



INSTALL CONFIDENCE.



# Centrifugal Inline Fan

## Model CIS

## **TABLE OF CONTENTS**

- 3 Introduction, Certifications & Listings**
- 4 Features & Benefits**
- 5 Options & Accessories**
- 6 Filter Options**
- 7 Motor Selection**
- 8 Motor Availability**
- 9 Dimensional & Performance Data**
- 25 Engineering Specifications**



**BY JOHNSON CONTROLS**

## INTRODUCTION

### Centrifugal Inline Fan

CIS inliner fans are widely used in square ducts as clean air boosters in both supply and exhaust systems where the installation of conventional blowers is impractical. Their compact design gives designers an excellent alternative to conventional blowers.

As an integral part of a ventilation system layout, centrifugal inline fans can be installed either horizontally, vertically or at any angle determined by the duct work. Full-size removable panels enable easy access to the fan interior. Direct-drive motors are isolated from the airstream. Belt drive motors are mounted on the outside housing and can be positioned at any angle to avoid existing building obstructions. Optional motor covers are available as belt guards.

Centrifugal inline fans feature durable galvanized steel construction (aluminum is optional for selected belt drive models), which works in conjunction with a patented wheel design and deeply spun inlets to provide smoother flow through the ventilator. The centrifugal wheels are aluminum, non-overloading, backwardly inclined, robotically welded, and dynamically balanced.

### Direct Drive Units

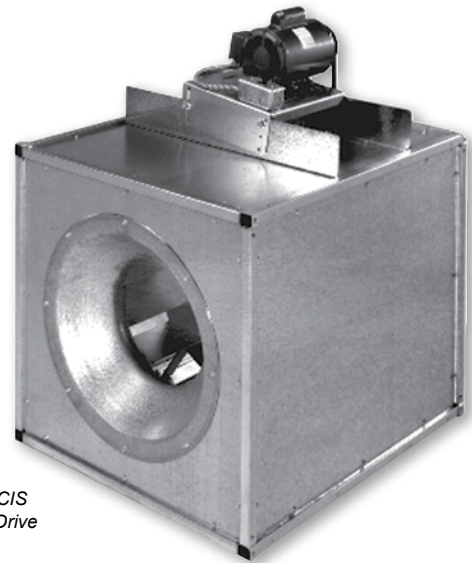
- Static pressure up to 1.75" wg.
- Flow capacity up to 3000 CFM

### Standard Duty Belt Drive Units

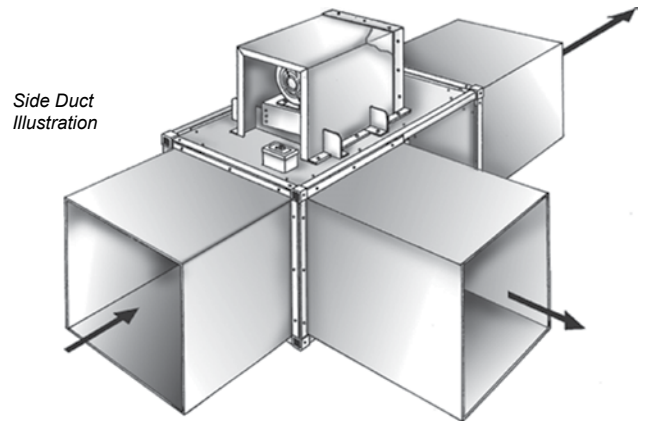
- Static pressure up to 2.5" wg.
- Flow capacity up to 27,500 CFM.

### High Pressure Belt Drive Units

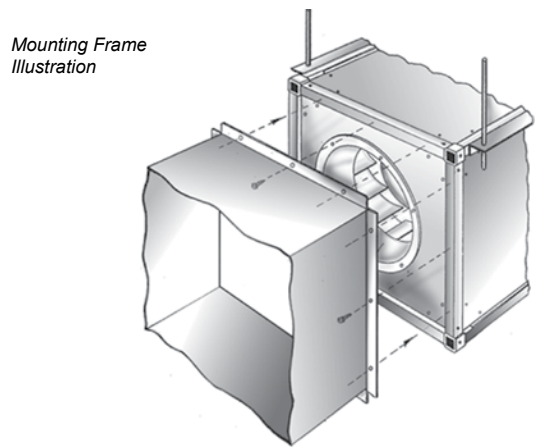
- Static pressure up to 3.5" wg.
- Flow capacity up to 9,200 CFM



Model CIS  
Direct Drive



Side Duct  
Illustration



Mounting Frame  
Illustration

## CERTIFICATIONS & LISTINGS



### AMCA Certification

YORK® by Johnson Controls certifies that the CIS models shown herein (except model CIS420) are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publications 211 and 311, and comply with the requirements of the AMCA Certified Ratings Program.



### UL and cUL Certification

CIS centrifugal inline fans carry the UL label, UL705 (ZACT/ZACT7), file #E28413.

## FEATURES & BENEFITS

### Silent Wheel (Direct Drive and CIS100/120BC)

- Blades' highly curved leading edge provide unsurpassed low sound numbers with excellent air performance.
- Back plate and inlet are stamped for consistency, plus dynamic balancing assure smooth vibration-free operation.
- Riveted or riveted and welded construction ensure superior dependability over other wheel designs.

### Standard Duty, All Welded Wheel Standard Duty and High Pressure Belt Drive

- Blades are curved for improved air performance while increasing their strength and rigidity.
- Back plate and inlet are stamped for consistency. They include a perimeter rim which enhances strength and improves balancing.
- Wheel assembly is robotically welded to provide extremely durable and consistent performance.
- Wheel is dynamically balanced.

Balancing weights are mechanically attached to both the back plate and wheel inlet. This allows a precise placement of the weights anywhere within a full 360° range on two separate planes, without the possibility of detachment.

### Support Angles

Shipped loose with every unit, these heavy-gauge angles attach to long corner posts. They can also be used to install vibration isolator devices or to bolt the unit to a solid foundation.

### Reverse Venturi

Reverse venturi reduces turbulence and improves distribution of the air as it enters the wheel inlet and is "captured" by the blades.

### Self-Aligning Bearings

Heavy-duty bearings are sized for minimum L50 life in excess of 200,000 hours of operation. 100% factory tested, they are designed for air handling applications

### Drive Belts

Pulleys are pre-set to the specified RPM. Cast iron variable pitch pulleys are adjustable, allowing for field balancing based on actual field conditions. All pulleys are sized for at least 150% of the driven horsepower.

### Aluminum Wheels

Centrifugal Inline fans offer patented wheel designs. Carefully matched highly-tooled venturis enhance the performance of these backward inclined and non-overloading centrifugal wheels. Made of advanced aluminum alloys, the various wheel components provide superior strength and durability, as well as spark resistant construction.

### Internal Wiring

All models with ODP motors are wired to an appropriate external junction box. An appropriately sized disconnect switch is available. The initial electrical connection does not require the removal of any access panels.

### Unique Mounting Frame

Unique "fully flush" mounting frame allows installers to quickly fabricate "flanged" duct ends which can be easily secured with common sheet metal hardware. The duct is connected to a heavy-gauge corner post ensuring a substantial wall for the fastener threads and a rigid base to hold the shape of the duct work.

### Three Removable Panels

Both side panels are removable for inspection, periodic maintenance, or optional discharge ducting. If required for cramped close to-the-wall installations, once either side panel is removed, the bottom panel can then be removed.

### Benefits of Duct Arrangement

Because of the rigid corner post construction of the Inliner, three of the four panels can be removed; only the top motor mounting side is fixed. The removal of these panels is usually for inspection and normal maintenance.

However there is another, and often overlooked, benefit to having this type construction. Any of these three panels, or all of them, can be removed and replaced by a duct connection. This option allows ducting directly out of the sides or bottom of the unit.

- Eliminates the static pressure duct loss through duct fittings.
- Eliminates the cost of one or more field duct fittings.
- Possible with no performance penalty.

In some cases, just the space savings of transitioning directly from the unit can translate into a large savings by eliminating a lengthy "out of the way" run of duct.

### Minimum Duct Dimensions

A side discharge duct may either be the full panel size, or smaller if desired. However, if not using a full panel, the duct opening must be installed at the inlet (wheel end) of the unit to avoid excessive "system effect" turbulence. In either case, the corner posts provide an effective surface for duct joints. If this side ducting method is used, the typical straight through outlet may or may not be blocked, depending upon the application.

Model	in.
CIS085, CIS095, CIS100BC	7
CIS125BC	11
CIS115, CIS120BC, CIS155BC	12
CIS125BCH	13
CIS205BCH	14
CIS165BC, CIS205BC	16
CIS225BCH	17
CIS275BC	19
CIS225BC	20
CIS335BC	24
CIS420BC	30



## OPTIONS & ACCESSORIES

### Fan Guards (1)

Both inlet and outlet guards are available whenever the unit is a termination point. Guards are highly recommended whenever the fan is mounted within seven feet of occupied space and/or otherwise unprotected duct work. Each application must be reviewed for compliance with OSHA standards.

### Inlet Rings (2)

Structural angles formed as circles can be provided to connect unit to round duct systems.

### Support Channels (3)

A pair of formed channels can be used to mount the units horizontally to a solid base.

### Vibration Isolators (4)

A variety of isolation devices for floor mounting are available, including flex pads and rubber in shear or spring isolators. These can be used in conjunction with support angles (standard) or support channels (optional).

### Vibration Hangers (5)

To support installation from overhead structural members, these rubber in shear or spring type isolators attach to threaded rods provided by the installer. Vibration hangers are attached to the unit by support angles (standard) or support channels (optional).

### Motor Cover (6)

Normally provided as a belt guard.

### Support Angles (7)

These are provided as standard. It is not necessary to order as an accessory.

### Safety Disconnect Switch (8)

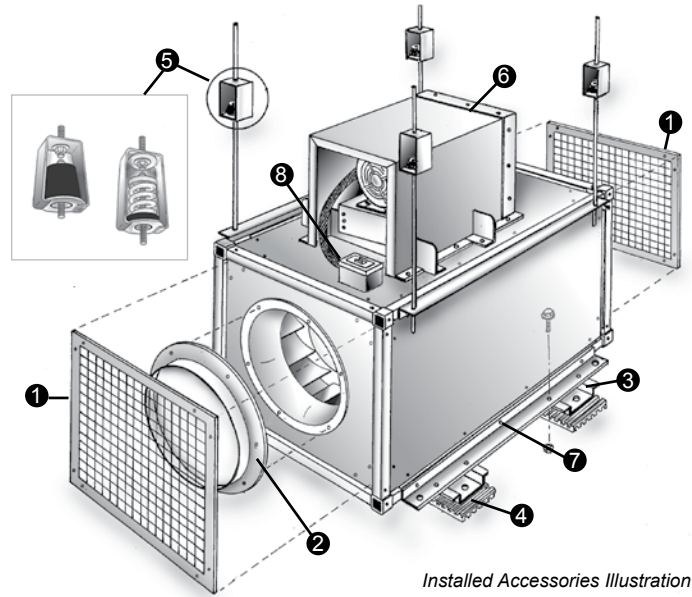
Safety disconnect switches are available to allow positive electrical shut-off and safety. Switches are factory mounted when factory wiring is requested. Wiring is only run from the motor to the junction box. (Factory wiring of explosion proof applications is not available.) A wide range of NEMA rated enclosures with disconnect switches are available for indoor and explosion proof installations. Disconnects are to be field wired by a licensed electrician.

### AMCA B Construction

Belt drive models, up through CIS205BC, are available with aluminum panels and corner posts.

### Backdraft Dampers

Backdraft dampers are available for either gravity or motorized operation (motor kit optional). Dampers feature square galvanized steel frame, multi-leaf, roll formed aluminum blades with nylon bearings.



Installed Accessories Illustration

### Finishes

Coatings such as Polyester Powder Coat, Epoxy Powder Coat, Phenolic Epoxy Powder Coat, and others are available. See the coatings brochure for details.

### Firestat Switch

Firestat switch automatically disconnects the unit when the temperature of the air being exhausted exceeds a preset rating.

### Time-Delay Switch (Direct Drive Models Only)

The Airminder Model AM12 switch is a UL listed and CSA certified time-delay relay that operates both the fan and room light to ventilate an area even after the occupants depart. In the "On" position, the Airminder turns the light and fan on immediately. In the "Off" position, the light goes off immediately and the fan is in operation for a period of time as preset from 1 to 60 minutes.



### Speed Controllers

The Lek-Trol™ controller allows adjustment in speed to a maximum of 50% reduction, which results in a very cost effective means for system balancing. The device can be located under the motor cover to prevent unauthorized tampering or on the wall for ease of operation by the building occupants. (Available on direct drive units with ODP motors and some select TE motors. See reference table under Motor Availability).



## FILTER OPTIONS

### Filter Box

The filter box is designed for compatibility with the CIS Square Centrifugal Inline Fan. The filter box can be directly coupled to the unit inlet or installed remotely in the system duct work.

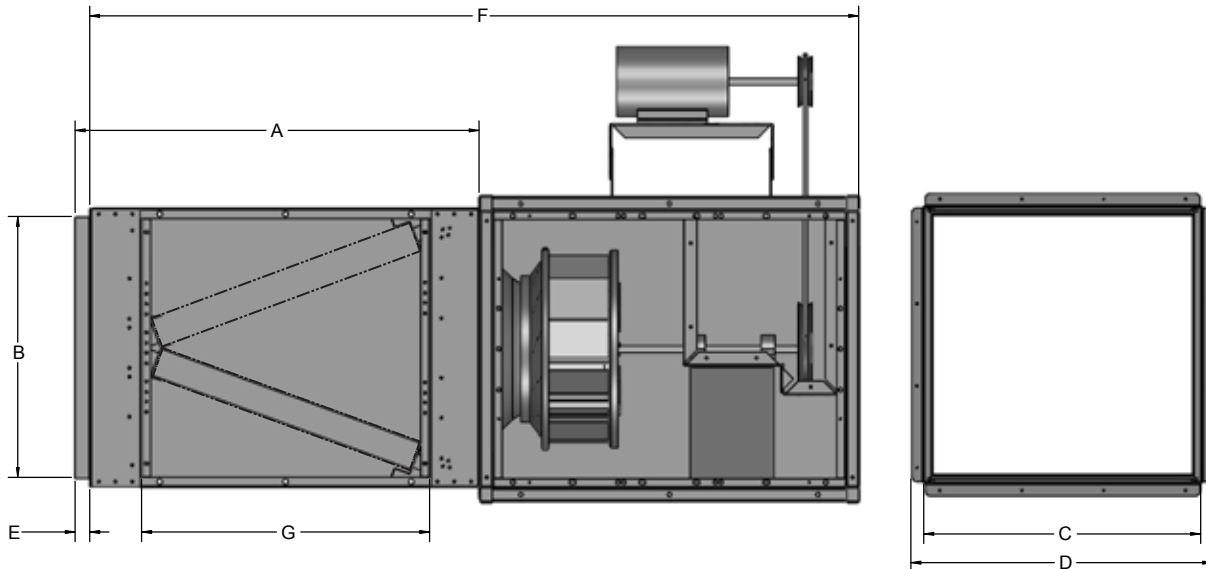


### Washable Filters

The unit is designed to handle 1" or 2" filters by utilizing tabs in the filter tracks. The filter media is washable aluminum available with a 1" or 2" inch thickness. Disposable filters are also available.

### Removable Side Panels

The side panels are removable for easy filter access from either side of the unit.



### Direct Drive Dimensions

Model	A	B	C	D	E	F	G	Filters Qty / Size
CIS085	26.96	12.67	13.90	15.75	1.00	42.22	20.89	1 14 x 20
CIS095	26.96	12.67	13.90	15.75	1.00	50.0	20.89	1 14 x 20
CIS115	28.87	18.67	19.80	21.64	1.00	55.0	20.37	2 20 x 20

### Belt Drive Dimensions

Model	A	B	C	D	E	F	G	Filters Qty / Size
CIS100BC	26.96	12.67	13.90	15.75	1.00	49.97	20.89	2 14 x 20
CIS120 CIS125BC	34.70	18.67	19.80	21.64	1.00	60.71	26.32	3 20 x 25
CIS155 CIS165BC	30.08	24.78	25.81	27.66	1.00	62.08	21.33	4 20 x 25
CIS205BC	35.08	24.78	25.81	27.66	1.00	67.08	26.28	4 25 x 25
CIS225BC	35.22	29.46	30.41	32.98	1.50	69.73	25.95	4 16 x 25 4 14 x 25
CIS275BC	36.05	36.71	38.47	41.04	1.50	78.55	25.71	4 25 x 25 4 14 x 25
CIS335BC	37.35	45.21	46.87	49.44	1.50	83.86	25.91	15 16 x 25
CIS420BC	38.78	55.57	57.17	59.74	1.50	91.28	25.27	10 16 x 25 5 25 x 25

All dimensions in inches.

### Pressure Drop

Model	Aluminum Washable Rated at 350 FPM		Pleated Rated at 500 FPM	
	1"	2"	1"	2"
CIS085	0.023	0.036	0.24	0.22
CIS095 CIS100BC	0.011	0.016	0.24	0.22
CIS115	0.015	0.024	0.24	0.22
CIS120BC CIS125BC	0.009	0.013	0.24	0.22
CIS155BC CIS165BC	0.010	0.016	0.24	0.22
CIS205BC	0.009	0.013	0.24	0.22
CIS225BC	0.010	0.016	0.24	0.22
CIS275BC	0.012	0.019	0.24	0.22
CIS335BC	0.013	0.020	0.24	0.22
CIS420BC	0.015	0.024	0.24	0.22

## MOTOR AVAILABILITY



### Green Plus Electronically Commutated Motor

The Green Plus (GP) option utilizes EC motors to provide significantly greater efficiency, flexibility, and controllability over standard direct drive permanent split capacitor (PSC) motors. Using the included potentiometer, the Green Plus motors can be turned down to as low as 80% the max operating speed while maintaining 90% efficiency through the operating range. Additionally, the Green Plus can accept 0-10V input to tie to building management systems, allowing for savings in not only direct fan energy consumption but reducing the exhaust of conditioned air during off peak hours as well. All Green Plus motors come in open enclosure or totally enclosed for usage with 115V-208V/230V or 460V, single phase, 50/60 Hz applications.

Model	Size	Tap	ECM HP
CIS	85	V	1/6
	85	S	1/6
	85	R	1/6
	85	Q	1/6
	95	V	1/6
	95	S	1/6
	95	R	1/6
	95	Q	1/6
	115	V	1/6
	115	S	1/6
	115	R	1/6
	115	Q1	1/4
	115	Q2	1/6

## MOTOR SELECTION

After choosing a fan model from the Direct Drive or Belt Drive Performance Data sections, it is important to review the motor availability charts in this section before specifying electric motors for your particular needs. Factors which influence the selection process are discussed below.

### Electric Power Considerations

First, determine the nature of the electric power feeding the motor. Is it single phase or three phase power? Next, determine the required line voltage. Is it 115V, 230V, 460V? If your HVAC application is in the U.S., the frequency of the alternating current will be 60 Hz. All of North America and most of Central and South America use 60 Hz, as does Saudi Arabia. Most other countries in the world use 50 Hz.

### Environmental Considerations

Standard motors supplied with fans are called Open Drip Proof (ODP) motors. Other types of motors may be required to meet specific field conditions; high temperature (50°C) or Totally Enclosed (TE) are two examples. Hazardous environments require Explosion Proof motors. Standard Explosion Proof motors are rated for Class 1, Group D, Div. 1 and Class II, Groups F and G, Div. 1 applications. Motors for other classes and groups may also be available. Please consult your local representative for information.

### Fixed Speed Motor Control

Two-speed motors, used in conjunction with external switches or sensors (gas concentration, odor, temperature), are used to quickly adjust the airflow through the ventilator by changing from one fixed speed to another. Two speed motors operate at either 1800 and 1200 RPM (2 speed, 2 windings) or 1800 and 900 RPM (2 speed, 1 winding). However, 2 speed, 1 winding motors are available only in 3 phase power. A single operating voltage must be specified because dual-voltage versions are not available in a 2-speed motor.

### Variable Speed Motor Control

YORK® by Johnson Controls offers Lek-Trol™ solid state controllers to alter the high speed of most direct drive motors by as much as 50%. If variable speed is required, check the Lek-Trol™ availability table on the following page to verify that controllers exist for the fan model selected. Remember, Lek-Trol™ controllers are currently only available for direct drive motors. Motors suitable for use with field supplied Frequency Inverters (variable speed control) can be supplied for belt drive models. Contact your local representative.

### High-Efficiency Motors

High-efficiency motors that comply with the requirements of the Energy Policy Act of 1992 are available.

### Direct Drive Motor Ability

The following chart lists the various motor options available for each of the direct drive fan models. Once a fan model is selected, this chart can be used to determine if a suitable motor is available. (If not, another selection may have to be made from the fan performance charts). Look under the nominal RPM heading to determine which fans have 2-speed and 3-speed motors.

## Direct Drive Motor Options

Model	Nominal RPM				1 Phase								3 Phase				
	1050 V	1300 V	1550 V	1725 V	115 Volts			200 - 240 Volts					200 - 460 Volts				
					Open Drip Proof	Totally Enclosed	Expl. Proof (4)	Open Drip Proof	Fully Enclosed	50 hz	50°C	Expl. Proof (4)	Open Drip Proof	Fully Enclosed	50 hz	50°C	Expl. Proof (4)
CIS085RC					-	yes	-	Use TE Motors	yes	yes	yes	-	-	-	-	-	-
CIS095V/S/RC	X	X	X		yes	yes (1)	-		yes (1)	yes (1)	yes (1)	-	-	-	-	-	-
CIS095QC				X	yes	yes	yes		yes	yes	yes	yes (5)	-	-	-	-	yes (6)
CIS115V/S/RC	X	X	X		yes	yes (1)	-		yes (1)	yes (1)	yes (1)	-	-	-	-	-	-
CIS115Q1C				X (3)	yes	-	-		-	-	-	-	-	-	-	-	-
CIS115Q2C				X	yes	yes	yes		yes	yes	yes	yes (5)	-	-	-	-	yes (6)

(1) High speed only.

(2) 200V - 240V, 380V, 415V, 460V.

(3) Nominal 1650 RPM.

(4) Cls. I, Grp. D, Div. I/Cls. II, Grp. F & G, Div. I. Not available with 50 Hz.

(5) 230V only. Not available in 200V or 208V.

(6) 230V and 460V only.

**Caution:** Hazardous environments require that fans be built for such service. (Care must be taken regarding the location of these fans in the duct run and surrounding environment). All belt drive inline fans, regardless of manufacturer, inherently leak. Additionally, the flat access panels supplied are not designed to provide air-tight service. Duct systems, except those fully welded, are not air-tight.



## MOTOR AVAILABILITY

### Lek-Trol™ Controller Options

The table below shows the availability of Lek-Trol™ controllers for direct drive models. There is a controller available for all size models. Not all totally enclosed motors are currently available with variable speed control.

Model	60 Hz.					50 Hz.		
	Open Drip Proof	Totally Enclosed				Totally Enclosed		
	115 V	115 V	200 V	208 V	230 V	110 V	220 V	240 V
CIS085RC	-	LT30	LT35	LT35	LT35	LT35	LT35	LT35
CIS095V/S/RC	LT30	LT30	LT35	LT35	LT35	LT35	LT35	LT35
CIS095QC	LT45	LT30	LT35	LT35	LT35	LT35	LT35	LT35
CIS115V/S/RC	LT50	-	-	-	-	-	-	-
CIS115Q1C	LT40	-	-	-	-	-	-	-
CIS115Q2C	LT40	-	-	-	-	-	-	-

Lek-Trol™ controllers indicated for multi-speed models are applicable only for the high speed. Do not use on low or medium speed for multi-speed models.

### Belt Drive Motor Availability

The chart below lists horsepower, voltages, and enclosure types. After selecting a model and horsepower that meets performance requirements, an engineer can verify that the desired voltage and enclosure are the same (or smaller) as the maximum NEMA motor frame shown for each model (see NEMA Motor Frame Size chart).

HP	Single Phase					200V, 230V, 460V or 575V Three Phase			
	Open Drip Proof		TE	Explosion Proof	2 Speed 2 Wdg.	Open Drip Proof	TE	Explosion Proof	2 Speed 2 Wdg.
	115V	230 V	115/200						
1/4	48	48	48	46/58	48	48	48	48	-
1/3	46/58	46/58	56	56	56	56	56	56	-
1/2	46/58	46/58	56	56	56	56	56	56	56
3/4	56	56	56	56	56	56	56	56	56
1	56	56	56	56	56	56	56	56	145T
1 1/2	56	56	145T	184T	-	56	56	56	182T
2	145T	145T	182T	182T	-	56/145T	145T	145T	182T
3	184T	184T	184T	215T	-	56/145T	182T	182T	184T
5	184T	184T	184T	-	-	184T	184T	184T	215T
7 1/2	-	-	-	-	-	213T	213T	213T	215T
10	-	-	-	-	-	215T	215T	215T	256T

On horsepower less than 1 1/2, motor frame sizes may change due to variations in voltage, special features and motor manufacturer.

### NEMA Motor Size Frame

The chart to the left summarizes the largest allowable NEMA frame sizes for motors used on belt drive models.

Model	Max Frame Size
CIS100BC	213 T
CIS120BC	213 T
CIS125B(H)C	213 T
CIS155BC	213 T
CIS165BC	213 T
CIS205B(H)C	213 T
CIS225B(H)C	213 T
CIS275BC	215 T
CIS335BC	215 T
CIS420BC	215 T

## CIS085, CIS095 & CIS115 | DIRECT DRIVE

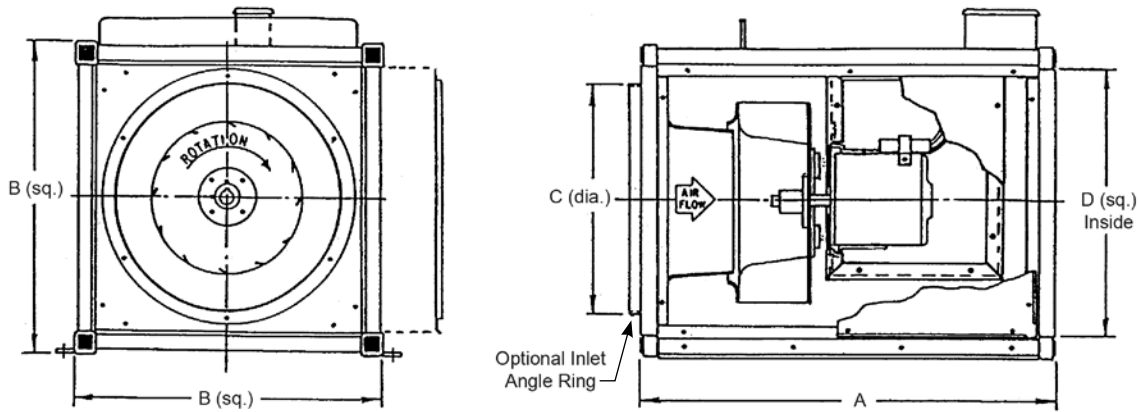
The following chart lists the various motor options available for each of the direct drive fan models. Once a fan model is selected, this chart can be used to determine if a suitable motor is available. (If not, another selection may have to be made from the fan performance charts). Look under the nominal RPM heading to determine which fans have 2-speed and 3-speed motors. Centrifugal Inline direct drive models (except size 085) are available with single and multi-speed motors. Multi-speed motors are designated V (1050 RPM), S (1300 RPM), and R (1550 RPM). CIS085R is an exception being a single speed motor. Q, Q1, Q2 (1725/1760 RPM) are single speed motors. A single Centrifugal Inline fan may be suitable for several requirements by a simple wiring change. This feature provides flexibility for a variety of reasons, including energy savings, future expansion or unexpected field variations.

By using Lek-Trol™ variable speed controllers, the high speed flow rate of most models can be reduced by as much as 50%. Do not use on medium or low speed for multi-speed models.

When compared to belt drive models, Centrifugal Inline direct drive fans require less maintenance, have a simpler construction, cost less, and are lighter in weight.

Centrifugal Inline direct drive models are available in three sizes (085, 095, 115). Capacities range from below 500 CFM to over 2750 CFM, with static pressures from 0" to above 1 1/2".

Performances in 50 Hz applications will be less than shown below; consult with your local representative.



Model	Galv. Side Panel	Galv. Venturi	A	B (sq.)	C (dia.)	D (sq.)	Est. Ship Weight
CIS085RC	20 gauge	18 gauge	16 1/8	15 3/4	11 3/4	13 3/4	35 lbs
CIS095VC, SC, RC, & QC	20 gauge	16 gauge	24 1/8	15 3/4	11 3/4	13 3/4	50 lbs
CIS115VC, SC, RC, Q1C, & Q2C	20 gauge	16 gauge	27 1/4	21 3/4	14 1/2	19 3/4	70 lbs

All dimensions in inches.

Fan Model	Nominal			Tip	0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP			
	HP	Max Watts	RPM		CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones
CIS085V	1/20(1)	-(1)	1050	2715	386	3.5	275	3.4	146	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIS085S	1/12(1)	-(1)	1300	3361	519	5.4	439	5.5	347	5.4	249	5.4	128	5.4	-	-	-	-	-	-	-	-	-	-	-	-
CIS085R	1/6(1)	-(1)	1550	4007	642	8.0	583	7.8	513	7.8	435	7.7	354	7.7	269	7.7	-	-	-	-	-	-	-	-	-	-
CIS085Q	1/4(1)	-(1)	1725	4460	647	9.4	592	9.3	520	9.1	441	8.9	360	8.9	276	8.9	-	-	-	-	-	-	-	-	-	-
CIS095V	1/20	125	1050	3221	429	2.7	308	3.2	247	3.8	199	4.2	157	4.7	118	5.1	-	-	-	-	-	-	-	-	-	-
CIS095S	1/12	164	1300	3988	633	5.0	528	4.8	433	5.2	366	5.6	314	5.9	260	6.3	152	7.0	-	-	-	-	-	-	-	-
CIS095R	1/6	212	1550	4755	849	7.9	775	7.5	698	7.4	616	7.5	546	7.7	476	7.9	333	8.3	162	8.8	-	-	-	-	-	-
CIS095Q	0.25	338	1725	5292	1111	10.6	1061	10.1	1011	10.0	960	10.0	907	10.0	851	10.6	728	13.0	556	12.2	200	10.8	-	-	-	-
CIS115V	1/6	437	1050	3788	1299	5.4	1061	5.6	876	5.8	754	5.9	663	6.1	595	6.3	461	6.9	335	7.5	192	8.2	-	-	-	-
CIS115S	1/3	494	1300	4690	1566	6.9	1382	6.8	1201	6.7	1041	6.7	922	6.6	830	6.9	655	7.5	487	8.0	305	8.7	103	9.5	-	-
CIS115R	1/2	566	1550	5592	1919	8.3	1779	8.2	1619	8.0	1459	7.9	1307	7.8	1167	7.7	932	8.1	710	8.6	465	9.3	213	10.0	-	-
CIS115Q1	1/2	701	1650	5953	2216	12.1	2133	11.6	2042	11.4	1952	11.3	1863	11.1	1755	11.0	1512	10.6	1220	10.2	873	10.6	491	11.1	-	-
CIS115Q2	3/4	894	1725	6223	2764	15.2	2673	14.0	2571	13.8	2476	13.7	2383	13.5	2285	13.3	2075	13.0	1823	12.6	1447	12.1	956	12.3	-	-

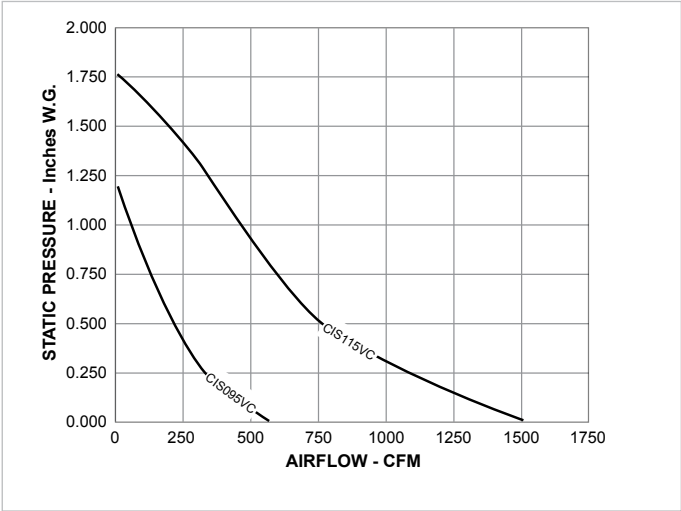
(1) Available on EC Motor only.

CIS | DIRECT DRIVE

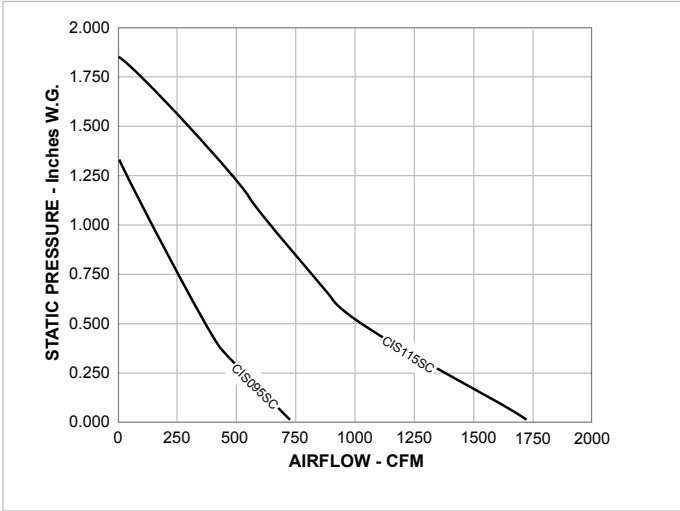
Fan Curves

The fan curves illustrated here show the range of capacities available for direct drive units. Each graph shows the performance of several models at one particular nominal speed. Fan curves provide a quick method for selection of a fan unit based on design point requirements. The direct drive performance chart on the previous page provides the tabular data (CFM and static pressure) used to plot the fan curves. In addition, horsepower, tip speed and sones are tabulated. Since sound is normally an important factor in the selection of a fan, an engineer will usually want to select the “slowest” unit which meets CFM and SP requirements.

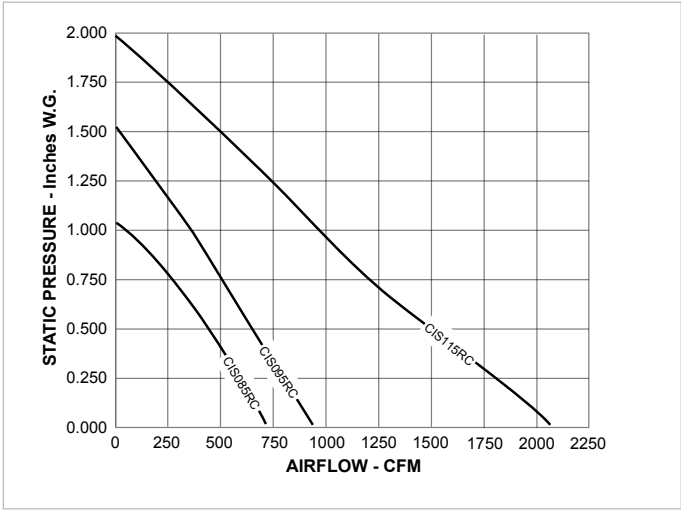
Nominal 1050 RPM



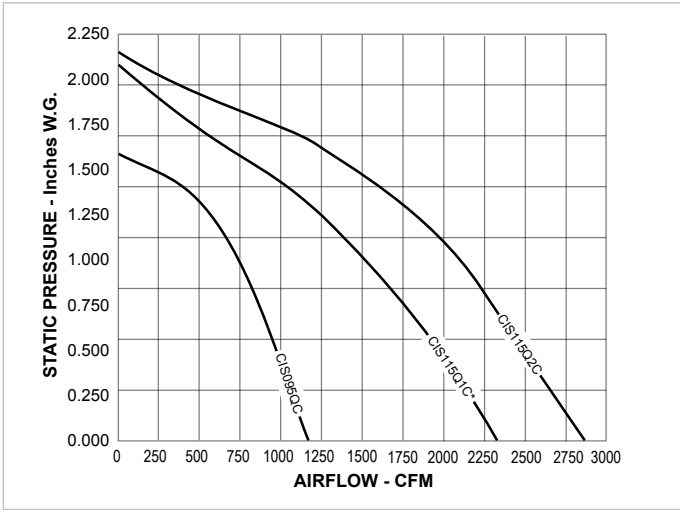
Nominal 1300 RPM



Nominal 1550 RPM



Nominal 1550 RPM



Performance shown is for installation Type B: Free Inlet, Ducted Outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in fan zones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for Installation Type B: free inlet fan zone levels. Performance ratings do not include the effects of appurtenances in the airstream. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

## CIS | BELT DRIVE

### Performance Data

The eleven belt drive models shown on the following pages have sizes and capacities ranging from below 400 CFM to above 27,000 CFM, with static pressures from 0" to above 3.5". All models are available in up to eight different horsepower sizes with a wide range of RPM. Two-speed motors are commonly used to increase this flexibility.

The data provided for each belt drive model includes:

- Performance Chart
- Fan Curve Graph
- Elevation drawing showing overall dimensions

Each curve graphically displays the range of capacities available for each model, in most cases beyond the specifics shown in the tabular data. The maximum performance afforded by each horsepower is indicated by dashed lines and the RPM is indicated by solid lines.

Some models have graphs that show both shaded and unshaded areas. Selection should be made from the unshaded area only. Shaded areas reflect unstable performance ("surge"), a characteristic typical of backwardly inclined wheels, and should be avoided. These unstable regions are not shown in the tabular data.

The highest RPM shown for a specific horsepower in the tabular data is the maximum speed that for any point along the performance curve, the BHP will not exceed the available horsepower.

It is important to note that while it is common industry-wide practice to exceed a "nominal" horsepower by using a motor's service factor, we use a conservative portion of the service factor, allowing half to remain a true "safety" factor. Our software also factors an additional allowance for belt drive losses into the BHP calculations to ensure proper motor selection. This allowance is currently the most conservative in the industry.

Use the Motor Availability chart (see Motor Selection section) to select motor enclosures and voltages which can be installed in the fans.

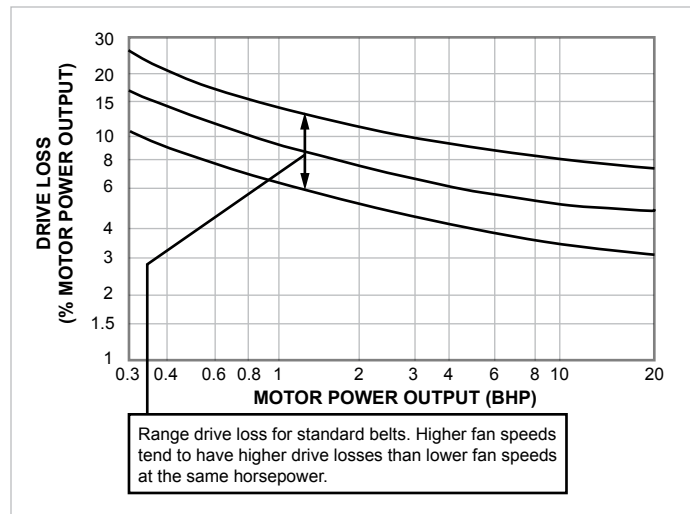
**Note:** Centrifugal Inline fans are only one component of a total system. As such, performance is directly affected by the system. It is critical that system designers determine actual system losses to ensure that the actual flow is specified in the system range.

### Belt Drive Losses

The air performance tables shown in this catalog do include drive losses. When comparing the data found in our charts to data that does not include drive losses, the chart below will help estimate our equivalent brake horsepower (BHP).

The AMCA Review Committee has developed the chart shown below for the purpose of estimating belt drive losses. To calculate total BHP (including drive losses): Find the BHP of your operating point on the x-axis on the graph below. Follow the vertical line to the lines indicating the range of drive losses. Look at the y-axis on the left and find the drive loss percentage. Calculate the total BHP by adding the drive loss to the operating point BHP. For BHP's below 0.3, use 30%.

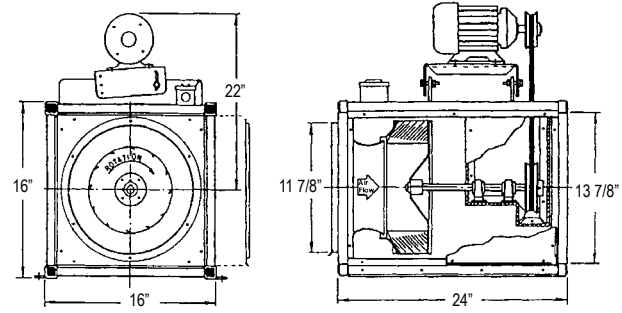
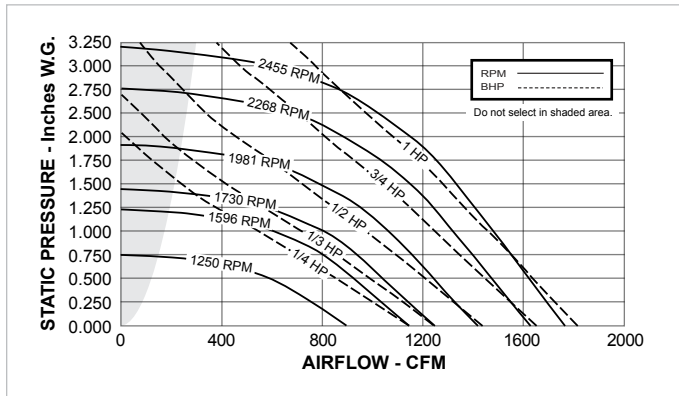
### Drive Loss Reference Chart



**For totally enclosed, explosion proof, multi-speed and all 1.0 Service Factor motors, fan BHP plus drive losses should not exceed motor rated HP.**

*Graph reprinted from AMCA publication 203, with the express written permission from the Air Movement and Control Association, Inc., 30 West University Drive, Arlington Heights, IL 60004-1983.*

# CIS100BC | BELT DRIVE



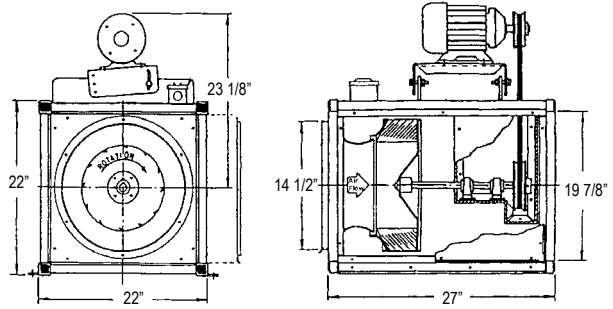
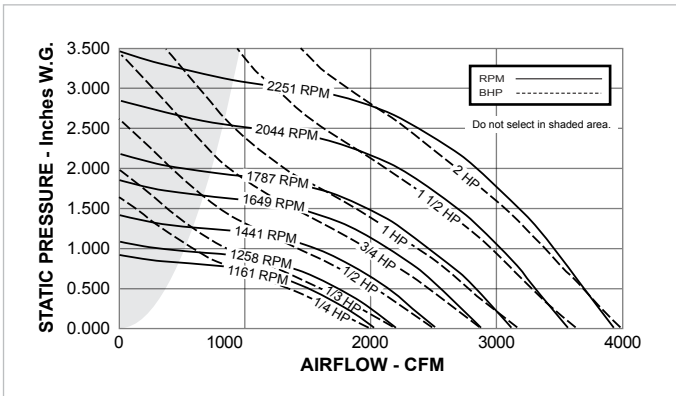
Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/2396) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 16 in (sq)	Max. RPM = 2840 (1 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 63/43 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/4	900	2820	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1000	3133	554	201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			5.2	0.07	5.3	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1100	3447	643	437	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			6.2	0.09	6.3	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1200	3760	728	573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			7.4	0.12	7.5	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1300	4073	811	678	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			8.2	0.15	8.3	0.16	8.3	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	4387	892	772	614	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		9.1	0.18	9.1	0.20	9.2	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500	4700	972	861	737	530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		10.1	0.22	10.0	0.24	10.1	0.24	10.1	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1596	5001	1047	944	834	681	381	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		11.0	0.27	10.7	0.28	10.7	0.29	10.8	0.29	10.8	0.23	-	-	-	-	-	-	-	-	-	-	-	-
1/3	1625	5091	1070	968	863	720	480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1650	5170	1089	990	886	752	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			11.5	0.30	11.2	0.31	11.1	0.32	11.2	0.32	11.2	0.29	-	-	-	-	-	-	-	-	-	-	-
	1675	5248	1109	1011	909	783	589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			11.7	0.31	11.4	0.32	11.4	0.34	11.4	0.34	11.4	0.31	-	-	-	-	-	-	-	-	-	-	-
	1700	5326	1128	1032	932	814	629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12.0			0.32	11.6	0.34	11.6	0.35	11.6	0.36	11.6	0.33	-	-	-	-	-	-	-	-	-	-	-	
1730	5420	1151	1057	959	849	677	339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		12.3	0.34	11.9	0.36	11.8	0.37	11.9	0.38	11.9	0.36	11.9	0.27	-	-	-	-	-	-	-	-	-	
1/2	1775	5561	1186	1094	999	895	747	512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1825	5718	1224	1135	1043	946	815	627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			13.3	0.40	12.8	0.41	12.7	0.43	12.7	0.44	12.7	0.44	12.7	0.40	-	-	-	-	-	-	-	-	-
	1900	5953	1281	1197	1109	1019	909	749	497	-	-	-	-	-	-	-	-	-	-	-	-	-	
14.1			0.45	13.7	0.46	13.4	0.48	13.4	0.49	13.4	0.50	13.4	0.48	13.4	0.40	-	-	-	-	-	-	-	
1981	6207	1342	1262	1178	1092	997	870	696	306	-	-	-	-	-	-	-	-	-	-	-	-		
		15.0	0.50	14.5	0.52	14.1	0.54	14.0	0.56	14.0	0.56	14.0	0.56	14.0	0.52	14.1	0.37	-	-	-	-	-	
3/4	2075	6501	1413	1337	1258	1176	1092	988	845	659	-	-	-	-	-	-	-	-	-	-	-		
	2150	6736	1470	1397	1321	1242	1163	1072	953	795	547	-	-	-	-	-	-	-	-	-	-	-	
			17.1	0.64	16.6	0.66	16.1	0.68	15.9	0.70	15.8	0.71	15.7	0.72	15.7	0.71	15.7	0.68	15.8	0.57	-	-	-
	2200	6893	1507	1437	1362	1286	1208	1123	1016	874	697	-	-	-	-	-	-	-	-	-	-	-	
17.9			0.69	17.4	0.71	16.8	0.73	16.6	0.75	16.4	0.76	16.3	0.77	16.3	0.77	16.3	0.74	16.2	0.68	-	-	-	
2268	7106	1558	1490	1418	1344	1269	1191	1100	980	824	583	-	-	-	-	-	-	-	-	-	-		
		18.9	0.75	18.5	0.77	17.9	0.79	17.5	0.81	17.3	0.83	17.2	0.84	17.2	0.85	17.1	0.83	17.0	0.79	17.0	0.68	-	-
1	2325	7285	1601	1534	1464	1392	1320	1246	1161	1052	914	740	-	-	-	-	-	-	-	-	-		
	2350	7363	1620	1553	1484	1414	1342	1269	1186	1084	953	787	-	-	-	-	-	-	-	-	-	-	
			20.0	0.83	19.7	0.85	19.1	0.88	18.6	0.90	18.5	0.92	18.3	0.93	18.2	0.94	18.2	0.94	18.1	0.91	18.0	0.85	-
	2375	7441	1639	1573	1505	1435	1364	1292	1212	1115	992	843	-	-	-	-	-	-	-	-	-	-	
			21.0	0.86	20.0	0.88	19.5	0.90	19.0	0.92	18.8	0.95	18.6	0.96	18.6	0.97	18.5	0.97	18.4	0.95	18.3	0.90	-
	2425	7598	1676	1611	1545	1477	1407	1337	1262	1176	1064	923	-	-	-	-	-	-	-	-	-	-	
			21.0	0.91	21.0	0.94	20.0	0.96	19.7	0.98	19.5	1.00	19.3	1.02	19.2	1.03	19.1	1.04	19.1	1.02	18.9	0.98	-
2455	7692	1699	1634	1569	1502	1433	1364	1292	1209	1102	970	-	-	-	-	-	-	-	-	-	-		
		22.0	0.95	21.0	0.97	21.0	0.99	20.0	1.01	19.9	1.04	19.7	1.06	19.6	1.07	19.5	1.08	19.4	1.06	19.3	1.03	-	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.



CIS120BC | BELT DRIVE

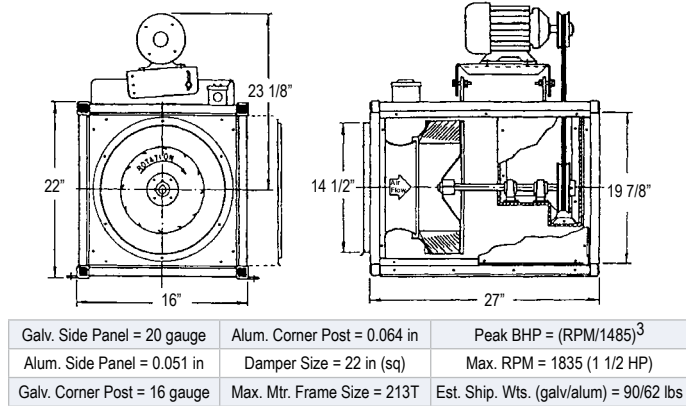
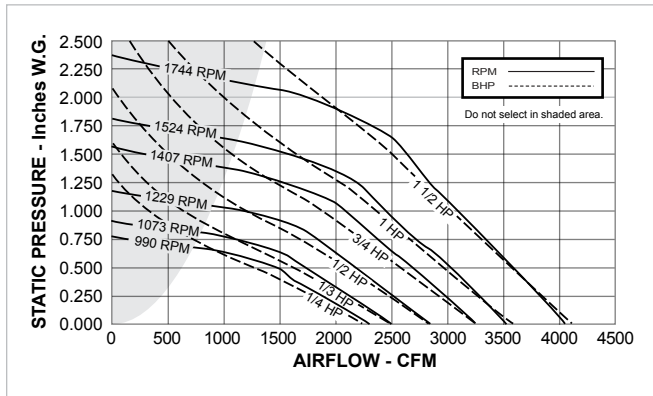


Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/1743) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 22 in (sq)	Max. RPM = 2530 (2 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 74/51 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/4	775	2847	948		-		-		-		-		-		-		-		-		-	
			3.6	0.09	-		-		-		-		-		-		-		-		-	
	925	3398	5.6	0.15	5.2	0.12	-		-		-		-		-		-		-		-	
1/3	1161	4265	1309		645		-		-		-		-		-		-		-		-	
			5.6	0.15	5.2	0.12	-		-		-		-		-		-		-		-	
	1225	4500	8.8	0.33	8.4	0.35	8.2	0.34	-		-		-		-		-		-		-	
1/2	1441	5293	1800		1507		989		-		-		-		-		-		-		-	
			8.0	0.29	7.6	0.30	7.5	0.27	-		-		-		-		-		-		-	
	1400	5153	10.3	0.49	10.0	0.51	9.6	0.52	9.6	0.50	-		-		-		-		-		-	
3/4	1500	5510	2255		2053		1792		1420		-		-		-		-		-		-	
			9.6	0.42	9.2	0.43	8.9	0.44	9.0	0.38	-		-		-		-		-		-	
	1649	6057	13.2	0.79	12.9	0.82	12.5	0.83	12.1	0.85	12.0	0.84	12.1	0.77	-		-		-		-	
1	1715	6300	2332		2140		1892		1560		767		-		-		-		-		-	
			10.8	0.53	10.5	0.55	10.1	0.56	10.0	0.55	10.1	0.40	-		-		-		-		-	
	1825	6704	16.2	1.06	15.8	1.10	15.4	1.12	14.9	1.14	14.4	1.15	14.2	1.14	14.3	1.08	14.5	0.82	-		-	
1 1/2	1925	7071	2443		2264		2032		1747		1284		-		-		-		-		-	
			11.6	0.60	11.2	0.62	10.8	0.64	10.6	0.63	10.6	0.58	-		-		-		-		-	
	2044	7508	19.5	1.48	19.3	1.52	19.1	1.55	19.0	1.58	18.9	1.60	18.7	1.61	19.0	1.61	19.0	1.58	18.9	1.50	18.8	1.18
2	2075	7622	2787		2628		2452		2235		1978		1609		-		-		-		-	
			13.7	0.84	13.4	0.87	13.1	0.89	12.7	0.90	12.4	0.90	12.5	0.85	-		-		-		-	
	2125	7806	21.0	1.66	21.0	1.70	21.0	1.74	20.0	1.77	20.0	1.79	19.7	1.81	19.6	1.81	19.6	1.80	19.6	1.75	19.6	1.64

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. For further information on estimating belt drive losses and motor service factors see page 13. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet sone levels. Performance ratings do not include the effects of appurtenances in the airstream.

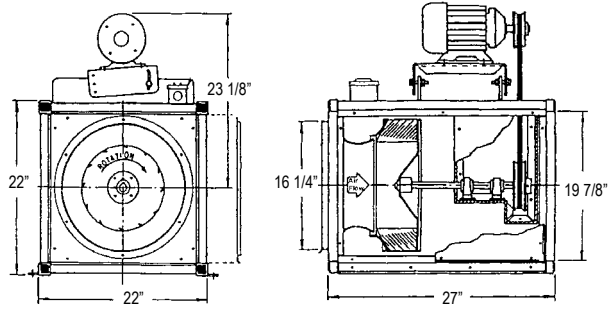
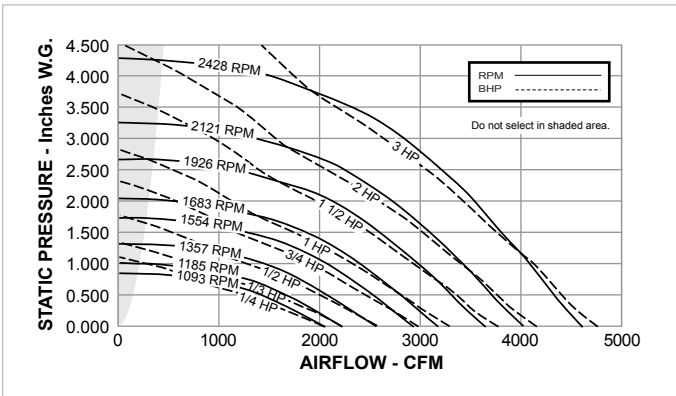
CIS125BC | BELT DRIVE



HP	RPM	Tip Speed FPM	0.250 SP "		0.500 SP "		0.750 SP "		1.000 SP "		1.250 SP "		1.500 SP "		1.750 SP "		2.000 SP "		2.250 SP "		2.500 SP "		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/4	915	3803	1687	1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	950	3948	8.6	0.23	8.2	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			1789	1310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	990	4115	9.1	0.25	8.8	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1020	4239	1901	1462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			1983	1559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	1050	4364	10.2	0.31	9.9	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1073	4459	2065	1647	894	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.4	0.34	10.1	0.35	9.8	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	1110	4613	11.1	0.44	10.9	0.46	10.9	0.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1150	4779	2128	1714	1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.5	0.36	10.3	0.37	10.1	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1190	4946	11.7	0.49	11.4	0.50	11.4	0.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1229	5108	2228	1823	1337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			12.0	0.54	11.7	0.55	11.8	0.57	11.7	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1265	5257	12.4	0.59	12.1	0.60	12.1	0.62	12.1	0.58	-	-	-	-	-	-	-	-	-	-	-	-	-
	1335	5548	2335	1941	1541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			13.2	0.68	13.0	0.71	12.9	0.71	13.0	0.72	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1370	5694	13.6	0.74	13.4	0.76	13.4	0.77	13.5	0.78	12.98	-	-	-	-	-	-	-	-	-	-	-	-
	1407	5848	2916	2605	2264	1967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			14.0	0.80	13.9	0.82	13.9	0.84	14.1	0.85	13.8	0.78	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1435	5964	14.4	0.84	14.3	0.87	14.2	0.88	14.5	0.90	14.3	0.86	-	-	-	-	-	-	-	-	-	-	-
	1465	6089	3082	2784	2457	2182	1738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			14.8	0.90	14.7	0.93	14.6	0.94	14.9	0.95	14.8	0.93	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1495	6213	15.2	0.95	15.1	0.98	15.0	1.00	15.2	1.01	15.3	1.00	15.2	0.87	-	-	-	-	-	-	-	-	-
	1524	6334	3156	2867	2549	2271	1896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.5	1.00	15.4	1.04	15.3	1.05	15.5	1.07	15.8	1.08	15.7	0.98	-	-	-	-	-	-	-	-	-
1 1/2	1555	6463	15.9	1.07	15.8	1.10	15.6	1.12	15.8	1.13	16.3	1.14	16.2	1.07	-	-	-	-	-	-	-	-	-
	1585	6587	3379	3111	2834	2534	2277	1807	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			16.2	1.13	16.2	1.17	16.0	1.18	16.1	1.20	16.8	1.21	16.7	1.17	-	-	-	-	-	-	-	-	-
1 1/2	1615	6712	16.6	1.19	16.6	1.23	16.3	1.25	16.4	1.26	17.1	1.28	17.2	1.25	17.1	1.10	-	-	-	-	-	-	-
	1645	6837	3526	3273	3010	2712	2471	2127	1480	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			17.0	1.25	17.0	1.30	16.7	1.32	16.6	1.33	17.3	1.35	17.8	1.34	17.6	1.23	-	-	-	-	-	-	-
1 1/2	1675	6961	17.4	1.32	17.4	1.37	17.2	1.39	16.9	1.41	17.6	1.42	18.4	1.43	18.2	1.34	-	-	-	-	-	-	-
	1705	7086	3673	3433	3182	2892	2648	2399	1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			17.8	1.39	17.8	1.44	17.6	1.46	17.3	1.48	17.9	1.50	18.8	1.51	18.8	1.44	18.5	1.21	-	-	-	-	-
1 1/2	1744	7248	3747	3512	3265	2985	2735	2500	2096	1350	-	-	-	-	-	-	-	-	-	-	-	-	
			18.4	1.49	18.4	1.54	18.2	1.57	17.8	1.58	18.2	1.60	19.2	1.61	19.6	1.58	19.4	1.43	-	-	-	-	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

CIS125BHC | BELT DRIVE

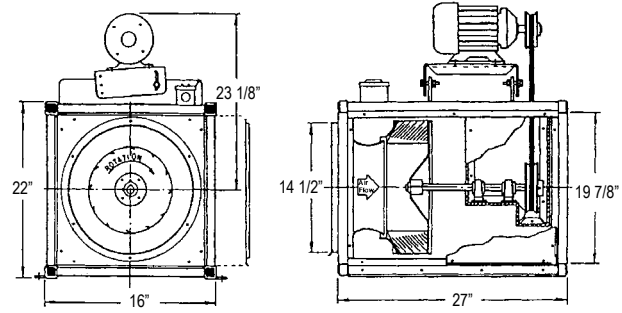
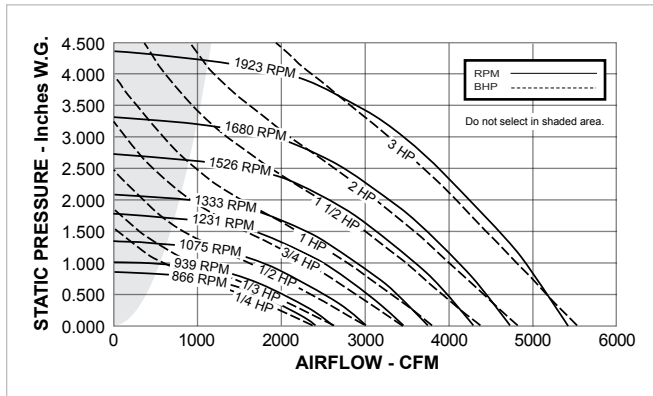


Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/1642) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 22 in (sq)	Max. RPM = 2725 (3 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 90/62 lbs

HP	RPM	Tip Speed FPM	0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/4	1093	4543	936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			9.1	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	1185	4925	976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			9.2	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	1375	5640	1340	486	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.4	0.38	10.5	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	1475	6130	1616	1154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			11.7	0.49	11.8	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1650	6858	1845	1508	870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			12.5	0.56	12.6	0.56	13.0	0.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1825	7585	2022	1724	1288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			13.6	0.64	13.6	0.65	13.8	0.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	2005	8333	2142	1874	1524	862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			14.5	0.70	14.5	0.72	14.6	0.72	15.0	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2200	9143	2329	2095	1806	1371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.8	0.82	15.8	0.83	15.9	0.85	16.0	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-
4	2428	10091	2436	2221	1949	1600	985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			16.4	0.89	16.5	0.91	16.6	0.92	16.7	0.91	17.1	0.77	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

CIS155BC | BELT DRIVE

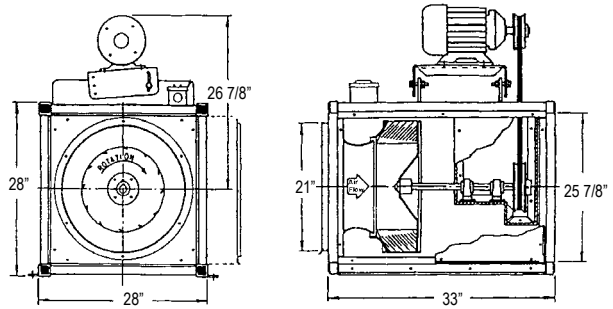
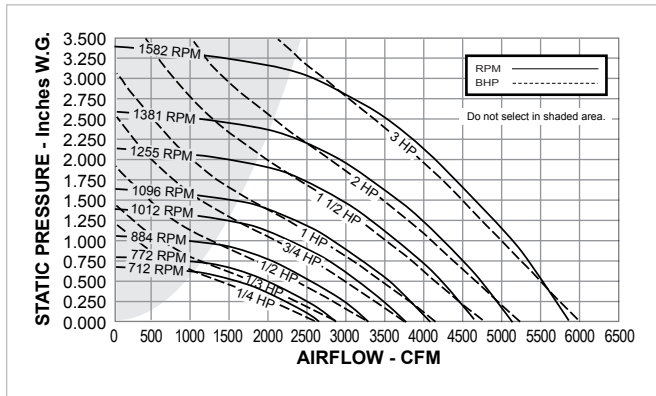


Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/1301) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 28 in (sq)	Max. RPM = 2150 (3 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 137/97 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/4	750	3669	1766	0.19	1232	0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	866	4237	2152	0.29	1762	0.29	1180	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	900	4403	2263	0.32	1902	0.33	1403	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	939	4594	2389	0.36	2053	0.37	1621	0.37	580	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	1025	5015	2663	0.47	2375	0.49	2004	0.48	1531	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1075	5259	2820	0.54	2546	0.56	2219	0.56	1821	1134	0.47	-	-	-	-	-	-	-	-	-	-	-	-
3/4	1150	5626	3052	0.65	2797	0.68	2515	0.69	2168	1737	0.66	709	0.45	-	-	-	-	-	-	-	-	-	-
	1231	6023	3296	0.79	3064	0.82	2821	0.85	2519	2179	0.83	1713	0.79	-	-	-	-	-	-	-	-	-	-
1	1256	6189	3398	0.86	3175	0.89	2942	0.92	2660	2332	0.90	1935	0.88	1257	0.75	-	-	-	-	-	-	-	-
	1300	6360	3502	0.93	3288	0.97	3062	0.99	2796	2486	0.98	2140	0.97	1629	0.90	-	-	-	-	-	-	-	-
1 1/2	1333	6522	3600	1.00	3395	1.04	3174	1.06	2923	2630	1.06	2316	1.05	1874	0.75	937	-	-	-	-	-	-	-
	1375	6727	3725	1.09	3529	1.14	3315	1.16	3083	2810	1.17	2506	1.16	2145	1.04	1607	-	-	-	-	-	-	-
2	1425	6972	3873	1.21	3688	1.26	3481	1.29	3271	3016	1.31	2728	1.30	2425	1.23	2003	1249	-	-	-	-	-	-
	1475	7216	4021	1.34	3846	1.39	3646	1.42	3446	3210	1.45	2945	1.44	2661	1.41	2324	1856	-	-	-	-	-	-
3	1526	7466	4171	1.48	4006	1.54	3813	1.57	3620	3405	1.60	3163	1.59	2888	1.53	2607	2223	1675	-	-	-	-	-
	1575	7706	4315	1.62	4159	1.69	3972	1.72	3785	3589	1.77	3358	1.77	3102	1.74	2837	2526	2112	-	-	-	-	-
4	1600	7828	4389	1.70	4236	1.77	4053	1.80	3869	3683	1.86	3455	1.85	3210	1.83	2949	2663	2287	-	-	-	-	-
	1625	7950	4462	1.78	4312	1.85	4133	1.88	3952	3771	1.95	3551	1.94	3317	1.92	3060	2800	2448	-	-	-	-	-
5	1650	8073	4535	1.86	4388	1.93	4213	1.97	4035	3856	2.03	3647	2.03	3423	2.01	3170	2916	2604	-	-	-	-	-
	1680	8219	4623	1.96	4478	2.03	4309	2.07	4134	3959	2.15	3761	2.15	3644	2.13	3300	3051	2772	-	-	-	-	-
6	1725	8440	4755	2.12	4613	2.19	4463	2.24	4282	4111	2.31	3931	2.33	3720	2.31	3494	3252	3009	-	-	-	-	-
	1775	8684	4900	2.30	4763	2.38	4611	2.43	4445	4279	2.50	4113	2.54	3912	2.52	3706	3471	3235	-	-	-	-	-
7	1825	8929	5046	2.50	4913	2.58	4769	2.64	4607	4446	2.71	4284	2.75	4102	2.74	3902	3686	3457	-	-	-	-	-
	1875	9173	5192	2.71	5062	2.85	4925	2.89	4768	4611	2.93	4454	2.99	4290	2.97	4096	3899	3676	-	-	-	-	-
8	1900	9296	5264	2.81	5136	2.96	5004	3.00	4848	4693	3.04	4538	3.12	4383	3.11	4191	4000	3784	-	-	-	-	-
	1923	9408	5331	2.92	5204	3.07	5075	3.11	4922	4769	3.15	4616	3.22	4463	3.21	4279	4090	3883	-	-	-	-	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

### CIS165BC | BELT DRIVE



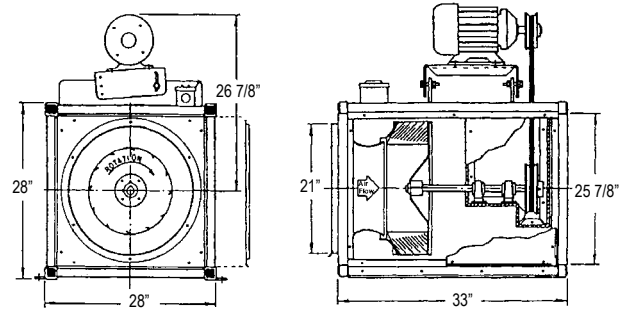
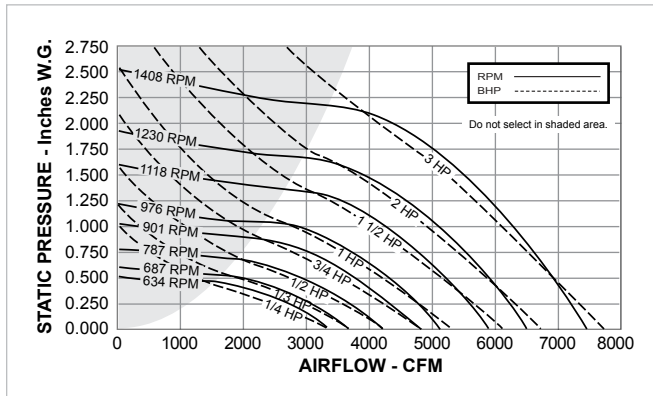
Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/1070) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 28 in (sq)	Max. RPM = 1680 (3 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 144/99 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/4	660	3229	2043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	712	3483	8.3	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	740	3620	2282	1438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	772	3777	9.9	0.29	9.4	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1096	5362	2411	1721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	830	4061	10.3	0.32	9.9	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	884	4325	2555	2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	930	4550	10.6	0.36	10.1	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4745	2815	2364	1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	970	5577	3428	3059	2619	1607	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1012	4951	13.3	0.69	12.6	0.73	11.8	0.74	11.6	0.62	-	-	-	-	-	-	-	-	-	-	-
1	1040	5088	3609	3251	2870	2087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5235	13.8	0.78	13.1	0.82	12.3	0.84	12.1	0.78	-	-	-	-	-	-	-	-	-	-	-	-
	1096	5362	3728	3380	3028	2371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1140	5577	14.4	0.85	13.6	0.88	12.8	0.92	12.5	0.88	-	-	-	-	-	-	-	-	-	-	-	-
		5773	3856	5616	3183	2653	1590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1220	5969	14.9	0.92	14.2	0.96	13.5	1.00	13.0	0.97	12.8	0.78	-	-	-	-	-	-	-	-	-	-
		6140	3966	3633	3315	2861	1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1280	6262	15.4	0.98	14.8	1.03	14.0	1.07	13.4	1.05	13.2	0.93	-	-	-	-	-	-	-	-	-	-
		6384	4152	3831	3524	3148	2422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1330	6507	16.3	1.10	15.7	1.15	15.0	1.19	14.2	1.20	14.1	1.13	-	-	-	-	-	-	-	-	-	-
		6629	4320	4009	3709	3379	2817	1858	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1381	6756	17.3	1.22	16.6	1.27	16.0	1.31	15.2	1.34	14.9	1.29	14.6	1.09	-	-	-	-	-	-	-	-
		6947	4485	4186	3893	3597	3165	2352	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1420	7143	18.1	1.34	17.6	1.40	16.8	1.44	16.1	1.48	15.6	1.45	15.4	1.33	-	-	-	-	-	-	-	
		7387	4629	4340	4054	3774	3399	2717	1704	-	-	-	-	-	-	-	-	-	-	-	-	
	1460	7583	18.7	1.46	18.1	1.52	17.4	1.56	16.8	1.61	16.1	1.59	15.9	1.51	15.7	1.20	-	-	-	-	-	
		7740	4731	4450	4168	3898	3553	2965	2082	-	-	-	-	-	-	-	-	-	-	-	-	
	1510	7883	19.1	1.54	18.6	1.60	17.9	1.65	17.3	1.70	16.5	1.70	16.3	1.64	16.1	1.42	-	-	-	-	-	
		8026	4833	4559	4281	4016	3697	3201	2400	-	-	-	-	-	-	-	-	-	-	-	-	
1550	8169	19.5	1.63	19.0	1.69	18.3	1.74	17.8	1.79	17.0	1.81	16.8	1.76	16.5	1.60	-	-	-	-	-		
	8312	4936	4667	4394	4132	3839	3417	2670	-	-	-	-	-	-	-	-	-	-	-	-		
	8455	19.9	1.72	19.5	1.79	18.8	1.83	18.3	1.89	17.6	1.92	17.2	1.88	17.0	1.75	-	-	-	-	-		
	8598	5036	4776	4507	4248	3975	3592	2929	2036	-	-	-	-	-	-	-	-	-	-	-		
1582	8741	20.0	1.82	19.9	1.89	19.3	1.93	18.8	1.99	18.1	2.03	17.6	2.00	17.4	1.90	17.1	1.60	-	-	-		
	8884	5142	4888	4623	4368	4108	3762	3188	2397	-	-	-	-	-	-	-	-	-	-			
	9027	21.0	1.92	20.0	1.99	19.8	2.04	19.3	2.09	18.7	2.15	18.0	2.13	17.9	2.06	17.6	1.85	-	-			
	9170	5300	5056	4798	4557	4305	3995	3548	2835	-	-	-	-	-	-	-	-	-	-			
1610	9313	21.0	2.09	21.0	2.16	21.0	2.21	20.0	2.26	19.5	2.33	18.8	2.32	18.5	2.27	18.3	2.13	-	-			
	9456	5461	5227	4976	4730	4494	4222	3855	3248	2480	-	-	-	-	-	-	-	-				
	9599	22.0	2.26	22.0	2.34	21.0	2.40	21.0	2.45	20.0	2.51	19.6	2.54	19.2	2.50	19.0	2.40	18.8	2.16			
	9742	5663	5440	5197	4958	4727	4486	4176	3724	3048	2197	-	-	-	-	-	-	-				
1640	9885	23.0	2.50	23.0	2.58	22.0	2.65	22.0	2.69	21.0	2.75	21.0	2.81	20.0	2.79	19.9	2.73	19.7	2.57			
	10028	5824	5609	5372	5138	4911	4688	4408	4047	3459	2752	-	-	-	-	-	-	-				
	10171	23.0	2.70	23.0	2.78	23.0	2.85	23.0	2.90	22.0	2.96	22.0	3.03	21.0	3.03	21.0	2.98	20.0	2.88			
	10314	5952	5744	5512	5282	5058	4842	4589	4265	3769	3111	-	-	-	-	-	-	-				
1670	10457	24.0	2.87	24.0	2.95	23.0	3.02	23.0	3.07	23.0	3.13	22.0	3.20	22.0	3.23	21.0	3.19	21.0	3.12			
	10600	24.0	2.95	23.0	3.02	23.0	3.07	23.0	3.13	22.0	3.20	22.0	3.23	21.0	3.19	21.0	3.12	21.0	2.93			

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.



CIS205BC | BELT DRIVE

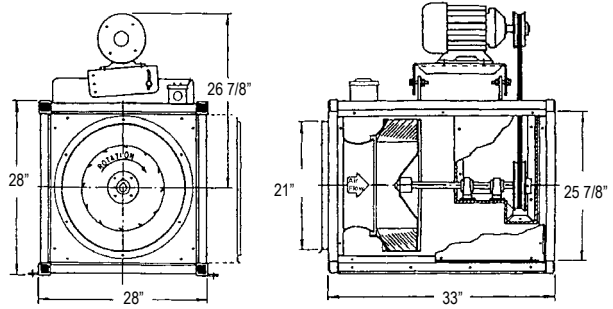
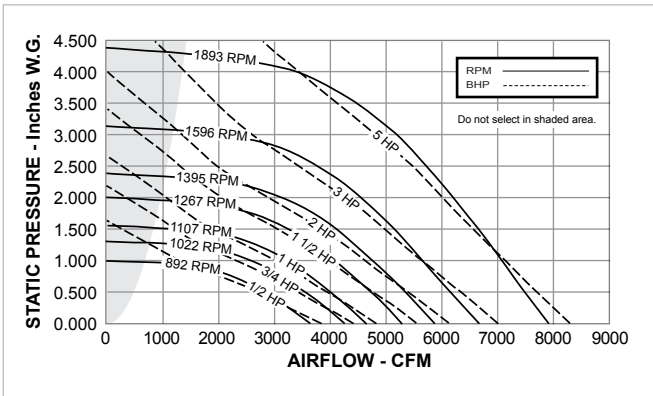


Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/953) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 28 in (sq)	Max. RPM = 1680 (3 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 152/104 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/4	550	2916	2062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	634	3361	2702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	660	3499	2875	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	687	3642	3049	1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	720	3817	3259	2345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	755	4003	3478	2710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	825	4374	3809	3306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	865	4586	4147	3603	2682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	925	4904	4498	4012	3322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	950	5036	4642	4174	3549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	1010	5354	4988	4557	4046	3225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1045	5540	5188	4777	4310	3598	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1150	6027	5783	5425	5025	4543	3830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1180	6256	5951	5608	5218	4780	4143	3121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1265	6706	6427	6110	5757	5384	4912	4251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1300	6892	6622	6313	5976	5620	5192	4615	3831	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1340	7104	6844	6545	6224	5880	5499	4989	4310	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1380	7316	7065	6776	6471	6138	5786	5333	4734	3957	-	-	-	-	-	-	-	-	-	-	-	-	-
3	1408	7464	7220	6937	6642	6316	5977	5560	5024	4324	-	-	-	-	-	-	-	-	-	-	-	-	-
			27.0	2.86	27.0	2.96	26.0	3.05	24.0	3.14	23.0	3.20	22.0	3.23	22.0	3.21	22.0	3.11	-	-	-	-	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

CIS205BHC | BELT DRIVE

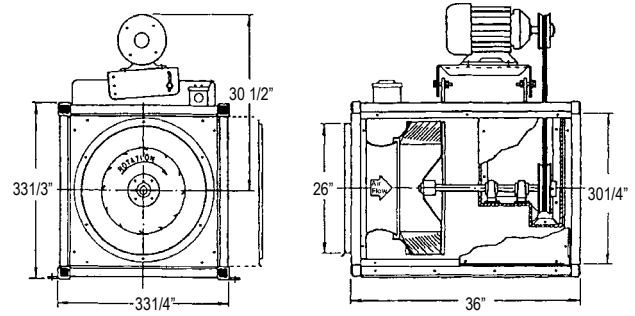
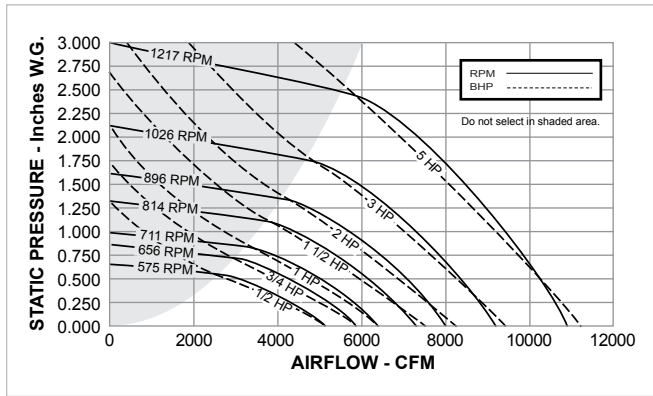


Galv. Side Panel = 20 gauge	Alum. Corner Post = 0.064 in	Peak BHP = (RPM/1083) <sup>3</sup>
Alum. Side Panel = 0.051 in	Damper Size = 28 in (sq)	Max. RPM = 2180 (5 HP)
Galv. Corner Post = 16 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 152/104 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/2	800	4241	987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	892	4729	2204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3/4	975	5169	2793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1022	5418	3081	2050	10.7	0.73	10.9	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	1075	5699	3373	2886	12.2	0.97	12.3	0.99	12.6	0.94	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1107	5869	3546	3106	12.8	1.05	12.9	1.07	13.1	1.06	-	-	-	-	-	-	-	-	-	-	-	-	-	
1 1/2	1175	6229	3909	3529	14.0	1.25	14.1	1.28	14.2	1.29	14.5	1.22	-	-	-	-	-	-	-	-	-	-	-	
	1225	6494	4170	3806	14.9	1.41	15.0	1.43	15.1	1.46	15.3	1.44	15.7	1.18	-	-	-	-	-	-	-	-	-	
2	1267	6717	4383	4034	15.8	1.55	15.8	1.57	15.9	1.61	16.0	1.61	16.2	1.52	-	-	-	-	-	-	-	-	-	
	1300	6892	4546	4212	16.3	1.66	16.4	1.69	16.5	1.73	16.6	1.74	16.8	1.70	17.4	1.20	-	-	-	-	-	-	-	
	1340	7104	4741	4425	17.1	1.80	17.2	1.85	17.2	1.89	17.3	1.91	17.5	1.91	17.7	1.76	-	-	-	-	-	-	-	
	1375	7289	4911	4609	17.8	1.94	17.9	2.00	18.0	2.03	18.0	2.06	18.2	2.06	18.3	1.99	19.0	1.32	-	-	-	-	-	
3	1395	7396	5008	4714	18.2	2.02	18.3	2.08	18.4	2.11	18.4	2.15	18.6	2.15	18.7	2.11	19.1	1.83	-	-	-	-	-	
	1440	7634	5224	4947	18.8	2.20	18.9	2.28	19.0	2.30	19.0	2.35	19.2	2.37	19.3	2.37	19.6	2.25	-	-	-	-	-	
	1480	7846	5417	5145	19.4	2.37	19.5	2.46	19.6	2.50	19.6	2.54	19.8	2.57	19.9	2.57	20.0	2.52	20.0	2.27	-	-	-	
	1525	8085	5632	5366	20.0	2.58	20.0	2.67	20.0	2.72	20.0	2.76	20.0	2.80	21.0	2.81	21.0	2.81	21.0	2.69	-	-	-	-
	1550	8217	5752	5488	21.0	2.70	21.0	2.79	21.0	2.86	21.0	2.88	21.0	2.94	21.0	2.95	21.0	2.96	21.0	2.88	-	-	-	-
	1575	8350	5870	5609	21.0	2.82	21.0	2.92	21.0	2.99	21.0	3.01	21.0	3.07	21.0	3.09	22.0	3.10	22.0	3.06	-	-	-	-
	1596	8461	5970	5711	21.0	2.93	21.0	3.02	21.0	3.11	22.0	3.13	22.0	3.18	22.0	3.22	22.0	3.23	22.0	3.21	23.0	2.35	-	-
	1650	8747	6224	5971	22.0	3.21	22.0	3.32	22.0	3.41	22.0	3.45	22.0	3.49	22.0	3.54	23.0	3.56	23.0	3.56	23.0	3.33	-	-
5	1700	9012	6458	6212	23.0	3.49	23.0	3.60	23.0	3.70	23.0	3.77	23.0	3.79	23.0	3.85	23.0	3.88	23.0	3.90	24.0	3.80	-	-
	1750	9278	6689	6452	23.0	3.79	23.0	3.90	24.0	4.01	24.0	4.10	24.0	4.13	24.0	4.17	24.0	4.23	24.0	4.25	24.0	4.24	25.0	3.74
	1800	9543	6915	6690	25.0	4.10	25.0	4.22	25.0	4.33	25.0	4.43	25.0	4.48	25.0	4.51	25.0	4.57	25.0	4.61	25.0	4.63	26.0	4.40
	1840	9755	7096	6880	26.0	4.36	26.0	4.49	26.0	4.60	26.0	4.71	26.0	4.78	26.0	4.80	26.0	4.86	26.0	4.91	26.0	4.94	26.0	4.84
	1875	9940	7254	7045	27.0	4.59	27.0	4.73	27.0	4.85	27.0	4.96	27.0	5.05	27.0	5.07	27.0	5.12	27.0	5.18	27.0	5.23	27.0	5.18
	1893	10036	7334	7130	29.0	4.72	29.0	4.86	29.0	4.98	29.0	5.09	29.0	5.19	29.0	5.22	29.0	5.25	29.0	5.32	29.0	5.38	29.0	5.37

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. For further information on estimating belt drive losses and motor service factors see page 13. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet sone levels. Performance ratings do not include the effects of appurtenances in the airstream.

## CIS225BC | BELT DRIVE

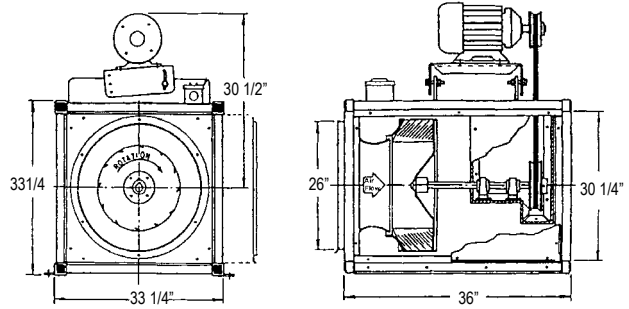
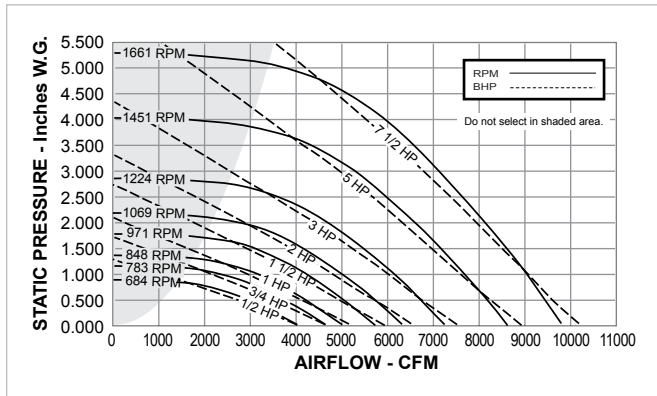


Galv. Side Panel = 20 gauge	Alum. Corner Post = NA	Peak BHP = $(RPM/704)^3$
Alum. Side Panel = NA	Damper Size = 33 1/4 in (sq)	Max. RPM = 1257 (5 HP)
Galv. Corner Post = 14 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 245 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/2	525	3410	3831	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			6.8	0.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	573	3722	4382	3145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			8.1	0.55	7.8	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	615	3995	4839	3802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			9.9	0.67	8.7	0.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	656	4261	5266	4343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.6	0.81	9.6	0.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	670	4352	5407	4518	3182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.9	0.86	9.8	0.90	9.9	0.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	690	4482	5608	4773	3628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			11.3	0.93	10.2	0.98	10.3	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	711	4618	5817	5037	4012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			11.8	1.02	10.5	1.07	10.9	1.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	735	4774	6055	5328	4392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			12.6	1.12	11.3	1.18	11.6	1.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	760	4937	6302	5623	4752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			13.7	1.23	12.4	1.29	12.4	1.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	785	5099	6548	5910	5086	3949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.0	1.35	13.8	1.42	13.1	1.44	12.9	1.38	-	-	-	-	-	-	-	-	-	-	-	-	-
8	814	5288	6830	6239	5451	4512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.5	1.50	14.6	1.58	13.7	1.61	13.8	1.58	-	-	-	-	-	-	-	-	-	-	-	-	-
9	830	5391	6983	6419	5654	4784	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.6	1.59	14.9	1.67	13.9	1.70	14.3	1.69	-	-	-	-	-	-	-	-	-	-	-	-	-
10	850	5521	7174	6635	5908	5091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			16.0	1.70	15.4	1.78	14.3	1.83	14.8	1.82	-	-	-	-	-	-	-	-	-	-	-	-	-
11	875	5684	7412	6900	6220	5451	4357	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			16.7	1.84	16.2	1.94	14.8	1.99	15.5	2.00	15.4	1.90	-	-	-	-	-	-	-	-	-	-	-
12	896	5820	7611	7121	6475	5734	4789	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			17.3	1.97	17.0	2.07	15.5	2.13	16.1	2.15	16.0	2.08	-	-	-	-	-	-	-	-	-	-	-
13	920	5976	7838	7369	6762	6044	5217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			18.3	2.13	18.0	2.23	16.6	2.30	16.5	2.32	16.7	2.29	-	-	-	-	-	-	-	-	-	-	-
14	945	6183	8074	7621	7051	6358	5611	4433	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			19.3	2.30	19.0	2.41	17.8	2.48	17.1	2.51	17.4	2.50	17.3	2.33	-	-	-	-	-	-	-	-	-
15	970	6301	8310	7872	7336	6677	5979	5012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			21.0	2.48	20.0	2.60	18.9	2.68	18.0	2.72	18.1	2.72	18.0	2.62	-	-	-	-	-	-	-	-	-
16	995	6463	8544	8122	7620	6992	6321	5492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			21.0	2.67	21.0	2.79	19.9	2.88	18.9	2.93	18.7	2.94	18.8	2.88	-	-	-	-	-	-	-	-	-
17	1026	6665	8835	8431	7966	7373	6725	6005	4927	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			22.0	2.92	22.0	2.92	20.0	3.15	19.6	3.20	19.6	3.22	19.6	3.20	19.5	3.02	-	-	-	-	-	-	-
18	1060	6886	9153	8767	8327	7782	7152	6513	5663	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			22.0	3.21	22.0	3.35	21.0	3.45	20.0	3.52	20.0	3.55	21.0	3.55	20.0	3.45	-	-	-	-	-	-	-
19	1090	7080	9433	9062	8644	8128	7535	6925	6197	5085	-	-	-	-	-	-	-	-	-	-	-	-	-
			23.0	3.48	23.0	3.63	22.0	3.74	21.0	3.81	21.0	3.85	21.0	3.87	21.0	3.81	21.0	3.57	-	-	-	-	-
20	1120	7275	9712	9356	8957	8471	7912	7317	6667	5786	-	-	-	-	-	-	-	-	-	-	-	-	-
			24.0	3.77	23.0	3.92	23.0	4.04	22.0	4.12	22.0	4.17	22.0	4.19	22.0	4.17	22.0	4.03	-	-	-	-	-
21	1160	7535	10084	9743	9361	8923	8399	7820	7246	6534	5500	-	-	-	-	-	-	-	-	-	-	-	-
			25.0	4.18	25.0	4.33	24.0	4.46	23.0	4.56	23.0	4.62	23.0	4.65	24.0	4.66	23.0	4.58	23.0	4.34	-	-	-
22	1190	7730	10362	10030	9662	9254	8757	8203	7649	7015	6179	-	-	-	-	-	-	-	-	-	-	-	-
			26.0	4.50	26.0	4.66	25.0	4.79	24.0	4.90	24.0	4.97	24.0	5.01	24.0	5.03	24.0	4.99	24.0	4.84	-	-	-
23	1217	7905	10612	10287	9932	9541	9068	8543	7995	7422	6698	5631	-	-	-	-	-	-	-	-	-	-	-
			27.0	4.81	27.0	4.97	26.0	5.11	25.0	5.23	25.0	5.30	25.0	5.36	25.0	5.38	25.0	5.37	25.0	5.26	25.0	4.95	-

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

**CIS225BHC | BELT DRIVE**

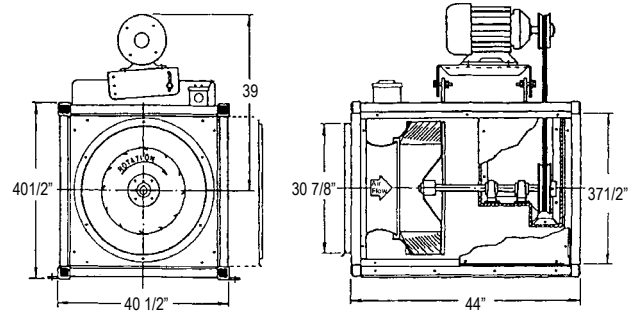
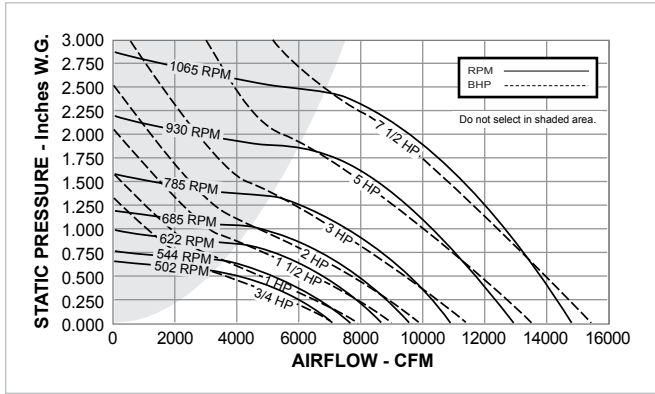


Galv. Side Panel = 20 gauge	Alum. Corner Post = NA	Peak BHP = $(RPM/828)^3$
Alum. Side Panel = NA	Damper Size = 33 1/4 in (sq)	Max. RPM = 1715 (7.5 HP)
Galv. Corner Post = 14 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 245 lbs

HP	RPM	Tip Speed FPM	0.750" SP		1.000" SP		1.250" SP		1.500"		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1	684	4443	2184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			9.0	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	725	4709	2626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			9.7	0.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
783	5086	5262	3168	2429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			10.6	0.84	10.8	0.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
810	5262	5508	3401	2742	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			11.1	0.93	11.3	0.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
848	5508	6009	3716	3139	2286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			11.9	1.07	12.0	1.07	12.2	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
875	5684	6307	3934	3391	2709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			12.5	1.18	12.6	1.18	12.8	1.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925	6009	6723	4318	3840	3274	2436	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			13.7	1.38	13.6	1.39	13.8	1.39	14.1	1.29	-	-	-	-	-	-	-	-	-	-	-	-	-
971	6307	6944	4665	4224	3724	3130	1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			14.6	1.58	14.6	1.61	14.7	1.61	14.9	1.58	15.3	1.32	-	-	-	-	-	-	-	-	-	-	-
1000	6496	7210	4874	4461	3992	3444	2647	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.2	1.72	15.2	1.76	15.3	1.76	15.5	1.74	15.8	1.63	-	-	-	-	-	-	-	-	-	-	-
1035	6723	7470	5123	4733	4300	3811	3201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			15.9	1.90	16.0	1.94	16.0	1.95	16.2	1.95	16.5	1.89	-	-	-	-	-	-	-	-	-	-	-
1069	6944	7730	5362	4993	4585	4129	3601	2829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			16.8	2.09	16.8	2.13	16.9	2.15	17.0	2.15	17.2	2.12	17.5	2.00	-	-	-	-	-	-	-	-	-
1110	7210	7951	5648	5303	4923	4505	4039	3472	2485	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			17.7	2.33	17.8	2.37	17.9	2.41	18.0	2.40	18.1	2.41	18.3	2.34	18.7	2.07	-	-	-	-	-	-	-
1150	7470	8282	5924	5595	5236	4847	4417	3927	3280	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			18.5	2.58	18.6	2.62	18.7	2.67	18.8	2.68	18.9	2.68	19.1	2.65	19.4	2.55	-	-	-	-	-	-	-
1190	7730	8607	6199	5879	5543	5180	4785	4352	3842	3057	-	-	-	-	-	-	-	-	-	-	-	-	-
			19.4	2.84	19.5	2.89	19.5	2.94	19.6	2.97	19.8	2.96	19.9	2.97	20.0	2.90	20.0	2.72	-	-	-	-	-
1224	7951	8932	6430	6119	5801	5458	5083	4672	4211	3641	-	-	-	-	-	-	-	-	-	-	-	-	-
			20.0	3.08	20.0	3.14	20.0	3.18	20.0	3.23	20.0	3.22	21.0	3.23	21.0	3.19	21.0	3.11	-	-	-	-	-
1275	8282	9256	6775	6475	6178	5854	5509	5141	4737	4274	2676	-	-	-	-	-	-	-	-	-	-	-	-
			21.0	3.45	21.0	3.54	21.0	3.57	21.0	3.62	22.0	3.65	22.0	3.64	22.0	3.65	22.0	3.60	23.0	3.06	-	-	-
1325	8607	9932	7110	6821	6535	6235	5919	5573	5203	4809	3738	-	-	-	-	-	-	-	-	-	-	-	-
			22.0	3.85	22.0	3.95	23.0	3.99	23.0	4.04	23.0	4.10	23.0	4.09	23.0	4.09	23.0	4.09	24.0	3.88	-	-	-
1375	8932	10458	7442	7164	6887	6611	6306	5989	5654	5284	4446	2794	-	-	-	-	-	-	-	-	-	-	-
			24.0	4.28	24.0	4.38	24.0	4.45	24.0	4.49	24.0	4.55	24.0	4.58	24.0	4.57	24.0	4.57	25.0	4.48	25.0	4.48	25.0
1425	9256	10789	7761	7504	7236	6970	6688	6394	6075	5744	4987	3930	-	-	-	-	-	-	-	-	-	-	-
			25.0	4.73	25.0	4.85	25.0	4.94	25.0	4.98	25.0	5.03	25.0	5.09	25.0	5.09	25.0	5.09	26.0	5.06	26.0	5.06	26.0
1451	9425	11068	7927	7680	7416	7155	6884	6595	6291	5974	5263	4347	-	-	-	-	-	-	-	-	-	-	-
			26.0	4.98	26.0	5.10	26.0	5.21	26.0	5.25	26.0	5.29	26.0	5.36	26.0	5.38	26.0	5.37	26.0	5.37	27.0	5.37	27.0
1500	9744	11458	8237	8010	7754	7501	7248	6972	6692	6386	5730	4964	-	-	-	-	-	-	-	-	-	-	-
			26.0	5.47	27.0	5.61	27.0	5.72	27.0	5.78	27.0	5.82	27.0	5.88	27.0	5.95	27.0	5.94	28.0	5.94	28.0	5.94	28.0
1550	10068	11848	8553	8344	8097	7850	7606	7351	7080	6800	6191	5502	-	-	-	-	-	-	-	-	-	-	-
			27.0	6.01	28.0	6.15	28.0	6.27	28.0	6.36	28.0	6.40	28.0	6.45	28.0	6.52	29.0	6.56	29.0	6.55	29.0	6.55	29.0
1585	10296	12238	8773	8576	8335	8093	7854	7613	7349	7085	6506	5859	-	-	-	-	-	-	-	-	-	-	-
			29.0	6.40	29.0	6.56	29.0	6.68	29.0	6.79	29.0	6.83	29.0	6.88	29.0	6.94	29.0	7.01	30.0	7.00	30.0	7.00	30.0
1610	10458	12628	8930	8736	8504	8266	8030	7795	7539	7279	6718	6094	-	-	-	-	-	-	-	-	-	-	-
			29.0	6.69	30.0	6.85	30.0	6.98	30.0	7.10	30.0	7.15	30.0	7.19	30.0	7.26	30.0	7.33	30.0	7.34	30.0	7.34	30.0
1635	10621	13018	9087	8895	8673	8438	8206	7974	7728	7472	6927	6327	-	-	-	-	-	-	-	-	-	-	-
			30.0	6.99	30.0	7.16	30.0	7.29	30.0	7.41	30.0	7.48	30.0	7.52	31.0	7.58	31.0	7.65	31.0	7.69	31.0	7.69	31.0
1661	10789	13408	9249	9061	8848	8617	8387	8159	7924	7672	7144	6567	-	-	-	-	-	-	-	-	-	-	-
			31.0	7.32	31.0	7.48	31.0	7.62	31.0	7.74	31.0	7.83	31.0	7.88	31.0	7.93	31.0	8.00	31.0	8.07	32.0	8.06	32.0

Performance shown is for installation Type A: free inlet, free outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type B: free inlet hemispherical sone levels. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound.

CIS275BC | BELT DRIVE



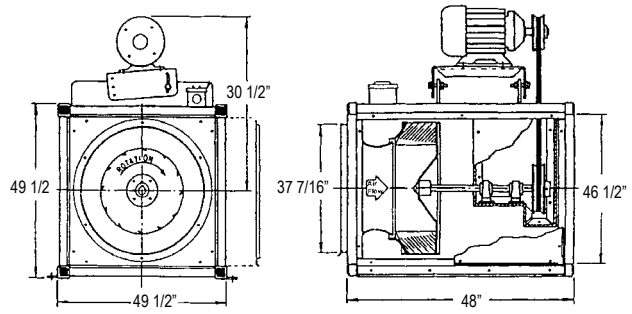
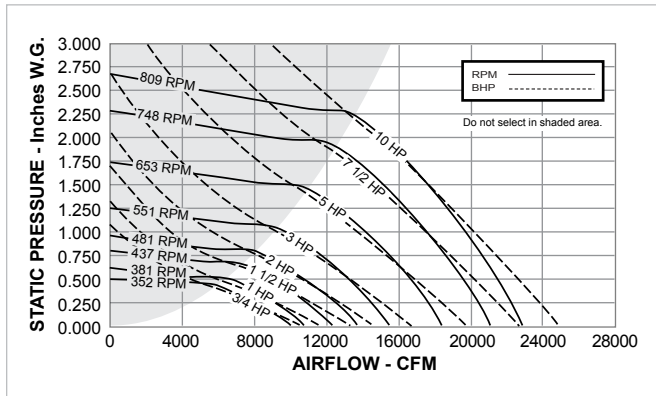
Galv. Side Panel = 20 gauge	Alum. Corner Post = NA	Peak BHP = (RPM/704) <sup>3</sup>
Alum. Side Panel = NA	Damper Size = 40 1/2 in (sq)	Max. RPM = 1113 (7.5 HP)
Galv. Corner Post = 14 gauge	Max. Mtr. Frame Size = 213T	Est. Ship. Wts. (galv/alum) = 415 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
3/4	400	3207	4486	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	502	4025	5.9	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	520	4169	6366	0.82	4943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	544	4362	11.2	0.82	8.5	0.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	570	4570	6678	0.90	5370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	595	4770	7090	1.02	5897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	622	4987	11.9	1.02	9.5	1.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	635	5091	7523	1.17	6430	4759	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	650	5211	12.6	1.17	10.6	1.22	10.0	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	665	5332	7928	1.31	6917	5530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	685	5492	13.7	1.31	11.9	1.39	10.8	1.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	710	5693	8363	1.49	7424	6228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 1/2	735	5893	8571	1.58	7666	6535	4583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	760	6093	14.9	1.58	13.6	1.68	11.8	1.71	11.8	1.60	-	-	-	-	-	-	-	-	-	-	-	-	-
7	777	6294	8810	1.68	7938	6870	5209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	785	6294	15.2	1.80	14.3	1.92	12.5	1.95	12.9	1.92	-	-	-	-	-	-	-	-	-	-	-	-	-
7	815	6534	9366	1.80	8563	7611	6329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	840	6735	15.5	1.96	14.8	2.09	12.9	2.13	13.6	2.12	-	-	-	-	-	-	-	-	-	-	-	-	-
7	870	6975	9760	2.17	9004	8112	6992	5126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	885	7176	10153	2.39	9437	8591	7586	6115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	900	7216	10544	2.63	9867	9060	8141	6907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	930	7456	10933	2.89	10294	9522	8666	7593	5941	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	950	7617	11398	3.06	10784	10061	9271	8329	7025	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	970	7777	12247	3.22	11189	10507	9755	8888	7780	6061	-	-	-	-	-	-	-	-	-	-	-	-	-
7	995	7978	12708	3.51	11672	11035	10320	9532	8575	7247	-	-	-	-	-	-	-	-	-	-	-	-	-
	1020	8178	13168	3.88	12153	11555	10878	10143	9286	8195	6577	-	-	-	-	-	-	-	-	-	-	-	-
7	1045	8378	13473	4.28	12631	12071	11419	10733	9953	9014	7745	-	-	-	-	-	-	-	-	-	-	-	-
	1065	8539	13779	4.71	13265	12749	12133	11488	10790	9983	8985	7623	-	-	-	-	-	-	-	-	-	-	-
7	1065	8539	14541	5.01	13966	13442	12861	12254	11599	10852	9975	8837	-	-	-	-	-	-	-	-	-	-	-
	1065	8539	14921	5.32	14445	13966	13442	12861	12254	11599	10852	9975	8837	-	-	-	-	-	-	-	-	-	-
7	1065	8539	14541	5.32	14053	13562	13010	12411	11781	11081	10274	9277	7941	-	-	-	-	-	-	-	-	-	-
	1065	8539	15224	5.32	14758	14287	13787	13218	12630	12003	11298	10489	9474	-	-	-	-	-	-	-	-	-	-
7	1065	8539	14921	5.32	14445	13966	13442	12861	12254	11599	10852	9975	8837	-	-	-	-	-	-	-	-	-	-
	1065	8539	15224	5.32	14758	14287	13787	13218	12630	12003	11298	10489	9474	-	-	-	-	-	-	-	-	-	-
7	1065	8539	14921	5.32	14445	13966	13442	12861	12254	11599	10852	9975	8837	-	-	-	-	-	-	-	-	-	-
	1065	8539	15224	5.32	14758	14287	13787	13218	12630	12003	11298	10489	9474	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. For further information on estimating belt drive losses and motor service factors see page 13. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet sone levels. Performance ratings do not include the effects of appurtenances in the airstream.



CIS335BC | BELT DRIVE

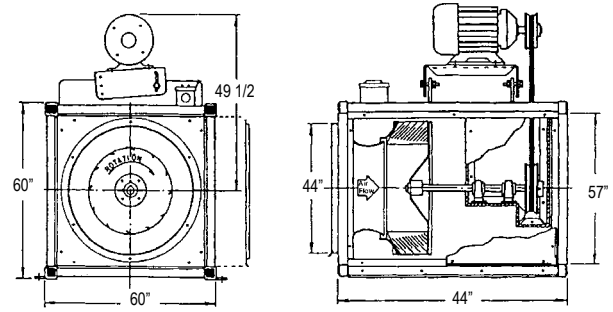
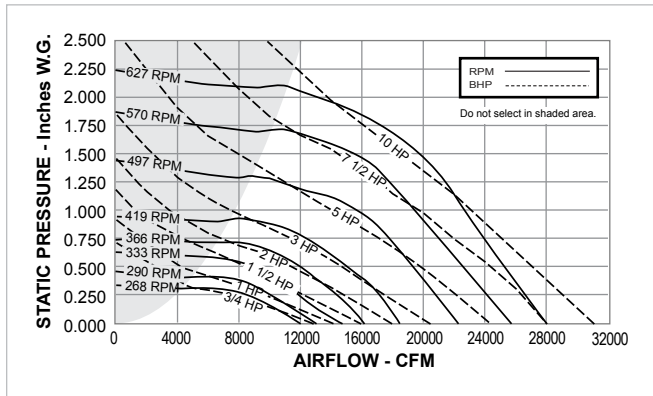


Galv. Side Panel = 20 gauge	Alum. Corner Post = NA in	Peak BHP = (RPM/373) <sup>3</sup>
Alum. Side Panel = NA	Damper Size = 49 1/2 in (sq)	Max. RPM = 810 (10 HP)
Galv. Corner Post = 14 gauge	Max. Mtr. Frame Size = 215T	Est. Ship. Wts. (galv/alum) = 525 lbs

HP	RPM	Tip Speed FPM	0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
3/4	300	2921	5.6	0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	352	3472	7.6	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	370	3602	8.2	0.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	381	3709	8.7	0.99	8.9	1.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1 1/2	410	3992	10.2	1.21	10.8	1.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	437	4254	11.9	1.44	11.6	1.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	460	4478	13.8	1.66	12.6	1.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	481	4683	15.7	1.88	14.0	2.05	13.1	2.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	490	4770	16.6	1.98	14.8	2.16	13.8	2.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	510	4965	18.3	2.21	16.1	2.41	14.8	2.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	535	5209	19.1	2.53	17.1	2.74	15.6	2.90	15.2	2.81	-	-	-	-	-	-	-	-	-	-	-	-	-	
	551	5364	19.8	2.75	17.9	2.97	16.2	3.14	15.9	3.18	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	575	5598	21.0	3.11	19.4	3.34	17.7	3.53	17.0	3.66	-	-	-	-	-	-	-	-	-	-	-	-	-	
	600	5841	23.0	3.51	21.0	3.75	19.8	3.96	18.4	4.13	18.1	3.99	-	-	-	-	-	-	-	-	-	-	-	
	625	6085	26.0	3.94	24.0	4.20	22.0	4.43	20.0	4.60	19.8	4.67	-	-	-	-	-	-	-	-	-	-	-	
	653	6357	27.0	4.29	25.0	4.57	23.0	4.76	21.0	4.93	21.0	5.00	-	-	-	-	-	-	-	-	-	-	-	
7 1/2	670	6523	27.0	4.29	25.0	4.57	23.0	4.76	21.0	4.93	21.0	5.00	-	-	-	-	-	-	-	-	-	-	-	
	690	6718	28.0	4.79	26.0	5.10	24.0	5.36	22.0	5.57	22.0	5.75	21.0	5.70	-	-	-	-	-	-	-	-	-	
	710	6912	29.0	5.22	26.0	5.53	25.0	5.80	24.0	6.04	22.0	6.21	22.0	6.31	-	-	-	-	-	-	-	-	-	
	730	7107	29.0	5.66	28.0	5.99	26.0	6.27	25.0	6.53	23.0	6.72	23.0	6.88	23.0	6.88	23.0	6.62	-	-	-	-	-	-
	748	7282	30.0	6.13	29.0	6.48	28.0	6.77	26.0	7.04	25.0	7.25	24.0	7.44	24.0	7.41	-	-	-	-	-	-	-	-
10	760	7399	32.0	6.57	31.0	6.94	30.0	7.24	28.0	7.53	27.0	7.76	25.0	7.94	25.0	8.04	-	-	-	-	-	-	-	-
	775	7545	33.0	6.88	32.0	7.26	31.0	7.57	29.0	7.86	28.0	8.10	26.0	8.29	26.0	8.44	25.0	8.14	-	-	-	-	-	-
	790	7691	34.0	7.28	33.0	7.67	32.0	7.99	31.0	8.28	30.0	8.54	28.0	8.74	27.0	8.94	26.0	8.83	-	-	-	-	-	-
	800	7788	36.0	7.70	35.0	8.10	34.0	8.42	33.0	8.73	32.0	9.00	29.0	9.22	28.0	9.43	27.0	9.43	-	-	-	-	-	-
	810	7885	37.0	7.98	36.0	8.39	35.0	8.72	34.0	9.03	33.0	9.32	31.0	9.55	29.0	9.75	28.0	9.84	-	-	-	-	-	-
	809	7876	38.0	8.24	37.0	8.66	36.0	9.00	35.0	9.31	33.0	9.61	32.0	9.84	29.0	10.04	29.0	10.18	28.0	9.89	-	-	-	-

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. For further information on estimating belt drive losses and motor service factors see page 13. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet sone levels. Performance ratings do not include the effects of appurtenances in the airstream.

CIS420BC | BELT DRIVE



Galv. Side Panel = 14 gauge	Alum. Corner Post = NA	Peak BHP = (RPM/284) <sup>3</sup>
Alum. Side Panel = NA	Damper Size = 61 1/2 in (sq)	Max. RPM = 694 (10 HP)
Galv. Corner Post = 14 gauge	Max. Mtr. Frame Size = 215T	Est. Ship. Wts. (galv/alum) = 725 lbs

HP	RPM	Tip Speed FPM	0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.250" SP		1.000" SP		1.500" SP		1.750" SP		2.000" SP		
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
3/4	240	2757	9156	4.6	0.53	7098	4.1	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	268	3078	10639	5.8	0.71	8921	5.2	0.80	5642	5.0	0.77	-	-	-	-	-	-	-	-	-	-	-	-
1	290	3331	11762	6.8	0.88	10212	6.2	0.98	8349	5.7	1.06	-	-	-	-	-	-	-	-	-	-	-	-
	310	3561	12735	8.1	1.05	11346	7.4	1.17	9823	6.7	1.20	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	333	3825	13844	8.9	1.28	12603	8.2	1.41	11209	7.7	1.53	9477	-	-	-	-	-	-	-	-	-	-	-
	345	3963	14418	9.4	1.41	13249	8.8	1.55	11916	8.3	1.68	10437	-	-	-	-	-	-	-	-	-	-	-
2	355	4078	14894	9.8	1.53	13782	9.4	1.67	12497	8.9	1.80	11139	-	-	-	-	-	-	-	-	-	-	-
	366	4204	15417	10.4	1.66	14363	10.0	1.82	13129	9.6	1.95	11833	-	-	-	-	-	-	-	-	-	-	-
3	380	4356	16079	11.1	1.85	15097	11.0	2.01	13914	10.5	2.15	12675	8142	-	-	-	-	-	-	-	-	-	-
	395	4537	16786	12.1	2.06	15877	12.0	2.24	14738	11.6	2.38	13562	10282	-	-	-	-	-	-	-	-	-	-
4	410	4709	17490	12.9	2.29	16628	13.1	2.48	15553	12.8	2.63	14435	11797	-	-	-	-	-	-	-	-	-	-
	419	4813	17911	13.4	2.44	17068	13.7	2.63	16037	13.2	2.78	14953	12532	-	-	-	-	-	-	-	-	-	-
5	440	5054	18891	14.9	2.80	18088	14.9	3.00	17156	15.4	3.18	16134	13990	9601	-	-	-	-	-	-	-	-	-
	460	5284	19822	16.2	3.18	19053	16.8	3.39	18208	17.5	3.58	17231	15201	12332	-	-	-	-	-	-	-	-	-
6	480	5513	20749	17.8	3.59	20012	18.0	3.81	19250	18.1	4.03	18313	16388	14197	-	-	-	-	-	-	-	-	-
	497	5709	21535	19.3	3.97	20824	19.1	4.20	20113	19.0	4.43	19222	17381	15401	11530	-	-	-	-	-	-	-	-
7 1/2	515	5916	22366	20.0	4.40	21679	20.0	4.64	20993	20.0	4.87	20176	18418	16577	13870	-	-	-	-	-	-	-	-
	530	6088	23056	21.0	4.78	22389	21.0	5.03	21723	21.0	5.27	20964	19268	17483	15291	10104	-	-	-	-	-	-	-
8	545	6260	23746	22.0	5.19	23098	22.0	5.44	22449	22.0	5.68	21747	20097	18377	16468	12713	-	-	-	-	-	-	-
	560	6432	24435	24.0	5.61	23804	23.0	5.87	23173	23.0	6.12	22525	20919	19261	17522	14705	-	-	-	-	-	-	-
9	570	6547	24894	25.0	5.91	24274	24.0	6.17	23653	24.0	6.43	23033	21463	19844	18181	15816	-	-	-	-	-	-	-
	585	6720	25581	26.0	6.37	24977	26.0	6.64	24373	25.0	7.18	23768	22274	20712	19092	17137	13182	-	-	-	-	-	-
10	595	6834	26039	28.0	6.70	25445	27.0	6.97	24851	27.0	7.24	24257	22811	21286	19693	17896	14648	-	-	-	-	-	-
	605	6949	26496	28.0	7.03	25912	28.0	7.31	25328	27.0	7.58	24743	23345	21856	20289	18603	15898	-	-	-	-	-	-
11	615	7064	26953	29.0	7.38	26379	29.0	7.66	25804	28.0	8.22	25229	23878	22415	20882	19303	17023	12341	-	-	-	-	-
	627	7202	27502	30.0	7.80	26938	29.0	8.09	26374	29.0	8.38	25810	24513	23079	21587	20075	18083	14343	-	-	-	-	-

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include transmission losses. For further information on estimating belt drive losses and motor service factors see page 13. The sound ratings shown are for loudness values in fan sones at 50' (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet sone levels. Performance ratings do not include the effects of appurtenances in the airstream.

## ENGINEERING SPECIFICATIONS

### Model

CIS = Centrifugal Inline Fan

### Unit Size

085, 095, 100, 115, 120, 125, 155, 165  
205, 225, 275, 335, 420

### Drive Type

D = Direct Drive  
B = Belt Drive

### Motor Tap

QC = 1550 RPM  
RC = 1300 RPM  
SC = 1050 RPM  
VC = 1650 RPM  
Q1C = 1725 RPM  
Q2C = 1725 RPM

### Motor Speed

1 = Single Speed  
2 = 2S2W 1800/1200  
3 = 2S1W 1800/900

### Horse Power

See selection software.

### Enclosure

O = Open Drip Proof  
T = Totally Enclosed  
E = Explosion Proof  
X = Special

### Voltage

See selection software.

### Phase

1 = Single  
3 = Three

### Cycle

5 = 50 Hz  
6 = 60 Hz

### Efficiency

S = Standard  
H = High Efficiency

### Fan RPM

See selection software.

### Application CFM

See selection software.

### Application Static Pressure

See selection software.

### Paint / Coating

0 = None  
F = Epoxy Powder Coat\*  
G = Epoxy Powder Coat with UV\*  
H = Hi-Temp Powder Coat\*  
J = Non-stick Powder Coat\*  
K = Phenolic Powder Coat\*  
L = Phenolic Powder Coat with UV\*  
N = Polyester Powder Coat  
X = Special  
\* Not available with choice of color.

### Color

0 = None  
50 = Chrome Green  
55 = Pale Green  
56 = Dove Gray  
61 = White  
63 = Oxford Beige  
65 = Dover White  
66 = Desert Tan  
70 = Black  
73 = Smoke Gray  
77 = Brick Red  
79 = Peppercorn  
81 = Pale Brown  
83 = Chocolate Brown  
85 = Timeless Bronze  
94 = Charcoal  
X = Special

### Damper

0 = None  
BDD = Gravity Backdraft Damper  
x = Special

### Aluminum Housing

0 = None  
A = Aluminum Housing

### Motor Cover

0 = None  
M = Motor

### Inlet Angle Ring

0 = None  
R = Ring

### Inlet Guard

0 = None  
G = Guard

### Support Channel

0 = None  
S = Support Channel

### Extended Lube Lines

0 = None  
L = Extended Lube Lines

### Sound Insulation

0 = None  
G = Gasket

### Vibration Isolation

0 = None  
RF = Rub in Shear Floor  
RH = Rub in Shear Hanger  
SC = Supp. Chann w/ Rubber Floor  
SF = Spring Floor  
SH = Spring Hanger

### Thermal Overload Protection

0 = None  
P = Thermal Overload Protection

### Disconnect Switch

0 = None  
1 = NEMA 1  
3R = NEMA 3R  
4 = NEMA 4  
7 = NEMA 7  
9 = NEMA 9

### Internal Wiring

0 = None  
1 = NEMA 1  
3R = NEMA 3R

### Transformer

0 = None  
T = Transformer

### Speed Controller

0 = None  
L = Loose  
M = Mounted

### Airminder Time Delay

0 = None  
D = Airminder Switch

### Firestat Switch

0 = None  
F = Switch

### High Pressure Wheel

0 = None  
H = High Pressure Wheel

### Filter Box

0 = None  
A = 1" Washable  
B = 1" Disposable  
C = 2" Washable  
F = 2" Disposable  
G = 1" Pleated  
H = 2" Pleated

*Continued on next page...*

## ENGINEERING SPECIFICATIONS

### Less Motor and Drive

0 = None  
 L = Less Motor - Less Drive  
 M = Less Motor with Drive

### Extra Belt Set

0 = None  
 1 = 1 Belt Set  
 2 = 2 Belt Sets

### Stainless Steel Shaft\*

0 = None (STD Steel)  
 S = Stainless Steel Shaft  
 \* *Belt Drive Only*

### Stainless Steel Fasteners

0 = None  
 S = Stainless Steel Fasteners

### CIS - Direct Drive Units

Direct drive Centrifugal Square Inline fan shall be model CIS, manufactured by YORK® by Johnson Controls. The housing shall utilize galvanized steel “corner post” framework and panels. Units shall be equipped with three removable access panels. Units shall be pre-wired to a junction box on the exterior and equipped with an electrical disconnect switch (not Explosion Proof). Two support angles shall be provided.

Statically and dynamically balanced backward inclined centrifugal wheels shall be aluminum, spark-resistant, nonoverloading, and matched to deeply spun venturis. Motors shall be continuous duty, permanently lubricated, multispeed (for applicable models), have thermal overload protection, mounted out of the main airstream (except Totally Enclosed), be easily accessible for service, and furnished at the specified voltage, phase, and enclosure. Each fan shall bear the AMCA Licensed Ratings Seal for Air and Sound Performance and shall be cULus listed.

### CIS - Belt Drive Units

Belt driven Centrifugal Square Inline fan shall be model CIS, manufactured by YORK® by Johnson Controls. The housing shall utilize galvanized steel (aluminum optional some sizes) “corner post” framework and panels. Units shall be equipped with three removable access panels. Units shall be pre-wired to a junction box on the exterior and equipped with an electrical disconnect switch (not Explosion Proof). Two support angles shall be provided.

Statically and dynamically balanced backward inclined, centrifugal wheels shall be aluminum, spark-resistant, nonoverloading, and matched to deeply spun venturis. Motors shall be continuous duty, ball bearing design, permanently lubricated, mounted out of the main airstream, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground and polished. Heavy duty ball bearings are rated for a minimum L50 life exceeding 200,000 hours. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed. Each fan shall bear the AMCA Licensed Ratings Seal for Air and Sound Performance and shall be cULus listed.



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