



MECHANICAL PERMIT APPLICATION

City of Portland, Oregon - Bureau of Development Services

1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7300 • TTY 503-823-6868 • www.portlandoregon.gov/bds

Type of work

- ☐ New construction ☐ Addition/alteration/replacement
☐ Demolition ☒ Other:

Category of construction

- ☐ 1 & 2 family dwelling ☒ Commercial/industrial ☐ Accessory building
☐ Multifamily ☐ Master builder ☐ Other:

Job site information and location

Job no.: Job address: 2050 NE COLUMBIA BLVD.

City/State/ZIP: PORTLAND, OR

Suite/bldg./apt. no.: Project name: AU COURANT

Cross street/directions to job site:

Subdivision: Lot no. Tax map/parcel no.

Description of work (example: upstairs bath fan/dryer exhaust)

ADD MODER CWR-161-HP-10
AND LOUVER

Provide RS permit no.

Property owner

Tenant

Name: AU COURANT E-mail: bryan.paglinawan@gmail.com

Address: 2026 NE COLUMBIA

City/State/ZIP: PORTLAND, OR

Phone: 503-320-0132 FAX:

Owner installation: This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.

Owner signature: Date:

Contractor

Subcontractor

Business name: RJP/PORTLAND MECHANICAL E-mail: bryan.paglinawan@gmail.com

Address: 17690 BOONFERRY ROAD

City/State/ZIP: L.O. OR 97055

Phone: 503-320-0132 FAX:

Lic. no. 193312/151807 CCB lic. no. 193312/151807

Authorized signature: (151807)

Print name: Date:

Applicant

Contact Person

Business name: RJP/PORTLAND MECHANICAL

Contact name: BRYAN PAGLINAWAN

Address: 17690 BOONFERRY RD.

City/State/ZIP: L.O. OR 97055

Phone: 503-320-0132 FAX:

E-mail: bryan.paglinawan@gmail.com

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

Commercial Fee Schedule - Use Checklist

Mechanical permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar of all mechanical materials, equipment, labor, overhead and profit.

Value: \$ 7,600.00

Residential Equipment / Systems Fees

For special information use checklist

Description	Qty.	Fee	Total
Heating / cooling			
Air conditioner (site plan required)		\$26	
Furnace / burner including duct work / vent / liner		\$55	
Heat pump (site plan required)		\$51	
Air handling unit		\$26	
Hydronic hot water system		\$32	
Residential boiler (radiator or hydronic) includes piping		\$32	
Unit heaters (fuel type, not electric) in-wall, in-duct, suspended, etc.		\$26	
Vent for appliance other than furnace		\$22	
Alteration of existing HVAC system	1	\$32	

Other fuel appliances

Decorative gas fireplace		\$26	
Flue vent for water heater or gas fireplace		\$22	
Wood / pellet stove		\$57	
Gas or wood fireplace / insert		\$57	
Chimney / liner / flue / vent		\$22	
Other:		\$32	

Environmental exhaust and ventilation

Range hood / other kitchen equipment		\$14	
Clothes dryer exhaust		\$14	
Single-duct exhaust (bathrooms, toilet compartments, utility rooms)		\$14	
Exhaust system apart from Heating or AC		\$22	
Other:		\$32	

Gas fuel piping

\$15 for the first four, \$2.70 for each additional. Please indicate number of fuel gas piping outlets below:

Furnace, etc.			
Gas heat pump			
Wall / suspended / unit heater			
Water heater / boiler			
Fireplace			
Range			
Barbecue			
Clothes dryer			
Other:			

Other appliances

Including oil tanks, gas and diesel generators, gas and electric kilns, gas appliances / equipment not included above		\$32	
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Mechanical permit fees

Subtotal	
Minimum permit fee (\$95)	
Commercial plan review (60% of permit fee)	
State surcharge (12% of permit fee)	
TOTAL PERMIT FEE	

DATE: May 5th, 2017

TO:

FROM: Daniel Touger, PE

PROJECT NAME: Au Courant Gardens Grow Facility

SÄZÄN PROJ. NO.

SUBJECT: Mechanical Permit Recommendations



GENERAL

The scope of this memo encompasses an approximately 53,000 square foot warehouse, of which, approximately 8,300 square feet are being converted from a warehouse with occupancy classification of S-1 to a marijuana grow facility with an occupancy classification of agriculture F-1. The facility will be used to cultivate marijuana and no extraction processes or CO2 enrichment systems have been proposed. The new occupancy classification indicates the facility to have 28 occupants.

CODES AND STANDARDS

Applicable portions of the codes, standards, regulations and recommendations of the following entities shall be observed in the design of the ventilation system and supporting facilities:

- 2014 Oregon Structural Specialty Code (OSSC)
- 2014 Oregon Energy Efficiency Specialty Code (OEESC)
- 2014 Oregon Mechanical Specialty Code (OMSC)
- 2014 Oregon Plumbing Specialty Code (OPSC)
- 2014 Oregon Electrical Specialty Code (OESC)
- 2014 Oregon Fire Code (OFC)
- NFPA 54, National Fuel Gas Code
- NFPA 68, Standard on Explosion Protection by Deflagration Venting
- NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilation Systems
- NFPA 13 & 14, Standard for the Installation of Sprinkler Systems, 2010 Edition
- ASHRAE 55, 2013, Thermal Environmental Conditions for Human Occupancy
- ASHRAE 62, Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90.1, Energy Standards for Buildings; except Low Rise Residential Buildings
- City of Portland, State of Oregon ordinances

In the event of conflicts, the more stringent provisions shall be applied.

RECOMMENDATIONS

After speaking with Thomas Ng, a code official for the City of Portland, on May 3rd, 2017, Săzăn Group has the following recommendations when it comes to the successful closing of the open mechanical permit:

1. Mechanical ventilation is required during all occupied times. As per 2014 OMSC, Table 403.3, a ventilation rate of 60 CFM per person is to be used. This is the same rate associated with smoking lounges.
2. At the listed occupancy, the required minimum ventilation rate is approximately 1,680 CFM during all occupied times.
3. The ventilation system should be designed to operate only during occupied times. This can be accomplished by either method below:
 - a. Ventilation system can operate on a time clock set to operate during all occupied times.
 - b. Ventilation system can be set to run anytime a door sensor indicates entry along with a motion sensor to keep system operational during all occupied times.
4. Ventilation system to include, but is not limited to, the following components:
 - a. Supply fan with energy code compliant damper to bring air into the warehouse. (Attachment 2)
 - b. Exhaust fan with energy code compliant damper to exhaust air from the warehouse. (Attachment 3)
 - c. Carbon filtration system ducted to the exhaust fan in order for all exhausted air to be odor free. (Attachment 4)
 - d. Electric resistance heater ducted to supply fan for freeze protection. (Attachment 5)
 - e. Associated controls and interlocks for all equipment.
5. The ventilation system in its entirety is to be designed and selected by the mechanical contractor. The size for all equipment and airflows are approximations and final determination is to be made by the engineer of record.

ATTACHMENTS

1. Au Courant Gardens Building Permit Set dated 03/02/2017 provided by architect
2. Supply Fan Cut Sheet
3. Exhaust Fan Cut Sheet
4. Carbon Filtration Cut Sheet
5. Electric Resistance Heater Cut Sheet

END OF MEMORANDUM



16-269412-MT

SUBMITTAL

Job Title: **AU COURANT GROW**

Elevation: (ft) 108

Date: 5/15/2017

Submitted By: Graeme Enkelis

JOHNSON AIR PRODUCTS

2220 SE 9TH AVENUE

PO BOX 15098

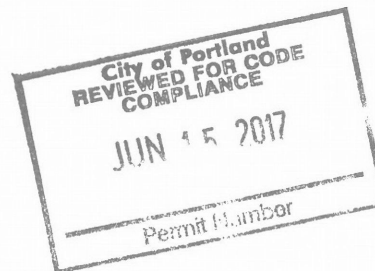
PORTLAND, OR 97293

US

Phone: (503)234-5071

Fax: (503)233-0451

Email Address: genkelis@johnsonair.com



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

2

MT

17-187821

WD-400 Backdraft Damper

APPLICATION & DESIGN

The WD-400 is an non-motorized backdraft dampers which can be mounted vertically for intake air. Backdraft dampers are designed to prevent reverse airflow.

RATINGS

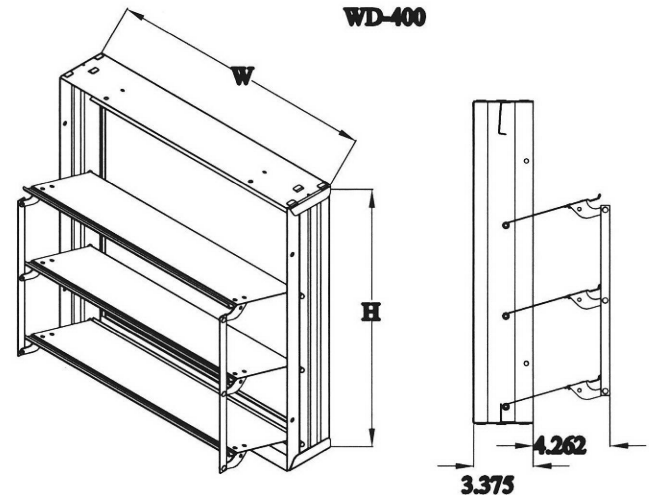
Max. Pressure: Up to 2 in. wg - pressure differential
Max. Velocity: Up to 2,500 ft/min
Temperature: 180 F

PRODUCT DETAILS

Frame: Galvanized Steel
Frame Thickness: 18 ga
Blade: Aluminum
Blade Seal Material: Vinyl
Blade Thickness: 0.025 in.
Axle Material: Steel
Axle Bearings: Synthetic
Linkage Material: Aluminum
Sizing: Nominal

OPTIONS & ACCESSORIES

Clean Wrap: No



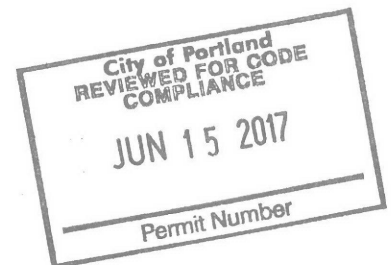
Note: All dimensions are shown in inches.

- Width and Height furnished approximately 0.125 in. under size.
- Installation instructions available at www.greenheck.com.

SUMMARY

ID #	TAG	QTY	W (in.)	H (in.)	SECTIONS WIDE	SECTIONS HIGH	SHIP SECTIONS
2-1		1	32.000	32.000	1	1	1

PROVIDE MOTORIZED
DAMPER.

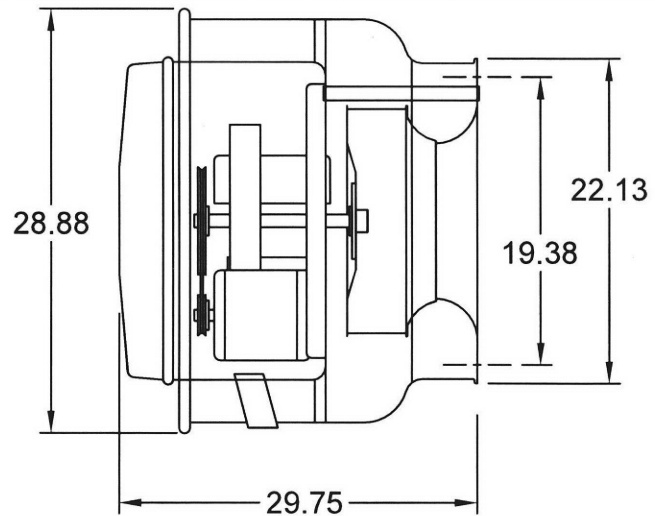


Model: CWB-161HP-10

Belt Drive Centrifugal Sidewall Exhaust Fan

Dimensional

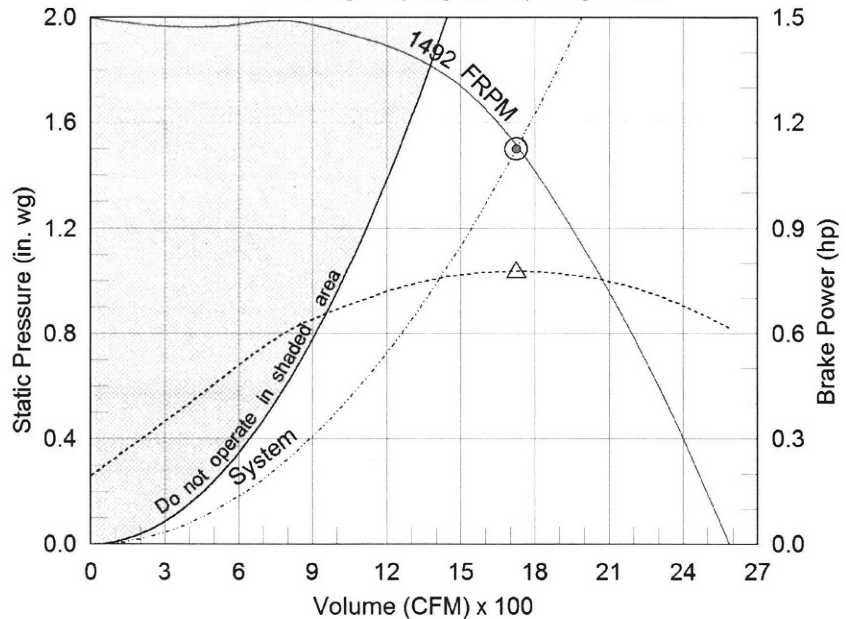
Quantity	1
Weight w/o Acc's (lb)	79
Weight w/ Acc's (lb)	87
Max T Motor Frame Size	145
Wall Opening (in.)	15.5 x 15.5



*Overall height may be greater depending on motor

Performance

Requested Volume (CFM)	1,725
Actual Volume (CFM)	1,725
External SP (in. wg)	1.5
Total SP (in. wg)	1.5
Fan RPM	1492
Operating Power (hp)	0.77
Elevation (ft)	108
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Drive Loss (%)	6.8
Tip Speed (ft/min)	6,496
Static Eff. (%)	56



- △ 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
Voltage/Cycle/Phase	460/60/3
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	2.1

City of Portland
 REVIEWED FOR CODE
 COMPLIANCE

JUN 15 2017

Permit Number

Notes:

All dimensions shown are in units of in.
 *NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. 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 ft - dBA levels are not licensed by AMCA International
 Sones - calculated using AMCA 301 at 5 ft



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	76	74	79	71	67	68	66	60	76	65	13.6

Model: CWB-161HP-10

Belt Drive Centrifugal Sidewall Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Birdscreen mounted to the discharge perimeter - Removable mounting plate - Ball bearing motors - Motor and drives isolated on shock mounts - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearing meet or exceed temperature rating of fan - Static free belts - Corrosion resistant fasteners

Selected Options & Accessories:

UL/cUL 705 Listed - "Power Ventilators"

Switch, NEMA-1, Toggle, Shipped with Unit

Junction Box Mounted & Wired

Birdscreen: Galvanized

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

Unit Warranty: 1 Yr (Standard)



Disconnect Switch

Enclosure Rating: NEMA-1

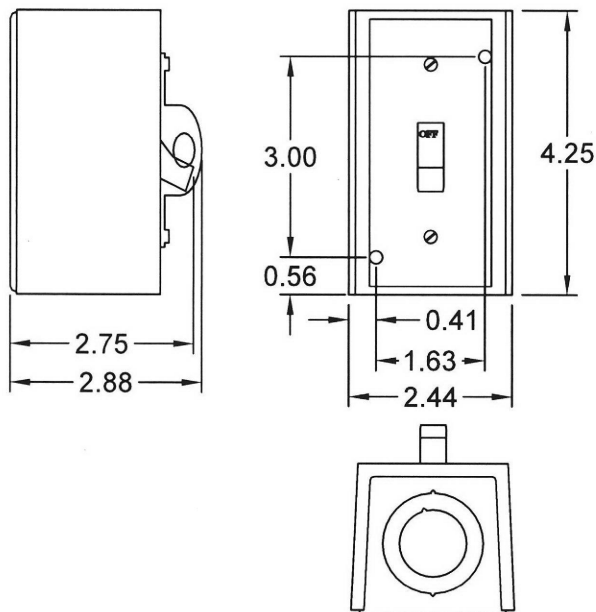
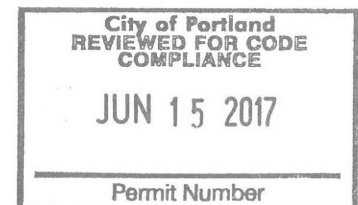
Standard Construction Features:

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.

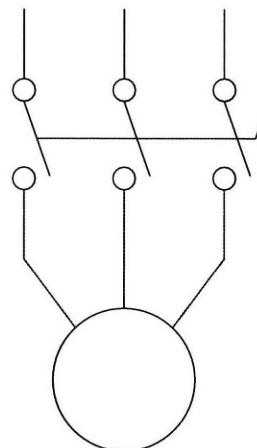
Disconnect Switch Configuration

Type:	Toggle	Motor Size:	1 hp	Voltage:	460	UL Listed:	Yes
Manufacturer:	Square D	Cycle:	60	Amperage:	30	CSA Approved:	Yes
Overload Protection:	None	Phase:	3	Switch Pole(s):	3	Rating:	10 hp
Junction Box Mtg.:	Mounted and Wired	RPM:	1725	Exp. Resist. Wiring:	None		
Switch Mounting:	Shipped With Unit						

Electrical Drawing Details



Wiring Schematic



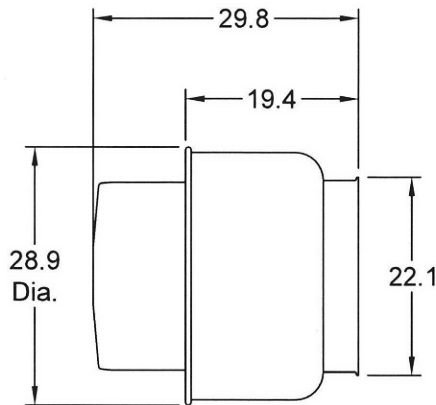
Notes: All dimensions shown are in units of in.

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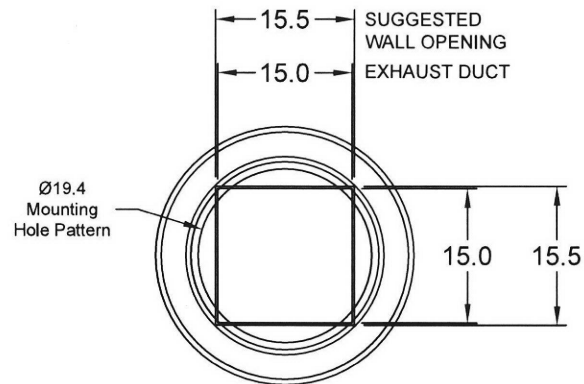
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Assembly Drawing

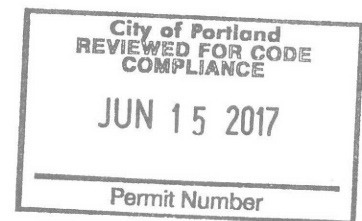
Type: Belt Drive Centrifugal Sidewall Exhaust Fan



TOP AND SIDE VIEW



END VIEW

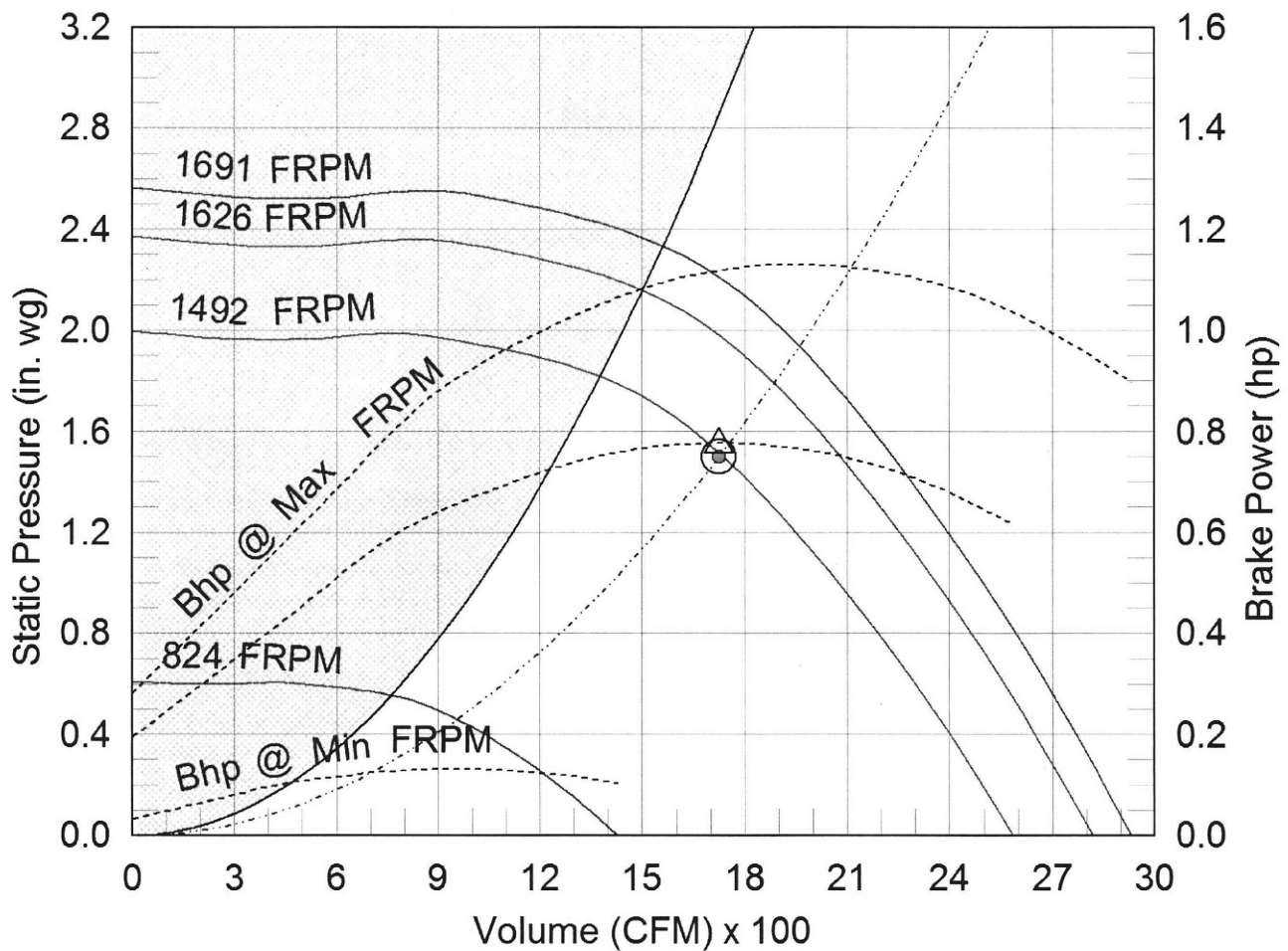


Notes: All dimensions shown are in units of in..

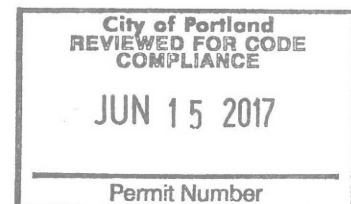
CWB-161HP-10 Min/Max Fan Curve

Performance

Requested Volume (CFM)	Actual Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	Fan RPM	Operating Power (hp)
1,725	1,725	1.5	1.5	1492	0.77



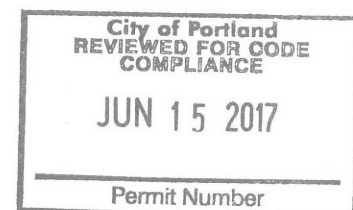
- △ Operating Bhp point
- Operating point at Total SP
- Operating point at External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve



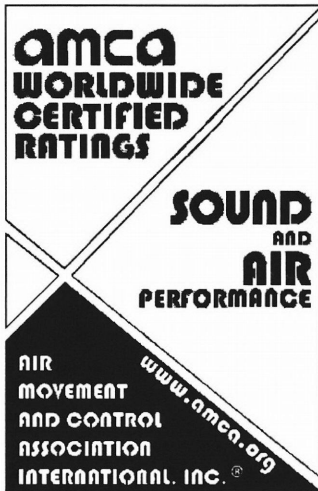
Warranty

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.

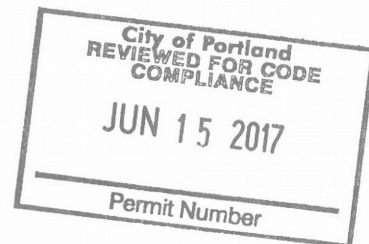


AMCA



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

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



ESD-435 4 in. Frame, 35 deg Blade

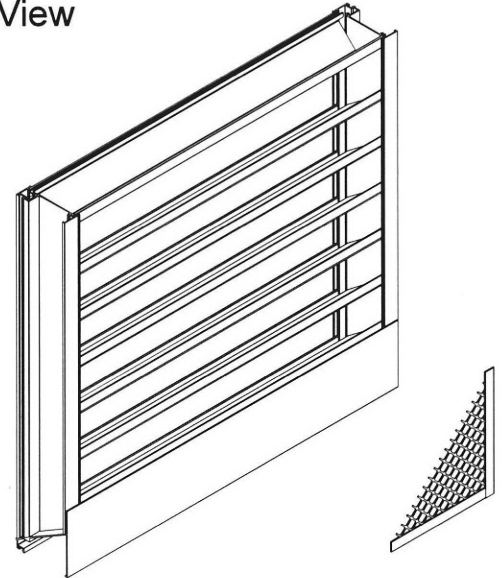
APPLICATION & DESIGN

ESD-435 is a weather louver designed to protect air intake and exhaust openings in building exterior walls. Design incorporates drain gutters in the head member and horizontal blades to channel water to the jambs where water is further channeled through vertical downspouts and out at the sloped sill. The ESD-435 is an extremely efficient louver with AMCA LICENSED PERFORMANCE DATA enabling designers to select and apply with confidence.

PRODUCT DETAILS

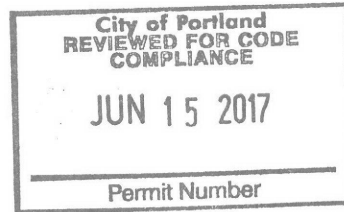
Frame: 4 in. x 0.081 in. Frame Thickness
Frame Type: Channel
Blades: 0.081 in. Fixed Blade Thickness
Material: Aluminum
Sizing: Nominal
Shape: Rectangular
Construction: Mechanically Fastened

Internal View



OPTIONS & ACCESSORIES

Finish: Mill
Bird Screen: 0.75 in. x 0.05 in., Flat Expanded Aluminum, Internal, Mill Finish
Warranty: 1 Yr (Standard) Product Warranty



Width and Height furnished approximately 0.250 in. under size.

SUMMARY

ID #	TAG	QTY.	W (in.)	H (in.)	FREE AREA (ft2)	FREE AREA (%)	SECT. WIDE	SECT. HIGH	SHIP SECT.
1-1		1	32	32	3.55	50.7	1	1	1

PERFORMANCE

ID #	TAG	APPLICATION	VOLUME (CFM)	PRESSURE DROP (in. wg)	FREE AREA VELOCITY (ft/min)	BPWP (ft/min)
1-1		Intake	1,725	0.04	486	989

**Calculated pressure drop does not include the effects of screens, filters or other accessories

Total Louver Qty: 1 **Total Weight (lb):** 24 **Louver Area (ft2):** 7
Total Ship Sect.: 1

**Weight shown is an estimate only based on the default base product configuration without options or accessories.

Larger openings may require field assembly of multiple louver panels to make up the overall opening size. Individual louver panels are designed to withstand windloads up to a maximum of 25 PSF (size and configuration dependent). Design, materials and installation of structural reinforcement required to adequately support large sections or multiple section assemblies within a large opening are not provided by Greenheck. Unless specifically indicated, the following are NOT included in the quote provided: structural steel, installation hardware (anchors, angle clips, continuous angles, shims, fasteners, inserts, backer rod and sealant), field measuring and/or installation, miscellaneous flashing, trim or enclosures, blank off panels, mullion covers or mullion hardware, hinged frames or removable subframes, custom bird/insect screen, 3-coat, metallic and/or exotic paint finishes, bituminous paints for unlike metals, any applicable taxes, stamped and sealed structural calculations seismic calculations or job specific engineered submittal drawings.

Louvers Product Limited Warranty

Thank you for purchasing Greenheck louvers. Greenheck warrants this equipment to be free from defect in material and workmanship for a period of **1 year** from the date of product shipment. Any units or parts, which prove defective during the warranty period, will be repaired or replaced at our option when returned to our factory, transportation prepaid. Unless agreed upon otherwise Greenheck will not be held responsible for costs associated with removal or installation of product(s).

The legal remedies described in this Limited Warranty are the sole exclusive remedy of Customer. This limited warranty will be void if payment from Customer is not received within a commercially reasonable time frame. GREENHECK 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 limited warranty is extended solely to the Customer. It is nontransferable and non-assignable, and the Customer 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 Customer.

In the event of material breach by the Customer of any of the conditions of this warranty, Greenheck shall have no liability for and product failure claims.

Failure to pay Greenheck in full for original services will automatically make this warranty null and void.

Greenheck will not be held liable for incidental or consequential damages of any kind. The limited warranty of product(s) replaced or repaired under this limited warranty shall be limited to the remainder of the original warranty period. Greenheck reserves the right to reasonable field access to diagnose and repair any product alleged to be defective. This limited warranty may not be modified by anyone and may not be changed by such things as purchase order forms or acceptance forms, unless otherwise agreed upon by Greenheck.

This limited warranty is provided in lieu of any other warranty requirements or obligations, including, but not limited to, those within project specifications.

All notices and claims given under or pursuant to this agreement shall be in writing and sent by certified or registered mail, postage prepaid, return receipt requested to: Greenheck, Attn: Louver Sales, 525 Western Road, Schofield, WI 54476.

By proceeding to use our products and services on your project, you accept the terms of these limited warranties.

