evapco®

PMC-E

EVAPORATIVE CONDENSERS

Easy to Install – Easy to Maintain

More Capacity
More Choices

*Forced Draft, Axial Fan Models Available in Capacities from **124** to **1,408** Ammonia Tons!*

Technology for the Future...Available Today!

U.S. GREEN BUILDING COUNCIL MEMBER

IARW International Association of Refrigerated Warehouses

Member of iiar International Institute of Ammonia Refrigeration www.iiar.org

Since its founding in 1976, EVAPCO, Incorporated has become an industry leader in the engineering and manufacturing of quality heat transfer products around the world. EVAPCO's mission is to provide first class service and quality products for the following markets:

- Industrial Refrigeration
- Commercial HVAC
- Industrial Process
- Power

EVAPCO's powerful combination of financial strength and technical expertise has established the company as a recognized manufacturer of market-leading products on a worldwide basis. EVAPCO is also recognized for the superior technology of their environmentally friendly product innovations in sound reduction and water management.

EVAPCO is an employee owned company with a strong emphasis on research & development and modern manufacturing plants. EVAPCO has earned a reputation for technological innovation and superior product quality by featuring products that are designed to offer these operating advantages:

- Higher System Efficiency
- Environmentally Friendly
- Lower Annual Operating Costs
- Reliable, Simple Operation and Maintenance

With an ongoing commitment to Research & Development programs, EVAPCO provides the most advanced products in the industry – ***Technology for the Future, Available Today***!

EVAPCO products are manufactured in 16 locations in 7 countries around the world and supplied through a sales network consisting of over 170 offices.

PMC-E Design a

EVAPCO is proud to introduce the latest
Easy to install…Easy to

NEW

PVC Water Distribution with ZM Nozzles

- Large orifice prevents clogging **(no moving parts)**.
- Threaded nozzles eliminate troublesome grommets.
- Fixed position require zero maintenance.
- Threaded end caps for ease of cleaning.
- Guaranteed for life.

NEW

Thermal Pak II Heat Transfer Technology

- Patented design.
- More surface area per plan area than competitive designs.
- Improved heat transfer efficiency due to tube geometry and orientation of tubes.
- Lower refrigerant charge.

U.S. Patent No. 4755331

NEW

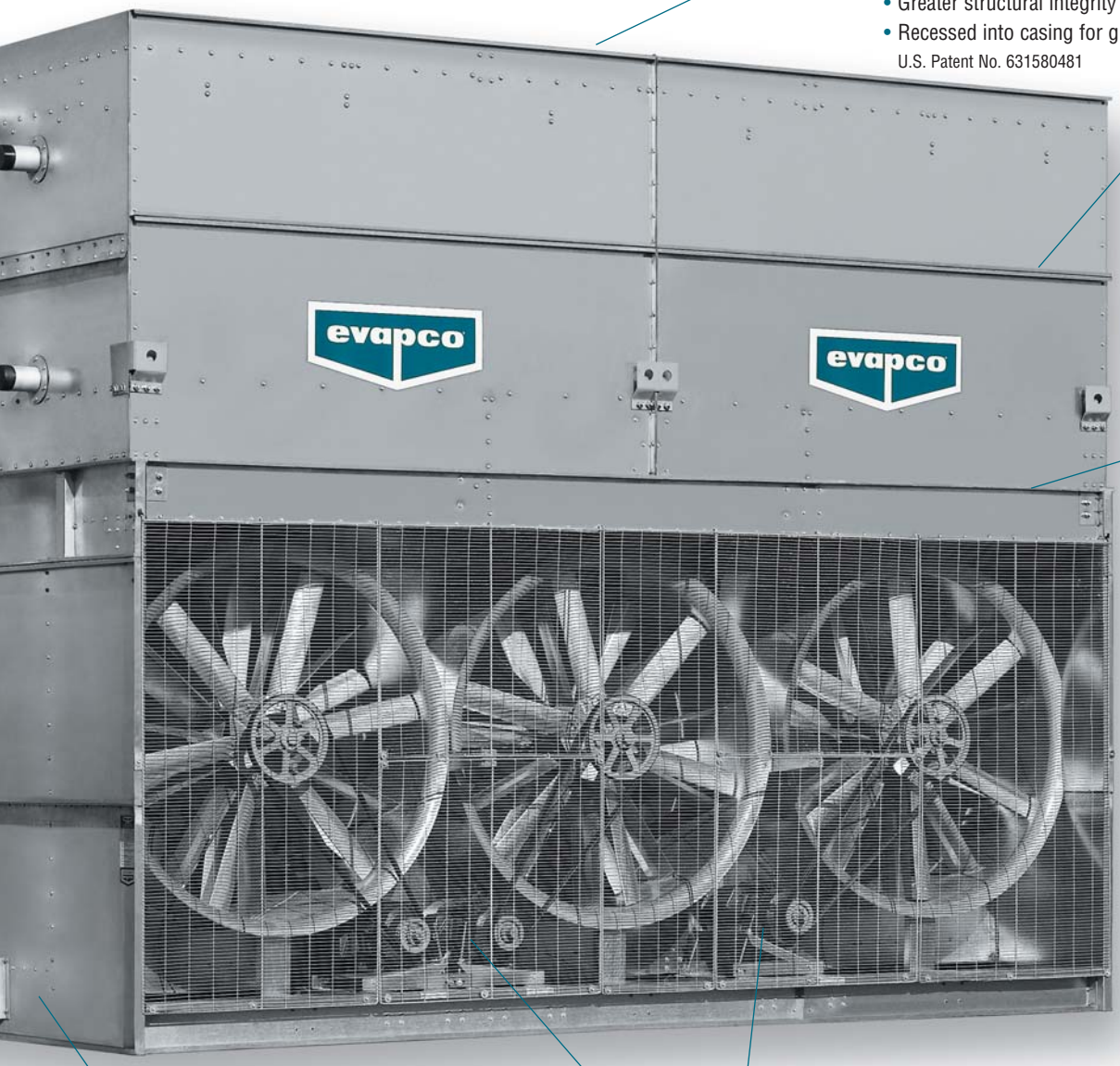
Improved Water Distribution Piping

- Horizontally mounted pumps allow for reduced basin water level.*
- Simplified piping for easier basin access.
- Totally enclosed pump motors assure long, trouble-free life.

*Refer to engineering data for availability.

nd Construction Features

in evaporative condenser technology, the PMC-E Evaporative Condenser. maintain…Easy on the operating budget…The Easy Choice!



Water Saver Drift Eliminators NEW

- New patented design reduces drift rate to 0.001%.
- Saves water and reduces water treatment cost.
- Greater structural integrity vs.old style blade-type.
- Recessed into casing for greater protection.

U.S. Patent No. 631580481

Double-Brake Flange Joints

- Stronger than single-brake designs by others.
- Minimizes water leaks at field joints.
- Greater structural integrity.

NEW Unique Field Seam

- Eliminates up to 85% of fasteners.
- Self guiding channels improve quality of field seam to eliminate leaks.
- Easy to install.
- Lower installation cost.

Optional Design Features:

- Man-sized Access Doors.
- External Service Platforms.
- Tandem Fan Drive System.
- Stainless Steel Construction.

Optional Man-sized Access Door

NEW Sloped Pan Bottom

- Pan bottom slopes to drain.
- Easy to clean.
- Stainless steel strainer resists corrosion.

NEW Individual Fan Drive System - STANDARD

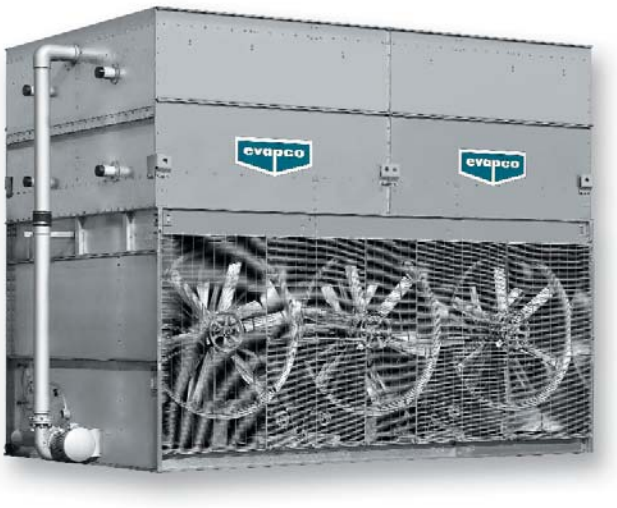
- Increased flexibility for improved capacity control.
- Greater reliability through redundancy.
- Easy motor replacement.
- Front mounted drives for improved maintenance accessibility.

PMC-E Design Features

Proven Performance & Design Flexibility

The new PMC-E Evaporative Condenser offers more capacity and greater system design flexibility than ever before. EVAPCO's research and development team has invested hundreds of hours in laboratory testing to develop the next generation in Forced Draft Condenser Technology. These efforts have produced a totally new fan section design which is now combined with the proven Thermal-Pak II® coil technology to offer improved condenser performance.

The PMC-E features more plan area options and fan horsepower options for the system design engineer. With more condenser capacity, more plan area options and greater flexibility in motor selection, the design engineer can now match the condenser performance to the specific application requirements. More equipment choices and more design flexibility mean greater value for the End-User.



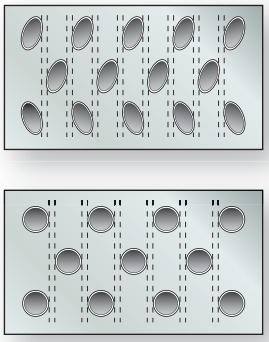
Patented Thermal-Pak II® Coil Design

Lower Refrigerant Charge

Only EVAPCO condensers offer the patented* Thermal-Pak II® Coil which assures greater operating efficiency in your condenser. Its unique elliptical tube design allows for closer tube spacing resulting in more surface area per plan area than traditional round tube designs. The Thermal-Pak II® Coil design has lower resistance to air flow and permits greater water loading, making the Thermal-Pak II® Coil the most efficient design available. And now with its new tube circuiting and orientation pattern, the Thermal-Pak II® coil yields a lower refrigerant charge.

*U.S. Patent No. 4755331

Thermal-Pak® II Coil by EVAPCO



Round Tube Coil by Others

Energy Efficient for Lowest Operating Cost

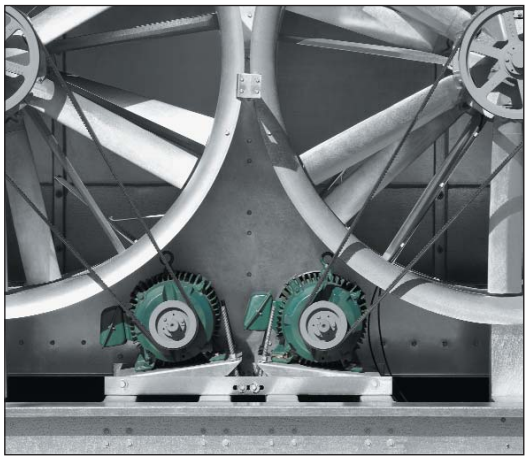
Lower Horsepower Options

The new fan drive system of the PMC-E utilizes larger diameter vane-axial fans in a two stage arrangement to provide more efficient air flow and reduced power consumption. When compared to the traditional centrifugal fan condenser models, the vane-axial fan design can offer up to a 50% reduction in energy consumption. And, with the new PMC-E model selections even more low horsepower options are available to obtain greater energy savings.

Individual Fan Drive System

Capacity Control Flexibility & Operating Redundancy

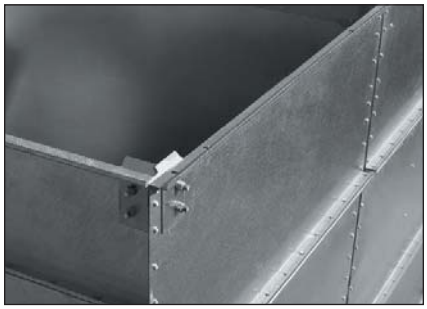
The new PMC-E fan drive system provides individual motor to fan configuration as standard equipment on all models. The dedicated fan to motor arrangement ensures less "wear & tear" on the drive system versus tandem fan motor drive arrangements resulting in less maintenance. The individual motor to fan design offers greater capacity control flexibility to match the system load requirements. In addition, all Evapco condensers are equipped with an internal baffle system which extends from the pan bottom vertically through the coil bundle. This unique design allows the user to cycle fan motors independently without harmful effects of air by-pass inside the unit. The individual motor to fan design ensures maximum operating redundancy in the condenser fan system when critical operation is necessary.



Easy Field Assembly

85% Fewer Fasteners
Lower Installed Cost

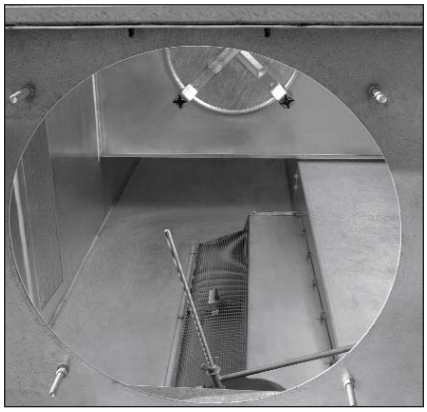
The PMC-E features a new field seam design which ensures easier assembly and fewer field seam leaks. The field seam incorporates new self-guiding channels to guide the coil casing section into position and set in place on the bottom fan section of the condenser. In addition, the new design eliminates up to 85% of the fasteners typically used to join the condenser sections in the field significantly reducing the contractor labor costs for installation.



Improved Maintenance

Fan Drive Accessibility

The drive components of the PMC-E are easily accessed for routine maintenance from the front of the unit. Bearing grease fittings are extended to the outside of the unit for ease of lubrication. All drive sheaves have been relocated to the front of the fan section and motors are positioned on a platform base to allow for easy belt tension adjustment.



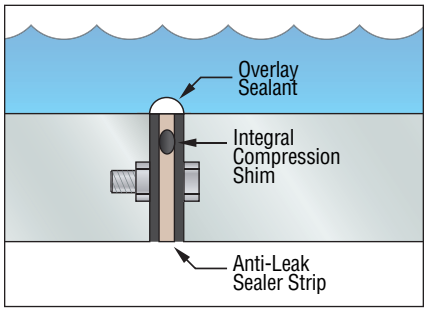
Easy Clean Sloped Basin

The PMC-E drain pan is designed to improve maintenance access and make it easier for operating technicians to clean. The bottom of the pan is sloped to the unit drain to ensure that the basin will completely drain and allow sediment and debris that may collect in the basin to be easily flushed from the unit. The design helps to prevent buildup of sedimentary deposits, biological films and standing water. In addition, Evapco offers a special "man-sized" access door option to improve access to this critical area of the unit.

Construction Features

Unique Seam Design–Eliminate Field Leaks

The new PMC-E features Evapco's unique panel construction design which includes a special butyl tape sealer with an integral sealing gasket. Each joint is then backed with a secondary caulking compound and encased in a double-brake flange for added strength and structural integrity. This unique sealing system has been proven effective in both laboratory tests and years of field application.



Superior Water Saver Drift Eliminators

The PMC-E condensers incorporate a patented* highly efficient PVC drift eliminator. The eliminator removes entrained water droplets from the air stream to limit the drift rate to less than 0.001% of the recirculating water rate. With a low drift rate, PMC-E condensers save valuable water and water treatment chemicals. The eliminators feature a honeycomb design which offers greater structural integrity and are recessed in the top of the casing and UV protected for longer life. They are constructed of inert polyvinyl chloride (PVC) which eliminates corrosion in this critical area of the condenser. The eliminators are assembled in sections for easy handling and removal for coil and water distribution system inspection.

*U.S. Patent No. 631580481

PMC-E Selection Procedure

Selection Procedure

Two methods of selection are presented, the first is based on the total heat of rejection as described immediately below. The second and more simple method is based on evaporator tons. The evaporator ton method is only applicable to systems with open type reciprocating compressors.

The heat of rejection method is applicable to all but centrifugal compressor applications and is normally used for selecting evaporative condensers for use with hermetic compressors and screw compressors. It can also be used for standard open type reciprocating compressors as an alternate to the evaporator ton method.

The evaporator ton method is based on the estimated heat of compression. **The heat of rejection method of selection is more accurate and should be used whenever possible.**

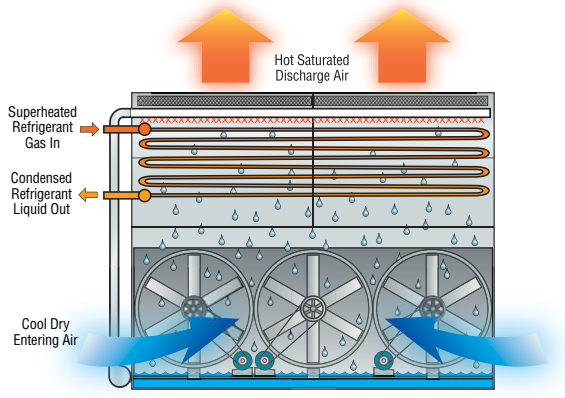
Refer to the factory for selections on systems with centrifugal compressors.

Principle of Operation

The refrigerant gas is discharged from the compressor into the inlet connection of the evaporative condenser. Water from the condenser's sump is continuously flooded over the condenser coil, while ambient air is simultaneously forced into the unit. As the ambient air moves up through the coil section, a portion of the spray water is evaporated into the air stream.

The evaporative process cools the spray water, which in turn cools the tubes containing the refrigerant gas. The cool tube walls cause the refrigerant gas to give up heat and condense into a liquid. The condensed liquid flows out of the coil's sloping tubes to the high pressure liquid receiver for return to the system.

The hot, saturated air is driven through the drift eliminators, where any entrained water droplets are removed. The condenser's fan then discharges this air stream out of the top of the unit at a high velocity, where it can dissipate harmlessly into the atmosphere. The water which was not evaporated falls into the sump and is recirculated by the spray pump to the water distribution system above the condensing coil section.



Principle of Operation

Heat of Rejection Method

In the heat of rejection method, a factor for the specified operating conditions (condensing temperature and wet bulb) is obtained from Table 1 or 2 and multiplied times the heat of rejection.
The resultant figure is used to select a unit from Table 3. Unit capacities are given in Table 3 in thousands of BTU/Hr or MBH.

If the heat of rejection is not known, it can be determined by one of the following formulas:

Open Compressors:
Heat of Rejection = Evaporator Load (BTU/Hr) + Compressor BHP x 2545

Hermetic Compressors:
Heat of Rejection = Evaporator Load (BTU/Hr) + K.W. Compressor Input x 3415

EXAMPLE

Given: 450 ton load, ammonia refrigerant 96.3° condensing temperature, 78° W.B. temperature and 500 compressor BHP.

Selection: Heat of Rejection

450 tons x 12000 =	5,400,000 BTU/Hr
500 BHP x 2545 =	1,272,500 BTU/Hr
Total	6,672,500 BTU/Hr

From Table 2 the capacity factor for 96.3° condensing and 78° W.B. = 1.37 6,672,500 x 1.37 = 9,141,325 BTU/Hr or 9142 MBH. Therefore, select a model PMC-631E.

Note: For screw compressor selections employing water cooled oil cooling, select a condenser for the total MBH as in the example. The condenser can then function in one of two ways:

(1) Recirculating water from the water sump can be used directly in the oil cooler. A separate pump should be employed and the return water should be directed into the water sump at the opposite end from the pump suction.

(2) The condenser coil can be circuited so that water or a glycol-water mixture for the oil cooler can be cooled in a separate section of the coil. Specify load and water flow required.

For refrigerant injection cooled screw compressors, select the condenser in the same manner as shown in the example.

If the oil cooler is supplied by water from a separate source, then the oil cooling load should be deducted from the heat of rejection before making the selection.

Table 1 - HCFC-22 and HFC-134a Heat Rejection Factors

Condensing Pres. psig		Cond. Temp. °F	Wet Bulb Temperature, (°F)																	
HCFC-22	HFC-134a		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
156	95	85	1.10	1.22	1.39	1.50	1.61	1.75	1.93	2.13	2.42	2.78	3.02	3.29	3.64	4.00	-	-	-	-
168	104	90	.93	1.02	1.14	1.21	1.28	1.36	1.45	1.57	1.71	1.89	2.00	2.12	2.25	2.38	2.85	3.50	-	-
182	114	95	.80	.87	.95	1.00	1.05	1.10	1.15	1.22	1.31	1.40	1.45	1.50	1.56	1.64	1.82	2.07	2.37	2.77
196	124	100	.71	.76	.82	.85	.88	.91	.94	.98	1.03	1.09	1.12	1.15	1.20	1.24	1.34	1.46	1.63	1.82
211	135	105	.63	.66	.70	.72	.75	.77	.80	.83	.87	.91	.93	.95	.97	1.00	1.06	1.13	1.23	1.35
226	146	110	.56	.59	.62	.64	.65	.67	.69	.71	.74	.77	.78	.80	.82	.84	.88	.93	.98	1.04

Note: Consult factory for selections using other refrigerants.

Table 2 - Ammonia (R-717) Heat Rejection Factors

Condensing Pres. psig	Cond. Temp. °F	Wet Bulb Temperature, (°F)																		
		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
152	85	.98	1.09	1.24	1.34	1.44	1.56	1.72	1.90	2.16	2.48	2.70	2.94	3.25	3.57	-	-	-	-
166	90	.83	.91	1.02	1.08	1.14	1.21	1.29	1.40	1.53	1.69	1.79	1.89	2.01	2.12	2.54	3.12	-	-
181	95	.71	.78	.85	.89	.94	.98	1.03	1.09	1.17	1.25	1.29	1.34	1.39	1.47	1.63	1.85	2.12	2.47
185	96.3	.69	.75	.82	.86	.90	.94	.98	1.03	1.10	1.18	1.22	1.26	1.31	1.37	1.51	1.71	1.94	2.25
197	100	.63	.68	.73	.76	.79	.81	.84	.87	.92	.97	1.00	1.03	1.07	1.11	1.20	1.30	1.46	1.63
214	105	.56	.59	.62	.64	.67	.69	.71	.74	.78	.81	.83	.85	.87	.89	.95	1.01	1.10	1.21
232	110	.50	.53	.55	.57	.58	.60	.62	.63	.66	.69	.70	.71	.73	.75	.79	.83	.87	.93

Table 3 - Unit Heat Rejection

Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base
PMC-175E	2572.5	PMC-428E	6291.6	PMC-631E	9275.7	PMC-852E	12524.4	PMC-1006E	14788.2	PMC-1290E	18963.0
PMC-190E	2793.0	PMC-431E	6335.7	PMC-634E	9319.8	PMC-853E	12539.1	PMC-1024E	15052.8	PMC-1358E	19962.6
PMC-210E	3087.0	PMC-450E	6615.0	PMC-636E	9349.2	PMC-856E	12583.2	PMC-1038E	15258.6	PMC-1376E	20227.2
PMC-220E	3234.0	PMC-457E	6717.9	PMC-645E	9481.5	PMC-863E	12686.1	PMC-1071E	15743.7	PMC-1382E	20315.4
PMC-235E	3454.5	PMC-464E	6820.8	PMC-679E	9981.3	PMC-888E	13053.6	PMC-1073E	15773.1	PMC-1438E	21138.6
PMC-240E	3528.0	PMC-481E	7070.7	PMC-688E	10113.6	PMC-889E	13068.3	PMC-1088E	15993.6	PMC-1446E	21256.2
PMC-250E	3675.0	PMC-488E	7173.6	PMC-690E	10143.0	PMC-894E	13141.8	PMC-1116E	16405.2	PMC-1473E	21653.1
PMC-275E	4042.5	PMC-492E	7232.4	PMC-691E	10157.7	PMC-895E	13156.5	PMC-1117E	16419.9	PMC-1549E	22770.3
PMC-295E	4336.5	PMC-495E	7276.5	PMC-719E	10569.3	PMC-900E	13230.0	PMC-1125E	16537.5	PMC-1556E	22873.2
PMC-325E	4777.5	PMC-503E	7394.1	PMC-723E	10628.1	PMC-929E	13656.3	PMC-1127E	16566.9	PMC-1599E	23505.3
PMC-332E	4880.4	PMC-515E	7570.5	PMC-731E	10745.7	PMC-939E	13803.3	PMC-1180E	17346.0	PMC-1625E	23887.5
PMC-335E	4924.5	PMC-519E	7629.3	PMC-737E	10833.9	PMC-940E	13818.0	PMC-1182E	17375.4	PMC-1705E	25063.5
PMC-360E	5292.0	PMC-536E	7879.2	PMC-772E	11348.4	PMC-949E	13950.3	PMC-1189E	17478.3	PMC-1712E	25166.4
PMC-369E	5424.3	PMC-558E	8202.6	PMC-774E	11377.8	PMC-956E	14053.2	PMC-1201E	17654.7	PMC-1776E	26107.2
PMC-375E	5512.5	PMC-559E	8217.3	PMC-778E	11436.6	PMC-962E	14141.4	PMC-1203E	17684.1	PMC-1788E	26283.6
PMC-386E	5674.2	PMC-564E	8290.8	PMC-800E	11760.0	PMC-974E	14317.8	PMC-1211E	17801.7	PMC-1877E	27591.9
PMC-397E	5835.9	PMC-591E	8687.7	PMC-801E	11774.7	PMC-976E	14347.2	PMC-1258E	18492.6	PMC-1879E	27621.3
PMC-400E	5880.0	PMC-596E	8761.2	PMC-811E	11921.7	PMC-983E	14450.1	PMC-1261E	18536.7	PMC-1985E	29179.5
PMC-420E	6174.0	PMC-601E	8834.7	PMC-831E	12215.7	PMC-989E	14538.3	PMC-1269E	18654.3		
PMC-426E	6262.2	PMC-605E	8893.5	PMC-840E	12348.0	PMC-992E	14582.4	PMC-1275E	18742.5		

PMC-E Selection Procedure

Evaporator Ton Method

In the evaporator ton method, factors for the specified operating conditions (suction temperature, condensing temperature and wet bulb) are obtained from either Table 5 or 6 and multiplied times the heat load in tons. The resultant figure is used to select a unit from Table 4. The condenser model in Table 4 is equal to the unit capacity in evaporator tons for HCFC-22 or HFC-134a conditions of 105°F condensing, 40°F suction and 78° wet bulb.

EXAMPLE

Given: 300 ton evaporator load, R-717, condensing at 95° F, with +10° F suction and 76° F wet bulb temperatures.

Selection: The capacity factor from Table 6 for the given condensing and wet bulb conditions is 1.38, and the capacity factor for the suction temperature of +10° F is 1.03, so the corrected capacity required may be determined as:

300 X 1.38 X 1.03 = 426 corrected tons. Therefore, select a model PMC-428E, PMC-431E or PMC-450E depending on unit type desired, and any layout or horsepower considerations.

Table 4 - Unit Sizes

PMC-E Models									
Model	Capacity	Model	Capacity	Model	Capacity	Model	Capacity	Model	Capacity
PMC-175E	175	PMC-481E	481	PMC-723E	723	PMC-956E	956	PMC-1261E	1261
PMC-190E	190	PMC-488E	488	PMC-731E	731	PMC-962E	962	PMC-1269E	1269
PMC-210E	210	PMC-492E	492	PMC-737E	737	PMC-974E	974	PMC-1275E	1275
PMC-220E	220	PMC-495E	495	PMC-772E	772	PMC-976E	976	PMC-1290E	1290
PMC-235E	235	PMC-503E	503	PMC-774E	774	PMC-983E	983	PMC-1358E	1358
PMC-240E	240	PMC-515E	515	PMC-778E	778	PMC-989E	989	PMC-1376E	1376
PMC-250E	250	PMC-519E	519	PMC-800E	800	PMC-992E	992	PMC-1382E	1382
PMC-275E	275	PMC-536E	536	PMC-801E	801	PMC-1006E	1006	PMC-1438E	1438
PMC-295E	295	PMC-558E	558	PMC-811E	811	PMC-1024E	1024	PMC-1446E	1446
PMC-325E	325	PMC-559E	559	PMC-831E	831	PMC-1038E	1038	PMC-1473E	1473
PMC-332E	332	PMC-564E	564	PMC-840E	840	PMC-1071E	1071	PMC-1549E	1549
PMC-335E	335	PMC-591E	591	PMC-852E	852	PMC-1073E	1073	PMC-1556E	1556
PMC-360E	360	PMC-596E	596	PMC-853E	853	PMC-1088E	1088	PMC-1599E	1599
PMC-369E	369	PMC-601E	601	PMC-856E	856	PMC-1116E	1116	PMC-1625E	1625
PMC-386E	386	PMC-605E	605	PMC-863E	863	PMC-1117E	1117	PMC-1705E	1705
PMC-397E	397	PMC-631E	631	PMC-888E	888	PMC-1125E	1125	PMC-1712E	1712
PMC-400E	400	PMC-634E	634	PMC-889E	889	PMC-1127E	1127	PMC-1776E	1776
PMC-420E	420	PMC-636E	636	PMC-894E	894	PMC-1180E	1180	PMC-1788E	1788
PMC-426E	426	PMC-645E	645	PMC-895E	895	PMC-1182E	1182	PMC-1877E	1877
PMC-428E	428	PMC-679E	679	PMC-900E	900	PMC-1189E	1189	PMC-1879E	1879
PMC-431E	431	PMC-688E	688	PMC-929E	929	PMC-1201E	1201	PMC-1985E	1985
PMC-450E	450	PMC-690E	690	PMC-939E	939	PMC-1203E	1203		
PMC-457E	457	PMC-691E	691	PMC-940E	940	PMC-1211E	1211		
PMC-464E	464	PMC-719E	719	PMC-949E	949	PMC-1258E	1258		

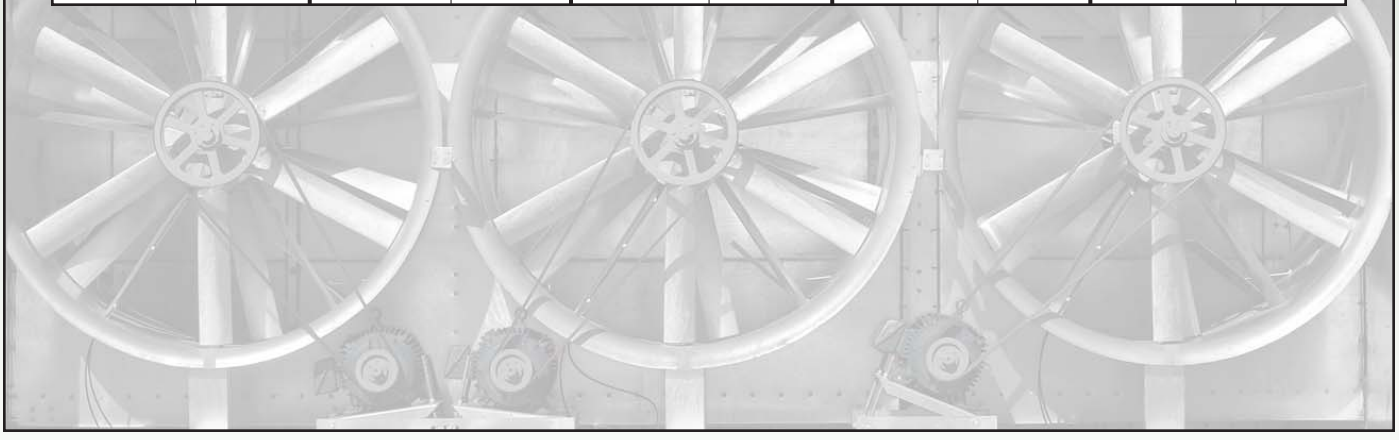


Table 5 - HCFC-22 and HFC-134a Capacity Factors

Condensing Pres. psig		Cond. Temp. °F	Wet Bulb Temperature, (°F)																
HCFC-22	HFC-134a		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
156	95	85	1.05	1.16	1.32	1.43	1.53	1.66	1.83	2.02	2.30	2.64	2.87	3.13	3.46	3.80	-	-	-	-
168	104	90	.90	.98	1.10	1.17	1.24	1.31	1.40	1.52	1.65	1.82	1.93	2.05	2.17	2.30	2.75	3.38	-	-
182	114	95	.78	.85	.93	.98	1.02	1.07	1.12	1.19	1.28	1.37	1.42	1.46	1.52	1.60	1.78	2.02	2.31	2.70
196	124	100	.70	.75	.81	.84	.87	.90	.93	.97	1.02	1.08	1.11	1.14	1.19	1.23	1.33	1.44	1.61	1.80
211	135	105	.63	.66	.70	.72	.75	.77	.80	.83	.87	.91	.93	.95	.97	1.00	1.06	1.13	1.23	1.35
226	146	110	.57	.60	.63	.65	.66	.68	.70	.72	.75	.78	.79	.81	.83	.85	.89	.94	.99	1.05

Suction Temp. °F		-20°	-10°	-0°	+10°	+20°	+30°	+40°	+50°
Suction Press. (psig)	HCFC-22	10.1	16.5	24.0	32.8	43.0	54.9	68.5	84.0
	HFC-134a	-1.8	1.9	6.5	11.9	18.4	26.1	35.0	45.4
Capacity Factor		1.22	1.17	1.13	1.09	1.06	1.03	1.00	0.97

Table 6 - Ammonia (R-717) Capacity Factors

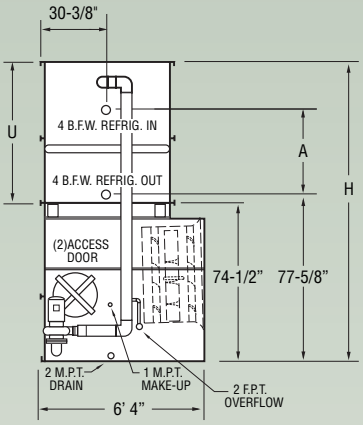
Condensing Pres. psig	Cond. Temp. °F	Wet Bulb Temperature, (°F)																	
		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
152	85	.99	1.09	1.25	1.34	1.44	1.57	1.73	1.91	2.17	2.49	2.71	2.95	3.26	3.59	-	-	-	-
166	90	.84	.93	1.03	1.10	1.16	1.23	1.32	1.42	1.55	1.71	1.81	1.92	2.04	2.16	2.59	3.17	-	-
181	95	.74	.80	.87	.92	.97	1.01	1.06	1.12	1.21	1.29	1.33	1.38	1.44	1.51	1.68	1.91	2.18	2.55
185	96.3	.72	.78	.85	.89	.93	.97	1.01	1.07	1.14	1.22	1.26	1.30	1.35	1.41	1.56	1.76	2.01	2.33
197	100	.66	.71	.76	.79	.82	.85	.87	.91	.96	1.01	1.04	1.07	1.12	1.15	1.25	1.36	1.52	1.69
214	105	.59	.62	.66	.68	.71	.73	.75	.78	.82	.86	.88	.90	.91	.94	1.00	1.07	1.16	1.27
232	110	.53	.56	.59	.61	.62	.64	.66	.68	.71	.73	.74	.76	.78	.80	.84	.89	.93	.99

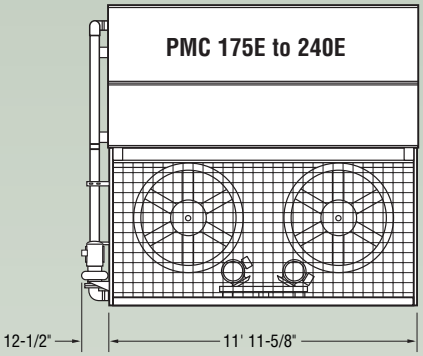
Suction Temp. °F	-30°	-20°	-10°	0°	+10°	+20°	+30°	+40°
Suction Press. (psig)	-1.6	3.6	9.0	15.7	23.8	33.5	45.0	58.6
Capacity Factor	1.18	1.14	1.10	1.07	1.03	1.00	0.97	0.95

Note: Consult factory for selections using other refrigerants.

Engineering & Dimensions Data

PMC 175E to 375E





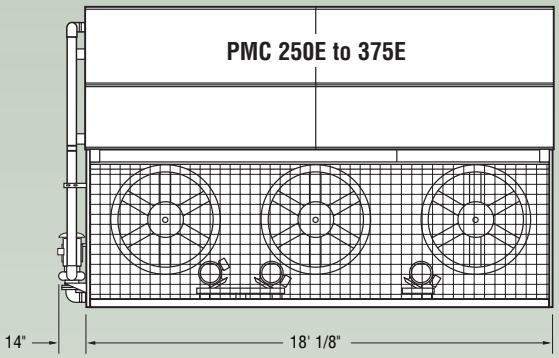


Table 7 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-175E	175	124	(2)5	31,300	7,560	5,180	9,570	165	22	2	345	200	8	8,920	130-3/8	57-3/8	30-3/4
PMC-190E	190	135	(2)5	34,000	7,690	5,180	9,700	165	22	2	345	200	8	9,050	130-3/8	57-3/8	30-3/4
PMC-210E	210	149	(2)5	33,500	8,710	6,200	10,740	200	28	2	345	200	8	10,090	138-7/8	65-7/8	39-1/4
PMC-220E	220	156	(2)5	33,000	9,640	7,230	11,670	240	33	2	345	200	8	11,020	147-3/8	74-3/8	47-3/4
PMC-235E	235	167	(2)7.5	36,600	8,840	6,200	10,870	200	28	2	345	200	8	10,220	138-7/8	65-7/8	39-1/4
PMC-240E	240	170	(2)7.5	35,500	9,770	7,230	11,800	240	33	2	345	200	8	11,150	147-3/8	74-3/8	47-3/4
PMC-250E	250	177	(3)5	54,000	10,170	6,380	12,680	185	25	3	515	260	10	11,720	121-7/8	48-7/8	22-1/4
PMC-275E	275	195	(3)5	48,500	11,590	7,890	14,120	240	33	3	515	260	10	13,160	130-3/8	57-3/8	30-3/4
PMC-295E	295	209	(3)5	51,900	11,680	7,890	14,210	240	33	3	515	260	10	13,250	130-3/8	57-3/8	30-3/4
PMC-325E	325	230	(3)5	50,900	13,250	9,410	15,820	300	41	3	515	260	10	14,860	138-7/8	65-7/8	39-1/4
PMC-335E	335	238	(3)5	50,300	14,670	10,940	17,280	360	49	3	515	260	10	16,320	147-3/8	74-3/8	47-3/4
PMC-360E	360	255	(3)7.5	57,000	13,460	9,410	16,030	300	41	3	515	260	10	15,070	138-7/8	65-7/8	39-1/4
PMC-375E	375	266	(3)7.5	56,300	14,880	10,940	17,490	360	49	3	515	260	10	16,530	147-3/8	74-3/8	47-3/4

* Tons at standard conditions: HCFC-22 and HFC-134a. 105°F condensing, 40°F suction and 78°F W.B.; ammonia 96.3°F condensing, 20°F suction and 78°F W.B.

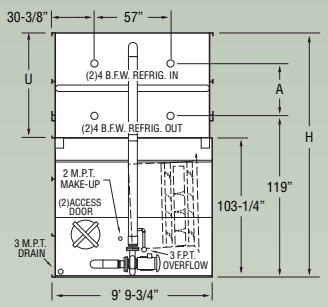
** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

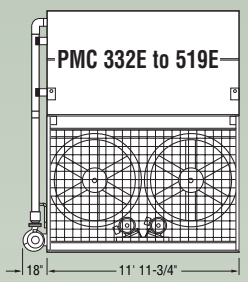
† Heaviest section is the upper coil section.

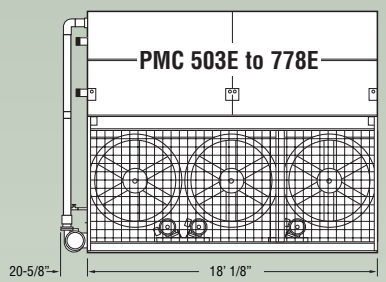
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

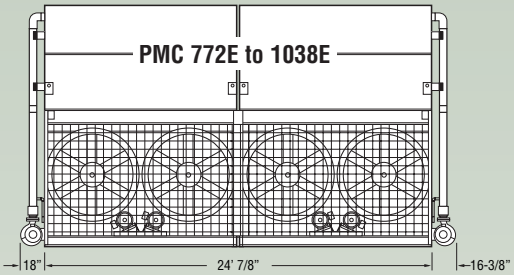
Dimensions are subject to change. Do not use for pre-fabrication.

PMC 332E to 1556E









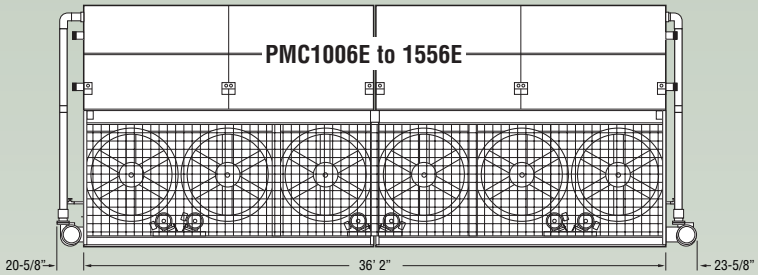
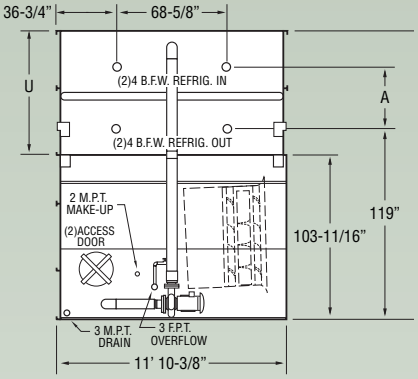


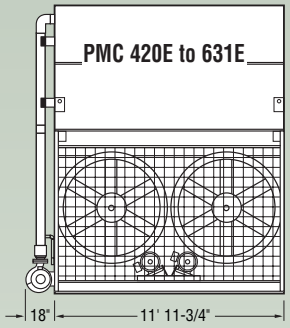
Table 8 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-332E	332	235	(2)5	61,000	12,550	8,220	18,600	250	34	5	685	500	10	15,940	163-3/8	61	22-1/4
PMC-369E	369	262	(2)7.5	70,000	12,600	8,220	18,650	250	34	5	685	500	10	15,990	163-3/8	61	22-1/4
PMC-386E	386	274	(2)5	59,200	16,520	12,190	22,870	405	56	5	685	500	10	20,210	180-3/8	78	39-1/4
PMC-397E	397	282	(2)10	77,200	12,630	8,220	18,680	250	34	5	685	500	10	16,020	163-3/8	61	22-1/4
PMC-400E	400	284	(2)7.5	69,000	14,640	10,270	20,850	325	44	5	685	500	10	18,190	171-7/8	69-1/2	30-3/4
PMC-426E	426	302	(2)7.5	67,900	16,570	12,190	22,920	405	56	5	685	500	10	20,260	180-3/8	78	39-1/4
PMC-428E	428	304	(2)15	88,700	12,950	8,220	19,000	250	34	5	685	500	10	16,340	163-3/8	61	22-1/4
PMC-431E	431	306	(2)10	76,000	14,670	10,270	20,870	325	44	5	685	500	10	18,210	171-7/8	69-1/2	30-3/4
PMC-457E	457	324	(2)10	74,900	16,590	12,190	22,940	405	56	5	685	500	10	20,280	180-3/8	78	39-1/4
PMC-464E	464	329	(2)15	87,400	14,990	10,270	21,190	325	44	5	685	500	10	18,530	171-7/8	69-1/2	30-3/4
PMC-481E	481	341	(2)10	73,800	18,580	14,180	25,080	480	66	5	685	500	10	22,420	188-7/8	86-1/2	47-3/4
PMC-492E	492	349	(2)15	86,100	16,910	12,190	23,270	405	56	5	685	500	10	20,610	180-3/8	78	39-1/4
PMC-519E	519	368	(2)15	84,800	18,900	14,180	25,400	480	66	5	685	500	10	22,740	188-7/8	86-1/2	47-3/4
PMC-503E	503	357	(3)5	91,800	18,550	12,330	25,990	365	50	7.5	1030	620	12	22,420	163-3/8	61	22-1/4
PMC-558E	558	396	(3)7.5	105,300	18,660	12,330	26,090	365	50	7.5	1030	620	12	22,530	163-3/8	61	22-1/4
PMC-596E	596	423	(3)10	116,100	18,690	12,330	26,120	365	50	7.5	1030	620	12	22,550	163-3/8	61	22-1/4
PMC-605E	605	429	(3)7.5	103,800	21,630	15,300	29,290	485	66	7.5	1030	620	12	25,730	171-7/8	69-1/2	30-3/4
PMC-636E	636	451	(3)15	133,500	19,090	12,330	26,520	365	50	7.5	1030	620	12	22,960	163-3/8	61	22-1/4
PMC-645E	645	457	(3)10	114,400	21,660	15,300	29,310	485	66	7.5	1030	620	12	25,750	171-7/8	69-1/2	30-3/4
PMC-690E	690	489	(3)15	131,500	22,060	15,300	29,720	485	66	7.5	1030	620	12	26,150	171-7/8	69-1/2	30-3/4
PMC-691E	691	490	(3)10	112,700	24,540	18,180	32,420	600	82	7.5	1030	620	12	28,850	180-3/8	78	39-1/4
PMC-719E	719	510	(3)10	111,100	27,500	21,150	35,610	720	98	7.5	1030	620	12	32,050	188-7/8	86-1/2	47-3/4
PMC-731E	731	518	(3)15	129,600	24,940	18,180	32,820	600	82	7.5	1030	620	12	29,260	180-3/8	78	39-1/4
PMC-778E	778	552	(3)15	127,600	27,910	21,150	36,020	720	98	7.5	1030	620	12	32,450	188-7/8	86-1/2	47-3/4
PMC-772E	772	548	(4)5	118,500	32,660	12,190	43,520	805	112	(2)5	1370	930	12	39,440	180-3/8	78	39-1/4
PMC-801E	801	568	(4)7.5	137,900	28,920	10,260	39,480	650	89	(2)5	1370	930	12	35,400	171-7/8	69-1/2	30-3/4
PMC-853E	853	605	(4)7.5	135,900	32,760	12,190	43,620	805	112	(2)5	1370	930	12	39,540	180-3/8	78	39-1/4
PMC-863E	863	612	(4)10	152,100	28,950	10,260	39,510	650	89	(2)5	1370	930	12	35,430	171-7/8	69-1/2	30-3/4
PMC-888E	888	630	(4)7.5	133,900	36,730	14,170	47,890	960	131	(2)5	1370	930	12	43,810	188-7/8	86-1/2	47-3/4
PMC-929E	929	659	(4)15	174,800	29,610	10,260	40,180	650	89	(2)5	1370	930	12	36,100	171-7/8	69-1/2	30-3/4
PMC-962E	962	682	(4)10	147,600	36,770	14,170	47,930	960	131	(2)5	1370	930	12	43,850	188-7/8	86-1/2	47-3/4
PMC-983E	983	697	(4)15	172,200	33,460	12,190	44,320	805	112	(2)5	1370	930	12	40,240	180-3/8	78	39-1/4
PMC-1038E	1038	736	(4)15	169,600	37,430	14,170	48,590	960	131	(2)5	1370	930	12	44,510	188-7/8	86-1/2	47-3/4
PMC-1006E	1006	713	(6)5	183,700	36,640	12,330	51,630	735	100	(2)7.5	2060	1400	14	46,110	163-3/8	61	22-1/4
PMC-1088E	1088	772	(6)5	181,000	42,590	15,300	58,020	965	132	(2)7.5	2060	1400	14	52,220	171-7/8	69-1/2	30-3/4
PMC-1116E	1116	791	(6)7.5	210,600	36,860	12,330	51,840	735	100	(2)7.5	2060	1400	14	46,330	163-3/8	61	22-1/4
PMC-1189E	1189	843	(6)10	232,300	36,910	12,330	51,890	735	100	(2)7.5	2060	1400	14	46,370	163-3/8	61	22-1/4
PMC-1211E	1211	859	(6)7.5	207,500	42,800	15,300	58,230	965	132	(2)7.5	2060	1400	14	52,440	171-7/8	69-1/2	30-3/4
PMC-1275E	1275	904	(6)7.5	204,500	48,560	18,180	64,440	1200	164	(2)7.5	2060	1400	14	58,640	180-3/8	78	39-1/4
PMC-1290E	1290	915	(6)10	228,900	42,850	15,300	58,280	965	132	(2)7.5	2060	1400	14	52,480	171-7/8	69-1/2	30-3/4
PMC-1382E	1382	980	(6)10	225,500	48,610	18,180	64,490	1200	164	(2)7.5	2060	1400	14	58,690	180-3/8	78	39-1/4
PMC-1438E	1438	1020	(6)10	222,100	54,540	21,150	70,870	1435	196	(2)7.5	2060	1400	14	65,080	188-7/8	86-1/2	47-3/4
PMC-1556E	1556	1104	(6)15	255,300	55,360	21,150	71,690	1435	196	(2)7.5	2060	1400	14	65,890	188-7/8	86-1/2	47-3/4

Engineering & Dimensions Data

PMC 420E to 939E





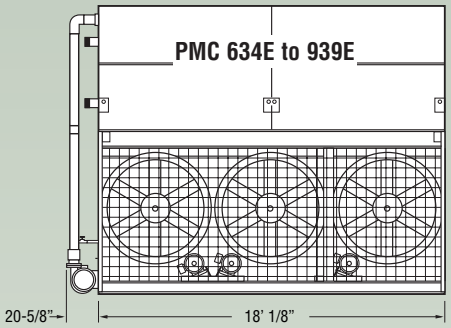


Table 9 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-420E	420	298	(2)7.5	79,200	14,850	9,950	21,710	305	42	5	800	570	10	18,690	163-3/8	61	22-1/4
PMC-450E	450	319	(2)10	84,500	14,890	9,950	21,750	305	42	5	800	570	10	18,730	163-3/8	61	22-1/4
PMC-488E	488	346	(2)10	83,200	17,330	12,390	24,370	400	55	5	800	570	10	21,360	171-7/8	69-1/2	30-3/4
PMC-495E	495	351	(2)15	97,100	15,200	9,950	22,060	305	42	5	800	570	10	19,040	163-3/8	61	22-1/4
PMC-515E	515	365	(2)20	100,300	15,330	9,950	22,190	305	42	5	800	570	10	19,180	163-3/8	61	22-1/4
PMC-536E	536	380	(2)15	95,600	17,640	12,390	24,680	400	55	5	800	570	10	21,670	171-7/8	69-1/2	30-3/4
PMC-559E	559	396	(2)20	98,700	17,770	12,390	24,810	400	55	5	800	570	10	21,800	171-7/8	69-1/2	30-3/4
PMC-564E	564	400	(2)15	94,400	20,070	14,830	27,300	495	68	5	800	570	10	24,280	180-3/8	78	39-1/4
PMC-591E	591	419	(2)15	92,800	22,500	17,260	29,910	590	81	5	800	570	10	26,900	188-7/8	86-1/2	47-3/4
PMC-601E	601	426	(2)20	100,300	20,200	14,830	27,430	495	68	5	800	570	10	24,420	180-3/8	78	39-1/4
PMC-631E	631	448	(2)20	98,800	22,630	17,260	30,040	590	81	5	800	570	10	27,030	188-7/8	86-1/2	47-3/4
PMC-634E	634	450	(3)7.5	118,400	21,840	14,850	30,080	450	62	7.5	1200	735	12	26,530	163-3/8	61	22-1/4
PMC-679E	679	482	(3)10	126,300	21,870	14,850	30,100	450	62	7.5	1200	735	12	26,550	163-3/8	61	22-1/4
PMC-688E	688	488	(3)7.5	116,700	25,420	18,430	33,930	595	81	7.5	1200	735	12	30,380	171-7/8	69-1/2	30-3/4
PMC-723E	723	513	(3)7.5	115,200	29,090	22,100	37,890	740	101	7.5	1200	735	12	34,330	180-3/8	78	39-1/4
PMC-737E	737	523	(3)10	124,500	25,440	18,430	33,960	595	81	7.5	1200	735	12	30,400	171-7/8	69-1/2	22-1/4
PMC-774E	774	549	(3)10	122,600	29,120	22,100	37,910	740	101	7.5	1200	735	12	34,350	180-3/8	78	39-1/4
PMC-800E	800	567	(3)15	143,000	25,850	18,430	34,360	595	81	7.5	1200	735	12	30,810	171-7/8	69-1/2	30-3/4
PMC-831E	831	589	(3)20	147,600	26,050	18,430	34,560	595	81	7.5	1200	735	12	31,010	171-7/8	69-1/2	30-3/4
PMC-856E	856	607	(3)15	141,200	29,520	22,100	38,310	740	101	7.5	1200	735	12	34,760	180-3/8	78	39-1/4
PMC-889E	889	630	(3)15	138,800	33,180	25,750	42,250	885	121	7.5	1200	735	12	38,690	188-7/8	86-1/2	47-3/4
PMC-894E	894	634	(3)20	149,900	29,720	22,100	38,510	740	101	7.5	1200	735	12	34,960	180-3/8	78	39-1/4
PMC-939E	939	666	(3)20	147,700	33,370	25,750	42,440	885	121	7.5	1200	735	12	38,890	188-7/8	86-1/2	47-3/4

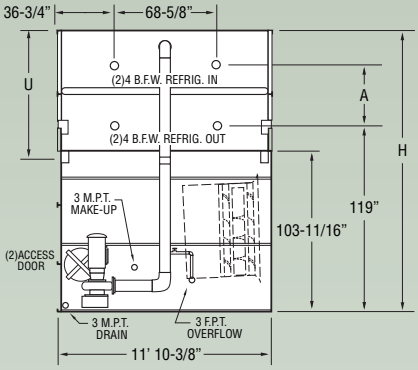
* Tons at standard conditions: HCFC-22 and HFC-134a. 105°F condensing, 40°F suction and 78°F W.B.; ammonia 96.3°F condensing, 20°F suction and 78°F W.B.

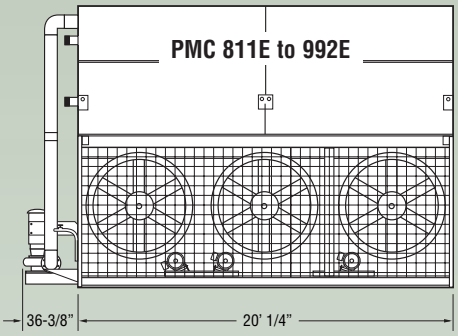
** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

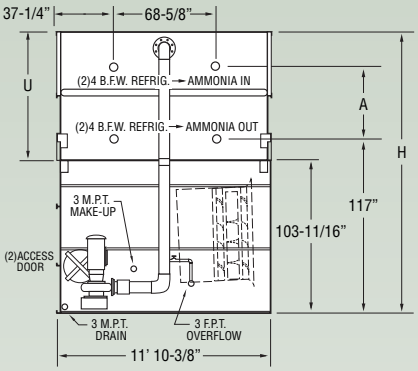
† Heaviest section is the upper coil section.

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.
Dimensions are subject to change. Do not use for pre-fabrication.

PMC 811E to 1258E







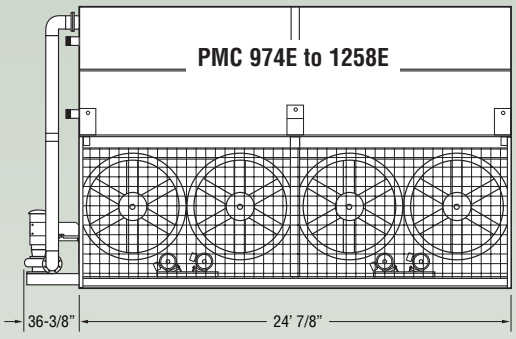


Table 10 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-811E	811	575	(3)10	130,000	31,940	24,490	41,710	820	112	10	1400	815	14	37,790	180-3/8	78	39-1/4
PMC-852E	852	604	(3)10	128,000	36,500	29,050	46,570	980	134	10	1400	815	14	42,650	188-7/8	86-1/2	47-3/4
PMC-895E	895	635	(3)15	149,600	32,350	24,490	42,120	820	112	10	1400	815	14	38,200	180-3/8	78	39-1/4
PMC-940E	940	667	(3)15	147,100	36,900	29,050	46,980	980	134	10	1400	815	14	43,060	188-7/8	86-1/2	47-3/4
PMC-949E	949	673	(3)20	158,900	32,550	24,490	42,310	820	112	10	1400	815	14	38,400	180-3/8	78	39-1/4
PMC-992E	992	704	(3)20	156,600	37,100	29,050	47,170	980	134	10	1400	815	14	43,260	188-7/8	86-1/2	47-3/4
PMC-974E	††	691	(4)10	166,800	34,490	25,120	46,080	790	108	10	1600	1080	14	42,010	178-7/8	76-3/8	38-3/4
PMC-1071E	††	760	(4)15	191,600	35,140	25,120	46,730	790	108	10	1600	1080	14	42,660	178-7/8	76-3/8	38-3/4
PMC-1125E	††	798	(4)15	189,100	40,090	30,060	52,050	985	134	10	1600	1080	14	47,980	188-7/8	86-3/8	48-3/4
PMC-1180E	††	837	(4)15	186,000	45,320	35,300	57,660	1175	161	10	1600	1080	14	53,590	198-7/8	96-3/8	58-3/4
PMC-1201E	††	852	(4)20	200,900	40,350	30,060	52,320	985	134	10	1600	1080	14	48,240	188-7/8	86-3/8	48-3/4
PMC-1258E	††	892	(4)20	197,900	45,590	35,300	57,920	1175	161	10	1600	1080	14	53,850	198-7/8	96-3/8	58-3/4

* Tons at standard conditions: HCFC-22 and HFC-134a. 105°F condensing, 40°F suction and 78°F W.B.; ammonia 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

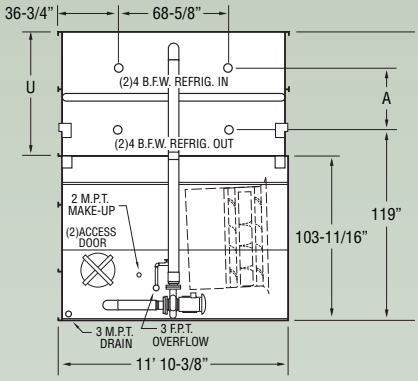
† Heaviest section is the upper coil section.

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a. Dimensions are subject to change. Do not use for pre-fabrication.

†† **These units are available for Ammonia applications only.**

Engineering & Dimensions Data

PMC 840E to 1261E



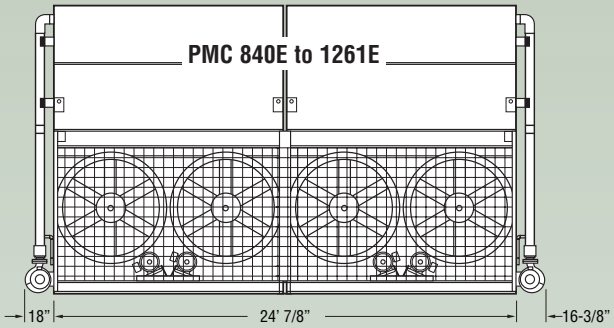


Table 11 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-840E	840	596	(4)7.5	158,400	29,250	9,960	40,490	610	83	(2)5	1600	1080	14	36,420	163-3/8	61	22-1/4
PMC-900E	900	638	(4)10	169,000	29,290	9,960	40,530	610	83	(2)5	1600	1080	14	36,460	163-3/8	61	22-1/4
PMC-956E	956	678	(4)7.5	154,000	39,000	14,830	50,970	995	135	(2)5	1600	1080	14	46,900	180-3/8	78	39-1/4
PMC-976E	976	692	(4)10	166,500	34,170	12,400	45,780	800	109	(2)5	1600	1080	14	41,710	171-7/8	69-1/2	30-3/4
PMC-989E	989	701	(4)15	194,200	29,950	10,040	41,190	610	83	(2)5	1600	1080	14	37,120	163-3/8	61	22-1/4
PMC-1024E	1024	726	(4)10	164,000	39,040	14,830	51,010	995	135	(2)5	1600	1080	14	46,940	180-3/8	78	39-1/4
PMC-1073E	1073	761	(4)15	191,300	34,830	12,400	46,430	800	109	(2)5	1600	1080	14	42,360	171-7/8	69-1/2	30-3/4
PMC-1117E	1117	792	(4)20	197,400	35,090	12,400	46,690	800	109	(2)5	1600	1080	14	42,620	171-7/8	69-1/2	30-3/4
PMC-1127E	1127	799	(4)15	188,800	39,690	14,830	51,670	995	135	(2)5	1600	1080	14	47,590	180-3/8	78	39-1/4
PMC-1182E	1182	838	(4)15	185,700	44,550	17,260	56,890	1185	161	(2)5	1600	1080	14	52,820	188-7/8	86-1/2	47-3/4
PMC-1203E	1203	853	(4)20	200,500	39,960	14,830	51,930	995	135	(2)5	1600	1080	14	47,860	180-3/8	78	39-1/4
PMC-1261E	1261	894	(4)20	197,600	44,810	17,260	57,150	1185	161	(2)5	1600	1080	14	53,080	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: HCFC-22 and HFC-134a. 105°F condensing, 40°F suction and 78°F W.B.; ammonia 96.3°F condensing, 20°F suction and 78°F W.B.

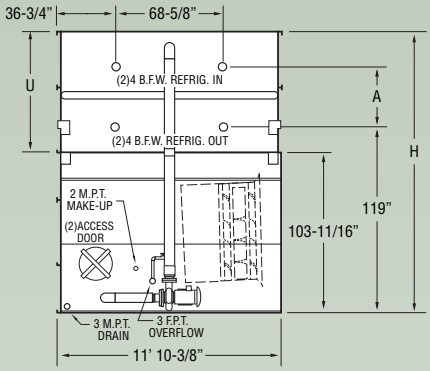
** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

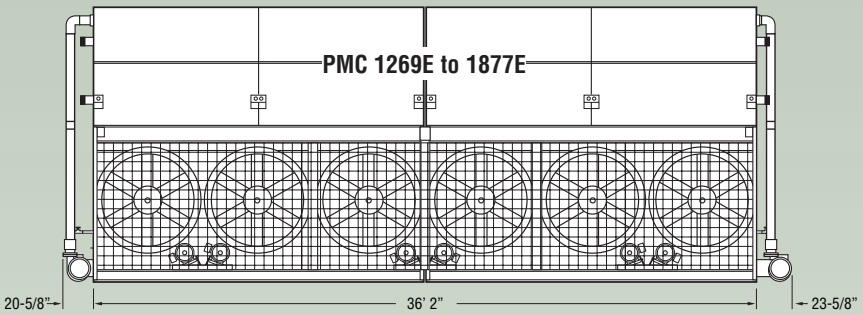
† Heaviest section is the upper coil section.

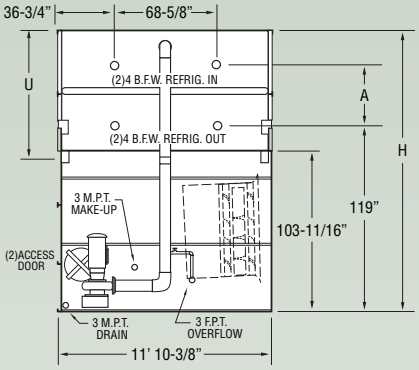
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

Dimensions are subject to change. Do not use for pre-fabrication.

PMC 1269E to 1985E







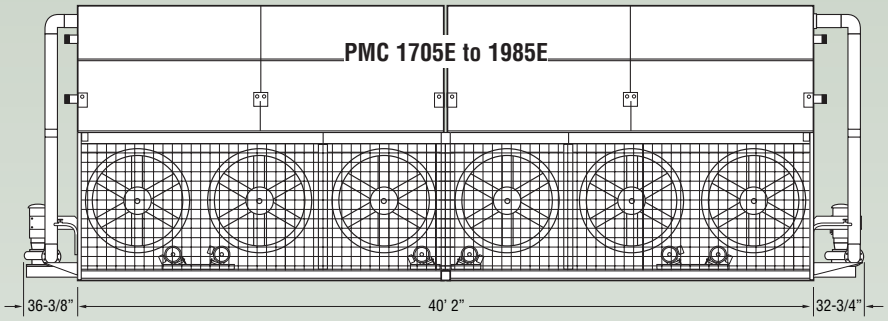


Table 12 Engineering Data

Model No.	R-22 Capacity Tons*	R-717 Capacity Tons*	Fans		Weights (lbs)			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
			HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-1269E	1269	900	(6)7.5	236,800	43,090	14,850	59,690	905	123	(2)7.5	2400	1460	16	52,490	163-3/8	61	22-1/4
PMC-1358E	1358	963	(6)10	252,600	43,150	14,850	59,750	905	123	(2)7.5	2400	1460	16	52,550	163-3/8	61	22-1/4
PMC-1376E	1376	976	(6)7.5	233,300	50,240	18,430	67,400	1190	163	(2)7.5	2400	1460	16	60,200	171-7/8	69-1/2	30-3/4
PMC-1446E	1446	1026	(6)7.5	230,300	57,590	22,100	75,300	1480	202	(2)7.5	2400	1460	16	68,100	180-3/8	78	39-1/4
PMC-1473E	1473	1045	(6)10	248,900	50,300	18,430	67,450	1190	163	(2)7.5	2400	1460	16	60,250	171-7/8	69-1/2	30-3/4
PMC-1549E	1549	1099	(6)10	245,200	57,650	22,100	75,360	1480	202	(2)7.5	2400	1460	16	68,160	180-3/8	78	39-1/4
PMC-1599E	1599	1134	(6)15	286,000	51,110	18,430	68,260	1190	163	(2)7.5	2400	1460	16	61,060	171-7/8	69-1/2	30-3/4
PMC-1625E	1625	1152	(6)10	241,600	64,950	25,750	83,220	1770	241	(2)7.5	2400	1460	16	76,020	188-7/8	86-1/2	30-3/4
PMC-1712E	1712	1214	(6)15	282,300	58,460	22,100	76,170	1480	202	(2) 7.5	2400	1460	16	68,970	180 3/8	78	39-1/4
PMC-1776E	1776	1260	(6)15	277,600	65,770	25,750	84,030	1770	241	(2) 7.5	2400	1460	16	76,830	188 7/8	86-1/2	47-3/4
PMC-1788E	1788	1268	(6)20	299,800	58,860	22,100	76,560	1480	202	(2)7.5	2400	1460	16	69,360	180-3/8	78	39-1/4
PMC-1877E	1877	1331	(6)20	295,400	66,160	25,750	84,430	1770	241	(2)7.5	2400	1460	16	77,230	188-7/8	86-1/2	47-3/4
PMC-1705E	1705	1209	(6)10	256,100	72,380	29,050	92,670	1965	268	(2)10	2800	1630	16	84,830	188-7/8	86-1/2	47-3/4
PMC-1879E	1879	1333	(6)15	294,300	73,190	29,050	93,480	1965	268	(2)10	2800	1630	16	85,640	188-7/8	86-1/2	47-3/4
PMC-1985E	1985	1408	(6)20	313,100	73,590	29,050	93,880	1965	268	(2)10	2800	1630	16	86,030	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: HCFC-22 and HFC-134a. 105°F condensing, 40°F suction and 78°F W.B.; ammonia 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

† Heaviest section is the upper coil section.

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.
Dimensions are subject to change. Do not use for pre-fabrication.

Optional Equipment

Oversized Access Door

For enhanced basin accessibility, the Oversized Access Door option enables maintenance personnel to quickly and easily enter the basin for float valve adjustment and unit inspection.

Self Supporting Service Platforms

Condensers are available with self-supporting service platforms that include access ladders which are designed for easy field installation. This option offers significant savings in comparison to field constructed, externally supported catwalks. The Evapco service platform option may be installed on either side, or the end opposite the connections.

Two Speed Motors

Two speed fan motors can provide an excellent means of capacity control. In periods of lightened loads or reduced wet bulb temperatures, the fans can operate at low speed, which will provide about 60% of full speed capacity, yet consume only about 15% of the power compared with high speed. In addition to the energy savings, the sound levels of the units will be greatly reduced at low speed.

Remote Sump Configuration

For units operating in areas where temperatures may be very low, or where low temperatures may occur during periods when the unit is not operating, a sump located inside the building is the preferred means of ensuring that the basin water will not freeze. For these applications, the condenser will be supplied without the spray pump, suction strainers and all associated piping, but with an oversize bottom outlet.

ASME Coils

Evaporative condensers can be furnished with condensing coils manufactured in accordance with the ASME Pressure Vessel Code Section VIII, Division I. Coils built with this option will bear a U-stamp indicating their compliance with the ASME code.

Electric Water Level Control

Evaporative condensers may be ordered with an electric water level control in lieu of the standard mechanical float and make-up assembly. This package provides accurate control of water levels and does not require field adjustment.

Water Level Indicator

Condensers may be supplied with a water level indicator to provide a visual indication of basin water level without opening access doors or air inlet louvers. The level indicator can be furnished with an optional low and high level alarm switches or a transmitter for continuous level monitoring.

Multiple Circuit Coils

Condensers may be supplied with multiple circuit coils to match various system requirements such as split systems, or if a glycol or water circuit is desired for compressor head cooling.

Extended Surface Coil

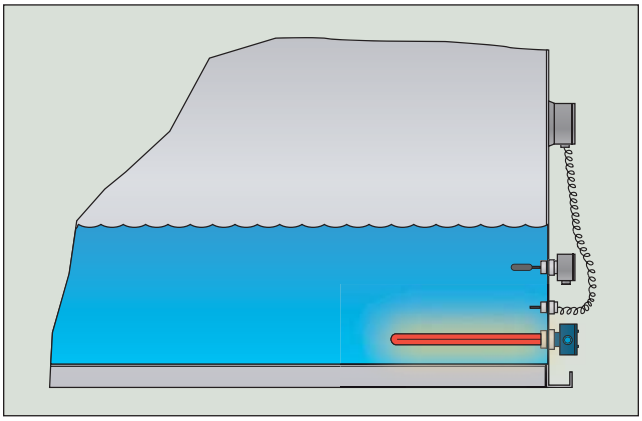
Condensers can be provided with spiral fins on the heat exchanger coil to increase the dry performance of the unit. Dry performance is accomplished by rejecting heat to the atmosphere without the use of the spray pump and the evaporation process. Dry operation can be practical in cold climates and/or when reduced winter loads exist. The number of fins per inch and quantity of rows finned can be varied to obtain different dry performances. Consult the factory for sizing.

Basin Heater Package

If a remote sump configuration is not practical, electric basin heater packages are available to help prevent freeze-up of the basin water. The packages include electric heater elements, and a combination thermostat/low water cutoff. **Note: External pumps should be heat traced and insulated in the field to prevent freezing.**

Electric Heaters

Electric immersion heaters are available factory installed in the basin of the condenser. They are sized to maintain a +40° F pan water temperature with the fans off and an ambient air temperature of 0°F. They are furnished with a combination thermostat/low water protection device to cycle the heater on when required and to prevent the heater elements from energizing unless they are completely submerged. All components are in weather proof enclosures for outdoor use. The heater power contactors and electric wiring are not included as standard.

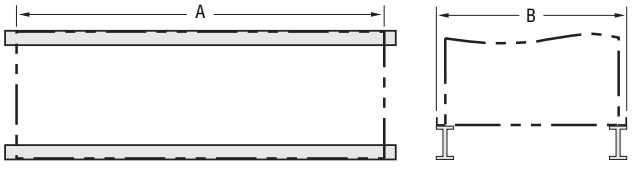


PMC-E Heater Sizes	
Models	**kW**
PMC-175E to PMC-240E	5
PMC-250E to PMC-375E	(2) 4
PMC-332E to PMC-519E	8
PMC-503E to PMC-778E	(2) 6
PMC-772E to PMC-1038E	(2) 8
PMC-1006E to PMC-1556E	(2) 12
PMC-420E to PMC-631E	10
PMC-634E to PMC-939E	(2) 7
PMC-811E to PMC-992E	(2) 8
PMC-974E to PMC-1258E	(2) 9
PMC-840E to PMC-1261E	(2) 9
PMC-1269E to PMC-1877E	(2) 15
PMC-1705E to PMC-1985E	(2) 15

Steel Support

The recommended support for EVAPCO condensers is structural "I" beams located under the outer flanges and running the entire length of the unit. Mounting holes, 3/4" in diameter are located in the bottom channels of the pan section to provide for bolting to the structural steel. (Refer to certified drawings from the factory for bolt hole locations.)

Beams should be level to within 1/8" in 6' before setting the unit in place. Do not level the unit by shimming between it and the "I" beams as this will not provide proper longitudinal support.



PMC-E Dimensions		
5' Wide Models	**A**	**B**
PMC-175E to 240E	11' 11-5/8"	6' 4"
250E to 375E	18' 1/8"	6' 4"
10' Wide Models	**A**	**B**
PMC-332E to 519E	11' 11-3/4"	9' 9-3/4"
503E to 778E	18' 1/8"	9' 9-3/4"
772E to 1038E	24' 7/8"	9' 9-3/4"
1006E to 1556E	36' 2"	9' 9-3/4"
12' Wide Models	**A**	**B**
PMC-420E to 631E	11' 11-3/4"	11' 10-3/8"
634E to 939E	18' 1/8"	11' 10-3/8"
811E to 992E	20' 1/4"	11' 10-3/8"
974E to 1258E	24' 7/8"	11' 10-3/8"
840E to 1261E	24' 7/8"	11' 10-3/8"
1269E to 1877E	36' 2"	11' 10-3/8"
1705E to 1985E	40' 2"	11' 10-3/8"

Application

Design

EVAPCO units are heavy-duty construction and designed for long trouble-free operation. Proper equipment selection, installation and maintenance is, however, necessary to ensure good unit performance. Some of the major considerations in the application of a condenser are presented below. For additional information, contact the factory.

Air Circulation

In reviewing the system design and unit location, it is important that proper air circulation be provided. The best location is on an unobstructed roof top or on ground level away from walls and other barriers. Care must be taken when locating condensers in wells or enclosures or next to high walls. The potential for recirculation of hot, moist discharge air back into the fan intake exists. Recirculation raises the wet bulb temperature of the entering air causing the condensing pressure to rise above the design. For these cases, a discharge hood or ductwork should be provided to raise the overall unit height even with the adjacent wall, thereby reducing the chance of recirculation. Good engineering practice dictates that the evaporative condenser's discharge air not be directed or located close to or in the vicinity of building air intakes. Engineering assistance is available from the factory to identify potential recirculation problems and recommend solutions.

For additional information regarding layout of evaporative condensers, see EVAPCO Bulletin entitled *"Equipment Layout".*

Piping

Condenser piping should be designed and installed in accordance with generally accepted engineering practice. All piping should be anchored by properly designed hangers and supports with allowance made for possible expansion and contraction. No external loads should be placed upon condenser connections, nor should any of the pipe supports be anchored to the unit framework. For additional information concerning refrigerant pipe sizing and layout, see EVAPCO Bulletin entitled *"Piping Evaporative Condensers"*.

Maintaining the Recirculated Water System

The heat rejection in a condenser is accomplished by the evaporation of a portion of the recirculated spray water. As this water evaporates, it leaves behind all of its mineral content and impurities. Therefore, it is important to bleed-off an amount of water equal to that which is evaporated to prevent the build-up of these impurities. If this is not done, the mineral or the acidic nature of the water will continue to increase. This will ultimately result in heavy scaling or a corrosive condition.

Bleed-off

Each unit supplied with a pump mounted on the side is furnished with a clear bleed line for visual inspection and a valve which, when fully open, will bleed-off the proper amount of water. If the make-up water supplying the unit is relatively free of impurities, it may be possible to cut back the bleed, but the unit must be checked frequently to make sure scale is not forming. Make-up water pressure should be maintained between 20 and 50 psig.

Water Treatment

In some cases the make-up will be so high in mineral content that a normal bleed-off will not prevent scaling. In this case water treatment will be required and a reputable water treatment company familiar with the local water conditions should be consulted.

Any chemical water treatment used must be compatible with the construction of the unit. If acid is used for treatment, it should be accurately metered and the concentration properly controlled. The pH of the water should be maintained between 6.5 and 8.0. **Units constructed of galvanized steel operating with circulating water having a pH of 8.3 or higher will require periodic passivation of the galvanized steel to prevent the formation of "white rust".** Batch chemical feeding is not recommended because it does not afford the proper degree of control. If acid cleaning is required extreme caution must be exercised and only inhibited acids recommended for use with galvanized construction should be used. **For more information see EVAPCO Bulletin entitled *"Maintenance Instructions"*.**

Control of Biological Contamination

Water quality should be checked regularly for biological contamination, If biological contamination is detected, a more aggressive water treatment and mechanical cleaning program should be undertaken. The water treatment program should be performed in conjunction with a qualified water treatment company. It is important that all internal surfaces be kept clean of accumulated dirt and sludge. In addition, the drift eliminators should be maintained in good operating condition.

Mechanical Specifications

Furnish and install, as shown on the plans, an EVAPCO model _____ evaporative condenser. Each unit shall have condensing capacity of _____ BTUH heat rejection, operating with _____ refrigerant at _____ °F condensing temperature and _____ °F design wet bulb temperature.

Pan and Casing

The pan and casing shall be constructed of G-235 hot-dip galvanized steel for long life and durability. The heat transfer section shall be removable from the pan to provide easy handling and rigging.

The pan/fan section shall include fans, motors and drives mounted and aligned at the factory. These items shall be located in the dry entering air stream to provide maximum service life and easy maintenaince. The pan bottom shall be sloped to the drain to ensure easy draining and to facilitate cleaning. Standard pan accessories shall include circular access doors, stainless steel strainers, wastewater bleed line with adjustable valve and brass makeup valve, with an unsinkable foam filled plastic float.

Power-Mizer Fan Drives

Fans shall be vane-axial type constructed of cast aluminum alloy blades. They shall be arranged in a two-stage system installed in a closely fitted cowl with venturi air inlet and air stabilizing vanes. Fan shaft bearings shall be a heavy-duty self aligning ball type with grease fittings extended to the outside of the unit.

The fan drive shall be solid backed Power-Band constructed of neoprene with polyester cords designed for 150% of motor nameplate horsepower. Drives are to be mounted and aligned at the factory.

Each fan shall be driven individually by a dedicated fan motor. Fan motors may be cycled independently without harmful moist air bypass.

Fan Motor

_____ horsepower totally enclosed fan cooled motor(s) with 1.15 service factor shall be furnished suitable for outdoor service on _____ volts, _____ hertz, and _____ phase. Motor(s) shall be mounted on an adjustable base.

Heat Transfer Coil

The coil(s) shall be all prime surface steel, encased in steel framework with the entire assembly hot-dip galvanized after fabrication. Coil(s) shall be designed with sloping tubes for free drainage of liquid refrigerant and tested to 400 psig air pressure under water.

Water Distribution System

The system shall provide a water flow rate of 6 GPM over each square foot of the unit face area to ensure proper flooding of the coil. The spray header shall be constructed of schedule 40, PVC pipe for corrosion resistance. All spray branches shall be removable and include a threaded end plug for cleaning. The water shall be distributed over the entire coil surface by heavy-duty molded nylon ZM spray nozzles with large 1-5/16" diameter opening and internal sludge ring to eliminate clogging. Nozzles shall be threaded into a spray header to provide easy removal for maintenance.

Water Recirculation Pump

The pump(s) shall be a close-coupled, centrifugal type with mechanical seal, installed at the factory. _____ horsepower totally enclosed, motor shall be furnished suitable for outdoor service on _____ volts, _____ hertz, and _____ phase.

Eliminators

The eliminators shall be constructed entirely of inert polyvinyl chloride (PVC) in easily handled sections. The eliminator design shall incorporate three changes in air direction to assure complete removal of all entrained moisture from the discharge air stream. Maximum drift rate shall be less than 0.001% of the circulating water rate.

Finish

All pan and casing materials shall be constructed of G-235 heavy gauge mill hot-dip galvanized steel for maximum protection against corrosion. During fabrication, all panel edges shall be coated with 95% pure zinc-rich compound.

Innovation, Performance, Experience

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