



Electroflo SBE SERIES

ELECTRIC HEATING SYSTEMS



**A MODEL
FOR EVERY
APPLICATION**

SBEH

SPACE HEATING with
room thermostat control.

SBEM

MAKE UP AIR with
discharge air controller
maintaining constant
leaving air temperature
regardless of outdoor
conditions.

SBEV

HEATING & VENTILATING
thermostat with room and
discharge air control. For
applications where both
outdoor and recirculated
air are required

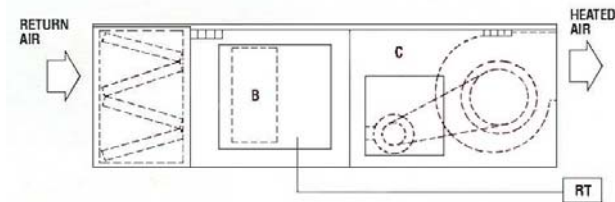
**AIR DELIVERIES FROM
2,000 TO 75,000 SCFM.
HEATING OUTPUTS FROM
17 TO 1483 KW.**

SBE SERIES ELECTROFLO HEATING SYSTEM

The Hastings' ELECTROFLO features the package concept in electric heating units. A UL listed electric heater is incorporated into a factory assembled, wired and tested heating system. Three temperature control sequences are available to meet the requirements of most heating applications:

SBEH – SPACE HEATING

(100% RETURN AIR)



- A – Filters (Optional)
- B – Electric Heating Section and Controls
- C – Blower and Motor
- RT – Room Thermostat

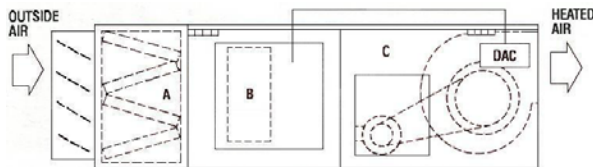
APPLICATION AND OPERATING SEQUENCE

The SBEH unit is designed for 100% return air room heating applications with the air temperature being controlled from the heated space. The SBEH operating sequence is not recommended for ventilating applications.

The “On” position of the “On-Off-Auto” blower switch provides continuous blower operation. The “Auto” position allows blower operation whenever the room thermostat calls for heat. With the “Summer-Off-Winter” season switch in the “Winter” position, the room thermostat stages the electric heater to maintain the desired space air temperature. With the “Summer-Off-Winter” season switch in the “Summer” position, electric heater is de-energized and blower operates to provide re-circulated air.

SBEM – MAKE UP AIR

(100% OUTSIDE AIR)



- A – Filters and Damper (Optional)
- B – Electric Heating Section and Controls
- C – Blower and Motor
- DAC – Discharge Air Controller

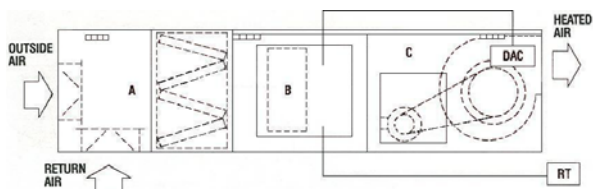
The SBEM make-up air unit designed to replace exhausted building air with 100% outside air to prevent the many problems of “air starvation.” This replacement air is heated when the outside air temperature is below the desired discharge air conditions.

The “On” position on the “On-Off” blower switch provides continuous blower operation. With the “Summer-Off-Winter” season switch in the “Winter” position, the discharge air temperature controller stages the electric heater to maintain desired leaving air temperature.

With the “Summer-Off-Winter” season switch in the “Summer” position, the electric heater is de-energized and blower operates to provide summer ventilation.

SBEV-HEATING & VENTILATING

(MIXED OR 100% OUTSIDE AIR)



- A – Filters and Mixing Dampers (Optional)
- B – Electric Heating Section and Controls
- C – Blower and Motor
- DAC – Discharge Air Controller
- RT – Room Thermostat

The SBEV combines the control of both make-up air and space air temperature. This sequence is equally effective for up to 100% of either outside or return air heating and ventilating applications, or 100% outside air only.

The “On” position of the “On-Off-Auto” blower switch provides continuous blower operation. The “Auto” position allows blower operation whenever the room thermostat calls for heat.

With the “Summer-Off-Winter” season switch in the “Winter” position, the electric heater is staged by either the room thermostat or the discharge air controller. Heating is controlled by the room thermostat. If discharge temperatures falls below the setting of the discharge air controller, the room thermostat is over-ridden and heating output is increased until discharge air controller is satisfied.

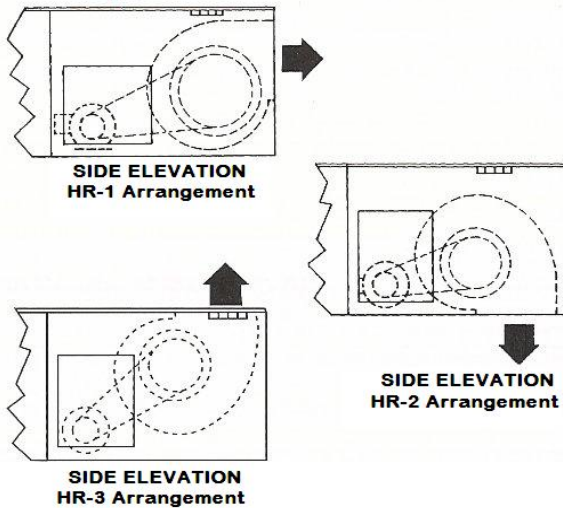
With the “Summer-Off-Winter” season switch in the “Summer” position, the electric heater is de-energized and blower operates to provide summer ventilation.

SBE SERIES ELECTROFLO HEATING SYSTEM

Standard Equipment

General:

Either of three horizontal blower arrangements are available as standard: HR-1 horizontal discharge; HR-2 down discharge; and HR-3 vertical up discharge as illustrated below.



Cabinet:

Bolted construction of aluminized steel; SB-112 and SB-115 of 16/18 gauge, all other models with 16/14 gauge. Access panels are provided to allow easy access to motors, drives and filters (if ordered). Outside surface is primed with zinc-chromate and finished with a coat of enamel.

Electric Controls:

Electric Heater controls – a standard SBEH, SBEM or SBEV control system as described on page 1 of this bulletin.

Air flow switch – built-in, pressure differential type provides the best electric heater protection against air failure caused by fan belt or other blower malfunctions.

“No Glo” safeguard system – continues blower operation for a short time period after electric heater shuts down. This control sequence extracts residual heat from the element which prolongs electric heater life.

115 volt control transformer – furnished on all Electroflo units with line voltage other than 115 volts.

NEMA 1 main control box – with terminals, relays, interlocks and starter for proper system control.

Terminal blocks – either 85 single or multiple line terminal blocks are furnished on all Electroflo heating units dependent upon load requirements.

Remote control station – complete with system switches and indicating lights.

Blower:

Centrifugal forward curved, double width, double inlet, class 1 fan(s) with solid turned ground shaft and self-aligning, 200,000 hour lubricatable ball bearings. All blower wheels are statically and dynamically balanced.

Blower housings, bearings and adjustable motor base are mounted on a reinforced frame to insure rigidity and quiet operation. Adjustable drives are standard through 10 HP, fixed drives with 15 HP and larger motors. V-belt drives are sized for 135% of motor horsepower.

Fan motors and drives are mounted within the blower cabinet. This affords motor protection and eliminates the operational hazard of V-belt external to the unit.

Motor:

Premium energy efficient (E.E.) T-frame, open drip-proof, 1800 RPM prelubricated ball bearing type for all standard voltages.

Heater:

UL Listed heating section with open type electric element, NEMA 1 terminal box, circuit fuses, step controller transformer with primary fusing, auto reset thermal cutout, heat limiter type secondary safety protection, de-energizing contactors and connecting terminal block(s) for wiring power supply. All fusing per NEC and UL. UL listed heating sections are available only for HR-1, HR-2, HR-3, VUR-1 and VUR-2 arrangements.



TYPICAL ELECTROFLO HEATER

OPTIONS AND ACCESSORIES

General:

Horizontal unit blower arrangement – horizontal upflow (HR-3) available.

Vertical unit blower arrangement – three Vertical upflow as illustrated below.

Components:

Weatherproof unit – for outdoor installations with blower section insulated and hinged, latched weatherproof control enclosure.

Insulated electric section – available on all units

Shut-off dampers – complete with two position damper motor and end switch. Discharge air damper recommended for outdoor installations and inlet air damper suggested for indoor units. Low leakage dampers are also available.

Stormproof weatherhood – with birdscreen, Installed on air intake of horizontal, HR-1 and HR-2, weatherproof units. Not available with optional vertical blower arrangements.

Birdscreen – for installation on the air intake of units with optional vertical blower arrangements.

Filter section – with “V” or “Z” frames for mounting 2 inch throwaway, cleanable or extended surface filters. A clogged filter switch and indicating light is available as an optional item. Filter section can also be insulated.

Combination filter/mixing box – complete with mixing dampers and linkage and a choice of 2 inch filters. A clogged filter switch and indicating light is available as an optional item.

Damper motors – either modulating or two position motors are available.

Discharge air louvers – adjustable horizontal or vertical bladed louvers are available for mounting on the blower outlet. These louvers can be combined for double deflection air control.

Discharge duct adapter – standard with curbs furnished by Hastings.

Service platform – with guardrail per OSHA standard. Service platforms are available for indoor horizontal units only.

Vibration isolators – either “rubber-in-shear” or spring type for floor mounting, roof mounting, or indoor suspension. Vibration isolators are shipped unmounted. Internal fan/motor isolation is also available.

Extended grease lines – for remote greasing of fan bearings from control side of unit.

Variable pitch sheave – for motors 15 HP and larger. Variable pitch sheaves are standard for motors 10 HP and smaller

Motors:

Totally enclosed motors are available on all units. Two speed, (10 HP and below) 1800/1200 RPM motors can be substituted on most SBE models.

Two speed 1800/1200 motor application for 15 HP and above will require a field provided and installed variable speed drive furnished by others.

Heater:

Full line break contactors – disconnecting contactors can be furnished in place of de-energizing contactors.

10-step controller – A 10-step electric heater controller may be furnished with any of the Electroflo heating systems. This increase the control increments above those listed in the Selection Table. SCR solid state controls are also available on all models.

Electric Controls:

Blocked intake switch – complete with indicating light.

Damper controls – modulating damper motor controllers.

Non-fused disconnect switch – shipped for field mounting.

Low outlet temperature shut-off – fan motor is shut down on heat failure to prevent delivery of cold air.

Roof Curbs:

Adapter frames and roof curbs available for horizontal units. Roof curbs are shipped knocked down.

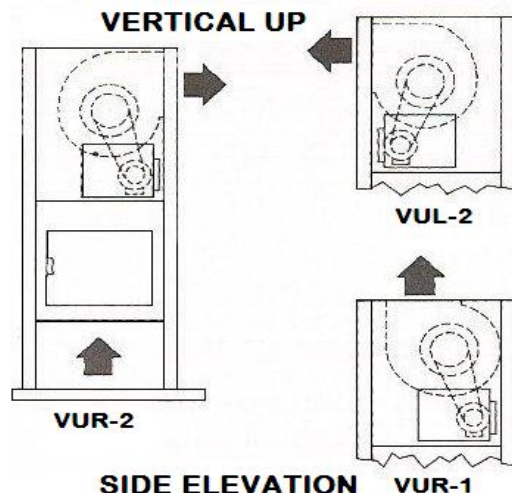
Miscellaneous:

Motor and controls can be mounted on opposite side. Matching cooling coil, heat reclaim coil, direct gas-fired heater and evaporative cooling section (located downstream) available on all Electroflo units.

VERTICAL UNIT BLOWER DISCHARGE ARRANGEMENTS

(All sections and components are supported by special base frame and vertical support channels)

(Standard support channel heights 112 thru 218 - 24”, 222 thru 233 - 26”)



SBE SERIES SELECTION TABLE

Model	Air Delivery - SCFM	Discharge Velocity - FPM	Approx. Shipping Weight - Lbs	NOMINAL AIR TEMPERATURE RISE IN °F AND STEPS OF CONTROL								MOTOR HORSPPOWER						
				21-30 2	31-40 3	41-50 3	51-60 4	61-70 4	71-80 5	81-90 5	91-100 5	TOTAL STATIC PRESSURE (SEE NOTES BELOW)						
				KW HEATING CAPACITY AND AVAILABLE VOLTAGE								3/4"	1"	1¼"	1½"	1¾"	2"	2½"
SBE-112	2000	1307	480	♦ 17	♦ 24	♦ 31	♦ 37	♦ 40	-	-	-	3/4	3/4	1	1	NA	NA	NA
	3000	1961	490	♦ 28	♦ 37	♦ 47	♦ 56	♦ 66	♦ 75	♦ 80	-	1½	1½	1½	2	NA	NA	NA
	4000	2614	490	♦ 37	♦ 49	♦ 63	♦ 75	♦ 88	♦ 96	-	-	2	NA	NA	NA	NA	NA	NA
SBE-115	3000	1316	690	♦ 28	♦ 37	♦ 47	♦ 51	-	-	-	-	3/4	1	1½	NA	NA	NA	NA
	4000	1754	700	♦ 37	♦ 49	♦ 63	♦ 75	♦ 87	-	-	-	1½	1½	2	2	3	3	NA
	5000	2193	700	♦ 47	♦ 63	♦ 79	♦ 94	♦ 109	■ 126	■ 131	-	2	2	3	3	3	5	5
	6000	2632	725	♦ 49	♦ 69	♦ 89	♦ 109	■ 126	■ 149	■ 165	-	3	3	5	5	5	5	5
	7000	3070	735	♦ 66	♦ 86	♦ 109	■ 126	■ 149	■ 170	■ 180	-	5	5	5	5	7½	7½	7½
	8000	3509	735	♦ 75	♦ 99	■ 126	■ 149	■ 170	■ 180	-	-	5	7½	7½	7½	7½	7½	NA
SBE-215	6000	1202	1200	♦ 49	♦ 69	♦ 89	♦ 103	-	-	-	-	1½	3	3	5	5	5	7½
	7000	1403	1200	♦ 66	♦ 86	♦ 109	♦ 134	-	-	-	-	2	3	3	5	5	5	7½
	8000	1603	1200	♦ 75	♦ 99	♦ 126	■ 149	■ 175	-	-	-	3	3	5	5	5	7½	7½
	9000	1804	1220	♦ 79	♦ 109	■ 138	■ 170	■ 199	■ 222	-	-	3	5	5	5	7½	7½	10
	10000	2004	1225	♦ 89	♦ 126	■ 149	■ 189	■ 218	■ 253	■ 262	-	3	5	5	7½	7½	7½	10
	12000	2405	1230	♦ 99	■ 149	■ 189	■ 218	■ 258	■ 298	■ 333	-	5	7½	7½	7½	7½	10	10
	14000	2806	1230	♦ 119	■ 173	■ 218	■ 258	■ 309	■ 352	-	-	7½	7½	10	10	10	10	NA
	16000	3206	1275	■ 149	■ 199	■ 238	■ 294	■ 352	-	-	-	10	10	10	10	NA	NA	NA
SBE-218	10000	1745	1720	♦ 89	♦ 126	♦ 149	■ 189	■ 218	■ 245	-	-	3	3	5	5	5	NA	NA
	12000	2094	1730	♦ 99	♦ 149	♦ 189	■ 218	■ 258	■ 298	■ 325	-	5	5	5	7½	7½	7½	10
	14000	2443	1730	♦ 119	■ 173	■ 218	■ 258	■ 309	■ 346	■ 391	-	5	7½	7½	7½	7½	10	10
	16000	2792	1775	♦ 149	■ 199	■ 238	■ 294	■ 346	■ 391	-	-	7½	7½	10	10	10	15	15
	18000	3141	1775	■ 149	■ 218	■ 276	■ 338	■ 391	-	-	-	10	10	15	15	15	15	15
	20000	3490	1800	■ 173	■ 238	■ 309	■ 378	■ 391	-	-	-	15	15	15	15	15	20	20
SBE-222	18000	1929	2730	♦ 149	♦ 218	♦ 276	♦ 338	♦ 397	♦ 438	♦ 481	-	10	10	15	15	15	15	20
	20000	2144	2730	♦ 173	♦ 238	♦ 309	♦ 378	♦ 438	♦ 497	♦ 553	-	10	15	15	15	15	15	20
	22000	2358	2780	♦ 199	♦ 276	♦ 338	♦ 397	♦ 477	♦ 553	♦ 575	-	15	15	15	15	20	20	20
	24000	2572	2800	♦ 218	♦ 298	♦ 378	♦ 438	♦ 517	♦ 575	-	-	15	15	20	20	20	20	25
	26000	2787	2800	♦ 238	♦ 319	♦ 397	♦ 477	♦ 575	-	-	-	15	20	20	20	20	25	25
	28000	3001	2850	♦ 258	♦ 346	♦ 438	♦ 517	♦ 575	-	-	-	20	20	20	25	25	25	NA
	30000	3215	2875	♦ 276	♦ 378	♦ 467	♦ 575	-	-	-	-	20	25	25	25	25	NA	NA
	32000	3430	2900	♦ 298	♦ 397	♦ 497	♦ 575	-	-	-	-	25	25	25	NA	NA	NA	NA

See notes at bottom of table on next page.

SBE SERIES SELECTION TABLE

Model	Air Delivery - SCFM	Discharge Velocity - FPM	Approx. Shipping Weight - Lbs	NOMINAL AIR TEMPERATURE RISE IN °F AND STEPS OF CONTROL								MOTOR HORSPOWER						
				21-30 2	31-40 3	41-50 3	51-60 4	61-70 4	71-80 5	81-90 5	91-100 5	TOTAL STATIC PRESSURE(SEE NOTES BELOW						
				KW HEATING CAPACITY AND AVAILABLE VOLTAGE								3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"
SBE-227	28000	1713	3600	■ 258	■ 346	■ 438	■ 517	■ 616	● 708	● 744	-	10	10	15	15	15	20	25
	30000	1835	3620	■ 276	■ 378	■ 467	■ 553	■ 656	● 756	▲ 808	-	10	15	15	15	20	20	25
	35000	2141	3685	■ 309	■ 438	■ 553	■ 656	■ 756	● 875	▲ 973	-	15	15	20	20	25	25	30
	40000	2446	3685	■ 378	■ 497	■ 616	■ 756	▲ 875	▲ 973	-	-	20	20	25	25	25	30	40
	45000	2752	3720	■ 397	■ 553	● 708	▲ 835	▲ 973	-	-	-	25	25	30	30	30	40	40
	50000	3058	3810	■ 438	■ 616	● 756	▲ 947	▲ 973	-	-	-	30	40	40	40	40	50	50
	55000	3364	3565	■ 497	■ 692	● 835	▲ 973	-	-	-	-	40	40	50	50	50	50	NA
	60000	3670	3900	■ 553	● 756	◆ 947	▲ 973	-	-	-	-	50	50	50	NA	NA	NA	NA
SBE-233	40000	1888	5100	■ 378	■ 497	■ 616	■ 756	● 875	● 986	▲ 1026	-	15	15	20	20	20	25	30
	45000	2124	5100	■ 397	■ 553	■ 708	■ 835	● 986	● 1134	▲ 1211	-	15	20	20	25	25	30	40
	50000	2360	5140	■ 438	■ 616	■ 756	■ 947	▲ 1107	▲ 1262	▲ 1360	-	20	25	25	30	30	40	40
	55000	2596	5200	■ 497	■ 692	■ 835	■ 986	▲ 1211	▲ 1373	▲ 1483	-	25	30	30	40	40	40	50
	60000	2832	5235	■ 553	■ 756	■ 947	▲ 1134	▲ 1313	▲ 1483	-	-	30	40	40	40	40	50	50
	65000	3067	5330	■ 616	■ 813	▲ 986	▲ 1211	▲ 1393	▲ 1483	-	-	40	40	40	50	50	50	60
	70000	3303	5330	■ 656	■ 875	▲ 1107	▲ 1313	▲ 1483	-	-	-	40	50	50	50	50	60	CHO
	75000	3539	5380	■ 696	■ 947	▲ 1134	▲ 1393	▲ 1483	-	-	-	50	60	60	60	CHO	CHO	NA

- NOTES:**
1. KW heating values are based on voltages shown below. Units will operate satisfactorily at N.E.C. standard voltages with slight reduction in heating capacity. ■ 208, 240 or 480 V., 3 Ph ◆ 240 V., 1 Ph. or 208, 240 or 480 V., 3 Ph. ● 240 or 480 V., 3 Ph ▲ 480 V., 3 Ph.
 2. To convert KW to MBH multiply by 3.412 Air Temperature Rise = MBH x 1000/SCFM x 1.08.
 3. Use Total Static Pressure column that will overcome total system resistance. Approximate pressure drop for component and accessory items: heater element 3/8", filter (dirty) 1/4", intake hood 1/8", birdscreen 1/8", discharge louver 1/8". Damper resistance may be ignored.
 4. Refer to fan curves in Bulletin SB-1 for blower RPM and brake horsepower.
 5. Maximum KW per sq. foot – 28.9 KW per U.L.
 6. NA – Not Available. CHO – Contact Home Office.

MODEL DESIGNATION

SBEX - XXX -X - XXX

Control System:

H – Space Heating
M – Make-up Air
V – Heating & Ventilating

SBE Blower Model:

112
thru
233

Air Volume:

SCFM/1000

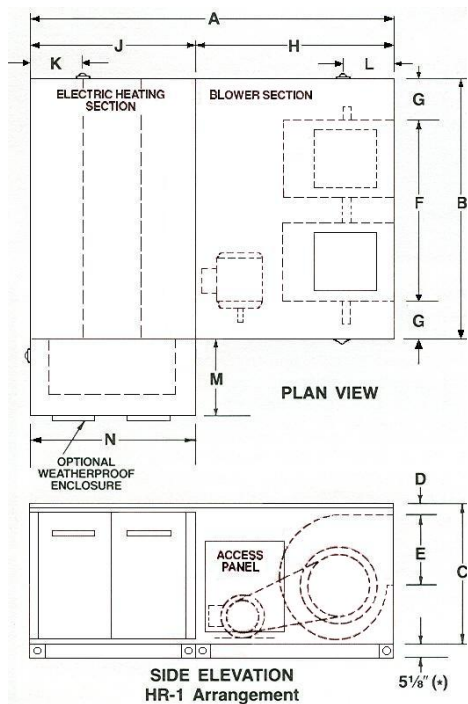
Heating Capacity:

KW

EXAMPLE : SBEM-222-24-438 Electric make-up air unit with SB-222 blower delivering 24,000 SCFM and 438 KW. Per note 2 of Selection Table, MBH = 438 x 3.412 = 1494.4 and Air Temperature Rise = 1494.4 x 1000/24,000 x 1.08 = 57.7°F

TO SIZE OPTIONAL MAIN DISCONNECT SWITCH: Add amps from ITEM A, B, and C from table below, then multiply by 1.25												
ITEM	SOURCE	AMPS										
A	Heating Element	Use KW from selection table, then calculate: $\frac{1 \text{ ph.}}{\text{Amps}} = \frac{\text{KW} \times 1000}{\text{Voltage}} \quad \text{or} \quad \frac{3 \text{ ph.}}{\text{Amps}} = \frac{\text{KW} \times 1000}{\text{Voltage} \times 1.73}$										
B	Blower Motor	MOTOR HP		1/3	1/2	3/4	1	1 ½	2	3	5	7 ½
		AMPS	240V. 1 Ph.	3.6	4.9	6.9	8.0	10	12	17	28	NA
		AMPS	480V. 3 Ph.	0.8	1.1	1.6	2.1	3	3.4	4.8	7.6	11
		MOTOR HP		10	15	20	25	30	40	50	60	75
		AMPS	480V. 3 Ph.	14	21	27	34	40	52	65	77	96
NOTE: 240V. 3 Ph. AMPS = 480V. 3 Ph. AMPS x 2 and 208V. 3 Ph. AMPS = 480V. 3 Ph. AMPS x 2.2												
C	Controls	Amp = $\frac{250 \text{ VA (std. Packages)}}{\text{Line Voltage}}$ or CHO – for Special Control Packages										

HORIZONTAL MODEL BASE UNIT



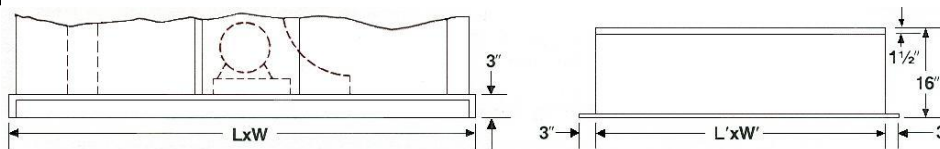
DIMENSIONS															
SBE MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
112	76 3/8	33	26 1/2	2 1/2	13 1/2	16 1/4	8 3/8	36 3/8	40	2 3/8	11	26	39 3/4	1 3/8	
115	83 3/4	40	35	2 1/2	16 1/2	19 1/4	10 1/2	43 3/4	40	12 1/2	13 1/2	26	39 3/4	1 1/2	
215	88 3/8	75 1/2	35	2 1/2	18 1/4	55 1/2	9 1/2	48 1/2	40	12 1/2	15 1/2	26	39 3/4	1 1/2	
218	89 3/8	79 1/2	39	2 1/2	18 1/2	58 1/2	10 1/2	49 1/2	40	12 1/2	12 1/2	26	39 3/4	1 1/2	
222	107 1/2	96 1/2	49	4	24 1/4	76 1/2	10 1/4	67 1/2	40	—	—	32	39 3/4	8	
227	123	114 3/8	58	5 1/2	34 1/2	88 1/2	12 1/4	83	40	—	—	32	39 3/4	8	
233	129 1/2	141	67	4	34 1/2	115	13	89 1/2	40	—	—	32	39 3/4	8	

All dimensions in inches.

NOTES:

- SBE-112 through SBE-218 have combination lifting and hanging lugs.
 - SBE-222, SBE-227 and SBE-233 have channel base frames with combination lifting-hanging lugs
- (*) Base channel on SBE-222, 227 and 233 only.

OPTIONAL ROOF CURB



Curb Adapter Frame *				
MODEL	112	115	215	218
L	82 3/8	89 3/8	93 3/8	94 3/8
W	34	41	76 3/8	80 3/8

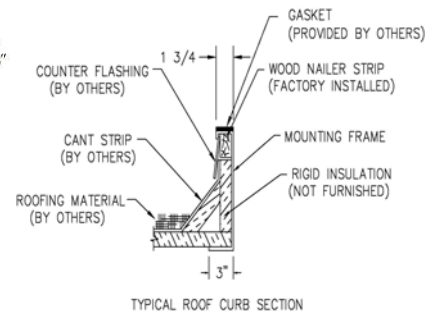
All dimensions in inches

*Channel frame on SBE-222, 227 233 and 240 mounts directly to roof curb.

NOTE: Duct adapter for HR-2 curb mounted units is furnished as standard equipment when Hastings curbs are supplied

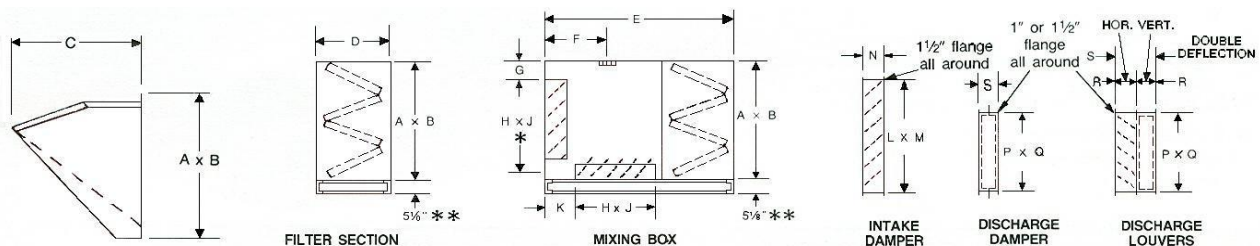
Roof Curb							
MODEL	112	115	215	218	222	227	233
L'	81 1/8	87 7/8	92 3/8	93 3/8	107 1/8	123	129
W'	32 1/2	39 1/2	74 3/8	78 3/8	96 3/8	114 1/4	141

All dimensions in inches



TYPICAL ROOF CURB SECTION

ACCESSORY ITEMS



(*) Use Intake Damper (LxM) for SB-222, 227 & 233 (**) Base Channel on SB-222, 227 & 233 Only.

MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	FILTERS – No. & Size
SBE-112	26 1/2	33	35 1/2	24 3/4	39 1/2	8 3/8	7 1/4	12	27	4 3/8	23 3/8	29 3/8	8 3/8	13 1/2	16 1/4	4"	12"	4)16 x 20 x 2
SBE-115	35	40	43 3/4	26	44 3/4	7	9 1/2	16	30 1/2	4 3/4	31 1/8	36 3/8	8 3/8	16 3/8	19 1/4	4"	12"	8)20 x 20 x 2
SBE-215	35	75 1/2	43 3/4	26	61 1/4	18 1/2	3	29	64	7 3/8	31 1/8	72	8 3/8	18 1/4	55 1/2	4"	12"	12)20 x 25 x 2
SBE-218	39	79 1/2	47 1/4	26	61 1/4	18 1/2	5	29	68	7 3/8	35 1/8	76	8 3/8	18 3/8	58 1/2	4"	12"	12)20 x 25 x 2
SBE-222	49	96 1/2	56 1/2	30	76 3/4	—	—	29 3/8	87 1/2	13 3/8	45 1/8	93 3/8	8 3/8	24 1/4	76	4"	12"	24)16 x 25 x 2
SBE-227	58	114 3/8	59 3/8	30 3/8	89 3/8	—	—	40 3/8	105 1/4	13 3/8	54 1/8	111 1/4	8 3/8	34 1/4	89	4"	12"	30)20 x 25 x 2 & 6)16 x 25 x 2
SBE-233	67	141	58 3/8	30 3/4	99 3/4	—	—	51 3/8	131 1/4	13 3/8	63 1/8	137 3/8	8 3/8	34 1/4	115	4"	12"	49)20 x 25 x 2

All dimensions in inches.

FAN PERFORMANCE CURVES

The following fan curves were developed from test data taken in accordance with AMCA standards. Belt losses are not included.

FAN SELECTION EXAMPLE

PROBLEM:

Select SB ventilating unit and motor horsepower to deliver 6,000 SCFM at 1.50" w.c. total static pressure. Desired motor type is single speed, 1800 RPM, dripproof.

SOLUTION:

- Check fan performance curves for smallest SB model which will handle the specified air flow and static pressure. This proves to be the SB-115.
- Locate 6,000 SCFM on the horizontal axis of the SB-115 fan performance curve and move vertically to the point of intersection with the 1.50" w.c. total static pressure line. This defines the operating point: fan speed will be 920 RPM and the motor will draw 3.5 HP. The next larger size of motor, 5 HP, is required.
- From the Reference Table on this page, we find that the 5 HP, 1800 RPM, dripproof motor has a 184T frame size. This size is smaller than the maximum motor frame size of 213T shown on SB-115 fan performance curve, so selection is acceptable.
- From the SB-115 performance curve, the fan outlet velocity is shown to equal $\text{SCFM}/2.28$. At the operating point of the selected unit, the outlet velocity is $6,000/2.28$ or 2,632 FPM.

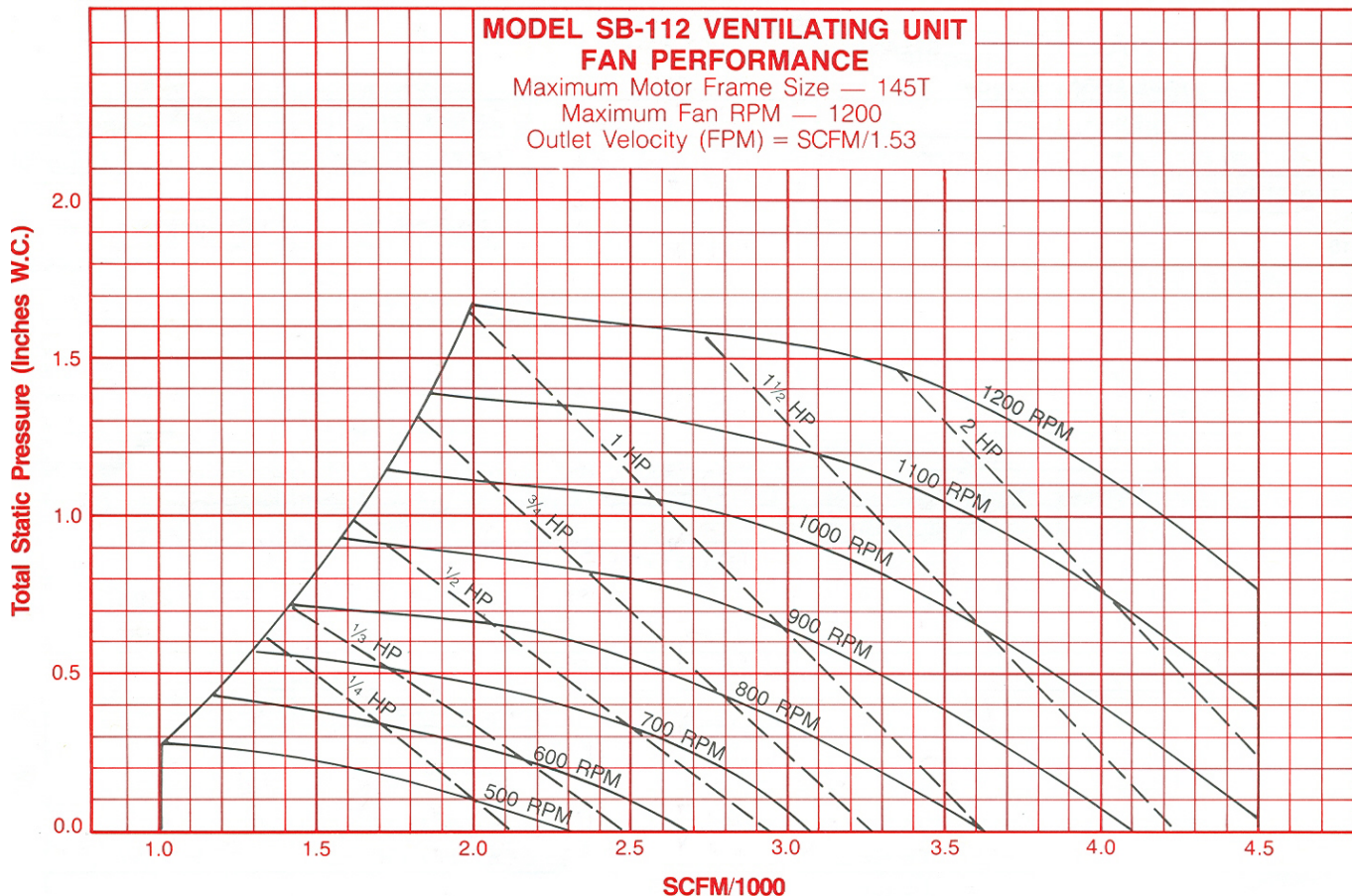
MOTOR FRAME SIZE REFERENCE TABLE

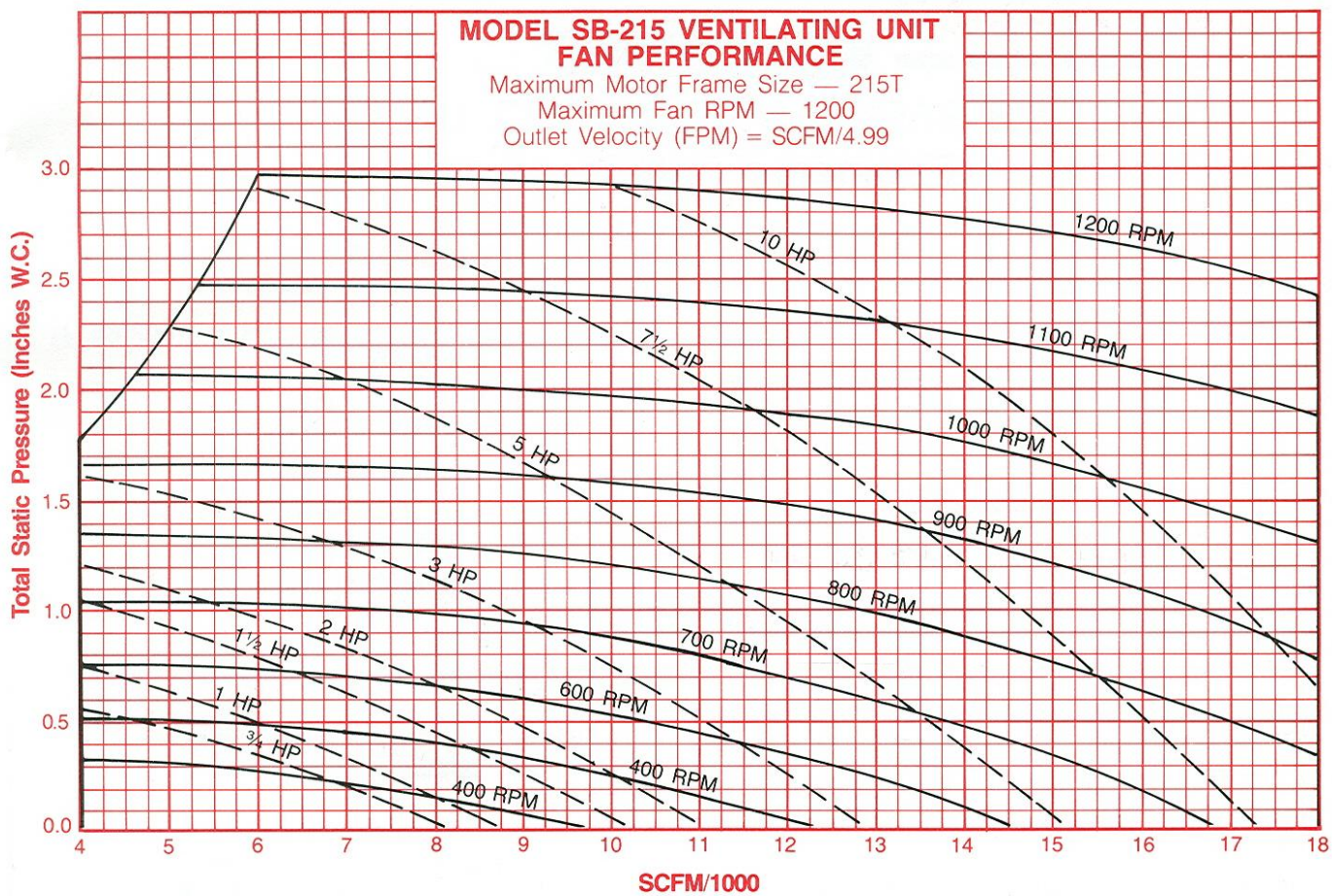
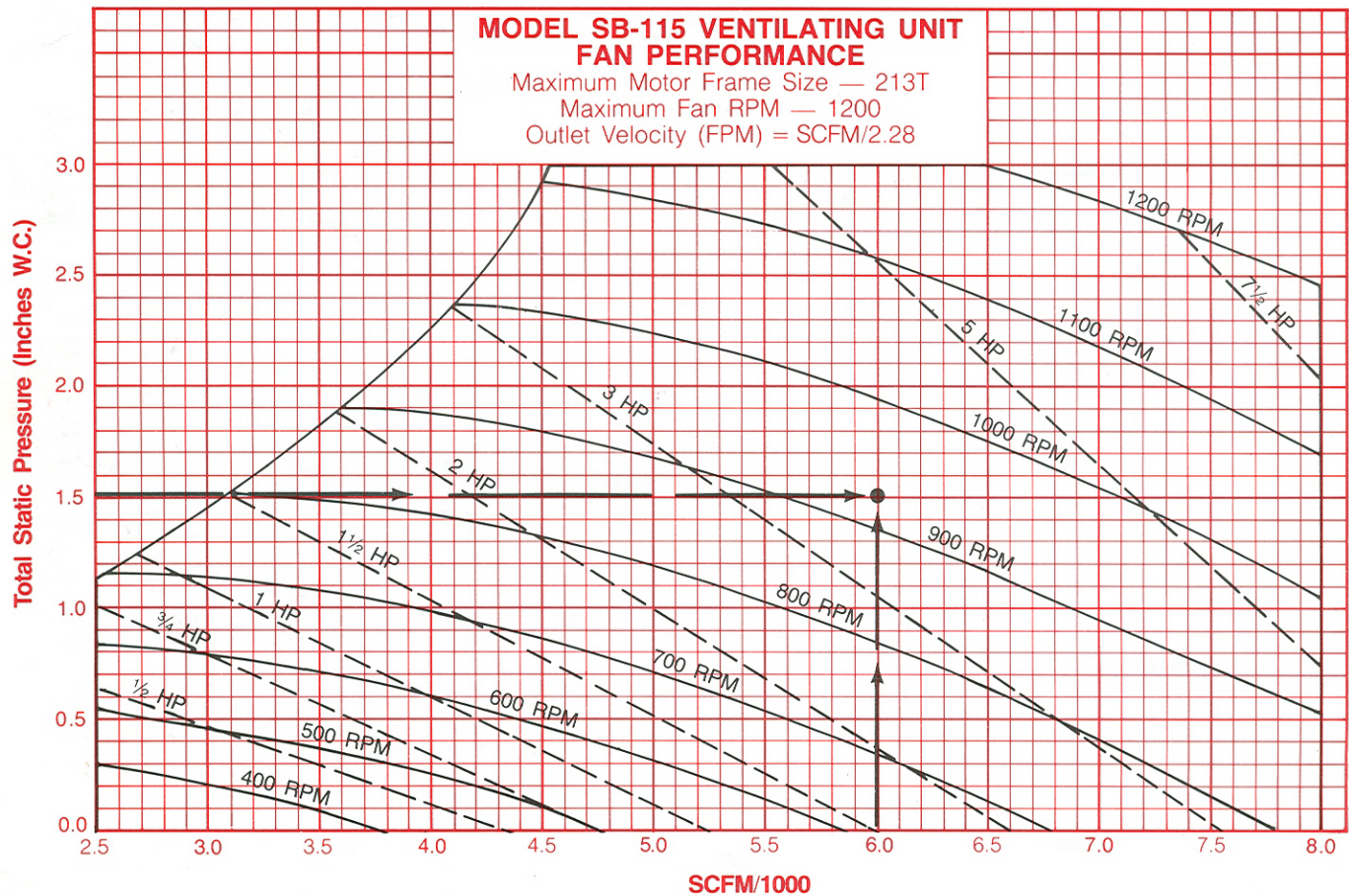
Motor HP	MOTOR TYPE				
	1800 RPM Dripproof or TEFC	1800/900 RPM One Winding		1800/1200RPM Two Winding	
		Drip-proof	TEFC	Drip-proof	TEFC
1.5	145T	145T	145T	145T	145T
2	145T	145T	145T	182T	182T
3	182T	182T	182T	184T	184T
5	184T	184T	184T	215T	215T
7.5	213T	213T	215T	254T	254T
10	215T	215T	215T	256T	256T
15	254T	—	—	—	—
20	256T	—	—	—	—
25	284T	—	—	—	—
30	286T	—	—	—	—
40	324T	—	—	—	—
50	326T	—	—	—	—
60	364T	—	—	—	—
75	365T	—	—	—	—
100	404T	—	—	—	—

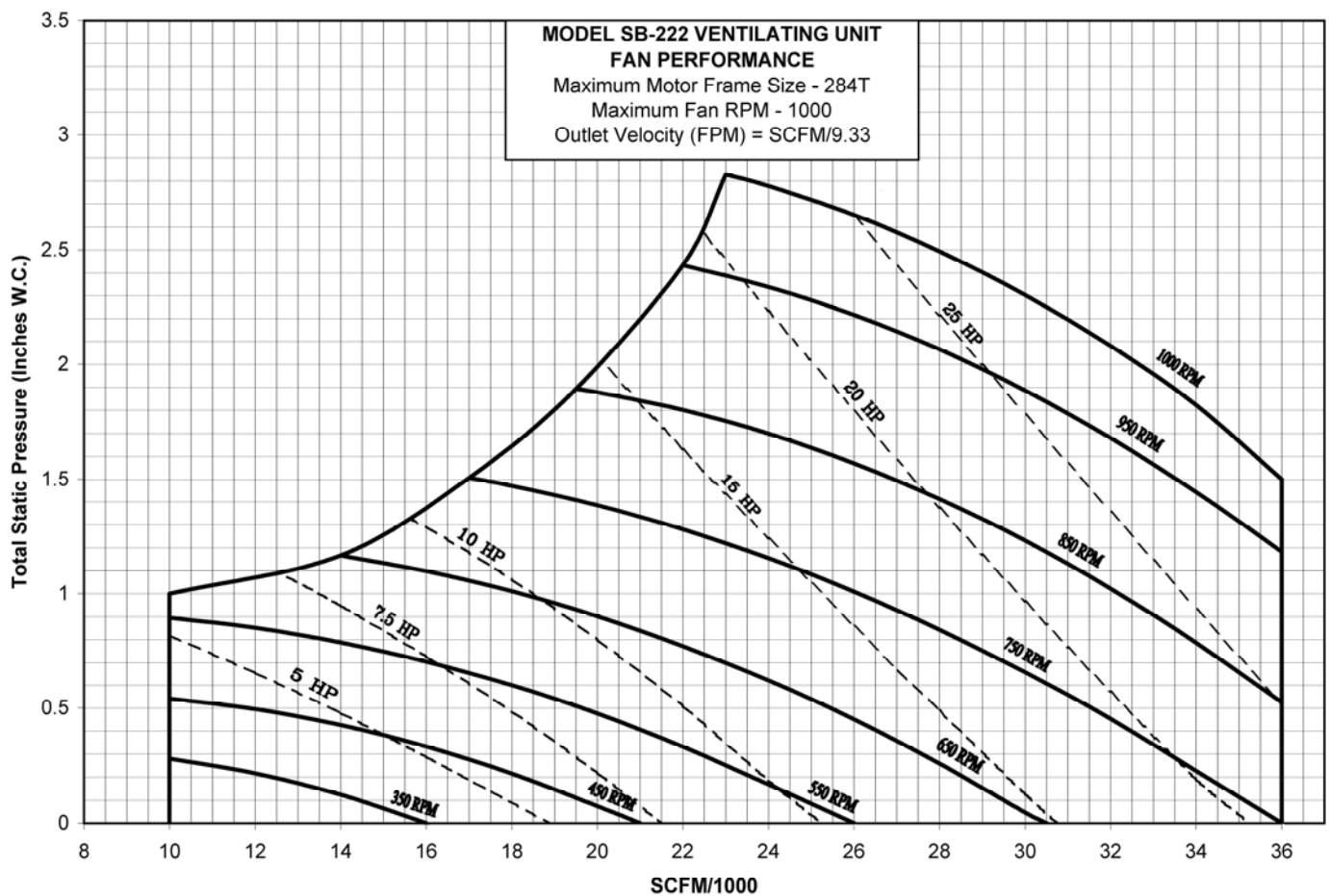
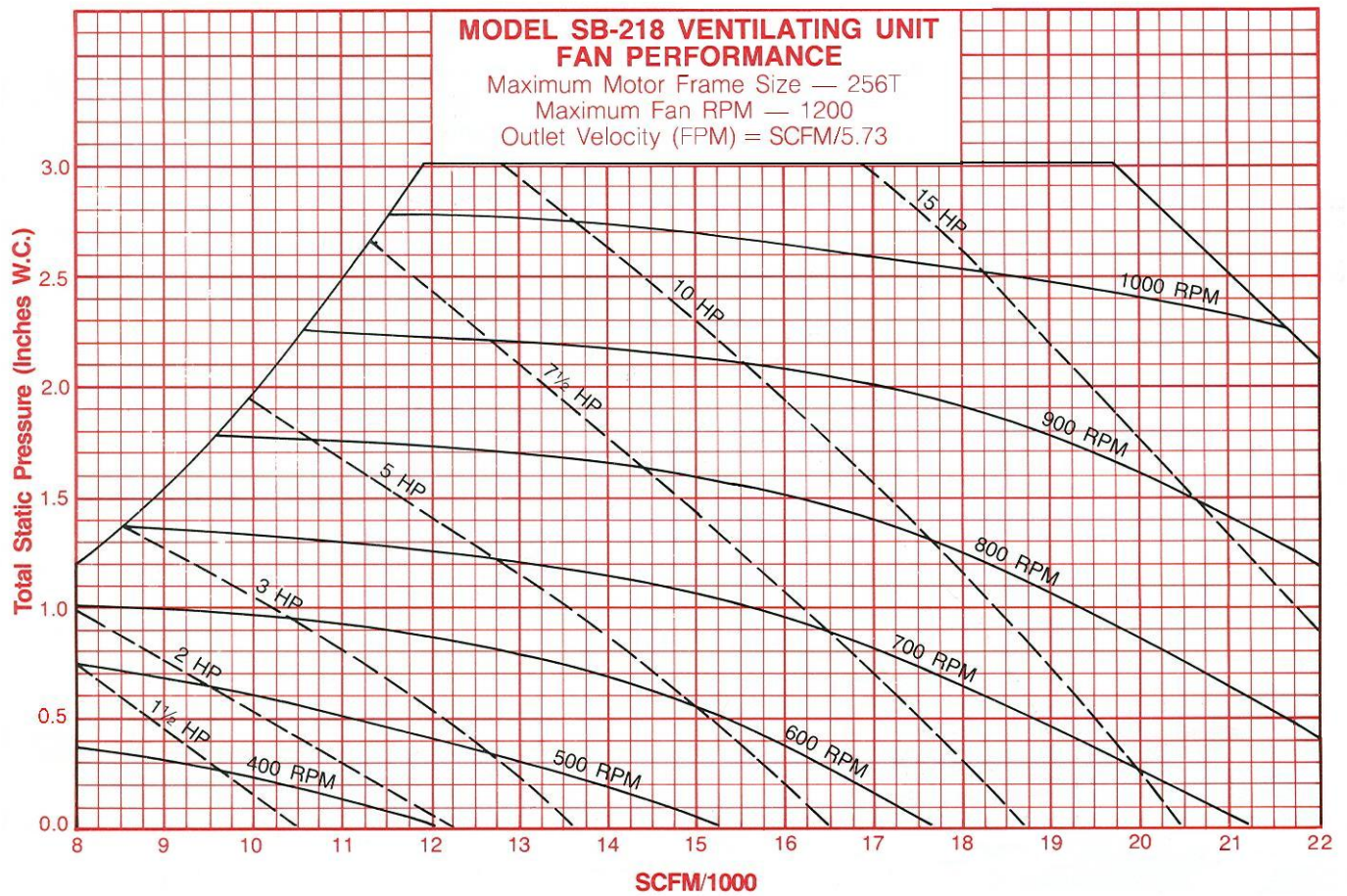
NOTES: 1) All motors three phase.

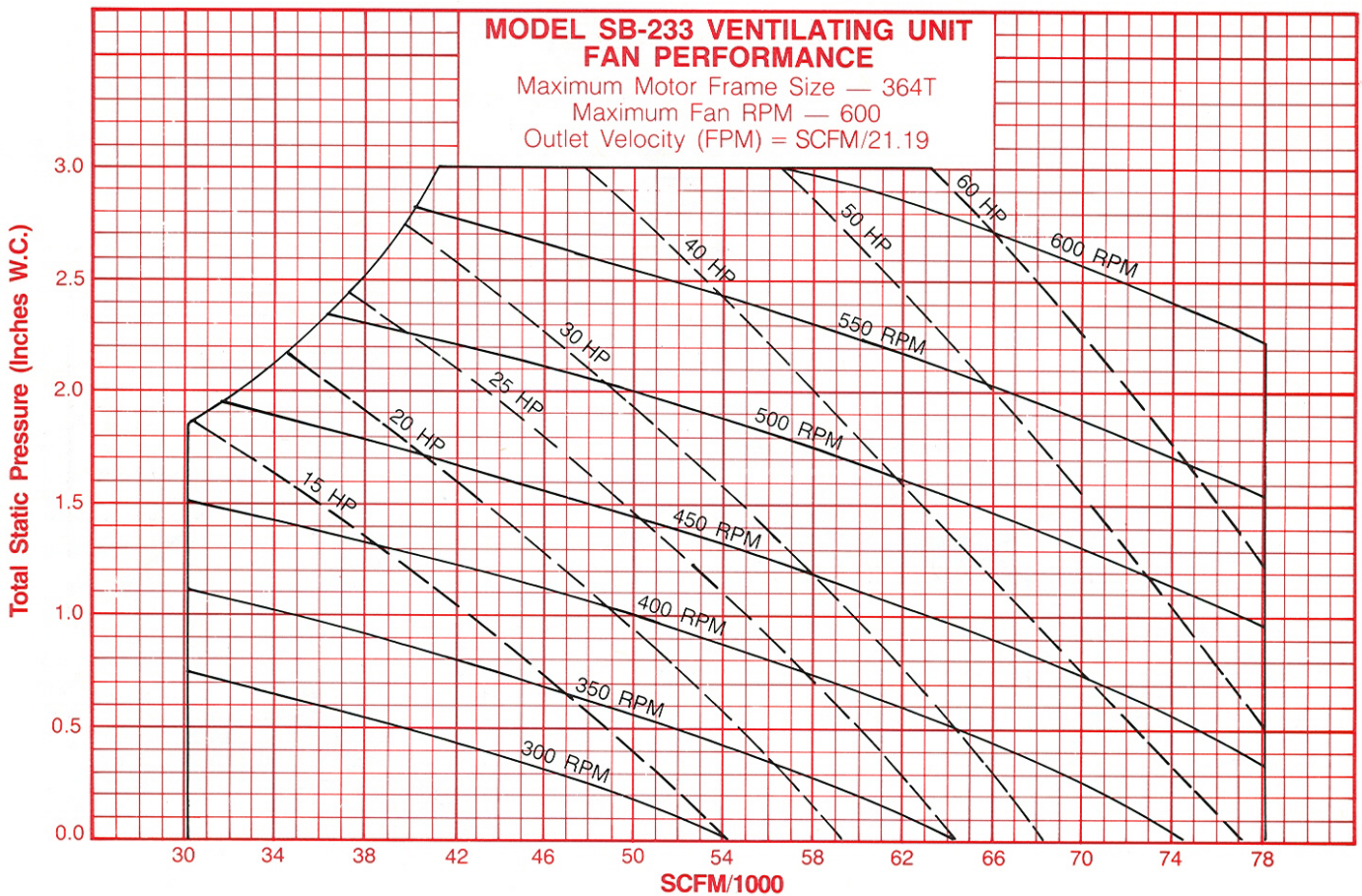
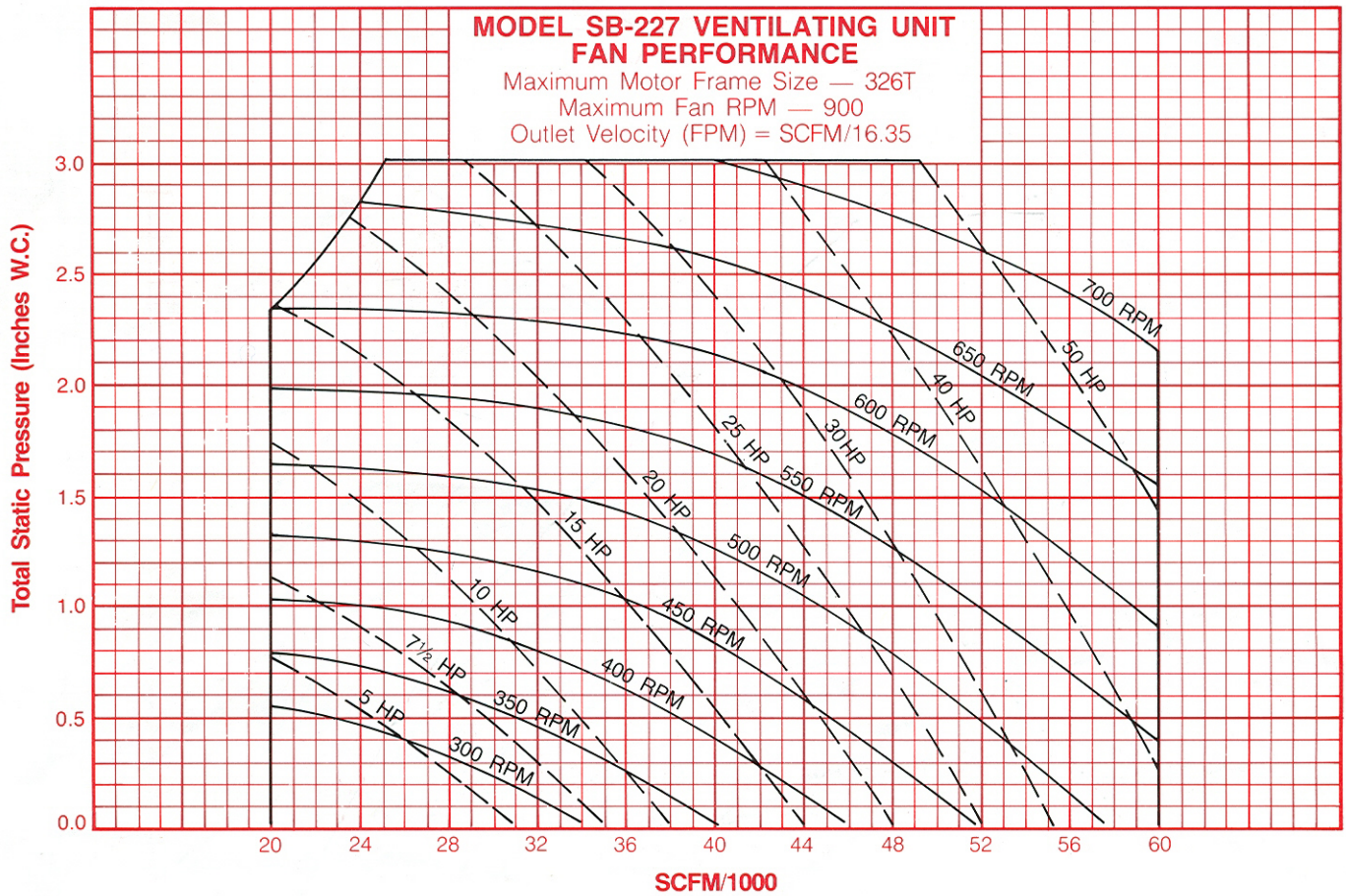
2) Motors less than 1.5 HP have frame sizes that will fit within any SB model ventilating unit cabinet.

3) SB-240 maximum frame size, 405T. For larger frame sizes consult factory.









SBE SERIES ELECTROFLO HEATING SYSTEM

Engineers Specifications

Furnish and install the following Hastings electric heating system.

Model No.	KW Heating Value	SCF M	Total S.P.	Motor HP	Supply Voltage and Phase
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Blower Section:

- A. Blower wheels shall be statically and dynamically balanced forwardly curved, double width, double inlet, class 1.
- B. Blower wheels shall be mounted on solid turned ground shaft with keyway for driven shaft.
- C. Bearings shall be ball bearing, self-aligning, 200,000 hour lubricatable, pillow-block or flange mounted.
- D. Blower housings, bearings and adjustable motor base shall be mounted on a reinforced frame to insure rigidity and quiet operation.
- E. The driver and driven sheaves shall be of the keyed hub type. The driven sheave shall be of a fixed pitch diameter and the driver sheave shall be of a variable pitch diameter through 10 HP and fixed pitch above 10 HP. V-belt drives shall be sized for 135% of motor horsepower.
- F. Cabinet shall be insulated and constructed of high quality (16) (14) gauge aluminized steel to insure long rust-free life.
- G. Access panels shall be provided to allow easy access to motors and filters (if ordered).
- H. Outside surface of cabinet shall be primed and finished with a coat of enamel.

Heater Section:

- A. The heating section shall be furnished with a UL Listed electric open coil heater. The elements shall be constructed of 80% nickel and 20% chromium with steps arranged to prevent stratification when operating at less than full capacity.
- B. Coil terminals shall be of stainless steel. Terminal insulators and bracket bushings shall be constructed of ceramic and securely positioned. Terminals shall be machine crimped to coil.
- C. Frame shall be constructed of heavy gauge galvanized steel to assure structural rigidity and have vertical galvanized steel supports with stiffening ribs and gussets spaced no more than 4" apart, spot welded to the casing.
- D. A hinged, NEMA 1 terminal box shall be provided to assure that heating elements and safety controls are in the airstream.

- E. Safety devices shall include a disc type automatic reset thermal cutout for over-temperature protection. For secondary protection, a sufficient number of heat limiters in the power lines shall de-energize elements if the primary cutout fails. All safety devices shall be serviceable through the terminal box without removing the heating coil from the electric heating section.
- F. Built-in components shall include de-energizing contactors, transformer with primary fusing, pressure-type airflow switch and connecting terminal block(s) for wiring of power supply. All fusing shall be per UL and NEC.
- G. The electric heater shall be mounted in an aluminized steel heating section cabinet which has been primed and coated with enamel to match the blower section.

Motor:

A Premium Energy Efficient T-frame, ODP, 1800 RPM prelubricated ball bearing type motor shall be furnished for voltage as scheduled.

Temperature Control

Unit shall include (Standard-step) control system to program equipment in accordance with (SBEH) (SBEM) (SBEV) operating sequence. **(Insert desired control system from Page 1 of this bulletin.)**

Electric Controls:

The following additional electrical controls shall be furnished as part of this heating system:

- "No Glo" safeguard system.
- Air proving switch.
- Control transformer, 115 volts.
- Motor starter.
- NEMA 1 control box.
- Remote control station with operating switches and indicating lights.

Assembly:

The system shall be factory assembled and wired with the exception of controls that are remote to the unit.

Options and Accessories:

The following items are to be furnished. **(Insert desired items from page 3 of this bulletin.)**

In order to maintain our policy of continuous product improvement, we reserve the right to change prices, specifications, ratings or dimensions without notice or obligation.



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