

SARAVEL

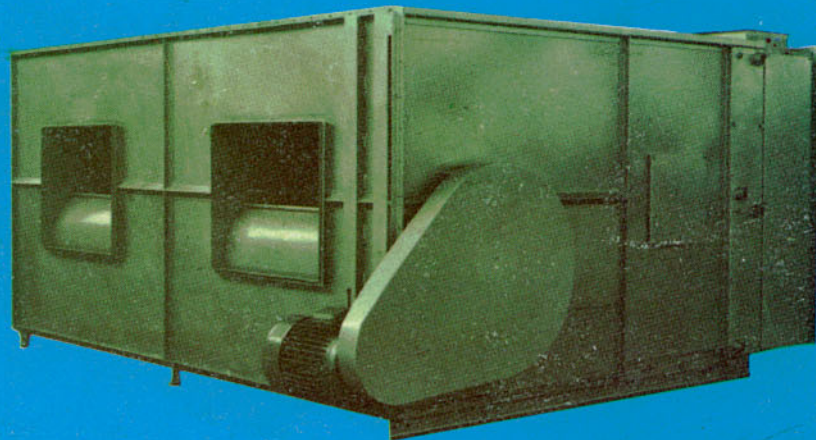
AIR HANDLING UNIT

معدن مطابقت استانه ايرجانه گيرت راول



دستگاه هوا ساز

SARAVEL AIR HANDLING UNIT



FOR COMFORT AND
PROCESS AIR CONDITIONING

SARAVEL MANUFACTURING CO.

75 PARDIS ST., MOLLASADRA AVE., TEHRAN 19, IRAN

Telephone:

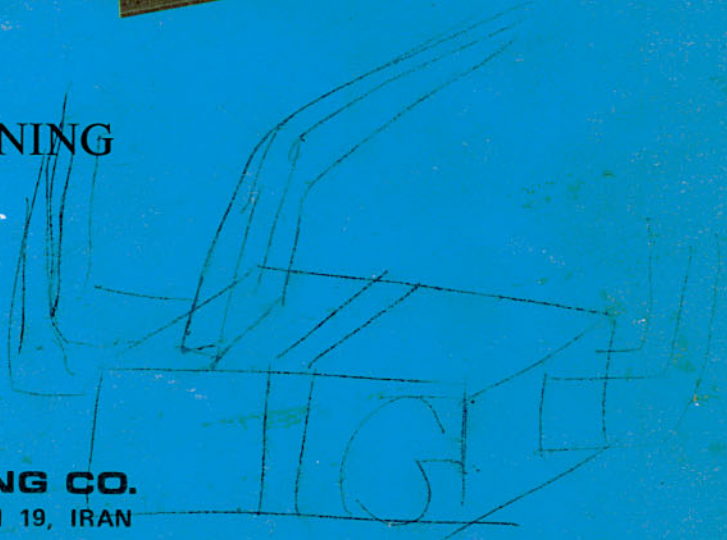
Telex:

Sales off: (021) 686255, 685694

Sales off: 213027 RKWL IR

Factory: (021) 680583 to 5

Factory: 212270 SRVL IR



CONSTRUCTION FEATURE

CONSTRUCTION

SARAVEL Air Handling Units are constructed of heavy duty angle iron frames and galvanized sheet metal

The units are modular and various accessories can be added as required. All bearings are heavy duty, labyrinth seal, ball bearing which are self-aligning. Mounting brackets are arranged so that units may be either floor or ceiling mounted.

COILS

Coils in SARAVEL Air Handling Units are made of 5/8" OD copper tubing with 0.4 mm thick aluminum fins with 100% contact around periphery. Direct expansion coils, chilled water cooling coils, hot water heating coils and steam heating coils are available with SARAVEL Air Handling Units for complete flexibility.

FANS

Heavy-duty oversized fans deliver air volumes at low tip speed for ultra-quiet operations. All blowers are of double width, double inlet forward curved construction. Statically and dynamically balanced. Wheels and housings are galvanized steel. Fan shafts are solid, cold-rolled, high-carbon steel. Shafts are oversized to insure operating limits below critical speeds. Three different discharge locations are available to suit every speed.

FILTERS

Low velocity cleanable type washable in hot water. Self cleaning (automatic) Air filters available (optional).

MOTORS

All motors furnished with SARAVEL Air Handling Units are drip-proof construction, with heavy duty ball bearings. Motors are 3 phase 380 Volts 50 Cycle

FAN DRIVES

All fan drives are V-Type belts for extra long life.

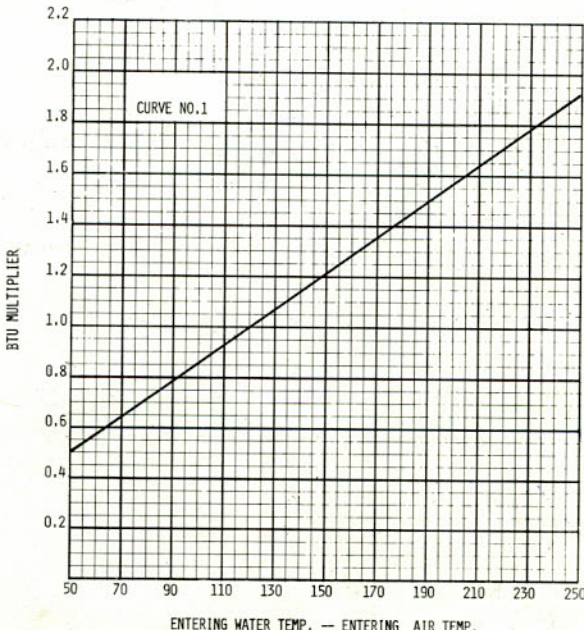
DRAIN PANS

Drain pans are furnished on all units having cooling coils. They are constructed of heavy galvanized sheet steel, treated with undercoating mastic.

ACCESSORIES

The following accessories are optional with SARAVEL Air Handling Units:

- 1" Thick fibre glass insulation
- Insulated drain pan
- Face and bypass dampers
- Mixing box and dampers
- Hot water or steam nozzle humidifier
- Air damper
- Angular, low velocity filter box with cleanable filters
- Preheating and reheating coils
- Self-cleaning (automatic) air filters



TO DETERMINE BTU/HR CAPACITIES AT VARIOUS ENTERING WATER AND AIR TEMPERATURES, APPLY MULTIPLIERS AS DETERMINED FROM CURVE ABOVE.

Handwritten notes and numbers on the right margin: 145, 23, 34, 50, 74, 80, 95, 127.

TABLE 1

SPECIFICATIONS

Sy	Fy	MODEL	NOMINAL C.F.M.	COILS			FILTERS FACE AREA Sq.Ft.	FANS			No.	DIAMETER, IN.		8"	10"	12"	
				FACE Hgt. in cm	FACE Lgt. in cm	FACE AREA Sq.Ft.		SERIES L	SERIES H								
										35		-	2				35
35	-	2	"	350	3500	1	66	1A	105	7.50	12.50	1	17	13	1"	1.0	3
60x 1/4	-	2	"	500	5000	1	66	1A	140	10.00	16.50	1	19	14	1"	1.0	3
72x 1/4	-	2	45	700	7000	1	93	2F	140	14.00	23.50	1	22	17	2"	1.55	5
"	1	1	45	1000	10000	1	107	2A	175	20.00	33.50	1	26	19	2"	1.8	7
82x 1/4	1	1	55	1500	15000	2	139	1A	210	30.00	50.00	1	29	22	2"	2.2	10
φ55	3	1	55	2200	22000	2	166	2Y	245	45.00	73.50	1	32	29	2"	2.8	14
φ55	3	1	55	2500	25000	2	139	1A	2x175	50.00	83.50	2	26	22	2"	2.1	1A
φ82x 1/4 + φ55	3	1	55	3000	30000	2	139	1A	2x210	60.00	100.00	2	29	26	2"	2.1	2.
"	3	1	55	4000	40000	2	166	2Y	2x245	80.00	133.50	2	32	29	2"	2.4	2A

TABLE 2

NOMINAL CAPACITY RATING

MODEL	C.F.M.	HEATING CAPACITY IN 1000 BTU/HR								COOLING CAPACITY 1000 BTU/HR			
		HOT WATER				STEAM							
		1 ROW	2 ROW	3 ROW	4 ROW	1 ROW	2 ROW	3 ROW	4 ROW	2 ROW	4 ROW	6 ROW	8 ROW
250	2500	70	116	160	189	130	195	285	334	48	75	95	113
350	3500	109	177	244	286	195	292	427	501	73	112	144	171
500	5000	148	252	338	398	260	390	570	668	100	161	200	236
700	7000	207	351	474	558	364	546	798	935	139	225	278	331
1000	10000	302	515	685	809	520	780	1140	1337	209	326	405	437
1500	15000	465	792	1052	1224	780	1170	1710	2005	323	504	604	677
2200	22000	723	1173	1597	1828	1140	1716	2508	2941	446	778	874	1040
2500	25000	756	1288	1703	2006	1300	1950	2850	3342	523	815	1014	1094
3000	30000	930	1584	2105	2449	1560	2340	3420	4011	647	1008	1252	1354
4000	40000	1240	2112	2807	3266	2080	3120	4560	5348	868	1344	1670	1806

CAPACITIES IN THIS TABLE BASED ON THE FOLLOWING CONDITIONS:

COOLING - AIR ENTERING 80°F D.B., 67°F W.B., CHILLED WATER TEMP. ENTERING COIL 45°F, LEAVING 55°F.

HEATING - AIR ENTERING 60°F, STEAM PRESSURE 15 LBS., HOT WATER TEMPERATURE ENTERING COIL 180°F LEAVING 160°F.

TABLE 3

AIR PRESSURE DROP OF CLEAN FILTERS, IN. WATER

FILTERS	FACE VELOCITY FPM									
	300	350	400	450	500	550	600	650	700	800
THROW-AWAY	.09	.12	.15	.19	.25	.33				
CLEANABLE	.028	.038	.049	.062	.076	.09	.12	.14	.18	.25

TABLE 4

COIL AIR PRESSURE DROP, IN. WATER

COIL	FACE VELOCITY FPM									
	300		400		500		600		700	800
	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	DRY
1 ROW	.02	.03	.04	.05	.06	.08	.08	.10	.10	.13
2 ROW	.04	.05	.06	.08	.10	.13	.14	.18	.18	.22
3 ROW	.06	.08	.10	.13	.15	.19	.21	.26	.27	.34
4 ROW	.08	.10	.14	.18	.21	.26	.28	.35	.35	.45
5 ROW	.10	.13	.18	.23	.26	.32	.34	.43	.45	.56
6 ROW	.13	.16	.21	.26	.30	.37	.41	.51	.54	.67
8 ROW	.17	.21	.27	.34	.40	.50	.55	.69	.72	.89

TABLE 7

DIMENSIONS

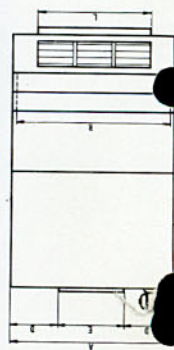
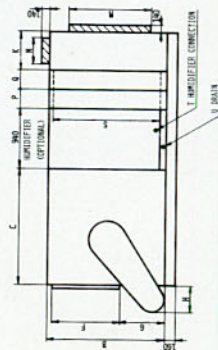
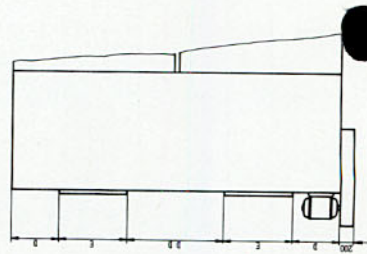
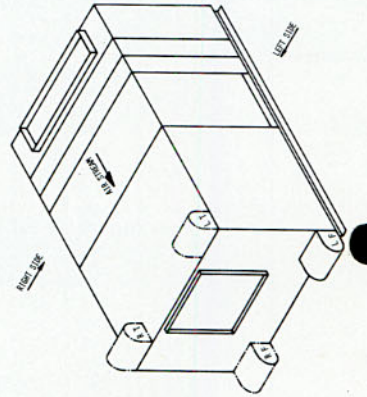
MODEL	A	B	C	D	DD	E	F	G	H	K	L	M	N	P	Q	R	S	T	U
250L	1120	800	1000	340	—	445	520	230	250	600	850	530	170	WIDTH OF EACH COIL	1050	470	1/2"	3/4"	
350L	1120	900	1100	310	—	495	575	270	250	600	850	650	290	1 ROW=100	1050	660	1/2"	3/4"	
500L	1460	1000	1150	460	—	535	625	320	300	600	1200	650	290	2 ROW=140	1400	660	1/2"	3/4"	
700L	1460	1150	1300	370	—	730	730	370	300	600	1200	890	290	3 ROW=170	1400	930	1/2"	3/4"	
1000L	1810	1400	1500	490	—	830	830	520	400	600	1200	1130	410	4 ROW=250	1750	1070	1/2"	1"	
1500L	2160	1550	1650	610	—	935	935	570	400	600	1550	1250	410	6 ROW=300	2100	1390	3/4"	1 1/4"	
2200L	2510	1800	1800	740	—	1040	1040	700	450	600	1750	1250	410	8 ROW=350	2450	1660	3/4"	1 1/4"	
2500L	3700	1550	1500	510	1020	830	830	520	450	600	2x1200	1130	410		2x1750	1390	2x3/4"	2x1 1/4"	
3000L	4400	1550	1650	630	1270	935	935	570	500	600	2x1550	1250	410		2x2100	1390	2x3/4"	2x1 1/4"	
4000L	5100	1800	1800	760	1500	1040	1040	700	500	600	2x1750	1250	410		2x2450	1660	2x3/4"	2x1 1/4"	

TABLE 8

DIMENSIONS

MODEL	A	B	C	D	DD	E	F	G	H	K	L	M	N	P	Q	R	S	T	U
250H	1120	800	800	390	—	350	370	350	250	600	850	530	170	WIDTH OF EACH COIL	1050	470	1/2"	3/4"	
350H	1120	900	900	390	—	350	420	400	250	600	850	650	290	1 ROW=100	1050	660	1/2"	3/4"	
500H	1460	1000	1050	510	—	445	420	450	300	600	1200	650	290	2 ROW=150	1400	660	1/2"	3/4"	
700H	1460	1150	1100	480	—	495	575	500	300	600	1200	890	290	4 ROW=250	1400	930	1/2"	3/4"	
1000H	1810	1400	1150	640	—	535	625	650	400	600	1200	1130	410	6 ROW=300	1750	1070	3/4"	1"	
1500H	2160	1550	1300	720	—	730	730	750	400	600	1550	1250	410	8 ROW=350	2100	1390	3/4"	1 1/4"	
2200H	2510	1800	1650	790	—	935	935	750	450	600	1750	1250	410		2450	1660	3/4"	1 1/4"	
2500H	3700	1550	1300	560	1120	730	730	650	450	600	2x1200	1130	410		2x1750	1390	2x3/4"	2x1 1/4"	
3000H	4400	1550	1500	690	1360	830	830	750	500	600	2x1550	1250	410		2x2100	1390	2x3/4"	2x1 1/4"	
4000H	5100	1800	1650	810	1610	935	935	750	500	600	2x1750	1250	410		2x2450	1660	2x3/4"	2x1 1/4"	

NOTE: ALL DIMENSIONS IN MM. EXCEPT MENTIONED. ROUGHING IN DIMENSIONS.

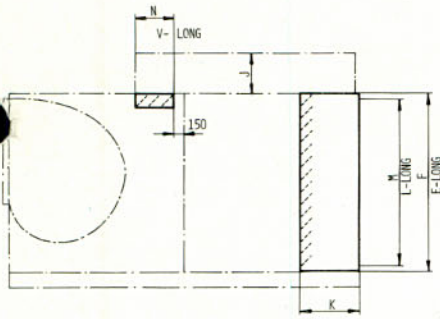


R.H. AND L.H. SIDE (CONNECTIONS) OF SARAVEL AIR HANDLING UNIT IS DETERMINED BY VIEWING UNITS ALONG THE AIR STREAM. LF (SHOWN) RF, RT AND LT AVAILABLE. TOP HORIZONTAL DISCHARGE SHOWN BHD, UP BLAST DISCHARGE AND DOWN BLAST DISCHARGE AVAILABLE. CONNECTIONS (COILS, DRAINS) MAY BE FURNISHED ON EITHER SIDE. ALL SPECIFICATIONS AND DATA SUBJECT TO CHANGE WITHOUT NOTICE.

DIMENSION DATA ON AIR HANDLING UNIT OPTIONAL PARTS

TABLE 9

FACE AND BYPASS DAMPERS

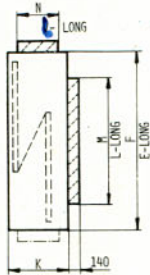


FACE AND BYPASS DAMPERS

MODEL	K	E	F	L	M	N	V	J
250	350	1120	800	1050	470	170	850	250
350	500	1120	900	1050	610	290	850	350
500	500	1460	1000	1400	660	290	1200	350
700	500	1460	1150	1400	930	290	1200	350
1000	600	1810	1400	1750	1070	410	1200	500
1500	600	2160	1550	2100	1390	410	1550	500
2200	600	2510	1800	2450	1660	410	1750	500
2500	600	3700	1550	2x1750	1390	410	2x120	500
3000	600	4400	1550	2x2100	1390	410	2x1550	500
4000	600	5100	1800	2x2450	1660	410	2x1750	500

TABLE 10

STAGGERED FILTERS



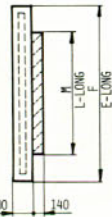
STAGGERED FILTERS

MODEL	K	E	F	L	M	N	F.A. SQ. FT.
250	600	1120	800	850	530	170	8.5
350	600	1120	900	850	650	290	12
500	600	1460	1000	1200	650	290	17
700	600	1460	1150	1200	890	290	23
1000	600	1810	1400	1200	1130	410	33
1500	600	2160	1550	1550	1250	410	50
2200	600	2510	1800	1750	1250	410	73
2500	600	3700	1550	2x1200	1130	410	2x33
3000	600	4400	1550	2x1550	1250	410	2x50
4000	600	5100	1800	2x1750	1250	410	2x73

Air washer { 2.5 - 8 GPM / 1000 CFM
1.5 - 6 GPM / 1000 CFM

TABLE 11

FLAT FILTERS



FLAT FILTERS

Sprayed coil 2 GPM / 1000 CFM

HUMIDIFIER 2 " "

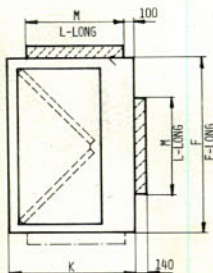
FOG NOZZLE 0.7 NO / 1000 CFM

10 105/HR / 1000 CFM
14 16/HR / 1000 CFM

MODEL	E	F	L	M	F.A. SQ. FT.
250	1120	800	850	530	5
350	1120	900	850	650	7
500	1460	1000	1200	650	10
700	1460	1150	1200	890	14
1000	1810	1400	1200	1130	20
1500	2160	1550	1550	1250	30
2200	2510	1800	1750	1250	44
2500	3700	1550	2x1200	1130	2x25
3000	4400	1550	2x1550	1250	2x30
4000	5100	1800	2x1750	1250	2x40

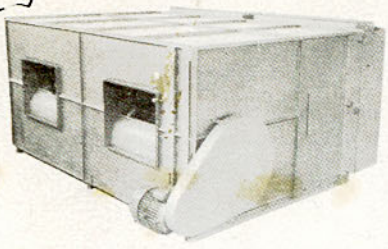
TABLE 12

MIXING BOX WITH FILTERS

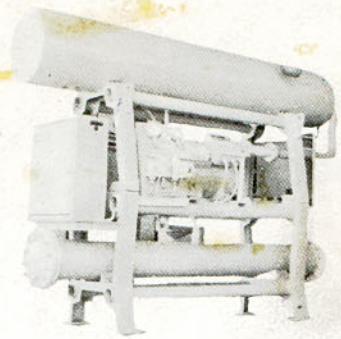


MIXING BOX WITH FILTERS

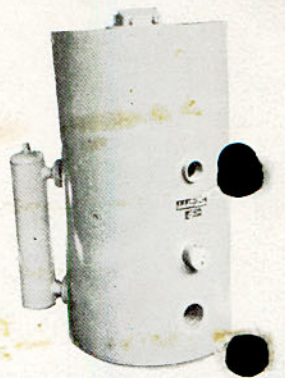
MODEL	K	E	F	L	M	F.A. Sq. Ft. (V Type)	F.A. Sq. Ft. (Flat)
250	600	1120	800	700	410	8.5	5
350	600	1120	900	700	410	12	7
500	850	1460	1000	1200	530	17	10
700	850	1460	1150	1200	650	23	14
1000	1000	1810	1400	1200	770	33	20
1500	1300	2160	1550	1800	890	50	30
2200	1300	2510	1800	2100	1010	73	44
2500	1000	3700	1550	2x1200	770	2x33	2x25
3000	1300	4400	1550	2x1800	820	2x50	2x30
4000	1300	5700	1800	2x2100	1010	2x73	2x40



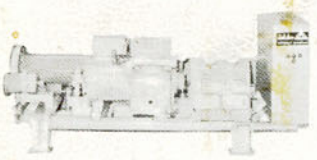
AIR HANDLING UNIT



PACKAGED CHILLER

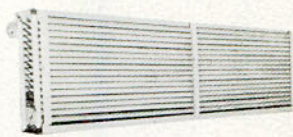


STEAM & HOT WATER BOILER



CONDENSING UNIT

280
46
388.5
425



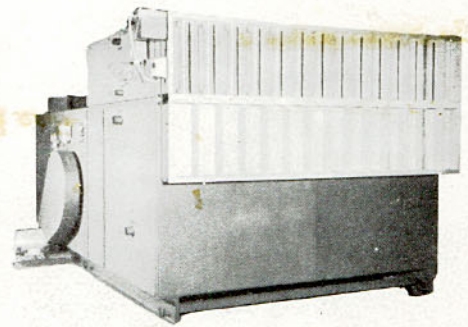
STEAM & HOT WATER COIL



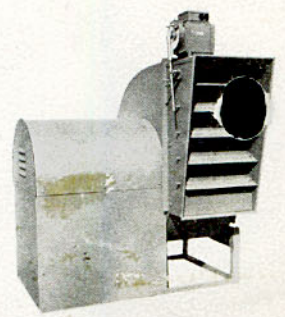
DIRECT EXPANSION COIL



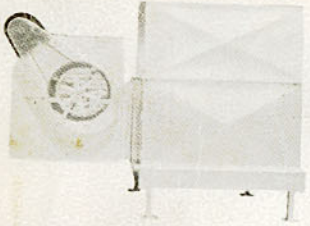
PACKAGED AIR CONDITIONER



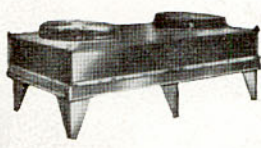
BLOW-THRU MULTIZONE



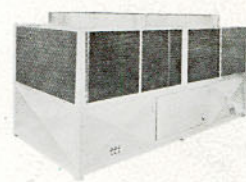
UTILITY FAN WITH MOTORIZED BACKDRAFT DAMPER



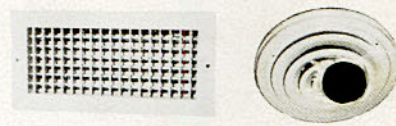
COOLING TOWER



AIR COOLED CONDENSER



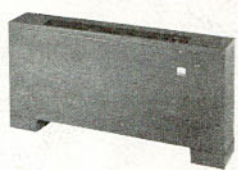
AIR COOLED WATER CHILLER



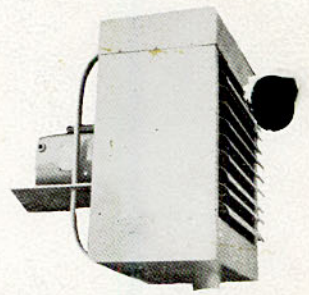
REGISTERS & DIFUSERS



AUTOMATIC AIR FILTER



FAN & COIL UNITS



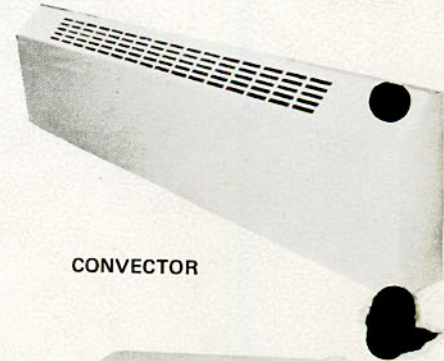
STEAM & HOT WATER UNIT HEATER



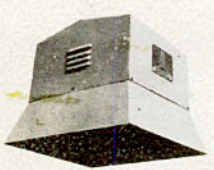
AIR HANDLING UNIT VERTICAL TYPE



INDUSTRIAL HEATING AND COOLING COILS



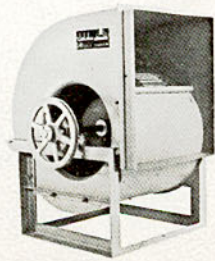
CONVECTOR



ROOF POWER VENTILATOR



INDUSTRIAL UNIT HEATER



CENTRIFUGAL FAN (DOUBLE INLET)



HEAT EXCHANGER