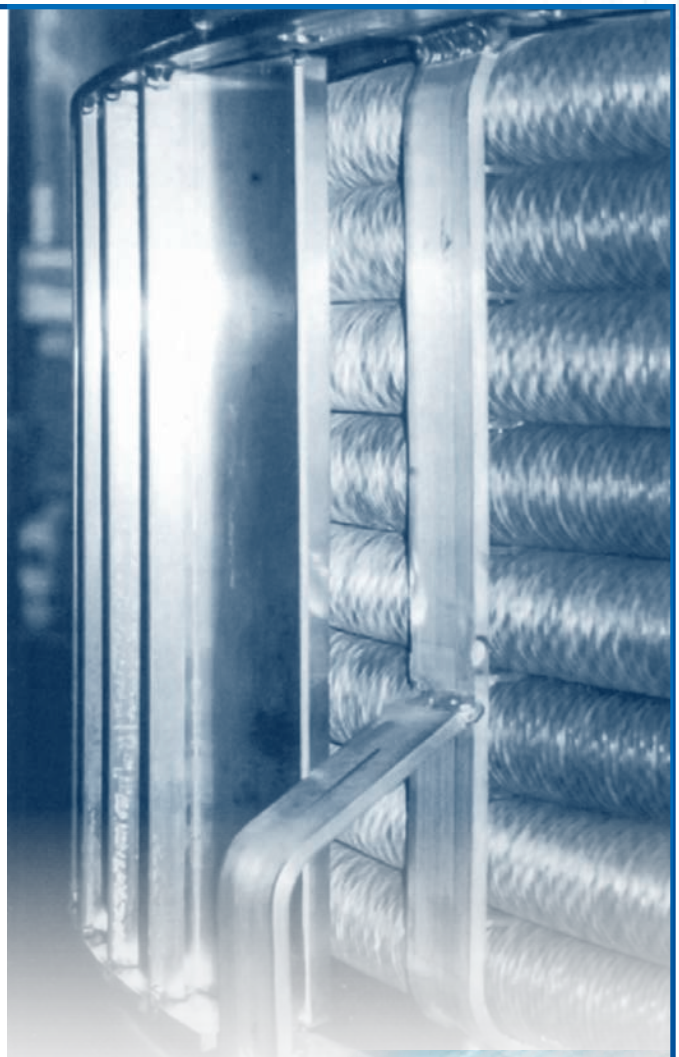
MALNAR

ALL ALUMINUM CIRCULAR EVAPORATORS

Issued January 2017

Aluminum Circular Evaporators:
QUALITY ENGINEERED FOR MAXIMUM PERFORMANCE



Malnar Industries Ltd. Is a proven manufacturer of aluminum circular evaporators. For over 30 years the superior quality of Malnar circular evaporators has proven its effectiveness time and time again.

Each Malnar circular evaporator has been fully engineered to yield maximum heat transfer. Combining computer aided design (CAD) along with years of experience in the refrigeration industry, you can be assured that every evaporator leaving our factory has been completely designed with your requirements in mind.

Due to the all aluminum construction of the evaporator, an increased heat transfer rate is achieved. Also, the aluminum construction gives the installation of our evaporators the advantage by reducing the unit weight by up to 50% compared to conventional galvanized steel evaporators. The aluminum evaporators provide excellent corrosion resistance[1] with all materials being USDA approved.

With six different styles of evaporators available, an optimum compatibility for capacity in a broad range of applications is available.

All circular evaporators are manufactured and tested by our staff to meet our exacting standards. Completed units are shipped as a fully assembled, ready to install unit.

1 Tested for products with 4-9 ph range. Consult factory for products not meeting these specifications.

STANDARD EQUIPMENT

FRAME

The frame is constructed of a lightweight but durable and strong aluminum alloy.

FINNED TUBING

The cooling coil is constructed of 5/8" x 0.058" wall aluminum tubing for a primary surface with 5/8" x 0.020" aluminum fin acting as the secondary surface. The spirally wound fin is mechanically joined to the knurled aluminum tube to ensure that positive contact is made between the primary and secondary surfaces.

FANS

Direct drive axial fans are cast aluminum design. Axial fans circulate air at high volumes with minimum horsepower requirements. Lower speeds reduce the operating noise of the entire unit.

ELECTRIC MOTORS

Electric Motors are totally enclosed air over and are modified to meet Malnar specifications. These specifications include changing to sealed bearings, "fling-ring" added to the shaft to prevent moisture from entering the motor, additional gaskets to be supplied between the motor body and the conduit box, and drain holes drilled into the bottom face of the motor. Motors can be supplied in 230/460 or 575V, 3 phase, 60 Hz at 850 RPM.

TOP CAP & DRAIN PANS

The top cap and the drain pan are both constructed of fiberglass and finished in a brilliant white colour. The drain pan is insulated with ¾" thick polyurethane sandwiched by the fiberglass coating. The drain pan is also sloped to enable quick and complete drainage of the condensate.

OPTIONAL EQUIPMENT

WATER ELIMINATORS

Moisture in the warm air condenses as it cools. The cooled air, along with the velocity of the air, may cause "carry-over" of water through the evaporator and on your product. Adding water eliminators prevents water droplet carry-over from spraying on your product.

DISCHARGE CHUTES

Aluminum extension discharge chutes may be added to the bottom of the fan section to act as a duct to allow for further air throw before dispensing on your product to be cooled.

DISCHARGE CONES

Discharge cones help to deflect the air at the discharge of the evaporator. Where space is a limitation, or if the evaporator is to be mounted in close proximity to the discharge outlet, a radial discharge cone may be added.

HOT GAS DEFROST

Hot gas defrost is an option on all evaporators including liquid recirc. coils as well as direct expansion coils. All hot gas defrost systems come with a hot gas check valve as well as hot gas tubes in the pan to prevent any freezing in the pan.

MAC EVAPORATORS

MAC Evaporators are designed for cooler applications where fin spacing is small to obtain effective cooling. Face velocity is maintained around 500 fpm to prevent water carry-over from the coil onto the product. MAC evaporators have an optional hot gas defrost in the coil and in the pan.

Unit Model Number	Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
MAC-04-60-30-5.5	4,580	6,200	1/2	30	464	18.37	1,098	0.434	530
MAC-06-60-30-5.5	6,613	8,720	3/4	30	434	20.07	1,557	0.677	620
MAC-08-72-36-5.5	7,080	9,380	1/2	36	436	21.50	1,625	0.668	650
MAC-08-60-30-5.5	7,630	9,930	3/4	30	424	23.41	1,817	0.760	710
MAC-08-72-36-5.5	8,362	11,060	3/4	36	428	25.80	1,950	0.777	760
MAC-10-72-36-5.5	9,800	13,050	1	36	434	30.09	2,275	0.923	870
MAC-12-72-36-5.5	11,742	16,597	2	36	483	34.40	2,600	1,048	980
MAC-14-72-36-5.5	13,220	17,300	2	36	402	42.99	3,250	1,380	1,200
MAC-16-78-42-5.5	16,621	23,487	3	42	478	49.18	3,604	1,563	1,350
MAC-18-78-42-5.5	18,060	23,487	3	42	443	53.00	3,686	1,810	1,460
MAC-20-78-42-5.5	20,068	25,512	5	42	441	57.82	4,305	1,974	1,610
MAC-22-78-42-5.5	21,770	25,512	5	42	485	52.63	4,688	2,139	1,670

MAF EVAPORATORS

MAF Evaporators are designed for freezer applications with standard hot gas defrost in coil and pan. Fin spacing is greater than that of the MAC Evaporators for a larger time period between defrosts. Face velocity is maintained around 600 fpm for maximum heat transfer. Quick defrosts and cool-down times makes the MAF evaporators ideal for low-temperature rooms.

Unit Model Number	Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
MAF-04-60-20-4.0	5,237	7,139	3/4	20	650	10.98	1,179	0.648	470
MAF-06-60-30-4.0	7,556	8,801	1	30	627	13.73	1,473	0.610	560
MAF-08-72-36-4.0	7,658	8,500	1 1/2	36	574	14.01	1,601	0.816	670
MAF-08-60-30-4.0	8,041	10,000	1 1/2	30	607	16.48	1,766	0.909	650
MAF-08-72-36-4.0	9,161	10,000	1 1/2	36	540	18.51	1,876	1,304	760
MAF-10-72-36-4.0	11,711	13,000	1 1/2	36	586	22.21	2,251	1,258	888
MAF-12-72-36-4.0	13,744	16,000	3	36	618	25.01	2,626	1,488	986
MAF-14-72-36-4.0	15,850	18,500	3	36	625	29.62	3,002	1,701	1,145
MAF-16-78-42-4.0	17,156	21,394	3	48	634	33.76	3,351	1,883	1,265
MAF-18-78-42-4.0	19,233	26,546	5	42	699	37.98	3,770	2,195	1,438
MAF-20-78-42-4.0	21,739	26,546	5	42	629	42.20	4,189	2,489	1,621
MAF-22-78-42-4.0	23,648	31,327	7 1/2	42	675	46.42	4,608	2,683	1,714

MAB EVAPORATORS

MAB Evaporators are designed for blast freezer applications where a high volume of air must be circulated in the area. Fin spacing is larger than that of MAF Evaporators for an even larger time period between defrosts. Hot gas defrost in the coil and pan are standard.

Unit Model Number	Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
MAB-04-60-30-3.5	5,096	7,370	1	30	671	10.99	1,041	0.648	430
MAB-06-60-30-3.5	6,971	8,735	1	30	636	13.73	1,801	0.810	510
MAB-06-72-36-3.5	6,910	8,906	1	36	602	14.61	1,325	0.878	530
MAB-08-60-30-3.5	8,289	10,725	2	30	651	16.48	1,561	0.989	590
MAB-08-72-36-3.5	8,573	11,000	1 1/2	36	594	18.51	1,657	1,084	700
MAB-10-72-36-3.5	10,629	13,750	2	36	519	22.21	1,989	1,258	828
MAB-12-72-36-3.5	12,235	15,073	3	36	620	25.91	2,320	1,486	926
MAB-14-72-36-3.5	14,204	19,131	5	36	646	29.62	2,552	1,707	1,065
MAB-16-78-42-3.5	17,156	24,875	5	42	655	37.96	3,330	2,101	1,350
MAB-18-78-42-3.5	19,233	24,875	5	42	589	42.20	3,700	2,419	1,480
MAB-20-78-42-3.5	21,739	24,875	5	42	536	46.42	4,070	2,657	1,604
MAB-22-78-42-3.5	28,848	29,052	7 1/2	42	574	50.64	4,441	2,901	1,730

TURBOJET EVAPORATORS

Turbojet Evaporators are designed to blow a high volume of air directly over the product to reduce cool down periods and improve product shrinkage. These evaporators are ideal in hog and beef carcass chilling.

Unit Model Number	Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
TJ-08-78-42-4.5	12,599	18,300	3	42	668	27.40	2,271	1,507	1,050
TJ-10-78-42-4.5	14,795	21,000	5	42	657	31.97	2,649	1,755	1,295
TJ-12-78-42-4.5	16,816	24,866	5	42	681	36.54	3,027	1,965	1,425
TJ-14-78-42-4.5	19,378	26,500	7 1/2	42	645	41.11	3,406	2,259	1,600

ZEPHYR EVAPORATORS

Zephyr Evaporators are designed with low velocity side discharge air and outside water eliminators. These evaporators are ideal for production areas to ensure employee comfort and therefore increase employee productivity.

Unit Model Number	Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
Z-04-60-30-5.0	4,175	6,330	3/4	30	473	13.37	948	0.434	485
Z-06-60-30-5.0	5,737	7,617	1	30	380	20.05	1,422	0.677	650
Z-06-72-36-5.0	6,028	8,310	3/4	36	387	21.50	1,484	0.660	685
Z-08-60-30-5.0	8,025	11,000	1	30	411	26.72	1,996	0.660	820
Z-08-72-36-5.0	8,266	12,610	1 1/2	36	489	25.80	1,781	0.777	800
Z-10-72-36-5.0	10,063	13,836	1 1/2	36	404	34.40	2,378	1,048	975
Z-12-72-36-5.0	12,009	17,200	2	36	400	43.00	2,989	1,390	1,170
Z-14-72-36-5.0	14,010	19,500	2	36	378	51.60	3,683	1,640	1,350
Z-16-72-42-5.0	16,109	22,072	3	42	416	53.00	3,620	1,702	1,380
Z-18-78-42-5.0	18,398	25,512	5	42	407	62.64	4,278	2,139	1,590
Z-20-75-42-5.0	19,845	25,512	5	42	378	67.45	4,607	2,278	1,700

HUMIGUARD EVAPORATORS

Humiguard Evaporators are designed to provide both temperature and humidity control in one compact unit. The humiguard coil draws air through the first coil, cooling it to remove excess moisture. The air then passes through the second coil where it is reheated to the desired temperature.

Unit Model Number	Cooling Capacity (BTU/hr. °F TD) <1>	Heating Capacity (BTU/hr. °F TD) <1>	Air Flow (CFM)	Motor (HP)	Fan Diameter (in.)	Face Velocity (fpm) <2>	Face Area (sq.ft.) <2>	Surface Area (sq.ft.)	Coil Volume (cu.ft.)	Shipping Weight (lb)
HG-06-72-36-4.5	6,898	3,099	8,310	3/4	36	415	20.01	1,794	0.861	1,012
HG-06-72-36-4.5	8,878	3,718	10,200	1	36	425	24.01	2,081	1,023	1,156
HG-10-72-36-4.5	10,623	4,398	12,610	1 1/2	36	450	28.01	2,428	1,185	1,296
HG-12-78-42-4.5	11,615	4,827	13,566	1 1/2	42	429	31.63	2,700	1,369	1,415
HG-14-78-42-4.5	13,626	5,518	15,300	2	42	423	36.15	3,086	1,548	1,574
HG-16-78-42-4.5	15,628	6,206	17,300	2	42	425	40.67	3,472	1,729	1,733
HG-18-78-42-4.5	17,700	6,895	19,500	3	42	434	45.19	3,858	1,909	1,803

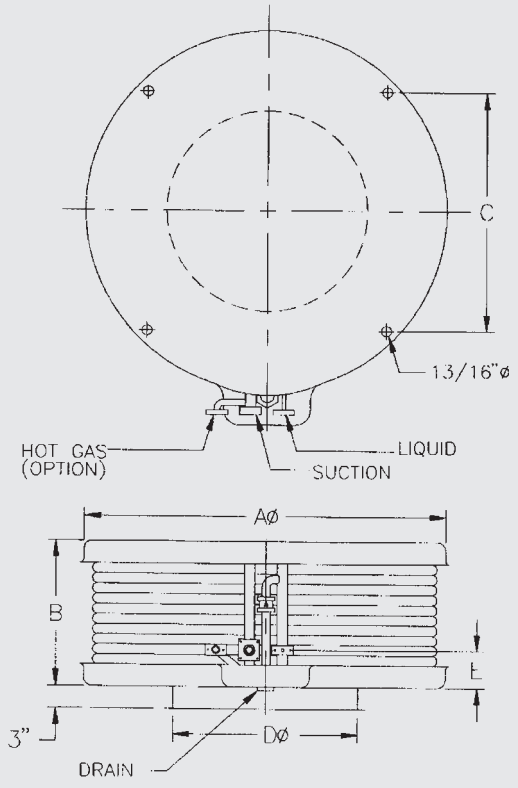
Notes: <1> *Based on Ammonia Refrigerant, 2:1 Liquid Recirculation (LR)*
For R717-DX, Derate 20%
For R22-LR, Derate 15%
For R22-DX, Derate 25%

<2> *Based on coil inside diameter, except on ZEPHYR Coils, which are based on outside diameter.*

DIMENSION SPECIFICATIONS

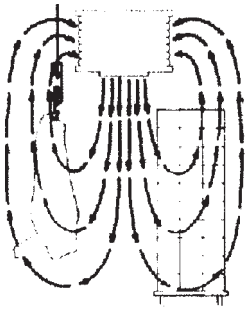
Unit Model Number	Outer Diameter in. (A)	Coil Height in. (B)	Mounting Distance in. (C)	Discharge Diameter in. (D)	Flange Height in. (E)
MAC-04-48-24-5.5	44	25 3/4	29	24	7 3/4
MAC-04-60-30-5.5	56	18 1/2	37 1/2	31	7 3/4
MAC-06-60-30-5.5	56	25 3/4	37 1/2	31	7 3/4
MAC-06-72-36-5.5	71	22 1/4	48	37	7 3/4
MAC-08-60-30-5.5	56	29 1/2	37 1/2	31	7 3/4
MAC-08-72-36-5.5	71	25 3/4	48	37	7 3/4
MAC-10-72-30-5.5	71	29 1/2	48	37	7 3/4
MAC-12-72-30-5.5	71	33	48	31	7 3/4
MAC-14-72-36-5.5	71	40 1/4	48	37	7 3/4
MAC-16-78-42-5.5	78	40 1/4	53	48 1/2	7 3/4
MAC-18-78-42-5.5	78	44	53	48 1/2	7 3/4
MAC-20-78-42-5.5	78	47 3/4	53	48 1/2	7 3/4
MAC-22-78-42-5.5	78	51 1/2	53	48 1/2	7 3/4
MAF-04-60-30-4.0	56	20	37 1/2	31	8 1/2
MAF-06-60-30-4.0	56	23 3/4	37 1/2	31	8 1/2
MAF-06-72-36-4.0	71	20	48	37	8 1/2
MAF-08-60-30-4.0	56	27 1/4	37 1/2	31	8 1/2
MAF-08-72-36-4.0	71	23 3/4	48	37	8 1/2
MAF-10-72-36-4.0	71	27 1/4	48	37	8 1/2
MAF-12-72-36-4.0	71	31	48	37	8 1/2
MAF-14-72-36-4.0	71	34 1/2	48	37	8 1/2
MAF-16-78-42-4.0	78	34 1/2	53	48 1/2	8 1/2
MAF-18-78-42-4.0	78	38 1/4	53	48 1/2	8 1/2
MAF-20-78-42-4.0	78	41 3/4	53	48 1/2	8 1/2
MAF-22-78-42-4.0	78	45 1/2	53	48 1/2	8 1/2
MAB-04-60-30-3.5	56	20	37 1/2	31	8 1/2
MAB-06-60-30-3.5	56	23 3/4	37 1/2	31	8 1/2
MAB-06-72-36-3.5	71	20	48	37	8 1/2
MAB-08-60-30-3.5	56	27 1/4	37 1/2	31	8 1/2
MAB-08-72-36-3.5	71	23 3/4	48	37	8 1/2
MAB-10-72-36-3.5	71	27 1/4	48	37	8 1/2
MAB-12-72-36-3.5	71	31	48	37	8 1/2
MAB-14-72-36-3.5	71	34 1/2	48	37	8 1/2
MAB-16-78-42-3.5	78	38 1/4	53	48 1/2	8 1/2
MAB-18-78-42-3.5	78	41 3/4	53	48 1/2	8 1/2
MAB-20-78-42-3.5	78	45 1/2	53	48 1/2	8 1/2
MAB-22-78-42-3.5	78	49 1/4	53	48 1/2	8 1/2

Unit Model Number	Outer Diameter in. (A)	Coil Height in. (B)	Mounting Distance in. (C)	Discharge Diameter in. (D)	Flange Height in. (E)
TJ-06-78-42-4.5	78	20	53	42 1/4	8 1/2
TJ-08-78-42-4.5	78	23 3/4	53	42 1/4	8 1/2
TJ-10-78-42-4.5	78	27 1/4	53	42 1/4	8 1/2
TJ-12-78-42-4.5	78	34 1/2	53	48 1/2	8 1/2
Z-06-60-30-5.0	56	33	37 1/2	31	7 3/4
Z-08-72-36-5.0	71	25 3/4	48	37	7 3/4
Z-10-72-36-5.0	71	33	48	37	7 3/4
Z-12-72-36-5.0	71	40 1/4	48	37	7 3/4
Z-14-72-36-5.0	71	47 3/4	48	37	7 3/4
Z-16-78-42-5.0	78	44	53	48 1/2	7 3/4
Z-18-78-42-5.0	78	51 1/2	53	48 1/2	7 3/4
Z-20-78-42-5.0	78	55 1/4	62	48 1/2	7 3/4
HG-06-72-36-4.5	71	23 3/4	48	37	8 1/2
HG-06-72-36-4.5	71	27 1/4	48	37	8 1/2
HG-08-72-36-4.5	71	21	48	37	8 1/2
HG-10-78-42-4.5	78	31	53	42 1/4	8 1/2
HG-12-78-42-4.5	78	34 1/2	58	42 1/4	8 1/2
HG-14-78-42-4.5	78	33 1/4	63	42 1/4	8 1/2
HG-16-78-42-4.5	78	41 3/4	63	42 1/4	8 1/2

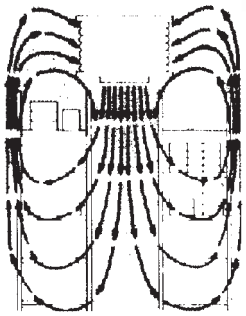


Dimensions & Specifications are subject to change without notice.

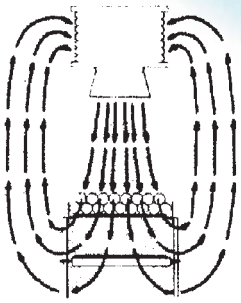
MALNAR makes AI-Jet Coil Evaporators
FOR ALL TYPES OF INDUSTRIAL APPLICATIONS



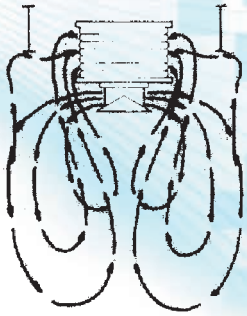
Chill or Holding Coolers



Blast Freezer Applications



Conveyor Freezer with
Bottom Discharge Evaporators



Bottom Radial Discharge

ALSO MANUFACTURED BY MALNAR INDUSTRIES:

- Roof-Top Units
- Brine/Water Chillers
- BTR Evaporators
- Air-Cooled Condensers
- Evaporative Condensers
- Air-Cooled Heat Exchangers

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