SUPERIOR PERFORMANCE FAN COILS

400 - 2,200 CFM

AIRTHERM

A Mestek Company

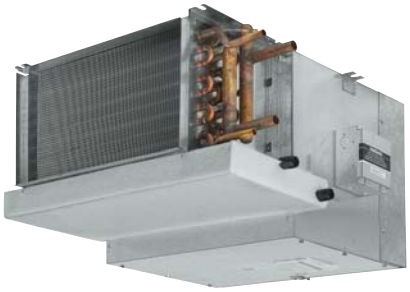
ARI Cooling Capacity—Horizontal Series

400 - 800 CFM

SRFB

400 - 2200 CFM

SCFR



SPFR & SPFB

SEFB

SRBB

SRFB – Horizontal Recessed Ducted Unit

This unit is a horizontally ducted fan coil that aligns flush with the ceiling. Ideal for horizontal applications in apartments, condominiums and motels requiring either a drop-ceiling or soffit installation, this unit features a swing-down access panel for fast and easy filter removal and routine maintenance. Bottom return-air is standard.

SLFR – Horizontal Concealed Unit

The low profile and flexible design of the Horizontal Concealed fan coil is the right choice for multiple applications where high static performance is required. The slim, compact design is well suited for drop-ceiling, closet, hallway and other concealed applications. This unit comes with a powder-coated epoxy drain pan and a wide range of coil, motor and controls options. These models have no exterior cabinet.

SPFR/SPFB – Horizontal Concealed Return Plenum Unit

The Horizontal Rear Return-Air Plenum is our concealed fan coil for high static application with a galvanized rear-return air plenum. Ideal for mounting above ceilings, in closets, hallways and bathroom areas, the plenum conceals the unit's blower motor, which is easily accessible for service by removing the bottom panel. Horizontal Bottom-Return also available.

SEFR – Horizontal Exposed Unit

The Horizontal Exposed fan coil is designed for horizontal exposed ceiling-mounted applications where high static performance is required. This unit is our concealed unit housed in a fully-painted cabinet intended for "free-blow" exposed ceiling mounting. Ideal for remodel situations where adding AC ductwork is limited. Exposed cabinets are constructed of cold-rolled steel and finished with a soft white epoxy powder-coated finish, and subjected to a 1500-hour salt spray test in accordance with ASTM-B117.

SRBB – Horizontal Recessed Bottom Supply & Return Unit

The Horizontal Recessed Bottom Supply and Return is a recessed fan coil designed for flush ceiling applications. The telescoping frame and hinged access panel of the Horizontal Recessed Bottom Supply and Return allow it to fit any type of ceiling. The unit comes in the same attractive, durable powder-coated cabinet as the Horizontal Exposed.

Table of Contents—Horizontal Series

ARI Certified

Airtherm Superior Performance fan coils are labeled and approved by the Air Conditioning and Refrigeration Institute (ARI). This designation signifies that Airtherm Superior Performance fan coil units have been examined by ARI and comply with the organization's applicable standards.

UL Listing

Airtherm Superior Performance fan coils are listed by Underwriters Laboratories, Inc. (UL). The UL listing ensures that Airtherm Superior Performance fan coil units have been examined by UL and comply with the organization's applicable standards. UL's re-examination service includes periodic visits by UL inspectors to our factory to ensure continued compliance for all listed products.

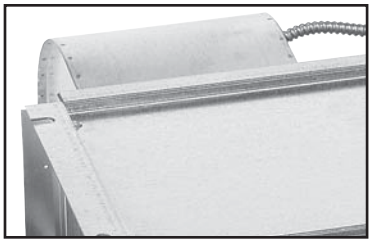
C-UL US Listing

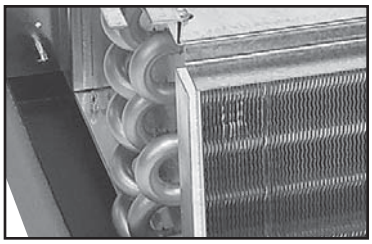
Airtherm Superior Performance fan coils are listed by Underwriters Laboratories of Canada (ULC). The C-UL US listing ensures that Airtherm Superior Performance fan coil units have been examined by UL and are in compliance with both the U.S. and Canadian organizations' applicable standards.

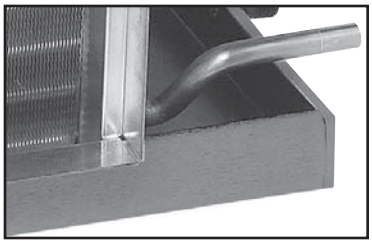
Materials and equipment acceptance for use by the New York Department of Buildings:

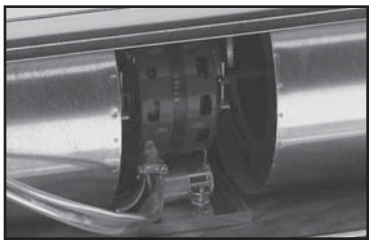
CH004-008, HH006-022
CV004-022

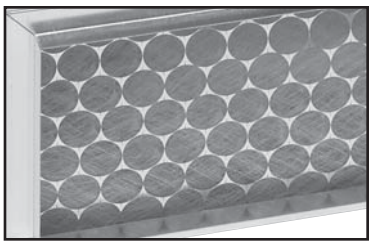
MEA 411-05-E
MEA 409-05-E





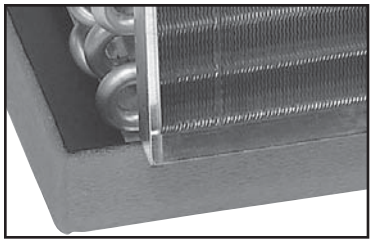


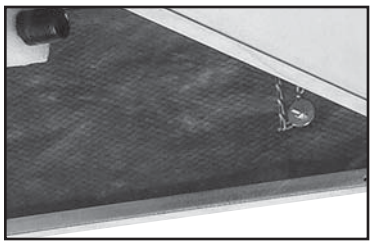


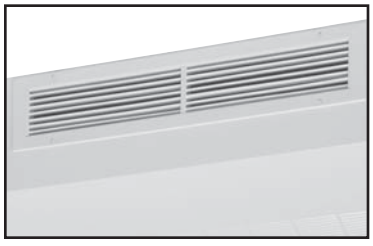


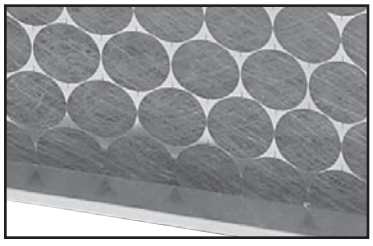
Standard Features

- Heavy-gauge galvanized steel cabinet with neoprene-coated 1/2" thick fiberglass insulation with 3.35 PCF density.
- Coils are made of 1/2" OD copper tube with aluminum fins (12 FPI) equipped with manual-air vent. DX and steam coils do not include manual-air vent. Coils are 100% underwater pressure tested at 350 PSI with a 300 PSI working pressure.
- Galvanized drain pan is powder-coated epoxy and subjected to a 650-hour salt spray test in accordance with ASTM-B117. Also comes with 1/8" thick closed-cell insulation and primary and secondary drain connections.
- Three-speed, 115/1/60 PSC motor with quick-connect plug.
- Controls and motors are factory-wired and terminated in a junction box for single-point power supply.
- One-inch, reinforced duct collar on return- and supply-air openings.
- Swing-down, hinged return-air grille/access door on Exposed and Flush models.
- Exposed unit has single-deflection supply-air grille.
- One-inch fiberglass, throwaway filter, except Horizontal Concealed.
- Individually tagged, crated and shipped as scheduled for installation.
- UL and C-UL approved, ARI certified and 100% factory tested.









Options

- Soft-white, powder-coated epoxy cabinet that's subjected to a 1500-hour salt spray test in accordance with ASTM-B117.
- Drain Pans - stainless steel.
- Insulation - fiberglass, foil-face, elastomeric and double-wall (solid or perforated) in 1/2" and 1" thicknesses.
- Coils - copper fins/tubes, stainless steel fins/tubes, phenolic coated, stainless steel end plates. All options are available on one- to six-rows.
- Three-speed, 208-230/1/50-60 or 277/1/60 PSC motor with quick-connect plug.
- Systems - two- or four-pipe, hydronic cooling/heating, steam, direct-expansion (DX) and/or electric heat.
- Cabinet - Exposed and Recessed custom colors option.
- Controls - wide selection of factory-mounted valves and controls.
- Filters - two-inch thick throwaway, and aluminum washable.
- Flow-control circulator for water heating applications.
- Grilles available as double-deflection and in custom colors.
- Electric Strip Heat from 0.5 to 5 kW.

ARI Certified Cooling Capacity

Horizontal fan coils have been rated in accordance with ARI Standard 440-2005 for room fan-coils air-conditioners and are certified by the Air-Conditioning and Refrigeration Institute to meet the following product performance ratings:

ARI APPROVED STANDARD RATINGS						COOLING CAPACITY		POWER INPUT (WATTS)
SIZE	MOTOR TYPE / #	STYLE	RATED CFM	GPM	WPD (FT./H_2O)	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)	
004	Standard (1)	F	470	2.6	2.3	13,040	10,780	286
006	Standard (1)	F	580	3.0	3.0	15,040	12,710	296
	High Static (1)	B	730	3.0	4.0	15,070	13,180	273
		R, Q	680	2.9	3.7	14,500	12,360	268
		D, E, F	650	2.8	3.6	14,160	11,860	262
008	Standard (1)	F	680	3.4	3.7	16,860	12,870	348
	High Static (1)	B	900	4.1	7.3	20,580	17,330	380
		R, Q	875	4.0	7.0	20,190	16,900	371
		D, E, F	850	4.0	6.8	19,800	16,490	366
010	High Static (1)	B	1,120	5.7	4.2	28,590	23,160	403
		R, Q	1,025	5.4	3.8	26,940	21,520	398
		D, E, F	1,010	5.3	3.8	26,680	21,260	392
012	High Static (1)	B	1,370	7.6	5.2	38,080	30,860	540
		R, Q	1,250	7.2	4.7	35,930	28,770	532
		D, E, F	1,250	7.1	4.6	35,570	28,420	524
015	High Static (2)	B	1,650	9.0	4.9	45,120	36,870	560
		R, Q	1,600	8.8	4.8	44,230	36,000	548
		D, E, F	1,500	8.5	4.5	42,450	34,250	536
018	High Static (2)	B	2,180	12.1	8.6	60,510	48,900	806
		R, Q	2,060	11.7	8.1	58,410	46,860	786
		D, E, F	2,000	11.4	7.8	57,220	45,700	762
022	High Static (2)	B	2,540	14.8	12.0	73,960	58,480	1060
		R, Q	2,290	13.8	11.5	69,190	53,870	1026
		D, E, F	2,230	13.6	11.2	68,160	52,870	998

Notes: 1) Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water. All units are listed under UL Category Control No. LZFE.
2) Ratings are based on actual CFM. Standard coils for 004 is 3 rows and 006-022 is 4 rows.

Style Legend - B = SCFR; D = SEFR; E = SRBB; F = SRFB; Q = SPFB; R = SPFR.

Heating Performance

Heating Performance						
SIZE	MOTOR TYPE	COIL ROWS/ (FPI)	RATED CFM	MBH	GPM	WPD (FT./H_2O)
004	(Standard)	1 Row (12)	470	18.8	0.9	1.2
		2 Rows (12)	470	29.8	1.5	0.9
006	(Standard)	1 Row (12)	520	21.8	1.1	1.4
		2 Rows (12)	520	35.5	1.8	1.1
	(High Static)	1 Row (12)	665	18.8	0.9	1.0
		2 Rows (12)	665	31.8	1.6	0.8
008	(Standard)	1 Row (12)	770	24.5	1.2	1.6
		2 Rows (12)	770	40.8	2.0	1.3
	(High Static)	1 Row (12)	855	25.8	1.3	1.7
		2 Rows (12)	855	43.4	2.2	1.4
010	(High Static)	1 Row (12)	1,010	33.9	1.7	3.0
		2 Rows (12)	1,010	55.8	2.8	2.3
012	(High Static)	1 Row (12)	1,250	38.4	1.9	0.8
		2 Rows (12)	1,250	68.3	3.4	2.0
015	(High Static)	1 Row (12)	1,580	49.6	2.5	1.3
		2 Rows (12)	1,580	85.9	4.3	3.1
018	(High Static)	1 Row (12)	2,005	62.1	3.1	1.9
		2 Rows (12)	2,005	107.3	5.4	4.8
022	(High Static)	1 Row (12)	2,285	72.2	3.6	2.6
		2 Rows (12)	2,285	124.4	6.2	6.5

Notes: Based on 70°F DB EAT, 180°F EWT, 40°F temperature drop, high fan speed. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water.

Coil Data

Coils are made from ½" O.D. copper tubing with .016" wall thickness, and tubes are staggered for maximum heat transfer. A manual air vent is standard on all hydronic coils. DX and steam coils do not include manual-air vent. All coils are 100% underwater pressure tested to 350 PSIG with a 300 PSIG working pressure. Steam coils are rated for up to 15 PSIG or 250ºF.

Coils are available in two- or four-pipe, and from one- to six-row configurations. All units available with any combination of chilled or hot water, steam or direct expansion. Custom circuiting is available.

Horizontal (CH & HH Series)

Coil Rows	003	004	006	008	010	012	015	018	022
Single-Row Coil	STANDARD								
Two-Row Coil									
Three-Row Coil									
Four-Row Coil									
Five-Row Coil									
*Six-Row Coil	OPTIONAL								

* Five-row coil maximum when selecting a DX coil with a hot water coil.

Coil Options:

- DX – Includes distributor and nozzle, TXV must be field furnished and installed
- Steam – 1-15 PSIG
- Opposite End Connection (E). Place the "E" - pipe-hand connection in the eleventh digit of the model number - when ordering
- Preheat Coil Position (PREHEAT) – Standard coil is reheat position
- Phenolic Anti-Corrosion Coating (PAC)
- Copper Fins/Tubes/End Plates
- Stainless Steel Tubes/Fins/End Plates
- 6-16 Fins Per Inch (Standard is 12 FPI)

Coil connections on the chilled water side for CH004-006 and HH006 is ½" and ¾" on CH008 and HH008-022. The hot water connection is ½" on CH004-008 and HH006-022.

Electric Heat

Electric heat may be furnished with either hydronic, direct expansion or steam coils and is factory-mounted, wired, and tested. Option-equipped with low-watt density (for long life) nichrome wire elements. The heater has a built-in, high limit, and fusible link to provide maximum safety.

Horizontal Superior Performance Series

Size	kW	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
	Voltage	AMPS															
006	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2								
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4								
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4								
008	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0						
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7						
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1						
010	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
012	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
015	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
018	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9
022	115		8.7	13.0	17.4	21.7	26.1										
	208		4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.9	31.3	33.7	36.1	38.5
	230		4.4	6.5	8.7	10.9	13.0	15.2	17.4	19.6	21.7	23.9	26.1	28.3	30.4	32.6	34.8
	277		3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.3	18.1	19.9	21.7	23.5	25.3	27.1	28.9

Air Flow Data

Air flow shown below is under dry coil conditions.

Horizontal Superior Performance Series

AIR FLOW DATA			EXTERNAL STATIC PRESSURE																	
SIZE	STYLE	COIL ROWS	0.00			0.05			0.10			0.15			0.20			0.25		
			HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW	HI	MED	LOW
004	(Standard)	3 ROW	470	400	320	450	370	300	430	350	270	405	330	250	385	310	228	360	290	215
		4 ROW	460	390	310	440	360	290	420	340	260	395	320	240	375	300	218	350	280	205
006	(Standard)	3 ROW	620	580	520	600	550	497	570	525	475	540	500	450	510	480	425	485	450	400
		4 ROW	610	570	510	590	540	487	560	515	465	530	490	440	500	470	415	475	440	390
	(Hi-Static)	3 ROW	680	545	415	665	525	405	645	505	385	620	485	365	595	465	340	565	440	315
		4 ROW	670	535	405	655	515	395	635	495	375	610	475	355	585	455	330	555	430	305
008	(Standard)	3 ROW	770	660	540	620	600	515	580	550	495	555	520	470	530	500	445	505	475	415
		4 ROW	760	650	530	610	590	505	570	540	485	545	510	460	520	490	435	495	465	405
	(Hi-Static)	3 ROW	875	760	605	855	745	595	825	725	580	800	705	565	780	685	550	750	660	525
		4 ROW	865	750	595	845	735	585	815	715	570	790	695	555	770	675	540	740	650	515
010	(Hi-Static)	4 ROW	1025	835	635	1010	825	625	980	810	610	955	785	590	925	760	565	880	720	535
		5 ROW	1010	820	620	995	810	610	965	795	595	940	770	575	910	745	550	865	705	520
012	(Hi-Static)	4 ROW	1250	1005	650	1230	990	640	1200	975	620	1165	955	600	1125	935	580	1090	905	550
		5 ROW	1235	980	635	1215	975	625	1185	960	605	1150	940	585	1110	920	565	1075	890	535
015	(Hi-Static)	4 ROW	1640	1290	1030	1615	1270	1010	1565	1240	980	1510	1200	940	1460	1155	880	1405	1090	820
		5 ROW	1620	1270	1010	1595	1250	990	1545	1220	960	1490	1180	920	1440	1135	860	1385	1070	800
018	(Hi-Static)	4 ROW	2085	1780	1370	2050	1745	1340	2000	1695	1305	1940	1640	1235	1870	1570	1170	1780	1485	1090
		5 ROW	2065	1760	1350	2030	1725	1320	1980	1675	1285	1920	1620	1215	1850	1550	1150	1760	1465	1070
022	(Hi-Static)	4 ROW	2310	2055	1375	2285	2040	1365	2235	2000	1350	2165	1950	1330	2105	1900	1300	2030	1845	1250
		5 ROW	2290	2035	1355	2265	2020	1345	2215	1980	1330	2145	1930	1310	2085	1880	1280	2010	1825	1230

Notes: Ratings and capacity tables based on nominal CFM.

Motor Data

Motors are wired to a junction box ready for single-point field connection. Outstanding features include:

- Quick-Connect Plug
- Permanent Split Capacitor
- Thermal overload protection
- 1050 RPM for lower operating costs
- Oversized bearings and permanently lubricated and sealed
- 122ºF maximum operating temperature
- Custom motor mounts designed to reduce noise and eliminate vibration
- Stators are epoxy-dipped for more efficient motor cooling

Optional motors:

- 208V-1Ø-60 motors
- 277V-1Ø-60 motors
- 230/220V-1Ø-60 motors
- 50-Hz motors in specified voltages

Horizontal

60 Hertz Single-Phase Motors (1100 RPM)				Voltage/Watts							
				115V		208V		230V		277V	
Size	Motor Type	HP (Qty)	Blowers	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
004	(Standard)	1/6 (1)	1	1.4	201	0.66	201	0.6	201	0.5	201
006	(Standard)	1/6 (1)	1	1.6	227	0.88	227	0.8	227	0.6	227
	(High Static)	1/6 (1)	1	2.2	280	1.10	280	1.0	280	0.8	280
008	(Standard)	1/6 (1)	1	2.2	237	1.10	237	1.0	237	0.8	237
	(High Static)	1/4 (1)	1	3.2	330	1.70	330	1.5	330	1.2	330
010	(High Static)	1/4 (1)	1	3.2	378	1.60	378	1.5	378	1.2	378
012	(High Static)	1/3 (1)	1	4.5	403	2.60	403	2.4	403	1.8	403
015*	(High Static)	1/6 (2)	2	4.6	560	2.20	560	2.0	560	1.6	560
018*	(High Static)	1/4 (2)	2	6.4	660	3.30	660	3.0	660	2.4	660
022*	(High Static)	1/3 (2)	2	9.0	806	5.20	806	4.8	806	3.6	806

* Data reflects combined performance of (2) motors for Horizontal units.

Notes: Motor full load amps listed refer to NEC amps. Actual motor nameplate amps may vary.

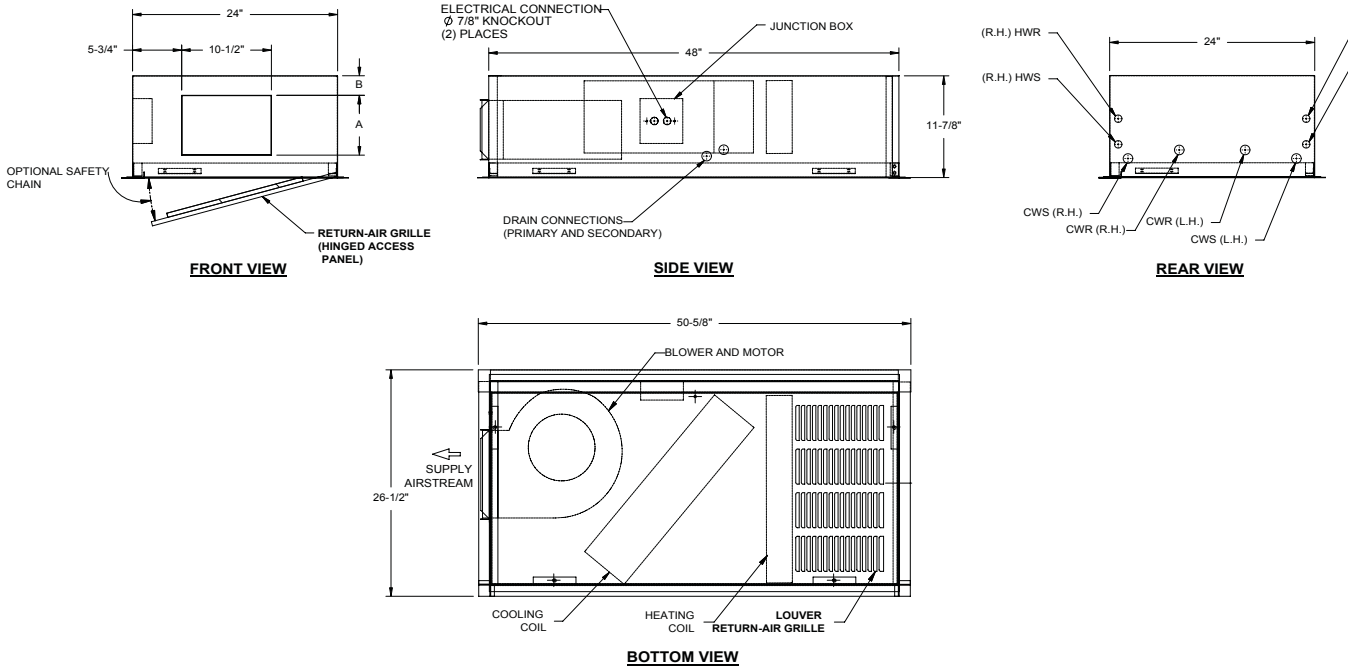
Sound Data

Horizontal Superior Performance Series

Size	Fan Speed	OCTAVE BAND						
		2	3	4	5	6	7	8
		CENTER FREQUENCY (CPS)						
		125	250	500	1000	2000	4000	8000
006	High	60.0	61.0	55.0	54.0	50.5	46.0	36.5
	Medium	54.0	56.0	49.0	46.0	41.0	35.0	24.0
008	High	61.0	63.0	56.0	55.0	52.0	47.0	38.0
	Medium	57.0	58.0	50.0	47.0	43.0	36.0	24.5
010	High	62.0	64.0	58.0	57.0	53.0	48.0	39.0
	Medium	58.5	60.0	51.5	49.0	44.0	37.0	25.0
012	High	63.5	65.5	60.5	58.0	54.0	49.5	40.5
	Medium	59.0	60.5	56.0	50.0	44.5	39.0	25.5
015	High	55.5	59.5	60.5	57.5	55.0	51.0	48.0
	Medium	51.0	53.5	53.0	49.5	45.0	40.0	26.5
018	High	57.5	61.0	62.5	59.0	58.0	54.0	43.0
	Medium	52.5	60.0	55.0	51.0	48.5	42.0	31.0
022	High	60.0	63.0	64.0	61.0	59.5	57.0	46.0
	Medium	55.0	57.0	57.0	53.0	49.0	45.0	33.0

Notes: 1) Power levels are in dB RE 10-12 watts.
2) Sound data tested in accordance with ASHRAE Standard 68 and ARI Standard 260 and 350.
3) Air Flow under dry coil conditions.

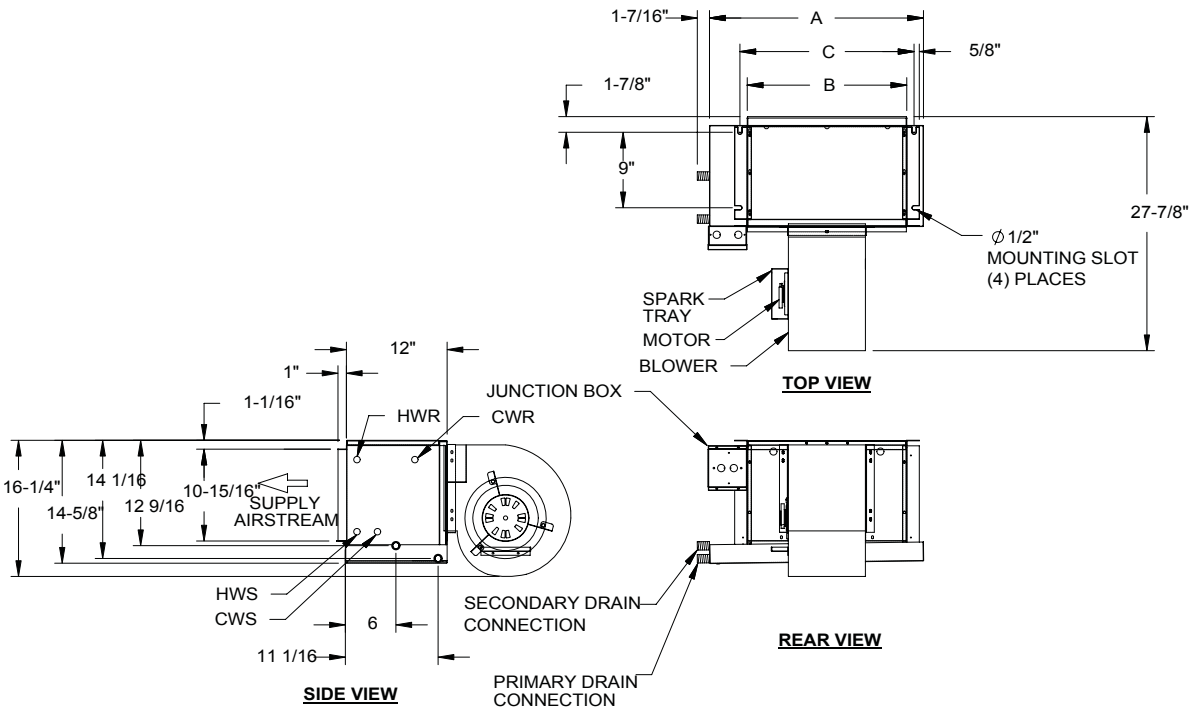
SRFB
400 - 800 CFM



MODEL SRFB	A	B	FILTER SIZE
400	7	2	12X20
600	8-3/8	2-11/16	12X20
800	8-3/8	2-11/16	12X20

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 1/2" CW on 004-006, 3/4" on 008. 1/2" HW on 004-008.

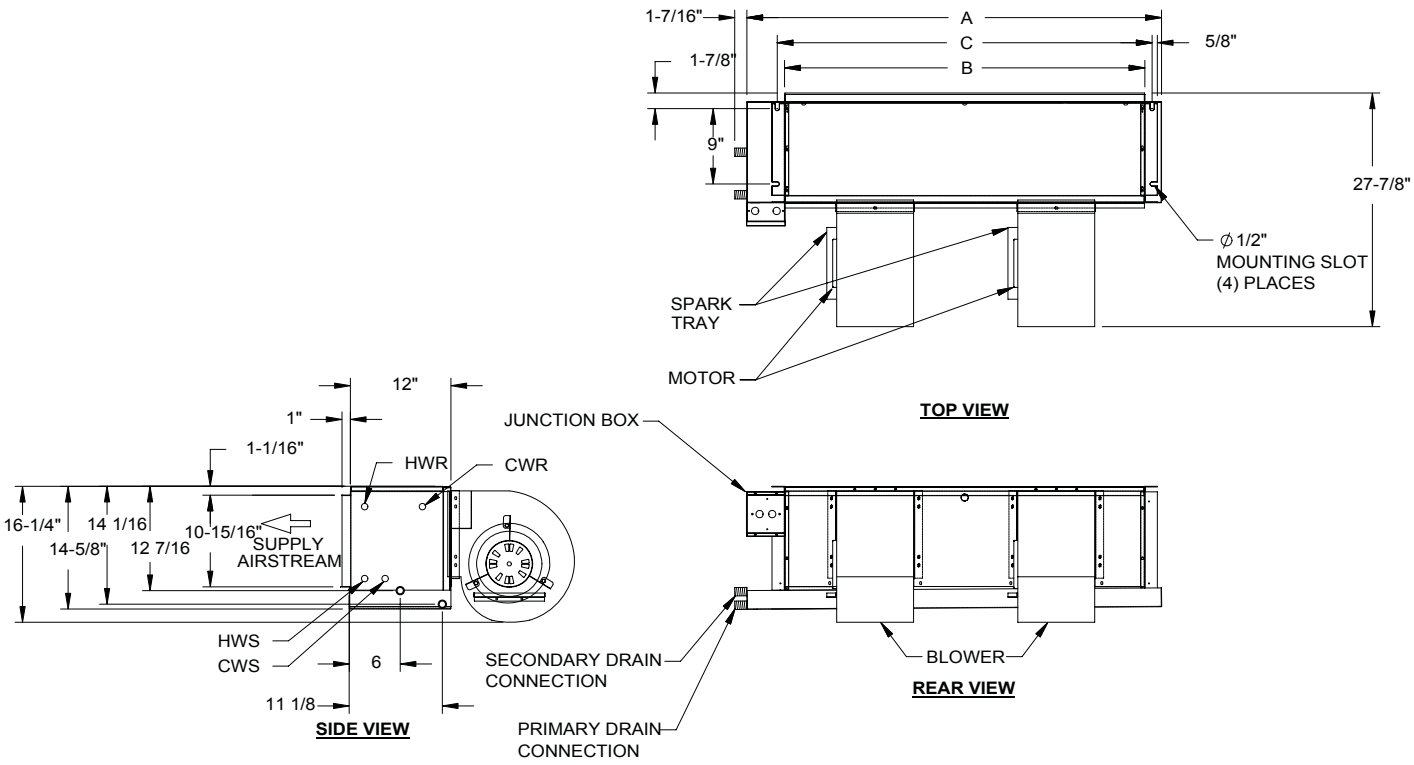
SCFR
600 - 1200 CFM



MODEL SCFR	A	B	C
600	21-1/2	15	16-3/4
800	25-1/2	19	20-3/4
1000	31-1/2	25	26-3/4
1200	37-1/2	31	32-3/4

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 1/2" CW on 006, 3/4" CW on 008-012 and 1/2" HW on 006-012.

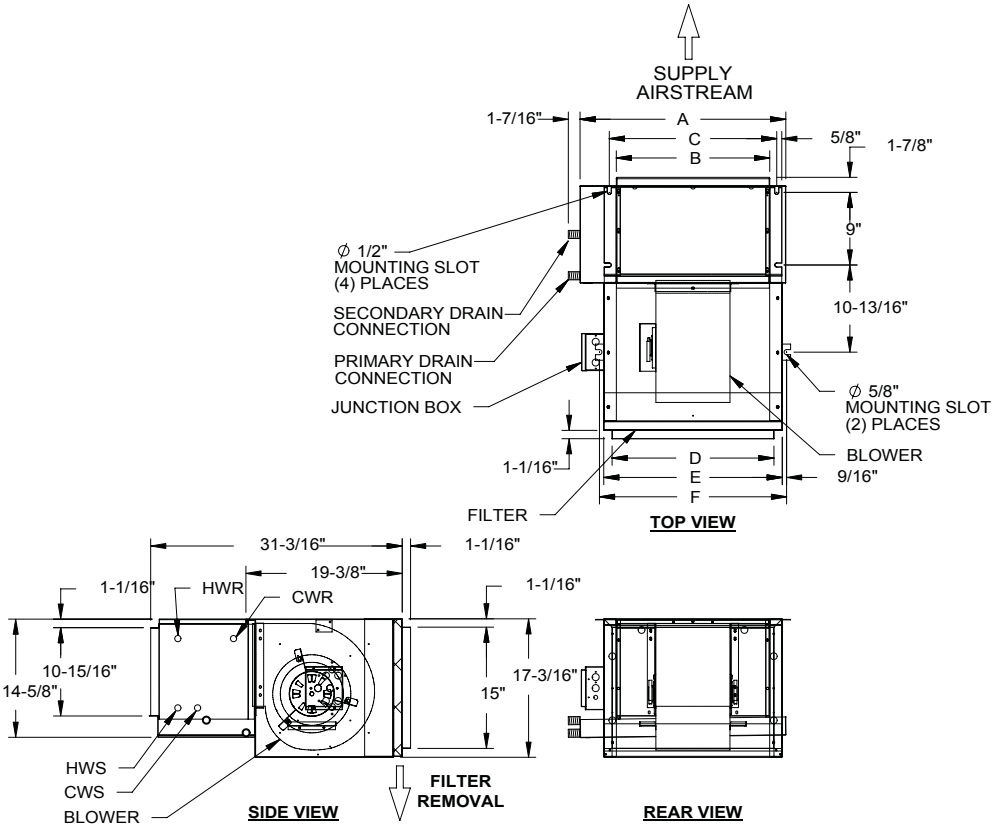
SCFR
1500 - 2200 CFM



MODEL SCFR	A	B	C
1500	43-1/2	37	38-3/4
1800	49-1/2	43	44-3/4
2200	55-1/2	49	50-3/4

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 3/4" CW on 015-022 and 1/2" HW on 015-022.

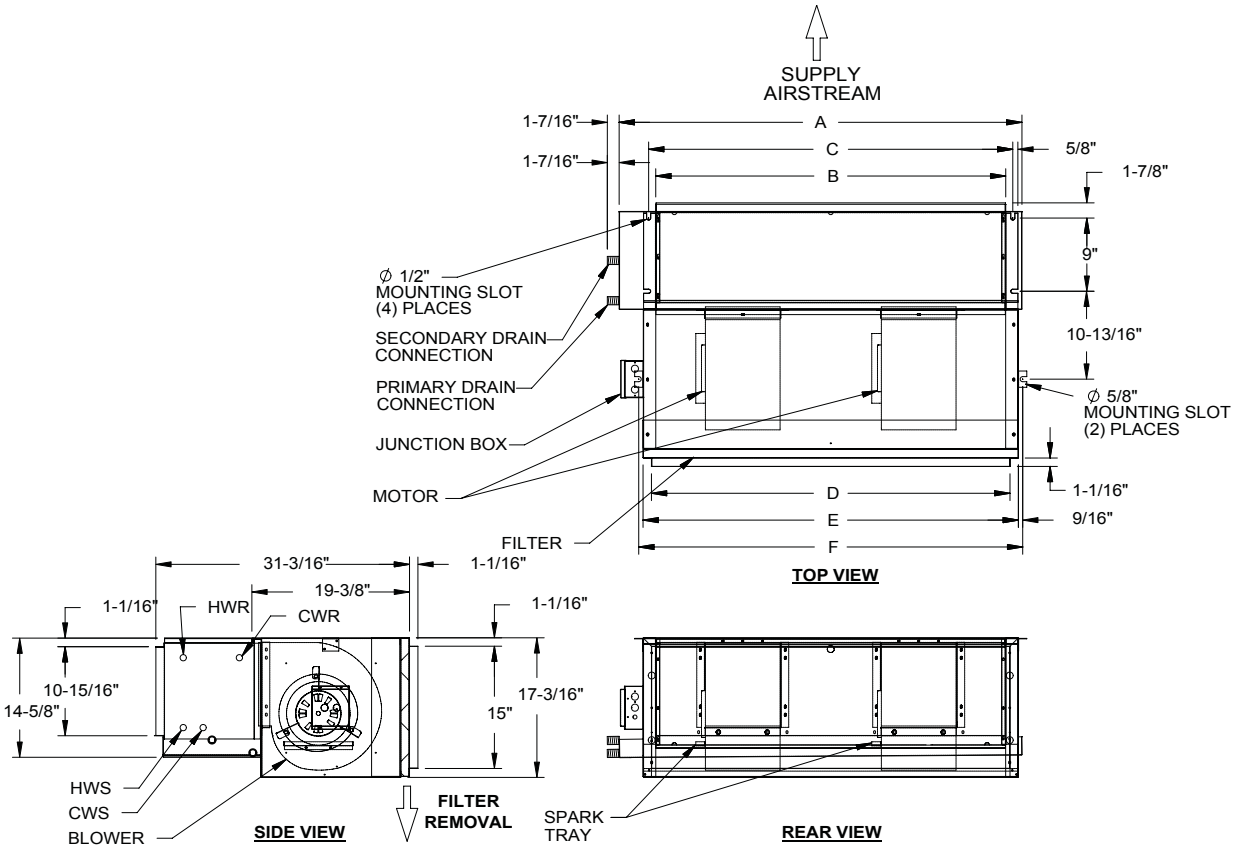
SPFR
600 - 1200 CFM



MODEL SPFR	A	B	C	D	E	F	FILTER SIZE
600	21-1/2	15	16	16-1/16	19-3/16	19-3/8	17X18X1
800	25-1/2	19	20	20-1/16	23-3/16	23-3/8	17X22X1
1000	31-1/2	25	26	26-1/16	29-3/16	29-3/8	17X28X1
1200	37-1/2	31	32	32-1/16	35-3/16	35-3/8	17X34X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 1/2" CW on 006, 3/4" on 008-012 and 1/2" HW on 006-012.

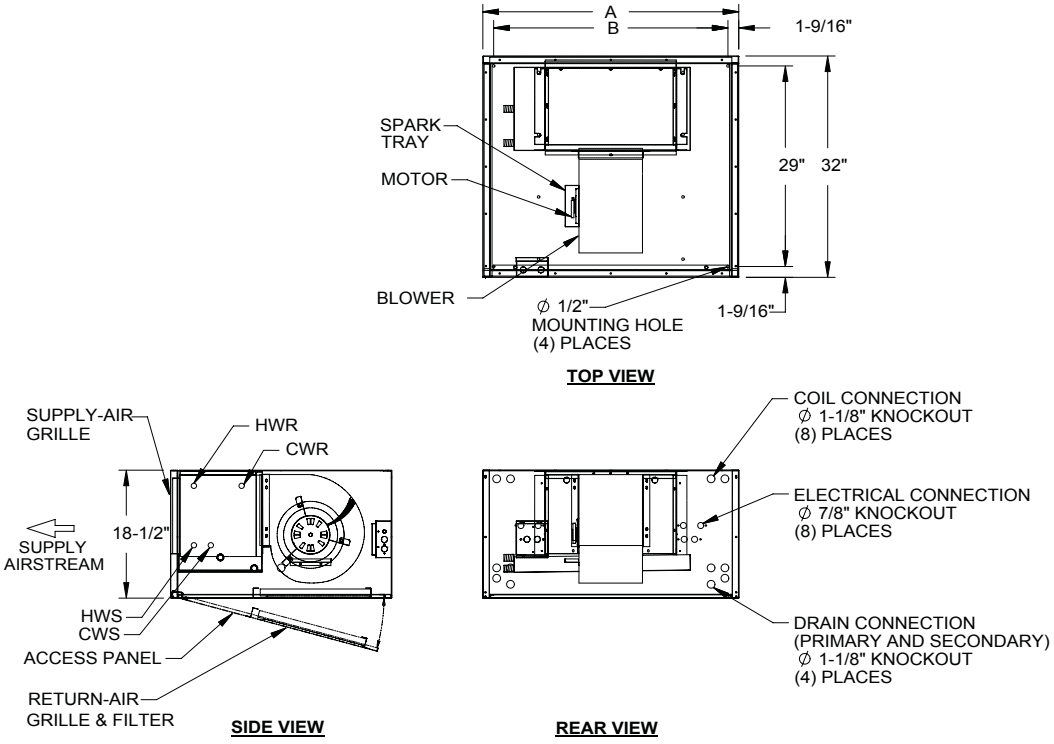
SPFR
1500 - 2200 CFM



MODEL SPFR	A	B	C	D	E	F	FILTER SIZE
1500	43-1/2	37	38-3/4	38-1/16	40-1/8	41-3/16	17X40X1
1800	49-1/2	43	44-3/4	44-1/16	46-1/8	47-3/16	17X46X1
2200	55-1/2	49	50-3/4	50-1/16	52-1/8	53-3/16	17X52X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 3/4" CW on 015-022 and 1/2" HW on 015-022.

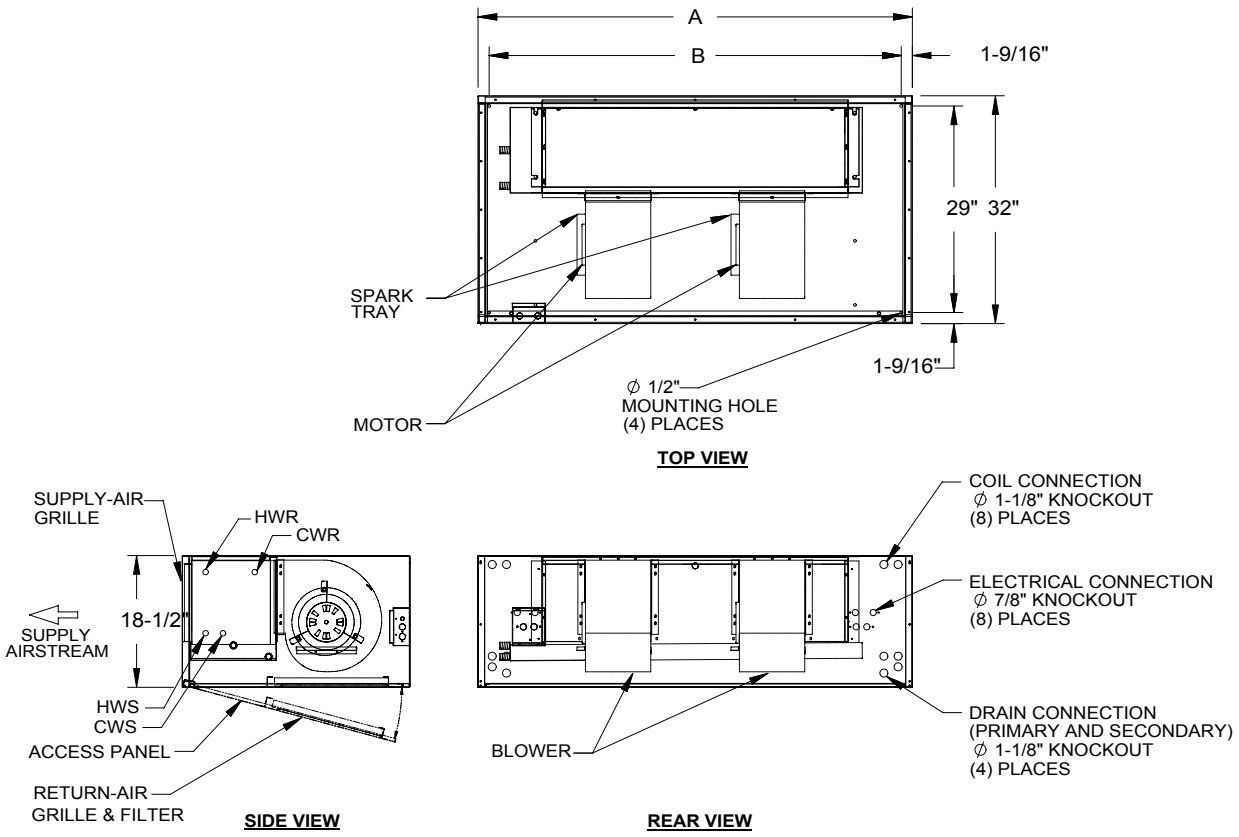
SEFB
600 - 1200 CFM



MODEL SEFB	A	B	FILTER SIZE
600	33	29-7/8	17X28X1
800	37	33-7/8	17X34X1
1000	43	39-7/8	17X40X1
1200	49	45-7/8	17X46X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 1/2" CW on 006, 3/4" on 008-012 and 1/2" HW on 006-012.

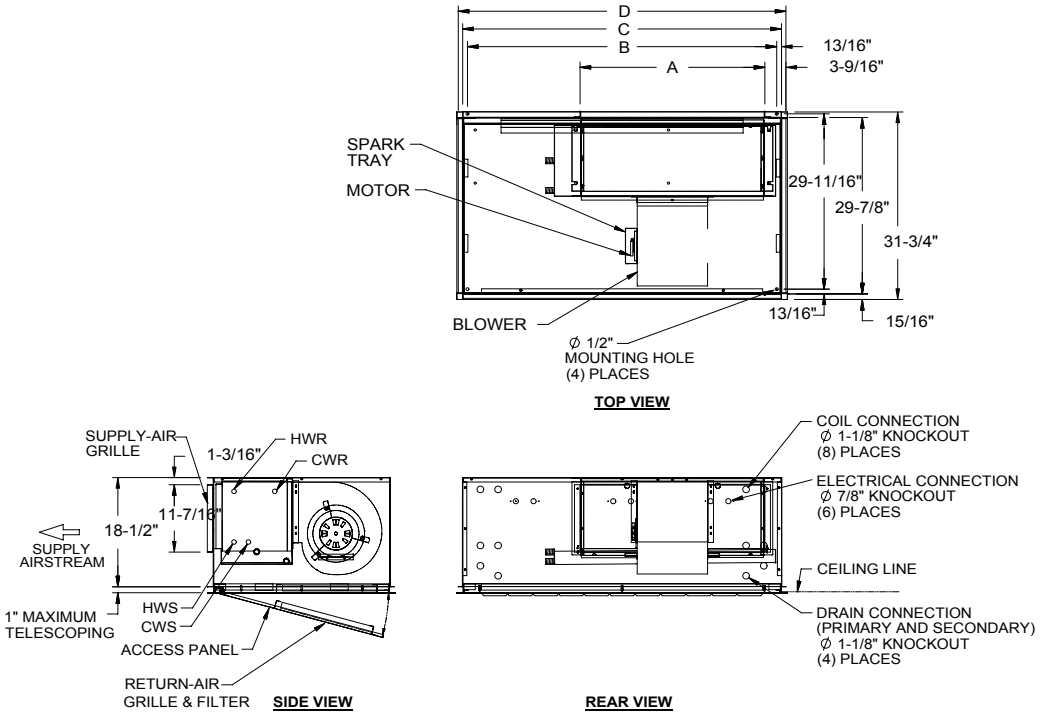
SEFB
1500 - 2200 CFM



MODEL SEFB	A	B	FILTER SIZE
1500	55	51-7/8	(1) 17X46X1
1800	61	57-7/8	(1) 17X52X1
2200	67	63-7/8	(1) 17X52X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 3/4" CW on 015-022 and 1/2" HW on 015-022.

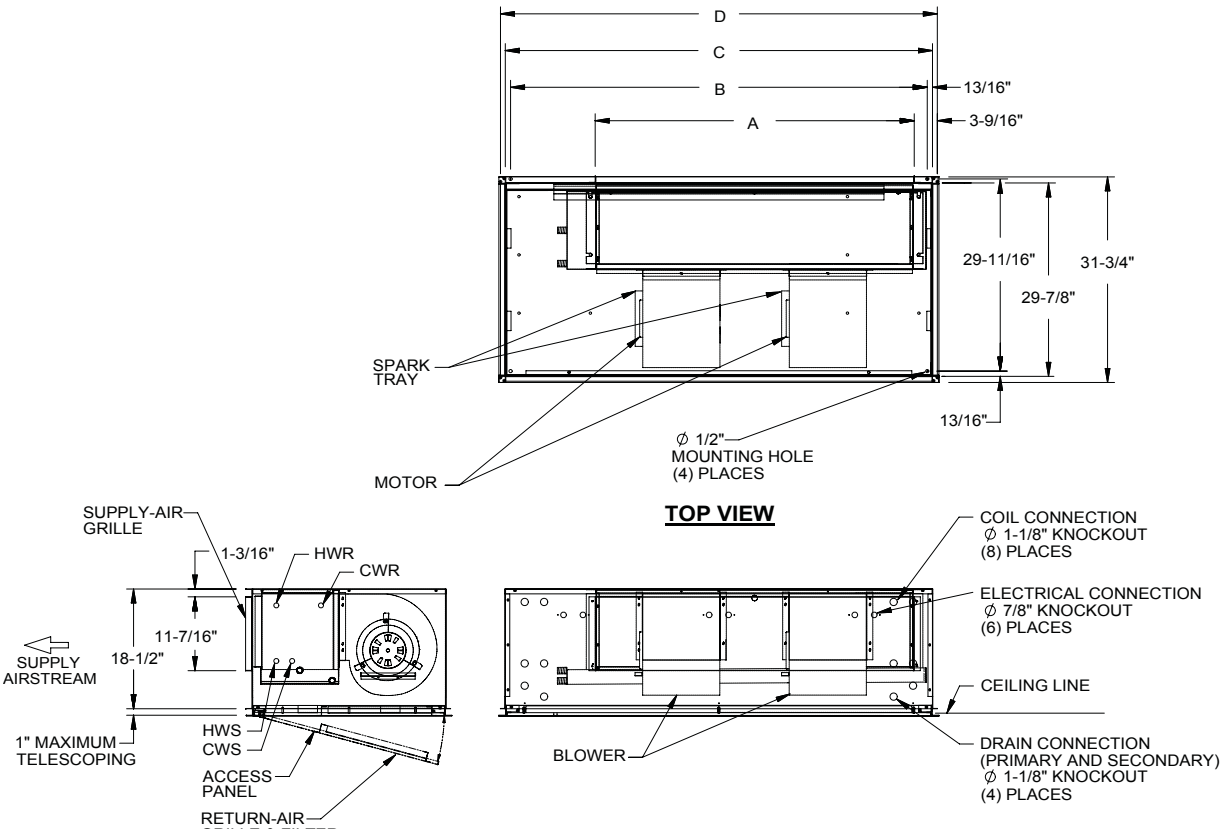
SRBB
600 - 1200 CFM



MODEL SRBB	A	B	C	D	FILTER SIZE
600	15-5/16	44-3/8	46	47-1/2	(2) 12X20X1
800	19-5/16	44-3/8	46	47-1/2	(2) 12X20X1
1000	25-5/16	44-3/8	46	47-1/2	(2) 12X20X1
1200	31-5/16	52-3/8	54	55-1/2	(2) 12X25X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 1/2" CW on 006, 3/4" on 008-012 and 1/2" HW on 006-012.

SRBB
1500 - 2200 CFM



MODEL SRBB	A	B	C	D	FILTER SIZE
1500	37-5/16	54-3/8	56	57-1/2	(2) 12X25X1
1800	43-5/16	58-3/8	60	61-1/2	(3) 12X20X1
2200	49-5/16	64-3/8	66	67-1/2	(3) 12X20X1

- All sizes shown in inches.
- Right-hand unit shown, left-hand unit opposite.
- Coil connections determined by facing the supply-air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Drain pan is powder-coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy-gauge, galvanized steel.
- Coil Connections: 3/4" CW on 015-022 and 1/2" HW on 015-022.

Weights and Measures

The following weights and measures are based on fan coil units only.Add approximately 20% for packaging and crating.

			Dimensions / Inches			Weight/lbs.		Dimensions / Millimeters			Weight/kg	
Unit	Model	Rows	Height	Width	Depth	Dry	Wet	Height	Width	Depth	Dry	Wet
SRFB	004	3	12	27	51	180	185	305	686	1295	82	84
	004	4	12	27	51	186	192	305	686	1295	84	87
	006	3	12	27	51	180	185	305	686	1295	82	84
	006	4	12	27	51	186	192	305	686	1295	84	87
	008	3	12	27	51	180	185	305	686	1295	82	84
	008	4	12	27	51	186	192	305	686	1295	84	87
SCFR	006	3	17	22	28	110	114	432	559	711	50	52
	006	4	17	22	28	114	119	432	559	711	52	54
	008	3	17	26	28	120	125	432	661	711	54	57
	008	4	17	26	28	125	132	432	661	711	57	60
	010	4	17	32	28	127	136	432	813	711	58	61
	010	5	17	32	28	132	143	432	813	711	60	64
	012	4	17	38	28	135	143	432	965	711	61	66
	012	5	17	38	28	141	155	432	965	711	64	70
	015	4	17	44	28	190	203	432	1118	711	86	92
	015	5	17	44	28	196	213	432	1118	711	89	97
	018	4	17	50	28	225	241	432	1270	711	102	109
	018	5	17	50	28	232	252	432	1270	711	105	114
	022	4	17	56	28	245	263	432	1423	711	111	119
	022	5	17	56	28	252	274	432	1423	711	114	124
SPFR/SPFB	006	3	18	22	32	125	129	457	559	813	57	59
	006	4	18	22	32	129	134	457	559	813	58	61
	008	3	18	26	32	135	140	457	661	813	61	64
	008	4	18	26	32	140	147	457	661	813	63	67
	010	4	18	32	32	145	154	457	813	813	66	70
	010	5	18	32	32	150	161	457	813	813	68	73
	012	4	18	38	32	150	161	457	965	813	68	73
	012	5	18	38	32	156	170	457	965	813	71	77
	015	4	18	44	32	210	223	457	1118	813	95	101
	015	5	18	44	32	156	233	457	1118	813	98	106
	018	4	18	50	32	250	266	457	1270	813	113	120
	018	5	18	50	32	257	277	457	1270	813	117	125
	022	4	18	56	32	270	288	457	1423	813	122	130
	022	5	18	56	32	277	299	457	1423	813	126	136
SEFB	006	3	19	33	32	140	144	483	838	813	64	65
	006	4	19	33	32	144	149	483	838	813	65	68
	008	3	19	37	32	155	160	483	940	813	70	73
	008	4	19	37	32	160	167	483	940	813	72	76
	010	4	19	43	32	165	174	483	1092	813	75	79
	010	5	19	43	32	170	181	483	1092	813	77	82
	012	4	19	49	32	175	186	483	1245	813	79	84
	012	5	19	49	32	181	195	483	1245	813	82	89
	015	4	19	55	32	230	243	483	1397	813	104	110
	015	5	19	55	32	236	253	483	1397	813	107	115
	018	4	19	61	32	270	286	483	1549	813	122	130
	018	5	19	61	32	277	297	483	1549	813	126	135
	022	4	19	67	32	290	308	483	1702	813	132	140
	022	5	19	67	32	297	319	483	1702	813	135	145
SRBB	006	3	19	48	32	130	134	483	1219	813	59	61
	006	4	19	48	32	134	139	483	1219	813	61	63
	008	3	19	48	32	145	150	483	1219	813	66	68
	008	4	19	48	32	150	157	483	1219	813	68	71
	010	4	19	48	32	150	159	483	1219	813	68	72
	010	5	19	48	32	155	166	483	1219	813	70	75
	012	4	19	56	32	160	171	483	1422	813	73	78
	012	5	19	56	32	166	180	483	1422	813	75	82
	015	4	19	58	32	215	228	483	1473	813	98	104
	015	5	19	58	32	221	238	483	1473	813	100	108
	018	4	19	62	32	255	271	483	1575	813	116	123
	018	5	19	62	32	262	282	483	1575	813	119	128
	022	4	19	68	32	275	293	483	1727	813	125	133
	022	5	19	68	32	282	304	483	1727	813	128	138

General

Furnish and install Airtherm Horizontal Direct Drive Fan Coil units as indicated on the plans and in the specifications. All units shall be completely factory-assembled, tested and shipped as one working unit. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Dimensions for each model and size shall be considered maximums. Units shall be UL listed and also in compliance with UL/ANSI Standard 1995, and be certified as complying with the latest edition of ARI Standard 440.

Construction

All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125-hour salt spray test per ASTM B-117. All exterior panels shall be insulated with 1/2" thick, 3.35 pound per cubic foot, dual density fiberglass insulation rated for a maximum air velocity of 3600 f.p.m. Insulation shall conform to UL 181 for erosion and NFPA 90A and 90B for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723 and CAN./ULC, S102-M88.

All concealed units shall have a minimum 1" duct collar on the discharge. Plenum units shall have a minimum 1" duct collar on the return.

All exposed units shall have exterior panels fabricated of cold-rolled steel. The fan and filter bottom access panel has two screws for easy removal and access for service and is also equipped with a safety chain.

OPTION: Provide foil-faced insulation in lieu of standard. Foil insulation shall meet or exceed the requirements stated above, and in addition, meet ASTM Standards C665 and C-1136 for biological growth in insulation. Insulation shall be lined with aluminum foil, fiberglass scrim reinforcement, and 30-pound kraft paper laminated together with a flame resistant adhesive. All exposed edges shall be sealed to prevent any fibers from reaching the air stream.

OPTION: Provide Elastomeric Closed Cell Foam Insulation in lieu of standard. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Anti-microbial Performance Rating of zero, no observed growth, per ASTM G21. Polyethylene insulation is not acceptable.

OPTION: For exposed units, the bottom access panels shall be attached with quick open fasteners to allow for easy removal and access for service.

OPTION: For exposed units, provide double deflection discharge grille and either a rear return or bottom return single deflection grille. Supply and return duct connections are available.

Unit mounting shall be by hanger and slotted hanging brackets provided at four locations. For easy installation, exposed units provided with 1/2" mounting knockouts in four places.

Painted Finish

All exposed cabinet exterior panels shall be provided with soft-white powder-coated epoxy finish and subjected to a 1500-hour salt spray test in accordance with ASTM B117.

Sound

Units shall have published sound power level data tested in accordance with ARI Standard 350-2000 (non-ducted equipment) and ARI Standard 260-2001 (ducted equipment).

Fan Assembly

Unit fan shall be a dynamically balanced, forwardly curved, DWDI centrifugal type constructed of heavy gauge zinc coated galvanized steel for corrosion resistance. Motors shall be high efficiency, permanently lubricated sleeve bearing, permanent split-capacitor type with UL and C-UL listed automatic reset thermal overload protection and three separate speed taps. Single speed motors are not acceptable.

The fan assembly shall be easily removable for servicing the motor and blower at or away from the unit. The entire fan assembly shall beable to come out of the unit by removing two wing nuts and unplugging the motor.

Plenum unit fan assemblies shall be easily serviced through an access panel provided.

OPTION: Devices used to energize and de-energize (switch) fan speeds must be totally silent. Mercury and/or quiet relays and/or contactors are not acceptable.

Coils

All cooling and heating coils shall optimize rows and fins per inch to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover.

All coils shall be hydrostatically tested at 350 PSIG air pressure under water, and rated for a maximum of 300 PSIG working pressure at 200°F maximum water temperature. Direct expansion cooling coils shall include a fixed orifice distributor and nozzle.

Steam coils shall be standard steam type suitable for temperatures above 35°F and 15 PSIG maximum working pressure.

OPTION: Coil casing shall be fabricated from 304 Stainless Steel. All coils shall be provided with a manual-air vent fitting to allow for coil venting.

OPTION: Provide automatic air vents in lieu of manual-air vents.

Cooling and heating coils shall be in the common coil casing, heating coils shall be furnished in the re-heat or pre-heat position on the unit with chilled water coils, and DX heating coil shall be in pre-heat position only.

Drain Pans

Primary condensate drain pans shall be single wall, heavy gauge, powder-coated epoxy subjected to a 650-hour salt spray test in accordance with ASTM B117, and shall extend under the entire cooling coil. Drain pans shall be of one-piece construction and be positively sloped for condensate removal. Drain pans shall have primary and secondary drain connections.

The drain pan shall be externally insulated with a closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and fungi resistant per ASTM G21/C1338, bacteria resistant per ASTM G22 and mold growth per UL 181.

OPTION: Provide a single wall primary drain pan constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

Provide a secondary drain connection on the primary drain pan for condensate overflow.

OPTION: Provide a condensate overflow switch in the primary drain pan for condensate overflow.

Filters

All plenum and exposed units shall be furnished with a minimum 1" nominal glass fiber throwaway filter. Filters shall be tight fitting to prevent air bypass. Plenum and exposed unit filters shall be easily removable from the bottom or rear of the unit without the need for tools.

OPTION: Provide unit with 1" pleated filters rated at 25-30% efficiency and MERV 6 based on ASHRAE 52.2 - 1999.

Electrical (Option)

Units shall be furnished with single point power connection. Provide an electrical junction box with terminal strip for motor and other electrical terminations.

OPTION: The factory-mounted terminal wiring strip consists of a multiple position screw terminal block to facilitate wiring terminations for the electric control valves and thermostats.

Electric Heat

Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be designed and rated for installation on the fan coil unit without the use of duct extensions or transitions, and be located in the unit as to not expose the fan assembly to excessive leaving air temperatures that could affect motor performance.

The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be UL listed with the unit as an assembly in compliance with UL/ANSI Standard 1995.

All heating elements shall be open coil type Nichrome wire mounted in ceramic insulators and located in an insulated heavy gauge galvanized steel housing. All elements shall terminate in a machine staked stainless steel terminal secured with stainless steel hardware for corrosion resistance. The element support brackets shall be spaced no greater than 3-1/2" on center. All internal wiring shall be rated for 105°C minimum.

All heaters shall include over temperature protection consisting of an automatic reset primary thermal limit and back up secondary thermal limit. All heaters shall be single stage.

An incoming line power distribution block shall be provided and designated to accept single point power wiring capable of carrying 125% of the calculated load current.

OPTION: Devices used to energize and de-energize (switch) electric heat must be totally silent. Mercury and/or quiet relays and/or contactors are not acceptable.

Piping Packages (Option)

Provide a factory assembled valve piping package to consist of a 2 or 3 way, on/off, motorized electric control valve and two ball isolation valves. Control valves are piped normally closed to the coil. Maximum entering water temperature on the control valve is 180°F, and maximum close-off pressure is 75 PSIG (1/2") or 50 PSIG (3/4"). Maximum operating pressure shall be 300 PSIG.

OPTION: Provide 3-wire floating point modulating control valve in lieu of standard 2-position control valve with factory assembled valve piping package.

OPTION: Provide either a fixed or adjustable flow control device for each piping package.

OPTION: Provide pressure-temperature ports for each piping package.

Piping packages are shipped installed on all units and can be shipped separately by request only.

TERM OF SALE

Our acknowledgment and acceptance are subject to the following conditions:

1. **Routing:** Where prices include freight, the Seller determines the routing. If special routing is requested a charge will be made for difference between such routing costs and normal minimum freight charges to same point.
2. **Price Adjustment:** Up to the time of formal order acknowledgment, all prices are subject to change without notice. Acknowledgement sales price(s) of Airtherm equipment are not subject to adjustment provided shipment can be made no later than three (3) months from the date order is accepted and entered. If, through no fault of Airtherm, shipment is scheduled beyond (3) months but less than one (1) year, original sale price(s) are subject to adjustment(s) to the price(s) in effect at the time of shipment - such adjustments, if any, not to exceed five (5) percent (%) of the contract price. If actual shipment goes beyond one year from the date of order acceptance, sale price(s) are subject to renegotiation. Additionally, the right is reserved to correct any stenographic or clerical errors, and we assume no responsibility beyond that usual in our course of business, except as defined in detail.
   No obligation is assumed by this Corporation to sell, to anyone holding this book, any of the items listed herein at the prices stated.
3. **Terms: Terms of Payment:** Net cash within thirty (30) days after shipment, or after notification that we are ready to ship. These terms apply to partial as well as complete shipments. A service charge at the rate 11/2 % per month (18% per annum) or the maximum rate allowed by law, whichever is less, will be made on past due accounts. Seller reserves the right to ship C.O.D. or refuse shipment or delivery of goods referred to herein, or any part thereof, in the event that it in its sole discretion decides that the outstanding indebtedness of the customer exceeds reasonable credit allowances.
4. **Acceptance:** All Orders must be in writing and are not binding until accepted by the Seller's office. Orders are accepted subject to strikes, accident and other causes beyond our control. We will not be liable for any delay in delivery or for any damages suffered by the Buyer for any reason of such delay.
5. **Delivery:** We will endeavor to ship by promised delivery date, but failure to do so for any cause whatever will not give the Buyer right to cancel or hold Seller responsible for any damages resulting from failure to deliver within time stated.
6. **Cancellations:** A minimum of 10% and maximum of all time and material will be charged, depending on work completed.
7. **Taxes:** In case of the imposition of any addition duty, tax, or other governmental charge upon raw materials entering into production of the goods represented by the invoice, and order acknowledgement, or upon or measured by the production, sale or shipment of said goods by Federal, State, or Municipal authorities, which would be applicable to this sale, then the contract price may be increased by the amount of such additional costs or expenses to the Seller, which is cause thereby. Unless specifically exempted, all sales, use and any other Federal, State, Municipal or Governmental tax will be invoiced to the purchaser as a separate item in addition to the price of the equipment and are to be paid by the purchaser.
8. **Specifications:** The Seller reserves the right to change the specifications as conditions warrant.
9. **Claims:** As all goods are shipped at the Buyer's risk they should be examined carefully before signing transportation delivery receipts. If transportation company tenders delivery of goods in bad order, Buyer should insist on transportation agent making notation of conditions on delivery receipt and request inspection within 48 hours, thus enabling Buyer prompt payment of transportation claims filed by him for value of damaged material.
10. **Warranty:** We agree that the apparatus manufactured by the Seller will be free from defects in material and workmanship for a period of one (1) year under normal use and service and when properly installed; and our obligation under this agreement is limited solely to repair or replacement at our option, at our factories, of any part or parts thereof, which shall, within one (1) year from date of installation or 18 months from the date of shipment from factory to the original purchaser, whichever date may first occur, be returned to us with transportation charges prepaid, which our examination shall disclose to our satisfaction to have been defective. **THIS AGREEMENT TO REPAIR OR REPLACE DEFECTIVE PARTS IS EXPRESSLY IN LIEU OF AND IS HEREBY IN DISCLAIMER OF ALL OTHER EXPRESS WARRANTIES, AND IS LIEU OFAND IN DISCLAIMER AND EXCLUSION OF ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AS WELL AS ALL OTHER IMPLIED WARRANTIES, IN LAW OR EQUITY. AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND DESCRIPTION HEREOF.** We neither assume nor authorize any person to assume for us any liabilities or obligations in connection with the sale of our apparatus, except said repair or replacement of the defective part as set forth above. Our liability does not include any labor charges for replacement of parts, adjustments, repairs, or any other work done outside our factories and our liability does not include any consequential or resulting damage to persons, property equipment, goods, merchandise, profits, good will or reputation arising out of any defect in or failure of our apparatus. Our obligation to repair or replace shall not apply to any apparatus which shall have been repaired or altered outside of our factory in any way, or which has been subject to negligence, to misuse, or to pressure in excess of states limits. On parts not of our manufacture, such as motors, controls, etc. we extend only the same warranties given to the Seller. Our agreement hereunder runs only to the immediate purchasers and does not extend, expressly or by implication, to any other person. Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Airtherm if Airtherm has not received payment in full for the apparatus in question.
11. **Shortages:** No claims for shortages will be considered unless it is made in writing to the Seller within 14 days of receipt of shipment.
12. **Returned Goods:** Goods must not be returned except by written permission from the factory, and when so returned will be accepted only as stated in the following conditions:
    a. Special material is not subject to return.
    b. All transportation charges for returned goods must be prepaid by shipper.
    c. Standard catalogued products may be returned upon written permission. After inspection at the factory, if they are found to be in good condition they will be accepted for credit, subject to a 25% handling charge.
    d. No goods will be accepted for return more than 6 months after shipment.
13. **Changes to a Released Order:** Work commences on release of an order, therefore, an order that is changed will be subject to additional charges for any extra time and material expended.
14. **Minimum Orders:** Orders with an invoice value of less than $50.00 will be invoiced at $50.00.
15. **Sole Terms:** Failure of the Seller to object to provisions contained in customer's purchase orders or other communications shall not be deemed a waiver of the terms or conditions hereof nor acceptance of such provisions. The printed terms hereon combined with the other writings entered into between the parties, are the entire contract and all terms hereof. No oral statements, warranties, representations, stipulations or terms have any binding effect or be any part of the contract whatsoever.
16. Failure of the Buyer to object in writing within five (5) days of receipt thereof to Terms of Sale contained in the Seller's acceptance and/or acknowledgement, or other communications, shall be deemed an acceptance of such Terms of Sale by Buyer.
17. The Occupational Safety and Health Act (OSHA) impose certain requirements on an "employer" including many relating to the use of machinery and equipment. Since these requirements are directly related to the conditions under which and the manner in which the machinery or equipment is used, Seller makes no warranty, express or implied, or merchantability under, fitness under, compliance with, or liability under OSHA, its interpretations and/or regulations. Further, the Seller makes no warranty of any kind other than the warranty set forth in paragraph 10 of the terms of sale.

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