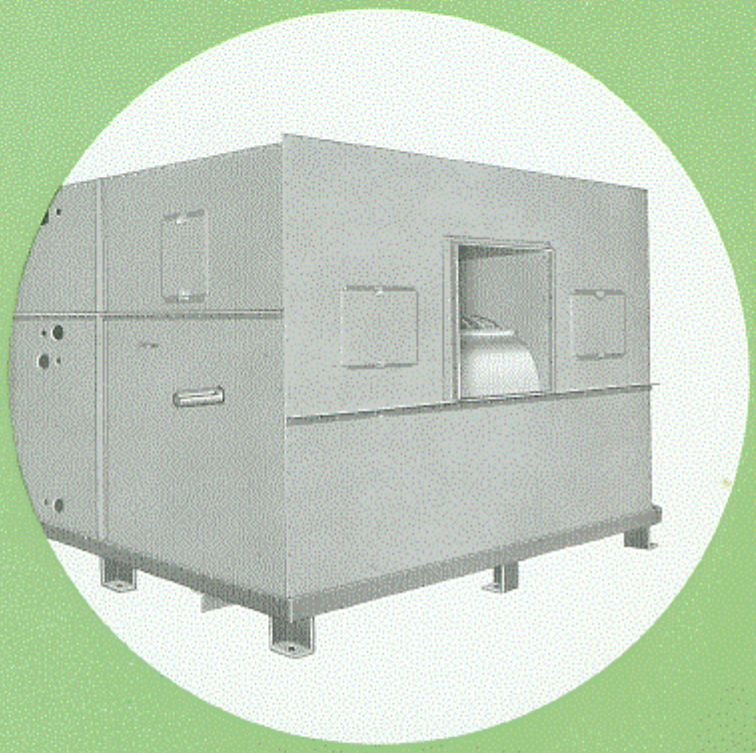
Bulletin 1312

CLARAGE

dependable equipment for making air your servant



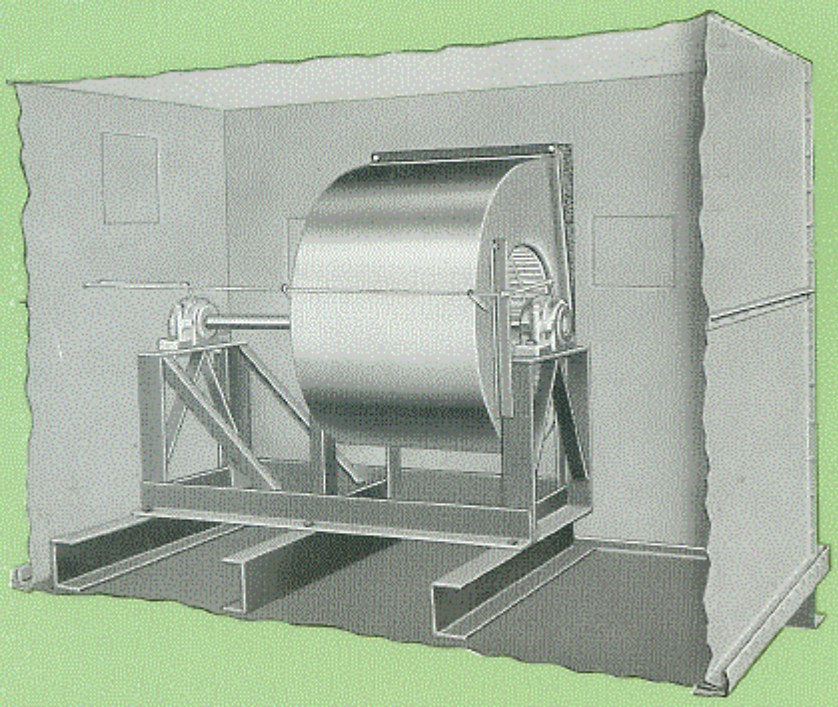
HI-STATIC MULTITHERMS

for high-pressure service

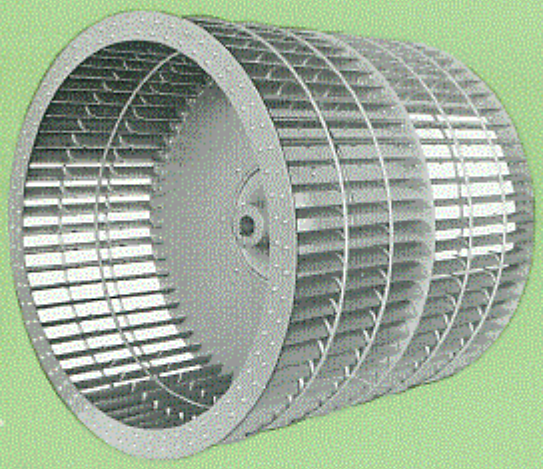
CLARAGE FAN COMPANY, Kalamazoo, Michigan

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES

CLARAGE *Hi-Static Multitherms*



Heavy structural steel members form a rigid support for the rotating assembly. Size 3680 shown in cutaway view. (On the cover is a Size 4120.)



Individual die formed blades are securely riveted to the rim and centerplate. For added strength and rigidity a heavy-duty hub and peripheral reinforcing are used.

The Hi-Static Multitherm is a specially adapted version of the popular Clarage Multitherm Air Conditioning Unit. Developed for high pressure service, the Hi-Static Multitherm has its principal application in high velocity, conduit type air conditioning systems which are frequently utilized for the conditioning of multi-story buildings.

As the name implies, conduit type systems have ducts of reduced size—an important space-saving feature. Because such systems involve relatively high duct velocities and because remote location of the equipment is usually desirable, the resultant pressure drop across the supply distribution system is considerable. Ordinarily it is several times as great as is experienced in the conventional air conditioning system. A sound trap should be installed between the unit outlet and the supply air risers.

Supply air is normally introduced to the conditioned space through a room diffuser unit which induces a secondary flow of recirculated air—thus ordinarily eliminating the necessity for return air ducts from the conditioned areas. As a result, the pressure drop through the conditioner itself and the air intake duct system need be no greater than that for a similar portion of a conventional system.

Component sections of the Hi-Static Multitherm, except for the fan section, are the same as for the highly regarded standard horizontal Multitherm (see Clarage Catalog 1307-A). The fan section, with its fan, bearings, and load carrying structures, is specifically designed to withstand the heavy-duty service imposed by the conduit type system.

In order to secure the most dependable and efficient fan operation, one double width, double inlet fan with a forward curved blade wheel is used. The performance table on the next page shows the range of operation for the various size units, with outlet velocities commensurate with the static pressures listed.

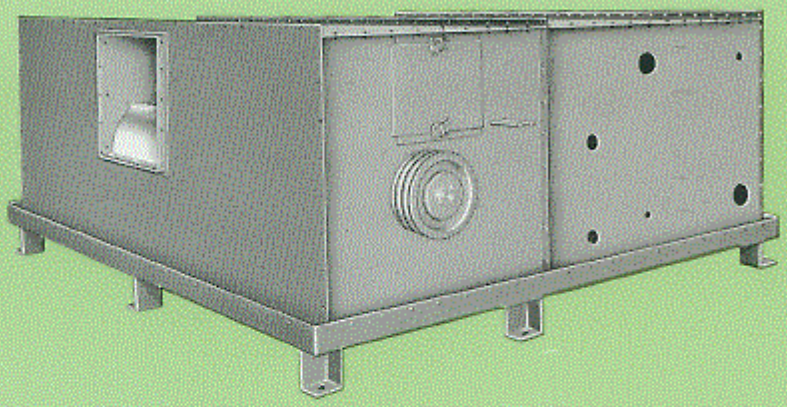
Because the high static pressures involved require high operating speeds and large horsepower, the fan wheel, housing, bearings, and supports are built particularly rugged, as illustrated above. Note the exceptionally heavy structural members, the supporting pan, and the sturdy legs which assure a stable, smooth operating unit. For trouble-free service, the motor must be mounted on a base separate from the unit.

Clarage Hi-Static Multitherms are available in seven sizes, covering a volume range of approximately 2500 through 22,000 CFM and suitable for systems having a static pressure (internal plus external) of 8" WG maximum. They are built in horizontal arrangement only. Overall casing dimensions are the same as for a corresponding size horizontal Multitherm unit.

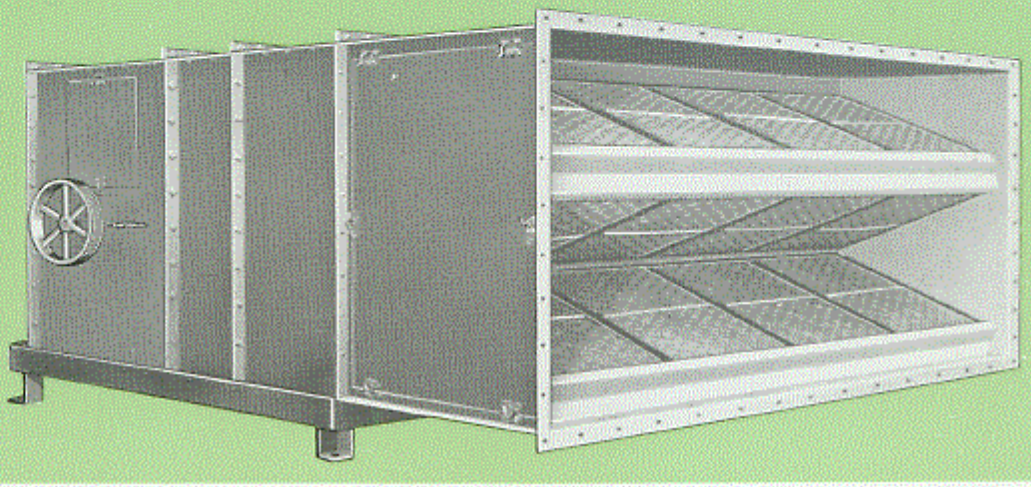
Unit components on the up-stream side of the Hi-Static Multitherm are identical with those of the standard Multitherm. **Filters** in either flat or angle arrangement are available in throw-away type, permanent low velocity type, or permanent high velocity type. **Humidifiers** of either spray, grid, or pan types can be furnished.

Cooling coils are copper tube with helically wound copper or aluminum fins. They are available in two types—suitable for use with water or brine, or for freon direct expansion refrigerants. **Heating coils**, constructed of similar materials, are provided in either of two types: the steam distributing type for uniform temperature distribution or the conventional type. Hot water coils also are available.

The Hi-Static Multitherm can also be furnished in a horizontal sprayed coil type unit.



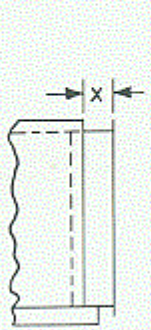
Size 1840 unit consisting of fan section and coil section with water cooling coil and steam heating coil. Motor must be mounted separately on its own base.



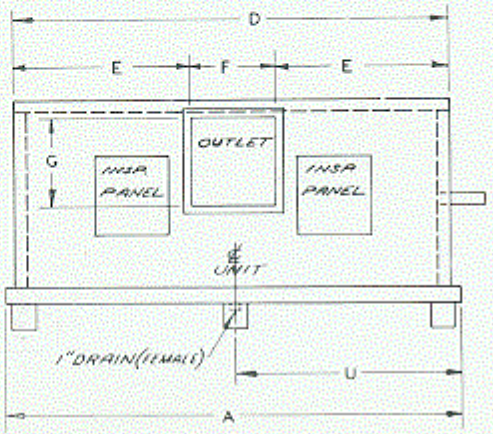
Inlet end of Size 2450. This particular unit is equipped with an angle type filter section and two coil sections in addition to the fan section. Grease type fittings for external lubrication of the anti-friction bearings are standard for all units.

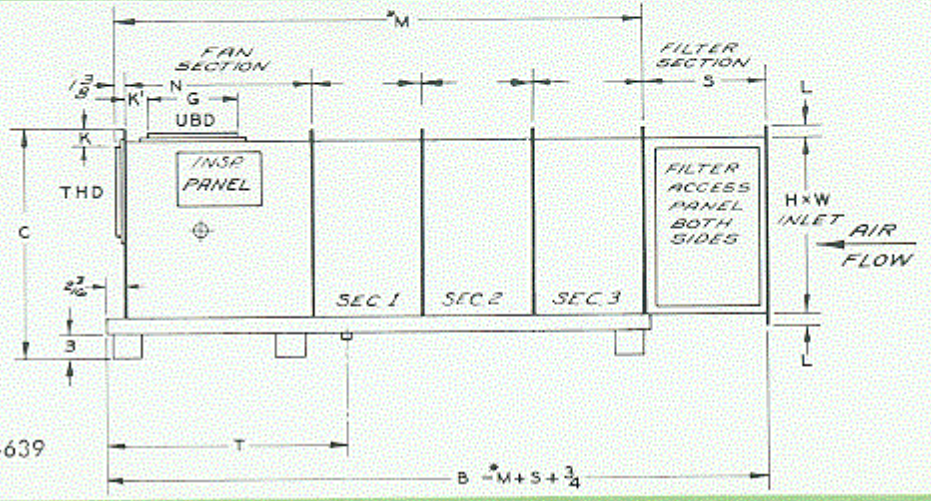
UNIT SIZE	STATIC PRESSURE (INTERNAL PLUS EXTERNAL)																				
	5"			5½"			6"			6½"			7"			7½"			8"		
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP
1820	2490	2102	3.41																		
	2700	2085	3.65	2800	2185	4.17	2800	2300	4.58	2900	2390	5.14	3000	2485	5.74	3000	2580	6.18	3100	2660	6.81
	3200	2025	4.30	3200	2136	4.72	3200	2254	5.15	3300	2350	5.76	3300	2455	6.22	3300	2550	6.69	3400	2635	7.38
	3630	2030	4.97	3630	2125	5.43	3630	2210	5.85	3630	2310	6.33	3630	2410	6.81	3630	2510	7.31	3630	2605	7.82
1830	2835	1910	4.12																		
	3200	1870	4.56	3300	1970	5.19	3400	2065	5.85	3600	2140	6.70	3800	2215	7.56	3900	2295	8.35	4000	2388	9.16
	3800	1856	5.38	4000	1950	6.22	4100	2032	6.95	4400	2116	8.09	4500	2196	8.91	4700	2270	9.96	4800	2345	10.90
	4420	1870	6.33	4675	1967	7.42	4845	2050	8.33	5090	2136	9.55	5240	2210	10.50	5450	2295	11.80	5520	2375	12.70
1840	4510	1525	6.57																		
	5000	1500	7.15	5300	1570	8.34	5400	1646	9.29	5600	1716	10.40	5700	1788	11.50	5800	1860	12.60	5900	1968	13.70
	6000	1482	8.48	6400	1554	9.93	6400	1626	10.90	6500	1690	11.90	6500	1756	12.90	6600	1818	14.10	6700	1882	15.30
	7010	1498	10.00	7410	1572	11.80	7420	1632	12.70	7420	1696	13.70	7420	1754	14.70	7420	1817	15.70	7420	1877	16.80
2450	5450	1390	7.92																		
	6100	1360	8.70	6400	1427	10.00	6500	1500	11.20	6700	1562	12.50	6900	1623	13.90	7000	1690	15.10	7200	1782	16.90
	7300	1348	10.30	7700	1413	12.00	7800	1478	13.30	7900	1536	14.50	8000	1595	15.90	8000	1655	17.00	8100	1710	18.40
	8475	1360	12.20	8950	1428	14.20	9050	1500	15.50	9050	1540	16.70	9050	1594	18.00	9050	1650	19.20	9050	1705	20.40
3060	6410	1275	9.32																		
	7200	1248	10.30	7500	1310	11.80	7700	1372	13.20	8000	1428	14.90	8100	1490	16.30	8300	1546	17.90	8500	1637	19.90
	8600	1235	12.20	9000	1296	14.00	9200	1353	15.60	9400	1410	17.30	9400	1462	18.70	9500	1515	20.20	9600	1570	21.80
	9960	1249	14.30	10530	1310	16.70	10750	1363	18.40	10750	1413	19.90	10750	1462	21.40	10750	1513	22.80	10750	1564	24.30
3680	8700	1058	12.38																		
	9700	1043	13.30	10300	1092	15.50	10600	1144	17.50	10900	1195	19.60	11100	1242	21.60	11400	1288	23.80	11600	1333	26.00
	11600	1006	14.60	12300	1055	17.10	12700	1102	19.20	12900	1147	21.10	12900	1190	22.90	13100	1235	25.10	13200	1289	27.80
	13530	1040	17.70	14300	1072	20.70	14820	1138	23.40	14850	1157	24.90	14850	1195	26.50	14850	1235	28.20	14850	1272	30.00
4120	11400	927	16.29																		
	12700	914	17.40	13400	957	20.20	13800	1002	22.80	14600	1040	25.90	15100	1080	28.90	15600	1120	32.00	15900	1159	35.00
	15200	880	19.20	16100	922	22.30	16600	964	25.10	17500	1002	28.80	18000	1040	31.80	18700	1078	35.40	18800	1112	37.90
	17700	894	23.20	18720	937	27.00	19450	978	30.60	20350	1020	34.70	21000	1058	38.50	21750	1093	42.80	21750	1123	45.00

DIMENSIONS



C-640





C-639

SIZE	A	B	C	D	E	F	G	H Height	W Width	K	K¹	L	*M	N	O Section	P Section	S₁ Flat Mount'g	S₂ Angle Mount'g	T	U	X
1820	51		36 7/16	48 1/2	17 1/16	14 3/8	12 1/2	30	46	5 5/16	1 5/16	1 1/4		23 1/16	14	19	6	28	25 1/4	25 1/2	3 3/4
1830	70 1/8		36 1/2	67 1/2	26 9/16	14 3/8	14 1/8	30	65	3 11/16	1 5/16	1 1/4		27 1/16	14	19	6	28	29 1/4	35 1/16	3 3/4
1840	90 1/4		37 5/16	87 1/2	34 11/16	18 1/8	17 1/2	30	85	2 1/8	1 5/16	1 1/4		33 1/16	14	19	6	28	35 1/4	45 1/8	3 3/4
2450	85 1/4		47 5/16	82 1/2	31 1/16	20 1/8	19 1/8	40	80	4 5/16	1 5/16	1 1/4		33 1/16	14	19	6	28	35 1/4	42 1/2	—
3060	95 1/4		47 5/16	92 1/2	35 7/16	21 5/8	20 3/4	40	90	2 3/4	1 5/16	1 1/4		39 1/16	14	19	6	28	41 1/4	47 5/8	3 3/4
3680	90 1/4		66 5/8	87 1/2	31 5/16	24 1/8	24 1/4	59	85	9 3/4	1 7/8	1 1/4		45 1/16	14	19	6	28	47 1/4	45 1/8	3 3/4
4120	105 1/4		75 3/4	102 7/8	37 5/16	28 1/4	27 3/4	68	100	15	4 5/8	1 7/16		54 1/16	14	19	7 1/4	28	56 1/4	52 5/8	3 5/16

*M is dependent upon the number and depth (O or P) of sections required.