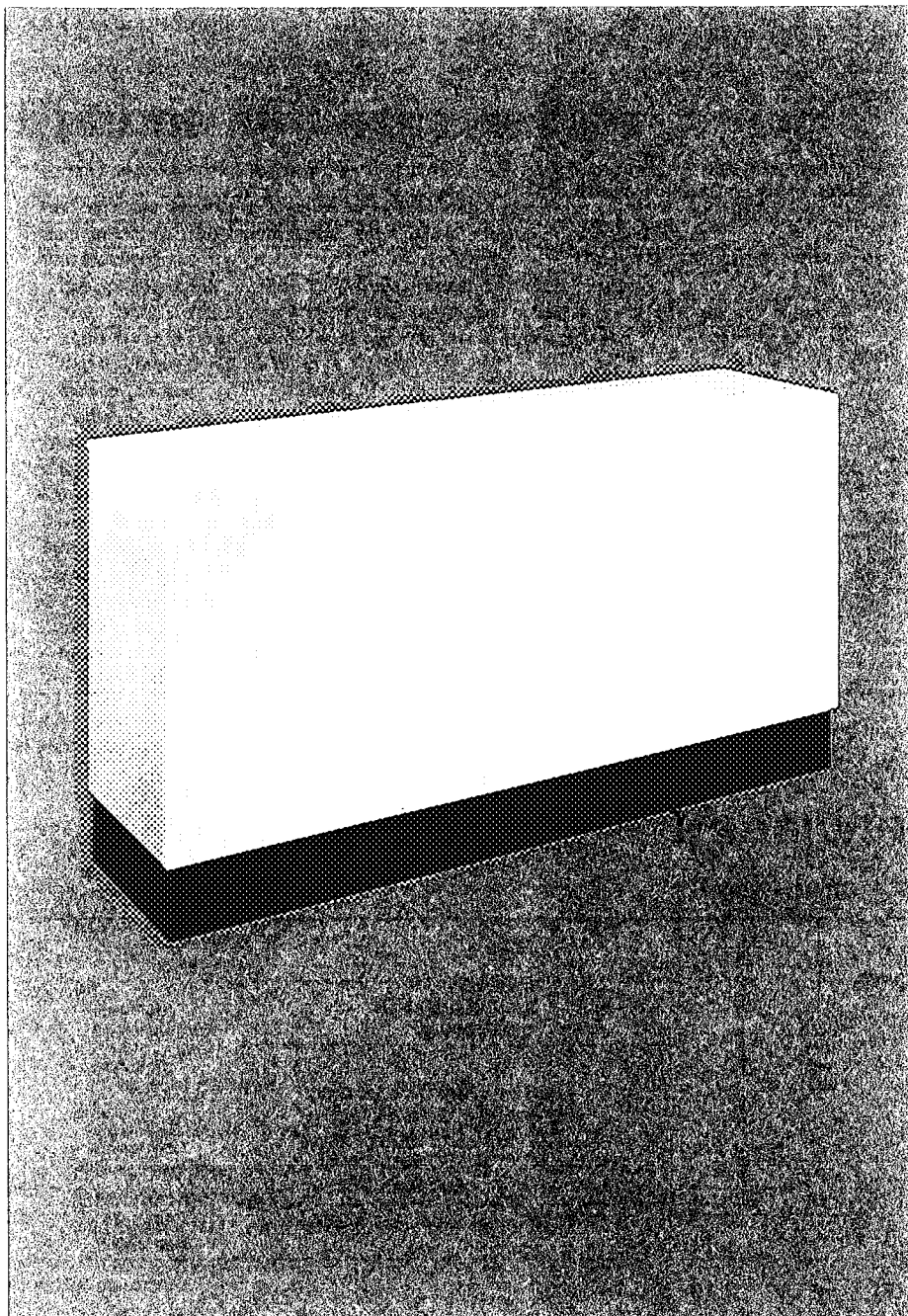




Product Data

50KQ Console Water Source Heat Pumps

1/2 to 1-1/2 Nominal Tons



Self-Contained Console Water Source Heat Pumps with the following standard features:

- low installation costs
- exceptional operating economy
- 180-degree reversible cabinet
- high-pressure switch
- protection against low water temperature
- built-in fresh air cycle
- compact unit design
- field-reversible chassis configuration (shipped right-hand from factory)

Features/Benefits

Operating efficiency and reliability

With EERs (energy efficiency ratios) to 11.0 and COPs (Coefficients of Performance) to 3.5, the 50KQ unit is a wise, energy-efficient choice with the promise of exceptionally low operating levels.

Optional night setback controls increase operating efficiency by limiting energy consumption during unoccupied periods, and optional factory-mounted electric coil and controls allow downsizing or elimination of boilers.

The built-in safety controls, including high-pressure switches and protection against low water temperatures, preserve the life expectancy of major components.

All units are ARI (Air Conditioning & Refrigeration Institute) certified, and UL (Underwriters' Laboratories) and CSA (Canadian Standards Association) listed. All units are backed by Carrier's exclusive extended warranty plans.

Design flexibility

The 50KQ console water source heat pumps are ideal for office buildings, hotels and motels, health care facilities, nursing homes and other commercial multi-room buildings that require perimeter applications of quiet, energy-efficient cooling and heating units.

Five popular sizes and a wide range of options and accessories are available to tailor the product to your specific application needs. The chassis and cabinet can also be reversed 180 degrees in the field to match piping requirements. This single chassis/cabinet design reduces the number of spares needed per project.

Easy installation and maintenance

The compact, 25-in. tall 50KQ unit fits under any window. Because the chassis is reversible, the units can be installed in either a right- or left-hand configuration by simply rotating the unit and locating the front panel after installation at the job site. The unit is shipped with a right-hand orientation.

The compact console design also simplifies ordering, installing, stocking, servicing and dealing with last-minute piping changes. All units are factory charged with refrigerant, and controls are prewired at the factory to speed installation time and lower labor costs.

The 50KQ unit cabinets include a

unit access door for easy access and servicing.

Quiet operation and attractive appearance

The 50KQ unit design features an acoustically insulated cabinet, a chassis-isolated compressor mounted outside the airstream, and rigid, high-quality cabinet and chassis construction.

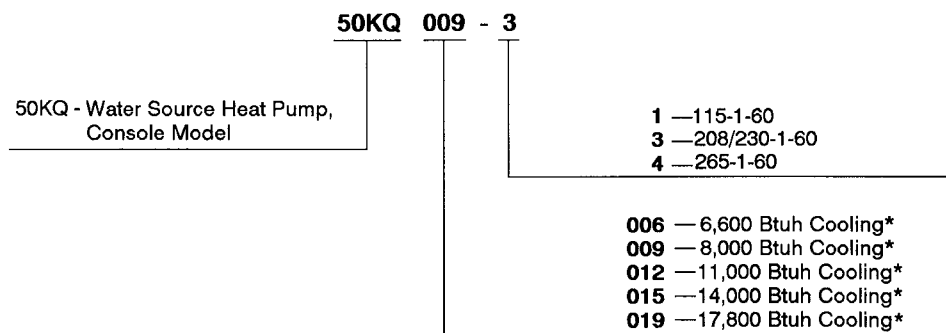
The compressor compartment is solidly mounted on the floor to reduce noise and vibration.

With their sleek and stylish lines and soft beige tone, the 50KQ units compliment virtually any decor. The rugged, all metal cabinet is designed to retain its attractive appearance for many years with a minimum of care.

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Model number nomenclature



* Nominal capacities at 230 v

UNIT 50KQ	VOLTAGE†	COOLING				HEATING			NOMINAL	
		TC	SHC	Watts	EER	TC	Watts	COP	Cfm	Gpm
006	115 208/230 265	6600	5280	647	10.2	7900	681	3.4	270	1.8
009	115 208/230 265	8000	6220	784	10.2	9800	870	3.3	300	2.3
012	208/230 265	11,000	7581	1078	10.2	12,800	1137	3.3	350	3.0
015	208/230 265	14,000	10,465	1272	11.0	15,500	1298	3.5	450	3.8
019	208/230 265	17,800	13,072	1618	11.0	21,000	1760	3.5	450	4.7

LEGEND

COP — Coefficient of Performance
EER — Energy Efficiency Ratio
Gpm — Gallons (U.S.)/Minute
SHC — Sensible Heat Capacity (Btuh)
TC — Total Capacity (Btuh)
Watts — Power Input

*Air Conditioning & Refrigeration Institute

†Capacities shown are for 115, 230, and 265-v. For capacities at 208 v, subtract 200 Btuh.

Rated in accordance with ARI Standard 320.



Cooling Standard: 80 F db, 67 F wb indoor entering-air temperature and 85 F entering, 95 F leaving-water temperature.

Heating Standard: 70 F db indoor entering-air temperature and 70 F entering-water temperature.

ITEM

Unit-Mounted Automatic Changeover Thermostat

Remote-Mounted Wall Thermostat, Automatic and Manual Changeover

Unit Mounted:

Night Setback with Setback Thermostat, Relay and Setback Button

Night Setback with Setback Thermostat and Relay for field-supplied 24-v setback signal

Night Setback Relay only for field-supplied 24-v setback signal

Night Setback Override Timer

Manual Damper

Motorized Damper

Warranty Option I (1st Year Labor Allowance on Refrigerant Circuit Repairs)

Warranty Option II (2nd — 5th Year Parts and Labor Allowance on Refrigerant Circuit Repairs)

Remote Automatic Changeover Thermostat, 24-v

Remote Manual Changeover Thermostat, 24-v

Supply/Return Hose Kit

Condensate Hose Kit

Shutoff (Gate) Valves

Balancing (Ball) Valves

Central Water Loop Controller

Outdoor-Air Damper Boxes

OPTION*

ACCESSORY†

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

*Factory installed

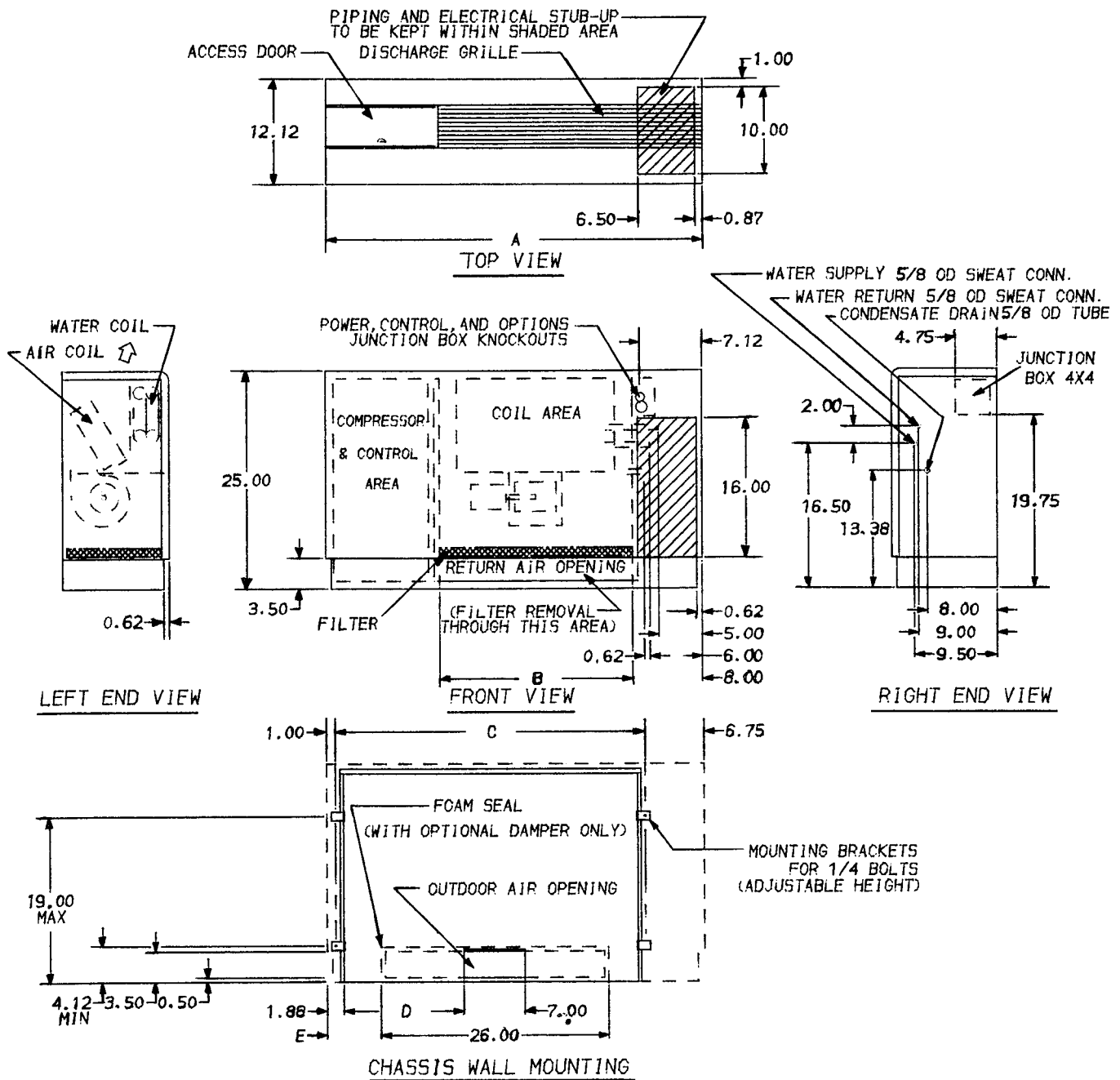
†Field installed

UNIT 50KQ	006	009	012	015	019
REFRIGERANT					
Control			Capillary Tube		
R-22 Charge (lb-oz)*	0-14	0-15	1-1	1-9	2-1
FAN†					
Quantity	1	1	2	2	2
Diameter (in.)	6 ⁵ / ₁₆	6 ⁵ / ₁₆	6 ⁵ / ₁₆	6 ⁵ / ₁₆	6 ⁵ / ₁₆
Width (in.)	6 ¹ / ₂	6 ¹ / ₂	4 ¹ / ₂	6 ¹ / ₂	6 ¹ / ₂
Motor Hp	¹ / ₂₀	¹ / ₂₀	¹ / ₂₀	¹ / ₂₀	¹ / ₂₀
Motor Rpm (nominal)	1000	1000	1000	1000	1000
COIL					
Face Area (sq ft)	1.0	1.25	1.25	1.67	1.67
Rows (no.)	2	2	3	3	4
OPERATING WEIGHT (lb)	130	140	160	175	190
SHIPPING WEIGHT (lb)	145	155	180	195	210
FILTER SIZE (in.) l x w x ¹ / ₂ thick					
Disposable		21 ³ / ₄ x 10 ¹ / ₂		33 ³ / ₄ x 10 ¹ / ₂	

*Factory charged

†Fan data is for each fan.

Base unit dimensions, right-hand stub-up

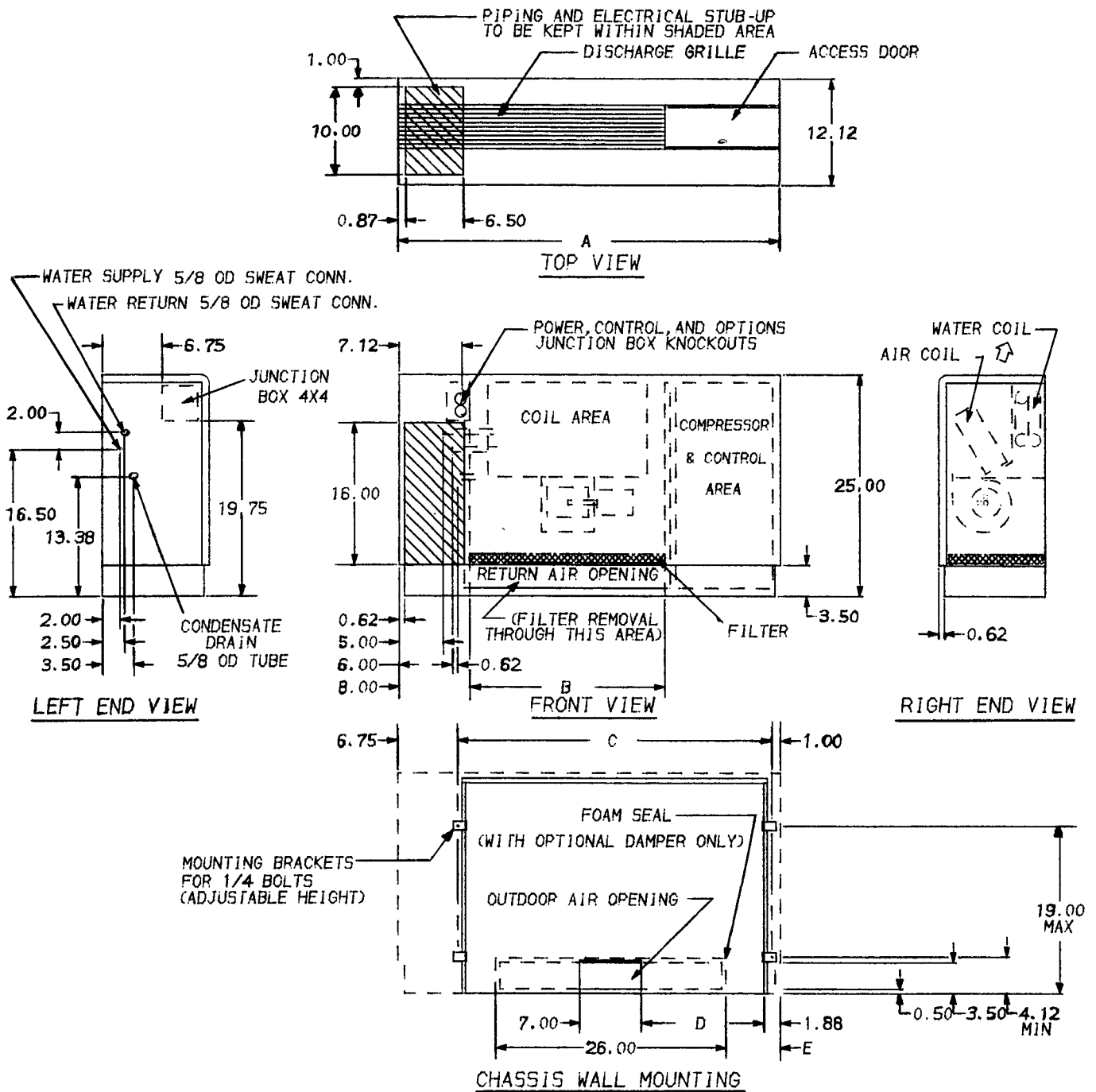


LEGEND
CONN. — Connection
OD — Outside Diameter
➡ Direction of airflow

NOTE: All dimensions are in inches

UNIT 50KQ	A	B	C	D	E
006,009,012	43	22	34.88	13.5	5.88
015,019	55	34	46.88	19.5	11.88

Package unit dimensions (cont), left-hand stub-up



LEGEND
CONN. — Connection
OD — Outside Diameter
➡ Direction of airflow

NOTE: All dimensions are in inches

UNIT 50KQ	A	B	C	D	E
006,009,012	43	22	34.88	13.5	5.88
015,019	55	34	46.88	19.5	11.88

I Determine job requirements

Given:

Total Cooling Load	11,700 Btuh
Sensible Heat Load	8,200 Btuh
Total Heating Load	12,314 Btuh
Indoor Air Quantity	350 Cfm
Indoor Coil Air Temp — Entering Wet Bulb	70 F
Indoor Coil Air Temp — Entering Dry Bulb (summer)	85 F
Indoor Coil Air Temp — Entering Dry Bulb (Winter)	65 F
Water Temp Entering Heat Exchanger (cooling)	90 F
Water Temp Entering Heat Exchanger (heating)	60 F
Water Flow Rate (Gpm)	3.0

II Determine unit location

Given: Unit needed for perimeter zone.

Select: Model 50KQ console unit.

III Select Model 50KQ which meets cooling requirements.

Enter Cooling and Heating Capacities table for nominal 350 cfm unit, model 50KQ012, at 90 F EWT and 3.0 gpm. Find a TC of 10,461 Btuh, and SHC of 7,391 Btuh, a THR of 14,275 Btuh, with 1,117 watts power input.

IV Apply Cooling Performance Correction Factors to determine values at given Conditions.

- A. Enter Correction Factors table for Model 50KQ012 at 70 F entering wet bulb, 85 F entering dry bulb and find these factors:
- TC — 1.033
 - SHC — 1.049
 - THR — 1.029
 - Power Input — 1.013

- B. Use the factors to compute the values at the given conditions:

tabular value x correction factor
= corrected value

$$10,461 \times 1.033 = 10,806 \text{ Btuh (TC)}$$

$$7,391 \times 1.049 = 7,753 \text{ Btuh (SHC)}$$

$$14,275 \times 1.029 = 14,689 \text{ Btuh (THR)}$$

$$1,117 \times 1.013 = 1,132 \text{ Watts (Power Input)}$$

These values meet the given cooling requirements.

V Obtain heating performance of selected unit.

Reenter the Cooling and Heating Capacities table for Model 50KQ012 at 60 F EWT and 3.0 gpm. Find a TC of 12,221 Btuh, SHC of 8,470 Btuh, with 1,098 watts power input.

VI Apply Heating Correction Factors (from Note 3) to determine capacity at given conditions.

- A. Enter table at 65 F entering dry bulb and find factor of 1.02.

- B. Compute capacity at given conditions:

Tabular value x correction factor

= corrected value

$$12,221 \times 1.02 = 12,465 \text{ Btuh (TC)}$$

This meets the heating requirements given.

VII Determine water pressure drop for selected unit.

Enter Water Pressure Drops table for Model 50KQ012 at 3.0 gpm. By interpolation, find pressure drop of 11.4 ft wg.

COOLING AND HEATING CAPACITIES, 50KQ006

EWT (F)	WATER FLOW (Gpm)	COOLING				HEATING		
		TC (Btuh)	SHC (Btuh)	THR (Btuh)	Power Input (Watts)	TC (Btuh)	THA (Btuh)	Power Input (Watts)
60	1.0	7,824	5,720	9,808	581	7,372	5,153	650
	1.8	8,218	5,867	10,143	564	7,448	5,214	654
	2.0	8,249	5,867	10,169	562	7,466	5,228	655
65	1.0	7,501	5,603	9,537	596	7,592	5,329	662
	1.8	7,895	5,750	9,868	577	7,673	5,394	667
	2.0	7,926	5,750	9,894	576	7,691	5,409	668
70	1.0	7,177	5,485	9,271	613	7,816	5,508	676
	1.8	7,572	5,632	9,596	593	7,900	5,574	681
	2.0	7,603	5,632	9,622	591	7,919	5,589	682
75	1.0	6,853	5,368	9,010	631	8,043	5,687	690
	1.8	7,249	5,515	9,329	609	8,131	5,756	695
	2.0	7,280	5,515	9,355	607	8,151	5,771	697
80	1.0	6,528	5,251	8,753	651	8,274	5,867	705
	1.8	6,925	5,397	9,067	627	8,366	5,938	711
	2.0	6,956	5,397	9,092	625	8,387	5,954	712
85	1.0	6,203	5,133	8,500	673	8,507	6,047	720
	1.8	6,600	5,280	8,809	647	8,604	6,121	727
	2.0	6,631	5,280	8,834	645	8,626	6,138	728
90	1.0	5,877	5,016	8,251	695	8,745	6,229	737
	1.8	6,275	5,163	8,555	668	8,845	6,304	744
	2.0	6,306	5,163	8,580	666	8,868	6,322	745

LEGEND

EWT — Entering Water Temperature
Gpm — Gallons (U.S.)/Minute
SHC — Sensible Heat Capacity
TC — Total Capacity
THA — Total Heat of Absorption
THR — Total Heat Rejection

BOLDFACE — Continuous operation not recommended

NOTES:

- Interpolation is permissible. Do not extrapolate.
- Capacities shown are for 230 and 265 v. For capacities at 208 v, subtract 200 Btuh.
- Heating Correction Factors.

Entering-Air Temperature (F)	60	65	70	75	80
Heating Capacity	1.04	1.02	1.00	0.98	0.97

COOLING PERFORMANCE CORRECTION FACTORS

50KQ006

Ent Air Temp (F) Wet Bulb	TC	SHC					THR	Power Input
		Ent Air Temp (F) Dry Bulb						
		75	80	85	90	95		
61	0.901	1.053	1.261	*	*	*	0.919	0.998
64	0.948	0.923	1.131	1.338	*	*	0.957	0.998
67	1.000	0.797	1.000	1.208	1.410	*	1.000	1.000
70	1.057	0.667	0.874	1.077	1.285	1.487	1.047	1.003
73	1.120	0.541	0.744	0.952	1.154	1.362	1.100	1.006
76	1.190	—	0.618	0.821	1.029	1.231	1.157	1.011
79	1.266	—	0.488	0.695	0.898	1.106	1.221	1.020

*Sensible heat capacity equals total capacity

WATER PRESSURE DROPS (ft)

50KQ006

Gpm	1.0	1.2	1.4	1.6	1.8	2.0
Pressure Drop	4.6	6.6	8.9	11.5	14.5	17.8

Performance data (cont)

COOLING AND HEATING CAPACITIES, 50KQ009

EWT (F)	WATER FLOW (Gpm)	COOLING				HEATING		
		TC (Btuh)	SHC (Btuh)	THR (Btuh)	Power Input (Watts)	TC (Btuh)	THA (Btuh)	Power Input (Watts)
60	1.1	9,104	6,642	11,637	742	9,279	6,401	842
	2.3	10,088	6,999	12,571	727	9,386	6,489	848
	3.0	10,311	7,097	12,796	728	9,437	6,530	851
65	1.1	8,726	6,480	11,300	754	9,476	6,562	853
	2.3	9,671	6,837	12,164	730	9,591	6,655	860
	3.0	9,887	6,934	12,373	728	9,646	6,700	863
70	1.1	8,348	6,350	10,973	768	9,682	6,728	865
	2.3	9,254	6,675	11,774	738	9,800	6,827	870
	3.0	9,463	6,772	11,967	733	9,856	6,874	873
75	1.1	7,970	6,220	10,651	785	9,888	6,900	875
	2.3	8,836	6,545	11,397	750	10,012	7,003	881
	3.0	9,038	6,610	11,577	744	10,072	7,053	884
80	1.1	7,590	6,091	10,336	804	10,101	7,077	885
	2.3	8,419	6,383	11,032	765	10,234	7,186	892
	3.0	8,613	6,448	11,201	758	10,298	7,286	896
85	1.1	7,210	5,928	10,025	824	10,322	7,258	897
	2.3	8,000	6,220	10,677	784	10,464	7,373	905
	3.0	8,187	6,285	10,835	775	10,532	7,428	909
90	1.1	6,829	5,798	9,714	845	10,552	7,444	910
	2.3	7,581	6,058	10,329	805	10,703	7,565	919
	3.0	7,761	6,123	10,478	795	10,775	7,622	923

LEGEND

EWT — Entering Water Temperature
Gpm — Gallons (U.S.)/Minute
SHC — Sensible Heat Capacity
TC — Total Capacity
THA — Total Heat Absorption
THR — Total Heat Rejection

BOLDFACE — Continuous operation not recommended

NOTES

- Interpolation is permissible. Do not extrapolate.
- Capacities shown are for 230 and 265 v. For capacities at 208 v, subtract 200 Btuh.
- Heating Correction Factors.

Entering-Air Temperature (F)	60	65	70	75	80
Heating Capacity	1.04	1.02	1.00	0.98	0.97

COOLING PERFORMANCE CORRECTION FACTORS

50KQ009

Ent Air Temp (F) Wet Bulb	TC	SHC					THR	Power Input
		Ent Air Temp (F) Dry Bulb						
		75	80	85	90	95		
61	0.998	1.101	1.302	*	*	*	0.990	1.001
64	0.990	0.948	1.144	1.344	*	*	0.992	1.000
67	1.000	0.800	1.000	1.196	1.396	*	1.000	1.000
70	1.018	0.656	0.856	1.052	1.252	1.018	1.014	0.999
73	1.045	0.517	0.717	0.913	1.113	1.308	1.036	0.999
76	1.082	—	0.583	0.778	0.978	1.174	1.066	1.001
79	1.129	—	0.448	0.648	0.844	1.044	1.104	1.005

WATER PRESSURE DROPS (ft)

50KQ009

Gpm	1.1	1.5	1.9	2.3	2.7	3.0
Pressure Drop	1.2	2.2	3.5	5.0	6.9	8.5

*Sensible heat capacity equals total capacity.

COOLING AND HEATING CAPACITIES, 50KQ012

EWT (F)	WATER FLOW (Gpm)	COOLING				HEATING		
		TC (Btuh)	SHC (Btuh)	THR (Btuh)	Power Input (Watts)	TC (Btuh)	THA (Btuh)	Power Input (Watts)
60	1.7	12,806	8,265	16,017	940	12,083	8,362	1,090
	3.0	13,685	8,645	16,709	886	12,221	8,470	1,098
	4.0	13,894	8,721	16,880	875	12,305	8,535	1,104
65	1.7	12,296	8,075	15,634	978	12,353	8,573	1,107
	3.0	13,149	8,417	16,282	917	12,503	8,689	1,117
	4.0	13,355	8,493	16,444	905	12,593	8,758	1,123
70	1.7	11,786	7,885	15,261	1,018	12,639	8,794	1,126
	3.0	12,612	8,189	15,871	954	12,800	8,917	1,137
	4.0	12,817	8,303	16,026	940	12,897	8,993	1,143
75	1.7	11,276	7,695	14,889	1,058	12,936	9,024	1,145
	3.0	12,076	7,999	15,472	995	13,100	9,158	1,154
	4.0	12,277	8,075	15,620	979	13,198	9,238	1,160
80	1.7	10,764	7,505	14,503	1,095	13,233	9,266	1,162
	3.0	11,538	7,809	15,082	1,038	13,408	9,408	1,171
	4.0	11,738	7,885	15,226	1,022	13,513	9,492	1,177
85	1.7	10,252	7,315	14,119	1,132	13,541	9,515	1,179
	3.0	11,000	7,581	14,680	1,078	13,728	9,665	1,190
	4.0	11,198	7,657	14,830	1,064	13,840	9,754	1,196
90	1.7	9,739	7,125	13,734	1,170	13,861	9,771	1,198
	3.0	10,461	7,391	14,275	1,117	14,059	9,929	1,209
	4.0	10,657	7,467	14,422	1,103	14,178	10,023	1,217

LEGEND

EWT — Entering Water Temperature
Gpm — Gallons (U S)/Minute
SHC — Sensible Heat Capacity
TC — Total Capacity
THA — Total Heat of Absorption
THR — Total Heat Rejection

BOLDFACE — Continuous operation not recommended.

NOTES:

- Interpolation is permissible. Do not extrapolate.
- Capacities shown are for 230 and 265 v. For capacities at 208 v, subtract 200 Btuh.
- Heating Correction Factors.

Entering-Air Temperature (F)	60	65	70	75	80
Heating Capacity	1.04	1.02	1.00	0.98	0.97

COOLING PERFORMANCE CORRECTION FACTORS

50KQ012

Ent Air Temp (F) Wet Bulb	TC	SHC					THR	Power Input
		Ent Air Temp (F) Dry Bulb						
		75	80	85	90	95		
61	0.976	1.103	1.282	1.461	*	*	0.979	0.992
64	0.982	0.960	1.135	1.314	1.493	*	0.984	0.994
67	1.000	0.825	1.000	1.179	1.354	1.533	1.000	1.000
70	1.033	0.695	0.874	1.049	1.228	1.407	1.029	1.013
73	1.080	0.578	0.753	0.932	1.107	1.286	1.072	1.034
76	1.144	—	0.640	0.819	0.994	1.173	1.130	1.068
79	1.224	—	0.532	0.711	0.886	1.065	1.204	1.111

*Sensible heat capacity equals total capacity

WATER PRESSURE DROPS (ft)

50KQ012

Gpm	1.7	2.2	2.7	3.1	3.6	4.0
Pressure Drop	3.8	6.3	9.4	12.2	16.4	20.1

COOLING AND HEATING CAPACITIES, 50KQ015

EWT (F)	WATER FLOW (Gpm)	COOLING				HEATING		
		TC (Btuh)	SHC (Btuh)	THR (Btuh)	Power Input (Watts)	TC (Btuh)	THA (Btuh)	Power Input (Watts)
60	2.0	15,822	11,174	19,626	1,114	12,083	10,205	1,218
	3.8	16,828	11,552	20,402	1,047	12,221	10,459	1,241
	5.0	17,119	11,647	20,636	1,030	12,305	10,577	1,252
65	2.0	15,305	10,985	19,260	1,158	12,353	10,495	1,244
	3.8	16,256	11,316	19,955	1,083	12,503	10,760	1,269
	5.0	16,544	11,458	20,178	1,064	12,593	10,884	1,280
70	2.0	14,746	10,749	18,860	1,205	12,639	10,791	1,272
	3.8	15,683	11,127	19,521	1,124	12,800	11,067	1,298
	5.0	15,968	11,221	19,735	1,103	12,897	11,196	1,311
75	2.0	14,186	10,560	18,471	1,255	12,936	11,091	1,301
	3.8	15,109	10,891	19,101	1,169	13,100	11,378	1,325
	5.0	15,392	10,985	19,307	1,147	13,198	11,513	1,335
80	2.0	13,625	10,371	18,090	1,308	13,233	11,395	1,326
	3.8	14,576	10,701	18,741	1,220	13,408	11,735	1,351
	5.0	14,814	10,796	18,891	1,194	13,513	11,875	1,362
85	2.0	13,063	10,134	17,706	1,360	16,361	11,745	1,352
	3.8	14,000	10,465	18,344	1,272	16,754	12,056	1,376
	5.0	14,278	10,607	18,534	1,246	16,939	12,201	1,387
90	2.0	12,499	9,945	17,309	1,409	16,756	12,058	1,376
	3.8	13,423	10,276	17,956	1,327	17,169	12,382	1,402
	5.0	13,699	10,371	18,140	1,301	17,363	12,533	1,415

LEGEND

EWT — Entering Water Temperature
Gpm — Gallons (U.S.)/Minute
SHC — Sensible Heat Capacity
TC — Total Capacity
THA — Total Heat Absorption
THR — Total Heat Rejection

BOLDFACE — Continuous operation not recommended.

NOTES:

- Interpolation is permissible. Do not extrapolate.
- Capacities shown are for 230 and 265 v. For capacities at 208 v, subtract 200 Btuh.
- Heating Correction Factors.

Entering-Air Temperature (F)	60	65	70	75	80
Heating Capacity	1.04	1.02	1.00	0.98	0.97

COOLING PERFORMANCE CORRECTION FACTORS

50KQ015

Ent Air Temp (F) Wet Bulb	TC	SHC					THR	Power Input
		Ent Air Temp (F) Dry Bulb						
		75	80	85	90	95		
61	0.915	1.042	1.206	*	*	*	0.925	0.973
64	0.954	0.939	1.099	1.262	*	*	0.959	0.985
67	1.000	0.836	1.000	1.160	1.323	*	1.000	1.000
70	1.053	0.738	0.897	1.061	1.224	1.384	1.048	1.020
73	1.118	0.639	0.802	0.962	1.126	1.289	1.106	1.048
76	1.188	—	0.704	0.867	1.031	1.191	1.170	1.083
79	1.268	—	0.609	0.772	0.932	1.096	1.241	1.115

*Sensible heat capacity equals total capacity.

WATER PRESSURE DROPS (ft)

50KQ015

Gpm	2.0	2.6	3.2	3.8	4.4	5.0
Pressure Drop	1.8	3.0	4.4	6.2	8.3	10.6

COOLING AND HEATING CAPACITIES, 50KQ019

EWT (F)	WATER FLOW (Gpm)	COOLING				HEATING		
		TC (Btuh)	SHC (Btuh)	THR (Btuh)	Power Input (Watts)	TC (Btuh)	THA (Btuh)	Power Input (Watts)
60	2.4	19,634	13,824	24,773	1,505	19,326	13,562	1,688
	4.7	20,987	14,341	25,852	1,425	19,864	14,062	1,710
	6.0	21,138	14,435	25,973	1,416	20,064	14,194	1,718
65	2.4	19,016	13,542	24,283	1,543	19,866	14,027	1,710
	4.7	20,350	14,106	25,343	1,462	20,428	14,507	1,734
	6.0	20,502	14,153	25,464	1,453	20,632	14,680	1,743
70	2.4	18,397	13,307	23,795	1,581	20,413	14,495	1,733
	4.7	19,713	13,824	24,836	1,500	21,000	14,991	1,760
	6.0	19,866	13,918	24,957	1,491	21,213	15,170	1,770
75	2.4	17,788	13,072	23,308	1,620	20,968	14,964	1,758
	4.7	19,076	13,589	24,331	1,539	21,579	15,476	1,788
	6.0	19,230	13,636	24,453	1,530	21,802	15,662	1,798
80	2.4	17,158	12,837	22,822	1,659	21,529	15,434	1,785
	4.7	18,438	13,307	23,828	1,579	22,167	15,964	1,817
	6.0	18,593	13,401	23,949	1,569	22,453	16,199	1,832
85	2.4	16,538	12,602	22,337	1,698	22,152	15,951	1,816
	4.7	17,800	13,072	23,326	1,618	22,816	16,497	1,851
	6.0	17,956	13,119	23,448	1,609	23,058	16,694	1,864
90	2.4	15,918	12,367	21,852	1,738	22,728	16,425	1,846
	4.7	17,162	12,837	22,825	1,659	23,420	16,987	1,884
	6.0	17,318	12,884	22,947	1,649	23,670	17,191	1,898

LEGEND

EWT — Entering Water Temperature
Gpm — Gallons (U.S.)/Minute
SHC — Sensible Heat Capacity
TC — Total Capacity
THA — Total Heat Absorption
THR — Total Heat Rejection

BOLDFACE — Continuous operation not recommended.

NOTES:

- Interpolation is permissible. Do not extrapolate.
- Capacities shown are for 230 and 265 volts. For capacities at 208 volts, subtract 200 Btuh
- Heating Correction Factors.

Entering-Air Temperature (F)	60	65	70	75	80
Heating Capacity	1.04	1.02	1.00	0.98	0.97

COOLING PERFORMANCE CORRECTION FACTORS

50KQ019

Ent Air Temp (F) Wet Bulb	TC	SHC					THR	Power Input
		Ent Air Temp (F) Dry Bulb						
		75	80	85	90	95		
61	0.975	1.089	1.253	1.414	*	*	0.979	0.993
64	0.987	0.961	1.125	1.289	*	*	0.989	0.996
67	1.000	0.836	1.000	1.164	1.328	*	1.000	1.000
70	1.014	0.714	0.878	1.039	1.204	1.368	1.012	1.004
73	1.030	0.593	0.757	0.918	1.082	1.246	1.026	1.009
76	1.047	—	0.635	0.800	0.961	1.125	1.041	1.015
79	1.067	—	0.517	0.678	0.842	1.007	1.058	1.018

*Sensible heat capacity equals total capacity.

WATER PRESSURE DROPS (ft)

50KQ019

Gpm	2.4	3.1	3.9	4.7	5.3	6.0
Pressure Drop	3.8	6.3	9.4	12.2	16.4	20.1



LEGEND

FLA — Full Load Amps
LRA — Locked Rotor Amps
RLA — Rated Load Amps

UNIT 50KQ	VOLTAGE (1-60 Hz)	COMPRESSOR		FAN	MINIMUM CIRCUIT AMPS	MAXIMUM FUSE AMPS
		RLA	LRA	FLA		
006	115	5.1	29.8	0.9	7.3	15
	208/230	2.7	15.9	0.5	3.9	15
	265	2.4	12.3	0.4	3.4	15
009	115	6.2	40.0	0.9	8.7	15
	208/230	3.5	20.0	0.5	4.9	15
	265	2.7	16.0	0.4	3.8	15
012	208/230	4.6	31.2	1.3	7.1	15
	265	4.1	27.0	1.2	6.4	15
015	208/230	5.4	31.2	1.3	8.1	15
	265	4.3	27.0	1.2	6.6	15
019	208/230	9.6	54.0	1.3	13.3	20
	265	8.0	42.0	1.2	11.2	20

Unit Operation

HEATING/COOLING — Thermostat cycles compressor to maintain thermostat setting. Reversing valve is energized in heating mode.

ROOM FAN — With fan switch in ON position, fan runs continuously. In AUTO. position, fan cycles on demand for heat or cool.

RESET RELAY — Opens circuit upon high refrigerant pressure or low water temperature. To reset, unit power can be shut off at thermostat or main power source and then turned back on.

CHANGEOVER — Automatic or manual changeover is dependent upon the type of thermostat purchased.

VOLTAGES

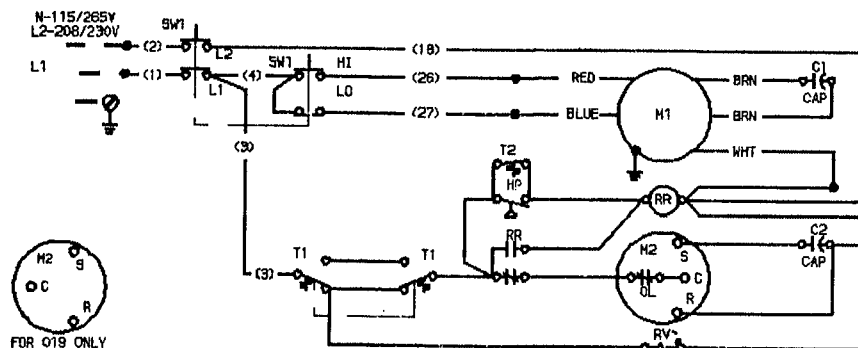
NAMEPLATE VOLTAGE	NOMINAL VOLTAGE
208 v	208 v
230 v	240 v
265 v	277 v

208/230-v units are factory wired for 230 v.
When power supplied is 208 v, change transformer connections as shown on the unit wiring diagram.

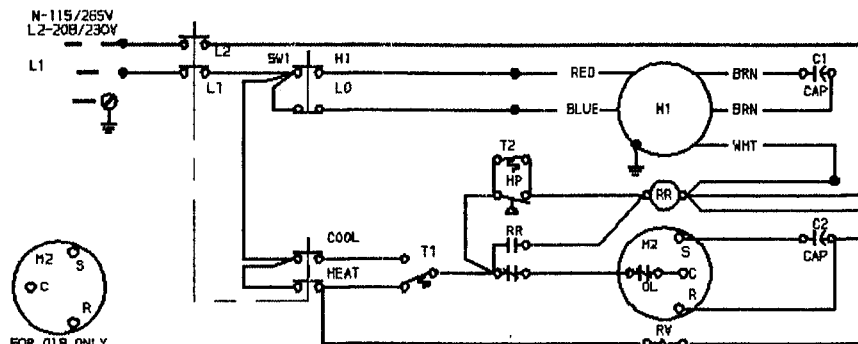
HI-SPEED LEAD CONNECTION

UNIT 50KQ	LEAD COLOR
006	Black
009	Black
012	Blue
015	Blue
019	Blue

UNIT-MOUNTED AUTO. CHANGEOVER THERMOSTAT



UNIT-MOUNTED MANUAL CHANGEOVER THERMOSTAT

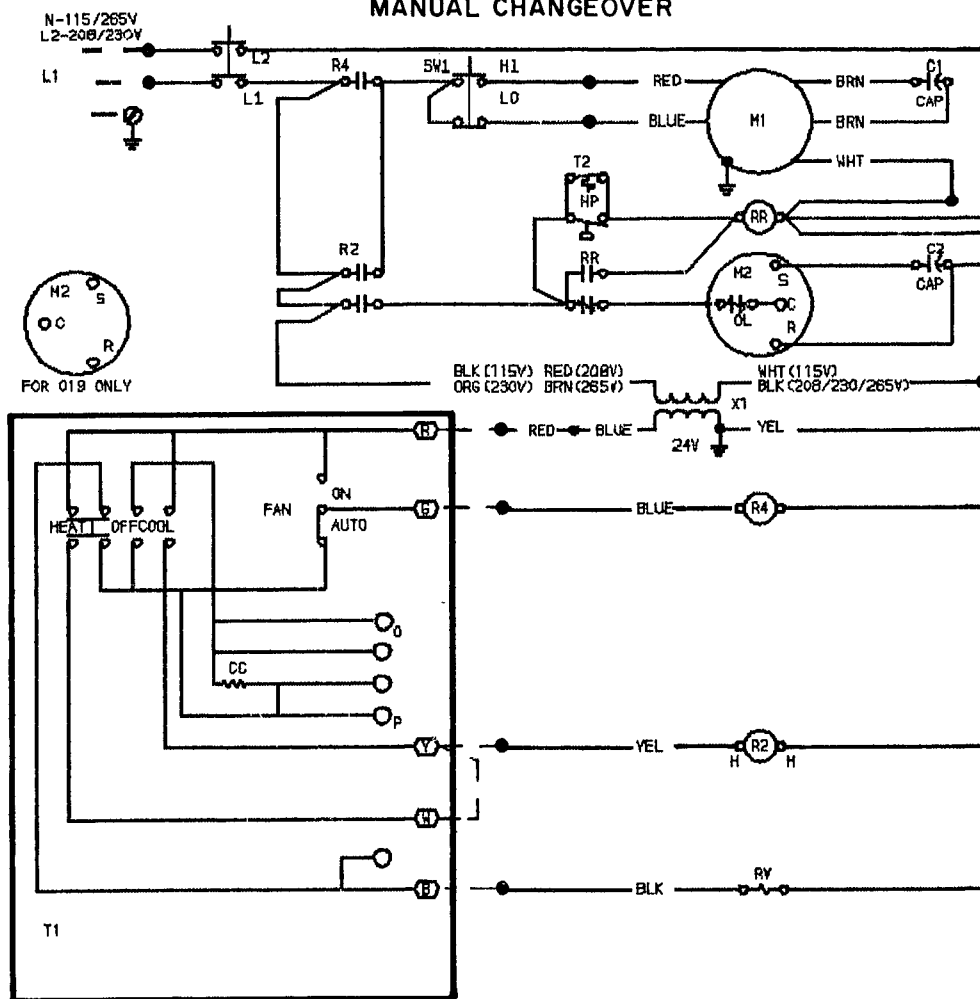


LEGEND FOR SCHEMATICS

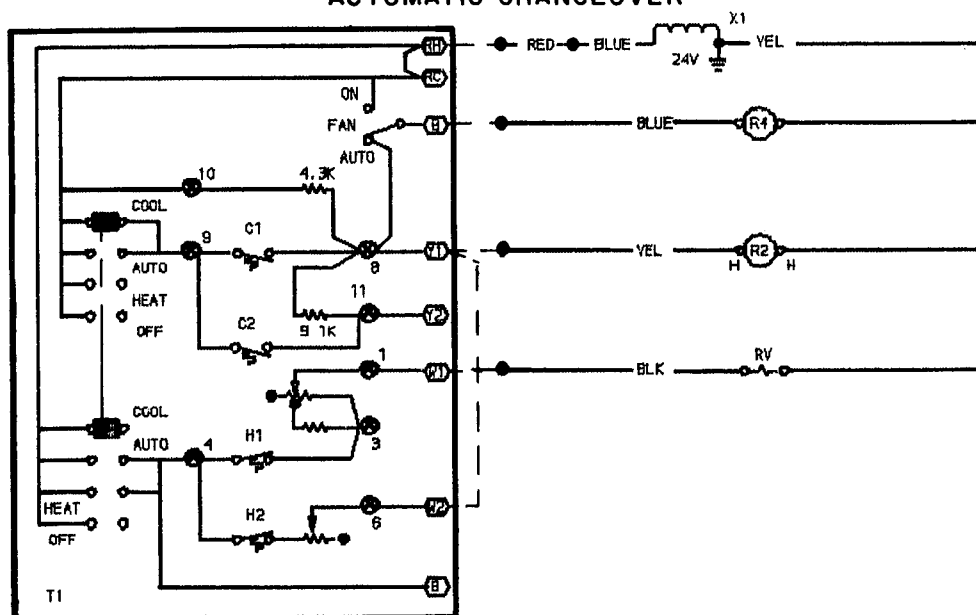
C1 — Fan Capacitor
C2 — Compressor Capacitor
HP — High-Pressure Switch
M1 — Fan Motor
M2 — Compressor
OL — Compressor Overload
R2 — Compressor Relay
R4 — Fan Relay
RR — Reset Relay
RV — Reversing Valve
SW1 — Fan Switch
T1 — Room Thermostat
T2 — Low Temperature Protection
X1 — Transformer

REMOTE-MOUNTED THERMOSTAT

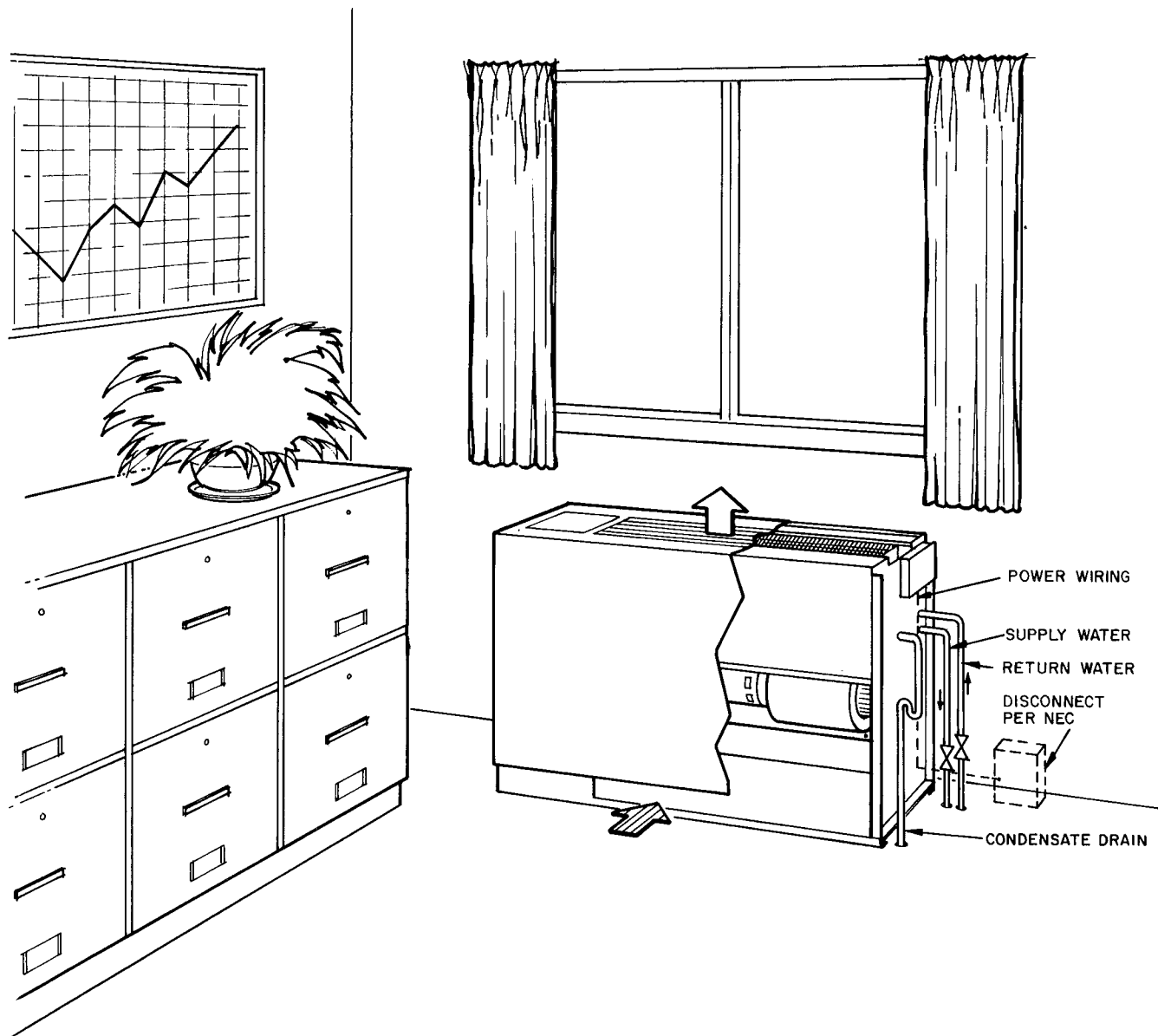
MANUAL CHANGEOVER



AUTOMATIC CHANGEOVER



NOTE: For wiring details regarding night setback controls and motorized dampers, refer to installation instructions



NOTES:

1. Wiring and piping are general guides only. They are not intended for a specific application.
2. Console cabinet will extend over piping, wiring, and disconnect.
3. Units are capable of field conversion to change water and electrical connections from right hand to left hand or vice versa by removing cabinet, relocating sheet metal panel on chassis, rotating chassis and reinstalling cabinet. All units are shipped from the factory in the right-hand configuration.

Guide specifications

Console Water-to-Air Heat Pump

HVAC Guide Specifications — 50KQ

Size Range: 1/2 to 1 1/2 Nominal Tons, Cooling

3/4 to 2 Nominal Tons, Heating

Carrier Model Number: 50KQ

Part 1 — General

1.01 SYSTEM DESCRIPTION

Indoor, console, electrically controlled water source heat pump utilizing a hermetic compressor for both heating and cooling, with air intake in the bottom and discharge through a top louvered grille.

1.02 QUALITY ASSURANCE

Unit shall be rated per ARI Standard 320, and shall be UL and CSA listed. All construction shall meet NFPA Standard 90-A.

1.03 DELIVERY, STORAGE, AND HANDLING

Each unit is shipped, individually packaged, from manufacturing point. Unit shall be stored and handled per manufacturer's recommendations.

1.04 WARRANTY

Warranties shall consist of 2 options in place of the standard warranty. Option I offers first year labor allowance on refrigerant circuit repairs. Option II offers a second through fifth year parts and labor allowance on refrigerant circuit repairs.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Indoor mounted, single package water source heat pump. Unit shall be complete with compressor, water-to-refrigerant heat exchanger, air-to-refrigerant coil, metering device, piping, fans, integral coils, and reversing valve.

B. Cabinet:

Cabinet shall be constructed of heavy-gage steel, painted with glossy alkyd melamine-baked enamel, fully insulated with a service access door and a discharge grille with 15 degrees vertical deflection. Unit shall be field reversible for right- or left-hand piping and electrical connections.

C. Fans:

Fans shall be direct-drive, double width, double inlet, centrifugal, forward curved type, which are dynamically and statically balanced.

D. Coils:

Coils shall be aluminum fins, non-ferrous tubes, and galvanized steel tube sheets. Tubes shall be mechanically bonded to the fins by mechanical expansion.

E. Water-to-Refrigerant Heat Exchanger:

Heat exchanger shall be coaxial, tube-in-tube, with all copper inner and steel outer tubing.

F. Motors:

Fan motors shall be multispeed, PSC type, have inherent protection, and be removable from the unit front only.

G. Compressor:

Compressor shall be fully hermetic with internal and external vibration isolation.

H. Controls:

The standard unit shall have integral controls, be factory wired with control circuit, safety devices, relays, thermostat, and manual changeover OFF-HI-LOW-HEAT-COOL pushbutton switch.

I. Safeties:

Unit shall have the following safeties:

1. High-pressure switch.
2. Freezestat. The low water temperature protection device shall be of the direct-sensing type, shall be located in the water, and shall measure the leaving-water temperature.

J. Special Features:

Certain standard features are replaced when features designated by a * are specified. See your local Carrier sales office for amending specifications.

1. Supply/Return Hose Kit:

Kit shall contain 18-in. long hose kit with EPDM hose, teflon seals on threaded swivel connections at each end, and working pressure of 300 psig.

2. Condensate Hose Kit:

Kit shall contain 48-in. long clear PVC tube with threaded adapter and clamps.

3. Gate Valves:

- a. Valves shall be cast iron, body type gate valves, with O-ring packing.
- b. Shall be UL listed.

4. Ball Valves:

- a. Valves shall be brass-body ball and stem valves, with teflon seats and seals.
- b. Shall be UL listed.

5. Thermostat:

Shall be wall mounted and capable of auto changeover or manual changeover.

* 6. Unit Thermostat:

Shall be unit mounted with OFF-HI-LOW and automatic changeover.

7. Unit Mounted Energy Control Systems:

- a. Night setback with pushbutton relay — pushbutton controls setback to maintain 52 F.
- b. Night setback with setback thermostat and relay — when field supplied 24-v signal is received by relay, setback is controlled at temperature set by independent thermostat.
- c. Night setback relay only — when 24-v signal is received by relay, setback is controlled by independent thermostat.
- d. Night setback override timer — adjustable timer to override night setback from zero — 5 hours for operation on day thermostat.

8. Unit Mounted Fresh Air Dampers:

a. Motorized damper:

Unit shall have provisions for electrical damper control. When in day (occupied) mode, damper door shall open; when in setback (unoccupied) mode, damper shall close.

b. Manual damper:

Unit shall have provisions for a manual damper control. Activation of damper door will be at selected times and non-related to electrical inputs.

* 9. Central Water Loop Control Panel:

Panel shall be provided by unit manufacturer for control of heat rejecter, heat supplier, and circulating pumps, with audible alarms, temperature indication, and available extra options.

10. Extended Warranty Packages:

Two extended warranty packages shall be offered to provide labor allowances on refrigerant circuit repairs.