



Bulletin AH-TB
January 2011
(Replaces AH-91C)

Air Handlers

Tech Bulletin

For Air Conditioning, Heating and Ventilation

Available in Bohn™, Climate Control™, Chandler™ & Larkin™



Models HCS, HCL
VCS, HD
Size 03 thru 75



VCS MODELS 03 - 41
11 Standard Models
Capacities From
1000 to 24000 CFM

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Quick Cues for the five cabinet styles:

S	= SHORT	in model HCS
L	= LONG	in model HCL
V	= VERTICAL	in model VCS
HD	= HEATING DUTY	in model HD

Quality Standard

Heatcraft has built high performance air handlers for the building trade for over forty years.

Our hallmark has been a continuing process of design improvements to keep pace with new system requirements. This bulletin presents the complete line of air handling units offered by Heatcraft for air conditioning, heating, and ventilation applications.

Our highest design priorities are for units with low operating costs, rugged construction, and the features most needed for simple trouble free installation and maintenance.

Heatcraft Refrigeration Products' ISO 9000 certification guarantees consistent quality products for you and your customers.

Customers can specify brand at time of order, available in Bohn, Climate Control, Chandler and Larkin.

Nomenclature

Cabinet style HCL 06 FC Fan Type:

HCS — (S for Short) Insulated fan section with motor base and access door(s), horizontally adjacent (same elevation) with insulated short depth coil section with drain pan.

HCL — (L for Long) Insulated fan section with motor base and access door(s), horizontally adjacent (same elevation) with insulated long coil section with drain pan.

VCS — (V for Vertical, fan on top of coil section) Insulated fan section with motor base and access door(s), vertically adjacent to (on top of) insulated AHV coil section with drain pan.

HD — (HD for Heating Duty) Uninsulated fan section with motor base and access door(s), horizontally adjacent (same elevation) with 1, 2, 3, 4 or 6 row heating section.

FC - Forward curved fans, available with all cabinet styles, sizes 3 thru 41

AF - Air foil type fans, available with sizes 20 thru 75, all cabinets except VCS style

Nominal coil face area (square feet):
Size 03 thru size 75
See inside back cover for actual coil face area for each model size.

Standard Features, Basic Cabinet Models Per Unit Size

'S' = Standard 'A' = Available

Standard Feature Description	Unit Size													
	03	06	08	10	12	14	18	20	26	34	41	50	65	75
HCS (short coil section) cabinet style	S	S	S	S	S	S	S	S	S	S	S	S	S	A
HCL (long coil section) cabinet style	S	S	S	S	S	S	S	S	S	S	S	S	S	S
VCS (fan above coil section) cabinet style	S	S	S	S	S	S	S	S	S	S	S	A	A	A
HD (heating duty) cabinet style	S	S	S	S	A	A	A	A	A	A	A	A	A	A
Universal (can be floor or ceiling) mount	S	S	S	S	S	S	S	S	S	S	S			
Floor or platform mounting only												S	S	S
16 gauge casing - fan and coil section	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Hinged access door motor side of fan section														
removable panel on opposite side	S	S	S	S	S	S	S							
Hinged access doors, both sides of fan section	A	A	A	A	A	A	A	S	S	S	S	S	S	S
Blower - forward curved (FC), low pressure	S	S	S	S	S	S	S							
Blower - forward curved (FC), medium pressure	A	A	A	A	A	A	A	S	S	S	S			
Blower - air foil (AF), Not available as VCS unit								A	A	A	A	S	S	S
200,000 hour lifetime lubricated bearings	S	S	S	S	S									
Pillow block bearings, extended lube lines	A	A	A	A	A	S	S	S	S	S	S	S	S	S
Adjustable motor base	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Left or right hand motor positions	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Combined fan & coil sections (HCS & HCL only)	S	S	S	S	S	S	S							
Split fan & coil sections (HCS, HCL, & HD only)	A	A	A	A	A	A	A	S	S	S	S	S	S	S
Coil section drain pan (HCS & HCL models only)	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Coil section drain pan (VCS models only)	S	S	S	S	S	S	S	S	S	S	S	S	S	S
1" by 3/4 lbs Insulation, fiberglass (HCS, HCL, & VCS)	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Horizontal or vertical fan discharge arrangements, see drawings pp.31-35 for actual placement and bottom discharge	S	S	S	S	S	S	S	S	S	S	S	S	S	S

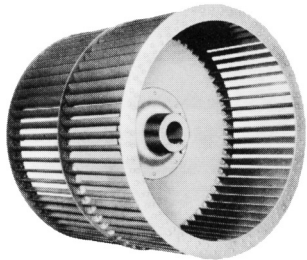
Basic Cabinet

Consists of a fan section and a coil section with double wall drain pan. The housing panels are die formed from mill galvanized steel and insulated with 1" - 3/4 pound density mat faced fiberglass insulation. All fan sections have hinged and latched access doors. Unit below has fan and coil section.

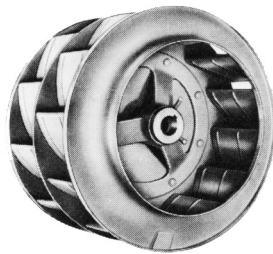


Fans

All units have single, double width, double inlet fan wheels for quiet performance and low energy consumption. Single wheels eliminate the problem of unequal loading which is characteristic of units with multiple wheels. Also, the expense of a "pants" type duct connection is avoided. Sizes 03 through 41 units have forward curved and size 50 through size 75 units have airfoil fan as standard.



Forward Curved Fans



Air Foil Fans

Bearings

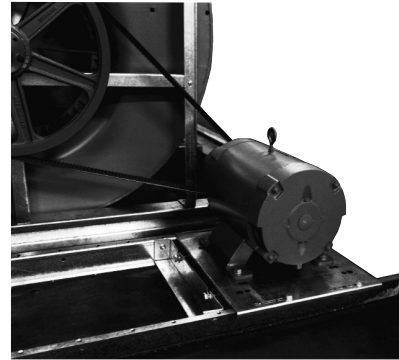
Unit sizes 03 through 12 have lifetime lubricated fan bearings as standard. Unit sizes 03 through 12 with optional medium pressure fan have pillow block bearings rigidly supported on a heavy steel frame. Unit sizes 14 through 75 have pillow block bearing rigidly supported on a heavy steel frame as standard. The bearings are self aligning and are selected for an average service life in excess of 200,000 hours. There are extended lube lines and grease fittings on the drive side of all units that have pillow block bearings. The bearings on these models can be lubricated without opening the blower section access door. Maximum operating temperature is 140°F.

Fan Shaft

The fan shaft is solid polished steel, and keyed for both fan and drive. It is designed so that critical speed is at least 1.25 times the maximum operating speed.

Motor Mount

Heatcraft puts the motor inside the fan section cabinet. It is mounted on a heavy gauge steel slide rail base. There are several advantages with internal motor location. It eliminates the need for a bulky belt guard. Another advantage is that Heatcraft balances the factory mounted motor and drive components, which can eliminate additional balancing at start-up.



Coil Section

Coil sections cover a wide range of heating and cooling requirements. Side, top and bottom panels are 16 gauge mill galvanized steel. All coil sections accommodate either small or large face area coils.

The HCS coil section will hold 15 1/2" of coils and spacers. The HCS section covers most applications. Use the HCL coil section if the coil or access space is more than 15 1/2". (See page 38 for maximum per model.)

Cooling coil sections have a drain pan with double wall construction. Insulation is sandwiched between the outer panel and the inner drain pan. The pans are heavy gauge mill galvanized steel. Heatcraft welds the corners of the drain pans and puts drain connections on both sides of the coil section for field convenience. The coils sit in an upright position inside the coil section. The air flows horizontally through the coils. Larger models (sizes 50 through 75) have cooling coils stacked two high. These larger models come with an intermediate drain pan, so that condensate from the upper coil does not flow over the lower coil.

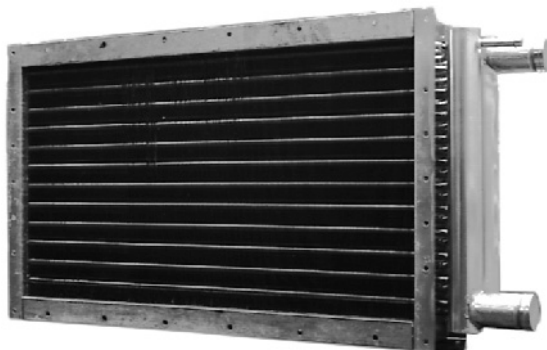
Coils come in either small or large sizes (pages 42-43). A large face area coil fills the total face area of the coil section. The coil section's total air volume passes through the large coil. A small coil is shorter in height and does not fill the total face height of the coil section. Air may bypass above the coil through balance dampers or internal face and bypass dampers. With either combination, it is possible to adjust and control the amount of air passing through the small size coil.

Chilled water and direct expansion coil face velocities over 550 FPM should be avoided--WATER CARRYOVER.

If desired, a blank off plate above the small coil can force total coil section air volume through the small coil.

There are a wide variety of coil types to meet the load requirements of conditioned spaces. Heatcraft's four coil types are: water, direct expansion, heat reclaim and steam coils. All standard coils have copper tubes and aluminum fins and a heavy gauge mill galvanized steel casing. Staggered tube designs increase air turbulence and improve coil performance. The plate type, die formed, corrugated fin design provides optimum strength. The fin design also enhances air turbulence for peak performance. Each fin has die formed, self-spacing fin collars which completely surround the tubes. Heatcraft mechanically expands the tubes into the fins to provide maximum heat transfer. Fin spacing selections of six to fourteen fins per inch insure that an optimum coil is offered to meet specific design needs.

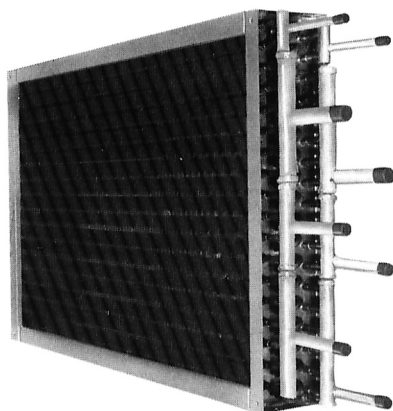
Water Coils



Direct Expansion Coils

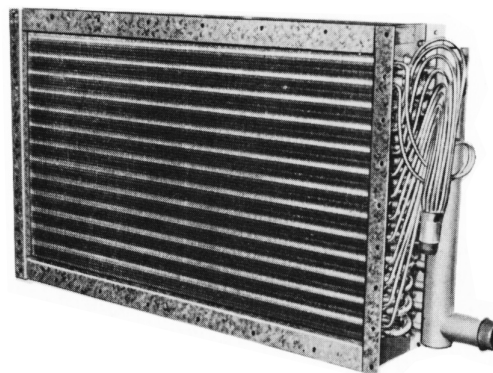
Select direct expansion coils from 3, 4, 5, 6, or 8 row coil depth options. All direct expansion coils offer five fin densities (6, 8, 10, 12, or 14 FPI). Specify either 1/2" (Type A) or 5/8" (Type 5) tube diameters. Each coil has a brass, sweat connection type distributor and copper suction header. Distributor leads of equal length work for equal refrigerant distribution to all the circuits. Working with Heatcraft software or your representative, select from a among variety of circuit designs. Heatcraft has an optimum design to deliver the proper refrigerant pressure drop for your conditions. Specify multiple distributors for face split or row split control of the coil.

Condenser Heat Reclaim Coils



Water Coils

A wide range of choices leads to the best coil selection for each particular job. Select water cooling coils from 4, 5, 6, or 8 row coil depth options. Select water heating coils from 1, 2, or 3 row coil depth options. All water coils offer five fin densities (6, 8, 10, 12, or 14 FPI). Specify either 1/2" (Type A) or 5/8" (Type 5) tube diameters. Heatcraft optimizes circuit design from the header into the coil and delivers high internal heat transfer coefficients for each application's conditions. This is done without resorting to internal devices which increase pressure drop or restrict draining. All circuit designs avoid trapped circuits, so the coil is drainable. There are vent and drain connections on both supply and return headers on coils of 3 or more rows. All coil connections terminate outside the air handler coil section cabinet. Design working pressure is 250 PSIG. Design fluid temperature for heating coils is 300°F.

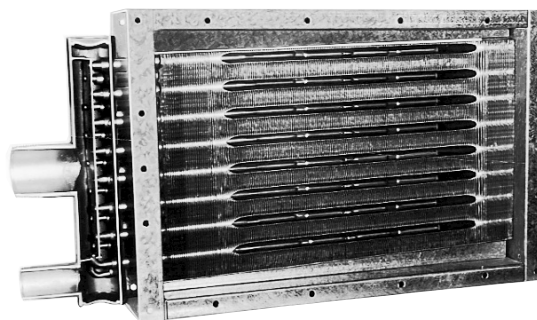


Direct Expansion Coils

Heat Reclaim Coils

Refrigerant Heat Reclaim (RHR) coils with multiple circuits handle applications where a number of refrigeration compressors are connected to a single coil. Each circuit has heavy wall copper, sweat type, hot gas inlet and liquid or cooled gas outlet connections. Heatcraft's custom coil circuiting maintains an internal coil pressure drop below 5 PSIG for each system. Depending upon job requirements select 1/2" (Type A) or 5/8" (Type 5) tube coils, select one of five fin densities (6, 8, 10, 12, and 14 FPI), and select from coil row depths of 2, 3, 4, 5, 6, an 8 rows.

Nonfreeze Steam (NFS) coils have internal steam distributing tubes which are directionally lanced for high performance and good condensate removal. The coils are also pitched in the coil casing. The design working pressure and temperature of standard copper tube coils are 150 PSIG and 366°F. respectively. Depending upon job requirements, select the 5/8" (Type 5) tube diameter coil at an optimum fin spacing and a one or two row coil depth for air handler model sizes 03 through 50. For models 65 and 75, select the 1" (Type 8) tube diameter coil with one row at an optimum fin spacing.

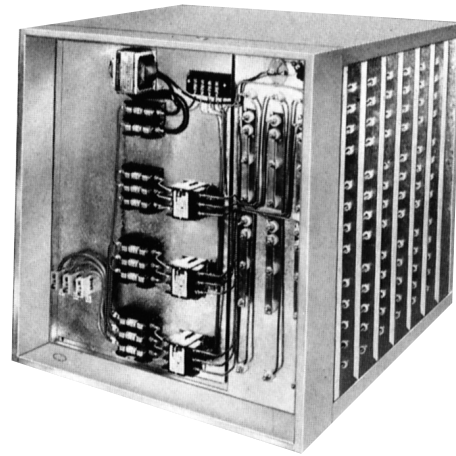


Steam Coils

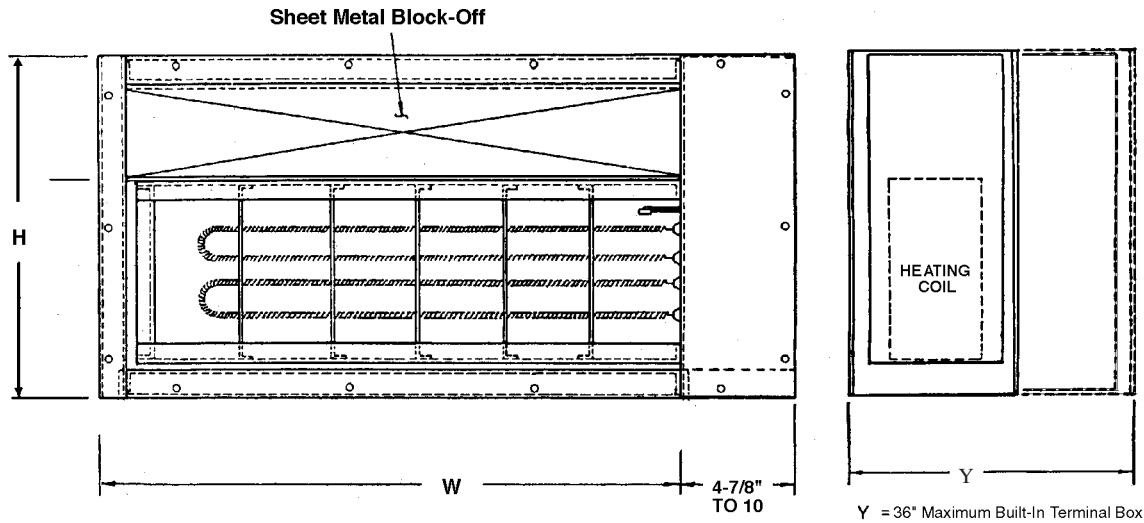
Electric heaters are UL listed for duct installation. The UL label applies to the heater only, not the complete air handler.

Heaters are furnished as a separate section and are available with insulated or uninsulated casings. Controls such as contactors, fuses, etc., may be factory installed and wired in the heater section end panel provided the number of control steps is not excessive.

Remote control panels are also available.



Construction & Dimensions



Unit Size	Heater Dimensions (In.)	
	H	W
03	22 3/4	30 5/8
06	26	45 5/8
08	35 1/2	42 5/8
10	35 1/2	51 5/8
12	38 3/4	57 5/8
14	38 3/4	66 5/8
18	47 3/4	66 5/8
20	44	83 5/8
26	44	108 5/8
34	54	108 5/8
41	65	108 5/8
50	74 3/4	110 7/8
65	82 3/4	126 7/8
75	94 3/4	126 7/8

Notes: Heaters for constant volume units to have 35 W/in² of wire surface maximum.

1. Total KW Needed

$$\text{Approximate KW} = \frac{\text{CFM} \times \text{TD (F)}}{3000}$$

2. Number Of Steps Recommended

Rule of thumb for calculating the recommended number of steps required. Use Step A or B below, whichever is higher.

$$\text{A. Number of Steps} = \frac{300 \times \text{Total Heater KW}}{\text{CFM}}$$

(Based on approx. 10°F. temp. rise per step)

$$\text{B. Number of Steps} = \frac{\text{Total Heater KW}}{\text{Maximum KW per step}}$$

The standard electric heater section construction includes:

1. Automatic thermal cutout
2. Heat limiters
3. Air flow switch

Typical options for the electric heater section are:

1. Fiberglass insulation in cabinet
2. At least one magnetic contactor per step of heating (two or three pole break)
3. Three phase fuse blocks and fuses
4. Transformer with primary fusing
5. Manual reset thermal cutout in control circuit

Maximum KW per contactor and per fuse block (at least one contactor is required per step of heating):

Component	Maximum KW			
	208 V	240 V	460 V	480 V
Low amps contactor	9.0	10.4	19.9	20.8
High amps contactor	17.3	19.3	38.2	39.9
Fuse block	17.3	19.9	38.2	39.9

Electric Heater Selection Example

A. How many KW is needed to increase temperature of 17000 CFM by 27 °F for Air Handler Model Size 34?

$$\frac{17000 \times 27}{3000} \text{ is: } 153 \text{ KW IS REQUIRED}$$

B. How many steps required at 10°F rise per step?

$$\frac{300 \times 153}{17000} \text{ is: } 2.7 \text{ STEPS ROUNDS UP TO 3 STEPS}$$

C. How many steps required at 460 volts with low amps contactors?

$$\frac{153}{19.9} \text{ is: } 7.7 \text{ STEPS ROUNDS UP TO 8 STEPS}$$

D. How many steps required at 460 volts with high amps contactors?

$$\frac{153}{38.2} \text{ is: } 4.0 \text{ STEPS}$$

E. How many fuse blocks required?

$$\frac{153}{38.2} \text{ is: } 4.0 \text{ FUSE BLOCKS}$$

°F. Order the 153 KW to get the 27 degree rise.

Throw out the 3 steps (figured at 10°F. rise in part B), because it is smaller than the two values figured per contactor size (parts D & E). Decide whether you want high amps or low amps contactors, if you want low amps contactors, round the 7.7 to 8 and order 8 of the low amps contactors (you now have a possible 8 steps of control). If four steps of control are satisfactory, order the high amps contactors. In either case, the application requires four fuse blocks (part E).

Notes:

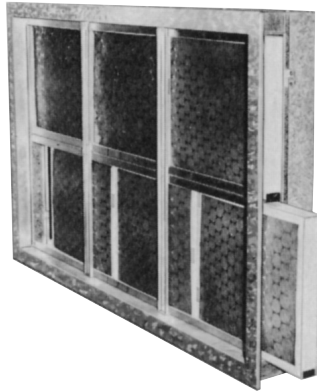
1. You must order the split shipment of the fan and coil sections to get electric heat on unit size 03 through unit size 18.
2. All electric heat controls are built into the heater control box.
3. Specify two pole break contactors or three pole break contactors. Two pole contactors only de-energize, while three pole contactors disconnect.
4. Be aware of requirements for heater circuits rated more than 48 amps. According to N.E.C. Code and U.L. you must subdivide the heater elements of such circuits. N.E.C. Code requires that the sub-circuit fuses be furnished by the heater manufacturer.

Commonly Used Control Systems:

- A. For small loads (up to 20 KW), consider a multi-stage thermostat.
- B. For medium loads (up to 200 KW), consider a modulating thermostat that operates a step controller.
- C. For fine control of large loads (above 75 KW), consider a combination step control and SCR vernier system. This scheme has 80% of heater capacity controlled by conventional step controller, with the other 20% on a solid state SCR controller.
- D. For 100% proportional control of any size, consider a total SCR control.
- E. Heatcraft does not supply :
 multi-stage thermostats
 modulating thermostats
 But you will want to order contactors and fuse blocks from Heatcraft that are appropriate for the control scheme specified in the field.

Flat Filter Sections

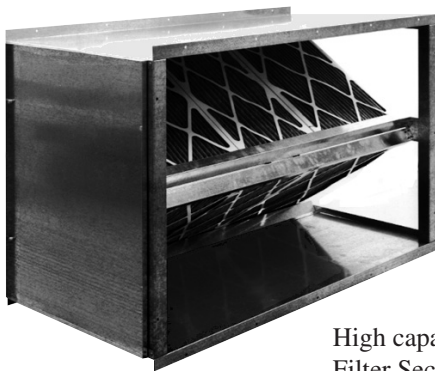
Flat filter sections are space saving and economical. Choose either two inch or four inch filters. The two inch filters can be the throwaway, the 35% pleated, or the high velocity cleanable type. Four inch filters are 35% pleated, they have more filter surface than two inch filters. Four inch filters impose less static on air flow and do not need to be changed as often as two inch filters. The filters slide into metal channels and are removable from either side of the section.



Flat Filter Section

High Capacity Filter Sections

Designed for high air volume applications. Filters are arranged in a V or W pattern for the greatest surface possible which provides extended filter life and reduced resistance to air flow. This means less fan horsepower. The sections have access doors on each side to ease filter change.

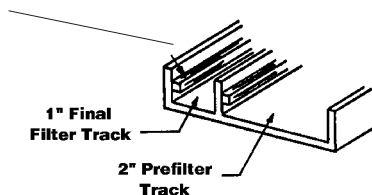


High capacity Filter Section

High Efficiency Filter Sections

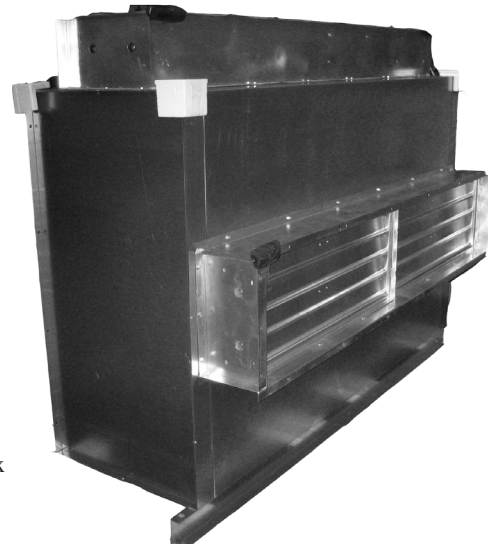
Select 22", 28", or 44" bag filter sections. Choose medium or high efficiency bag or cartridge filters for this section. See pages 9, 29, 42, and 43. Sections are complete with prefilter and bag filter tracks. The sections have an extruded aluminum final filter track with a reinforced nylon pile seal. The positive seal forces the air flow through the high efficiency final filter.

Extruded Aluminum Filter Track
Final Filter Tracks Have Reinforced Nylon Pile For A Positive Seal



Mix Box Sections

The Mixbox is an entering air section. Typically, the mixbox accepts air from two sources. Many system designers economize performance by varying the two air flows to deliver conditioned air with minimum energy consumption. Mixbox sections are constructed with heavy gauge mill galvanized steel. Select from three inlet opening locations: the air can enter through openings at the top, at the back, or at the bottom of the section. Order the mixbox with or without dampers. The section with dampers has parallel blades at each opening and an interconnecting linkage between the openings. The damper rods rotate in frictionless sleeve bearings, and the drive rod extends from both sides of the section for either left or right hand drive.



Mixbox

Face And Bypass Dampers

For damper applications, choose either the internal face and bypass section or the external face and bypass section. If used with a large coil the damper section must be the external face and bypass damper type. When used with a small coil, select the internal face and bypass damper section. The damper sections have balanced opposed blades with interconnecting linkage. The blades positively lock to the damper shafts. The shafts rotate freely in frictionless sleeve bearings.

Face and Bypass Dampers



Filters And Auxiliary Sections
(see pages 42 and 43 for number and quantity of filters per model)

Flat and High Capacity Filter Sections- All Unit Sizes: (Dimensions, Page 29 to 37)

<p>2" flat filter section with choice of three standard filter types:</p> <ul style="list-style-type: none"> • 2" throwaway filters • 2" 35% efficient pleated filters • 2" permanent high velocity cleanable filters
<p>4" flat filter section:</p> <ul style="list-style-type: none"> • with 4" 35% efficient pleated filters
<p>High capacity filter section with choice of three standard filter types:</p> <ul style="list-style-type: none"> • 2" throwaway filters • 2" 35% efficient pleated filters • 2" permanent high velocity cleanable filters

High Efficiency Filter Sections- All Unit Sizes: (Dimensions, Page 29 to 37)

<p>Prefilters: select either 2" throw-away or 2" 35% efficient filters as prefilters. All three high efficiency filter sections accept prefilters, without reducing final filter depth capacity.</p>
<ul style="list-style-type: none"> • 2" high efficiency filter section (accommodates up to 12" of final filter depth): • Prefilter and either 6" or 12" cartridge filters at 60% to 65%, or 80% to 85%, or 90% to 95% efficiency
<ul style="list-style-type: none"> • 28" high efficiency filter section (accommodates up to 21" of final filter depth): • Prefilter and 21" bag filters at 60-65%, or 80-85%, or 90-95% efficiency
<ul style="list-style-type: none"> • 44", high efficiency filter section (accommodates up to 37" of final filter depth): • Prefilter and 30" bag filters at 60% to 65%, or 80% to 85%, or 90% to 95% efficiency • OR prefilter and thirty-seven inch bag filters at 60% to 65%, or 80% to 85%, or 90% to 95% efficiency
<p>High efficiency filter section options:</p> <ul style="list-style-type: none"> • 1" depth by 3/4 lbs per cu. ft. density fiber glass insulation (standard section not insulated) • Diffuser section, must be used when high efficiency filter section is downstream of fan (blow-through unit) • Double wall construction on high efficiency filter section, adds 4" to the width and 2" to the height of the unit. Insulation is 2" depth and 1.5 lbs per cu. ft. fiberglass. The insulation is sandwiched between standard unit and outer skin.

Auxiliary Sections- All unit Sizes: (Dimensions, Page 29 to 37)

<ul style="list-style-type: none"> • Mixbox section, without dampers, with top, bottom, or back inlet openings,
<ul style="list-style-type: none"> • HCS type coil module, includes insulation, drain pan and four mounting legs, 15.5" max coil depth, see page 38. • HCL type coil module, includes insulation, drain pan and four mounting legs, and more coil depth, see page 38.
<ul style="list-style-type: none"> • internal face and bypass sections, must be used with small coil for air bypass. See page 8. • external face and bypass section, must be used with HCL type coil section or module. See page 8.
<ul style="list-style-type: none"> • Insulated access section, same size as high capacity filter section, hinged and latched doors, both sides. • Uninsulated access section, same size as high capacity filter section, hinged and latched doors, both sides.



Accessories for Fan and Coil Sections

Fan Section Accessory:

Forward curved blower for total static of 3.5" to 6"	Models 03 - 18 for all cabinet styles
Internal spring isolation (discharge arrangement 2 and 3 only).....	All models except size 14 and VCS cabinets
Internal spring isolation (discharge arrangement 2, 3, 4, 5 only)	All VCS cabinets except size 14
Inlet vanes (does not include damper motor), forward curve (FC).....	Models 20 - 41 for all cabinet styles
Inlet vanes (does not include damper motor), air foil (AF) fan	Models 20 - 75 for all cabinet styles
Dual drive (extended shaft blowers with motors and drives installed on each side of fan, select 2 motors and 2 drives	Models 20 - 75 for all cabinet styles

Available on:

Coil Section Accessory:

Large face area and small face area coils (see pages 42 & 43).....	All HCS, HCL, HD, and VCS coil cabinets
Balancing dampers above small coil (to adjust air flow over coil in the field).....	All HCS, HCL, HD, and VCS cabinets
Blank off plate above small sized coil (to force entire air flow over coil).....	All HCS, HCL, HD, and VCS cabinets
Stainless steel drain pan (in coil sections).....	All HCS, HCL, HD, and VCS coil cabinets
Coil section access door (standard section has removable panels).....	All HCL and VCS coil cabinets
Coil spacer, a preheat coil can be spaced apart from a cooling coil with a coil spacer, the spacer prevents air bypass around the downstream coil. The standard spacer is 6" wide and is furnished with a 4" x 6" removable inspection plate. See below for reheat coil.	All HCL and VCS coil cabinets
Mount reheat coil to leaving air side of section (see page 38).....	All HCL and VCS coil cabinets

Available on:

Gaskets

Gaskets between sections.....	All HCS, HCL, HD, and VCS cabinets
Gaskets between sections and gasketed panels (outdoor application).....	Available on all five cabinets

Available on:

Double Wall:

Double wall construction, adds 4" to the width and 2" to the height and length of cabinet. Insulation is 2" of fiberglass at 1.5 lbs per cubic foot density.
The insulation is sandwiched between the standard unit and the outer skin.

Available on all five fan and coil cabinets

Available Motors, Drives, Motor Starters per Horsepower

Motors are three phase, ball bearing, rigid base and belt duty.
'A' = Available

Motor	Drive* Description	Starter	Motor Horsepower													
			1	1.5	2	3	5	7.5	10	15	20	25	30	40	50	
Open single speed motor, EPAct			A	A	A	A	A	A	A	A	A	A	A	A	A	A
Totally enclosed fan cooled (TEFC) motor, EPAct			A	A	A	A	A	A	A	A	A	A	A	A	A	A
Open 2 speed 2 winding, 1800-1200 RPM motor			A	A	A	A	A	A	A	A	A					
Open single speed premium high efficiency motor			A	A	A	A	A	A	A	A	A	A	A	A	A	A
Fixed drive - at a 120% Safety Factor of HP	A		A	A	A	A	A	A	A	A	A	A	A	A	A	
Fixed drive - selected at a 150% SF of HP	A		A	A	A	A	A	A	A	A	A	A	A	A	A	
Adjustable drive - selected at a 120% SF of HP	A		A	A	A	A	A	A	A	A	A					
Adjustable drive - selected at a 150% SF of HP	A		A	A	A	A	A	A	A	A	A					
Motor starter at 460/3/60, 120 volt holding coil			A	A	A	A	A	A	A	A	A	A	A	A	A	A
Motor starter at 230/3/60, 120 volt holding coil			A	A	A	A	A	A	A	A	A	A	A			
Motor starter at 200-208/3/60, 120 volt holding coil			A	A	A	A	A	A	A	A	A					

* The percentage means the belts can handle an extra 20% or 50% BHP.



1. Air handler selections vary with each application. Use the index below to find Heatcraft Products air handler performance tables for:
 - Standard comfort cooling (either direct expansion or chilled water)
 - Heating (either steam or hot water, either make up air or return air)
 - Supermarket air conditioning (direct expansion refrigerant)
 - Heat reclaim (coil performance, refrigerant condenser, typically supermarket)

2. The air handler performance tables give ARI ratings for the specific applications, conditions and coils listed. All performance tables (except reclaim) rate: 10 FPI coils at 500 FPM coil air velocity. To select air handlers for other applications, conditions, or components:
 - Call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.
 - Use tables on pages 21 to 23 for estimates of coil performance at various conditions.

3. See page 12, step 5 to calculate total static pressure. Consult fan tables, pages 24 to 29 and select fan motor.

4. Heatcraft builds each air handler to your components specifications. Please specify the following as needed with your order:
 - CFM
 - External or total static pressure
 - Motor HP, motor type, motor voltage, motor location (left hand or right hand)
 - Describe coils or specify with Heatcraft Products model numbers.

Coil description can include:

 - Rows, FPI, refrigerant, design capacity (BTUH),
 - Number of circuits, coil location inside air handler (preheat, reheat, etc.)
 - Location of coil connections (left hand or right hand)
 - Filter sections and filter types
 - Vibration isolators

5. Go to page 12 for air handler selection example.

Index To Air Handler Performance Tables - Typical Applications & Coil Selections		
Application & Table	Coil Type	Selection Conditions
Heating and cooling Table 1 "Quick Reference", page 13	Refrigerant Water & Steam	Selected conditions for each coil type presented in a single table. See Table 1 notes for conditions.
Cooling:		
Standard comfort cooling Tables 2 & 3, page 14	DX Refrigerant 4 & 6 Row Coils	80°F. DB entering air 35°F., 40°F., and 67°F. WB entering air 45°F. evaporating temp
Supermarket air conditioning Tables 4 & 5, page 15	DX Refrigerant 4 & 6 Row Coils	75°F. DB entering air 35°F., 40°F., and 63°F. WB entering air 45 °F. evaporating temp
Standard comfort cooling Tables 6 to 9, page 16	Chilled Water 4 & 6 Rows	80°F. DB entering air 42°F. ,44°F., 45°F. entering 67°F. WB entering air water temperature
Heating:		
Refrigerant Hot Gas Reclaim Table 16 page 20	Refrigerant 2, 3, 4, 6, 8 Row Coils	50°F. Temperature Difference Between Condensing Temperature and Coil Entering Air Temp.
Preheating, Tempering Tables 10 & 11, page 18	Hot Water 1 & 2 Rows	0 °F. entering air 180°F. entering water and 200°F. entering water
Preheating, Tempering Table 11, page 18	Steam 1 Row Only	0°F. entering air 5 PSIG steam*
Heating Return Air Tables 12 & 13, page 19	Hot Water 1 & 2 Rows	60°F. entering air 180°F. entering water 200°F. entering water
Heating Return Air Table 13, page 19	Steam 1 & 2 Rows	60°F. entering air 5 PSIG steam*

* Steam coils for model sizes 65 and 75 have a 1" tube diameter.

Air Handler Selection Conditions:

"I want a ceiling mounted air handler that gives 35 tons of cooling and 35 tons of heating. I have 44°F. water for cooling and I have 200°F. water for heating. My entering air temperatures on the coil are standard, that is 80°F. dry bulb and 67°F. wet bulb (50% relative humidity) for cooling. For heating, the entering air temperature is 60°F. I will supply duct work, you should select the motor to handle a half inch of external static pressure. Select the smallest air handler possible and tell me what kind of CFM, flow rates, fluid pressure drops, and sensible cooling performance your selection will give me. I want a filter too."

Selection Procedure:

1. Which air handler for cooling performance?

Look at index of air handler performance on page 11. Find that tables 6 through 9 give chilled water performance.

You need 35 tons or $35 \times 12 = 420$ MBH

Compare 1/2" and 5/8" and 4 row and 6 row performance:

Select size 20 air handler with six row 1/2" tube coil with capacity of:	430	MBH
Note that 4 row 5/8" tube coil is not enough at:	374	MBH

2. Which air handler for heating performance?

Look at index of air handler performance on page 11. Find that tables 12 & 13 are for hot water performance with 60°F. air.

You need 35 tons or $35 \times 12 = 420$ MBH

Compare 1/2" and 5/8" and 1 row and 2 row performance:

Select one row 5/8" tube coil for size 20 air handler with capacity of:	502	MBH
Note that 1 row 1/2" tube coil is much too small at capacity of	395	MBH

3. Comparing steps 1 & 2, select:

Size 20 air handler at 10025 CFM with
6 row, 1/2" tube chilled water coil with
1 row, 5/8" tube hot water coil.

4. Look at page 38, "Characteristics of standard coil sections" and confirm that:

1 row depth coil casing:	3.25	inches
+ 6 row depth coil casing:	+9.75	inches
Total	13.00	inches fits into HCS type cabinet

5. Look at page 40 & 41, "Air pressure drop tables" and calculate total pressure drop:

0.17	inch	Pressure drop through 1 row coil, see dry 5/8" tube at: $10025 \text{ Divided By } 19.25 = 521 \text{ FPM}$
0.79	inch	Pressure drop through 6 row coil see wet 1/2" tube at: 500 FPM
0.22	inch	Pressure drop for flat filter section, pleated 2" filter at: $10025 \text{ Divided By } 24.4 = 411 \text{ FPM}$
+0.50	inch	External static pressure
<u>1.68</u>	inch	Total static pressure

6. Look at page 27, "Fan performance":

Select a 5 HP motor for the condition of 10000 CFM and less than 1.75 inches of water.

7. Air handler description and performance:

Description:	Performance:
HCS model size 20	10025 CFM at 1.68" total static and
with 6 row 10FPI, type A, cooling coil	0.5" external static pressure
with 1 row 10 FPI, type 5, heating coil	430 MBH total cooling capacity and
with open 5 HP motor at 230/3/60 volts	292 MBH sensible cooling capacity with
(See page 10)	80°F. DB/ 67°F. WB entering air
with 120% adjustable drive	and 44 °F entering water at
with motor starter	85.8 GPM and 13.5 feet of
with flat filter section	fluid pressure drop
with 35% efficient 2" filters	502 MBH of heating capacity with
with (6) rubber in shear vibration isolators	60°F. entering air and 200°F.
for ceiling mount (see page 38)	entering water at 64.5 gpm
	and 12.3 feet of fluid pressure drop

8. To estimate performance of coils at other than 10 FPI, or different row depths, or different air speeds or temperature conditions see tables on page 20 - 23, or call your representative. With your representative, you can have specific computer selected coils for your job conditions.

Table 1

Heating and Cooling Performance for Selected Coils

At 500 FPM (2.54 m/s) and 10 FPI.

See notes for coil descriptions and rating conditions.

Unit Size	Note 1 air volume at 500 fpm 2.54 m/s		Note 2 air handler face area		Note 3 DX air conditioning		Note 4 Refrigerant Heat reclaim		Note 5 Chilled water A/C		Note 6 Hot water Heating		Note 7 Steam Heating	
	CFM	cu m/h	SQ FT	sq m	MBH	KW	MBH	KW	MBH	KW	MBH	KW	MBH	KW
03	1565	2659	3.13	0.29	58	17.0	50	14.7	73	21.4	177	51.9	93	27.3
06	2880	4893	5.76	0.54	110	32.2	92	27.0	136	39.9	341	99.9	179	52.4
08	3905	6635	7.81	0.73	150	44.0	124	36.3	179	52.5	452	132.4	254	74.4
10	4885	8300	9.77	0.91	190	55.7	156	45.7	229	67.1	548	160.6	317	92.9
12	6200	10534	12.40	1.15	241	70.6	198	58.0	286	83.8	684	200.4	395	115.7
14	7290	12386	14.58	1.36	284	83.2	232	68.0	328	96.1	812	237.9	465	136.2
18	8855	15045	17.71	1.65	345	101.1	282	82.6	418	122.5	1034	303.0	571	167.3
20	10025	17033	20.05	1.86	390	114.3	319	93.5	472	138.3	1162	340.5	651	190.7
26	13280	22563	26.56	2.47	520	152.4	423	124.0	616	180.5	1520	445.4	859	251.7
34	16825	28586	33.65	3.13	659	193.1	536	157.1	814	238.5	2026	593.6	1145	335.5
41	20365	34601	40.73	3.79	797	233.5	649	190.2	978	286.6	2406	705.0	1360	398.5
50	25313	43008	50.63	4.70	992	290.7	807	236.5	1196	350.4	2637	772.6	1586	464.7
65	32290	54861	64.58	6.00	1253	367.1	1029	301.5	1549	453.9	3798	1112.8	1848	541.5
75	37675	64011	75.35	7.00	1462	428.4	1200	351.7	1792	525.1	4407	1291.3	2156	631.7

Notes

- Note 1 - Air volume in CFM and cubic meters per hour for air speed of 500 fpm or 2.54 meter per second through a large face area 1/2" tube diameter (Type A) coil for each air handler model. See pages 42 & 43 for range of air volumes for each model.
- Note 2 - Face area of large size 1/2" diameter tube coil for each air handler in square feet and square meters. 5/8" & 1" diameter tube coils have slightly smaller face areas. See page 42 & 43 for other coils.
- Note 3 - Direct expansion halocarbon air conditioning in thousands of BTUH and kilowatts. Performance is for a 1/2" tube, 4 row, 10 FPI coil with 40°F. (4.4°C.) evaporating temperature and entering air temperatures at 80°F. (26.7°C.) dry bulb and 67°F. (19.4°C.) wet bulb. See pages 14, 15, and 21 for other coils and conditions.
- Note 4 - Halocarbon refrigerant gas heat reclaim (thousands of BTUH and kilowatts). Performance is for a 1/2" tube, 3 row, 10FPI coil with a 50°F. TD (or 27.7 degrees centigrade of temperature difference) between entering air and condensing temperature. See page 20 for other coils and conditions.
- Note 5 - Chilled water air conditioning in thousands of BTUH or kilowatts. Performance is for a 5/8" tube, 6 row, 10FPI coil with 44°F. (6.7°C.) entering water temperature. Entering air temperatures are 80°F. (26.7°C.) dry bulb and 67°F. (19.4°C.) wet bulb. The fluid pressure drop is less than 25 feet (0.76 kilogram per square centimeter) and the water velocity is less than 6 fps (1.83 meters per second). See pages 16,17,and 22 for other coils and conditions.
- Note 6 - Hot water heating performance in thousands of BTUH or kilowatts. Performance is for a 5/8" tube, 2 row, 10 FPI coil with 200°F. (93.3°C.) entering water temperature. The entering air temperature is 0°F. (-18°C.). The fluid pressure drop is less than 25 feet (0.76 kilogram per square centimeter) and the water velocity is less than 6 fps (1.83 meters per second). See pages 18, 19, and 23 for more coils.
- Note 7 - Steam heating performance in thousands of BTUH or kilowatts. The coils are 5/8" tube, 1 row, and 10 FPI (coils for models 65 and 75 are 1" diameter tubes). The entering air temperature is 60°F. (15.6°C.) and the steam pressure is 5 psig (1.38 kilogram per square centimeter). See pages 18, 19, and 23 for other coils and conditions.



Air Handler Performance- Direct Expansion

Table 2
Comfort Cooling

1/2" tube, entering air at 80°F. DB and 67°F. WB**
1/2" Tube , direct expansion, cooling capacities
10 FPI**, large coils, 500 FPM**

Unit Size	CFM Std Air	Coil Face Area	MBH - 4 ROWS						MBH - 6 ROWS					
			35°F. SST		40°F. SST		45°F. SST		35°F. SST		40°F. SST		45°F. SST	
			Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
03	1565	3.13	70	44	58	38	44	33	87	53	75	48	61	42
06	2880	5.76	132	81	110	72	90	64	163	99	138	88	114	78
08	3905	7.81	177	110	150	99	123	88	219	133	189	119	154	105
10	4885	9.77	224	139	190	125	152	109	278	168	235	150	192	131
12	6200	12.40	284	177	241	157	194	140	353	214	301	191	242	166
14	7290	14.58	336	207	284	187	231	165	416	253	354	225	290	197
18	8855	17.71	408	250	345	226	280	201	505^	308	428	272	352	242
20	10025	20.05	459	282	390	256	319	226	568	343	489	308	399	273
26	13280	26.56	614	379	520	338	418	300	762^	461	648^	411	524	358
34	16825	33.65	778^	480	659^	428	530^	380	966^	584	821^	520	664^	454
41	20365	40.73	942^	581	797^	518	641^	460	1168^^	706	994^^	630	804^	549
50	25313	50.63	1169^	721	992^	648	803^	577	1488*	875	1239*	788	1002*	686
65	32290	64.58	1447^	905	1253^	827	1035^	742	1820*	1104	1574*	995	1293*	884
75	37675	75.35	1689*	1056	1462*	965	1208*	866	2124*	1288	1836*	1161	1509*	1032

Table 3
Comfort Cooling

5/8" tube, entering air at 80°F. DB and 67°F. WB**
5/8" Tube, direct expansion, cooling capacities
10 FPI**, large coils, 500 FPM**

Unit Size	CFM Std Air	Coil Face Area	MBH - 4 ROWS						MBH - 6 ROWS					
			35°F. SST		40°F. SST		45°F. SST		35°F. SST		40°F. SST		45°F. SST	
			Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
03	1500	3.00	75	47	62	42	48	37	88	54	76	49	63	43
06	2844	5.69	138	88	111	77	84	67	173	105	147	94	118	81
08	3750	7.50	178	114	157	106	129	95	228	139	192	122	152	106
10	4690	9.38	234	148	192	130	157	116	283	173	244	156	198	136
12	5844	11.69	296	186	246	165	192	144	346	212	301	192	249	169
14	6875	13.75	349	220	295	196	235	172	412	253	345	221	290	199
18	8750	17.50	444	280	375	249	299	219	536	326	455	289	369	254
20	9625	19.25	467	297	408	273	335	245	591	360	500	317	412	279
26	12750	25.50	651	408	540	362	422	314	779^	475	665	421	547	371
34	17000	34.00	868^	544	720^	482	563	418	1039^	633	886^	562	729^	495
41	20188	40.38	1030^	646	855^	573	669	497	1234^	752	1052^	667	866^	587
50	24750	49.50	1268^	790	1059^	709	830^	610	1520*	923	1282^	817	1062^	722
65	32292	64.58	1651^	1032	1401^	933	1116^	809	1989*	1212	1692*	1067	1369^	937
75	37458	74.92	1915^	1197	1625^	1082	1295^	939	2307*	1405	1962*	1238	1588^	1087

SST = Saturated Suction Temperature
MBH = BTU per Hour in Thousands
Sens. = Sensible Capacity

All coils have single refrigerant distributors unless noted as below:

- ^ These selections require two circuits.
- ^^ These selections require three circuits.
- * These selections require four circuits.

** To estimate performance of coils at other than 10 FPI or at other air speeds or with other refrigerant or air temperatures see page 21, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



Table 4
Supermarket
Air Conditioning

1/2" tube, entering air at 75°F. DB and 63°F. WB**
1/2" tube, direct expansion, cooling capacities
10 FPI**, large coils, 500 FPM**

Unit Size	CFM Std Air	Coil Face Area	MBH - 4 ROWS						MBH - 6 ROWS					
			35°F. SST		40°F. SST		45°F. SST		35°F. SST		40°F. SST		45°F. SST	
			Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
03	1565	3.13	57	39	44	34	32	29	72	48	60	42	46	36
06	2880	5.76	108	73	88	65	69	56	133	88	111	78	86	67
08	3905	7.81	145	99	121	88	92	76	182	119	151	106	117	91
10	4885	9.77	184	125	149	110	117	97	228	150	187	132	147	115
12	6200	12.40	234	159	192	139	147	121	292	191	238	168	186	144
14	7290	14.58	276	187	227	164	174	145	341	224	284	199	218	171
18	8855	17.71	335	227	276	199	211	176	414 [^]	273	345	241	267	208
20	10025	20.05	378	254	314	227	240	196	472	312	391	272	302	233
26	13280	26.56	505	342	413	298	320	261	628 [^]	411	513 [^]	361	402	311
34	16825	33.65	640 [^]	434	523 [^]	378	405	330	796 [^]	520	649 [^]	457	510 [^]	394
41	20365	40.73	775 [^]	525	633 [^]	457	490	403	963 ^{^^}	630	786 ^{^^}	553	617 [^]	477
50	25313	50.63	962 [^]	645	793 [^]	573	603 [^]	500	1199 [*]	787	984 [*]	984	764 [^]	593
65	32290	64.58	1312 [^]	820	1011 [^]	736	778 [^]	640	1520 [*]	992	1265 [*]	880	978 [*]	758
75	37675	75.35	1415 [*]	957	1180 [*]	859	908 [*]	747	1773 [*]	1158	1476 [*]	1027	1141 [*]	885

Table 5
Supermarket
Air Conditioning

5/8" tube, entering air at 75°F. DB and 63°F. WB**
5/8" tube, direct expansion, cooling capacities
10 FPI**, large coils, 500 FPM**

Unit Size	CFM Std Air	Coil Face Area	MBH - 4 ROWS						MBH - 6 ROWS					
			35°F. SST		40°F. SST		45°F. SST		35°F. SST		40°F. SST		45°F. SST	
			Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.
03	1500	3.00	61	42	48	36	36	31	74	49	61	43	48	37
06	2845	5.69	110	77	85	66	62	57	143	94	116	82	88	70
08	3750	7.50	152	106	127	93	98	82	187	123	151	107	117	92
10	4690	9.38	189	132	153	116	122	102	236	155	194	136	149	117
12	5844	11.69	242	167	192	143	142	123	291	193	243	170	189	147
14	6875	13.75	288	197	233	173	175	148	334	221	281	198	224	173
18	8750	17.50	367	251	296	221	223	188	442	291	360	251	285	220
20	9625	19.25	394	270	329	245	256	213	486	320	402	281	312	240
26	12750	25.50	531	366	419	313	332	278	641	425	535	374	415	323
34	17000	34.00	708 [^]	488	559 [^]	418	442	371	855	567	713 [^]	498	553	430
41	20188	40.38	840 [^]	580	664 [^]	496	525	441	1016	673	846 [^]	592	657	511
50	24750	49.50	1037 [^]	706	826 [^]	615	634 [^]	532	1242 [*]	820	1036 [^]	726	811 [^]	622
65	32292	64.58	1364 [^]	927	1105 [^]	814	832 [^]	704	1641 [*]	1081	1339 [*]	938	1059 [^]	813
75	37458	74.92	1582 [^]	1075	1282 [^]	944	966 [^]	817	1904 [*]	1254	1553 [*]	1088	1229 [^]	943

SST = Saturated Suction Temperature
MBH = BTU per Hour in Thousands
Sens. = Sensible Capacity
Face Area in square feet

All coils have single refrigerant distributors unless noted as below:
^ These selections require two circuits.
^^ These selections require three circuits.
* These selections require four circuits.

** To estimate performance of coils at other than 10 FPI or at other air speeds or with other refrigerant or air temperatures see page 21, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



Air Handler Performance- Chilled Water

4 Row Coils*

Table 6
Comfort Cooling

1/2" tube, entering air at 80°F. DB and 67°F. WB
1/2" tube, chilled water, cooling capacities
10 FPI*, 4 rows, large coils, 500 FPM*

Unit Size	CFM Std Air	Coil Face Area	42°F. Entering Water				44°F. Entering Water				45°F. Entering Water			
			MBH		GPM	PD	MBH		GPM	PD	MBH		GPM	PD
			TOTAL	SENS			TOTAL	SENS			TOTAL	SENS		
03	1565	3.13	51	37	10.2	2.4	46	35	9.1	1.9	43	34	8.6	1.7
06	2880	5.76	105	73	20.9	8.8	94	69	18.8	7.2	89	67	17.7	6.5
08	3905	7.81	139	98	27.8	7.6	125	92	25.0	6.3	118	89	23.6	5.6
10	4885	9.77	181	125	36.2	13.6	163	118	32.6	11.2	154	114	30.8	10.1
12	6200	12.40	233	160	46.6	18.2	210	151	41.9	15.0	198	146	39.6	13.5
14	7290	14.58	271	187	54.0	10.6	253	180	50.5	22.8	239	174	47.8	20.6
18	8855	17.71	328	227	65.6	10.8	307	218	61.4	23.8	290	212	58.0	21.5
20	10025	20.05	390	265	77.8	20.2	346	247	69.1	16.4	327	239	65.3	14.8
26	13280	26.56	500	343	99.8	15.6	450	323	89.8	12.8	425	313	84.9	11.6
34	16825	33.65	633	435	126.5	16.5	570	409	113.8	13.6	538	396	107.5	12.2
41	20365	40.73	767	527	153.1	17.0	690	495	137.8	14.0	652	480	130.2	12.6
50	25313	50.63	961^	658	191.9	17.8	865^	618	172.8	14.7	817^	600	163.3	13.3
65	32290	64.58	1105^	790	220.6	5.5	1125^	798	224.8	21.7	1064^	774	212.6	19.6
75	37675	75.35	1289^	922	257.5	6.0	1313^	931	262.3	22.6	1241^	903	248.1	20.4

Table 7
Comfort Cooling

4 Row Coils*

5/8" tube, entering air at 80°F. DB and 67°F. WB
5/8" tube, chilled water, cooling capacities
10 FPI*, large coils, 500 FPM*

Unit Size	CFM Std Air	Coil Face Area	42°F. Entering Water				44°F. Entering Water				45°F. Entering Water			
			MBH		GPM	PD	MBH		GPM	PD	MBH		GPM	PD
			TOTAL	SENS			TOTAL	SENS			TOTAL	SENS		
03	1500	3.00	62	42	12.5	10.6	57	40	11.5	9.1	54	39	11.5	9.1
06	2845	5.69	125	83	33.5	10.7	113	78	29.5	8.5	109	76	29.5	8.5
08	3750	7.50	163	109	43.5	10.5	148	103	39.5	8.7	142	100	39.5	8.7
10	4690	9.38	203	136	47.5	13.5	179	126	39.5	9.6	172	123	39.5	9.5
12	5854	11.69	257	171	59.5	19.0	228	158	49.5	13.5	219	155	49.5	13.4
14	6875	13.75	296	198	59.5	20.3	269	187	54.5	17.2	259	183	54.5	17.1
18	8750	17.50	377	252	75.5	16.8	342	238	69.5	14.4	330	232	69.5	14.4
20	9625	19.25	414	277	89.5	12.3	374	260	79.5	9.9	360	255	79.5	9.9
26	12750	25.50	558	371	125.5	15.2	499	347	109.5	11.7	480	339	109.5	11.7
34	17000	34.00	751	498	175.5	16.7	680	468	159.5	13.9	655	458	159.5	13.9
41	20190	40.38	880	586	197.5	17.1	799	552	179.5	14.2	766	540	179.5	14.2
50	24750	49.50	1058^	710	219.5	13.6	983^	679	219.5	13.5	947^	663	219.5	13.4
65	32290	64.58	1145^	917	309.0	12.4	1287^	888	271.5	18.3	1240^	867	271.5	18.2
75	37460	74.92	1599^	1073	379.0	14.6	1482^	1026	307.5	17.5	1417^	998	299.5	16.8

GPM = Gallons per minute

PD = Water pressure drop in feet of water

MBH = BTU per Hour in Thousands

Sens. = Sensible Capacity

^ These selections have two fluid circuits. All the other selections have a single fluid circuit.

* To estimate performance of coils at other than 10 FPI or at other air speeds or with other water or air temperatures see page 22, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



6 Row Coils*

Table 8
Comfort Cooling

1/2" tube, entering air at 80°F. DB and 67°F. WB
1/2" tube, chilled water, cooling capacities
10 FPI*, 6 rows, large coils, 500 FPM*

Unit Size	CFM Std Air	Coil Face Area	42°F. Entering Water				44°F. Entering Water				45°F. Entering Water			
			MBH		GPM	PD	MBH		GPM	PD	MBH		GPM	PD
			TOTAL	SENS			TOTAL	SENS			TOTAL	SENS		
03	1565	3.13	70	47	13.9	5.8	63	44	12.6	4.9	60	43	11.9	4.4
06	2880	5.76	137	90	27.4	20.0	125	84	24.9	16.8	118	82	23.6	15.3
08	3905	7.81	184	121	36.7	17.0	167	114	33.3	14.3	158	110	31.6	13.0
10	4885	9.77	225	149	44.9	8.3	214	145	42.8	25.0	203	140	40.6	22.8
12	6200	12.40	288	190	57.6	11.0	261	179	52.2	9.2	248	173	49.5	8.3
14	7290	14.58	346	227	69.1	16.8	314	213	62.7	14.1	298	206	59.5	12.8
18	8855	17.71	421	276	84.1	17.7	382	259	76.4	14.9	363	251	72.5	13.6
20	10025	20.05	464	306	115.7	23.0	430	292	85.8	13.5	408	283	81.4	12.3
26	13280	26.56	618	407	123.4	14.1	560	383	111.8	11.8	531	371	106.0	10.6
34	16825	33.65	783	516	156.3	15.3	709	485	141.7	12.8	672	470	134.3	11.5
41	20365	40.73	947	625	189.2	16.1	858	588	171.5	13.4	814	568	162.6	12.1
50	25313	50.63	1181 [^]	781	236.9	15.9	1075 [^]	735	214.8	13.3	1020 [^]	711	203.7	12.0
65	32290	64.58	1538 [^]	1007	307.2	23.2	1325 [^]	916	264.6	17.6	1325 [^]	916	264.6	17.6
75	37675	75.35	1795 [^]	1175	358.4	24.7	1546 [^]	1068	308.8	18.7	1546 [^]	1068	308.8	18.7

6 Row Coils*

Table 9
Comfort Cooling

5/8" tube, entering air at 80°F. DB and 67°F. WB
5/8" tube, chilled water, cooling capacities
10 FPI*, 6 rows, large coils, 500 FPM*

Unit Size	CFM Std Air	Coil Face Area	42°F. Entering Water				44°F. Entering Water				45°F. Entering Water			
			MBH		GPM	PD	MBH		GPM	PD	MBH		GPM	PD
			TOTAL	SENS			TOTAL	SENS			TOTAL	SENS		
03	1500	3.00	79	50	15.5	22.6	73	48	15.5	22.4	70	47	15.5	22.3
06	2844	5.69	146	94	29.5	11.9	136	89	29.5	11.8	131	87	29.5	11.7
08	3750	7.50	192	123	39.5	11.6	179	117	39.5	11.5	172	115	39.5	11.5
10	4690	9.38	245	157	49.5	19.3	229	149	49.5	19.2	220	146	49.5	19.1
12	5845	11.69	307	196	59.5	25.0	286	186	59.5	24.8	275	182	59.5	24.7
14	6875	13.75	364	232	79.5	14.3	328	216	69.5	11.1	316	211	69.5	11.1
18	8750	17.50	449	289	89.5	11.9	418	275	89.5	11.8	402	269	89.5	11.8
20	9625	19.25	507	323	99.0	20.2	472	308	99.5	20.3	453	300	99.0	20.0
26	12750	25.50	652	420	139.5	12.0	616	404	123.5	19.1	590	392	119.5	17.9
34	17000	34.00	863	557	179.5	12.6	814	536	159.5	18.1	786	523	159.5	18.0
41	20188	40.38	1033	665	219.5	16.0	978	642	199.5	21.9	945	625	199.5	21.8
50	24750	49.50	1286 [^]	822	279.5	13.4	1196 [^]	784	279.5	13.3	1152 [^]	765	279.5	13.3
65	32291	64.58	1686 [^]	1078	351.5	19.1	1549 [^]	1018	331.5	16.9	1491 [^]	994	332.0	17.0
75	37458	74.92	1922 [^]	1236	378.0	17.5	1792 [^]	1179	379.0	17.6	1722 [^]	1148	378.0	17.4

GPM = Gallons per minute

PD = Water pressure drop in feet of water

MBH = BTU per Hour in Thousands

Sens. = Sensible Capacity

[^] These selections have two fluid circuits. All the other selections have a single fluid circuit.

* To estimate performance of coils at other than 10 FPI or at other air speeds or with other water or air temperatures see page 22, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



Air Handler Performance- Hot Water/Steam

Table 10
Heating,
Water

Heating 0°F. Air*

1/2" tube, entering air at 0°F.
1/2" tube, hot water, heating capacities
10 FPI*, large coils, 500 FPM*

Unit Size	CFM Std Air	Face Area Sq. Ft.	180°F. Entering Water Coils						200°F. Entering Water Coils					
			One Row			Two Row			One Row			Two Row		
			MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD
03	1565	3.13	75	7.6	0.3	137	14.1	1.5	85	8.8	0.4	155	16.0	1.8
06	2880	5.76	144	14.8	1.0	259	26.6	4.9	164	16.9	1.3	292	30.1	5.9
08	3905	7.81	194	19.9	1.0	350	35.9	4.6	220	22.8	1.3	394	40.7	5.5
10	4885	9.77	247	25.3	1.8	442	45.3	7.7	280	28.9	2.1	497	51.3	9.2
12	6200	12.40	315	32.3	2.4	562	57.7	10.2	357	36.9	2.9	633	65.3	12.2
14	7290	14.58	375	38.4	3.5	665	68.2	14.9	424	43.7	4.2	747	77.2	17.8
18	8855	17.71	455	46.6	3.8	808	82.8	15.8	514	53.1	4.6	908	93.8	18.8
20	10025	20.05	522	53.5	6.4	899	92.2	4.4	589	60.8	7.7	1013	104.6	5.3
26	13280	26.56	700	71.8	12.4	1205	123.6	8.8	788	81.4	14.9	1355	140.0	10.5
34	16825	33.65	887	90.9	13.4	1526	156.5	9.4	999	103.2	16.1	1717	177.3	11.4
41	20365	40.73	1073	110.1	13.9	1847	189.5	9.9	1209	124.9	16.7	2078	214.6	11.9
50	25312	50.63	1337^	137.1	13.5	2301^	236.0	9.8	1505^	175.5	16.6	2525^	260.9	11.5
65	32290	64.58	1714^	175.8	19.7	2949^	302.4	14.1	1928^	199.2	23.6	3313^	342.2	17.0
75	37675	75.35	2000^	205.1	20.8	3440^	352.9	14.9	2250^	232.4	25.0	3865^	399.3	17.6

Table 11
Heating,
Water And
Steam

Heating 0°F. Air*

5/8" tube, entering air at 0°F.
Type 5**, hot water, heating & steam capacities
10 FPI*, large coils, 500 FPM*

Unit Size	CFM Std Air	Face Area Sq. Ft.	Water Heating Coils												Steam Coils^^			
			180°F. Entering Water						200°F. Entering Water						CFM	Face Std Air	One Area Sq. Ft.	Row MBH
			One Row			Two Row			One Row			Two Row						
			MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD				
03	1500	3.00	97	10.0	3.9	158	20.5	2.4	110	17.5	1.9	177	20.5	2.4	1375	2.75	126	
06	2844	5.69	191	30.5	5.0	304	33.0	5.6	216	33.0	5.6	341	36.0	6.4	2641	5.28	243	
08	3750	7.50	252	27.5	15.5	399	43.5	5.9	283	44.0	6.5	452	51.5	7.9	3563	7.13	331	
10	4690	9.38	311	41.0	6.1	504	54.5	9.5	359	55.0	10.1	548	61.5	3.2	4454	8.91	409	
12	5844	11.69	399	60.5	11.4	625	60.5	10.7	445	60.0	11.0	684	72.0	3.9	4781	9.56	439	
14	6875	13.75	466	60.5	11.7	724	80.0	5.0	519	60.0	11.3	812	84.5	5.4	6875	13.75	632	
18	8750	17.50	588	71.5	12.4	921	102.0	6.0	661	76.5	13.7	1034	108.0	6.5	8438	16.88	776	
20	9625	19.25	643	66.0	13.1	1027	112.0	8.8	718	66.0	12.9	1162	131.0	11.4	9625	19.25	880	
26	12750	25.50	835	66.0	14.0	1363	132.0	12.7	932	66.0	13.7	1520	132.0	12.5	12750	25.50	1103	
34	17000	34.00	1114	88.0	8.5	1818	176.0	15.7	1242	87.5	8.2	2026	175.0	15.2	16469	32.94	1425	
41	20188	40.38	1323	104.5	9.4	2159	209.0	17.8	1475	104.0	9.1	2406	208.0	17.3	19656	39.31	1700	
50	24750	49.50	1614^	121.0	13.4	2635^	238.5	11.9	1612^	120.0	13.2	2637^	240.0	12.0	23625	47.25	1994^	
65	32292	64.58	2077^	135.5	14.9	3409^	271.0	13.5	2316^	135.5	14.5	3798^	269.0	13.1	31000	62.00	2502**	
75	37458	74.92	2333^	133.0	8.5	3952^	312.0	14.9	2616^	136.5	8.7	4407^	313.0	14.6	36167	72.33	2919**	

GPM = Gallons per minute
PD = Water pressure drop in feet of water
MBH = BTU per Hour in Thousands

^ These selections have two circuits. All the other selections have a single circuit.
^^ All steam coils rated at 5 PSIG Steam.
** Steam selections for 65 and 75 are two circuits and are 1 inch diameter tube (Type-8).

* To estimate performance of coils at other than 10 FPI or at other air speeds or with other water or air temperatures or other steam pressures see page 23, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



Table 12
Heating,
Water

Heating 60°F. Air*

1/2" tube, entering air at 60°F.
1/2" tube, hot water, heating capacities
10 FPI, large coils, 500 FPM

Unit Size	CFM Std Air	Face Area Sq. Ft.	180°F. Entering Water Coils						200°F. Entering Water Coils					
			One Row			Two Row			One Row			Two Row		
			MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD
03	1565	3.13	45	4.6	0.1	86	8.8	0.7	56	5.7	0.2	104	10.7	0.9
06	2880	5.76	89	9.1	0.4	164	16.9	2.2	108	11.2	0.6	197	20.3	3.0
08	3905	7.81	119	12.2	0.4	221	22.7	2.1	146	15.0	0.6	266	27.5	2.8
10	4885	9.77	153	15.7	0.8	281	28.8	3.5	186	19.2	1.0	336	34.7	4.6
12	6200	12.40	196	20.1	1.0	358	36.7	4.6	238	24.6	1.4	428	44.2	6.1
14	7290	14.58	234	24.0	1.5	425	43.6	6.8	283	29.2	2.1	507	52.3	9.0
18	8855	17.71	285	29.2	1.6	516	52.9	7.2	344	35.5	2.2	615	63.6	9.5
20	10025	20.05	329	33.7	2.8	590	60.5	12.6	395	40.8	3.8	703	72.6	16.6
26	13280	26.56	443	45.5	5.5	767	78.7	3.9	531	54.9	7.4	917	94.7	5.2
34	16825	33.65	561	57.6	6.0	972	99.7	4.2	673	69.5	8.0	1162	120.0	5.6
41	20365	40.73	680	69.7	6.2	1177	120.7	4.4	814	84.1	8.3	1406	145.3	5.9
50	25312	50.63	847 [^]	86.9	6.2	1467 [^]	150.4	4.4	1015 [^]	104.9	8.3	1710 [^]	176.6	5.4
65	32290	64.58	1088 [^]	111.6	8.9	1884 [^]	193.2	6.4	1302 [^]	134.4	11.9	2247 [^]	232	8.5
75	37675	75.35	1270 [^]	130.3	9.4	2198 [^]	225.4	6.7	1519 [^]	156.9	12.5	2621 [^]	270.8	8.9

Table 13
Heating,
Water And
Steam

Heating 60°F. Air*

5/8" tube, entering air at 60°F.
Type 5**, hot water, heating & steam capacities
10 FPI*, large coils, 500 FPM*

Unit Size	CFM Std Air	Face Area Sq. Ft.	Water Heating Coils												Steam Coils ^{^^}		
			180°F. Entering Water						200°F. Entering Water						One Std Air	Two Row MBH	Row MBH
			One Row			Two Row			One Row			Two Row					
			MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD	MBH	GPM	PD			
03	1500	3.00	65	10.0	3.9	101	10.0	1.8	76	10.0	3.8	119	10.0	1.8	1375	93	148
06	2844	5.69	125	18.5	8.7	195	18.5	4.8	147	19.0	8.9	229	19.0	4.9	2641	179	284
08	3750	7.50	166	25.0	13.0	259	25.0	5.6	195	25.0	12.7	303	25.0	5.4	3750	254	403
10	4690	9.38	200	31.0	3.6	315	31.0	3.4	236	31.5	3.7	370	31.5	3.5	4675	317	499
12	5844	11.69	253	39.0	5.1	396	39.0	4.9	297	39.0	5.0	464	39.0	4.8	5845	395	628
14	6875	13.75	300	45.5	7.0	470	45.5	6.8	353	46.0	6.9	551	46.0	6.8	6875	465	739
18	8750	17.50	382	58.0	8.5	598	58.0	7.9	449	58.5	8.4	701	58.5	7.9	8438	571	907
20	9625	19.25	428	64.0	12.4	666	64.0	12.4	502	64.5	12.3	781	64.5	12.3	9625	651	1035
26	12750	25.50	557	65.5	13.8	864	85.0	5.7	653	66.0	13.7	1013	85.5	5.7	12750	859	1370
34	17000	34.00	743	87.5	8.4	1152	113.0	7.0	871	88.0	8.3	1351	114.0	7.0	17000	1145	1827
41	20188	40.38	882	104.0	9.3	1368	134.5	8.0	1034	104.0	9.1	1605	135.5	8.0	20190	1360	2170
50	24750	49.50	1077 [^]	120.5	13.2	1683 [^]	165.0	6.1	1261 [^]	120.0	12.9	1974 [^]	166.0	6.1	23625	1586 [^]	2539
65	32292	64.58	1384 [^]	134.5	14.6	2207 [^]	211.0	8.6	1623 [^]	135.5	14.5	2589 [^]	213.5	8.6	31000	1848 ^{**}	
75	37458	74.92	1565 [^]	136.5	8.8	2562 [^]	246.5	9.6	1837 [^]	137.5	8.8	3003 [^]	248.0	9.5	36167	2156 ^{**}	

GPM = Gallons per minute
PD = Water pressure drop in feet of water
MBH = BTU per Hour in Thousands

[^] These selections have two circuits. All the other selections have a single circuit.
^{^^} All steam coils rated at 5 PSIG Steam.
^{**} Steam selections for 65 and 75 are two circuits and are 1 inch diameter tube (Type 8).

* To estimate performance of coils at other than 10 FPI or at other air speeds or with other water or air temperatures or other steam pressures see page 23, or call your representative. With your representative, you can have specific computer selected coils rated for your job conditions.



Coil Performance- Heat Reclaim MBH/SQ FT

Heat Reclaim Coil Selection Example:

Select reclaim coil for Size 26 air handler at 13280 CFM, 344 MBH reclaimed at 45°F. Temperature Difference.

- A. Change the application's requirement at application's TD to adjusted requirement at 50°F. TD. Use Table 15:

$$344/0.9 = 382.2 \text{ MBH (adjusted)}$$

- B. Divide the adjusted MBH by the coil face area:

$$382.2 / 26.56 = 14.4 \text{ MBH (adjusted) per square foot}$$

- C. Find the coil air speed:

$$13280 / 26.56 = 500 \text{ fpm}$$

- D. Select coil rows and fins per inch from Table 16 at coil air speed and with enough MBH to meet the MBH (adjusted to 50°F. TD) per square foot figured in step B:

Select 3 row 8 fin per inch coil with capacity of 14.56 MBH per square foot at 50°F. TD.
For this application, capacity equals: (14.56 x 26.56 x 0.9) or 348 MBH for size 26 at 45°F. TD.

- E. When ordering, please specify refrigerant type and the total heat of rejection for each reclaim circuit. Or specify the per cent of the total heat of rejection that is reclaimed for each circuit.

Table 14

Air Handler Unit Size	Type A Large Coil Face Area Square Feet	Type 5 Large Coil Face Area Square Feet
03	3.13	3.00
06	5.76	5.69
08	7.81	7.50
10	9.77	9.38
12	12.40	11.69
14	14.58	13.75
18	17.71	17.50
20	20.05	19.25
26	26.56	25.50
34	33.65	34.00
41	40.73	40.38
50	50.63	49.50
65	64.58	64.58
75	75.35	74.92

Table 15 Heat reclaim correction factor for temperature difference between air and refrigerant.

Temperature Difference	20	25	30	35	40	45	50	60
Correction Factor	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2

Table 16
Refrigeration Gas
Heat Reclaim

1/2" and 5/8" tube, 50°F TD, entering air to condensing temperature
Type A and Type 5, hot gas reclaim, heating capacities
MBH per SQ FT of coil face area

Rows	FPI	FPM, Type A Coils (1/2" DIA.)					FPM, Type 5 Coils (5/8" DIA.)				
		400	450	500	550	600	400	450	500	550	600
2	6	7.70	8.18	9.43	9.90	10.25	9.25	9.85	10.41	10.91	11.41
	8	8.90	9.45	10.90	11.38	11.85	10.04	10.70	11.33	11.92	12.47
	10	10.40	11.05	12.15	12.73	13.18	11.12	11.93	12.68	13.37	14.03
	12	11.70	12.45	13.13	13.77	14.35	12.20	13.13	13.99	14.80	15.56
	14	12.88	13.73	14.48	15.18	15.83	13.23	14.28	15.26	16.18	17.04
3	6	11.08	11.96	12.88	13.50	13.98	12.27	13.13	13.98	14.77	15.52
	8	12.60	13.60	14.56	15.25	15.90	13.17	14.13	15.07	15.96	16.79
	10	13.93	14.95	15.93	16.80	17.63	14.30	15.48	16.58	17.61	18.58
	12	14.91	16.02	17.08	18.03	18.95	15.40	16.73	17.98	19.16	20.28
	14	16.08	17.30	18.50	19.55	20.58	16.39	17.87	19.28	20.60	21.86
4	6	13.27	14.35	15.53	16.38	17.18	14.50	15.66	16.77	17.81	18.79
	8	14.98	16.21	17.43	18.47	19.47	15.39	16.66	17.89	19.04	20.12
	10	16.20	17.48	18.75	19.92	21.07	16.50	17.96	19.36	20.68	21.94
	12	17.47	18.73	19.98	21.25	22.50	17.48	19.11	20.68	22.17	23.58
	14	18.57	19.95	21.30	22.65	23.97	18.32	20.11	21.83	23.48	25.05
6	6	16.41	17.83	19.58	20.78	21.90	17.38	19.10	20.62	22.09	23.49
	8	18.35	19.93	21.50	23.10	24.67	18.10	19.96	21.61	23.21	24.74
	10	19.13	20.90	22.63	24.20	25.75	18.96	21.00	22.83	24.62	26.33
	12	19.80	21.70	23.58	25.23	26.87	19.65	21.83	23.82	25.78	27.67
	14	19.87	22.01	24.02	26.02	27.95	20.18	22.48	24.61	26.72	28.75
8	6	18.25	20.08	21.75	23.45	25.08	18.93	21.51	23.02	24.69	26.42
	8	19.29	21.31	23.16	25.04	26.86	19.49	21.82	23.82	25.60	27.47
	10	20.04	22.23	24.24	26.30	28.28	20.11	22.57	24.74	26.67	28.71
	12	20.51	22.82	24.95	27.14	29.26	20.58	23.12	25.43	27.63	29.68
	14	20.82	23.22	25.44	27.72	29.95	20.91	23.51	25.93	28.25	30.45

This table for R-22, for R404A & R507, multiply MBH by 0.98
For heat reclaim capacities at other temperature differences, multiply by factor in Table 15.

Table 17
Wet Evaporator
Capacity

1/2" and 5/8" tube, entering air 80°F. DB, 67°F. WB
Type A and Type 5, direct expansion at 40°F. evaporating, cooling capacities
MBH per SQ FT of coil face area

Rows	FPI	FPM, Type A Coils (1/2" DIA.)					FPM, Type 5 Coils (5/8" DIA.)				
		400	450	500	550	600	400	450	500	550	600
3	6	11.3	12.1	12.8	13.4	14.0	13.1	13.8	14.5	15.2	15.8
	8	13.0	13.9	14.7	15.4	16.1	14.9	15.8	16.6	17.4	18.1
	10	14.4	15.3	16.2	17.0	17.8	16.2	17.2	18.2	19.0	19.8
	12	15.4	16.5	17.4	18.3	19.1	17.3	18.4	19.4	20.3	21.2
	14	16.3	17.4	18.4	19.3	20.2	18.0	19.2	20.4	21.4	22.4
4	6	14.0	15.0	16.0	16.9	17.7	15.8	16.8	17.8	18.7	19.5
	8	15.9	17.1	18.2	19.2	20.1	17.7	18.9	20.0	21.0	22.0
	10	17.4	18.7	19.8	20.9	22.0	19.0	20.4	21.7	22.8	23.9
	12	18.5	19.9	21.2	22.3	23.4	19.9	21.4	22.8	24.1	25.3
	14	19.4	20.9	22.2	23.5	24.6	20.7	22.3	23.8	25.2	26.5
5	6	15.9	17.1	18.3	19.3	20.3	17.9	19.2	20.5	21.6	22.6
	8	18.3	19.7	21.1	22.3	23.5	19.8	21.3	22.7	24.0	25.2
	10	19.8	21.3	22.8	24.2	25.5	21.0	22.7	24.3	25.7	27.1
	12	20.9	22.6	24.2	25.6	27.0	21.8	23.6	25.4	27.0	28.5
	14	21.8	23.6	25.3	26.8	28.3	22.5	24.4	26.3	28.0	29.6
6	6	17.8	19.2	20.5	21.7	22.8	19.7	21.2	22.7	24.0	25.3
	8	19.7	21.3	22.7	24.1	25.4	21.4	23.1	24.8	26.3	27.8
	10	21.1	22.8	24.4	25.9	27.2	22.5	24.4	26.3	28.0	29.7
	12	22.1	23.9	25.6	27.2	28.7	23.3	25.3	27.3	29.2	31.0
	14	22.9	24.8	26.6	28.2	29.8	23.9	26.0	28.1	30.1	32.0
8	6	20.9	22.7	24.3	25.9	27.4	22.3	24.2	26.0	27.7	29.4
	8	22.7	24.7	26.6	28.4	30.0	23.8	25.9	28.0	29.9	31.7
	10	23.9	26.1	28.1	30.1	31.9	24.6	27.0	29.3	31.3	33.3
	12	24.8	27.1	29.3	31.3	33.2	25.2	27.7	30.1	32.4	34.6
	14	25.4	27.8	30.1	32.2	34.2	25.7	28.2	30.7	33.1	35.4

Actual capacity will vary
with coil circuiting

Note: Please contact your representative for ARI ratings for coils. These tables are only estimates.
For estimates for other web bulb and evaporator temperatures, multiply by correction factors in Table 18.

Table 18:

Capacity Correction Factors* To Coil Performance Of 67°F Wb And 40°F Evaporating																
Ent Air WB Temp. °F.	Refrigerant Evaporating Temperature °F.															
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
60	0.820	0.794	0.768	0.740	0.713	0.685	0.656	0.628	0.598	0.568	0.538	0.506	0.475	0.442	0.409	0.376
61	0.862	0.837	0.810	0.783	0.756	0.727	0.698	0.670	0.640	0.610	0.580	0.548	0.517	0.484	0.452	0.418
62	0.907	0.881	0.854	0.827	0.799	0.771	0.743	0.714	0.684	0.654	0.623	0.592	0.561	0.528	0.496	0.462
63	0.950	0.923	0.897	0.870	0.842	0.814	0.785	0.756	0.727	0.696	0.666	0.635	0.603	0.571	0.538	0.505
64	0.994	0.969	0.942	0.914	0.887	0.859	0.831	0.802	0.772	0.742	0.712	0.680	0.649	0.616	0.583	0.550
65	1.040	1.014	0.988	0.960	0.933	0.905	0.876	0.847	0.818	0.788	0.757	0.726	0.694	0.662	0.629	0.596
66	1.087	1.061	1.035	1.008	0.980	0.952	0.923	0.894	0.864	0.835	0.804	0.773	0.741	0.709	0.676	0.642
67	1.136	1.109	1.083	1.055	1.028	1.000	0.971	0.943	0.913	0.883	0.852	0.822	0.789	0.757	0.724	0.691
68	1.185	1.158	1.132	1.105	1.077	1.050	1.020	0.992	0.962	0.932	0.901	0.870	0.838	0.806	0.773	0.740
69	1.235	1.209	1.182	1.155	1.127	1.100	1.071	1.042	1.012	0.982	0.952	0.920	0.889	0.856	0.824	0.790
70	1.286	1.260	1.235	1.206	1.179	1.152	1.122	1.094	1.063	1.033	1.003	0.972	0.940	0.908	0.875	0.841
71	1.339	1.313	1.285	1.260	1.231	1.203	1.175	1.146	1.115	1.086	1.055	1.024	0.993	0.960	0.927	0.894
72	1.393	1.365	1.340	1.314	1.285	1.257	1.229	1.200	1.170	1.140	1.110	1.079	1.046	1.015	0.981	0.948
73	1.450	1.422	1.395	1.369	1.340	1.313	1.285	1.255	1.225	1.195	1.165	1.134	1.103	1.070	1.036	1.003
74	1.505	1.479	1.451	1.425	1.396	1.370	1.340	1.310	1.281	1.252	1.221	1.190	1.159	1.126	1.094	1.060

* Note: correction factor = (enthalpy of air temperature - enthalpy of evaporator temperature) in BTU/LB divided by 16.39



Coil Performance- Chilled Water MBH/SQ FT

Table 19
Chilled
Water

1/2" and 5/8" tube, entering air 80°F. DB, 67°F. WB
Type A and Type 5, chilled water at 45°F., cooling capacities
MBH per SQ FT of coil face area (Max. water velocity= 3 fps)

Rows	FPI	FPM, Type A Coils (1/2" DIA.)					FPM, Type 5 Coils (5/8" DIA.)				
		400	450	500	550	600	400	450	500	550	600
3	6	7.3	7.9	8.3	8.8	9.2	10.3	11.2	12.0	12.4	12.9
	8	8.7	9.3	9.9	10.5	11.0	11.5	12.5	13.5	14.0	14.5
	10	9.8	10.6	11.3	12.0	12.6	12.5	13.7	14.7	15.2	15.8
	12	10.9	11.7	12.5	13.2	14.0	13.3	14.5	15.6	16.2	16.8
	14	11.7	12.7	13.6	14.4	15.2	13.9	15.2	16.4	17.0	17.6
4	6	9.1	9.8	10.4	11.0	11.6	12.3	13.4	13.7	14.8	15.7
	8	10.6	11.4	12.2	12.9	13.6	13.6	14.9	15.3	16.4	17.5
	10	11.8	12.8	13.7	14.6	15.4	15.4	16.1	17.5	18.7	19.4
	12	12.9	14.0	15.0	16.0	16.9	16.2	16.9	18.5	19.9	20.6
	14	13.8	15.0	16.1	17.2	18.2	16.9	17.7	19.3	20.7	21.5
5	6	11.7	12.6	13.5	14.3	15.1	14.6	15.6	16.4	17.1	17.8
	8	13.4	14.6	15.6	16.6	17.2	16.1	17.2	18.1	18.9	19.7
	10	14.8	16.1	17.0	17.7	18.5	17.2	18.4	19.4	20.2	21.1
	12	15.9	17.0	17.9	18.7	19.6	17.5	19.3	20.4	21.4	22.2
	14	16.8	17.8	18.7	19.5	20.4	18.2	20.0	21.1	22.2	23.1
6	6	13.1	14.1	15.2	16.1	17.1	15.9	17.3	17.8	19.1	20.3
	8	14.8	16.1	17.3	18.5	19.6	17.3	19.0	19.4	20.9	22.3
	10	16.2	17.6	19.0	20.1	20.9	18.3	20.2	20.6	22.2	23.8
	12	17.2	18.9	20.2	21.2	22.0	19.1	21.1	21.5	23.2	24.9
	14	18.1	19.9	21.0	22.0	22.9	19.8	21.9	22.5	24.4	26.2
8	6	16.0	17.4	19.0	20.0	20.8	18.3	20.1	20.6	21.7	22.6
	8	17.7	19.4	20.6	21.7	22.6	19.6	21.6	22.3	23.4	24.5
	10	19.0	20.5	21.8	23.0	23.9	20.5	22.7	23.4	24.7	25.9
	12	19.9	21.4	22.7	23.9	25.0	21.4	23.7	24.3	25.7	26.9
	14	20.4	22.0	23.4	24.7	25.8	21.8	24.2	24.9	26.3	27.7

Actual capacity will vary
with coil circuiting
and flow rate

Note: Please contact your representative for ARI ratings for coils. These tables are only estimates.
For estimates for other wet bulb and water temperatures, multiply by correction factor in
Table 20.

Table 20

Ent Air WB TEMP. °F.	Capacity Correction Factors* To Coil Performance Of 67°F. Wb Air And 45 Entering Water Entering Water Temperature °F.										
	40	41	42	43	44	45	46	47	48	49	50
60	0.805	0.782	0.736	0.702	0.666	0.630	0.594	0.556	0.518	0.480	0.440
61	0.853	0.819	0.785	0.750	0.715	0.680	0.643	0.606	0.568	0.529	0.490
62	0.903	0.869	0.836	0.801	0.765	0.730	0.693	0.656	0.618	0.579	0.540
63	0.954	0.921	0.887	0.852	0.817	0.781	0.745	0.707	0.670	0.631	0.591
64	1.007	0.974	0.940	0.905	0.870	0.834	0.798	0.760	0.722	0.684	0.644
65	1.062	1.028	0.994	0.959	0.924	0.888	0.852	0.815	0.777	0.738	0.699
66	1.117	1.083	1.049	1.014	0.979	0.943	0.907	0.870	0.832	0.793	0.754
67	1.173	1.140	1.106	1.071	1.036	1.000	0.963	0.926	0.888	0.850	0.810
68	1.230	1.197	1.163	1.128	1.093	1.057	1.021	0.984	0.946	0.907	0.868
69	1.290	1.256	1.223	1.188	1.152	1.117	1.080	1.043	1.005	0.966	0.927
70	1.350	1.316	1.283	1.248	1.213	1.177	1.140	1.103	1.065	1.026	0.987
71	1.412	1.378	1.344	1.309	1.274	1.238	1.202	1.165	1.127	1.088	1.049
72	1.475	1.441	1.407	1.372	1.337	1.301	1.265	1.228	1.190	1.151	1.112
73	1.540	1.506	1.472	1.437	1.402	1.366	1.330	1.293	1.255	1.216	1.177
74	1.606	1.572	1.538	1.503	1.468	1.432	1.396	1.359	1.321	1.282	1.243

* Note: correction factor = (enthalpy of air temperature - enthalpy of water temperature) in BTU /LB divided by 13.97.



Table 21
Hot Water

1/2" and 5/8" tube, entering air 60°F. DB
Type A and Type 5, 190°F. average water temperature[^], heating capacities
MBH per SQ FT of coil face area (water velocity=3 fps).

Rows	FPI	FPM, Type A Coils (1/2" DIA.)					FPM, Type 5 Coils (5/8" DIA.)				
		400	500	600	650	700	400	500	600	650	700
1	6	11.2	12.7	14.0	14.6	15.2	15.1	17.0	18.5	19.3	20.0
	8	14.2	16.0	17.6	18.3	19.0	18.8	20.9	22.8	23.7	24.5
	10	17.1	19.2	21.0	21.9	22.7	21.9	24.4	26.6	27.5	28.4
	12	19.9	22.3	24.4	25.3	26.2	24.6	27.4	29.9	30.9	31.9
	14	22.7	25.4	27.6	28.6	29.6	26.9	30.1	32.7	33.8	34.9
2	6	20.3	23.3	25.9	27.1	28.3	25.8	29.5	32.6	34.0	35.4
	8	25.0	28.6	31.8	33.3	34.7	30.8	35.0	38.8	40.4	42.1
	10	29.4	33.6	37.3	39.0	40.6	34.7	39.6	43.9	45.8	47.6
	12	33.5	38.3	42.5	44.4	46.2	37.8	43.4	48.1	50.3	52.3
	14	37.3	42.6	47.3	49.4	51.4	40.4	46.5	51.7	54.2	56.3
3	6	27.8	32.1	36.0	37.8	39.6	35.2	40.8	45.6	47.9	50.1
	8	33.5	38.8	43.5	45.7	47.8	40.1	46.9	52.9	55.7	58.3
	10	38.4	44.7	50.2	52.7	55.2	43.9	51.6	58.6	61.7	64.8
	12	42.8	49.9	56.3	59.2	61.9	46.7	55.3	63.0	66.5	70.0
	14	46.7	54.7	61.8	65.0	68.1	48.9	58.2	66.5	70.4	74.1

Actual capacity will vary with coil circuiting and flow rate

To estimate for other entering air and average water temperatures, multiply by correction factor in Table 23.

Table 22
Steam

5/8" and 1" tube, entering air 0°F. DB
Type 5*** and Type 8, 190°F. steam at 5 PSIG, heating capacities
MBH per SQ FT of coil face area

Rows	FPI	FPM, Type 5 Coils (5/8" DIA.)					FPM, Type 8 Coils (1" DIA.)				
		400	500	600	650	700	400	500	600	650	700
1	6	27.4	31.0	34.0	35.4	36.6	23.7	26.7	29.2	30.4	31.5
	8	34.3	38.2	41.2	42.4	43.5	30.3	34.0	37.1	38.4	39.7
	10	39.6	43.2	45.5	46.2	46.7	36.2	40.3	43.7	45.1	46.4
	12	43.3	46.1	47.0	56.6	57.9	42.3	46.3	49.2	50.4	51.4
	14	45.6	47.0	58.7	59.9	60.8	46.3	50.2	52.9	53.9	54.8
2	6	49.4	56.6	62.8	65.6	68.3					
	8	56.9	65.4	72.6	75.7	78.4					
	10	62.8	72.3	79.7	82.7	85.3					
	12	67.5	77.5	84.8	87.5	89.8					
	14	71.3	81.4	88.3	90.7	92.4					

*Type 8 coils offered as one row only on model 65 and 75.

Note: Please contact your representative for ARI ratings for coils. These tables are only estimates. To estimate for other entering air and steam pressures multiply by correction factor in Table 23.

Table 23

Capacity connections Factors to Table 21 for other than 60°F. and 190 average water temperature[^]
Capacity Correction Factors to Table 22 for other than 0°F. air and 5 PSIG steam***.

Ent Air Temp. °F.	Average Water Temperature [^] , °F.								Steam Pressure, PSIG						
	120	130	140	150	160	170	180	190	5	10	20	25	30	40	50
-20	1.077	1.154	1.231	1.308	1.385	1.462	1.538	1.615	1.088	1.142	1.228	1.263	1.295	1.351	1.395
-10	1.000	1.077	1.154	1.231	1.308	1.385	1.462	1.538	1.044	1.098	1.184	1.219	1.251	1.306	1.351
0	0.923	1.000	1.077	1.154	1.231	1.308	1.385	1.462	1.000	1.054	1.140	1.175	1.207	1.262	1.306
10	0.846	0.923	1.000	1.077	1.154	1.231	1.308	1.385	0.956	1.010	1.096	1.131	1.162	1.218	1.262
20	0.769	0.846	0.923	1.000	1.077	1.154	1.231	1.308	0.912	0.966	1.052	1.087	1.118	1.174	1.218
30	0.692	0.769	0.846	0.923	1.000	1.077	1.154	1.231	0.868	0.922	1.007	1.043	1.074	1.130	1.174
40	0.615	0.692	0.769	0.846	0.923	1.000	1.077	1.154	0.824	0.878	0.963	0.999	1.030	1.086	1.130
50	0.538	0.615	0.692	0.769	0.846	0.923	1.000	1.077	0.780	0.834	0.919	0.955	0.986	1.042	1.086
60	0.462	0.538	0.615	0.692	0.769	0.846	0.923	1.000	0.736	0.790	0.875	0.911	0.942	0.998	1.042
70	0.385	0.462	0.538	0.615	0.692	0.769	0.846	0.923	0.692	0.746	0.831	0.867	0.898	0.954	0.998
80	0.308	0.385	0.462	0.538	0.615	0.692	0.769	0.846	0.648	0.702	0.787	0.823	0.854	0.910	0.954
90	0.231	0.308	0.385	0.462	0.538	0.615	0.692	0.769	0.604	0.658	0.743	0.779	0.810	0.866	0.910
100	0.154	0.231	0.308	0.385	0.462	0.538	0.615	0.692	0.560	0.614	0.699	0.734	0.766	0.822	0.866

[^] Average water temperature = (entering water temp + leaving water temp) divided by 2.

*** For type 5, at 5 PSIG, if (total MBH divided by 0.961) divided by coil tubes is more than to 50 LB per tube, the condensate loading may be too high. At higher pressures the condensate loading can be more than 50 LB per tube. Get a computer rating for the application.



Fan Performance

Size 03

		9" Forward Curved Fan															
CFM Std. Air	Coil Vel. FPM	Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	383	848	0.23	1141	0.40	1273	0.50	1403	0.62	1530	0.75	1643	0.87	1747	0.99	1843	1.12
1300	415	862	0.26	1149	0.44	1274	0.54	1395	0.65	1515	0.78	1633	0.92	1741	1.05	1840	1.19
1400	447	877	0.29	1159	0.49	1280	0.59	1395	0.70	1507	0.82	1618	0.96	1729	1.11	1832	1.25
1500	479	892	0.33	1172	0.54	1289	0.64	1399	0.76	1506	0.88	1611	1.01	1714	1.15	1819	1.31
1600	511	910	0.37	1185	0.59	1300	0.70	1408	0.82	1510	0.94	1610	1.07	1708	1.21	1805	1.36
1700	543	930	0.41	1119	0.64	1313	0.76	1418	0.89	1518	1.01	1614	1.14	1708	1.28	1800	1.42
1800	575	951	0.47	1214	0.70	1327	0.83	1430	0.96	1528	1.09	1621	1.22	1712	1.36	1800	1.50
1900	607	973	0.52	1229	0.76	1341	0.90	1443	1.03	1539	1.17	1631	1.31	1719	1.45	1804	1.59
2000	639	998	0.59	1243	0.83	1355	0.97	1457	1.11	1552	1.25	1642	1.40	1728	1.54	1811	1.69
2100	671	1024	0.66	1258	0.91	1370	1.05	1472	1.19	1566	1.34	1654	1.49	1739	1.65	1821	1.80
2200	703	1052	0.73	1276	0.99	1385	1.13	1486	1.28	1580	1.44	1668	1.59	1751	1.75	1831	1.91
2300	735	1081	0.82	1295	1.07	1399	1.22	1501	1.37	1594	1.54	1681	1.70	1764	1.86	1843	2.03
2400	767	1111	0.91	1314	1.17	1416	1.32	1515	1.47	1609	1.64	1696	1.81	1778	1.98	1856	2.15
2500	799	1142	1.01	1335	1.27	1434	1.42	1530	1.58	1623	1.75	1710	1.93	1792	2.10	1870	2.28
2600	831	1174	1.11	1357	1.38	1453	1.53	1546	1.70	1638	1.86	1725	2.05	1806	2.23	1884	2.42
2700	863	1208	1.23	1380	1.49	1473	1.65	1564	1.82	1653	1.99	1740	2.17	1821	2.36	1898	2.15

Size 03

		9" Forward Curved Fan															
CFM Std. Air	Coil Vel. FPM	Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	383	1843	1.12	2020	1.38	2179	1.65	2327	1.94	2464	2.24	2594	2.55	2716	2.87	2833	3.21
1300	415	1840	1.19	2020	1.46	2182	1.74	2330	2.04	2469	2.34	2600	2.66	2723	2.99	2840	3.33
1400	447	1832	1.25	2017	1.54	2181	1.83	2332	2.14	2472	2.45	2604	2.78	2728	3.12	2846	3.46
1500	479	1819	1.31	2010	1.62	2179	1.93	2332	2.24	2474	2.57	2607	2.90	2732	3.25	2851	3.60
1600	511	1805	1.36	1999	1.69	2173	2.02	2329	2.35	2473	2.69	2608	3.03	2734	3.39	2855	3.75
1700	543	1800	1.42	1983	1.75	2163	2.11	2324	2.46	2471	2.81	2607	3.17	2735	3.53	2856	3.90
1800	575	1800	1.50	1974	1.82	2147	2.18	2315	2.56	2465	2.93	2604	3.30	2734	3.68	2857	4.06
1900	607	1804	1.59	1972	1.90	2136	2.25	2300	2.65	2456	3.05	2598	3.44	2731	3.83	2855	4.23
2000	639	1811	1.69	1973	2.00	2130	2.34										
2100	671	1821	1.80	1978	2.12	2130	2.45										
2200	703	1831	1.91	1985	2.24	2133	2.58										
2300	735	1843	2.03	1994	2.36	2138	2.71										
2400	767	1856	2.15	2005	2.50	2146	2.85										
2500	799	1870	2.28	2017	2.64	2156	3.00										
2600	831	1884	2.42	2030	2.79	2167	3.16										
2700	863	1898	2.55	2043	2.94	2179	3.33										

Maximum ODP Motor Frame Size for Models 03 — 182 T

Size 06

		12" Forward Curved Fan															
CFM Std. Air	Coil Vel. FPM	Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2200	382	624	0.39	832	0.62	925	0.76	1015	0.92	1105	1.10	1207	1.32	1291	1.52	1366	1.72
2400	417	637	0.46	841	0.70	929	0.84	1013	1.00	1095	1.17	1178	1.36	1272	1.59	1355	1.82
2600	451	651	0.54	852	0.80	937	0.93	1017	1.09	1094	1.26	1170	1.45	1246	1.65	1329	1.88
2800	486	666	0.63	864	0.91	946	1.05	1024	1.20	1098	1.37	1170	1.55	1241	1.75	1311	1.96
3000	521	683	0.72	876	1.03	958	1.17	1033	1.33	1105	1.50	1174	1.68	1241	1.87	1307	2.08
3200	556	702	0.83	888	1.17	970	1.32	1044	1.47	1114	1.64	1181	1.82	1246	2.01	1309	2.22
3400	590	723	0.96	901	1.32	982	1.48	1056	1.64	1125	1.81	1190	1.99	1253	2.18	1314	2.38
3600	625	746	1.09	916	1.48	995	1.65	1068	1.82	1136	1.99	1201	2.17	1262	2.36	1321	2.57
3800	660	770	1.25	930	1.64	1007	1.84	1081	2.02	1148	2.20	1212	2.38	1272	2.57	1331	2.78
4000	694	796	1.42	945	1.81	1022	2.04	1093	2.23	1161	2.42	1224	2.61	1284	2.80	1341	3.01
4200	729	823	1.60	963	2.00	1036	2.24	1106	2.46	1173	2.66	1236	2.86	1296	3.05	1352	3.26
4400	764	850	1.81	981	2.21	1051	2.45	1121	2.71	1186	2.92	1249	3.12	1308	3.33	1364	3.54
4600	799	879	2.03	1001	2.44	1068	2.68	1135	2.94	1198	3.19	1261	3.41	1320	3.62	1376	3.84
4800	833	907	2.27	1022	2.69	1086	2.93	1150	3.20	1214	3.47	1274	3.71	1333	3.94	1389	4.16
5000	868	937	2.54	1045	2.96	1105	3.21	1166	3.47	1228	3.75	1286	4.03	1345	4.27	1401	4.50

SIZE 06

		12" Forward Curved Fan															
CFM Std. Air	Coil Vel. FPM	Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2200	382	1366	1.72	1498	2.12	1617	2.51	1725	2.91	1827	3.32	1922	3.73	2012	4.15		
2400	417	1355	1.82	1496	2.26	1618	2.69	1729	3.01	1832	3.55	1928	3.99	2019	4.43		
2600	451	1329	1.88	1487	2.38	1616	2.85	1730	3.32	1835	3.78	1932	4.25	2024	4.72		
2800	486	1311	1.96	1464	2.46	1607	2.99	1727	3.50	1835	4.00	1934	4.50	2027	5.01		
3000	521	1307	2.08	1439	2.53	1586	3.09	1717	3.66	1831	4.21	1934	4.75				
3200	556	1309	2.22	1433	2.67	1557	3.16	1696	3.77	1820	4.38	1928	4.97				
3400	590	1314	2.38	1433	2.82	1549	3.31	1665	3.84	1798	4.50						
3600	625	1321	2.57	1436	3.01	1547	3.49	1657	4.02	1767	4.58						
3800	660	1331	2.78	1442	3.23	1549	3.69										
4000	694	1341	3.01	1450	3.44	1554	3.92										
4200	729	1352	3.26	1459	3.70	1561	4.17										
4400	764	1364	3.54	1470	3.98	1570	4.45										
4600	799	1376	3.84	1481	4.29												
4800	833	1389	4.16	1493	4.62												
5000	868	1401	4.50														

Maximum ODP Motor Frame Size for Models 06 — 184 T
Coil Face Velocity is for a Large Cooling Coil, Type A (1/2" Tube Diameter)

Medium Pressure Fan Must Be Used When Operating in Shaded Area



Size 08

CFM Std. Air	Coil Vel. FPM	15" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2700	346	510	0.47	685	0.80	763	0.97	838	1.11	908	1.22	976	1.33	1041	1.47	1103	1.63
3000	384	524	0.56	691	0.93	765	1.11	836	1.30	904	1.46	970	1.63	1031	1.71	1092	1.84
3300	423	541	0.69	700	1.06	771	1.27	839	1.47	903	1.67	966	1.86	1027	2.04	1085	2.19
3600	461	559	0.82	712	1.20	780	1.42	845	1.65	906	1.88	966	2.10	1024	2.32	1080	2.52
3900	499	581	0.98	725	1.37	791	1.60	853	1.84	913	2.09	970	2.34	1025	2.58	1079	2.82
4200	538	602	1.18	739	1.56	803	1.80	864	2.05	921	2.31	977	2.58	1030	2.85	1082	3.11
4500	576	625	1.41	756	1.80	817	2.02	875	2.28	931	2.55	985	2.84	1037	3.12	1087	3.41
4800	615	648	1.67	773	2.07	832	2.28	889	2.53	943	2.81	995	3.11	1046	3.41	1095	3.72
5100	653	673	1.97	792	2.33	849	2.58	903	2.83	956	3.11	1007	3.40	1056	3.72	1104	4.04
5400	691	699	2.31	813	2.65	867	2.94	919	3.16	970	3.43	1020	3.73	1068	4.05	1114	4.38
5700	730	727	2.69	835	3.01	886	3.26	936	3.55	986	3.81	1034	4.10	1080	4.42	1126	4.76
6000	768	755	3.11	857	3.42	907	3.65	953	3.94	1002	4.23	1049	4.51	1094	4.83	1139	5.16
6300	807	784	3.57	879	3.87	928	4.09	974	4.36	1020	4.71	1065	4.97	1109	5.28	1152	5.61
6600	845	813	4.08	902	4.38	950	4.59	995	4.84	1038	5.15	1082	5.50	1125	5.79	1167	6.11
6900	883	844	4.65	926	4.93	972	5.13	1017	5.38	1059	5.67	1098	6.01	1142	6.36	1183	6.67
7200	922	874	5.25	951	5.54	995	5.73	1038	5.96	1080	6.25	1119	6.57	1160	6.99	1200	7.28

SIZE 08

CFM Std. Air	Coil Vel. FPM	15" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2700	346	1103	1.63	1219	2.02	1323	2.45	1419	2.91	1507	3.39	1589	3.88	1665	4.39	1738	4.90
3000	384	1092	1.84	1207	2.17	1313	2.58	1411	3.05	1502	3.54	1587	4.06	1666	4.59	1740	5.14
3300	423	1085	2.19	1195	2.43	1301	2.78	1400	3.22	1493	3.70	1580	4.73	1661	4.77	1738	5.34
3600	461	1080	2.52	1189	2.85	1290	3.11	1388	3.47	1481	3.92	1569	4.42	1652	4.97	1731	5.54
3900	499	1079	2.82	1184	3.25	1284	3.62	1378	3.88	1469	4.25	1557	4.70	1641	5.22	1721	5.78
4200	538	1082	3.11	1182	3.62	1279	4.08	1372	4.50	1459	4.76	1545	5.12	1629	5.57	1709	6.09
4500	576	1087	3.41	1184	3.97	1277	4.51	1367	5.00	1455	5.50	1537	5.74	1618	6.10	1697	6.54
4800	615	1095	3.72	1188	4.33	1278	4.92	1365	5.49	1450	6.02	1533	6.51	1610	6.86	1687	7.19
5100	653	1104	4.04	1195	4.69	1282	5.33										
5400	691	1114	4.38	1203	5.07	1288	5.75										
5700	730	1126	4.76	1213	5.46												
6000	768	1139	5.16	1224	5.88												
6300	807	1152	5.61														

Maximum ODP Motor Frame Size for Models 08 — 215 T

Size 10

CFM Std. Air	Coil Vel. FPM	18" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	328	438	0.51	597	0.92	665	1.14	730	1.36	793	1.59	852	1.82	908	2.05	961	2.29
3600	368	449	0.63	602	1.05	668	1.30	729	1.54	787	1.79	844	2.04	899	2.30	952	2.56
4000	409	461	0.79	609	1.20	673	1.46	732	1.73	789	2.00	841	2.28	893	2.56	944	2.84
4400	450	475	0.97	617	1.38	679	1.64	737	1.92	792	2.22	844	2.53	893	2.82	941	3.13
4800	491	491	1.18	627	1.60	687	1.86	744	2.14	797	2.45	848	2.78	896	3.11	943	3.44
5200	532	508	1.44	638	1.87	697	2.12	752	2.40	804	2.71	853	3.05	900	3.40	946	3.75
5600	573	525	1.74	651	2.18	707	2.43	761	2.70	812	3.01	860	3.34	906	3.70	951	4.07
6000	614	545	2.08	664	2.53	719	2.78	771	3.06	821	3.36	868	3.69	913	4.05	957	4.42
6400	655	566	2.45	679	2.92	732	3.19	783	3.47	831	3.76	877	4.09	921	4.44	964	4.82
6800	696	589	2.87	695	3.35	746	3.64	795	3.93	842	4.23	887	4.55	931	4.89	972	5.26
7200	737	613	3.33	714	3.85	761	4.14	809	4.44	854	4.75	898	5.07	941	5.41	982	5.77
7600	778	637	3.83	729	4.44	777	4.68	823	5.01	867	5.33	910	5.65	952	5.99	992	6.35
8000	819	662	4.38	746	5.06	797	5.30	838	5.62	881	5.96	923	6.30	964	6.64	1003	7.00
8400	860	687	4.99	766	5.73	811	6.02	855	6.28	896	6.65	937	7.00	976	7.35	1015	7.71
8800	901	712	5.64	787	6.46	828	6.79	874	7.04	912	7.38	951	7.76	990	8.13	1027	8.50
9200	942	738	6.36	810	7.24	847	7.61	888	7.91	928	8.17						

Size 10

CFM Std. Air	Coil Vel. FPM	18" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	328	961	2.29	1058	2.78	1146	3.28	1227	3.80	1302	4.34	1372	4.90				
3600	368	952	2.56	1051	3.08	1141	3.62	1223	4.18	1300	4.75	1372	5.34				
4000	409	944	2.84	1042	3.41	1132	3.99	1216	4.58	1295	5.19	1368	5.81				
4400	450	941	3.13	1034	3.75	1123	4.37	1208	5.01	1287	5.65	1361	6.31				
4800	491	943	3.44	1031	4.10	1116	4.77	1199	5.45	1278	6.14	1353	6.83				
5200	532	946	3.75	1033	4.46	1113	5.18	1193	5.91	1270	6.64	1344	7.38	1415	8.13		
5600	573	951	4.07	1035	4.84	1115	5.60	1190	6.37	1264	7.16	1337	7.95	1407	8.74		
6000	614	957	4.42	1040	5.22	1118	6.05	1192	6.87	1262	7.69	1332	8.53	1400	9.37		
6400	655	964	4.82	1045	5.63												
6800	696	972	5.26	1052	6.07												
7200	737	982	5.77	1060	6.58												
7600	778	992	6.35														
8000	819	1003	7.00														
8400	860	1015	7.71														
8800	901	1027	8.50														

Maximum ODP Motor Frame Size for Models 10 — 215 T
Coil Face Velocity is for a Large Cooling Coil, Type A (1/2" Tube Diameter)

Medium Pressure Fan Must Be Used when Operating in Shaded Area



Fan Performance

Size 12

CFM Std. Air	Coil Vel. FPM	18" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4400	354	475	0.97	617	1.38	679	1.64	737	1.92	792	2.22	844	2.53	893	2.82	941	3.13
4800	306	491	1.18	627	1.60	687	1.86	744	2.14	797	2.45	848	2.78	896	3.11	943	3.44
5200	419	508	1.44	638	1.87	697	2.12	752	2.40	804	2.71	853	3.05	900	3.40	946	3.75
5600	451	525	1.74	651	2.18	707	2.43	761	2.70	812	3.01	860	3.34	906	3.70	951	4.07
6000	483	545	2.08	664	2.53	719	2.78	771	3.06	821	3.36	868	3.69	913	4.05	957	4.42
6400	515	566	2.45	679	2.92	732	3.19	783	3.47	831	3.76	877	4.09	921	4.44	964	4.82
6800	547	589	2.87	695	3.35	746	3.64	795	3.93	842	4.23	887	4.55	931	4.89	972	5.26
7200	580	613	3.33	714	3.85	761	4.14	809	4.44	854	4.75	898	5.07	941	5.41	982	5.77
7600	612	637	3.83	729	4.44	777	4.68	823	5.01	867	5.33	910	5.65	952	5.99	992	6.35
8000	644	662	4.38	746	5.06	797	5.30	838	5.62	881	5.96	923	6.30	964	6.64	1003	7.00
8400	676	687	4.99	766	5.73	811	6.02	855	6.28	896	6.65	937	7.00	976	7.35	1015	7.71
8800	708	712	5.64	787	6.46	828	6.79	874	7.04	912	7.38	951	7.76	990	8.13	1027	8.50
9200	741	738	6.36	810	7.24	847	7.61	888	7.91	928	8.17	967	8.58				
9600	773	764	7.12	833	8.09	868	8.48										
10000	805	790	7.94														

Size 12

CFM Std. Air	Coil Vel. FPM	18" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4400	354	941	3.13	1034	3.75	1123	4.37	1208	5.01	1287	5.65	1361	6.31	1432	6.98		
4800	306	943	3.44	1031	4.10	1116	4.77	1199	5.45	1278	6.14	1353	6.83	1424	7.54		
5200	419	946	3.75	1033	4.46	1113	5.18	1193	5.91	1270	6.64	1344	7.38	1415	8.13		
5600	451	951	4.07	1035	4.84	1115	5.60	1190	6.37	1264	7.16	1337	7.95	1407	8.74		
6000	483	957	4.42	1040	5.22	1118	6.05	1192	6.87	1262	7.69	1332	8.53	1400	9.37		
6400	515	964	4.82	1045	5.63	1122	6.49	1195	7.37	1265	8.24	1331	9.11	1396	10.01		
6800	547	972	5.26	1052	6.07	1128	6.95	1199	7.88	1268	8.81	1334	9.74	1396	10.66		
7200	580	982	5.77	1060	6.58	1134	7.46	1204	8.40	1272	9.38	1337	10.37	1399	11.36		
7600	612	992	6.35														
8000	644	1003	7.00														
8400	676	1015	7.71														
8800	708	1027	8.50														

Maximum ODP Motor Frame Size for Model 12 — 254T

Size 14 and Size 18

CFM Std. Air	Coil Vel. Size 14	Size 18	20" Forward Curved Fan															
			Total Static Pressure - Inches Of Water															
			0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5400	370	—	386	0.88	518	1.42	577	1.72	634	2.01	686	2.24	738	2.53	789	2.87	836	3.25
5900	405	—	395	1.04	522	1.61	578	1.92	632	2.25	684	2.57	733	2.82	781	3.11	828	3.46
6400	439	361	403	1.22	528	1.82	582	2.15	633	2.50	682	2.85	731	3.20	777	3.48	821	3.77
6900	473	390	413	1.40	535	2.07	587	2.40	637	2.76	684	3.14	729	3.52	775	3.90	819	4.23
7400	508	418	423	1.61	543	2.35	594	2.69	642	3.06	687	3.45	731	3.85	774	4.26	816	4.67
7900	542	446	434	1.89	551	2.66	601	3.02	648	3.39	692	3.79	734	4.20	776	4.63	816	5.07
8400	576	474	446	2.18	559	2.99	609	3.38	655	3.76	698	4.17	739	4.59	779	5.03	818	5.49
8900	610	503	459	2.48	568	3.33	617	3.77	662	4.17	705	4.59	745	5.02	784	5.47	822	5.94
9400	645	531	472	2.82	577	3.69	625	4.18	670	4.62	712	5.05	752	5.49	790	5.95	827	6.42
9900	679	559	486	3.18	587	4.05	634	4.61	678	5.10	720	5.55	759	6.01	797	6.47	833	6.95
10400	713	587	500	3.56	597	4.49	643	5.06	687	5.60	728	6.09	767	6.57	804	7.05	839	7.54
10900	748	615	514	3.98	608	5.03	653	5.51	696	6.12	736	6.66	775	7.17	811	7.67	846	8.17
11400	782	644	529	4.44	620	5.59	663	5.98	705	6.66	745	7.26	783	7.81	819	8.33	854	8.85
11900	816	672	544	4.93	632	6.18	674	6.65	715	7.20	754	7.87	791	8.47	827	9.04	861	9.58
12400	850	700	560	5.46	644	6.79	685	7.33	725	7.74	763	8.50	800	9.16	835	9.77	869	10.35

Size 14 and Size 18

CFM Std. Air	Coil Vel. Size 14	Size 18	20" Forward Curved Fan															
			Total Static Pressure - Inches Of Water															
			2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5400	370	—	836	3.25	924	4.09	1001	5.02	1071	6.02	1135	7.06	1195	8.15	1250	9.27		
5900	405	—	828	3.46	916	4.26	997	5.18	1070	6.18	1136	7.24	1198	8.35	1255	9.51		
6400	439	361	821	3.77	908	4.51	989	5.39	1065	6.37	1133	7.43	1197	8.56	1256	9.73		
6900	473	390	819	4.23	901	4.86	981	5.67	1057	6.61	1128	7.66	1193	8.78	1254	9.96		
7400	508	418	816	4.67	897	5.37	973	6.08	1048	6.94	1120	7.94	1187	9.04	1250	10.21		
7900	542	446	816	5.07	895	5.94	969	6.64	1041	7.41	1111	8.33	1178	9.38	1243	10.52		
8400	576	474	818	5.49	894	6.42	968	7.33	1037	8.05	1104	8.87	1170	9.84	1234	10.92		
8900	610	503	822	5.94	895	6.91	965	7.90	1035	8.85	1099	9.59	1163	10.45	1226	11.45		
9400	645	531	827	6.42	897	7.42	966	8.46										
9900	679	559	833	6.95	902	7.97	968	9.05										
10400	713	587	839	7.54	907	8.57	971	9.66										
10900	748	615	846	8.17	913	9.22	976	10.33										
11400	782	644	854	8.85	919	9.92	982	11.04										
11900	816	672	861	9.58	926	10.68	988	11.82										
12400	850	700	869	10.35	934	11.49	994	12.65										

Maximum ODP Motor Frame Size for Models 14 & 18 — 254 T
Coil Face Velocity is for a Large Cooling Coil, Type A (1/2" Tube Diameter)

Medium Pressure Fan Must Be Used When Operating in Shaded Area



Size 20 and Size 26

CFM Std. Air	Coil Vel. Size 20	Size 26	22" Forward Curved Fan															
			Total Static Pressure - Inches Of Water															
			0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8500	424	—	394	1.66	514	2.53	567	2.99	614	3.46	658	3.94	699	4.42	738	4.90	775	5.39
9000	449	—	403	1.88	519	2.77	571	3.25	618	3.75	662	4.25	703	4.75	741	5.26	778	5.77
9500	474	—	412	2.10	524	3.03	575	3.53	622	4.05	666	4.57	707	5.10	745	5.63	782	6.17
10000	499	—	421	2.35	529	3.32	580	3.84	627	4.37	670	4.91	711	5.47	749	6.02	786	6.59
10500	524	395	432	2.63	535	3.62	585	4.16	631	4.71	674	5.28	715	5.85	753	6.43	789	7.02
11000	549	414	443	2.94	542	3.95	590	4.50	636	5.08	679	5.66	719	6.26	757	6.86	793	7.47
11500	574	433	455	3.27	549	4.31	595	4.87	640	5.46	683	6.07	723	6.69	761	7.31	797	7.94
12000	599	452	467	3.64	557	4.69	602	5.27	645	5.88	688	6.50	728	7.14	766	7.78	802	8.44
12500	623	471	480	4.04	566	5.11	609	5.70	651	6.32	692	6.96	732	7.61	770	8.28	806	8.96
13000	648	489	493	4.47	575	5.55	616	6.15	657	6.79	698	7.44	737	8.12	774	8.80	810	9.50
14000	698	527	521	5.44	593	6.50	633	7.16	671	7.82	709	8.51	747	9.21	784	9.94	819	10.67
15000	—	565	549	6.56	614	7.61	651	8.28	688	8.99	723	9.70	759	10.44	794	11.19	828	11.96
16000	—	602	578	7.84	637	8.89	670	9.54	706	10.30	739	11.04	773	11.80	806	12.58	839	13.39
17000	—	640	607	9.27	662	10.35	692	10.99	724	11.72	758	12.54	789	13.32	820	14.13	851	14.96
18000	—	678	636	10.88	688	11.98	715	12.62	744	13.34	775	14.14	807	15.01	836	15.84	866	16.69
19000	—	715	666	12.67	715	13.79	740	14.45	767	15.16	794	15.94	824	16.81	854	17.72	882	18.60

Size 20 and Size 26

CFM Std. Air	Coil Vel. Size 20	Size 26	22" Forward Curved Fan															
			Total Static Pressure - Inches Of Water															
			2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8500	424	—	775	5.39	850	6.51	922	7.76	989	9.07	1051	10.43	1109	11.81	1163	13.22		
9000	449	—	778	5.77	849	6.85	919	8.08	986	9.42	1049	10.81	1108	12.25	1163	13.71		
9500	474	—	782	6.17	850	7.25	917	8.45	983	9.78	1046	11.20	1106	12.67	1162	14.18		
10000	499	—	786	6.59	853	7.72	917	8.88	981	10.18	1044	11.60	1103	13.10	1160	14.65		
10500	524	395	789	7.02	857	8.20	920	9.39	980	10.65	1041	12.05	1100	13.55	1157	15.13		
11000	549	414	793	7.47	861	8.70	923	9.95	981	11.20	1040	12.56	1098	14.04	1154	15.62		
11500	574	433	797	7.94	865	9.23	927	10.52	985	11.82	1040	13.14	1096	14.59	1151	16.16		
12000	599	452	802	8.44	869	9.77	931	11.11	989	12.47	1043	13.82	1096	15.22	1150	16.76		
12500	623	471	806	8.96	873	10.33	935	11.72	993	13.13	1047	14.54	1099	15.96	1149	17.44		
13000	648	489	810	9.50	877	10.92	939	12.36	996	13.81	1051	15.28	1102	16.75	1152	18.22		
14000	698	527	819	10.67	885	12.17												
15000	—	565	828	11.96	894	13.54												
16000	—	602	839	13.39	903	15.04												
17000	—	640	851	14.96	913	16.67												
18000	—	678	866	16.69	925	18.46												
19000	—	715	882	18.60														

Maximum ODP Motor Frame Size for Models 20 and 26 — 256T

Size 34

CFM Std. Air	Coil Vel. FPM	25" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	267	312	1.30	420	2.12	468	2.65	517	3.19	565	3.67	607	4.19	645	4.73	680	5.30
10000	297	319	1.57	424	2.46	469	2.94	513	3.52	556	4.17	601	4.68	642	5.24	679	5.82
11000	327	327	1.87	430	2.86	473	3.35	514	3.89	554	4.50	593	5.25	634	5.84	673	6.42
12000	357	337	2.23	436	3.32	479	3.84	518	4.38	556	4.96	592	5.61	628	6.37	664	7.16
13000	386	347	2.62	443	3.81	485	4.39	524	4.96	560	5.54	595	6.16	629	6.85	662	7.61
14000	416	358	3.07	451	4.36	492	4.99	530	5.60	565	6.22	599	6.84	632	7.50	663	8.22
15000	446	370	3.60	459	4.95	499	5.64	537	6.31	572	6.97	605	7.62	636	8.29	667	8.99
16000	475	385	4.21	467	5.60	507	6.34	544	7.07	578	7.78	611	8.48	642	9.18	672	9.89
17000	505	400	4.89	477	6.32	515	7.10	551	7.88	585	8.65	617	9.41	648	10.15	677	10.89
18000	535	415	5.67	487	7.11	524	7.92	559	8.75	592	9.58	624	10.39	655	11.19	684	11.98
19000	565	432	6.53	497	7.95	533	8.83	567	9.69	600	10.57	632	11.44	662	12.30	690	13.14
20000	594	448	7.49	508	8.89	544	9.82	576	10.71	608	11.63	639	12.55	669	13.47	697	14.37
21000	624	465	8.54	521	9.95	553	10.84	586	11.83	617	12.77	647	13.74	676	14.71	704	15.67
22000	654	482	9.71	535	11.11	564	11.99	597	13.01	626	14.00	655	15.00	684	16.02	712	17.03
23000	684	500	10.98	549	12.39	576	13.26	606	14.25	637	15.34	665	16.36	692	17.41	720	18.47
24000	713	518	12.36	565	13.78	590	14.65	617	15.62	646	16.72	674	17.83	701	18.90	728	20.00

Size 34

CFM Std. Air	Coil Vel. FPM	25" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	267	680	5.30	744	6.47	800	7.71	851	9.00	899	10.34	943	11.74	985	13.18		
10000	297	679	5.82	746	7.05	804	8.34	857	9.68	906	11.08	951	12.53	994	14.02		
11000	327	673	6.42	744	7.68	805	9.02	860	10.42	911	11.87	958	13.37	1001	14.92		
12000	357	664	7.16	738	8.41	803	9.77	861	11.22	913	12.72	961	14.28	1007	15.88		
13000	386	662	7.61	729	9.27	797	10.63	857	12.10	912	13.65	963	15.25	1009	16.91		
14000	416	663	8.22	725	9.87	788	11.63	851	13.09	908	14.66	961	16.30	1009	18.01		
15000	446	667	8.99	726	10.53	784	12.37	842	14.25	902	15.81	956	17.46	1007	19.20		
16000	475	672	9.89	729	11.39	784	13.09	838	15.09	893	17.14	949	18.77	1001	20.51		
17000	505	677	10.89	733	12.41	786	14.05	838	15.90	889	18.03	940	20.29	993	22.00		
18000	535	684	11.98	738	13.55	790	15.19										
19000	565	690	13.14	744	14.80												
20000	594	697	14.37	751	16.13												
21000	624	704	15.67	757	17.54												
22000	654	712	17.03	764	19.03												
23000	684	720	18.47	772	20.59												
24000	713	728	20.00	779	22.23												

Maximum ODP Motor Frame Size for Models 34 — 324 T
Coil Face Velocity is for a Large Cooling Coil, Type A (1/2" Tube Diameter)



Fan Performance

Size 41

CFM Std. Air	Coil Vel. FPM	30" Forward Curved Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
17000	418	265	3.07	348	4.81	383	5.65	416	6.50	447	7.37	477	8.29	506	9.27	542	10.53
18000	443	270	3.43	352	5.28	386	6.17	418	7.06	449	7.96	478	8.89	506	9.87	534	10.91
19000	468	277	3.87	355	5.77	389	6.72	421	7.66	451	8.60	479	9.56	507	10.55	533	11.58
20000	492	282	4.31	359	6.28	393	7.30	424	8.30	453	9.29	481	10.28	508	11.29	534	12.33
21000	517	288	4.80	363	6.83	396	7.91	427	8.97	456	10.01	484	11.04	510	12.09	535	13.15
22000	541	295	5.34	367	7.40	400	8.54	431	9.66	459	10.76	486	11.85	512	12.94	537	14.04
23000	566	302	5.92	371	8.01	404	9.21	434	10.39	463	11.55	489	12.70	515	13.83	539	14.97
24000	591	309	6.56	375	8.66	407	9.91	438	11.15	466	12.38	493	13.58	518	14.77	542	15.95
25000	615	317	7.24	379	9.36	411	10.64	441	11.95	470	13.23	496	14.50	521	15.74	545	16.98
26000	640	324	7.98	387	10.23	416	11.42	445	12.78	473	14.13	499	15.45	524	16.76	548	18.05
27000	664	332	8.78	392	11.06	420	12.25	449	13.65	477	15.05	503	16.44	528	17.81	551	19.16
28000	689	340	9.63	398	11.94	425	13.12	453	14.56	481	16.02	507	17.47	531	18.90	555	20.32
29000	714	348	10.55	404	12.88	432	14.23	458	15.52	485	17.03	510	18.54	535	20.03	558	21.51
30000	738	357	11.52	410	13.89	437	15.25	462	16.53	489	18.08	514	19.64	538	21.20	562	22.74
31000	763	365	12.57	417	14.97	443	16.34	467	17.61	493	19.19	518	20.80	542	22.41	565	24.02
32000	788	374	13.67	424	16.12	449	17.49	475	18.99	497	20.35	522	22.00	546	23.67	569	25.33

Size 41

CFM Std. Air	Coil Vel. FPM	30" Forward Curved Fan													
		Total Static Pressure - Inches Of Water													
		2.50		3.00		3.50		4.00		4.50		5.00		5.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
17000	418	542	10.53	608	13.20	664	15.89	714	18.59	758	21.28	799	23.98	837	26.69
18000	443	534	10.91	600	13.60	659	16.45	710	19.30	757	22.15	799	25.00	838	27.86
19000	468	533	11.58	590	13.99	651	16.94	706	19.95	754	22.96	798	25.97	838	28.98
20000	492	534	12.33	584	14.55	643	17.39	699	20.52	749	23.69	795	26.87	837	30.04
21000	517	535	13.15	584	15.38	632	17.85	690	21.05	743	24.36	790	27.69	834	31.02
22000	541	537	14.04	585	16.30	631	18.71	681	21.56	735	24.96	784	28.43	829	31.92
23000	566	539	14.97	586	17.29	631	19.71	675	22.31	725	25.54	776	29.11	823	32.74
24000	591	542	15.95	588	18.34	632	20.80	675	23.40	716	26.17	767	29.75	815	33.50
25000	615	545	16.98	591	19.45	634	21.97	675	24.59	716	27.35	757	30.40	806	34.21
26000	640	548	18.05	593	20.62	636	23.21	676	25.86	716	28.71				
27000	664	551	19.16	596	21.84	638	24.51	678	27.22	717	30.08				
28000	689	555	20.32	599	23.10	640	25.87	680	28.65	718	31.59				
29000	714	558	21.51	602	24.41	643	27.28	682	30.15	720	33.15				
30000	738	562	22.74	605	25.77	646	28.75	685	31.71	722	34.79				
31000	763	565	24.02	609	27.17	649	30.27	688	33.33	724	36.50				
32000	788	569	25.33	612	28.62	653	31.83	691	35.01	726	38.21				

Maximum ODP Motor Frame Size for Models 41 — 324 T

Size 50

CFM Std. Air	Coil Vel. FPM	32 3/8" Airfoil Fan															
		Total Static Pressure - Inches Of Water															
		0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
17000	349	679	3.44	750	4.90	783	5.64	815	6.38	845	7.13	875	7.89	903	8.66	931	9.44
19000	390	744	4.52	809	6.15	840	6.96	870	7.76	899	8.58	927	9.38	954	10.21	978	11.02
21000	431	809	5.82	868	7.60	897	8.48	925	9.32	953	10.22	979	11.04	1005	11.93	1027	12.81
23000	472	873	6.92	928	8.86	955	9.84	981	10.83	1006	11.82	1031	12.81	1056	13.81	1079	14.82
25000	522	938	9.07	987	11.16	1012	12.18	1036	13.10	1060	14.07	1083	14.95	1107	15.95	1133	17.05
27000	554	1003	11.09	1046	13.29	1069	14.35	1091	15.30	1114	16.33	1135	17.22	1158	18.26	1189	19.53
29000	595	1068	13.39	1105	15.67	1126	16.77	1146	17.73	1168	18.82	1187	19.69	1209	20.78	1246	22.28
31000	636	1133	15.98	1164	18.32	1183	19.45	1201	20.41	1222	21.56	1239	22.40	1260	23.53	1305	25.31

Size 50

CFM Std. Air	Coil Vel. FPM	32 3/8" Airfoil Fan															
		Total Static Pressure - Inches Of Water															
		2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
17000	349	931	9.44	982	11.06	1032	12.85	1080	14.64	1126	16.46	1172	18.32	1216	20.22		
19000	390	978	11.02	1028	12.75	1074	14.45	1120	16.46	1164	18.45	1207	20.46	1249	22.49		
21000	431	1027	12.81	1076	14.68	1122	16.58	1166	18.50	1206	20.51	1247	22.72	1287	24.92		
23000	472	1079	14.82	1125	16.84	1170	18.88	1212	20.95	1254	23.05	1293	25.17	1329	27.44		
25000	522	1133	17.05	1177	19.23	1220	21.43	1261	23.64	1300	25.89	1339	28.15	1376	30.44		
27000	554	1189	19.53	1231	21.87	1272	24.23	1311	26.60	1349	28.99	1386	31.41	1422	33.83		
29000	595	1246	22.28	1286	24.78	1325	27.29	1363	29.83	1400	32.37	1436	34.94				
31000	636	1305	25.31	1343	27.98	1381	30.66	1417	33.35	1452	36.05						

Maximum ODP Motor Frame Size for Models 50 — 324 T

Coil Face Velocity is for a Large Cooling Coil, Type A (1/2" Tube Diameter)

Size 65 and Size 75

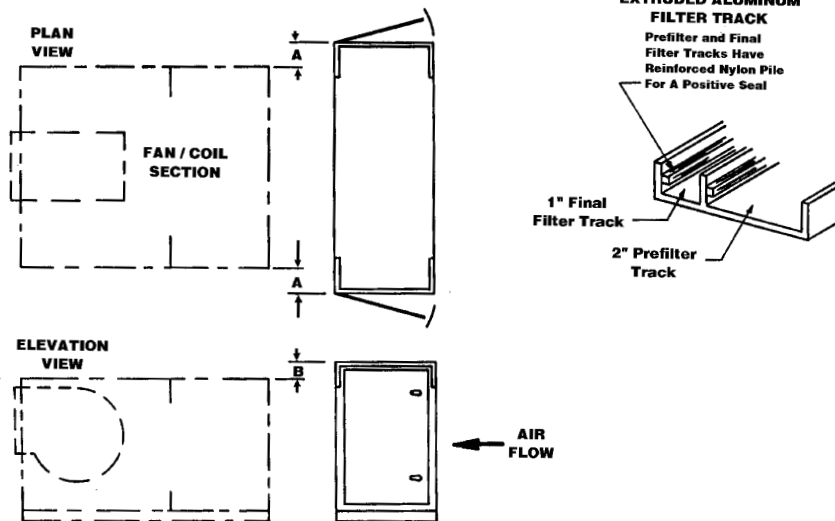
CFM Std. Air	Coil Vel Size	Size	39 3/8" Airfoil Fan															
			Total Static Pressure - Inches Of Water															
			0.50		1.00		1.25		1.50		1.75		2.00		2.25		2.50	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
23000	356	—	506	4.32	562	6.06	592	7.04	620	8.01	645	9.00	669	9.99	693	11.01	715	12.04
25500	395	—	550	5.48	597	7.31	625	8.35	653	9.43	678	10.51	702	11.60	724	12.70	746	13.81
28000	434	372	595	6.85	638	8.82	661	9.94	686	11.03	711	12.21	735	13.39	757	14.59	778	15.78
30500	472	405	640	8.44	680	10.59	700	11.68	719	12.80	744	14.10	768	15.39	790	16.68	811	17.97
33000	511	438	685	10.30	724	12.62	742	13.78	760	14.98	777	16.17	801	17.59	823	18.98	844	20.37
35500	550	471	731	12.40	768	14.94	785	16.17	801	17.42	818	18.72	836	20.11	856	21.50	877	23.01
38000	588	504	776	14.77	813	17.55	829	18.86	845	20.20	860	21.54	876	22.94	891	24.36	910	25.87
40500	627	537	822	17.48	858	20.47	873	21.88	888	23.29	903	24.71	917	26.16	930	27.29	943	28.78
43000	666	571	868	20.47	903	23.72	918	25.23	932	26.73	946	28.23	960	29.75	974	31.82	988	33.11

Size 65 and Size 75

CFM Std. Air	Coil Vel Size	Size	39 3/8" Airfoil Fan															
			Total Static Pressure - Inches Of Water															
			2.50		3.00		3.50		4.00		4.50		5.00		5.50		6.00	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
23000	356	—	715	12.04	755	14.17	799	16.56	840	18.75	880	21.56	925	23.78	974	26.15	1015	29.01
25500	395	—	746	13.81	781	16.00	824	18.39	863	20.86	901	23.21	947	25.8	990	28.52	1027	32.14
28000	434	372	778	15.78	819	18.28	851	20.77	886	23.45	926	25.89	973	28.61	1011	31.43	1044	34.14
30500	472	405	811	17.97	843	20.56	880	23.52	920	25.83	958	28.75	1003	31.51	1031	34.66	1066	38.18
33000	511	438	844	20.37	878	23.33	920	25.93	949	28.61	989	31.41	1025	35.01	1056	38.43		
35500	550	471	877	23.01	910	26.10	947	29.08	986	32.16	1018	33.63	1047	38.71				
38000	588	504	910	25.87	951	29.29	978	31.78	1016	34.04	1048	36.18						
40500	627	537	943	28.78	984	32.45	1021	36.16										
43000	666	571	988	33.11	1029	37.10												

Maximum ODP Motor Frame Size for Models 65 and 75 — 324T for Open Drip Proof Motor and 286T for TEFC Motor.

High Efficiency Filter Sections- Dimensions



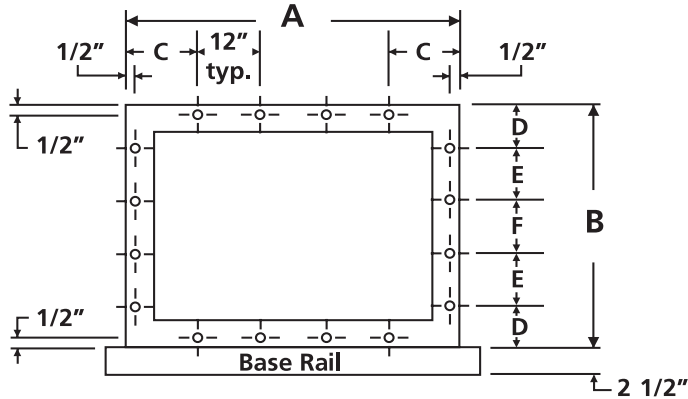
UNIT SIZE	High Efficiency Filter Section Dimensions - inches	
	A Width	B Height
03	0	3 1/2
06	0	1/4
08	0	3
10	3/8	3
12	0	0
14	0	0
18	0	0
20	2 1/4	0
26	1 1/2	0
34	1 1/2	0
41	1 1/2	0
50	0	0
65	0	0
75	0	3 3/8

Notes:

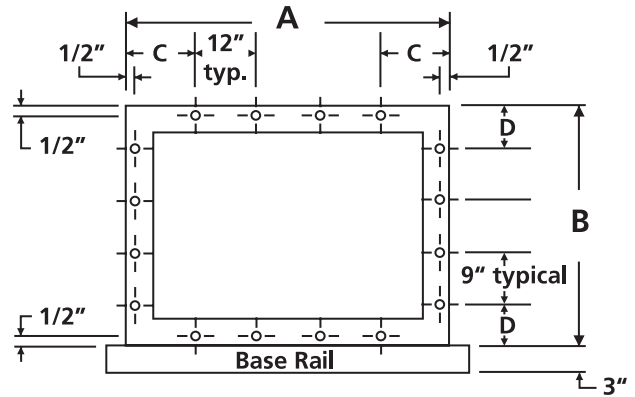
1. The high efficiency filter housing has flanges on the entering and leaving air sides that match the Heatcraft Products accessory hole pattern (page 30).
2. The access doors have gaskets. Access doors are located on both sides of the filter housing.
3. Filter housing is manufactured from a minimum of 16 gauge steel.

22" Section accommodates 2" prefilter and up to an additional 12" of high efficiency final filter
 28" Section accommodates 2" prefilter and up to an additional 21" of high efficiency final filter
 44" Section accommodates 2" prefilter and up to an additional 37" of high efficiency final filter

Sizes 03 - 18



Sizes 20 - 41

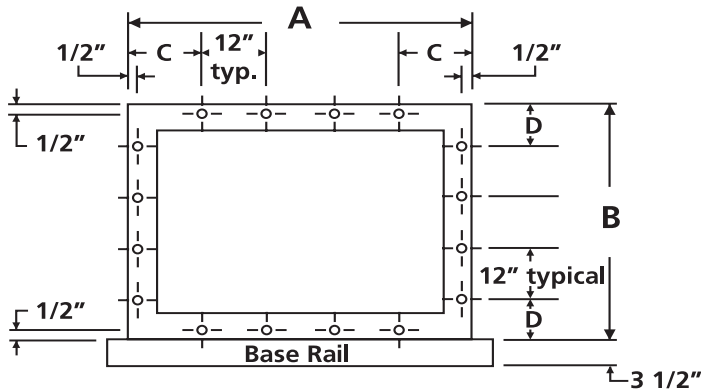


Flanges are 1" minimum all sections.

Size	Dimensions					
	A	B	C	D	E	F
03	37	22 3/4	1/2	2 3/8	9	—
06	52	26	2	4	9	—
08	49	35 1/2	1/2	5 3/4	12	—
10	58	35 1/2	5	5 3/4	12	—
12	64	38 3/4	2	4 3/8	12	6
14	73	38 3/4	6 1/2	4 3/8	12	6
18	73	47 3/4	6 1/2	5 1/2	12 1/4	—

Size	Dimensions			
	A	B	C	D
20	90	44	3	4
26	115	44	3 1/2	4
34	115	54	3 1/2	4 1/2
41	115	65	3 1/2	5 1/2

Sizes 50 - 75



Flanges are 2", all sections.

Size	Dimensions			
	A	B	C	D
50	117 3/4	74 3/4	4 7/8	7 3/8
65	133 3/4	82 3/4	6 7/8	5 3/8
75	133 3/4	94 3/4	6 7/8	5 3/8

Notes - Sizes 03 Through 75:

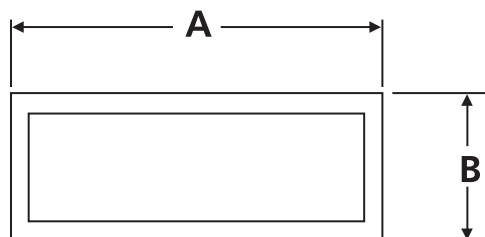
Accessory hole patterns apply to both the inlet and outlet of all the following sections:

- Coil sections.
- Flat and high efficiency filter sections.
- High capacity filter sections and Access sections.
- Internal face and bypass sections.

Accessory hole patterns apply to the:

- Inlet of fan sections.
- Inlet of external face and bypass sections.
- Outlet of economizer sections.

Mixbox Inlet Duct Connections



Sizes 03 - 75

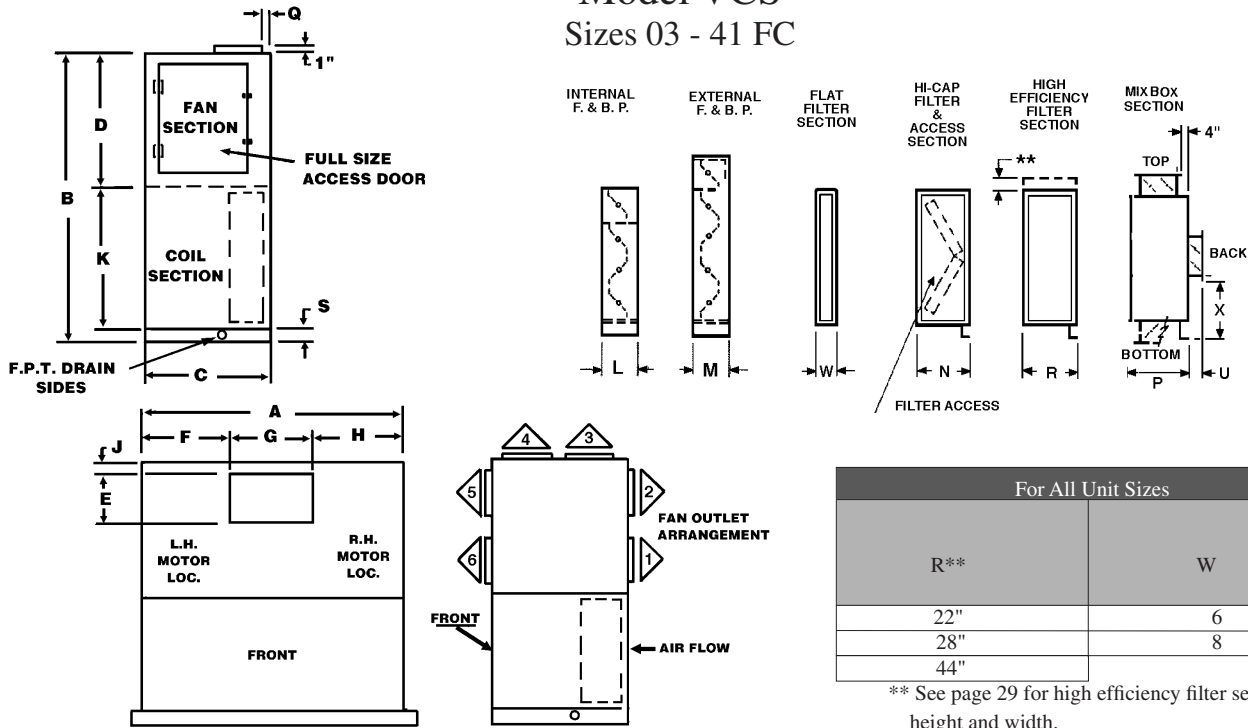
SIZE	03	06	08	10	12	14	18
A	35	50	47	56	62	71	71
B	12 1/2	12 1/2	12 1/2	12 1/2	12 1/2	15 1/4	15 1/4

SIZE	20	26	34	41	50	65	75
A	88	113	113	113	115 3/4	131 3/4	131 3/4
B	15 1/4	15 1/4	21	26 3/4	32 1/2	32 1/2	32 1/2

All dimensions are in inches.

Flanges:
All sizes = 1"

Model VCS Sizes 03 - 41 FC



Arrangements Available:

Sizes 03 through 18 — Arrangements 1, 2, 3, 4, 5, 6.^^

Sizes 20 through 41 — Arrangements 2, 3, 4, 5.^^

Unit Size	A air handler width	B air handler height	C air handler depth	D fan section height	E fan outlet length	F* fan outlet locator	G fan outlet width	H* fan outlet locator	J discharge arr 1,2,5,6	K coil section vertical data	L int. F&BP depth	M^^ ext. F&BP depth	N high cap. filter, depth
03	39	49 1/2	28 11/16	—	10 1/4	18 1/8	11 7/8	9	1 1/2	—	7 3/4	8 1/2	26 1/2
06	52	56	28 11/16	—	13 7/16	18 3/16	15 5/8	18 3/16	1 1/2	—	7 3/4	8 1/2	25 5/8
08	49	73 1/2	35 1/2	—	15 7/8	17 1/8	14 3/4	17 1/8	1 1/2	—	7 3/4	13	28 3/4
10	58	73 1/2	35 1/2	—	18 7/8	20 5/16	17 3/8	20 5/16	1 1/2	—	7 3/4	13	28 3/4
12	64	80	38 3/4	—	18 7/8	23 5/16	17 3/8	23 5/16	1 1/2	—	7 3/4	14	28 3/4
14	73	80	38 3/4	—	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	—	7 3/4	14	27 3/4
18	73	89	38 3/4	38 3/4	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	47 3/4	7 3/4	14	27 3/4
20	90	91	44	44	27 1/4	31 3/8	27 1/4	31 3/8	4	44	10	15	23
26	115	91	44	44	27 1/4	43 7/8	27 1/4	43 7/8	4	44	10	15	23
34	115	109	54	52	31 1/4	41 7/8	31 1/4	41 7/8	3	54	10	15	23
41	115	133	62	65	36 3/4	39 1/8	36 3/4	39 1/8	4	65	10	18	26 5/8

Unit Size	P Mix box without filter section	Q+ discharge arr 3 & 4	S air handler base height	U back inlet depth	V inlet height	X back inlet locator
03	20 1/2	1 1/2	2 1/2	5 1/2	4	5 1/8
06	20 1/2	1 1/2	2 1/2	5 1/2	4	9 1/4
08	20 1/2	1 1/2	2 1/2	5 1/2	4	14
10	20 1/2	1 1/2	2 1/2	5 1/2	4	14
12	20 1/2	1 1/2	2 1/2	5 1/2	4	15 5/8
14	23 1/4	2 1/2	2 1/2	7	5 1/2	14 1/4
18	23 1/4	2 1/2	2 1/2	7	5 1/2	18 3/4
20	23 1/4	2	3	7	5 1/2	17 3/8
26	23 1/4	2	3	7	5 1/2	17 3/8
34	29	3	3	7	5 1/2	19 1/2
41	34 3/4	3	3	7	5 1/2	22 1/8

Reference

Motor and coil connection locations (R.H. or L.H.) determined facing the front of the unit, with the air blowing through the coil and into observer's face.

^^External Face & Bypass Note Arrangements 1 and 2 not available with external face and bypass dampers.

All dimensions are in inches.

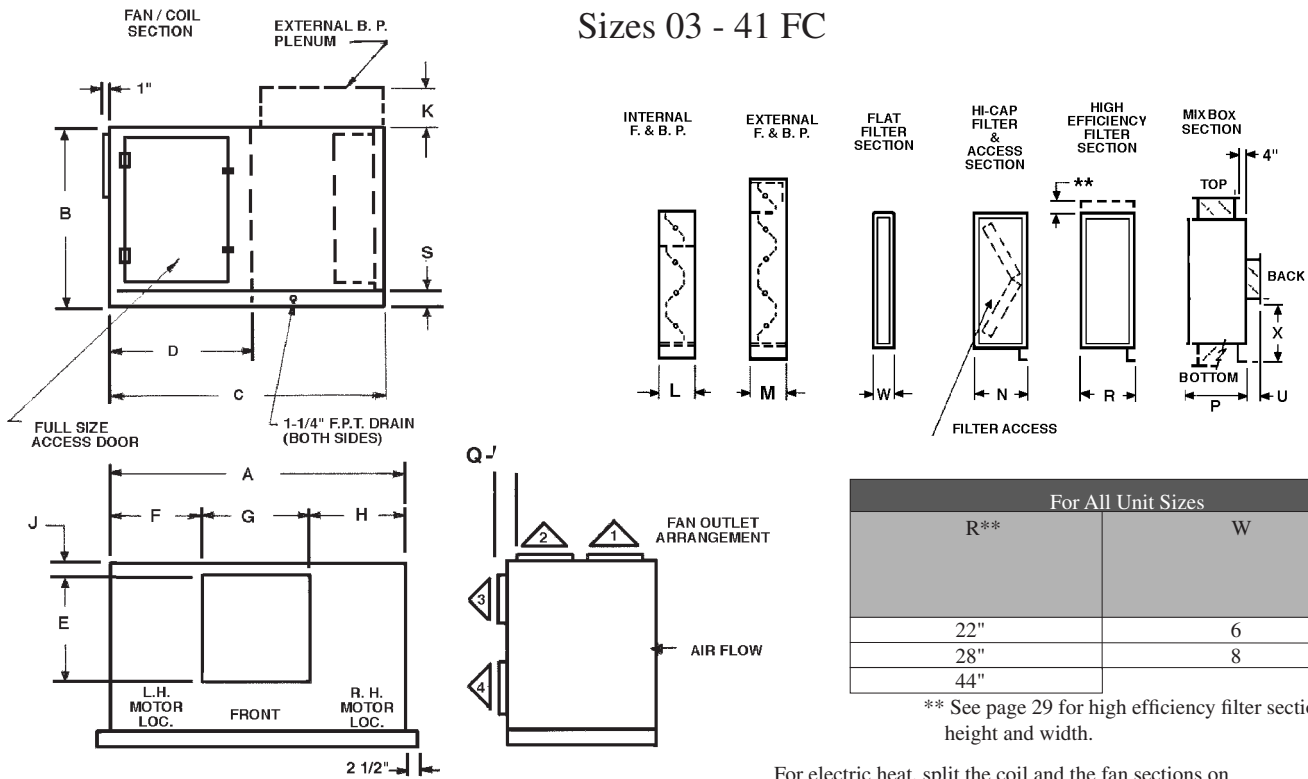
FC = Forward Curved Fan

* Dimension "F" and "H" are for Left Hand (L.H.) drive. For Right Hand (R.H.) drive, reverse dimension "F" and "H" (size 03 only).

+ Dimension "Q" is for Discharge Arrangement 3. For Discharge Arrangement 4, "Q" measures from corresponding side of unit.

NOTE: For double wall construction and internal isolation, please consult factory

Models HCS and HCL Sizes 03 - 41 FC



Arrangements Available:
 Sizes 03 through 41 — Arrangements 1, 2, 3, 4.

For All Unit Sizes	
R**	W
22"	6
28"	8
44"	

** See page 29 for high efficiency filter section height and width.

For electric heat, split the coil and the fan sections on sizes 03 through 18. For dimensions see page 6 for heater, page 34 for fan, and page 38 for coil section.

Unit Size	A	B	C		D	E	F*	G	H*	J^	K	L
	air handler width	air handler height	air handler depth	fan section fan outlet	fan outlet depth	fan outlet height	fan outlet locator	discharge width	external locator	internal arr 3 & 4	F&BP	F&BP
03	39	25 1/4	45	51 7/16	—	10 1/4	18 1/8	11 7/8	9	1 1/2	6 1/4	7 3/4
06	52	28 1/2	48 1/4	54 11/16	—	13 7/16	18 3/16	15 5/8	18 3/16	1 1/2	6 1/4	7 3/4
08	49	38	57 3/4	71	—	15 7/8	17 1/8	14 3/4	17 1/8	1 1/2	10 1/4	7 3/4
10	58	38	57 3/4	71	—	18 7/8	20 5/16	17 3/8	20 5/16	1 1/2	10 1/4	7 3/4
12	64	41 1/4	61	77 1/2	—	18 7/8	23 5/16	17 3/8	23 5/16	1 1/2	10 1/4	7 3/4
14	73	41 1/4	61	77 1/2	—	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	10 1/4	7 3/4
18	73	50 1/4	61	77 1/2	—	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	10 1/4	7 3/4
20	90	47	66 1/4	88 5/8	44	27 1/4	31 3/8	27 1/4	31 3/8	2	10 1/4	10
26	115	47	66 1/4	88 5/8	44	27 1/4	43 7/8	27 1/4	43 7/8	2	10 1/4	10
34	115	57	74 1/4	96 5/8	52	31 1/4	41 7/8	31 1/4	41 7/8	3	13 7/16	10
41	115	68	84 1/4	106 5/8	62	36 3/4	39 1/8	36 3/4	39 1/8	4	16 5/8	10

Unit Size	M^	N	P	Q+	S	U	V	X
	ext. F&BP depth	high cap. filter depth	Mix Box without filter section	discharge arr 1 & 2	base	air handler depth	inlet height	inlet locator
03	8 1/2	26 1/2	20 1/2	1 1/2	2 1/2	5 1/2	4	5 1/8
06	8 1/2	25 5/8	20 1/2	1 1/2	2 1/2	5 1/2	4	9 1/4
08	13	28 3/4	20 1/2	1 1/2	2 1/2	5 1/2	4	14
10	13	28 3/4	20 1/2	1 1/2	2 1/2	5 1/2	4	14
12	14	28 3/4	20 1/2	1 1/2	2 1/2	5 1/2	4	15 5/8
14	14	27 3/4	23 1/4	2 1/2	2 1/2	7	5 1/2	14 1/4
18	14	27 3/4	23 1/4	2 1/2	2 1/2	7	5 1/2	18 3/4
20	15	23	23 1/4	2	3	7	5 1/2	17 3/8
26	15	23	23 1/4	2	3	7	5 1/2	17 3/8
34	15	23	29	3	3	7	5 1/2	19 1/2
41	18	26 5/8	34 3/4	3	3	7	5 1/2	22 1/8

Reference

Motor and coil connection locations (R.H. or L.H.) determined facing the front of the unit, with the air blowing through the coil, and into the observer's face.

All dimensions above are in inches

FC = Forward Curved Fan

*Dimension "F" and "H" are for Left Hand (L.H.) drive. For Right Hand (R.H.) drive, reverse dimension "F" and "H" (Size 03 only).

+Dimension "Q" is for Discharge Arrangement 2. For Discharge Arrangement 1, "Q" measures from corresponding side of unit.

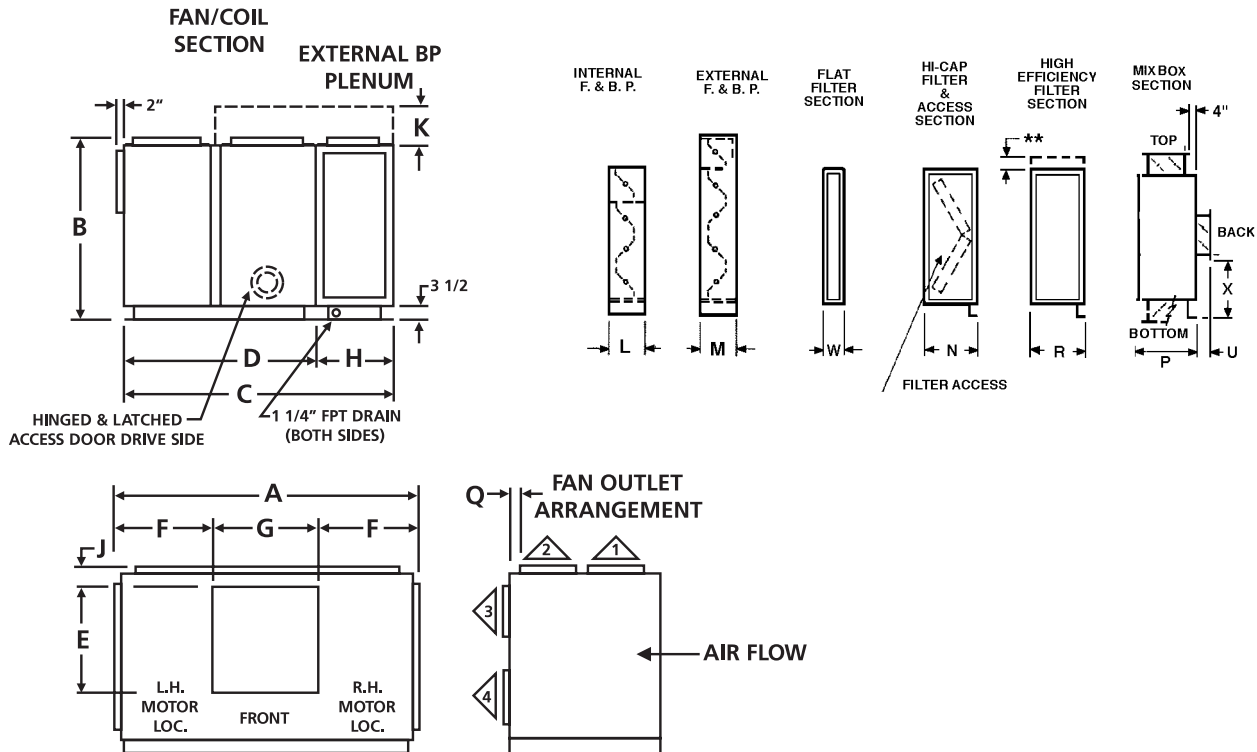
^Dimension "J" is for Discharge Arrangement 3. For Discharge Arrangement 4, Dimension "J" measures from top of base rail.

^^External face and bypass is available on HCL (long cabinet) models only.

Note: For double wall construction and internal isolation, please consult factory

* Add 6" to dim C if internal isolation and down discharge

Models HCS and HCL Sizes 50 - 75 AF



Notes:

Motor and connection locations (R.H. or L.H.) determined when facing the front of the unit, with the air blowing through the coil and into observer's face.

Floor or platform mounting only. Ceiling suspension is not available.
For Electric Heat : See page 6 for heater section dimensions.

Arrangements Available:
Sizes 50 through 75 — Arrangement 1, 2, 3, 4.

For All Unit Sizes	
R**	W
22"	6
28"	8
44"	

** See page 29 for high efficiency filter section height and width.

Unit Size	A	B	C		D	E	F	G	H	
	air handler width	air handler height	air handler depthfan section		fan discharge depth	fan discharge length	fan discharge location	coil width	section depth	
			AHS cabinet	AHL cabinet					AHS cabinet	AHL cabinet
50	119	78 7/8	91	109 1/4	67 3/4	34 1/2	35 9/16	47 7/8	23 1/4	41 1/2
65	135	86 7/8	98	116 1/4	74 3/4	42 1/4	38 1/2	58	23 1/4	41 1/2
75	135	98 7/8	98	116 1/4	74 3/4	42 1/4	38 1/2	58	23 1/4	41 1/2

Unit Size	J	K	L	M^^	P	Q+	X
	discharge arr 3	external F&BP added height	internal F&BP section depth	external F&BP section depth	Mixbox without filter section	discharge arr 1 & 2	vertical locator, back inlet, mixbox
50	15	19 1/2	9 1/4	21 1/2	40 1/2	2 1/2	24 5/8
65	10 3/4	24 1/2	10 1/4	27 1/2	40 1/2	5 5/8	28 5/8
75	22 3/4	24 1/2	10 1/4	27 1/2	40 1/2	5 5/8	34 5/8

All dimensions are in inches.

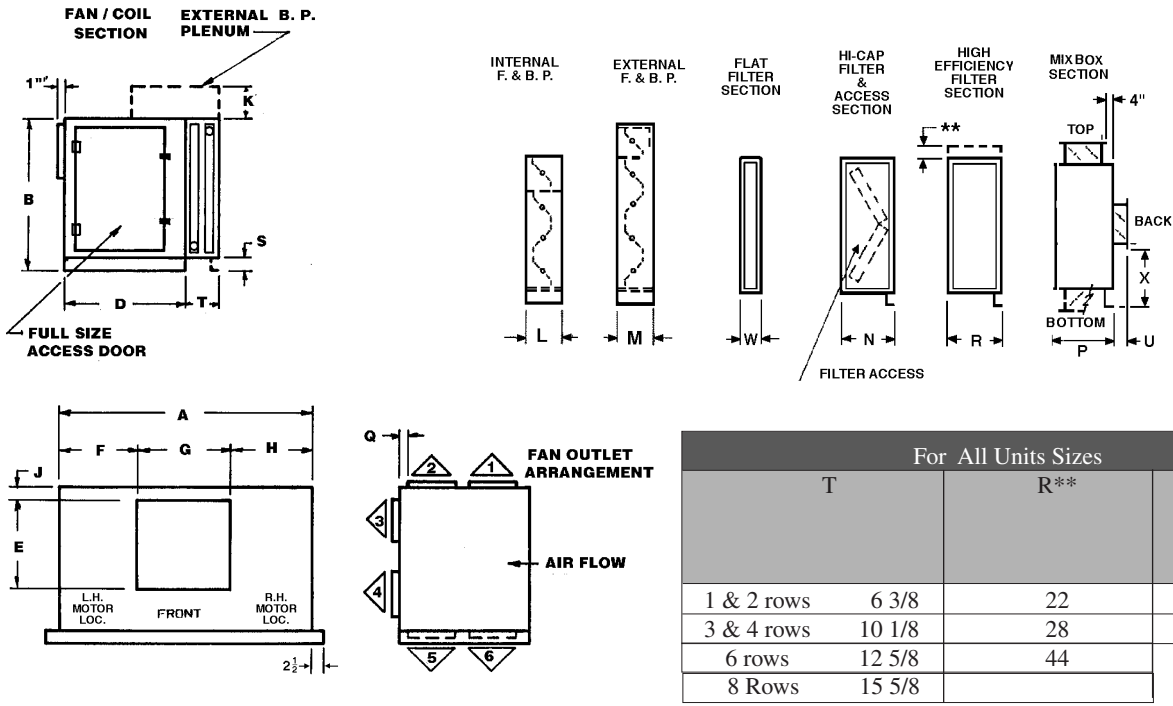
AF = Airfoil Fan

+ Dimension "Q" is for Discharge Arrangement 2. For Discharge Arrangement 1, "Q" measures from corresponding side of unit.

^^ External face and bypass is available on HCL (long cabinet) models only.

Note: For double wall construction and internal isolation, please consult factory

Models HD Sizes 03 - 41 FC



For All Units Sizes			
	T	R**	W
1 & 2 rows	6 3/8	22	6
3 & 4 rows	10 1/8	28	8
6 rows	12 5/8	44	
8 Rows	15 5/8		

Arrangements Available:

03 through 18 — Arrangements 1, 2, 3, 4, 5, 6.^^

Sizes 20 through 41 — Arrangements 1, 2, 3, 4.^^

** See page 29 for high efficiency filter section height and width.

Sizes

Unit Size	A air handler width	B air handler height	D fan section depth	E fan discharge length	F* fan outlet locator	G fan discharge width	H* fan outlet locator	J^ discharge arr 3 & 4	K ext. F&BP height	L int. F&BP depth	M^^ ext. F&BP depth	N high capacity filter depth
03	39	25 1/4	22 3/4	10 1/4	18 1/8	11 7/8	9	1 1/2	6 1/4	7 3/4	8 1/2	26 1/2
06	52	28 1/2	26	13 7/16	18 3/16	15 5/8	18 3/16	1 1/2	6 1/4	7 3/4	8 1/2	25 5/8
08	49	38	35 1/2	15 7/8	17 1/8	14 3/4	17 1/8	1 1/2	10 1/4	7 3/4	13	28 3/4
10	58	38	35 1/2	18 7/8	20 5/16	17 3/8	20 5/16	1 1/2	10 1/4	7 3/4	13	28 3/4
12	64	41 1/4	38 3/4	18 7/8	23 5/16	17 3/8	23 5/16	1 1/2	10 1/4	7 3/4	14	28 3/4
14	73	41 1/4	38 3/4	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	10 1/4	7 3/4	14	27 3/4
18	73	50 1/4	38 3/4	24 3/4	25 1/8	22 3/4	25 1/8	2 1/2	10 1/4	7 3/4	14	27 3/4
20	90	47	44	27 1/4	31 3/8	27 1/4	31 3/8	2	10 1/4	10	15	23
26	115	47	44	27 1/4	43 7/8	27 1/4	43 7/8	2	10 1/4	10	15	23
34	115	57	52	31 1/4	41 7/8	31 1/4	41 7/8	3	13 7/16	10	15	23
41	115	68	62	36 3/4	39 1/8	36 3/4	39 1/8	4	16 5/8	10	18	26 5/8

Unit Size	P Mixbox	Q+ discharge arr 1&2	S air handler base height	U inlet depth	V inlet height	X inlet locator
03	20 1/2	1 1/2	2 1/2	5 1/2	4	5 1/8
06	20 1/2	1 1/2	2 1/2	5 1/2	4	9 1/4
08	20 1/2	1 1/2	2 1/2	5 1/2	4	14
12	20 1/2	1 1/2	2 1/2	5 1/2	4	15 5/8
14	23 1/4	2 1/2	2 1/2	7	5 1/2	14 1/4
18	23 1/4	2 1/2	2 1/2	7	5 1/2	18 3/4
20	23 1/4	2	3	7	5 1/2	17 3/8
26	23 1/4	2	3	7	5 1/2	17 3/8
34	29	3	3	7	5 1/2	19 1/2
41	34 3/4	3	3	7	5 1/2	22 1/8

Reference

Motor and coil connection locations (R.H. or L.H.) determined facing the front of the unit, with the air into observer's face.

HD Note

Air handler depth is dimension 'D'. HD (heating duty) unit depth is dimension 'D' added to dimension 'T'.

FC = Forward Curve Fan

*Dimension "F" and "H" are for Left Hand (L.H.) drive. For Right Hand (R.H.) drive, reverse dimension "F" and "H" (Size 03 only).

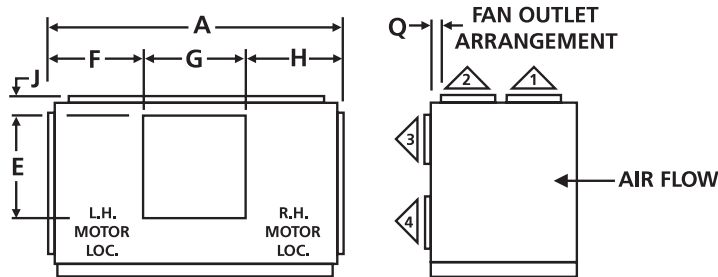
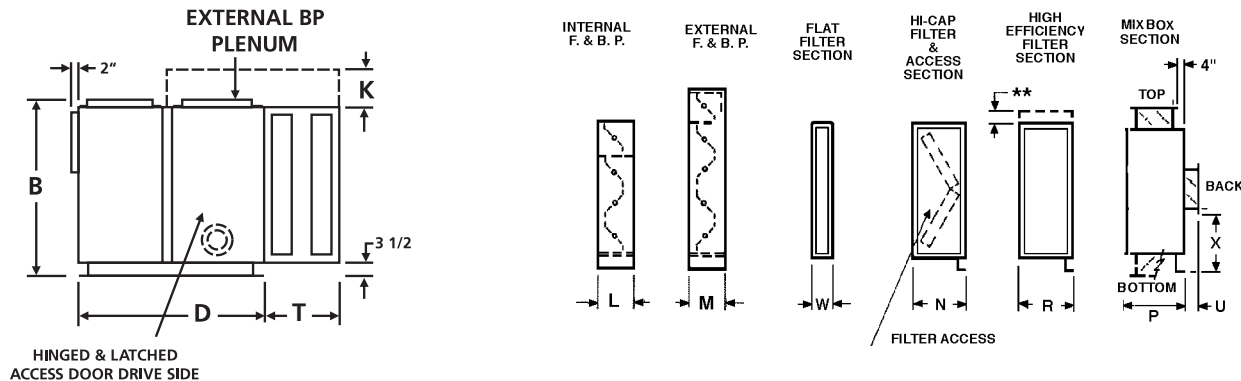
+Dimension "Q" is for Discharge Arrangement 2. For Discharge Arrangement 1, "Q" measures from corresponding side of unit.

^Dimension "J" is for Discharge Arrangement 3. For Discharge Arrangement 4, Dimension "J" measures from top of base rail.

^^Arrangements 1 & 2 are not available with external face and bypass dampers.

Note: For double wall construction and internal isolation, please consult factory

MODELS HD Sizes 50 - 65 AF



Notes:

Motor and connection locations (R.H. or L.H.) determined when facing the front of the unit, with the air blowing through the coil and into observer's face.

Floor or platform mounting only.

Ceiling suspension is not available.

Electric Heat: See page 6 for heater section dimensions.

Arrangements Available:

Size 50 through 75 — Arrangements 1, 2, 3, 4^{^^}

For All Units Sizes			
	T	R**	W
1 & 2 rows	6 3/8	22	6
3 & 4 rows	10 1/8	28	8
6 rows	12 5/8	44	
8 Rows	15 5/8		

** See page 29 for high efficiency filter section height and width.

Unit Size	A air handler width	B air handler height	E fan discharge length	F fan discharge location	G fan discharge width	J discharge arrangement 3	K external F&BP added height
50	119	78 7/8	34 1/2	35 9/16	47 7/8	15	19 1/2
65	135	86 7/8	42 1/4	38 1/2	58	10 3/4	24 1/2
75	135	98 7/8	42 1/4	38 1/2	58	22 3/4	24 1/2

Unit Size	L internal F&BP section depth	M ^{^^} external F&BP section depth	P Mixnoc	Q+ discharge arrangement 1 & 2	X vertical locator, back inlet, economizer
50	9 1/4	21 1/2	40 1/2	2 1/2	24 5/8
65	10 1/4	27 1/2	40 1/2	5 5/8	28 5/8

HD Note

HD HF(heating duty) unit depth is dimension 'D' added to dimension 'T'.

All dimensions are in inches.

AF = Airfoil Fan

+ Dimension "Q" is for Discharge Arrangement 2. For Discharge Arrangement 1, "Q" measures from corresponding side of unit.

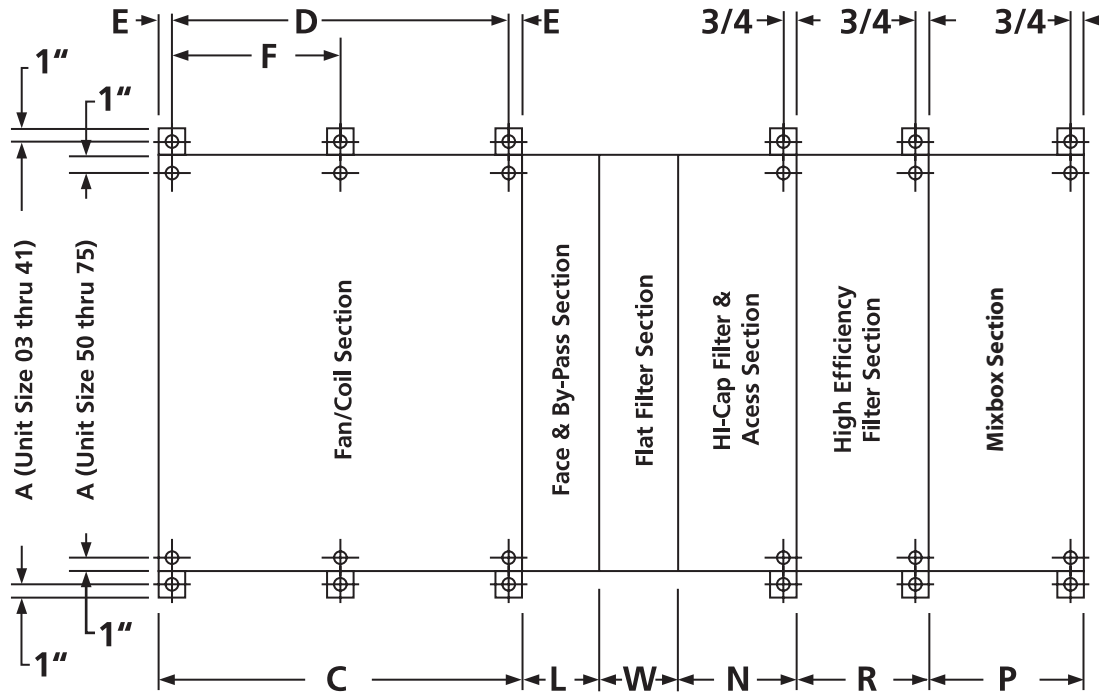
^{^^} Arrangements 1 and 2 are not available with external face and bypass damper section.

Note: For double wall construction and internal isolation, please consult factory

Models HCS, HCL and VCS

Sizes 03 - 75

Mounting Locations For Vibration Isolators



All mounting holes are : 5/8 inch diameter.

Unit Size	E center to edge dimension
03 - 18	3/4
20 - 41	1
50 - 75	1

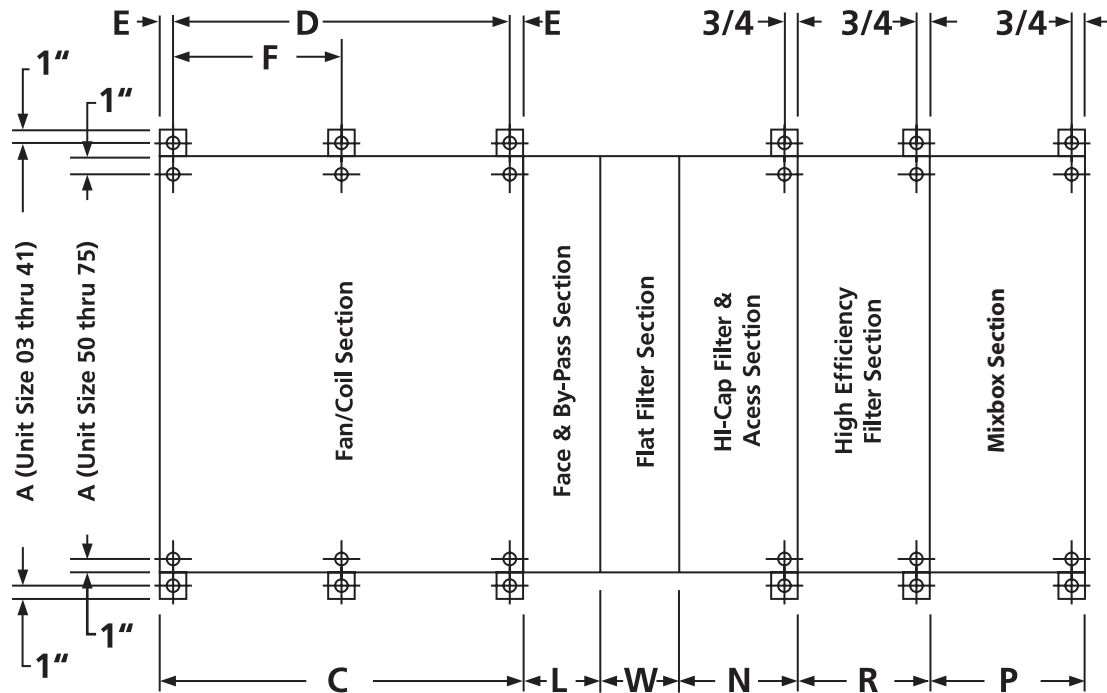
For All Unit Sizes		
R High Efficiency Filter Section Depths	W Flat Filter Section Depths	
22	2 inch filters	6
28	4 inch filters	8
44		

UNIT SIZE	A* air handler centers width	C air handler overall edge to edge depth			D air handler extreme center to center depth			F intermediate center	L face and bypass dampers section, overall depth		N high capacity filter or access	P Mixbox
		HCS	HCL	VCS	HCS	HCL	VCS		internal	external		
03	40	45	51 7/16	28 11/16	43 1/2	49 15/16	27 3/16	—	7 3/4	8 1/2	26 1/2	20 1/2
06	55	48 1/4	54 11/16	28 11/16	46 3/4	53 3/16	27 3/16	—	7 3/4	8 1/2	25 5/8	20 1/2
08	52	57 3/4	71	35 1/2	56 1/4	69 1/2	34	—	7 3/4	13	28 3/4	20 1/2
10	61	57 3/4	71	35 1/2	56 1/4	69 1/2	34	—	7 3/4	13	28 3/4	20 1/2
12	67	61	77 1/2	38 3/4	59 1/2	76	37 1/4	—	7 3/4	14	28 3/4	20 1/2
14	76	61	77 1/2	38 3/4	59 1/2	76	37 1/4	—	7 3/4	14	27 3/4	23 1/4
18	76	61	77 1/2	38 3/4	59 1/2	76	37 1/4	—	7 3/4	14	27 3/4	23 1/4
20	93	66 1/4	88 5/8	44	62 1/4	88 5/8	42	40	10	15	23	23 1/4
26	118	66 1/4	88 5/8	44	62 1/4	88 5/8	42	40	10	15	23	23 1/4
34	118	74 1/4	96 5/8	52	72 1/4	94 5/8	50	50	10	15	23	29
41	118	84 1/4	106 5/8	62	82 1/4	104 5/8	60	60	10	18	26 5/8	34 3/4
50	115 3/4	91	109 1/4	—	89	107 1/4	—	65 3/4	9 1/4	21 1/2	30	40 1/2
65	131 3/4	98	116 1/4	—	96	114 1/4	—	72 3/4	10 1/4	27 1/2	30	40 1/2
75	131 3/4	98	—	—	96	—	—	72 3/4	10 1/4	27 1/2	30	40 1/2

All dimensions are in inches.

Models HD
 Sizes 03 - 65

Mounting Locations For Vibration Isolators



All mounting holes are : 5/8 inch diameter.

For All Unit Sizes				
T**		R	W	
1 & 2 rows**	6 3/8	22	2 inch filters	6
3 & 4 rows	10 1/8	28	4 inch filters	8
6 rows	12 5/8	44		
8 Rows	15 5/8			

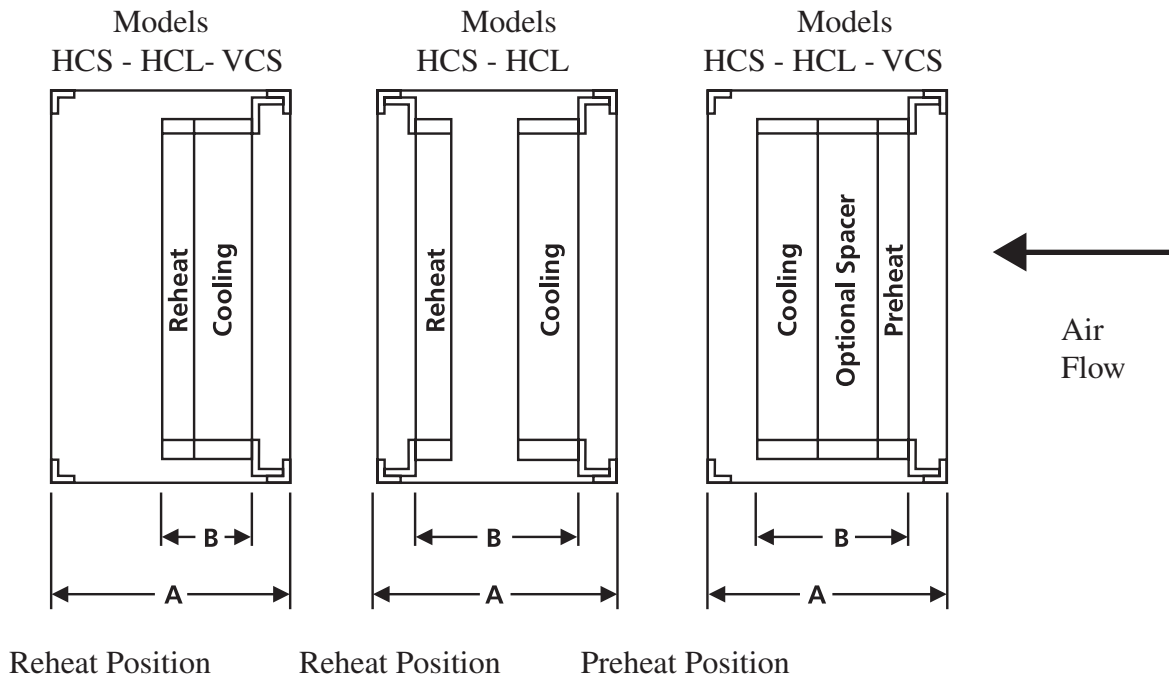
** One and two row heating coils do not have support legs.

Unit Size	A* air handler centers width	C fan section edge to edge depth	D fan section centers depth	E center to edge dimension	L face and bypass dampers section, overall depth		N high capacity or access	P Mixbox Section
					internal	external		
03	40	22 3/4	22 1/4	3/4	7 3/4	8 1/2	26 1/2	20 1/2
06	55	26	24 1/2	3/4	7 3/4	8 1/2	25 5/8	20 1/2
08	52	35 1/2	34	3/4	7 3/4	13	28 3/4	20 1/2
10	61	35 1/2	34	3/4	7 3/4	13	28 3/4	20 1/2
12	67	38 3/4	37 1/4	3/4	7 3/4	14	28 3/4	20 1/2
14	76	38 3/4	37 1/4	3/4	7 3/4	14	27 3/4	23 1/4
18	76	38 3/4	37 1/4	3/4	7 3/4	14	27 3/4	23 1/4
20	93	44	42	1	10	15	23	23 1/4
26	118	44	42	1	10	15	23	23 1/4
34	118	52	50	1	10	15	23	29
41	118	62	60	1	10	18	26 5/8	34 3/4
50	115 3/4	67 3/4	65 3/4	1	9 1/4	21 1/2	30	40 1/2
65	131 3/4	74 3/4	72 3/4	1	10 1/4	27 1/2	30	40 1/2

All dimensions are in inches.

Note:
 HD
 (heating duty)
 unit depth is dimension 'D' added to the AHD heating section depth dimension 'T**' in the table above.

Coil Section



Coil Casing Depth - Inches										
Type	Hot Water & Steam		RHR & DX		RHR, DX, Water					
Rows	1	2	1	2	3	4	5	6	8	10
Depth	3 1/4	3 1/4	7	7	7	7	9 3/4	9 3/4	12 1/2	15

Unit Size	Overall Section Depth			Maximum Coil Space		
	A			B		
	HCS	HCL	VCS	HCS	HCL	VCS
03-06	22 1/4	28 11/16	28 11/16	15 1/2	21	18 3/4
08-10	22 1/4	35 1/2	35 1/2	15 1/2	28	18 3/4
12-18	22 1/4	38 3/4	38 3/4	15 1/2	31	18 3/4
20	22 1/4	44 5/8	42 1/8	15 1/2	37	18 3/4
26	22 1/4	44 5/8	44 1/8	15 1/2	37	18 3/4
34	22 1/4	44 5/8	54 1/8	15 1/2	37	18 3/4
41	22 1/4	44 5/8	62 1/8	15 1/2	37	18 3/4
50-75	23 1/4	41 1/2	—	15 1/2	33 3/4	—

All dimensions are in inches.

Vibration Isolators, Quantity Required

Order either rubber in shear (RIS) or 1" deflection spring isolators as accessories. Isolators are shipped loose, see pages 36 and 37 for isolator location points, see page 3 for ceiling versus platform mounting per unit size:

Cabinet types	Unit size	Quantity
HCS or HCL models	03 - 18	4
HCS or HCL models	20 - 75	6
VCS models	03 - 41	4
HD models	03 - 75	4

Accessory sections (All sizes):	Quantity required
High capacity filter section	2
Economizer section, combined with filters or without filters	2
Access section	2
Auxiliary coil section (either HCS or HCL)	4
Electric preheat section	2
High efficiency filter section	2



Air Handler Component Weight in pounds				Unit Size													
				03	06	08	10	12	14	18	20	26	34	41	50	65	75
Fan	HCS	short	FC	290	430	500	550	650	790	816	836	968	1188	1386			
	HCS	short	AF								946	1177	1518	1782	2700	3300	4496
and	HCL	long	FC	318	450	553	600	732	988	1033	1067	1221	1474	1672			
	HCL	long	AF								1177	1430	1793	2057	2850	3480	4690
Coil	VCS	vertical	FC	296	387	482	535	615	860	1004	1111	1254	1628	1881			
	HD	heating duty	FC	170	280	312	360	450	510	564	605	693	902	1078			
Sections	HD	heating duty	AF								715	891	1221	1474	2600	3200	3359
Filter	Flat - TA & Pleated 2"			60	73	83	95	99	104	106	108	115	160	185	255	315	384
	Flat - Permanent 2"			66	79	89	101	106	114	126	135	165	240	275	390	460	560
Sections	Flat - Pleated 4"			75	88	98	110	119	124	126	127	130	185	210	298	351	428
	High Capacity - TA & Pleated			149	168	187	206	215	224	230	234	244	260	290	360	440	535
	High Capacity - Permanent			155	176	196	216	225	234	240	244	254	365	450	520	650	790
	High Efficiency - 22" Section			82	95	112	133	133	153	175	180	194	235	248	269	330	359
	High Efficiency - 28" Section			103	121	143	170	170	196	225	224	246	296	318	345	425	463
	High Efficiency - 44" Section			127	150	173	201	201	230	264	274	299	358	380	412	516	552
Other	Mixbox			174	195	216	224	236	247	254	260	300	430	550	680	800	975
	Accessory	Internal Face and Bypass			52	68	79	100	115	138	148	155	180	260	350	420	520
Sections		External Face and Bypass			57	75	87	110	128	155	166	175	200	286	385	462	650
		Auxiliary Coil Module HCS			129	164	204	208	223	306	280	261	310	331	362	515	640
	Auxiliary Coil Module HCL			157	184	257	258	305	504	497	492	563	617	648	665	820	1499
	Electric Heater			199	218	237	266	285	294	310	314	324	355	390	485	590	685
Large	Type 5	1	Row	36	55	70	80	94	106	110	112	144	195	239	339	406	538
		2	Row	50	80	101	120	143	164	169	173	228	318	396	562	673	891
Coils	10 FPI	3	Row	64	106	134	161	195	223	231	236	314	444	557	737	936	1168
		4	Row	78	132	168	202	246	282	292	299	398	569	718	913	1199	1445
		6	Row	109	187	240	290	353	408	422	432	578	830	1052	1278	1677	2017
		8	Row	141	242	311	379	461	534	552	565	760	1092	1385	1638	2154	2589
		10	Row	172	297	383	467	569	659	682	699	942	1355	1718	2194	2893	3478

(Coil weights include the weight of water when filled)

TA= Throw away type filters
 AF= Airfoil Fan
 FC= Forward Curved fan

Double wall construction add 45% to fan & Coil section or accessory

To estimate weights for other coils:			
For Type A:		multiply type 5 coil weight by	0.800
For Small coil :		multiply large coil weight by	0.823
For 14 FPI:		multiply 10 FPI coil weight by	1.121
For 12 FPI:		multiply 10 FPI coil weight by	1.065
For 8 FPI:		multiply 10 FPI coil weight by	0.935
For 6 FPI:		multiply 10 FPI coil weight by	0.915

Air Handler Motor And Drive Weight in pounds		Motor Horsepower, 1800 RPM											
		1	1.5 - 2	3	5	7.5	10	15	20	25	30	40	50
Motor & Drive Weight	High Efficiency Open Single Speed	67	74	114	127	209	216	341	384	396	427	621	623
	Totally Enclosed Fan Cooled (TEFC)	56	71	88	104	178	194	275	336	411	461	624	670
	Open 2 Speed, 2 Winding	71	97	115	160	291	267	368	356	366			

Air Handler Panels And Frames Description, metal gauge		Unit Size													
		03	06	08	10	12	14	18	20	26	34	41	50	65	75
Fan Section	Frame	12	12	12	12	12	12	12	12	12	12	12	10	10	10
	Fan Panel	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Side Panel	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Bottom Panel	14	14	14	14	14	14	14	14	16	16	16	16	16	16
Coil Section	Frame	14	14	14	14	14	14	14	14	14	14	14	10	10	10
	Top Panel	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Bottom Panel	14	14	14	14	14	14	14	14	16	16	16	16	16	16
	Drain Panel	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Accessory Sections	Filter Section Casings	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Economizer Casings	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Others	Damper Blades	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Removable Panels	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Base Rails	10	10	10	10	10	10	10	10	10	10	10	08	08	08



Face Areas- Air Pressure Drops, Dry Coils

Face Area of Coils, And Filters (Used to Compute Velocity for Air Pressure Drop)

Face Area Square Feet	Air Handler Unit Size													
	03	06	08	10	12	14	18	20	26	34	41	50	65	75
Steam coils:														
Large Type 5 Coils	2.75	5.28	7.50	9.38	11.69	13.75	16.88	19.25	25.50	34.00	40.38	47.25	—	—
Large Type 8 Coils	—	—	—	—	—	—	—	—	—	—	—	—	62.00	72.33
Water & Refrigerant:														
Large Type A Coils	3.13	5.76	7.81	9.77	12.40	14.58	17.71	20.05	26.56	33.65	40.73	50.63	64.58	75.35
Large Type 5 Coils	3.00	5.69	7.50	9.38	11.69	13.75	14.58	16.71	25.50	34.00	40.38	49.50	64.58	74.92
Filter Face Area:														
Flat Filter Sections	5.00	6.94	10.00	11.11	15.00	17.50	22.50	24.44	31.11	38.89	46.67	54.40	73.33	82.50
High Capacity Sections	10.00	13.89	16.67	19.44	22.22	25.00	37.50	31.94	40.28	64.44	80.56	104.17	137.50	160.42
High Efficiency Section	6.00	8.00	12.00	14.00	14.00	18.00	24.00	24.00	30.00	40.00	50.00	60.00	66.00	88.00

Type A (1/2" O.D.) Dry Coil Air Pressure Drop*

Rows	Fins	Air Velocity^ - Feet per minute						
		400	450	500	550	600	650	700
1	6	0.05	0.05	0.07	0.08	0.09	0.10	0.11
	8	0.06	0.07	0.08	0.09	0.11	0.12	0.14
	10	0.07	0.08	0.10	0.11	0.13	0.15	0.17
	12	0.08	0.10	0.11	0.13	0.15	0.17	0.19
	14	0.09	0.11	0.13	0.15	0.17	0.19	0.21
2	6	0.09	0.11	0.13	0.15	0.18	0.20	0.23
	8	0.11	0.14	0.16	0.19	0.22	0.25	0.28
	10	0.14	0.16	0.19	0.23	0.26	0.29	0.33
	12	0.16	0.19	0.22	0.26	0.30	0.34	0.38
	14	0.18	0.22	0.25	0.29	0.34	0.38	0.43
3	6	0.14	0.16	0.20	0.23	0.26	0.30	0.34
	8	0.17	0.21	0.24	0.28	0.33	0.37	0.42
	10	0.20	0.25	0.29	0.34	0.39	0.44	0.50
	12	0.24	0.29	0.34	0.39	0.45	0.51	0.57
	14	0.27	0.32	0.38	0.44	0.50	0.57	0.64
4	6	0.18	0.22	0.26	0.31	0.35	0.40	0.46
	8	0.23	0.27	0.33	0.38	0.44	0.50	0.56
	10	0.27	0.33	0.39	0.45	0.52	0.59	0.66
	12	0.32	0.38	0.45	0.52	0.60	0.68	0.76
	14	0.36	0.43	0.51	0.59	0.67	0.76	0.85
6	6	0.27	0.33	0.39	0.46	0.53	0.60	0.68
	8	0.34	0.41	0.49	0.57	0.66	0.75	0.84
	10	0.41	0.49	0.58	0.68	0.78	0.88	0.99
	12	0.47	0.57	0.67	0.78	0.89	1.01	1.14
	14	0.54	0.65	0.76	0.88	1.01	1.14	1.28
8	6	0.36	0.44	0.52	0.61	0.71	0.81	0.91
	8	0.45	0.55	0.65	0.76	0.87	0.99	1.12
	10	0.54	0.66	0.78	0.90	1.04	1.18	1.32
	12	0.63	0.76	0.90	1.04	1.19	1.35	1.52
	14	0.72	0.86	1.02	1.18	1.35	1.52	1.71

Type 5 (5/8" O.D.) Dry Coil Air Pressure Drop*

Rows	Fins	Air Velocity^ - Feet per minute						
		400	450	500	550	600	650	700
1	6	0.07	0.09	0.11	0.13	0.15	0.17	0.20
	8	0.09	0.11	0.13	0.16	0.18	0.21	0.24
	10	0.11	0.13	0.16	0.18	0.21	0.25	0.28
	12	0.12	0.15	0.18	0.21	0.24	0.28	0.31
	14	0.14	0.17	0.20	0.23	0.27	0.31	0.35
2	6	0.13	0.17	0.20	0.24	0.28	0.32	0.37
	8	0.17	0.21	0.25	0.29	0.34	0.39	0.44
	10	0.20	0.24	0.29	0.34	0.40	0.45	0.52
	12	0.23	0.28	0.33	0.39	0.45	0.51	0.58
	14	0.25	0.32	0.37	0.43	0.50	0.57	0.65
3	6	0.20	0.25	0.30	0.36	0.42	0.48	0.55
	8	0.25	0.31	0.37	0.44	0.51	0.59	0.67
	10	0.30	0.36	0.43	0.51	0.59	0.68	0.77
	12	0.34	0.41	0.50	0.58	0.67	0.77	0.87
	14	0.38	0.46	0.55	0.65	0.75	0.86	0.97
4	6	0.27	0.33	0.40	0.48	0.56	0.65	0.74
	8	0.33	0.41	0.49	0.58	0.68	0.78	0.89
	10	0.39	0.48	0.58	0.68	0.79	0.91	1.03
	12	0.45	0.55	0.66	0.78	0.90	1.03	1.16
	14	0.51	0.62	0.74	0.87	1.00	1.14	1.29
6	6	0.40	0.50	0.60	0.72	0.84	0.97	1.11
	8	0.50	0.62	0.74	0.87	1.02	1.17	1.33
	10	0.59	0.72	0.87	1.02	1.19	1.36	1.55
	12	0.68	0.83	0.99	1.16	1.35	1.54	1.75
	14	0.76	0.93	1.11	1.30	1.50	1.71	1.94
8	6	0.54	0.67	0.80	0.96	1.12	1.29	1.47
	8	0.67	0.82	0.99	1.17	1.36	1.56	1.78
	10	0.79	0.97	1.16	1.36	1.58	1.82	2.06
	12	0.91	1.11	1.32	1.55	1.80	2.06	2.33
	14	1.02	1.24	1.48	1.73	2.00	2.28	2.58

Type 8 (1" O.D.) Dry Coil Air Pressure Drop*

Rows	Fin	Air Velocity^ - Feet per minute						
		400	450	500	550	600	650	700
1	6	0.05	0.06	0.07	0.09	0.10	0.11	0.13
	8	0.07	0.08	0.10	0.12	0.13	0.15	0.17
	10	0.09	0.11	0.12	0.14	0.16	0.19	0.21
	12	0.10	0.13	0.15	0.17	0.20	0.22	0.25
	14	0.12	0.15	0.17	0.20	0.23	0.26	0.29

* Dry coil air pressure drop for air entering at 70 °F DB, 0 °F WB over rippled high efficiency fins. Inches of water.

^ Air velocity = CFM divided by coil face area in square feet. See table at top of page 40.



Cabinet And Filter Air Pressure Drop

Air Pressure Drop - inches of water Component			Air Velocity [^] - Feet per minute								
			200	250	300	350	400	450	500	550	600
Cabinet:	V Style Cabinet ^{^^}		—	—	—	.10	.13	.16	.20	.24	.29
	Economizer Section ^{^^}		—	—	.02	.03	.03	.04	.05	.06	.07
Filters: flat & hi capacity	Throwaway	2" Depth	.05	.08	.11	.15	.19	.24	.28	—	—
	35% Efficient , Pleated	2" Depth	.08	.10	.13	.16	.21	.25	.30	.37	—
	Permanent, Aluminum, Cleanable	2" Depth	.03	.04	.06	.08	.10	.13	.15	.18	.21
flat, 4"	35% Efficient , Pleated	4" Depth	.06	.07	.10	.13	.17	.20	.25	.29	.34
Filters:	(60 - 65%) Efficient Bag Filter	21" Depth	.12	.16	.21	.26	.32	.38	.45	—	—
		30" Depth	—	—	.19	.24	.28	.33	.37	.41	.44
		37" Depth	—	—	.12	.17	.23	.27	.33	.37	.41
Medium	(80 - 85%) Efficient Bag Filter	21" Depth	.14	.20	.26	.32	.38	.44	.51	—	—
		30" Depth	—	—	.23	.28	.34	.40	.47	.51	.55
		37" Depth	—	—	.15	.21	.26	.32	.38	.45	.52
and	(90 - 95%) Efficient Bag Filter	21" Depth	.20	.28	.36	.44	.52	.61	.70	—	—
		30" Depth	—	—	.32	.39	.46	.53	.60	.66	.72
		37" Depth	—	—	.22	.29	.36	.44	.54	.60	.68
High	(60 - 65%) Cartridge Filter	6" Depth	.15	.20	.26	.33	—	—	—	—	—
		12" Depth	—	—	.22	.28	.34	.41	.50	.58	.68
		12" Depth	—	—	.26	.32	.38	.46	.55	.64	.74
Efficiency	(80 - 85%) Cartridge Filter	6" Depth	.22	.29	.37	.46	—	—	—	—	—
		12" Depth	—	—	.26	.32	.38	.46	.55	.64	.74
		12" Depth	—	—	.29	.35	.42	.50	.59	.70	.82

The filter air pressure drop is for air through clean filters.

Type A (1/2" O.D.) Wet Coil Air Pressure Drop*

Rows	Fin Series	Air Velocity - Feet per minute [^]					
		400	450	500	550	600	650
3	6	0.18	0.22	0.26	0.30	0.34	0.39
	8	0.22	0.27	0.32	0.37	0.42	0.48
	10	0.26	0.32	0.37	0.43	0.50	0.56
	12	0.30	0.37	0.43	0.50	0.57	0.65
	14	0.34	0.41	0.49	0.56	0.64	0.73
4	6	0.24	0.29	0.35	0.40	0.47	0.53
	8	0.30	0.36	0.43	0.50	0.57	0.65
	10	0.35	0.43	0.51	0.59	0.67	0.77
	12	0.41	0.49	0.58	0.68	0.77	0.88
	14	0.46	0.56	0.66	0.76	0.87	0.99
5	6	0.31	0.38	0.45	0.53	0.61	0.70
	8	0.39	0.47	0.56	0.65	0.74	0.84
	10	0.46	0.55	0.65	0.75	0.86	0.97
	12	0.53	0.63	0.74	0.85	0.97	1.10
	14	0.59	0.71	0.83	0.95	1.09	1.22
6	6	0.37	0.46	0.54	0.64	0.74	0.84
	8	0.46	0.56	0.67	0.78	0.90	1.03
	10	0.55	0.67	0.79	0.92	1.05	1.18
	12	0.63	0.77	0.90	1.04	1.19	1.34
	14	0.72	0.86	1.01	1.17	1.33	1.49
8	6	0.51	0.62	0.74	0.87	0.99	1.12
	8	0.63	0.77	0.90	1.05	1.20	1.35
	10	0.75	0.90	1.06	1.23	1.40	1.58
	12	0.86	1.03	1.21	1.40	1.59	1.79
	14	0.96	1.15	1.35	1.56	1.78	2.01

Type 5 (5/8" O.D.) Wet Coil Air Pressure Drop*

Rows	Fin Series	Air Velocity - Feet per minute [^]					
		400	450	500	550	600	650
3	6	0.25	0.30	0.36	0.42	0.49	0.56
	8	0.31	0.37	0.44	0.52	0.60	0.68
	10	0.36	0.44	0.52	0.58	0.67	0.79
	12	0.42	0.50	0.59	0.66	0.76	0.87
	14	0.45	0.54	0.64	0.74	0.85	0.97
4	6	0.33	0.40	0.48	0.56	0.65	0.74
	8	0.41	0.50	0.59	0.69	0.80	0.91
	10	0.48	0.58	0.69	0.81	0.93	1.06
	12	0.56	0.67	0.79	0.92	1.02	1.20
	14	0.63	0.75	0.89	1.03	1.14	1.34
5	6	0.41	0.50	0.60	0.70	0.81	0.93
	8	0.51	0.62	0.74	0.86	0.99	1.13
	10	0.60	0.73	0.87	1.01	1.12	1.32
	12	0.69	0.84	0.99	1.11	1.27	1.50
	14	0.78	0.94	1.11	1.24	1.42	1.68
6	6	0.49	0.60	0.72	.84	0.98	1.12
	8	0.61	0.74	0.88	1.03	1.19	1.36
	10	0.72	0.88	1.04	1.21	1.40	1.59
	12	0.83	1.01	1.19	1.38	1.59	1.80
	14	0.94	1.13	1.33	1.55	1.77	2.01
8	6	0.66	0.80	0.96	1.12	1.30	1.49
	8	0.82	0.99	1.18	1.38	1.59	1.82
	10	0.97	1.17	1.39	1.62	1.86	2.12
	12	1.11	1.34	1.58	1.84	2.12	2.41
	14	1.25	1.51	1.78	2.06	2.36	2.68

* Wet coil air pressure drop for air entering at 80 °F DB and 67 °F WB over rippled high efficiency fins. Inches of water.

[^] Air velocity = CFM divided by coil or filter face area in square feet. See table at top of page 40.

^{^^} Use face area of large coil to calculate air speed through AHV cabinet and economizer section.

Description	UNIT SIZE						
	03	06	08	10	12	14	18

CFM Range*

Cooling	800-1650	1600-3170	2400-4100	3000-5150	3550-6400	4150-755	5800-9600
Heating & Ventilating	800-2700	1600-5000	2400-7200	3000-9200	3550-9200	4150-12400	5800-12400

Fan Type & Shaft Diameter @ Bearing

FC, Low Pres.	inches	3/4—C	1—C	1—C	1—C	1—C	1 3/16 —PB	1 3/16 —PB
FC, Med. Pres.	inches	1—PB	1 3/16 —PB	1 3/16 —PB	1 3/16 —PB	1 3/16 —PB	1 7/16 —PB	1 7/16 —PB
AF, shaft dia. (in) @ bearing		—	—	—	—	—	—	—

Type 5 Coils

Large Refrigerant and Water Coils	FH X FL	18.00X24	21.00X39	30.00X36	30.00X45	33.00X51	33.00X60	42.00x60
	TH	12T	14T	20T	20T	22T	22T	28T
	FACE AREA	3.00	5.69	7.50	9.38	11.69	13.75	17.50
Small Refrigerant and Water Coils	FH X FL	12.00X24	15.00X39	24.00X36	24.00X45	27.00X51	27.00X60	36.00x60
	TH	8T	10T	16T	16T	18T	18T	24T
	FACE AREA	2.00	4.06	6.00	7.50	9.56	11.25	15.00
Large Type 5 Steam Coils^	FH X FL	16.50X24	19.50X39	28.50X36	28.50X45	33.00X51	33.00X60	40.50x60
	TH	11T	13T	19T	19T	22T	22T	27T
	FACE AREA	2.75	5.28	7.13	8.91	11.69	13.75	16.88
Small Type 5 Steam Coils^	FH X FL	12.00X24	15.00X39	24.00X36	24.00X45	24.00X51	27.00X60	34.50x60
	TH	8T	10T	16T	16T	18T	18T	23T
	FACE AREA	2.00	4.06	6.00	7.50	9.56	11.25	14.38

Type A Coils

Large Refrigerant and Water Coils	FH X FL	18.75x24	21.25x39	31.25x36	31.25x45	35.00x51	35.00x60	42.50x60
	TH	15T	17T	25T	25T	28T	28T	34T
	FACE AREA	3.13	5.76	7.81	9.77	12.40	14.58	17.71
Small Refrigerant and Water Coils	FH X FL	12.50X24	16.25X39	25.00X36	25.00X45	28.75X51	28.75X60	35.00X60
	TH	10T	13T	20T	20T	23T	23T	28T
	FACE AREA	2.08	4.40	6.25	7.81	10.18	11.99	14.58

Filters:

Flat Section	Area in Sq. Ft.	5.00	6.94	10.00	11.11	15.00	17.50	22.50
	Quantity and size	1-20 X 20 1-20 X 16	2- 20 X 25	2-16 X 20 2-16 X 25	4-16 X 25	3-16 X 20 3- 20X 20	2-16 X 25 1-16 X 20 2-20 X 25 1-20 X 20	2-16 X 25 2-16 X 20 2-20 X 25 2-20 X 20
High Capacity Section	Area in Sq. Ft.	10.00	13.89	16.67	19.44	22.22	25.00	37.50
	Quantity and size	2-20 X 20 2-16 X 20	4- 20 X 25	6-16 X 25	2-16 X 25 4-20 X 25	8-16 X 25	4-16 X 25 4-20 X 25	6-16 X 25 6-20 X 25
High Efficiency Filter Section	Area in Sq. Ft.	6.00	8.00	12.00	14.00	14.00	18.00	24.00
	Quantity and size	1-24 X 24 1-12 X 24	2-24 X 24	2-24 X 24 2-12 X 24	2-24 X 24 3-12 X 24	2-24 X 24 3-12 X 24	3-24 X 24 3-12 X 24	6-24 X 24

^ The steam coils in models 65 and 75 are not type 5. They are type 8 coils with 1" diameter tubes on 3" centers.

* The CFM range for cooling and heating starts at a low of about 400 fpm through small coil. The maximum CFM for cooling is at no more than 550 fpm through a large coil. The maximum CFM for heating is at no more than 900 fpm through a large coil. The fan tables are on pages 24 through 29.

Fan Type
FC = Forward curve fan
AF = Airfoil fan
Shaft Diameter is inches

Bearings
(Ball Type)
C = Cartridge
PB = Pillow Block

Coils
FH X FL
FH = Finned Height, inches
FL = Finned Length, inches
TH = Tubes High
FACE AREA is in Square Feet.

Filters
1-24 X 24 Means one 24" by 24" filter

Refrigerant can be either direct expansion, heat reclaim, or condenser coil.



Description	Unit Size						
	20	26	34	41	50	65	75

CFM Range*

Cooling	6400-10600	8500-14000	10600-18500	13400-22200	17100-26800	22400-35500	25800-41200
Heating & Ventilating	6400-19000	8500-19000	10600-24000	13400-32000	17100-31000	22400-43000	25800-43000

Fan Type & Shaft Diameter @ Bearing

FC, Low Pres. inches	—	—	—	—	—	—	—
FC, Med. Pres. inches	1 7/16—PB	1 7/16—PB	1 11/16—PB	1 15/16—PB	—	—	—
AF, shaft dia. (in) @ bearing	1 7/16—PB	1 7/16—PB	1 11/16—PB	2 3/16—PB	2 7/16—PB	2 11/16—PB	2 11/16—PB

Type 5 Coils

Large Refrigerant and Water Coils	FH X FL	36.00X77	36.00X102	48.00X102	57.00X102	66.00X108	75.00X124	87.00X124
	TH	24T	24T	32T	38T	44T	50T	58T
	FACE AREA	19.25	25.50	34.00	40.38	49.50	64.58	74.91
Small Refrigerant and Water Coils	FH X FL	30.00X77	30.00X102	39.00X102	45.00X102	54.00X108	60.00X124	69.00X124
	TH	20T	20T	26T	30T	36T	40T	46T
	FACE AREA	16.04	21.25	27.63	31.88	40.50	51.67	59.42
Large Type 5 Steam Coils^	FH X FL	36X77	36X102	48X102	57.0X102	63.0X108	72.0X124^	84.0X124^
	TH	24T	24T	32T	38T	42T	24T	28T
	FACE AREA	19.25	25.50	34.00	40.38	47.25	62.00	72.33
Small Type 5 Steam Coils^	FH X FL	28.5X77	28.5X102	37.5X102	43.5X102	51X108	60X124^	66X124^
	TH	19T	19T	25T	29T	34T	20T	22T
	FACE AREA	12.84	20.19	26.56	30.81	38.25	51.67	56.83

Type A Coils

Large Refrigerant and Water Coils	FH X FL	37.50X77	37.50X102	47.50X102	57.50X102	67.5X108	75X124	87.5X124
	TH	30T	30T	38T	46T	54T	60T	70T
	FACE AREA	20.05	26.56	33.65	40.73	50.63	64.58	75.35
Small Refrigerant and Water Coils	FH X FL	30X77	30X102	37.5X102	45X102	55X108	60X124	70X124
	TH	24T	24T	30T	36T	44T	48T	56T
	FACE AREA	16.04	21.25	26.56	31.89	41.25	51.67	60.23

Filters:

Flat Section	Area in Sq. Ft.	24.44	31.11	38.89	46.67	54.40	73.33 4-16 X 20	82.50
	Quantity and size	6-16 X 20 4-20 X 20	4-16 X 20 8-20 X 20	4-16 X 25 8-20 X 25	6-16 x 20 12-20 x 20	7-16 X 20 14-16 X 25	8-16 x 20 20-20 x 20	4-16 X 25 10-20 X 20 10-20 X 25
High Capacity Section	Area in Sq. Ft.	31.94	40.28	64.44	80.56	104.17	137.50	160.42
	Quantity and size	4-16 X 25 6-20 X 25	10-20 X 25 2-16 X 25	4-16 X 20 20-20 X 20	4-16 X 25 20-20 X 25	30-20 X 25	12-16 X 25 30-20 X 25	14-16 X 25 35-20 X 25
High Efficiency Filter Section	Area in Sq. Ft.	24.00	30.00	40.00	50.00	60.00	66.00	88.00
	Quantity and size	4-24 X 24 4-12 X 24	5-24 X 24 5-12 X 24	10-24 X 24	10-24 X 24 5-12 X 24	15-24 X 24	15-24 X 24 3-12 X 24	20-24 X 24 4-12 X 24

^ The steam coils in models 65 and 75 are not type 5. They are type 8 coils with 1" diameter tubes on 3" centers.

* The CFM range for cooling and heating starts at a low of about 400 fpm through small coil. The maximum CFM for cooling is at no more than 550 fpm through a large coil. The maximum CFM for heating is at no more than 900 fpm through a large coil. The fan tables are on pages 24 through 29.

Fan Type

FC = Forward curve fan
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Shaft Diameter is inches

Bearings

(Ball Type)
C = Cartridge
PB = Pillow Block

Coils

FH X FL
FH = Finned Height, inches
FL = Finned Length, inches
TH = Tubes High
FACE AREA is in Square Feet.

Filters

1-24 X 24 Means one 24" by 24" filter

Refrigerant can be either direct expansion, heat reclaim, or condenser coil.

Mechanical Specification

General

Provide a air handler of sound materials construction and design. Frame members, structural bases and all casings parts are fabricated from mill galvanized steel. The table on page 39 specifies the metal gauge of each component. Exterior panels are to be a minimum of 16 gauge galvanized steel. Access doors in the fan section provide complete access to motor(s), belts, drive(s) and fan. Removable casing panels in the coil section permit removal of coil from either side. Fan housings extend from the fan section panel for duct connections.

Air Conditioning Models - VCS, HCS, HCL

Provide a air conditioning air handler to meet cooling and condensate requirements. The air handler shall have standard insulation in both the fan and cooling coil sections with a drain pan as described below.

Cooling Coil Sections

Provide a air handler with a readily accessible and drainable coil section. Coil sections have removable panels on each side. Drain pan is of double wall construction with insulation sandwiched between the metal pans. Two (2) 1-1/4" FPT drain connections are supplied. These drain connections are furnished on each side of the drain pan on all sizes. Drain pans are #16 gauge galvanized steel. Provide standard insulation for the cooling coil section as described below.

Insulation

Provide the air handler with adequate insulation for air conditioning requirements. Standard Insulation is 1"-3/4# (1 inch thick, 3/4 lbs per cubic foot) fiberglass. Insulation is mat faced to prevent erosion. It meets the NFPA 90 Standard for flame spread and smoke generation.

Heating And Ventilating Models - HD

Provide a air handler to meet heating or ventilating (but no cooling) duty requirements. The standard heating unit includes 1 or 2 row heating sections. Furnish deeper coil sections for 3, 4, or 6 row coils. Do not insulate the fan or coil sections on these units.

Fans

Provide a air handler with fan section that meets air flow requirements. All units have been certified as complying with ARI Standard 430. All units have a single fan design (either forward curved or airfoil). The fans are statically and dynamically balanced in fan section before the unit leaves the factory. Fans and shafts operate well below the first critical speed. Fan bearings are ball bearing type selected for 200,000 hour average life. Low pressure LF fans - Sizes 03 through 12 have lifetime lubricated, rubber mounted, cartridge bearings. Unit sizes 14 through 75 have extended lube lines to the outside casing of the air handler on drive side.

Coils

Provide water heating, water cooling, steam heating, and direct expansion coils with ARI certification. All coils shall be of cartridge type, coils removable from either side of casing. Direct expansion coils are to be aluminum ripple corrugated plate fins on the staggered copper tubes. Fins shall have belled collars and shall be bonded to tubes by mechanical expansion. Maximum working pressure shall be 250 psig at 300°F. Coil shall be submerged in water for testing. Direct expansion coils shall be provided with pressure-type brass distributors with solder-type connections. All coils shall have a minimum of ___ distributors, charged with dry air. Tubing for coils shall be copper with 1/2 or 5/8 inch outside diameters. Coils shall have suction and discharge connections on the same end. Heatcraft coil performance data is certified as complying with ARI Standard 410.

Filter Sections

Flat - Provide the air handler with an accessible flat filter section. Flat filter sections for 2 and 4 inch filters are available on all sizes. Access doors are furnished on both sides.

High Capacity - Provide the air handler with an accessible high capacity filter section. High capacity filter sections are for 2 inch filters. High capacity filter sections have one large door on each side.

High Efficiency - Provide the air handler with a high or a medium efficiency filter section. Units are constructed of 16 gauge galvanized steel. Fully gasketed doors are standard on each side of housing and units are fitted with positive pressure trip lock latches that assures a tight seal. Both 2 inch prefilter and one inch final filter tracks are extruded aluminum combined with reinforced nylon pile seal to create a corrosion resistant seal.

Economizer Section

Provide the air handler with an economizer with inlets options at the back, bottom, and top of the section. Economizer damper casing and blades shall be not less than 16 U.S. gauge galvanized steel. Each blade shall be die-formed, multi-break and not exceed 49 inches in length. Blades are to be mounted to a single square one half inch rod, to prevent linkage slip, extending the full length of the damper casing.

Face and Bypass Section

Dampers are opposed blade type. Shafts rotate in porous bronze bearings.

Access Section

Access sections have two hinged and latched doors, for all unit sizes. Access sections are not insulated as standard.

Visit our website at www.heatcraftpd.com for technical literature online.

Since product improvement is a continuing effort, we reserve the right to make changes in specifications without notice.



Heatcraft Refrigeration Products, LLC
2175 West Park Place Blvd., Stone Mountain, GA 30087
P: (800) 321-1881 • www.heatcraftpd.com