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XL Evaporative Condensers

Featuring Premium Quality Hot-Dip Galvanized After Fabrication Construction and the Remarkable Patented Technology of the PowerFlow™ Spray Nozzle

YORK Refrigeration Systems

Contents

Our Commitment to Quality

Frick® is the recognized leader in the industrial refrigeration and commercial cooling industries for providing heavy-duty, energy efficient, high performance products. With over 50 years of experience in the design and manufacture of thermal transfer products, Our commitment to quality and performance is proven in thousands of applications worldwide. From food processing, distribution, and storage, to office buildings, condominiums, schools, hospitals and industrial plants—**Frick** equipment can be found providing customers with years of dependable cooling performance.

Frick customers can now enjoy the added value provided by the first comprehensive computer software program designed to aid in faster, more accurate analysis and selection of cooling equipment. The program readily accesses information concerning performance, weight, size, and capacity, and is available for all **Frick** product lines.

Frick's experience and commitment to serving the needs of the cooling equipment markets have led to the development of the industry's broadest line of evaporators, evaporative condensers, closed circuit fluid coolers and cooling towers.

The new and expanded Imeco® XL Evaporative Condenser line is the latest development from **Frick** reflecting our commitment to developing products for specific customer applications. Available in two design configurations, each XL Evaporative Condenser can incorporate *Hot Dip Galvanized After Fabrication* design features that offer enhanced corrosion resistance and longer condenser life.

The **Imeco** XLP series of Evaporative Condensers utilize two- stage axial-flow fans mounted in a close-fitting fan cylinder. Discharge guide vanes at the outlet of the first stage fan minimize prerotation of the air into the second stage fan and further maximize fan efficiency. XLP Evaporative Condensers operate with low fan horsepower—providing the required condensing capacity with as low as 50% of the fan horsepower of comparably sized centrifugal fan units.

The multistage fan design also has the additional benefit of operating at rotation and fan tip speeds slower than most conventional single-stage axial fans, providing acceptable sound levels for most industrial applications.

Imeco XLP Evaporative Condensers are ideal for unrestricted, open installations which do not require external static pressure capability, extremely low sound levels or condensing pressure control more accurate than that provided by fan cycling. They satisfy the requirements of most condensing applications with low energy consumption.

The **Imeco** XLC series of Evaporative Condensers utlize large diameter, forward-curved centrifugal fans. Centrifugal fans are inherently quiet compared to axial fans and can operate against greater static pressures. Equipped with optional capacity control dampers, XLC Evaporative Condensers are ideally suited for applications requiring close control of condensing pressure.

During periods of low ambient wet bulb temperature or light loads, operating energy can be reduced by furnishing XLC Evaporative Condensers with capacity control dampers, two-speed fan motors or Imeco's Pony-Motor fan system. The Pony-Motor fan system utilizes two, single-speed fan motors and drive assemblies on either end of the fan shaft. One motor is sized for maximum performance and the other motor is sized for approximately 1/3 of the design horsepower and 2/3 of design fan speed. The motors operate independently and provide control similar to that achieved with a two-speed/two-winding fan motor, with the additional benefit of standby capacity.

HOT DIP GALVANIZED AFTER FABRICATION
THE MOST EFFECTIVE METHOD OF CORROSION PROTECTION

The critical components—coil, fan casing, and pan sections—are *Hot Dip Galvanized After Fabrication* as standard on all Imeco® model XL evaporative condensers.

Hot Dip Galvanized After Fabrication is the most effective method of protecting steel against corrosion. Applied by immersing fabricated articles in a bath of molten zinc, the galvanized coating is metallurgically bonded to the underlying steel and forms an impervious barrier between the steel and the corrosive environment. It does not adhere to the surface like paint, it becomes part of the surface. At the interface, the steel and zinc are combined into an iron-zinc alloy, so it won't peel away or crumble.

Hot Dip Galvanized After Fabrication withstands rough handling during shipping and erection. If small areas of the coating are mechanically damaged, the zinc on neighboring areas will protect the exposed steel from corrosion by sacrificial action. If the steel is only painted, underfilm rust causes the paint to blister and peel away. Furthermore, because galvanizing is accomplished by total immersion, all parts of the steel fabrication become fully coated and protected, including areas inaccessible and hard to reach with paints.

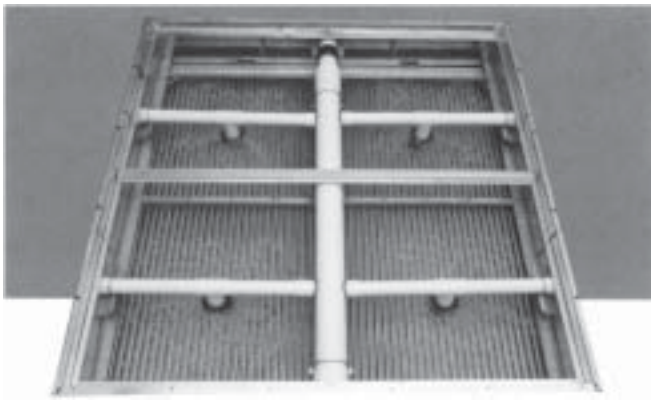
CONDENSING COIL
The XL condensers utilize eddy-current tested, .060" heavy-wall coils to assure long life. Coil circuits are staggered in the direction of the air flow to ensure maximum air turbulence and water coverage across the coil for optimum heat transfer performance. All circuits are adequately pitched to provide free and complete drainage.

The condensing coil assembly is supported by a welded structural steel frame. The entire coil assembly including the framework is Hot Dip Galvanized After Fabrication. As an alternative, for the ultimate in condenser quality, we offer Schedule 40, Grade A pipe coils.

PUMP AND SPRAY PIPING
The spray water circulating pump is a close-coupled centrifugal unit with a ductile iron housing, closed impeller, mechanical seal, and is driven by a TEFC motor with a 1.15 service factor. The pump is mounted vertically under an all-weather hood to permit self draining and is completely piped to the spray system inlet connection. All external pump piping is SCH 40 PVC pipe. The piping includes a bleed line with adjustable valve located between the pump discharge and overflow connection to meter the necessary water bleed-off.

SPRAY ASSEMBLY
The XLP Series evaporative condensers feature patented PowerFlow™ nonclogging spray design. The PowerFlow™ nozzle is a low pressure nozzle, operating at just 1-5 psi at the header inlet, which minimizes the consumed pumping horsepower. The remarkable PowerFlow™ nozzle is spring-loaded to compensate for flow variances and to prevent contaminants from stopping flow. Under normal operation, the PowerFlow™ nozzle opening is over 25 times as large than conventional nozzles. However, the spring operation opens to more than 100 times conventional nozzles to allow passage of large clumps of debris. By ensuring a consistent, uninterrupted flow of water over the entire coil, the PowerFlow™ nozzle maximizes the lifetime efficiency of your evaporative condenser through the elimination of scale-producing, clogged nozzles.

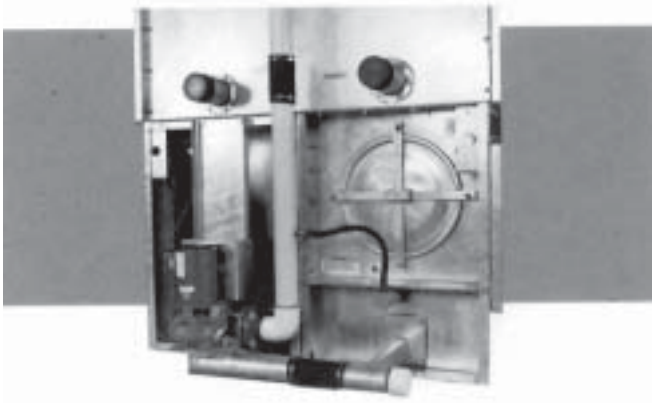
For XLC units, the noncorroding PVC spray pipes provide complete and even water coverage from low pressure, closely spaced, fixed-orifice, nonclogging ABS spray nozzles. This very efficient spray arrangement creates an overlapping spray pattern that gives excellent coverage throughout the coil, reducing scale formation under all operating conditions.



MOISTURE ELIMINATORS
The XL multiple break design eliminator provides very efficient removal of water droplets and mist from the air system. These small, highly efficient eliminators can easily be removed for coil and spray assembly inspection.

The eliminators are constructed of noncorroding PVC for maximum protection against even the most corrosive atmospheres.

As an option, the eliminators are also available as galvanized steel sections mounted in a heavy-gauge steel framework *Hot Dip Galvanized After Fabrication* when required.



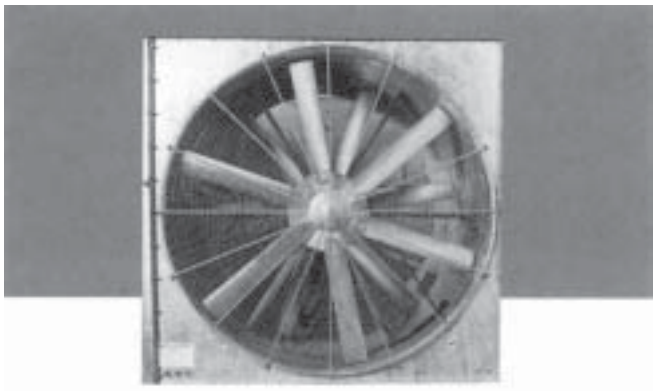
WATER PAN SECTION

The large circular access opening at the pump end of the pan provides easy access for internal inspection and periodic maintenance. The brass float valve and the stainless steel strainer are conveniently located near the access opening for easy adjustment and cleaning.

FAN SECTION

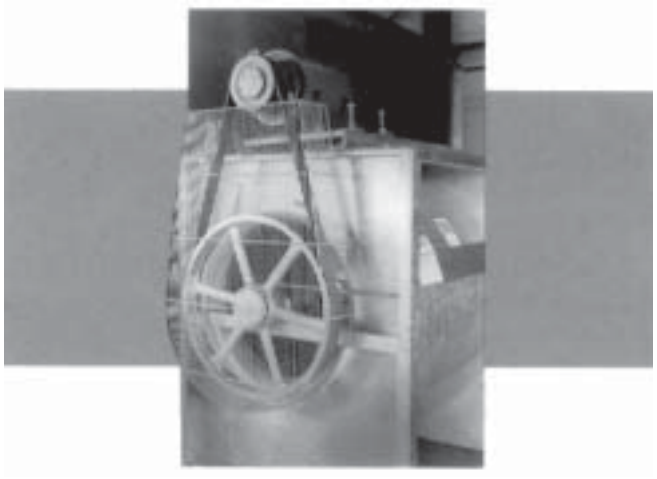
All XLP condensers use two-stage, heavy-duty cast aluminum vane axial fans mounted in a fan orifice tube with air guides mounted between the first and second-stage fans to straighten the air between the fans, improving fan performance. The fans are designed to run at low rpm to reduce wear and noise.

Fan shafts are supported by heavy-duty, self-aligning ball bearings with locking collar. Bearings are conservatively sized for long life. Bearing lubrication is accomplished through grease fittings extended to the outside casing. Fan housing, including orifice panel, tube, and vanes are a welded assembly of heavy-gauge steel.



A convex-shaped heavy-duty *Hot Dip Galvanized After Fabrication* fan guard protects the fans during operation. The guards can be easily removed for access to fans, shafts, and bearings. V-belt drives are designed for a minimum of 150% of the fan motor nameplate horsepower. Motors are mounted on a heavy duty base designed for easy accessibility for belt adjustment. The solid orifice panels and lower casings protect the motor(s) from the weather. Fan motors are prewired to the outside of the casing.

All XLC condensers use heavy-duty, forward curved centrifugal fans selected to operate at low rpm for long life and quiet operation. Fans are mounted on a steel shaft supported by oversized, self-aligning, heavy-duty ball bearings with extended lubrication points for easy service. Fans are statically and dynamically balanced individually and then assembled and balanced as a complete unit. Fan wheels are constructed of heavy gauge steel. The fan housing is constructed of heavy-gauge steel and is *Hot Dip Galvanized After Fabrication*. All fan and belt guards meet OSHA requirements and are *Hot Dip Galvanized After Fabrication* as standard. V-belt drives are designed for a minimum of 150% of the fan motor nameplate horsepower. Rugged motor bases are provided with conveniently located belt adjustment. Motor covers provide complete protection against all weather conditions.



FAN MOTOR

TEFC, ball-bearing motors with a 1.15 service factor are standard on all XLP and XLC condensers. Fan motors are mounted on heavy duty frames and easily accessible for belt adjustment.

COIL CASING

XL coil casings are constructed of heavy-duty *Hot Dip Galavanized After Fabrication* steel. All casing panels are flanged. Internal structural members are used to provide added integrity. As an alternative, we can offer the condenser sections above the pan section to be constructed from G-235 mill galvanized steel. This is for those applications which are first cost sensitive and where maximum condenser longevity is not a premium concern.

This method of selection is used when the refrigeration system utilizes an open-type reciprocating compresor. The **Frick** XL condenser model numbers correspond to the actual Evaporator Tons in a refrigeration system using refrigerant R-22 at system operating conditions of 40°F Suction Temperature, 78°F Wet Bulb Temperature and 105°F Condensing Temperature.

Table 1, page 7 shows the Suction Temperature capacity factors which must be applied when the system refrigerant is R-22 and operating conditions other than 40°F Suction Temperature, and for ammonia (R-717) at Suction Temperatures other than 20°F.

NOTE: In Two-Stage Reciprocating Compressor Systems, Base the Suction Temperature capacity factor on the intermediate temperature.

Table 2, page 7 shows the Condensing Temperature and Wet Bulb Temperature capacity factors which must be applied when the system refrigerant is R-22 and operating conditions other than 105°F Condensing Temperature and 78°F Wet Bulb Temperature.

Table 3, page 7 shows the Condensing Temperature and Wet Bulb Temperature capacity factors which must be applied when the system refrigerant is ammonia.

The System Evaporator Tons must be multiplied by these capacity factors to determine the correct XL condenser to be used.

TO MAKE SELECTION WITHOUT DESUPERHEATER

The following information must be known:
Total System Evaporator Tons (1 Ton = 12,000 BTUH)
Type Refrigerant
Suction Temperature (°F)
Condensing Temperature (°F)
Wet Bulb Temperature (°F)

SELECTION PROCEDURE

Step 1
Establish the Suction Temperature capacity factor from Table 1 for the proper refrigerant and Suction Temperature.

Step 2
Establish the capacity factor for the Condensing and Wet Bulb Temperature for the proper refrigerant from Table 2 or 3.

Step 3
Multiply the System Evaporator Tons by the correct capacity factors obtained in Steps 1 and 2.

Step 4
From the XL Model Lineups on page 10, select an XLP or an XLC Condenser with a MODEL NUMBER that equals or exceeds the corrected Evaporator Tons determined in Step 3.

EXAMPLE 1

Known:
Refrigerant = R-22
Evaporator Tons = 375 tons
Suction Temperature = +20°F
Condensing Temperature = +105°F
Wet Bulb Temperature = +78°F

Solution
Table 1 shows a Suction Temperature capacity factor of 1.06 for +20°F Suction Temperature.

Table 2 shows a capacity factor for +78°F Wet Bulb and +105°F Condensing Temperatures of 1.00.

Multiply the System Evaporator Tons by the correction factors:

375 x 1.06 x 1.00 = 397.5

From the XL Model Lineups on page 10, select a condenser with a MODEL NUMBER equal to or greater than 397.5. In this example, select an XLP-M 405, XLP-L 405 or an XLC-410-2.

EXAMPLE 2

Known:
Refrigerant = Ammonia
Evaporator Tons = 150 tons
Suction Temperature = +20°F
Condensing Temperature = +96.3°F
Wet Bulb Temperature = +78°F

Solution
Table 1 shows a Suction Temperature capacity factor of 1.00 for +20°F Suction Temperature.

Table 3 shows a capacity factor 1.41 for +78°F Wet Bulb and +96.3°F Condensing Temperature.

Multiply the System Evaporator Tons by the correction factors:

150 x 1.00 x 1.41 = 211.5

From the XL Model Lineups on page 10, select a condenser with a MODEL NUMBER equal to or greater than 211.5. In this example, select an XLP-S 220 or an XLC-220.

TO MAKE SELECTION WITH DESUPERHEATER

Follow the same procedure as outlined in Steps 1, 2 and 3, but also multiply the Evaporator Tons by the desuperheater capacity factor obtained from Table 4 for the appropriate system Suction Temperature.

From the XL Model Lineups, select an XL condenser with a MODEL NUMBER that equals or exceeds the corrected Evaporator Tons as determined.

TABLE 1—SUCTION TEMPERATURE CAPACITY FACTORS

Suction Temperature (°F)	–30°	–20°	–10°	0°	+10°	+20°	+30°	+40°	+50°
Ammonia (R-717)	1.18	1.14	1.10	1.06	1.03	1.00	0.97	0.94	0.91
R-22	1.28	1.22	1.18	1.14	1.10	1.06	1.03	1.00	0.97

TABLE 2—EVAPORATOR TON CAPACITY FACTORS—R-22

Cond. Temp.	Condensing Pressure (psig)		Entering Air Wet Bulb Temperature (°F)																
(°F)	R-22	R-134a	50°	55°	60°	62°	64°	66°	68°	70°	72°	74°	75°	76°	77°	78°	79°	80°	82°	84°
60	101.6	57.4	4.00	7.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	111.2	64.0	2.56	3.57	6.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70	121.4	71.1	1.90	2.38	3.45	4.17	5.55	—	—	—	—	—	—	—	—	—	—	—	—	—
75	132.2	78.6	1.52	1.79	2.27	2.56	2.94	3.57	4.54	6.25	—	—	—	—	—	—	—	—	—	—
80	143.6	86.7	1.28	1.43	1.69	1.92	2.04	2.27	2.63	3.13	3.85	—	—	—	—	—	—	—	—	—
85	155.7	95.2	1.04	1.16	1.35	1.43	1.54	1.67	1.82	2.04	2.27	2.63	2.86	3.13	—	—	—	—	—	—
90	168.4	104.3	0.90	0.99	1.11	1.18	1.25	1.33	1.43	1.54	1.67	1.85	1.96	2.04	2.17	2.33	2.50	2.70	3.23	—
95	181.8	113.9	0.78	0.85	0.93	0.97	1.02	1.06	1.12	1.19	1.27	1.35	1.41	1.45	1.52	1.59	1.67	1.75	2.00	2.27
100	195.9	124.1	0.70	0.75	0.81	0.83	0.86	0.89	0.93	0.97	1.02	1.08	1.11	1.15	1.18	1.22	1.27	1.32	1.45	1.59
105	210.8	134.9	0.63	0.66	0.70	0.72	0.75	0.77	0.80	0.83	0.86	0.90	0.93	0.94	0.97	1.00	1.03	1.06	1.14	1.23
110	226.4	146.3	0.57	0.60	0.63	0.65	0.66	0.68	0.70	0.72	0.75	0.78	0.79	0.81	0.83	0.85	0.87	0.89	0.94	1.00
115	242.7	158.4	—	0.54	0.57	0.58	0.59	0.61	0.62	0.64	0.66	0.68	0.69	0.70	0.71	0.72	0.74	0.75	0.78	0.82
120	259.9	171.1	—	—	—	—	—	0.53	0.55	0.56	0.57	0.59	0.60	0.61	0.62	0.63	0.64	0.65	0.67	0.70

TABLE 3—EVAPORATOR TON CAPACITY FACTORS—AMMONIA

Cond. Temp.	Condensing Pressure (psig)	Entering Air Wet Bulb Temperature (°F)																	
(°F)	R-717	50°	55°	60°	62°	64°	66°	68°	70°	72°	74°	75°	76°	77°	78°	79°	80°	82°	84°
60	92.9	3.53	6.71	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	103.1	2.35	3.36	6.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70	114.1	1.81	2.24	3.20	4.03	5.22	—	—	—	—	—	—	—	—	—	—	—	—	—
75	125.8	1.42	1.81	2.14	2.43	2.82	3.36	3.71	5.88	—	—	—	—	—	—	—	—	—	—
80	138.3	1.17	1.33	1.60	1.74	1.88	2.14	2.47	2.82	3.53	—	—	—	—	—	—	—	—	—
85	151.7	1.00	1.10	1.26	1.37	1.47	1.60	1.76	1.93	2.20	2.52	2.71	2.94	—	—	—	—	—	—
90	165.9	0.86	0.95	1.05	1.11	1.18	1.26	1.36	1.47	1.60	1.76	1.88	1.96	2.07	2.20	2.39	2.56	3.00	—
95	181.1	0.75	0.82	0.89	0.93	0.98	1.02	1.08	1.14	1.22	1.31	1.36	1.40	1.45	1.52	1.60	1.70	1.96	2.24
96.3	185.1	0.73	0.78	0.86	0.90	0.93	0.98	1.02	1.08	1.13	1.21	1.25	1.31	1.36	1.41	1.48	1.57	1.78	2.04
100	197.2	0.67	0.72	0.78	0.80	0.83	0.86	0.89	0.93	0.99	1.04	1.07	1.10	1.13	1.17	1.22	1.27	1.40	1.55
105	214.2	0.60	0.64	0.67	0.70	0.72	0.74	0.77	0.80	0.84	0.87	0.89	0.91	0.93	0.96	0.99	1.01	1.08	1.17
110	232.3	0.54	0.57	0.60	0.62	0.63	0.65	0.67	0.69	0.72	0.75	0.77	0.78	0.80	0.82	0.83	0.85	0.90	0.95
115	251.5	—	0.52	0.55	0.56	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69	0.70	0.71	0.73	0.74	0.78	0.82
120	271.7	—	—	—	—	—	0.52	0.53	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.63	0.65	0.67

TABLE 4—AMMONIA DESUPERHEATER CAPACITY FACTORS

Suction Temperature (°F)	–30°	–20°	–10°	0°	+10°	+20°	+30°	+40°	+50°
Suction Pressure (psig)	1.6"	3.60	9.00	15.70	23.80	33.50	45.00	58.60	74.50
Capacity Factor	0.78	0.80	0.82	0.84	0.86	0.88	0.90	0.92	0.94

This selection method is generally used when the refrigeration system utilizes rotary screw or hermetic reciprocating compressors. It can also be used when selecting a condenser in a system with an open type reciprocating compressor. Consult factory for centrifugal compressor applications.

The Total Heat of Rejection (THR) is the total of the compressor evaporator capacity at design operating conditions in BTUH and the heat input of the compressor Motor Brake Horsepower in BTUH.

NOTE: In Multistage Open Compressor Systems, the Total Heat of Rejection is calculated from the high state compressor evaporator capacity and compressor Motor Brake Horsepower in BHP.

To determine the THR for open type or hermetic compressors, use the following formulas:

OPEN COMPRESSORS

Total Heat of Rejection (THR) = Compressor Evaporator Capacity (BTUH) + Compressor BHP x 2545.

HERMETIC COMPRESSORS

Total Heat of Rejection (THR) = Compressor Evaporator Capacity (BTUH) + Compressor KW x 3415.

Tables 5 and 6 show the base heat of rejection of the XL line of evaporative condensers when applied in a system operating at 78°F Wet Bulb Temperature and 105°F Condensing Temperature, and using refrigerants R-22 and Ammonia at other specific Condensing and Wet Bulb Temperatures.

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 opposiste end from the pump section.
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. Consult factory for selection.

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.

TO MAKE UNIT SELECTION

The following information must be known:

Total Heat of Rejection required by the system.
Type refrigerant used in the system.
Condensing Temperature (°F)
Wet Bulb Temperature (°F)

Step 1

Establish the capacity factor for Condensing Temperature and Wet Bulb Temperature for the proper refrigerant from Table 5 or 6.

Step 2

Multiple the system Total Heat of Rejection by the capacity factory established in Step 1.

Step 3

From page 10, select an XLP or XLC Evaporative Condenser with a Base Heat of Rejection equal to or greater than the Total Heat of Rejection requirement established in Step 2.

EXAMPLE 1

Rotary Screw Compressor (Refrigerant Cooled)

Known:

Refrigerant = Ammonia
Compressor Evaporator Capacity = 320 tons
Compressor Brake Horsepower = 400
Condensing Temperature = +95°F
Wet Bulb Temperature = +76°F

Solution

Establish Total Heat of Rejection.

Compressor Evaporator
Capacity = 320 x 12,000 = 3,840,000 BTUH

Compressor
BHP input = 400 x 2,545 = 1,018,000 BTUH

Total Heat of Rejection = 4,858,000 BTUH

Refer to Table 6 for the capacity factor for 95°F Condensing Temperature and 76°F Wet Bulb Temperature. The capacity factor is 1.36.

Multiply 4,858,000 x1.36=6,606,880 BTUH (6,606.9 MBH).

From page 10 select a model with a base THR in MBH equal to or greater than 6,606.9 MBH. Select an XLP-ML 450 or an XLC-460-2 in this example.

EXAMPLE 2 Hermetic Compressors

Known: Refrigerant = R-22 Condensing Temperature = +95°F
Compressor Evaporator Capacity = 100 tons Wet Bulb Temperature = +76°F
Compressor KW = 75

Solution: Establish Total Heat of Rejection.

Compressor Evaporator Capacity = 100 x 12,000 = 1,200,000 BTUH
Compressor KW input = 75 x 3,415 = 256,125 BTUH
Total Heat of Rejection = 1,456,125 BTUH

Table 5 shows a capacity factor of 1.49 for 95°F Condensing Temperature and 76°F Wet Bulb Temperature of R-22 refrigerant.
Multiply the system Total Heat of Rejection of 1,456,125 BTUH by the established capacity factor of 1.49:

1,456,125 x 1.49 = 2,169,626 BTUH (2,169,6 MBH)

From page 10, select a model with a base THR in MBH equal to or greater than 2,169.6 MBH. In this example, select an XLP-S 150 or XLC-150.

TABLE 5—HEAT OF REJECTION CAPACITY FACTORS—R-22

Cond. Temp.	Condensing Pressure (psig)		Entering Air Wet Bulb Temperature (°F)																	
(°F)	R-22	R-134a	50°	55°	60°	62°	64°	66°	68°	70°	72°	74°	75°	76°	77°	78°	79°	80°	82°	84°
60	101.6	57.4	4.17	7.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	111.2	64.0	2.70	3.85	7.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70	121.4	71.1	1.96	2.50	3.64	4.54	5.88	—	—	—	—	—	—	—	—	—	—	—	—	—
75	132.2	78.6	1.59	1.85	2.38	2.70	3.12	3.85	4.76	—	—	—	—	—	—	—	—	—	—	—
80	143.6	86.7	1.28	1.47	1.75	1.88	2.08	2.35	2.70	3.23	—	—	—	—	—	—	—	—	—	—
85	155.7	95.2	1.10	1.22	1.39	1.49	1.61	1.75	1.92	2.17	2.44	2.78	2.94	3.23	—	—	—	—	—	—
90	168.4	104.3	0.93	1.00	1.15	1.22	1.30	1.39	1.47	1.59	1.72	1.89	2.00	2.13	2.27	2.38	2.56	2.78	3.23	—
95	181.8	113.9	0.80	0.85	0.96	1.01	1.05	1.11	1.16	1.22	1.28	1.37	1.43	1.49	1.56	1.64	1.72	1.82	2.08	2.38
100	195.9	124.1	0.71	0.76	0.82	0.85	0.88	0.91	0.94	0.98	1.03	1.09	1.11	1.15	1.19	1.23	1.28	1.33	1.47	1.64
105	210.8	134.9	0.63	0.66	0.70	0.72	0.75	0.77	0.80	0.83	0.86	0.90	0.92	0.94	0.97	1.00	1.03	1.06	1.14	1.23
110	226.4	146.3	0.56	0.59	0.62	0.64	0.65	0.68	0.69	0.72	0.75	0.78	0.79	0.81	0.82	0.84	0.86	0.88	0.93	0.98
115	242.7	158.4	—	0.52	0.55	0.56	0.58	0.59	0.61	0.62	0.64	0.66	0.67	0.68	0.69	0.70	0.71	0.72	0.75	0.79
120	259.9	171.1	—	—	—	—	—	0.51	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.64	0.66

TABLE 6—HEAT OF REJECTION CAPACITY FACTORS—AMMONIA

Cond. Temp.	Condensing Pressure (psig)	Entering Air Wet Bulb Temperature (°F)																	
(°F)	R-717	50°	55°	60°	62°	64°	66°	68°	70°	72°	74°	75°	76°	77°	78°	79°	80°	82°	84°
60	92.9	3.78	7.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	103.1	2.47	3.49	6.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70	114.1	1.86	2.34	3.24	4.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
75	125.8	1.46	1.72	2.19	2.47	2.89	3.49	4.39	6.18	—	—	—	—	—	—	—	—	—	—
80	138.3	1.17	1.33	1.60	1.77	1.94	2.19	2.52	2.96	3.68	4.86	5.91	—	—	—	—	—	—	—
85	151.7	1.01	1.11	1.26	1.37	1.46	1.60	1.74	1.94	2.19	2.52	2.72	3.02	—	—	—	—	—	—
90	165.9	0.86	0.91	1.03	1.10	1.16	1.25	1.33	1.45	1.58	1.74	1.84	1.94	2.06	2.19	2.34	2.52	2.89	—
95	181.1	0.73	0.78	0.88	0.92	0.96	1.01	1.05	1.11	1.17	1.25	1.30	1.35	1.40	1.48	1.56	1.64	1.86	2.16
96.3	185.1	0.71	0.75	0.83	0.87	0.90	0.94	0.99	1.04	1.09	1.16	1.20	1.26	1.31	1.36	1.43	1.51	1.72	1.97
100	197.2	0.64	0.69	0.75	0.77	0.80	0.82	0.86	0.89	0.93	0.98	1.01	1.04	1.08	1.11	1.16	1.21	1.33	1.48
105	214.2	0.57	0.60	0.64	0.66	0.68	0.70	0.73	0.76	0.79	0.82	0.84	0.87	0.88	0.91	0.94	0.96	1.03	1.11
110	232.3	0.51	0.53	0.56	0.58	0.59	0.61	0.63	0.65	0.67	0.70	0.71	0.73	0.75	0.76	0.78	0.80	0.84	0.89
115	251.5	—	0.47	0.50	0.51	0.52	0.53	0.55	0.56	0.58	0.60	0.61	0.62	0.63	0.64	0.65	0.67	0.70	0.73
120	271.7	—	—	—	—	—	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.53	0.54	0.55	0.56	0.58	0.60

IMECO XL EVAPORATIVE CONDENSERS
SPECIFICATIONS - ENGINEERING DATA - DIMENSIONS

XLP Model	Heat Rejection (MBH)
S 90	1,323.0
S 100	1,470.0
S 110	1,617.0
S 115	1,690.5
S 120	1,764.0
S 125	1,837.5
S 130	1,911.0
S 135	1,984.5
S 140	2,058.0
S 145	2,131.5
S 150	2,205.0
M 155	2,278.5
S 155	2,278.5
S 160	2,352.0
S 165	2,425.5
M 170	2,499.0
S 170	2,499.0
S 175	2,572.5
S 180	2,646.0
M 185	2,719.5
S 185	2,719.5
M 190	2,793.0
S 190	2,793.0
M 195	2,866.5
S 195	2,866.5
M 200	2,940.0
S 200	2,940.0
M 205	3,013.5
S 205	3,013.5
M 210	3,087.0
S 210	3,087.0
M 220	3,234.0
S 220	3,234.0
M 225	3,307.5
S 230	3,381.0
M 235	3,454.5
ML 235	3,454.5
M 240	3,528.0
S 240	3,528.0
M 245	3,601.5
S 250	3,675.0
M 260	3,822.0
ML 260	3,822.0
ML 265	3,895.5
M 270	3,969.0
ML 270	3,969.0
S 270	3,969.0
M 280	4,116.0
ML 280	4,116.0
M 285	4,189.5
L 290	4,263.0

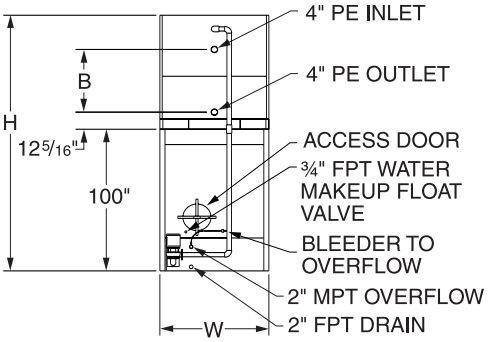
XLP Model	Heat Rejection (MBH)
ML 290	4,263.0
ML 295	4,336.5
L 300	4,410.0
ML 300	4,410.0
M 305	4,483.5
ML 305	4,483.5
M 310	4,557.0
L 315	4,630.5
M 320	4,704.0
ML 320	4,704.0
L 330	4,851.0
ML 330	4,851.0
L 335	4,924.5
ML 335	4,924.5
M 340	4,998.0
L 345	5,071.5
ML 345	5,071.5
L 350	5,145.0
ML 350	5,145.0
L 355	5,218.5
M 355	5,218.5
XL 355	5,218.5
M 360	5,292.0
M 370	5,439.0
L 375	5,512.5
ML 380	5,586.0
ML 385	5,659.5
L 390	5,733.0
XL 390	5,733.0
M 395	5,806.5
ML 395	5,806.5
XL 395	5,806.5
L 405	5,953.5
M 405	5,953.5
ML 410	6,027.0
L 415	6,100.5
XL 415	6,100.5
ML 425	6,247.5
XL 425	6,247.5
M 430	6,321.0
ML 430	6,321.0
L 435	6,394.5
XL 435	6,394.5
XL 440	6,468.0
ML 445	6,541.5
ML 450	6,615.0
L 460	6,762.0
XL 470	6,909.0
L 475	6,982.5
ML 475	6,982.5
XL 475	6,982.5

XLP Model	Heat Rejection (MBH)
ML 490	7,203.0
XL 495	7,276.5
L 505	7,423.5
XL 505	7,423.5
L 510	7,497.0
XL 515	7,570.5
L 520	7,644.0
ML 520	7,644.0
XL 530	7,791.0
XL 535	7,864.5
L 565	8,305.5
L 575	8,452.5
XL 580	8,526.0
L 590	8,673.0
XL 590	8,673.0
XL 600	8,820.0
XL 630	9,261.0
L 635	9,334.5
XL 640	9,408.0
XL 660	9,702.0
XL 665	9,775.5
XL 710	10,437.0
XL 715	10,510.0
XL 745	10,951.0
XL 760	11,172.0
XL 765	11,245.5
XL 785	11,539.5
XL 805	11,833.5
XL 825	12,127.5
XL 830	12,201.0
XL 845	12,421.5
XL 865	12,715.5
XL 870	12,789.0
XL 895	13,156.5
XL 940	13,818.0
L 810-2	11,907.0
M 810-2	11,907.0
ML 820-2	12,054.0
L 830-2	12,201.0
XL 830-2	12,201.0
ML 850-2	12,495.0
XL 850-2	12,495.0
M 860-2	12,642.0
ML 860-2	12,642.0
L 870-2	12,789.0
XL 870-2	12,789.0
XL 880-2	12,936.0
ML 890-2	13,083.0
ML 900-2	13,230.0
L 920-2	13,524.0
XL 940-2	13,818.0

XLP Model	Heat Rejection (MBH)
L 950-2	13,965.0
ML 950-2	13,965.0
XL 950-2	13,965.0
ML 980-2	14,406.0
XL 990-2	14,553.0
L 1010-2	14,847.0
XL 1010-2	14,847.0
L 1020-2	14,994.0
XL 1030-2	15,141.0
L 1040-2	15,288.0
ML 1040-2	15,288.0
XL 1060-2	15,582.0
XL 1070-2	15,729.0
L 1130-2	16,611.0
L 1150-2	16,905.0
XL 1160-2	17,052.0
L 1180-2	17,346.0
XL 1180-2	17,346.0
XL 1200-2	17,640.0
XL 1260-2	18,522.0
L 1270-2	18,669.0
XL 1280-2	18,816.0
XL 1320-2	19,404.0
XL 1330-2	19,551.0
XL 1420-2	20,874.0
XL 1430-2	21,021.0
XL 1490-2	21,903.0
XL 1520-2	22,344.0
XL 1530-2	22,491.0
XL 1570-2	23,079.0
XL 1610-2	23,667.0
XL 1650-2	24,255.0
XL 1660-2	24,402.0
XL 1690-2	24,843.0
XL 1730-2	25,431.0
XL 1740-2	25,578.0
XL 1790-2	26,313.0
XL 1880-2	27,636.0

XLC Model	Heat Rejection (MBH)
25	367.5
28	411.6
30	441.0
35	514.5
38	558.6
40	588.0
43	632.1
50	735.0
55	808.5
58	852.6
60	882.0
68	999.6
75	1,102.5
78	1,146.6
80	1,176.0
85	1,249.5
90	1,323.0
95	1,396.5
100	1,470.0
108	1,587.6
110	1,617.0
115	1,690.5
120	1,764.0
128	1,881.6
130	1,911.0
140	2,058.0
145	2,131.5
150	2,205.0
155	2,278.5
160	2,352.0
165	2,425.5
170	2,499.0
185	2,719.5
195	2,866.5
205	3,013.5
220	3,234.0
230	3,381.0
235	3,454.5
250	3,675.0
285	4,189.5
300	4,410.0
310	4,557.0
340	4,998.0
350	5,145.0
365	5,365.5
385	5,659.5
410-2	6,027.0
440-2	6,468.0
460-2	6,762.0
470-2	6,909.0
500-2	7,350.0
570-2	8,379.0
600-2	8,820.0
620-2	9,114.0
680-2	9,996.0
700-2	10,290.0
730-2	10,731.0
770-2	11,319.0

S90-270



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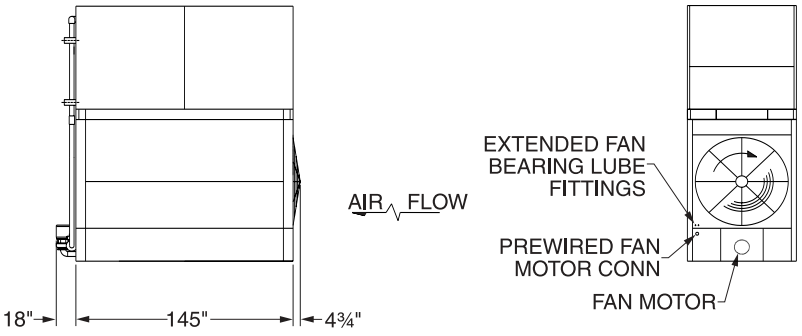


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Width W	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
S 90	63.8	17,620	1.5	200	1.5	3*	6†	120	159.12	60.25	22.87	100	5,220	8,539	3,170
S 100	70.9	21,680	3	200	1.5	3*	6†	120	159.12	60.25	22.87	100	5,230	8,549	3,170
S 110	78	25,460	5	200	1.5	3*	6†	120	159.12	60.25	22.87	100	5,245	8,564	3,170
S 115	81.5	21,180	3	200	1.5	3*	6†	120	166.25	60.25	30.25	130	5,490	8,842	3,430
S 120	85.1	28,400	7.5	200	1.5	3*	6†	120	159.12	60.25	22.87	100	5,270	8,589	3,170
S 125	88.6	20,780	3	200	1.5	3*	6†	120	173.38	60.25	37.5	160	6,580	9,966	4,520
S 130	92.1	25,030	5	200	1.5	3*	6†	120	166.25	60.25	30.25	130	5,505	8,857	3,430
S 135	95.7	23,650	3	240	2	3*	6†	120	166.25	60.25	30.25	170	6,610	10,043	4,550
S 140	99.2	28,880	7.5	200	1.5	3*	6†	120	166.25	60.25	30.25	130	5,530	8,882	3,430
S 145	102.8	24,560	5	200	1.5	3*	6†	120	173.38	60.25	37.5	160	6,595	9,981	4,520
S 150	106.3	27,950	5	240	2	3*	6†	120	166.25	60.25	30.25	170	6,625	10,058	4,550
S 155	109.9	23,690	5	200	1.5	3*	6†	120	180.25	60.25	44.25	200	7,375	10,788	5,300
S 160	113.4	28,350	7.5	200	1.5	3*	6†	120	173.38	60.25	37.5	160	6,620	10,006	4,520
S 165	117	32,250	7.5	240	2	3*	6†	120	166.25	60.25	30.25	170	6,650	10,083	4,550
S 170	120.5	27,330	7.5	200	1.5	3*	6†	120	180.25	60.25	44.25	200	7,760	11,144	5,660
S 175	124.1	34,380	10	240	2	3*	6†	120	166.25	60.25	30.25	170	6,670	10,103	4,550
S 180	127.6	33,350	5	300	3	4*	8†	150	166.25	72.75	30.25	200	7,975	12,120	5,800
S 185	131.2	31,700	7.5	240	2	3*	6†	120	173.38	60.25	37.5	210	7,680	11,154	5,480
S 190	134.7	30,120	7.5	240	2	3*	6†	120	180.12	60.25	44.25	240	8,560	12,070	6,360
S 195	138.2	37,510	7.5	300	3	4*	8†	150	166.25	72.75	30.25	200	8,000	12,145	5,800
S 200	141.8	34,870	10	240	2	3*	6†	120	173.38	60.25	37.5	210	7,700	11,174	5,480
S 205	145.3	33,130	10	240	2	3*	6†	120	180.25	60.25	44.25	240	8,580	12,090	6,360
S 210	148.9	41,670	10	300	3	4*	8†	150	166.25	72.75	30.25	200	8,020	12,165	5,800
S 220	156	36,170	7.5	300	3	4*	8†	150	173.38	72.75	37.5	250	8,850	13,044	6,650
S 230	163.1	40,180	10	300	3	4*	8†	150	173.38	72.75	37.5	250	8,870	13,064	6,650
S 240	170.2	42,900	15	300	3	4*	8†	150	173.38	72.75	37.5	250	8,880	13,074	6,650
S 250	177.3	39,480	10	300	3	4*	8†	150	180.25	72.75	44.25	300	9,930	14,174	7,710
S 270	191.4	43,480	15	300	3	4*	8†	150	180.12	72.75	44.25	300	9,940	14,184	7,890

*Male Pipe Thread
†Plain End

[1] The XL Model number represents the capacity in tons of refrigeration at +40°F Suction Temperature, +78°F Wet Bulb Temperature and +105°F Condensing Temperature for R-22. The standard right hand arrangement as shown has air inlet side on the right when facing coil connection end. Left hand arrangement can be furnished upon request.

[2] Tons capacity for ammonia (R-717) at +20°F Suction Temperature, +78°F Wet Bulb Temperature and +96.3°F Condensing Temperature.

[3] Remote units are supplied less water circulating pump(s), float valve(s) and piping between pump discharge and spray assembly inlet.

[4] Values are for water in unit and piping—remote sump must also be sized for volume in supply and drain pipes.

[5] The refrigerant charge is for ammonia (R-717). For R-22 multiply the ammonia charge by 1.93.

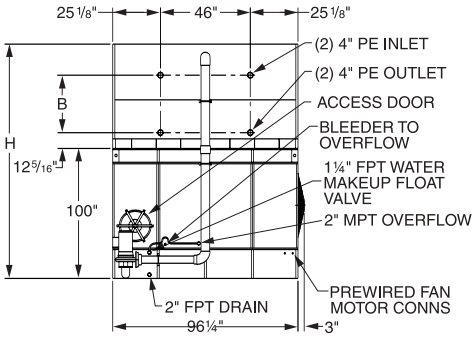
[6] Shipping weights are for units with water circulating pumps.

[7] Operating weights are based on a standard unit with pump, ammonia in the condensing coils and normal water operating level in the sump.

[8] All data in this catalog is subject to change without notice.

Do not use for construction—product drawings available on request.

M155—M860-2



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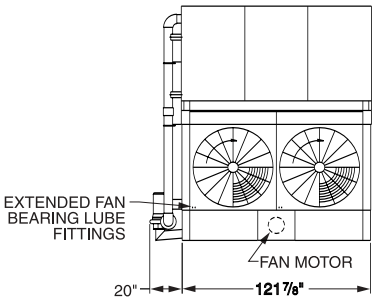

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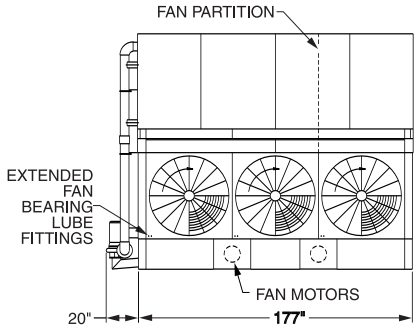

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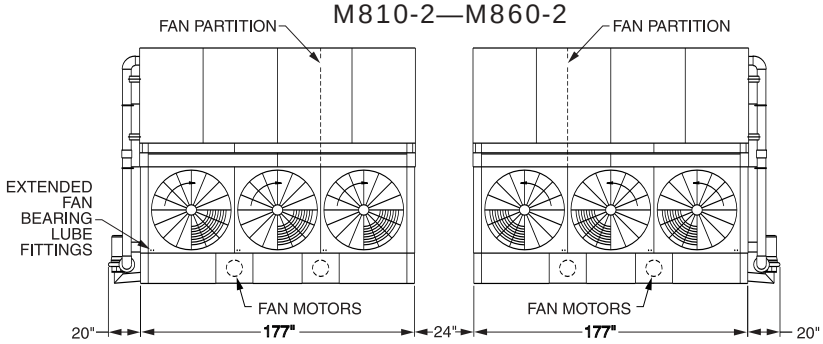
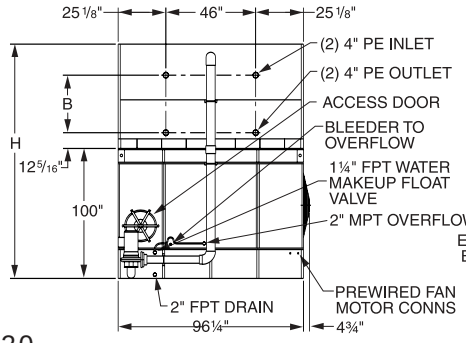


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
M 155	109.9	32,060	3	325	3	4*	8†	190	159.12	22.87	170	7,900	11,855	5,100
M 170	120.5	37,380	5	325	3	4*	8†	190	159.12	22.87	170	8,000	11,955	5,100
M 185	131.2	31,460	3	325	3	4*	8†	190	166.25	30.25	220	8,930	12,941	6,130
M 190	134.7	42,780	7.5	325	3	4*	8†	190	159.12	22.87	170	8,050	12,005	5,100
M 195	138.2	47,080	10	325	3	4*	8†	190	159.12	22.87	170	8,150	12,105	5,100
M 200	141.8	30,540	3	325	3	4*	8†	190	173.38	37.5	280	10,210	14,277	7,410
M 205	145.3	36,690	5	325	3	4*	8†	190	166.25	30.25	220	9,030	13,041	6,130
M 210	148.9	29,580	3	325	3	4*	8†	190	180.25	44.25	335	11,400	15,523	8,600
M 220	156	41,920	7.5	325	3	4*	8†	190	166.25	30.25	220	9,080	13,091	6,130
M 225	159.5	35,620	5	325	3	4*	8†	190	173.38	37.5	280	10,310	14,377	7,410
M 235	166.6	34,500	5	325	3	4*	8†	190	180.25	44.25	335	11,500	15,623	8,600
M 240	170.2	47,220	10	325	3	4*	8†	190	166.25	30.25	220	9,180	13,191	6,130
M 245	173.7	40,700	7.5	325	3	4*	8†	190	173.38	37.5	280	10,360	14,427	7,410
M 260	184.3	39,410	7.5	325	3	4*	8†	190	180.25	44.25	335	11,550	15,673	8,600
M 270	191.4	45,850	10	325	3	4*	8†	190	173.38	37.5	280	10,460	14,527	7,410
M 280	198.5	44,400	10	325	3	4*	8†	190	180.25	44.25	335	11,650	15,773	8,600
M 285	202.1	48,200	3 & 1.5	450	5	4*	8†	280	166.25	30.25	325	13,080	19,025	8,780
M 305	216.3	46,800	3 & 1.5	450	5	4*	8†	280	173.38	37.5	410	15,030	21056	10,730
M 310	219.8	56,210	5 & 3	450	5	4*	8†	280	166.25	30.25	325	13,180	19,125	8,780
M 320	226.9	45,320	3 & 1.5	450	5	4*	8†	280	180.25	44.25	490	16,830	22,936	12,530
M 335	237.5	54,580	5 & 3	450	5	4*	8†	280	173.38	37.5	410	15,130	21,156	10,730
M 340	241.1	64,530	7.5 & 5	450	5	4*	8†	280	166.25	30.25	325	13,230	19,175	8,780
M 355	251.7	52,850	5 & 3	450	5	4*	8†	280	180.25	44.25	490	16,930	23,036	12,530
M 360	255.3	69,640	10 & 5	450	5	4*	8†	280	166.25	30.25	325	13,330	19,275	8,780
M 370	262.4	62,360	7.5 & 5	450	5	4*	8†	280	173.38	37.5	410	15,180	21,206	10,730
M 395	280.1	60,390	7.5 & 5	450	5	4*	8†	280	180.25	44.25	490	16,980	23,086	12,530
M 405	287.2	70,240	10 & 5	450	5	4*	8†	280	173.38	37.5	410	15,280	21,306	10,730
M 430	304.9	68,020	10&5	450	5	4*	8†	280	180.25	44.25	490	17,080	23,186	12,530
M 810-2	574.4	140,480	(2)10&(2)5	900	(2)5	(2)4*	(2)8†	560	173.38	37.5	820	30,540	42,591	(2)10,720
M 860-2	618	136,040	(2)10&(2)5	900	(2)5	(2)4*	(2)8†	560	180.25	44.25	980	34,170	46,382	(2)12,535

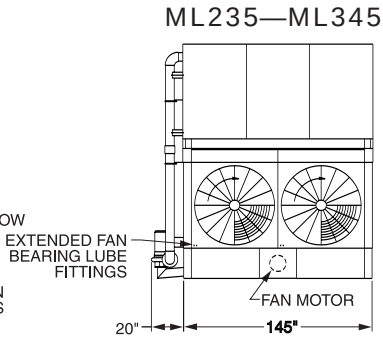
*Male Pipe Thread †Plain End

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

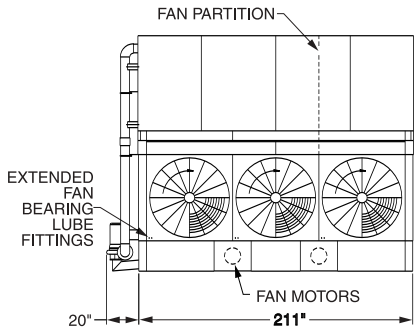
ML235—ML1040-2



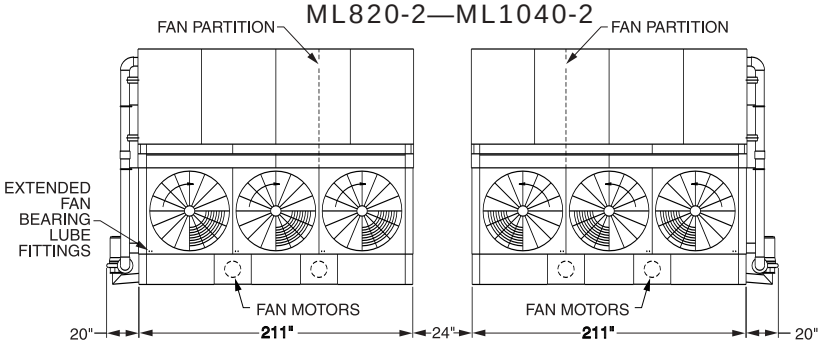
ML235—ML345



ML350—ML520



ML820-2—ML1040-2



XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
ML 235	166.6	41,950	5	400	3	4*	8†	230	166.25	30.25	265	10,330	15,194	7,230
ML 260	184.3	40,490	5	400	3	4*	8†	230	173.38	37.5	330	11,910	16,840	8,810
ML 265	187.9	48,670	7.5	400	3	4*	8†	230	166.25	30.25	265	10,430	15,294	7,230
ML 270	191.4	39,270	5	400	3	4*	8†	230	180.25	44.25	400	13,390	18,386	10,290
ML 280	198.5	53,050	10	400	3	4*	8†	230	166.25	30.25	265	10,480	15,344	7,230
ML 290	205.6	46,970	7.5	400	3	4*	8†	230	173.38	37.5	330	12,010	16,940	8,810
ML 295	209.2	57,430	15	400	3	4*	8†	230	166.25	30.25	265	10,580	15,444	7,230
ML 300	212.7	45,550	7.5	400	3	4*	8†	230	180.25	44.25	400	13,490	18,486	10,290
ML 305	216.3	51,200	10	400	3	4*	8†	230	173.38	37.5	330	12,060	16,990	8,810
ML 320	226.9	49,750	10	400	3	4*	8†	230	180.25	44.25	400	13,540	18,536	10,290
ML 330	234	57,580	15	400	3	4*	8†	230	173.38	37.5	330	12,160	17,090	8,810
ML 345	244.6	55,850	15	400	3	4*	8†	230	180.25	44.25	400	13,640	18,636	10,290
ML 350	248.2	61,670	5 & 3	575	5	4*	8†	340	166.25	30.25	390	15,390	22,600	10,490
ML 380	269.5	59,620	5 & 3	575	5	4*	8†	340	173.38	37.5	490	17,690	24,995	12,790
ML 385	273	71,540	7.5 & 5	575	5	4*	8†	340	166.25	30.25	390	15,490	22,700	10,490
ML 395	280.1	57,820	5 & 3	575	5	4*	8†	340	180.25	44.25	590	19,840	27,240	14,940
ML 410	290.7	77,980	10 & 5	575	5	4*	8†	340	166.25	30.25	390	15,540	22,750	10,490
ML 425	301.4	69,160	7.5 & 5	575	5	4*	8†	340	173.38	37.5	490	17,790	25,095	12,790
ML 430	304.9	84,420	15 & 7.5	575	5	4*	8†	340	166.25	30.25	390	15,640	22,850	10,490
ML 445	315.6	67,080	7.5 & 5	575	5	4*	8†	340	180.25	44.25	590	19,940	27,340	14,940
ML 450	319.1	75,400	10 & 5	575	5	4*	8†	340	173.38	37.5	490	17,840	25,145	12,790
ML 475	336.8	73,110	10 & 5	575	5	4*	8†	340	180.25	44.25	590	19,990	27,390	14,940
ML 490	347.5	84,790	15 & 7.5	575	5	4*	8†	340	173.38	37.5	490	17,940	25,245	12,790
ML 520	368.7	82,230	15 & 7.5	575	5	4*	8†	340	180.25	44.25	590	20,090	27,490	14,940
ML 820-2	581.5	155,960	(2)10&(2)5	1150	(2)5	(2)4*	(2)8†	680	166.25	30.25	780	31,090	45,509	(2)10,495
ML 850-2	602.8	138,320	(2)7.5&(2)5	1150	(2)5	(2)4*	(2)8†	680	173.38	37.5	980	35,580	50,189	(2)12,790
ML 860-2	609.9	168,840	(2)15&(2)7.5	1150	(2)5	(2)4*	(2)8†	680	166.25	30.25	780	31,290	45,709	(2)10,495
ML 890-2	631.2	134,160	(2)7.5&(2)5	1150	(2)5	(2)4*	(2)8†	680	180.25	44.25	1,180	39,860	54,660	(2)14,930
ML 900-2	638.2	150,800	(2)10&(2)5	1150	(2)5	(2)4*	(2)8†	680	173.38	37.5	980	35,680	50,289	(2)12,790
ML 950-2	673.7	146,220	(2)10&(2)5	1150	(2)5	(2)4*	(2)8†	680	180.25	44.25	1,180	39,960	54,760	(2)14,930
ML 980-2	695	169,580	(2)15&(2)7.5	1150	(2)5	(2)4*	(2)8†	680	173.38	37.5	980	35,880	50,489	(2)12,790
ML1040-2	737.5	164,460	(2)15&(2)7.5	1150	(2)5	(2)4*	(2)8†	680	180.25	44.25	1,180	40,160	54,960	(2)14,930

*Male Pipe Thread †Plain End

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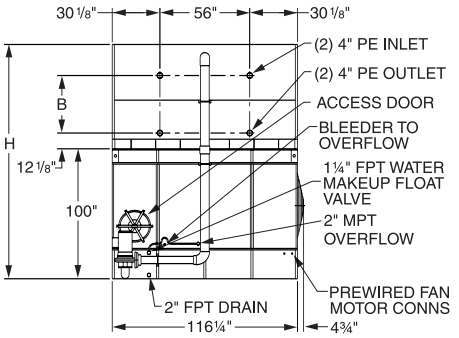
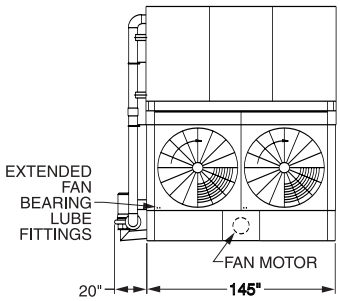
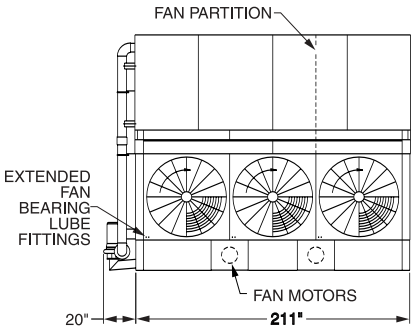
L290—L635



L290—L415



L435—L635

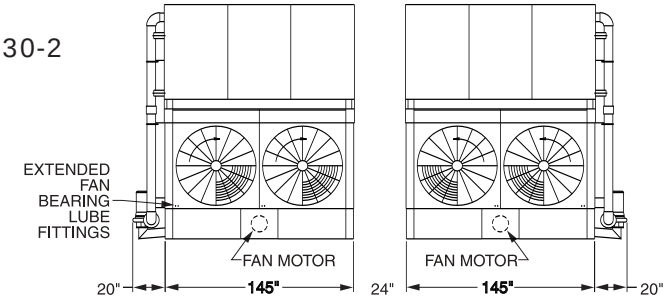


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
L290	205.7	52,200	7.5	400	3	4*	8†	325	166.25	30.25	330	12,715	18,931	8840
L300	212.8	57,500	10	400	3	4*	8†	325	166.25	30.25	330	12,740	18,956	8840
L315	223.4	50,600	7.5	400	3	4*	8†	325	173.5	37.50	410	14,655	20,952	10,780
L330	234	49,000	7.5	400	3	4*	8†	325	180.25	44.25	490	16,475	22,852	12,600
L335	237.6	65,800	15	400	3	4*	8†	325	166.25	30.25	330	12,790	19,006	8,840
L345	244.7	55,700	10	400	3	4*	8†	325	173.5	37.50	410	14,680	20,977	10,780
L350	248.2	70,000	20	400	3	4*	8†	325	166.25	30.25	330	12,840	19,056	8,840
L355	251.8	54,000	10	400	3	4*	8†	325	180.25	44.25	490	16,500	22,877	12,600
L375	266	63,700	15	400	3	4*	8†	325	173.5	37.50	410	14,730	21,027	10,780
L390	276.6	69,000	20	400	3	4*	8†	325	173.5	37.50	410	14,780	21,077	10,780
L405	287.2	61,500	15	400	3	4*	8†	325	180.25	44.25	490	16,550	22,927	12,600
L415	294.3	68,000	20	400	3	4*	8†	325	180.25	44.25	490	16,600	22,977	12,600
L435	308.5	78,300	7.5 & 5	600	5	4*	8†	500	166.25	30.25	480	18,440	27,706	12,790
L460	326.2	86,200	10 & 5	600	5	4*	8†	500	166.25	30.25	480	18,490	27,756	12,790
L475	336.8	75,800	7.5 & 5	600	5	4*	8†	500	173.5	37.50	600	21,280	30,662	15,630
L505	358.1	98,700	15 & 7.5	600	5	4*	8†	500	166.25	30.25	480	18,540	27,806	12,790
L510	361.7	83,400	10 & 5	600	5	4*	8†	500	173.5	34.5	600	21,330	30,712	15,630
L520	368.8	101,800	20 & 10	600	5	4*	8†	500	166.25	30.25	480	18,590	27,856	12,790
L565	400.7	95,400	15 & 7.5	600	5	4*	8†	500	173.5	37.50	600	21,380	30,762	15,630
L575	407.8	101,100	20 & 10	600	5	4*	8†	500	173.5	37.50	600	21,430	30,812	15,630
L590	418.4	92,160	15 & 7.5	600	5	4*	8†	500	180.25	44.25	720	24,000	33,497	18,300
L635	450.3	101,950	20 & 10	600	5	4*	8†	500	180.25	44.25	720	24,100	33,597	18,300

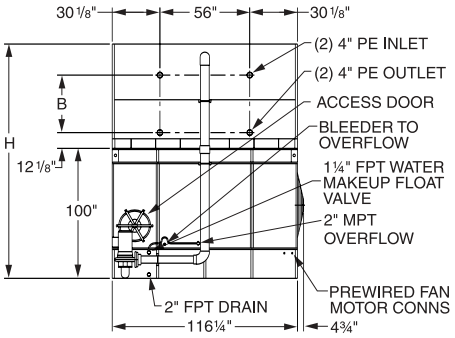
*Male Pipe Thread †Plain End

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

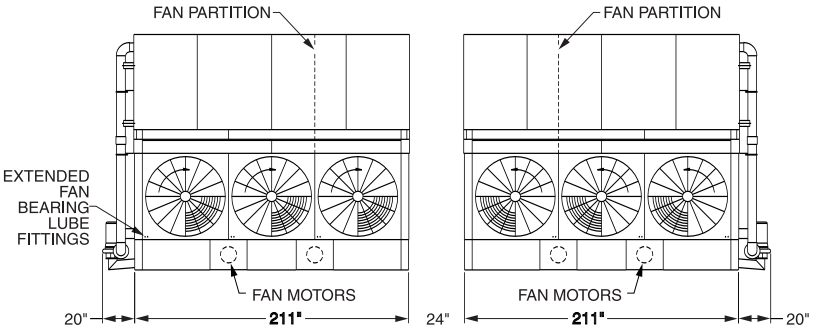
L810-2—L830-2



L810-2—L1270-2



L870-2—L1270-2

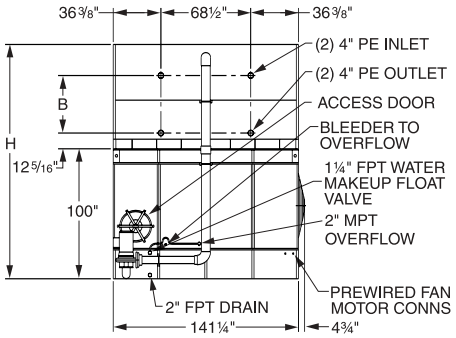


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
L810-2	574.4	123,000	(2)15	800	(2)3	(2)4*	(2)8†	650	180.25	44.25	980	33,090	45,843	(2)12,595
L830-2	588.6	136,000	(2)20	800	(2)3	(2)4*	(2)8†	650	180.25	44.25	980	33,190	45,943	(2)12,595
L870-2	617	156,600	(2)7.5&(2)5	1,200	(2)5	(2)4*	(2)8†	1,000	166.25	30.25	960	36,880	55,412	(2)12,790
L920-2	652.4	172,400	(2)10&(2)5	1,200	(2)5	(2)4*	(2)8†	1,000	166.25	30.25	960	36,980	55,512	(2)12,790
L950-2	673.6	151,600	(2)7.5&(2)5	1,200	(2)5	(2)4*	(2)8†	1,000	173.5	37.50	1,200	44.25,570	61,333	(2)15,635
L1010-2	716.2	197,400	(2)15&(2)7.5	1,200	(2)5	(2)4*	(2)8†	1,000	166.25	30.25	960	37,080	55,612	(2)12,790
L1020-2	723.4	166,800	(2)10&(2)5	1,200	(2)5	(2)4*	(2)8†	1,000	173.5	37.50	1,200	44.25,670	61,433	(2)15,635
L1040-2	737.6	203,600	(2)20&(2)10	1,200	(2)5	(2)4*	(2)8†	1,000	166.25	30.25	960	37,180	55,712	(2)12,790
L1130-2	801.4	190,800	(2)15&(2)7.5	1,200	(2)5	(2)4*	(2)8†	1,000	173.5	37.50	1,200	44.25,770	61,533	(2)15,635
L1150-2	815.6	202,200	(2)20&(2)10	1,200	(2)5	(2)4*	(2)8†	1,000	173.5	37.50	1,200	44.25,870	61,633	(2)15,635
L1180-2	836.8	184,320	(2)15&(2)7.5	1,200	(2)5	(2)4*	(2)8†	1,000	180.25	44.25	1,440	47,990	66,985	(2)18,295
L1270-2	900.7	203,900	(2)20&(2)10	1,200	(2)5	(2)4*	(2)8†	1,000	180.25	44.25	1,440	48,190	67,185	(2)18,295

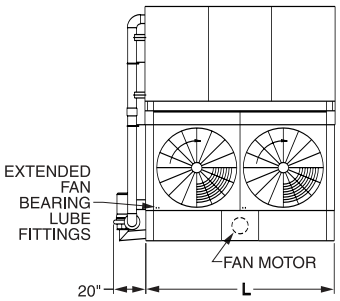
*Male Pipe Thread †Plain End

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

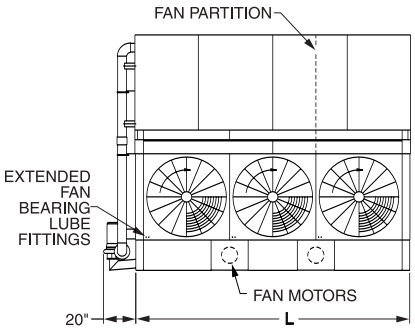
XL355—XL940



XL355—XL530 & XL580



XL535—XL940

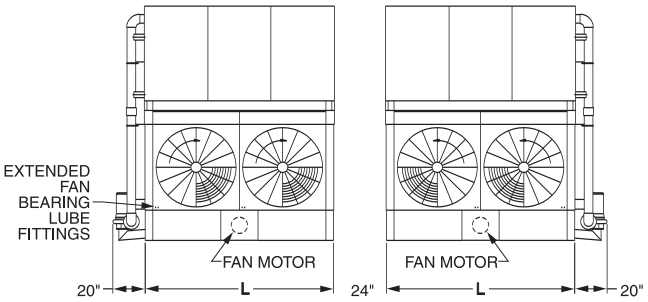


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Length L	DIMENSIONS Ctrs C	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
XL 355	251.1	63,600	10	600	5	6‡	10†	350	166.25	145	30.25	400	15,300	23,179	10,500
XL 390	276.5	73,100	15	600	5	6‡	10†	350	166.25	145	30.25	400	15,350	23,229	10,500
XL 395	280.1	63,100	10	600	5	6‡	10†	350	173.5	145	37.5	500	17,670	25,650	12,870
XL 415	294.3	79,700	20	600	5	6‡	10†	350	166.25	145	30.25	400	15,400	23,279	10,500
XL 425	301.4	62,500	10	600	5	6‡	10†	350	180.25	145	44.25	600	19,890	27,972	15,090
XL 435	308.5	72,200	15	600	5	6‡	10†	350	173.5	145	37.5	500	17,720	25,700	12,870
XL 440	312	86,300	25	600	5	6‡	10†	350	166.25	145	30.25	400	15,500	23,379	10,500
XL 470	333.3	78,900	20	600	5	6‡	10†	350	173.5	145	37.5	500	17,770	25,750	12,870
XL 475	336.8	71,300	15	600	5	6‡	10†	350	180.25	145	44.25	600	19,940	28,022	15,090
XL 495	351	85,500	25	600	5	6‡	10†	350	173.5	145	37.5	500	17,870	25,850	12,870
XL 505	358.1	78,200	20	600	5	6‡	10†	350	180.25	145	44.25	600	19,990	28,072	15,090
XL 515	365.2	90,800	30	600	5	6‡	10†	350	173.5	145	37.5	500	17,940	25,920	12,970
XL 530	375.8	84,700	25	600	5	6‡	10†	350	180.25	145	44.25	600	20,090	28,172	15,090
XL 535	379.4	96,200	10 & 5	900	7.5	6‡	10†	520	166.25	211	30.25	590	21,390	33,094	14,740
XL 580	411.3	89,200	30	600	5	6‡	10†	350	180.25	145	44.25	600	20,160	28,242	15,090
XL 590	418.4	111,000	15 & 7.5	900	7.5	6‡	10†	520	166.25	211	30.25	590	21,490	33,194	14,740
XL 600	425.5	95,850	10 & 5	900	7.5	6‡	10†	520	173.5	211	37.5	740	24,930	36,779	18,280
XL 630	446.7	123,000	20 & 10	900	7.5	6‡	10†	520	166.25	211	30.25	590	21,540	33,244	14,740
XL 640	453.8	95,800	10 & 5	900	7.5	6‡	10†	520	180.25	211	44.25	890	27,940	39,934	21,590
XL 660	468	132,000	25 & 15	900	7.5	6‡	10†	520	166.25	211	30.25	590	21,690	33,394	14,740
XL 665	471.6	110,600	15 & 7.5	900	7.5	6‡	10†	520	173.5	211	37.5	740	25,030	36,879	18,280
XL 710	503.5	121,450	20 & 10	900	7.5	6‡	10†	520	173.5	211	37.5	740	25,080	36,929	18,280
XL 715	507	110,500	15 & 7.5	900	7.5	6‡	10†	520	180.25	211	44.25	890	28,340	40,334	21,590
XL 745	528.3	130,400	25 & 15	900	7.5	6‡	10†	520	173.5	211	37.5	740	25,230	37,079	18,280
XL 760	538.9	136,200	30 & 15	900	7.5	6‡	10†	520	173.5	211	37.5	740	25,300	37,150	18,280
XL 765	542.5	121,100	20 & 10	900	7.5	6‡	10†	520	180.25	211	44.25	890	28,390	40,384	21,590
XL 785	556.7	132,100	20 & 10	1,050	7.5	6‡	12†	683	184	245	48.25	890	29,260	43,155	21,360
XL 805	570.9	130,000	25 & 15	900	7.5	6‡	10†	520	180.25	211	44.25	890	28,540	40,534	21,590
XL 825	585	134,500	30 & 15	900	7.5	6‡	10†	520	180.25	211	44.25	890	28,610	40,610	21,590
XL 830	585.6	142,000	25 & 15	1,050	7.5	6‡	12†	683	184	245	48.25	890	29,430	43,155	21,360
XL 845	599.3	131,850	20 & 10	1,050	7.5	6‡	12†	683	191.75	245	56	1,064	32,910	46,,795	25,010
XL 865	613.4	136,000	30 & 15	1,200	10	6‡	10†	520	180.25	211	44.25	890	28,700	40,700	21,590
XL 870	614.2	152,000	30 & 15	1,050	7.5	6‡	12†	683	184	245	48.25	890	30,390	44,123	21,360
XL 895	633.3	142,200	25 & 15	1,050	7.5	6‡	12†	683	191.75	245	56	1,064	33,080	46,965	25,010
XL 940	664.5	151,800	30 & 15	1,050	7.5	6‡	12†	683	191.75	245	56	1,064	33,140	47,018	25,010

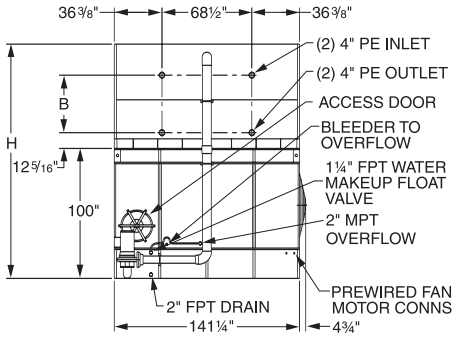
‡Flanged †Plain End

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

XL830-2—XL1060-2 & XL1160-2



XL830-2—XL1880-2



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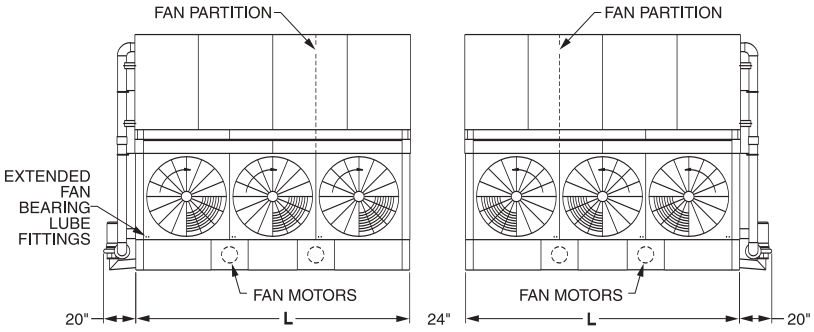
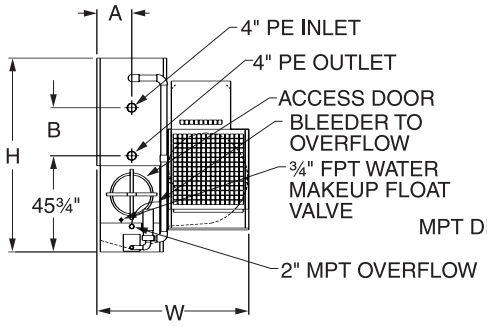


XLP Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Length L	DIMENSIONS Ctrs B	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
XL 830-2	588.6	159,400	(2) 20	1,200	(2) 5	(2)‡	(2)10†	700	166.25	145	30.25	800	30,800	46,558	(2)10,500
XL 850-2	602.8	125,000	(2)10	1,200	(2)5	(2)6‡	(2)10†	700	180.25	145	44.25	1,200	39,770	55,934	(2)15,085
XL 870-2	617	144,400	(2)15	1,200	(2)5	(2)6‡	(2)10†	700	173.5	145	37.5	1,000	35,440	51,401	(2)12,870
XL 880-2	624.1	172,600	(2)25	1,200	(2)5	(2)6‡	(2)10†	700	166.25	145	30.25	800	31,000	46,758	(2)10,500
XL 940-2	666.6	157,800	(2)20	1,200	(2)5	(2)6‡	(2)10†	700	173.5	145	37.5	1,000	35,540	51,501	(2)12,870
XL 950-2	673.7	142,600	(2)15	1,200	(2)5	(2)6‡	(2)10†	700	180.25	145	44.25	1,200	39,870	56,034	(2)15,085
XL 990-2	702.1	171,000	(2)25	1,200	(2)5	(2)6‡	(2)10†	700	173.5	145	37.5	1,000	35,740	51,701	(2)12,870
XL 1010-2	716.3	156,400	(2)20	1,200	(2)5	(2)6‡	(2)10†	700	180.25	145	44.25	1,200	39,970	56,134	(2)15,085
XL 1030-2	730.5	181,600	(2) 30	1,200	(2) 5	(2)6‡	(2)10†	700	173.5	145	37.5	1,000	35,880	51,840	(2)12,970
XL 1060-2	751.7	169,400	(2)25	1,200	(2)5	(2)6‡	(2)10†	700	180.25	145	44.25	1,200	40,170	56,334	(2)15,085
XL 1070-2	758.8	192,400	(2)10&(2)5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	166.25	211	30.25	1,180	42,780	66,187	(2)14,740
XL 1160-2	822.7	178,400	(2)30	1,200	(2) 5	(2)6‡	(2)10†	700	180.25	145	44.25	1,200	40,320	56,484	(2)15,090
XL 1180-2	836.8	222,000	(2)15&(2)7.5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	166.25	211	30.25	1,180	42,980	66,387	(2)14,740
XL 1200-2	851	191,700	(2)10&(2)5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	173.5	211	37.5	1,480	49,860	73,558	(2)18,280
XL 1260-2	893.5	246,000	(2)20&(2)10	1,800	(2)7.5	(2)6‡	(2)10†	1,040	166.25	211	30.25	1,180	43,080	66,487	(2)14,740
XL 1280-2	907.7	191,600	(2)10&(2)5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	55,900	79,888	(2)21,600
XL 1320-2	936.1	264,000	(2)25&(2)15	1,800	(2)7.5	(2)6‡	(2)10†	1,040	166.25	211	30.25	1,180	43,380	66,787	(2)14,740
XL 1330-2	943.2	221,200	(2)15&(2)7.5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	173.5	211	37.5	1,480	50,060	73,758	(2)18,280
XL 1420-2	1007	242,900	(2)20&(2)10	1,800	(2)7.5	(2)6‡	(2)10†	1,040	173.5	211	37.5	1,480	50,160	73,858	(2)18,280
XL 1430-2	1014.1	221,000	(2)15&(2)7.5	1,800	(2)7.5	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	56,700	80,688	(2)21,600
XL 1490-2	1056.7	260,800	(2)25&(2)15	1,800	(2)7.5	(2)6‡	(2)10†	1,040	173.5	211	37.5	1,480	50,460	74,158	(2)18,280
XL 1520-2	1078	272,400	(2)30&(2)15	1,800	(2) 7.5	(2)6‡	(2)10†	1,040	173.5	211	37.5	1,480	50,600	74,300	(2)18,280
XL 1530-2	1085	242,200	(2)20&(2)10	1,800	(2)7.5	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	56,800	80,788	(2)21,600
XL 1570-2	1113.4	262,200	(2)20&(2)10	2,100	(2)7.5	(2)6‡	(2)12†	1,366	184	245	48.25	1,780	58,530	85,795	(2)21,365
XL 1610-2	1141.8	260,000	(2)25&(2)15	1,800	(2)7.5	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	57,100	81,088	(2)21,600
XL 1650-2	1170.2	269,000	(2)30&(2)15	1,800	(2) 7.5	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	57,220	81,220	(2)21,590
XL 1660-2	1173	263,700	(2)25&(2)15	2,100	(2)7.5	(2)6‡	(2)12†	1,366	184	245	48.25	1,780	58,870	86,321	(2)21,365
XL 1690-2	1198.6	284,800	(2)20&(2)10	2,100	(2)7.5	(2)6‡	(2)12†	1,366	191.75	245	56	2,128	65,820	93,606	(2)25,010
XL 1730-2	1226.5	272,000	(2)30&(2)15	2,400	(2) 10	(2)6‡	(2)10†	1,040	180.25	211	44.25	1,780	57,400	81,400	(2)21,590
XL 1740-2	1228.4	304,000	(2)30&(2)15	2,100	(2)7.5	(2)6‡	(2)12†	1,366	184	245	48.25	1,780	60,790	88,241	(2)21,365
XL 1790-2	1266.6	284,000	(2)25&(2)15	2,100	(2)7.5	(2)6‡	(2)12†	1,366	191.75	245	56	2,128	66,160	93,946	(2)25,010
XL 1880-2	1329	303,600	(2)30&(2)15	2,100	(2)7.5	(2)6‡	(2)12†	1,366	191.75	245	56	2,128	66,280	94,066	(2)25,010

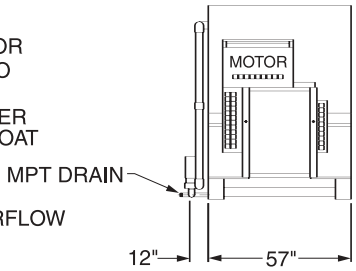
‡Flanged †Plain End

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

XLC25—128



XLC25—XLC55



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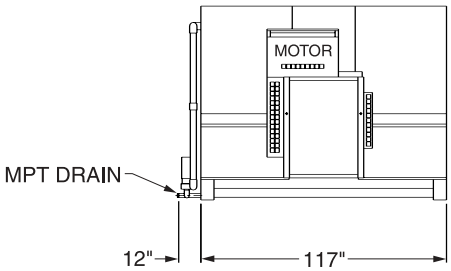
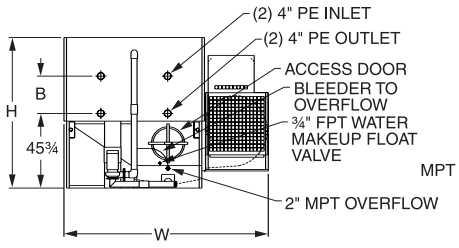


XLC Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	DIMENSIONS Width W	DIMENSIONS Base C	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
25	17.7	5,800	2	40	0.5	2.5*	3**	50	94.25	22.875	66.25	30.0	24	1,860	2,350	1,370
28	19.8	6,700	3	40	0.5	2.5*	3**	50	94.25	22.875	66.25	30.0	26	1,890	2,350	1,400
30	21.3	5,700	2	40	0.5	2.5*	3**	50	99.625	30.25	66.25	30.0	32	1,990	2,450	1,500
35	24.8	6,600	3	40	0.5	2.5*	3**	50	99.625	30.25	66.25	30.0	36	2,020	2,470	1,530
,																
38	26.9	6,500	3	40	0.5	2.5*	3**	50	106.875	37.50	66.25	30.0	40	2,220	2,720	1,730
40	28.7	6,900	5	40	0.5	2.5*	3**	50	106.875	37.50	66.25	30.0	41	2,240	2,740	1,750
43	30.5	7,900	3	60	0.75	2.5*	3**	70	99.625	30.25	77.75	41.5	45	2,640	3,270	2,150
50	35.5	9,400	5	60	0.75	2.5*	3**	70	99.625	30.25	77.75	41.5	50	2,670	3,300	2,180
55	39	9,300	5	60	0.75	2.5*	3**	70	106.875	37.5	77.75	41.5	56	2,980	3,660	2,490
58	41.1	13,000	5	90	1	2.5*	4**	95	94.25	22.875	72.5	30.0	51	3,190	4,250	2,515
60	42.5	14,700	7.5	90	1	2.5*	4**	95	94.25	22.875	72.5	30.0	52	3,230	4,300	2,555
68	48.2	12,800	5	90	1	2.5*	4**	95	99.625	30.25	72.5	30.0	68	3,470	4,500	2,795
75	53.2	14,700	7.5	90	1	2.5*	4**	95	99.625	30.25	72.5	30.0	73	3,510	4,540	2,835
78	55.3	12,700	5	90	1	2.5*	4**	95	106.875	37.50	72.5	30.0	85	3,930	5,030	3,255
80	56.7	12,600	5	90	1	2.5*	4**	95	113.625	44.25	72.5	30.0	102	4,250	5,350	3,575
85	60.3	14,600	7.5	90	1	2.5*	4**	95	106.875	37.5	72.5	30.0	91	3,960	5,070	3,285
90	63.8	14,400	7.5	90	1	2.5*	4**	95	113.625	44.25	72.5	30.0	111	4,290	5,390	3,615
95	67.4	18,300	10	120	1.5	2.5*	4**	130	99.625	30.25	84.0	41.5	95	4,360	5,790	3,685
100	70.9	16,500	7.5	120	1.5	2.5*	4**	130	106.875	37.5	84.0	41.5	112	5,030	6,540	4,355
108	76.6	18,200	10	120	1.5	2.5*	4**	130	106.875	37.5	84.0	41.5	119	5,050	6,560	4,375
110	78	16,400	7.5	120	1.5	2.5*	4**	130	113.625	44.25	84.0	41.5	137	5,540	7,140	4,865
115	81.6	18,100	10	120	1.5	2.5*	4**	130	113.625	44.25	84.0	41.5	142	5,560	7,160	4,885
120	85.1	20,400	15	120	1.5	2.5*	4**	130	106.875	37.5	84.0	41.5	129	5,090	6,610	4,415
128	90.8	20,400	15	120	1.5	2.5*	4**	130	113.625	44.25	84.0	41.5	154	5,600	7,200	4,925
130	92.2	24,200	7.5	180	1	3*	4**	95	94.25	30.25	102.5	60.0	129	6,260	7,350	4,980
140	99.3	26,600	10	180	1	3*	4**	95	94.25	30.25	102.5	60.0	136	6,280	7,570	5,000
145	102.8	24,000	7.5	180	1	3*	4**	95	106.875	37.5	102.5	60.0	158	7,200	8,610	5,920
150	106.4	29,400	15	180	1	3*	4**	95	99.625	30.25	102.5	60.0	143	6,320	7,610	5,040

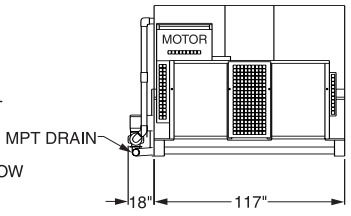
*Male Pipe Thread **Female Pipe Thread

Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

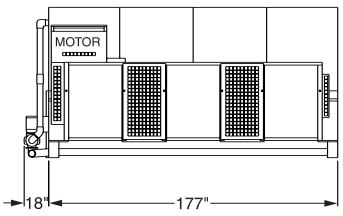
XLC130—770-2



XLC130—XLC250



XLC285—XLC385



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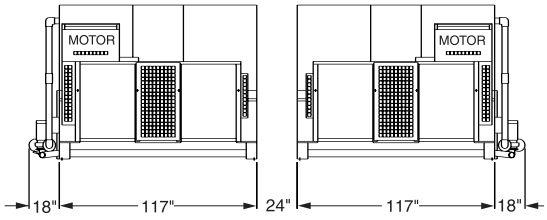

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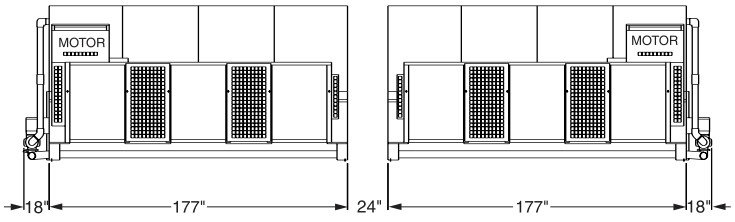


XLC Model[1]	NH3 Tons[2]	CFM	Fan Mtr HP	Spray Water GPM	Pump Mtr HP	REMOTE SUMP Water In[3]	REMOTE SUMP Sump Drain[3]	REMOTE SUMP Gal. Req'd[4]	DIMENSIONS Height H	DIMENSIONS Ctrs B	DIMENSIONS Width W	DIMENSIONS Base C	Refrig Charge NH3 lb[5]	WEIGHTS Unit Shipping[6]	WEIGHTS Unit Operating[7]	WEIGHTS Heaviest Section
155	109.9	23,700	7.5	180	1	3*	4**	95	113.625	44.25	102.5	60.0	196	7,740	9,040	6,460
160	113.5	26,400	10	180	1	3*	4**	95	106.875	37.5	102.5	60.0	170	7,210	8,630	5,930
165	117	26,000	10	180	1	3*	4**	95	113.625	44.25	102.5	60.0	205	7,770	9,060	6,490
170	120.6	29,400	15	180	1	3*	4**	95	106.875	37.5	102.5	60.0	178	7,260	8,670	5,980
185	131.2	29,400	15	180	1	3*	4**	95	113.625	44.25	102.5	60.0	224	7,810	9,090	6,530
195	138.3	36,800	15	240	1.5	3*	5**	130	99.625	30.25	125.5	83.0	190	7,700	9,480	6,420
205	145.5	40,500	20	240	1.5	3*	5**	130	99.625	30.25	125.5	83.0	197	7,740	9,520	6,460
220	156	36,600	15	240	1.5	3*	5**	130	106.875	37.5	125.5	83.0	238	8,910	10,860	7,630
230	163.1	40,200	20	240	1.5	3*	5**	130	106.875	37.5	125.5	83.0	246	8,950	10,900	7,670
235	166.7	36,400	15	240	1.5	3*	5**	130	113.625	44.25	125.5	83.0	285	9,960	12,090	8,680
250	177.3	40,050	20	240	1.5	3*	5**	130	113.625	44.25	125.5	83.0	299	10,000	12,130	8,720
285	202.1	53,400	20	370	3	3*	6**	205	99.625	30.25	125.5	83.0	280	11,340	14,110	9,165
300	212.8	57,500	25	370	3	3*	6**	205	99.625	30.25	125.5	83.0	291	11,390	14,160	9,215
310	219.8	61,100	30	370	3	3*	6**	205	99.625	30.25	125.5	83.0	298	11,430	14,200	9,255
340	241.1	57,300	25	370	3	3*	6**	205	100.75	37.5	125.5	83.0	364	13,130	16,170	10,955
350	248.2	60,900	30	370	3	3*	6**	205	100.75	37.5	125.5	83.0	372	13,170	16,210	10,995
365	258.9	57,000	25	370	3	3*	6**	205	113.625	44.25	125.5	83.0	437	14,690	18,000	12,515
385	273	60,500	30	370	3	3*	6**	205	113.625	44.25	125.5	83.0	454	14,740	18,050	12,565
410-2	290.8	81,000	(2)20	480	(2)1.5	(2)3*	(2)5**	260	99.625	30.25	125.5	83.0	394	15,480	19,050	(2)6,465
440-2	312	73,200	(2)15	480	(2)1.5	(2)3*	(2)5**	260	106.875	37.5	125.5	83.0	476	17,830	21,750	(2)7,640
460-2	326.2	80,000	(2)20	480	(2)1.5	(2)3*	(2)5**	260	106.875	37.5	125.5	83.0	492	17,910	21,830	(2)7,680
470-2	333.3	72,800	(2)15	480	(2)1.5	(2)3*	(2)5**	260	113.625	44.25	125.5	83.0	570	19,910	24,170	(2)8,675
500-2	354.6	80,100	(2)20	480	(2)1.5	(2)3*	(2)5**	260	113.625	44.25	125.5	83.0	598	19,980	24,250	(2)8,715
570-2	404.2	106,800	(2)20	740	(2)3	(2)3*	(2)6**	410	99.625	30.25	125.5	83.0	560	22,670	28,210	(2)9,160
600-2	425.5	115,000	(2)25	740	(2)3	(2)3*	(2)6**	410	99.625	30.25	125.5	83.0	582	22,770	28,320	(2)9,210
620-2	439.7	122,200	(2)30	740	(2)3	(2)3*	(2)6**	410	99.625	30.25	125.5	83.0	596	22,860	28,410	(2)9,250
680-2	482.3	114,600	(2)25	740	(2)3	(2)3*	(2)6**	410	106.875	37.5	125.5	83.0	728	26,260	32,340	(2)10,955
700-2	496.4	121,800	(2)30	740	(2)3	(2)3*	(2)6**	410	106.875	37.5	125.5	83.0	744	26,340	32,430	(2)10,995
730-2	517.7	114,000	(2)25	740	(2)3	(2)3*	(2)6**	410	113.625	44.25	125.5	83.0	874	29,380	36,010	(2)12,520
770-2	546.1	121,000	(2)30	740	(2)3	(2)3*	(2)6**	410	113.625	44.25	125.5	83.0	908	29,470	36,100	(2)12,570

*Male Pipe Thread **Female Pipe Thread

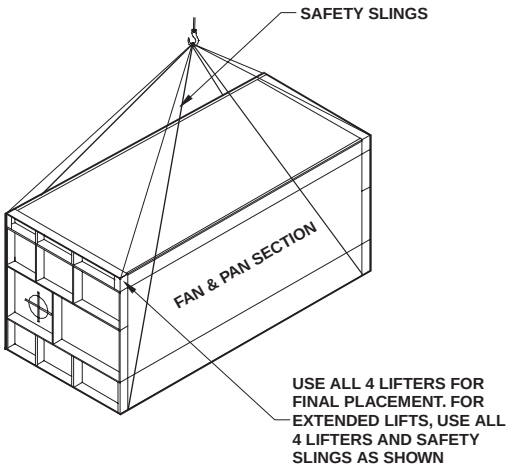
Do not use for construction—product drawings available on request. Footnotes are listed on page 11.

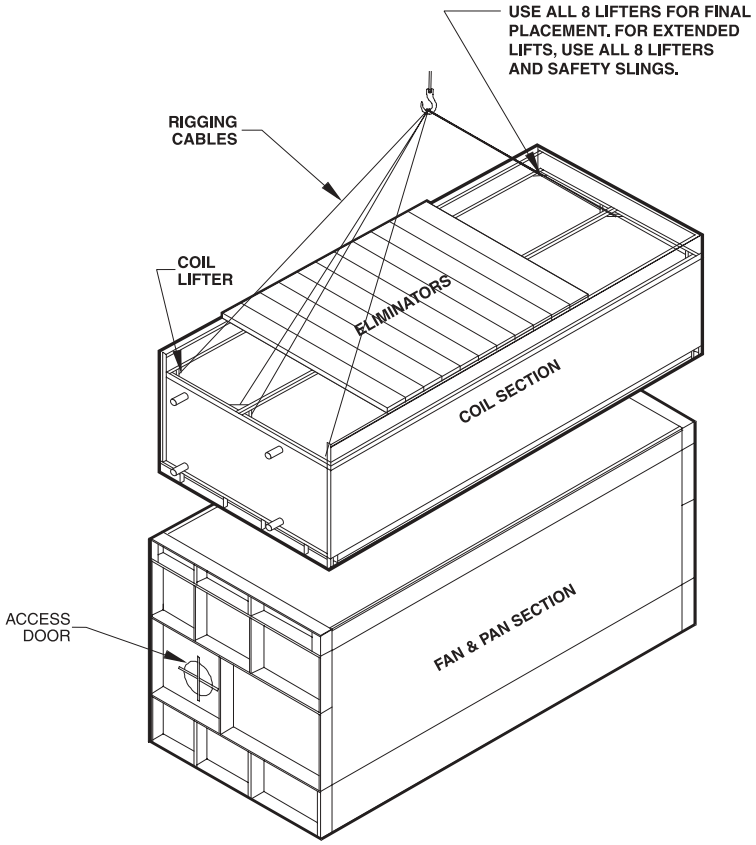
ASSEMBLY INSTRUCTIONS:

Step 1
Take mastic from parts box and place mastic on pan/fan section as shown. Remove paper strip before lowering coil section.

Step 2
Lower coil section to pan/fan section. Use drift pins in (4) alignment holes to guide coil section in final placement.

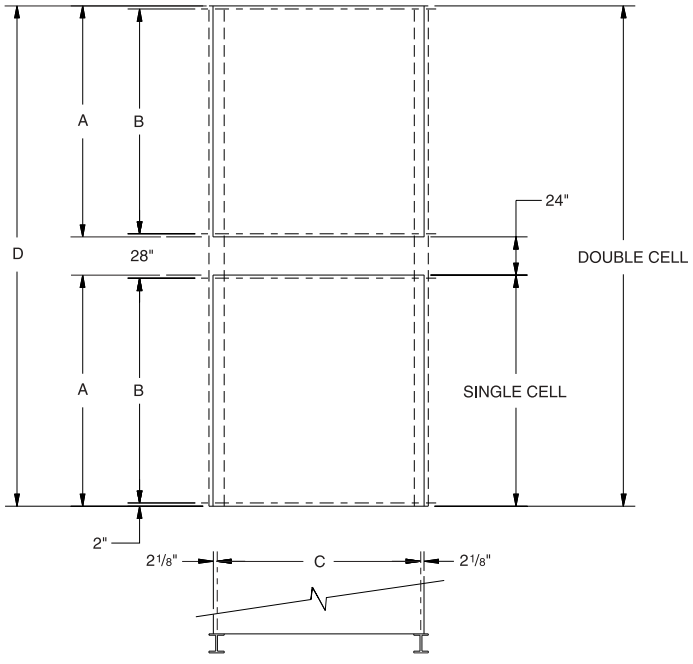
Step 3
On all (4) sides, install fasteners in holes provided.





XLP PLATFORM LAYOUT

XLP Model	A	B	C	D
S 90 through S 175 and S 185, S 190, S 200, S 205	145	141	57.5	—
S 180, S 195, and S 210 through S 270	145	141	68.5	—
M 155 through M 280	121.87	117.87	92	—
M 285 through M 430	177	173	92	—
M 810-2 through M 960-2	177	173	92	378
M 235 through ML 345	145	141	92	—
ML 350 through ML 520	211	207	92	—
ML 820-2 through ML 1040-2	211	207	92	446
L 290 through L 415	145	141	112	—
L 435 through L 635	211	207	112	—
L 810-2 through L 830-2	145	141	112	314
L 870-2 through L 1270-2	211	207	112	446
XL 355 through XL 530	145	141	137	—
XL 535 through XL 805	211	207	137	—
XL 785, XL 830 through XL XL 940	245	241	137	—
XL 830-2 through XL 1060-2	145	141	137	314
XL 1070-2 through XL 1610-2	211	207	137	446
XL 1570-2, XL 1660-2 through XL 1880-2	245	241	137	—



NOTE: Beams and/or piers should be sized in accordance with standard engineering practices. Beam deflection should not exceed 1/360 of span, not to exceed 1/2".

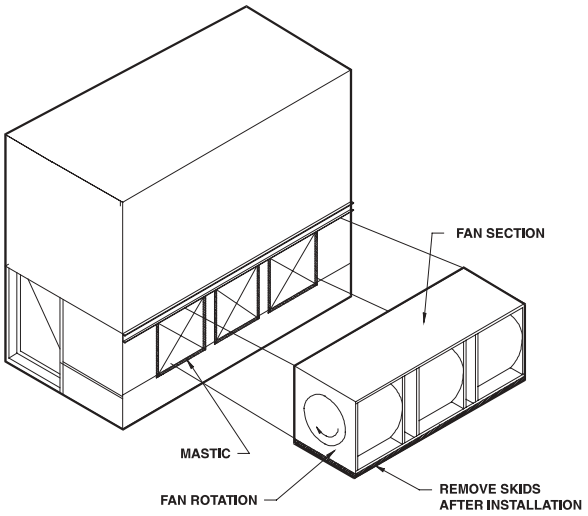
ASSEMBLY INSTRUCTIONS:

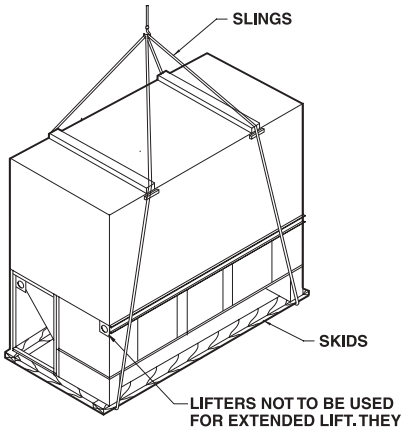
Step 1
Take mastic from parts box and place mastic on pan/fan section as shown.

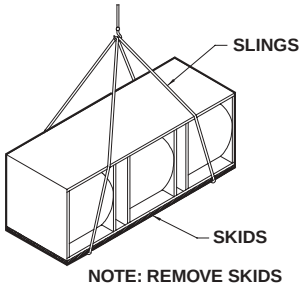
Step 2
Lower fan section to unit body so that the blower support on the fan section rests on the flanged edge of the top fan mounting panel on the unit body. Move the fan section to the coil section until all mounting flanges are touching.

Step 3
On each blower, install bolts with a flat washer under both the bolt and nut.

Step 4
TIGHTEN ALL BOLTS CONNECTING FAN SECTION TO UNIT BODY BEFORE REMOVING RIGGING.





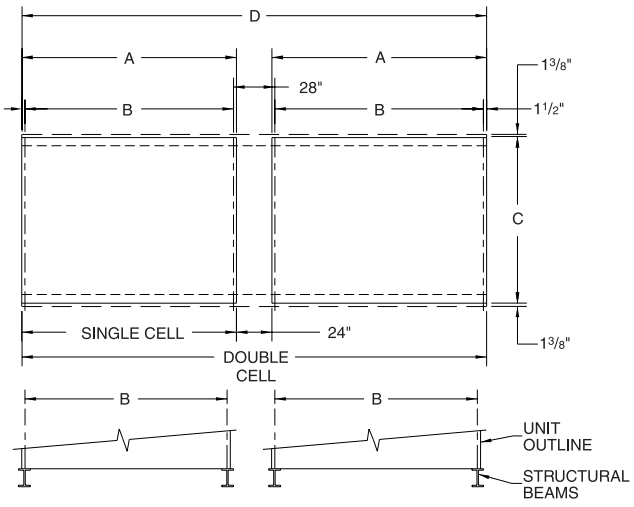


NOTE: REMOVE SKIDS FROM BLOWER SECTION AFTER INSTALLATION

XLC PLATFORM LAYOUT

XLC Model	A	B	C	D
XLC 25 through XLC 40	57	54	27.25	—
XLC 43 through XLC 55	57	54	38.75	—
XLC 58 through XLC 90	117	114	27.25	—
XLC 95 through XLC 128	117	114	38.75	—
XLC 130 through XLC 185	117	114	57.25	—
XLC 195 through XLC 250	117	114	80.25	—
XLC 285 through XLC 385	177	174	80.25	—
XLC 410-2 through XLC 500-2	117	114	80.25	258
XLC 570-2 through XLC 770-2	177	174	80.25	378

NOTE: Beams and/or piers should be sized in accordance with standard engineering practices. Beam deflection should not exceed 1/360 of span, not to exceed 1/2".



PAN WATER HEATERS

To prevent freeze-up of water in the pan when the condenser is idle, Frick® can furnish and install a steam coil or an electric immersion heater in the pan.

The steam is an injection system and is Hot Dip Galvanized After Fabrication.

The electric immersion heater is a stainless steel sheath type that is controller by a thermostat that senses the pan water temperature and a low water cutout switch that prevents operation of the heater if there is an insufficient water level in the pan. The heater will maintain the pan water at 40°F when the ambient is -10°F with a 45 mph wind, and the unit is not operating.

CONTROL PANEL

To minimize design engineering and field wiring, **Frick** offers single point electrical connections with all the necessary components in the CP panel.

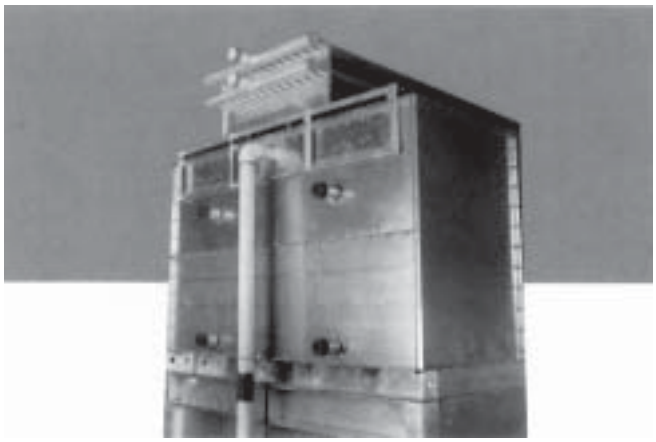
Frick CP panels include: main disconnect(s), individual fusing of all major components, motor starters with 3-phase overload protection, 120 volt single phase control voltage transformer, Hands-Off-Auto switch for both manual and automatic startups, terminal strip with custom wiring for stage controllers, and a NEMA-12 enclosure with rain dripshield. Contact your local **Frick** representative or **Frick** direct for your special design applications.

ELECTRIC PAN WATER LEVEL CONTROL

For installations where very close control of the pan water is required, **Frick** can provide an electric water level system that consists of a weather protected electric float switch mounted on the pan section and weather protected solenoid valve mounted on the water makeup connection. The float switch and solenoid valve are factory wired to NEMA 4 junction box.

DESUPERHEATER COIL

To increase condenser capacity and minimize scale buildup, Frick offers a high quality, efficient spiral fin desuperheater. The desuperheater is tested twice under water with 350 psig air pressure. The entire assembly is Hot Dip Galvanized After Fabrication.



NOTE: Desuperheaters should only be used in Ammonia systems utilizing Open-Type Reciprocating Compressors.

MULTICIRCUITED COIL

Condensing coils can be divided into multiple circuits to satisfy most system requirements. This arrangement might be considered for the following reasons:

- A split compressor system requiring a common condenser.
- Two or more compressor systems using different refrigerants.
- A system requiring glycol or water cooling in addition to the condensing duty.

CATWALKS AND HANDRAILS

Optionally available catwalks and handrails offer convenience of access to water eliminators and spray trees.

As configured by Frick, these items, provided for field assembly, are ruggedly designed with OSHA requirements in mind. They mount to the condenser structure without requiring any casing penetrations.

VIBRATION ISOLATORS

Where building codes require vibration isolation, Frick can furnish spring-type vibration isolators designed to properly isolate the condensers from the mounting structure.

CAPACITY CONTROL

To maintain system head pressure during low ambient conditions or in systems with widely fluctuating refrigeration loads, Frick offers several types of capacity control systems:

MODULATING DAMPERS

On the XLC centrifugal fan condensers, modulating dampers can be mounted in the discharge throat of each fan. These dampers consist of galvanized steel blades mounted on a common steel shaft and are controlled by a modulating damper actuator that is mounted on the fan casing with the appropriate interconnecting linkage. A pressure sensing controller is furnished for mounting in the refrigerant gas line to the condenser.

The damper actuator is designed to close the dampers if the unit is turned off or power is lost, and also contains an end switch that can be used to turn off the fan motor when the dampers close.

FAN PARTITIONS

On XLP vane axial fan condensers with two or more fan motors, partitions can be installed between fans to allow cycling some motor/fan combinations, allowing sequential staging of the fans. These partitions prevent idle fans from turning backwards and water from being blown out the idle fans.

TWO-SPEED FAN MOTORS

On XLC and XLP condensers, two-speed fan motors are available and provide one step of capacity reduction by reducing the fan speed. These motors are available with either single or dual windings.

HOT DIP GALVANIZED AFTER FABRICATION

The Most Effective Method of Corrosion Protection

Coil, pan and fan sections, the critical areas for corrosion protection, are Hot Dip Galvanized After Fabrication as standard on all Frick evaporative condensers. Frick sets the standard for corrosion protection and component longevity with Hot Dip Galvanized After Fabrication components.

OPTIONAL MILL GALVANIZED CASING

Frick also offers competitive mill galvanized components for applications where maximum condenser longevity is not the primary concern. Panels are designed with structural flanges and are suitably small to provide maximum panel rigidity. For applications where cost is the deciding factor, this option provides a competitive alternative with reasonable life expectancy.

EVAPORATIVE CONDENSERS

Furnish and install as shown on plans, _____factory assembled evaporative condenser(s) of counterflow blow-through design.

XLP (TWO-STAGE VANE-AXIAL FANS)

Models shall have fan assemblies built into the pan(s) with all moving parts factory assembled and aligned.

XLC (CENTRIFUGAL FAN)

Models shall have the fan section side mounted with all moving parts factory assembled and aligned.

All unit casing panels shall be made from galvanized steel with all bolting flanges for easy access.

CAPACITY

The evaporative condenser(s) shall each have the following capacity:

____ BTUH Heat Rejection
____ Refrigerant
____ °F Condensing Temp.
____ °F Wet Bulb Temp.

____ System Evaporator Tons
____ Refrigerant
____ °F Suction Temp.
____ °F Condensing Temp.
____ °F Wet Bulb Temp.

XLP PAN SECTION(S)

Shall be flat sump design and shall be constructed of heavy-gauge steel panels with flanged edges. All panels to be Hot Dip Galvanized After Fabrication. Pan section(s) shall include large, heavy-gauge, leak-proof steel access door(s) Hot Dip Galvanized After Fabrication, oversized steel suction strainer(s) Hot Dip Galvanized After Fabrication, solid brass float actuated makeup valve(s) with PVC float(s) and waste water bleed line(s) with solid brass bleed valve(s).

XLC PAN SECTION(S)

Shall be constructed of heavy-gauge steel welded into one-piece assembly to prevent leakage and Hot Dip Galvanized After Fabrication. The edges of the pan(s) shall be flanged to bolt to the coil casing(s). Pan(s) shall have a sloped V-sump to aid in maintenance and shall have a flush-out connection, in addition to the drain connection, located on the opposite end of the sump from the drain. Pan(s) shall also include large, heavy-gauge steel suction strainer Hot Dip Galvanized After Fabrication, solid brass, float-actuated makeup valve with PVC float, and waste water bleed line with solid brass bleed valve.

XLP FAN SECTION(S)

Fans shall be cast aluminum and shall be two-stage vane-axial type with discharge guide vanes between the fans to increase efficiency. Each fan assembly shall be a welded one-piece design Hot Dip Galvanized After Fabrication. Fans shall be statically and dynamically balanced and shall be mounted on a common steel shaft supported by oversized, self-aligning, heavy-duty ball bearings with extended lube lines for easy access. The fans shall run at low rpm for quiet operation and long bearing life. Fan guard(s) shall be Hot Dip Galvanized After Fabrication and meet OSHA requirements.

XLC FAN SECTION(S)

Fans shall be forward curved, centrifugal type constructed of heavy-gauge steel and shall be individually statically and dynamically balanced. Fan(s) shall be mounted on a steel shaft supported by oversized, self-aligning, heavy-duty ball bearings with extended lube lines for easy access. The fan section(s) shall be statically balanced after assembly. The fan(s) shall run at low rpm for quiet operation and long life.

The fan casing(s) shall be made of heavy-gauge steel with flanged edges and shall have heavy-gauge reinforcing structural members for added strength. Bearing supports and one-piece welded fan housings shall be Hot Dip Galvanized After Fabrication to prevent corrosion.

FAN MOTOR(S) AND DRIVE(S)

Fans on each unit shall be driven by ____ HP ____ rpm, TEFC ball bearing NEMA "T" frame motor(s) with 1.15 service factor. The motor(s) shall be protected from the weather by a galvanized steel housing. Motor(s) shall be suitable for outdoor service on ____ volt, ____ hertz, ____ phase electrical service. Motors shall be prewired to the outside of the casing.

Fans shall be V-belt driven with drives and belts designed for not less than 150% of the fan motor nameplate horsepower. Fan motor(s) shall be mounted on a rugged steel base(s) Hot Dip Galvanized After Fabrication that provides convenient belt adjustment. All fan openings and fan belts shall be protected by guards that meet applicable OSHA standards.

COIL SECTION(S)

Shall be constructed of .060" wall, eddy-current tested tubing to assure long life. Coil circuits shall be staggered in the direction of air flow to ensure maximum air turbulence and spray water coverage across the coil(s). All circuits shall be adequately pitched to allow free and complete drainage. The coil(s) shall be designed for low pressure drop.

Complete coil assembly(ies) shall be tested under water with 350 psig pressure, before and after galvanizing.

Each coil assembly shall be supported by heavy-gauge, welded structural steel frame. Entire coil assembly(ies) including frame shall be Hot Dip Galvanized After Fabrication.

SPRAY WATER DISTRIBUTION SYSTEM(S)

Self-modulating, clog-clearing design shall be incorporated to prevent and eliminate potential interruptions in water flow over the coils. Nozzle must maintain continuous, uniform flow despite debris from airborne particulate and variations in water pumping system common to evaporative condenser applications.

Spray water shall be distributed uniformly over the coil(s) by closely spaced, nonclogging, noncorroding ABS spray nozzles which create an overlapping spray pattern to provide even coverage, complete coil wetting, and reduced scale formation. The distribution system(s) shall have a PVC distribution manifold with removable schedule 40 PVC spray header(s) to allow easy cleaning.

SPRAY WATER RECIRCULATION PUMP(S)

Spray water shall be recirculated by a close-coupled centrifugal pump(s) with mechanical seal(s) and an open drip-proof, ball bearing, 1.15 service factor motor(s). Pump(s) shall be vertically mounted to permit self-draining and shall be mounted and completely piped to the pan(s) and spray header(s) with schedule 40 pipe. Piping includes bleed line(s) with adjustable brass valve(s) located between the pump discharges and unit overflow connection(s) to meter the necessary water bleed-off. Protective weather cover(s) shall be mounted over the motor(s). ____ HP pump motor(s) shall be furnished for operation on ____ volt, ____ hertz, ____ phase electrical service.

MOISTURE ELIMINATORS

The evaporative condenser(s) shall have moisture eliminators located in the air discharge stream to remove any moisture being carried away by the air. Eliminators shall be constructed of noncorroding PVC for maximum corrosion protection and shall be of multiple-break design. Eliminators shall direct the discharge air away from the fan inlet.

UNIT SIZE

Overall dimensions shall not exceed approximately ___ feet x ___ feet with an overall height not exceeding approximately ___ feet. The operating weight shall not exceed ____ pounds.

The evaporative condenser shall be Frick Model _____.

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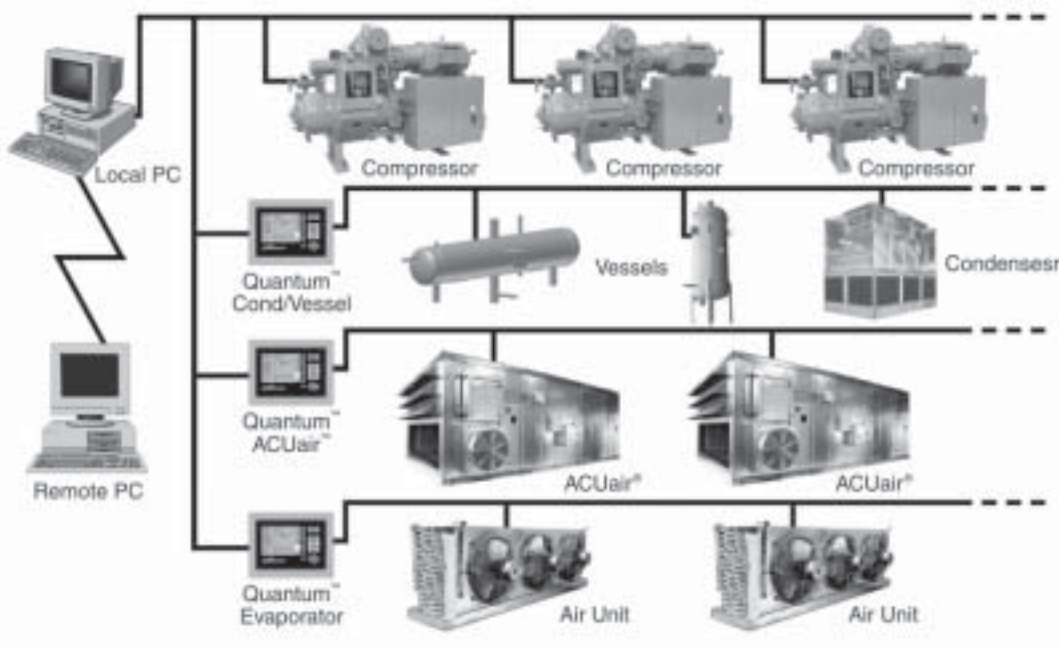

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