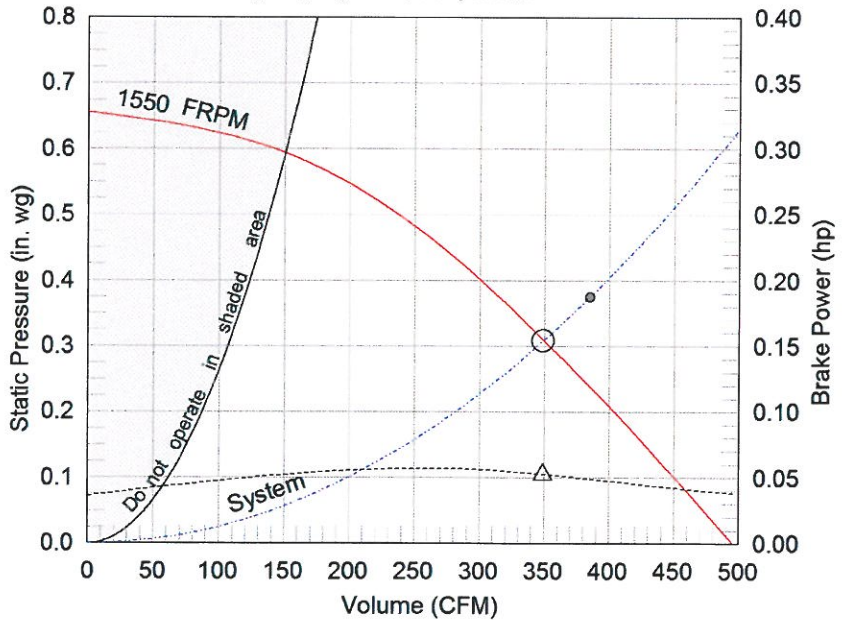
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	17
Weight w/ Acc's (lb)	52
Optional Damper (in.)	10 x 10
Roof Opening (in.)	12.5 x 12.5



Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	385
Actual Volume (CFM)	349
External SP (in. wg)	0.375
Total SP (in. wg)	0.308
Fan RPM	1550
Operating Power (hp)	0.05
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	4,413
Static Eff. (%)	32



Motor	
Motor Mounted	Yes
Size (hp)	1/20
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

△ Operating Bhp point	External SP	0.375 in. wg
○ Operating point at Total SP	Direct Drive RPM Adjustment	-0.067 in. wg
● Operating point at External SP	Total SP	0.308 in. wg
— Fan curve		
- - - System curve		
· · · Brake horsepower curve		

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	66	73	69	61	60	57	53	46	66	55	7.3

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-080-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

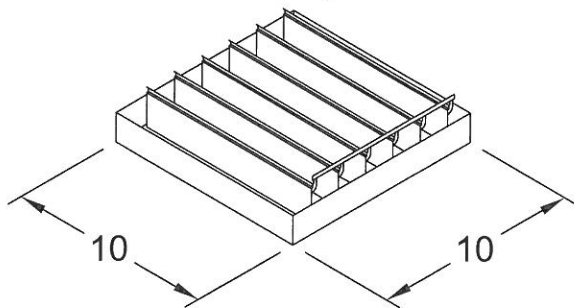
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-100-PB-10X10, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

Horizontal Mount Exhaust Damper

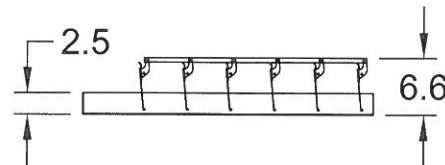
Model: WD-100

Standard Construction Features:

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



DAMPER



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

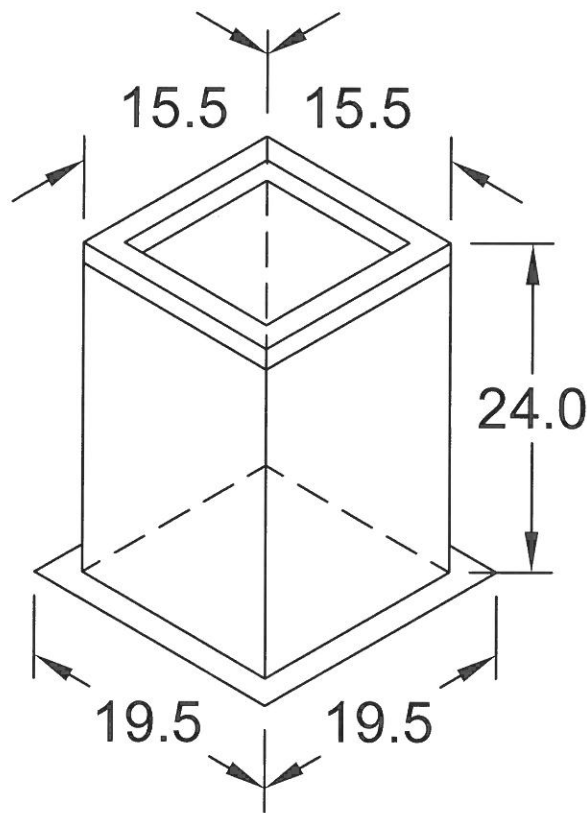
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatorc coating.

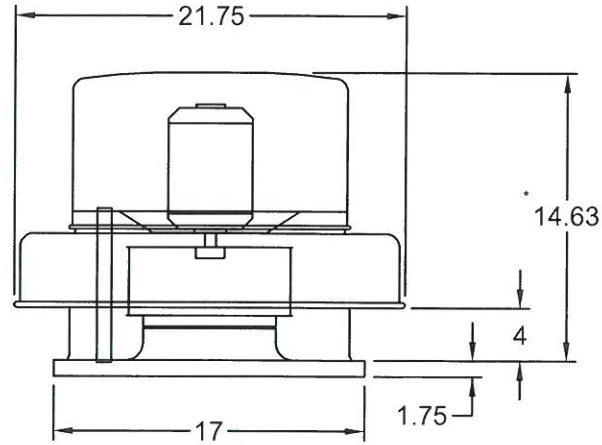


ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-090-D

Direct Drive Centrifugal Roof Exhaust Fan

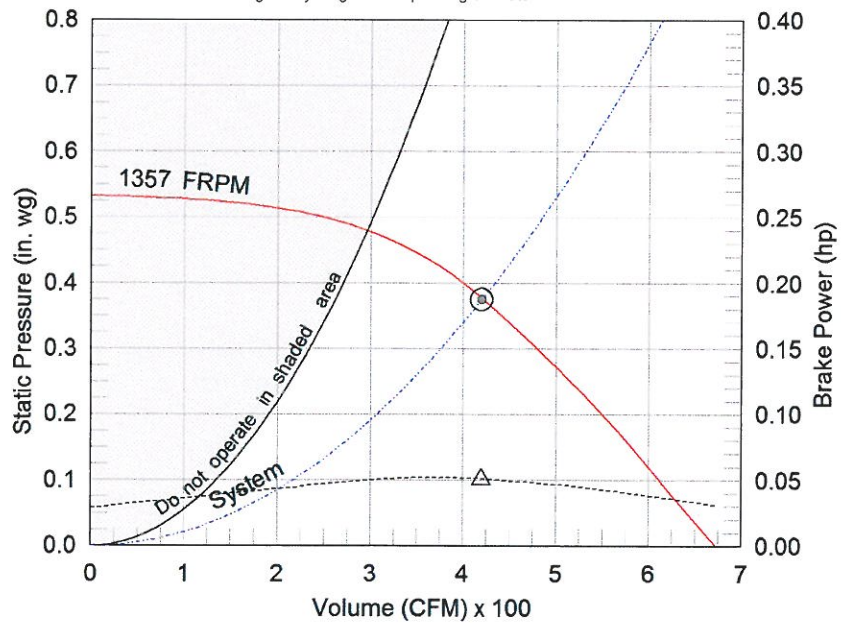


Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Dimensional	
Quantity	3
Weight w/o Acc's (lb)	18
Weight w/ Acc's (lb)	53
Optional Damper (in.)	10 x 10
Roof Opening (in.)	12.5 x 12.5

Performance	
Requested Volume (CFM)	420
Actual Volume (CFM)	420
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1357
Operating Power (hp)	0.05
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,865
Static Eff. (%)	49



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

Motor	
Motor Mounted	Yes
Size (hp)	1/15
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	69	70	65	58	54	53	50	43	62	51	5.9

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary; for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-090-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

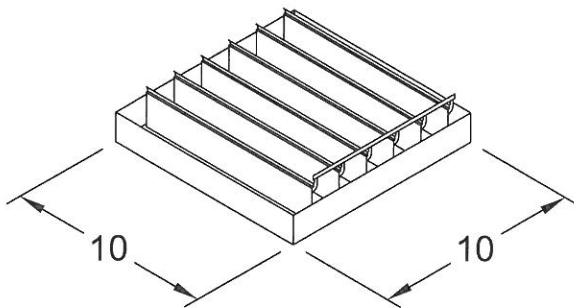
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-100-PB-10X10, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

Horizontal Mount Exhaust Damper

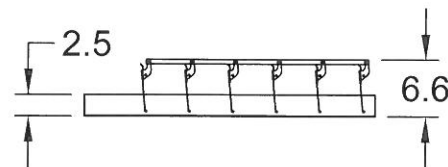
Model: WD-100

Standard Construction Features:

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



DAMPER



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

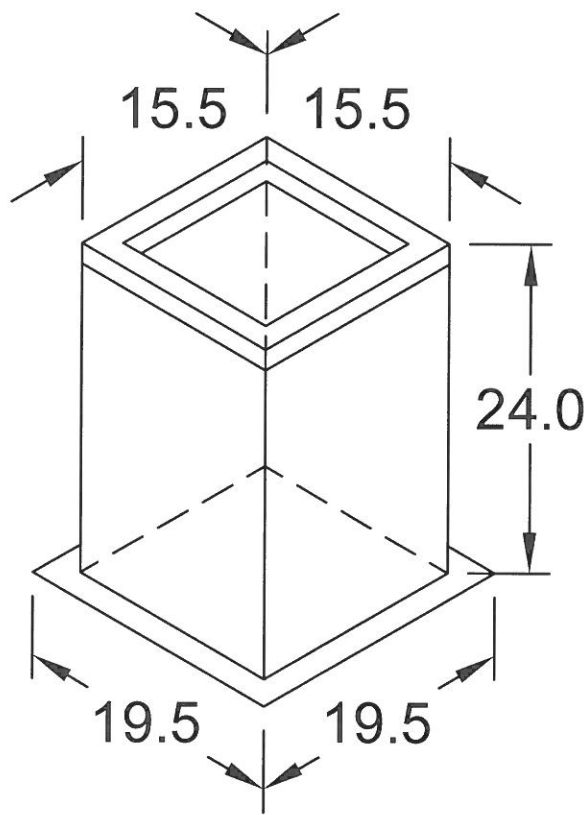
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatector coating.



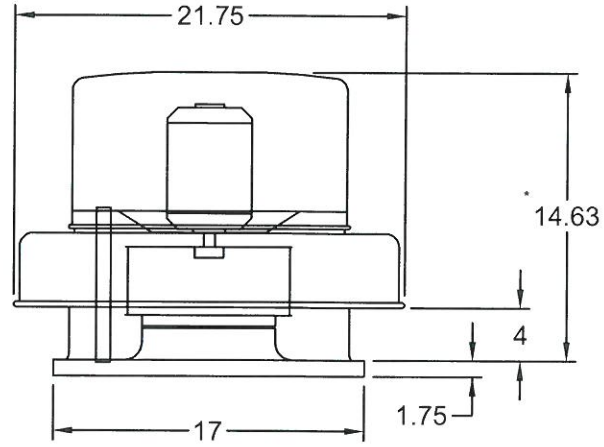
ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: G-090-D

Direct Drive Centrifugal Roof Exhaust Fan

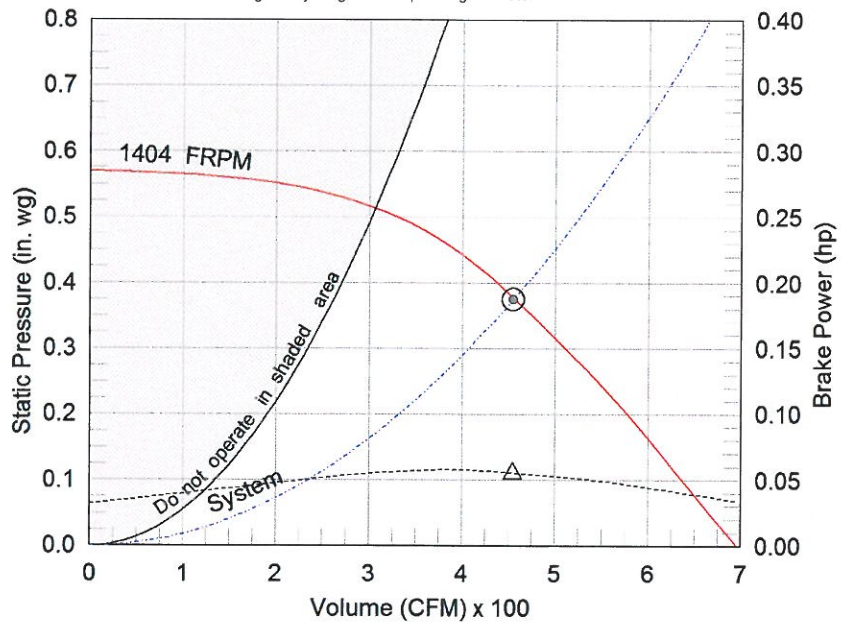
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	18
Weight w/ Acc's (lb)	53
Optional Damper (in.)	10 x 10
Roof Opening (in.)	12.5 x 12.5



Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Performance	
Requested Volume (CFM)	455
Actual Volume (CFM)	455
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1404
Operating Power (hp)	0.06
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	3,998
Static Eff. (%)	49



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

Motor	
Motor Mounted	Yes
Size (hp)	1/15
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1550
Windings	1
NEC FLA* (Amps)	NA

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	70	66	59	55	53	50	43	63	51	6.3

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: G-090-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 100-180), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners.

Options & Accessories:

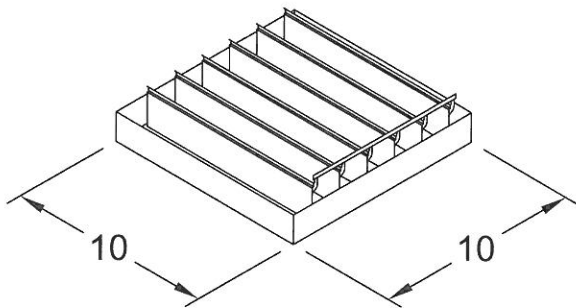
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-17-G24, Under Sized 1.5 in. Total
Damper, WD-100-PB-10X10, Gravity Operated (Loose), Not Coated
Solid State Speed Control, 5 Amp (PN 385031) Shipped Loose
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

Horizontal Mount Exhaust Damper

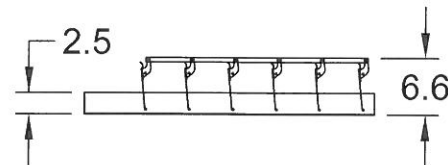
Model: WD-100

Standard Construction Features:

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



DAMPER



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

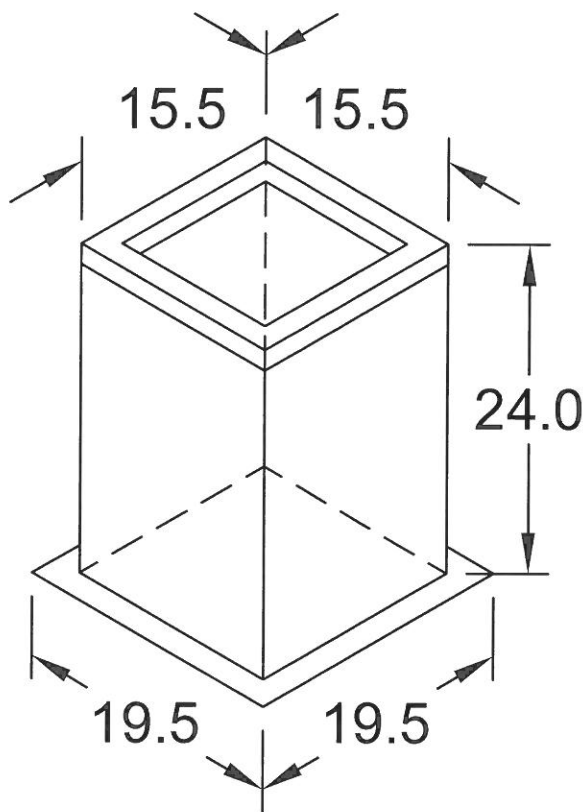
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatecor coating.

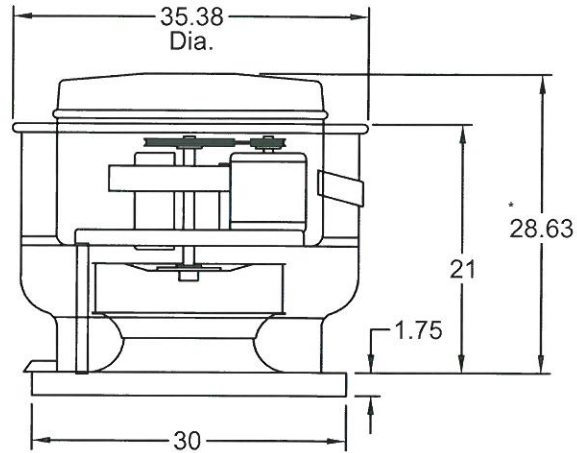


ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: CUBE-200HP-30

Belt Drive Upblast Centrifugal Roof Exhaust Fan

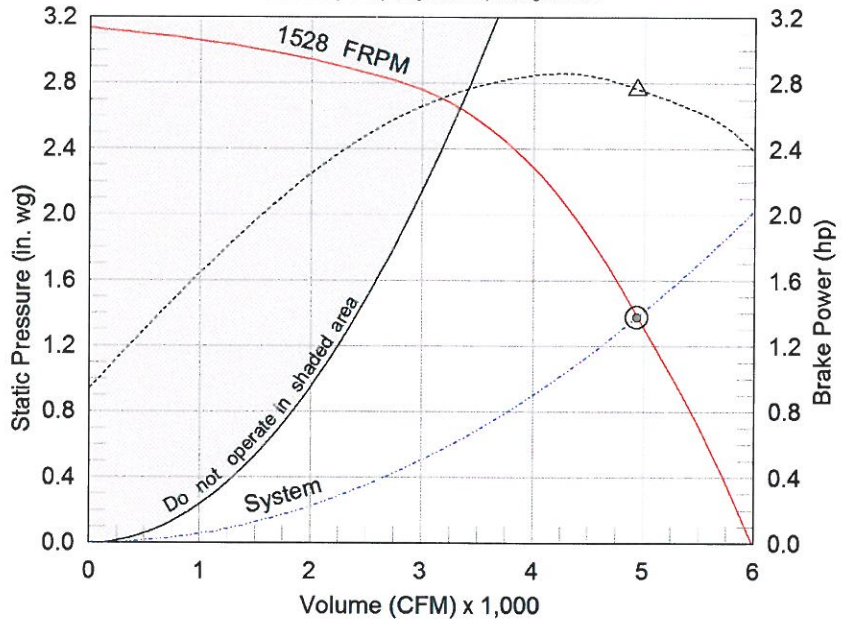


Reference assembly view drawings for actual dimensions with mounted accessories

*Overall height may be greater depending on motor

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	151
Weight w/ Acc's (lb)	217
Max T Motor Frame Size	184
Roof Opening (in.)	20.5 x 20.5

Performance	
Requested Volume (CFM)	4,940
Actual Volume (CFM)	4,940
External SP (in. wg)	1.375
Total SP (in. wg)	1.375
Fan RPM	1528
Operating Power (hp)	2.76
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Drive Loss (%)	4.4
Tip Speed (ft/min)	8,550
Static Eff. (%)	40



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

Motor	
Motor Mounted	Yes
Size (hp)	3
VIC/P	208/60/3
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	10.6

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	80	78	92	83	82	79	74	69	88	77	26

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: CUBE-200HP-30

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

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

Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated

UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"

Switch, NEMA-1, Toggle, Junction Box Mounted & Wired

Roof Curb-Galv., GPI-30-G24, Under Sized 1.5 in. Total

Hinged Base (Attached)

Curb Seal (Attached)

Non-Stick Coated Wheel (Teflon)

Clean-out Port

Grease Trap with Drain Connection (PN 475538)

Heat Baffle (Attached)

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

Unit Warranty: 1 Yr (Standard)

Roof Curb

Model: GPI

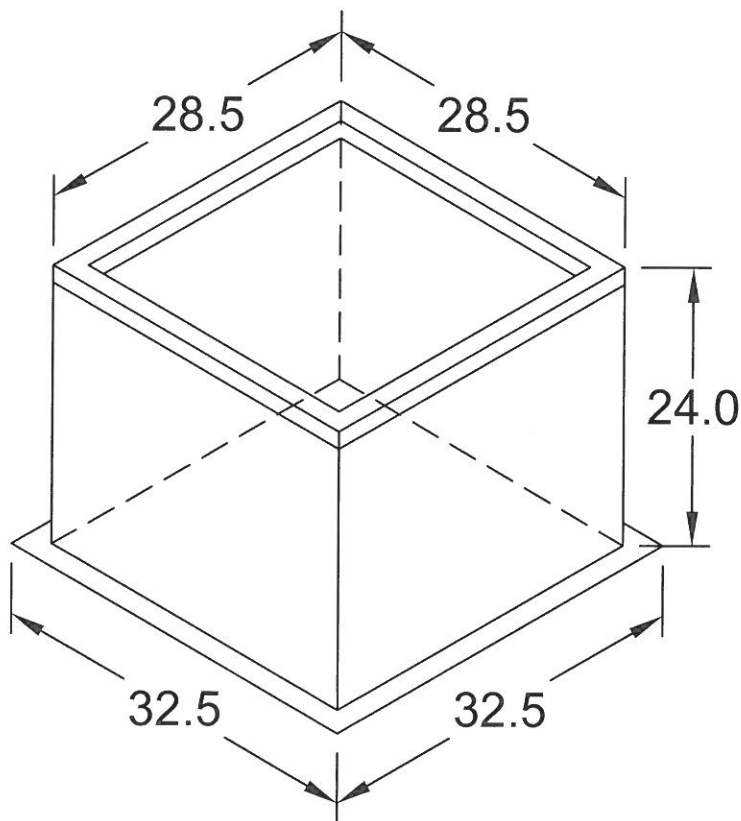
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatecor coating.

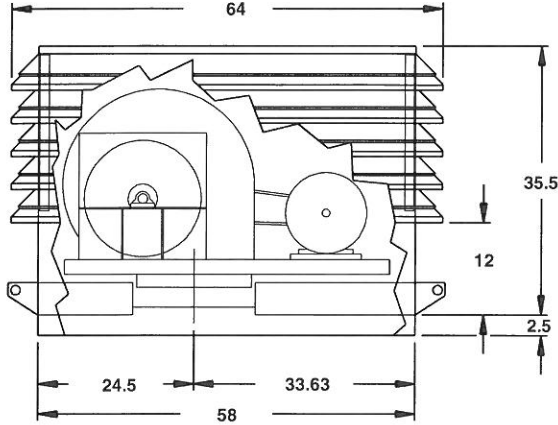


ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

LSF

Filtered Louvered Roof Supply Unit



Tag S-1

STANDARD CONSTRUCTION FEATURES

- Exterior base panels, louver sections and insulated covers all of aluminum construction
- Duct adaptor, blower housing, wheel and isolation bases all of heavy gauge steel construction coated with gray enamel
- Backward inclined centrifugal wheels
- Ball bearing motor
- Motor slide base
- Adjustable motor pulley
- Fan shaft pulley
- Fan shaft mounted in ball bearing pillow blocks
- Set of four Tie Down Points
- Four lifting lugs with fan sizes 15 thru 36

SELECTED OPTIONS & ACCESSORIES

- 2 in. Washable Alum. Filters
- Class B Motor Insulation or Greater
- VFD Rated Motor, Meets NEMA MG-1 Standard, S.F. is 1.0
- NEMA Premium Efficient Motor - meets NEMA Table 12-12
- Curb GPSHL-58-G12
- Damper VCD-23-24x18-OB, Chnl. Frm., 208 VAC, Transformer 115 Volt, Int Mnt.,...
- Switch - Nema-1, Toggle, Mounted & Wired

NOTES: All dimensions shown are in units of inches
Fan weight is without accessories
Louvered Penthouse, Top Sections, Mounting Plate, and Filter Racks will ship separate and require field assembly (sizes 24 and larger)

DIMENSIONS

Approx. Fan Weight (lb)	Recommended Roof/Wall Opening: (in.)	Optional Damper (in.)
724	28 x 22	24 x 18

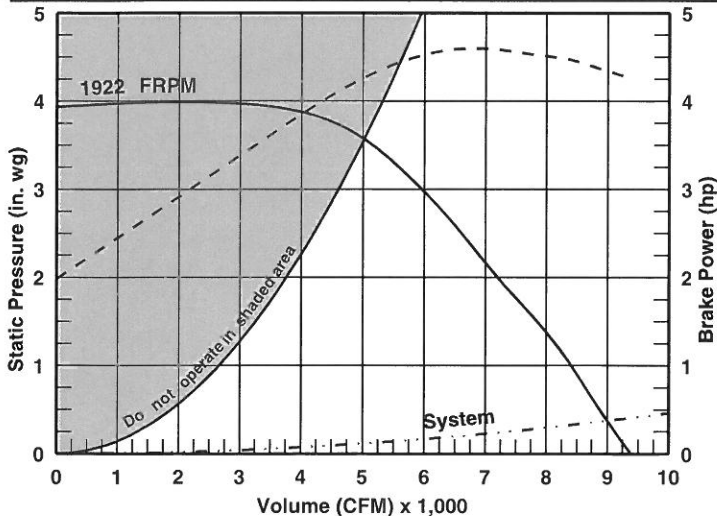
PERFORMANCE (Elevation ft = 62, Airstream Temperature F = 70)

Drive Loss (%) 3

Qty	Model	Volume (CFM)	Total SP (in. wg)	FRPM (RPM)	Operating Power (hp)	Motor Information				
						Size (hp)	V/C/P	Enclosure	Motor RPM	Windings
1	LSF-16-50	9,000	0.375	1922	4.34	5	208/60/3	ODP	1725	1

SOUND

Inlet Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
96	91	90	88	85	83	80	75	90	79	33



— Fan curve
- - - System curve
- - - Brake horsepower curve

GPSHL Canted Roof Curb

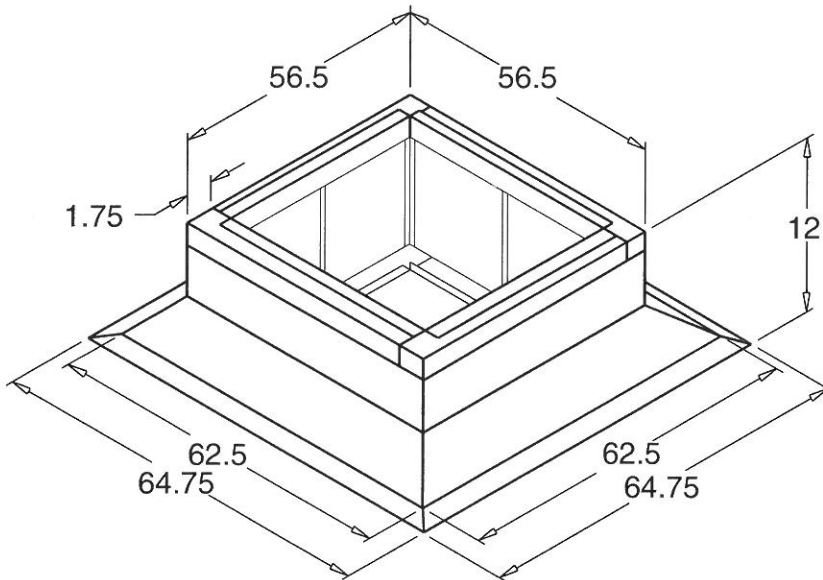
STANDARD CONSTRUCTION FEATURES

- Welded construction in aluminum 0.08 in. or galvanized steel 16 ga with intermediate reinforcing
- Built in 45 degree cant
- 1 in. 3# density insulation
- Wood nailer.

Roof Opening - The Maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. With dampers, the Minimum roof opening dimension should be at least 2.5 in. more than the damper dimension.

NOTES:

- * The Roof Opening Dimension may NOT be the Structural Opening Dimension.
- * Height - Available only as 8 in. and 12 in..
- * Curbs for LSF models 24 thru 36 will ship in sections for field assembly.
- * Damper Trays are not available.



NOTES: All dimensions shown are in units of inches

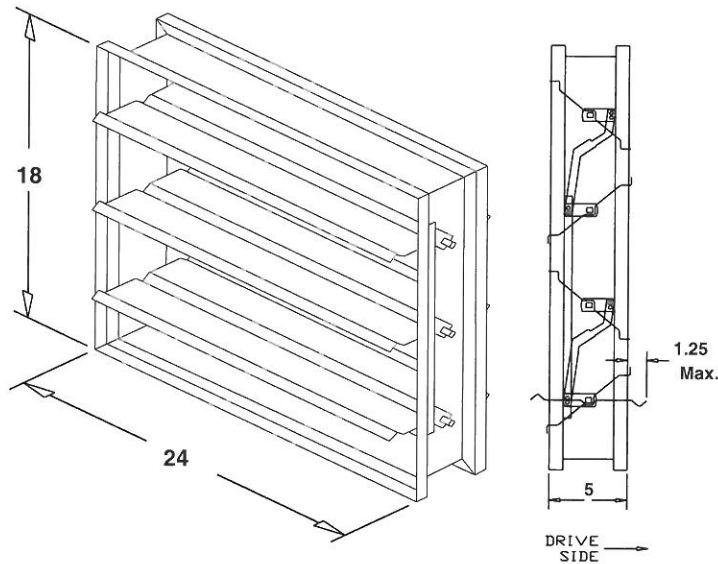
VCD-23 Low Leakage Control Damper

STANDARD CONSTRUCTION FEATURES

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

Accessory Configuration

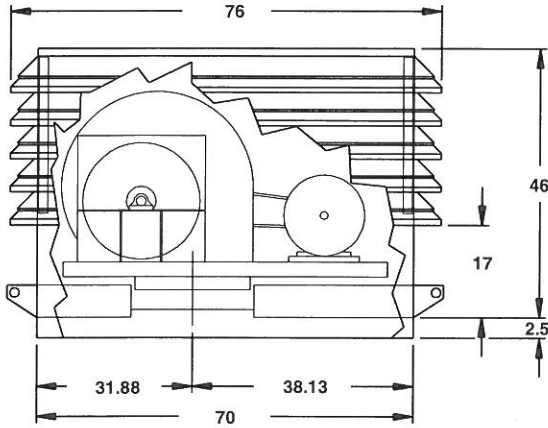
Blade Action	Opposed	End Switch	Yes
Actuator Type	208 VAC		



NOTES: All dimensions shown are in units of inches
 Width and height furnished approximately 0.125 in. undersize.

LSF

Filtered Louvered Roof Supply Unit



Tag S-2

STANDARD CONSTRUCTION FEATURES

- Exterior base panels, louver sections and insulated covers all of aluminum construction
- Duct adaptor, blower housing, wheel and isolation bases all of heavy gauge steel construction coated with gray enamel
- Backward inclined centrifugal wheels
- Ball bearing motor
- Motor slide base
- Adjustable motor pulley
- Fan shaft pulley
- Fan shaft mounted in ball bearing pillow blocks
- Set of four Tie Down Points
- Four lifting lugs with fan sizes 15 thru 36

SELECTED OPTIONS & ACCESSORIES

- 2 in. Washable Alum. Filters
- Class B Motor Insulation or Greater
- VFD Rated Motor, Meets NEMA MG-1 Standard, S.F. is 1.0
- NEMA Premium Efficient Motor - meets NEMA Table 12-12
- Curb GPSHL-70-G12
- Damper VCD-23-32x24-OB, Chnl. Frm., 208 VAC, Transformer 115 Volt, Int Mnt.,...
- Switch - Nema-1, Toggle, Mounted & Wired

NOTES: All dimensions shown are in units of inches
Fan weight is without accessories
Louvered Penthouse, Top Sections, Mounting Plate, and Filter Racks will ship separate and require field assembly (sizes 24 and larger)

DIMENSIONS

Approx. Fan Weight (lb)	Recommended Roof/Wall Opening: (in.)	Optional Damper (in.)
1,148	36 x 28	32 x 24

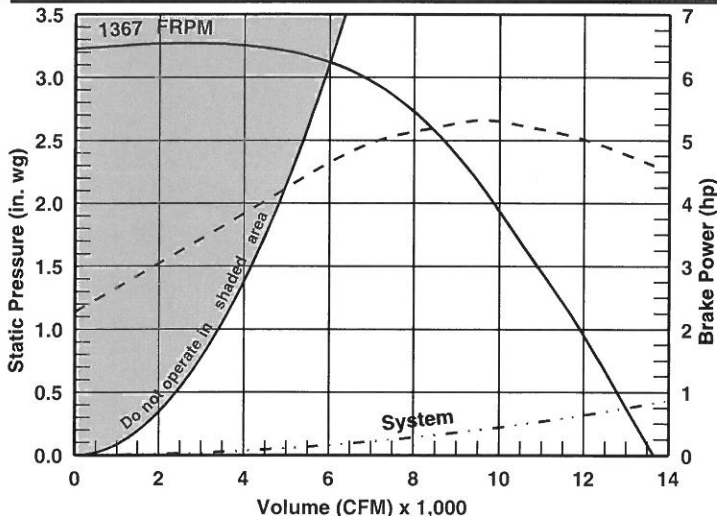
PERFORMANCE (Elevation ft = 62, Airstream Temperature F = 70)

Drive Loss (%) 3

Qty	Model	Volume (CFM)	Total SP (in. wg)	FRPM (RPM)	Operating Power (hp)	Motor Information				
						Size (hp)	V/C/P	Enclosure	Motor RPM	Windings
1	LSF-22-50	13,000	0.375	1367	4.77	5	208/60/3	ODP	1725	1

SOUND

Inlet Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
88	90	92	90	84	79	74	70	90	79	30



— Fan curve
- - - System curve
- · - Brake horsepower curve

GPSHL Canted Roof Curb

STANDARD CONSTRUCTION FEATURES

- Welded construction in aluminum 0.08 in. or galvanized steel 16 ga with intermediate reinforcing
- Built in 45 degree cant
- 1 in. 3# density insulation
- Wood nailer.

Roof Opening - The Maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. With dampers, the Minimum roof opening dimension should be at least 2.5 in. more than the damper dimension.

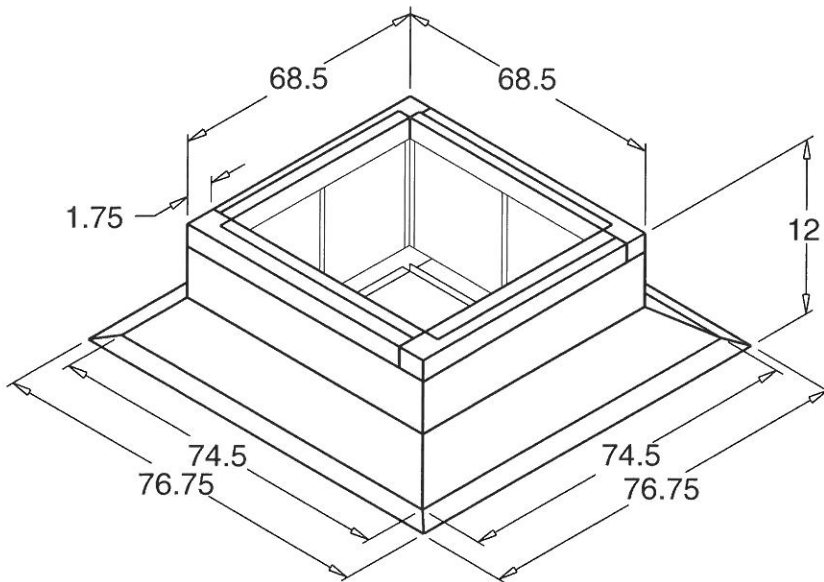
NOTES:

- * The Roof Opening Dimension may NOT be the Structural Opening Dimension.

- * Height - Available only as 8 in. and 12 in..

- * Curbs for LSF models 24 thru 36 will ship in sections for field assembly.

- * Damper Trays are not available.



NOTES: All dimensions shown are in units of inches

VCD-23

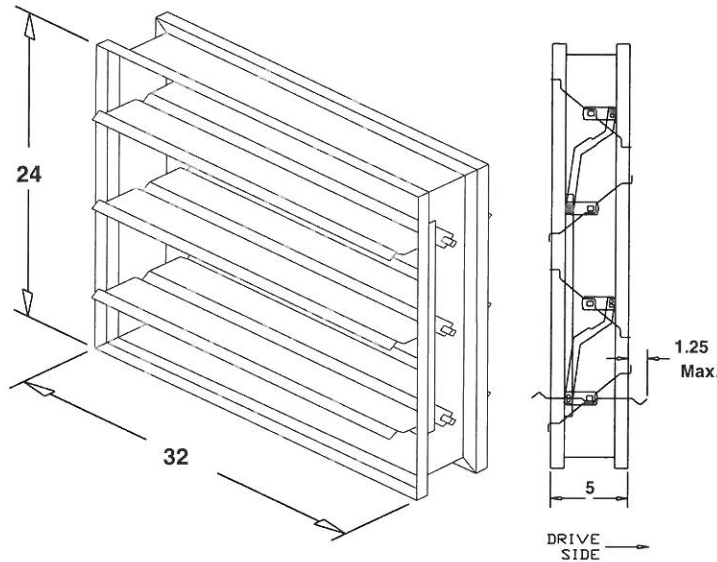
Low Leakage Control Damper

STANDARD CONSTRUCTION FEATURES

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

Accessory Configuration

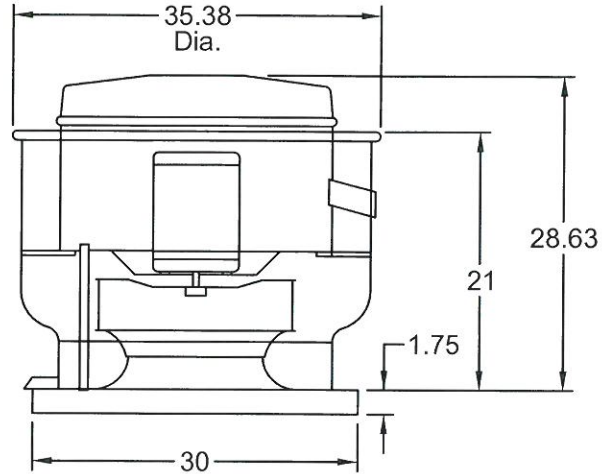
Blade Action	Opposed	End Switch	Yes
Actuator Type	208 VAC		



NOTES: All dimensions shown are in units of inches
 Width and height furnished approximately 0.125 in. undersize.

Model: CUE-180-B

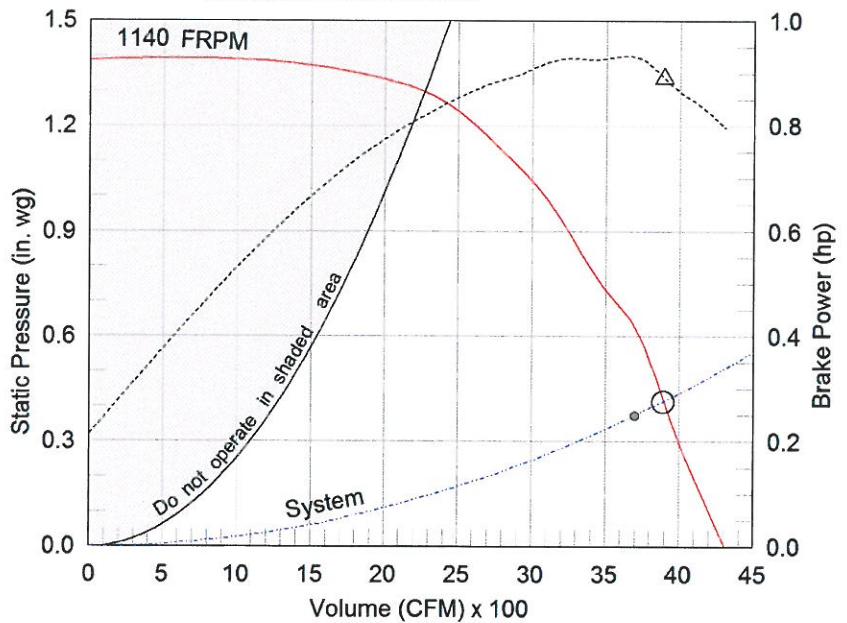
Direct Drive Upblast Centrifugal Roof Exhaust Fan



Reference assembly view drawings for actual dimensions with mounted accessories

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	105
Weight w/ Acc's (lb)	167
Max T Motor Frame Size	184
Optional Damper (in.)	18 x 18
Roof Opening (in.)	20.5 x 20.5

Performance	
Requested Volume (CFM)	3,700
Actual Volume (CFM)	3,893
External SP (in. wg)	0.375
Total SP (in. wg)	0.415
Fan RPM	1140
Operating Power (hp)	0.89
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Tip Speed (ft/min)	5,521
Static Eff. (%)	29



△ Operating Bhp point	External SP	0.375 in. wg
○ Operating point at Total SP	Direct Drive RPM Adjustment	0.04 in. wg
● Operating point at External SP	Total SP	0.415 in. wg
— Fan curve		
····· System curve		
----- Brake horsepower curve		

Motor	
Motor Mounted	Yes
Size (hp)	1
V/C/P	208/60/3
Enclosure	ODP
Motor RPM	1140
Windings	1
NEC FLA* (Amps)	4.6

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	78	81	84	77	69	70	65	57	80	68	16.5

Notes:

All dimensions shown are in units of in..
*FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
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 5.0 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5.0 ft



Model: CUE-180-B

Direct Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Aluminum curb cap with prepunched mounting holes - Drain trough - Ball bearing motors (sizes 98-160), sleeve bearing motors (sizes 60-95) - Motor isolated on shock mounts - Corrosion resistant fasteners

Options & Accessories:

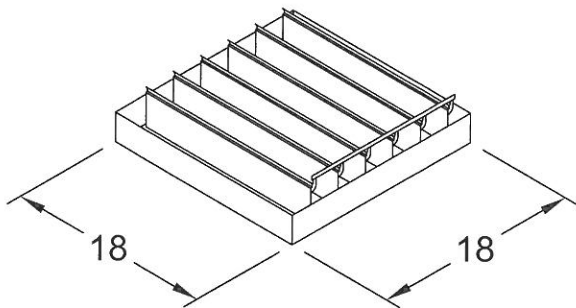
Motor VFD Rated
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Junction Box Mounted & Wired
Roof Curb-Galv., GPI-30-G24, Under Sized 1.5 in. Total
Damper, WD-100-PB-18X18, Gravity Operated (Loose), Not Coated
Birdscreen: Aluminum
Unit Warranty: 1 Yr (Standard)

Horizontal Mount Exhaust Damper

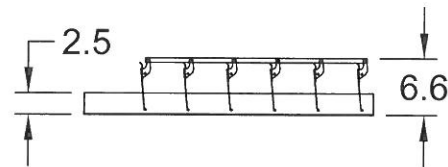
Model: WD-100

Standard Construction Features:

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



DAMPER



TYP. SECTION VIEW

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

Roof Curb

Model: GPI

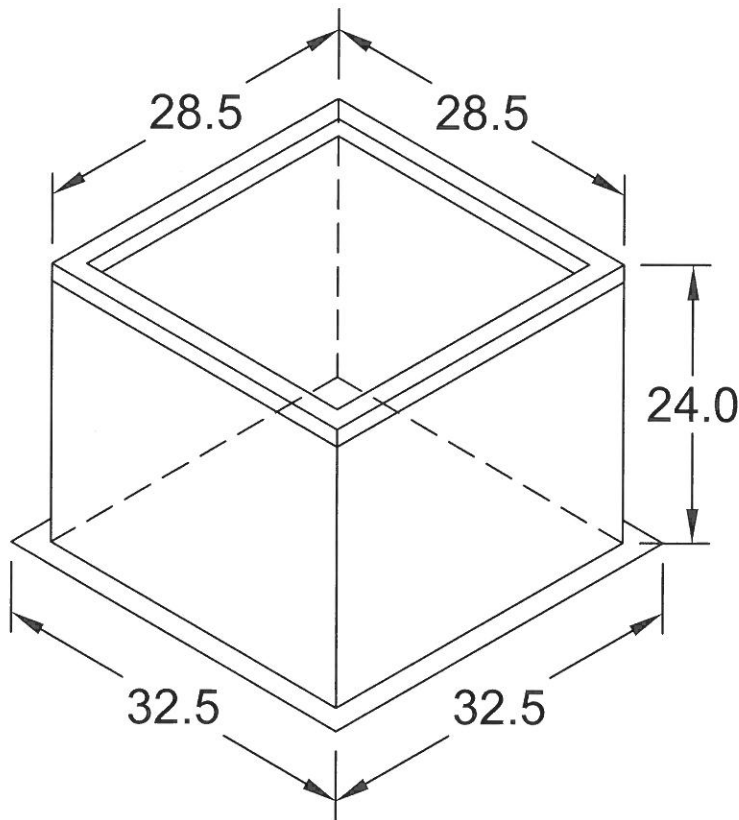
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permator coating.

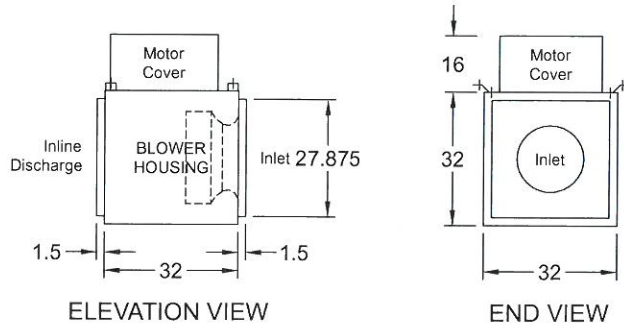
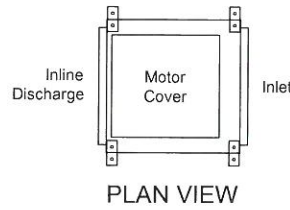


ISOMETRIC VIEW

Notes: All dimensions shown are in units of in.

Model: BSQ-200-30

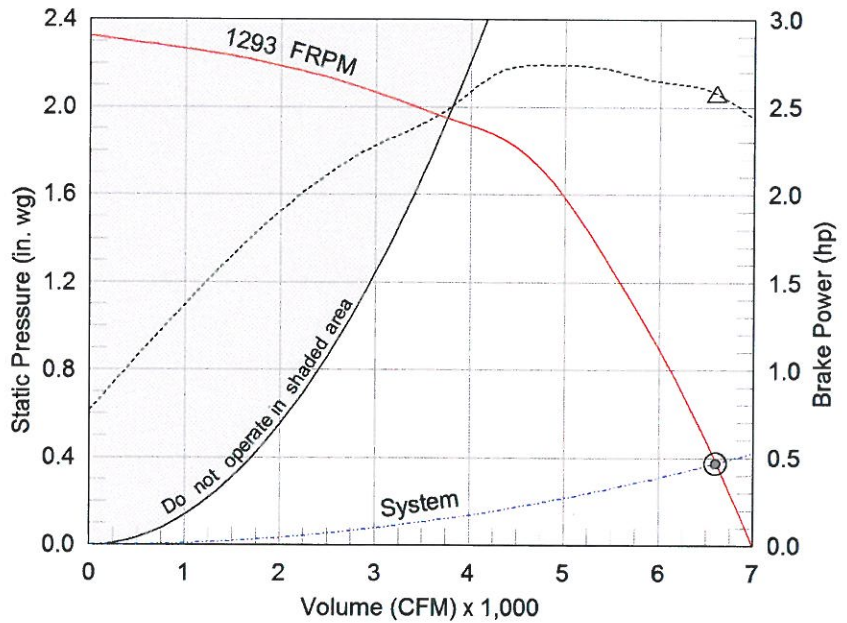
Belt Drive Centrifugal Inline Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	332
Weight w/ Acc's (lb)	385
Max T Motor Frame Size	184
Optional Damper (in.)	28 x 28

Performance	
Requested Volume (CFM)	6,600
Actual Volume (CFM)	6,600
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1293
Operating Power (hp)	2.57
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Drive Loss (%)	4.5
Tip Speed (ft/min)	7,233
Static Eff. (%)	16

Motor	
Motor Mounted	Yes
Size (hp)	3
V/C/P	208/60/3
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	10.6



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

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	89	86	90	83	77	75	70	66	86	74	24
Radiated	92	87	86	77	69	60	52	50	80	69	17.3

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: BSQ-200-30

Belt Drive Centrifugal Inline Fan

Standard Construction Features:

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

Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Junction Box Mounted & Wired

Damper, Inline, WD-330-PB-28X28, Gravity Operated (Loose), Not Coated

Motor Cover

Isolators & Brackets, Neoprene Hanging (1 Kit(s): Qty 4, PN: HVI KIT-SQ16-36) (Shipped Loose)

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

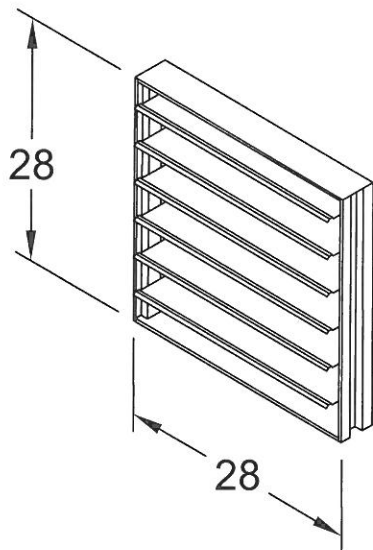
Unit Warranty: 1 Yr (Standard)

Vertical Mount Exhaust Damper

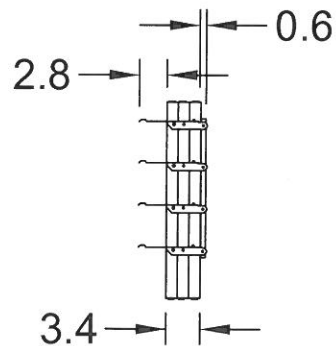
Model: WD-330

Standard Construction Features:

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



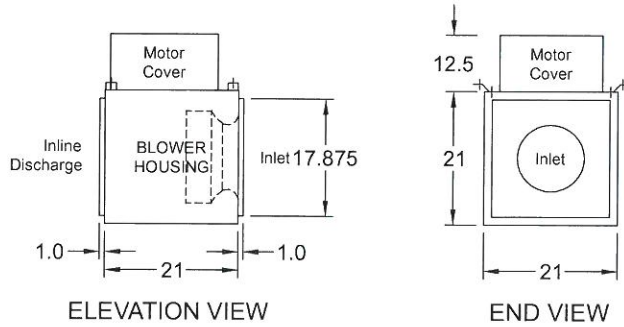
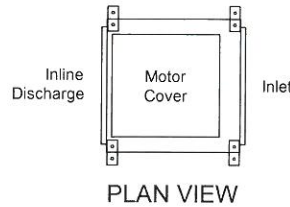
DAMPER - INLINE
DISCHARGE



TYP. SECTION VIEW

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

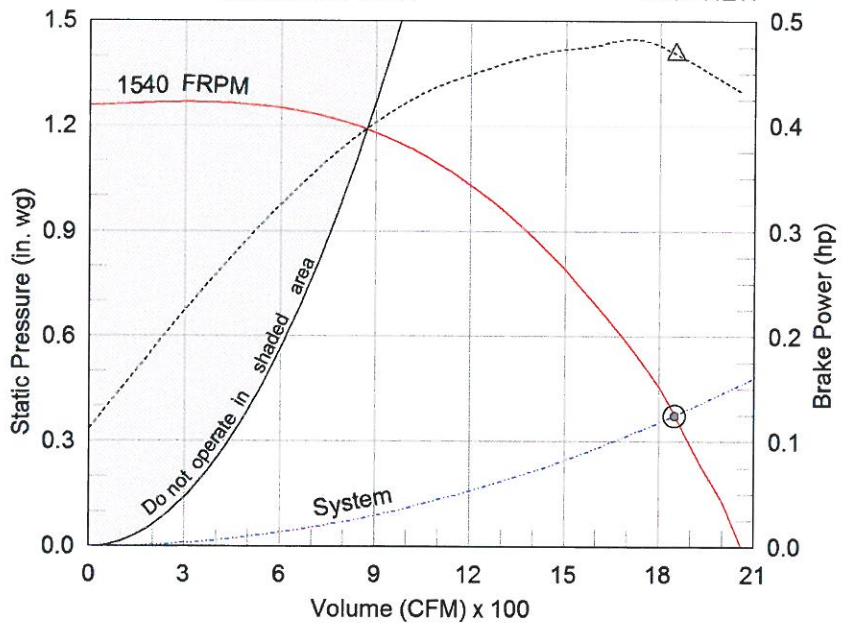
Model: BSQ-130-5
Belt Drive Centrifugal Inline Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	94
Weight w/ Acc's (lb)	125
Max T Motor Frame Size	145
Optional Damper (in.)	18 x 18

Performance	
Requested Volume (CFM)	1,850
Actual Volume (CFM)	1,850
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1540
Operating Power (hp)	0.47
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Drive Loss (%)	8.7
Tip Speed (ft/min)	5,292
Static Eff. (%)	25

Motor	
Motor Mounted	Yes
Size (hp)	1/2
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	9.8



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

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	81	79	80	75	65	67	62	59	77	65	14.3
Radiated	82	81	74	69	60	61	56	55	72	60	11.8

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: BSQ-130-5

Belt Drive Centrifugal Inline Fan

Standard Construction Features:

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

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Junction Box Mounted & Wired

Damper, Inline, WD-330-PB-18X18, Gravity Operated (Loose), Not Coated Motor Cover

Isolators & Brackets, Neoprene Hanging (1 Kit(s): Qty 4, PN: HVI KIT-SQ6-14) (Shipped Loose)

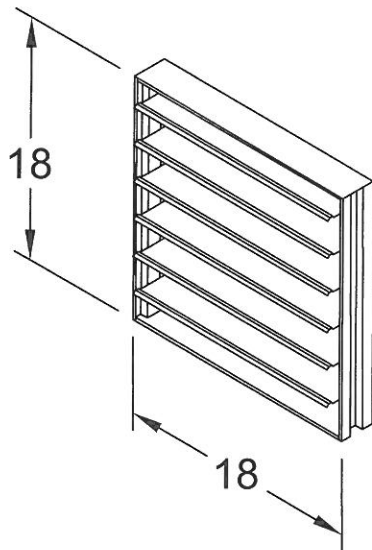
Unit Warranty: 1 Yr (Standard)

Vertical Mount Exhaust Damper

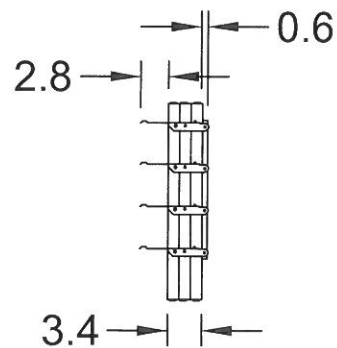
Model: WD-330

Standard Construction Features:

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



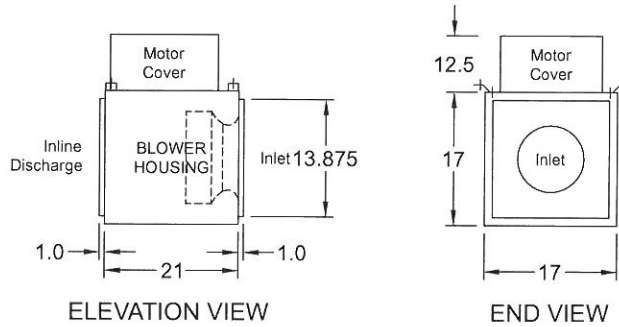
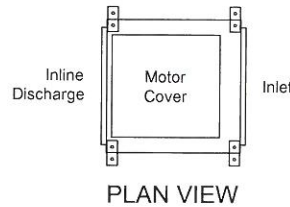
DAMPER - INLINE
DISCHARGE



TYP. SECTION VIEW

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

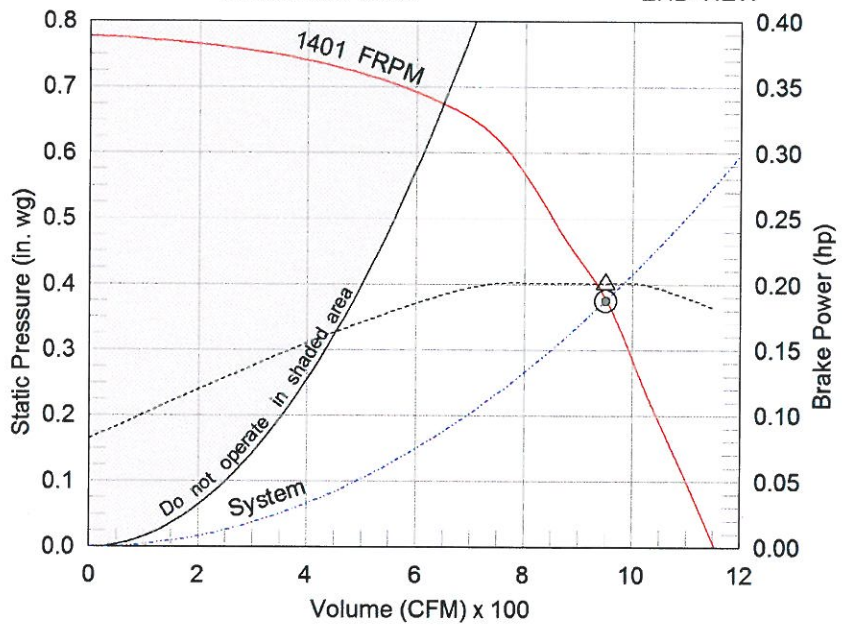
Model: BSQ-100-4
Belt Drive Centrifugal Inline Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	76
Weight w/ Acc's (lb)	102
Max T Motor Frame Size	145
Optional Damper (in.)	14 x 14

Performance	
Requested Volume (CFM)	950
Actual Volume (CFM)	950
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1401
Operating Power (hp)	0.2
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075
Drive Loss (%)	14.2
Tip Speed (ft/min)	4,103
Static Eff. (%)	33

Motor	
Motor Mounted	Yes
Size (hp)	1/4
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	5.8



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	79	81	72	70	60	57	55	48	71	60	10.8
Radiated	80	83	66	64	55	51	49	44	69	58	10.2

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: BSQ-100-4

Belt Drive Centrifugal Inline Fan

Standard Construction Features:

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

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Junction Box Mounted & Wired

Damper, Inline, WD-330-PB-14X14, Gravity Operated (Loose), Not Coated Motor Cover

Isolators & Brackets, Neoprene Hanging (1 Kit(s): Qty 4, PN: HVI KIT-SQ6-14) (Shipped Loose)

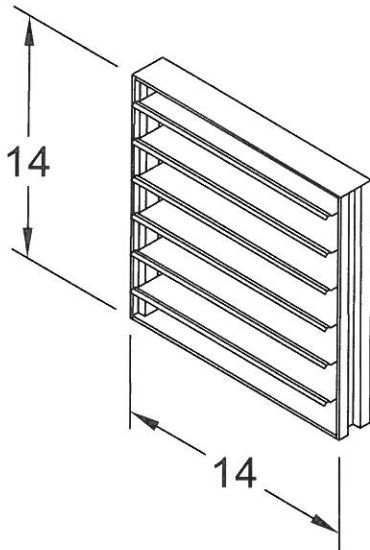
Unit Warranty: 1 Yr (Standard)

Vertical Mount Exhaust Damper

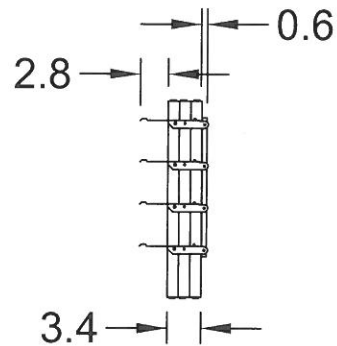
Model: WD-330

Standard Construction Features:

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



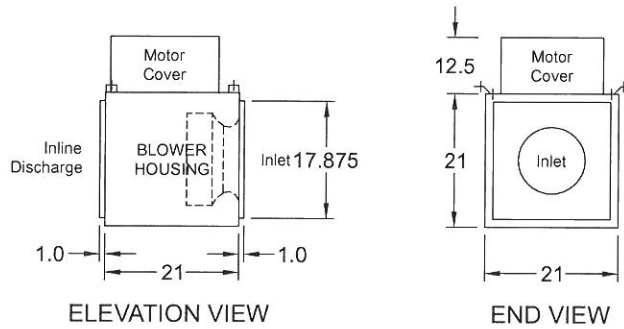
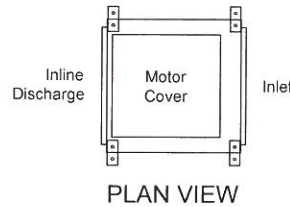
DAMPER - INLINE
DISCHARGE



TYP. SECTION VIEW

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

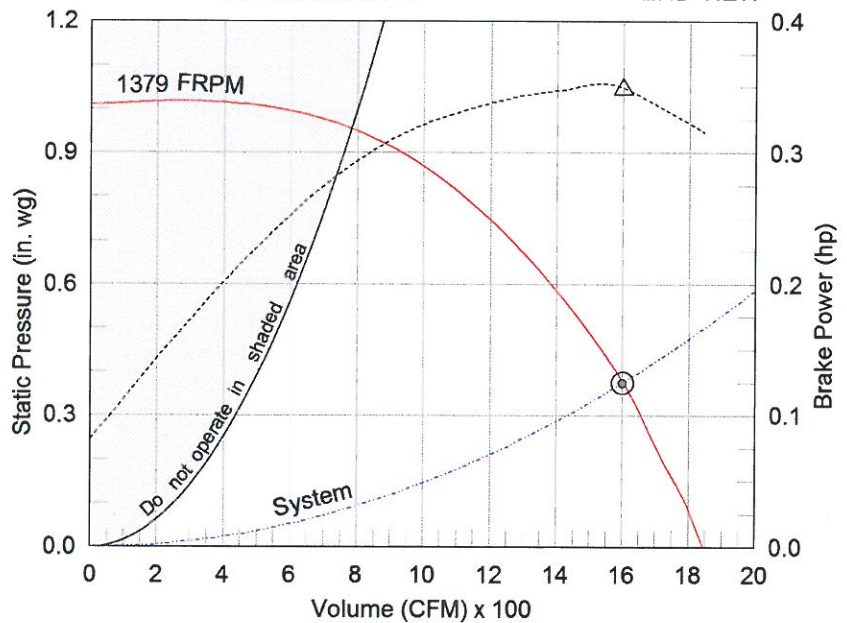
Model: BSQ-130-5
Belt Drive Centrifugal Inline Fan



Dimensional	
Quantity	1
Weight w/o Acc's (lb)	93
Weight w/ Acc's (lb)	124
Max T Motor Frame Size	145
Optional Damper (in.)	18 x 18

Performance	
Requested Volume (CFM)	1,600
Actual Volume (CFM)	1,600
External SP (in. wg)	0.375
Total SP (in. wg)	0.375
Fan RPM	1379
Operating Power (hp)	0.35
Elevation (ft)	62
Airstream Temp. (F)	70
Air Density (ft3)	0.075
Drive Loss (%)	10.2
Tip Speed (ft/min)	4,739
Static Eff. (%)	30

Motor	
Motor Mounted	Yes
Size (hp)	1/2
V/C/P	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	9.8



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

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	83	78	78	71	62	64	59	56	74	62	12.4
Radiated	84	80	72	65	57	58	53	52	70	58	10.4

Notes:

All dimensions shown are in units of in..
 *FLA - based on tables 150 or 148 of National Electrical Code 2002. Actual motor FLA may vary, for sizing thermal overload, consult factory.
 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 5.0 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5.0 ft



Model: BSQ-130-5

Belt Drive Centrifugal Inline Fan

Standard Construction Features:

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

Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Junction Box Mounted & Wired

Damper, Inline, WD-330-PB-18X18, Gravity Operated (Loose), Not Coated Motor Cover

Isolators & Brackets, Neoprene Hanging (1 Kit(s): Qty 4, PN: HVI KIT-SQ6-14) (Shipped Loose)

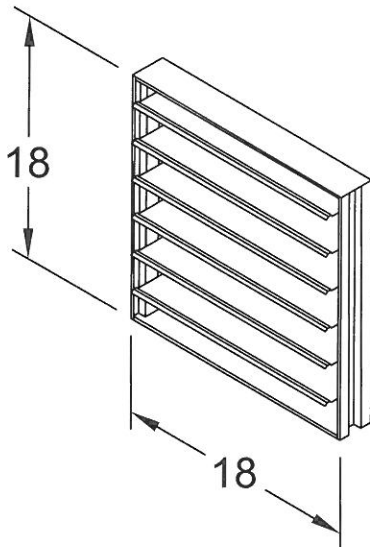
Unit Warranty: 1 Yr (Standard)

Vertical Mount Exhaust Damper

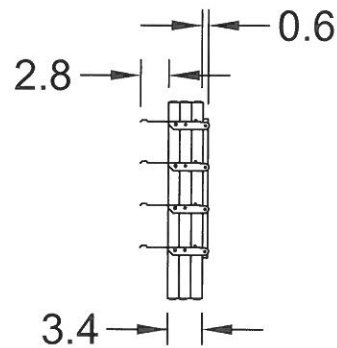
Model: WD-330

Standard Construction Features:

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

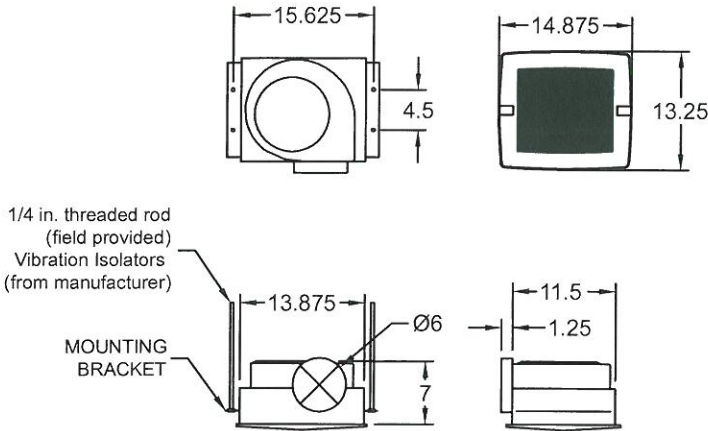


DAMPER - INLINE
DISCHARGE



TYP. SECTION VIEW

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



Model: SP-B70

Ceiling Exhaust Fan

Standard Construction Features:

- Corrosion resistant galvanized steel scroll and housing - White designer non-yellowing grille - Round outlet duct collar with integral backdraft damper - Single inlet forward curved wheel - Plug type disconnect - Adjustable mounting brackets

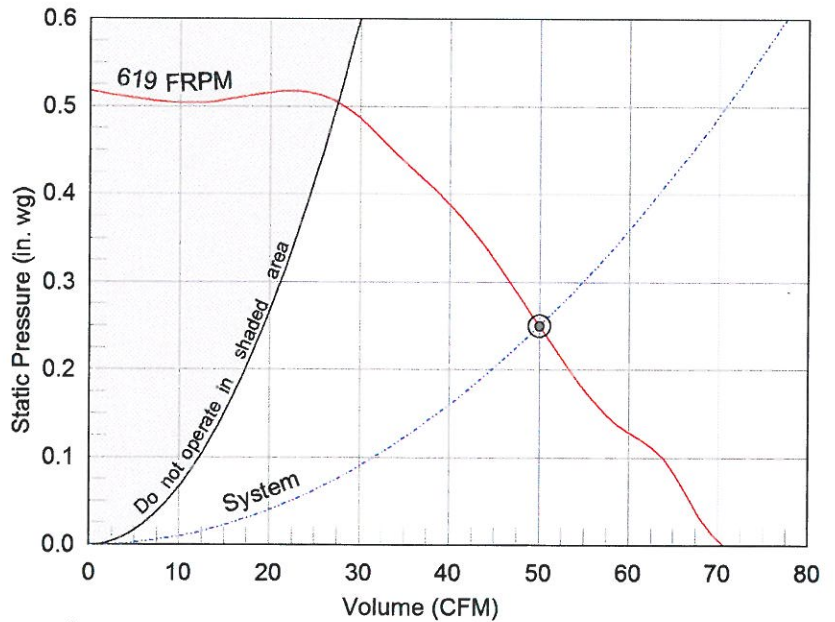
Options & Accessories:

UL/cUL 507 Listed - Electric Fan
Solid State Speed Control, 5 Amp (PN 385031) Mounted and Wired Internally
Roof Cap, Curb Mounted, (PN: RCC-7) Shipped Loose
Roof Curb-Galv., GPI-15-G24, Under Sized 1.5 in. Total Designer Grille
Round Duct Connection
Transition Duct Reducer, (PN: 473324) Shipped Loose
Isolation Kit, (PN: VI KIT-SP/CSP) Shipped Loose
Polypropylene Wheel Material
Energy Star Rated

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	9
Weight w/ Acc's (lb)	42

Performance	
Requested Volume (CFM)	50
Actual Volume (CFM)	50
External SP (in. wg)	0.25
Total SP (in. wg)	0.25
Fan RPM	619
Watts (W)	45
Amps (A)	0.53
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (ft3)	0.075

Motor	
Motor Mounted	Yes
Watts (W)	45
V/C/P	115/60/1
Enclosure	ODP
NEC FLA* (Amps)	NA



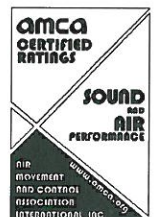
- △ Operating Bhp point
- Operating point at Total SP
- Operating point at External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Notes:

All dimensions shown are in units of in..
*FLA is approximate and will vary slightly with the motor.
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 5.0 ft
Sones - calculated using AMCA 301 at 5.0 ft
AMCA certified ratings seal applies to sone ratings only.
Wattage is shown at free air.

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	45	51	48	50	45	37	29	25	50	36	1.4



Roof Curb

Model: GPI

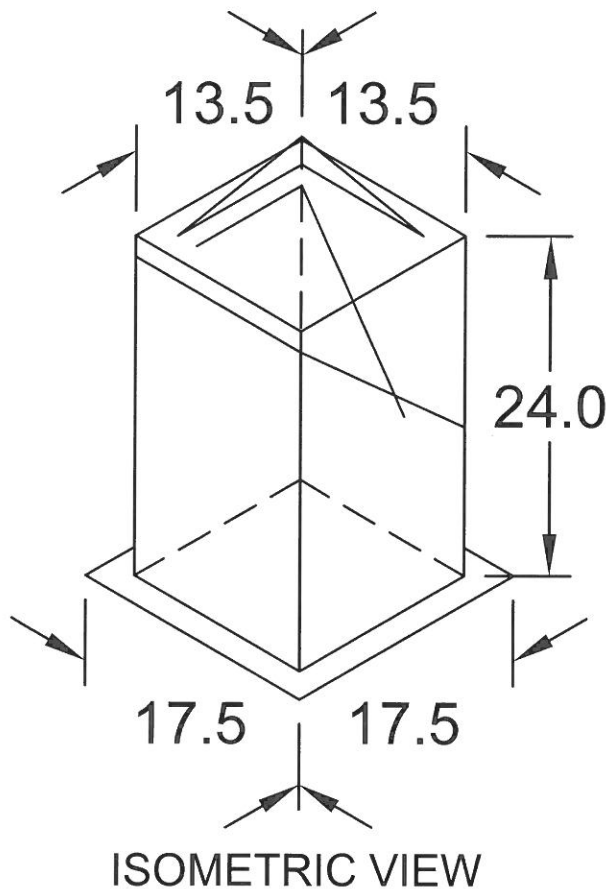
Material: Galvanized

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 - 1 in. thick 3 lb density insulation - Height - Available from 8 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 NOT be 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 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatecor coating.



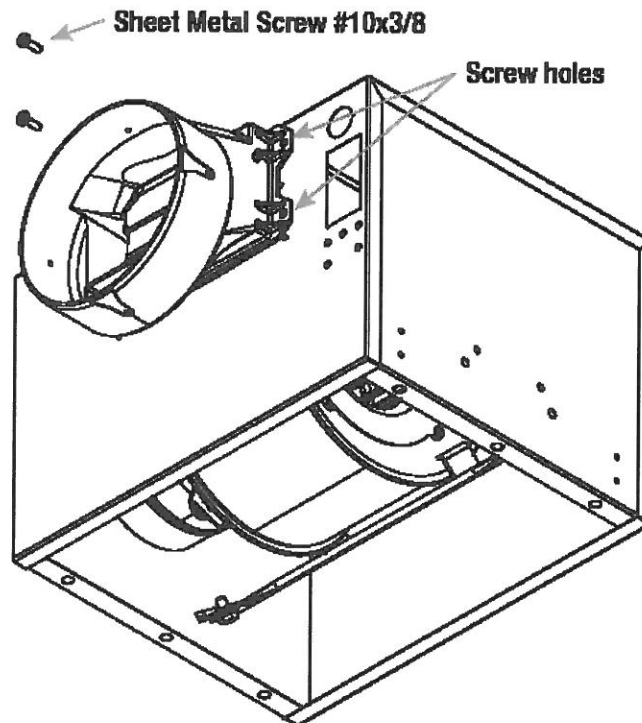
Notes: All dimensions shown are in units of in.

Round Duct Connector

Model: RDC

Standard Construction Features:

-Constructed of Polypropylene - Replaces the square discharge duct connector and damper using the existing mounting holes



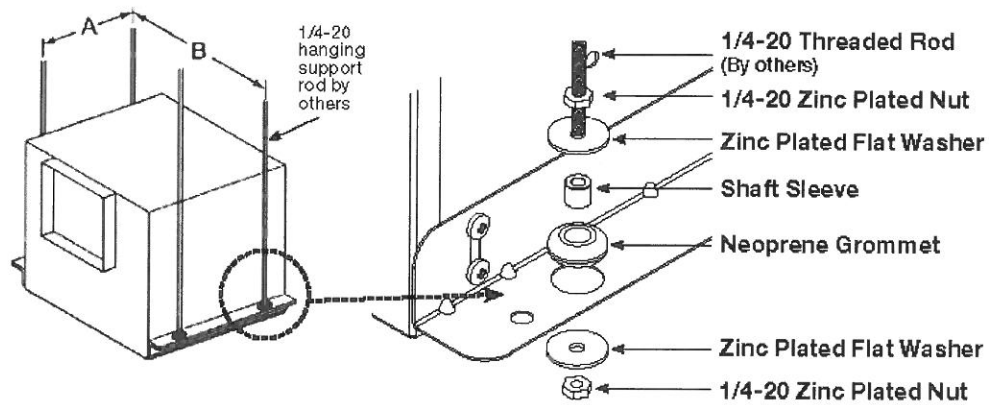
Notes: All dimensions shown are in units of in.

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).

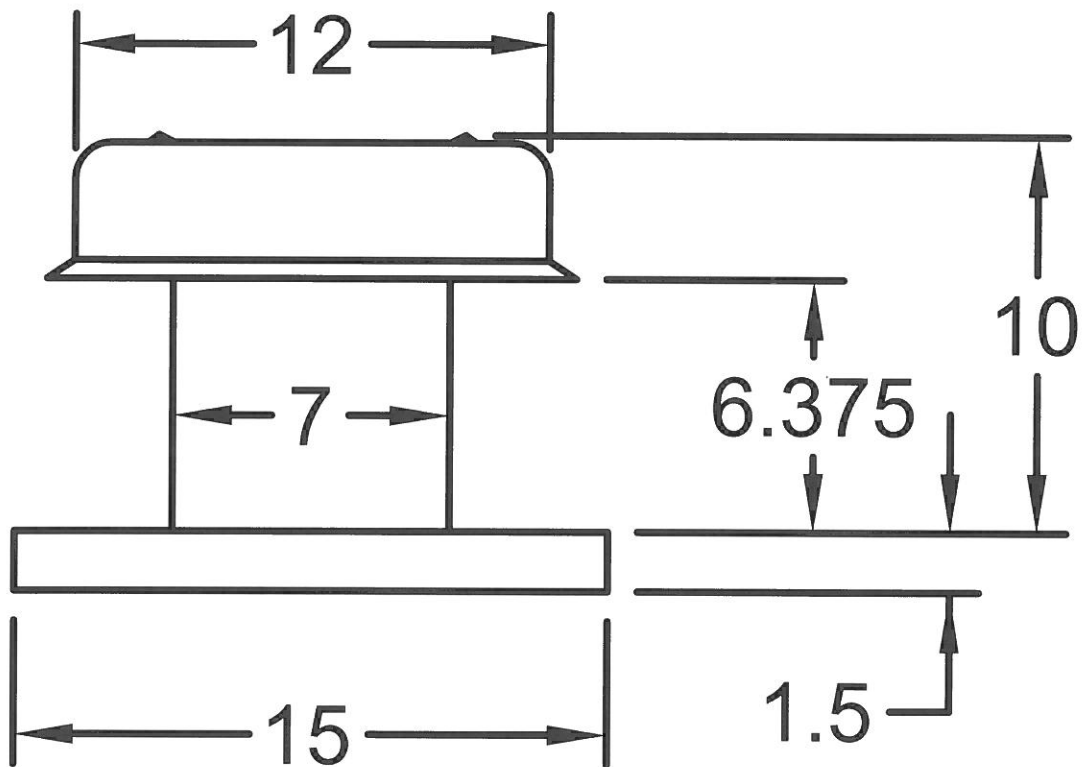
Description	Qty
Neoprene Grommets	4
1 x 32 Zinc Plated Nuts	8
Zinc Plated Flat Washers	8
3/8 x 3/16 Shaft Sleeves	4

Discharge Accessory

Type: Roof Cap Curb

Standard Construction Features:

- Weathertight aluminum construction - Integral birdscreen - Built-in curb cap - Requires roof curb



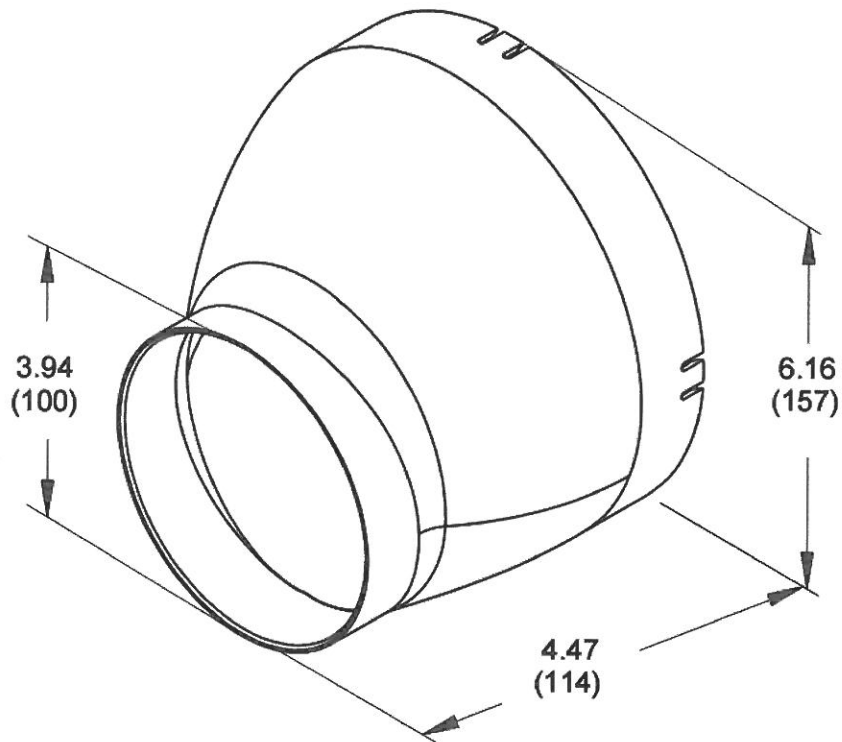
Notes: All dimensions shown are in units of in.

6 to 4 Reducer

Model: TR 6X4

Standard Construction Features:

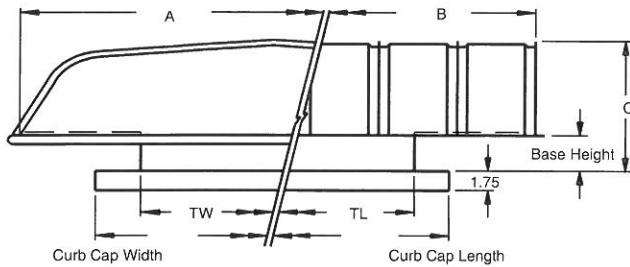
- Reduces duct from 6 to 4 inches - Galvanized steel construction



Notes: All dimensions shown are in units of in.

FGI

Hooded Gravity Intake STANDARD CONSTRUCTION FEATURES



- Precision formed locked rib construction.
- Available in aluminum or galvanized steel construction.
- 0.5 in. galvanized steel mesh birdscreens.
- Heavy gauge galvanized steel support members.
- Hood can be removed completely from the base or hinged open.
- Units with a throat size exceeding 60 in. x 120 in. will have 12 in. galvanized bases as standard.
- Recommended roof opening dimension is at least 2.5 in. larger than the damper size.

SELECTED OPTIONS & ACCESSORIES

- Aluminum Birdscreen in lieu of Galvanized
- Aluminum Housing
- Curb GPI-G24

NOTE: All dimensions shown are in units of inches

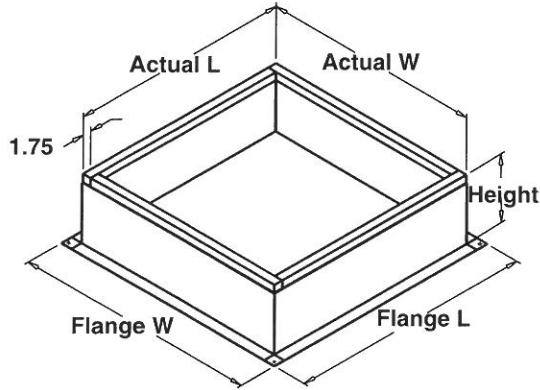
DIMENSIONS

ID #	Tag	Qty	"TW" Throat Width (in.)	"TL" Throat Length (in.)	A (in.)	B (in.)	C (in.)	Curb Cap Width (in.)	Curb Cap Length (in.)	Opt. Damper Width (in.)	Opt. Damper Length (in.)	Wt. (lb)	Base Height (in.)	Ship Assembled
10-1		1	12	24	24	36	14	18	30	24	12	27	5	Yes

PERFORMANCE

ID #	Tag	Qty	Volume (CFM)	SP (in. wg)	Throat Area (ft2)	Throat Velocity (ft/min)
10-1		1	0	0	2	0

GPI Roof Curb



STANDARD CONSTRUCTION FEATURES

- Welded Aluminum (0.064 in.) or galvanized (18 ga) construction
 - Straight sided
 - 2 in. roof mounting flange
 - 1 in. 3# density insulation
 - Wood nailer.
- Roof Opening - The Maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. With dampers, the Minimum roof opening dimension should be at least 2.5 in. more than the damper dimension.

NOTES:

- * The Roof Opening Dimension may NOT be the Structural Opening Dimension.
- * Maximum single piece shipping length is 76".
- * Security Bars are optional and must be specified. Frames and gridwork are all 10 ga steel. Gridwork is welded to the frame and the frame is welded to the curb. To prevent corrosion, they are coated with Greenheck's high performance Permatector coating.

NOTES: All dimensions shown are in units of inches

Mark	Qty.	Cap W x L	Actual W x L	Flange W x L	Height	Damper Tray W x L
WRH24X12 - 1	1	18 x 30	16.5 x 28.5	20.5 x 32.5	24	