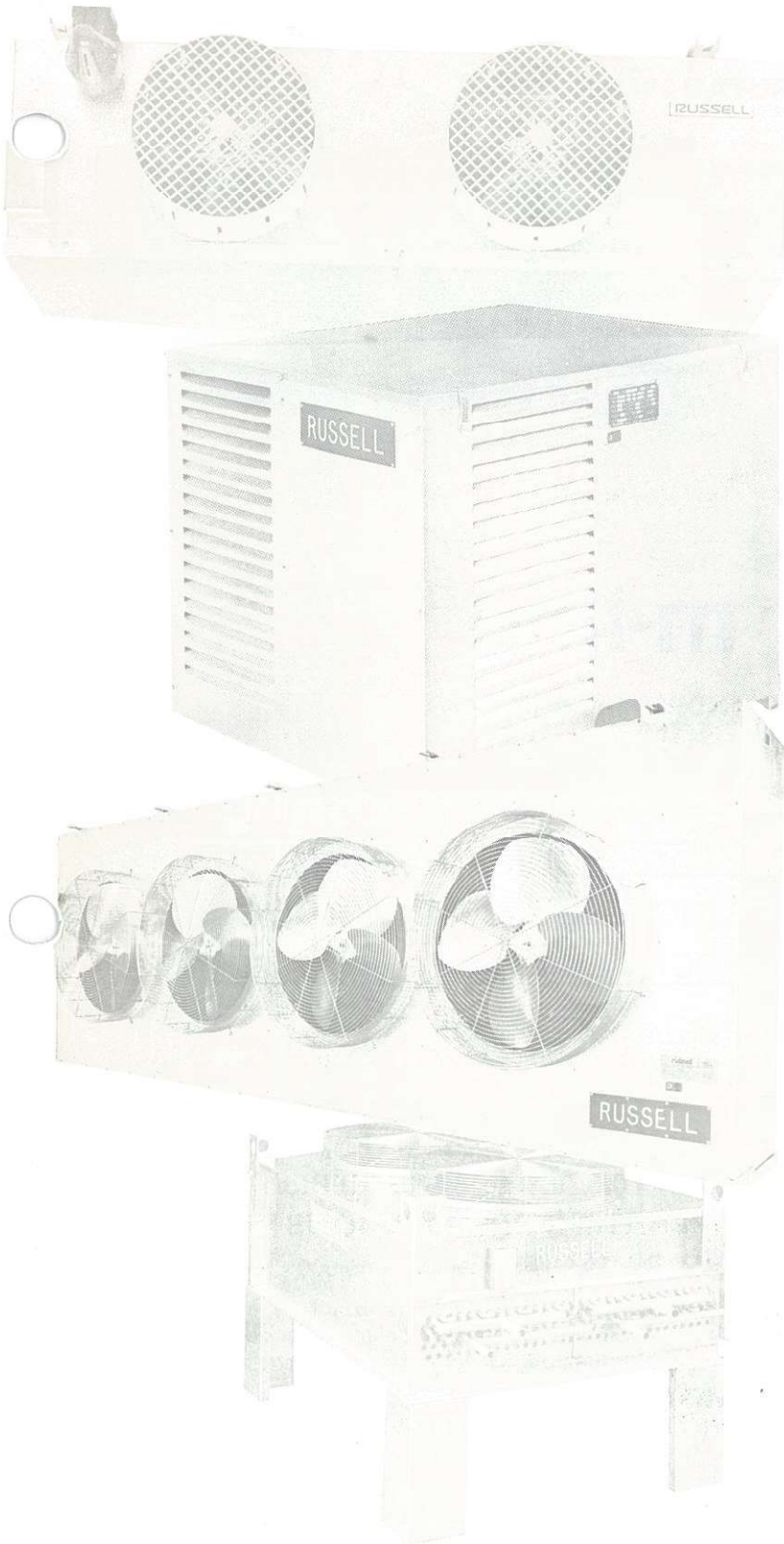


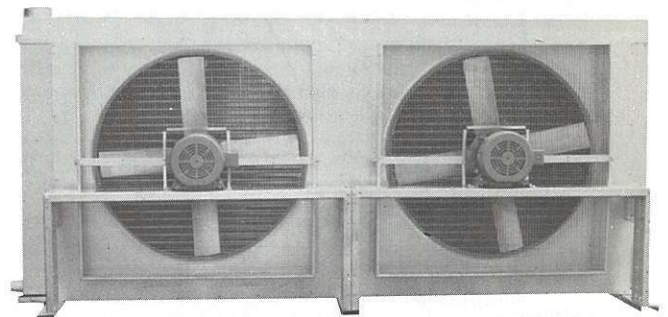
TECHNICAL BULLETIN  
*November 1983*

ML



**m-line**

**HIGH POWERED  
INDUSTRIAL  
UNIT COOLERS**



**Russell**

**Russell Coil Company**

a subsidiary of ARDCO, INC.

221 South Berry Street Brea, California 92621

## M-LINE INDUSTRIAL UNIT COOLERS:

Russell's M-Line Evaporators consist of six basic models, with capacities ranging from:

- 13 to 26 tons at 20° suction temperature
- 8 to 20 tons at —30° suction temperature

They are available with copper or aluminum tubes in aluminum fins and, can be circuited for direct expansion halocarbon refrigerants or ammonia, recirculated or flooded ammonia.

## M-LINE FEATURES:

**Coil** — Heavy wall aluminum or copper tubing mechanically expanded into aluminum fins for maximum heat transfer. The aluminum tube coils are heliarc welded for maximum durability - no brazing alloys are used with aluminum. Steel mating flanges with garlock gaskets are supplied with all aluminum coil units. The copper tube coils are brazed at very high temperatures to obtain the maximum strength at the joints. To insure the maintenance of even fin spacing at 4 fpi, full collars are formed on the aluminum fins.

**Housing** — Rust-proof, all aluminum stucco finish. All components are easy to service with all parts readily accessible. Pre-drilled hangers are provided for fast installation.

**Air Throw** — The unobstructed air throw is in excess of 100 feet. Maximum air throw is obtained with high ceilings with no interference from beams and other obstructions.

**Fans** — The direct drive axial fans are an industrial heavy duty air foil type fan. They are of cast aluminum and are dynamically balanced. On Model 2, there are two fans and on Model 3, there are three fans. The fan blades are 36" in diameter and, are designed for high air movement with very low noise.

**Motors** — The motors are 2, 3, or 5 horsepower, 1140 rpm, wound for 230 or 460 volt, 60 cycle, 3 phase operation. The long life ball bearings are lubricated with low temperature grease.

**Motor Mount** — The motor is directly supported with heavy gauge steel beams which are bolted directly to the hanger of the evaporator. This minimizes transmission of vibration from the motor to the evaporator. The motor, of course, is easily accessible due to this unique construction.

**Fan Guard** — All units are supplied with an all aluminum air straightening fan guard. This directs the air straight out from the coil giving an even distribution of refrigerated air in the box.

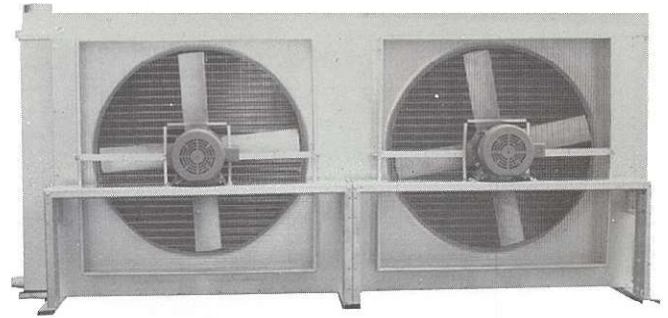
**Drain Pan** — The drain pans can be supplied sloped to either end and, are designed for rapid removal of the condensate as well as the water during water defrost.

**Electrical** — The electrical connections on the motors are easily accessible for rapid installation.

**Refrigerant** — For use with halocarbon or ammonia refrigerants. This must be specified with order.

**Defrost System** — Units are available with hot gas or water defrost. Hot gas defrost is recommended for all the low temperature applications; water defrost or hot gas defrost for medium or high temperature applications.

**Water Defrost Feed** — The water defrost water distribution pan is easily removable for cleaning. The level of water in the pan is easily observed with the Russell exclusive sight glass.



# m-line

## INDUSTRIAL UNIT COOLERS

designed for processing  
rooms, quick freezers  
and large cold storage  
facilities

from 105,000 to 347,500 Btuh

**OPERATING SPECIFICATIONS/RANGE:**

**AIR CAPACITY:** 25,600 to 49,500 CFM

**FANS:** Heavy duty direct drive axial fans, cast aluminum. Dynamically balanced for quiet operation. 36" diameter.

**MOTORS:** 2, 3 or 5 horsepower, 1140 rpm, available in 230V or 460V, 3 phase. Long life ball bearings are lubricated with low temperature grease.

**AIR THROW:** Approximately 100 to 150 feet.

**DEFROST:** Water or Hot Gas Defrost available.

# Russell

### HIGH TEMPERATURE APPLICATIONS

BTUH @ 10°TD, 20° EVAPORATOR TEMPERATURE

MODEL	ROWS	WATER DEFROST				HOT GAS DEFROST			
		DX	RECIRC OR FLOODED	CFM	HP	DX	RECIRC OR FLOODED	CFM	HP
M2	6	135,200	162,300	28,200	2	151,000	181,300	33,000	3
M2	8	164,100	197,000	26,600	2	182,000	218,400	31,000	3
M2	10	186,500	223,900	25,600	2	207,200	248,600	29,600	3
M3	6	189,200	227,000	41,100	2	210,600	253,300	42,000	3
M3	8	231,000	277,200	38,700	2	256,900	308,300	39,600	3
M3	10	258,500	310,200	36,300	2	289,600	347,500	37,500	3

### LOW TEMPERATURE APPLICATIONS

BTUH @ 10° TD, -30° EVAPORATOR TEMPERATURE

MODEL	ROWS	HOT GAS DEFROST						
		0" ESP*			½" ESP*			
		DX	RECIRC OR FLOODED	CFM	DX	RECIRC OR FLOODED	CFM	HP
M2	6	105,000	126,100	34,200	95,500	114,600	28,400	5
M2	8	125,700	150,800	32,400	116,100	139,300	27,200	5
M2	10	149,200	179,000	31,000	135,900	163,000	25,800	5
M3	6	147,900	177,400	49,500	134,900	160,900	41,100	5
M3	8	171,800	206,200	47,000	161,800	194,200	39,000	5
M3	10	204,800	245,800	44,400	189,300	227,200	36,900	5

\*External Static Pressure

**NOTES:**

**AIR FLOW RESTRICTION:** Install not less than 36" from back wall.

**CAPACITY CORRECTION:** Maximum of 10°TD recommended. Multiply capacity by 0.8 for 8°TD.

**MOTOR CONTACTORS:** Contactors required for all units. Available as option.

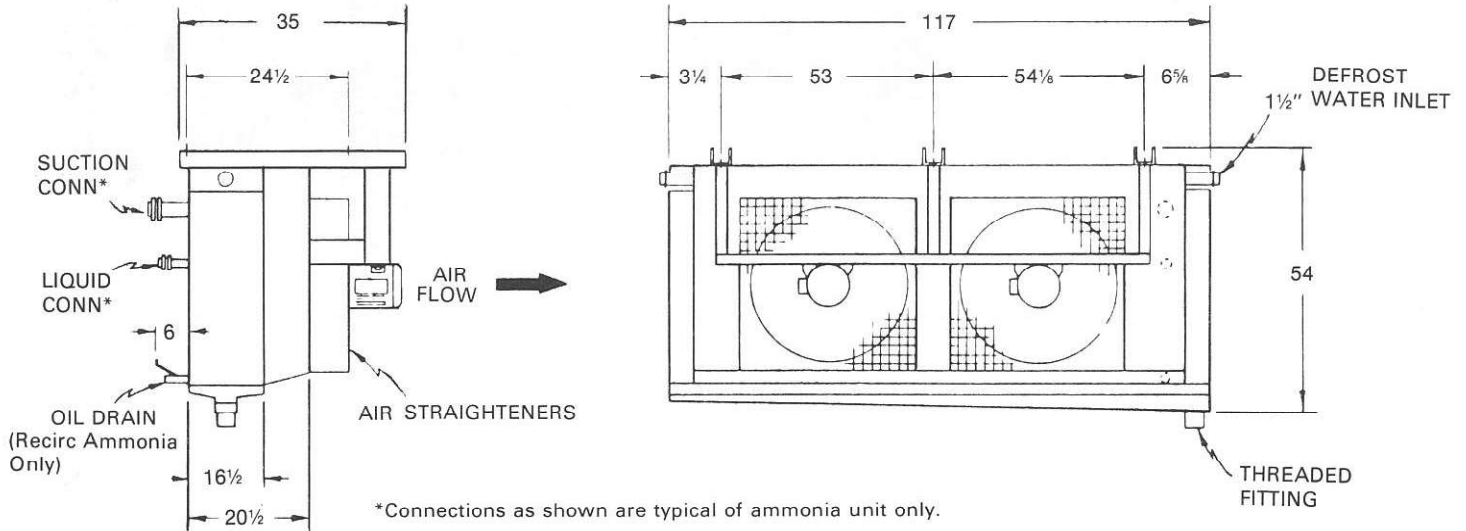
**WATER DEFROST:** Includes water distribution pan with distribution tubes along the full length of coil for even defrost. Russell's unique water level sightglass included.

**HOT GAS DEFROST:** Unit piping and controls per customer specification.

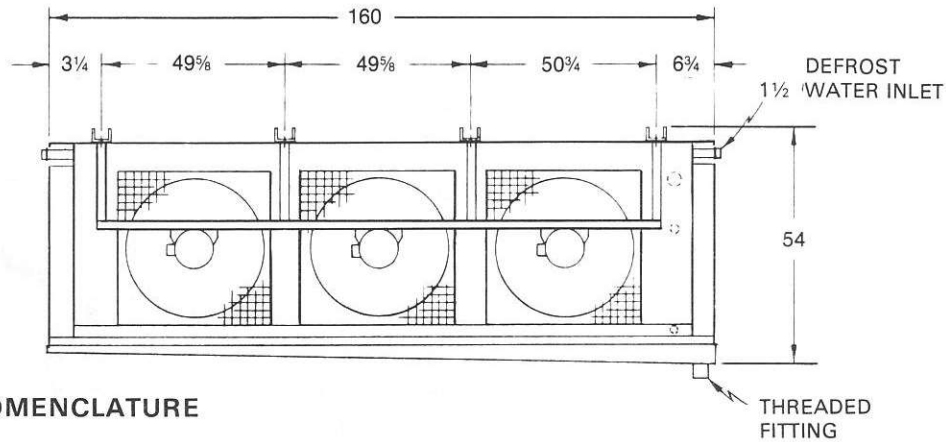
**MOTOR AMPS**

MODEL	2 HP		3 HP		5 HP	
	230/3	460/3	230/3	460/3	230/3	460/3
M 2	15.4	7.7	22.4	11.2	35.2	17.6
M 3	23.1	11.6	33.6	16.8	52.8	26.4

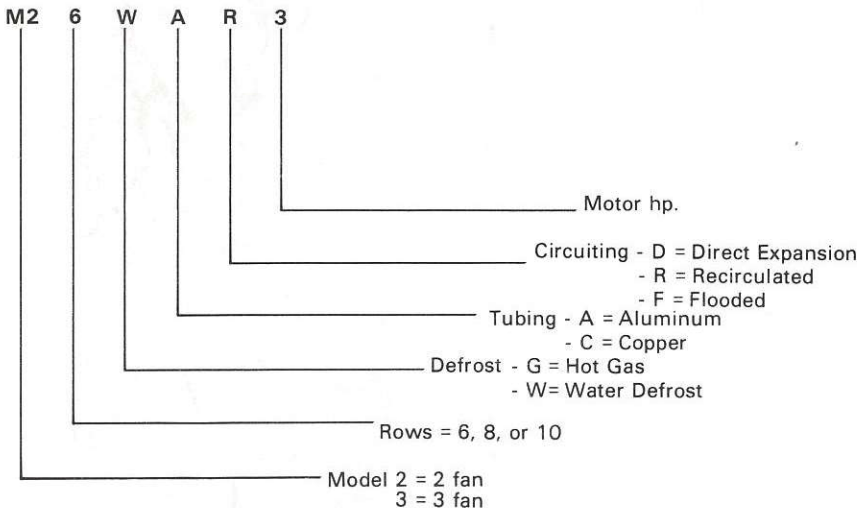
**MOUNTING SPECIFICATIONS / Mounting and Dimensions**



\*Connections as shown are typical of ammonia unit only.



**MODEL NOMENCLATURE**



**ORDERING INFORMATION**

1. Model number
2. Type Defrost
3. Electrical characteristics
4. Required capacity
5. Box temperature
6. Suction temperature
7. Condensing pressure
8. Type refrigerant
9. Air volume
10. External static pressure
11. Drain location
12. Unusual operating conditions

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**Russell**

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