

Number One
Air Conditioning
Maker

Carrier

Advance Product Data

Division of
Carrier Corporation
Carrier Parkway • Syracuse, N.Y. 13221

**CARRIER
MODU-VAC**

50BJ,BK

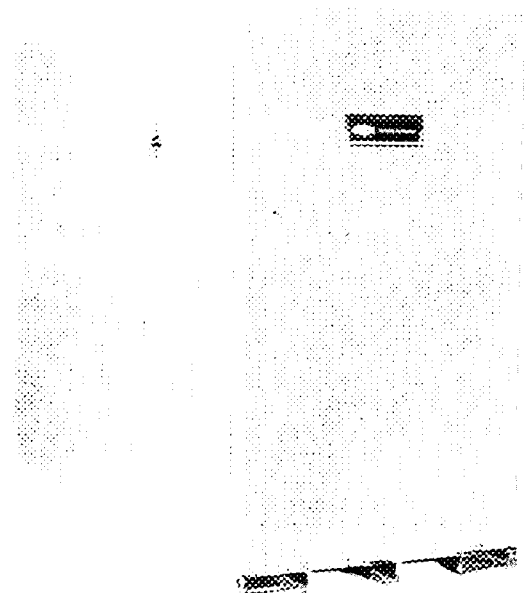
COOLING CAPACITIES:

INDOOR PACKAGE
COOLING UNITS
FOR VARIABLE
AIR VOLUME

450,000 TO

800,000 BTUH

NEW MODELS IN
NOMINAL 40,50 & 60
TON CAPACITIES



WATER-COOLED OR
CONDENSERLESS MODELS

Book	1
Tab	2a

9/82

PC 111

Form 50BJ,BK-1APD New

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

NOW -- BRING SINGLE-PACKAGE ECONOMY AND VAV COMFORT INTO ANY BUILDING.

The single-package, vertical 50BJ or 50BK (condenserless) cooling unit automatically conditions the air to your exact requirements; then Modubox and Moduline, Carrier's unique variable air volume terminals, distribute the air in precisely controlled flows to suit each area of the building.

50BJ, BK units plus Modubox and Moduline ... together they form Modu-Vac, the modern air conditioning system that allows your building to change with the times, whenever interior layouts are updated or modified.

Whether you choose the 50BJ water-cooled unit or 50BK condenserless model you'll get a package that can cool, dehumidify, and circulate air -- all under a microprocessor master control that assures minimum energy consumption at full or partial load.

QUALITY ENGINEERED FEATURES ASSURE OUTSTANDING PERFORMANCE

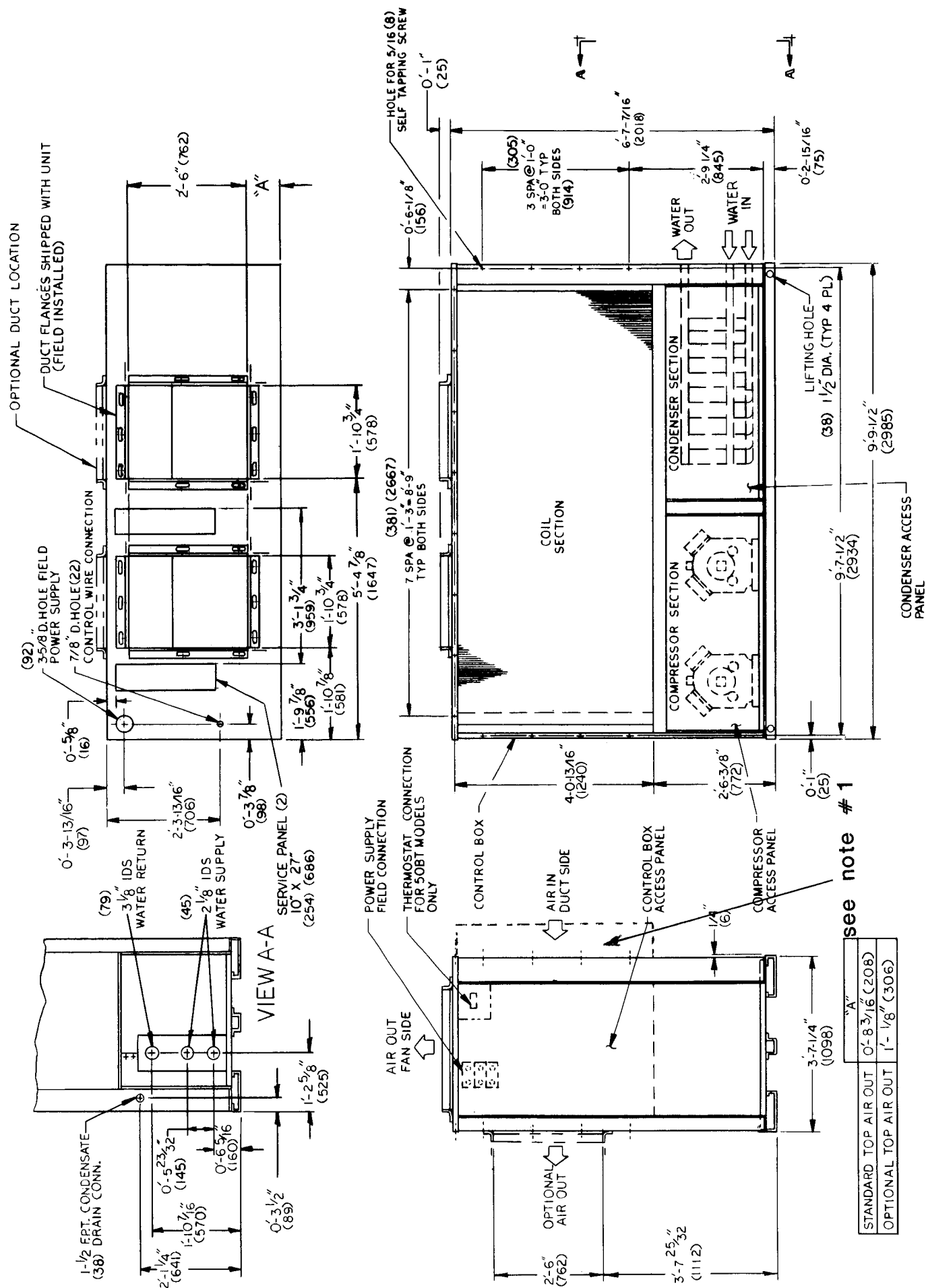
- o Carrier Serviceable Compressors deliver quiet, reliable high cooling capacities at low cost. The Time Guard circuit, a Carrier exclusive, prohibits short cycling and simultaneous start-up of compressors, thus minimizing power surges.
- o Automatic Capacity Control at partial load is provided by electric unloaders and compressor cycling that tailor cooling capacity to cooling requirements. A temperature-actuated microprocessor cycles the electric unloaders and compressors to ensure positive control of the supply air temperature as it leaves the unit. The result is lower operating cost.
- o Positive Compressor Protection is assured on all units by the use of calibrated circuit breakers, high and low pressure switches, and a discharge gas thermostat.
- o Crankcase Heaters are energized during the compressor off-cycle to prevent dilution of oil by refrigerant.
- o High-Efficiency Condensers of tube and tube type construction provide maximum exposed heat exchange surface for greater heat rejection with less water consumption. Counterflow design provides greater refrigerant subcooling for improved efficiency.

ACCESSORIES

- o Timer Control Panel includes a 7-day programmable clock with a 10-hour spring carryover function and skip-a-day operation, status lights for monitoring system modes, and a 5-hour bypass timer for placing unit temporarily in occupied mode during otherwise unoccupied times.

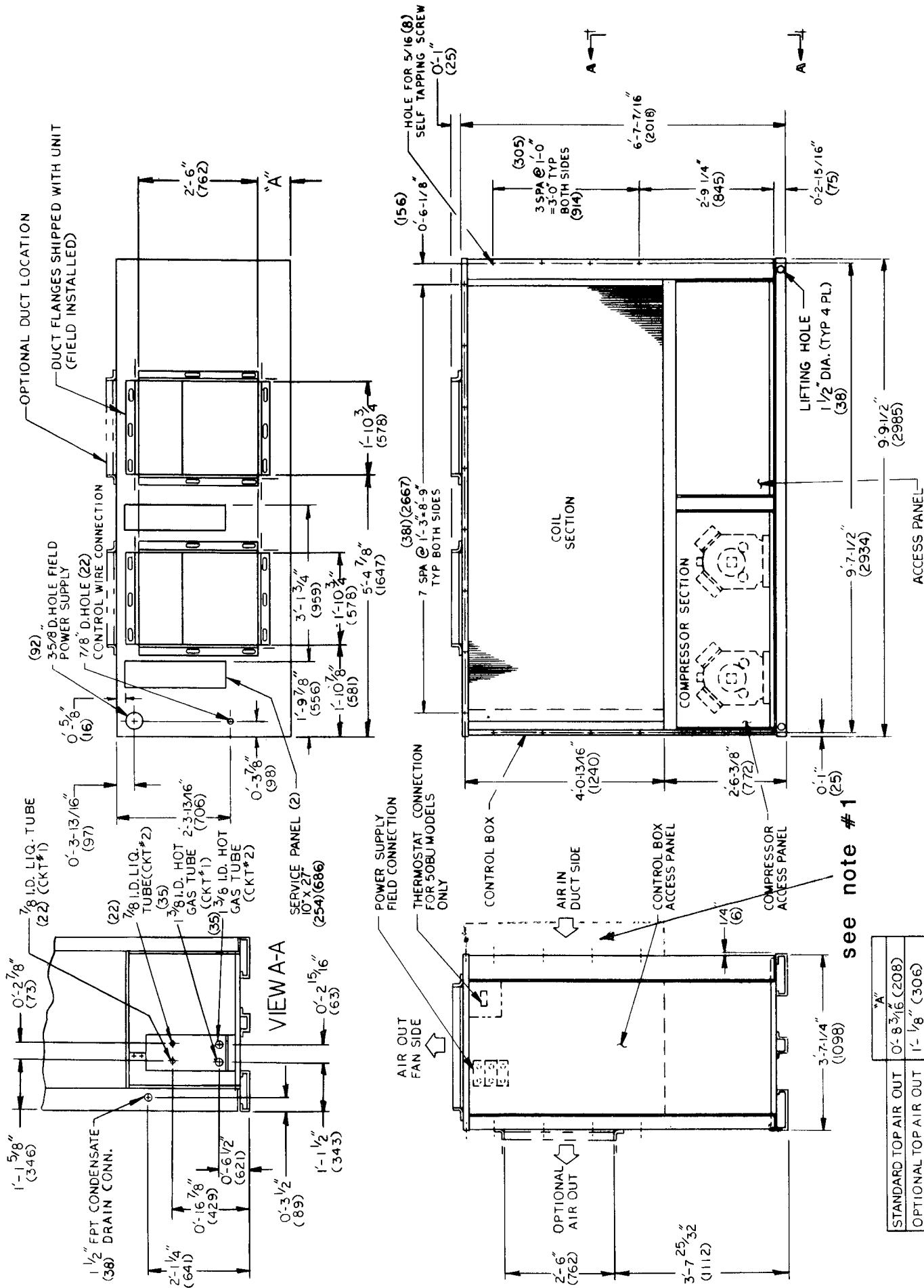
This panel is remotely mounted and one timer control panel can operate multiple units.

50BJ DIMENSIONS



NOTE: #1 FILTERS ARE NOT SUPPLIED WITH THE BASE UNIT, HOWEVER, ALL MODELS ARE DIRECTLY COMPATIBLE WITH 39E (SIZE 32) AND HANDLING UNIT COMPONENTS. REFER TO 39E LITERATURE FOR PHYSICAL DATA OF THE ACCESSORIES.

50BK DIMENSIONS



NOTE: #1 FILTERS ARE NOT SUPPLIED WITH THE BASE UNIT, HOWEVER, ALL MODELS ARE DIRECTLY COMPATIBLE WITH 39E (SIZE 32) AIR HANDLING UNIT COMPONENTS. REFER TO 39E LITERATURE FOR PHYSICAL DATA OF THE ACCESSORIES.

PHYSICAL DATA

	BJ	BK	BJ	BK	BJ	BK
MODEL 50	044		054		064	
OPERATING WEIGHT (lbs)	3560	3155	3860	3270	4000	3275
COMPRESSOR	Serviceable Hermetic 1750 Rpm					
System 1 : 06E	2150	2250	7265	7265	7175	7275
System 2 : 06E	A150	A250	A150	A250	F175	F275
No. of Unloading Cylinders						
System 1	2	2	4	4	4	4
System 2	0	0	0	0	0	0
No. of Capacity Steps	4	4	6	6	6	6
H.P. Switch Setting PSIG	395		395		395	
L.P. Switch Setting PSIG	27		27		27	
CONDENSER (BJ only)	Tube in Tube					
Inlet Sweat (No..Size In.)	2..2 1/8		2..2 1/8		2..2 1/8	
Outlet Sweat (No..Size In.)	1..3 1/8		1..3 1/8		1..3 1/8	
INDOOR FAN						
Number	2	2	2	2	2	2
Size (in.)	20x10	20x10	20x18	20x18	20x18	20x18
Nominal Cfm	16000	16000	20000	20000	24000	24000
Max Rpm	1200	1200	1200	1200	1200	1200
Std HP..Frame Size	15..254T	15..254T	15..254T	15..254T	20..256T	20..256T
Alt HP..Frame Size	25..284T	25..284T	25..284T	25..284T	30..286T	30..286T
EVAPORATOR COIL	Copper Tubes - Aluminum Plate Fins					
Rows..Fins/In.	3..15	3..15	4..15	4..15	4..15	4..15
Total Face Area (Sq.Ft.)	37.5	37.5	37.5	37.5	37.5	37.5
REFRIGERANT CONNECTIONS	Size (In.)...Sweat Type					
System 1 : Hot Gas Line	--	1 5/8	--	1 5/8	--	1 5/8
Liquid Line	--	7/8	--	7/8	--	7/8
System 2 : Hot Gas Line	--	1 5/8	--	1 5/8	--	1 5/8
Liquid Line	--	7/8	--	7/8	--	7/8

SELECTION PROCEDURE (WITH EXAMPLE)

I Determine design conditions.

Given:

	50BJ Water Cooled	50BK Air Cooled
Total Cooling Capacity (TC/Btuh)	750,000	700,000
Sensible Cooling Capacity (SHC/Btuh)	615,000	600,000
Evaporator Air Quantity (cfm)	24,000	24,000
Entering Air Conditions (tedb)	82	82
(tewb)	67	67
Entering Condenser Water Temp. (tew)	85	--
Entering Condenser Air Temp. (toa)	--	95

A. Water Cooled Selection Method - 50BJ

Enter the top and left side of the gross cooling capacity tables of the unit whose capacity is closest to the required capacity. Read down and across to obtain the following data:

Unit Selection - 50BJ064 selected at 24,000 cfm of 82/67 ent. air.

TC = 762,000

SHL = 625,624 (See SHC Correction Table on next page)

Compressor Power Input = 53.5 kw

Condensor: Pressure drop - 10.8 ft.

tew - 85°

gpm - 180

B. Air Cooled Selection Method - 50BK

Enter the top and left side of the gross cooling capacity tables of the unit whose capacity is closest to the required capacity. Read down and across to obtain the following data:

Unit Selection - 50BK064 selected at 24,000 cfm of 82/67 ent. air.

TC = 704,000

SHL = 601,624 (See SHC Correction Table below)

Compressor Power Input = 59.9 kw

SCT = 125

PERFORMANCE DATA

Cooling Capacity Notes

1. 50BJ, BK044-064 are tested and rated in accordance with ARI Standard 360-81.
2. Gross capacities do not include deduction for indoor fan motor heat.

3. All 50BJ gpm values are based on .0005 fouling factor.
4. Direct interpolation is permissible. Do not extrapolate.
5. All combinations use R22. Unless otherwise designated, ratings are at optimum charge.
6. Ratings for 50BU units are based on 15° of subcooling. For 0° subcooling reduce capacity by 7.5%
7. Minimum microprocessor setpoint is 50°F.

SHC Correction Table

SHC is based on 80F db temperature of air entering evaporator coil. Below 80F db, subtract (corr factor x cfm) from SHC.

Above 80F db, add (corr factor x cfm) to SHC.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMPERATURE (F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	Correction Factor					
.025	1.07	2.12	3.19	4.25	5.32	Use formula shown below.
.05	1.04	2.07	3.11	4.14	5.18	
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	
.35	.71	1.42	2.13	2.83	3.54	

Interpolation is permissible.

Correction Factor = $1.08 \times (1 - BF) \times (db - 80)$.

50BJ044

EWT	GPM	PRES FT.	DROP PSI		EVAPORATOR ENTERING AIR - CFM/BF											
					8000/.04			12000/.06			16000/.09			20000/.11		
					EVAPORATOR ENTERING AIR W.B. TEMP. - (F)											
					72	67	62	72	67	62	72	67	62	72	67	62
65	60	3.5	1.5	TC	513	470	---	557	513	472	581	538	498	595	552	520
				SHC	244	289	---	277	343	407	306	391	467	333	434	514
				KW	33.2	31.8	---	34.6	33.2	31.9	35.4	34.0	32.7	35.8	34.5	33.4
	120	11.0	4.8	TC	527	481	---	575	529	485	601	556	514	618	572	536
				SHC	250	295	---	284	350	413	313	398	476	341	442	525
				KW	30.2	29.2	---	31.1	30.2	29.3	31.6	30.8	29.9	32.0	31.1	30.4
	160	18.0	7.8	TC	530	484	---	579	532	488	607	559	517	624	576	539
				SHC	251	296	---	286	351	415	316	400	477	343	444	527
				KW	29.4	28.5	---	30.2	29.4	28.6	30.7	29.9	29.1	31.0	30.2	29.5
75	60	3.5	1.5	TC	495	453	---	537	494	454	559	516	480	574	532	501
				SHC	236	281	---	269	335	397	298	382	457	325	426	500
				KW	35.7	34.1	---	37.3	35.6	34.2	38.1	36.5	35.1	38.6	37.1	35.9
	120	11.0	4.8	TC	509	464	---	555	509	467	579	534	494	594	550	516
				SHC	242	287	---	276	341	404	306	389	465	332	433	511
				KW	32.8	31.7	---	34.0	32.8	31.7	34.6	33.5	32.5	34.9	33.9	33.0
	160	18.0	7.8	TC	512	467	---	559	513	470	584	538	498	600	555	520
				SHC	243	288	---	278	343	405	307	391	467	334	435	514
				KW	32.1	31.0	---	33.1	32.1	31.1	33.6	32.6	31.7	34.0	33.0	32.2
85	60	3.5	1.5	TC	476	436	397	515	474	436	537	495	460	550	509	482
				SHC	228	273	316	261	326	388	291	374	445	317	416	482
				KW	38.1	36.4	34.7	39.8	38.0	36.4	40.7	39.0	37.4	41.2	39.5	38.3
	120	11.0	4.8	TC	490	447	---	533	488	448	556	512	474	572	527	496
				SHC	234	278	---	268	333	394	297	380	454	325	423	495
				KW	35.5	34.2	---	36.8	35.4	34.2	37.5	36.2	35.0	37.9	36.6	35.6
	160	18.0	7.8	TC	493	450	---	537	492	451	561	516	478	576	531	499
				SHC	235	280	---	269	334	396	299	382	455	326	425	498
				KW	34.8	33.5	---	36.0	34.7	33.6	36.6	35.4	34.4	37.0	35.8	34.9
95	60	3.5	1.5	TC	457	417	379	494	453	416	513	473	440	526	485	462
				SHC	220	264	307	253	317	378	282	364	432	309	406	462
				KW	40.5	38.5	36.7	42.3	40.3	38.5	43.2	41.3	39.7	43.8	41.9	40.8
	120	11.0	4.8	TC	470	428	389	510	467	428	532	489	454	545	503	476
				SHC	226	270	312	259	324	384	288	371	441	315	414	476
				KW	38.1	36.6	35.0	39.5	38.0	36.6	40.3	38.7	37.5	40.7	39.3	38.3
	160	18.0	7.8	TC	473	431	391	514	471	431	536	493	457	550	507	479
				SHC	227	271	313	261	325	386	290	373	443	317	415	479
				KW	37.5	36.0	34.6	38.8	37.4	36.0	39.4	38.1	36.9	39.9	38.5	37.6

50BJ054

EWT	GPM	PRES FT.	DROP PSI		EVAPORATOR ENTERING AIR - CFM/BF											
					10000/.02			15000/.04			20000/.05			25000/.07		
					EVAPORATOR ENTERING AIR W.B. TEMP. - (F)											
					72	67	62	72	67	62	72	67	62	72	67	62
65	80	3.4	1.5	TC	637	583	534	688	636	587	716	664	621	731	682	649
				SHC	303	361	418	346	432	512	385	495	595	421	554	649
				KW	37.5	35.8	34.4	39.0	37.5	36.0	39.8	38.3	37.0	40.2	38.8	37.8
	150	10.0	4.3	TC	649	594	543	705	650	599	736	680	635	755	699	663
				SHC	309	367	423	353	438	520	392	502	603	429	561	661
				KW	34.5	33.4	32.2	35.6	34.5	33.5	36.2	35.1	34.2	36.6	35.4	34.7
	200	16.0	6.9	TC	653	597	---	711	654	602	741	685	638	760	705	667
				SHC	310	368	---	355	440	522	394	504	604	431	563	665
				KW	33.6	32.6	---	34.6	33.6	32.7	35.2	34.1	33.3	35.5	34.5	33.8
75	80	3.4	1.5	TC	614	563	515	664	612	565	689	640	598	706	657	628
				SHC	294	352	408	337	422	503	376	486	581	412	543	628
				KW	40.4	38.7	37.1	42.1	40.3	38.8	42.9	41.3	39.8	43.5	41.9	40.9
	150	10.0	4.3	TC	628	574	524	681	627	577	708	656	612	726	674	641
				SHC	300	357	413	343	428	510	382	492	590	419	550	641
				KW	37.7	36.3	35.0	38.9	37.6	36.4	39.5	38.3	37.3	39.9	38.7	38.0
	200	16.0	6.9	TC	632	577	---	686	631	581	714	660	615	733	679	645
				SHC	301	359	---	345	430	511	385	494	592	521	552	645
				KW	36.8	35.6	---	37.9	36.8	35.7	38.5	37.4	36.4	38.9	37.8	37.1
85	80	3.4	1.5	TC	592	542	495	639	588	543	663	613	575	677	631	606
				SHC	284	342	398	328	412	492	367	475	566	403	532	606
				KW	43.4	41.5	39.7	45.2	43.3	41.5	46.1	44.3	42.7	46.7	44.9	44.0
	150	10.0	4.3	TC	605	553	504	655	602	555	682	629	588	697	647	618
				SHC	290	347	402	334	418	498	373	481	575	409	539	618
				KW	40.8	39.3	37.8	42.2	40.7	39.3	43.0	41.5	40.3	43.4	42.0	41.2
	200	16.0	6.9	TC	609	556	511	660	606	558	687	633	592	703	652	622
				SHC	291	349	406	335	419	500	375	483	577	411	541	622
				KW	40.0	38.6	35.8	41.3	39.9	38.6	42.0	40.6	39.5	42.4	41.1	40.3
95	80	3.4	1.5	TC	568	519	473	612	562	519	634	587	551	648	601	581
				SHC	274	332	387	318	401	480	356	464	549	393	520	581
				KW	46.3	44.2	42.2	48.3	46.1	44.2	49.2	47.2	45.6	49.8	47.8	46.9
	150	10.0	4.3	TC	581	530	482	628	576	531	653	601	564	668	619	595
				SHC	280	337	392	323	407	482	363	470	559	399	527	595
				KW	44.0	42.2	40.5	45.5	43.8	42.2	46.3	44.6	43.4	46.8	45.2	44.4
	200	16.0	6.9	TC	584	533	489	632	580	534	657	605	567	673	623	598
				SHC	281	338	395	325	408	488	364	472	561	401	529	598
				KW	43.2	41.6	38.7	44.6	43.0	41.6	45.4	43.8	42.6	45.8	44.3	43.6

50BJ064

EWT	GPM	PRES FT.	DROP PSI		EVAPORATOR ENTERING AIR - CFM/BF											
					16000/.04			20000/.05			22000/.06			24000/.07		
					EVAPORATOR ENTERING AIR W.B. TEMP. - (F)											
					72	67	62	72	67	62	72	67	62	72	67	62
65	90	3.4	1.5	TC	816	752	692	846	782	725	856	793	737	866	804	749
				SHC	401	492	581	423	544	650	443	569	681	463	594	711
				KW	50.6	48.1	45.8	51.7	49.2	47.1	52.1	49.6	47.5	52.5	50.1	48.0
	180	10.8	4.7	TC	843	775	711	877	809	746	888	821	760	899	832	774
				SHC	412	503	591	444	556	662	459	571	694	474	605	725
				KW	46.0	44.1	42.3	46.9	45.0	43.3	47.1	45.3	43.6	47.4	45.7	44.0
	240	18.0	7.8	TC	850	781	716	884	815	751	896	827	765	908	839	779
				SHC	415	505	593	447	558	664	463	583	696	478	608	728
				KW	44.8	43.0	41.4	45.6	43.9	42.3	45.9	44.2	42.6	46.2	44.5	43.0
75	90	3.4	1.5	TC	785	722	664	813	750	695	823	761	708	832	771	720
				SHC	389	479	567	421	531	636	436	556	665	451	580	694
				KW	54.5	51.7	49.3	55.6	52.9	50.6	56.0	53.3	51.1	56.5	53.8	51.6
	180	10.8	4.7	TC	811	745	683	843	776	716	854	787	729	864	798	742
				SHC	399	489	576	432	542	646	447	567	677	462	591	708
				KW	50.0	47.9	45.9	51.0	48.9	47.0	51.3	49.2	47.4	51.7	49.6	47.8
	240	18.0	7.8	TC	818	750	687	850	782	721	861	794	735	872	804	748
				SHC	402	492	579	434	544	649	450	569	680	465	594	711
				KW	48.8	46.9	45.0	49.7	47.8	46.0	50.0	48.1	46.4	50.4	48.4	46.8
85	90	3.4	1.5	TC	751	691	636	779	718	665	788	727	677	796	736	689
				SHC	375	466	553	408	517	620	423	541	648	437	565	675
				KW	58.2	55.4	52.8	59.6	56.6	54.2	60.0	57.0	54.7	60.4	57.5	55.3
	180	10.8	4.7	TC	777	713	653	806	742	685	817	752	698	827	762	711
				SHC	386	476	562	418	528	631	434	553	660	449	577	689
				KW	54.1	51.8	49.6	55.1	52.8	50.8	55.4	53.1	51.2	55.8	53.5	51.7
	240	18.0	7.8	TC	784	718	658	813	747	690	824	758	703	834	768	716
				SHC	388	478	564	421	530	633	436	555	663	451	579	692
				KW	53.0	50.8	48.7	53.9	51.7	49.8	54.2	52.0	50.2	54.6	52.4	50.7
95	90	3.4	1.5	TC	719	659	606	743	684	635	751	693	647	759	701	659
				SHC	363	453	538	395	504	603	410	528	629	425	552	654
				KW	62.2	59.0	56.3	63.4	60.3	57.7	63.8	60.7	58.3	64.3	61.2	59.0
	180	10.8	4.7	TC	742	680	623	769	707	653	779	717	666	788	726	678
				SHC	372	461	547	405	513	614	420	538	642	435	562	669
				KW	58.2	55.6	53.3	59.2	56.7	54.5	59.6	57.1	55.0	60.0	57.5	55.5
	240	18.0	7.8	TC	748	685	627	775	712	658	785	722	671	794	731	683
				SHC	375	463	549	407	515	616	422	540	644	437	564	672
				KW	57.1	54.7	52.5	58.1	55.7	53.7	58.4	56.0	54.1	58.8	56.4	54.6

50BK044/09DE044

TEMP (F)	EVAPORATOR ENTERING AIR - CFM/BF												
AIR ENT	8000/0.04			12000/0.06			16000/0.09			2000/0.11			
COND	EVAPORATOR ENTERING AIR W.B. TEMP. - (F)												
	72	67	62	72	67	62	72	67	62	72	67	62	
85	TC	486	445	406	530	485	446	551	509	472	567	522	492
	SHC	232	277	321	267	332	394	296	380	453	324	423	492
	KW	37.1	35.4	33.9	38.8	37.1	35.5	39.6	38.0	36.5	40.2	38.5	37.3
	SCT	114	112	110	117	114	112	118	116	114	119	116	115
95	TC	466	424	387	504	462	424	524	484	449	538	496	471
	SHC	224	268	311	258	322	383	286	369	439	314	412	471
	KW	39.7	37.8	36.0	41.5	39.6	37.8	42.3	40.5	39.0	43.0	41.1	40.0
	SCT	124	121	119	126	123	121	127	125	123	128	125	124
100	TC	454	415	377	490	451	414	509	470	437	522	484	459
	SHC	219	263	306	253	318	378	281	364	431	308	407	459
	KW	41.0	39.0	37.1	42.8	40.8	39.0	43.7	41.7	40.1	44.3	42.4	41.3
	SCT	128	126	124	130	128	126	131	129	127	132	130	128
105	TC	443	403	367	476	438	402	496	455	426	506	468	449
	SHC	214	258	301	247	312	372	276	358	424	303	400	449
	KW	42.3	40.2	38.1	44.0	42.0	40.0	45.0	43.0	41.4	45.6	43.6	42.6
	SCT	133	130	128	134	132	130	136	133	132	136	134	133
115	TC	418	381	347	449	412	379	467	428	404	476	440	426
	SHC	204	248	291	237	302	360	266	349	403	293	388	426
	KW	44.6	42.4	40.1	46.5	44.2	42.2	47.5	45.3	43.7	48.2	46.0	45.1
	SCT	142	139	137	143	141	139	144	142	141	145	143	142

50BK054/09DE054

TEMP (F)				EVAPORATOR ENTERING AIR - CFM/BF									
AIR ENT	10000/0.02			15000/0.04			20000/0.05			25000/0.07			
COND				EVAPORATOR ENTERING AIR W.B. TEMP. - (F)									
	72	67	62	72	67	62	72	67	62	72	67	62	
85	TC	590	540	493	638	586	541	663	612	573	678	630	602
	SHC	284	342	397	327	411	492	366	474	565	403	532	602
	KW	43.0	41.1	39.2	44.8	42.9	41.2	45.8	43.9	42.4	46.3	44.5	43.5
	SCT	114	112	110	116	114	112	117	115	113	118	116	115
95	TC	565	515	470	607	558	516	631	582	547	645	598	576
	SHC	274	330	386	316	400	478	355	462	545	392	518	576
	KW	46.1	43.9	41.8	47.9	45.8	43.9	49.0	46.8	45.3	49.6	47.5	46.6
	SCT	123	121	119	125	123	121	126	124	122	127	125	124
100	TC	551	504	459	593	545	503	616	567	535	629	581	564
	SHC	268	325	380	311	394	472	350	456	534	386	511	564
	KW	47.5	45.3	43.1	49.6	47.3	45.3	50.6	48.3	46.8	51.2	49.0	48.2
	SCT	128	125	123	130	127	126	131	128	127	131	129	128
105	TC	538	491	448	576	529	489	597	552	521	610	566	551
	SHC	263	319	375	305	388	464	343	450	521	380	505	551
	KW	49.1	46.7	44.4	51.0	48.6	46.6	52.0	49.8	48.2	52.7	50.5	49.8
	SCT	132	130	128	134	132	130	135	133	131	136	134	133
115	TC	509	464	423	543	501	462	562	520	496	574	533	523
	SHC	252	308	362	294	376	449	331	436	496	368	489	523
	KW	52.0	49.3	46.8	53.9	51.4	49.2	55.0	52.5	51.2	55.7	53.4	52.7
	SCT	141	139	137	143	141	139	144	142	141	144	142	142

50BK064/09DE064

TEMP (F)				EVAPORATOR ENTERING AIR - CFM/BF											
AIR ENT	16000/0.04			20000/0.05			22000/0.06			24000/0.07					
COND				EVAPORATOR ENTERING AIR W.B. TEMP. - (F)											
	72	67	62	72	67	62	72	67	62	72	67	62			
85	TC	759	696	639	785	723	669	797	733	681	806	743	694		
	SHC	378	468	554	410	520	621	426	544	651	441	569	679		
	KW	56.8	54.0	51.5	57.9	55.2	52.8	58.4	55.7	53.4	58.8	56.1	54.0		
	SCT	117	114	112	118	115	113	118	116	113	119	116	114		
95	TC	722	661	606	745	686	635	756	695	647	765	704	660		
	SHC	364	453	538	396	504	604	411	529	631	427	553	655		
	KW	60.8	57.8	55.0	62.0	59.0	56.5	62.5	59.5	57.1	62.9	59.9	57.7		
	SCT	125	123	121	126	124	122	127	124	122	127	125	123		
100	TC	701	642	591	724	666	617	734	674	629	742	683	642		
	SHC	357	445	531	388	496	593	403	520	619	419	544	641		
	KW	62.8	59.7	56.9	64.1	60.9	58.3	64.5	61.5	59.0	65.0	61.8	59.6		
	SCT	130	127	125	131	128	126	131	129	127	131	129	127		
105	TC	684	626	574	705	648	601	715	657	614	719	665	624		
	SHC	350	438	522	382	489	584	397	513	609	411	537	624		
	KW	64.9	61.6	58.6	66.2	62.9	60.2	66.6	63.4	61.0	67.0	63.8	61.6		
	SCT	134	132	130	135	133	131	136	133	131	136	134	132		
115	TC	641	588	541	663	609	567	669	616	580	675	622	592		
	SHC	334	423	504	367	473	562	381	496	580	396	519	592		
	KW	68.8	65.3	62.1	70.0	66.6	63.9	70.6	67.0	64.7	70.9	67.5	65.6		
	SCT	143	141	139	144	142	140	144	142	140	144	142	141		

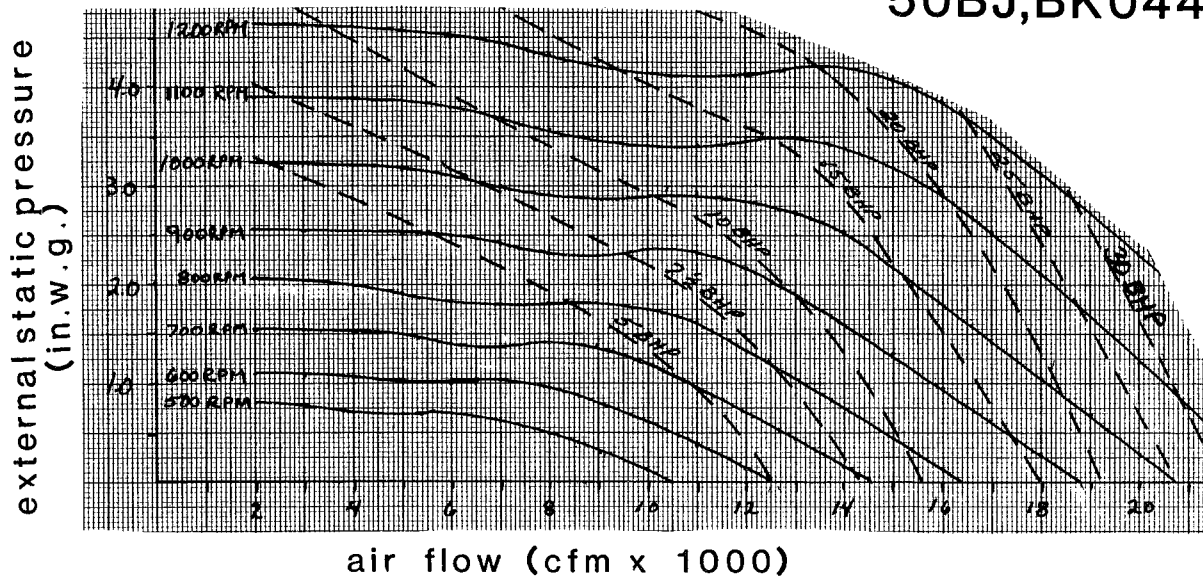
LEGEND

EWT - CONDENSER ENTERING WATER TEMP.
 GPM - CONDENSER GALLONS PER MINUTE
 BF - BYPASS FACTOR
 TC - GROSS TOTAL CAPACITY (1000 BTUH)
 SHC - SENSIBLE HEAT CAPACITY (1000 BTUH)
 KW - COMPRESSOR MOTOR POWER INPUT (KILOWATTS)
 SCT - SATURATED CONDENSING TEMP. (F)

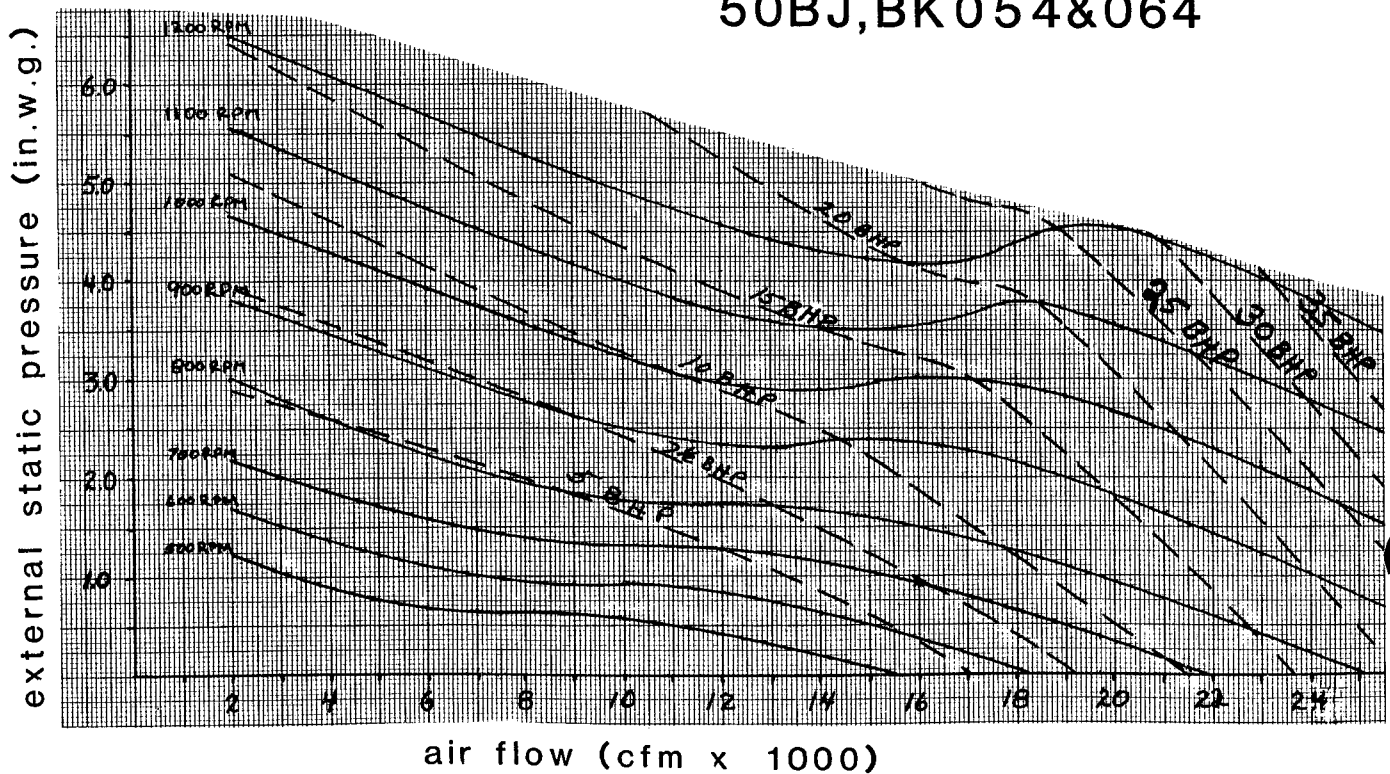
EVAPORATOR FAN PERFORMANCE

FAN PERFORMANCE IS BASED ON WET COIL AND DEDUCTED CASING LOSSES. MAXIMUM FAN SPEED IS 1200 RPM

50BJ,BK044



50BJ,BK054&064



ELECTRICAL DATA

UNIT	VOLTS-PH-HZ	VOLTAGE RANGE		COMP. #1		COMP. #2		I.F.M.		POWER SUPPLY	
		MIN.	MAX.	RLA	LRA	RLA	LRA	HP	FLA	MCA*	MFA
50BJ044	208/230-3-60	187	253	58.3	283	58.3	283	15	46.2	178.4	225
	460-3-60	414	506	26.4	142	26.4	142	15	21.0	81.4	100
	575-3-60	517	633	21.0	98	21.0	98	15	16.0	64.3	80
50BJ054	208/230-3-60	187	253	80.4	446	60.2	283	15	46.2	207.8	250
	460-3-60	414	506	36.3	223	27.2	142	15	21.0	94.6	125
	575-3-60	517	633	29.1	164	21.8	98	15	16.0	75.2	100
50BJ064	208/230-3-60	187	253	89.6	446	89.6	446	20	59.4	262.0	350
	460-3-60	414	506	40.5	223	40.5	223	20	27.0	119.1	150
	575-3-60	517	633	32.4	164	32.4	164	20	21.3	95.2	125
50BK044	208/230-3-60	187	253	77.1	345	77.1	345	15	46.2	220.7	250
	460-3-60	414	506	36.8	173	36.8	173	15	21.0	104.8	125
	575-3-60	517	633	29.4	120	29.4	120	15	16.0	83.2	110
50BK054	208/230-3-60	187	253	100	446	77.1	345	15	46.2	249.3	350
	460-3-60	414	506	47.9	223	38.4	173	15	21.0	120.3	150
	575-3-60	517	633	38.4	164	30.6	120	15	16.0	95.6	125
50BK064	208/230-3-60	187	253	120	506	120	506	20	59.4	331.0	450
	460-3-60	414	506	54.2	253	54.2	253	20	27.0	150.0	200
	575-3-60	517	633	43.4	176	43.4	176	20	21.3	120.0	150

RLA - Rated Load Amps
 LRA - Locked Rotor Amps
 MCA - Minimum Circuit Amps
 MFA - Maximum Fuse Amps
 HP - Nominal Horsepower

*Minimum circuit amps (MCA) for wire sizing complies with NEC Section 430-24.

NOTE: In compliance with NEC requirements for multimotor and combination load equipment (Ref: NEC Articles 430 and 440) the overcurrent protective device for the unit shall be fuse only.

ELECTRICAL PROTECTION

Compressor circuit breakers are current sensitive and temperature compensated to ensure compressor cutoff if current draw becomes excessive. Breakers must be manually reset.

Discharge gas thermal protection with automatic reset de-energizes the control circuit if extreme compressor motor temperature should occur from excessive gas temperature or motor overloading.

Low- and high-pressure switches automatically shut off compressor(s) if refrigerant pressure exceeds switch settings. This action protects against loss of charge.

Indoor fan motor circuit breaker protects against motor overload. Breaker requires manual reset.

OPERATIONAL SEQUENCE

50BJ,BK044 - 054 - 064

When each compressor circuit breaker is energized, 3-phase power is supplied to the line side of each of the compressor contactors.

When the fan circuit breaker is energized with the standby switch in the "STAND BY" position 3 phase power is supplied to the line side of the fan contactor. In addition, the 120 volt control circuit transformer is energized powering the "SYSTEM" light, each 125 watt crankcase heater and setting each timeguard circuit.

If the stand-by switch is in the "ON" position, power is supplied to the indoor fan contactor "IFC" starting the indoor fan and lighting the "FAN" light. In addition to the "IFC", the low voltage (24 volt) transformer is energized, powering the Honeywell W7100 microprocessor.

The improved Honeywell microprocessor based W7100 discharge air controller is supplied with the 50BJ/BJ 044-064 air conditioning units. The controller is equipped with 3 control knobs: set point, reset, and control band, which is used in conjunction with the leaving air temperature sensor. The microprocessor will control the leaving air temperature close to the "set point" setting by cycling compressors and unloaders.

The loading sequence for the VAV units is listed below:

50BJ,BK	<u>044</u>	<u>054</u>	<u>064</u>
STAGE 1	25%	19%	17%
2	50%	38%	34%
3	75%	57%	50%
4	100%	63%	67%
5	--	84%	84%
6	--	100%	100%

For typical piping and wiring (1) follow all applicable local and national codes and (2) follow standard refrigerant piping techniques. Refer to Carrier System Design Manual, Part 3, for details.

GUIDE SPECIFICATIONS

Base Unit

Unit shall be single-package vertical type and shall include self-contained water-cooled condenser(s) or have provisions for connection of _____ remote, air-cooled condenser(s).

Total cooling capacity of the unit shall be _____ Btuh or greater, at conditions of _____ cfm evaporator air entering unit at _____ F wet-bulb temperature. Total sensible capacity shall be _____ Btuh or greater, with _____ F dry-bulb temperature at the above conditions.

Compressors shall be serviceable hermetic type equipped with suitable vibration isolators, crankcase heaters, filter-drier(s), and suction and discharge service valves.

Electric unloaders providing _____ capacity steps shall be factory installed to provide close control of leaving air dry-bulb temperature regardless of load variations.

Compressors shall be of same manufacture as unit and shall be located in a sound attenuating compartment within the cabinet.

Power input to the compressor motors shall not exceed _____ kw at the conditions specified.

Evaporator coils shall be of nonferrous construction with aluminum plate fins mechanically bonded to seamless copper tubing. Coils shall be of same manufacture as unit.

Coils shall be fed by thermostatic expansion valves. Hot gas bypass to the evaporator shall be factory installed. Evaporator coil shall always have a full face active to assure proper treatment of air flowing through unit.

Evaporator air fans shall be capable of delivering _____ cfm of air with an external static pressure of _____ in. wg or greater. Fans shall be centrifugal, forward curved, and shall be belt-driven by a motor of _____ nominal hp or less when operating at _____ rpm.

Condenser(s) of water-cooled condenser units (50BJ) shall be tube in tube type. Tubes shall be seamless with no interior joints. Sweat connections shall be provided for water supply and return lines. Each 50BJ unit shall contain a full operating refrigerant charge.

Air-cooled units (50BK) shall have hot gas and liquid line shutoff valves for connection of remote, air-cooled condensers. Each 50BK unit shall be shipped with a holding charge.

Controls shall be factory wired to operate on _____ volts, 3 phase, 60 Hz power supply.

The variable volume control network shall be factory installed and wired in the unit. Control network shall contain a microprocessor which will:

- (a) provide precise control of capacity staging;
- (b) contain an adjustable set point for discharge air temperature;
- (c) have the ability to program a reset of discharge air temperature based on temperature readings from the conditioned space. Reset function shall be adjustable in both amount of reset and point at which reset is initiated on a pre-programmed schedule;
- (d) contain a control band adjustment to set a temp. region where there will be a minimum of cycling.

Safety controls shall include factory-installed circuit breakers. Cooling system shall be protected by a fusible plug (50BJ), high- and low-pressure switches, compressor overloads, and a timing device that will prevent compressor motor from being subjected to starting current more than once every 5 minutes.

Power wiring to unit shall be made to single-point terminal connections.

Cabinet shall be zinc surface alloyed steel that is bonderized and painted with a modified alkyd enamel. Unit sections shall be insulated to prevent sweating and to muffle sound.

Unit dimensions shall be 117½ in. wide, 43¼ in. deep and 79½ in. high.

Accessories (field installed)

Timer control panel shall contain a 7-day, 10-hour, spring return clock; 5-hour bypass timer and system-status indicating lights.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.