

CP Series

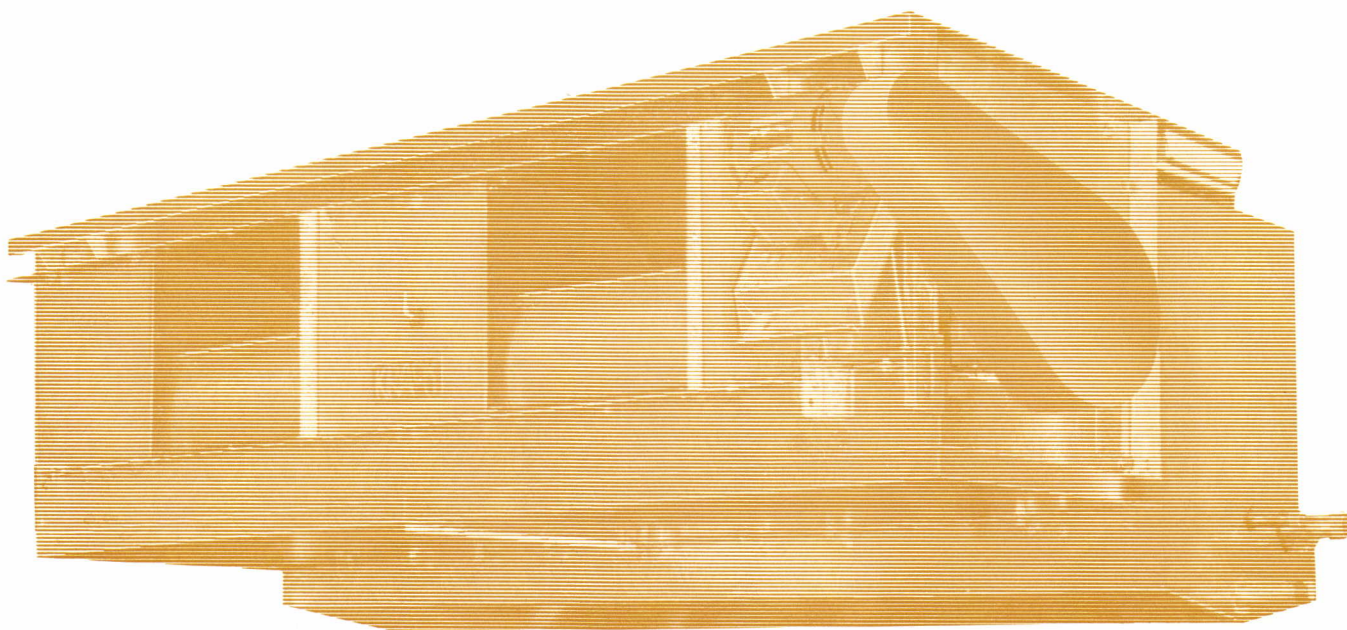
Bulletin: CP-379

March 1, 1979

Supersedes: CP-474

KRACK

Centrifugal Fan Product Coolers



*10 Basic Models. Air Flow from 2,000 to 53,000 CFM,
Air, Water, Hot Gas and Electric Defrost.
Ammonia, Halocarbon and Brine Refrigerants.
Capacities from 13,000 to 445,000 BTUH/10° TD.*



CONNECTIONS

[illegible]

Model Key

CP - C - 25 - 6 - 8 - DX - F22 - A - LH - 5 - TH
CP - 25 - 8 - 4 - RB - A - HGU - RH - 7½ - I

CENTRIFUGAL FAN

COPPER TUBE/AL FIN COIL

(space void for steel)

COIL FACE AREA—SQ. FT.

COIL ROW DEPTH

COIL FIN SPACING—FINS/INCH

TYPE OF REFRIGERANT FEED

DX—Direct expansion FI

BB—Recirculated bottom B—Brine

RT—Recirculated top CW—Water

CW—Water

REFRIGERANT

A—Ammonia F-12, F-22, F-502 Halocarbons

TYPE OF DEERHORNTYPE OF DEFROST _____
A Air or off cycle (Room above 34°F) WD Water _____

HCC: Hot gas coil only (Room above 29.85°)

HGC—Hot gas coil only (Room above 32°F)

FD—Electric coil only (Room above 228)

ED—Electric coil only (Room above 32°)

EDL—Electric coil and drain pan (Room — 20 to 32°F)

COIL AND DRAIN CONNECTION

RH—Right hand standa

LH—Left h

CALL US TODAY

FAN MOTOR HP _____

FAN DISCHARGE ARRANG

Horizontal TH=Top Horiz. BH=Bottom Horiz.

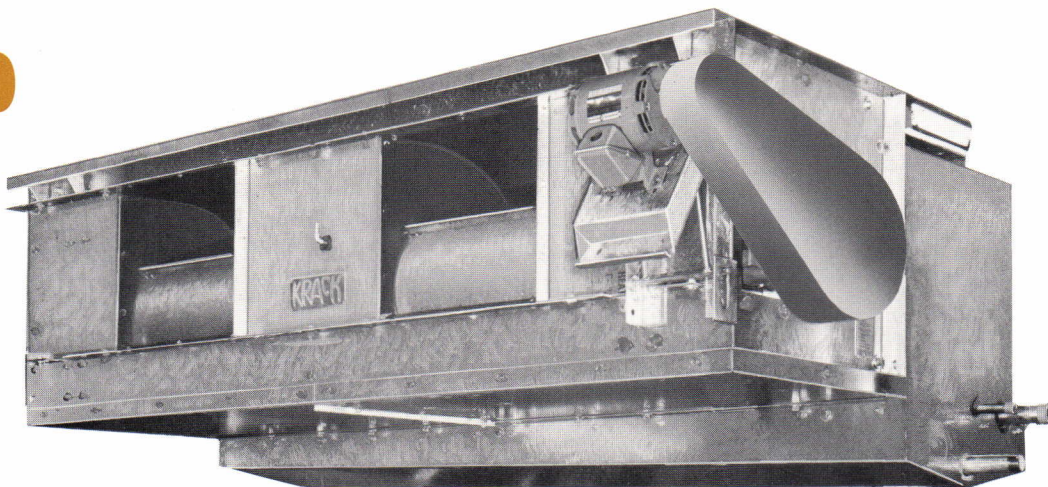
Down DE—Down

UP, UF—Up Front
UR—Up Rear

CONNECTION SIZE NOTES:

1. Do not use for construction purposes.
Use certified drawing information.
2. Contact factory for chilled water, brine, heat reclaim, or other non-listed sizes.
3. Hot gas drain pans for halocarbons with 2 sets of connections require hot gas feed at end opposite coil connection.
4. DXF and DXA liquid connection sizes are distributor openings.
5. Connection sizes do not determine liquid or suction line sizes.
6. Steel suction adaptors on copper coils will be MPT thru 2" and capped steel pipe to be cut off in the field on larger sizes.

STANDARD FEATURES



Krack Product Coolers incorporate many high quality design features to assure optimum performance. Check these standard features.

- ☐ Tubes are staggered in the direction of air flow.
- ☐ Turbo-Spacers, located between tubes in the secondary plate fin surface, position fins at 3, 4, or 6 per inch (also 8 on cu/al) and improve air-side turbulence.
- ☐ Variable fin spacing is accomplished with continuous plate fins. See Options.
- ☐ Circuits with vertical headers are cross-fed in row depth, achieving equal loading and refrigerant side pressure drop.
- ☐ Recirculated designs use orifices in each circuit inlet to balance the refrigerant static head in the vertical liquid header.
- ☐ Coil circuiting is designed to suit the application, minimizing circuit pressure drops. Low temperature over-fed coils may be double circuited with two vertical liquid headers.
- ☐ Hot gas defrost designs using TEV feed have a vertical hot gas header connected to each circuit. Distributor capillaries bypass the header. This feature provides a large hot gas opening to each circuit for rapid defrosting. Product coolers up to 15 ton capacity may be provided with a side-ported distributor for DXF feed.

Proven coil construction

- ☐ Steel coils for ammonia and calcium chloride brine have steel fins and tubes which are hot dip galvanized after fabrication. Turbo-Spacers leave the tube wall open for maximum galvanizing penetration.
- ☐ Coils with copper tubes and aluminum fins are applicable for halocarbons, glycol brines and water. Tubes on these coils are expanded into the fins to provide positive mechanical contact.
- ☐ Thermostatic expansion valve (TEV) fed coils have a distributor and capillary feed arrangement requiring externally pressure equalized TEV.
- ☐ All coils are tested under water with 300 PSIG air pressure. Steel coils are tested before and after galvanizing.

Heavy duty housing and fans

- ☐ Coil and fan housings are constructed of mill galvanized steel. Models CP-25 thru 75 have 20 gauge panels attached to painted steel frames. Smaller models use 12 gauge panels without frames. All fan section bottom panels are 20 gauge metal.
- ☐ Squirrel cage centrifugal fans are double inlet with non-overloading forward curved blades. Wheels and scrolls are mill galvanized and balanced for smooth operation. Fan shafts are solid tempered steel with a rust resistant coating. Shaft

end bearings are ball bearing construction with lubrication lines extended to grease fittings. Inboard bearings between fans are self-aligning, split sleeve type with extended lubrication lines. Models CP-44, 60 and 75 have a split shaft joined by a resilient coupling with sleeve bearings on either side.

- ☐ Mill galvanized drain pans are pitched to the refrigerant connection end and available with optional insulation. Drain pans are shipped loose for field mounting unless the unit is specified with optional mounting legs.

Motors and belt drive

Motors are 1750 RPM, open drip-proof for 200/400 or 230/460-3-60 power. Optional motors are available upon request. Oversized belt drives are selected for fan motor horsepower, plus 20%. Fixed motor and fan sheaves are balanced for smooth operation. Belt guards, motors and drives are shipped loose for field mounting.

Unique hot gas heated drain pans

High performance construction consists of two seam welded stainless steel sheets, hydraulically expanded to form a "coil-less" waffle pattern. This design assures that the entire pan surface is in contact with hot gas. Polyurethane insulation is foamed-in-place between the pan and its mill galvanized outer cover.

SPECIFICATIONS

CAPACITY—BTUH/°F TD												BELOW 30°F COIL TEMP— 700 FPM—FROSTED COIL				COIL DATA										WEIGHTS				
ABOVE 30°F COIL TEMP.—600 FPM—WET COIL																FACE						INT.		DXF		WATER		LBS.		
MODEL NO.	3 FINS/INCH		4 FINS/INCH		6 FINS/INCH		8 CU/AL COIL ONLY		3 FINS/INCH		4 FINS/INCH		ROWS DEEP	AREA SQ. FT.	SURFACE SQ. FT.		3 FPI	4 FPI	6 FPI	8 FPI	VOL. CU FT	CHARGE LBS.	GPM FPT	DEFROST	INSUL. CU-AL	DRAIN PAN STEEL	4 FPI	15 35 L—		
	DX	REC	DX	REC	DX	REC	DX	REC	DX	REC	DX	REC			3 FPI	4 FPI													6 FPI	8 FPI
CP-64	1363	1639	1505	1803	1737	2072	1968	2362	1299	1559	1420	1699	4		241	311	452	592	0.37	7				1110	1235					
CP-66	1885	2265	2056	2466	2333	2788	2539	3047	1837	2204	1997	2399	6	6.56	362	467	678	888	0.55	11		12		1140	1340					
CP-68	2310	2771	2518	3025	2773	3325	2952	3542	2309	2771	2486	2990	8		482	622	904	1185	0.74	14		1-1"		1185	1445					
CP-610	2683	3220	2877	3459	3101	3712	3214	3857	2722	3266	2919	3510	10		603	778	1130	1480	0.93	18				1250	1530					
CP-104	2061	2478	2275	2725	2624	3131	2973	3568	1962	2354	2145	2567	4	9.91	364	470	683	895	0.54	10				1295	1550					
CP-106	2849	3423	3108	3728	3525	4212	3835	4602	2775	3330	3016	3624	6		546	705	1024	1342	0.81	16		18		1380	1680					
CP-108	3491	4189	3806	4572	4189	5023	4460	5352	3488	4186	3756	4517	8		728	940	1366	1790	1.08	21		1-1"		1520	1850					
CP-1010	4054	4865	4347	5225	4685	5608	4856	5827	4113	4936	4410	5302	10		910	1175	1707	2237	1.35	26				1705	2075					
CP-154	3092	3718	3413	4089	3937	4698	4461	5353	2944	3533	3218	3851	4	14.87	633	809	1164	1516	0.98	19				1855	2210					
CP-156	4775	5136	4663	5627	5289	6320	5755	6906	4166	4999	4526	5439	6		966	1235	1777	2315	1.47	28		27		2070	2535					
CP-158	5238	6286	5711	6860	6268	7536	6692	8030	5234	6281	5636	6778	8		1300	1663	2391	3132	1.96	38		2-1"		2250	2755					
CP-1510	6083	7300	6523	7841	7029	8415	7286	8743	6171	7405	6618	7955	10		1633	2089	3005	3917	2.45	47				2460	2995					
CP-204	4124	4958	4552	5453	5250	6264	5949	7139	3926	4711	4292	5136	4	19.83	844	1079	1552	2022	1.30	25				2140	2605					
CP-206	5701	6850	6219	7459	7053	8428	7647	9176	5552	6662	6035	7252	6		1288	1645	2370	3033	1.95	38		36		2200	2910					
CP-208	6986	8383	7617	9149	8383	10050	8924	10709	6980	8376	7515	9039	8		1734	2217	3189	4044	2.60	50		2-1"		2620	3190					
CP-2010	8112	9735	8698	10456	9374	11222	9717	11660	8229	9875	8824	10610	10		2178	2786	4007	5055	3.25	63				2870	3500					
CP-254	5190	6240	5729	6864	6609	7885	7488	8986	4942	5930	5402	6464	4	24.96	1062	1358	1954	2546	1.63	31				2480	3025					
CP-256	7176	8623	7828	9388	8878	10608	9660	11592	6889	8267	7597	9128	6		1621	2074	2983	3819	2.45	47		45		2810	3435					
CP-258	8793	10551	9587	11516	10551	12650	11232	13478	8786	10543	9460	11377	8		2182	2791	4014	5092	3.26	63		2-1"		3160	3850					
CP-2510	10211	12253	10948	13161	11799	14125	12230	14676	10358	12430	11107	13354	10		2742	3507	5044	6365	4.08	79				3820	4170					
CP-354	7237	8700	7988	9570	9214	10993	10440	12528	6890	8268	7532	9013	4	34.80	1481	1834	2724	3430	2.24	43				3100	3775					
CP-356	10005	12022	10915	13090	12378	14790	13468	16161	9744	11693	10591	12727	6		2261	2875	4159	5145	3.36	65		60		3550	4335					
CP-358	12259	14711	13366	16055	14711	17637	15660	18792	12250	14700	13190	15863	8		3042	3891	5597	6860	4.48	86		2-1"		3960	4825					
CP-3510	14236	17084	15265	18349	16451	19694	17052	20462	14442	17330	15486	18617	10		3823	4889	7032	8575	5.60	108				4410	5385					
CP-444	9447	11336	10426	12490	12025	14347	13626	16351	8993	10792	9830	11764	4	45.42	1950	2495	3587	4677	2.90	56				4220	5155					
CP-446	13036	15643	14244	17085	16155	19304	17578	21094	12718	15262	13823	16610	6		2978	3810	5478	7015	4.36	84		85		4835	5900					
CP-448	15988	19186	17446	20955	19201	23019	20439	24527	15988	19185	17213	20704	8		3972	5080	7308	9354	5.80	112		3-1"		5510	6720					
CP-4410	18304	21965	19922	23949	21471	25704	22256	26707	18849	22619	20211	24322	10		4964	6350	9131	11693	7.26	140				6040	7390					
CP-454	9649	11600	10615	12760	12285	14658	13920	16704	9187	11024	10042	12017	4	46.40	1974	2525	3632	4734	2.99	58				3880	4725					
CP-456	13340	16029	14553	17453	16504	19720	17957	21548	12992	15590	14122	16970	6		3014	3855	5545	7101	4.49	86		75		4450	5425					
CP-458	16345	19615	17822	21407	19615	23516	20880	25056	16333	19600	17587	21150	8		4057	5188	7462	9468	5.98	115		2-1"		5025	6125					
CP-4510	18982	22778	20353	24465	21935	26258	22736	27283	19256	23107	20648	24824	10		5097	6519	9376	11835	7.48	144				5690	6925					
CP-604	12581	15125	13888	16638	16019	19113	18150	21780	11979	14375	13095	15669	4	60.50	2574	3292	4735	6171	3.87	75				5550	6780					
CP-606	17394	20900	18975	22756	21519	25713	23414	28097	16940	20328	18414	22127	6		3930	5027	7230	9256	5.81	112		90		6360	7760					
CP-608	21313	25575	23238	27913	25575	30663	27225	32670	21296	25555	22931	27577	8		5289	6765	9730	12342	7.74	149		3-1"		7250	8840					
CP-6010	24750	29700	26538	31900	28600	34238	29645	35574	25108	30130	26922	32367	10		6646	8499	12225	15428	9.68	186				7950	9720					
CP-754	15746	18895	17377	20817	20042	23912	22710	27252	14989	17987	16384	19606	4	75.70	3310	4233	6088	7934	4.84	93				6880	8410					
CP-756	21726	26071	23741	28474	26925	32173	29296	35155	21196	25435	23038	27684	6		4964	6350	9131	11901	7.26	140		95		7885	9620					
CP-758	26646	31975	29078	34926	32002	38365	34065	40878	26646	31975	28688	34506	8		6620	8466	12180	15868	9.67	186		3-1"		8990	10960					
CP-7510	30507	36608	33204	39915	35785	42839	37093	44512	31416	37699	33685	40537	10		8274	10583	15219	19835	12.10	233				9860	12050					

Capacity is based on sensible heat removal with a wet, dry, or frosted coil with TD's less than 20 Deg.F. Wet coil heat transfer is more efficient than frosted resulting in 10% higher ratings. Dry ratings are between wet and frosted, however, refrigeration coils seldom operate dry. Although rated for sensible heat, a product cooler will absorb the room total load consisting of both sensible and latent if the TD is adequate for the rated CFM. Flooded ratings are the same as recirculated.

Fan motor HEAT is not included in the ratings and must be included in the load estimate.

MOTOR HP	BTUH/HP AT VARIOUS ROOM TEMP.				
	45°F	35°F	20°F	-10°F	-30°F
3 HP and smaller	3900	4000	4100	4400	4550
5 HP and larger	3100	3200	3300	3550	3700

Brine refrigerants or chilled water require factory selections. Provide capacity required; type, GPM, temperature and concentration of brine; and room temperature.

50 HERTZ applications will use 1,450 RPM motors with belt drives adjusted to maintain rated fan speeds. Derating is not necessary.

CAPACITY CORRECTION FACTORS MULTIPLY RATED CAPACITY BY FACTOR

RATED CAPACITY	VARIOUS AIR FLOW RATES						
	ABOVE 30°F COIL 600 FPM FACE VELOCITY				BELOW 30°F COIL 700 FPM FACE VELOCITY		
	COIL FACE VELOCITY—FPM				FPM		
ROW DEPTH	400	500	600	700	500	600	700
4	0.82	0.91	1.0	1.07	0.85	0.93	1.0
6	0.80	0.90	1.0	1.08	0.83	0.92	1.0
8	0.79	0.89	1.0	1.09	0.81	0.91	1.0
10	0.77	0.88	1.0	1.10	0.80	0.90	1.0

VARIABLE FIN SPACING—NOT RECOMMENDED FOR DX					
ENTERING AIR 2 ROWS FINS/INCH	REMAINING ROWS FINS/INCH	RATED CAPACITY FINS/INCH	FACTOR ROW DEPTH		
			6	8	10
1 1/2	3	3	0.85	0.89	0.91
2	4	4	0.85	0.88	0.90

DIRECT EXPANSION FEED—DXF HALOCARBON REFRIGERANTS			
SAT	SUCT	°F	FACTOR
—20			1.0
—30			0.9
—40			0.8
—50			0.7

CENTRIFUGAL FAN DATA

TOTAL STATIC PRESSURE—INCHES, WATER GAUGE																			STANDARD MOTOR HP	NO-DIA CENTIFUGAL FANS
Face Velocity		Outlet Velocity		1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"				
				Model	FPM	CFM	FPM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM		
CP-6	400	2620	1416	640	.45	730	.60	810	.77	—	—	—	—	—	—	—	—	1	1-13"	
CP-6	500	3275	1770	720	.75	790	.91	860	1.07	930	1.23	1000	1.45	—	—	—	—	1		
CP-6	600	3930	2124	800	1.15	870	1.35	930	1.48	990	1.70	1050	1.90	1160	2.30	1270	2.68	1 1/2		
CP-6	700	4585	2478	—	—	—	—	1010	2.15	1060	2.30	1120	2.50	1207	2.83	1310	3.30	3		
CP-10	400	4000	1081	590	.62	695	.86	798	1.14	—	—	—	—	—	—	—	—	1	2-13"	
CP-10	500	5000	1351	630	.90	720	1.10	810	1.42	894	1.70	—	—	—	—	—	—	1 1/2		
CP-10	600	6000	1622	686	1.24	763	1.52	838	1.80	910	2.12	983	2.48	—	—	—	—	2		
CP-10	700	7000	1892	750	1.88	820	2.20	885	2.52	950	2.86	1010	3.22	1140	4.00	—	—	3		
CP-15	400	6000	1145	529	.88	627	1.22	—	—	—	—	—	—	—	—	—	—	1	2-14 5/8"	
CP-15	500	7500	1431	575	1.36	655	1.70	729	2.10	—	—	—	—	—	—	—	—	2		
CP-15	600	9000	1718	629	1.92	700	2.34	763	2.76	824	3.18	888	3.68	—	—	—	—	3		
CP-15	700	10500	2004	695	2.80	752	3.20	812	3.68	862	4.20	920	4.66	1029	5.78	—	—	5		
CP-20	400	8000	1389	500	1.50	572	1.82	—	—	—	—	—	—	—	—	—	—	2	2-16 1/4"	
CP-20	500	10000	1736	573	2.36	628	2.80	681	3.32	725	3.66	775	4.12	878	5.20	—	—	3		
CP-20	600	12000	2083	640	3.50	693	4.12	740	4.62	780	5.18	830	5.68	907	6.74	987	7.88	5		
CP-20	700	14000	2431	725	5.00	763	5.70	805	6.44	845	7.06	880	7.70	955	8.92	1027	10.12	7 1/2		
CP-25	400	10000	1202	389	1.48	452	1.98	517	2.56	—	—	—	—	—	—	—	—	2	2-19 1/2"	
CP-25	500	12500	1502	427	2.80	480	2.84	531	3.42	582	4.12	—	—	—	—	—	—	3		
CP-25	600	15000	1803	470	3.42	517	4.02	562	4.66	604	5.36	646	6.10	732	7.76	—	—	5		
CP-25	700	17500	2103	540	5.20	560	5.60	600	6.10	640	7.00	675	8.20	750	9.80	825	11.80	7 1/2		
CP-35	400	14000	1122	378	1.86	—	—	—	—	—	—	—	—	—	—	—	—	—	3-19 1/2"	
CP-35	500	17500	1402	410	2.88	467	3.69	522	4.56	579	5.82	—	—	—	—	—	—	5		
CP-35	600	21000	1683	452	4.38	501	5.25	548	6.18	593	7.20	638	8.31	731	11.64	—	—	7 1/2		
CP-35	700	24500	1963	490	5.97	535	7.20	580	8.40	620	9.30	658	10.20	738	12.90	—	—	10		
CP-44	400	18200	1458	420	3.23	475	4.04	527	4.91	580	5.90	633	7.01	739	9.50	—	—	5	3-19 1/2"	
CP-44	500	22700	1819	473	5.24	519	6.15	564	7.11	606	8.17	647	9.28	732	11.77	819	14.56	7 1/2		
CP-44	600	27300	2188	—	—	573	9.28	612	10.36	650	11.51	686	12.70	757	15.28	826	18.10	10		
CP-44	700	31800	2548	—	—	—	—	665	14.50	699	15.77	731	17.06	794	19.81	855	22.76	15		
CP-45	400	18670	1263	293	2.90	335	3.60	379	4.70	—	—	—	—	—	—	—	—	5	2-26"	
CP-45	500	23300	1576	326	4.36	362	5.30	396	6.30	430	7.34	465	8.80	—	—	—	—	7 1/2		
CP-45	600	28000	1894	367	6.78	398	7.90	428	9.04	456	10.20	484	11.40	539	14.00	596	16.98	10		
CP-45	700	32700	2212	410	10.20	435	11.42	465	12.72	488	14.16	513	15.42	561	18.22	608	21.20	15		
CP-60	400	24000	1406	356	4.14	403	5.22	449	6.42	497	7.80	—	—	—	—	—	—	5	3-22 3/4"	
CP-60	500	30000	1757	399	6.69	439	7.89	478	9.21	515	10.62	552	12.15	628	16.10	701	20.19	10		
CP-60	600	36000	2109	455	10.50	482	11.70	516	13.14	549	14.70	581	16.35	643	19.77	705	24.00	15		
CP-60	700	42000	2460	515	15.90	535	17.10	560	18.60	589	20.10	618	21.84	673	25.56	726	29.49	20		
CP-75	400	30300	1367	305	5.00	344	6.26	383	7.65	422	9.24	463	11.03	546	15.36	—	—	7 1/2	3-26"	
CP-75	500	37800	1705	344	8.02	377	9.54	409	11.11	440	12.74	471	14.47	534	18.40	600	23.08	10		
CP-75	600	45400	2048	—	—	416	14.06	444	15.90	471	17.75	497	19.65	548	23.62	600	28.04	20		
CP-75	700	53000	2391	—	—	—	—	484	22.19	508	24.33	531	26.49	577	30.87	621	35.44	25		

Contact factory when conditions are outside of the above ranges.

ITEMS TO SPECIFY

1. Complete model number
2. Electrical characteristics
3. External air side resistance
4. BTUH or TONS capacity
5. Saturated suction temperature—coil temperature
6. Room or entering air temperature
7. Optional arrangements

AIRSIDE RESISTANCE

COIL ROW DEPTH	UNIT INTERNAL AIRSIDE RESISTANCE—DRY COIL																	
	INCHES WATER, GAUGE—AT VARIOUS COIL FACE VELOCITIES AND FIN SPACING																	
	400 FPM				500 FPM				600 FPM				700 FPM					
	3	4	FPI	6	8	3	4	FPI	6	8	3	4	FPI	6	8	3	FPI	4
4	.23	.25	.30	.38	.26	.30	.37	.45	.30	.36	.44	.54	.36	.43				
6	.26	.30	.37	.45	.32	.37	.46	.56	.39	.46	.57	.70	.47	.56				
8	.30	.35	.43	.52	.37	.44	.55	.67	.47	.56	.70	.85	.57	.78				
10	.34	.40	.50	.60	.43	.52	.65	.79	.55	.67	.83	1.0	.68	.84				

To calculate total static pressure:

WET COIL—Above 30 °F SST—add 1% for each degree F difference between entering air dew point and SST.

FROSTED COIL—Below 30 °F SST—add 25% (Multiply above by 1.25) to allow for added resistance caused by frost.

DISCHARGE LOUVRES—Add 2% (Multiply above by 1.02)

EXTERNAL STATIC PRESSURE—Add static pressure created by duct work, filters, etc.

We reserve the right to change or revise specifications and product design in connection with any feature of our products. Such changes do not entitle the buyer to corresponding changes, improvements, additions or replacements for equipment previously sold or shipped.

APPLICATION GUIDELINES

Recommended coil feeds

Recirculated overfeed systems

- ☐ Hot gas defrost of coil and pan—RB bottom feed
- ☐ Hot gas defrost of coil only—RB bottom or RT top feed
- ☐ Wet coil air defrost—RT top feed

Direct expansion ammonia

Thermostatic expansion valve feeds are not recommended below 0°F. saturated suction or with a design TD less than 12°F. Suction traps or accumulators must be used to protect the compressor from overfeed. TEV must be externally pressure equalized and TEV discharge tubes must not be used.

Recirculated ammonia liquid feed temperature must be no warmer than 30°F. above saturated suction temperature. Otherwise coil circulating must be designed for additional flash gas and distributors may be required.

Recirculated halocarbon liquid feed temperature must be the same as the saturated suction temperature.

Recommended recirc rates

AMM—3 or 4 to 1
R22—3 to 1
R12—2 to 1
R502—2 to 1

Maximum coil face velocity is 600 FPM when coils are in rooms above 30°F. to prevent carry-over when refrigerant is shut-off causing the coil to air defrost.

Batch chilling room temperatures rise during initial chill causing the TD to increase. Coils should be circuited for a higher TD and a 4 to 1 ammonia recirculation rate if rated performance is required initially.

Hot gas defrost controls

Select on the basis

of a 10—12°F. TD. Suction line valves must be selected for allowable pressure drops for low temperature application.

Flooded surge drum

sizing—Hot gas defrost systems can use smaller diameter surge drums if the defrost condensate relief and check valve is piped to the suction line or to the engine room intercooler. Surge drums are sized for gas/liquid separation velocities based on condenser pressure liquid feed. If compressors have suction trap protection, smaller operating drums can be used. Do not use ammonia sizes for halocarbons.

Fan motor heat is not included in the ratings and must be included in the load estimate. Motors in cold rooms may draw greater than nameplate ampacity due to denser air. Motor starter overloads may have to be increased in capacity to compensate. When selecting, optimize required motor horsepower by adjusting coil face velocity and capacity.

Outlet velocities are based on the rectangular outlet area shown. The fan cut-off plate covers approximately half this area, resulting in higher actual discharge velocities. Air throws over 150 feet are common if other conditions, such as overhead obstructions, pallet racks, etc. allow.

Sound level values are the expected "A" scale decibels, six feet in front of the air discharge without duct work, in a room having hard and soft surfaces. Air flow is based on 600 FPM.

Total static pressure— $\frac{3}{4}$ inch—78 to 82 db
Total static pressure— $1\frac{1}{2}$ inch—82 to 89 db

Locate units away from walls a distance equivalent to the unit height. This distance should be

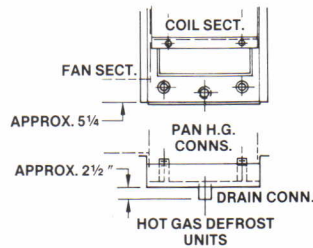
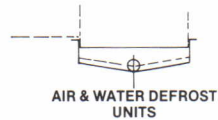
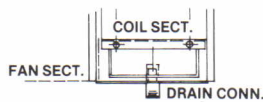
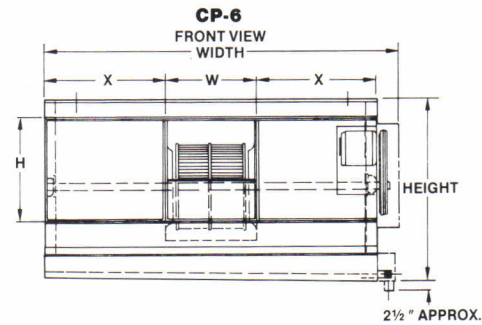
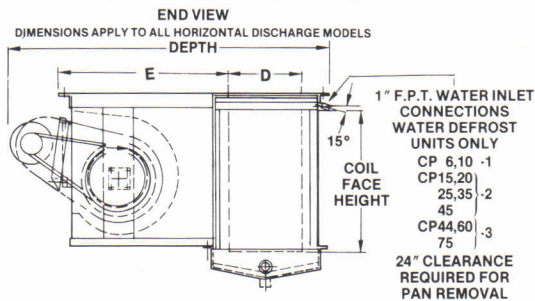
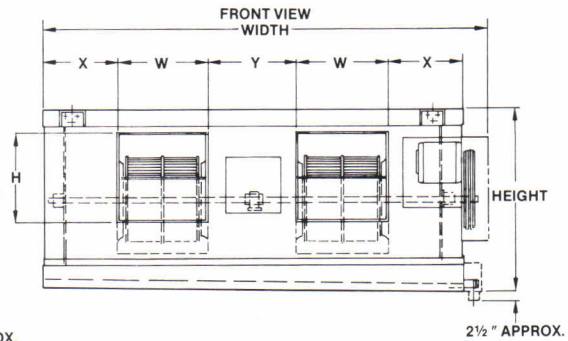
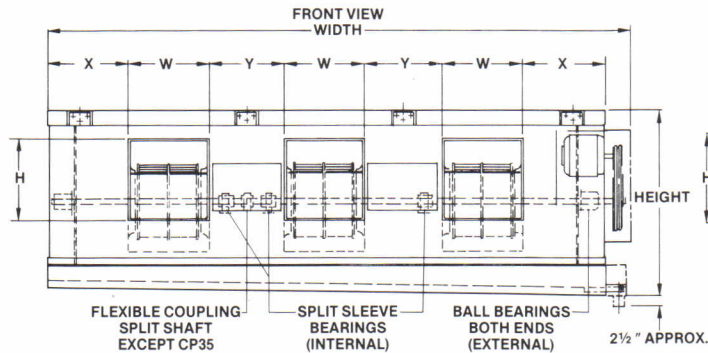
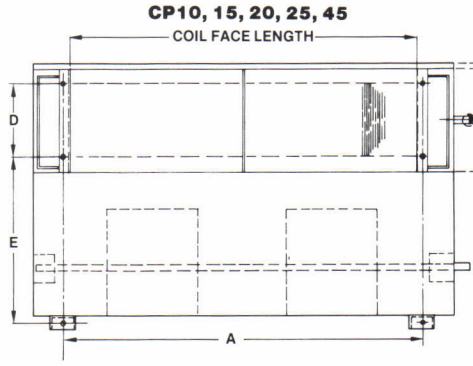
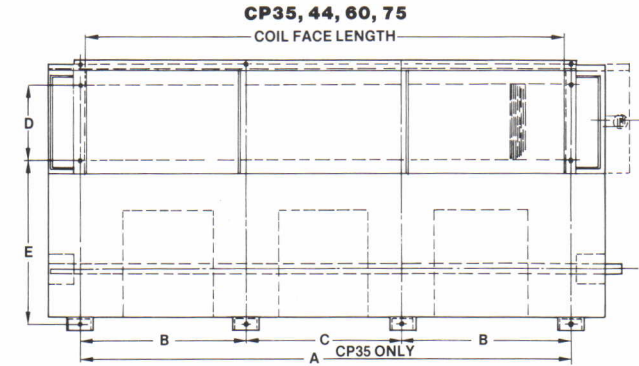
increased if product is stacked to the unit underside. Air discharge should not be blocked by steel-work, product, or lights. Water defrost models require 24 inches clearance for distribution pan removal for cleaning. Since housings are non-insulated, units are to be located in the conditioned space.

Piping—Weight of piping, controls, etc. should be carried by proper pipe supports. Steel suction lines on TEV fed ammonia units, should be down sized at the unit and then trapped. The undersized riser should enter the top of a suction header. During hot gas defrost, an evaporator coil can condense at 3 to 4 times its rated cooling capacity. Liquid condensate must be allowed to leave the coil or defrost will be retarded by lack of flow. Defrost condensate relief lines must be connected to the bottom of RT or DX suction lines or traps and to the bottom of RB or FLA liquid lines. Do not back-flow condensate thru hand expansion valves as the orifice will restrict defrost.

Size 75 are two coils high. RBA defrost relief lines should be looped or provided with check valves so that liquid in the top header does not fall thru the relief piping to the lower coil during refrigeration.

When the defrost relief is piped in a fourth pipe to the system intercooler or controlled pressure receiver, the defrost relief regulator may require oversizing because its pressure differential is lower. With multiple evaporators, each is provided with a defrost relief check valve and the regulator is in the common header. The regulator and the common defrost relief header must be sized for the maximum number of units being defrosted at one time.

PHYSICAL DATA

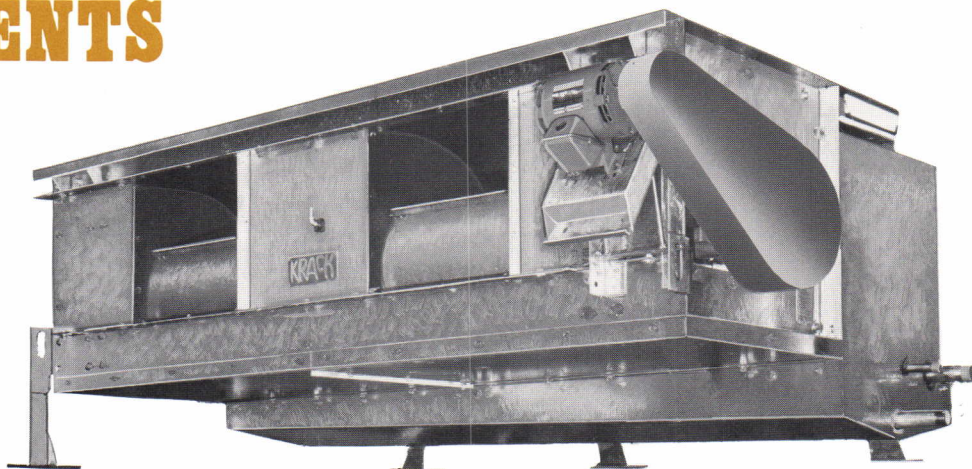


MODEL SIZE	OVERALL•			1" HANGER HOLE SPACING†					DUCT COLLAR		COLLAR SPACING		COIL FACE	
	Height	Depth	Width	A	B	C	D	E	H	W	X	Y	LENGTH	× HEIGHT
CP-6	33 ⁹ / ₁₆	65 ³ / ₈	68	48 ¹ / ₂	—	—	14	29 ¹ / ₄	16 ⁷ / ₁₆	16 ⁹ / ₁₆	22 ⁷ / ₃₂	—	45	21
CP-10	33 ⁹ / ₁₆	65 ³ / ₈	91	71 ¹ / ₂	—	—	14	29 ¹ / ₄	16 ⁷ / ₁₆	16 ⁹ / ₁₆	16 ³ / ₄	17 ³ / ₈	68	21
CP-15	38 ¹ / ₈	77 ³ / ₈	111	87 ¹ / ₂	—	—	20	35 ⁵ / ₈	18 ⁵ / ₈	20 ⁵ / ₈	20 ¹ / ₄	22 ¹ / ₄	84	25 ¹ / ₂
CP-20	46 ³ / ₈	78 ³ / ₈	111	87 ¹ / ₂	—	—	20	35 ⁵ / ₈	20 ¹ / ₂	20 ⁵ / ₈	20 ¹ / ₄	22 ¹ / ₄	84	34
CP-25	50 ⁷ / ₈	86 ¹ / ₂	121 ³ / ₈	97 ¹ / ₂	—	—	20	43 ¹ / ₁₆	24 ¹ / ₈	24 ³ / ₄	20 ⁹ / ₁₆	23 ¹ / ₁₆	94	38 ¹ / ₄
CP-35	50 ⁷ / ₈	86 ⁷ / ₈	158 ³ / ₈	134 ¹ / ₂	—	—	20	43 ¹ / ₁₆	24 ¹ / ₈	24 ³ / ₄	20 ⁹ / ₁₆	18	131	38 ¹ / ₄
CP-44	50 ⁷ / ₈	89 ⁵ / ₈	198 ³ / ₈	—	58 ³ / ₄	57	20	43 ¹ / ₁₆	24 ¹ / ₈	24 ³ / ₄	20 ⁹ / ₁₆	38	171	38 ¹ / ₄
CP-45	64 ³ / ₈	96 ¹ / ₂	158 ³ / ₈	134 ¹ / ₂	—	—	20	53 ¹ / ₁₆	32 ³ / ₄	32 ³ / ₄	22 ³ / ₈	40 ⁵ / ₈	131	51
CP-60	64 ³ / ₈	99 ⁵ / ₈	198 ³ / ₈	—	58 ³ / ₄	57	20	53 ¹ / ₁₆	28 ³ / ₄	28 ⁷ / ₈	22 ⁵ / ₈	29 ³ / ₄	171	51
CP-75	77 ³ / ₈	99 ⁵ / ₈	198 ³ / ₈	—	58 ³ / ₄	57	20	53 ¹ / ₁₆	32 ³ / ₄	32 ³ / ₄	22 ⁵ / ₈	23 ¹ / ₁₆	171	63 ³ / ₄

Do not use for construction purposes—use certified job drawings.

- Height includes 1" for insulated drain pan.
 - Width does not include external piping or belt guard removal access.
 - Depth includes largest HP fan motor with TH or BH fan discharger arrangement. Other fan discharge arrangements will increase depth dimension.
- † Approximately 2/3 of unit weight must be carried by the coil side hangers or optional mounting legs. Mounting leg dimensions are available from the factory.

OPTIONAL ARRANGEMENTS



Fan motors. Available in any electrical characteristic. Totally enclosed fan cooled-TEFC. Two speed, two winding 1800/1200 SRPM. Two speed single or two winding 1800/900 SRPM.

Belt drive. Variable pitch motor sheave.

Insulated drain pan. Foamed-in-place polyurethane between mill galvanized inner pan and outer cover. Hot gas drain pans (HGU) are insulated. See standard features.

Mounting legs. Drain pan is factory mounted.

Surge assembly. Flooded ammonia surge drums designed for 250 PSIG working pressure. Includes Phillips internal float and ASME stamp when required. R/S type LL float and liquid solenoid, Sporlan Level Master, or provision for TDS are optional.

Variable fin spacing. Two rows

on the entering air side of 6, 8, or 10 row coils have half the fins per inch as the remaining rows. Available in 1.5/3 and 2/4 combinations. Not recommended for DX feeds.

Directional discharge air louvres. Adjustable for one directional vertical or horizontal deflection. Two directional special.

Discharge duct adaptors. Factory mounted collars to attach ductwork.

Flat filter section. Accepts two inch cleanable or throw away filters provided by others. Applicable for return air temperatures above 36°F. with 600 FPM maximum coil face velocity.

Electric defrost. Models with copper tubes and aluminum fin coils for room temperatures above -20°F. Contact factory for selection and electrical details.

Steel coils for halocarbon refrigerants. Brass distributor and copper capillaries are installed after galvanizing for TEV feeds.

Copper to steel suction adaptors. For halocarbon systems using steel pipe.

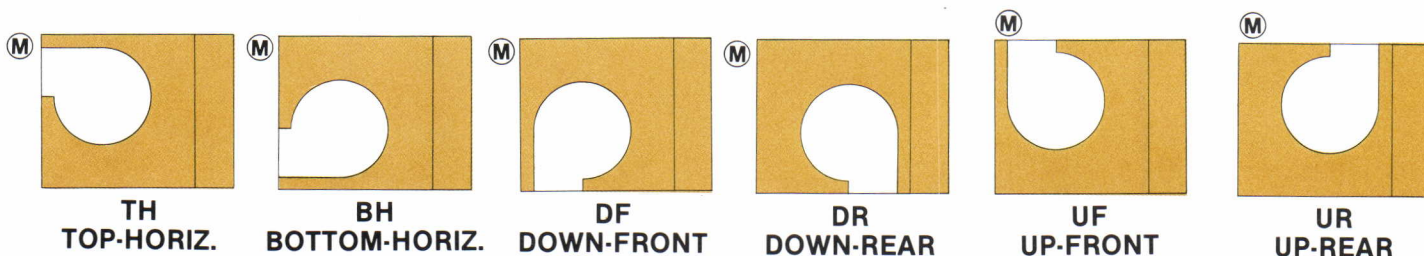
Split coil circuiting. Multiple headered coil sections split vertically in face or horizontally in row depth.

Reheat or preheat coils. Steam, hot water or hot gas available with non-continuous finned surface.

Fan discharge and/or coil face dampers. Motorized automatic dampers with electric heat to retard frost binding. 208-240 volt electrical source required.

Split roller bearings. Inboard bearings between fans can be provided with this more expensive type bearing.

Fan discharge arrangements looking at refrigerant connection end.



TH is standard. Other arrangements are optional and down or up discharge increases overall unit depth.