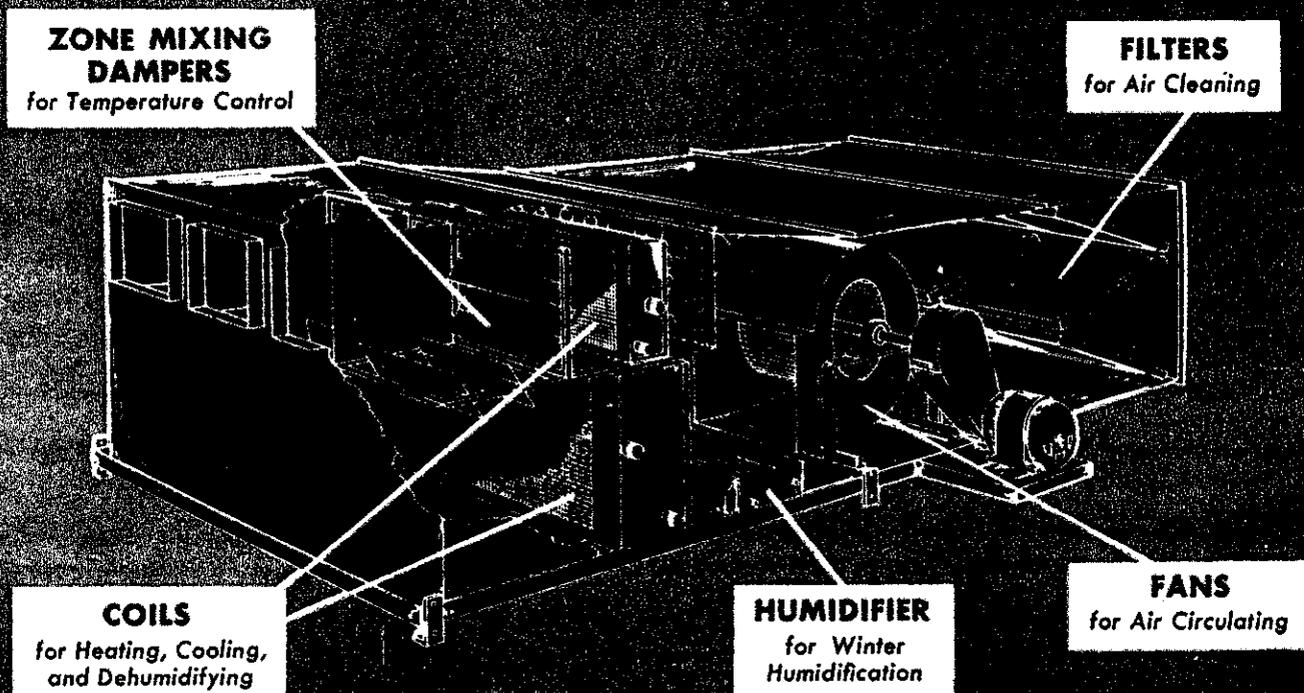


# CLARAGE

## Blow-Thru MULTITHERMS<sup>®</sup> DESIGN I



### for ZONE CONTROL Air Conditioning

The Clarage Blow-Thru Multitherm is an air conditioning unit specifically designed to maintain required temperatures and humidities in several separate areas having different simultaneous loads.

Thus a single unit is capable of air conditioning an ENTIRE medium sized building without disrupting air distribution in any given zone, when a change in load results from solar variations, wind velocity and/or variable occupancy.

Zone Control is accomplished by means of a separate pair of mixing dampers for each individual zone. One damper of each pair connects to a hot air plenum, while the other connects to a cold air plenum.

Each pair of dampers is so interconnected that one zone thermostat controls the proportion of hot and cold air mixed to maintain desired room temperature.

The resistance through the heating and cooling coils is closely balanced with no appreciable change in supply volume resulting through the entire range of mixing from 100% cooling to 100% heating.

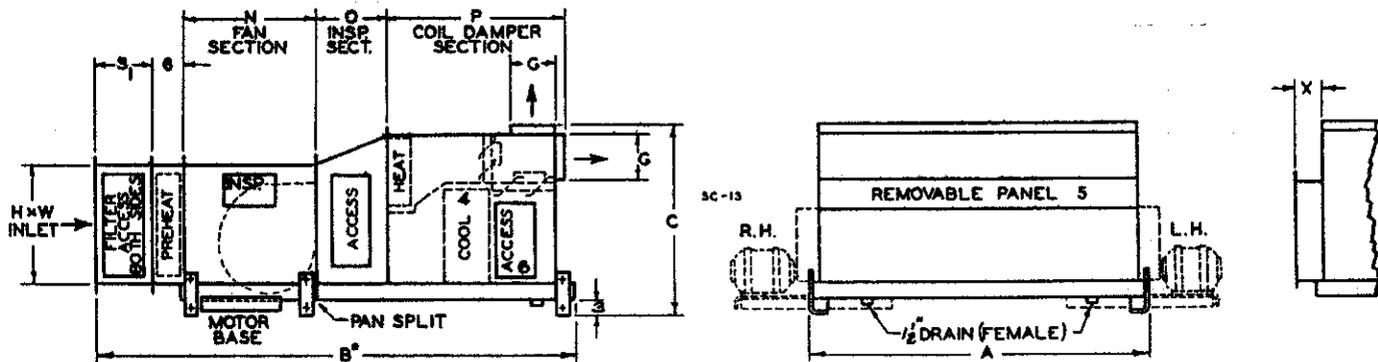
Maximum number of zones obtainable in a single unit depends somewhat on the size of the unit. Wider units naturally will accommodate a larger number of zones. Experience shows that more than five zones are seldom required, although some units have been furnished with as many as eight.



CLARAGE FAN COMPANY

KALAMAZOO, MICHIGAN

# Dimensions - Physical Data - Performance



- (1) Sizes 3060 and larger have preheat coil in fan section.
- (2) Motors 25 H.P. and larger are mounted separate from unit.
- (3) If unit has angle filter section, increase B by S<sub>2</sub>-S<sub>1</sub>.
- (4) Sizes 3680 and larger have staggered cooling coils.
- (5) Sizes 1205 thru 1840 have removable panel.
- (6) Sizes 2450 thru 5190 have access door.

## DIMENSIONS — INCHES

SIZE	1206	1210	1215	1820	1830	1840	2450	3060	3680	4120	4180	5190
A	30	40	57	51½	70½	90½	85¼	95¼	90¼	105¼	145¼	145¼
B	79½ <sub>16</sub>	84½ <sub>16</sub>	84½ <sub>16</sub>	92½ <sub>16</sub>	96½ <sub>16</sub>	102½ <sub>16</sub>	109½ <sub>16</sub>	109½	126½ <sub>16</sub>	141½ <sub>16</sub>	147½ <sub>16</sub>	161½ <sub>16</sub>
C	35½ <sub>16</sub>	35½ <sub>16</sub>	35½	44¾	44¾	45½ <sub>16</sub>	58¾	58¾	80½	89	93½	109
G	8	8	8	8	8	8	13½	13½	22	22	22	24
H	22	22	22	30	30	30	40	40	59	68	68	73
W	25	35	52	46	65	85	80	90	85	100	140	140
N	18½ <sub>16</sub>	23½ <sub>16</sub>	23½ <sub>16</sub>	23½ <sub>16</sub>	27½ <sub>16</sub>	33½ <sub>16</sub>	33½ <sub>16</sub>	39½ <sub>16</sub>	45½ <sub>16</sub>	54½ <sub>16</sub>	60½ <sub>16</sub>	64½ <sub>16</sub>
O	15	15	15	18	18	18	21	21	21	21	21	28
P	33¼	33¼	33¼	38¼	38¼	38¼	42¼	42¼	53¼	58½	59	62
X	—	—	3¾	3¾	3¾	3¾	—	3¾	3¾	3¾	—	—
S <sub>1</sub> (flat)	6	6	6	6	6	6	6	6	6	7¼	7¼	7¼
S <sub>2</sub> (angle)	—	24	24	28	28	28	28	28	28	28	28	29¼

## PHYSICAL DATA

UNIT SIZE	FAN OUTLET AREA	FANS		COIL FACE AREA IN SQ. FT.		FLAT FILTER		ANGLE FILTER	
		NO.	SIZE	COOLING	REHEAT	NO.	SIZE	NO.	SIZE
1205	0.53	1	¾	1.58	.89	1	20 x 25	1	20 x 25
1210	1.13	1	¾	2.63	1.41	2	16 x 20	2	20 x 25
1215	1.50	2	¾	4.73	2.47	2	20 x 25	4	20 x 25
1820	2.26	2	¾	6.05	3.49	2	20 x 25	4	20 x 25
1830	2.57	2	1	9.20	5.23	3	20 x 25	6	20 x 25
1840	4.08	2	1¼	12.38	6.97	4	20 x 25	8	20 x 25
2450	4.93	2	1½	15.10	7.67	8	20 x 20	12	20 x 25
3060	5.80	2	1½	17.90	9.04	8	20 x 20	12	20 x 25
3680	7.87	2	1¾	24.76	12.45	8	20 x 25	16	20 x 25
4120	10.31	2	2	36.24	18.30	12	20 x 25	20	20 x 25
4180	15.50	2	2¾	48.5	24.5	21	20 x 20	28	20 x 25
5190	16.20	2	2½	58.9	28.0	21	20 x 20	28	20 x 25

NOTE: When preheat coil is required, use a large or a small area Multitherm Coil.

## PERFORMANCE: Based on 6 Row Cooling Coil and 2 Row Heating Coil

UNIT	1206				1210				1215				1820				1830				1840			
	800		850		1200		1700		1800		2550		2400		3400		3600		5100		4800		6800	
	Ext. S.P.	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
¼	1058	.11	1348	.26	840	.27	1072	.65	910	.34	1170	.81	786	.48	997	1.10	725	.76	954	1.86	573	1.00	736	2.30
½	1251	.16	1496	.31	990	.38	1183	.78	1070	.47	1285	.96	942	.67	1102	1.35	828	1.01	1024	2.16	676	1.31	811	2.81
¾	1448	.20	1635	.37	1132	.49	1300	.91	1230	.61	1400	1.15	1090	.87	1219	1.61	930	1.25	1096	2.48	774	1.81	885	3.35
1	1630	.26	1771	.44	1249	.60	1408	1.05	1383	.77	1512	1.33	1210	1.09	1330	1.89	1036	1.51	1172	2.81	866	2.58	956	4.55
1½	1784	.31	1940	.50	1357	.71	1508	1.20	1533	.93	1629	1.55	1322	1.31	1440	2.18	1137	1.87	1251	3.20	949	3.12	1027	5.20

UNIT	2450				3060				3680				4120				4180				5190			
	6000		8500		7200		10200		9600		13600		14430		20400		18600		26350		22680		32400	
	Ext. S.P.	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
¼	527	1.26	680	2.93	487	1.53	641	3.78	379	1.22	493	4.14	352	2.88	471	7.14	316	3.90	370	7.68	291	4.82	373	11.6
½	620	1.73	745	3.53	574	2.18	708	4.55	444	2.27	536	4.86	398	3.67	496	8.15	370	5.30	407	9.20	327	6.07	399	13.1
¾	705	2.24	810	4.18	670	2.71	758	5.29	515	2.94	580	5.65	447	4.58	529	9.21	415	6.78	446	10.9	362	7.60	423	14.7
1	792	2.46	874	4.93	735	3.44	815	6.15	575	3.83	628	6.56	500	5.83	552	10.5	451	8.12	484	12.8	398	9.65	449	16.5
1½	870	3.01	938	5.64	805	4.11	869	7.00	641	4.82	671	7.60	556	7.19	595	11.6	488	9.68	542	14.9	431	11.5	474	18.4

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lets can be located either in the front sheet for horizontal discharge, or in the top sheet for up-blast discharge. Where necessary, a special combination can be furnished with some zones in each location.

**COOLING COILS:** Cooling coils are copper tube with aluminum or copper fins either of the plate or helically wound type. Cold water cooling coils are of the serpentine type. Removable headers for tube cleaning can be furnished at additional cost.

Direct expansion coils are suitable for operation with either Freon or Methyl Chloride. Supply connection may be located on either side of the unit.

**HEATING COILS:** Heating coils are copper tube with aluminum or copper fins either of plate or helically wound type. Coils are available for operation on steam or hot water. Steam coils are of the internal distributing tube type to provide an even air temperature distribution throughout the entire hot air plenum. This feature also insures protection against freezing where a high percentage of outside air is handled.

**MIXING DAMPERS:** Each zone is equipped with its individual pair of mixing dampers, interconnected for operation from a damper operator mounted inside the unit. An inspection door in the unit casing provides access to dampers and their operators. Damper blades are louvre type, except on small size units where single leaf blades give satisfactory results.

**FILTERS:** Filters are optional equipment. They are installed in flat or angle arrangements depending on the amount of air handled. Standard cells are throw-away type, but permanent type cells of both conventional and high velocity design can be furnished.

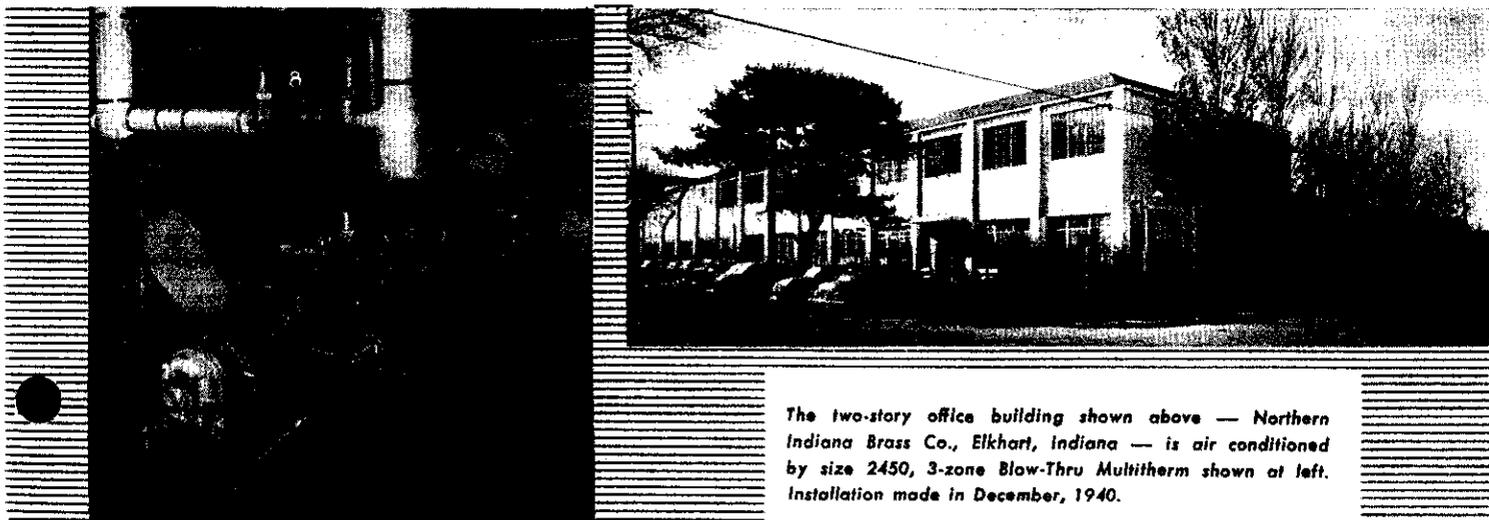
**HUMIDIFIERS:** Humidifiers are also optional equipment. Three types are available: (1) Spray type designed for use with hot water (2) Pan type consisting of a galvanized pan equipped with copper submerged steam coil and float valve (3) Grid type for direct introduction of steam where steam is of such quality that no objectionable odors are present.

**COMPLETE CONDITIONING:** When filters and humidifiers are provided as component parts the Blow-Thru Multitherm becomes a *complete* year around air conditioning unit. For winter operation a single tempering coil, when furnished on the intake side of the fans, simplifies the automatic control system by eliminating the need for a low-limit control in each zone supply duct.

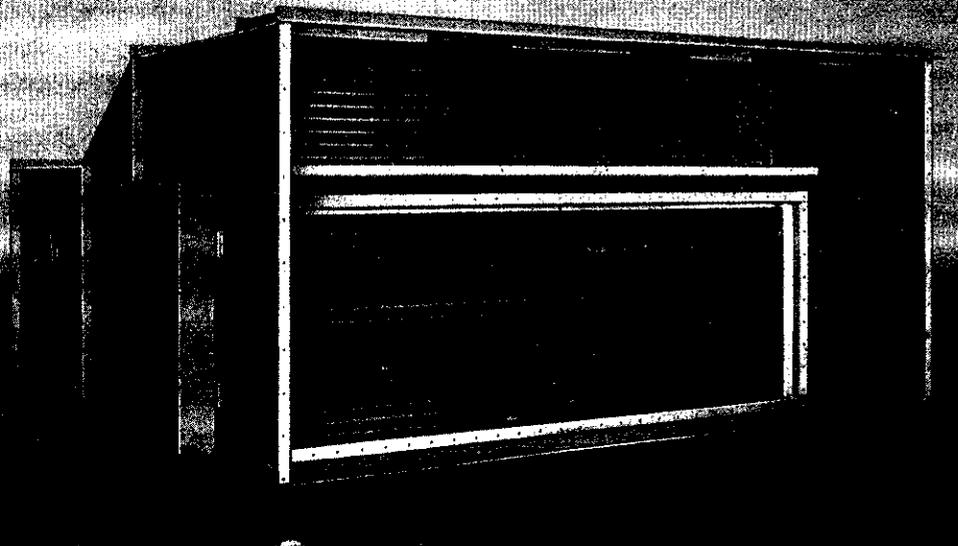
**AUTOMATIC CONTROL:** Temperature and humidity control equipment (electric or pneumatic type) can be furnished for use with Blow-Thru Multitherms. Mixing damper operators are parts of such control, and where purchased separately may be sent to Kalamazoo for mounting if desired.

**INSULATION:** Blow-Thru Multitherms can be provided with 1/2" interior insulation on pan or casing or both. However, it is suggested that exterior insulation applied after installation be used instead.

**ENGINEERING SERVICE:** If you have any type of air conditioning problem, it will pay you to take advantage of the *lasting economy* which Clarage HEAVY-DUTY equipment insures. See your telephone directory for the address of the Clarage branch office in your city, or consult with our engineers in Kalamazoo.



The two-story office building shown above — Northern Indiana Brass Co., Elkhart, Indiana — is air conditioned by size 2450, 3-zone Blow-Thru Multitherm shown at left. Installation made in December, 1940.



*Clarage 4-zone Blow-Thru Multitherm with front panel and mixing dampers removed showing arrangement of heating and cooling coils.*

## CONSTRUCTION HIGHLIGHTS

**CASING:** The cabinet, with the exception of the base, is built up in sections of either No. 18 or No. 16 gauge zinc coated steel. The several sections of the top sheet and side sheets, as well as the front sheet, are separately removable. A latched inspection panel is provided on drive side of the fan section.

The base of the unit, which also serves as a drip pan, is constructed of black steel welded throughout, and is fitted with a drain connection. The standard hangers are designed to serve also as legs for floor or platform mounting. Interior surfaces, not galvanized, are painted with a protective coating. Exterior finish is a pleasing and durable blue-green zinoxide high-gloss paint.

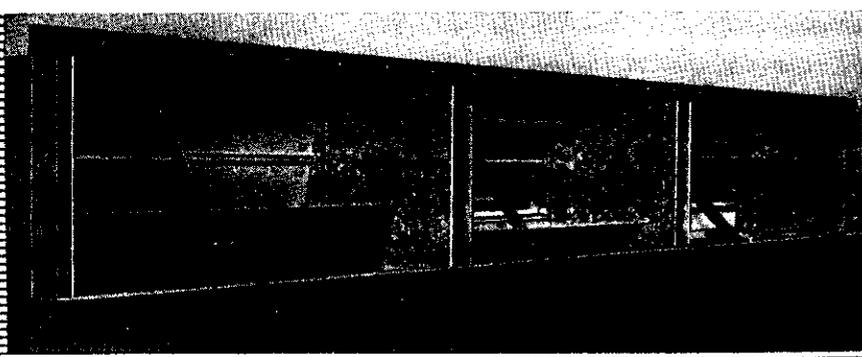
**FANS** used in Blow-Thru Multitherm Units are Clarage double width, double inlet centrifugal, forward curved blade type. Wheels are of center-plate type construction with shallow die formed blades

securely riveted to both rim and center-plate, and are dynamically balanced on precision machines to assure a smooth-running, trouble-free rotating assembly. Bearings are ball type, factory prelubricated, and do not require additional lubrication under normal conditions. Sleeve bearings can be furnished where necessary, in which case oil piping is provided with filler cups located outside unit casing.

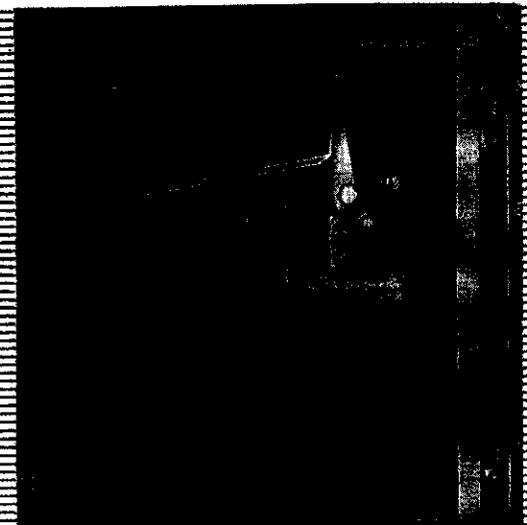
**DRIVE:** The fan shaft extends through the side of the cabinet for V-belt drive from motor as shown. Where motors of less than 10 HP are used, a vari-pitch motor sheave is furnished as standard equipment.

The motor base is detachable, and is equipped with a mechanism for adjusting the tension of the V-belts. A guard for the drive is also furnished.

**ARRANGEMENT:** Blow-Thru Multitherm Units are available only in horizontal type. The discharge out-



*ABOVE: Outlet end of 3-zone unit showing mixing dampers in different positions . . . RIGHT: View through access panel of same unit showing automatic damper operators mounted inside casing front sheet.*





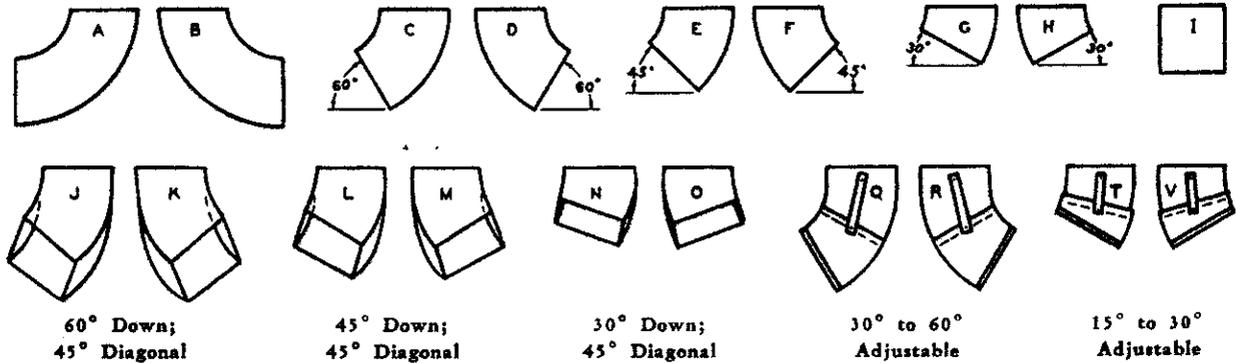
**SPECIAL DESIGNS**

Clarage Gas Fired Multitherm units can also be designed for special application in high temperature oven work. These are of the Blow-Thru design in which the gas burner is downstream of the fans allowing the fans to handle air at normal temperatures while the unit delivers

air at relatively high temperature.

Contact nearest sales office (see back cover) or main office at Kalamazoo, Michigan for further information on special application of Gas Fired Multitherm Units.

**OUTLETS AND OUTLET EXTENSIONS**



Clarage Multitherm Units can be furnished with any of the various outlets and outlet extensions shown above. Special shaped outlets may be obtained by combining standard outlets and extensions with the exception that

outlet extensions can not be added beyond the diagonal or adjustable outlets. Horizontal or vertical diffusing vanes can be furnished in any standard outlet. All outlets are shipped separately for mounting in the field by others.

**GENERAL DATA**

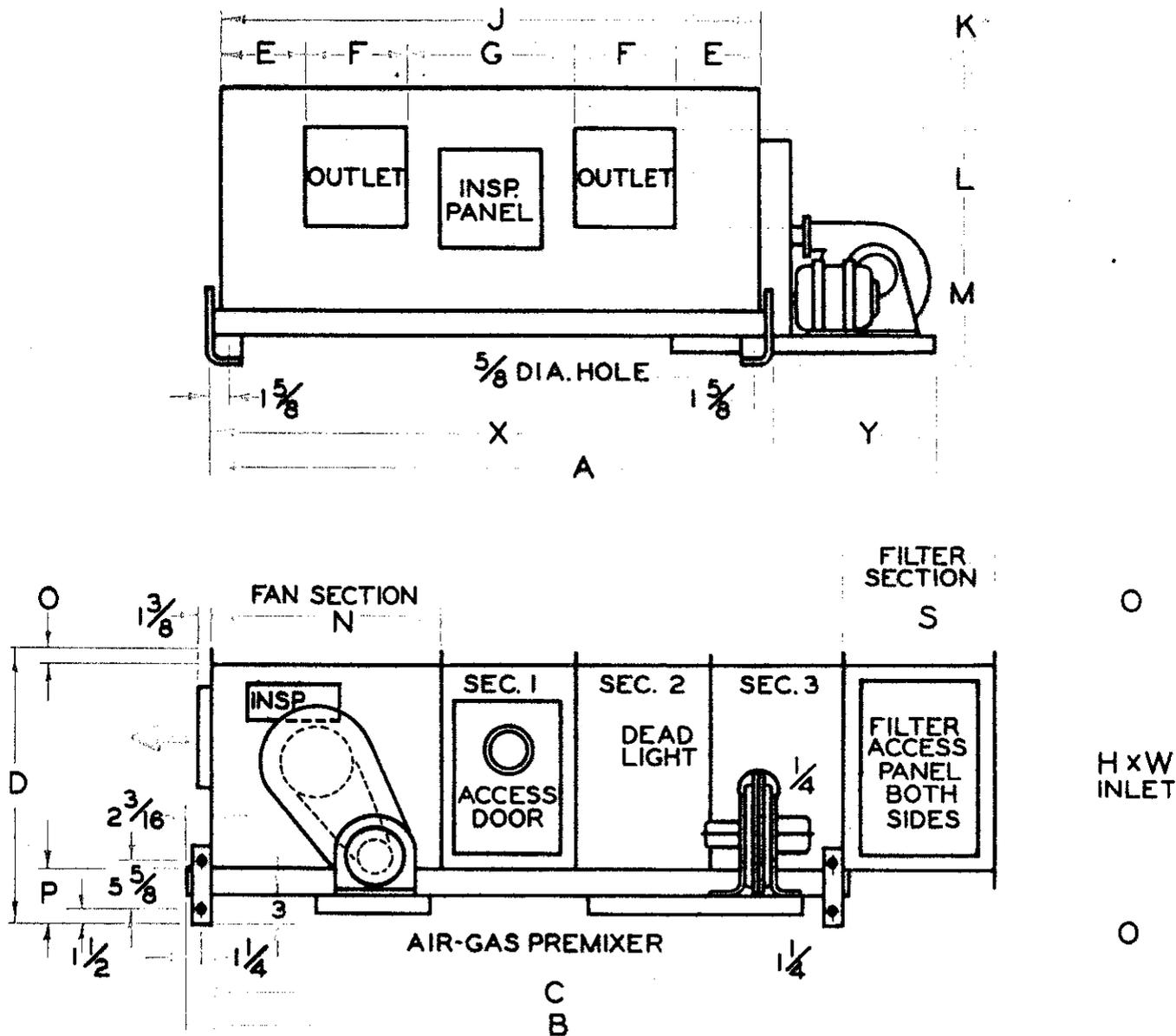
UNIT SIZE	FAN DATA		ANGLE FILTER SECTION (High Velocity Type Cells)			SHIPPING WEIGHT (Approximate)	
	No. and Size	Total Outlet Area	No.	Size	Nominal CFM (throw-away or permanent type)	Unit with Motor and Controls	Add for St'd. Filter Section
1830	2 No. 1	2.57	6	20 x 25 x 2	9000	2060	160
1840	2 No. 1¼	4.08	8	20 x 25 x 2	12000	2450	200
2450	2 No. 1¾	4.93	12	20 x 25 x 2	18000	2710	225
3060	2 No. 1½	5.80	12	20 x 25 x 2	18000	3080	260
3680	2 No. 1¾	7.87	16	20 x 25 x 2	24000	3775	300
4120	2 No. 2	10.31	20	20 x 25 x 2	30000	4630	375
4160	2 No. 2¼	15.50	28	20 x 25 x 2	42000	6465	450
5190	2 No. 2½	16.20	35	20 x 25 x 2	52500	7490	560



GAS FIRED MULTITHERM CAPACITIES

UNIT SIZE	BTU/HR. (Premix HP)	CFM		Outlet Vel. Ft./Min.	Final Temp. with 0° E.A.	EXTERNAL STATIC PRESSURE													
						¼" SP		½" SP		¾" SP		1" SP		1½" SP		2" SP			
						RPM	BHP 70°	RPM	BHP 70°	RPM	BHP 70°	RPM	BHP 70°	RPM	BHP 70°	RPM	BHP 70°		
1830	375,000 BURNER A (½ HP)	3680	3840	1495	94	681	.76	777	.96	875	1.26	962	1.57	1060	1.82	1148	2.12	1318	2.84
		4020	4145	1615	86	729	.93	819	1.19	906	1.47	995	1.73	1089	2.04	1162	2.34	1340	3.07
		4430	4500	1750	78	781	1.15	862	1.41	950	1.69	1035	2.00	1118	2.34	1195	2.65	1360	3.44
	750,000 BURNER B (½ HP)	4950	4950	1925	70	855	1.50	930	1.79	1004	2.14	1080	2.40	1155	2.74	1228	3.10	1378	3.86
		5120	5750	2240	135	839	1.67	902	1.93	968	2.22	1035	2.54	1100	2.88	1168	3.24	1305	4.01
		5620	6175	2405	123	898	2.02	958	2.31	1019	2.62	1082	2.97	1143	3.32	1207	3.68	1339	4.49
1840	750,000 BURNER A (½ HP)	6150	6645	2585	112	960	2.54	1013	2.86	1063	3.14	1123	3.51	1180	3.82	1240	4.25	1358	5.15
		6910	7300	2840	100	1047	3.30	1098	3.62	1152	3.98	1200	4.35	1252	4.74	1305	5.15	1418	6.02
		7360	7700	1885	94	610	1.47	672	2.27	732	2.78	795	3.18	855	3.64	912	4.15	1032	5.30
2450	750,000 BURNER A (½ HP)	8050	8280	2030	86	652	2.30	684	2.62	761	3.12	819	3.62	878	4.15	932	4.68	1040	5.82
		8850	8980	2205	78	698	2.84	729	3.18	800	3.74	855	4.26	907	4.80	960	5.36	1060	6.50
		9875	9875	2420	70	761	3.70	812	4.21	855	4.68	905	5.26	955	5.85	1000	6.43	1100	7.76
3060	1,125,000 BURNER B (½ HP)	7685	8630	2115	135	655	2.40	705	2.80	760	3.33	817	3.76	870	4.26	923	4.80	1027	5.94
		8410	9250	2265	123	693	2.88	742	3.32	797	3.82	843	4.30	885	4.70	948	5.40	1043	6.59
		9240	9955	2440	112	745	3.58	788	4.00	837	4.51	881	5.01	933	5.59	978	6.16	1072	7.40
3680	1,500,000 BURNER B (½ HP)	10380	10970	2685	100	815	4.66	857	5.19	898	5.68	940	6.24	983	6.83	1024	7.46	1120	8.85
		7360	7700	1565	94	518	1.60	585	2.19	651	2.56	719	3.32	783	3.76	856	4.30	979	5.67
		8050	8280	1680	86	547	1.91	611	2.38	678	2.92	739	3.44	799	4.02	860	4.68	986	6.14
4120	1,875,000 BURNER B (½ HP)	8850	8980	1820	78	598	2.38	647	2.88	702	3.40	761	3.95	819	4.48	877	5.08	999	6.89
		9875	9875	2005	70	641	2.84	682	3.52	748	4.20	800	4.82	851	5.44	899	6.05	1020	7.88
		10250	11500	2335	135	640	3.54	684	4.10	730	4.62	775	5.22	819	5.82	863	6.51	955	8.02
4120	1,125,000 BURNER A (½ HP)	11230	12350	2510	123	682	4.33	722	4.86	763	5.44	807	6.12	849	6.76	891	7.49	975	8.96
		12320	13300	2705	112	735	5.44	773	6.02	808	6.61	850	7.25	886	7.79	923	8.65	1000	10.2
		13850	14500	2965	100	800	7.00	837	7.56	873	8.40	905	9.00	940	9.80	978	10.5	1055	12.5
4120	1,875,000 BURNER A (½ HP)	11080	11550	1990	94	531	2.95	581	3.52	631	4.16	680	4.83	729	5.56	777	6.31	870	8.00
		12030	12400	2140	86	568	3.59	613	4.19	659	4.84	705	5.58	760	6.44	800	7.21	882	8.75
		13280	13480	2320	78	612	4.34	652	5.15	695	5.90	738	6.64	788	7.54	821	8.26	903	9.94
4120	1,875,000 BURNER B (½ HP)	14820	14820	2560	70	689	6.30	725	6.96	761	7.74	800	8.53	836	9.39	871	10.2	949	12.2
		12800	14350	2475	135	611	4.75	649	5.37	689	6.12	729	6.96	779	7.85	809	8.52	885	10.2
		14050	15400	2660	123	652	5.81	688	6.54	722	7.23	763	8.09	800	8.90	833	9.22	908	11.6
4120	1,500,000 BURNER A (½ HP)	15430	16650	2875	112	703	7.35	732	7.96	766	8.74	800	9.50	835	10.4	870	11.4	939	13.3
		17300	18250	3150	100	769	9.56	795	10.2	829	11.2	858	12.0	889	12.9	920	13.9	987	16.1
		14700	15350	1950	94	445	4.09	488	4.76	531	5.50	569	6.25	608	7.07	645	7.88	724	9.90
3680	2,437,500 BURNER B (½ HP)	16080	16550	2100	86	476	5.07	517	5.79	557	6.56	593	7.34	629	8.17	664	9.03	736	11.0
		17700	17970	2280	78	510	6.32	549	7.13	585	7.93	620	8.77	653	9.62	687	10.6	750	12.5
		19800	19800	2515	70	557	8.35	593	9.24	627	10.1	659	10.9	690	11.9	720	12.9	778	15.8
4120	1,875,000 BURNER A (½ HP)	16600	18650	2370	135	495	6.41	536	7.25	573	8.08	608	8.92	642	9.80	673	10.7	737	12.6
		18200	20000	2540	123	528	7.80	567	8.70	603	9.61	636	10.5	667	11.4	698	12.3	757	14.3
		20000	21590	2740	112	576	9.88	600	10.6	635	11.6	667	12.7	697	13.5	726	14.5	781	16.7
4120	1,875,000 BURNER B (½ HP)	22400	23700	3010	100	617	12.7	650	13.9	681	14.9	711	15.8	740	16.7	767	17.8	819	19.9
		18400	19200	1860	94	380	4.84	420	5.82	457	6.70	492	7.60	526	8.57	559	9.64	636	12.5
		20050	20650	2000	86	470	6.09	443	7.03	478	7.81	511	8.90	543	9.93	574	11.0	639	13.6
4120	3,375,000 BURNER B (¾ HP)	22150	22500	2185	78	435	7.59	470	8.65	503	9.70	533	10.7	563	11.7	593	12.8	652	15.3
		24700	24700	2395	70	473	9.93	507	11.1	537	12.2	566	13.8	593	14.5	620	15.6	674	18.1
		23050	25820	2505	135	447	9.48	481	10.8	513	12.0	543	13.1	572	14.4	600	15.6	653	18.0
4160	2,625,000 BURNER A (½ HP)	25300	27800	2695	123	478	11.8	511	13.1	542	14.5	570	15.7	597	17.1	623	18.3	673	20.9
		27750	30000	2910	112	511	14.5	543	16.1	572	17.5	599	18.9	625	20.4	650	21.7	697	24.4
		31100	32820	3185	100	557	18.8	587	20.5	613	22.2	638	23.7	663	25.2	687	26.8	732	29.9
4160	4,687,500 BURNER B-1 (1 HP)	25700	26800	1730	94	300	5.12	342	6.23	368	7.28	402	8.72	440	10.4	480	12.3	553	16.5
		28100	28950	1865	86	321	6.32	351	7.35	381	8.40	415	9.97	449	11.7	482	13.4	553	17.8
		31000	31450	2030	78	345	7.94	372	8.99	401	10.3	430	11.7	460	13.4	491	15.2	555	19.3
4160	3,375,000 BURNER A (¾ HP)	34600	34600	2230	70	376	10.4	402	11.5	429	12.9	452	14.3	480	16.1	509	17.8	589	22.3
		28100	31500	2030	135	327	7.22	358	8.33	387	9.58	414	10.9	443	12.4	475	14.2	538	18.2
		30900	33390	2190	123	350	8.92	378	10.0	405	11.3	432	12.7	457	14.2	485	15.9	544	20.0
5190	4,687,500 BURNER B-1 (1 HP)	33900	36600	2360	112	374	11.0	402	12.3	426	13.6	450	15.0	474	16.5	499	18.2	552	22.2
		38000	40150	2595	100	408	14.5	433	15.7	457	17.3	479	18.8	500	20.3	523	22.0	568	25.8
		32000	35850	2310	135	358	9.97	386	11.3	413	12.6	437	13.9	462	15.4	487	17.0	540	20.8
5190	3,375,000 BURNER A (¾ HP)	35100	38500	2485	123	381	12.3	407	13.6	433	15.0	456	16.3	478	17.8	501	19.4	549	23.2
		38500	41500	2675	112	405	15.0	430	16.4	453	17.8	477	19.4	498	21.0	519	22.6	561	26.0
		43100	45500	2935	100	440	19.4	464	21.1	486	22.6	507	24.3	527	25.9	547	27.6	585	31.2
5190	5,250,000 BURNER B (1 HP)	33100	34500	2130	94	318	9.54	348	11.3	375	12.8	400	14.4	424	16.0	448	17.7	494	21.5
		36200	37300	2305	86	342	12.0	369	13.7	39									

# DIMENSIONS



C-707

UNIT SIZE	A	B	C	D	E	F	G	H Height	W Width	J	K	L	M	N	O	P	S	X	Y
1820	75 1/8	110 3/16	82 7/16	36 7/16	5 3/16	14 3/8	8 1/8	30	46	48 1/2	5 1/16	12 1/2	18 3/8	23	1 1/4	5 1/2	28	51 1/2	24
1830	94 1/8	114 3/16	86 7/16	36 1/2	10 3/16	14 3/8	18 1/8	30	65	67 1/2	3 11/16	14 3/8	18 11/16	27	1 1/4	5 1/16	28	70 1/8	24
1840	114 1/8	120 3/16	92 7/16	37 3/16	13 1/16	18 3/8	24 3/8	30	85	87 1/2	2 1/8	17 1/2	17 15/16	33	1 1/4	6 1/4	28	90 3/8	24
2450	111 1/8	120 3/16	92 7/16	47 3/16	11 3/16	20 3/8	19 3/8	40	80	82 1/2	4 5/16	19 3/8	24 3/8	33	1 1/4	6 1/4	28	85 3/8	26
3060	121 1/8	126 3/16	98 7/16	47 3/16	12 15/16	21 3/8	23 3/8	40	90	92 1/2	2 3/4	20 3/8	24 1/16	39	1 1/4	6 1/4	28	95 3/8	26
3680	114 1/8	132 3/16	104 7/16	66 3/16	10 1/16	24 3/8	17 3/8	59	85	87 1/2	9 3/4	24 3/8	32 9/16	45	1 1/4	6 1/4	28	90 3/8	26
4120	133 3/8	141 3/16	113 7/16	75 3/8	12 5/16	28 3/8	21 3/8	68	100	102 3/8	15	27 3/8	33	54	1 7/16	6 1/4	28	105 3/8	28
4160	173 3/8	147 3/16	119 7/16	75 3/8	17 11/16	37 1/2	32 1/2	68	140	142 3/8	7 11/16	31 1/4	36 15/16	60	1 7/16	6 1/4	28	145 3/8	28
5190	175 3/8	152 3/16	123 7/16	80 3/8	18 13/16	35 3/4	34 3/4	73	140	142 3/8	4 1/2	34 1/2	41 1/8	64	1 9/16	6 1/4	29 3/4	145 3/8	30