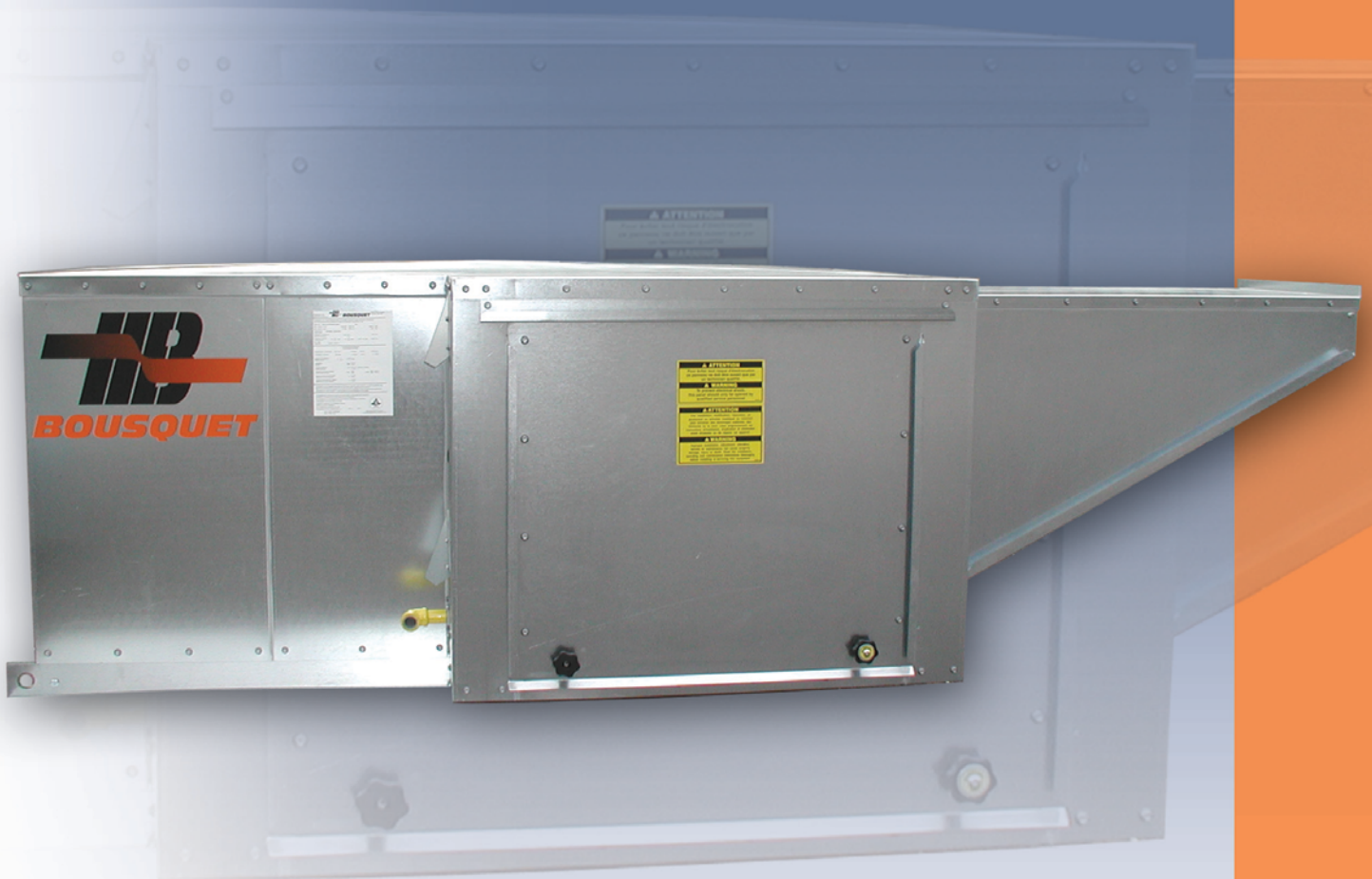


DIRECT GAS-FIRED MAKE-UP AIR HEATERS



SDM(E) SERIE
OUTDOOR



SPECIFICATIONS MANUAL



MANUFACTURED BY

BOUSQUET

BROTHERS LIMITED

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MODEL SDM - E SERIES

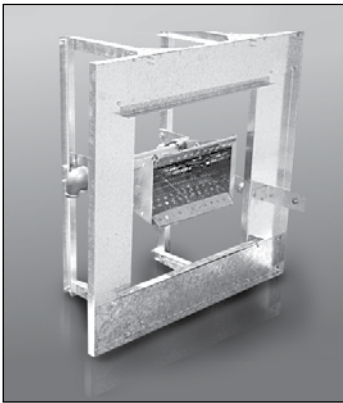
DIRECT GAS-FIRED MAKE-UP AIR HEATERS

The **E series** of the SDM models by Bousquet Brothers Limited consists of direct gas-fired make-up heaters of modular design, which are compact and easy to maintain. They can also be delivered in a short period of time. This series offers a range of flow rates of air up to 25 000 CFM, 3300 MBTU/h capacity and temperature rise of 120 °F (65°C).

A-CONSTRUCTION

The E series units are built with Galvalume™ or 20 gauge galvanized steel insulated with 1-inch neoprene and mounted on a 14 gauge galvanized steel structure with integrated lifting holes. Galvalume™ steel is an aluminum-zinc alloy offering the following characteristics:

- Excellent corrosion resistance
- Low-sheen surface finish with small even flakes
- Esthetic finish for years of use
- No paint required

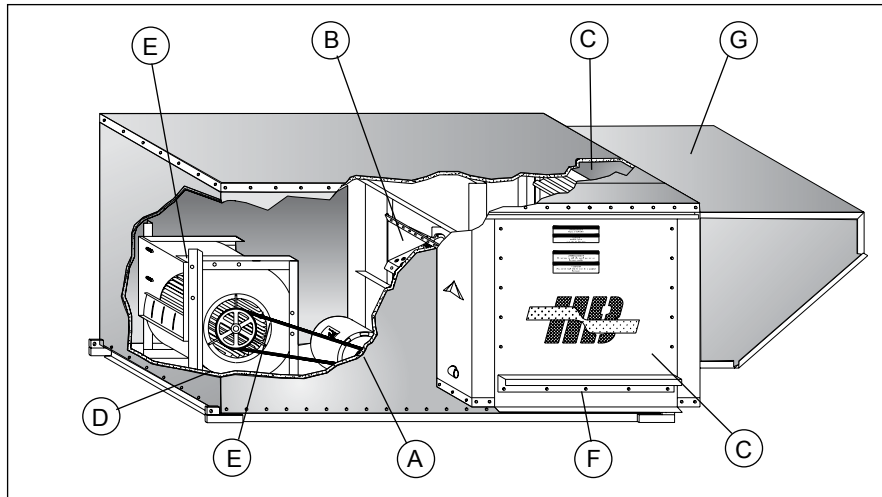


B-DIRECT GAS-FIRED BURNER

- Stainless steel burner
- 25 :1 turndown ratio
- Flame rod detector

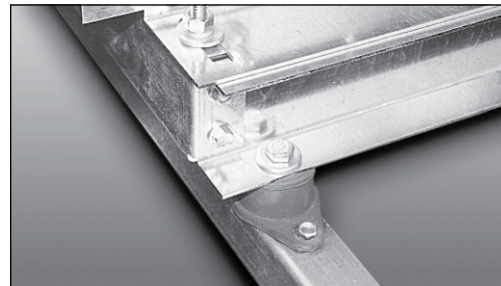
C-CONTROLS AND ELECTRICITY

- Main power supply (575, 460, 208 volts /3 phases /60 Hz)
- Connecting terminal block
- Modulation with integrated temperature selector (MAXITROL series 14)
- Flame monitor with trouble diagnostic warning lights.
- Magnetic starter and thermal overload protection for the motor
- Air temperature high limit switches
- Air pressure low and high limit switches
- Fresh air damper actuator



D- VIBRATION ISOLATORS

The blower and motor are installed on a single integral base and mounted on vibration isolators to reduce sound and vibration transmission to the building.

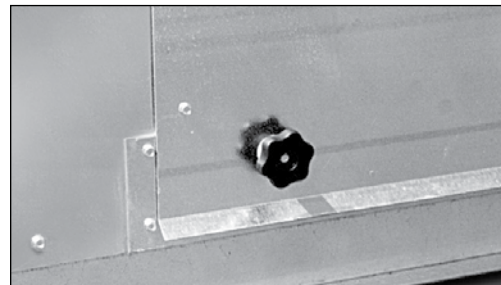


E-BLOWER AND MOTOR

- DWDI forward-curved blade blower
- Shaft on ball bearings or bushings
- One-speed, drip proof, energy efficient motor
- Adjustable motor base

F- ACCESS DOORS

Two wide quick-opening access doors allow for easy inspection and maintenance of the mechanical and electrical components of the unit.



G-FRESH AIR INTAKE

The unit includes a fresh air intake with a bird screen and integrated 2-inch thick filters.

H-TESTS AND INSPECTION

All the units are plant tested to ensure their proper operation. A series of inspections at all stages of production ensure units of prime quality.

Model	Air delivery SCFM	Velocity FPM	Burner capacity required (MBTU/H) Temperature rise (°F)											Motor (cv) External static pressure (w. c.)*						
			70	75	80	85	90	95	100	105	110	115	120	0"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"
25-E (9 - 9)	1500	1470	116	124	132	140	149	157	165	173	182	190	198	1/2	3/4	3/4	1	1	1	-
	2000	1960	154	165	176	187	198	209	220	231	242	253	264	1	1	1 1/2	1 1/2	1 1/2	1 1/2	2
	2500	2450	193	206	220	234	248	261	275	289	303	316	330	1 1/2	1 1/2	2	2	2	2	3
	3000	2941	231	248	264	281	297	314	330	347	363	380	396	2	2	3	3	3	3	3
50-E (12 - 12)	3000	2083	231	248	264	281	297	314	330	347	363	380	396	1 1/2	1 1/2	1 1/2	2	2	2	3
	3500	2430	270	289	308	327	347	366	385	404	424	443	462	1 1/2	2	2	2	3	3	3
	4000	2777	308	330	352	374	396	418	440	462	484	506	528	2	2	3	3	3	3	5
	4500	3124	347	371	396	421	446	470	495	520	545	569	594	3	3	3	3	5	5	5
	5000	3472	385	413	440	468	495	523	550	578	605	633	660	-	3	5	5	5	5	5
75-E (15 - 15)	5000	2487	385	413	440	468	495	523	550	578	605	633	660	2	3	3	3	3	5	5
	5500	2736	424	454	484	514	545	575	605	635	666	696	726	3	3	3	5	5	5	5
	6000	2985	462	495	528	561	594	627	660	693	726	759	792	3	3	5	5	5	5	5
	6500	3233	501	536	572	608	644	679	715	751	787	822	858	-	5	5	5	5	5	7 1/2
	7000	3482	539	578	616	655	693	732	770	809	847	886	924	-	5	5	5	7 1/2	7 1/2	7 1/2
100-E (18 - 18)	7000	2439	539	578	616	655	693	732	770	809	847	886	924	5	5	5	5	5	7 1/2	7 1/2
	7500	2613	578	619	660	701	743	784	825	866	908	949	990	5	5	5	5	7 1/2	7 1/2	7 1/2
	8000	2787	616	660	704	748	792	836	880	924	968	1 012	1 056	5	5	7 1/2	7 1/2	7 1/2	7 1/2	10
	8500	2961	655	701	748	795	842	888	935	982	1 029	1 075	1 122	5	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	10
	9000	3135	693	743	792	842	891	941	990	1 040	1 089	1 139	1 188	5	7 1/2	7 1/2	7 1/2	7 1/2	10	10
	9500	3310	732	784	836	888	941	993	1 045	1 097	1 150	1 202	1 254	5	7 1/2	7 1/2	7 1/2	10	10	10
	10000	3484	770	825	880	935	990	1 045	1 100	1 155	1 210	1 265	1 320	-	7 1/2	10	10	10	10	10
150-E (20 - 20)	10000	2380	770	825	880	935	990	1 045	1 100	1 155	1 210	1 265	1 320	5	5	7 1/2	7 1/2	7 1/2	7 1/2	10
	11000	2619	847	908	968	1 029	1 089	1 150	1 210	1 271	1 331	1 392	1 452	7 1/2	7 1/2	7 1/2	7 1/2	10	10	10
	12000	2857	924	990	1 056	1 122	1 188	1 254	1 320	1 386	1 452	1 518	1 584	7 1/2	7 1/2	10	10	10	10	15
	13000	3095	1 001	1 073	1 144	1 216	1 287	1 359	1 430	1 502	1 573	1 645	1 716	7 1/2	10	10	10	15	15	15
	14000	3333	1 078	1 155	1 232	1 309	1 386	1 463	1 540	1 617	1 694	1 771	1 848	10	10	15	15	15	15	15
200-E (25 - 25)	15000	2235	1 155	1 238	1 320	1 403	1 485	1 568	1 650	1 733	1 815	1 898	1 980	7 1/2	7 1/2	10	10	10	15	15
	16000	2384	1 232	1 320	1 408	1 496	1 584	1 672	1 760	1 848	1 936	2 024	2 112	7 1/2	10	10	10	10	15	15
	17000	2533	1 309	1 403	1 496	1 590	1 683	1 777	1 870	1 964	2 057	2 151	2 244	7 1/2	10	10	10	15	15	15
	19000	2831	1 463	1 568	1 672	1 777	1 881	1 986	2 090	2 195	2 299	2 404	2 508	10	10	15	15	15	15	15
	20000	2980	1 540	1 650	1 760	1 870	1 980	2 090	2 200	2 310	2 420	2 530	2 640	15	15	15	15	15	15	20
	22000	3278	1 694	1 815	1 936	2 057	2 178	2 299	2 420	2 541	2 662	2 783	2 904	15	15	15	15	20	20	20
	24000	3576	1 848	1 980	2 112	2 244	2 376	2 508	2 640	2 772	2 904	3 036	3 168	15	15	20	20	20	25	25
	25000	3725	1 925	2 063	2 200	2 338	2 475	2 613	2 750	2 888	3 025	3 163	3 300	20	20	20	20	25	25	25

*** EXTERNAL STATIC PRESSURE OF UNIT**

Internal static pressure drop includes the losses through the fresh air inlet, damper, 2-inch standard filter section and burner section.

Note: Refer to the manufacturer for higher static pressure and increased air delivery.

GAS PIPE SIZE (INCHES)

NOTE	ENERGY	
The gas pipe size is determined according to a 0.5 psi inlet pressure.	0 MBTU/H - 750 MBTU/H	3/4
	751 MBTU/H - 1 000 MBTU/H	1
Refer to the manufacturer for a pressure higher than 0.5 psi.	1 001 MBTU/H - 2 500 MBTU/H	1 1/2
	2 501 MBTU/H - 5 000 MBTU/H	2

Model	Air delivery l/s	Velocity m/s	Burner capacity required (kW) Temperature rise (°C)											Motor (kW) External static pressure (Pa)*						
			38	40	43	46	49	51	54	57	60	63	65	0	62	125	187	250	300	375
25-E (9 - 9)	700	7,5	32	34	36	39	41	43	46	48	51	53	55	0,4	0,6	0,6	0,7	0,7	0,7	-
	950	10,0	44	46	49	53	56	58	62	65	69	72	75	0,7	0,7	1,1	1,1	1,1	1,1	1,5
	1200	12,4	55	58	62	67	71	74	78	83	87	91	94	1,1	1,1	1,5	1,5	1,5	1,5	2,2
	1400	14,9	64	68	73	78	83	86	91	96	101	106	110	1,5	1,5	2,2	2,2	2,2	2,2	2,2
50-E (12 - 12)	1400	10,6	64	68	73	78	83	86	91	96	101	106	110	1,1	1,1	1,1	1,5	1,5	1,5	2,2
	1650	12,3	76	80	86	92	98	102	108	114	119	125	129	1,1	1,5	1,5	1,5	2,2	2,2	2,2
	1900	14,1	87	92	99	105	112	117	124	131	138	144	149	1,5	1,5	2,2	2,2	2,2	2,2	3,7
	2100	15,9	96	101	109	117	124	129	137	144	152	160	165	2,2	2,2	2,2	2,2	3,7	3,7	3,7
	2350	17,6	108	113	122	130	139	145	153	162	170	179	184	-	2,2	3,7	3,7	3,7	3,7	3,7
75-E (15 - 15)	2350	12,6	108	113	122	130	139	145	153	162	170	179	184	1,5	2,2	2,2	2,2	2,2	3,7	3,7
	2600	13,9	119	126	135	144	154	160	169	179	188	198	204	2,2	2,2	2,2	3,7	3,7	3,7	3,7
	2850	15,2	131	138	148	158	169	175	186	196	206	217	224	2,2	2,2	3,7	3,7	3,7	3,7	3,7
	3000	16,4	138	145	156	167	177	185	196	206	217	228	235	-	3,7	3,7	3,7	3,7	3,7	5,6
	3300	17,7	151	159	171	183	195	203	215	227	239	251	259	-	3,7	3,7	3,7	5,6	5,6	5,6
100-E (18 - 18)	3300	12,4	151	159	171	183	195	203	215	227	239	251	259	3,7	3,7	3,7	3,7	3,7	5,6	5,6
	3500	13,3	161	169	182	194	207	215	228	241	253	266	275	3,7	3,7	3,7	3,7	5,6	5,6	5,6
	3800	14,2	174	183	197	211	225	234	248	261	275	289	298	3,7	3,7	5,6	5,6	5,6	5,6	5,6
	4000	15,0	183	193	208	222	237	246	261	275	290	304	314	3,7	5,6	5,6	5,6	5,6	5,6	7,5
	4250	15,9	195	205	221	236	251	262	277	292	308	323	333	3,7	5,6	5,6	5,6	5,6	7,5	7,5
	4500	16,8	206	217	234	250	266	277	293	310	326	342	353	3,7	5,6	5,6	5,6	7,5	7,5	7,5
	4700	17,7	216	227	244	261	278	289	306	323	340	357	369	-	5,6	7,5	7,5	7,5	7,5	7,5
150-E (20 - 20)	4700	12,1	216	227	244	261	278	289	306	323	340	357	369	3,7	3,7	5,6	5,6	5,6	5,6	7,5
	5200	13,3	239	251	270	289	308	320	339	358	377	395	408	5,6	5,6	5,6	5,6	7,5	7,5	7,5
	5650	14,5	259	273	293	314	334	348	368	389	409	430	443	5,6	5,6	7,5	7,5	7,5	7,5	11
	6000	15,7	275	290	311	333	355	369	391	413	435	456	471	5,6	7,5	7,5	7,5	11	11	11
	6600	16,9	303	319	343	366	390	406	430	454	478	502	518	7,5	7,5	11	11	11	11	11
	7000	18,1	321	338	363	389	414	431	456	482	507	532	549	7,5	7,5	11	11	11	11	11
200-E (25 - 25)	7000	11,4	321	338	363	389	414	431	456	482	507	532	549	5,6	5,6	7,5	7,5	7,5	11,2	11,2
	7550	12,1	346	365	392	419	447	465	492	519	547	574	592	5,6	7,5	7,5	7,5	7,5	11,2	11,2
	8000	12,9	367	386	415	444	473	492	521	550	579	608	628	5,6	7,5	7,5	7,5	11,2	11,2	11,2
	8900	14,4	408	430	462	494	526	548	580	612	645	677	698	7,5	7,5	11,2	11,2	11,2	11,2	11,2
	9450	15,1	433	456	490	525	559	582	616	650	684	719	741	11,2	11,2	11,2	11,2	11,2	11,2	14,9
	10400	16,7	477	502	540	577	615	640	678	716	753	791	816	11,2	11,2	11,2	11,2	14,9	14,9	14,9
	11300	18,2	518	546	586	627	668	696	737	777	818	859	887	11,2	11,2	14,9	14,9	14,9	18,6	18,6
	11800	18,9	541	570	612	655	698	726	769	812	855	897	926	14,9	14,9	14,9	14,9	18,6	18,6	18,6

***EXTERNAL STATIC PRESSURE OF UNIT**

Internal static pressure drop includes the losses through the fresh air inlet, damper, 2-inch standard filter section and burner section

Note: Refer to the manufacturer for higher static pressure and increased air delivery

GAS PIPE SIZE (mm)

NOTE

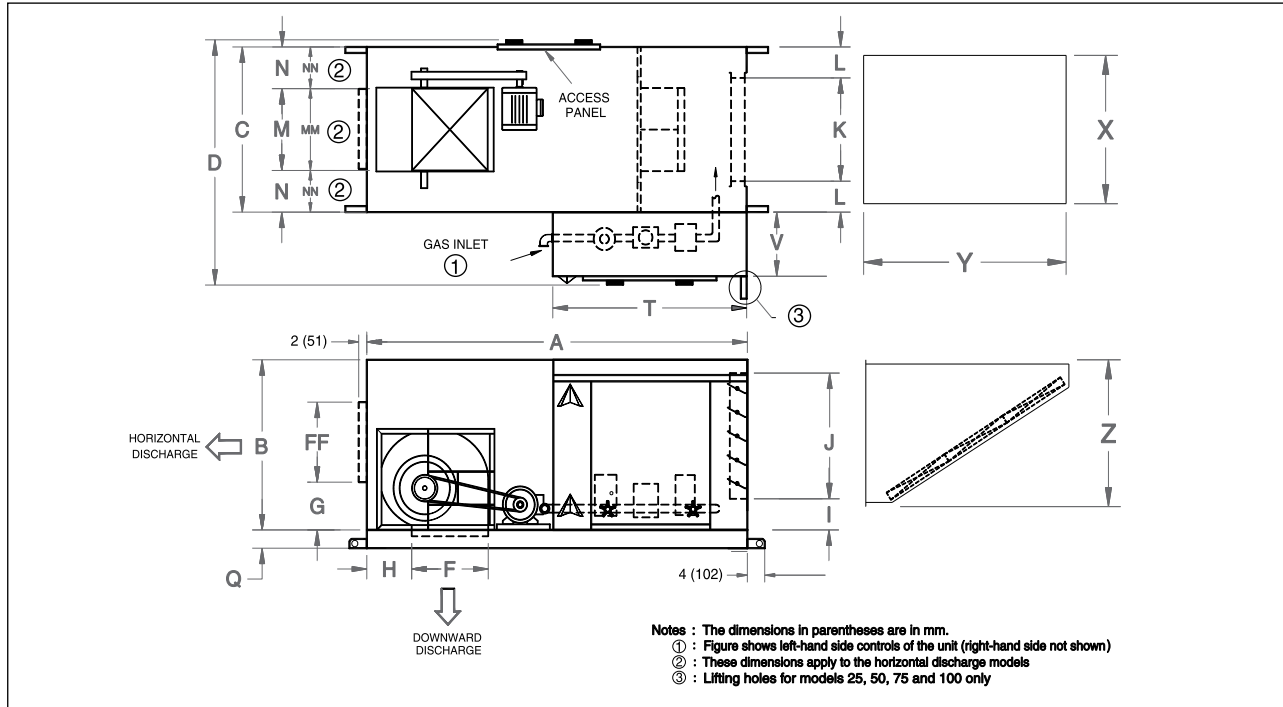
The gas pipe size is determined according to a 3.45 kPa inlet pressure.

Refer to the manufacturer for a pressure higher than 3.45 kPa.

ENERGY

0 KW - 220 KW	19
220 KW - 293 KW	25
293 KW - 733 KW	38
733 KW - 1465 KW	50

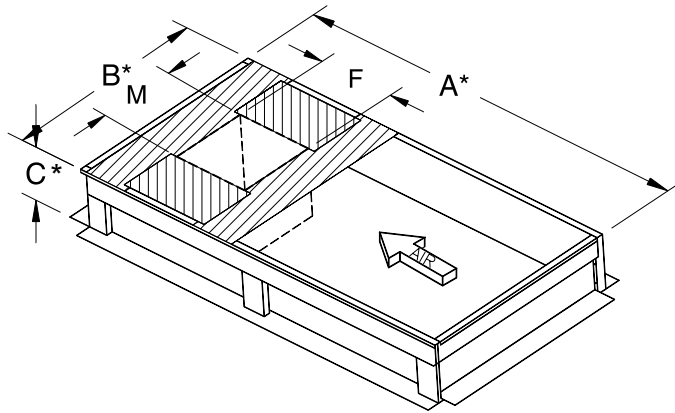
Models SDM 25E to SDM 200E



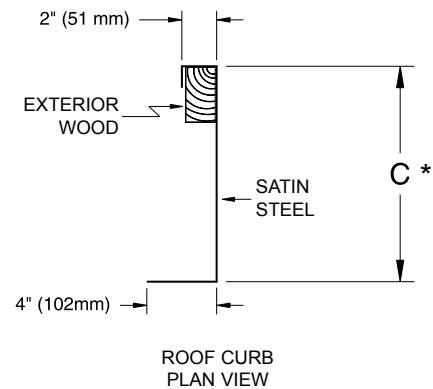
BLOWER	SDM 25-E 9-9		SDM 50-E 12-12		SDM 75-E 15-15		SDM 100-E 18-18		SDM 150-E 20-20		SDM 200-E 25-25	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
FILTERS	1-20x20	1-508x508	2-16x20	2-406x508	3-16x20	3-406x508	6-20x25	6-508x635	9-20x25	9-508x635	8-16x25	8-406x635
	1-20x25	1-508x635	2-16x25	2-406x635	3-16x25	3-406x635					8-20x25	8-508x635
A ¹	70	1778	70	1778	76	1930	80	2032	87	2210	102-1/2	2604
B	28-3/8	721	28-3/8	721	28-3/8	721	35	889	45	1143	58	1473
C	26	660	31	787	40	1016	42	1067	50	1270	57	1448
D	40	1016	44	1118	54	1372	58	1473	69	1753	78	1981
E	11-1/8	283	13-5/8	346	16	406	19-1/8	486	25-1/4	641	31-3/4	806
F	11-1/8	283	13-5/8	346	16	406	19-1/8	486	25-1/4	641	31-3/4	806
FF	11-1/4	286	14-1/4	362	17-1/8	435	19-7/8	505	26	660	32-1/2	826
G	7-1/8	181	8-5/8	219	7-3/4	197	10-7/8	276	15-7/8	403	18-7/8	479
H	7-1/2	191	9-1/4	235	10-5/8	270	12-1/2	318	13	330	16-3/8	416
I	3-1/2	89	3-1/2	89	3-1/2	89	3-1/2	89	3-1/2	89	4	102
J	20	508	20	508	20	508	31	787	36	914	48	1219
K	20	508	25	635	34	864	36	914	42	1067	51	1295
L	3	76	3	76	3	76	3	76	4	102	3	76
M	12	305	16	406	19	483	22-1/8	562	25-1/2	648	31-3/4	806
MM	12-1/2	318	16-1/4	413	19-3/4	502	22-5/8	575	26	660	32-1/2	826
N	7	178	7-1/2	191	10-1/2	267	9-7/8	251	12-1/4	311	12-5/8	321
NN	6-3/4	171	7-3/8	187	10-1/8	257	9-11/16	246	12	305	12-1/4	311
Q	4-1/2	114	4-1/2	114	4-1/2	114	4-1/2	114	5	127	5	127
T	38	965	38	965	38	965	41	1041	45	1143	54	1372
V	11	279	11	279	11	279	13	330	16	406	18	457
X	20	508	32	813	48	1219	50	1270	60	1524	72	1829
Y ¹	42	1067	42	1067	42	1067	58	1474	70	1778	89	2261
Z	27	686	27	686	27	686	34	864	43	1092	56	1422
Weight	441 lbs	200 kg	589 lbs	267 kg	728 lbs	330 kg	823 lbs	373 kg	1325 lbs	601 kg	1830 lbs	830 kg

¹ Add up dimensions A and Y to determine the overall length of the unit with a fresh air inlet.

ROOF CURBS

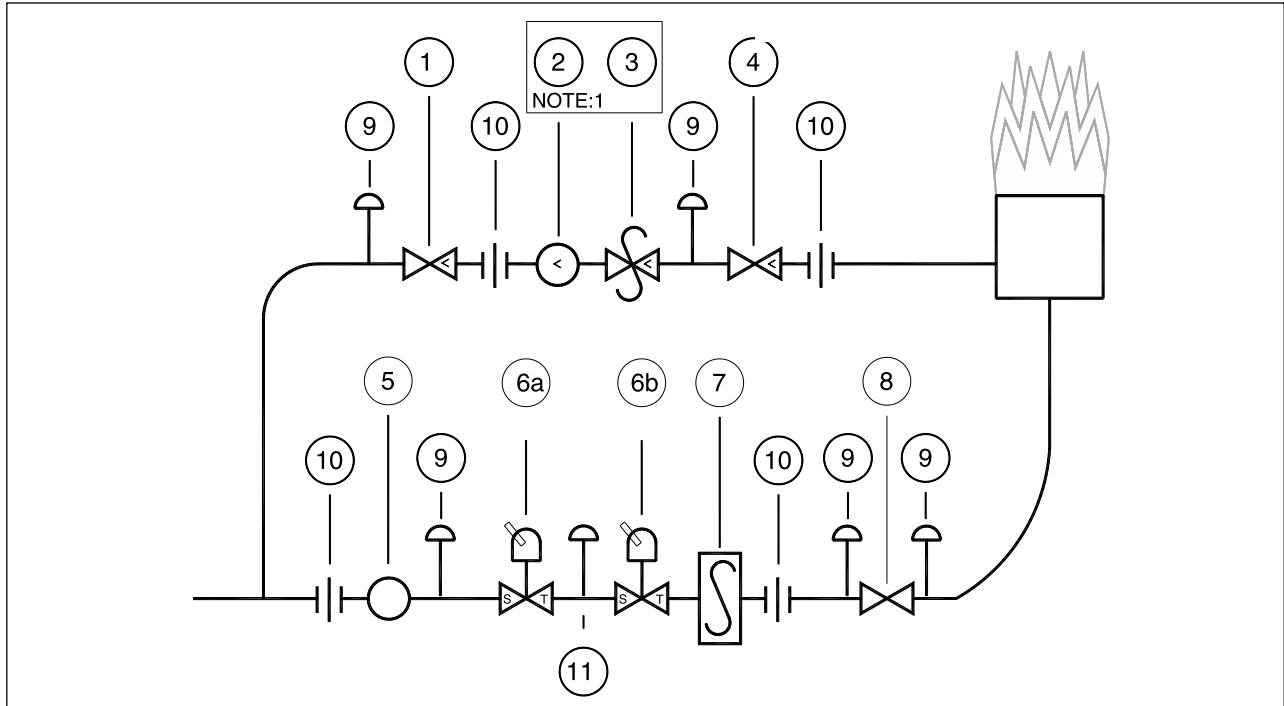


* Overall dimensions



	SDM 25-E		SDM 50-E		SDM 75-E		SDM 100-E		SDM 150-E		SDM 200-E	
A*	65. ¹ / ₈	1654	65. ¹ / ₈	1654	71. ¹ / ₈	1807	75. ¹ / ₈	1908	82	2083	97. ¹ / ₂	2477
B*	21. ¹ / ₈	537	26. ¹ / ₈	664	35. ¹ / ₈	892	37. ¹ / ₈	943	44. ⁷ / ₈	1140	51. ⁷ / ₈	1318
C*	18	457	18	457	18	457	18	457	18	457	18	457
F	11. ⁷ / ₈	302	15. ¹ / ₄	387	17. ³ / ₈	441	20. ³ / ₈	518	26. ³ / ₄	679	33. ¹ / ₈	841
M	14	356	17. ³ / ₈	441	20. ¹ / ₈	511	23. ³ / ₈	594	26. ³ / ₄	679	33. ¹ / ₈	841
Weight	107 lbs	49 kg	113 lbs	51 kg	132 lbs	60 kg	140 lbs	64 kg	158 lbs	72 kg	187 lbs	85 kg

TYPICAL GAS PIPING



ITEM

DESCRIPTION

PILOT BURNER PIPING

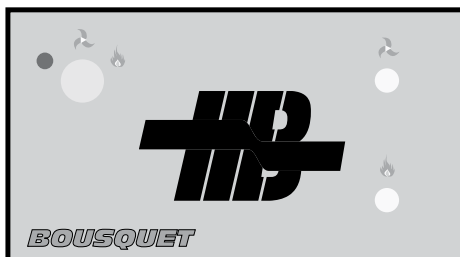
1	Pilot manual shut-off valve
2	Pilot gas pressure regulator - low pressure - (see note 1)
3	Pilot automatic safety shut-off control valve - (see note 1)
4	Pilot manual ignition valve

BURNER PIPING

5	Main burner gas pressure regulator - low pressure - (see note 2)
6a	Automatic quick-closing shut-off valve
6b	Automatic quick-closing shut-off valve
7	Modulating gas valve
8	Ignition manual test valve
9	1/8-inch diameter gas pressure test port
10	Piping union
11	1/8-inch diameter gas pressure test port (400,000 Btu/hr and more)

NOTE 1 : May be separate or joined in a single valve, depending on the situation.

NOTE 2 : Not required when modulating gas valve (7) has an internal regulator such as MR 212D, E or G



CONTROL PANEL (optional)

STANDARD EQUIPMENT

- (STOP/START, SUMMER/WINTER) SELECTOR SWITCH
- CONNECTING TERMINAL BLOCK
- BLOWER OPERATION LIGHT
- BURNER OPERATION LIGHT

STANDARD AND OPTIONAL FEATURES

STANDARD:

- CGA and AGA. certified
- Downward or horizontal discharge
- Access to electric controls and gas connections on right-hand side only (when facing the airstream)
- Natural gas burner
- Adjustable burner profile plate
- Stainless steel burner with 25:1 turndown ratio
- Inlet gas pressure of 14 inches of water (1/2 PSIG) (MAXIMUM)
- Main power supply: 575, 460, 208 volts (3 phases, 60 Hz)
- One-speed open, drip proof, energy efficient, 1800 RPM motor
- Adjustable motor base
- Connecting terminal block
- MAXITROL series 14: Integrated temperature selector which may be installed by the user in a location up to 200 feet maximum from the unit
- All the electrical and mechanical components required for the proper operation of the unit
- Flame rod detector
- All the necessary air temperature and pressure control switches
- Double width, double inlet, forward-curved blade blower with ball bearing or bushing
- Galvalume™ or galvanized steel exterior panel (20 gauge)
- Galvanized steel structure (14 gauge)
- 1-inch neoprene insulation inside all panels
- Variable pitch pulley on motors of 5-HP or less
- Fixed pitch pulley on motors of 7.5-HP or above
- Lifting holes on both sides of unit for easy handling and installation
- Vibration isolators for motor and blower
- Motorized (fresh air) damper section.
- Fresh air intake with integrated 2-inch filters

OPTIONAL:

- Propane gas burner
- Gas inlet pressure of 2 psi for model SDM(E)-200 (ONLY)
- Gas feed high pressure regulator
- Purge period
- Low temperature freezing limit
- Two air volumes obtained by use of motorized dampers (50% or 75% of maximum discharge)
- Main power supply disconnect
- Closed, ventilated, drip proof, energy efficient motor
- Main power supply: 220, 110 volts/1 phase/60 Hz
- Non-insulated base

SDM-E TYPICAL SPECIFICATIONS

Supply and install a model SDM-E _____ (25, 50, 75, 100, 150, 200) direct gas-fired make-up air heater, as manufactured by **Bousquet Brothers Limited**, with a capacity of (_____)CFM and an external static pressure of _____ inches (wg).

The unit is for outdoor installation. It has a _____ (horizontal/downward) air discharge and use (natural/propane)_____ gas.

The casing of the unit is made of 20 gauge galvanized steel panels requiring no paint and offering excellent corrosion resistance. The unit rests on 14 gauge galvanized steel supports. The inside walls of the unit are covered with 1-inch neoprene insulation. With its four lifting holes, the unit is easy to handle with a crane.

The unit includes :

- A fresh air inlet with a bird screen and a 2-inch replaceable filters
- A 2-position (open / closed) motorized damper
- A DWDI forward-curved blower model _____ (9-9, 12-12, 15-15, 18-18, 20-20, 25-25) mounted on spring-type vibration isolators
- A stainless steel Midco burner with 25 :1 turndown ratio and _____-MBTU/h capacity
- A one-speed, _____ HP ($1/2$, $3/4$, 1, $1\ 1/2$, 2, 3, 5, $7\ 1/2$, 10, 15, 20, 25), drip proof, energy efficient motor mounted on an adjustable base
- Two quick-opening access doors
- A weatherproof control compartment
- A roof curb with guides for ducts pre-installation
- A remote control panel with (stop/fan/burner) selector switch and (burner/blower operation) lights

Controls and electricity:

- Main power supply _____ (575, 460, 208 volts / 3 phases / 6 Hz) (240 / 1 phase / 6 Hz)
- Connecting terminal block
- Electronic modulation with integrated temperature selector (Maxitrol series 14)
- Flame monitor with trouble diagnostic warning lights
- Magnetic starter and thermal overload protection for the motor
- Air temperature high limit switches
- Air pressure low and high limit switches

The unit is _____ (CGA/AGA) certified. The start-up is included and performed by a qualified technician appointed for this purpose by the manufacturer.



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