



**NSWC** NORMAN S. WRIGHT  
CLIMATEC  
MECHANICAL EQUIPMENT

5<sup>TH</sup> EDITION

**STOCK BOOK AND PRODUCT GUIDE**

## The Norman S. Wright Climatec Team of professionals assembled in Southern California has increasingly grown sales and influence in our market.

Norman S. Wright Climatec has rapidly grown in recent years to become one of the premier suppliers of HVAC products and services in the Southern California market. The company's roots began in 1996 as Airelink Products focusing mainly on air distribution products. Norman S. Wright partnered up with Airelink to form Norman S. Wright Airelink and in the process expanded the breath of product lines with a focus on engineering and applied equipment. In 2012 the company evolved to Norman S.



Wright of Southern California and continued to rapidly grow its engineering strengths and market presence. With the merging with Climatec Equipment in 2014, Norman S. Wright Climatec was formed, establishing uniform coverage across all of



Southern California with one of the most comprehensive offerings of HVAC products in the market.

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# FANS & ACCESSORIES



# FANS & ACCESSORIES - FAN SELECTION GUIDE

## Introduction to FAN SELECTION

This is a guide to the most basic fan sections, all of which enable you to select the right fan for the job. It will answer the following questions (and more):

What is a SONE?

- How are model numbers and performance tables used to select a fan?

- How are direct drive and belt driven fans different?

What types of motors are used with these fans?

The goal is to understand and use the Greenheck literature as an important tool in filling a customer's fan order.

TERMS	
cfm	Cubic Feet Per Minute. A measure of airflow.
Ps	Static Pressure. Resistance to airflow measured in inches of water gauge.
sone	A measure of loudness. One sone can be approximated as the loudness of a quiet refrigerator at a distance of 5 feet. Sones follow a linear scale, that is, 10 sones are twice as loud as 5 sones.
Bhp	Brake Horsepower. A measure of power consumption. Used to determine the proper motor horsepower and wiring.
hp	Horsepower. Used to indicate a fan's motor size.
rpm	Revolutions Per Minute. Measure of fan speed.
TS	Tip Speed. The speed of the tip of a fan wheel or prop measured in feet per minute.
AMCA	Air Movement & Control Association. A nationally recognized association which establishes standards for fan testing and performance ratings. AMCA also license air volume and sound certified ratings.

## MODEL DESIGNATION

For Greenheck belt drive models, the model designation tells the model type, size and the motor hp.

EXAMPLE: GB-090-6

Model is GB    |    |    hp is 1/6  
                    Nominal Wheel Dia. 9 in.

For direct drive units, the model designation tells the model type, the size and the motor/fan rpm.

EXAMPLE: G-121-B

Model is G    |    |    rpm is 1140  
                    Nominal Wheel Dia. 12 in.

## MOTOR INFORMATION (Belt Drive Only)

When specifying a belt drive fan, the model designation does not completely describe the unit. Additional information about the motor is necessary. These items are listed below:

### MOTOR ENCLOSURE

This will be either "Open" (open, drip proof), "TE" (totally enclosed) or "EXP" (explosion resistant). Open is the most common and will be supplied unless otherwise specified.

## DIRECT DRIVE

Selection of direct drive fans (those with the motor shaft connected to the fan wheel or propeller) is nearly the same as belt drive selection. However, there are two differences worth noting. Where belt drive fan speed can be altered by adjusting the motor pulley, direct drive fans (since they have no pulleys) must use a different method.

1 To adjust a direct drive fan's speed (also motor speed) or to provide a means of meeting an exact performance requirement, a speed control can be furnished. Speed controls vary the voltage supplied to the fan and slow it down; a principle similar to the way dimmer light switches work.

2 Models CUE and CW, sizes 060-095 and Model SQ, sizes 60-95, are provided with 115 volt, 60 cycle motors.

BELT DRIVE		DIRECT DRIVE	
Suffix	Motor hp	Suffix	Fan rpm
6	1/6	A	1725
4	1/4	B	1140
3	1/3	C	860
5	1/6	D	1550
7	3/4	G	1300
10	1	E	1050
15	1 1/2	F	880
20	2	P	1625
30	3		
50	5		
75	7 1/2		

This table lists model designation suffixes for motor horsepower and fan rpm.

Motors are available in either single speed or two speed. Single speed motors are 1725 rpm. Two speed motors will be 1725/1140 rpm. Single speed will be supplied unless otherwise specified.

### ELECTRICAL CHARACTERISTICS

Voltage and phase. Voltage can be 115, 208, 230 or 460. Phase is either single or 3 phase. A 115 volt, single phase motor is shown as 115/1. Typically, motors of 1/2 hp and less are single phase. Motors of 3/4 hp and greater are 3 phase.

TYPICAL MOTOR TAG - Electrical Instructions		
Suffix Letter	Motor Speed	Wiring Connections
D	1550 rpm	White to L1 Black to L2
G	1300 rpm	White to L1 Blue to L2
E	1050 rpm	White to L1 Red to L2

The three speeds are 1550 rpm (D), 1300 rpm (G) and 1050 rpm (E). Changing a motor lead is all that is necessary to change speeds. When selecting a model with a 3 speed motor, it is recommended that the G speed be chosen whenever possible. This is the middle speed, which gives the greatest flexibility in air volume because airflow can be increased or decreased simply by changing a motor lead.

## Introduction to FAN SELECTION

### MOTOR HORSEPOWER

The motor horsepower for direct drive fans is always sized by Greenheck and does not require further consideration. For belt drive models, the catalog identifies which horsepower is recommended. However, there are times when it is wise to bump the horsepower one size. For example, the hp recommended for the GB-180 at 810 rpm (2375 cfm @ .5" Ps, page reference 9) is 1/3 hp.

Although a 1/3 hp motor is recommended, it is not necessarily a good motor selection for this application. Our static pressure of 0.5 in. was only an estimate. It may actually turn out to be .625 in.

If this is the case, we will need a 1/2 hp motor because our fan will have to run at almost 810 rpm (refer to performance box - 2052 cfm at 0.625 in. Ps, page reference 9). Therefore, choosing a 1/2 hp motor in this case is exercising good judgement.

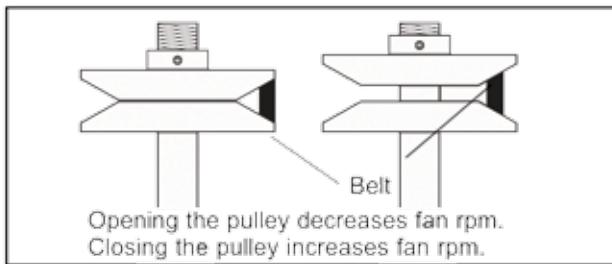
The complete model designation for this application is GB-180-5.

**NOTE:** The GB-180-5 has an rpm range of 700-940. This means that if the static pressure is less than estimated, say 0.25 in. Ps, the fan can be slowed down to accommodate this condition.

### BELT DRIVE

One advantage of choosing a belt drive over a direct drive is that it is capable of adjusting the fan rpm, which enables the fan to move more air if necessary.

Motor pulleys are adjusted by loosening the set screw and turning the top half of the pulley (see illustrations at right). This causes the pulley diameter to change, which results in changing the fan rpm.



### Motor Starting Torque

When selecting a motor for a centrifugal fan, the motor must be capable not only of driving the fan at operating speed, but must also be capable of accelerating the fan wheel, shaft and drive to the operating speed.

The fan performance tables and curves show the brake horsepower required to operate the fan once it is brought to speed. For applications requiring a large air volume at a low static pressure, the BHP required at the fan's operating RPM may not be sufficient to initially start the fan. If the time required to bring the fan to speed is excessive, the motor winding insulation can be damaged due to excessive temperature rise and the life of the motor seriously affected.

For a belt drive centrifugal fan, the required motor torque capability can be expressed by the following formula:

$$WR^2 = WR^2 f \times (FRPM / MRPM)^2 \times (1.1)$$

WR<sup>2</sup> = The moment of inertia that the motor must be capable of turning at the motor shaft. LB-Ft.2  
 WR<sup>2f</sup> = The moment of inertia of the fan wheel. LB-Ft.2

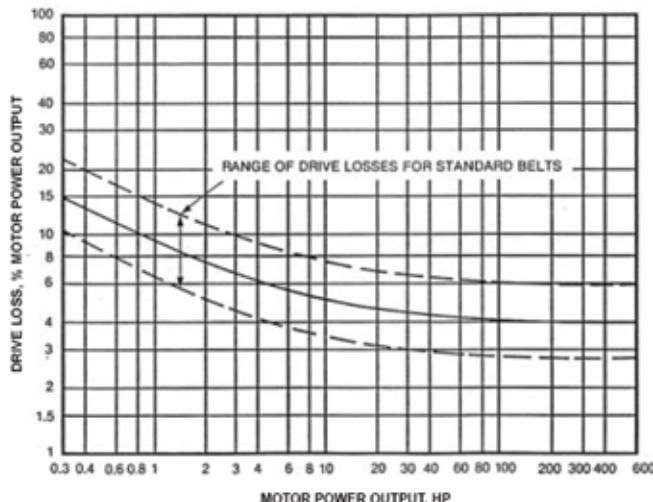
FRPM = Fan RPM

MRPM = Motor RPM

For a direct drive fan, WR<sup>2</sup> must exceed WR<sup>2f</sup>

## Introduction to FAN SELECTION

### ESTIMATED BELT DRIVE LOSS CHART



HIGHER BELT SPEEDS TEND TO HAVE HIGHER LOSSES THAN LOWER BELT SPEEDS AT THE SAME HORSEPOWER.

Drive losses are based on the conventional V-belt which has been the "work horse" of the drive industry for several decades.

#### Example:

- Motor power output is determined to be 13.3 hp
- The belts are the standard type and just warm to the touch immediately after shutdown.
- From the chart above, the drive loss = 5.1%
- Drive loss =  $0.051 \times 13.3 = 0.7$  hp
- Fan power input =  $13.3 - 0.7$  hp = 12.6 hp

Adapted from - AMCA Publication 203-90

## APPLICATIONS

Ventilating a building simply replaces stale or foul air with clean, fresh air. Although the ventilation process is required for many different applications, the airflow fundamentals never change:

UNDESIRED AIR OUT, FRESH AIR IN

The key variables that do change depending on applications are the fan model and the air volume flow rate (cfm). Other considerations include the resistance to airflow (static pressure or Ps) and sound produced by the fan (Sones).

Occasionally, a customer will require a fan to perform a particular function, yet does not know which model to use or even what cfm is necessary. In this case, some fan specification work must be done.

Fan specification is usually not a precise science and can be done confidently when the fan application is understood.

Based on the application, four parameters need to be determined. They are:

Fan Model

Cubic Feet per Minute (cfm)

Static Pressure (Ps)

Loudness limit (sones)

The information that follows will help walk you through this type of problem and enable you to select the right fan for the job.

## FAN MODEL

Fans all perform the basic function of moving air from one space to another. But the great diversity of fan applications creates the need for manufacturers to develop many different models. Each model has benefits for certain applications, providing the most economical means of performing the air movement function. The trick for most users is sorting through all of the models available to find one that is suitable for their needs.

## PROPELLER vs. CENTRIFUGAL WHEEL

Propeller fans provide an economical method to move large air volumes (5,000+ cfm) at low static pressures (0.50 in. or less). Motors are typically mounted in the airstream which limits applications to relatively clean air at maximum temperatures of 110°F.

Centrifugal fans are more efficient at higher static pressures and are quieter than propeller fans. Many centrifugal fan models are designed with motors mounted out of the airstream to ventilate contaminated and high temperature air.

## Introduction to FAN SELECTION

### DETERMINING CFM

After the model is known, the cfm must be determined. Consult local code requirements or the table below for suggested air changes for proper ventilation.

The ranges specified will adequately ventilate the corresponding areas in most cases. However, extreme conditions may require "Minutes per Change" outside of the specified range. To determine the actual number needed within a range, consider the geographic

location and average duty level of the area. For hot climates and heavier than normal area usage, select a lower number in the range to change the air more quickly. For moderate climates with lighter usages, select a higher number in the range.

To determine the cfm required to adequately ventilate an area, divide the room volume by the appropriate "Minutes per Change" value.

### SUGGESTED AIR CHANGES FOR PROPER VENTILATION

	cfm = Room Volume Min./Chg.		Room Volume = L x W x H (of room)		
Area	Min./Chg.	Area	Min./Chg.	Area	Min./Chg.
Assembly Hall . . . . .	3-10	Dance Hall . . . . .	3-7	Machine Shop . . . . .	3-6
Attic . . . . .	2-4	Dining Room . . . . .	4-8	Mill . . . . .	3-8
Auditorium . . . . .	3-10	Dry Cleaner . . . . .	2-5	Office . . . . .	2-8
Bakery . . . . .	2-3	Engine Room . . . . .	1-3	Packing House . . . . .	2-5
Bar . . . . .	2-4	Factory . . . . .	2-7	Projection Room . . . . .	1-2
Barn . . . . .	12-18	Foundry . . . . .	1-5	Recreation Room . . . . .	2-8
Boiler Room . . . . .	1-3	Garage . . . . .	2-10	Residence . . . . .	2-6
Bowling Alley . . . . .	3-7	Generator Room . . . . .	2-5	Restaurant . . . . .	5-10
Cafeteria . . . . .	3-5	Gymnasium . . . . .	3-8	Rest Room . . . . .	5-7
Church . . . . .	4-10	Kitchen . . . . .	1-5	Store . . . . .	3-7
Classroom . . . . .	4-6	Laboratory . . . . .	2-5	Transfer Room . . . . .	1-5
Club Room . . . . .	3-7	Laundry . . . . .	2-4	Warehouse . . . . .	3-10

### SAMPLE PROBLEM

A building requires an exhaust fan to ventilate a general office (see diagram below) which measures 30 ft. x 40 ft. x 8 ft. The office is often crowded.

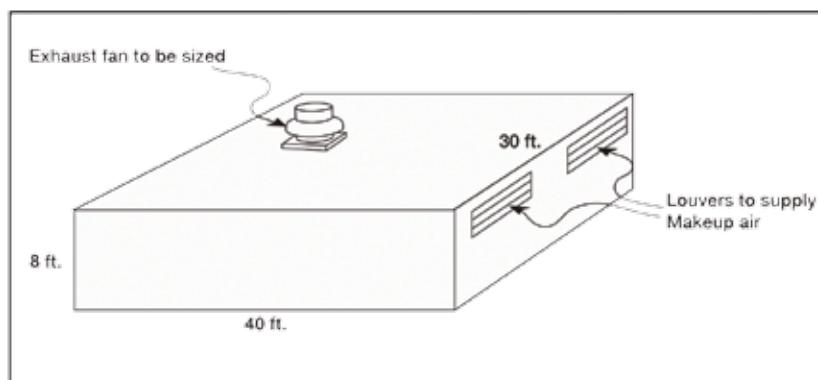
#### SOLUTION:

The total room volume is 30 ft. x 40 ft. x 8 ft. = 9600 cubic feet. From the chart, the range for general offices is 2-8 minutes per change. Since the office has heavier than normal usage, 4 minutes per change is recommended. Therefore, the required exhaust is:

$$\frac{9600 \text{ ft}^3}{4 \text{ min.}} = 2400 \text{ cfm}$$

Since the air to be exhausted is relatively clean, this is an ideal application for a model GB fan.

NOTE: In this example, make-up air was provided through a set of louvers at the wall farthest from the exhaust fan. If there were no provisions for make-up air in this room, a supply fan would also have to be sized. The supply cfm should equal the exhaust cfm. Supply fan location should be as far as possible from the exhaust fan.



## Introduction to FAN SELECTION

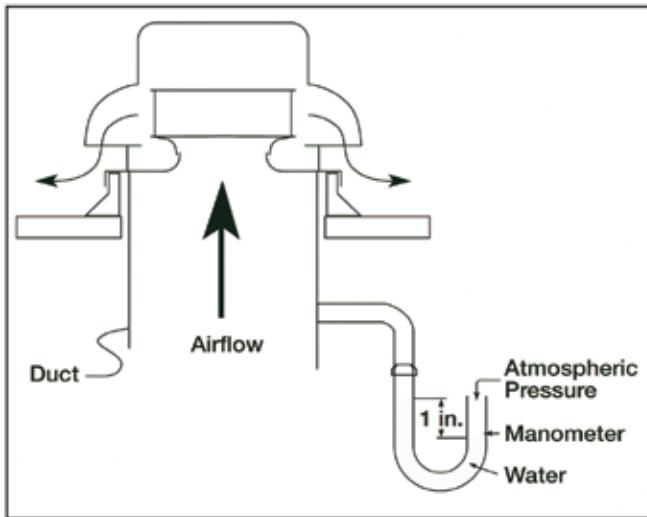
### DETERMINING STATIC PRESSURE (Ps)

The pressures generated by fans in ductwork are very small. Yet, accurately estimating the static pressure is critical to proper fan selection.

Fan static pressure is measured in inches of water gauge. One pound per square inch is equivalent to 27.7 in. of water gauge. Static pressures in fan systems are typically less than 2 in. of water gauge, or 0.072 Psi. The drawing below illustrates how static pressures are measured in ductwork with a manometer.

A pressure differential between the duct and the atmosphere will cause the water level in the manometer legs to rest at different levels. This difference is the static pressure measured in inches of water gauge.

In the case of the exhaust fan below, the air is being drawn upward through the ductwork because the fan is producing a low pressure region at the top of the duct. This is the same principle that enables beverages to be sipped through a straw.



To calculate the system losses, one must know the ductwork system configuration (see Ductwork figure).

This duct is sized for air velocities of 1400 feet per minute. Referring to the static pressure chart, that will result in about 0.3 in. per 100 feet. Since we have 10 feet of total ductwork, our pressure drop due to the duct is:

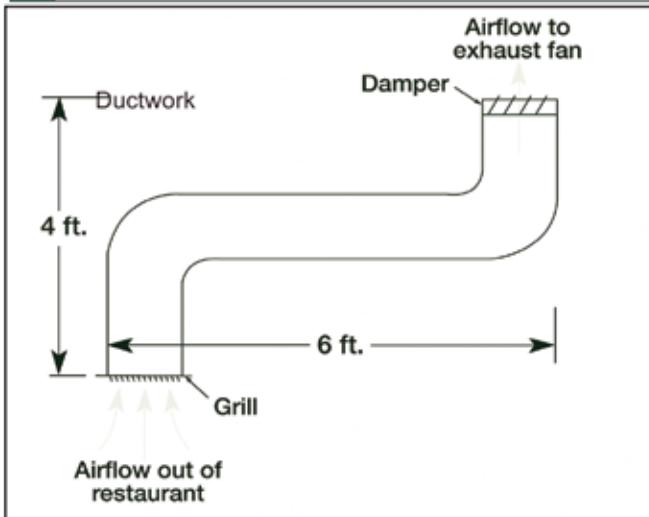
$$\frac{.3 \text{ in.}}{100 \text{ ft.}} \times 10 \text{ ft.} = .03 \text{ in.}$$

The amount of static pressure that the fan must overcome depends on the air velocity in the ductwork, the number of duct turns (and other resistive elements), and the duct length. For properly designed systems with sufficient make-up air, the guidelines in the table below can be used for estimating static pressure: [STATIC PRESSURE GUIDELINES](#)

STATIC PRESSURE GUIDELINES	
Non-Ducted	0.05 in. to 0.20 in.
Ducted	0.2 in. to 0.40 in. per 100 feet of duct (assuming duct air velocity falls within 1000-1800 feet per minute)
Fittings	0.08 in. per fitting (elbow, register, grill, damper, etc.)
Kitchen Hood Exhaust	0.625 in. to 1.50 in.

**IMPORTANT!**

Static pressure requirements are significantly affected by the amount of make-up air supplied to an area. Insufficient make-up air will increase static pressure and reduce the amount of air that will be exhausted. Remember, for each cubic foot of air exhausted, one cubic foot of air must be supplied.



There is also a 0.08 in. pressure drop for each resistive element or fitting. For this example, there are 5 fittings: one grill, two duct turns, one damper and louvers in the wall of the office. The total pressure drop for fittings is:

$$5 \times 0.08 \text{ in.} = 0.4 \text{ in.}$$

Therefore, the total pressure drop is:

$$0.03 \text{ in.} + 0.40 \text{ in.} = 0.43 \text{ in.}^*$$

\* NOTE: For convenience in using selection charts, round this value up to the nearest 1/8 in., which would be 0.50 Ps.

## Introduction to FAN SELECTION

### FAN LAWS

In a steady-state system, as the fan rpm changes, cfm, Ps and BHp (horsepower) also change. The equations below, known better as fan laws, show the relationship between these performance parameters.

$$cfm_{New} = \left( \frac{rpm_{New}}{rpm_{Old}} \right) \times cfm_{Old}$$

$$Ps_{New} = \left( \frac{rpm_{New}}{rpm_{Old}} \right)^2 \times Ps_{Old}$$

$$Bhp_{New} = \left( \frac{rpm_{New}}{rpm_{Old}} \right)^3 \times Bhp_{Old}$$

This equation relates horsepower to rpm. The change in horsepower can be determined when the rpm is increased by 25%. This is shown below:

$$Bhp_{New} = (1.25)^3 \times Bhp_{Old} = 1.95 \times Bhp_{Old}$$

**NOTE:** A 25% increase in rpm results in a 95% increase in horsepower. Considering this, initial fan selections should be sized with motor horsepowers greater than necessary if any increase in fan rpm is likely in the future.

### ADJUSTING FAN PERFORMANCE

There is a direct relationship between cfm and rpm within a system. Doubling the fan rpm will double the cfm delivered.

**Sample:** The example at the right shows a fan curve at 700 rpm which had an operating point of 1000 cfm at 0.25 in. Ps. What rpm is required to move 2000 cfm through the same system?

**Solution:** Within a system, cfm is directly related to rpm.

Therefore, the new rpm ( $rpm_2$ ) can be determined from the following equation:

$$rpm_2 = rpm_1 \times \left( \frac{cfm^2}{cfm^1} \right)$$

$$= 700 \text{ rpm} \times \left( \frac{2000 \text{ cfm}}{1000 \text{ cfm}} \right) = 1400 \text{ rpm}$$

Referring to figure at right, this results in sliding up the system resistance curve from 700 rpm to 1400 rpm.

Notice that as we doubled our airflow from 1000 cfm to 2000 cfm, the Ps went up from 0.25 in. to 1.0 in. It must be kept in mind that we are not changing the system, only increasing fan speed. Therefore, we must remain on the system resistance curve. Within a system, Ps varies as the square of cfm. Since cfm and rpm are directly proportional, an equation relating Ps and rpm can be derived as follows:

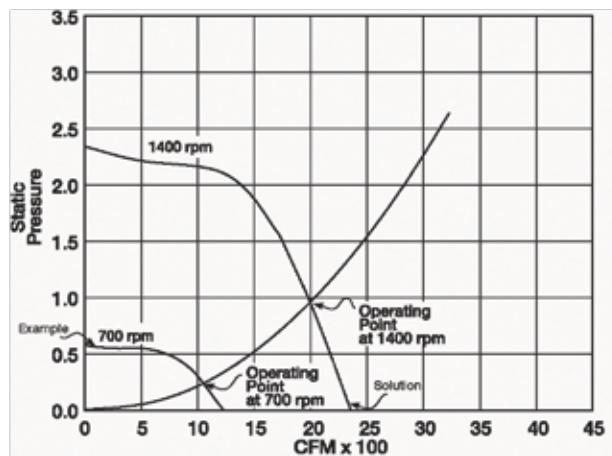
$$Ps_2 = Ps_1 \times \left( \frac{rpm^2}{rpm^1} \right)$$

For our example,

$$Ps^2 = 0.25 \text{ in.} \times \left( \frac{1400 \text{ rpm}}{700 \text{ rpm}} \right)^2 = 1.0 \text{ in.}$$

This verifies the operating point on the 1400 rpm curve (2000 cfm at 1.0 in. Ps). With this example, it should be clear how cfm, rpm and Ps tie together in a steady-state system.

### Varying Operating Points



# FANS & ACCESSORIES - FAN SELECTION GUIDE

## Introduction to FAN SELECTION

### SOUND LEVELS

In many cases, the sound generated by a fan must be considered. For the fan industry, a common unit for expressing sound pressure level is the sone. In practical terms, the loudness of one sone is equivalent to the sound of a quiet refrigerator heard from five feet away in an acoustically average room.

Sones are a linear measurement of sound pressure levels. For example, a sound level of 10 sones is twice as loud as 5 sones.

Refer to the Suggested Limits for Room Loudness chart to determine the acceptable sone range for the application. As a general guideline, choose a fan that has a sone value within the range specified.

### SUGGESTED LIMITS FOR ROOM LOUDNESS

Sones	DBA	Description
1.3-4	32-48	Private homes (rural and suburban)
1.7-5	36-51	Conference rooms
2-6	38-54	Hotel rooms, libraries, movie theatres, executive offices
2.5-8	41-58	Schools and classrooms, hospital wards, and operating rooms
3-9	44-60	Court rooms, museums, apartments, private homes (urban)
4-12	48-64	Restaurants, lobbies, general open offices, banks
5-15	51-67	Corridors and halls, cocktail lounges, washrooms and toilets
7-21	56-72	Hotel kitchens and laundries, supermarkets
12-36	64-80	Light machinery, assembly lines
15-50	67-84	Machine shops
25-60	74-87	Heavy machinery

From AMCA Publication 302 (Application of Sone Ratings for Non Ducted Air Moving Devices with Room-Sone-dBA correlations).

**85dB** Prolonged exposure to any noise at or above this level can cause hearing loss

**110db** Regular exposure of more than 1 minute risks permanent hearing loss



**NOTE:** Rooms with a hard construction (concrete block, tile floors, etc.) reflect sound. For these rooms, select fans on the lower end of the range. Rooms with soft construction or those with carpeting and drapes, etc., absorb sound. For these rooms, fans near the higher end of the range may be selected.

For example, an exhaust fan for an office in the "Suggested Limits for Room Loudness" chart below says that offices should have a loudness range from 4 to 12 sones. Comparing a GB-141, GB-161 and GB-180 fan for approximately 3100 cfm at 0" Ps only the GB-180 has a sone value of less than 12. Therefore, the GB-180 is the best selection for this application.

### FORMULAS & DEFINITIONS

Area Factor = Dimension in Square Feet

**CFM** = Cubic Feet per Minute  
= FPM x Area Factor

**FPM** = Feet per Minute

= CFM / Area Factor

**VP** = Velocity Pressure

= (FPM / 4005)<sup>2</sup>

**SP** = Static Pressure

= TP - VP

**Δ** = Delta T (DT)

**ΔP** = Differential Pressure

= Static Differential Pressure

**ΔP<sub>S</sub>** = SP<sub>1</sub> - SP<sub>2</sub>

**ΔP<sub>T</sub>** = Total Differential Pressure

= TP<sub>1</sub> - TP<sub>2</sub>

### COILS

**BTU** = British Thermal Units

**GPM** = Gallons per Minute

**MBH** = 1000's BTU's per Hour

**TON** = 12,000 BTU's

**ΔT** = Temperature Differential

= KW x 3160/CFM

**KW** = Kilowatts

= CFM x DT/3160

= 927 x MBH/CFM

**ΔTAir** = 2.04 x MBH/GPM

### CONVERSION FACTORS

#### AIR VOLUME

M<sup>3</sup>/Second x 2118.6 = CFM

M<sup>3</sup>/Hour x 0.5886 = CFM

#### DIMENSIONS

Meters x 39.37 = Inches

Meters x 3.280833 = Feet

CM x 0.3937 = Inches

MM x 0.03937 = Inches

#### HEAT

KW x 3412 = BTUH

#### TEMPERATURE

(°C x 1.8) + 32 = °F

#### VELOCITY

CM/S x 1.9685 = FPM

#### WATER VOLUME

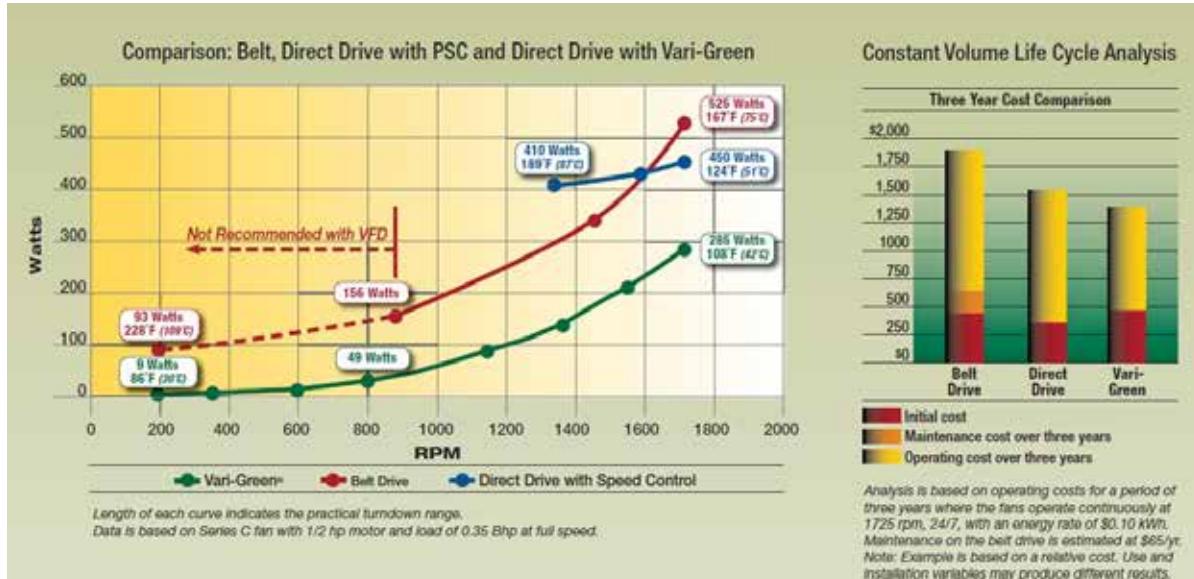
Liters/Second x 15.850 = GPM

#### WC PRESSURE

Pa (Pascals) x 0.0040 = Inches

## VARI-GREEN MOTOR

The Vari-Green motor is a low-cost, easy to control, electronically commutated (EC) motor that uses AC input power and internally converts it to a DC power supply. This highly reliable, energy efficient, low maintenance motor is capable of an 80% turndown and is changing the way the industry designs, specifies and operates air movement equipment



### Better than a PSC

- Potentiometer dial pre-mounted on motor for speed control
- 80% usable turndown vs. 30%
- No speed controller to wire
- 20%-70% energy savings
- Full speed range for better adjustment

### More Efficient than Belts

- Potentiometer dial pre-mounted on motor for speed control
- No belt and pulley losses
- Higher efficiency motor
- Comparable up-front cost
- No maintenance required

### Easier than VFD's

- 0-10 volt control wires pre-installed in motor
- No VFD to buy or install
- 30% energy savings
- Lower up-front cost
- Eliminates stray current and carrier frequencies

### Reliability

With industry leading technology comes a new standard in motor reliability.

- No shaft grounding required regardless of the turndown
- Bearing life is greater since the motor runs cooler at lower speeds
- No voltage or current spikes as in VFD controlled motors

### Electronic Commutation

Electronic commutation uses circuitry to control the motor's functions: Solid state circuitry controls the output of power and the speed of rotation. Internal circuitry converts AC voltage to DC voltage for increased efficiencies and offers full control over speed.

Motor Information					
HP	RPM	Volts	Phase	FLA	Enclosure
1/6	1725	115	Single	3.1	TENV
1/4	1725	115	Single	3.9	ODP
1/2	1725	115	Single	6.2	ODP
1/2	2500	115	Single	6.5	ODP
3/4	1725	115	Single	10.1	ODP
3/4	2200	115	Single	11.3	ODP
1	1725	115	Single	12.4	ODP
1	1725	115/208-230	Single	12.0/6.0	TEFC
2	1725	208-230	Single	12.0	TEFC

## DIRECT DRIVE ROOF EXHAUST FANS - MODEL G

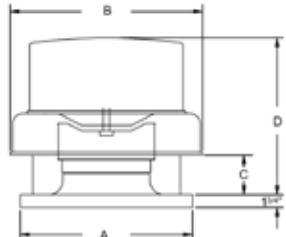
Model G Centrifugal Roof Exhaust fans are direct drive. These fans are specifically designed for roof mounted applications exhausting relatively clean air. Fan wheels are centrifugal, backward inclined, and constructed of aluminum.



 **GREENHECK**  
Building Value in Air.

### Features

- Aluminum housing
- Non-overloading backward inclined wheel
- Aluminum curb cap with prepunched mounting holes
- Integral reinforced bead for strength on hood
- Galvanized birdscreen
- Ball bearing motors (sizes 101-180), sleeve bearing motors (sizes 060-095)
- Motor isolated on shock mounts
- Corrosion resistant fasteners
- Nema-1 disconnect
- UL/cUL 705 Electrical

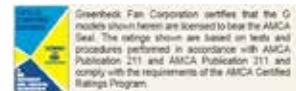


### Dimensions

Model	A	B	C	D*	Weight	Roof Opening	Damper Size
<b>G-060</b>	17"	19 3/8"	03"	12 1/8"	15lbs	10 1/2" x 10 1/2"	08" x 08"
<b>G-065</b>	17"	19 3/8"	03"	12 1/8"	15lbs	10 1/2" x 10 1/2"	08" x 08"
<b>G-070</b>	17"	19 3/8"	03"	12 1/8"	15lbs	10 1/2" x 10 1/2"	08" x 08"
<b>G-075</b>	17"	19 3/8"	03"	12 1/8"	15lbs	10 1/2" x 10 1/2"	08" x 08"
<b>G-080</b>	17"	21 3/4"	4"	14 5/8"	19lbs	12 1/2" x 12 1/2"	10" x 10"
<b>G-085</b>	17"	21 3/4"	4"	14 5/8"	19lbs	12 1/2" x 12 1/2"	10" x 10"
<b>G-090</b>	17"	21 3/4"	4"	14 5/8"	22lbs	12 1/2" x 12 1/2"	10" x 10"
<b>G-095</b>	17"	21 3/4"	4"	14 5/8"	22lbs	12 1/2" x 12 1/2"	10" x 10"
<b>G-103</b>	19"	24 3/8"	4 3/8"	23 3/4"	54lbs	14 1/2" x 14 1/2"	12" x 12"
<b>G-103</b>	19"	24 3/8"	4 3/8"	23 3/4"	54lbs	14 1/2" x 14 1/2"	12" x 12"
<b>G-123</b>	19"	24 3/8"	4 3/8"	23 3/4"	58lbs	14 1/2" x 14 1/2"	12" x 12"
<b>G-133</b>	19"	28 3/8"	4	23 3/4"	62lbs	14 1/2" x 14 1/2"	12" x 12"
<b>G-143</b>	22"	28 3/8"	4	23 3/4"	77lbs	18 1/2" x 18 1/2"	16" x 16"
<b>G-163</b>	22"	28 3/8"	4	23 3/4"	101lbs	18 1/2" x 18 1/2"	16" x 16"

\* May be greater depending on motor. All dimensions in inches

- Dimension A - given is the inside dimensions of the curb cap
- The roof curb should be 1 1/2 in. less than the curb cap to allow for roofing and flashing



**Performance**

Performance capabilities in inventory range from 138 cfm to 3,367 cfm at 0 in. wg of static pressure.

Item Number	Model	HP		RPM	TS	SONES @ 0 in.	MAX BHP	Performance in Inches WG						
		0	0.125					0	0.125	0.25	0.375	0.5	0.625	0.75
005-0400	G-060	E	1/200	1050	2234	1.7	0.005	138	73					
		G	1/100	1300	2765	2.9	0.009	170	125					
		D	1/60	1550	3297	4.2	0.016	203	166	120				
005-04040	G-065	E	1/100	1050	2234	2.2	0.007	187	110					
		G	1/60	1300	2765	3.2	0.012	231	178	91				
		D	1/30	1550	3297	4.9	0.022	276	232	176	96			
005-0408	G-070	E	1/100	1050	2234	2.7	0.008	254	179					
		G	1/60	1300	2765	4.1	0.015	314	257	171				
		D	1/30	1550	3297	5.6	0.026	374	327	274	190			
005-0412	G-075	E	1/80	1050	2234	3.6	0.011	296	200					
		G	1/50	1300	2765	4.1	0.021	367	294	195				
		D	1/25	1550	3297	6.1	0.035	438	377	310	214			
005-0416	G-080	E	1/40	1050	2990	3.8	0.017	335	249	134				
		G	1/30	1300	3701	5.4	0.033	415	348	272	175			
		D	1/20	1550	4413	7.3	0.057	495	439	379	314	238		
005-0421	G-085	E	1/40	1050	2990	4	0.019	399	307	179				
		G	1/30	1300	3701	5.5	0.036	494	421	340	233			
		D	1/20	1550	4413	7.6	0.062	588	529	464	393	308	169	
005-0426	G-090	E	1/40	1050	2990	4	0.024	520	420	292				
		G	1/25	1300	3701	5.4	0.045	644	564	478	373			
		D	1/15	1550	4413	7.6	0.076	768	700	633	558	472	338	
005-0431	G-095	E	1/30	1050	2990	5.4	0.037	717	569	389				
		G	1/12	1300	3701	7.6	0.071	888	780	640	493	184		
		D	1/8	1550	4413	9.6	0.12	1059	969	863	745	623	474	
005-0434	G-103-AX		1/4	1725	5278	12.2	0.29	1462	1405	1351	1298	1250	1193	1126
005-0438	G-103-BX		1/6	1140	3488	6.6	0.08	966	883	805	702	507		
005-0441	G-123-BX		1/6	1140	3712	8.4	0.14	1383	1300	1213	1112	993	831	
005-0447	G-133-BX		1/6	1140	4160	10.0	0.17	1618	1535	1444	1340	1211	1031	
005-0449	G-143-BX		1/3	1140	4365	11.0	0.29	2115	2008	1905	1792	1660		
005-0455	G-163-BX		1/2	1140	4887	15.9	0.54	3367	3219	3072	2922	2761		

- Performance and values shown are certified for installation type A: Free inlet, Free outlet
- Power rating (BHP) does not include transmission losses
- Performance ratings include the effects of a birdscreen
- 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
- Value Ratings Seal applies to sone ratings only

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## DIRECT DRIVE ROOF EXHAUST FANS- MODEL G WITH VARI-GREEN MOTORS

These Model G Centrifugal Roof Exhaust fans utilizes Greenheck's Vari-Green™ motor technology for energy efficiency and lower maintenance. When these motors are combined with Greenheck's Model-G fans, all the CFM and static pressure ranges of a belt drive can be attained with the benefits of a direct drive.



### Features

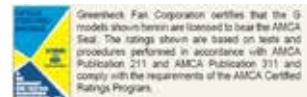
A potentiometer (dial on motor control) is mounted right on the motor for easy speed adjustment for system balance. Simply turn a dial instead of adjusting belts and pulleys

### Benefits

- Operates on AC power that's converted to DC— providing a more efficient motor operation as compared to AC operation
- The motor can attain up to 85% efficiency and reduce energy consumption
- Watt savings of 30-70% depending on RPM. Note: As motor speed is turned down, efficiency stays constant as compared to an AC motor that decreases dramatically
- Operates cooler than a standard AC motor. A cooler motor has longer motor life and reduces energy consumption
- G fans with Vari-Green motors can provide all the CFM and static pressure ranges of a comparable belt drive
- Maintenance costs are reduced as there are no belts or bearings to replace and no pulleys to adjust
- Direct drive fans are often preferred where maintenance access is difficult
- The Vari-Green motor reduces noise and vibration as well as providing solutions for variable volume system balancing

### Dimensions

These fans have the same dimensions as the Model- G Fans. Please reference page 18 for these dimensions.



**Performance**

Performance capabilities in inventory range from 335 cfm to 5,095 cfm at 0 in. wg of static pressure.

Item Number	Model	Motor	RPM	TS	SONES @ 0 in.	MAX BHP	Performance in Inches WG								
							0	0.125	0.25	0.375	0.5	0.625	0.75	1	1.25
N/A	G-080-VG	VG-1/4	1050	2990	3.8	0.017	335	249	134						
			1300	3701	5.4	0.033	415	348	272	175					
			1550	4413	7.3	0.057	495	439	379	314	238				
			1725	4911	9.1	0.08	551	501	449	392	332	260			
005-0508	G-085-VG	VG-1/4	1050	2990	4	0.019	399	307	179						
			1300	3701	5.5	0.036	494	421	340	233					
			1550	4413	7.6	0.062	588	529	464	393	308	169			
			1725	4911	9.5	0.09	654	602	544	486	419				
N/A	G-090-VG	VG-1/4	1050	2990	4	0.024	520	420	292						
			1300	3701	5.4	0.045	644	564	478	373					
			1550	4413	7.6	0.076	768	700	633	558	472	338			
			1725	4911	9.7	0.11	855	794	735	671	600	522			
005-0509	G-099-VG	VG-1/4	1050	2990	5.4	0.037	717	569	389						
			1300	3701	7.6	0.071	888	780	640	493	184				
			1550	4413	9.6	0.12	1059	969	863	745	623	474			
			1725	4911	11.4	0.16	1179	1098	1013	903	800	688			
005-0513	G-103-VG	VG-1/4	720	2144	3.8	0.02	610	477							
			860	2561	4.6	0.04	729	623	473						
			1000	2978	5.5	0.05	848	753	654	481					
			1140	3395	6.6	0.08	966	883	805	702	507				
			1245	3708	7.5	0.11	1055	978	908	824	715				
			1350	4020	8.5	0.14	1144	1073	1006	938	851	731			
			1450	4318	9.3	0.17	1229	1162	1099	1041	965	878	750		
			1555	4631	10.2	0.21	1318	1255	1196	1140	1079	1005	917		
			1660	4943	11.4	0.25	1407	1348	1292	1238	1187	1122	1050	841	
			1725	5137	12.2	0.29	1462	1405	1351	1298	1250	1193	1126	955	
			580	1984	3.2	0.01	704	515							
			720	2462	4.2	0.04	873	735	523						
			860	2941	5.4	0.06	1043	932	796	580					
			1000	3420	6.7	0.09	1213	1119	1013	883	694				
N/A	G-123-VG	VG-1/2	1140	3899	8.4	0.14	1383	1300	1213	1112	993	831			
			1265	4326	10.2	0.19	1535	1460	1384	1299	1204	1093	950		
			1395	4771	12.5	0.24	1692	1625	1557	1484	1404	1315	1214	907	
			1475	5045	13.5	0.31	1789	1726	1661	1594	1521	1441	1356	1132	
			1550	5301	14.6	0.33	1880	1820	1759	1696	1629	1555	1475	1289	974
			1635	5592	15.9	0.41	1983	1926	1868	1810	1747	1680	1608	1446	1231
			1725	5900	17.4	0.47	2093	2038	1984	1928	1871	1810	1746	1600	1426
			580	1993	4.5	0.02	823	626							
			720	2474	5.4	0.04	1022	879	650						
			860	2955	6.6	0.07	1221	1106	962	727					
			1000	3436	8.1	0.11	1419	1323	1213	1075	867				
			1140	3917	10	0.17	1618	1535	1444	1340	1211	1031			
005-0533	G-133-VG	VG-3/4	1250	4295	12	0.22	1774	1698	1617	1528	1426	1133			
			1315	4518	13.2	0.26	1866	1794	1718	1637	1545	1435	1305		
			1440	4948	15	0.34	2044	1978	1911	1838	1759	1674	1571	1299	
			1600	5498	16.2	0.47	2271	2212	2152	2088	2023	1873	1783	1686	1425
			1685	5790	16.9	0.52	2391	2335	2279	2219	2158	2020	1946	1857	1654
			1725	5927	17.4	0.58	2448	2393	2338	2281	2220	2159	2089	1935	1746
			580	2221	4.7	0.04	1076	855							
			720	2757	5.8	0.08	1336	1169	938						
			860	3293	7.1	0.13	1595	1457	1304	1085					
			950	3638	8.1	0.17	1762	1636	1506	1344	1085				
			1075	4116	10	0.26	1994	1882	1771	1647	1490	1266			
N/A	G-143-VG	VG-3/4	1140	4365	11	0.29	2115	2008	1905	1792	1660	1488	1233		
			1265	4844	12.9	0.35	2347	2250	2158	2062	1955	1832	1677	1048	
			1360	5207	14.6	0.51	2523	2433	2347	2259	2166	2062	1943	1602	
			1450	5552	16.2	0.63	2690	2606	2524	2443	2358	2266	2165	1905	1501
			1550	5935	17.7	0.65	2845	2797	2719	2644	2566	2487	2396	2191	1910
			1725	6605	25	1.07	3200	3129	3059	2991	2923	2853	2782	2619	2427
			580	2524	5.8	0.078	1713	1417	970						
			720	3133	7.8	0.15	2127	1893	1632	1243					
			860	3743	10.5	0.26	2540	2344	2145	1913	1596				
			945	4113	12.6	0.34	2791	2612	2434	2236	2010	1692			
			1050	4570	14.4	0.47	3102	2940	2782	2616	2429	2217	1937		
			1100	4787	15.3	0.53	3249	3095	2943	2787	2615	2429	2198		
			1140	4961	15.9	0.6	3367	3219	3072	2922	2761	2587	2382	1808	
			1200	5222	17	0.69	3545	3403	3263	3123	2977	2813	2641	2167	
N/A	G-163-VG	VG-2	1375	5984	21	1.04	4062	3938	3815	3694	3571	3444	3304	3007	2609
			1575	6854	26	1.57	4652	4545	4437	4330	4225	4118	4007	3769	3512
			1725	7507	30	3.22	5095	4997	4899	4800	4704	4608	4510	4308	4082

- Performance and values shown are certified for installation type A: Free inlet, Free outlet.

• Power rating (BHP) does not include transmission losses.

• Performance ratings include the effects of a birdscreen.

• 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.

• Value Ratings Seal applies to sone ratings only.

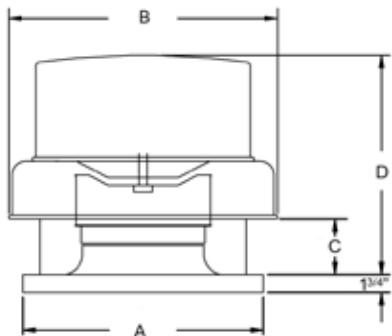
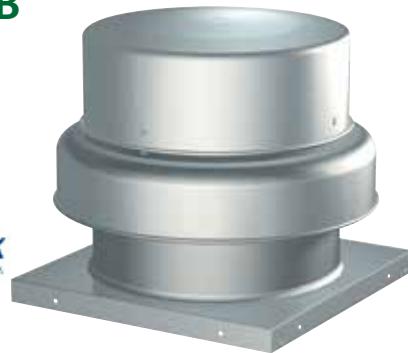
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## BELT DRIVE ROOF EXHAUST FANS - MODEL GB

Model GB Centrifugal Roof Exhaust fans are belt drive. These fans are specifically designed for roof mounted applications exhausting relatively clean air. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. Adjustable motor pulleys allow for final system balancing.

### Features

- Aluminum housing
- Non-overloading backward inclined wheel
- Galvanized birdscreens
- Integral reinforcing bead for strength
- Double studded isolators for true vibration isolation
- Motor out of airstream
- Motor pulley is adjustable for system balancing
- Nema-1 disconnect
- Lifting lugs (mid and larger sizes)
- UL/cUL 705 electrical



### Options and Accessories

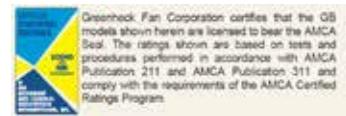
- Gravity and motorized dampers
- Galvanized roof curbs
- Aluminum roof curbs
- Extended bases
- Insect screen bases
- Aluminum birdscreens
- Curb seal
- Hinged curb cap w/cable
- Curb adaptors
- Tie down points
- Relubricatable bearings
- Dual drives
- UL/cUL 705 electrical
- NEMA 3R and EXP disconnect switches
- Greenheck coatings

### Dimensions

Model	A	B	C	D*	Damper Size	Roof Opening	Weight
<b>GB-071</b>	19"	24 3/8"	4 3/8"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	60lbs
<b>GB-081</b>	19"	24 3/8"	4 3/8"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	60lbs
<b>GB-091</b>	19"	24 3/8"	4 3/8"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	61lbs
<b>GB-101</b>	19"	24 3/8"	4 3/8"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	61lbs
<b>GB-121</b>	19"	24 3/8"	4 3/8"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	66lbs
<b>GB-131</b>	19"	28 3/8"	4"	23 3/4"	12" x 12"	14 1/2" x 14 1/2"	67LBS
<b>GB-141</b>	22"	28 3/8"	4"	23 3/4"	12" X 12" or 16" x 16"	18 1/2" x 18 1/2"	86lbs
<b>GB-161</b>	22"	28 3/8"	4"	23 3/4"	12" X 12" or 16" x 16"	18 1/2" x 18 1/2"	88lbs
<b>GB-180</b>	30"	35 1/2"	5 1/2"	28"	18" x 18"	20 1/2" x 20 1/2"	142lbs
<b>GB-200</b>	30"	35 1/2"	5 1/2"	28"	18" x 18"	20 1/2" x 20 1/2"	144lbs
<b>GB-240</b>	34"	42 3/4"	5 3/4"	31 1/2"	24" x 24"	26 1/2" x 26 1/2"	165lbs
<b>GB-300</b>	40"	50"	8 1/4"	36"	30" x 30"	32 1/2" x 32 1/2"	320lbs
<b>GB-360</b>	46"	58 3/4"	8 7/8"	38 1/2"	36" x 36"	38 1/2" 38 1/2"	415lbs

\*May be greater depending on motor. All dimensions in inches.

- Dimension A - given is the inside dimensions of the curb cap.
- The roof curb should be 1 1/2 in. less than the curb cap to allow for roofing and flashing



**Performance**

Performance capabilities in inventory range from 272 cfm to 18,322 cfm at 0 in. wg of static pressure.

Item Number	Model	HP	RPM	TS	Sones @ 0 In.	MAX BHP	Performance in Inches WG									
							0	.125	.25	.375	.5	.625	.75	1	1.5	2
005-0603	GB-071-4	1/4 1/6	1247	3652	6.5	0.05	272	246	217	185	154	109				
			1556	4558	9.3	0.098	339	319	296	274	248	223	197	120		
			1710	5009	11.1	0.13	373	353	335	312	292	269	246	198		
005-0609	GB-081-4	1/4	1247	3652	7.6	0.073	625	575	525	470	403	284				
			1556	4558	10.8	0.14	779	740	700	660	615	571	517			
			1710	5009	12.5	0.19	856	821	785	748	710	669	630	511		
		1/6	1725	5207	12.7	0.17	864	829	793	756	719	679	640	527		
005-0615	GB-091-4X	1/4	1247	3652	9.2	0.098	945	866	785	698	604	454				
			1556	4558	11.8	0.19	1179	1116	1052	988	919	848	772	504		
			1710	5009	13.4	0.25	1296	1238	1180	1122	1062	999	934	785		
005-0624	GB-101-4X	1/4	1400	4077	8.9	0.16	1186	1117	1051	989	909	810	633			
005-0617	GB-101-LMD	1/3	1800	5242	13.2	0.33	1525	1471	1418	1367	1320	1270	1208	1064		
005-0630	GB-121-4X	1/4	595	2035	3.3	0.021	722	542								
			820	2804	5.2	0.054	995	877	728							
			1045	3574	7.3	0.111	1268	1177	1078	962	805					
			1395	4770	12.5	0.25	1692	1625	1557	1484	1404	1315	1214	907		
005-0626	GB-121-LMD	1/3	1550	5300	14.6	0.33	1880	1820	1759	1696	1629	1555	1475	1289		
		1/2	1725	5899	17.4	0.5	2093	2038	1984	1928	1871	1810	1743	1600		
005-0633	GB-131-4X	1/4	595	2044	4.5	0.024	844	655								
			720	2474	5.4	0.043	1022	879	650							
			960	3299	7.6	0.103	1362	1262	1144	990						
			1315	4518	13.2	0.26	1866	1794	1718	1637	1545	1435	1305			
005-0631	GB-131-LMD	1/3	1440	4948	15	0.35	2044	1978	1911	1838	1759	1674	1571	1299		
		1/2	1685	5790	16.9	0.56	2391	2335	2279	2219	2158	2093	2020	1857		
005-0636	GB-141-LMD	1/4	525	2010	4.4	0.03	974	709								
			710	2718	5.7	0.074	1317	1147	908							
			920	3522	7.7	0.16	1706	1576	1439	1258	961					
			1075	4115	10	0.26	1994	1881	1771	1646	1489	1265				
		1/3	1170	4479	11.4	0.34	2170	2066	1966	1858	1733	1574	1355			
		1/2	1360	5207	14.6	0.53	2522	2433	2346	2258	2166	2062	1942	1602		
		3/4	1545	5915	17.6	0.78	2866	2787	2709	2634	2556	2475	2384	2176		
		1	1705	6528	20	1.03	3163	3091	3020	2952	2883	2811	2739	2574		
005-0654	GB-161-LMD	1/4	478	2080	4.7	0.044	1412	1030								
			625	2720	6.4	0.097	1846	1574	1221							
			865	3764	10.6	0.26	2555	2359	2162	1932	1624					
			1/3	945	4113	12.6	0.34	2791	2612	2433	2236	2009	1692			
		1/2	1100	4787	15.3	0.53	3249	3094	2943	2786	2614	2428	2197			
		3/4	1250	5440	17.9	0.79	3692	3556	3421	3288	3149	2997	2838	2443		
		1	1375	5984	21	1.05	4062	3938	3815	3694	3571	3444	3304	3007		
005-0670	GB-180-LMD	1/4	495	2397	4.3	0.078	1924	1645	1150							
			730	3535	7.4	0.26	2838	2667	2469	2212	1882					
			1/3	810	3923	8.8	0.35	3149	2997	2832	2623	2375	2052			
			1/2	940	4552	12.7	0.55	3655	3526	3387	3234	3052	2843	2600		
		3/4	1055	5109	16.2	0.77	4102	3989	3866	3741	3596	3432	3251	2811		
		1	1185	5739	19	1.1	4607	4507	4400	4290	4179	4045	3900	3575		
		1 1/2	1335	6465	22	1.54	5191	5102	5010	4912	4814	4715	4599	4343		
		2	1460	7071	26	1.97	5677	5595	5514	5424	5335	5245	5155	4938	4426	3765

# FANS & ACCESSORIES - GREENHECK

## Performance (Continued)

Item Number	Model	HP	RPM	TS	Sones @ 0 In.	Max BHP	Performance in Inches WG									
							0	.125	.25	.375	.5	.625	.75	1	1.5	2
005-0681	GB-200-LMD	1/4	440	2462	6.5	0.103	2434	1975								
			3357	8.5	0.26	3320	2984	2637	2088							
		1/3	665	3721	9.6	0.35	3679	3378	3084	2705	2087					
		1/2	770	4308	12.1	0.55	4260	4013	3744	3477	3140	2643				
		3/4	860	4812	14.1	0.77	4759	4548	4289	4068	3810	3504	3085			
		1	965	5400	16.7	1.09	5340	5157	4927	4719	4519	4285	4015	3239		
		1 1/2	1090	6099	20	1.57	6031	5870	5681	5473	5301	5123	4924	4449		
		2	1200	6715	24	2.09	6640	6493	6336	6144	5968	5812	5650	5274	4177	
005-0684	GB-240-LMD	1/4	425	2726	5.9	0.21	3902	3422	2691							
			460	2950	6.7	0.26	4223	3784	3188	2036						
		1/3	505	3239	7.8	0.35	4636	4241	3760	3059						
		1/2	585	3752	10.3	0.55	5371	5030	4665	4194	3562	2112				
		3/4	660	4233	13.1	0.79	6059	5756	5449	5093	4636	4073	3217			
		1	730	4682	15.8	1.06	6702	6427	6157	5861	5506	5076	4567			
		1 1/2	825	5291	19.7	1.54	7574	7331	7091	6844	6573	6261	5901	5002		
		2	910	5836	24	2.06	8355	8134	7916	7699	7467	7214	6932	6240	3707	
005-0687	GB-300-LMD	1/3	300	2395	9.3	0.19	4859	3976								
			365	2914	9.2	0.35	5912	5222	4339							
		1/2	420	3353	9.6	0.53	6803	6221	5536	4640						
		3/4	475	3792	11.4	0.77	7694	7197	6615	5954	5094					
		1	530	4231	13.4	1.07	8584	8149	7639	7094	6455	5667	4194			
		1 1/2	600	4790	15.9	1.55	9718	9334	8906	8445	7951	7387	6721			
		2	665	5309	18.8	2.12	10771	10424	10059	9648	9228	8772	8268	7025		
		3	760	6068	23	3.15	12310	12007	11703	11357	10996	10629	10241	9369		
005-0696	GB-360-LMD	5	890	7106	28	5.05	14416	14157	13897	13638	13335	13027	12716	12072	10536	7963
		1/2	300	2827	7.6	0.4	8024	7070	5804							
		3/4	365	3440	10.8	0.72	9763	9024	8109	7013						
		1	410	3864	13.7	1.02	10966	10330	9558	8686	7641					
		1 1/2	483	4552	17	1.67	12919	12379	11776	11109	10355	9517				
		2	543	5118	20	2.38	14524	14043	13551	12959	12350	11679	10965	8917		
		3	580	5467	26	3.77	16931	15064	14614	14077	13523	14639	12289	10813		
		5	685	6456	30	4.77	18322	17941	17560	17179	16711	16243	15774	14710	13535	12119

- Performance and values shown are certified for installation type A: Free inlet, Free outlet
- Power rating (BHP) does not include transmission losses
- Performance ratings include the effects of a birdscreen
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301
- The AMCA Certified Ratings Seal applies to sone ratings only

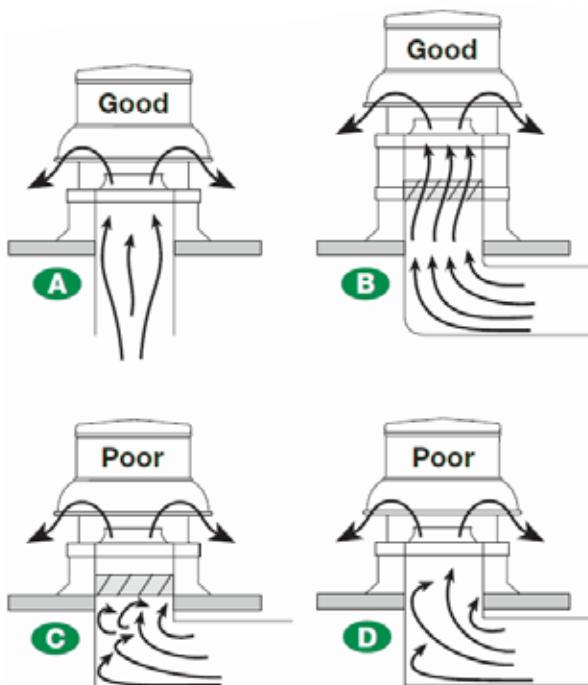
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**Typical Installations**

## Fan Inlet Connections

In order to assure proper fan performance, caution must be exercised in fan placement and connection to the ventilation system. Obstructions, transitions, poorly designed elbows, improperly selected dampers, etc., can cause reduced performance, excessive noise, and increased mechanical stress. For performance to be as published, the system must provide uniform and stable airflow into the fan.

- A** Provide uniform airflow at fan inlet to assure optimum performance.
- B** Provide uniform airflow at fan inlet and through the damper to assure optimum performance.
- C** Dampers must open fully. Use motorized dampers in low airflow applications to reduce losses.
- D** Avoid sharp turns or entrance conditions which cause uneven flow. Use turning vanes in elbows to reduce adverse effects.



## BELT DRIVE UPBLAST ROOF EXHAUST FANS - MODEL CUBE

Model CUBE Centrifugal Roof Exhaust fans are belt drive. These fans are specifically designed for roof mounted applications. Exhaust air is discharged directly upward, away from the roof surface. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. Adjustable motor pulleys allow for final system balancing. Listed for Grease Removal with UL 762.

### Features

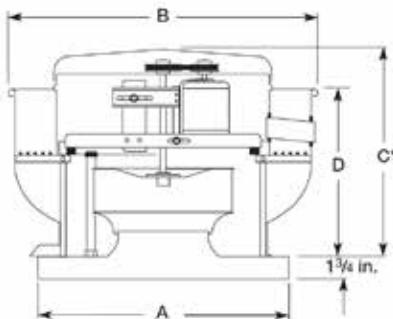
- Aluminum housing
- Non-overloading backward inclined aluminum wheel
- Curb cap with pre-punched mounting holes
- Motor and drives isolated on shock mounts
- Drain trough
- Ball bearing motors
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearings
- Static resistant belts
- Corrosion resistant fasteners
- Nema-1 disconnect

### Options and Accessories

- Galvanized aluminum birdscreen
- Gravity dampers
- Galvanized aluminum roof curbs
- Vented curb extensions
- Heat baffles
- UL/cUL 705 electrical
- UL/cUL 762 grease
- Clean out port
- Drain connection
- Grease trap w/drain connection
- Hinged
- Relubricatable bearings
- NEMA 3R and EXP disconnect switches
- Greenheck coatingscurb cap kit w/cable



 GREENHECK  
Building Value in Air



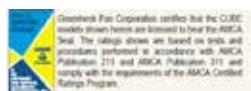
### Dimensions

Model	A*	B	C**	D	Roof Opening	Damper Size^	Weight
<b>CUBE-101</b>	19"	24 7/8"	28 1/4"	17 3/8"	14 1/2" x 14 1/2"	12" x 12"	58 lbs
<b>CUBE-121</b>	19"	24 7/8"	28 1/4"	17 3/8"	14 1/2" x 14 1/2"	12" x 12"	66 lbs
<b>CUBE-131</b>	19"	24 7/8"	28 1/4"	17 3/8"	14 1/2" x 14 1/2"	12" x 12"	66 lbs
<b>CUBE-141</b>	22"	28 7/8"	29 3/4"	19 3/8"	18 1/2" x 18 1/2"	16" x 16"	84 lbs
<b>CUBE-161</b>	22"	28 7/8"	29 3/4"	19 3/8"	18 1/2" x 18 1/2"	16" x 16"	87 lbs
<b>CUBE-180</b>	30"	35 3/8"	28 5/8"	21"	20 1/2" x 20 1/2"	18" x 18"	126 lbs
<b>CUBE-200</b>	30"	35 3/8"	28 5/8"	21"	20 1/2" x 20 1/2"	18" x 18"	142 lbs
<b>CUBE-240</b>	34"	42 3/4"	33 7/8"	25 1/2"	26 1/2" x 26 1/2"	24" x 24"	142 lbs

\* Dimension A - given is the inside dimensions of the curb cap.

\*\* May be greater depending on motor. All dimensions in inches.

^ Dampers should not be used in grease applications.



**Performance**

Performance capabilities in inventory range from 732 cfm to 8,431 cfm and at 0 in. wg of static pressure.

Item Number	Model	HP	RPM	TS	Sones @ 0 in.	Max BHP	Performance							
							0	.125	.25	.375	.5	.625	.75	1
005-0287	CUBE-101-4	1/4	860	2505	4.6	0.04	732	625	481					
			1205	3509	7.7	0.1	1025	957	873	782	662			
			1660	4834	12.7	0.26	1413	1364	1313	1251	1189	1125	1056	861
005-0285	CUBE-101-LMD	1/3	1820	5300	14.3	0.35	1549	1505	1458	1406	1350	1293	1234	1106
005-0289	CUBE-121-LMD	1/4	685	2342	4.4	0.029	808	669						
			845	2889	5.3	0.056	997	885	757					
			1045	3573	6.5	0.105	1233	1141	1053	944	798			
		1/3	1410	4821	11.1	0.26	1664	1594	1528	1463	1398	1315	1224	965
005-0291	CUBE-131-LMD	1/4	1545	5283	12.8	0.34	1824	1760	1698	1639	1580	1518	1441	1262
			650	2223	6.2	0.03	892	724						
			743	2541	7.1	0.04	1019	876	668					
			836	2859	8.2	0.06	1147	1021	868					
			929	3177	9.6	0.08	1274	1161	1042	864				
			1022	3495	11.1	0.1	1402	1299	1193	1060	869			
			1115	3813	12.2	0.13	1529	1435	1341	1235	1094	886		
			1208	4131	13.4	0.17	1657	1570	1480	1391	1277	1136	928	
		1/3	1305	4463	14.6	0.22	1790	1709	1629	1547	1458	1340	1201	
		1/3	1435	4908	15.7	0.29	1968	1895	1822	1749	1671	1586	1479	1198
005-0293	CUBE-141-LMD	1/4	590	2259	5	0.04	1068	851						
			1105	4230	10.9	0.26	2001	1905	1792	1667	1515	1318	998	
			1210	4632	12.2	0.34	2191	2106	2006	1896	1772	1628	1442	
			1390	5322	14.9	0.52	2517	2445	2361	2271	2173	2068	1949	1642
		3/4	1595	6106	20	0.79	2889	2825	2757	2683	2601	2517	2429	2225
005-0297	CUBE-161-LMD	1/4	730	3177	8.1	0.15	2098	1904	1669	1389				
			875	3808	11	0.26	2515	2361	2177	1974	1743	1364		
			965	4200	12.4	0.35	2774	2637	2476	2300	2109	1893	1583	
			1110	4831	15	0.54	3190	3072	2940	2796	2640	2475	2297	1770
			1265	5505	18.5	0.79	3636	3532	3425	3301	3172	3035	2893	2582
		1	1390	6049	22	1.05	3995	3900	3806	3698	3584	3464	3340	3078
005-0331	CUBE-180-LMD	1/4	630	3051	7.1	0.16	2380	2154	1861	1403				
			745	3608	9.2	0.26	2814	2616	2448	2143	1763			
			820	3971	11.2	0.34	3097	2915	2759	2525	2257	1866		
			940	4552	13.8	0.52	3551	3388	3243	3115	2879	2654	2363	
			1075	5206	16.5	0.78	4061	3919	3786	3666	3554	3344	3141	2652
			1185	5739	18.5	1.04	4476	4347	4223	4108	4005	3903	3702	3336
			1360	6586	23	1.58	5137	5025	4913	4811	4710	4620	4531	4232
			1495	7240	28	2.10	5647	5545	5443	5345	5253	5162	5082	4921
			500	2797	6.2	0.15	2812	2386	1821					
005-0355	CUBE-200-LMD	1/4	605	3385	8.1	0.26	3402	3054	2674	2144				
			665	3721	9.4	0.35	3740	3421	3095	2699	2072			
			760	4252	12.1	0.52	4274	3993	3718	3413	3048	2517		
			875	4896	16.3	0.79	4921	4676	4438	4192	3922	3626	3240	
			960	5372	18.7	1.04	5399	5175	4957	4742	4508	4253	3985	3168
			1100	6155	23	1.57	6187	5991	5798	5610	5420	5216	5006	4528
			1210	6771	25	2.09	6805	6628	6450	6279	6108	5932	5747	5349
005-0360	CUBE-240-LMD	1/4	410	2629	6.4	0.18	3716	3169	2471					
			465	2982	7.6	0.26	4215	3767	3187	2162				
			510	3271	8.9	0.34	4623	4242	3716	3134				
			585	3752	11.5	0.51	5303	4960	4539	4093	3565			
			670	4297	14.3	0.79	6073	5762	5460	5052	4059	4202	3524	
			735	4714	16.6	1.04	6663	6370	6133	5764	5409	5037	4618	
			845	5419	19.6	1.58	7660	7399	7183	6947	6615	6304	6002	5282
			930	5965	24	2.10	8431	8194	7985	7798	7536	7233	6953	6375

- Performance and values shown are certified for installation type B: Free inlet, Ducted outlet.
- Power rating (BHP/kW) does not include transmission losses.
- Performance ratings do not include the effects of appurtenances (accessories).
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
- The AMCA Certified Ratings Seal applies to sone ratings only.

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## DIRECT DRIVE SIDEWALL EXHAUST FANS - MODEL CW

These fans are ideal for exhausting contaminated air out and away from buildings. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. These fans are centrifugal direct drive exhaust fans.

Model CW fans include birdscreen, disconnect switch, UL/cUL 705 label.

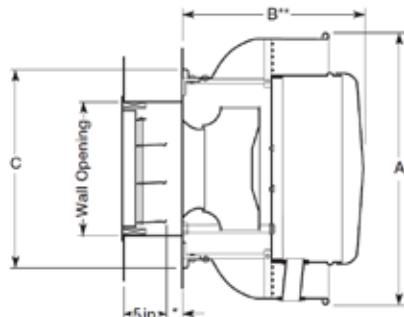


### Features

- Aluminum housing
- Non-overloading backward inclined aluminum wheel
- Birdsreen mounted to the discharge perimeter
- Removable mounting plate
- Ball bearing motors
- Motors and drives isolated on shock mounts
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearing pillow blocks
- Static resistant belts
- Corrosion resistant fasteners
- Nema-1 disconnect

### Options and Accessories

- Aluminum birdsreen
- Gravity and motorized dampers (In stock for CW)
- Heat baffles (Belt drive)
- UL/cUL 705 Electrical
- UL/cUL 762 Grease (Size 121)
- Non-stick wheels (Belt drive)
- Wall grille
- Speed controls (Direct drive)
- Relubricatable bearings (Belt drive)
- Dual drives
- NEMA 3R and EXP disconnect switches
- Greenheck coatings

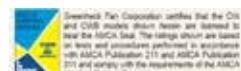


\*Note: 2 inches minimum. 5 inches when motorized damper is required.

### Dimensions

Model	A	B**	C	Weight	Wall Opening	Damper
<b>CW-075</b>	18 1/2"	13 1/2"	14 3/4"	26 lbs	08 1/2" x 08 1/2"	08" x 08"
<b>CW-085</b>	21"	13 3/8"	17 7/8"	40 lbs	10 1/2" x 10 1/2"	10" x 10"
<b>CW-090</b>	21"	13 3/8"	17 7/8"	40 lbs	10 1/2" x 10 1/2"	10" x 10"
<b>CW-095</b>	21"	13 3/8"	17 7/8"	40 lbs	10 1/2" x 10 1/2"	10" x 10"
<b>CW-121</b>	24 7/8"	28 1/4"	19 3/4"	53 lbs	12 1/2" x 12 1/2"	12" x 12"

\*\*May be greater depending on motor. All dimensions in inches.



**Performance**

Performance capabilities in inventory range from 287 cfm to 1,346 cfm at 0 in. wg of static pressure.

Item Number	Model	HP		RPM	TS	Sones @ 0 in.	Max BHP	Performance in Inches WG					
		0	0.125					0	0.125	0.25	0.375	0.5	0.625
005-0728	CW-075	E	1/25	1050	2234	3.3	0.012	287	188				
		G		1300	2765	4.4	0.024	356	279	185			
		D		1550	3297	6.1	0.039	424	359	291	204		
005-0730	CW-085	E	1/20	1050	2990	3.6	0.018	389	305	182			
		G		1300	3701	5.4	0.035	482	416	340	235		
		D		1550	4413	7.5	0.061	574	520	462	395	313	161
005-0735	CW-090	E	1/15	1050	2990	3.8	0.027	550	450	306			
		G		1300	3701	5.4	0.052	680	600	516	391		
		D		1550	4413	7.5	0.088	811	744	677	603	501	347
005-0740	CW-095	E	1/8	1050	2990	4.9	0.037	711	569	381			
		G		1300	3701	7.4	0.072	880	773	641	484	200	
		D		1550	4413	9.6	0.121	1049	964	861	746	616	443
005-0748	CW-121	A	1/6	1140	3898	7.4	0.14	1346	1260	1179	1091	980	833

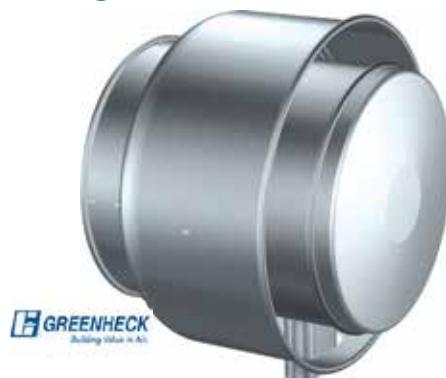
- Performance and values shown are certified for installation type A: Free inlet, Free outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
- Values shown are for installation type A: free inlet fan sone levels.
- The AMCA Certified Ratings Seal applies to sone ratings only.

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## BELT DRIVE SIDEWALL EXHAUST FANS - MODEL CWB

These fans are ideal for exhausting contaminated air out and away from buildings. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. These fans are a centrifugal belt drive exhaust fan. They have adjustable motor pulleys that allow for final system balancing.

Model CWB fans include birdscreen, disconnect switch, UL/cUL762 and heat baffle.

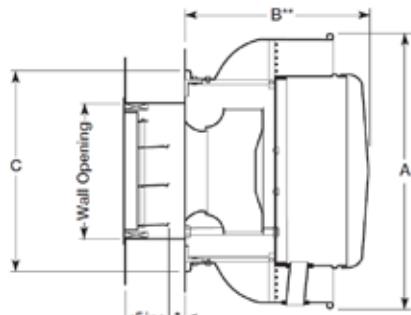


### Features

- Aluminum housing
- Non-overloading backward inclined aluminum wheel
- Birdsscreen mounted to the discharge perimeter
- Removable mounting plate
- Ball bearing motors
- Motors and drives isolated on shock mounts
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearing pillow blocks
- Static resistant belts
- Corrosion resistant fasteners
- Nema-1 disconnect

### Options and Accessories

- Aluminum birdscreen
- Gravity and motorized dampers (In stock for CW)
- Heat baffles (Belt drive)
- UL/cUL 705 Electrical
- UL/cUL 762 Grease (Size 121 and up)
- Non-stick wheels (Belt drive)
- Wall grille
- Speed controls (Direct drive)
- Relubricatable bearings (Belt drive)
- Dual drives
- NEMA 3R and EXP disconnect switches
- Greenheck coatings

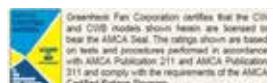


\*Note: 2 inches minimum. 5 inches when motorized damper is required.

### Dimensions

Model	A	B**	C	Weight	Wall Opening	Damper
<b>CWB-141</b>	29 3/4"	29 3/4"	22 1/8"	90 lbs	15 1/2" x 15 1/2"	15" x 15"
<b>CWB-180</b>	35 3/8"	28 5/8"	27 3/4"	142 lbs	17 1/2" x 17 1/2"	17" x 17"

\*\*May be greater depending on motor. All dimensions in inches.



**Performance**

Performance capabilities in inventory range from 1,069 cfm to 5,591 cfm at 0 in. wg of static pressure.

Item Number	Model	HP	RPM	TS	Sones @ 0 in.	MAX BHP	Performance in Inches WG									
							0	0.125	0.25	0.375	0.5	0.75	0.1	1.25	1.5	1.75
005-0750	CWB-114-LMD	1/4	590	2259	7.3	0.04	1069	851								
			4173	10.7	0.25	1975	1877	1763	1633	1476						
		1/3	1200	4594	12.1	0.34	2174	2088	1987	1875	1749	1410				
		1/2	1400	5360	15.2	0.53	2537	2465	2382	2292	2196	1974	1675			
		3/4	1590	6087	19.9	0.78	2881	2817	2748	2674	2592	2420	2213	1952		
		1	1725	6605	26	1	3125	3066	3005	2936	2865	2711	2539	2339	2085	1704
005-0753	CWB-180-LMD	1/4	740	3584	9.1	0.25	2795	2596	2422	2115	1723					
		1/3	830	4019	11.4	0.36	3135	2954	2799	2575	2315					
		1/2	960	4649	14.2	0.55	3626	3466	3323	3197	2981	2487				
		3/4	1070	5182	16.4	0.77	4042	3898	3765	3645	3533	3113	2613			
		1	1200	5811	18.8	1.08	4533	4405	4281	4168	4066	3778	3411	2948		
		1 1/2	1360	6586	22	1.58	5137	5024	4911	4809	4710	4531	4229	3909		
		2	1480	7168	26	2.03	5591	5487	5383	5284	5193	5021	4845	4517		

- Performance and values shown are certified for installation type A: Free inlet, free outlet.
- Performance ratings do not include the effects of appurtenances (accessories).
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
- The AMCA Certified Ratings Seal applies to sone ratings only

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## ROOF SUPPLY FAN - MODEL RSF

Models RSF are roof mounted, filtered supply fans designed to provide efficient and economical make-up air. Galvanized steel housings are designed for maximum airflow and weather protection.

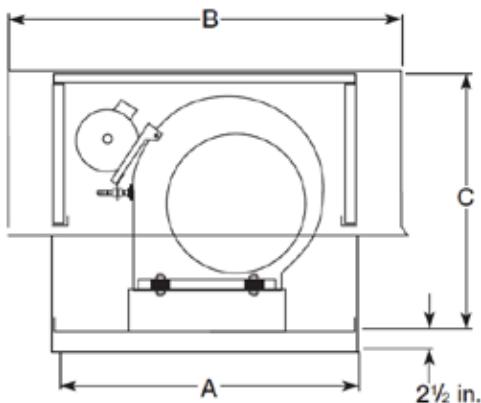


### Features

- Heavy gauge galvanized steel housing
- Double width, double inlet forward curved wheel
- Removable, insulated cover with quick release latches allows complete accessibility for filters and blower assembly
- Washable aluminum filters, easily removable for cleaning
- Vibration isolation for entire blower assembly
- AMCA certified ratings seal for air performance
- UL/cUL 705 electrical

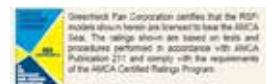
### Options and Accessories

- Duct adaptors
- Performance baffle
- Gravity and motorized dampers
- High velocity supply dampers
- Galvanized and aluminum roof curbs
- Aluminum construction
- 2 in. washable aluminum supply filters
- Replacement filter sets
- Tie down points
- Curb adaptors



### Dimensions

Model	A (SQ)	B (SQ)	C	Roof Opening	Damper Size
RSF-90	26"	35 1/8"	23 1/4"	15" x 15"	12" x 12"
RSF-100	30"	41 1/8"	23 1/4"	17" x 17"	14" x 14"
RSF-120	34"	47 1/8"	27 1/4"	21" x 21"	18" x 18"
RSF-150	40"	53 1/8"	31 1/4"	23" x 23"	20" x 20"
RSF-180	46"	61 1/8"	34 1/4"	29" x 29"	26" x 26"



**Performance**

Performance capabilities in inventory range from 650 cfm to 8,810 cfm and up to 2 in. wg of static pressure.

Item Number	Model	CFM	Performance in Inches WG											
			0.125		0.25		0.5		1		1.5		2	
			RPM	BHM	RPM	BHM	RPM	BHM	RPM	BHM	RPM	BHM	RPM	BHM
005-0772	RSF-90	650	435	0.03	569	0.05								
		1090	556	0.1	655	0.13	830	0.19						
		1530	707	0.23	783	0.28	924	0.36	1172	0.54	1385	0.74		
		1860	828	0.4	894	0.45	1014	0.55	1236	0.76				
		2300	995	0.72	1048	0.78								
005-0776	RSF-100	700	377	0.03	505	0.05								
		1420	514	0.13	604	0.17	756	0.25	1010	0.41				
		2140	699	0.4	763	0.45	880	0.56	1086	0.78	1269	1	1438	1.26
		2500	796	0.61	852	0.67	957	0.8	1146	1.08	1314	1.32		
		2860	898	0.89	945	0.96	1040	1.1	1212	1.4				
		3400	1053	1.47	1089	1.54								
005-0782	RSF-120	1150	330	0.06	430	0.09								
		2070	4400	0.21	512	0.26								
		2760	541	0.45	600	0.52	705	0.65	890	0.95	1049	1.26		
		3220	615	0.68	664	0.75	760	0.92	930	1.26	1079	1.61	1213	1.97
		3910	728	1.18	766	1.27	849	1.46	997	1.85				
		4600	845	1.89	877	1.99								
005-0786	RSF-150	1625	274	0.08	363	0.13								
		3350	395	0.4	454	0.5								
		4730	516	0.99	558	1.13	641	1.41	784	1.96	913	2.54	1030	3.15
		5765	610	1.71	647	1.89	714	2.21	848	2.92				
		6800	708	2.72	739	2.93								
005-0790	RSF-180	2450	241	0.13	317	0.2								
		4040	319	0.38	363	0.49	459	0.71						
		5630	394	0.9	434	1.05	510	1.34	647	1.97	768	2.64		
		7220	478	1.74	516	1.93	581	2.35	691	3.08	799	3.89	901	4.79
		8810	570	3.05	601	3.31	654	3.8	758	4.74				

- Performance and values shown are certified for installation type B: Free inlet, Ducted outlet.
- Power rating (BHP/kW) does not include transmission losses.
- Performance ratings include the effects of 1 in. aluminum filters.

For the latest product information and performances download CAPS from the greenheck software page <http://www.greenheck.com/software>

## CEILING EXHAUST FANS - MODEL SP

Model SP Ceiling Exhaust fans are designed for clean air applications where low sound levels are desired. Low sound levels are achieved through quiet running forward curved wheels.



SP-A



SP-B



SP-C

**GREENHECK**  
Building Value in Air.

Standard Features	SP Fans		
	A	B	C
Backdraft Damper - Prevents unwanted backdrafts	X	X	X
Spring Loaded Aluminum Backdraft Damper - Eliminates rattling or unwanted backdrafts (sizes 110 and up)	X		
Outlet - Both square and round outlets are field rotatable from horizontal to vertical discharge	X		
Round Outlet (4 or 6 in.) - up to size A90. Versatile for quick, easy connections	X	X	X
Power Assembly - Removes quickly for maintenance	X	X	
External Electrical Access - Eliminates removing motor pack, saving installation time	X		
Electrical Knockout - Eliminates drilling holes	X	X	
Disconnect (Plug Type) - Servicing is quick and safe	X	X	X
Electrical Junction Box - Large for easy wiring	X	X	
Attractive Designer Grille - Concealed attachment screws securely to fasten grille to housing for quiet, rattle free operation	X	X	
Mounting Brackets - Fully adjustable for multiple installation types	X	X	X
Housing - Embossed galvanized steel for rigidity and low profile for height restricted areas	X	X	
PSC Compatible Motors - 50 cycle, 220v, and 240v options. 60 cycle, 115v, 208v, 220v, 230v, and 277v options. (Check factory for availability)	X	X	X
3 Year Warranty	X	X	X
UL listed for above showers w/ GFCI branch protected circuit	X	X	X

### Options and Accessories

- Vibration isolation kits
- Speed controls
- Motion detectors
- Time delays
- Roof discharge accessories
- Wall discharge accessories
- Transitions

SP Fans can be converted to CSP Fans by adding an adapter. Adaptor is included in SP-A110-C thru SP-A1550-C except for the SP-A700. Select CSP-A700, Item Code 005-2346 for Cabinet Fan



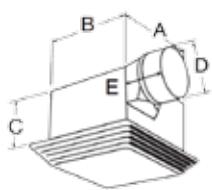
Fans that are ENERGY STAR qualified include:  
SP-A-60, 70, 90, 200, 210, 290 and 410  
SP-B-50, 70, 80 and 90



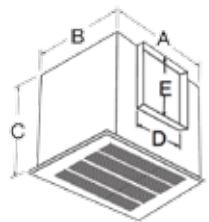
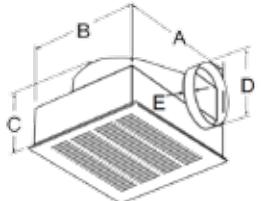
Greenheck Fan Corporation certifies that the SP models shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The SP models are not AMCA certified with 60 hertz motors.

**UL** US LISTED

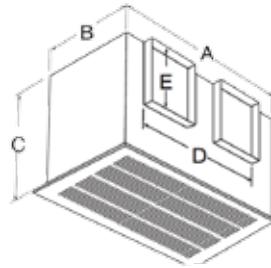
Models SP and CSP are listed electric fans (UL/ULC-S07). Ceiling Exhaust Fans are also UL Listed for above bathtubs/showers with GFCI branch protected circuit. File no. E30599.



SP-C50

SP-A110 - SP-A51,  
SP-A710, SP-A780

SP-B50 - SP-B200

SP-A700,  
SP-A900- SP-A1550**Dimensions**

Model	A	B	C	D	E
<b>SP-A50</b>	13 7/8"	10 5/8"	11 5/8 "	06" dia. x 1"	6 dia. x 1
<b>SP-A70</b>	13 7/8"	10 5/8"	11 5/8"	06" dia. x 1"	6 dia. x 1
<b>SP-A90</b>	13 7/8"	10 5/8"	11 5/8"	06" dia. x 1"	6 dia. x 1
<b>SP-A110-C</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"
<b>SP-A125-C</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"
<b>SP-A190-C</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"
<b>SP-A200-C</b>	13 7/8"	11 1/2"	6 5/8"	08"	08"
<b>SP-A250-C</b>	14"	11 7/8"	11 1/2"	08"	08"
<b>SP-A290-C</b>	14"	11 7/8"	11 1/2"	08"	08"
<b>SP-A390-C</b>	14"	11 7/8"	11 1/2"	08"	08"
<b>SP-A410-C</b>	18"	14 3/8"	14 1/2"	08"	08"
<b>SP-A510-C</b>	18"	14 3/8"	14 1/2"	08"	08"
<b>SP-A700</b>	13 7/8"	11 1/2"	11 5/8"	19 1/2"	08"
<b>SP-A710-C</b>	18"	14 3/8"	14 1/2"	10"	08"
<b>SP-A780-C</b>	18"	14 3/8"	14 1/2"	10"	08"
<b>SP-A900-C</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"
<b>SP-A1050-C</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"
<b>SP-A1410-C</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"
<b>SP-A1550-C</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"
<b>SP-B50</b>	13 7/8"	11 1/2"	6 15/16"	04" dia. x 3/4"	4 dia. x 3/4
<b>SP-B70</b>	13 7/8"	11 1/2"	6 15/16"	04" dia. x 3/4"	4 dia. x 3/4
<b>SP-B80</b>	13 7/8"	11 1/2"	6 15/16"	04" dia. x 3/4"	4 dia. x 3/4
<b>SP-B90</b>	13 7/8"	11 1/2"	7 15/16"	06" dia. x 11/4"	6 dia. x 11/4
<b>SP-B110</b>	13 7/8"	11 1/2"	7 15/16"	06" dia. x 11/4"	6 dia. x 11/4
<b>SP-B150</b>	13 7/8"	11 1/2"	7 15/16"	06" dia. x 11/4"	6 dia. x 11/4
<b>SP-B200</b>	13 7/8"	11 1/2"	7 15/16"	06" dia. x 11/4"	6 dia. x 11/4
<b>SP-C50</b>	7 1/2"	7 1/4"	3 5/8"	03" dia. x 15/8"	3 dia. x 15/8

## INLINE CABINET EXHAST FANS - MODEL CSP

Model CSP Inline Cabinet fans are designed for clean air applications where low sound levels are desired. Low sound levels are achieved through quiet running forward curved wheels

SP-A Fans can be converted to CSP Fans by adding an adapter. Adaptor is included in SP-A110-C thru SP-A1550-C except for the SP-A700. Select CSP-A700, Item Code 005-2346 for Cabinet Fan



### Features

- Aluminum Backdraft Damper- Prevents unwanted backdrafts
- Power Assembly - Removes quickly and is rotatable from horizontal to vertical discharge
- External Electrical Access - Eliminates removing motor pack, saving installation time
- Access Panel - Gain easy access to internal components once installed
- Mounting Brackets - Fully adjustable for multiple installation types
- Compatible with Speed Controllers
- 3 Year Warranty
- UL/cUL 705 electrical

### Options and Accessories

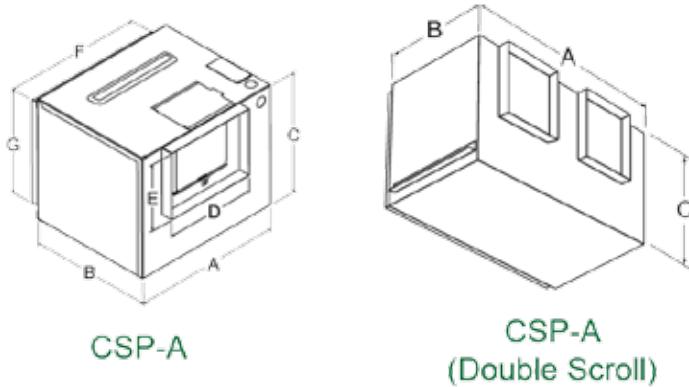
- Vibration isolation kits
- Speed controls
- Motion detectors
- Time delays
- Roof discharge accessories
- Wall discharge accessories
- Transitions



Greenheck Fan Corporation certifies that the CSP model shown herein has been tested to bear the AMCA seal. This seal is shown on the basis of tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program. The CSP models are not AMCA certified with 50 hertz motors.



Models SP and CSP are listed electric fans (UL/VA, 607). Ceiling Exhaust Fans are also UL Listed for above bathtub/shower with GFCI branch protected circuit. File no. E3399.

**Dimensions**

Model	A	B	C	D	E	F	G
<b>CSP-A110</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"	12	9 1/4"
<b>CSP-A125</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"	12"	9 1/4"
<b>CSP-A190</b>	13 1/4"	10 5/8"	10 1/2"	08"	06"	12"	9 1/4"
<b>CSP-A200</b>	14"	10 7/8"	11 1/4"	08"	08"	12 7/8"	10"
<b>CSP-A250</b>	14"	10 7/8"	11 1/4"	08"	08"	12 7/8"	10"
<b>CSP-A290</b>	14"	10 7/8"	11 1/4"	08"	08"	12 7/8"	10"
<b>CSP-A390</b>	14"	10 7/8"	11 1/4"	08"	08"	12 7/8"	10"
<b>CSP-A410</b>	18"	14 3/8"	14 1/2"	08"	08"	16 7/8"	13 1/4"
<b>CSP-A510</b>	18"	14 3/8"	14 1/2"	08"	08"	16 7/8"	13 1/4"
<b>CSP-A700</b>	23 5/8"	11 5/8"	10 1/2"	19 1/2"	08"	22 5/8"	11 5/8"
<b>CSP-A710</b>	18"	14 3/8"	14 1/2"	10"	08"	16 7/8"	13 1/4"
<b>CSP-A780</b>	18"	14 3/8"	14 1/2"	10"	08"	16 7/8"	13 1/4"
<b>CSP-A900</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"	22 5/8"	13 1/4"
<b>CSP-A1050</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"	22 5/8"	13 1/4"
<b>CSP-A1410</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"	22 5/8"	13 1/4"
<b>CSP-A1550</b>	23 3/4"	14 3/8"	14 1/2"	18 3/4"	08"	22 5/8"	13 1/4"
<b>CSP-A1750</b>	35"	14 3/4"	14 3/4"	28"	06"	32 3/4"	13"

# FANS & ACCESSORIES - GREENHECK

## Performance

Models SP-A, SP-B, and SP-C in inventory are compact exhaust fans with performance capabilities of 52 cfm to 1,842 cfm at 0 in.wg.

Item Number	Model	RPM	AMPS	WATTS	SONES @0 IN.	Grille Size	Performance in Inches WG								
							.00	.100	.125	.250	.375	.500	.625	.750	1.00
005-2285	SP-A50	700	0.31	18	0.7	14 3/4" x 12 3/4"	76	51	47	30					
005-2290	SP-A70	850	0.27	20	1.1	14 3/4" x 12 3/4"	83	70	66	42					
005-2295	SP-A90	900	0.34	29	1.1	14 3/4" x 12 3/4"	99	88	84	61	25				
005-2300	SP-A110-C	950	0.58	49	1.3	14 3/4" x 12 3/4"	119	110	106	88					
005-2305	SP-A125-C	1100	0.62	53	1.4	14 3/4" x 12 3/4"	135	123	121	104					
005-2310	SP-A190-C	1400	1.3	113	3.2	14 3/4" x 12 3/4"	216	197	192	167	133				
005-2315	SP-A200-C	900	0.43	48	2	14 3/4" x 12 3/4"	247	225	220	196	172	142	105	67	
005-2320	SP-A250-C	1000	0.77	83	2.9	14 3/4" x 12 3/4"	272	251	246	227	210	185	157	119	
005-2325	SP-A290-C	1050	0.72	81	3.2	14 3/4" x 12 3/4"	315	293	287	257	231	207	175	124	
005-2330	SP-A390-C	1350	1.34	135	5.4	14 3/4" x 12 3/4"	410	395	391	368	345	325	307	279	
005-2335	SP-A410-C	1000	1.74	121	4.1	19 3/8" x 16 3/8"	443	413	405	351	305				
005-2340	SP-A510-C	1070	3.3	224	6.1	19 3/8" x 16 3/8"	557	512	501	439	392	325			
005-2345	SP-A700	1100	3.2	350	1.9	25 1/8" x 13 1/2"	757	729	723	700	679	649	613	560	396
005-2350	SP-A710-C	1080	4.4	285	7.4	19 3/8" x 16 3/8"	752	714	701	653	588	485	320		
005-2355	SP-A780-C	1600	3.3	348	10.2	19 3/8" x 16 3/8"	812	782	775	741	704	665	625	581	
005-2360	SP-A900-C	950	4	285	5.2	25" x 16 3/8"	955	907	896	841	773	701			
005-2365	SP-A1050-C	1095	6.3	420	7.2	25" x 16 3/8"	1125	1059	1043	964	885	796	662		
005-2370	SP-A1410-C	1450	7.4	786	11.6	25" x 16 3/8"	1455	1414	1404	1353	1307	1262	1218	1174	
005-2375	SP-A1550-C	1610	8.6	818	12.4	25" x 16 3/8"	1607	1568	1558	1506	1449	1407	1369	1323	
005-3100	SP-B50	625	0.5	38	1.7	14 1/2" x 12 3/4"	67	53	51	40	29				
005-3105	SP-B70	675	0.53	45	1.7	14 1/2" x 12 3/4"	77	70	68	57	49	39			
005-3110	SP-B80	900	0.6	54	2.9	14 1/2" x 12 3/4"	87	80	78	68	61	54	44	30	
005-3115	SP-B90	700	0.65	50	1.9	14 1/2" x 12 3/4"	102	92	88	75	59	45	30		
005-3120	SP-B110	950	1.14	80	2	14 1/2" x 12 3/4"	133	114	110	97	95	94	91	85	50
005-3125	SP-B150	1050	1.7	129	3	14 1/2" x 12 3/4"	160	156	155	154	152	149	147	138	92
005-3130	SP-B200	1100	2.2	173	4.4	14 1/2" x 12 3/4"	197	195	194	191	187	184	181	166	128
005-3200	SP-C50	1680	0.8	46	2.9	9 1/4" x 09"	52	49	48	46	43	37	29		

- Performance values shown are certified for installation B: Free inlet, Ducted outlet
- Performance ratings include the effects of an inlet grille and backdraft damper
- Speed (RPM) shown is nominal
- Performance is based on actual speed of test
- 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

For the latest product information and performances download CAPS from the greenheck software page <http://www.greenheck.com/software>

Model	RPM	AMPS	WATTS	WT		Performance in Inches WG						
						0	0.125	0.25	0.375	0.5	0.75	1
<b>CSP-A110</b>	950	0.62	51	16	CFM	124	110	102	77			
					Sones	1.1	1.1	1.3	1.3			
<b>CSP-A125</b>	1100	0.63	55	16	CFM	138	124	113	91			
					Sones	1.4	1.3	1.4	1.7			
<b>CSP-190</b>	1400	1.1	100	16	CFM	215	198	180	159	121		
					Sones	2.3	2.2	2.7	2.9	3		
<b>CSP-A200</b>	900	0.43	48	23	CFM	254	225	203	177	145	70	
					Sones	0.8	0.8	1.3	1.5	1.9	2.1	
<b>CSP-A250</b>	1000	0.79	83	23	CFM	266	241	221	205	187	132	
					Sones	1.3	1.5	2.3	3.3	3.4	3	
<b>CSP-A290</b>	1050	0.71	80	23	CFM	318	292	265	248	229	144	
					Sones	1.6	1.8	2.6	3.3	4	3.4	
<b>CSP-A390</b>	1350	1.33	144	23	CFM	412	397	382	363	339	309	
					Sones	2.8	2.8	3.2	3.7	4.7	6.5	
<b>CSP-A410</b>	1000	1.87	139	36	CFM	447	403	364	316	217		
					Sones	2.2	2.2	2.5	2.7	2.7		
<b>CSP-A510</b>	1070	3.11	217	36	CFM	545	506	464	405	324		
					Sones	3.1	2.8	2.8	2.7	3.1		
<b>CSP-A700</b>	1100	3.2	350	34	CFM	766	752	739	726	702	635	418
					Sones	2.6	2.4	2.4	2.5	2.6	3	4.9
<b>CSP-A710</b>	1080	4.4	325	36	CFM	737	688	635	566	474		
					Sones	3.2	3.2	3.3	2.7	2.5		
<b>CSP-A780</b>	1600	3.77	405	36	CFM	813	776	741	707	671	603	527
					Sones	3.8	3.6	3.5	3.4	3.5	3.8	4.3
<b>CSP-A900</b>	950	4.87	328	39	CFM	908	840	782	714	631		
					Sones	3.7	3.8	4	4	4.1		
<b>CSP-A1050</b>	1095	6.65	455	39	CFM	1182	1093	1013	922	832		
					Sones	6.3	5.9	5.8	6	6		
<b>CSP-A1410</b>	1450	7.8	822	39	CFM	1584	1533	1483	1439	1395	1293	1181
					Sones	6.3	6.2	6.3	6.5	6.8	7.6	8.6
<b>CSP-A1550</b>	1610	8.32	830	39	CFM	1672	1604	1542	1484	1427	1306	1171
					Sones	8.6	8.5	8.4	8.5	8.5	8.5	8.4
<b>CSP-A1750</b>	1130	6.6	550	68	CFM	1842	1749	1619	1463	1283	771	
					Sones	6.9	6.7	6.4	6.3	6.4	6.8	

- Performance and values shown are certified for installation type D: Ducted inlet, Ducted outlet
- Performance ratings include the effects of a backdraft damper
- Speed (RPM) shown is nominal
- Performance is based on actual speed of test
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) from the test inlet duct in a hemispherical free field calculated per AMCA Standard 301
- Ratings do not include the effects of duct end correction

For the latest product information and performances download CAPS from the greenheck software page <http://www.greenheck.com/software>

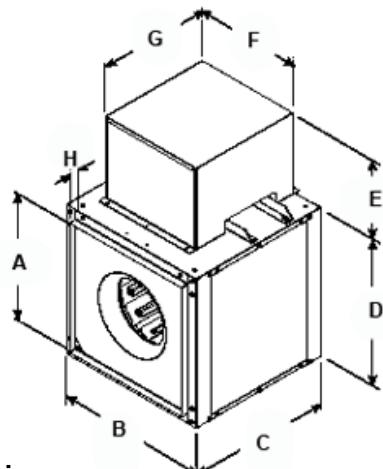
## INLINE BELT DRIVE FANS - MODEL BSQ

Greenheck's Models BSQ is the ideal selection for clean air applications (intake, exhaust, return, or make-up air systems) where space is a prime consideration. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. They are belt drive and have a maximum operating temperature of 180° F.



### Features

- Galvanized steel housing
- Non-overloading backward inclined aluminum wheel
- Side access panels
- Inlet and outlet duct connection flanges
- Ball bearing motors
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearing pillow blocks
- Static resistant belts



### Dimensions

Model	A	B	C	D	E	F	G	H	Damper Size	Weight	Gauge
<b>BSQ-70</b>	11 7/8	15	21	15	12 1/2	14	15 1/2	1	12 X 12	76	18
<b>BSQ-80</b>	11 7/8	15	21	15	12 1/2	14	15 1/2	1	12 X 12	79	18
<b>BSQ-90</b>	11 7/8	15	21	15	12 1/2	14	15 1/2	1	12 X 12	84	18
<b>BSQ-100</b>	13 7/8	17	21	17	12 182	14	15 1/2	1	14 X 14	91	18
<b>BSQ-120</b>	15 7/8	19	21	19	12 1/2	16	17 7/8	1	16 X 16	97	18
<b>BSQ-130</b>	17 7/8	21	21	21	12 1/2	16	17 7/8	1	18 X 18	97	18
<b>BSQ-140</b>	19 7/8	23	22	23	12 1/2	16	17 7/8	1	20 X 20	111	18
<b>BSQ-160</b>	22 7/8	26	26	26	13 3/8	17	20 1/2	1	23 X 23	208	18
<b>BSQ-180</b>	23 7/8	28	28	28	13 3/4	18	24 3/8	1 1/2	24 X 24	245	18
<b>BSQ-240</b>	34 7/8	39	34	39	19	22	32 7/8	1 1/2	35 X 35	412	18

### Options and Accessories

- Motor covers-standard and insulated
- Aluminum construction
- Inlet and outlet guards
- Filter boxes and filters
- Insulated fan housing
- Gravity and motorized dampers
- Isolators
- Aluminum rub ring
- UL/cUL 705 Electrical
- Relubricatable bearings (belt drive)
- Dual drives
- NEMA 3R and EXP disconnect switches
- Greenheck coatings
- Side discharge

## Discharge Configurations

The side discharge option helps to reduce system effect. It will increase performance and reduce installation labor. The most notable is reducing system effects. Note: The figure 1 example shows the air being discharged into the corner. It will take several duct lengths before the airflow becomes laminar or smooth again after making the turn. In figure 2, the fan is placed in the corner using a side discharge. In this configuration the air flow pattern at discharge is smooth and supports a more predictable system. Remember the duct length on the discharge side, should be approximately two to three wheel diameters to achieve catalog performance. Fan performance will change with different discharge positions. Catalog data is based on an inline discharge. Right side discharge will give you 108% of cataloged performance and left side will give you 109% of cataloged performance. Use figure 3 to locate the orientation to fit your application.

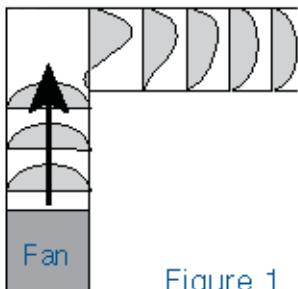


Figure 1

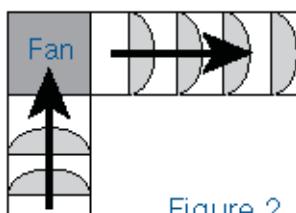
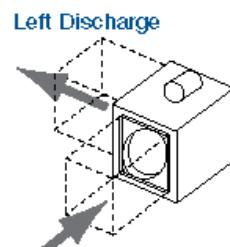


Figure 2



Right Discharge

Left &amp; Right Discharge

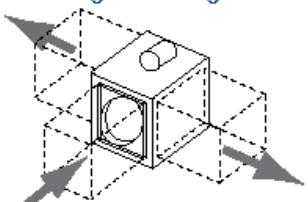
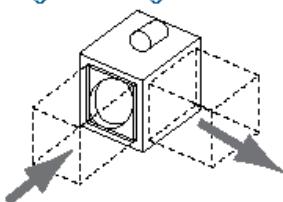


Figure 3

Discharge Positions				
Right Side	Left Side	Inline	Combination	
A 3D perspective diagram of a fan unit with a circular duct opening on the right side.	A 3D perspective diagram of a fan unit with a circular duct opening on the left side.	A 3D perspective diagram of a fan unit with a circular duct opening on the front face.	A 3D perspective diagram of a fan unit with circular duct openings on both the left and right sides.	A 3D perspective diagram of a fan unit with circular duct openings on the front face and both the left and right sides.

Complete isolation kits are available with either neoprene or spring isolators. Please see page 157.

# FANS & ACCESSORIES - GREENHECK

## Performance

Performance capabilities in inventory range from 265 cfm to 11,973 cfm at .125 in. wg of static pressure.

Item Number	Model	HP	RPM	Sones @ 0"	Performance in Inches WG									
					0.125	0.25	0.375	0.5	0.625	0.75	1	1.25	1.5	1.75
005-0100	BSQ-070-4X	1/4	1370	11.8	265	227	186	140	90					
			1730	16.1	349	323	293	260	227	192	112			
			1970	19.1	404	383	358	330	301	272	211	141		
005-0110	BSQ-080-4X	1/4	1050	8.0	372	298	184							
			1835	17.2	721	688	651	614	571	525	426			
005-0106	BSQ-080-LMD	1/3	1885	17.7	742	710	675	640	598	555	459	297		
		1/2	2100	21	834	805	775	743	711	674	595	508	367	
		3/4	2645	28	1065	1041	1018	995	970	945	894	835	773	705
005-0120	BSQ-090-4X	1/4	1050	8.0	547	443	290							
			1360	11.7	753	684	605	509	383					
			1695	16.0	966	915	859	798	730	655	439			
005-1111	BSQ-090-LMD	1/3	1750	16.5	1000	951	898	841	776	708	528			
		1/2	1910	18.1	1100	1057	1009	958	904	845	705	517		
		3/4	2220	22	1291	1255	1216	1175	1132	1086	987	879	733	540
		1	2690	28	1578	1548	1519	1487	1453	1419	1347	1270	1185	1097
005-0130	BSQ-100-4X	1/4	1050	7.9	774	671	498							
			1265	9.8	966	893	798	683						
			1610	15.0	1266	1207	1149	1089	1004	917				
005-0124	BSQ-100-LMD	1/3	1765	16.3	1398	1345	1292	1240	1179	1101	924			
		1/2	2030	19.7	1623	1577	1531	1484	1439	1396	1263	1120		
		3/4	2325	23	1872	1832	1791	1750	1710	1669	1593	1474	1360	1201
		1	2555	26	2065	2028	1991	1954	1917	1880	1809	1732	1624	1521
005-0140	BSQ-120-4X	1/4	1000	7.7	1026	914	783							
			1370	11.0	1475	1396	1315	1230	1136	1026				
005-0140	BSQ-120-LMD	1/3	1500	12.4	1629	1557	1484	1410	1331	1243	1010			
		1/2	1725	15.2	1893	1831	1768	1705	1641	1572	1425	1243		
		3/4	1974	19.7	2183	2129	2075	2020	1964	1908	1791	1663	1518	1307
		1	2170	23	2410	2361	2312	2262	2212	2161	2059	1951	1833	1709
		11/2	2490	31	2779	2737	2694	2651	2607	2563	2475	2387	2294	2198
005-0144	BSQ-130-LMD	1/4	900	7.7	1084	911	635							
			1293	11.9	1652	1563	1462	1328	1170	958				
		1/3	1424	13.7	1838	1754	1672	1568	1443	1299				
		1/2	1630	16.2	2126	2050	1983	1908	1820	1714	1468	1121		
		3/4	1866	21	2448	2389	2324	2266	2202	2128	1949	1740	1462	1686
			2053	25	2702	2655	2592	2357	2484	2426	2286	2117	1926	2359
		11/2	2355	35	3112	3074	3026	2971	2923	2877	2777	2659	2514	

**Performance** (Continued)

Item Number	Model	HP	RPM	Sones @ 0"	Performance in Inches WG									
					.125	.25	.375	.5	.625	.75	1	1.25	1.5	1.75
005-0160	BSQ-140-LMD	1/4	800	6.3	1362	1185	860							
			1075	10.7	1925	1808	1679	1535	1307					
		1/3	1180	12.0	2132	2029	1916	1795	1651	1442				
		1/2	1355	14.2	2474	2390	2295	2195	2092	1977	1631			
		3/4	1550	16.2	2852	2781	2702	2619	2532	2442	2246	1955	1429	
		1	1710	18.3	3161	3096	3030	2955	2880	2800	2638	2453	2181	1758
		1 1/2	1960	24	3640	3584	3528	3469	3404	3338	3201	3059	2904	2718
		2	2135	30	3975	3923	3872	3821	3763	3703	3583	3454	3324	3181
005-0165	BSQ-160-LMD	1/4	650	6.6	1671	1391								
			860	8.7	2333	2165	1966	1691						
		1/3	960	9.8	2637	2497	2331	2142	1883					
		1/2	1100	12.3	3058	2941	2808	2662	2500	2296				
		3/4	1265	15.6	3550	3448	3346	3226	3101	2961	2629	2101		
		1	1390	18.0	3920	3827	3734	3638	3525	3412	3157	2830	2334	
		1 1/2	1590	22	4509	4428	4347	4266	4184	4086	3887	3664	3397	3065
		2	1750	28	4979	4905	4831	4757	4683	4610	4431	4247	4044	3810
		5	2000	40	5710	5645	5581	5516	5451	5387	5256	5100	4943	4770
005-0170	BSQ-180-LMD	1/3	700	10.0	2649	2387	2023							
			790	10.6	3046	2840	2569	2210	1499					
		1/2	905	12.2	3546	3366	3167	2928	2621	2175				
		3/4	1035	14.5	4101	3947	3789	3606	3398	3166	2411			
		1	1140	16.5	4545	4408	4265	4122	3944	3755	3283	2510		
		1 1/2	1310	20	5259	5145	5021	4896	4772	4630	4302	3911	3365	
		2	1440	23	5803	5699	5590	5476	5363	5250	4979	4678	4318	3838
		3	1645	29	6656	6566	6475	6377	6278	6179	5981	5744	5485	5216
005-0175	BSQ-240-LMD	1/2	500	10.7	4518	4001	3325							
			570	12.3	5279	4845	4363	3704						
		3/4	650	14.3	6121	5757	5360	4933	4375					
		1	715	16.1	6795	6476	6133	5757	5358	4847				
		1 1/2	820	19.4	7874	7616	7317	7016	6688	6349	5494			
		2	900	22	8689	8457	8198	7926	7646	7347	6713	5833		
		3	1035	28	10058	9856	9653	9420	9184	8947	8433	7894	7234	6302
		5	1225	41	11973	11802	11631	11460	11270	11070	10671	10245	9804	9345

- Performance and values shown are certified for installation B: Free inlet, Ducted outlet
- Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories)
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301
- The AMCA Certified Ratings Seal applies to sone ratings only.

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

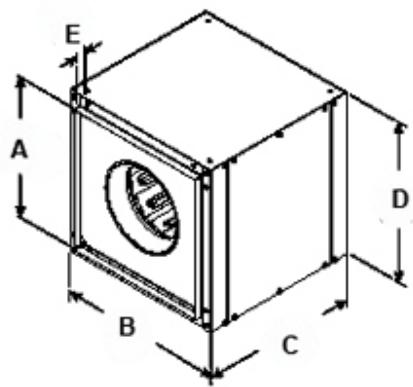
## INLINE DIRECT DRIVE FANS - MODEL SQ

Greenheck's Models SQ is the ideal selection for clean air applications (intake, exhaust, return, or make-up air systems) where space is a prime consideration. Fan wheels are centrifugal, backward inclined, and constructed of aluminum. These fans are direct drive and have maximum operating temperature of 130° F.



### Features

- Galvanized steel housing
- Non-overloading backward inclined aluminum wheel
- Side access panels
- Inlet and outlet duct connection flanges
- Ball bearing motors
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearing pillow blocks
- Static resistant belts



### Dimensions

Model	A	B	C	D	E	Damper Size	Unit Weight	Gauge	Outlet Velocity
SQ-75	8 7/8"	12"	13"	12"	1"	9" X 9"	26 lb	18	1.828 X CFM
SQ-80	11 7/8"	15"	16"	15"	1"	12" X 12"	41 lb	18	1.021 X CFM
SQ-85	11 7/8"	15"	16"	15"	1"	12" X 12"	41 lb	18	1.021 X CFM
SQ-90	11 7/8"	15"	16"	15"	1"	12" X 12"	41 lb	18	1.021 X CFM
SQ-95	11 7/8"	15"	16"	15"	1"	12" X 12"	41 lb	18	1.021 X CFM
SQ-100	13 7/8"	17"	21"	17"	1"	14" X 14"	56 lb	18	0.748 X CFM
SQ-120	15 7/8"	19"	21"	19"	1"	16" X 16"	67 lb	18	0.571 X CFM
SQ-140	19 7/8"	23"	22"	23"	1"	20" X 20"	104 lb	18	0.364 X CFM

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

**Performance**

Performance capabilities in inventory range from 241 cfm to 2,170 cfm at 0 in. wg of static pressure.

Item Number	Model	HP	RPM	Sones @ 0"	Max BHP	Performance in Inches WG								
						0	0.125	0.25	0.375	0.5	0.625	0.75	1	1.25
005-0920	SQ-75-DGEX	1/100	1050	3.6	0.01	241	147							
		1/50	1300	4.1	0.02	299	225	133						
		1/30	1550	6.1	0.03	356	294	229	187					
005-0930	SQ-80-DGEX	1/40	1050	3.8	0.02	306	225	105						
		1/20	1300	5.4	0.03	379	313	244	140					
		1/12	1550	7.3	0.06	452	395	343	280	201				
005-0935	SQ-85-DGEX	1/40	1050	3.8	0.02	358	272	142						
		1/20	1300	5.4	0.03	443	378	299	186					
		1/12	1550	7.3	0.06	528	474	414	344	254				
005-0940	SQ-90-DGEX	1/50	1050	4	0.02	500	370	188						
		1/25	1300	5.4	0.04	619	519	398	245					
		1/10	1550	7.6	0.07	738	655	565	457	334				
005-0950	SQ-95-DGEX	1/30	1050	4.9	0.03	623	475	275						
		1/15	1300	7.6	0.06	771	660	523	352					
		1/8	1550	9.6	0.09	920	830	720	604	462	276			
005-0960	SQ-100-A	1/4	1725	13.2	0.22	1455	1403	1350	1292	1227	1156	1078	831	
005-0970	SQ-120-A	1/2	1725	14.7	0.47	1948	1884	1819	1754	1692	1629	1563	1417	1240
005-0980	SQ-140-B	1/3	1140	10.8	0.27	2170	2061	1942	1818	1667	1447	1122		

- Performance and values shown are certified for installation type B: Free inlet, Ducted outlet.
- Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
- The AMCA Certified Ratings Seal applies to sone ratings only.

The side discharge option helps to reduce system effect. It will increase performance and reduce installation labor. The most notable is reducing system effects. Note: The figure 1 example shows the air being discharged into the corner. It will take several duct lengths before the airflow becomes laminar or smooth again after making the turn. In figure 2, the fan is placed in the corner using a side discharge. In this configuration the air flow pattern at discharge is smooth and supports a more predictable system. Remember the duct length on the discharge side, should be approximately two to three wheel diameters to achieve catalog performance.

Fan performance will change with different discharge positions. Catalog data is based on an inline discharge. Right side discharge will give you 108% of catalogued performance and left side will give you 109% of catalogued performance. Use figure 3 to locate the orientation to fit your application.

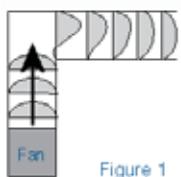


Figure 1

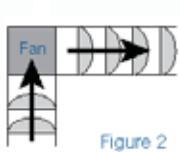


Figure 2

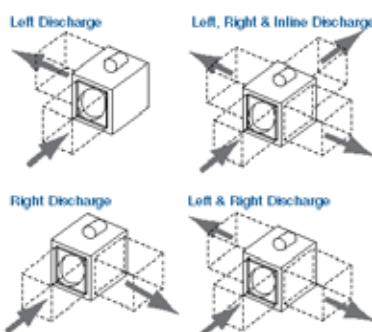


Figure 3

Complete isolation kits are available with either neoprene or spring isolators. Please see page 173.

## SWB - CENTRIFUGAL UTILITY FANS

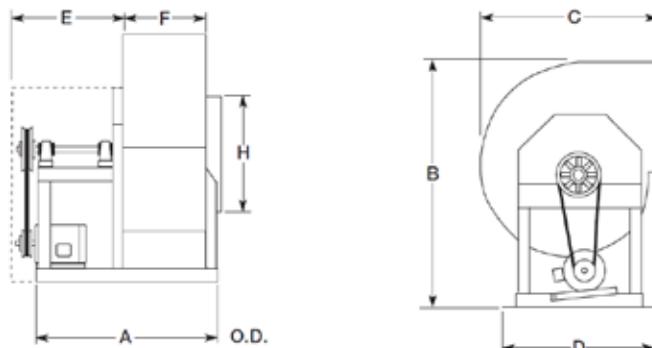
Model SWB Backward Inclined, Belt Drive Utility fans have several advantages of higher operating efficiencies, a non-overloading horsepower curve, and higher pressure capability.

### Options and Accessories

SWB 100	SWB 200	Options and Accessories
X	X	Vibrations isolators
X	X	Weatherhood
X	X	Belt guard
X	X	Gravity and motorized dampers -Model WD (in stock)
X	X	External inlet vane damper and companion flange
X	X	Shaft seal with aluminum rub ring
X	X	Inlet and outlet guards
X	X	Heat slinger
X	X	Drain connection
X	X	Access doors - bolted
	X	Access doors - hinged
X	X	Flanged inlets or outlets
X	X	Dual drives
STD	X	Aluminum wheel
X	X	UL/cUL 705 electrical with weatherhood
	X	UL/cUL 762 grease- indoor and outdoor Mounting
	X	Performance baffles
	X	Welded scroll construction
X	X	Extended lube lines
	X	Stainless steel shaft
	X	Aluminum construction
	X	UL Listed for emergency and smoke control



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### Dimensions

Item Code	Model	A	B	C	D	E	F	G
005-1000	<b>SWB-110</b>	23 1/2"	26 5/8"	18 3/4"	16 7/8"	15 1/2"	9 3/4"	11"
005-1100	<b>SWB-113</b>	25 1/8"	31 1/4"	23 3/8"	18 7/8"	16 3/4"	10 5/8"	14"
005-1200	<b>SWB-116</b>	30 3/8"	38 1/8"	28"	22 7/8"	19 1/2"	13 1/8"	17 1/2"
005-1300	<b>SWB-120</b>	37"	46"	33 5/8"	27 3/8"	23 3/4"	15 7/8"	21 1/8"
005-1400	<b>SWB-124</b>	41 1/2"	57 3/4"	40 5/8"	33 5/8"	25"	19 1/2"	25 7/8"
005-1500	<b>SWB-212</b>	23"	28 3/8"	21 3/8"	16 7/8"	15 1/2"	9 5/8"	13"
005-1600	<b>SWB-216</b>	30 3/8"	38 1/8"	28"	22 7/8"	19 1/2"	13 1/8"	17 1/2"
005-1700	<b>SWB-220</b>	37"	46"	33 5/8"	27 3/8"	23 3/4"	15 7/8"	21 1/8"
005-1800	<b>SWB-224</b>	41 1/2"	57 3/4"	40 5/8"	33 5/8"	25"	19 1/2"	25 7/8"

## SWB SERIES 100

Greenheck's Model SWB Series 100 backward inclined utility fans are available in five sizes (110-124) with capacities from 500 to 8,050 cfm.

### Features

- Housing: heavy gauge steel housing with lock formed seams
- Unit support angles with prepunched mounting holes
- Adjustable motor plate
- Corrosion resistant fasteners
- Slip fit outlet bearings, shaft, and wheel: heavy duty lubricatable, self-aligning ball bearing pillow blocks
- Polished, solid steel shafts
- Backward inclined aluminum wheels
- Blower scroll constructed of galvanized steel
- Drive frame is coated with permatector
- Aluminum wheel
- Clockwise and counter-clockwise wheel rotation

### Performance

Performance capabilities in inventory range from 500 cfm to 10,813 cfm.

Item Code	Model	CFM	OV	Fan RPM / Static Pressure Performance in Inches WG					
				0.25	0.5	1	1.5	2	2.5
005-1000	SWB-110-LMD	500	641	898	1094				
		1200	1540	1631	1759	1983	2176	2351	2511
		2000	2567	2571	2652				
005-1100	SWB-113-LMD	800	748	824	986				
		1800	1683	1496	1591	1767	1928	2073	2211
		2675	2502	2136	2210	2338			
005-1200	SWB-116-LMD	1200	789	625	751				
		2800	1842	1164	1237	1368	1492	1606	1709
		4200	2763	1682	1734	1832	1921	2008	
005-1300	SWB-120-LMD	1800	807	471	591				
		3600	1615	723	807	943	1069	1184	1287
		5175	2321	967	1035	1153	1251	1344	
005-1400	SWB-124-LMD	2800	848	413	503				
		5600	1697	668	727	827	827	917	1005
		8050	2440	912	957	1039	1039	1112	1180

- Performance and values shown are certified for installation type B: Free inlet, Ducted outlet
- Power rating (BHP) does not include transmission losses
- Performance ratings do not include the effects of appurtenances (accessories)

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## SWB SERIES 200

Greenheck's Model SWB Series 200 backward inclined utility fans are available in thirteen sizes (210 - 236) with capacities from 1,443 to 10,813 cfm.

Model SWB fans come with CW-TH rotation and discharge and include: aluminum wheel (SWB-210), steel wheel (SWB-212-224), weatherhood and UL/cUL 762.

### Features

- Housing: heavy gauge steel housing with lock formed seams
- Unit support angles with prepunched mounting holes
- Adjustable motor plate
- Corrosion resistant fasteners
- Slip Fit, outlet, bearings, shaft, and wheel: heavy duty lubricatable, self-aligning ball bearing pillow blocks
- Polished, solid steel shafts
- Backward inclined wheel
- Entire fan is constructed of steel and is coated with Permatector
- Larger shafts, bearings, and increased material thickness
- Clockwise and counter-clockwise wheel rotation

### Direct Mount

No base required. Isolators are attached directly to equipment. Direct isolation can be used if equipment is unitary and rigid without the use of additional support. Direct isolation is not recommended for equipment having large overhung loads (e.g. motors on Arr. 9 fans). If there is any doubt that equipment can be supported directly on isolators, use rails, bases or consult with our sales team.



Greenheck Fan Corporation certifies that the SWB models shown herein are licensed to bear the AMCA Seal. The ratings shown on pages 59-60 are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.



**Performance**

Performance capabilities in inventory range from 500 cfm to 10,813 cfm.

Item Code	Model	RPM	HP	MAX BHP	Performance in Inches WG								
					.25	.5	.75	1	1.5	2	2.5	3	4
005-1500	SWB-212-LMD	1500	1/4	0.251	1443	1323	1185	990					
		1651	1/3	0.334	1606	1504	1388	1252					
		1770	1/2	0.414	1734	1645	1538	1421	1048				
		1891	1/2	0.501	1867	1786	1685	1583	1313				
		2029	3/4	0.612	2017	1940	1851	1757	1544	1170			
		2169	3/4	0.751	2169	2092	2016	1928	1742	1490			
		2265	1	0.863	2273	2196	2128	2044	1871	1655	1298		
		2376	1	1.001	2392	2315	2257	2176	2016	1833	1574		
		2486	1 1/2	1.15	2509	2434	2377	2306	2153	1986	1772	1435	
		2600	1 1/2	1.316	2629	2559	2501	2440	2293	2140	1962	1718	
		2716	1 1/2	1.501	2751	2686	2627	2574	2434	2293	2132	1929	
		2857	2	1.74	2899	2840	2779	2730	2603	2470	2326	2164	1620
		2998	2	2.001	3047	2992	2930	2884	2770	2643	2513	2367	1975
005-1600	SWB-216-LMD	982	1/3	0.334	2396	2140	1773						
		1124	1/2	0.501	2805	2599	2352	1996					
		1287	3/4	0.752	3267	3092	2897	2676					
		1347	1	0.861	3435	3267	3089	2887	2284				
		1416	1	1.001	3628	3468	3307	3117	2634				
		1526	1 1/2	1.252	3933	3786	3639	3473	3092	2153			
		1621	1 1/2	1.503	4195	4057	3917	3774	3438	2976			
		1705	2	1.748	4426	4295	4163	4034	3721	3347			
		1784	2	2.003	4643	4519	4392	4267	3980	3652	3191		
		1905	3	2.439	4974	4858	4740	4621	4368	4083	3737	3231	
		2042	3	3.004	5348	5240	5031	5019	4800	4537	4257	3904	
		2200	5	3.756	5778	5678	5576	5474	5270	5045	4800	4529	3732
005-1700	SWB-220-LMD	815	1/2	0.502	3551	3179	2653						
		876	3/4	0.621	3860	3527	3114						
		934	3/4	0.752	4156	3856	3499	2994					
		980	1	0.869	4389	4113	3779	3368					
		1028	1	1.003	4631	4366	4061	3709					
		1100	1 1/2	1.228	4991	4742	4475	4174	3242				
		1176	1 1/2	1.501	5369	5136	4903	4625	3934				
		1230	2	1.718	5636	5414	5195	4937	4342				
		1295	2	2.004	5956	5746	5536	5308	4781	3994			
		1395	3	2.506	6447	6253	6056	5866	5398	4832	2781		
		1482	3	3.004	6872	6690	6505	6323	5906	5433	4779		
		1622	5	3.939	7554	7389	7220	7051	6703	6300	5842	5223	
		1757	5	5.007	8209	8056	7920	7746	7439	7083	6706	6262	
		1942	7 1/2	6.76	9107	8971	8834	8692	8407	8128	7792	7451	6597
005-1800	SWB-224-LMD	681	3/4	0.753	5420	4878	4198						
		715	1	0.87	5739	5236	4631	3650					
		749	1	1.002	6057	5589	5028	4299					
		799	1 1/2	1.216	6516	6093	5592	5013					
		858	1 1/2	1.506	7050	6664	6227	5726	3775				
		895	2	1.709	7384	7019	6614	6151	4874				
		944	2	2.005	7824	7485	7120	6692	5671				
		1014	3	2.482	8449	8143	7807	7435	6583	5222			
		1080	3	3.003	9037	8758	8442	8118	7349	6263			
		1175	5	3.867	9878	9623	9345	9054	8401	7650	6650		

- Performance and values shown are certified for installation type B: Free inlet, Ducted outlet
- Power rating (BHP) does not include transmission losses
- Performance ratings do not include the effects of appurtenances (accessories)

For the latest product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## GRS - SPUN ALUMINUM GRAVITY VENTILATORS

Model GRS is an aluminum ventilator designed for intake (Model GRSI) or relief (Model GRSR) applications with either natural gravity or positive pressure systems. The GRS appearance blends with other Greenheck products and with its low silhouette, avoids the problem of detracting from architectural aesthetics. Exceptional design and construction features make this unit a rugged, efficient, and economical air inlet or outlet.



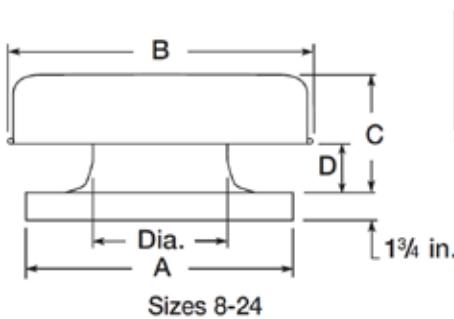
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### Features

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

### Options and Accessories

- Gravity and motorized dampers
- Galvanized roof curbs
- Aluminum roof curbs
- Extended bases
- Rubber curb cap stripping
- Aluminum curb adaptors
- Hood insulation (1/2 in. and 1 in.)
- Insect screen in frame
- Greenheck coatings



### Dimensions

Item Code	Model	A	B	C	D	DIA.	Throat Area (FT <sup>2</sup> )
005-0708	GRS-8	19"	20 1/2"	7 3/4"	1 1/2"	8 1/4"	0.37
005-0710	GRS-10	19"	20 1/2"	7 3/4"	2	10 1/4"	0.57
005-0712	GRS-12	22"	29"	10"	3 1/2"	12 1/4"	0.82
005-0715	GRS-15	22"	29"	10"	3 1/2"	14 1/4"	1.12
005-0716	GRS-16	26"	29"	11"	4 1/4"	16 1/4"	1.45
005-0718	GRS-18	30"	35 1/2"	9 3/4"	1 3/4"	20 1/4"	1.83
005-0721	GRS-20	30"	35 1/2"	11 1/4"	3 3/4"	20 1/4"	2.25
005-0724	GRS-24	34"	38 1/4"	11"	4"	24 1/2"	3.24

- Dimension A - given is the inside dimensions of the curb cap.
- The roof curb should be 1 1/2 in. less than the curb cap to allow for roofing and flashing.

**Performance**

Item Code	Model	Capacities (CFM)									
			.04	.06	.08	.1	.125	.187	.25	.3	.35
005-0708	GRS-8	RELIEF	203	250	291	325	365	462	559	636	713
		INTAKE	182	224	257	286	315	394	448	493	530
005-0710	GRS-10	RELIEF	310	387	450	505	570	695	814	908	1003
		INTAKE	283	348	399	445	490	611	697	765	823
005-0712	GRS-12	RELIEF	440	557	643	724	818	1000	1165	1290	1395
		INTAKE	406	500	572	637	702	879	999	1097	1180
005-0715	GRS-15	RELIEF	630	762	890	1004	1125	1375	1625	1819	2014
		INTAKE	560	690	790	880	970	1210	1380	1515	1630
005-0716	GRS-16	RELIEF	820	1025	1190	1340	1515	1845	2160	2385	2610
		INTAKE	751	925	1059	1180	1301	1623	1850	2031	2186
005-0718	GRS-18	RELIEF	995	1240	1440	1630	1835	2245	2615	2910	3189
		INTAKE	913	1124	1286	1434	1580	1972	2248	2468	2656
005-0721	GRS-20	RELIEF	1220	1520	1785	1995	2235	2730	3166	3513	3859
		INTAKE	1111	1368	1565	1745	1923	2399	2735	3003	3232
005-0724	GRS-24	RELIEF	1780	2215	2580	2920	3255	3990	4650	5140	5650
		INTAKE	1440	1820	2120	2418	2722	3330	3836	4235	4580

For the last product information and performances download CAPS from the greenheck software page. <http://www.greenheck.com/software>

## FAN ACCESSORIES

### Electrical Accessories

#### Fan Speed Control

Speed controls are available in two models for use with shaded pole and open permanent split capacitor motors in 115 volt single phase only. Handy box not included.



Item Number	Model
010-0825	SPEED CONTROL 6 AMP
010-0828	SPEED CONTROL 10 AMP

#### Disconnect Switches

Use these non-fused disconnect switches for safety in servicing fans not equipped with factory mounted disconnects. Each model includes a switch assembly, handy box and cover plate.

Item Number	Model	HP	Volts	Phase
010-0842	N1TS-1	up to 1/2	120V	1 PH
010-0845	N1TS- 2	up to 1	120V	1 PH
010-0848	N1TS-3	up to 2	120V	1 PH
010-0851	N1TS-6	up to 7 1/2	200/600	3 PH

### Specific Accessories

Item Code	Description	For Use with
010-0869	Vibration Isolation Kit	SP/ CSP
010-0870	Mounting Brackets # 800201	SQ/BSQ
010-0872	Grease Trap Kit w/ Drain #851973	CUBE
010-0884	Hinge Kit #851018	CUBE

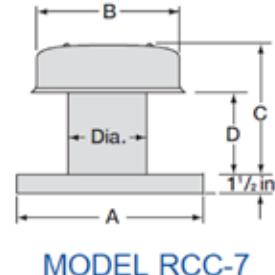
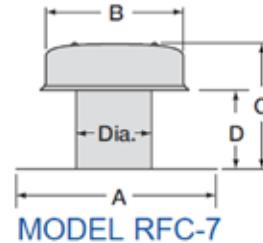
## Roof Accessories

Flashing Flange : Model RFC-7

- Weathertight aluminum construction
- Integral birdscreen
- Built in flashing flange

Curb Caps: Model RCC-7

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

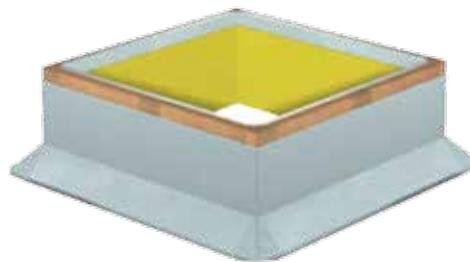
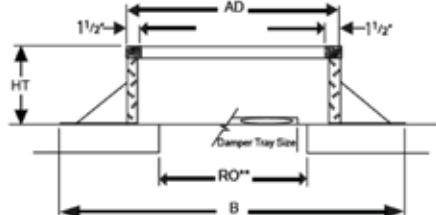


Item Number	Model	A	B	C	D	Throat
010-0809	RFC-7	18"	12"	10"	6 3/8"	7 in. Dia.
010-0810	RCC-7	15"	12"	10"	6 3/8"	7 in. Dia.

For warranty information and to order replacement parts, Contact the parts department toll free 1-888-332-2040 with the fan model and serial number (located on fan name tag)

## Roof Curbs

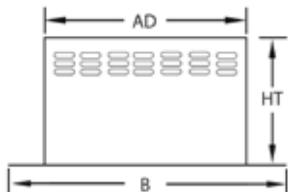
GPS Roof Curbs are suitable for flat, non-insulated roof deck applications



Item Number	Model	Damper Tray Size	AD	B	HT	Roof Opening (SQ)
<b>010-0114</b>	GPS15-G8	08"	13 1/2"	23 3/4"	08"	10 1/2"
<b>010-0115</b>	GPS17-G8	08"	15 1/2"	23 3/4"	08"	10 1/2"
<b>010-0116</b>	GPS17-G8	10"	15 1/2"	23 3/4"	08"	12 1/2"
<b>010-0119</b>	GPS19-G8	10"	17 1/2"	25 3/4"	08"	12 1/2"
<b>010-0120</b>	GPS19-G8	12"	17 1/2"	25 3/4"	08"	14 1/2"
<b>010-0122</b>	GPS22-G8	12"	20 1/2"	28 3/4"	08"	14 1/2"
<b>010-0123</b>	GPS22-G8	16"	20 1/2"	28 3/4"	08"	18 1/2"
<b>010-0124</b>	GPS24-G8	14"	22 1/2"	30 3/4"	08"	16 1/2"
<b>010-0126</b>	GPS26-G8	16"	24 1/2"	32 3/4"	08"	18 1/2"
<b>010-0130</b>	GPS30-G8	18"	28 1/2"	36 3/4"	08"	20 1/2"
<b>010-0132</b>	GPS30-G8	20"	28 1/2"	36 3/4"	08"	22 1/2"
<b>010-0134</b>	GPS34-G8	24"	32 1/2"	40 3/4"	08"	26 1/2"
<b>010-0140</b>	GPS40-G8	30"	38 1/2"	46 3/4"	08"	32 1/2"
<b>010-0146</b>	GPS46-G8	36"	44 1/2"	52 3/4"	08"	38 1/2"

## Vented Roof Curbs

GPVF Vented Roof Curbs are suitable for flat roof decks in kitchen applications



Item Code	Model	AD	B	HT
<b>010-0219</b>	GPFV-19 GALV 24"	19"	29"	24"
<b>010-0222</b>	GPFV-22 GALV 24"	22"	32"	24"
<b>010-0226</b>	GPFV-26 GALV 24"	26"	36"	24"
<b>010-0230</b>	GPFV-30 GALV 20"	30"	40"	20"
<b>010-0234</b>	GPFV-34 GALV 20"	34"	44"	20"
<b>010-0240</b>	GPFV-40 GALV 20"	40"	50"	20"

## Backdraft Dampers

Greenheck's Backdraft Dampers are used in systems to allow airflow in one direction and prevent airflow in the opposite direction. For example, exhaust dampers allow airflow out of buildings only, preventing airflow into the building.



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Item Code	Model	Size	Flange	Mounting			For Use w/ Fan Model
				Vertical	Horizontal	Exhaust (airflow up)	
010-0308	WD-100	08" x 08"	None		X	X	G, GB,
010-0310	WD-100	10" x 10"	None		X	X	G, GB,
010-0312	WD-100	12" x 12"	None		X	X	G, GB,
010-0314	WD-100	14" x 14"	None		X	X	G, GB,
010-0316	WD-100	16" x 16"	None		X	X	G, GB,
010-0318	WD-100	18" x 18"	None		X	X	G, GB,
010-0320	WD-100	20" x 20"	None		X	X	G, GB,
010-0324	WD-100	24" x 24"	None		X	X	G, GB,
010-0330	WD-100	30" x 30"	None		X	X	G, GB,
010-0336	WD-100	36" x 36"	None		X	X	G, GB,
010-0408	WD-323	08" x 08"	Discharge	X		X	CW, CWB
010-0412	WD-323	12" x 12"	Discharge	X		X	CW, CWB
010-0415	WD-323	15" x 15"	Discharge	X		X	CW, CWB
010-0509	WD-330	09" x 09"	None	X		X	SQ
010-0512	WD-330	12" x 12"	None	X		X	SQ, BSQ
010-0514	WD-330	14" x 14"	None	X		X	SQ, BSQ
010-0516	WD-330	16" x 16"	None	X		X	SQ, BSQ
010-0518	WD-330	18" x 18"	None	X		X	SQ, BSQ
010-0520	WD-330	20" x 20"	None	X		X	SQ, BSQ
010-0524	WD-330	24" x 24"	None	X		X	SQ, BSQ
010-0535	WD-330	35" x 35"	None	X		X	SQ, BSQ

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## FORWARD-CURVE UTILITY FANS

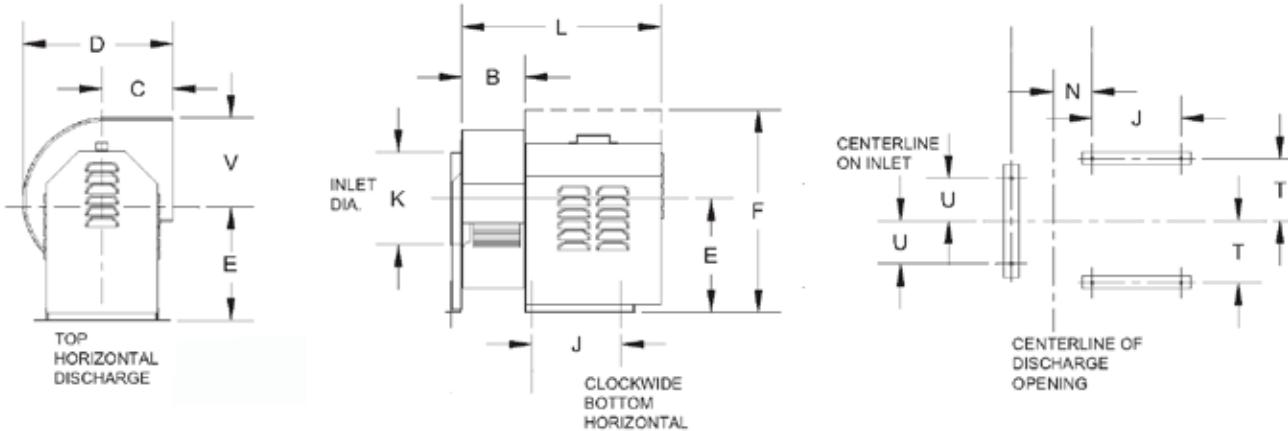
Model FC Forward Curve, Belt Drive Utility fans are built with superior quality for most commercial and industrial exhaust applications.

### Features

- Frame/housings construction of heavy gauge, zinc-coated steel.
- Baked enamel finish
- Self-aligning ball bearing pillow blocks

### Options and Accessories

- Gravity and motorized outlet dampers
- Inlet screen
- Drain fittings
- AMCA- Type "B" spark resistant construction



### Dimensions

Item Name	MODEL	WHEEL DIA.	B	C	D	E	F	J	K	L	N	U	V	SHAFT
017-0109	FC 109	9 1/8" X 4 5/8"	6 3/8"	6 3/4"	14 7/16 "	9 3/8"	16 1/8"	10 1/8"	8 7/8"	23"	4 7/16"	~	8 3/4"	5/8"
017-0111	FC 111	10 5/8" X 6"	8 1/4 "	7 15/16"	16 5/8"	10 1/4"	17 3/4"	11"	9 7/8"	26"	5 3/4"	~	9 5/8"	3/4"
017-0112	FC 112	12 5/8" X 6"	8 1/4"	9 1/8"	19 3/8"	14 5/8"	23 5/8"	11 1/2"	11 7/8"	27"	5 3/8"	8"	11 1/2"	3/4"
017-0115	FC 115	15" X 9"	12 1/4"	10 1/2"	22 5/8"	17 5/8"	28 1/4"	12 1/2"	15 7/8"	31 3/4"	7 3/8"	9 1/2"	13 9/16"	1"

## Performance

### FC-109 | 017-0109

- 9 1/8" wheel diameter
- TIP Speed (FPM) =  $2.39 \times \text{RPM}$

Volume CFM	O.V.FPM	Performance in Inches WG																					
		1/8" RPM BHP		1/4" RPM BHP		3/8" RPM BHP		1/2" RPM BHP		5/8" RPM BHP		3/4" RPM BHP		1" RPM BHP		1 1/4" RPM BHP		1 1/2" RPM BHP		1 3/4" RPM BHP		2" RPM BHP	
300	670	458	0.01	577	0.02	706	0.03																
400	893	525	0.02	633	0.04	723	0.05	808	0.06	903	0.07												
500	1116	598	0.04	699	0.06	782	0.07	855	0.08	924	0.09	992	0.11	1145	0.14								
600	1339	690	0.07	762	0.08	847	0.10	917	0.11	980	0.13	1040	0.14	1154	0.17	1272	0.21						
700	1563	786	0.10	840	0.11	913	0.13	983	0.15	1044	0.17	1101	0.19	1205	0.22	1304	0.26	1401	0.30	1505	0.34		
800	1786	886	0.15	930	0.16	982	0.18	1049	0.20	1111	0.22	1165	0.25	1266	0.29	1357	0.33	1445	0.36	1529	0.40	1616	0.45
900	2009	987	0.21	1025	0.22	1066	0.24	1115	0.26	1176	0.28	1234	0.31	1330	0.36	1419	0.41	1501	0.45	1581	0.49	1656	0.54
1000	2232	109	0.29	1122	0.30	1158	0.31	1197	0.33	1242	0.35	1296	0.38	1397	0.44	1483	0.50	1563	0.56	1638	0.60	1710	0.65
1100	2455	1193	0.38	1222	0.39	1253	0.41	1286	0.43	1323	0.45	1364	0.47	1467	0.54	1550	0.60	1627	0.66	1701	0.73	1770	0.78
1200	2679	1296	0.49	1322	0.51	1350	0.52	1379	0.54	1411	0.56	1445	0.58	1525	0.64	1619	0.71	1694	0.78	1765	0.85	1834	0.92
1300	2902	1400	0.62	1424	0.64	1449	0.65	1475	0.67	1503	0.69	1532	0.71	1598	0.76	1678	0.83	1764	0.92				
1400	3125	1504	0.77	1526	0.79	1549	0.81	1573	0.83	1598	0.85	1624	0.87										

- Performance shown is for Type B - Free inlet, ducted outlet
- Power rating (BHP) does not include drive losses
- Performance ratings do not include the effects of appurtenances in the airstream.

### FC-111 | 017-0111

- 10 5/8" wheel diameter
- TIP Speed (FPM) =  $2.78 \times \text{RPM}$

Volume CFM	O.V.FPM	Performance in Inches WG																					
		1/8" RPM BHP		1/4" RPM BHP		3/8" RPM BHP		1/2" RPM BHP		5/8" RPM BHP		3/4" RPM BHP		1" RPM BHP		1 1/4" RPM BHP		1 1/2" RPM BHP		1 3/4" RPM BHP		2" RPM BHP	
600	910	445	0.04	545	0.06	635	0.08	710	0.10	785	0.11	857	0.13										
700	1062	480	0.06	580	0.08	661	0.10	734	0.12	799	0.14	864	0.16	990	0.21								
800	1214	521	0.09	617	0.11	690	0.13	760	0.15	825	0.18	882	0.20	998	0.25	1107	0.29						
900	1366	576	0.12	645	0.14	723	0.16	790	0.19	854	0.22	910	0.24	1017	0.30	1117	0.35	1218	0.40				
1000	1517	628	0.16	682	0.18	758	0.20	823	0.23	881	0.26	939	0.29	1040	0.35	1136	0.41	1223	0.47	1313	0.52	1400	0.59
1100	1669	682	0.21	722	0.23	791	0.25	858	0.28	917	0.32	968	0.35	1064	0.41	1159	0.48	1241	0.54	1322	0.60	1407	0.67
1200	1821	741	0.28	755	0.29	824	0.31	890	0.34	945	0.38	1000	0.41	1098	0.48	1183	0.55	1268	0.62	1342	0.69	1420	0.76
1300	1973	800	0.36	827	0.36	863	0.38	922	0.41	980	0.45	1037	0.48	1125	0.56	1217	0.63	1297	0.71	1370	0.79	1441	0.86
1400	2124	859	0.44	880	0.44	915	0.46	960	0.49	1017	0.52	1065	0.56	1160	0.64	1242	0.73	1321	0.81	1397	0.89	1465	0.98
1500	2276	917	0.54	938	0.54	962	0.56	1000	0.58	1050	0.61	1100	0.65	1192	0.74	1276	0.83	1352	0.92	1422	1.00	1495	1.09
1600	2428	975	0.65	994	0.66	1019	0.68	1044	0.69	1085	0.72	1136	0.76	1225	0.85	1308	0.94	1382	1.04	1456	1.13	1521	1.22
1700	2580	1035	0.78	1055	0.79	1075	0.79	1098	0.82	1130	0.84	1170	0.88	1260	0.96	1340	1.07	1418	1.16	1483	1.26	1555	1.36
1800	2731	1092	0.92	1110	0.94	1125	0.94	1150	0.97	1177	0.98	1210	1.01	1295	1.10	1377	1.20	1450	1.31	1518	1.41		
1900	2883	1150	1.09	1170	1.10	1180	1.11	1205	1.12	1225	1.15	1255	1.17	1330	1.25	1408	1.35	1481	1.46				
2000	3035	1210	1.27	1225	1.28	1240	1.28	1259	1.29	1279	1.33	1300	1.35	1365	1.41								

- Performance and values shown are certified for installation Type B - Free inlet, ducted outlet
- Power rating (BHP) does not include drive losses
- Performance ratings do not include the effects of appurtenances in the airstream

# FANS & ACCESSORIES - CENTRAL BLOWER

## Performance (Continued)

### FC-112 | 017-0112

- 12 5/8" wheel diameter
- TIP Speed (FPM) =  $3.31 \times \text{RPM}$

Volume CFM	O.V.FPM	Performance in Inches WG															
		1/8"		1/4"		3/8"		1/2"		5/8"		3/4"		1"	1 1/4"	1 1/2"	1 3/4"
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
800	1054	400	0.06	481	0.08	551	0.11	611	0.14	667	0.15	721	0.18	835	0.24		
1000	1318	455	0.10	530	0.13	594	0.16	651	0.20	704	0.23	752	0.25	842	0.31	930	0.37
1200	1581	511	0.16	584	0.19	642	0.23	696	0.27	746	0.31	793	0.35	877	0.42	955	0.48
1400	1845	570	0.23	639	0.27	695	0.32	746	0.36	792	0.41	837	0.45	918	0.55	992	0.62
1600	2108	630	0.33	694	0.38	750	0.43	799	0.48	842	0.54	885	0.58	962	0.68	1035	0.79
1800	2372	693	0.46	753	0.51	805	0.57	853	0.62	896	0.70	936	0.75	1010	0.86	1078	0.96
2000	2635	758	0.62	812	0.68	862	0.73	909	0.79	951	0.89	989	0.94	1060	1.06	1126	1.18
2200	2899	824	0.81	872	0.87	920	0.93	965	1.00	1006	1.09	1045	1.18	1112	1.29	1176	1.43
2400	3162	891	1.03	935	1.10	980	1.17	1021	1.25	1062	1.33	1100	1.42	1167	1.60	1228	1.72
2600	3426	959	1.30	999	1.38	1040	1.45	1081	1.53	1118	1.64	1156	1.71	1222	1.90	1282	2.07
															1338	2.20	
															1390	2.36	
															1442	2.50	

- Performance and values shown are certified for installation Type B - Free Inlet,Ducted Outlet
- Power rating (BHP) does not include drive losses
- Performance ratings do not include the effects of appurtenances in the airstream

### FC-115 | 017-0115

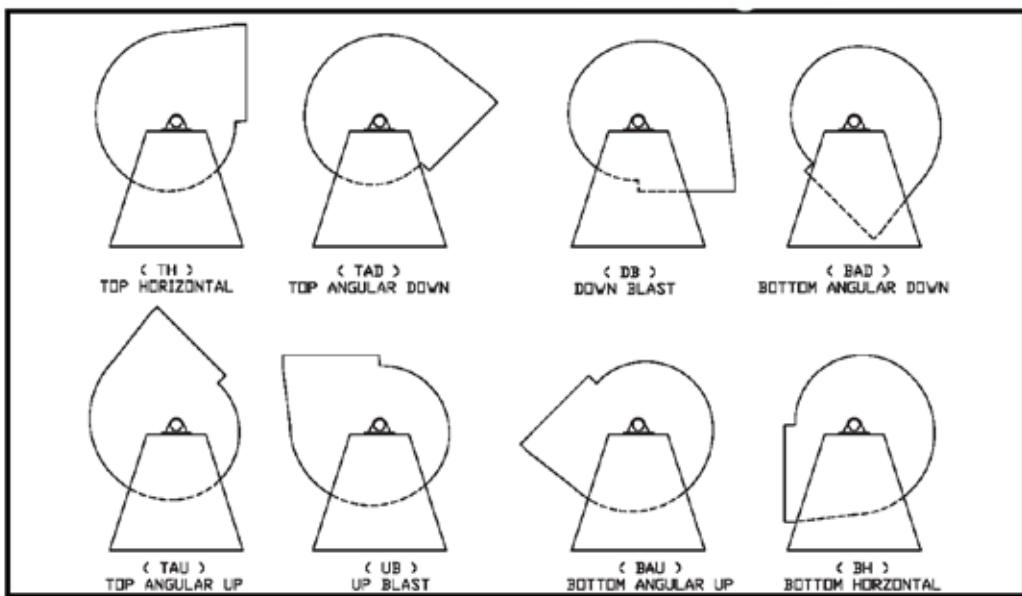
- 15" wheel diameter
- TIP Speed (FPM) =  $3.93 \times \text{RPM}$

Volume CFM	O.V.FPM	Performance in Inches WG															
		1/8"		1/4"		3/8"		1/2"		5/8"		3/4"		1"	1 1/4"	1 1/2"	1 3/4"
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	894	281	0.07	350	0.10	415	0.16										
1400	1043	300	0.10	362	0.13	420	0.19	479	0.21								
1600	1192	319	0.13	380	0.17	440	0.21	484	0.26	538	0.30	582	0.35				
1800	1341	340	0.17	403	0.21	460	0.24	489	0.32	545	0.36	589	0.41	675	0.54		
2000	1490	360	0.21	425	0.27	475	0.27	510	0.35	560	0.43	594	0.48	678	0.60	755	0.72
2200	1639	382	0.27	440	0.33	498	0.41	540	0.39	580	0.52	618	0.57	683	0.69	758	0.80
2400	1788	408	0.34	460	0.41	517	0.49	562	0.56	600	0.62	630	0.68	688	0.80	762	0.92
2600	1937	430	0.43	480	0.50	536	0.58	580	0.66	620	0.73	650	0.81	718	0.92	767	1.05
2800	2086	458	0.54	502	0.60	556	0.69	599	0.77	639	0.86	670	0.94	736	1.08	772	1.20
3000	2235	482	0.64	525	0.72	576	0.80	619	0.90	652	0.99	693	1.08	752	1.22	804	1.36
3200	2385	510	0.77	550	0.84	597	0.93	638	1.03	674	1.13	712	1.23	772	1.41	828	1.54
3400	2534	538	0.92	570	1.00	619	1.08	658	1.18	692	1.27	731	1.39	795	1.60	848	1.74
3600	2683	570	1.10	595	1.17	642	1.25	679	1.35	715	1.37	750	1.59	813	1.62	866	1.99
3800	2832	600	1.27	625	1.26	665	1.44	700	1.53	736	1.62	770	1.80	832	1.90	880	2.36
4000	2981	632	1.50	650	1.52	689	1.65	723	1.75	756	1.92	790	2.10	851	2.23		

- Performance and values shown are certified for installation Type B - Free Inlet,Ducted Outlet
- Power rating (BHP) does not include drive losses
- Performance ratings do not include the effects of appurtenances in the airstream



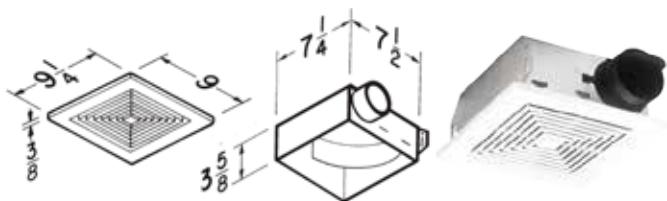
## DISCHARGE POSITIONS



ROTATION IS DETERMINED BY LOOKING AT CLOSE END (MOTOR END) CW SHOWN ABOVE

## BROAN COMPACT VENTILATION

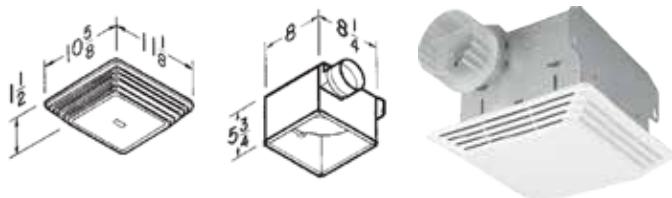
Remove air wherever needed with Broan compact ventilation fans.



Item Code	Description	Duct Size	CFM @.10	Sones
013-0670	670	03"	50	3.5
013-0671	671	03"	70	6
013-0688	688	03"	50	4
013-0689	689	03"	60	5.5

## BROAN CEILING MOUNT

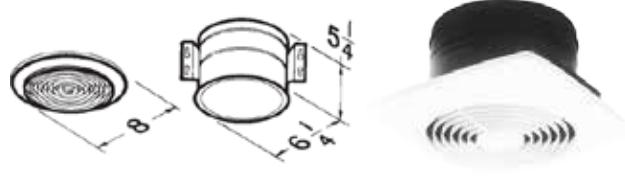
Broan delivers smart designs for easy installation, classic lines that complement any decor and the performance levels you need in a compact package. Broan ventilation fans are effective at removing humidity and odors from bathrooms or any other room in the home.



Item Code	Description	Duct Size	CFM @.10	Sones
013-0676	676	04"	110	4
013-0684	684	04"	80	2.5

## BROAN VERTICAL DISCHARGE

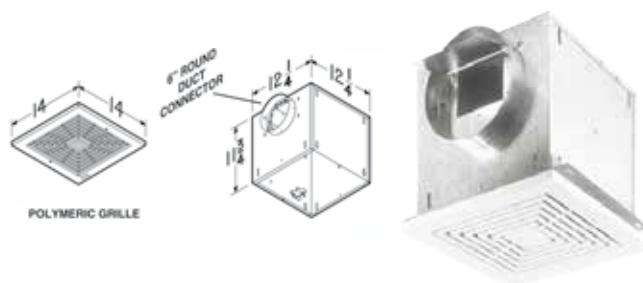
Eliminate humidity from laundry rooms, tobacco smoke from rec rooms, fumes from workshops, or cooking fumes from kitchens with BROAN's utility ventilators.



Item Code	Description	DuctSize	CFM @.10	Sones
013-0673	673	06"	60	4.5

## BROAN L SERIES

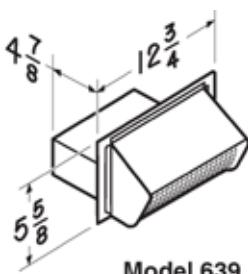
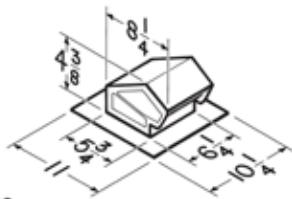
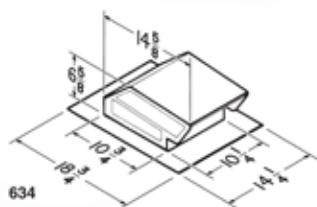
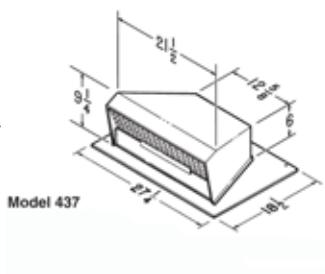
Broan high capacity fans are an exceptionally quiet solution to continuous ventilation. With their heavy-duty motors, high capacity fans are an ideal solution for conference rooms, public restrooms, commercial kitchens and spaces that require ongoing ventilation. Low-vibration and low-profile, they work quietly without getting noticed.



Item Code	Description	Duct Size	CFM @.10	Sones
013-6100	L100	06"	115	0.9
013-6105	L150	06"	161	1.5
013-6200	L200	08"	214	1.7
013-6205	L250	08"	261	2.2
013-6300	L300	08"	294	3.7

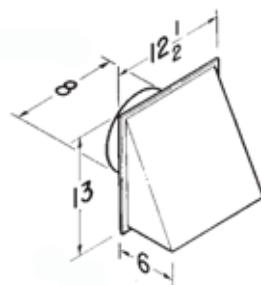
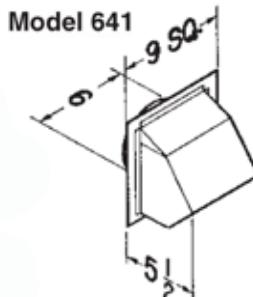
## ROOF & WALL DISCHARGE ACCESSORIES

The following roof and wall caps are constructed of 24 GA. CRCQ steel, with a black electrically-bonded epoxy finish. They include a built-in back draft damper and bird screen.



Item Code	Model	Size
<b>013-5437</b>	437	3 1/4 X 10"
<b>013-5634</b>	634	3 1/4 X 10" or up to 8" round
<b>013-5636</b>	636	03" & 04" Round Duct
<b>013-5639</b>	639	3 1/4" x 10"

The following roof and wall caps are constructed of .025 Aluminum with a natural finish. They have built-in back draft dampers and come with an attachment collar.



Model 643

Item Code	Model	Size
013-5641	641	06" Round
013-5643	643	08" Round



Broan Nutone LLC certifies that the models shown herein are 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 if sound is also certified) and comply with the requirements of the AMCA Certified Ratings Program.



# FANS & ACCESSORIES - INLINE FANS

## POWERVENT<sup>®</sup> INLINE FANS

The POWERVENT (PV) series of direct drive centrifugal in-line duct ventilation fans are designed for a direct in-line connection with standard diameter round ducting. Airflow performance values range from 108 CFM up to 654 CFM. All PV fan models incorporate a powerful external rotor motor that has been factory matched to a nonoverloading backward curved centrifugal fan wheel. This powerful combination enables the PV fans to deliver exceptional airflow performances against high static pressure typically found in ducted ventilation systems. All motors within PV fans are fully speed controllable using voltage or frequency control regulators.

### Features

- Powerful external rotor motor designed to operate in high moisture, lint, and dust laden air
- Backward curved centrifugal fan wheel
- Corrosion resistant galvanized steel casing with black baked enamel coating
- Comprehensive five (5) year warranty



### Code Approval

- All models have been independently safety tested by Underwriters Laboratories, Inc. and are UL and cUL Listed.
- Independently safety tested by Intertek Laboratories, and are ETL Listed.
- Independently tested for airflow performance. The PV range is licensed to bear the AMCA seal for air performance.
- The PV product range is certified by the Home Ventilating Institute (HVI) for air performance.

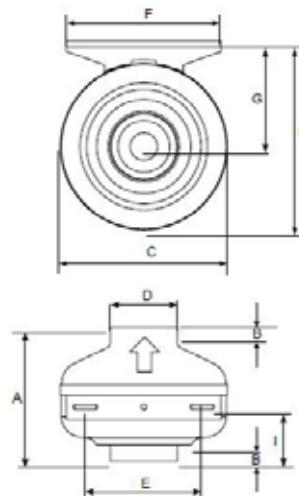
All products manufactured by S&P have undergone extensive tests and quality assurance programs to ensure that the products supplied meet the latest international performance and safety standards. Soler & Palau is an ISO9001 registered company, and has onsite ENAC and AMCA third party accredited test laboratory facilities.

### Performance

Item Code	Model No.	Duct Size	RPM	Volts	Max. Watts	CFM v Static Pressure (SP) Ins. WG									Max. SP
						0"	0.125"	0.25"	0.375"	0.5"	0.75"	1.0"	1.25"	1.5"	
<b>015-0204</b>	PV-100	4"	1400	115	57	108	100	92	85	78	66	52	33	18	1.7
<b>015-0205</b>	PV-125	5"	2350	115	58	128	104	85	74	63	47	32	15	-	1.43
<b>015-0206</b>	PV-150	6"	2750	115	78	245	205	177	157	129	93	59	-	-	1.2
<b>015-0208</b>	PV-200	8"	3100	115	130	402	375	350	327	296	239	179	135	85	1.94
<b>015-0210</b>	PV-250	10"	3000	115	200	587	555	525	495	472	412	355	312	270	2.61
<b>015-0212</b>	PV-315	12.4"	2600	115	170	654	605	570	525	487	408	333	265	203	2.2

Performance and values shown are certified for installation type D-Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Speed (RPM) shown is nominal.

Model	A	B	C	D	E	F	G	H	I	Weight
<b>PV-100</b>	7 5/8"	1"	9 1/2"	3 7/8"	6 11/16"	8 7/8"	6 1/16"	10 13/16"	3 1/4"	7 lbs
<b>PV-125</b>	7 5/8"	1"	9 1/2"	4 7/8"	6 11/16"	8 7/8"	6 1/16"	10 13/16"	3 7/16"	7 lbs
<b>PV-150</b>	8 1/2"	1"	13 1/8"	5 7/8"	6 11/16"	8 7/8"	7 7/8"	14 3/8"	3"	11 lbs
<b>PV-200</b>	8 1/2"	1"	13 1/8"	7 7/8"	6 11/16"	8 7/8"	7 7/8"	14 3/8"	3 11/16"	11 lbs
<b>PV-250</b>	8 1/2"	1"	13 1/8"	9 7/8"	6 11/16"	8 7/8"	7 7/8"	14 3/8"	3 1/4"	13 lbs
<b>PV-315</b>	9 1/16"	1"	15 13/16"	12 5/16"	6 11/16"	8 7/8"	9 3/16"	17 1/8"	3 1/2"	21 lbs



The PV-POWERVENT Series fans are California Title 24 compliant and receive ASHRAE 62.2 when installed with 3 way switch and remotely controlled speed control.

## COMPACT SIZE INLINE FANS

The TD series of in-line duct fans have been specially designed to maximize the airflow performance within the smallest and most compact of housing sizes. This makes TD series the ultimate solution for small to medium sized ventilation installations which require a high airflow to pressure ratio and occupy only the minimum space possible. Example: false ceiling voids, cabinets and many other limited space environments. All the models have been designed with the professional contractor/engineer in mind. They include a "removable body" feature that enables the motor-impeller assembly to be completely removed or replaced without the need to interfere with the attached ducting. They also incorporate a powerful mixed flow impeller and internal air vanes located at the discharge end of the fan housing. This impeller and guide vane combination provides a smooth laminar air flow which in turn minimizes turbulence and noise, and generates an excellent air flow to pressure performance ratio. The motor and impeller combination enables the TD-fans to deliver high airflow performances with minimum noise generation against high static pressures typically found in ducted ventilation systems. The unique design of the support brackets, allows the motor and impeller assembly to be fitted or removed without dismantling the adjacent ducting and therefore, facilitating any installation or maintenance. The TD-fans offer the ideal in-line duct fan solution for a wide range of HVAC ventilation applications.

### Features

- Low Profile
- Direct connection two-speed motor
- Safety auto reset Thermal Overload Protection (fuse type)
- Self-lubricating sleeve bearings
- Suitable for working airstreams up to 104° F
- Unique support brackets design for easy mounting
- Five (5) year limited warranty



### Sound characteristics

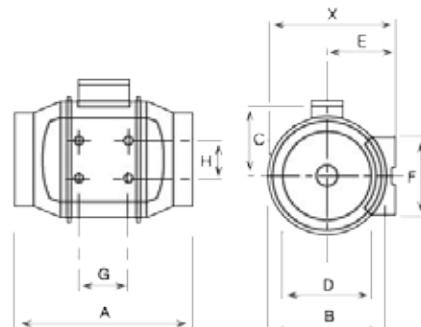
Fan sound levels are measured in sones. At this time there are no sone level test standards available through HVI due to the fact that remote mounted fan noise levels are in proportion to the following: type of duct, length of duct, fan distance from the intake source and other miscellaneous factors, however, it is generally accepted that remote mounted venting is usually quieter than standard (in room) venting.

### Performance

Item Code	Model	Duct Size	RPM	Volts	Max Watts	Speed	CFM v Static Pressure (SP) Ins. WG							Max. SP	Max Operating Temp	Wgt. (LBS)
							0"	0.125"	0.25"	0.375"	0.5"	0.75"	1.0"			
015-0404	TD-100x	4"	1556	120	20	Low	100	77	48	-	-	-	-	0.375	104	4.4
			2096	120	33	High	135	113	90	53	-	-	-	0.55	104	4.4
015-0405	TD-125	5"	1633	120	24	Low	149	110	73	-	-	-	-	0.35	104	4.4
			2146	120	38	High	197	168	133	86	22	-	-	0.55	104	4.4
015-0406	TD-150	6"	1709	120	54	Low	218	193	163	128	105	24	-	0.8	140	4.4
			2289	120	65	High	293	273	250	227	206	131	35	1.15	140	4.4
015-0408	TD-200	8"	2322	120	139	Low	476	422	373	317	260	40	-	1.38	140	8.8
			2781	120	184	High	538	495	458	418	367	190	10	1.625	140	8.8
015-0410	TD-250	10"	2400	115	162	Low	541	475	418	355	295	218	170	2.03	140	19.8
			3200	115	241	High	754	715	680	640	606	520	405	2.53	140	19.8
015-0412	TD-315	12"	2000	115	208	Low	751	670	545	420	285	190	130	1.62	140	30.9
			2500	115	335	High	1050	990	932	850	770	600	420	2.95	140	30.9

Performance and values shown are certified for installation Type D: Ducted Inlet, Ducted Outlet. Performance ratings do not include the effects of appurtenances.

Model	X	A	B	C	D	E	F	G	H
TD-100x	7 3/8"	11 15/16"	6 15/16"	4 1/2"	3 13/16"	3 15/16"	3 9/16"	3 1/8"	2 3/8"
TD-125	7 3/8"	10 3/16"	6 15/16"	4 1/2"	4 13/16"	3 15/16"	3 9/16"	3 1/8"	2 3/8"
TD-150	8 3/8"	11 5/8"	7 7/8"	5"	5 13/16"	4 7/16"	5 1/8"	3 1/8"	2 3/8"
TD-200	9 3/16"	11 7/8"	8 9/16"	5 9/16"	7 13/16"	4 7/8"	5 1/2"	315/16"	311/16"
TD-250	11 7/16"	15 3/16"	10 11/16"	7 9/16"	9 3/4"	6 1/8"	6 5/8"	511/16"	5 1/2"
TD-315	14"	17 11/16"	13 1/4"	8 13/16"	12 5/16"	7 3/8"	8 1/4"	7 3/16"	7"



The TD-MIXVENT Models 100, 125, 150, 200, 250 & 315 are Certified to ASHRAE 62.2 compliances and meet ASHRAE 62.2 when installed with a CVC and other TD models are compliant when installed with a 3 way switch and remotely mounted speed control.



TD 250 & 315 are UL listed for outdoor use.

## INDUSTRIAL AIR CURTAINS

Air curtains maintain air quality by repelling dust, flying insects and other general outside contaminants. They maintain air temperatures by creating a "barrier" that keeps outside temperatures from affecting the internal environment. Our units offer protection for applications ranging from customer entrances, cold storage facilities and receiving areas to processing plants, loading docks and warehouses. Units range from door heights of 8' to 10'. Their lower energy usage makes them a perfect choice for your HVAC LEED approved needs.



### Features

- Reduces energy costs and consumption
- Creates effective environmental separation
- Maintains interior building temperatures
- Provides low operational costs
- Minimizes dirt, dust, and fumes
- Prevents flying insects from intruding
- Offers an unobstructed view, enhancing safety

Item Code	Door Width	Door Height	AMPS		Sound dBA	Weight (lbs)
			115v	208/230v		
016-5005	36"	8' - 10'	5.1	2.5 / 2.5	66	55
016-5010	42"	8' - 10'	5.1	2.5 / 2.5	66	60
016-5015	48"	8' - 10'	5.1	2.5 / 2.5	66	65

# MOTORS AND VFD'S





## DANFOSS VLT HVAC DRIVES AND PANELS

Since 1968 Danfoss Drives has been dedicated to developing VLT variable frequency drives to control speed, torque, acceleration, synchronization, positioning, and the overall performance of AC motors. The reliable and innovative VLT drives are designed to support any automation application and provide major energy savings.

### VLT HVAC DRIVE

Setting new standards, the modular VLT HVAC Drive integrates seamlessly with HVAC systems at the lowest cost of ownership in the market. Danfoss' extensive experience in advanced variable frequency drive technology for HVAC applications has produced an unmatched product offering. The VLT HVAC Drive is suited for a range of needs, from simple follower operation to intelligent standalone control. The VLT HVAC Drive is the most economical, flexible and user-friendly drive on the market..



*Danfoss*

Item Number	Model Number	HP	KW	Amps	Voltage	Enclosure
<b>103-0050</b>	131F0668	5 hp	4.0 kw	8.2	460V-3ph	Nema 1
<b>103-0075</b>	131F0670	7.5 hp	5.5 kw	11	460V-3ph	Nema 1
<b>103-0100</b>	131F0669	10 hp	7.5 kw	14	460V-3ph	Nema 1
<b>103-0150</b>	131B3609	15 hp	11 kw	21	460V-3ph	Nema 1
<b>103-0200</b>	131B4245	20 hp	15 kw	27	460V-3ph	Nema 1
<b>103-0250</b>	131B3531	25 hp	18.5 kw	34	460V-3ph	Nema 1
<b>103-0300</b>	131B4263	30 hp	22 kw	40	460V-3ph	Nema 1
<b>103-0400</b>	131B4264	40 hp	30 kw	52	460V-3ph	Nema 1
<b>103-0500</b>	131B9894	50 hp	37 kw	65	460V-3ph	Nema 1
<b>103-0600</b>	131B9895	60 hp	45 kw	77	460V-3ph	Nema 1
<b>103-0750</b>	131B9896	75 hp	55 kw	106	460V-3ph	Nema 1
<b>103-5000</b>	131B9897	100 hp	75 kw	130	460V-3ph	Nema 1

## VLT® HVAC DRIVE TRADITIONAL PANEL

Danfoss HVAC Drive Traditional Panels are stocked in two different configurations. Both are NEMA / UL Type 1 rated, and are available as either non-bypass panels with fuses and disconnects, or electronic bypass designs. The Traditional Panels are available from 5HP to 100HP. All Danfoss panels are UL508A listed.



*Danfoss*

### TRADITIONAL NON-BYPASS PANELS

Item Number	Model Number	HP	KW	Amps	Voltage	Enclosure
<b>103-2050</b>	131F0727	5 hp	3.7 kw	8.2	460V-3ph	Nema-1 w/ disc
<b>103-2075</b>	131F0454	7.5 hp	5.5 kw	11	460V-3ph	Nema-1 w/ disc
<b>103-2100</b>	131F0172	10 hp	7.5 kw	14	460V-3ph	Nema-1 w/ disc
<b>103-2150</b>	131F0143	15 hp	11 kw	21	460V-3ph	Nema-1 w/ disc
<b>103-2200</b>	131F0730	20 hp	15 kw	27	460V-3ph	Nema-1 w/ disc
<b>103-2250</b>	131F0145	25 hp	18.5 kw	34	460V-3ph	Nema-1 w/ disc
<b>103-2300</b>	131F0148	30 hp	22 kw	40	460V-3ph	Nema-1 w/ disc
<b>103-2400</b>	131F0144	40 hp	30 kw	52	460V-3ph	Nema-1 w/ disc
<b>103-2500</b>	131F0736	50 hp	37 kw	65	460V-3ph	Nema-1 w/ disc
<b>103-2600</b>	131F0737	60 hp	45 kw	77	460V-3ph	Nema-1 w/ disc
<b>103-2750</b>	131F0740	75 hp	55 kw	106	460V-3ph	Nema-1 w/ disc
<b>103-3000</b>	131F0149	100 hp	75 kw	130	460V-3ph	Nema-1 w/ disc



*Danfoss*

### TRADITIONAL BYPASS PANELS

Item Number	Model Number	HP	KW	Amps	Voltage	Enclosure
<b>103-6050</b>	174Z1941	5 hp	3.7 kw	7.6	460V-3ph	Nema 1 w/ bypass
<b>103-6075</b>	174Z1942	7.5 hp	5.5 kw	11	460V-3ph	Nema 1 w/ bypass
<b>103-6100</b>	174Z2417	10 hp	7.5 kw	14	460V-3ph	Nema 1 w/ bypass
<b>103-6150</b>	174Z2532	15 hp	11 kw	21	460V-3ph	Nema 1 w/ bypass
<b>103-6200</b>	174Z2539	20 hp	15 kw	27	460V-3ph	Nema 1 w/ bypass
<b>103-6250</b>	174Z2690	25 hp	18.5 kw	34	460V-3ph	Nema 1 w/ bypass
<b>103-6300</b>	174Z2540	30 hp	22 kw	40	460V-3ph	Nema 1 w/ bypass
<b>103-6400</b>	174Z2791	40 hp	30 kw	52	460V-3ph	Nema 1 w/ bypass
<b>103-6500</b>	174Z2689	50 hp	37 kw	65	460V-3ph	Nema 1 w/ bypass
<b>103-6600</b>	174Z2416	60 hp	45 kw	77	460V-3ph	Nema 1 w/ bypass



508A  
INDUSTRIAL  
CONTROL PANEL  
FABRICATOR

**NSWC** NORMAN S. WRIGHT  
CLIMATEC  
MECHANICAL EQUIPMENT

Call For More Information: 714-632-9800 or 818-367-6100

## VLT HVAC DRIVE VERTICAL PANELS -BYPASS

The VLT®HVAC drive Vertical Panel is designed around the FC102 drive and has the same performance as the Traditional panel with a smaller footprint. The sleek vertical layout requires less horizontal wall space than Traditional Panels. The units are offered as NEMA / UL Type 1 designs and are UL/cUL 508A listed. The panels have been seismically certified and OSHPD Pre-Approved. The Vertical Panels are stocked in 460 VAC up to 60 HP with 3 contactor bypass designs.



Item Number	Model Number	HP	KW	Amps	Voltage	Enclosure
<b>103-7150</b>	177U9498	15 hp	11 kw	21	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7200</b>	177U9545	20 hp	15 kw	27	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7250</b>	177U9583	25 hp	18.5 kw	34	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7300</b>	177U9622	30 hp	22 kw	40	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7400</b>	177U9660	40 hp	30 kw	52	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7500</b>	177U9696	50 hp	37 kw	65	460V-3ph	Vertical Nema 1- w/ bypass
<b>103-7600</b>	177U9728	60 hp	80 kw	80	460V-3ph	Vertical Nema 1- w/ bypass

## VLT HVAC DRIVE 3R OUTDOOR PANELS

Danfoss NEMA / UL Type 3R panels are stocked in 460V and 5 hp thru 50 hp. These designs are full featured similar to the vertical and traditional bypass and non-bypass panels. Cabinets contain thermostatically controlled fans with washable filters as required and a heater to mitigate condensation. These panels feature 3 contactor bypass . All panels are UL508A listed. Enclosure is powder coated light grey.

*Danfoss*



Item Number	Model Number	HP	KW	Amps	Voltage	Enclosure
<b>103-4050</b>	177U2499	5 hp	3.7 kw	7.6	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4075</b>	177U2464	7.5 hp	5.5 kw	11	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4100</b>	177U2614	10 hp	7.5 kw	14	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4150</b>	177U2629	15 hp	11 kw	21	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4200</b>	177U2615	20 hp	15 kw	21	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4250</b>	177U2616	25 hp	18.5 kw	27	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4300</b>	177U3132	30 hp	22 kw	40	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4400</b>	177U2559	40 hp	30 kw	52	460v-3ph	Nema-3R w/ 3-cont bypass
<b>103-4500</b>	177U3022	50 hp	37 kw	65	460v-3ph	Nema-3R w/ 3-cont bypass

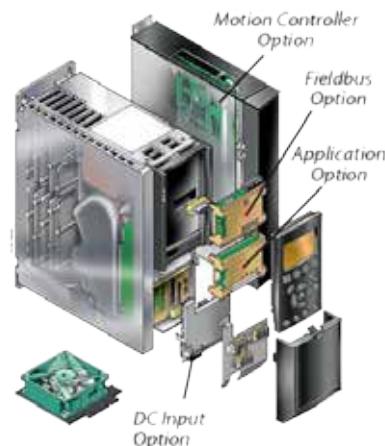
## COMMUNICATION CARDS

Pluggable, field-installable option cards allow the VLT HVAC Drive's capabilities to be easily expanded. The drive's built-in intelligence senses the added capabilities when the drive is initialized and unlocks the relevant parameters in its menu structure. The user can then choose to accept each new parameter's default value or program a new parameter value. Option cards may be either ordered with a drive for factory installation or ordered subsequently for shipment loose.

### BACnet MS/TP

Allows the standard drive to communicate on a BACnet MS/TP network. It acts as a Master device on the network and can communicate at BAUD rates of 9.6, 19.2, 38.4 and 78.6 kBAUD. Its BAUD Rate, Device Instance Number, and MAC Address are set directly from the drive's keypad without the need for external hardware or software.

Item Code	Model	Description
103-9015	130B1244	<b>BACnet MS/TP</b>



### LonWorks

Allows the standard drive to communicate on a LonWorks Free Topology network at 78 kbps. Card is certified as compliant with LonWorks 3.4 specifications.

Item Code	Model	Description
103-9010	130B1206	<b>LonWorks</b>



### General Purpose Input/Output

This card provides the following inputs and outputs in addition to those in the standard drive.

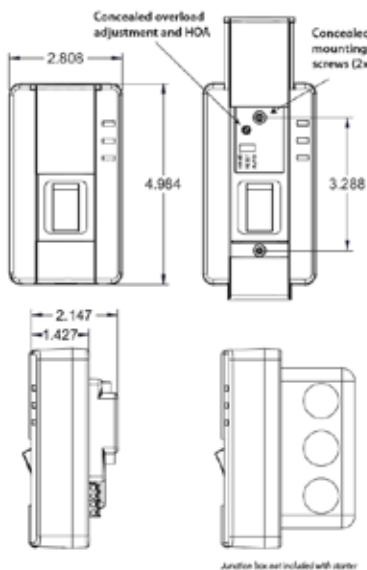
- 3 digital inputs
- 2 digital outputs
- 2 analog voltage inputs
- 1 analog current output

Item Code	Model	Description
103-9005	130B1125	<b>General Purpose Input/Output</b>

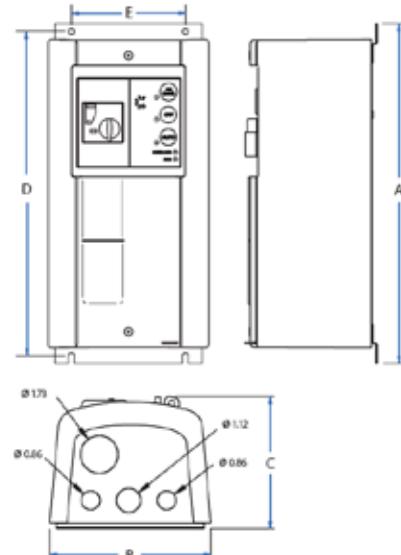
## SMART STARTERS FOR HVAC APPLICATIONS

### Features

- Nema Type 1 for indoor use
- Lockable cover prevents unauthorized access/tampering
- Standard conduit knock-outs top and bottom for easy installation
- Combination version features motor circuit protector to provide branch and short circuit



**BAS-1P**



**BAS / EMS**

Item Code	Description	1 Phase HP		3 Phase HP			N E M A Size	Dimensions				
		120	230	208	230	460		A	B	C	D	E
116-0000	BAS-1P	1	1	-	-	-	-	See Diagram				
116-0005	BAS1-9/J-5M	-	1	1	1	3	00	15.7"	7.5"	6.1"	15"	5.3"
116-0018	BAS1-18/J-22M	2	5	7.5	10	20	1	15.7"	7.5"	6.1"	15"	5.3"
116-1332	EMS1-32/J-32	2	5	7.5	10	20	1	15.7"	7.5"	6.1"	15"	5.3"



## MOTORS

Marathon's ventilating, air conditioning, and refrigeration (HVAC/R) motors are built for the OEM and the replacement market with designed-in features to help ease installation. They are easier and more versatile to install with extended through-bolts on both ends of double shafted motors, extra long 30 inch leads and stud bolts that fit either a #8 or #10 hole size. The motors listed below are for use with our stock fans and commercial evaporative coolers.



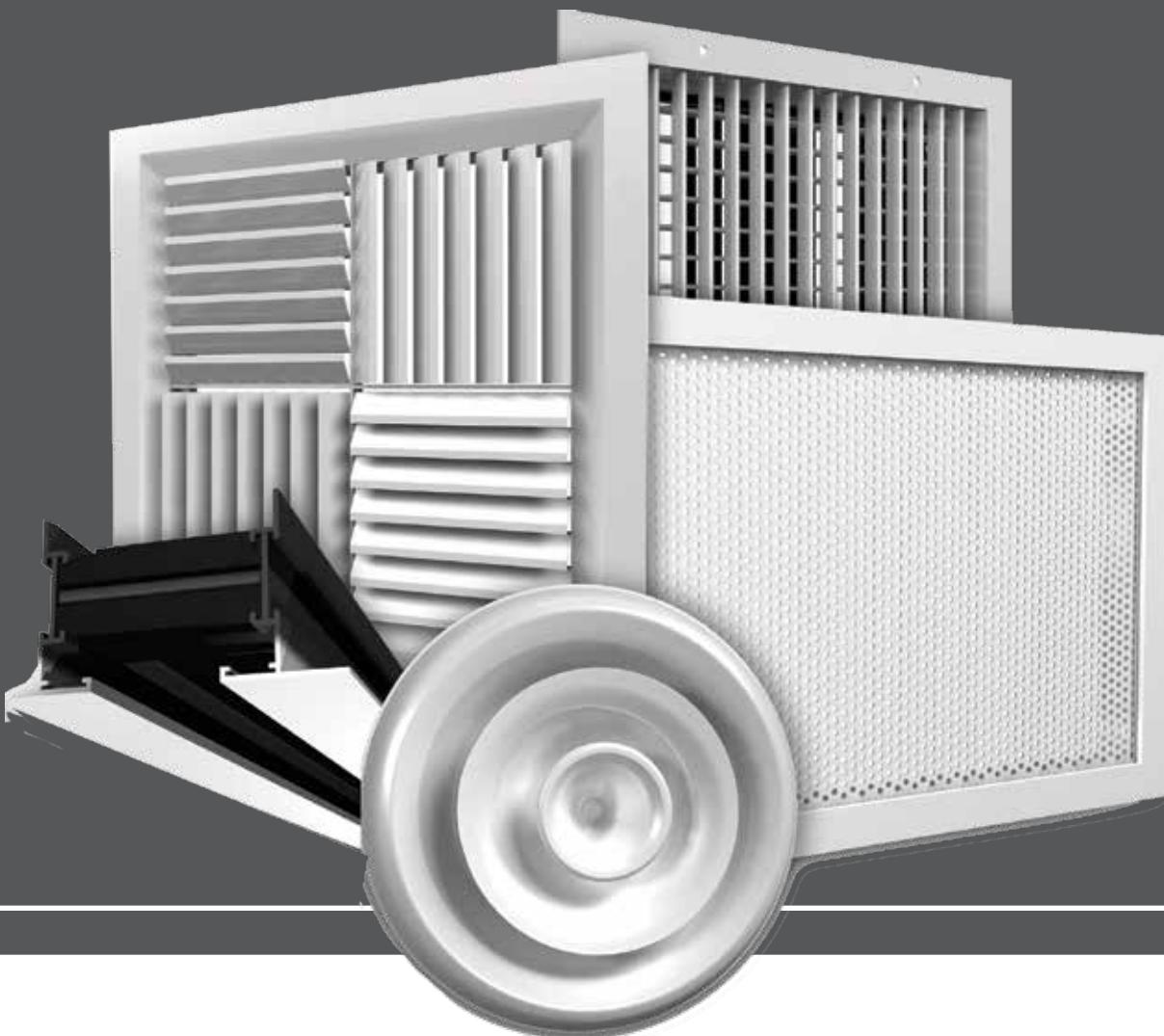
**marathon™**  
Motors

### Features

- Open Drip Proof
- Uses standardized capacitors and shaft slingers to improve reliability
- Easy install

Item Code	Model Number	Hp	Voltage	Phase	RPM	Frame
090-0107	MTR D107	1/6	115	1	1800	48
090-0303	MTR B303	1/4	115	1	1800	48
090-0305	MTR B305	1/3	115	1	1800	48Y
090-0307	MTR B307	1/2	115	1	1800	48Y
090-0313	MTR B313	1/4	115/208-230	1	1800	48Y
090-0315	MTR B315	1/3	115/208-230	1	1800	48Z
090-0317	MTR B317	1/2	115/208-230	1	1800	56
090-0319	MTR B319	3/4	115/208-230	1	1800	56
090-0323	MTR I146	1 1/2	115/208-230	1	1800	145T
090-0324	MTR I147	2	115/208-230	1	1800	56Z
090-0325	MTR 4688	1	115/208-230	1	1725	56Z
090-0328	MTR C235	1	115/208-230	1	1725	56
090-0330	MTR C1160	1 1/2	115/208-230	1	1725	56H
090-0340	MTR C193	2	115/208-230	1	1725	56HZ
090-0420	MTR G044	1/4	208-230/460	3	1800	48
090-2047	MTR G047	1/3	208-230/460	3	1800	56
090-2063	MTR G063	1/2	208-230/460	3	1800	56
090-2084	MTR G084	3/4	208-230/460	3	1800	56
090-4004	MTR K004	1	208-230/460	3	1800	56
090-4022	MTR K022	1 1/2	208-230/460	3	1800	56H
090-5115	MTR U758	1	208-230/460	3	1800	143T
090-5116	MTR U759	1 1/2	208-230/460	3	1800	145T
090-5122	MTR U760	2	208-230/460	3	1800	145T
090-7718	MTR E1930	3	208-230/460	3	1800	182T
090-7719	MTR E1931	5	208-230/460	3	1800	184T

# AIR DISTRIBUTION



## NOISE CRITERIA - (NC)

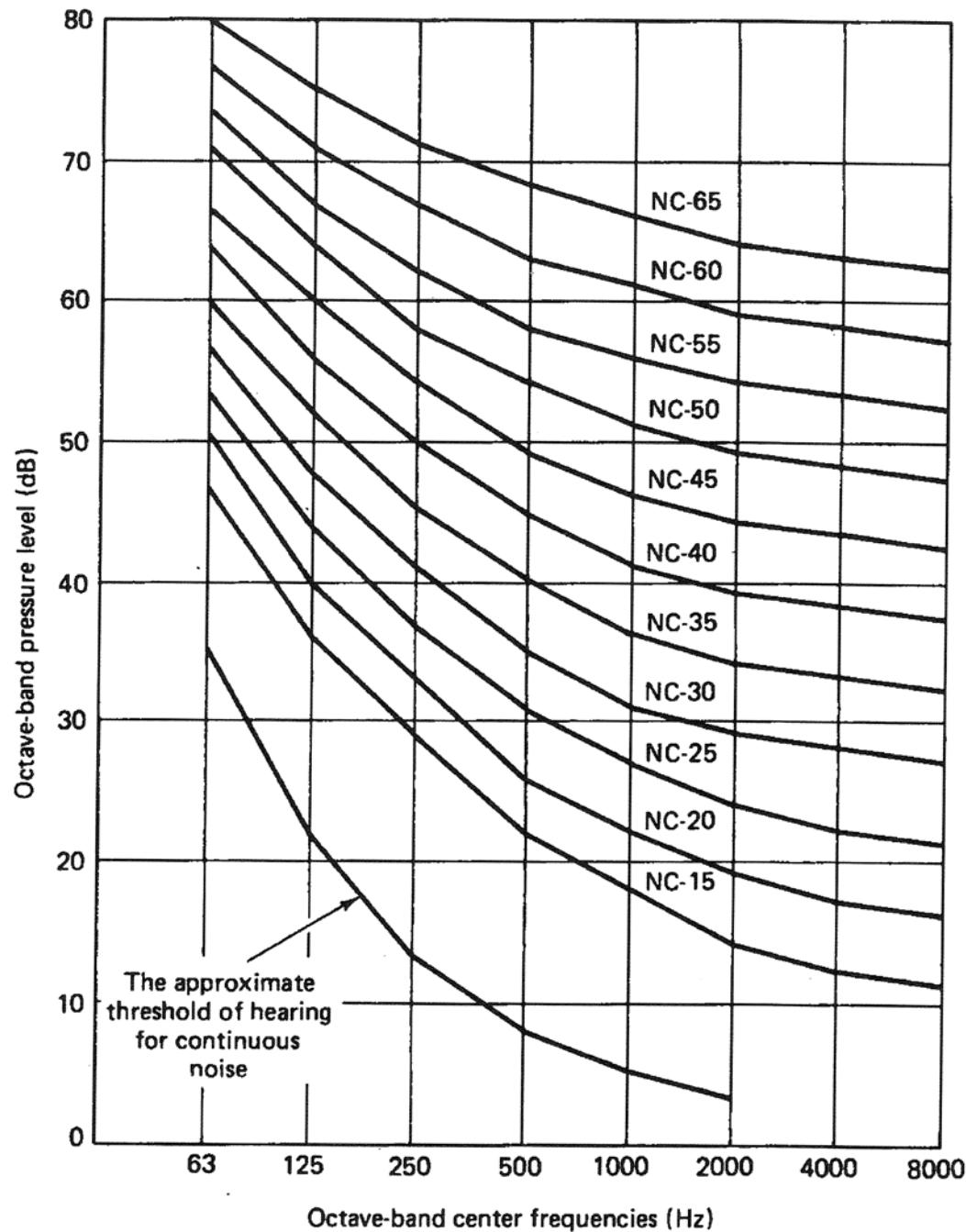
The NC ratings provide a good overall indication of the loudness in a space. The NC rating is determined by plotting the sound pressure levels over the 8 octave band center frequencies and comparing them to the family of NC curves. The highest NC curve level that is not exceeded in any octave band is the effective NC rating.

Type of Room- Occupancy		Noise Criteria (NC)	Noise Rating (NR)	db(A)
Very quiet	Concert and opera halls, recording studios, theaters, etc.	10 - 20	20	25 - 30
	Private bedrooms, live theaters, television and radio studios, conference and lecture rooms, cathedrals and large churches, libraries, etc.	20 - 25	25	25 - 30
	Private living rooms, board rooms, conference and lecture rooms, hotel bedrooms	30 - 40	30	30 - 35
Quiet	Public rooms in hotels, small offices classrooms, courtrooms	30 - 40	35	40 - 45
Moderately noisy	Drawing offices, toilets, bathrooms, reception areas, lobbies, corridors, department stores, etc.	35 - 45	40	45 - 55
Noisy	Kitchens in hospitals and hotels, laundry rooms, computer rooms, canteens, supermarkets, office landscape, etc.	40 - 50	45	45 - 55

## REAL WORLD VALUES FOR dB LEVELS



## dB TO NC COMPARISON



## SCVD SERIES - CURVED VANE DIFFUSERS

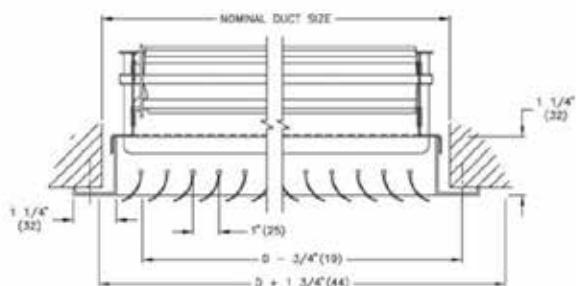
The SCVD curved vane directional diffusers feature individually adjustable curved vanes to direct supply air precisely to suit the desired application. A clean, functional appearance with excellent performance characteristics. The SCVD can be installed in ceiling or sidewall locations, and provides a wide range of application versatility



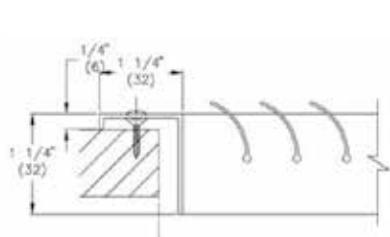

### Features

- Curved vanes provide superior air control
- Curved vanes are individually adjustable from the grille face
- Mullion supports supplied when vanes exceed 20 " for strength and stability
- White Powder Coat (B12) Finish

Product:	SCVD
Frame:	F - Side Wall Application 1 1/4" Frame
Pattern:	Available in 3Way and 4Way
Damper:	3 - Opposed Blade Damper Steel Construction
Fastening:	A- Countersunk screwholes with Screws
Finish:	B12- White powder Coat

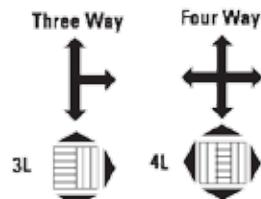


**Border:** Sidewall Application 1 1/4" Flat Frame



Countersunk Screwholes with Screws

### Patterns



Item Number	Size	Pattern	Max CFM @ NC <35
040-0306	06 x 06	3 Way (3L)	160
040-0308	08 x 08	3 Way (3L)	260
040-0309	10 x 06	3 Way (3L)	260
040-0310	10 x 10	3 Way (3L)	420
040-0311	12 x 6	3 Way (3L)	290
040-0312	12 x 12	3 Way (3L)	565
040-0520	14 x 06	3 Way (3L)	326
040-0522	14 x 08	3 Way (3L)	478
040-0314	14 x 14	3 Way (3L)	775
040-0316	16 x 16	3 Way (3L)	890
040-0318	18 x 18	3 Way (3L)	1157

Item Number	Size	Pattern	Max CFM @ NC <35
040-0406	06 x 06	4 Way (4L)	160
040-0408	08 x 08	4 Way (4L)	206
040-0410	10 x 10	4 Way (4L)	420
040-0412	12 x 12	4 Way (4L)	565
040-0414	14 x 14	4 Way (4L)	775
040-0416	16 x 16	4 Way (4L)	890
040-0418	18 x 18	4 Way (4L)	1157
040-0420	20 x 20	4 Way (4L)	1448
040-0422	22 x 22	4 Way (4L)	1642
040-0425	24 x 24	4 Way (4L)	1820

## 520D SERIES -DOUBLE DEFLECTION SUPPLY W/ DAMPER

The 520D Series Supply and registers feature precise, high quality roll-formed construction and an attention to detail uncommon in an economical air outlet. Its louvers are individually adjustable, double deflection with 3/4" blade spacing.

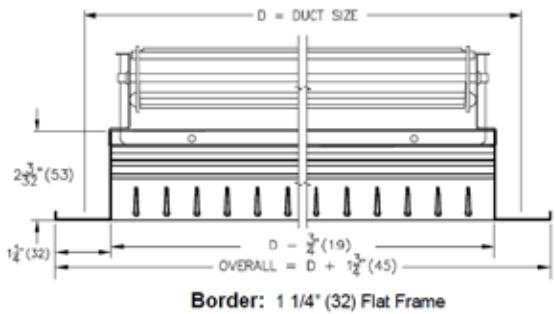


**price**

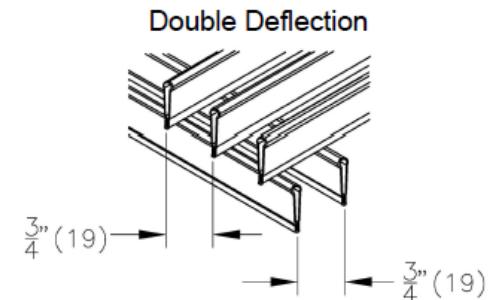
### Features

- Opposed blade damper
- Roll formed steel construction
- Borders are all-welded construction with reinforced precision mitered corners
- Louvers are individually adjustable from the grille face

Product:	520D
Frame:	F - 1 1/4" Flat Frame
Pattern:	S - Front Louver Blades Parallel to Short Dimension
Fastening:	A - Countersunk Screwholes c/w Screws
Finish:	B12 - White - Powder Coat



**Fastening:**  
Countersunk Screwholes with  
Screw



Item Number	Size	Max CFM @ NC < 35
040-0803	06 x 06	235
040-0809	08 x 06	324
040-0812	08 x 08	470
040-0815	10 x 04	324
040-0818	10 x 06	410
040-0821	10 x 08	532
040-0824	10 x 10	672
040-0827	12 x 04	324
040-0830	12 x 06	470
040-0833	12 x 08	672
040-0836	12 x 10	759
040-0839	12 x 12	936
040-0842	14 x 14	372
040-0845	14 x 06	532
040-0848	14 x 08	759
040-0851	14 x 10	863
040-0854	14 x 12	1105
040-0857	14 x 14	1180
040-0860	16 x 04	410
040-0863	16 x 06	590
040-0866	16 x 08	863
040-0869	16 x 10	936
040-0872	16 x 12	1180
040-0878	16 x 16	1554
040-0881	18 x 04	470
040-0884	18 x 06	672
040-0887	18 x 08	936
040-0890	18 x 10	1105
040-0893	18 x 12	1340
040-0899	18 x 18	1960

Item Number	Size	Max CFM @ NC <35
040-0902	20 x 04	532
040-0905	20 x 06	759
040-0909	20 x 10	1180
040-0912	20 x 12	1480
040-0915	20 x 14	1698
040-0918	20 x 16	1960
040-0921	20 x 20	2345
040-0924	24 x 04	590
040-0927	24 x 06	900
040-0930	24 x 08	1180
040-0933	24 x 10	1460
040-0936	24 x 12	1698
040-0939	24 x 14	1960
040-0942	24 x 16	2240
040-0945	24 x 18	2500
040-0948	24 x 24	3096
040-0951	28 x 08	1340
040-0954	30 x 04	759
040-0957	30 x 06	1105
040-0960	30 x 08	1455
040-0963	30 x 10	1760
040-0966	30 x 12	2120
040-0969	30 x 14	2500
040-0975	30 x 18	3637
040-0978	36 x 04	871
040-0984	36 x 10	1960
040-0987	36 x 12	2500
040-0993	36 x 16	3096
040-0998	30 x 24	4460
040-0999	48 x 12	3096

## 530 SERIES - LOUVERED SINGLE DEFLECTION RETURN GRILLES

The 530 series feature precise, high quality roll-formed construction and an attention to detail uncommon in an economical air outlet. Its louvers are fixed at a 45 degree deflection with 3/4" blade spacing.

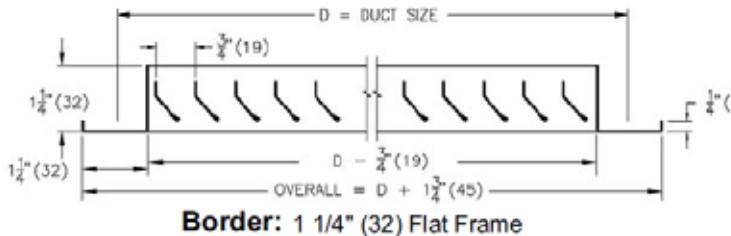


**PRICE**

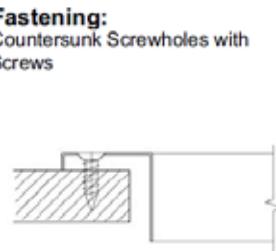
### Features

- Roll formed steel construction
- Borders are all-welded construction with reinforced precision mitered corners

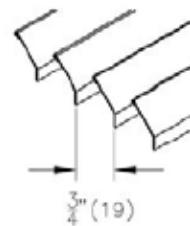
Product: 530  
 Frame: F - 1 1/4" Flat Frame  
 Pattern: L - Front Louver Blades Parallel to Long Dimension  
 Fastening: A - Countersunk Screwholes c/w Screws  
 Finish: B12 - White - Powder Coat



**Fastening:**  
Countersunk Screwholes with Screws



Single Deflection



Item Number	Size	Max CFM @ NC < 35
040-1001	06 x 06	205
040-1009	08 x 08	368
040-1012	10 x 04	223
040-1015	10 x 06	343
040-1018	10 x 08	459
040-1021	10 x 10	571
040-1027	12 x 06	409
040-1030	12 x 08	547
040-1033	12 x 10	680
040-1036	12 x 12	811
040-1042	30 x 12	1913
040-1048	14 x 06	474
040-1051	14 x 08	633
040-1054	14 x 10	788
040-1057	14 x 12	940
040-1060	14 x 14	1088
040-1066	20 x 14	1522

Item Number	Size	MAX CFM @ NC <35
040-1075	16 x 06	537
040-1078	16 x 08	718
040-1081	16 x 10	894
040-1084	16 x 12	1066
040-1087	16 x 14	1235
040-1090	16 x 16	1401
040-1096	18 x 06	600
040-1102	18 x 10	999
040-1105	18 x 12	1191
040-1108	18 x 14	1379
040-1111	18 x 16	1565
040-1114	18 x 18	1748
040-1123	20 x 06	662
040-1126	20 x 08	885
040-1129	20 x 10	1102
040-1132	20 x 12	1314
040-1135	20 x 14	1522

Continued

Item Number	Size	Max CFM @ NC <35
040-1139	20 x 16	1726
040-1144	20 x 20	2128
040-1145	24 x 12	1556
040-1148	24 x 14	1803
040-1149	30 x 14	2215
040-1151	24 x 18	2500
040-1152	22 x 22	2541
040-1156	24 x 08	1049
040-1159	24 x 10	1306
040-1162	24 x 12	1556
040-1165	24 x 14	1803
040-1168	24 x 16	2045
040-1171	24 x 18	2284
040-1174	24 x 20	2521
040-1177	24 x 24	2986
040-1180	30 x 04	626
040-1186	30 x 08	1289
040-1189	30 x 10	1684
040-1192	30 x 12	1913
040-1195	30 x 14	2215
040-1198	30 x 16	2513
040-1201	30 x 18	2807
040-1204	30 x 20	3097
040-1207	30 x 24	3669
040-1210	30 x 30	4509
040-1215	36 x 08	1524
040-1218	36 x 10	1897
040-1221	30 x 12	2261
040-1224	36 x 14	2619
040-1227	36 x 16	2971
040-1230	36 x 18	3319
040-1233	36 x 20	3662
040-1236	36 x 24	4338
040-1239	36 x 30	5330
040-1242	36 x 36	6302
040-1245	46 x 22	5007
040-1248	48 x 10	2467
040-1251	48 x 12	3096
040-1254	48 x 24	5642
040-1260	48 x 36	8196
040-1263	48 x 48	10660

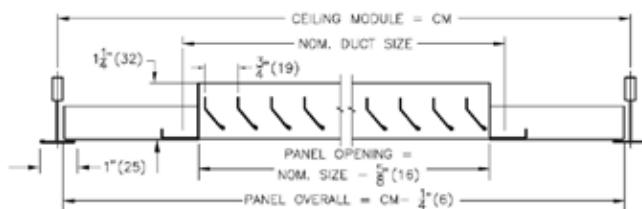
The following items are without screw holes for use on t-bar ceiling applications.

Product: 530  
 Frame: F - 1 1/4" Flat Frame  
 Pattern: L - Front Louver Blades parallel to Long Dimension  
 Fastening: 0 - No Screwholes  
 Application: LI - T-Bar Lay-In  
 Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35	T-Bar Panel Size
040-1280	22 x 10	1204	24" x 12"
040-1285	22 x 22	2541	24" x 24"

### 530- T-Bar Panel Louvered Return Grilles

530 T-Bar Series are stocked with a 24" x 24" panel for use on T-bar ceiling applications



Border: For T-Bar Lay-In

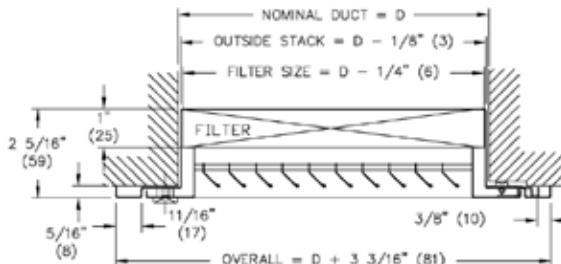
Product: 530  
 Border: 3P - T-Bar Lay-In (with Steel Panel 24" x 24")  
 Pattern: L - Front Louver Blades parallel to Long Dimension  
 Fastening: 0 - No Screwholes  
 Application: LI - T-Bar Lay-In  
 Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-1506	06 x 06	205
040-1508	08 x 08	368
040-1510	10 x 10	571
040-1512	12 x 12	811
040-1514	14 x 14	1088
040-1516	16 x 16	1401
040-1518	18 x 18	1748
040-1520	20 x 20	2128

# AIR DISTRIBUTION

## 530FF - Louvered Return 1" Filter Grilles

The 530FF Series Includes a frame to hold a 1" filter  
(filter is not included)



**Border:** Sidewall Application Surface Mount Border

### Sidewall Application

Product: 530FF  
Border: SM - Sidewall Application Surface Mount Border  
Blade: L - Louver Blades parallel to Long Dimension  
Filter Frame: 1 - 1" Filter  
Hinge: HL - Hinge Tabs Parallel to Long Dimension  
Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-1403	14 x 14	1088
040-1406	18 x 18	1748
040-1409	20 x 20	2128
040-1412	20 x 25	2618
040-1415	24 x 10	1306
040-1418	24 x 12	1556
040-1421	24 x 14	1803
040-1427	24 x 24	2986
040-1430	25 x 14	1872
040-1433	25 x 20	2618
040-1436	30 x 10	1604
040-1439	30 x 14	2215
040-1442	30 x 20	3097

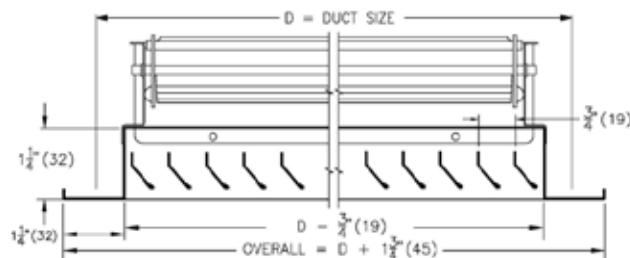
### T-Bar Lay-in Application

Product: 530FF  
Border: TB - Lay-In Application T-Bar Lay-In (24" x 24")  
Blade: L - Louver Blades parallel to Long Dimension  
Filter Frame: 1 - 1" Filter  
Hinge: HL - Hinge Tabs Parallel to Long Dimension  
Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-1445	20 x 20*	2128

## 530D - Side Wall Louvered Return Register

The 530D Series includes a VCS3 opposed blade damper



**Border:** 1 1/4" (32) Flat Frame

Product: 530D  
Frame: F - 1 1/4" Flat Frame  
Pattern: L - Front Louver Blades parallel to Long Dimension  
Fastening: A - Countersunk Screwholes c/w Screws  
Application: SW - Sidewall  
Finish: 12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-1266	06 x 06	171
040-1269	08 x 08	307
040-1272	10 x 10	475
040-1275	12 x 12	676

## RCDE SERIES - ROUND CONE DIFFUSERS

The RCDE series round cone ceiling diffusers feature a spring lock arrangement permitting quick, easy removal of the inner cone assembly. Ample adjustment of inner screw allows two different horizontal air patterns.

### Features

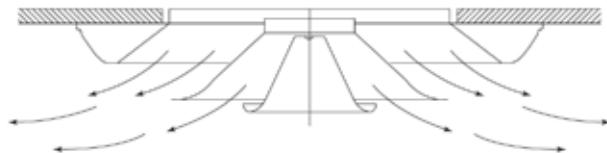
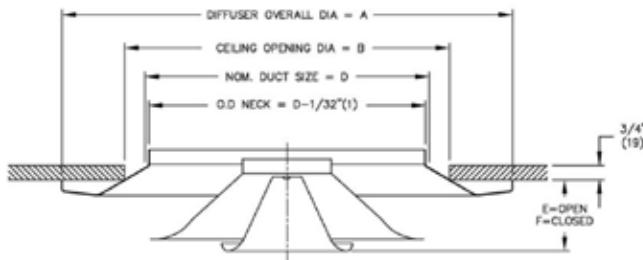
- Heavy gauge spun steel construction
- Two horizontal discharge settings for different flow rate conditions.
- Easily adjustable without requiring special tools
- Deeply contoured outer cone prevents smudging
- Excellent performance for VAV applications
- White Powder Coat B12 finish



**PRICE**

Product: RCDE

Finish: B12 - White - Powder Coat

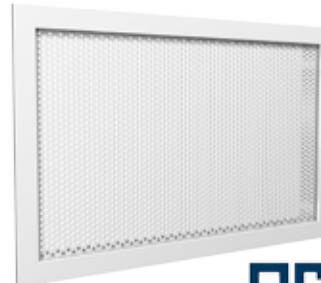


RCDE Air Pattern

Item Number	Size	Max CFM @ NC < 35	Dimensions				
			A	B	D	E	F
040-3806	06"	235	11 1/8"	6 1/2"	06"	1 3/4"	1 1/8"
040-3808	08"	322	14 3/4"	8 1/2"	08"	2 1/8"	1 1/2"
040-3810	10"	581	18 1/4"	10 1/2"	10"	2 7/8"	2 1/8"
040-3812	12"	836	22"	12 1/2"	12"	3 1/8"	2 3/8"
040-3814	14"	900	26"	14 1/2"	14"	3 3/4"	2 5/8"
040-3816	16"	1260	29"	16 1/2"	16"	4"	3 1/4"
040-3818	18"	1650	32 1/2"	18 1/2"	18"	4 3/4"	3 7/8"
040-3820	20"	2025	36"	20 1/2"	20"	5 7/8"	4 7/8"
040-3824	24"	3140	43 1/4"	24 1/2"	24"	7 3/4"	6 5/8"

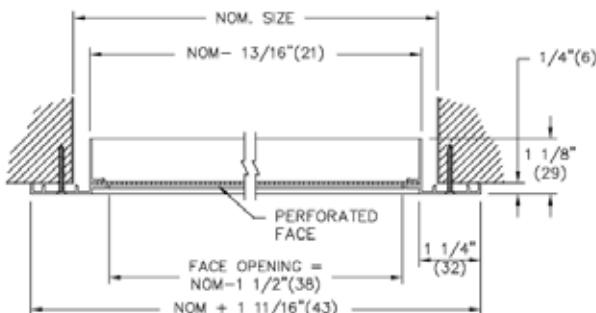
## 10 SERIES - STEEL PREFORATED FACE RETURN GRILLES

The 10 Series Steel Perforated Face Return is a mid to high capacity return with core free area of approximately 50%. The perforated core blends unobtrusively with most interior design conditions. It is ideally suited for ceiling mounted return applications.

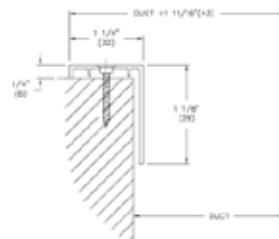


### Features

- Steel core construction
- Extruded aluminum borders for clean, crisp detailing
- White Powder Coat finish (B12)



**Fastening:**  
Countersunk screwholes with standard screws



### Sidewall Application

Product: 10  
 Frame: F - 1 1/4" Flat Frame  
 Application: SW - Sidewall  
 Fastening: A - Countersunk Screwholes c/w Screws  
 Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-1906	06 x 06	156
040-1908	08 x 08	338
040-1910	10 x 10	500
040-1912	12x 12	780
040-1914	14 x 14	1022
040-1916	16 x 16	1387

### T-Bar 1" Filter Grill Application

Filters not Included  
 Product: 10  
 Border: TB - Lay-In Application T-Bar Lay-In 24" x 24"  
 Filter Frame: 1 - 1" Filter  
 Finish: B12 - White - Powder Coat

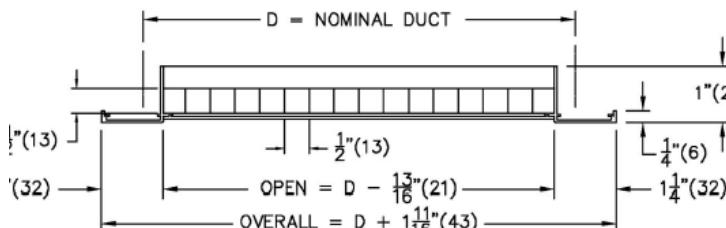
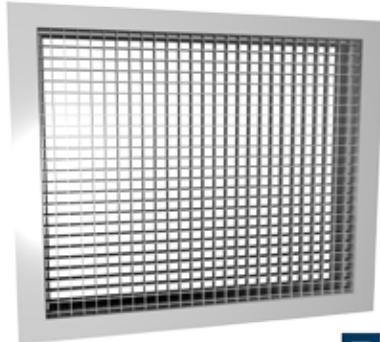
Item Number	Size	Max CFM @ NC < 35
040-1470	20 x 20	2695

## 80 SERIES - ALUMINUM EGGCRATE FACE RETURN GRILLES

The 80 Series Aluminum Eggcrate Face Return Grilles is used in high capacity return or exhaust outlet with high free area and low sound and pressure drops. Ideal for pressurized ceiling return or size restricted exhaust applications.

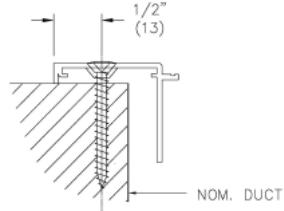
### Features

- Extruded aluminum borders and frames
- Countersunk screwholes with factory painted oval-head screws are supplied
- White Powder Coat finish (B12)



**Border:** 1 1/4" (32) Flat Frame

### Fastening: Countersunk Screw Holes



Product:	80
Frame:	F - 1 1/4" Flat Frame
Application:	SW - Sidewall
Fastening:	A - Countersunk Screwholes c/w Screws
Finish:	B12 - White - Powder Coat

**The following items are without screw holes for use on T-bar ceiling applications.**

Product:	80
Frame:	F - 1 1/4" Flat Frame
Application:	SW - Sidewall
Fastening:	O - No Screwholes
Finish:	B12 - White - Powder Coat

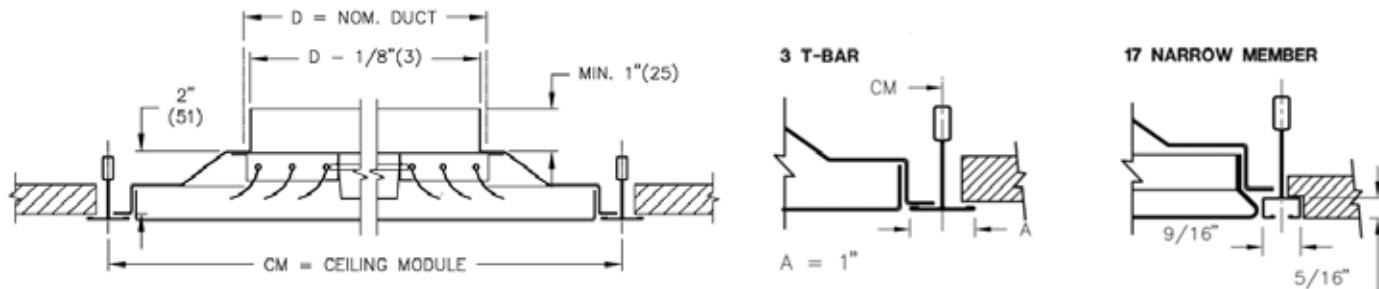
Item Number	Size	Max CFM @ NC < 35	T-Bar Panel Size
040-1606	06 x 06	252	
040-1608	08 x 08	502	
040-1610	10 x 10	740	
040-1612	12 x 12	1080	
040-1614	14 x 14	1348	
040-1616	16 x 16	1783	
040-1618	18 x 18	2260	
040-1620	20 x 20	2735	
040-1622	22 x 22	3270	
040-1623	24 x 12	2007	
040-1624	24 x 24	3713	
040-1627	48 x 24	7275	

## PDC SERIES - PERFORATED FACE CEILING SUPPLY DIFFUSERS

The PDC Series perforated face ceiling diffusers feature individually adjustable curved blades at the diffuser inlet, stocked in fixed 4 way air patterns. The adjustable curved blades provide total flexibility in pattern adjustment from horizontal to vertical, as well as low pressure loss and noise levels. Quick-release latches on the hinged perforated face screen allow easy access for field adjustment of the blades.

### Features

- Roll formed steel construction
- Hinged, removable perforated face screen with quick-release spring latches
- Individually pivoting curved blades are located at the inlet neck and are field adjustable from horizontal to vertical air pattern
- PDC diffusers are designed for spaces requiring low noise and air pattern adjustment from horizontal to vertical



### PDC Frame 3- T-Barr Lay-in Ceilings

Product: PDC  
Frame: 3 - T-Bar Lay-In for 1" and 9/16" Flat T Applications  
Pattern: 4 - 4 Way  
Panel: 24" x 24"  
Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-2506	06"	196
040-2508	08"	314
040-2510	10"	464
040-2512	12"	628
040-2514	14"	828
040-2516	16"	1033

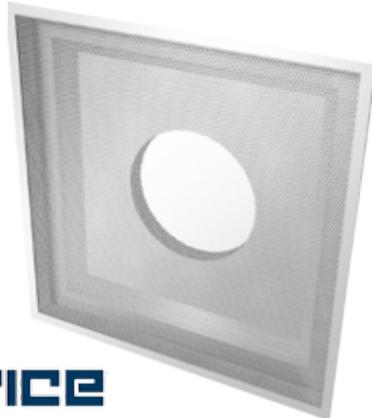
### PDC Frame 17 - Narrow Member Lay-In Ceilings

Product: PDC  
Frame: 17 - Narrow Member Lay-In  
Pattern: 4 - 4 Way  
Panel: 24" x 24"  
Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-2606	6"	196
040-2608	8"	314
040-2610	10"	464
040-2612	12"	628
040-2614	14"	828

## PDDR SERIES - PERFORATED FACE CEILING RETURN DIFFUSERS

The PDDR series is used for ducted return air applications. PDDR features the same backpan as the supply air models, providing a connection to a flexible or rigid round duct, or to a square or rectangular duct. For plenum return (non-ducted) applications, a special frame assembly results in an inlet 2" under module size for maximum free area.



**PRICE**

### Features

- Roll formed steel construction
- Hinged, removable perforated face screen with quick-release spring latches
- White Powder Coat B12 Finish

### PDDR Frame 3 - T-Bar Lay-in Ceilings

Product: PDDR

Frame: 3 - T-Bar Lay-In for 1" and 9/16" Flat Tee

Panel: 24" x 24"

Finish: B12 - White - Powder Coat

Item Number	Size
040-2318	18" x 18"
040-2320	20" x 20"
040-2321	22" x 10"
040-2322	22" x 22"
040-2346	46" x 22"
040-2806	06"
040-2808	08"
040-2810	10"
040-2812	12"
040-2814	14"
040-2816	16"

### PDDR Frame 17 - Narrow Member Lay-In Ceilings

Product: PDDR

Frame: 17 - Narrow Member Lay-In

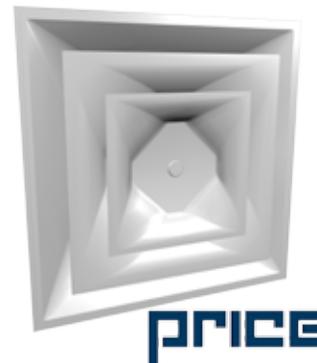
Panel: 24" x 24"

Finish: B12 - White - Powder Coat

Item Number	Size
040-2418	18" x 18"
040-2420	20" x 20"
040-2422	22" x 22"
040-2706	06"
040-2708	08"
040-2710	10"
040-2712	12"
040-2714	14"
040-2716	16"

## SCD SERIES - SQUARE CONE DIFFUSERS

The SCD series square cone diffusers are the most efficient diffuser for any ceiling application. The diffuser delivers supply air in a true 360° radial horizontal air pattern, making it ideal for VAV applications. The special contour design of the diffuser cones protects the ceiling and prevents smudging and streaking associated with many other types of ceiling diffusers.



**PRICE**

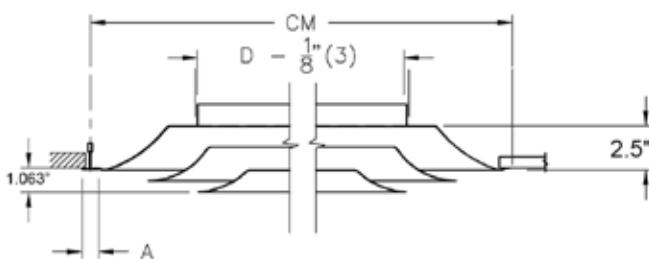
### Features

- Steel construction
- Cones are one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints
- Inner cone Fixed-assembly
- Excellent performance for VAV applications.

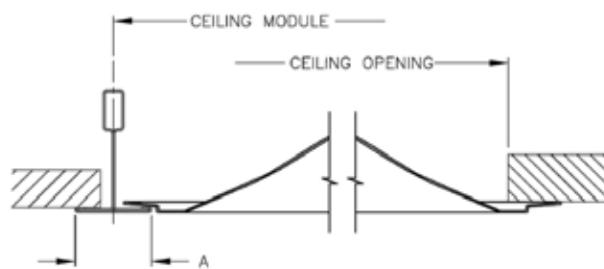
Product: SCD  
 Border: 31 - T-Bar Lay-In 1" and 9/16" Flat Tee Applications  
 Panel: 24" x 24"  
 No. of Cones: 3 Cones (Standard)  
 Core: Fixed Core  
 Finish: B12 - White - Powder Coat

### Border:

T-Bar Lay-In 1" and 9/16" Flat Tee Applications (A)



### Frame Detail:



Item Number	Size	Max CFM @ NC < 35
040-3006	6"	294
040-3008	8"	475
040-3010	10"	675
040-3012	12"	916
040-3014	14"	1197

## SPD SERIES - SQUARE PLAQUE DIFFUSER

The SPD Series square plaque diffuser satisfies both architectural appeal and engineering performance criteria. The simple, clean and unobtrusive face design is intended to blend with most ceiling systems.

### Features

- Steel construction
- Face panel has smooth edges and rounded corners to blend with back cone
- Back cone is one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints. helps prevent ceiling smudging
- The back cone shape combines with the face panel to deliver a tight 360° radial horizontal air pattern
- Face panel is easily installed and removed without special tools.
- Maintains true 360° horizontal air pattern even at low air volumes, making it a good choice for VAV applications
- White Powder Coat B12 Finish



Product: SPD

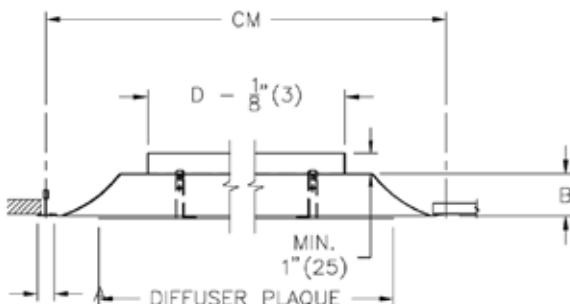
Border: 31 - T-Bar Lay-In 1" and 9/16" Flat Tee Applications

Panel: 24" x 24"

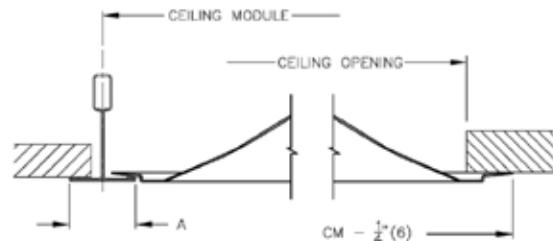
Finish: B12 - White - Powder Coat

**Border:** 31

T-Bar Lay-In 1" and 9/16" Flat Tee Applications (A) / Surface Mount



### Frame Detail:



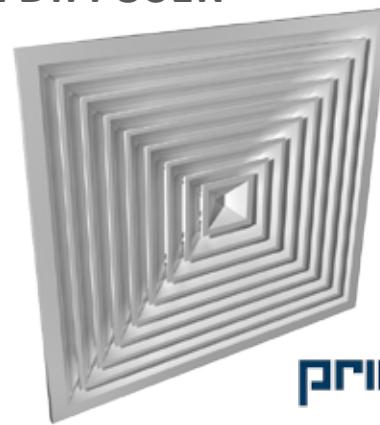
Item Number	Size	Max CFM @ NC < 35
040-6006	06"	282
040-6008	08"	445
040-6010	10"	635
040-6012	12"	833
040-6014	14"	1069

### Aluminum and Steel Plaster Frames

Item Number	Model	Size	Frame Material
045-0921	APF/CD/24/24/B12	24" x 24"	Aluminum
045-0935	APF/CD/12/12/B12	12" x 12"	Aluminum
045-0940	APF/CD/16/16/B12	16" x 16"	Aluminum
045-1000	SPF/CD/24/24/B12	24" x 24"	Steel

## SMD SERIES - LOUVERED FACE DIRECTIONAL DIFFUSER

The SMD Series Louvered Face Directional Diffuser can supply large volumes of conditioned air at acceptable pressure drops and sound levels when overall dimensions of the diffuser are limited by a modular ceiling system, or architectural considerations prevail. The excellent performance of these diffusers is complemented by a pleasing appearance that blends harmoniously with various architectural details. SMD are stocked in a fixed 4 way pattern.



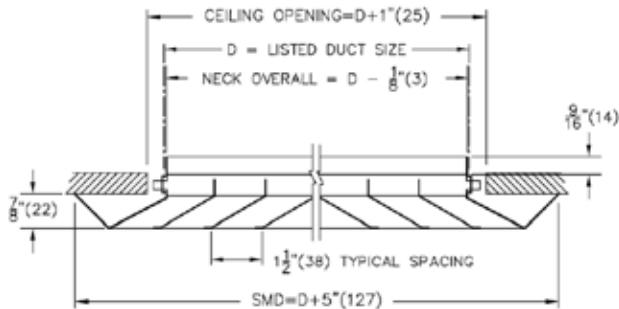
**PRICE**

### Features

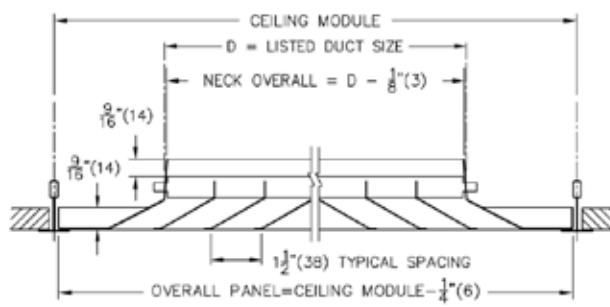
- Steel construction
- Stocked in both Surface mount and T-bar lay in
- White powder coat B12 finish

### Ceiling Effect

The directional diffusers are not recommended for applications without ceilings, such as exposed duct mounting.



**Border:** Bevelled Frame Surface Mount



**Border:** Steel T-Bar Panel Lay-In 1"

### SMD Frame 6 - Surface Mount

Product: SMD

Border: 6 - Bevelled Frame Surface Mount

Pattern: 4A - 4-Way - Style A for Square Inlet Neck

Finish: B12 - White - Powder Coat

### SMD Frame 3P - T-Bar Panel

Product: SMD

Border: T-Bar (varies by size)

Pattern: 4A - 4-Way - Style A for Square Inlet Neck

Pannel: 24" x 24"

Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
<b>040-3106</b>	06" x 06"	220
<b>040-3109</b>	09" x 09"	450
<b>040-3112</b>	12" x 12"	720
<b>040-3115</b>	15" x 15"	1094
<b>040-3118</b>	18" x 18"	1395

Item Number	Size	Border	Max CFM @ NC < 35
<b>040-3206</b>	06" x 06"	3P - 1" T-Bar	220
<b>040-3209</b>	09" x 09"	3P - 1" T-Bar	450
<b>040-3212</b>	12" x 12"	3P - 1" T-Bar	720
<b>040-3215</b>	15" x 15"	3P - 1" T-Bar	1094
<b>040-3218</b>	18" x 18"	36 - 1" T-Bar	1395

## SMCD SERIES - MODULAR CORE DIRECTIONAL DIFFUSERS

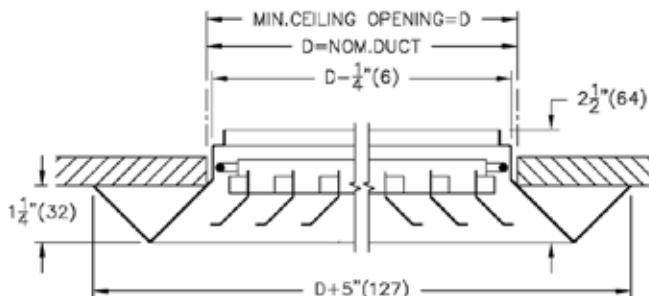
The SMCD Series high capacity modular core directional diffusers are designed to supply large volumes of air at low sound levels and pressure drops. The Steel Modular Core Diffuser design enables a quick and easy re-configuration of the air discharge pattern by repositioning the individual cores. The excellent horizontal discharge pattern, maintained at low volumes, makes this diffuser ideal for VAV applications.

### Features

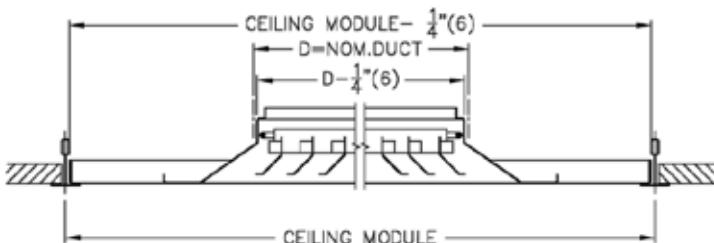
- Steel construction
- Four louvered air pattern modules can be repositioned in the field simply and quickly without tools
- White powder coat B12 finish



**PRICE**



**Border Type:** Bevelled Frame



**Border Type:** T-Bar Panel Lay-In 1"

### SMCD Frame 6 - Surface Mount

Product: SMCD

Border: 6 - Bevelled Frame

Cores: 4 - Modular Cores

Finish: B12 - White - Powder Coat

### SMCD Frame 3P/36/38/34 - T-Bar Panel

Product: SMCD

Border: T-Bar (varies by size)

Panel: 24" x 24"

Cores: 4 - Modular Cores

Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
<b>040-3306</b>	06" x 06"	250
<b>040-3308</b>	08" x 08"	429
<b>040-3310</b>	10" x 10"	625
<b>040-3312</b>	12" x 12"	866
<b>040-3314</b>	14" x 14"	1123
<b>040-3316</b>	16" x 16"	1422
<b>040-3318</b>	18" x 18"	1744
<b>040-3320</b>	20" x 20"	2083

Item Number	Size	Border	Max CFM @ NC < 35
<b>040-3406</b>	06" x 06"	3P - T-Bar Lay-In 1"	250
<b>040-3408</b>	08" x 08"	3P - T-Bar Lay-In 1"	429
<b>040-3410</b>	10" x 10"	3P - T-Bar Lay-In 1"	625
<b>040-3412</b>	12" x 12"	3P - T-Bar Lay-In 1"	866
<b>040-3414</b>	14" x 14"	3P - T-Bar Lay-In 1"	1123
<b>040-3416</b>	16" x 16"	38 - T-Bar Lay-In	1422
<b>040-3418</b>	18" x 18"	36 - T-Bar Lay In	1744
<b>040-3420</b>	20" x 20"	34 - T-Bar Lay-in 1"	2083

## PDMC SERIES - MODULAR CORE PERFORATED DIFFUSERS

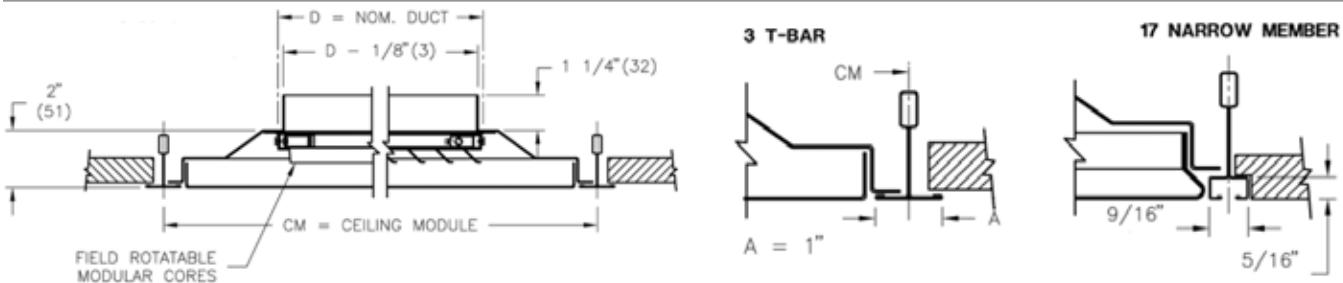
The PDMC Series perforated face high capacity modular core directional diffusers match in detail the SMCD series and offer a perforated face for smooth integration with the ceiling system. Field adjustment of the air pattern is easily accomplished by opening the perforated faceplate and repositioning the modular pattern controllers. The core design provides an excellent horizontal pattern, suitable for VAV applications.



**PRICE**

### Features

- Steel perforated face, backpan, and core construction
- Perforated face panel has 3/16 in. diameter holes staggered 1/4 in. on center
- Four louvered air pattern modules are located at the neck and can be easily repositioned in the field without tools
- Adjustable 1, 2, 3 or 4 way patterns, in a wide selection of sizes
- White powder coat B12 finish



### PDMC Frame 3 - T-Bar Lay-in for 1" - 24 X 24

Product: PDMC

Border: 3 - T-Bar Lay-In for 1" and 9/16" Flat T Applications

Panel: 24" x 24"

Finish: B12 - White - Powder Coat

Item Number	Size	Max CFM @ NC < 35
040-3606	06" x 06"	190
040-3608	08" x 08"	311
040-3610	10" x 10"	459
040-3612	12" x 12"	620
040-3614	14" x 14"	817
040-3616	16" x 16"	1016
040-3618	18" x 18"	1254
040-3626	06"	157
040-3628	08"	251
040-3630	10"	371
040-3632	12"	507
040-3634	14"	659
040-3636	16"	383
040-3638	18"	1002

### PDMC Frame 3 - T-Bar Lay-in for 1"- 12x12, 16x16

Product: PDMC

Border: 3 - T-Bar Lay-In for 1" and 9/16" Flat T Applications

Finish: B12 - White - Powder Coat

Item Number	Size	T-Bar Size	Max CFM @ NC < 35
040-3506	06" x 06"	12" X 12"	190
040-3508	08" x 08"	16" X 16"	311
040-3510	10" x 10"	16" X 16"	45

### Aluminum and Steel Plaster Frames

Item Number	Size	Frame Material
045-0921	24" x 24"	Aluminum
045-0935	12" x 12"	Aluminum
045-0940	16" x 16"	Aluminum
045-1000	24" x 24"	Steel

**PDMC Frame 17 - T-Bar Lay-in Narrow Member 9/16**

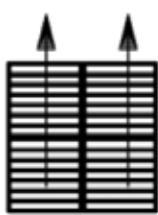
Product: PDMC

Border: 17 - Narrow Member Lay-In

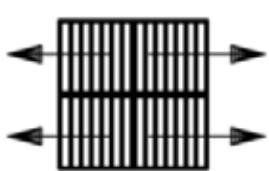
Panel: 24" x 24"

Finish: B12 - White - Powder Coat

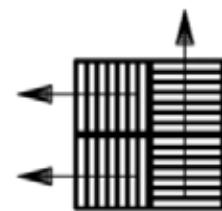
Item Number	Size	Max CFM @ NC < 35
040-3706	06" x 06"	190
040-3708	08" x 08"	311
040-3710	10" x 10"	459
040-3712	12" x 12"	620
040-3714	14" x 14"	817
040-3716	16" x 16"	1016
040-3718	18" x 18"	1254
040-3726	06"	157
040-3728	08"	251
040-3730	10"	371
040-3732	12"	507
040-3734	14"	659
040-3736	16"	383
040-3738	18"	1002

**AVAILABLE AIR PATTERNS**

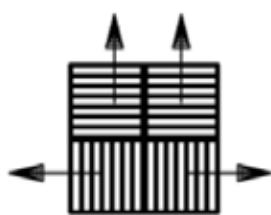
ONE-WAY



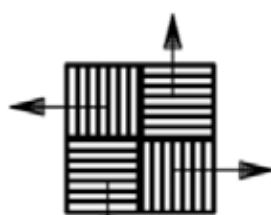
TWO-WAY



TWO-WAY CORNER



THREE-WAY



FOUR-WAY

## SDS SERIES- EXPOSED FRAME LINEAR SLOT DIFFUSERS

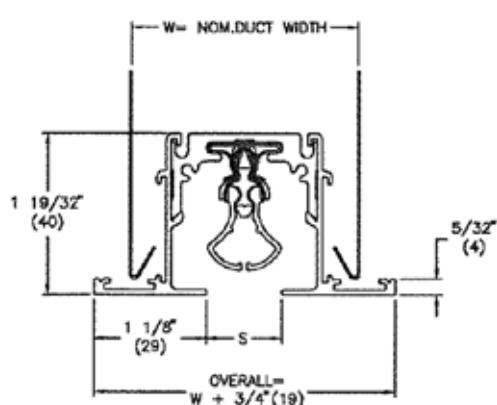
The SDS Series supply linear slot diffusers offer high performance in a VAV outlet with 180° air pattern control and complete blank-off for true design flexibility. The crisp, clean lines of this linear slot diffuser are architecturally appealing and, with its extruded aluminum frames, it virtually blends into any ceiling system. A precisely shaped aerodynamic pattern controller provides a full 180° range of air pattern adjustment from vertical to a tight ceiling-hugging horizontal air pattern. The curved, aerodynamic shape of the pattern controller is essential in achieving an exceptionally tight horizontal ceiling pattern.



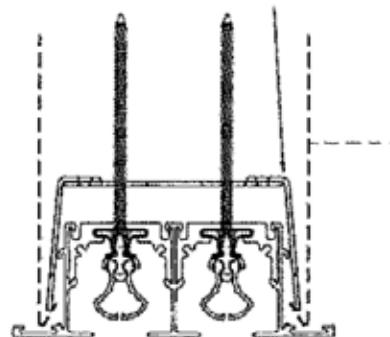
**price**

### Features

- Solid extruded aluminum border and frame construction
- 180° air pattern adjustment and complete flow rate control with stable horizontal air pattern
- No "lefts" or "rights" makes for simple specification and installation
- Stocked in one through four slots for low, medium and high capacity requirements
- White powder coat B12 finish



CONCEALED MOUNTING  
BRACKETS (INCLUDED)



### SDS 75- 3/4" Slot

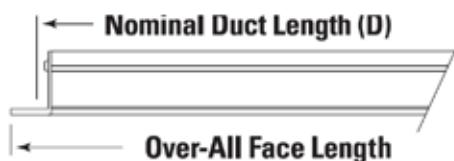
Product:	SDS75
Size:	Stocked in 48" and 72"
Slots:	Stocked in 1, 2, 3, and 4 Slots
Border:	2 - Flange Frame Concealed Mounting
End Condition:	YY - 2 Open Ends
End Cut:	Standard Factory Cut
Finish:	B12 - White - Powder Coat

### SDS 100- 1" Slot

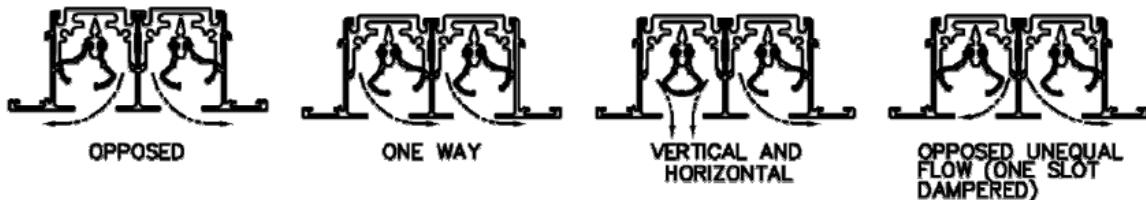
Product:	SDS100
Size:	Stocked in 48" and 72"
Slots:	Stocked in 1, 2, 3, and 4 Slots
Border:	2 - Flange Frame Concealed Mounting
End Condition:	YY - 2 Open Ends
End Cut:	Standard Factory Cut
Finish:	B12 - White - Powder Coat

Item Number	Size	# Slots	Max CFM @ NC < 35	Dimension - W
040-3924	48"	1	42	2 1/4"
040-3930	48"	2	72	3 3/4"
040-3936	48"	3	99	5 1/4"
040-3942	48"	4	124	6 3/4"
040-3927	72"	1	42	2 1/4"
040-3933	72"	2	72	3 3/4"
040-3939	72"	3	99	5 1/4"
040-3945	72"	4	124	6 3/4"

Item Number	Size	# Slots	Max CFM @ NC < 35	Dimension - W
040-3900	48"	1	50	2 1/2"
040-3906	48"	2	83	4 1/4"
040-3912	48"	3	114	06"
040-3918	48"	4	148	7 3/4"
040-3903	72"	1	50	2 1/2"
040-3909	72"	2	83	4 1/4"
040-3915	72"	3	114	06"
040-3921	72"	4	148	7 3/4"

**Type W End Condition****Type W End Condition Caps**

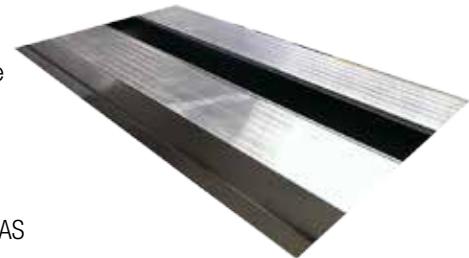
Item Number	Used On	# Slots
045-2390	SDS100	1
045-2400	SDS100	2
045-2410	SDS100	3
045-2420	SDS100	4
045-2430	SDS75	1
045-2440	SDS75	2
045-2450	SDS75	3
045-2460	SDS75	4

**PATTERN ADJUSTMENT  
ONE SLOT****TWO SLOT**

## AS SERIES- MUD-IN FRAME LINEAR SLOT DIFFUSER

The AS Adjusta-slot continuous linear application provides the ultimate in design flexibility due to its wide capacity range and fully adjustable air pattern control.

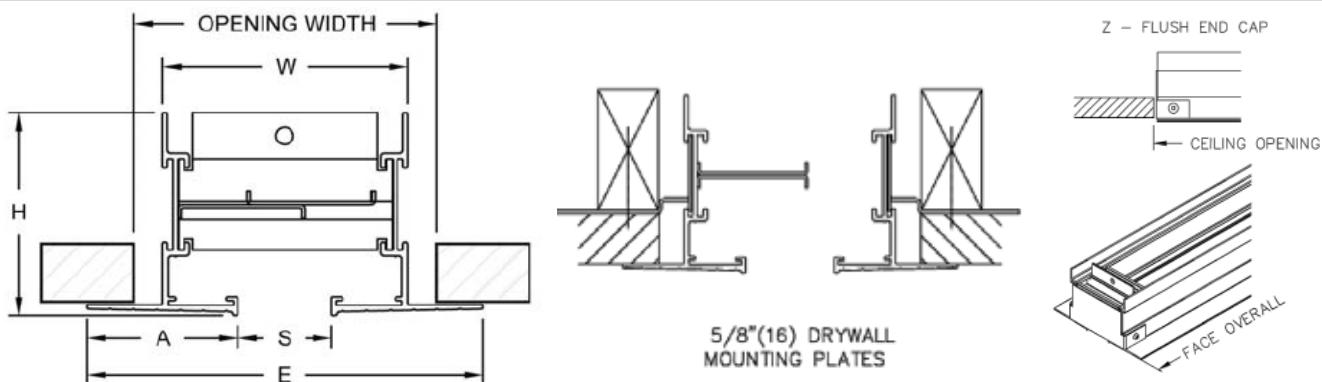
The aesthetically pleasing lines and architectural appeal of the Adjusta-slot make it ideal for integration into architectural ceiling suspension systems.



**PRICE**

### Features

- Extruded aluminum construction with steel pattern controllers
  - Fully-adjustable sliding pattern controller
  - Shut-off without adding any blank-off devices
  - Stocked in standard single slot 144" length in widths 1", 1 1/2", and 2"
  - Flush end caps, 1/16", Type Z
  - Dual pattern controllers are sectioned every 24 in. for total adjustment flexibility
- |                |   |
|----------------|---|
| Product:       | AS  |
| Size:          | 144"                                      |
| Slots:         | 1 Slot                                    |
| Border:        | 22 - Concealed Tapered Frame              |
| End Condition: | ZZ - 2 Screw Mounted Flush End Caps       |
| Mounting:      | MP-D625 - Mounting Plate for 5/8" Drywall |
| Finish:        | MILL - Raw Aluminum Production Material   |



Item Number	Model Number	Size	Dimension				
			E	W	Opening	A	H
040-3970	AS210	1"	4 1/4"	2 5/8"	3 1/4"	1 5/16"	2 3/16"
040-3973	AS215	1 1/2"	5 1/4"	3 5/8"	4 1/4"	1 7/8"	2 7/16"
040-3975	AS220	2"	6 1/4"	4 5/8"	5 1/4"	2 1/8"	2 11/16"

- Opening dimension is outside of field of built plenum with hemmed seam

### Parts Kit- 1 Kit is needed per cut

Item Number	Model
040-4215	AS210 PARTS KIT
040-4255	AS215 PARTS KIT
040-4281	AS220 PARTS KIT

### 48" Plenum for AS Linear

Item Number	Model
040-4020	ASPI210 48" Plenum for AS210
040-4225	ASPI215 48" Plenum for AS215
040-4260	ASPI220 48" Plenum For AS220

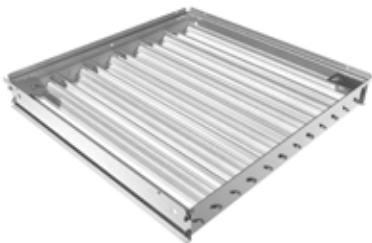
## PRICE ACCESSORIES

### Aluminum and Steel Plaster Frames

Item Number	Size	Frame Material
045-0921	24" x 24"	Aluminum
045-0935	12" x 12"	Aluminum
045-0940	16" x 16"	Aluminum
045-1000	24" x 24"	Steel

### VCS3 Series- Opposed Blade Damper

The VCS3 Series is designed to install on most of our grilles. The volume control louvers move simultaneously in opposite directions, closing to provide superior metering and control with a minimum disturbance of the air pattern.



Item Number	Size
045-2003	06" x 06"
045-2006	08" x 04"
045-2012	08" x 08"
045-2015	09" x 09"
045-2018	10" x 04"
045-2021	10" x 06"
045-2024	10" x 08"
045-2027	10" x 10"
045-2030	12" x 04"
045-2033	12" x 06"
045-2036	12" x 08"
045-2042	12" x 12"
045-2045	14" x 06"
045-2048	14" x 08"
045-2051	14" x 10"
045-2054	14" x 12"
045-2057	14" x 14"
045-2060	15" x 06"
045-2063	15" x 08"

### Continued

Item Number	Size
045-2069	15" x 12"
045-2084	16" x 06"
045-2087	16" x 08"
045-2090	16" x 10"
045-2091	16" x 12"
045-2093	16" x 16"
045-2095	18" x 08"
045-2096	18" x 10"
045-2097	18" x 12"
045-2114	18" x 14"
045-2120	18" x 16"
045-2123	18" x 18"
045-2129	20" x 08"
045-2132	20" x 10"
045-2135	20" x 12"
045-2144	20" x 20"
045-2150	22" x 22"
045-2160	24" x 24"

### Screen

Item Code	Description	Size
040-2024	T-Bar Lay-in F3	24" x 24"
040-2048	Fineline Screen F17	12" x 24"
040-2051	Fineline Screen F17	24" x 24"

### Touch-up Paint

Item Number	Model
045-0048	Price B-12

## DUCTBOARD

### 4-Way Ductboard Supply

Item Number	Size
060-0130	12" x 24"
060-0140	24" x 24"

### 4- Way Ductboard Return Air Grilles

Item Number	Size
060-0150	12" x 24"
060-0160	24" x 24"

# VAV ZONE CONTROLS



## SINGLE DUCT TERMINAL UNITS



### Features

- 1/2 in. thick, min. 1.5 lb density fiberglass internal insulation which meets requirements of NFPA 90A and UL181
- 22 gauge zinc-coated steel housing, mechanically sealed and gasketed, leak resistant construction
- Rectangular discharge opening with slip and drive cleat duct connection
- Control assembly will be supplied as illustrated on right hand side
- Gauge taps are standard on units with pneumatic controls
- Clean, dry, 20 psi control air required for pneumatic unit
- SDV5 - For use with controls provided by others.
- SPV8 - Pneumatic controller and actuator supplied and mounted by Price

## SDV5 SERIES

For use with controls provided by others.

Product: SDV5

Seq. No: 2000 - VAV - Field Installed Controls Supplied by Others

Option: PS - Protective Shroud

Item Number	Model Number	Size	Max CFM @ NC < 35
050-0005	SDV5 05" #2000	05"	350
050-0006	SDV5 06" #2000	06"	450
050-0008	SDV5 08" #2000	08"	800
050-0010	SDV5 10" #2000	10"	1350
050-0012	SDV5 12" #2000	12"	2100
050-0014	SDV5 14" #2000	14"	3000
050-0016	SDV5 16" #2000	16"	3400
050-0022	SDV5 24" x 16" #2000	24" x 16"	380

## SDV5 SERIES

For use with controls provided by others. Includes 115-24v transformer

Product: SDV5

Seq. No: 2000-VAV-Field Installed Controls Supplied by Others

Transformer: 115V-24 transformer

Option: PS - Protective Shroud

Item Number	Model Number	Size	Max CFM @ NC < 35
050-0106	SDV5 05" #2000	06"	350
050-0108	SDV5 06" #2000	08"	450
050-0110	SDV5 08" #2000	10"	800
050-0112	SDV5 10" #2000	12"	1350
050-0114	SDV5 12" #2000	14"	2100
050-0116	SDV5 14" #2000	16"	3000
050-0122	SDV5 16" #2000	24" x 16"	3400

## SPV8 SERIES

Comes with Pneumatic Controls

Product: SPV8

Seq. No: 1008 - VAV - CP101/NO/DA Cooling

Item Number	Model Number	Size	Max CFM @ NC < 35
050-0306	SPV8 06" #1008	06"	450
050-0308	SPV8 08" #1008	08"	800
050-0310	SPV8 10" #1008	10"	1350
050-0312	SPV8 12" #1008	12"	2100
050-0314	SPV8 14" #1008	14"	3000
050-0316	SPV8 16" #1008	16"	3400

## ACCESSORIES

### WATER COILS

Item Number	Size	Rows
050-0506	06"	1
050-0508	08"	1
050-0510	10"	1
050-0512	12"	1
050-0514	14"	1
050-0516	16"	1
050-0522	24" x 16"	1
050-0606	06"	2
050-0608	08"	2
050-0610	10"	2
050-0612	12"	2
050-0614	14"	2
050-0616	16"	2
050-0622	24" x 16"	2

### ATTENUATORS

#### 3 FT Long Attenuators

Item Code	Size	Dimension
055-0406	06"	12" x 08"
055-0408	08"	12" x 10"
055-0410	10"	14" x 12.5"
055-0412	12"	16" x 15"
055-0414	14"	20" x 17.5"
055-0416	16"	23" X 18"
055-0422	22"	24" x 18"

#### End Caps

Item Code	Size	Dimension
055-0506	06"	12" x 08"
055-0508	08"	12" x 10"
055-0510	10"	14" x 12.5"
055-0512	12"	16" x 15"
055-0514	14"	20" x 17.5"
055-0516	16"	23" x 18"
055-0522	22"	24" x 16"

### PROTECTIVE SHROUD

Item Code	Model
050-0350	CP101

## DUAL DUCT TERMINAL UNITS

### DPV8 SERIES

The Price DPV8 series dual duct terminal unit is a factory built assembly, utilizing the latest developments in volume control. It precisely regulates the flow of conditioned air to a room or zone in response to thermostat demand for cooling or heating



#### Features

- Pressure independent operation
- Available with pneumatic controls
- Individually adjustable minimum and maximum air volume for each inlet. These can be easily field adjusted
- Gauge taps are provided for flow measurement and balancing for units with factory mounted pneumatic controls
- Certified in accordance with the AHRI 880 certification program
- 22 gauge zinc-coated steel housing, mechanically sealed, leak-resistant
- 3/4 in. [19] thick, min 1.5 density fiberglass internal insulation which meets requirements of UL181 and NFPA-90A

Product: DPV8

Seq. No: 3112 - VAV - RA: NO Cold/NC Hot deck

Hot Dk Loc: LH - Left Hand

Item Number	Model Number	Size	Max CFM @ NC < 35
050-0406	DPV8 06" #3112	06"	400
050-0408	DPV8 08" #3112	08"	750
050-0410	DPV8 10" #3112	10"	1300
050-0412	DPV8 12" #3112	12"	1900

# VAV ZONE CONTROLS- TERMINAL UNITS

## Recommended Air Changes

### DIGITAL CONTROLS

SIZE	L/S MIN*	L/S MAX	CFM MIN*	CFM MAX
6	31	212	66	450
8	62	378	132	800
10	104	637	221	1350
12	143	991	304	2100
14	207	1416	439	3000
16	268	1888	568	4000
22 (24x16)	500	3775	1187	8000

### PNEUMATIC CONTROLS

SIZE	L/S MIN*	L/S MAX	CFM MIN*	CFM MAX
6	44	212	93	450
8	88	378	187	800
10	147	637	312	1350
12	203	991	430	2100
14	293	1416	621	3000
16	379	1888	803	4000

### Terminal Selection Guide

NC levels presented in the Typical Selection Guide are based on typical attenuation values as outlined in ARI standard 885 – 98, Appendix E. ARI Standard 885-98, Appendix E provides typical sound attenuation values for air terminal discharge sound and air terminal radiated sound. The typical attenuation values are recommended for use by manufacturers to estimate application sound levels.

In product catalogs the end use environments are not known and the factors presented in ARI Standard 885-98 are provided as typical attenuation values. Use of these values will allow better comparison between manufacturers and give the end user a value which will be expected to be applicable for many types of spaces.

Following is a detailed description of the typical attenuation values used to determine NC levels on page 76.

#### Radiated Sound

Table E-1 of Appendix E provides typical radiated sound attenuation values for three types of ceilings: Type 1 – Glass Fiber; Type 2 – Mineral Fiber; Type 3 – Solid Gypsum Board.

Since Mineral Fiber tile ceilings are the most common construction used in commercial buildings, the attenuation values in the Typical Selection Guide are based on Type 2 – Mineral Fiber.

The following table provides the calculation method for the radiated sound total attenuation values based on ARI Standard 885-98.

Octave Band Mid Frequency, Hz						
	125	250	500	1000	2000	4000
Environmental Effect	2	1	0	0	0	0
Ceiling/Space Effect	16	18	20	26	31	36
Total Attenuation Deduction	18	19	20	26	31	36

The ceiling/space effect assumes the following conditions:

1.  $\frac{5}{8}$ " tile, 20 lb/ft<sup>3</sup> density
2. The plenum is at least 3 feet deep
3. The plenum space is either wide (over 30 feet) or lined with insulation
4. The ceiling has no significant penetration directly under the unit.

#### Discharge Sound

Table E-1 of Appendix E provides typical discharge sound attenuation values for three sizes of terminal units.

1. Small box – defined as a unit with discharge duct of approximately

#### Notes:

Factory calibrated controls must be selected within the above flow range limits. A minimum value of zero is also available. When an auxiliary flow setting is specified, the value must be greater than the minimum setting and within the range limits.

On controls mounted by Price but supplied by others, the air volume ranges are guidelines only.

\*Minimum air flow limit is based on min .02" w.g. differential pressure signal from air flow sensor (.04" w.g. for CP100 and CP200). Selection of air flow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended air flow limits. The actual performance will vary depending on the terminal unit controls supplied.

8" x 8" and capacity less than 300 cfm.						
2. Medium box – defined as a unit with discharge duct of approximately 12" x 12" and capacity between 300 – 700 cfm.						
3. Large box – defined as a unit with discharge duct of approximately 15" x 15" and capacity of greater than 700 cfm.						
The following tables provide the calculation method for the discharge sound and total attenuation values based on ARI Standard 885-98.						
<b>Small Box</b>		<b>Octave Band Mid Frequency, Hz</b>				
(< 300 cfm)		125	250	500	1000	2000
Environmental Effect		2	1	0	0	0
5 Ft (1.5 m) Duct Lining		2	6	12	25	28
End Reflection		9	5	2	0	0
5 Ft (1.5 m), 8 in (200 mm)						
Flex Duct		6	10	18	20	21
Space Effect		5	6	7	8	9
Sound Power Division		0	0	0	0	0
Total Attenuation Deduction		24	28	39	53	58
<b>Medium Box</b>		<b>Octave Band Mid Frequency, Hz</b>				
(300 – 700 cfm)		125	250	500	1000	2000
Environmental Effect		2	1	0	0	0
5 Ft (1.5 m) Duct Lining		2	4	10	20	20
End Reflection		9	5	2	0	0
5 Ft (1.5 m), 8 in (200 mm)						
Flex Duct		6	10	18	20	21
Space Effect		5	6	7	8	9
Sound Power Division		3	3	3	3	3
Total Attenuation Deduction		27	29	40	51	53
<b>Large Box</b>		<b>Octave Band Mid Frequency, Hz</b>				
(> 700 cfm)		125	250	500	1000	2000
Environmental Effect		2	1	0	0	0
5 Ft (1.5 m) Duct Lining		2	3	9	18	17
End Reflection		9	5	2	0	0
5 Ft (1.5 m), 8 in (200 mm)						
Flex Duct		6	10	18	20	21
Space Effect		5	6	7	8	9
Sound Power Division		5	5	5	5	5
Total Attenuation Deduction		29	30	41	51	52

For a complete explanation of the attenuation factors and the procedures for calculating room NC levels, please refer to ARI Standard 885-98.

## Terminal Selection Guide (*continued*)

### NC vs Sound Power Levels – Compare Them Carefully

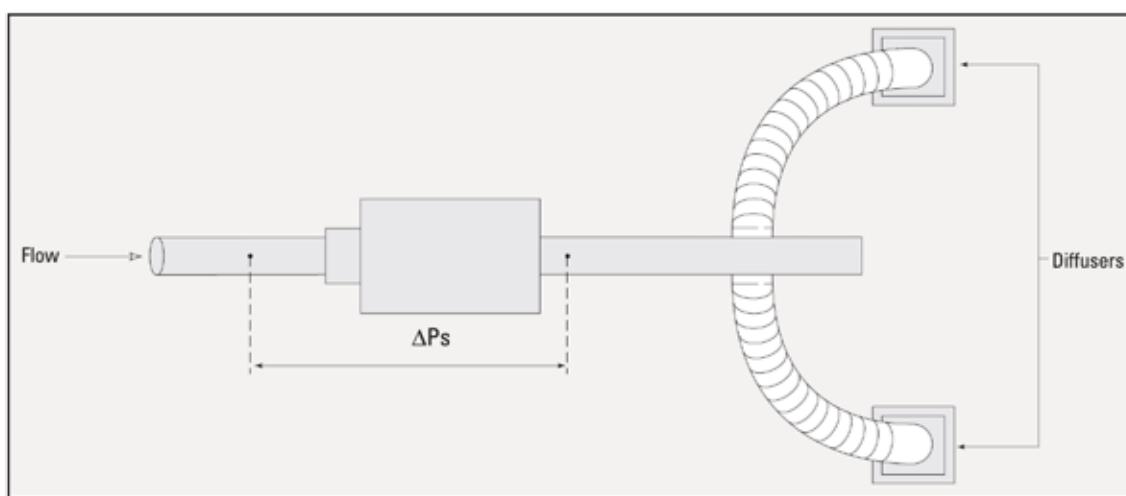
PRICE represents the sound performance data for the SPV/SEV/SDV series of single duct terminals in two manners.

The laboratory attained discharge and radiated sound power levels for each unit at various flows and inlet static pressures is presented in the Acoustical Data tables. This data is derived in accordance with ARI Standard 880 and shows the "raw" sound power levels of the terminal in the 2nd through 7th octave bands with NO attenuation allowances. This data includes ARI standard ratings which are on record with the Air-Conditioning Refrigeration Institute.

PRICE also offers this Typical Application and Selection Guide to assist you in selecting the proper size and configuration of terminal for your needs. The attenuation

allowances listed are based on values suggested in ARI Standard 885-98, Appendix E. The suggested attenuation allowances are intended to be representative of typical jobsite construction. If your conditions differ significantly from these it is recommended you utilize the sound power level data on pages F22 – F25 and the procedures outlined in ARI Standard 885-98.

If the NC levels listed in the PRICE catalog are being compared to other manufacturers' cataloged NC information, a careful review of the other manufacturers' attenuation allowances must be made. If allowances other than recommended ARI Standard 885-98, Appendix E are used, a fair comparison of NC levels cannot be performed.



### Pressure Drop Explanation

1.  $\Delta P_s$  is the static pressure drop across the terminal unit from the inlet to the discharge.
2. Minimum  $\Delta P_s$  across the unit is the pressure drop across the terminal unit from the inlet to the discharge with the damper in full open position. The minimum  $\Delta P_s$  must be maintained in order to supply the rated air flow through the terminal unit.

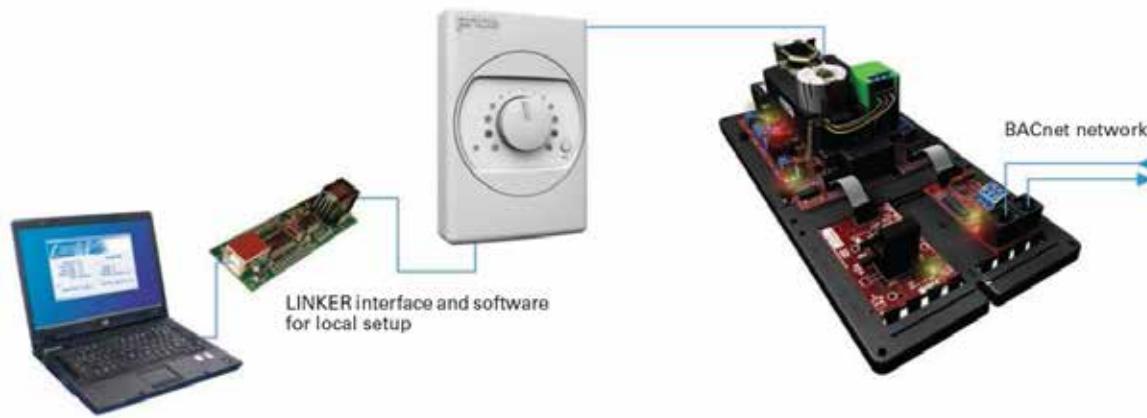
Minimum  $\Delta P_s$  values are provided for the basic assembly only and for the basic assembly combined with accessories such as attenuator and hot water coils.

The minimum  $\Delta P_s$  across the terminal unit and accessories does not include resistance of the downstream ductwork or diffusers. To determine the minimum inlet static pressure required to achieve rated air flow the downstream resistance must be added to the minimum  $\Delta P_s$ .

3.  $\Delta P_t$  is the total pressure drop across the terminal unit from the inlet to the discharge. Total pressure includes both the static pressure drop and velocity pressure drop. Velocity pressure drop is due to the reduced duct velocity at the terminal unit discharge.
4. NC at  $\Delta P_s$  across the unit is the NC level produced by the terminal unit with the listed static pressure drop from the inlet to the discharge ( $\Delta P_s$ ). The listed  $\Delta P_s$  is the excess static pressure removed by the terminal unit damper.

## PRICE INTELLIGENT CONTROLLER

The Price Intelligent Controller (PIC) is a direct digital controller for VAV terminals or fan coils that offers cutting edge zone control. The PIC combines the accuracy of direct digital control with the flexibility of an individual room control system, providing maximum control and efficiency. An advanced and configurable proportional integral controller allows for exceptional user comfort and energy efficiency. Installation of the controller and thermostat is simple and error proof with RJ-45 (network type) connections to the thermostat and BACnet network.



### Features

- 24 VAC power terminal or RJ-12 power connection
- 24 VAC Binary Outputs (7) – A variety of binary outputs for heating, cooling or fan operation which are rated for maximum 0.5 amps each. Max: 1.85 amps total. Field switchable from HOT to COM
- Analog outputs (4) – fully configurable (2-10vdc, 0-10vdc, 10-2vdc etc.) outputs for heating, cooling, fan operation, and auxiliary, rated at maximum 10 mA each
- S.A.T sensor input (1) 10K type J thermistor - when heat/cool changeover is required a temperature probe must be connected
- Contact closure Input (1) – night setback
- BACnet expansion module (optional) – providing a native BACnet MS/TP interface
- VAV expansion module (optional) – provides air flow sensing for true VAV control.
- Integrated damper actuator – default stroke time of 95 seconds
- T-stat port – for RJ-45 connection to thermostat from the PIC controller
- Service port – RJ-12 port used to connect Price linker for system balancing and setup, or to connect an LCD thermostat for system balancing and setup. The LINKER is a USB 2.0 interface to Price controls and is used in conjunction with FREE setup and balancing software available from Price
- LED indication – for ease of troubleshooting.

Item Number	Description
<b>050-1000</b>	PIC Controller w/ LED Stat
<b>050-1005</b>	RJ-12 Gray 35' Power Cable
<b>050-1010</b>	RJ-12 Splitter - 10 Pack
<b>050-1015</b>	RJ-45 Blue 25' Comm Cable
<b>050-1020</b>	RJ-45 Female / Female Coupler

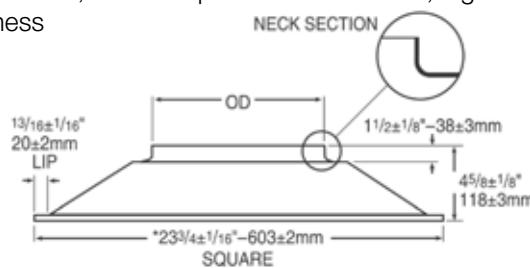
## TH-HC SERIES - THERMA-FUSER™ THERMALLY POWERED VAV MODULE

Every Therma-Fuser™ diffuser is a VAV zone of temperature control providing pleasing comfort in both heating and cooling. The built in thermostat senses average room air temperature from a sample of air induced into the unit. It controls air flow to precisely match the comfort requirements of the room or portion of the room served. Occupants breathe easier knowing that their personal temperature choice will not be changed by someone else.



### Features

- Separate temperature set points for VAV heating and VAV cooling
- Superior air distribution— longer throws, no dumping, more entrainment, even temperature distribution, higher air diffusion performance index and better room air change effectiveness
- Lowest cost per zone of control
- Lowest energy VAV terminal— green VAV
- Low to no maintenance— 10 year warranty
- Easily adapts to office changes



Item Number	Inlet Size	O.D.	Inlet Static Pressure in. wg	Max Flow CFM"	Max Flow		25% Max Flow	
					Throw-Feet @ V <sub>t</sub> = 50/100/150 FPM	NC	Throw-Feet @ V <sub>t</sub> = 50/100/150 FPM	NC
062-1006	6"	5 15/16"	0.05	100	6/4/3	<15	3/2/1	<15
			0.1	140	8/5/4	20	4/3/2	17
			0.11	147	8/5/4	21	4/3/2	18
			0.15	175	9/6/5	26	5/4/3	21
			0.2	200	9/7/6	31	6/5/3	24
			0.25	220	10/8/7	34	7/6/4	27
062-1008	8"	7 15/16"	0.05	160	8/6/4	<15	5/3/2	<15
			0.1	225	10/7/5	20	6/4/3	16
			0.13	255	11/8/6	23	7/5/3	19
			0.15	275	11/8/6	25	7/5/3	21
			0.2	320	12/9/7	30	8/6/4	25
			0.25	355	13/10/8	34	9/6/4	28
062-1010	10"	9 15/16"	0.05	260	9/7/5	15	7/6/4	<15
			0.1	370	11/8/6	23	9/7/5	18
			0.12	402	12/9/7	25	9/7/5	20
			0.15	450	13/10/8	27	10/8/6	22
			0.2	520	14/11/9	31	11/9/7	26
			0.25	580	15/12/10	34	12/10/07	29
062-1012	12"	11 15/16"	0.5	350	11/8/6	15	7/6/4	<15
			0.1	470	13/10/8	23	9/7/5	19
			0.15	560	15/12/10	27	10/8/6	23
			0.16	576	15/12/10	28	10/8/6	24
			0.2	640	16/13/11	31	12/10/8	27
			0.25	720	17/14/12	34	14/11/9	30

All dimensions in inches and are +/- 1/16"

# VAV ZONE CONTROLS- THERMA-FUSERS

## Use Therma-Fuser™ Modules to:

- Design new building systems for individual temperature control at low initial cost.
- Upgrade existing building systems for individual temperature control without replacing duct work.
- Solve specific problems where two or more people are uncomfortable or can not agree on the thermostat setting.

## LOW TO NO MAINTENANCE

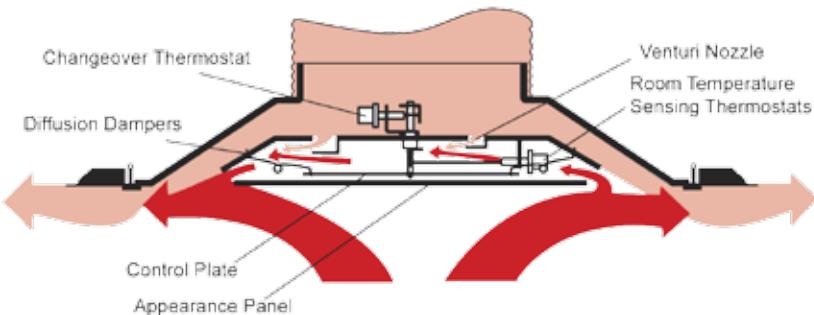
Customers using Therma-Fuser modules for as long as 20 years testify that no maintenance at all has been required. What VAV box or control offers similar results? Or the Acutherm warranty?

## EASILY ADAPTS TO OFFICE LAYOUT CHANGES

No Therma-Fuser zone is split when office walls are put up or moved. A common problem with VAV boxes.

## AESTHETIC APPEARANCE, "ARCHITECTURAL LOOK"

The clean lines of the "architectural square panel" harmonize with the ceiling resulting in a virtually unbroken ceiling plane.



## HOW IT WORKS

The model TH-FC Therma-Fuser module is a 24" x 24" ceiling diffuser with built-in temperature controls. The TH-FC has four dampers that open and close to meter air flow (warm or cold) into the room in response to room temperature. The dampers are mechanically actuated by thermal element thermostats.

Each thermostat is a small brass cylinder containing a petroleum-based wax. The wax expands when heated, driving a piston out. A spring retracts the piston when the wax is cooled and contracts. The movement of the piston positions the dampers in a proportional manner.

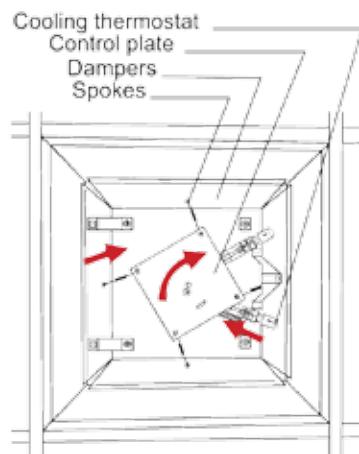
Average room temperature is monitored by inducing a sample of air from the room across the thermostats. Because this sample is drawn directly from the air circulation pattern in the room, just before it mixes with supply air flowing into the room, it better represents average room temperature than does a wall thermostat. A properly applied TF-HC will hold the room within 1.5°F of the temperature selected.

Room temperature may be set between 70°F and 78°F by turning the thermostat. Separate room thermostats for heating & cooling may be set at the same or different temperatures. The thermostats are concealed and out of casual reach but are easily accessible by folding down a hinged panel.

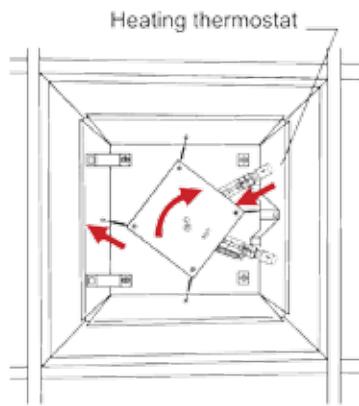
Changeover between heating and cooling modes is determined by supply air temperature. A third thermostat located in the inlet of the Therm-Fuser module senses supply air temperature as it enters the duct. Changeover from cooling to heating begins at a supply air temperature of 76°F and completes around 80°F. Changeover is achieved by disengaging the cooling thermostat and engaging the heating thermostat. Changeover back is completed when the supply air reaches 68°F.

When supply air is warm, the Therma-Fuser module operates in the heating mode—the dampers open on a drop in room temperature. When the supply air is cold, it operates in cooling mode—the dampers open on rise in temperature.

TF-HC THERMA-FUSER MODULE  
APPEARANCE PANEL REMOVED

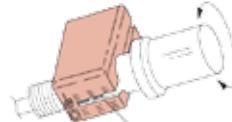


In Cooling mode, as room warms dampers open.



In Heating mode, as room warms dampers close.

ADJUSTING TEMPERATURE



Room temperature set points for heating and cooling are separately adjusted by screwing the heating (red scale) or cooling (blue scale) thermostats in or out. In for cooling and out for warmer. Determine set point by aligning the white indicator with the "F" or "C" numbers on the temperature scale.

## TH-FC Therma-Fuser™ Module-

The only thermally powered terminal offering both VAV heating and VAV cooling. No uncomfortable over heating during warm-up cycles plus temperature control for both heating and cooling.

### INDIVIDUAL TEMPERATURE CONTROL

Each Therma-Fuser module is a VAV zone. The thermostats, actuator and damper are built into the diffuser. Temperature set points for both heating and cooling are separately adjusted between 70°F and 78°F. It easily zones open offices.

### SUPERIOR AIR DISTRIBUTION

Unlike the fixed opening diffusers used with VAV boxes, Therma-Fuser modules vary the discharge opening as they vary air volume. The result is a discharge velocity with comfort benefits of higher throws, no dumping, better room air movement and uniform temperature distribution-especially when turned down

### BETTER SENSES AVERAGE ROOM TEMPERATURE

Unlike wall thermostats, Therma-Fuser thermostats are never in the wrong location. They maintain average temperature within 1.5°F of set point by sensing secondary space air at all times. And secondary air is the return air of the space-the best place to sense the average room temperature.

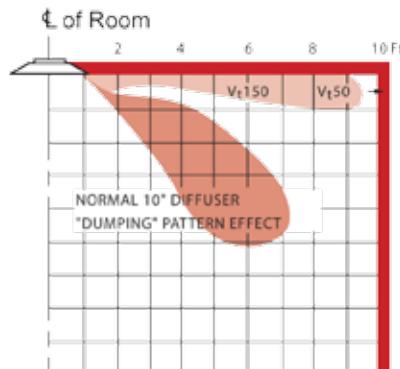
### LOWEST COST PER ZONE OF CONTROL

A single trade can install Therm-Fuser VAV because it is self contained. When comparing total installed cost-including labor-systems with Therma-Fuser VAV are clearly the lowest cost of any VAV alternative.

### LOWEST ENERGY VAV TERMINAL

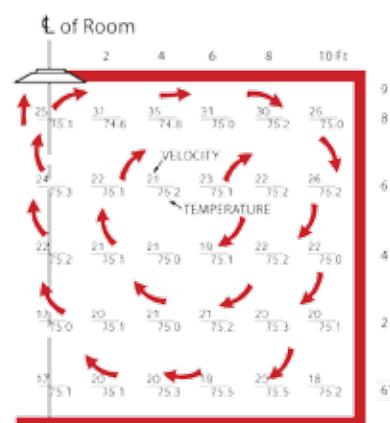
Therma-Fuser modules have the lowest pressure drop of any VAV terminal which allows low pressure systems and low energy fan motors. Fan energy is further reduced by a variable speed drive when the systems turns down. It saves refrigeration and heating energy because no portion of the building is overcooled or overheated. No energy is required to operate the Therma-Fuser.

### COANDA EFFECT



10" neck at 255 of maximum cfm with 55°F supply temperature

### ENTRAINMENT EFFECT



Based on 0.2 cfm/sq.ft. with 55°F supply air temperature

### NOTES

- 1) Both fixed and adjustable minimum flow stops are available.
- 2) For blow patterns reduce maximum four way air volume from the performance guide by:
 

Blow Pattern	Reduction
3 way (D3)	.78
2 way (D2,D2C)	.56
1 way (D1)	.34
- 3) The performance guide does not apply to therma-Fuser modules with R-ring ceiling plenum bypass. Use separate ratings.

Protected by U.S. Patents RE 30,953 and 4,523,713.  
Canada Patent 1987 - Brevete 1987. Patents pending  
in other countries.

# VAV ZONE CONTROLS- THERMA-FUSERS

## Therma-Fuser™ Thermally Powered VAV Module

### SYSTEM DESIGN

The best control for heating/cooling units supplying air to VAV terminals is a discharge thermostat which maintains a constant supply air temperature. With DX equipment these are a high and low limit. For hybrid systems (part VAV and part constant volume) control the heating/cooling supply unit with a thermostat in one of the rooms with a constant volume diffuser, preferably the space with the greatest load. For both VAV or hybrid systems, the fan should run continuously.

The constant discharge velocity of Therma-Fuser diffusers at varying air flow provides good room circulation which reduces stratification. Keeping heating supply air temperatures as low as possible will further reduce room air stratification to a negligible level.

Static pressure at the inlet of the Therma-Fuser diffuser should be between .05"wg./12Pa and .25"wg./62Pa, at full and partial air flows. Static pressure below .05"wg./12Pa will result in low air flow and less induction. Above .25"wg./62Pa, Therma-Fuser diffusers operate well but excessive noise may result. Use minimum flow stops where tight shut off is not needed.

If the system turns down more than 30%, static pressure should be controlled. Included in the options for static pressure control are bypass, fan control and discharge dampers. Zone dampers are recommended where several zones share a higher pressure duct or riser.

When designing ducts, if Therma-Fuser diffusers are to deliver nominal volume at inlet SP of .15"wg./37Pa and if a maximum SP of .25"wg./62Pa is to be held for quiet operation, size the duct for a maximum pressure drop of .1"wg/25Pa between the first and last takeoff.

Manual balancing dampers should be used at the takeoff for each diffuser. Manual balancing dampers may not be required with ducts designed to Acutherm specifications.

Because Therma-Fuser diffusers control room temperature by sensing room air induced up the center of the space, care should be taken not to disturb room air induction and entrainment. For example, location next to walls or dropped lights results in the reflection of primary air back at the Therma-Fuser diffuser. Avoid this with a three-way blow pattern or relocate either the Therma-Fuser diffuser or the light.

Acutherm has "how to" system design brochures for almost every ducted air system. For specific recommendations refer to the brochure for your system.

### GUIDE SPECIFICATION

Thermally powered variable air volume dif-fusers shall be Therma-Fuser model TF-HC manufactured by Acutherm, Hayward, CA. Each diffuser shall be a complete VAV terminal and thermostat self-contained in a nominal 2' x 2' diffuser. External wiring or pneumatics shall not be allowed.

The diffusers shall vary the supply air volume to provide both VAV heating and VAV cooling. They shall be thermally powered using two room temperature sensing thermostats and one changeover thermostat. The room temperature settings for heating and cooling shall be separately adjustable in the field by separately adjusting each of the two room thermostats.

One room temperature sensing thermostat shall sense room temperature and vary the supply air when cooling. The other room temperature sensing thermostat shall sense room temperature and vary the supply air when heating and shall be biased to offset room temperature stratification.

Each room sensing thermostat shall have a micrometer type temperature set point ad-justment with an indicator that moves along a 70°F/21°C to 78°F/26°C temperature scale. Initial set point shall be factory set at 74°F/23°C.

The changeover thermostat shall be factory installed and adjusted to engage the heating mode when the supply air temperature rises above 80°F/27°C and return to the cooling mode when the supply air temperature falls below 68°F/20°C. The changeover mechanism shall not extend above the neck of the diffuser.

Each unit shall have four perimeter dampers to provide 66 linear inches of variable discharge area at the perimeter of the diffuser for maximum Coanda effect and to avoid dumping. Each module shall be factory tested.

The manufacturer shall warrant that the diffuser shall be free from defects in materials and workmanship for a period of ten years from date of shipment.

Each diffuser shall have a hinged appearance panel that can be unlatched and folded down to hang allowing hands to be free for adjust-ing temperature set points. Instructions for the module shall be on the inside of the appearance panel.

### TEN YEAR WARRANTY

Acutherm warrants that its TF-HC Therma-Fuser diffusers, exclusive of any options and accessories (whether factory or field installed) shall be free from defects in material or work-manship for a period of ten (10) years from the date of shipment and agrees to repair or re-place, at its option, any parts that fail during said ten (10) year period due to any such de-fects which would not have occurred had rea-sonable care been taken, provided that such parts have been inspected by Acutherm and found defective and provided the diffusers have been given normal and proper usage and all parts and controls remain unaltered. Acutherm makes NO WARRANTY OF MERCHANTABIL-ITY OF PRODUCTS OR OF THEIR FITNESS FOR ANY PURPOSE OR ANY OTHER EX-PRESS OR IMPLIED WARRANTY WHICH EX-TENDS BEYOND THE LIMITED WARRANTY ABOVE. ACUTHERM'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES RESULT-ING FROM DEFECTS SHALL IN NO EVENT EXCEED THE COST OF REPAIR OR RE-PLACEMENT OF PARTS FOUND DEFECTIVE UPON EXAMINATION BY ACUTHERM. IN NO EVENT SHALL ACUTHERM BE LIABLE FOR INCIDENTAL, INDIRECT OR CONSEQUEN-TIAL DAMAGES OR DAMAGES FOR INJURY TO PERSONS OR PROPERTY. Acutherm shall not be responsible for freight to or from its plant in connection with the inspection, repair or replacement of parts under the terms of this limited warranty nor for cost or installation.

## COOLING AND HEATING EQUIPMENT



# COOLING & HEATING EQUIPMENT- DAIKIN VRV



## DAIKIN VRV PRODUCTS

Daikin's advanced residential and commercial systems can deliver absolute comfort to practically any building of any shape, size, and age. It is the ideal solution for schools, hotels, offices, hospital, homes, stores, restaurants and much more. With Daikin, you can create a responsive environment that can constantly readjust itself to your changing needs.

VRV systems provide advanced solutions for almost any large residential to commercial application. The VRV system integrates cutting-edge inverter technology for individual temperature and zone control. At the heart of the condensing unit is a high efficiency variable speed "inverter" compressor coupled with inverter fan motors for superior system part load performance. The compressor capacity is modulated automatically to maintain a constant suction pressure, while varying the refrigerant volume to precisely deliver cooling or heating load requirements.



## VRV-III HEAT RECOVERY

Designed for large commercial applications, VRVIII systems are available up to 28 tons in heat recovery. With the ability to operate up to 41 indoor fan coil units on a single system, the VRVIII provides excellent part load performance in a modular centralized system.

Model	Tonnage	BTUs		Rated Conditions		MAX Units	Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating		H	W	D			
REYQ72PBTJ	6	69,000	81,000	80°-67°	70°-60°	12	66 1/8"	51 3/16"	30 1/8"	730 lb	58	208-230V/60hz/3ph
REYQ96PBTJ	8	92,000	103,000	80°-67°	70°-60°	16	66 1/8"	51 3/16"	30 1/8"	730 lb	58	208-230V/60hz/3ph
REYQ120PBTJ	10	114,000	129,000	80°-67°	70°-60°	20	66 1/8"	51 3/16"	30 1/8"	730 lb	60	208-230V/60hz/3ph
REYQ144PBTJ	12	138,000	154,000	80°-67°	70°-60°	25	66 1/8"	51 3/16"	30 1/8"	747 lb	62	208-230V/60hz/3ph
REYQ240PBTJ	20	240,000	257,000	80°-67°	70°-60°	41	66 1/8"	73 1/4"	30 1/8"	560 lb + 560 lb	63	208-230V/60hz/3ph
REYQ72PBYD	6	69,000	77,000	80°-67°	70°-60°	12	66 1/8"	51 3/16"	30 1/8"	732 lb	58	460V/60hz/3ph
REYQ96PBYD	8	92,000	103,000	80°-67°	70°-60°	16	66 1/8"	51 3/16"	30 1/8"	732 lb	58	460V/60hz/3ph
REYQ120PBYD	10	114,000	129,000	80°-67°	70°-60°	20	66 1/8"	51 3/16"	30 1/8"	732 lb	60	460V/60hz/3ph
REYQ240PBYD	20	240,000	257,000	80°-67°	70°-60°	41	66 1/8"	73 1/4"	30 1/8"	573 lb + 573 lb	63	460V/60hz/3ph

## VRV-III MULTI-CONNECTION REPLACEMENT UNITS

Model	Tons	Electrical
REMQ72PBTJ	6	208-230V/60hz/3ph
REMQ96PBTJ	8	208-230V/60hz/3ph
REMQ120PBTJ	10	208-230V/60hz/3ph
REMQ72PBYD	6	460V/60hz/3ph
REMQ96PBYD	8	460V/60hz/3ph
REMQ120PBYD	10	460V/60hz/3ph

Items are in stock locally. Please call your Norman S. Wright Climatec sales representative for availability.

## VRV-IV S HEAT PUMP

The VRV IV Heat Pump inherits all the renowned technological features of the VRVIII and adds a number of revolutionary technologies, setting the new standard in the market once again. VRV IV S heat pump systems are ideal for most light commercial and residential applications.



DAIKIN

Model	Tonnage	BTUs		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
RXTQ36TAVJU	3	34,200	37,000	80°-67°	70°-60°	39"	37"	12 5/8"	172 lb	59	208-230V/60hz/1ph
RXTQ48TAVJU	4	45,500	49,500	80°-67°	70°-60°	39"	37"	12 5/8"	176 lb	58	208-230V/60hz/1ph
RXTQ60TAVJU	5	57,000	57,000	80°-67°	70°-60°	52 15/16"	35 7/16"	12 5/8"	225 lb	59	208-230V/60hz/1ph

## VRV-IV HEAT PUMP

The VRV IV Heat Pump inherits all the renowned technological features of the VRVIII and adds a number of revolutionary technologies, setting the new standard in the market once again.



DAIKIN

Model	Tonnage	BTUs		Rated Conditions		MAX Units	Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating		H	W	D			
RXYQ72TTJU	6	69,000	77,000	80°-67°	70°-60°	12	66 11/16"	36 11/16"	30 3/16"	435 lb	58	208-230V/60hz/3ph
RXYQ96TTJU	8	92,000	103,000	80°-67°	70°-60°	16	66 11/16"	48 7/8"	30 3/16"	525 lb	61	208-230V/60hz/3ph
RXYQ120TTJU	10	114,000	129,000	80°-67°	70°-60°	20	66 11/16"	48 7/8"	30 3/16"	528 lb	61	208-230V/60hz/3ph
RXYQ144TTJU	12	138,000	154,000	80°-67°	70°-60°	25	66 11/16"	48 7/8"	30 3/16"	695 lb	64	208-230V/60hz/3ph
RXYQ168TTJU	14	160,000	180,000	80°-67°	70°-60°	29	66 11/16"	48 7/8"	30 3/16"	695 lb	65	208-230V/60hz/3ph
RXYQ72TYDN	6	69,000	77,000	80°-67°	70°-60°	12	66 11/16"	36 11/16"	30 3/16"	451 lb	58	460V/60hz/3ph
RXYQ96TYDN	8	92,000	103,000	80°-67°	70°-60°	16	66 11/16"	48 7/8"	30 3/16"	553 lb	61	460V/60hz/3ph
RXYQ120TYDN	10	114,000	129,000	80°-67°	70°-60°	20	66 11/16"	48 7/8"	30 3/16"	556 lb	61	460V/60hz/3ph
RXYQ144TYDN	12	138,000	154,000	80°-67°	70°-60°	25	66 11/16"	48 7/8"	30 3/16"	709 lb	64	460V/60hz/3ph
RXYQ168TYDN	14	160,000	180,000	80°-67°	70°-60°	29	66 11/16"	48 7/8"	30 3/16"	709 lb	65	460V/60hz/3ph

Items are in stock locally. Please call your Norman S. Wright Climatec sales representative for availability.

# COOLING & HEATING EQUIPMENT- DAIKIN VRV

## VRV INDOOR UNITS

Daikein offers a wide selection of ducted and duct-free units in capacities from 7,500 Btu/h to 96,000 Btu/h. Designed for absolute comfort and versatility with a sleek and sophisticated design, indoor units provide zoning flexibility and comfort control for almost any application.

### Wall Mounted: FXAQ

Stylish and compact, wall mounted units blend discreetly into any interior design. Available in capacities up to 24,000 Btu/h, units are ideal for smaller zone applications such as retail, offices, hotel rooms, and multi-family residences.



Item Code	Model	BTUs		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
<b>140-0175</b>	FXAQ09PVJU	9,500	1,050	80°-67°	70°-60°	11 3/8"	31 1/4"	9 1/4"	26 lb	37	208-230V-60hz-1ph
<b>140-0200</b>	FXAQ12PVJU	12,000	13,500	80°-67°	70°-60°	11 3/8"	31 1/4"	9 1/4"	26 lb	38	208-230V-60hz-1ph
<b>140-0250</b>	FXAQ18PVJU	18,000	20,000	80°-67°	70°-60°	11 3/8"	41 3/8"	9 1/4"	31 lb	43	208-230V-60hz-1ph
<b>140-0300</b>	FXAQ24PVJU	24,000	26,500	80°-67°	70°-60°	11 3/8"	41 3/8"	9 1/4"	31 lb	47	208-230V-60hz-1ph

### Concealed Ceiling Unit: FXMQ

Powerful and compact, concealed ceiling units are slim in height for above the ceiling concealed installation. These indoor units offer design flexibility with ducted capabilities for applications where ceiling space is limited. They are perfect for residential applications, hotels, schools, office buildings, and churches or where a hidden solution is desired.



Item Code	Model	BTUs		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
<b>140-0900</b>	FXMQ07PBVJU	7,500	8,500	80°-67°	70°-60°	11 13/16"	21 5/8"	27 9/16"	55 LB	29	208-230V/60hz/1ph
<b>140-0950</b>	FXMQ09PBVJU	9,500	10,500	80°-67°	70°-60°	11 13/16"	21 5/8"	27 9/16"	55 LB	29	208-230V/60hz/1ph
<b>140-1000</b>	FXMQ12PBVJU	12,000	13,500	80°-67°	70°-60°	11 13/16"	27 9/16"	27 9/16"	62 lb	34	208-230V/60hz/1ph
<b>140-1025</b>	FXMQ15PBVJU	15,000	12,000	80°-67°	70°-60°	11 13/16"	39 3/8"	27 9/16"	80 lb	34	208-230V/60hz/1ph
<b>140-1050</b>	FXMQ18PBVJU	18,000	20,000	80°-67°	70°-60°	11 13/16"	39 3/8"	27 9/16"	80 lb	38	208-230V/60hz/1ph
<b>140-1200</b>	FXMQ24PBVJU	24,000	27,000	80°-67°	70°-60°	11 13/16"	39 3/8"	27 9/16"	80 lb	38	208-230V/60hz/1ph
<b>140-1250</b>	FXMQ30PBVJU	30,000	34,000	80°-67°	70°-60°	11 13/16"	55 1/8"	27 9/16"	102 lb	43	208-230V/60hz/1ph
<b>140-1300</b>	FXMQ36PBVJU	36,000	40,000	80°-67°	70°-60°	11 13/16"	55 1/8"	27 9/16"	102 lb	43	208-230V/60hz/1ph
<b>140-1400</b>	FXMQ48PBVJU	48,000	54,000	80°-67°	70°-60°	11 13/16"	55 1/8"	27 9/16"	102 lb	44	208-230V/60hz/1ph
<b>140-1450</b>	FXMQ54PBVJU	54,000	60,000	80°-67°	70°-60°	11 13/16"	55 1/8"	27 9/16"	104 lb	44	208-230V/60hz/1ph
<b>140-1600</b>	FXMQ72MVJU	72,000	81,000	80°-67°	70°-60°	18 1/8"	54 3/8"	43 5/16"	302 lb	49	208-230V/60hz/1ph
<b>140-1800</b>	FXMQ96MVJU	96,000	108,000	80°-67°	70°-60°	18 1/8"	54 3/8"	43 5/16"	302 lb	49	208-230V/60hz/1ph

# COOLING & HEATING EQUIPMENT- DAIKIN VRV

## Ceiling Mounted Cassette: FXZQ and FXFQ

Designed for customizable comfort, ceiling-mounted cassettes are available in two styles. The FXZQ provides up to a four-way airflow option with quiet sound levels as low as 30dB(A). Designed to fit in a standard 2' x 2' ceiling grid, these units are ideal for smaller room applications.

The FXFQ round flow cassette features 23 configurable airflow distribution patterns, minimizing variances in temperature and airflow discomfort. This model is a great fit for open plan applications, and provides supreme ideal distribution and maximum comfort control. ( 3' x 3' )



### 4 Way Cassette (2' x 2')

Item Code	Model	BTUs		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
<b>140-3060</b>	FXZQ07MVJU9	7,500	8,700	80°-67°	70°-60°	11 1/4"	22 5/8"	22 5/8"	42 lb	31	208-230V/60hz/1ph
<b>140-3075</b>	FXZQ09MVJU9	9,500	6,800	80°-67°	70°-60°	11 1/4"	22 5/8"	22 5/8"	42 lb	33	208-230V/60hz/1ph
<b>140-3100</b>	FXZQ12MVJU9	12,000	14,000	80°-67°	70°-60°	11 1/4"	22 5/8"	22 5/8"	42 lb	41	208-230V/60hz/1ph
<b>140-3125</b>	FXZQ15M7VJU	15,000	17,500	80°-67°	70°-60°	11 1/4"	22 5/8"	22 5/8"	42 lb	41	208-230V/60hz/1ph
<b>140-3150</b>	FXZQ18MVJU9	18,000	21,000	80°-67°	70°-60°	11 1/4"	22 5/8"	22 5/8"	42 lb	41	208-230V/60hz/1ph

### Round Flow Cassette (3' x 3')

Item Code	Model	BTU/hr		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
<b>140-0400</b>	FXFQ12PVJU	12,000	13,500	80°-67°	70°	9 11/16"	33 1/16"	33 1/16"	43 lb	30	208-230V/60hz/1ph
<b>140-0450</b>	FXFQ18PVJU	18,000	20,000	80°-67°	70°	9 11/16"	33 1/16"	33 1/16"	443 lb	32	208-230V/60hz/1ph
<b>140-0500</b>	FXFQ24PVJU	24,000	27,000	80°-67°	70°	9 11/16"	33 1/16"	33 1/16"	48.5 lb	36	208-230V/60hz/1ph
<b>140-0550</b>	FXFQ30PVJU	30,000	34,000	80°-67°	70°	9 11/16"	33 1/16"	33 1/16"	48.5 lb	38	208-230V/60hz/1ph
<b>140-0600</b>	FXFQ36PVJU	36,000	40,000	80°-67°	70°	11 5/16"	33 1/16"	33 1/16"	55 lb	44	208-230V/60hz/1ph
<b>140-0700</b>	FXFQ48PVJU	35,300	54,000	80°-67°	70°	11 5/16"	33 1/16"	33 1/16"	55 lb	45	208-230V/60hz/1ph

### Slim Duct Built-in Concealed Ceiling Unit: FXDQ

The Slim Duct Built-in Concealed Ceiling Unit at only 7-7/8" high makes it suitable for most of the applications where attic / bulkhead space is limited. With a sound level as low as 31dBA, these systems are among the quietest on the market. These units include washable filters, and a built-in condensate pump. It blends unobtrusively with any interior decor; only the suction and discharge grills are visible.



Item Code	Model	BTUs		Rated Conditions		Dimensions			Weight	db (A)	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D			
<b>140-3160</b>	FXDQ07MVJU	7,500	8,500	80°-67°	70°-60°	7 7/8"	27 9/16"	24 7/16"	51 LB	29	208-230V/60hz/1ph
<b>140-3165</b>	FXDQ09MVJU	9,500	10,500	80°-67°	70°-60°	7 7/8"	27 9/16"	24 7/16"	51 LB	29	208-230V/60hz/1ph
<b>140-3170</b>	FXDQ12MVJU	12,000	13,500	80°-67°	70°-60°	7 7/8"	27 9/16"	24 7/16"	51 LB	29	208-230V/60hz/1ph
<b>140-3175</b>	FXDQ18MVJU	18,000	20,000	80°-67°	70°-60°	7 7/8"	35 7/16"	24 7/16"	63 LB	31	208-230V/60hz/1ph
<b>140-3180</b>	FXDQ24MVJU	24,000	27,000	80°-67°	70°-60°	7 7/8"	43 5/16"	24 7/16"	71 LB	32	208-230V/60hz/1ph

# COOLING & HEATING EQUIPMENT- DAIKIN VRV

## Vertical Air Handling Unit: FXTQ

Vertical Air Handling Unit: FXTQ Intelligent and energy-saving, the FXTQ is designed for attic and closet applications. Integrated with an electronic expansion valve, printed circuit boards, and an ECM motor, these indoor units offer energy efficiency with installation ease. Up flow and horizontal right configurations with capacities ranging from 12,000 Btu/h to 36,000 Btu/h provide design flexibility for retrofit and new construction applications.



Item Code	Model	BTUs		Rated Conditions		Dimensions			Weight	Electrical
		Cooling	Heating	Cooling	Heating	H	W	D		
140-2000	FXTQ12PAVJU	12,000	13,500	80°-67°	70°-60°	46 3/4"	19 1/2"	22"	119 lb	208-230V/60hz/1ph
140-2050	FXTQ18PAVJU	18,000	20,000	80°-67°	70°-60°	46 3/4"	19 1/2"	22"	119 lb	208-230V/60hz/1ph
140-2200	FXTQ24PAVJU	24,000	15,909	80°-67°	70°-60°	53 1/4"	22"	24"	145 lb	208-230V/60hz/1ph
140-2250	FXTQ30PAVJU	30,000	34,000	80°-67°	70°-60°	53 1/4"	22"	24"	145 lb	208-230V/60hz/1ph
140-2300	FXTQ36PAVJU	36,000	40,000	80°-67°	70°-60°	53 1/4"	22"	24"	145 lb	208-230V/60hz/1ph
140-2400	FXTQ48PAVJU	48,000	54,000	80°-67°	70°-60°	53 1/4"	22"	24"	167 lb	208-230V/60hz/1ph

## ACCESSORIES

### Branch Selector Boxes

Providing flexibility and minimizing mechanical and electrical installation costs, single port branch selector boxes can connect up to 8 indoor units and are ideal for open plan applications whereas multi-port branch selector boxes are ideal for small tightly grouped rooms which require individual heating and cooling control.



Item Code	Model	Max units per Branch	Piping Connections					Dimension			Weight	
			Indoor Unit		Outdoor Unit		HP/LP Gas					
			Liquid	Gas	Liquid	Suction Gas	H	W	D			
140-0012	BSVQ36PVJU	4	3/8 (Braze)	5/8 (Braze)	3/8 (Braze)	5/8 (Braze)	1/2 (Braze)	8 1/8"	15 1/4"	12 13/16"	27lb	
140-0013	BSVQ60PVJU	8	3/8 (Braze)	5/8 (Braze)	3/8 (Braze)	5/8 (Braze)	1/2 (Braze)	8 1/8"	15 1/4"	12 13/16"	27lb	
140-0014	BSVQ96PVJU	8	3/8 (Braze)	7/8 (Braze)	3/8 (Braze)	7/8 (Braze)	3/4 (Braze)	8 1/8"	15 1/4"	12 13/16"	33lb	

**REFNET**

REFNET joints distribute an equal flow of refrigerant in every branch of the piping network.

Item Code	Model	Description
<b>140-0100</b>	KHRP25A22T	3 Pipe REFNET™ Joint
<b>140-0101</b>	KHRP25A33T	3 Pipe REFNET™ Joint
<b>140-0102</b>	KHRP25M72TU	3 Pipe REFNET™ Joint
<b>140-0103</b>	KHRP25M73TU	3 Pipe REFNET™ Joint
<b>140-0104</b>	KHRP26A22T	2 Pipe REFNET™ Joint
<b>140-0105</b>	KHRP26A33T	2 Pipe REFNET™ Joint
<b>140-0106</b>	KHRP26M72TU	2 Pipe REFNET™ Joint
<b>140-0107</b>	KHRP26M73TU	2 Pipe REFNET™ Joint
<b>140-0001</b>	BHFP26P100U	Condensing Unit Multi Connection Piping



VRV-III Heat Recovery - 208-230V and 460V					
Unit Model Number	REYQ72PB	REYQ96PB REYQ120PB	REYQ144PB REYQ168PB	REYQ192PB REYQ216PB REYQ240PB	REYQ264PB REYQ288PB REYQ312PB REYQ336PB
<b>REFNET Joint</b>	KHRP25A22T KHRP25A33T		KHRP25A22T KHRP25A33T KHRP25M72TU		KHRP25A22T KHRP25A33T KHRP25M72TU KHRP25M73TU
<b>Outdoor Unit Multi Piping Connection Kit</b>			BHFP26P90U	BHFP26P90U	

VRV-IV Heat Recovery - 208-230V and 460V					
Unit Model Number	RXYQ120TY/TT RXYQ144TY/TT		RXQ166TY/TT	RXYQ192TY/TT RXYQ216TY/TT RXYQ240TY/TT	RXYQ264TY/TT RXYQ288TY/TT RXYQ312TY/TT RXYQ336TY/TT RXYQ360TY/TT
<b>REFNET Joint</b>	KHRP26A22T KHRP26A33T KHRP26M72TU			KHRP26A22T KHRP26A33T KHRP26M72TU KHRP26M73TU	

**Controls**

Item Code	Model	Description
<b>140-0003</b>	BRC1E72	Navigation Remote Controller 2013
<b>140-0021</b>	DCM601A71	I-Touch Manager
<b>140-0022</b>	KRCS01-1B	Remote Sensor Kit
<b>140-0023</b>	KRCS01-4B	Remote Sensor Kit
<b>140-0024</b>	DCS601C71	I-Touch Controller
<b>140-0026</b>	ITC	HTTP Interface

**Condensate Pump**

Item Code	Model	Description
<b>140-0020</b>	DACA-CP3-1	Condensate Pump
<b>140-0025</b>	DACA-CP1-1	Condensate Pump



## ENFINITY™ HORIZONTAL CEILING-MOUNTED WATER SOURCE HEAT PUMPS

Daikin Enfinity Horizontal Ceiling-Mounted units are designed for use in multiple floor apartments, office buildings, hotels, nursing homes and other similar applications. Enfinity™ water source heat pumps incorporate the best of our past and the best of what's new. Using feedback from building owners, consulting engineers, contractors and service engineers, Enfinity products were designed to give you maximum flexibility to design, install, operate and maintain the ideal water source heat pump system for your building project. Incorporating non-ozone depleting R-410A refrigerant, which—along with high Energy Efficiency Ratios (EER's)—helps preserve our environment and precious energy resources.



### FEATURES:

- High efficiency, low operating costs
- Easy, low cost design and installation.
- Standard or extended range/geothermal application flexibility.
- Superior indoor air quality.
- Quiet, reliable operation.

- Easy, low-cost maintenance and service.
- Available in multiple unit sizes – 007 (1/2 ton, 2.6kW) through 070 (6 ton, 10.6kW)
- Units exceed ASHRAE 90.1 efficiency levels
- R-410A Refrigerant, environmentally friendly with zero ozone depletion potential
- Optional extended 4-year parts warranty

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

## AHRI Performance Data

Unit Size	GPM	CFM	Water Loop Heat Pump				Ground Loop Heat Pump			
			Cooling EWT 86°F		Heating EWT 68°F		Cooling EWT 77°F		Heating EWT 32°F	
			Capacity (Btuh)	EER	Capacity (Btuh)	COP	Capacity (Btuh)	EER	Capacity (Btuh)	COP
009	2.4	315	9600	13.3	12600	4.5	10200	15.3	7700	3.2
012	3.0	400	13000	12.7	16000	4.3	14000	15.0	10500	3.1
019	5.3	630	21000	14.9	23600	4.8	26300	16.6	18000	3.6
024	6.2	800	24700	14.4	28400	4.7	31500	17.7	23100	3.6
030	7.6	1000	30400	15.3	36200	5.0	37800	17.7	28400	3.6
036	9.0	1200	35800	15.2	42500	4.9	44500	17.1	33900	3.7
042	10.7	1400	43000	15.0	50700	5.0	50200	16.1	38400	3.5
048	12.3	1600	48400	14.1	57100	4.7	61500	16.8	47500	3.7
060	15.2	2000	59500	14.6	69400	4.9	n/a	n/a	n/a	n/a

- Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering Air Temperature.
- Heating capacity is based on 68°F db (20°C) wntering Air Temperature.
- All ratings are based at 208-230 volt electrical.

## Norman S. Wright Climatec Item Code

Unit Size	Tons	Part Number	Hand	Item Codes			
				208 / 230 / 1	265 / 1	208 / 230 / 3	460 / 3
009	3/4	WCCW5009	Left	131-0010			
			Right	131-0015	131-0020		
012	1	WCCW5012	Left	131-0025	131-0035		
			Right	131-0030	131-0040		
019	1.5	WCCW4019	Left	131-0045	131-0055		
			Right	131-0050	131-0060		
024	2	WCCW4024	Left	131-0065	131-0080		131-0090
			Right	131-0070	131-0085	131-0075	131-0095
030	2.5	WCCW5030	Left	131-0100	131-0120	131-0110	131-0130
			Right	131-0105	131-0125	131-0115	131-0135
036	3	WCCW5036	Left	131-0140		131-0150	131-0160
			Right	131-0145		131-0155	131-0165
042	3.5	WCCW5042	Left			131-0170	131-0180
			Right			131-0175	131-0185
048	4	WCCW5048	Left			131-0190	131-0200
			Right			131-0195	131-0205
060	5	WCCW5060	Left			131-0210	131-0220
			Right			131-0215	131-0225

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

## Electrical Data

Unit Size	Voltage/Hz/Ph	Compressor		Fan Motor FLA	Total Unit RLA	Minimum Voltage	Minimum Circuit Amps	Maximum Fuse Size
		RLA	LRA					
009	115/60-1	8.3	45.5	2.1	10.4	104	12.5	20
	208/230-60-1	4.0	22.0	1.0	5.0	197	6.0	15
	265/277-60-1	3.3	18.8	0.7	4.0	240	4.8	15
012	115/60-1	13.2	63.0	2.1	15.3	104	18.6	30
	208/230-60-1	5.6	29.0	1.0	6.6	197	8.0	15
	265/277-60-1	4.7	20.0	0.7	5.4	240	6.5	15
019	208/230-60-1	6.5	43.0	1.7	8.2	197	9.8	15
	265/277-60-1	5.8	46.0	1.4	7.2	240	8.6	15
	208/230-60-1	7.4	43.0	1.7	9.1	197	11.0	15
024	265/277-60-1	6.7	46.0	1.4	8.1	240	9.7	15
	208/230-60-3	5.9	63.0	1.7	7.6	197	9.1	15
	460-60-3	2.9	30.0	1.2	4.1	416	4.8	15
030	208/230-60-1	14.1	73.0	1.7	15.8	197	19.3	30
	265/277-60-1	11.2	60.0	1.4	12.6	240	15.4	25
	208/230-60-3	8.9	58.0	1.7	10.6	197	12.8	20
	460-60-3	4.2	28.0	1.2	5.4	416	6.5	15
036	208/230-60-1	16.7	79.0	3.0	19.7	197	23.9	40
	265/277-60-1	13.5	72.0	3.0	16.5	240	19.9	30
	208/230-60-3	10.4	73.0	3.0	13.4	197	16.0	25
	460-60-3	5.8	38.0	1.7	7.5	416	9.0	15
042	208/230-60-1	19.9	109.0	3.4	23.3	197	28.3	45
	208/230-60-3	13.6	83.1	3.4	17.0	197	20.4	30
	460-60-3	6.1	41.0	1.5	7.6	416	9.1	15
	575-60-3	4.2	33.0	1.6	5.8	520	6.9	15
048	208/230-60-1	21.4	135.0	4.5	25.9	197	31.3	50
	208/230-60-3	14.5	98.0	4.5	19.0	197	22.6	35
	460-60-3	6.3	55.0	2.0	8.3	416	9.9	15
	575-60-3	6.0	41.0	1.8	7.8	520	9.3	15
060	208/230-60-1	26.3	134.0	4.5	30.8	197	37.4	60
	208/230-60-3	15.6	110.0	4.5	20.1	197	24.0	35
	460-60-3	7.8	52.0	2.0	9.8	416	11.8	15
	575-60-3	5.8	38.9	1.8	7.6	520	9.1	15

- All 460-60-3 units require 4-wire power, which includes a neutral wire.

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

## Fan Performance

Unit Size	Speed	Factory Wired	Nominal cfm	External Static Pressure (in. w.c.)										
				0 .10	0 .15	0 .20	0 .25	0 .30	0 .40	0 .50	0 .60	0 .65	0 .70	0 .75
<b>009</b>	High	Yes	300	410	400	390	380	360	330	310	270	250		
<b>012</b>	Low	No	400	350	340	330	320	300						
	High	Yes		430	420	400	390	370	340	300				
<b>019</b>	Low	No	630	670	650	640	610	590	540					
	High	Yes		890	870	840	820	790	730	660				
<b>024</b>	Low	Yes	800	1000	990	980	970	950	910	880	800	760	720	660
	High	No		1190	1170	1150	1130	1110	1060	990	920	880	820	770
<b>030</b>	Low	No	1000	1050	1040	1030	1020	1010	970	920	850	820	770	
	High	Yes		1270	1260	1240	1210	1190	1140	1070	980	940	890	840
<b>036</b>	Low	No	1200				1170	1170	1140	1090	1020	980	940	900
	High	Yes		1510	1500	1480	1460	1430	1350	1260	1150	1090	1040	980
<b>042</b>	Low	No	1400					1450	1420	1280	1120			
	High	Yes		2130	2110	2090	2050	2020	1930	1790	1580	1460	1250	
<b>048</b>	Low	Yes	1600	2100	2070	2030	1990	1950	1850	1720	1400			
	High	No		2440	2380	2330	2260	2200	2070	1910	1590	1410		
<b>060</b>	Low	No	2000			2080	2070	2050	1980	1900	1770	1680		
	High	Yes		2600	2570	2530	2490	2440	2320	2180	2010	1920	1620	

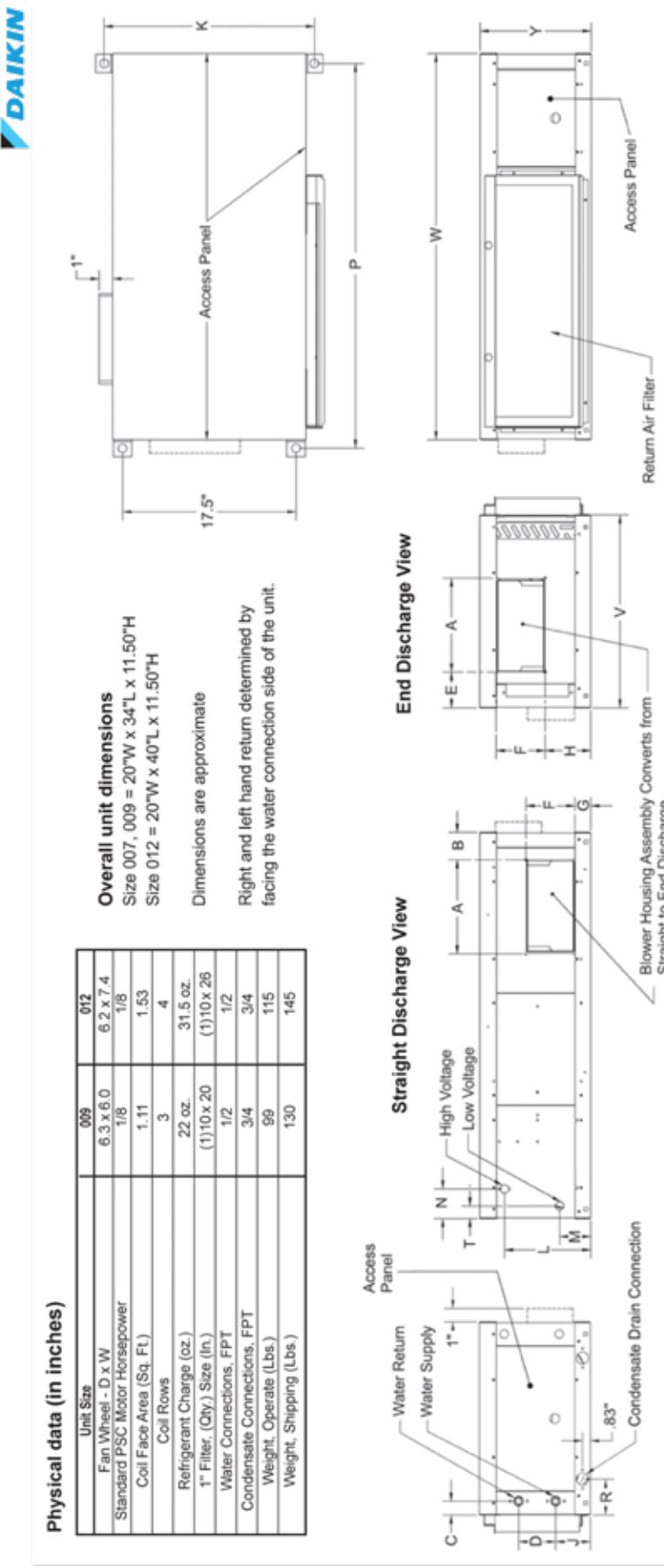
- PSC blower motors are designed to deliver nominal 400 cfm/ton.

## Physical Data

Unit Size	Fan		Coil		Refrigerant Charge (Oz.)	Filters (Qty) / Size		Connections, Female NPT		Weight (Lbs.)		Shipping Dimensions
	Wheel	Motor HP	Face Area (Sq. Ft.)	Rows		1"	2"	Water	Condensate	Operating	Shipping	
<b>009</b>	6.3"D x 6.0"W	1/8	1.11	3	22	(1) 10"H x 20"W	(1) 9.5"H x 21.5"W	1/2"	3/4" I.D.	99	130	39"L x 25"W x 17"H
<b>012</b>	6.2"D x 7.4"W	1/8	1.53	4	31.5	(1) 10"H x 26"W	(1) 9.5"H x 27.5"W	1/2"	3/4" I.D.	115	145	48"L x 26"W x 25"H
<b>019</b>	9.5"D x 7.1"W	1/3	2.75	3	45	(1) 18"H x 24"W	(1) 18"H x 25"W	1/2"	3/4" I.D.	195	214	48"L x 26"W x 26"H
<b>024</b>	9.5"D x 7.1"W	1/3	2.75	3	40.5	(1) 18"H x 24"W	(1) 18"H x 25"W	1/2"	3/4" I.D.	195	214	48"L x 26"W x 26"H
<b>030</b>	9.5"D x 7.1"W	1/3	3.43	3	48	(1) 19"H x 27"W	(1) 18.5"H x 30.5"W	3/4"	3/4" I.D.	225	244	52)L x 27"W x 25"H
<b>036</b>	9.5"D x 7.1"W	1/2	3.43	3	49	(1) 19"H x 27"W	(1) 18.5"H x 30.5"W	3/4"	3/4" I.D.	223	242	52)L x 27"W x 25"H
<b>042</b>	12.9"D x 11.1"W	1/2	3.43	3	60	(2) 16"H x 22.5"W	(1) 21.5"H x 34.5"W	3/4"	3/4" I.D.	293	314	57)L x 33"W x 28"H
<b>048</b>	12.9"D x 11.1"W	3/4	3.43	3	61	(2) 16"H x 22.5"W	(1) 21.5"H x 34.5"W	3/4"	3/4" I.D.	298	319	57)L x 33"W x 29"H
<b>060</b>	12.9"D x 11.1"W	3/4	6.11	3	74	(2) 22"H x 22"W	(1) 21.5"H x 46.5"W	3/4"	3/4" I.D.	332	351	57)L x 33"W x 29"H

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

## Size 009, 012 – left hand return, end and straight discharge



### Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W	Y
009	7.55	3.25	1.45	3.83	4.12	4.95	1.80	5.00	3.60	22	8.93	3.23	3.00	34	3.73	1.25	20	34	11.50
012	9.60	2.80			3.75	4.80					40						40		



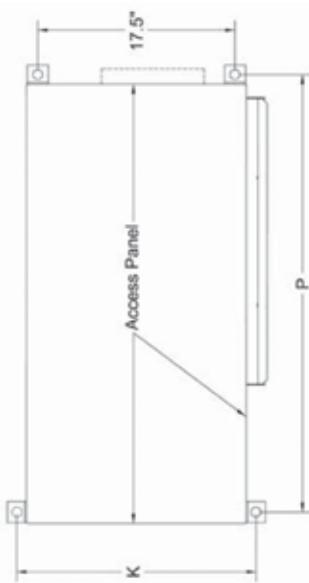
## Size 009, 012 – right hand return, end and straight discharge

### Physical data (in inches)

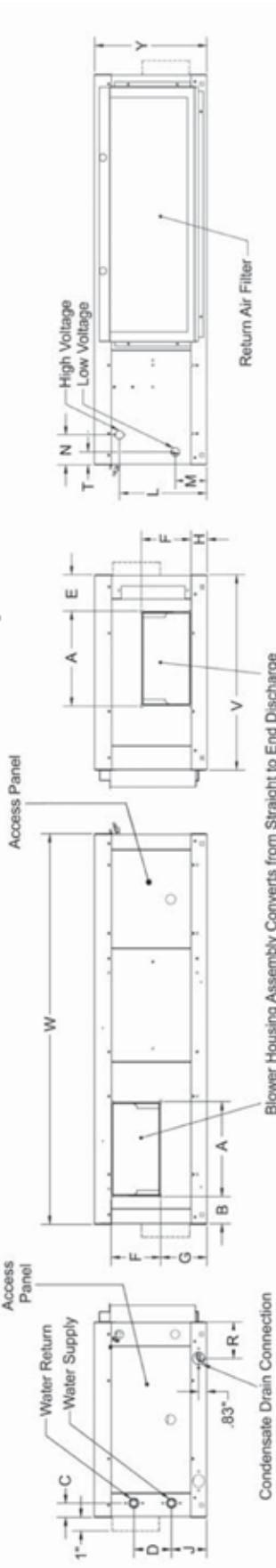
Unit Size	009	012
Fan Wheel - D x W	6.3 x 6.0	6.2 x 7.4
Standard PSC Motor Horsepower	1/8	1/8
Coil Face Area (Sq. Ft.)	1.11	1.53
Coil Rows	3	4
Refrigerant Charge (oz.)	22 oz.	31.5 oz.
1" Filter, (Qty) Size (In.)	(1)10 x 20	(1)10 x 26
Water Connections, FPT	1/2	1/2
Condensate Connections, FPT	3/4	3/4
Weight, Operate (lbs.)	99	115
Weight, Shipping (lbs.)	130	145

**Overall unit dimensions**  
 Size 007, 009 = 20" W x 34" L x 11.50" H  
 Size 012 = 20" W x 40" L x 11.50" H  
 Dimensions are approximate

Right and left hand return determined by facing the water connection side of the unit.



### Straight Discharge View



Blower Housing Assembly Converts from Straight to End Discharge

### Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W	Y
009	7.55	3.25	4.12	4.95	5.00	1.80	3.60	22	5.71	3.23	3.00	3.4	40	3.73	1.25	20	34	11.50	
012	9.60	2.80	1.45	3.83	3.75	4.80											40	40	

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS



## Size 019, 024 – left hand return, end and straight discharge

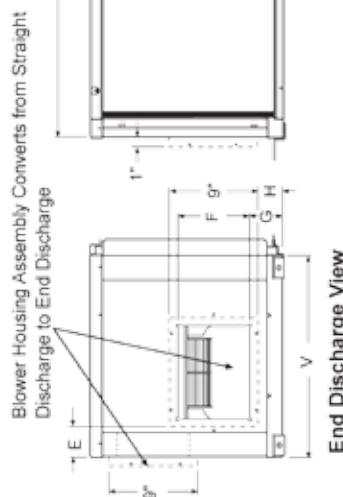
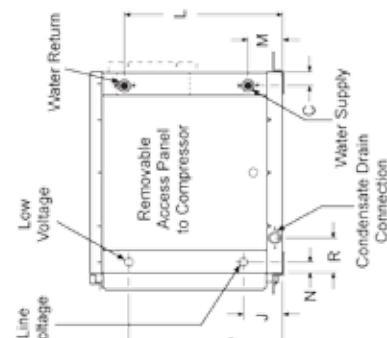
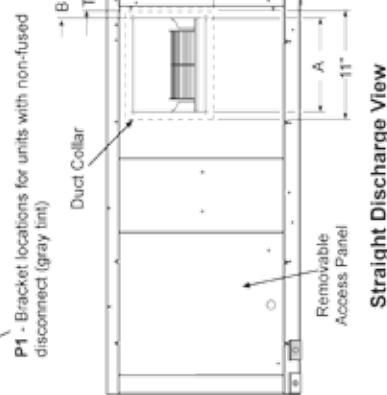
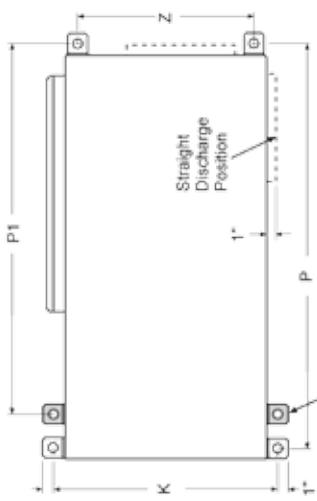
### Physical data (in inches)

Unit Size	019	024
Fan Wheel - D x W	9.5 x 7.1	9.5 x 7.1
Standard PSC Motor Horsepower	1/3	1/3
Coil Face Area (Sq Ft.)	2.75	2.75
Coil Rows	3	3
Refrigerant Charge (oz.)	45 oz.	40.5 oz.
1" Filter (Qty.) Size (in.)	(1)18 x 24	(1)18 x 24
Water Connections, FPT	1/2	1/2
Condensate Connections, FPT	3/4	3/4
Weight, Operate (lbs.)	195	195
Weight, Shipping (lbs.)	214	214

Overall unit dimensions =  
20'W x 42'L x 19'H

Dimensions are approximate.

Right and left hand return  
determined by facing the water  
connection side of the unit.



### Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	P1			R	T	U	V	W	Y	Z
															Bracket locations for units with non-fused disconnect	R	T							
019-024	9.22	3.00	1.45	14.93	2.91	7.12	3.15	2.15	4.10	2.2	15.43	3.60	1.25	42	36.90	3.73	2.03	8.30	20	42	19	17.50		

## Size 019, 024 – right hand return, end and straight discharge



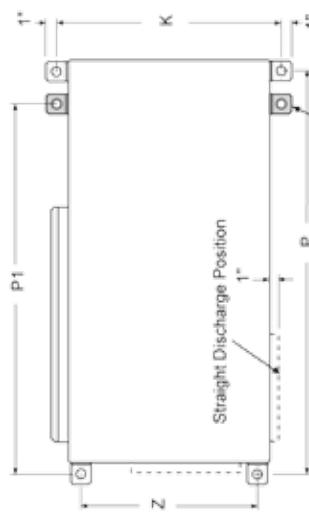
### Physical data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P
Fan Wheel - D x W	019	9.5 x 7.1		024	9.5 x 7.1									
Standard PSC Motor Horsepower	1/3			1/3										
Coil Face Area (Sq. Ft.)	2.75			2.75										
Coil Rows	3			3										
Refrigerant Charge (oz.)	45 oz.			40.5 oz.										
1" Filter, (Qty.) Size (In.)	(1)18 x 24			(1)18 x 24										
Water Connections, FPT	1/2			1/2										
Condensate Connections, FPT	3/4			3/4										
Weight, Operate (lbs.)	195			195										
Weight, Shipping (lbs.)	214			214										

Overall unit dimensions =  
20'W x 42"H x 19"H

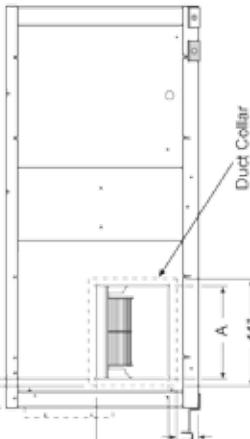
Dimensions are approximate.

Right and left hand return  
determined by facing the water  
connection side of the unit.

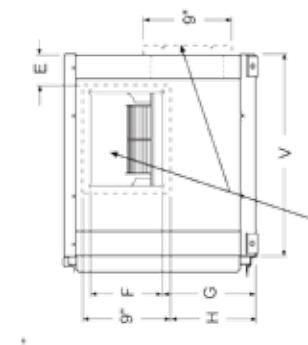


Straight Discharge Position  
P1

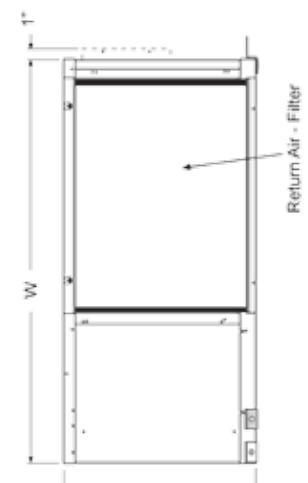
P1 - Bracket locations  
for units with non-fused  
disconnect (gray unit)



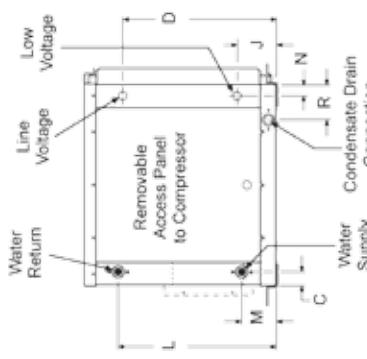
Straight Discharge View



End Discharge View



Return Air - Filter  
Blower Housing Assembly Converts from  
Straight Discharge to End Discharge



Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	P1	R	T	U	V	W	Y	Z
019-024	9.22	2.98	1.45	14.93	2.91	7.12	9.28	8.30	4.10	22	15.43	3.60	1.25	42	38.90	3.73	2.00	2.15	20	42	19	17.50

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS



## Size 030, 036 – left hand return, end and straight discharge

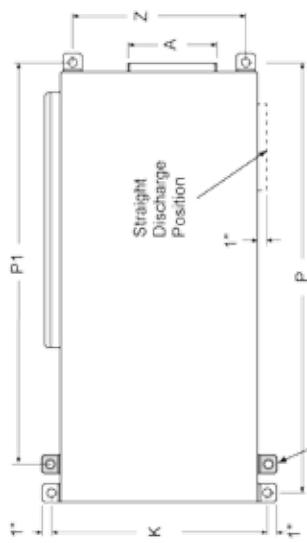
### Physical data (in inches)

Unit Size	030	036
Fan Wheel - D x W	9.5 x 7.1	9.5 x 7.1
Standard PSC Motor Horsepower	1/3	1/2
Coil Face Area (Sq. Ft.)	3.43	3.43
Coil Rows	3	3
Refrigerant Charge (oz.)	48 oz.	49 oz.
1" Filter (Qty.) Size (In.)	(1)19x27	(1)19x27
Water Connections, FPT	3/4	3/4
Condensate Connections, FPT	3/4	3/4
Weight, Operate (lbs.)	225	223
Weight, Shipping (Lbs.)	244	242

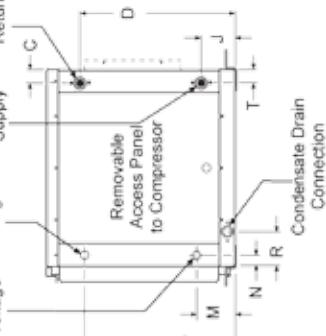
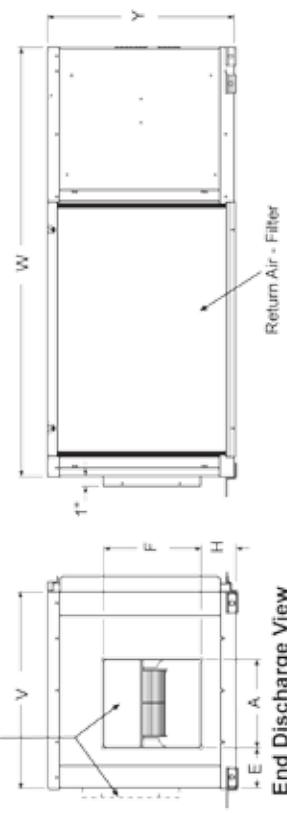
Overall unit dimensions =  
21" W x 46" L x 20" H

Dimensions are approximate.

Right and left hand return  
determined by facing the water  
connection side of  
the unit.



Blower Housing Assembly Converts from Straight  
Discharge to End Discharge



### Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	U	V	W	Y	Z
030 - 036	9.29	3.53	1.45	16.43	4.41	10.26	6.17	4.06	3.60	23	15.93	4.10	1.25	46	42.90	3.74	1.45	21	46	20	18.50

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS



## Size 030, 036 – right hand return, end and straight discharge

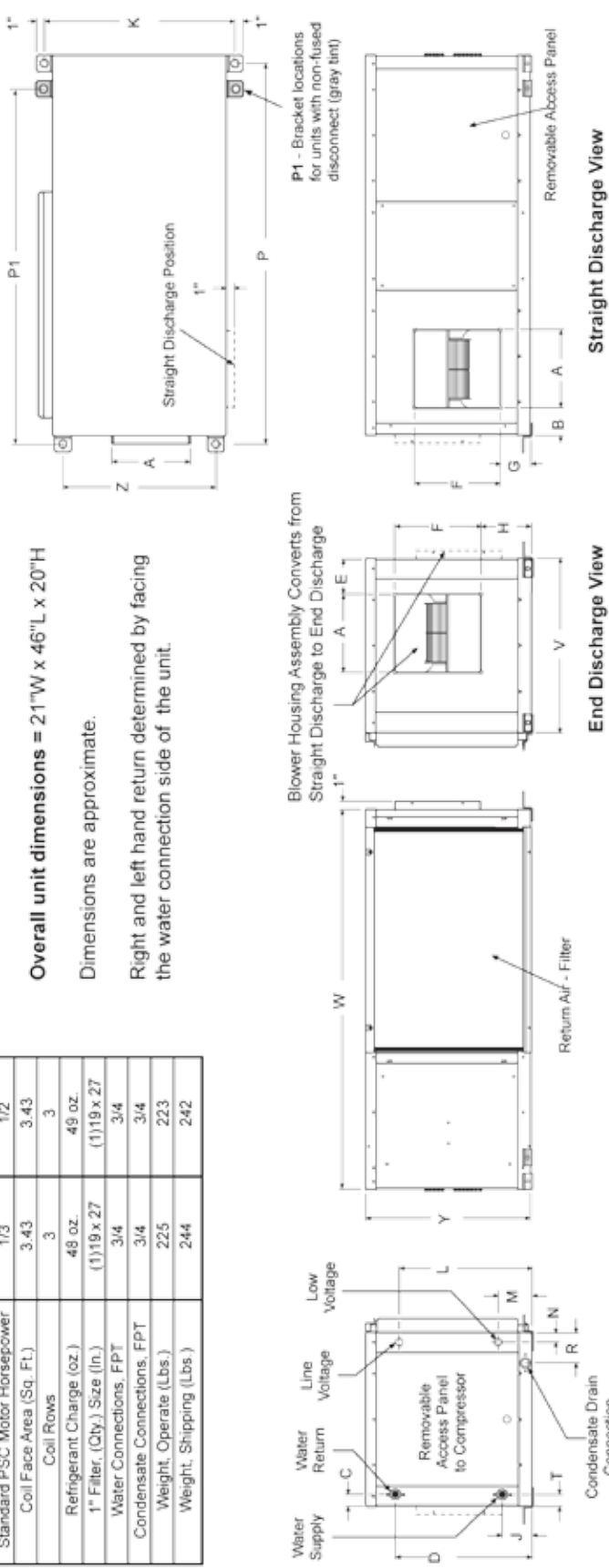
### Physical data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	<b>P1</b>	R	T	V	W	Y	Z
Fan Wheel - D x W	9 5/8	7 1/2																			
Standard PSC Motor Horsepower	1/3																				
Coil Face Area (Sq. Ft.)	3.43																				
Coil Rows	3																				
Refrigerant Charge (oz.)	48 oz.																				
1" Filter, (Qty) Size (In.)	(1)19x27																				
Water Connections, FPT	3/4																				
Condensate Connections, FPT	3/4																				
Weight, Operate (lbs.)	225																				
Weight, Shipping (lbs.)	244																				

Overall unit dimensions = 21" W x 46" L x 20" H

Dimensions are approximate.

Right and left hand return determined by facing the water connection side of the unit.



### Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	<b>P1</b>	R	T	V	W	Y	Z
030 = 036	9.29	3.53	1.45	16.43	4.41	10.26	4.06	6.17	3.60	2.3	15.93	4.10	1.25	.46	42.90	3.74	1.45	2.1	4.6	2.0	18.50

# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS



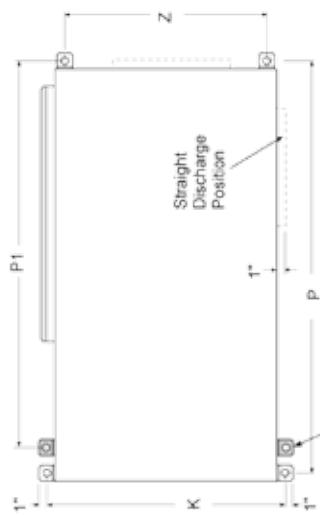
## Size 042, 048, 060 – left hand return, end and straight discharge

Physical data (in inches)

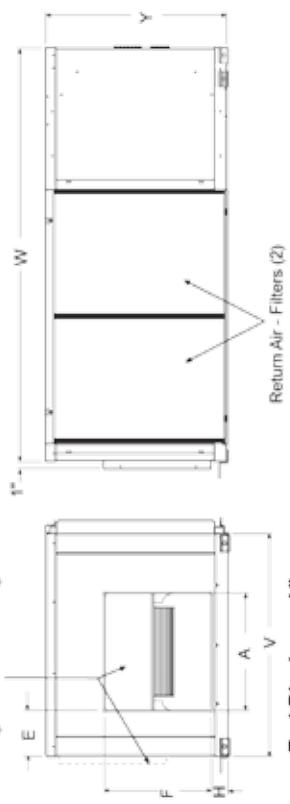
Unit Size	042	048	060
Fan Wheel - D x W	12.9 x 11.1	12.9 x 11.1	12.9 x 11.1
Standard PSC Motor Horsepower	1/2	3/4	3/4
Coil Face Area (Sq. Ft.)	4.43	4.43	6.11
Coil Rows	3	3	3
Refrigerant Charge (oz.)	60.0 oz.	55.0 oz.	74.0 oz.
1" Filter (Qty.) Size (In.)	(2)16 x 22.5	(2)16 x 22.5	(2)22 x 22
Water Connections, FPT	3/4	3/4	3/4
Condensate Connections, FPT	3/4	3/4	3/4
Weight, Operate (Lbs.)	293	298	332
Weight, Shipping (Lbs.)	314	319	351

Dimensions are approximate.

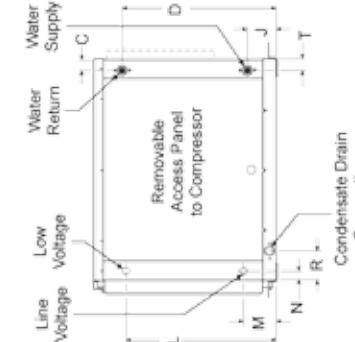
Right and left hand return determined by facing the water connection side of the unit.



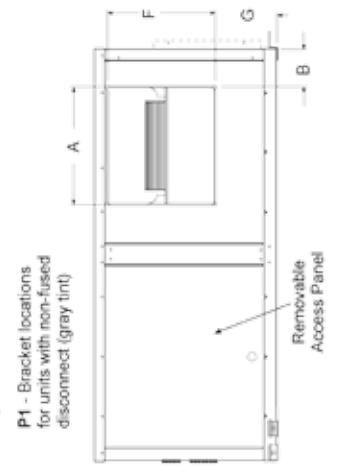
Blower Housing Assembly Converts from Straight Discharge to End Discharge



End Discharge View



Straight Discharge View



Straight Discharge View

Dimensional data (in inches)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P1	R	T	V	W	Y	Z
															Bracket locations for units with non-fused disconnect						
042 - 060	14.68	4.89	1.45	19.43	5.76	13.43	8.06	1.95	3.60	2.3	17.43	5.60	1.25	52	48.80	3.74	1.45	2.8	52	23	25.50

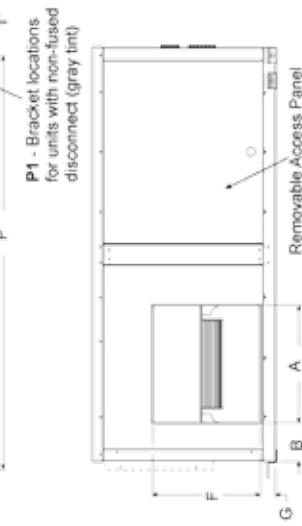
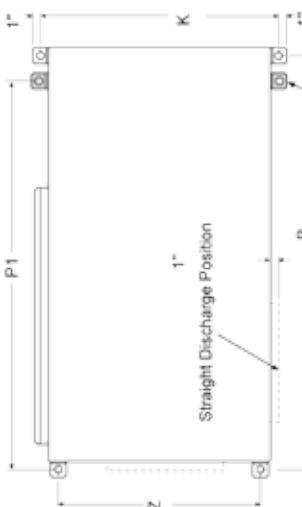
# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

## Size 042, 048, 060—right hand return, end and straight discharge

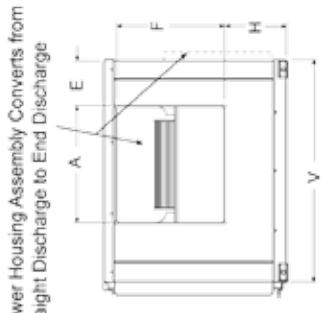
**Physical data (in inches)**

Unit Size	042	048	060
Fan Wheel = D x W	12.9 x 11.1	12.9 x 11.1	12.9 x 11.1
Standard PSC Motor Horsepower	1/2	3/4	3/4
Coil Face Area (Sq. Ft.)	3.43	3.43	6.11
Coil Rows	3	3	3
Refrigerant Charge (oz.)	60.0 oz.	55.0 oz.	74.0 oz.
1" Filter, (Qty.) Size (In.)	(2)16 x 22.5	(2)16 x 22.5	(2)22 x 22
Water Connections, FPT	3/4	3/4	3/4
Condensate Connections, FPT	3/4	3/4	3/4
Weight, Operate (Lbs.)	293	298	332
Weight, Shipping (Lbs.)	314	319	351

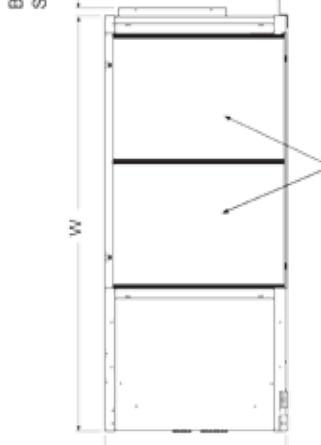
**Overall unit dimensions =**  
28" W x 52" L x 23" H  
  
 Dimensions are approximate.  
  
 Right and left hand return  
determined by facing the water  
connection side of the unit.



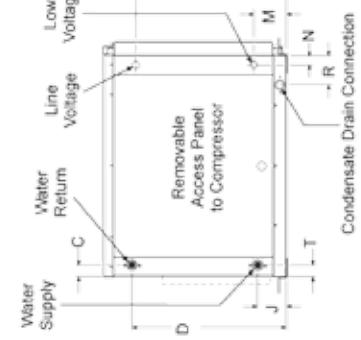
**Straight Discharge View**



**End Discharge View**



**Return Air - Filter**



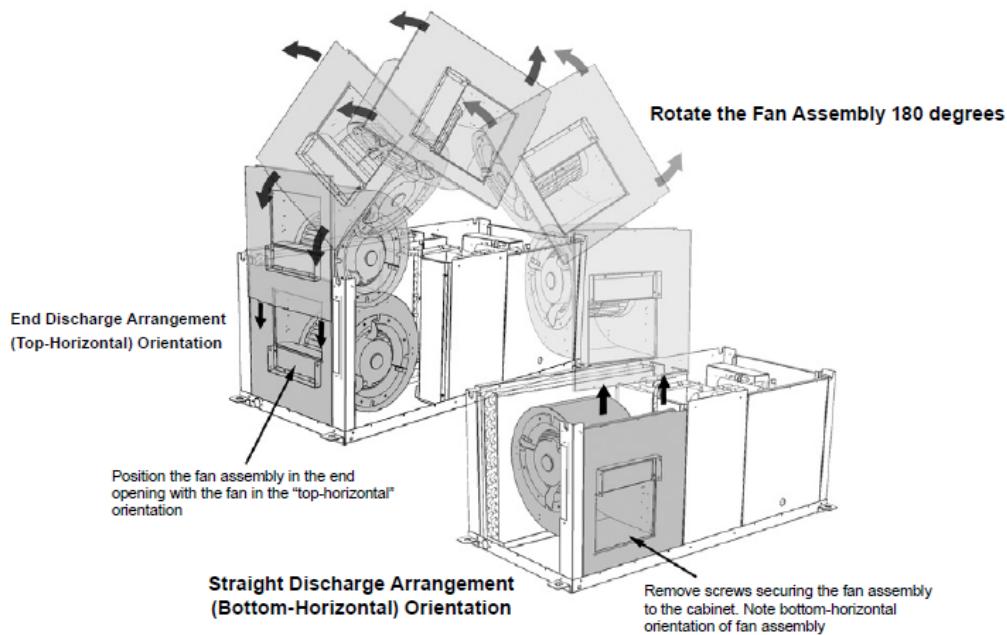
**Dimensional data (in inches)**

Unit Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	P1	R	T	V	W	Y	Z
042 - 060	14.68	4.89	1.45	19.43	5.76	13.43	1.95	8.06	3.60	30	17.43	5.60	1.25	52	48.80	3.74	1.45	26	52	23	25.50

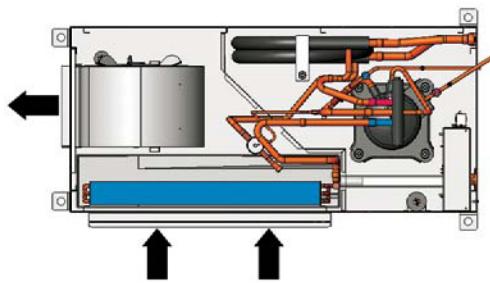
# COOLING & HEATING EQUIPMENT- DAIKIN HEAT PUMPS

Daikin Enfinity horizontal heat pumps offer four configurations to meet your space requirements. Whether working around obstacles or laying out units down a corridor, the mirror image design of the units lets you configure the system using minimum ductwork and piping. This helps reduce design, material and installation costs. For maximum flexibility, the fan discharge can exit from the end or side of the unit. This can be configured at the factory or field-converted using interchangeable side and end panels.

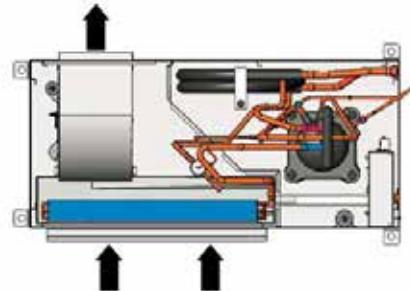
*Lift out the fan assembly, turn 90 degrees and rotate 180 degrees*



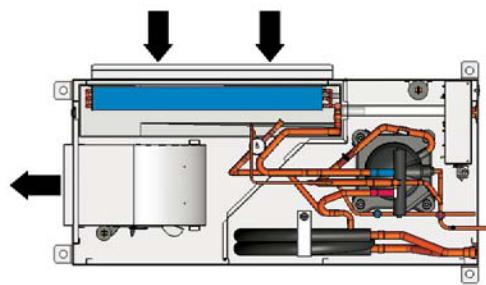
**Left hand end discharge arrangement**



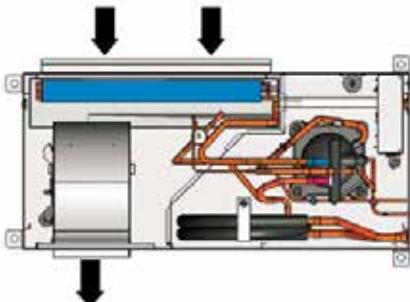
**Left hand straight discharge arrangement**



**Right hand end discharge arrangement**



**Right hand straight discharge arrangement**



## ACCESSORIES

### Programmable Thermostat

Our 7-Day Programmable Thermostat RTH2510B1000 is simple to install and operate with comfort and savings in mind. You can program every day of the week to fit your lifestyle and save on energy. Standout features include the backlit display, Early Start and precision temperature control.

#### Features:

- Seven-day programming
- Program each day differently — up to four programs per day
- Easy to use
- Display options
- One-year limited warranty
- Title 24 compliant

Item Code	Description
131-1000	7 Day Programmable Thermostat



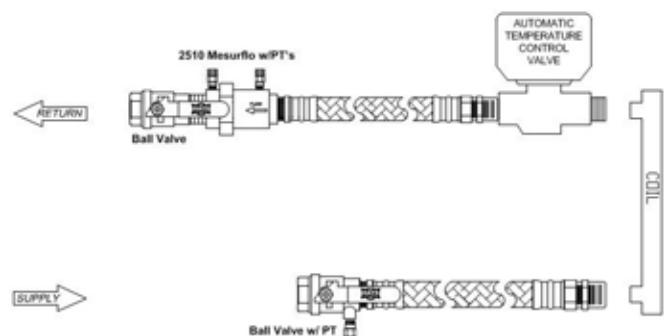
### Hose Kits

#### Features:

- Manual shutoff ball valve
- Auto-flow control device
- Strainer with drain port
- P/T ports
- 24" Steel braided flexible hose
- Excludes control valve



Item Code	Description
131-2005	2.5 GPM X 1/2" X 24" HOSE
131-2010	3.0 GPM X 1/2" X 24" HOSE
131-2015	4.5 GPM X 1/2" X 24" HOSE
131-2020	6.0 GPM X 1/2" X 24" HOSE
131-2025	9.0 GPM X 3/4" X 24" HOSE
131-2030	11.0 GPM X 3/4" X 24" HOSE
131-2035	12.0 GPM X 3/4" X 24" HOSE
131-2040	15.0 GPM X 3/4" X 24" HOSE



## RESIDENTIAL EVAPORATIVE COOLERS

**FEATURES:**

- Heavy gauge galvanized steel cabinet
- Electrostatically applied polyester powder coating finish
- One piece drawn bottom pan
- Chem treated adjustable water troughs in pad frames
- Junction box with optional locations standard
- Bleed-off kit standard
- 8 year limited warranty against leakage due to rusting, 1 year limited warranty on parts.
- Made in the U.S.A.



## DOWN DISCHARGE UNITS

Item Code	Model
020-0033	N31D
020-0043	N43/48D
020-0063	N56/66D

## SIDE DISCHARGE UNITS

Item Code	Model
020-1033	N30S
020-1043	N40/45S
020-1063	N55/65S

## PERFORMANCE

Model Number	Motor			Weight		CFM @ External Static Pressure					
	HP	Speed	Voltage	Ship	Oper	0.0"	0.1"	0.2"	0.3"	0.4"	0.5"
N30S	1/3	1	115	109	193	2077	1950	1760	1700	1500	NR
N31D	1/3	1	115	118	175	2175	2060	1970	1810	1650	1520
N40/45S	1/3	1	115	150	269	2973	2726	2550	2230	NR	NR
N43/48D	1/3	1	115	161	233	3077	2880	2565	2240	NR	NR
N40/45S	1/2	1	115	150	269	3432	3230	3000	2775	2140	1475
N43/48D	1/2	1	115	161	233	3654	3430	3230	3064	2498	2010
N55/65S	1/2	1	115	202	357	4190	3910	3650	3330	2900	NR
N56/66D	1/2	1	115	220	309	4334	4000	3620	3300	2610	2170
N5565S	3/4	1	115	202	357	4734	4600	4320	4060	3810	3630
N56/66D	3/4	1	115	220	309	4983	4780	4530	4280	4020	3780

Notes:

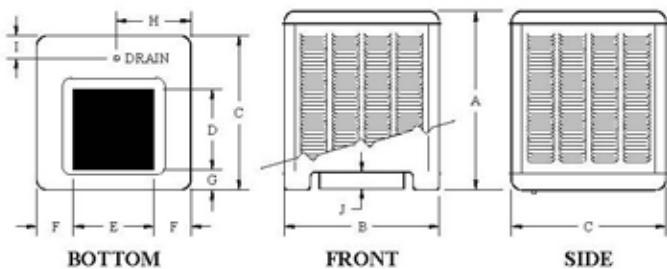
Units include 115V pump, float, bleed off kit, motor and sheaves

Ship weight includes unit with motor and drives

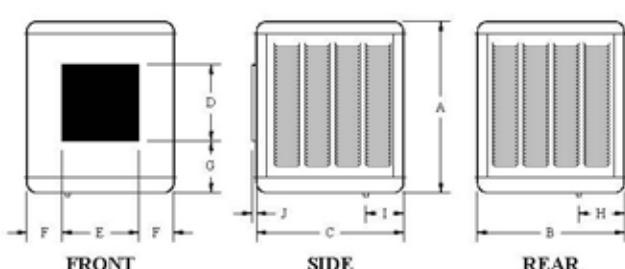
Operating weight includes unit with motor and drives full of water.

## DIMENSIONS

### DOWN DISCHARGE UNITS



### SIDE DISCHARGE UNITS



Model	Cabinet Dimensions			Duct Opening		Duct Location		Drain		Duct Ext	Filter Pad Dimensions		
	A	B	C	D	E	F	G	H	I	J	#Required	Height	Width
N31D	33 7/16"	28 1/8"	28 1/8"	13 5/8"	13 5/8"	7 1/4"	4 5/8"	7 11/16"	5 3/16"	3 3/4"	4	24"	22"
N43/48D	34 1/2"	34 1/8"	34 1/8"	17 3/4"	17 3/4"	8 3/16"	4 1/4"	16 13/32"	5"	3 23/32"	4	28"	27"
N56/66D	42 7/16"	39"	39"	19 3/4"	19 3/4"	9 5/8"	4 1/4"	25 13/23"	5 1/2"	4"	4	36"	33"
N30S	33 7/16"	28 1/8"	28 1/8"	13 5/8"	13 5/8"	7 1/4"	12 3/32"	12 25/32"	8 3/4"	1"	3	27"	22"
N40/45S	34 1/2"	34 1/8"	34 1/8"	17 3/4"	17 3/4"	8 3/16"	12 1/16"	10 21/32"	8 3/4"	1"	3	28"	27"
N55/65S	42 7/16"	39"	39"	19 3/4"	19 3/4"	9 5/8"	16 21/32"	15 21/32"	8 3/4"	1"	3	36"	33"

## ACCESSORIES

### Residential Cooler Motors

Item Code	HP	Voltage	Speed
025-0845	1/3	115V	1
025-0846	1/2	115V	1
025-0847	3/4	115V	1
025-0849	3/4	230V	1
025-0870	1/3	115V	2
025-0871	1/2	115V	2
025-0872	3/4	115V	2
025-0874	3/4	230V	2
025-0882	1	230V	1
025-0884	1/2	230V	1

### Residential Cooler Accessories

Item Code	Model	Description
025-1250	FL-C1/4"	Float Valve
025-1310	310586	Bleed Off

# COOLING & HEATING EQUIPMENT- ESSICK COOLERS

## COMMERCIAL EVAPORATIVE COOLERS

Essick Commercial evaporative coolers offer an economical and environmentally friendly means of cooling air in large facilities where refrigerated systems would be cost prohibitive. With no harmful chemicals and much less energy than traditional air conditioning, evaporative coolers provide an energy efficient cooling alternative. These American made units are made of heavy duty steel and high quality components. All steel components (except the blower wheel, shaft, and pulley) are chemically treated and covered with an electrostatically applied polyester finish at a thickness of 1 to 1.5 mil to protect the cooler from scratches and corrosion.



### FEATURES:

- Heavy gauge galvanized steel cabinet
- Electrostatically applied polyester resin powder paint finish
- Drawn pans on 75/85SD, 75/85 DD, 95SD & 95DD units
- Sealed pans on 10/12SD 10/12DD, 14/21SD& 14/21DD units
- Chemically treated adjustable water troughs in pad frames
- Made in the U.S.A.

### DOWN DISCHARGE UNITS

Item Number	Model
020-0083	75/85 DD
020-0095	95DD
020-0143	10/12DD
020-0213	14/21 DD

### SIDE DISCHARGE UNITS

Item Number	Model
020-1083	75/85 SD
020-1095	95 SD
020-1143	10/12 SD
020-1213	14/21 SD

## WATER SIZING DATA

### DOWN DISCHARGE UNITS

Model	HP	GPH
75/85DD	3/4	18
75/85DD	1	20
95DD	1 1/2	23
95DD	2	25
95DD	3	29
10/12DD	2	35
14/21DD	1 1/2	40
14/21DD	2	44
14/21DD	3	50

### SIDE DISCHARGE UNITS

Model	HP	GPH
75/85SD	3/4	18
75/85SD	1	19
95SD	1 1/2	22
95SD	2	25
10/12SD	1	26
10/12SD	2	32
14/21SD	1 1/2	3
14/21SD	2	43
14/21SD	3	47

# COOLING & HEATING EQUIPMENT- ESSICK COOLERS

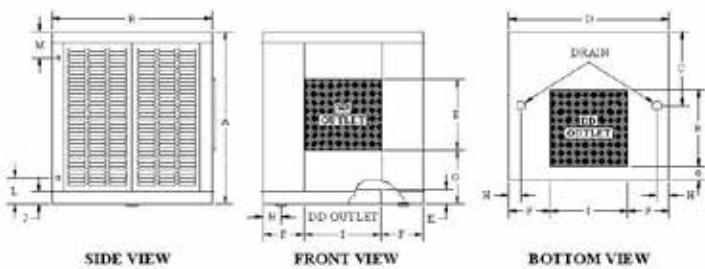
## PERFORMANCE

Model	HP	Speed	Voltage	Phase	Weight		CFM @ External Static Pressure												
					Ship	Operating	0.0"	0.1"	0.2"	0.3"	0.4"	0.5"	0.6"	0.7"	0.8"	0.9"	1.0"		
75/85SD	0.75	1	115/208-230	1	276	451	5905	5670	5405	5110	4795	4456	4089	3705	3302				
		1	208-230/460	3	276	451													
	1	1	115/208-230	1	276	455	5905	5670	5405	5110	4795	4456	4089	3705	3302				
		1	208-230/460	3	276	455													
75/85DD	0.75	1	115/208-230	1	298	398	6074	5086	5479	5144	4812	4482	4132	3753	3342				
		1	208-230/460	3	298	398													
	1	1	115/208-230	1	298	419	6685	6449	6160	5854	5552	5255	4951	4638	4299	3935			
		1	208-230/460	3	298	419													
95SD	1.5	1	115/208-230	1	276	466	6868	6724	6572	6411	6246	6071	5885	5683	5464	5227	4965		
		1	208-230/460	3	276	466													
	2	1	115/208-230	1	276	473	7558	7429	7291	7148	7002	6850	6688	6522	6345	6156	5952		
		1	208-230/460	3	276	473													
95DD	1.5	1	115/208-230	1	298	430	7653	7453	7212	6949	6683	6417	6158	5893	5629	5357	5068		
		1	208-230/460	3	298	430													
	2	1	115/208-230	1	298	437	8424	8247	8035	7802	7560	7320	7078	6840	6602	6363	6122		
		1	208-230/460	3	298	437													
10/12SD	1	1	115/208-230	1	462	718	9225	8673	8215	7607	7098	6581	6038						
		1	208-230/460	3	462	718													
	1.5	1	115/208-230	1	462	726	6868	6724	6572	6411	6246	6071	5885	5683	5464	5227	4965		
		1	208-230/460	3	462	726													
10/12DD	2	1	115/208-230	1	462	731	6868	6724	6572	6411	6246	6071	5885	5683	5464	5227	4965		
		1	208-230/460	3	462	731													
	1.5	1	115/208-230	1	470	651	9225	8673	8215	7607	7098	6581	6038						
		1	208-230/460	3	470	651													
10/12DD	2	1	115/208-230	1	470	659	10575	10004	9680	9213	8822	8315	7906	7372	6847				
		1	208-230/460	3	470	659													
	1.5	1	115/208-230	1	470	664	11625	11193	10793	10360	9986	9551	9186	8755	8386	7904	7434		
		1	208-230/460	3	470	664													
14/21SD	1.5	1	115/208-230	1	662	1037	12386	11713	11083	10451	9785	9067	8284	7427					
		1	208-230/460	3	662	1037													
	2	1	115/208-230	1	662	1042	13633	13016	12439	11868	11281	10674	10025	9313	8557	7758			
		1	208-230/460	3	662	1042													
14/21DD	3	1	115/208-230	1	662	1054	15606	15063	14551	14050	13553	13042	12522	11969	11390	10777	10133		
		1	208-230/460	3	662	1069													
	1.5	1	115/208-230	1	666	933	13245	12690	11955	11121	10415	9789	9032	8016					
		1	208-230/460	3	666	933													
14/21DD	2	1	115/208-230	1	666	938	14607	14106	13520	12692	12093	11388	10728	10042	9337	8694			
		1	208-230/460	3	666	938													
	3	1	115/208-230	1	666	950	16711	16299	15726	15138	14557	13897	13379	12821	12246	11583	11002		
		1	208-230/460	3	666	965													
14/21DD	5	1	115/208-230	1	666	965	19806	19481	18606	18088	17544	16983	16558	16079	15528	15110			
		1	208-230/460	3	666	965													

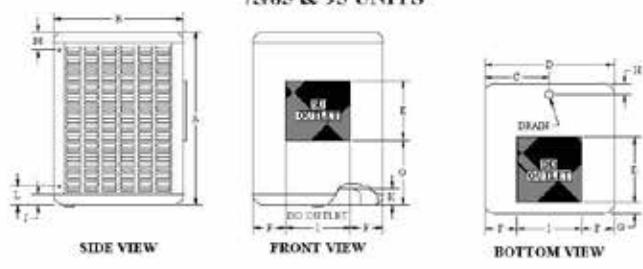
# COOLING & HEATING EQUIPMENT- ESSICK COOLERS

## DIMENSIONS

10/12 & 14/21 UNITS



75/85 & 95 UNITS



Model	Cabinet			Electrical	Duct				Drain Location		Water Service			
	A	B	D		Opening		Location		H	C	L	J	K	
					E	I	G	F						
75/85DD	53 5/8	41 1/4	41 1/4	4 1/2	21 3/4	21 3/4	4 7/8	9 3/4	5 3/4	20 5/8	5 7/8	4	4 3/8	
95DD	53 5/8	41 1/4	41 1/4	4 1/2	21 3/4	21 3/4	4 7/8	9 3/4	5 3/4	20 5/8	5 7/8	4	4 3/8	
10/12DD	53 5/8	50	50	7 9/16	26 7/8	26 7/8	4	11 9/16	4	25	7 9/16	4	4 9/16	
14/21DD	61 1/4	62	62	7 9/16	31 3/4	31 3/4	7	15 1/8	4	31	7 9/16	4	4 9/16	
75/85SD	53 5/8	41 1/4	41 1/4	4 1/2	21 3/4	21 3/4	17	9 3/4	8 1/2	16 1/2	5 7/8	4		
95SD	53 5/8	41 1/4	41 1/4	4 1/2	21 3/4	21 3/4	17	9 3/4	8 1/2	16 1/2	5 7/8	4		
10/12SD	53 5/8	50	50	7 9/16	26 7/8	26 7/8	20 1/2	11 9/16	4	25	7 9/16	4		
14/21SD	61 1/4	62	62	7 9/16	31 3/4	31 3/4	22 1/2	15 1/8	4	31	7 9/16	4		

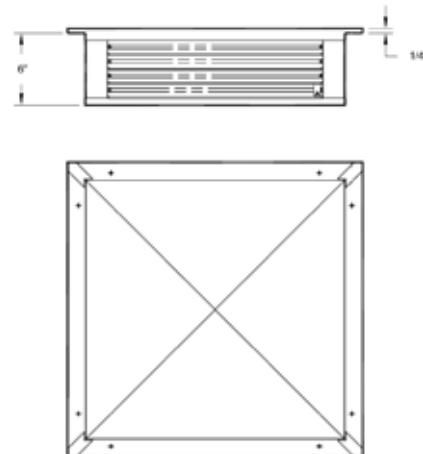
## ACCESSORIES

Item Code	Model	Description
025-1306	FL-3/8"	Float Valve
025-1315	310587	Bleed Off
025-1411	110467	115V Pump
025-1412	110468	230V Pump
025-1421	CM120B	Clean Water 115V Pump

## EVAPORATIVE COOLER DIFFUSER

- Adjustable louver shutter dampers on all four sides
- 22 gauge steel is used for longer lasting product life
- Finished with white powder coating
- High volume air delivery
- Suitable for evaporator blower system

Item Number	Diffuser Size
040-5014	14" X 14"
040-5018	18" X 18"
040-5020	20" X 20"
040-5022	22" X 22"
040-5023	22" x 22" for 24" T-Bar
040-5024	24" x 24"



# COOLING & HEATING EQUIPMENT- ESSICK COOLERS

## Sizing Instructions

### For Commercial/Industrial Environments

The four steps (using ASHRAE 5% design standards for climatic conditions) to determine the correct CFM requirements are

1. Determine the temperature of cooler discharge (Cd)

$Cd = WB + .2 (DB - WB)$ , where WB = ambient wet bulb temperature in °F and DB = ambient dry bulb temperature in °F.

2. Determine the design sensible heat load (SHL) in (BTU/h) (Note A)

3. Compute needed CFM from the formula

$$CFM = SHL / 1.08 \Delta t$$

Where CFM = Cubic feet per minute of cooler discharge,

SHL = British Thermal Units per hour, sensible load.

and  $\Delta t$  = Difference between temperature of air leaving the conditioned environment and entering the conditioned environment (cooler discharge) or temperature rise (See Note B)

4. From the Air Delivery sections in the charts select the equipment that will deliver the required CFM at the expected system static pressure.

Note A: Sensible load only of conditioned environment

Note B:  $\Delta t$  is a designer-specified number. Average room temperature will be approximately midpoint between two values expressed.

## Alternative Sizing Method

If heat load is undetermined this method may be used, it assumes commercial/light industrial environment with normal heat loads. Unusual heat loads may increase these requirements, and should be calculated by the other method.

1. Determine Cd as in (1) of other method

2. Determine the volume of the area to be cooled

In work spaces with high ceilings consider only the worker environment – normally up to 8 or 10 feet above the floor. If large volumes of space are occupied by machinery or stored goods these volumes need not be included.

3. Determine required CFM

Multiply the volume in cubic feet (from step 2) by the appropriate factor depending on Cd:

	Factor
if Cd°F less than 69.7°	.2
69.7°-72°	.25
72°-73.6°	.32
73.6°-75°	.4
75°-76.3°	.5
76.3°-77.5°	.7
Over 77.5°	1.0+

4. From the air delivery sections of the charts, select the equipment that will deliver the required CFM at the expected system static pressure.

## Motor Sheave Selection

1. Determine the external static pressure of the air delivery system.

2. Determine the motor (H.P., Voltage and Phase) required to deliver the design airflow.

3. Determine the shaft size for the motor selected.

Refer to the Electrical Specifications chart on page 50.

4. Determine the RPM that will deliver the required airflow (CFM) at the static pressure of the system.

Refer to the Certified Air Delivery CFM chart for the chosen cooler, find the selected motor HP.

5. Determine the sheave, and the number of turns open, that is closest to the desired RPM.

Refer to the Sheave Selection charts on page 6. Find the selected motor HP, shaft size, and desired RPM (See Steps 2-4 above). You might need to look at more than one sheave before finding the correct RPM.

6. Specify the sheave and sheave setting (turns open) for the installer.

## Ordering

When ordering your cooler, you should know this information.

- System design static pressure.
- Desired air volume at system design.
- Electrical power supply available.
- Stability of structure to support operating weight of unit.

Complete systems consist of the following components, and are sold separately for application versatility.

- Cabinet
- Motor
- Motor sheave
- Pulley-belt kit
- Pump

NOTE: Motor starters, internal wiring and over-current protection are not supplied by Adobe Air.

# DAMPERS



## CEILING RADIATION DAMPERS

Greenheck's ceiling radiation dampers are qualified under UL/cUL 555C, Standard for Ceiling Dampers. Ceiling radiation dampers are designed to function as a heat barrier in duct outlets penetrating fire resistive membrane ceilings. These dampers may be used in lieu of hinged door type dampers, in ceiling designs listed in the UL/cUL Fire Resistance Directory which allows penetrations.



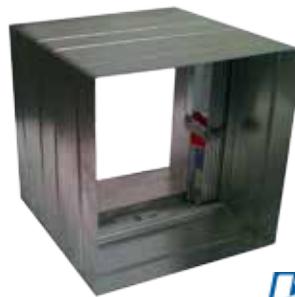
### Features

- Galvanized steel
- UL/cUL 555C listed
- Fusible link replaceable (165F)
- Rectangular or round type
- Frame extension - top and bottom

Item Code	Model	Size
<b>070-0106</b>	CRD-1BT	6" x 6"
<b>070-0108</b>	CRD-1BT	8" x 8"
<b>070-0110</b>	CRD-1BT	10" x 10"
<b>070-0112</b>	CRD-1BT	12" x 12"
<b>070-0114</b>	CRD-1BT	14" x 14"
<b>070-0116</b>	CRD-1BT	16" x 16"
<b>070-0118</b>	CRD-1BT	18" x 18"
<b>070-0120</b>	CRD-1BT	20" x 20"
<b>070-0122</b>	CRD-1BT	22" x 22"
<b>070-0206</b>	CRD-2BT	6" Round
<b>070-0208</b>	CRD-2BT	8" Round
<b>070-0210</b>	CRD-2BT	10" Round
<b>070-0212</b>	CRD-2BT	12" Round
<b>070-0214</b>	CRD-2B	14" Round

## DYNAMIC RATED FIRE DAMPERS WITH SLEEVES

Greenheck Model DFD-150 is approved for use in walls, floors and partitions with fire resistance ratings less than 3 hours. This model carries a 1 1/2 hour UL fire damper label. UL 555 classifies dynamic rated fire dampers for use in HVAC systems that are operational in the event of fire.



### Features

- Galvanized steel 20ga.
- Dynamic closure rating
- UL/cUL 555 listed
- Fusible link replaceable (165F)
- 1½ Hour fire resistance rating

Item Code	Model	Size	Sleeve Size
<b>070-0306</b>	DFD-150	6" x 6"	12"
<b>070-0308</b>	DFD-150	8" x 8"	12"
<b>070-0310</b>	DFD-150	10" x 10"	12"
<b>070-0312</b>	DFD-150	12" x 12"	12"
<b>070-0314</b>	DFD-150	14" x 14"	12"
<b>070-0316</b>	DFD-150	16" x 16"	12"
<b>070-0318</b>	DFD-150	18" x 18"	12"
<b>070-0320</b>	DFD-150	20" x 20"	12"
<b>070-0324</b>	DFD-150	24" x 24"	12"



## CORRIDOR FIRE/SMOKE DAMPERS

Greenheck's model CFSD is a combination fire smoke damper with 3V style blades. The CFSD-212 has been qualified to 20,000 FPM (10. m/s) and 4 in. wg (1 kPa) for operation and dynamic closure in emergency fire/smoke situations. Model CFSD is rated for airflow and leakage in either direction. UL 555 Fire Resistance Rating, and UL 555S Leakage Rating.

### Features

- Galvanized steel
- UL 555S leakage class II
- RRL resettable link closure device
- 1-1/2 hour fire resistance rating
- Can be used in standard horizontal applications.



Item Code	Model	Size	Sleeve Size
070-0508	CFSD-212	8" x 8"	21"
070-0510	CFSD-212	10" x 10"	21"
070-0512	CFSD-212	12" x 12"	16"
070-0514	CFSD-212	14" x 14"	16"
070-0516	CFSD-212	16" x 16"	16"
070-0518	CFSD-212	18" x 18"	16"
070-0520	CFSD-212	20" x 20"	16"

## ACCESSORIES

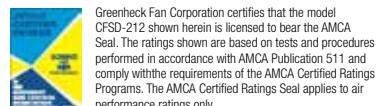
For Flag Tape please see page 154. For Fire Caulking please see page 153.

Item Codes	Description	Size
070-1863	Fuse Link	CRD 1-1/2"
070-1866	Fuse Link	FD 2-3/4"
070-1880	Thermal Blanet	24" x 24"



## RETAINING ANGLE

Item Codes	Size
070-1206	6" x 6"
070-1208	8" x 8"
070-1210	10" x 10"
070-1212	12" x 12"
070-1214	14" x 14"
070-1216	16" x 16"
070-1218	18" x 18"
070-1220	20" x 20"
070-1222	22" x 22"
070-1224	24" x 24"



## GREENHECK REMOTE BALANCING DAMPER

Model RBDR-50 is a round remote powered balancing damper designed to regulate the flow of air in a HVAC system. This balancing damper is ideal for applications where it is difficult to get access to manually adjust the dampers and balance the airflow. The 'EZ Balance' hand held remote (equipped with 9 volt power supply) operates the damper actuator when connected to the diffuser connector or wall/ceiling plate.

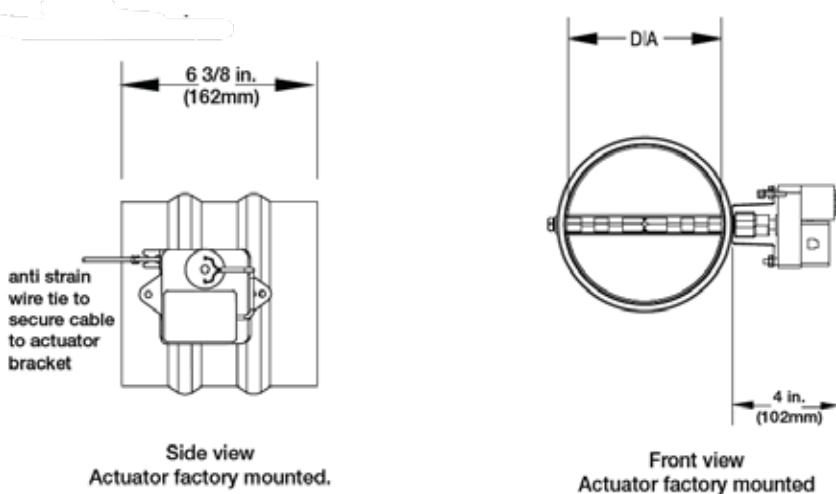


### Features

- Galvanized steel
- Single round blade
- 9 volt actuator



Item Code	Model	Size
150-2006	RBDR-50	6"
150-2008	RBDR-50	8"
150-2010	RBDR-50	10"
150-2012	RBDR-50	12"



Side view  
Actuator factory mounted.

Front view  
Actuator factory mounted

## ACCESSORIES

Item Code	Model	Description
150-2100	893165	'EZ Balance' remote control device
150-2101	849220	Round wall/ceiling plate
150-2105	384264	5' Non-Plenum rated cable
150-2114	384268	14' Plenum rated cable
150-2125	384269	25' Plenum rated cable
150-2150	384270	50' Plenum rated cable



- All wire connections are made with prewired RJ11 plugs and sockets. No additional wiring or tools required
- Utilizing any controller other than 'EZ Balance' remote to adjust the RBD-10 damper voids the actuator warranty

## ROUND DAMPERS

DuroZone round dampers are made of galvanized steel with reinforcing beads for maximum durability. The single blade design insures smooth operation and efficient sealing for maximum control of air flow. The round housing is suitable for use with flexible ducting or round sheet metal duct.



**DURO  
DYNE**

### Features

- Durable galvanized steel construction housing and blade made of galvanized steel with reinforced beads for maximum durability
- High-torque motor will work with all existing 24-volt thermostats. High-torque means reliable, trouble-free service for many years
- Low-leakage, single-blade design insures smooth operation and efficient sealing for maximum control of air flow
- Quick installation with wiring damper, no screwdriver required.

Item Number	Model	Size
067-0106	RD-6	6"
067-0107	RD-7	7"
067-0108	RD-8	8"
067-0109	RD-9	9"
067-0110	RD-10	10"
067-0112	RD-12	12"
067-0114	RD-14	14"
067-0116	RD-16	16"

## ACCESSORIES

Item Number	Model	Description
067-5052	DT4	Digital Display Thermostat
067-5054	PT-40	120/24 VAC Transformer

## WIRELESS REMOTE CONTROL DAMPERS

The model WRCD Damper uses a wireless remote control to incrementally open and close a volume damper allowing the occupant total control over their comfort. It is a 24 volt powered damper that is designed to install between a lay-in diffuser and the supply duct for the purpose of regulating the volume of airflow into a specific space. Easily installed, the WRCD is designed to be a quick cure for areas where occupants require the ability to frequently adjust the airflow.



**DURO  
DYNE**

### Features

- Designed for use with Wireless Remote Control
- The occupant can adjust the room airflow from any location in the room
- A new and unique cure to an old and continual problem.
- The WRCD eliminates the employee's desire to constantly adjust system controls which can result in higher heating and cooling costs.

Item Number	Model	Size
067-6008	WRCD8	8"
067-6010	WRCD10	10"
067-6012	WRCD12	12"

## ACCESSORIES

Item Code	Model	Description
067-6500	35095	Wireless Remote



Certified to  
ISO 9001:2008



Precisely Right

# GAS DETECTION



## DUCT SMOKE DETECTORS

These units are designed to prevent the recirculation or spread of smoke by air handling systems, fans, and blowers. Complete systems may be shut down in the event of smoke detection. The MS Series remote accessories are designed to be used with the duct smoke detectors to provide audible and visual indication as well as remote test/reset functions.



### Features

- Interconnectability for multi-fan shutdown
- 24 VAC/ DC, or 120/240 VAC operation
- Built-in reset button
- UL 288a listed
- Air velocity rating from 100 to 4,000 FPM
- Easy mounting to round or rectangular duct

Item Code	Model Number	Description
084-0005	SL-2000-P	Indoor Photoelectric Duct Smoke Detector
084-0006	RT-3000-P	Outdoor Photoelectric Weathertight Duct Smoke Detector

## ACCESSORIES

Item Code	Model Number	Description
084-0007	HS-100-P	Photoelectric Plenum Smoke Detector
084-0205	TG-2000	Gas & Test Port (Smoke in a Can)



## ALARMS & SWITCHES

Item Code	Model Number	Description
084-0210	MS-RA/KA/P/A/T	Switch/Alrm with Key
084-0215	MS-RA/R	Remote Switch with Push Button Reset



## SAMPLING TUBES

Item Code	Model Number	Description
084-0010	STN-1.0	12" - 24"
084-0025	STN-2.5	24" - 48"
084-0020	Fast Tube	Universal Size



## PIONEER CARBON MONOXIDE DETECTOR

### Features

- High-accuracy electrochemical cell sensor for gas
- Up to 2 SPDT relay outputs with LED status indicators
- Cast aluminum custom enclosure
- Microprocessor-base control
- 10 step bar-graph display of gas levels
- Programmable time delays to avoid nuisance alarms



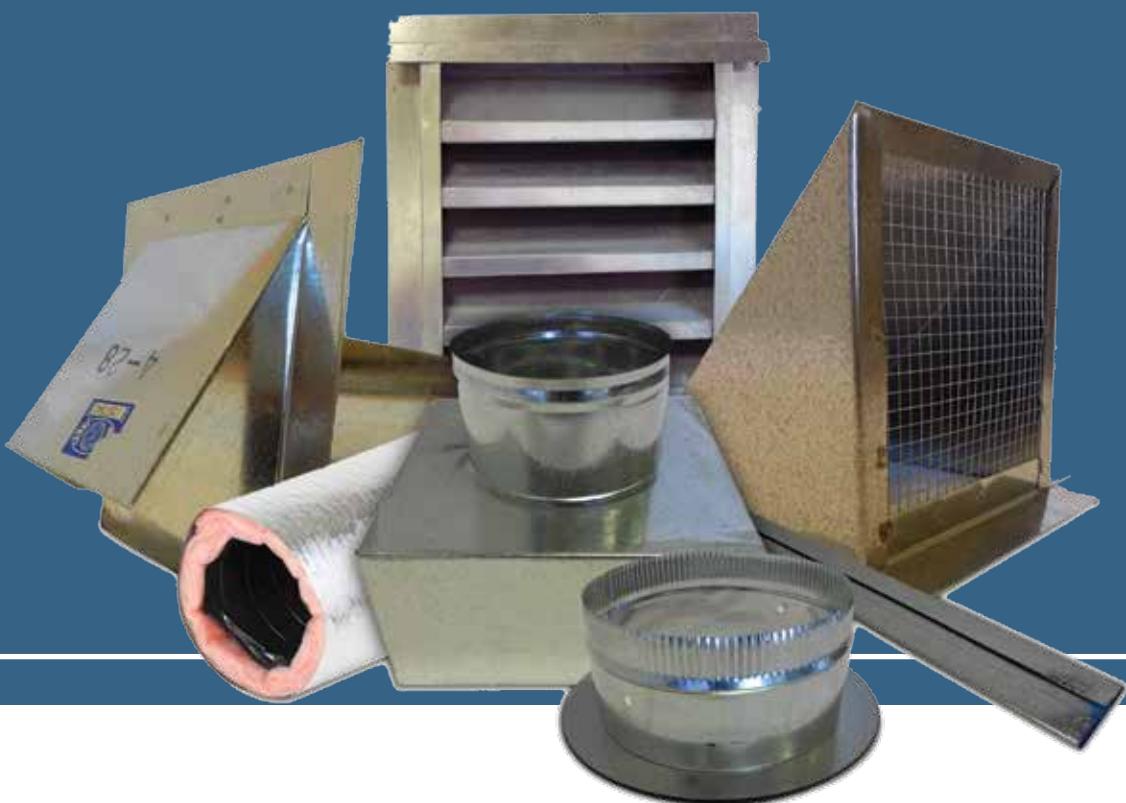
Item Code	Model	PPM	Voltage
087-0200	CO-PN2-24	0-200 PPM	24 VAC / 60

## ACCESSORIES

Item Code	Model	
087-0100	TKR100	CO Test Kit

ACME also offers detectors for different types of Gas Detection.  
Please ask a Norman-Wright Climatec representative for details.

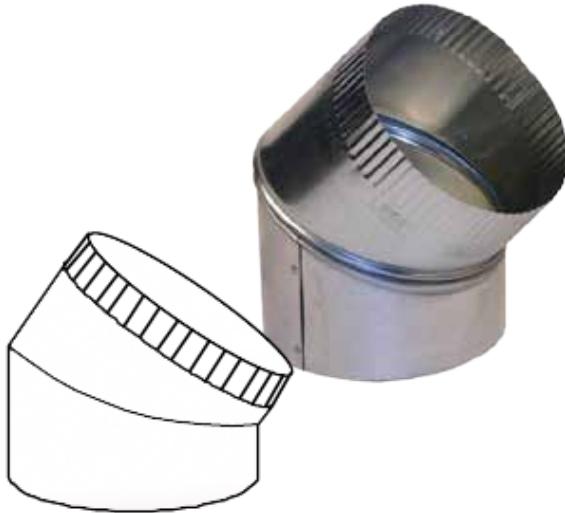
# SHEET METAL



## Custom fittings available in short time frames:

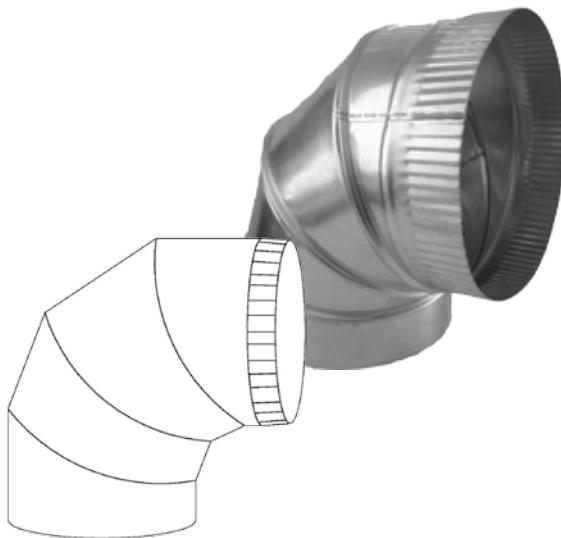
- Dual and pant wyes
- Square duct
- Stainless steel
- PVC-coated duct and fittings

...and much more, just ask!

**45° ADJUSTABLE ELBOWS****Features**

- Adjustable
- Spot welded
- Galvanized steel
- Crimped end

Item Number	Size	Gauge
110-0105	5"	26
110-0106	6"	26
110-0107	7"	26
110-0108	8"	26
110-0109	9"	26
110-0110	10"	26
110-0112	12"	26
110-0114	14"	24
110-0116	16"	24
110-0118	18"	24
110-0120	20"	24
110-0122	22"	24
110-0124	24"	24

**90° ADJUSTABLE ELBOWS****Features**

- Adjustable
- Spot welded
- Galvanized steel
- Crimped end

Item Number	Size	Gauge
110-0203	3"	30
110-0204	4"	26
110-0205	5"	26
110-0206	6"	26
110-0207	7"	26
110-0208	8"	26
110-0209	9"	26
110-0210	10"	26
110-0212	12"	26
110-0214	14"	24
110-0216	16"	24
110-0218	18"	24
110-0220	20"	24
110-0222	22"	24
110-0224	24"	24
110-0226	26"	24
110-0228	28"	24

**TEE-WYES****Features**

- Spot welded
- Galvanized steel
- Branch angle – approximately 45°
- Crimped end

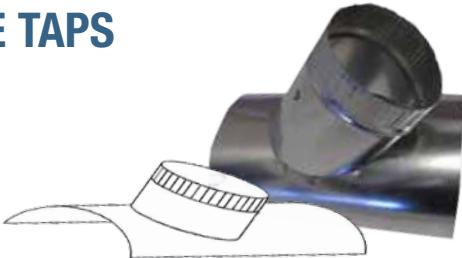
Item Number	Size	Gauge
110-0305	05" X 04" X 04"	26
110-0306	06" X 03" X 03"	26
110-0307	06" X 05" X 05"	26
110-0308	06" X 06" X 06"	26
110-0309	06" X 04" X 04"	26
110-0311	07" X 05" X 05"	26
110-0314	07" X 06" X 05"	26
110-0317	07" X 06" X 06"	26
110-0319	08" X 06" X 05"	26
110-0320	08" X 06" X 06"	26
110-0323	08" X 07" X 05"	26
110-0326	08" X 07" X 06"	26
110-0329	08" X 07" X 07"	26
110-0330	08" X 08" X 05"	26
110-0331	08" X 08" X 07"	26
110-0332	08" X 08" X 06"	26
110-0335	08" X 08" X 08"	26
110-0337	09" X 06" X 06"	26
110-0338	09" X 07" X 05"	26
110-0341	09" X 07" X 06"	26
110-0344	09" X 07" X 07"	26
110-0347	09" X 08" X 05"	26

Item Number	Size	Gauge
110-0350	09" X 08" X 06"	26
110-0353	09" X 08" X 07"	26
110-0356	09" X 08" X 08"	26
110-0359	09" X 09" X 07"	26
110-0362	09" X 09" X 08"	26
110-0365	09" X 09" X 09"	26
110-0368	10" X 07" X 07"	26
110-0371	10" X 08" X 06"	26
110-0374	10" X 08" X 07"	26
110-0377	10" X 08" X 08"	26
110-0380	10" X 09" X 06"	26
110-0383	10" X 09" X 07"	26
110-0386	10" X 09" X 08"	26
110-0389	10" X 09" X 09"	26
110-0392	10" X 10" X 06"	26
110-0395	10" X 10" X 07"	26
110-0398	10" X 10" X 08"	26
110-0401	10" X 10" X 10"	26
110-0403	12" X 08" X 06"	26
110-0404	12" X 08" X 07"	26
110-0407	12" X 08" X 08"	26
110-0410	12" X 09" X 07"	26
110-0413	12" X 09" X 08"	26
110-0417	12" X 09" X 09"	26
110-0420	12" X 10" X 06"	26
110-0423	12" X 10" X 07"	26
110-0425	12" X 10" X 08"	26
110-0430	12" X 10" X 09"	26
110-0433	12" X 10" X 10"	26
110-0436	12" X 12" X 06"	26
110-0439	12" X 12" X 07"	26
110-0442	12" X 12" X 08"	26
110-0445	12" X 12" X 09"	26
110-0448	12" X 12" X 10"	26
110-0451	12" X 12" X 12"	26
110-0454	14" X 10" X 08"	24
110-0460	14" X 10" X 09"	24
110-0463	14" X 10" X 10"	24
110-0466	14" X 12" X 06"	24
110-0469	14" X 12" X 07"	24
110-0472	14" X 12" X 08"	24
110-0475	14" X 12" X 09"	24

Item Number	Size	Gauge
110-0478	14" X 12" X 10"	24
110-0481	14" X 12" X 12"	24
110-0484	14" X 14" X 06"	24
110-0485	14" X 14" X 07"	24
110-0487	14" X 14" X 08"	24
110-0490	14" X 14" X 09"	24
110-0493	14" X 14" X 10"	24
110-0496	14" X 14" X 12"	24
110-0499	14" X 14" X 14"	24
110-0502	16" X 12" X 10"	24
110-0505	16" X 12" X 12"	24
110-0508	16" X 14" X 07"	24
110-0511	16" X 14" X 08"	24
110-0514	16" X 14" X 09"	24
110-0517	16" X 14" X 10"	24
110-0520	16" X 14" X 12"	24
110-0523	16" X 14" X 14"	24
110-0532	16" X 16" X 07"	24
110-0535	16" X 16" X 08"	24
110-0538	16" X 16" X 09"	24
110-0541	16" X 16" X 10"	24
110-0544	16" X 16" X 12"	24
110-0547	16" X 16" X 14"	24
110-0548	16" X 16" X 16"	24
110-0550	18" X 12" X 12"	24
110-0553	18" X 14" X 10"	24
110-0556	18" X 14" X 12"	24
110-0559	18" X 14" X 14"	24
110-0562	18" X 16" X 07"	24
110-0565	18" X 16" X 08"	24
110-0568	18" X 16" X 09"	24
110-0571	18" X 16" X 10"	24
110-0574	18" X 16" X 12"	24
110-0577	18" X 16" X 14"	24
110-0580	18" X 16" X 16"	24
110-0583	18" X 18" X 07"	24
110-0586	18" X 18" X 08"	24
110-0589	18" X 18" X 09"	24
110-0592	18" X 18" X 10"	24
110-0595	18" X 18" X 12"	24
110-0596	18" X 18" X 14"	24
110-0598	18" X 18" X 16"	24

Item Number	Size	Gauge
110-0599	18" X 18" X 18"	24
110-0601	20" X 16" X 14"	24
110-0604	20" X 16" X 16"	24
110-0606	20" X 18" X 06"	24
110-0607	20" X 18" X 07"	24
110-0609	20" X 18" X 10"	24
110-0610	20" X 18" X 12"	24
110-0613	20" X 18" X 14"	24
110-0616	20" X 18" X 16"	24
110-0619	20" X 18" X 18"	24
110-0622	20" X 20" X 8"	24
110-0625	20" X 20" X 10"	24
110-0628	20" X 20" X 16"	24
110-0631	20" X 20" X 18"	24
110-0632	20" X 20" X 20"	24
110-0633	22" X 16" X 16"	24
110-0634	22" X 18" X 14"	24
110-0635	22" X 18" X 16"	24
110-0636	22" X 20" X 12"	24
110-0637	22" X 20" X 14"	24
110-0640	22" X 20" X 16"	24
110-0643	22" X 20" X 18"	24
110-0646	22" X 20" X 20"	24
110-0648	22" X 22" X 08"	24
110-0649	22" X 22" X 10"	24
110-0650	22" X 18" X 18"	24
110-0651	22" X 22" X 18"	24
110-0652	22" X 22" X 20"	24
110-0655	24" X 16" X 16"	24
110-0656	24" X 18" X 14"	24
110-0657	24" X 18" X 16"	24
110-0658	24" X 18" X 18"	24
110-0661	24" X 20" X 16"	24
110-0664	24" X 20" X 18"	24
110-0667	24" X 20" X 20"	24
110-0668	24" X 22" X 12"	24
110-0670	24" X 22" X 16"	24
110-0673	24" X 22" X 18"	24
110-0676	24" X 22" X 20"	24
110-0683	22" X 16" X 14"	24
110-0686	22" X 18" X 12"	24

## SADDLE TAPS

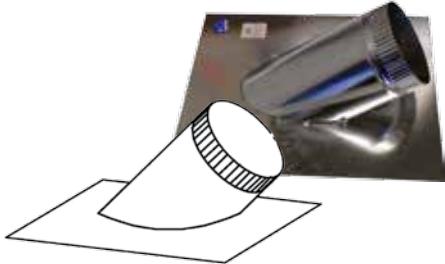


### Features

- Spot welded
- Galvanized steel
- Branch angle – approximately 45°
- Crimped end

Item Number	Size	Gauge
110-0705	5"	26
110-0706	6"	26
110-0707	7"	26
110-0708	8"	26
110-0709	9"	26
110-0710	10"	26
110-0712	12"	26
110-0714	14"	24
110-0716	16"	24
110-0718	18"	24

## FLAT SADDLE TAPS



### Features

- Spot welded
- Galvanized steel
- Branch angle – approximately 45°
- Crimped end

Item Number	Size	Gauge
110-0725	5"	26
110-0726	6"	26
110-0727	7"	26
110-0728	8"	26
110-0729	9"	26
110-0730	10"	26
110-0732	12"	26
110-0734	14"	24
110-0736	16"	24
110-0738	18"	24

## SHORT TAPERS



### Features

- Spot welded
- Galvanized steel

Item Number	Size	Gauge
110-0800	4" x 3"	26
110-0803	5" x 3"	26
110-0806	5" x 4"	26
110-0809	6" x 4"	26
110-0811	6" x 5"	26
110-0814	7" x 5"	26
110-0817	7" x 6"	26
110-0820	8" x 5"	26
110-0823	8" x 6"	26
110-0826	8" x 7"	26
110-0828	9" x 6"	26
110-0829	9" x 7"	26
110-0832	9" x 8"	26
110-0835	10" x 6"	26
110-0838	10" x 7"	26
110-0841	10" x 8"	26
110-0844	10" x 9"	26
110-0847	12" x 7"	26
110-0850	12" x 8"	26
110-0853	12" x 9"	26
110-0857	12" x 10"	26
110-0860	14" x 8"	24
110-0863	14" x 10"	24
110-0866	14" x 12"	24
110-0869	16" x 12"	24
110-0872	16" x 14"	24
110-0875	18" x 14"	24
110-0878	18" x 16"	24
110-0881	20" x 16"	24
110-0884	20" x 18"	24
110-0885	22" x 16"	24
110-0887	22" x 18"	24
110-0893	22" x 20"	24
110-0897	24" x 20"	24
110-0899	24" x 22"	24

## SURE FIT TAPER

### Features

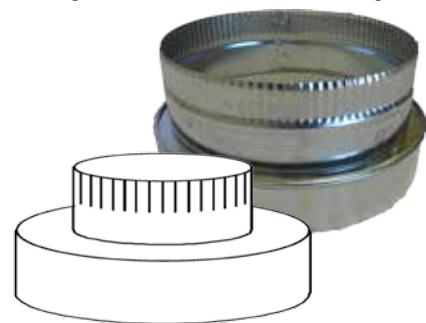
- Spot welded
- Galvanized steel
- Crimped end



## COOKIE CUTTERS (PANCAKE TAPERS)

### Features

- Spot welded
- Galvanized steel
- Crimped end



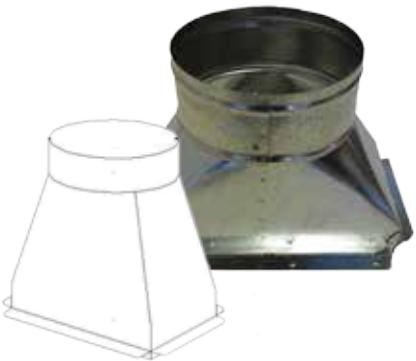
Item Number	Size	Gauge
110-1401	5" x 4"	26
110-1403	4" x 3"	26
110-1405	6" x 4"	26
110-1406	6" x 5"	26
110-1408	7" x 5"	26
110-1410	7" x 6"	26
110-1418	8" x 6"	26
110-1434	9" x 8"	26
110-1438	10" x 6"	26
110-1440	10" x 7"	26
110-1446	10" x 8"	26
110-1450	10" x 9"	26
110-1455	8" x 7"	26
110-1458	12" x 8"	26
110-1462	12" x 9"	26
110-1466	12" x 10"	26
110-1471	14" x 8"	26
110-1474	14" x 10"	26
110-1478	14" x 12"	26
110-1480	16" x 10"	26
110-1482	16" x 12"	26
110-1486	16" x 14"	26
110-1488	18" x 12"	26
110-1490	18" x 14"	24
110-1491	22" x 16"	24
110-1492	18" x 16"	24
110-1493	20" x 14"	24
110-1494	20" x 18"	24
110-1495	20" x 16"	24
110-1496	22" x 20"	24
110-1497	22" x 18"	24
110-1498	24" x 20"	24
110-1499	24" x 22"	24

Item Number	Size	Gauge
110-0900	4" x 3"	26
110-0903	5" x 4"	26
110-0906	6" x 4"	26
110-0909	6" x 5"	26
110-0912	7" x 6"	26
110-0915	8" x 6"	26
110-0918	8" x 7"	26
110-0921	9" x 7"	26
110-0924	9" x 8"	26
110-0927	10" x 6"	26
110-0928	10" x 7"	26
110-0930	10" x 8"	26
110-0933	10" x 9"	26
110-0936	12" x 7"	26
110-0939	12" x 8"	26
110-0942	12" x 9"	26
110-0945	12" x 10"	26
110-0947	14" x 8"	26
110-0948	14" x 10"	26
110-0951	14" x 12"	26
110-0954	16" x 12"	26
110-0957	16" x 14"	24
110-0960	18" x 14"	24
110-0963	18" x 16"	24
110-0964	20" x 18"	24
110-0966	22" x 20"	24
110-0969	24" x 22"	24

## FLOOR BOX

### Features

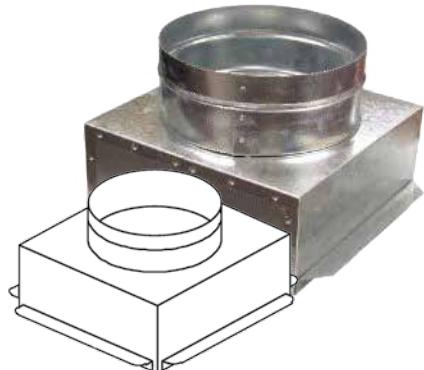
- Spot welded
- Galvanized steel



## CEILING BOX

### Features

- Spot welded
- Galvanized steel
- with P.G.



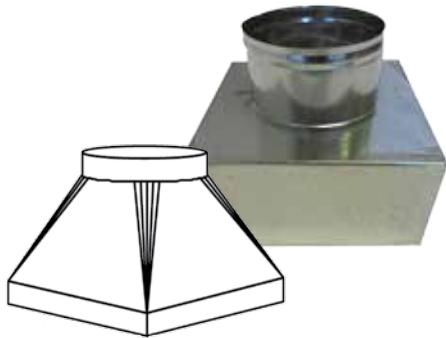
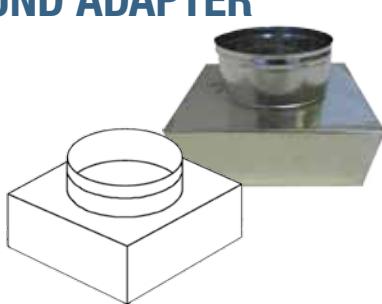
Item Number	Size	Gauge
110-1202	8" x 4" x 5"	26
110-1205	8" x 4" x 6"	26
110-1208	8" x 6" x 6"	26
110-1211	10" x 4" x 5"	26
110-1214	10" x 4" x 6"	26
110-1217	10" x 6" x 6"	26
110-1220	10" x 6" x 7"	26
110-1223	10" x 6" x 8"	26
110-1226	10" x 8" x 7"	26
110-1229	10" x 8" x 8"	26
110-1232	10" x 9" x 9"	26
110-1235	12" x 4" x 6"	26
110-1238	12" x 4" x 7"	26
110-1241	12" x 6" x 6"	26
110-1244	12" x 6" x 7"	26
110-1247	12" x 6" x 8"	26
110-1250	12" x 6" x 9"	26
110-1253	12" x 8" x 6"	26
110-1256	12" x 8" x 7"	26
110-1259	12" x 8" x 8"	26
110-1262	12" x 8" x 10"	26
110-1265	14" x 4" x 6"	26
110-1268	14" x 4" x 7"	26
110-1271	14" x 6" x 6"	26
110-1274	14" x 6" x 7"	26
110-1277	14" x 6" x 8"	26
110-1280	14" x 6" x 9"	26
110-1283	14" x 6" x 10"	26
110-1286	14" x 8" x 8"	26
110-1289	14" x 8" x 9"	26
110-1292	14" x 8" x 10"	26
110-1295	14" x 10" x 9"	26
110-1298	14" x 10" x 10"	26
110-1301	16" x 8" x 10"	26
110-1305	16" x 10" x 10"	26
110-1306	16" x 12" x 12"	26

Item Number	Size	Gauge
110-1103	6" x 6" x 5"	26
110-1107	6" x 6" x 6"	26
110-1113	8" x 8" x 5"	26
110-1116	8" x 8" x 6"	26
110-1119	8" x 8" x 7"	26
110-1122	8" x 8" x 8"	26
110-1128	10" x 10" x 6"	26
110-1131	10" x 10" x 7"	26
110-1133	10" x 10" x 8"	26
110-1136	10" x 10" x 9"	26
110-1139	10" x 10" x 10"	26
110-1151	12" x 12" x 7"	26
110-1154	12" x 12" x 8"	26
110-1157	12" x 12" x 9"	26
110-1160	12" x 12" x 10"	26
110-1163	12" x 12" x 12"	26
110-1166	14" x 14" x 8"	26
110-1169	14" x 14" x 10"	26
110-1172	14" x 14" x 12"	26
110-1175	14" x 14" x 14"	26
110-1178	16" x 16" x 10"	26
110-1181	16" x 16" x 12"	26
110-1184	16" x 16" x 14"	26
110-1187	16" x 16" x 16"	26
110-1190	18" x 18" x 10"	26
110-1193	18" x 18" x 12"	26
110-1196	18" x 18" x 14"	26
110-1199	18" x 18" x 16"	26

## SQUARE TO ROUND ADAPTER

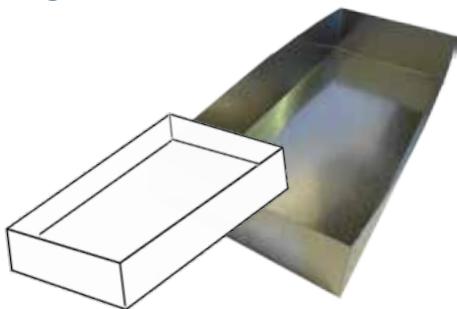
### Features

- Spot welded
- Galvanized steel
- No PG



Item Number	Size	Gauge
110-1603	6" x 6" x 5"	26
110-1606	6" x 6" x 6"	26
110-1609	8" x 8" x 5"	26
110-1612	8" x 8" x 6"	26
110-1615	8" x 8" x 7"	26
110-1618	8" x 8" x 8"	26
110-1621	9" x 9" x 6"	26
110-1624	9" x 9" x 7"	26
110-1627	9" x 9" x 8"	26
110-1630	9" x 9" x 9"	26
110-1636	10" x 10" x 6"	26
110-1639	10" x 10" x 7"	26
110-1642	10" x 10" x 8"	26
110-1645	10" x 10" x 9"	26
110-1648	10" x 10" x 10"	26
110-1651	12" x 12" x 6"	26
110-1654	12" x 12" x 7"	26
110-1657	12" x 12" x 8"	26
110-1660	12" x 12" x 9"	26
110-1663	12" x 12" x 10"	26
110-1666	12" x 12" x 12"	26
110-1672	14" x 14" x 6"	26
110-1675	14" x 14" x 7"	26
110-1678	14" x 14" x 8"	26
110-1681	14" x 14" x 9"	26
110-1684	14" x 14" x 10"	26
110-1687	14" x 14" x 12"	26
110-1690	14" x 14" x 14"	26
110-1693	15" x 15" x 8"	26

Item Number	Size	Gauge
110-1696	15" x 15" x 9"	26
110-1699	15" x 15" x 10"	26
110-1702	15" x 15" x 12"	26
110-1705	15" x 15" x 14"	26
110-1714	16" x 16" x 10"	26
110-1717	16" x 16" x 12"	26
110-1720	16" x 16" x 14"	26
110-1726	16" x 16" x 16"	26
110-1732	18" x 18" x 8"	26
110-1735	18" x 18" x 10"	26
110-1738	18" x 18" x 12"	26
110-1741	18" x 18" x 14"	26
110-1746	18" x 18" x 16"	26
110-1749	18" x 18" x 18"	26
110-1754	20" x 20" x 8"	26
110-1755	20" x 20" x 10"	26
110-1758	20" x 20" x 12"	26
110-1761	20" x 20" x 14"	26
110-1764	20" x 20" x 16"	26
110-1767	20" x 20" x 18"	26
110-1770	20" x 20" x 20"	26
110-1803	22" x 22" x 8"	26
110-1809	22" x 22" x 10"	26
110-1812	22" x 22" x 12"	26
110-1815	22" x 22" x 14"	26
110-1818	22" x 22" x 16"	26
110-1821	22" x 22" x 18"	26
110-1824	22" x 22" x 20"	26
110-1827	22" x 22" x 22"	26

**RETURN AIR CAN****Features**

- Spot welded
- Galvanized steel
- No PG

Item Number	Size	Gauge
110-1500	20" x 12"	26
110-1503	20" x 14"	26
110-1506	20" x 16"	26
110-1512	20" x 20"	26
110-1513	22" x 10"	26
110-1515	22" x 22"	26
110-1518	24" x 12"	26
110-1521	24" x 14"	26
110-1524	24" x 16"	26
110-1527	24" x 18"	26
110-1530	24" x 20"	26
110-1533	24" x 24"	26
110-1536	25" x 12"	26
110-1539	25" x 14"	26
110-1542	25" x 16"	26
110-1545	25" x 18"	26
110-1548	25" x 20"	26
110-1551	25" x 25"	26
110-1554	30" x 8"	26
110-1557	30" x 12"	26
110-1560	30" x 14"	26
110-1563	30" x 16"	26
110-1566	30" x 18"	26
110-1569	30" x 20"	26
110-1572	30" x 24"	26
110-1575	36" x 10"	26
110-1578	36" x 12"	26
110-1579	48" x 24"	26
110-1580	36" x 20"	26
110-1889*	46" x 22"	26
110-1890*	22" x 10"	26

**ROUND END CAP****Features**

- Spot welded
- Galvanized steel

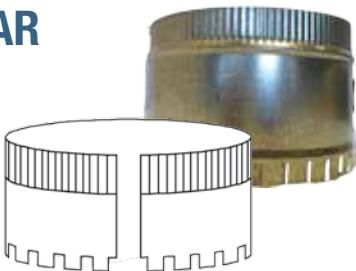
Item Number	Size	Gauge
110-1075	5"	26
110-1076	6"	26
110-1077	7"	26
110-1078	8"	26
110-1079	9"	26
110-1080	10"	26
110-1082	12"	26
110-1084	14"	26
110-1086	16"	24
110-1088	18"	24
110-1090	20"	24
110-1092	22"	24
110-1094	24"	24

**SPIN-IN COLLAR****Features**

- Spot welded
- Galvanized steel
- Crimped end

Item Number	Size	Gauge
110-0974	4"	26
110-0975	5"	26
110-0976	6"	26
110-0977	7"	26
110-0978	8"	26
110-0979	9"	26
110-0980	10"	26
110-0982	12"	26
110-0984	14"	26
110-0986	16"	26
110-0988	18"	24
110-0990	20"	24
110-0992	22"	24
110-0994	24"	24

## START COLLAR

**Features**

- Galvanized steel
- Crimped end

Item Number	Size	Gauge
110-2504	4"	26
110-2505	5"	26
110-2506	6"	26
110-2507	7"	26
110-2508	8"	26
110-2509	9"	26
110-2510	10"	26
110-2512	12"	26
110-2514	14"	24
110-2516	16"	24
110-2518	18"	24
110-2520	20"	24
110-2522	22"	24
110-2524	24"	24
110-2526	26"	24

## AIR TIGHT COLLAR

**Features**

- Galvanized steel
- Crimped end

Item Number	Size	Gauge
110-3006	6"	26
110-3007	7"	26
110-3008	8"	26
110-3009	9"	26
110-3010	10"	26
110-3012	12"	26
110-3014	14"	24
110-3016	16"	24
110-3018	18"	24
110-3020	20"	24

## VOLUME DAMPER

**Features**

- Galvanized steel
- Crimped end
- Windgate controls

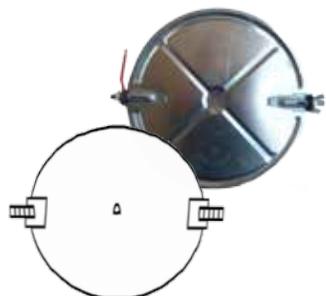


Item Number	Size	Gauge
110-2705	5"	26
110-2706	6"	26
110-2707	7"	26
110-2708	8"	26
110-2709	9"	26
110-2710	10"	26
110-2712	12"	26
110-2714	14"	26
110-2716	16"	26
110-2718	18"	26
110-2720	20"	26

## DAMPER DISK WITH GASKET

**Features**

- Galvanized steel
- Comes with hardware

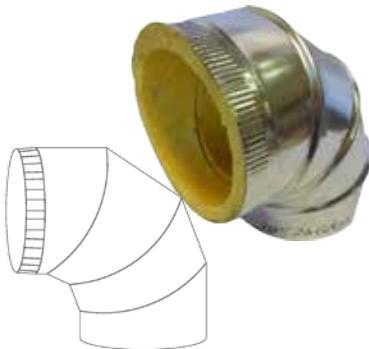


Item Number	Size	Gauge
110-2805	5"	26
110-2806	6"	26
110-2807	7"	26
110-2808	8"	26
110-2809	9"	26
110-2810	10"	26
110-2812	12"	26
110-2814	14"	26
110-2816	16"	26
110-2818	18"	26
110-2820	20"	26

## CIRCLE LINED 90° ELBOWS

### Features

- Spot welded
- Galvanized steel
- Crimped end
- 1" Liner: R4.3

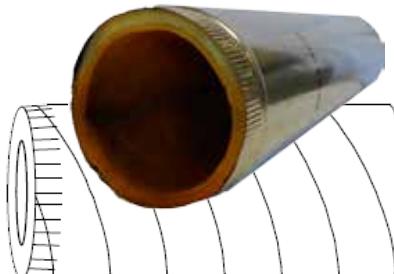


Item Number	Size	Gauge
112-0108	8"	26
112-0109	9"	26
112-0110	10"	26
112-0112	12"	26
112-0114	14"	24
112-0116	16"	24
112-0118	18"	24
112-0120	20"	24

## CIRCLE LINED KD PIPE

### Features

- Spot welded
- Galvanized steel
- Crimped end
- 1" Liner: R4.3

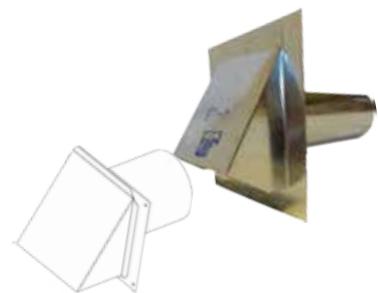


Item Number	Size	Gauge
112-0008	8" x 36"	26
112-0009	9" x 36"	26
112-0010	10" x 36"	26
112-0012	12" x 36"	26
112-0014	14" x 36"	24
112-0016	16" x 36"	24
112-0018	18" x 36"	24
112-0020	20" x 36"	24

## DRYER VENT FLANGE DAMPER

### Features

- Spot welded
- Galvanized steel



Item Number	Size
115-0304	4"

## LOUVER WITH P.G.

### Features

- Spot welded
- Galvanized steel
- Bird screen

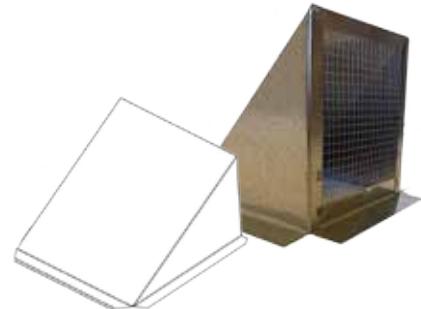


Item Number	Description	Size
115-0325	With P.G.	14" x 12"
115-0330	14" x 18" w/P.G.-GALV.	14" x 18"
115-0335	14" x 24" w/P.G.-GALV.	14" x 24"

## EYEBROW

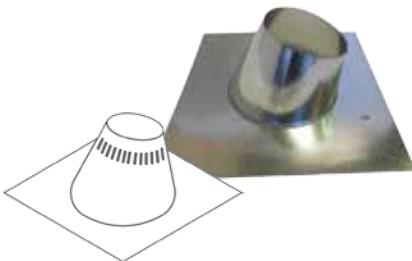
### Features

- Spot welded
- Galvanized steel
- Bird screen



Item Number	Description	Size
115-0404	4" x 4"-GALV. 30GA	14" x 12"
115-0406	6" x 6"-GALV. 30GA	14" x 18"
115-0408	8" x 8"-GALV. 28GA	14" x 24"
115-0409	8" w/ DMPR. GALV. 28GA	8"

## FLASHING

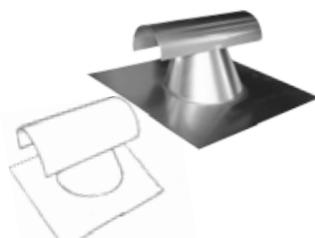


### Features

- Spot welded
- Galvanized steel

Item Number	Size	Gauge
113-0050	1/2"	26
113-0075	3/4"	26
113-0100	1"	26
113-0125	1 1/4"	26
113-0150	1 1/2"	26
113-0200	2"	26
113-0303	3"	26
113-0304	4"	26
113-0305	5"	26
113-0306	6"	26
113-0307	7"	26
113-0308	8"	26
113-0309	9"	26
113-0310	10"	26
113-0312	12"	26
113-0314	14"	26
113-0316	16"	26
113-0318	18"	26
113-0320	20"	26
113-0322	22"	26
113-0324	24"	26

## T-TOP FLASHING

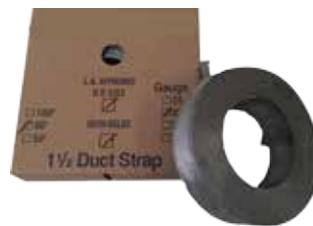


### Features

- Spot welded
- Galvanized steel
- Bird screen

Item Number	Size
113-0404	4"
113-0407	7"
113-0408	8"
113-0410	10"
113-0412	12"

## STRAP WITH HOLES



### Features

- Spot welded
- Galvanized steel
- No PG

Item Number	Size	Gauge
115-0520	1.5" X 80'	26
115-0531	1.5" X 80'	24

## STRAP NO HOLES



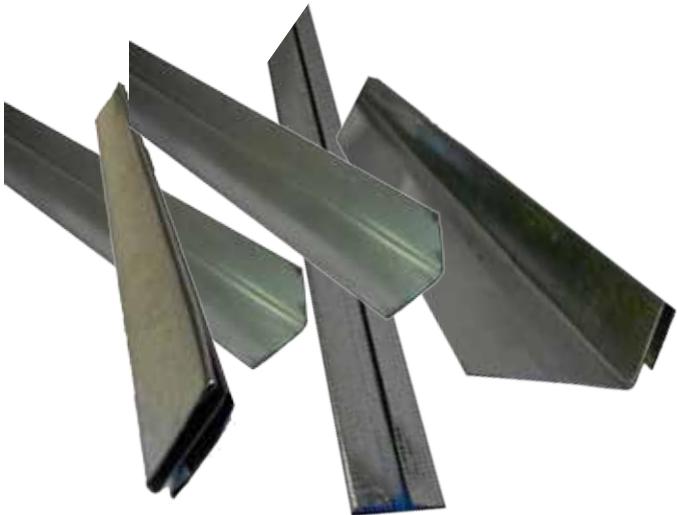
### Features

- Spot welded
- Galvanized steel
- No PG

Item Number	Size	Gauge
115-0500	1.5" x 80'	26
115-0525	1.5" x 10'	20
115-0530	1.5" x 80'	20
115-0532	1.5" x 80'	24

## NOTES:

## SHEET METAL - HVAC FITTINGS



### Features

- Galvanized steel
- Helps hold equipment to roof

## J ANGLE

Item Number	Size	Gauge
115-0550	1.5" x 10'	16
115-0552	1.5" x 10'	16

## S-MATERIAL

Item Number	Size	Gauge
115-0568	10'	28

## S-LOCK

Item Number	Size	Gauge
115-0569	10'	24

## DRIVE MATERIAL

Item Number	Size	Gauge
115-0570	10'	26

## PLASTER GUARD

Item Number	Size	Gauge
115-0579	10'	28

## KD PIPE

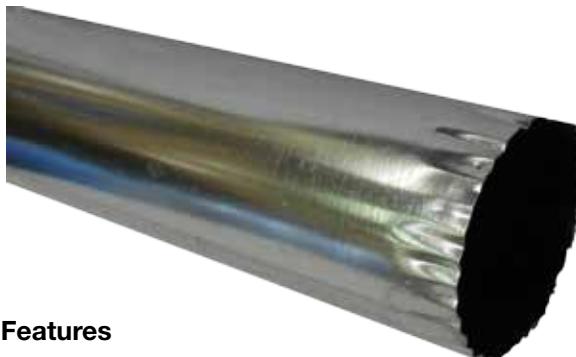


### Features

- Galvanized steel

Item Number	Size	Gauge
110-2303	3" x 36"	26
110-2304	4" x 36"	26
110-2305	5" x 36"	26
110-2306	6" x 36"	26
110-2307	7" x 36"	26
110-2308	8" x 36"	26
110-2309	9" x 36"	26
110-2310	10" x 36"	26
110-2312	12" x 36"	26
110-2314	14" x 36"	24
110-2316	16" x 36"	24
110-2318	18" x 36"	24
110-2320	20" x 36"	24
110-2322	22" x 36"	24
110-2324	24" x 36"	24

## CONDO PIPE



### Features

- Galvanized steel

Item Number	Size	Gauge
115-0593	3" X 10'	28
115-0594	4" X 10'	28

## SPIRAL PIPE BARE



### Features

- Galvanized steel
- Crimped end

Custom Sizes Available

Item Number	Size	Gauge
130-0004	4" x 7.5'	26
130-0005	5" x 7.5'	26
130-0006	6" x 7.5'	26
130-0007	7" x 7.5'	26
130-0008	8" x 7.5'	26
130-0009	9" x 7.5'	26
130-0010	10" x 7.5'	26
130-0012	12" x 7.5'	26
130-0014	14" x 7.5'	26
130-0016	16" x 7.5'	24
130-0018	18" x 7.5'	24
130-0020	20" x 7.5'	24
130-0022	22" x 7.5'	24
130-0024	24" x 7.5'	24

## SPIRAL PIPE HANGING BRACKET

### Features

- Galvanized steel
- Crimped end



Item Number	Size	Gauge
130-0106	6"	20
130-0108	8"	20
130-0110	10"	20
130-0112	12"	20
130-0114	14"	20
130-0116	16"	20
130-0118	18"	20
130-0124	24"	20

## SPIRAL PIPE WRAPPED



### Features

- Galvanized steel
- Crimped end
- Insulated wrapped with metalized jacket

Custom Sizes Available

## SPIRAL PIPE WRAPPED R 4.2

Item Number	Size	Gauge
130-0206	6" x 7.5'	26
130-0207	7" x 7.5'	26
130-0208	8" x 7.5'	26
130-0209	9" x 7.5'	26
130-0210	10" x 7.5'	26
130-0212	12" x 7.5'	26
130-0214	14" x 7.5'	26
130-0216	16" x 7.5'	24
130-0218	18" x 7.5'	24
130-0220	20" x 7.5'	24
130-0222	22" x 7.5'	24
130-0224	24" x 7.5'	24

## SPIRAL PIPE WRAPPED R 8.0

Item Number	Size	Gauge
130-0306	6" x 7.5' (S.O.)	26
130-0307	7" x 7.5' (S.O.)	26
130-0308	8" x 7.5' (S.O.)	26
130-0309	9" x 7.5' (S.O.)	26
130-0310	10" x 7.5' (S.O.)	26
130-0312	12" x 7.5' (S.O.)	26
130-0314	14" x 7.5' (S.O.)	26
130-0316	16" x 7.5' (S.O.)	24
130-0318	18" x 7.5' (S.O.)	24

## ALUMINUM FLEX BARE



### Features

- Aluminum
- Size 5"-18" come w/ collars

Custom Sizes Available

## COMPRESSED NO COLLAR

Item Number	Size
135-0003	3" x 10'
135-0004	4" x 10'

## ALUMINUM FLEX BARE W/ COLLAR

Item Number	Size
135-0005	5" x 6'
135-0006	6" x 6'
135-0007	7" x 6'
135-0008	8" x 6'
135-0009	9" x 6'
135-0010	10" x 6'
135-0012	12" x 6'
135-0014	14" x 6'
135-0016	16" x 6'
135-0018	18" x 6'

## ALUMINUM FLEX WRAPPED



### Features

- Aluminum
- Comes with collars
- Insulated wrapped with metalized jacket

Custom Sizes Available

## ALUMINUM FLEX WRAPPED R4.2

Item Number	Size
135-0105	5" x 6'
135-0106	6" x 6'
135-0107	7" x 6'
135-0108	8" x 6'
135-0109	9" x 6'
135-0110	10" x 6'
135-0112	12" x 6'
135-0114	14" x 6'
135-0116	16" x 6'
135-0118	18" x 6'
135-0120	20" x 6'
135-0122	22" x 6'
135-0124	24" x 6'

## ALUMINUM FLEX WRAPPED R8.0

Item Number	Size
135-0105	5" x 6'
135-2106	6" x 6'
135-2107	7" x 6'
135-2108	8" x 6'
135-2109	9" x 6'
135-2110	10" x 6'
135-2112	12" x 6'
135-2114	14" x 6'
135-2116	16" x 6'
135-2118	18" x 6'
135-2120	20" x 6'
135-2122	22" x 6'
135-2124	24" x 6'

**FLEXIBLE DUCT R 4.2****Features**

- Aluminum
- Comes with collars
- Insulated wrapped with metalized jacket



Item Number	Size
138-0405	25' x 5"
138-0406	25' x 6"
138-0407	25' x 7"
138-0408	25' x 8"
138-0409	25' x 9"
138-0410	25' x 10"
138-0412	25' x 12"
138-0414	25' x 14"
138-0416	25' x 16"
138-0418	25' x 18"
138-0420	25' x 20"
138-0505	7' x 5"
138-0506	7' x 6"
138-0507	7' x 7"
138-0508	7' x 8"
138-0509	7' x 9"
138-0510	7' x 10"
138-0512	7' x 12"
138-0514	7' x 14"
138-0516	7' x 16"
138-0518	7' x 18"
138-0520	7' x 20"

**FLEXIBLE DUCT R 8.0****Features**

- Aluminum
- Comes with collars
- Insulated wrapped with metalized jacket



Item Number	Size
138-2505	25' x 5"
138-2506	25' x 6"
138-2507	25' x 7"
138-2508	25' x 8"
138-2509	25' x 9"
138-2510	25' x 10"
138-2512	25' x 12"
138-2514	25' x 14"
138-2516	25' x 16"
138-2518	25' x 18"
138-2520	25' x 20"
138-7005	7' x 5"
138-7006	7' x 6"
138-7007	7' x 7"
138-7008	7' x 8"
138-7009	7' x 9"
138-7010	7' x 10"
138-7012	7' x 12"
138-7014	7' x 14"
138-7016	7' x 16"
138-7018	7' x 18"
138-7020	7' x 20"

R6, 25' and 7' Flexible duct also available through a special order.

## FLEXMASTER ACOUSTICAL FLEX DUCT- TYPE 8M, R4.2

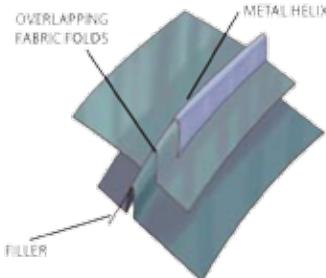


Flexmaster's Type 8M is manufactured to meet the highest quality standards in strength, permeability and fire resistance required in a flexible air duct. This insulated, UL-181/ETL Class I AIR DUCT is fabricated with an acoustically transparent CPE inner film which allows mid-range sound energy to penetrate the duct wall.

### TECHNICAL DATA

Standard lengths (feet)	25'
Inside Diameter (Inches)	3", 4", 5", 6", 7", 8", 9", 10", 12", 14", 15", 16", 18", 20"
Inside Bend Radius (inches)	1/2 x I.D. (All Sizes)
Vapor Barrier Permeance	05 perm A.S.T.M. E96, Procedure A
UL Listing	UL 181 / ETL Class 1 Air Duct
Standard Codes	NFPA 90A and 90B, BOCA, SBBC HUD/FHA, MIN Property Std.
Rated Velocity	5500 F.P.M.
Working Pressure (W.G.)	10" w.g. positive 5" w.g. negative thru 16" Dia. 1" w.g. negative, 18" & 20" Dia.
Min Burst Pressure Operating	2 1/2 times working pressure
Temperature Range	-20° to +250°F
Flame Spread	Less. than 25
Smoke Developed	Less. than 50
Thermal Conductance	R-4.2

### TYPE 8M-ACOUSTICAL INSULATED



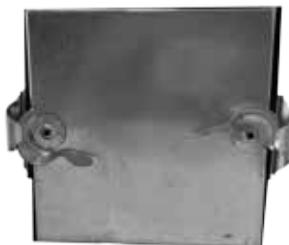
Item Number	Size
138-0906	25' x 6"
138-0908	25' x 8"
138-0910	25' x 10"
138-0912	25' x 12"
138-0914	25' x 14"
138-0916	25' x 16"
138-0918	25' x 18"
138-0920	25' x 20"
138-0924	25' x 24"

## SQUARE ACCESS DOORS

Access Doors consists of two, 24 gauge galvanized steel panels mechanically locked together. These doors are insulated with high density fiberglass insulation with UL classification: FHC25/50. They have a double gasketed closed cell cross-linked polyethylene gasket with a service temperature range of -70°F to 175°F. The gasket is bonded to the inside of both the dovetail frames and also to the outside of the frame. They meet SMACNA requirements for low pressure doors.

### Features

- Galvanized steel
- Insulated
- Bonded gasket to prevent leakage
- Allows access to inside of ductwork



## CAM LOCK

Item Number	Size
120-0106	6" x 6"
120-0108	8" x 8"
120-0110	10" x 10"
120-0112	12" x 12"
120-0114	14" x 14"
120-0116	16" x 16"
120-0118	18" x 18"



## HINGED

Item Number	Size
120-0206	6" x 6"
120-0208	8" x 8"
120-0210	10" x 10"
120-0212	12" x 12"
120-0214	14" x 14"
120-0216	16" x 16"
120-0218	18" x 18"

## ROUND ACCESS DOORS

Round access doors contain bonded neoprene gasket to the inside plates to prevents leakage. Its conical springs and high impact plastic plates provide for easy installation.

### Features

- Galvanized steel
- Bonded gasket to prevent leakage
- Allows access to inside of ductwork



Item Number	Size	Round Duct Size
120-0306	4" x 8"	6" - 7"
120-0308	4" x 8"	8" - 11"
120-0312	4" x 8"	12" - 14"
120-0314	8" x 12"	12" - 14"
120-0318	8" x 12"	15" - 18"

# SUPPLIES



# SUPPLIES - TOOLS

## TOOLS



Item Number	Description
195-0125	6IN1 Screwdriver
195-0515	Chuck 1/4" For 6IN1 Screwdriver
195-0520	Chuck 5/16" For 6IN1 Screwdriver
195-0522	6" Duct Knife
195-0535	18 oz. Tinners Hammer
195-0625	Wiss Hand Nucher
195-0630	Wiss Hand Seamer
190-0615	Wiss 5 Blade Crimper
190-0500	18" Divider
190-0510	24" Divider
190-2105	8560 Heavy Dust Mask

## SAWZALLZ

Blades fit all reciprocating saws using a universal 1/2" shank. They are bi-metal construction for long life and rugged use. This alloy steel features excellent flexibility. The teeth are hardened, giving the blades a high-speed cutting edge, long life and durability. Thicker than most blades, teeth stay sharper longer, resisting over heating and embrittlement.



Item Number	Model Number	Description	Length	TPI	QTY/PK
190-0575	DD075	<b>GENERAL PURPOSE</b> -Wood with nails, metal & non-ferrous metal and pipes with wall thickness over 3/8"	6"	10	5
190-0580	DD059	<b>METAL CUTTING</b> - Pipe, structural and stainless steel 3/32 - 1/4 in.; non-ferrous metal 3/32 - 3/8 in.	6"	14	5
190-0585	DD057	<b>METAL CUTTING</b> - Sheet metal and pipes with wall thickness from 1/8 to 3/16 in.	6"	18	5
190-0590	DD058	<b>METAL CUTTING</b> - Sheet metal and pipes with wall thickness up to 1/8 in.	6"	24	5
190-0600	DD060	<b>METAL CUTTING</b> - Sheet metal and pipes with wall thickness from 1/8 to 3/16 in.	8"	18	5
190-0605	DD067	<b>WOOD</b> - Roughing, fast work, nail embedded knotty wood remodeling	12"	16	5
190-0610	DD065	<b>WOOD</b> - Roughing, fast work, nail embedded knotty wood remodeling	6"	6	5

## MIDWEST AVIATION SNIPS

Midwest Snips® forged blade offset model aviation snips are the world's best! We offer three different blade pattern models and two blade hardness options in this product category as well as two tradesmen sets. These models perform superior to respective ASME performance requirements.



Item Number	Description
195-1065	Straight Cuts, Yellow Handle
195-1075	Left Offset- Cuts, Red Handle
195-1080	Right Offset-Cuts, Green Handle

## DAMPER REGULATOR

Item Number	Model Number	Description
150-0265	RS-156	Rapid Damper Regulator Kit
150-0270	RS-256	Rapid Damper Regulator Kit
150-0273	SRST-2	2" Stand Off Regulator

## LINER AND WRAPS

### FSK Duct Wrap

FSK Duct Wrap is a foil faced fiberglass bonded with thermosetting resin. FSK facing is applied during the manufacturing process to insure a strong, long lasting bond between the base blanket and the facing. Specification Compliance: ASTM C 1290, ASTM C 553, and ASTM C 1136



Item Number	Description	Size
145-0155	FSK 1.5"	1.5" x 48" x 100'
145-0160	FSK 02"	02" x 48" x 75'
145-0165	FSK 03"	03" x 48" x 50'

### 36" Duct Wrap

36" Duct Wrap is formaldehyde-free insulation. This product is a light weight, highly resilient, blanket-type insulation designed for use on the exterior of HVAC ductwork systems.

Item Number	Description	Size
145-0150	36" cut	01" x 36" x 150"

### TEXTILE DUCT LINER

Textile Duct Liner is a black mat faced and edge coated liner made from continuous textile-type glass fibers bonded with thermosetting resin. A tough, durable black facing is applied during the manufacturing process to insure a strong, long lasting bond between the base blanket and the facing. Specification Compliance: ASTM C 1071, Type I, ASTM G 21 and G 22, NFPA 90A, and 90B



Item Number	Description	Size
145-0101	Liner	02" x 18" x 50'
145-0105	Liner	01" x 48" x 100'
145-0120	Liner	1" x 46 1/4" x 100'

## DOUBLE REFLECTIVE INSULATION

Reflectix® Insulation consists of two outer layers of metallized polyester that reflect 96% of radiant heat. Each layer of metallized polyester is bonded to a tough layer of polyethylene for strength. Two inner layers of insulating bubbles resist conductive heat flow, while a center layer of polyethylene gives Reflectix® high reliability and structural integrity.



### Features

- Non-toxic/non-carcinogenic, fiber free
- Reflects 96% radiant heat
- No nesting characteristics for birds/insects/rodents
- Resists growth of fungi, mold and mildew
- No need for protective garments or respirators when installing

Item Number	Description	Size
145-0170	Bubble Wrap	48"x50'

## SELF ADHESIVE INSULATION HANGER



Dynastick® Self Adhesive Insulation Hangers are insulation hangers with a self-stick base. Just peel the release paper from the hanger base and firmly press the base to the duct surface. Impale the insulation over the hanger nail and slip on the locking washer. Self-stick hangers adhere to clean metal surfaces and withstand temperatures of up to 79°C.

Sold in Boxes of 100.

Item Number	Model	Length	Use With
150-0275	SAH34	0.75	1/2" Insulation
150-0280	SAH114	1.25	1" Insulation
150-0285	SAH134	1.75	1 1/2" Insulation

## ADHESIVES AND SEALANTS

### 1599B

#### UL-181B-FX



A polypropylene film with an acrylic CW cold weather adhesive system. This adhesive performs well in either sub-zero cold or abnormally warm temperatures, including hot attics. Listed with UL and meets all requirements of UL 181B-FX for closure systems for use with flexible air ducts and air connectors. This product can also be used on metal and metal connections and is primarily used for sealing flexible air ducts and air connectors.

Item Nmber	Model	Size
148-3120	1599B Silver Duct Tape	2 " x 120 yds

### 1525CW

#### FSK Tape / UL723



1525CW COLD WEATHER FSK is a foil/scrim/kraft (FSK) lamination coated with Venture's cold weather solvent acrylic pressure sensitive adhesive. This versatile FSK tape applies easily to both fibrous and sheet metal ducts and easily conforms to irregular surfaces. Venture Tape 1525CW excels in demanding temperature and humidity applications and provides superior performance and durability over a wide range of environmental conditions. UL723 Classified (5/10 Flame/Smoke Rating)

Item Nmber	Model	Size
148-3140	1581A Ductboard Tape	3" x 50 yds

### 557F



#### UL181B-FX

557 Premium duct tapes acts as a superior closure system for use with flexible air ducts and air connectors. For use in heating, air conditioning, ventilating and refrigeration applications. Suitable for bonding, protecting, holding, repairing, and patching. It has excellent resistance to mold growth, humidity, flame spread, smoke generation, and the effects of high temperatures.

Item Nmber	Model	Size
148-0180	557 Duct Tape	48mm x 55M

### 1581A



#### UL181A-P

1581A Duct Board Tape excels in demanding temperature and humidity applications and provides superior performance over a wide range of environmental conditions. This tape has a high temperature, high tensile strength aluminum foil coating with an extremely aggressive all weather solvent acrylic pressure sensitive adhesive. It is specifically designed for use as a vapor seal on reinforced fiberglass duct board.

Item Nmber	Model	Size
148-3140	1581A Ductboard Tape	2 1/2,"x 60 yds



### DP WRAP

#### UV Resistant

DP Wrap is a polyethylene film with a high-tack adhesive designed to be applied over the openings of ductwork during transportation and storage to temporarily protect the inside from moisture, dust, debris, paint and other particles that can lead to poor indoor air quality.

Item Nmber	Model	Size
148-3150	DP Wrap	36" x 200'

## SILICONE SEALANT

BOSS® 370 HVAC Silicone is a one-part acetoxy cure adhesive sealant that is suitable for general heating, ventilation and air conditioning sealing and adhesive applications. This product will adhere to clean metal, glass, many types of wood, silicone resins, vulcanized silicone rubber, ceramics and plastic surfaces. A primer may be required for optimum adhesion to some substrates.



### Features

- Seals heating, ventilating or air conditioning duct work
- Seals cracks or gaps around windows, vents, ducts, fixtures and lights
- Seals leaks in gutters, downspouts, ducts and piping
- Seals electrical connections and boxes to waterproof
- Bond gaskets in heating and refrigeration units
- Tack-free time (77°F & 50% RH) 10 - 20 minutes
- Cured – (7 days at 77°F+3°F and 50% and +5% TH)

Item Number	Model	Color	Size
165-7955	Boss 370	Clear	10.1 oz Tube
165-7963	Boss 370	Aluminum	10.1 oz Tube

## FIRESTOP SEALANT

BOSS® 816 UL Classified Intumescent Firestop Sealant is a fire rated, general purpose sealant for use on through-penetrations and construction joints. It is a single component, non-sag, water based sealant and smoke seal that is easy to apply and clean up. BOSS® 816 will prevent the spread of toxic gases, water, smoke and fire through joint openings and through penetrations. BOSS® 816 is suitable for adhesion to almost any surface and remains flexible, making it ideal for both horizontal and vertical joints, subject to vibration or dynamic movement. It bonds quickly, has excellent adhesion and is non-toxic. BOSS® 816 is protected against mold growth with a combination of biocides in both wet and dry stages. It has been tested to the following specifications: UL 1479 (ASTM E-814), UL 2079 (ASTM E-1966), ASTM E-84 (0-flame, 0-smoke), ASTM E-90 (STC 53).



### Features

- Intumescent firestop sealant
- Bonds quickly with excellent adhesion
- Mildew resistant
- Remains flexible
- VOC compliant
- Excellent freeze / thaw properties
- Safe to use and handle
- Water based and paintable
- Tested to the following specifications: UL 1479 (ASTM E-814), UL 2079 (ASTM E-1966), ASTM E-84 (0-flame, 0-smoke), ASTM E-90 (STC 53)

Item Number	Model	Size
162-1000	Boss 816	10.1 oz Tube
162-0100	Caulking gun	

# SUPPLIES - PAINTS AND MARKER

## DUCT SEALANT



### DP 77

An industrial strength, solvent based, aerosol duct liner spray adhesive.

- May be used to bond galvanized metal, wood, fiberglass, foam rubber, paper, glass, cardboard, textiles, plastics, and laminate
- Sealing and bonding laps in HVAC duct insulation
- Adhering kraft backed foil and foil jacketing to urethane foam

Item Code	Model	Size
147-0077	DP#77	16oz Can

### DP 1010

A smooth waterbase, premium quality, high velocity duct sealant for commercial and residential use. UL 181 Classified.

- Sealing joints, seams, and duct wall penetrations
- Sealing connections on flexible duct
- Up to 15 inches water column pressure

Item Code	Model	Size
147-1000	DP 1010-T	1/2 Gallon Caulking Tube
147-1001	DP 1010-1	1 Gallon Pail

### DP 1020

A fiber reinforced waterbased, premium quality, high velocity duct sealant for commercial and residential use. UL 181 Classified.

- Sealing joints, seams, and duct wall penetrations
- Sealing connections on flexible duct
- Up to 15 inches water column pressure

Item Code	Model	Size
147-1020	DP 1020-T	1/2 Gallon Caulking Tube
147-1021	DP 1020-1	1 Gallon Pail

## Accessories

Item Code	Model
190-0150	BRUSH-2"



## PAINTS AND MARKERS



### Marking Paint

Item Number	Color	Base
190-2000	Flat Black	Enamel
190-2005	Fluorescent Orange	Water
190-2010	Flat White	Enamel
190-2015	Gloss Black	Enamel
190-2020	Gloss White	Enamel
190-2030	Fluorescent Green	Water
190-2035	Fluorescent Yellow	Water

### Touch-up Paint

Item Number	Description	Color
045-0046	Price B-11	Pure White
045-0048	Price B-12	Standard White

### Flag Tape

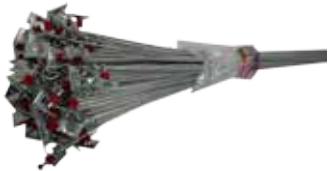
Item Code	Color	Roll Size
070-1915	Red	3/16" X 300'
070-1920	Blue	3/16" X 300'
070-1925	Orange	3/16" X 300'



## STONE WIRE

Item Number	Weight	Gauge
153-0300	12.5 lbs	18 GA
153-0316	25 lbs	16 GA

## HANGING MATERIAL



Hanging wire is hanging material that is straightened wire that is cut to specific lengths and used in the installation of acoustical tile grids, electrical components and other various construction projects.

### Loaded Hanger Wire

Hanger Wire with 1 1/4" Pin and Clip

Item Number	Size	Gauge
153-0106	06'	12 GA
153-0108	08'	12 GA
153-0110	10'	12 GA
153-0112	12'	12 GA

### Hanger Wire

Item Number	Size	Gauge
153-0208	08'	12 GA
153-0210	10'	12 GA
153-0212	12'	12 GA
153-0214	14'	12 GA
153-0216	16'	12 GA
153-0218	18'	12 GA
153-0220	20'	12 GA
153-0224	24'	12 GA
153-0226	26'	12 GA

### Hanger Wire Accessories

Item Number	Description	Size
153-0200	Eyelag Screws/ 1,000 per box	1/4" x 03"
153-0202	Rod Hangers	3/8"
153-0205	Rod Hangers	1/2"
153-0410	Angle Clips with Pin	1 1/4"
153-0525	Shoots (Yellow 4RS25)	Strips of 10 Shoots
153-0527	Shoots (Yellow 4RS27)	Strips of 10 Shoots
153-0570	Cobra Semi Auto 27CA STR Tool	

## NYLON DUCT STRAPS

Nylon duct straps are designed for use with flexible air ducts and air connectors allowing for quick and secure installation. Nylon duct straps are UL Listed ensuring quality and safety in varying environments.



- UV Black
- UL 181-B-C Approved
- Heavy duty installation tools allow for quick and easy fastening

Item Code	Length	Width	Diameter	Tensile Strength
190-0528	36"	0.345"	2-3/4" – 10-3/4 "	175 lbs
190-0530	48"	0.345"	3/16" – 15"	175 lbs
195-0524	Installation Tool			

## WIRE ROPE



Aviation grade galvanized wire rope supplied by Duro Dyne is manufactured to exacting standards and statistically tested to verify stated breaking strengths. Duro Dyne 1/16", 3/32" and 1/8" wire ropes utilize standard 7 x 7 construction. 3/16" wire rope has 7 x 19 construction.

Item Number	Model	Thickness	Length	Tolerance	LBS
190-3107	WC2	1/16"	500'	+.010 / -.006"	75
190-3108	WC3	3/32"	500'	+.012 / -.006 "	150
190-3110	WC4	1/8"	500'	+.014 / -.007"	250
190-3115	WC6	3/16"	250'	+.018 / -.009"	640

### Cable Locks - Sold 10 per Box

Item Number	Model	Use With	Load at 5:1 Safety Factor
190-3120	CL12	WC2	0-75 lbs
		WC3	25-150 lbs
190-3125	CL23	WC4	25-250 lbs
		WC6	50-640 lbs

# SUPPLIES - FASTENERS

## UNISTRUT



Item Number	Description	Size	Gauge
155-0135	A-1200-HS	1 5/8" x 10'	12 GA
155-0150	B-1400-HS	13/16" x 10'	14 GA

## THREADED ROD



Item Number	Description	Size
155-0216	Threaded Rod	3/8" x 10'
155-0220	Threaded Rod	1/2" x 10'
155-0225	Rod Coupler	3/8"
155-0230	Rod Coupler	1/2"
155-0240	Ceiling Flange	3/8"

## POLYPROPYLENE ROPE

Item Number	Size
196-0050	3/8" X 50'

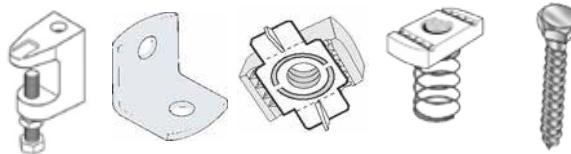
## ANCHOR KITS



Item Number	Description	QTY
159-0105	EZ-5 ANCHOR KIT	50
159-0110	Flanged Anchor Kit #12 Screw	70
159-0112	Flanged Anchor Kit #10 Screw	101

## FASTENERS

For use with Unistrut Systems



Item Number	Description	Size
155-0110	Angle Bracket	3/8" x 3/8"
155-0115	Angle Bracket	3" x 1/2"
155-0120	Angle Bracket	3/8" x 1/2"
155-0122	Beam Clamp	3/8"
155-0123	Beam Clamp	1/2"
155-0125	Spring Nut	1/2"
155-0130	Spring Nut	3/8"
155-0155	Squeeze Nut	3/8"
155-0156	Squeeze Nut	1/2"
155-0160	Lag Bolt	3/8" x 1"
155-0165	Lag Bolt	3/8" x 1 1/2"
155-0170	Lag Bolt	1/2" x 1 1/2"
155-0180	Lag Bolt	3/8" x 3"

## NUTS AND WASHERS



Item Number	Description	Size
155-0185	Nut	3/8"
155-0190	Nut	1/2"
155-0195	Nylon Nut	3/8"
155-0200	Flat Washer	3/8"
155-0205	Flat Washer	1/2"
155-0210	Fender Washer	3/8"
155-0211	Fender Washer	1/2"

## PROPOINT SCREWS

Self Drilling Screws for Heavy Gauge



Pro-Point Screws, with a precision formed drill point, are designed to fasten heavy gauge metals. These screws assure accurately sized holes for maximum holding power, eliminating the need for hole preparation and frequent alignment problems encountered in parts assembly.

Item Number	Model	Head Size	QTY
<b>150-0191</b>	PPT8X1/2	1/4"	1000
<b>150-0196</b>	PPP8X1/2	1/4"	5000
<b>150-0201</b>	PPT8X3/4	1/4"	1000
<b>150-0206</b>	PPT10X1/2	5/16"	1000
<b>150-0221</b>	PPT10X3/4	5/16"	1000
<b>150-0226</b>	PPP 10X3/4	5/16"	3000
<b>150-0236</b>	PPT10X1	5/16"	1000

## SABER SCREWS

Self Piercing Screws for Light to Medium Gauge



Designed for light-to medium-gauge materials, the Super Saber Point offers onestep fastening. Its time saving performance is related to the saber-sharp piercing point with a "fine-cut" machine thread, which pierces the metal upon contact. Once pierced, the thread propels the screw through metal rapidly and almost without effort.

Item Number	Model	Head Size	Box QTY
<b>150-0291</b>	SAT8X1/2	1/4"	1000
<b>150-0296</b>	SAP8X1/2	1/4"	5000
<b>150-0306</b>	SAT8X3/4	1/4"	1000
<b>150-0311</b>	SAP8X3/4	1/4"	4000
<b>150-0316</b>	SAT8X1	1/4"	1000
<b>150-0321</b>	SAT8X1.5	1/4"	1000
<b>150-0326</b>	SAT8X2	1/4"	1000
<b>150-0331</b>	SAT10X3/4	5/16"	1000
<b>150-0336</b>	SAP10X3/4	5/16"	3000

## VIBRATION ISOLATION



Hanging Spring Mount

Item Number	Model Number	Weight Rated
<b>157-0057</b>	CH30-8 ET42	42
<b>157-0079</b>	CH30-9 ET80	80
<b>157-0106</b>	CH30-10 ET129	129
<b>157-0155</b>	CH30-ET255	255



Floor / Base Spring Mount

Item Number	Model Number	Type	Weight Rated
<b>157-0255</b>	OSV055	Spring	55
<b>157-0279</b>	OSV079	Spring	79
<b>157-1106</b>	OSV106	Spring	106



Floor / Base Neoprene Mount

Item Number	Model Number	Type	Weight Rated
<b>157-2040</b>	RM040	Neoprene	40
<b>157-2055</b>	RM055	Neoprene	55

**DRIVE COMPONENTS**

These drive components are used on our stock fans and evaporative coolers.

**V-BELTS**

Item Number	Model Number
097-0117	4L170
097-0118	4L180
097-0119	4L190
097-0120	4L200
097-0121	4L210
097-0122	4L220
097-0123	4L230
097-0124	4L240 (A22)
097-0125	4L250
097-0126	4L260
097-0127	4L270
097-0128	4L280
097-0129	4L290
097-0130	4L300
097-0134	4L340
097-0135	4L350
097-0139	4L390
097-0145	4L450
097-0150	4L500
097-0221	A21
097-0224	A24
097-0225	A25
097-0226	A26
097-0227	A27
097-0228	A28
097-0229	A29
097-0234	A34
097-0237	V-BELT A37
097-0241	V-BELT A41
097-0242	V-BELT A42
097-0243	V-BELT A43

**V-BELTS (CON'T)**

Item Number	Model Number
097-0117	4L170
097-0118	4L180
097-0119	4L190
097-0120	4L200
097-0121	4L210
097-0122	4L220
097-0123	4L230
097-0124	4L240 (A22)
097-0125	4L250
097-0126	4L260
097-0127	4L270
097-0128	4L280
097-0129	4L290
097-0130	4L300
097-0134	4L340
097-0135	4L350
097-0139	4L390
097-0145	4L450
097-0150	4L500
097-0221	A21
097-0224	A24
097-0225	A25
097-0226	A26
097-0227	A27
097-0228	A28
097-0229	A29
097-0234	A34
097-0237	V-BELT A37
097-0241	V-BELT A41
097-0242	V-BELT A42
097-0243	V-BELT A43
097-0244	V-BELT A44
097-0245	V-BELT A45
097-0246	V-BELT A46
097-0247	V-BELT A47
097-0248	V-BELT A48
097-0249	V-BELT A49
097-0250	V-BELT A50 (4L520)
097-0252	V-BELT A52
097-0261	V-BELT A61

**BUSHINGS**

Item Number	Model Number
097-2405	H-5 5/8" Bore
097-2406	H-6 3/4" BORE
097-2408	H-8 1' BORE
097-2420	H X 1 1/4' BORE

**PULLEYS**

Item Number	Model Number
097-0428	AK28 X 3/4'
097-2230	AK30H
097-2232	AK32H
097-2234	AK34H
097-2239	AK39H
097-2241	AK41H
097-2244	AK44H
097-2246	AK46H
097-2249	AK49H
097-2251	AK51H
097-2254	AK54H
097-2256	AK56H
097-2259	AK59H (MAL57)
097-2261	AK61H (MAL59)
097-2264	AK64H
097-2266	AK66H
097-2269	AK69H
097-2274	AK74H
097-2284	AK84H
097-2324	AK124H
097-2344	AK144H

**DUAL GROVE PULLEYS**

Item Number	Model Number
097-3241	2AK41H
097-3250	2AK51H
097-3274	2AK74H
097-3324	2AK124H
097-3334	2AK134H

**SHEAVES**

Item Number	Model Number
097-3925	1VL25 X 1/2'
097-3930	1VL30 X 1/2"
097-3934	1VL34 X 1/2'
097-3940	1VL40 X 1/2"
097-4034	1VL34 X 5/8'
097-4040	1VL40 X 5/8'
097-4044	1VL44 X 5/8'
097-4144	1VL44 X 7/8'
097-4150	1VM50 X 5/8'
097-4250	1VL50 X 7/8'
097-4450	1VL50 X 7/8"
097-4456	1VP56 X 7/8"
097-4550	1VP50 X 1-1/8'

**DUAL GROVE SHEAVES**

Item Number	Model Number
097-5036	2VP36 X 5/8
097-5242	2VP42 X 1-1/8
097-5250	2VP50 X 1-1/8
097-5256	2VP56 X 1-1/8

**THERMOSTAT CABLES****Features**

- Sunlight resistant (except plenum)
- Braided ripcord
- Convenient speed bag packaging
- 18 AWG wire U.L. listed type CL2/CMH FT-1 SOL BC

Item Code	Model	Strand QTY	Roll length	WT. / 1000"
085-1802	1802	2	500'	14 lbs
085-1803	1803	3	500'	19 lbs
085-1804	1804	4	250'	25 lbs
085-1805	1805	5	250'	31 lbs
085-1806	1806	6	250'	36 lbs
085-1807	1807	7	250'	42 lbs
085-1808	1808	8	250'	47 lbs

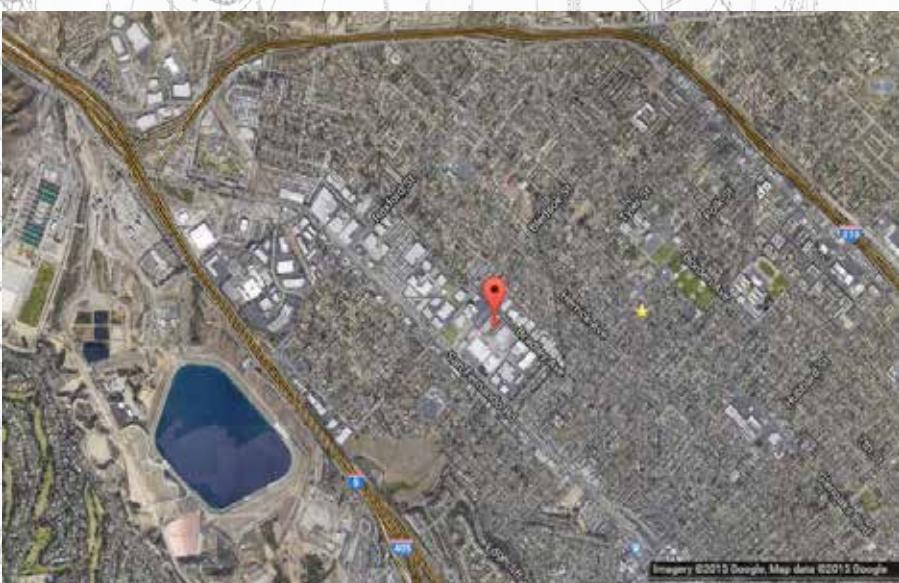
## Anaheim Warehouse

3325 La Palma Ave.  
Anaheim, CA 92806  
Phone 714.632.9800  
Sales Fax: 714.632.6900



## Sylmar Warehouse

13031 Bradley Ave.  
Sylmar (Los Angeles), CA 91342  
Phone 818.367.6100  
Sales Fax: 818.367.1221



# NSWC

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# 5TH EDITION

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