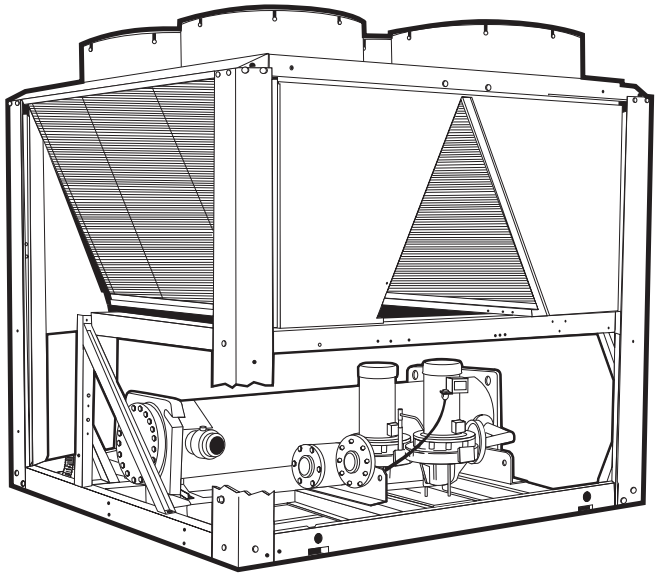
Carrier®

Product Data

AQUASNAP® 30RB060-390 Air-Cooled Chillers

60 to 390 Nominal Tons
(210 to 1370 kW)

AQUASNAP®



Puron®
the environmentally sound refrigerant

ASHRAE 90.1 COMPLIANT

Features/Benefits

AquaSnap chillers are an effective all-in-one package that is easy to install and easy to own. AquaSnap chillers cost less to purchase and install, and then operate quietly and efficiently. Value-added features include:

- Quiet AeroAcoustic™ fan system
- Rotary scroll compression
- Puron® HFC refrigerant
- Easy to use *Comfort*Link™ controls
- Integrated hydronic pump package

Leave it to Carrier to rethink chiller design in ways noticed at the initial purchase, through installation, and for years afterward. Carrier's new AquaSnap chiller installs quickly and easily on the ground or the rooftop. Then it will run so quietly that you'll hardly know it's there. There is one place, however, where you will definitely be aware of AquaSnap unit — on your electric bill. The AquaSnap unit's high efficiency keeps costs down.

Costs less right from the start

Only AquaSnap chillers feature a compact, all-in-one package design. The optional pump and hydronic components are already built in, which costs less than buying and installing the components individually. You'll save when you install an AquaSnap chiller, too. The chiller's fully integrated and preassembled hydronic system installs in minutes. No other chiller in this class installs so easily and inexpensively. The preassembled and integrated hydronic module utilizes top-quality components and pumps to ensure years of reliable operation.

AquaSnap® chillers make noise in the marketplace, not the workplace.

AquaSnap chillers are having a big impact, but they are doing it very quietly. In fact, the AquaSnap chiller's Aero-Acoustic™ fan is almost twice as quiet as the competition's per cfm. Much of the reduction is in frequencies where noise is most annoying, which makes AquaSnap chillers ideal for sound-sensitive environments. When cooler temperatures allow part-load operation or during scheduled nighttime operation, the units operate with fewer fans and becomes even quieter. AquaSnap chillers are quiet during the day and even quieter at night.

The savings will continue to mount

Besides costing less to buy and install, AquaSnap chillers are also more affordable to operate. They are our most efficient air-cooled models, with full-load EER (Energy Efficiency Ratio) up to 9.7 and IPLV (integrated part-load value) up to 14.2. AquaSnap chillers use ultraquiet, high-efficiency rotary scroll compressors, operated in tandem, trios or quads per independent circuit for greater efficiency at partial loads.

Proven reliability that's built in

Thousands of AquaSnap chillers are already in service around the world. This field-proven design is backed by a 12-month warranty that includes the hydronic system. The compressors are maintenance-free and protected by an auto-adaptive control that minimizes compressor wear. Year-round operation is standard, from –20 F (–29 C) (with optional cooler heater and low ambient control) to 125 F (52 C).

Environmentally friendly

Carrier's unique Puron® refrigerant enables you to make a responsible decision in the protection of the earth's ozone layer. Puron refrigerant is an HFC refrigerant that does not contain chlorine that is damaging to the ozone layer. Puron refrigerant is unaffected by the Montreal Protocol unlike the traditional R-22 refrigerant and is therefore not subject to phase-out restrictions. Puron refrigerant is a safe, non-toxic, efficient and environmentally friendly refrigerant for the future.

Structurally sound

The base rail is industrial-quality 1/4-in. cold-rolled steel for maximum structural integrity. The zinc-dipped and painted galvanized frame (with Serma-Guard™ coated screws) provides the best protection on the market for corrosion resistance. With such a structurally sound base, no perimeter base rail is needed.

*Comfort*Link™ controls speak your language

Would you rather decipher blinking LEDs and codes, or use controls that communicate in plain English, Portuguese, Spanish or French? The *Comfort*Link control system makes it as easy as possible to monitor and control each AquaSnap chiller while accurately maintaining fluid temperatures. The large Scrolling Marquee display acts as a window into the unit's operation, providing easy-to-read information about chiller performance and over 15 diagnostic functions. This intuitive interface greatly reduces start-up and operator training time.

Carrier's exclusive handheld display Navigator™ provides convenience and powerful information in the palm of your hand. The Navigator helps technicians to quickly diagnose problems and even prevent them from occuring.

All AquaSnap units are ready to be used with the Carrier Comfort Network (CCN).

Benefits at a glance

For contractors:

- all-in-one chilled water package for quick and easy installation
- costs less to buy and install
- easy to use controls — less training needed
- no perimeter base rail required
- high reliability
- callbacks for noise mitigation unlikely
- makes service calls more productive

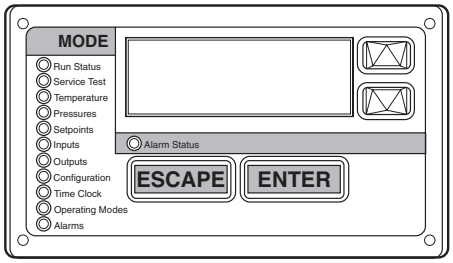
For consulting engineers:

- high efficiency/low operating costs
- low sound levels
- rotary scroll compressor
- operates year-round, even in extreme temperatures
- costs less to buy and install
- HFC Puron refrigerant
- high reliability
- quick and easy installation
- no perimeter base rail required
- common controls for all 30-series units
- All-in-one chilled water package

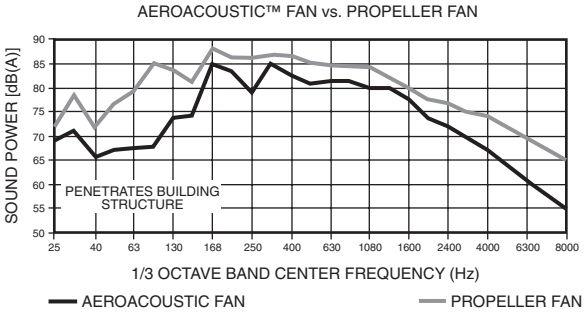
For building owners:

- costs less to buy and install
- extremely quiet operation
- lower energy, operating and maintenance costs
- HFC Puron refrigerant
- high reliability
- easy to operate — less training needed
- operates year-round, even in extreme temperatures

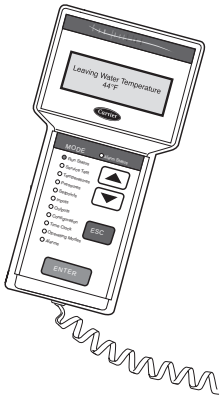
Features/Benefits (cont)



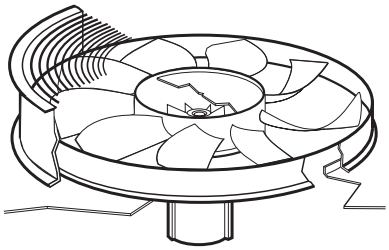
SCROLLING MARQUEE DISPLAY



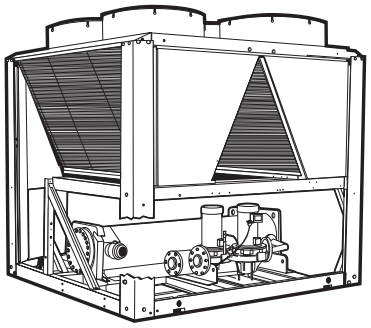
AEROACOUSTIC FAN VS PROPELLER FAN



NAVIGATOR™ DISPLAY



LOW-NOISE AEROACOUSTIC FAN



OPTIONAL HYDRONIC PACKAGE

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Model number nomenclature

AQUASNAP® CHILLER MODEL NUMBER DESIGNATION

30RB – 210 6 – 8 0 – – – L

30RB – Air-Cooled AquaSnap Chiller

Design Series

Nominal Sizes*

060	110	170	275
070	120	190	300
080	130	210	315
090	150	225	330
100	160	250	345
			360
			390

Voltage
1 – 575-360
2 – 380-3-60
5 – 208/230-3-60
6 – 460-3-60

Condenser Coil and Fan Options
– – Aluminum Fin/Copper Tube (Standard)
0 – Copper Fin/Copper Tube
1 – Aluminum Precoat Fin/Copper Tube
2 – Aluminum E-Coat Fin/Copper Tube
3 – Copper E-Coat Fin/Copper Tube
6 – Aluminum Fin/Copper Tube, Low Sound Enclosure
7 – Copper Fin/Copper Tube, Low Sound Enclosure
8 – Aluminum E-Coat Fin/Copper Tube, Low Sound Enclosure
9 – Aluminum E-Coat Fin/Copper Tube, Low Sound Enclosure
B – Copper E-Coat Fin/Copper Tube, Low Sound Enclosure

Security/Packaging Option
L – No Packaging or Security Grilles
1 – Skid
2 – Skid (Top Crate)
3 – Coil Covers and Upper Grilles
4 – Skid, Coil Covers and Upper Grilles
5 – Skid (Top Crate), Coil Covers and Upper Grilles
7 – Coil Covers and Upper and Lower Grilles
8 – Skid, Coil Covers and Upper and Lower Grilles
9 – Skid (Top Crate), Coil Covers and Upper and Lower Grilles
C – Hail Guards with Coil Covers and Upper Grilles
D – Skid, Hail Guards with Coil Covers and Upper Grilles
F – Skid (Top Crate), Hail Guards with Coil Covers and Upper Grilles

Controls/Communication Option
– – None
0 – EMM
1 – Service
2 – Service, EMM
7 – BACnet
8 – EMM, BACnet
9 – Service, BAcnet
B – Service, EMM, BACnet
H – LON
J – EMM, LON
K – Service, LON
L – Service, EMM, LON

Electrical Option
– – Single Power Connection, No Disconnect
3 – Dual Power Connection, No Disconnect
7 – Single Power Connection, Disconnect
C – Dual Power Connection, Disconnect

Refrigeration Circuit Option
– – No Suction Line Insulation
0 – Suction Insulation
1 – Suction Service Valves
2 – Head Pressure Control Operation
3 – Suction Insulation, Suction Service Valves
4 – Suction Insulation, Head Pressure Control Operation
5 – Suction Service Valves, Head Pressure Control Operation
6 – Suction Insulation, Service Valves, Head Pressure Control Operation
7 – Minimum Load Control
8 – Suction Insulation, Minimum Load Operation
9 – Suction Service Valves, Minimum Load Control
B – Head Pressure Control Operation, Minimum Load Control
C – Suction Insulation, Suction Service Valves, Minimum Load Control
D – Suction Insulation, Head Pressure Control Operation, Minimum Load Control
F – Suction Service Valves, Low Ambient Operation, Minimum Load Control
G – Suction Insulation, Suction Service Valves, Head Pressure Control Operation, Minimum Load Control

Cooler Option
– – Integral Cooler
0 – Integral Cooler, Cooler Heater
1 – Remote Cooler
9 – Integral Cooler, Brine
B – Integral Cooler, Cooler Heater, Brine
C – Remote Cooler, Brine
M – Integral Cooler, Removable Core TXV
N – Integral Cooler, Cooler Heater, Removable Core TXV
P – Remote Cooler, Removable Core TXV

Hydronics Option
– – No Pump Installed
0 – Single Pump, 3 HP
1 – Single Pump, 5 HP
2 – Single Pump, 7.5 HP
3 – Single Pump, 10 HP
4 – Single Pump, 15 HP
6 – Dual Pump, 3 HP
7 – Dual Pump, 5 HP
8 – Dual Pump, 7.5 HP, Low Head
9 – Dual Pump, 7.5 HP, High Head
B – Dual Pump, 10 HP
C – Dual Pump, 15 HP

LEGEND

EMM — Energy Management Module
GFI — Ground Fault Interrupting
LON — Local Operating Network

*Refer to unit sizes and modular combinations below.

Quality Assurance

Certified to ISO 9001:2000

UNIT SIZES AND MODULAR COMBINATIONS

UNIT 30RB	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
060	60	210	—	—
070	70	245	—	—
080	80	280	—	—
090	90	315	—	—
100	100	350	—	—
110	110	385	—	—
120	120	421	—	—
130	130	456	—	—
150	150	526	—	—
160	160	562	—	—
170	170	597	—	—

UNIT 30RB	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
190	190	667	—	—
210	210	737	—	—
225	225	791	—	—
250	250	879	—	—
275	275	967	—	—
300	300	1055	—	—
315	315	1107	160	160
330	330	1160	170	160
345	345	1213	170	170
360	360	1266	190	170
390	390	1370	190	190

ARI* capacity ratings

UNIT 30RB	CAPACITY (Tons)	CAPACITY kW	COMP kW	FAN kW	TOTAL POWER kW	FULL LOAD		IPLV		COOLER FLOW RATE (gpm)	COOLER PD (ft)	COOLER PD (kPa)
						EER	COP	EER	COP			
060	57.1	200.7	60.2	10.3	70.5	9.7	2.85	13.2	3.87	136.6	9.1	26.80
070	66.5	233.8	73.2	10.3	83.5	9.6	2.80	13.4	3.93	159.1	11.9	35.35
080	76.0	266.9	85.0	10.3	95.3	9.6	2.80	14.2	4.16	181.6	7.1	21.11
090	86.5	303.9	91.2	15.5	106.7	9.7	2.85	13.5	3.96	206.8	9.1	26.80
100	95.8	336.6	104.1	15.5	119.6	9.6	2.81	13.6	3.99	229.1	10.9	32.36
110	105.5	370.7	116.7	15.5	132.2	9.6	2.80	13.7	4.02	252.3	9.0	26.62
120	118.5	416.3	129.6	18.1	147.7	9.6	2.82	13.7	4.02	283.2	11.1	32.94
130	127.3	447.2	137.7	20.6	158.3	9.6	2.82	13.6	3.99	304.3	12.7	37.61
150	144.5	507.6	158.6	20.6	179.3	9.7	2.83	13.8	4.04	345.4	7.7	22.76
160	153.1	537.8	162.9	25.8	188.7	9.7	2.85	13.4	3.93	366.0	8.6	25.38
170	166.5	585.0	182.4	25.8	208.2	9.6	2.81	13.5	3.96	398.1	10.0	29.73
190	188.6	662.6	205.8	31.0	236.7	9.6	2.80	13.4	3.93	450.9	12.7	37.59
210	201.9	709.4	217.8	31.0	248.7	9.7	2.85	13.6	3.99	482.5	14.6	43.10
225	214.4	753.3	237.1	31.0	268.1	9.6	2.81	13.8	4.04	512.5	16.3	48.31
250	238.0	836.3	261.8	36.1	298.0	9.6	2.81	13.6	3.99	569.0	19.9	58.87
275	260.3	914.7	284.3	41.3	325.6	9.6	2.81	13.7	4.02	622.4	23.6	69.76
300	282.7	993.4	308.4	46.5	354.9	9.6	2.80	13.5	3.96	675.9	27.6	81.53
315	306.1	1075.6	325.7	51.6	377.4	9.7	2.85	13.4	3.9	731.9	8.6	25.57
330	319.6	1122.8	345.3	51.6	396.9	9.7	2.83	13.5	4.0	764.0	10.0	29.73
345	333.0	1170.1	364.8	51.6	416.5	9.6	2.81	13.5	4.0	796.2	10.0	29.73
360	355.1	1247.7	388.2	56.8	445.0	9.6	2.80	13.5	4.0	849.0	12.7	37.76
390	377.2	1325.3	411.5	62.0	473.5	9.6	2.80	13.4	3.9	901.8	12.7	37.76

LEGEND

COP — Coefficient of Performance
EER — Energy Efficiency Ratios
IPLV — Integrated Part Load Value
PD — Pressure Drop

*Air Conditioning and Refrigeration Institute.

NOTE: Based on ARI standard rating conditions.

Physical data

30RB060-300 — ENGLISH

UNIT 30RB	060	070	080	090	100	110	120	130	150
OPERATING WEIGHT (lb)*									
Al-Cu	4705	4911	5258	6590	6813	7067	8238	8593	9,808
Cu-Cu	5187	5393	5740	7314	7537	7791	9082	9558	10,773
REFRIGERANT TYPE	R-410A, EXV Controlled System								
Refrigerant Charge (lb) Ckt A/Ckt B/Ckt C	40.5/89.5/—	40.5/112/—	68.5/68.5/—	96/76/—	96/96/—	96/106/—	96/133/—	133/106/—	133/133/—
COMPRESSORS	Scroll, Hermetic								
Quantity	3	3	4	4	4	5	5	6	6
Speed (rpm)	3500								
(Qty) Compressor Type Ckt A	(2) 20	(2) 25	(2) 20	(2) 25	(2) 25	(2) 25	(2) 25	(3) 25	(3) 25
(Qty) Compressor Type Ckt B	(1) 20	(1) 20	(2) 20	(2) 20	(2) 25	(3) 20	(3) 25	(3) 20	(3) 25
(Qty) Compressor Type Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oil Charge (Pt, Ckt A/Ckt B/Ckt C)	26.2/13.1	26.2/13.1	26.2/26.2	26.2/26.2	26.2/26.2	26.2/39.4	26.2/39.4	39.4/39.4	39.4/39.4
No. Capacity Steps									
Standard	3	3	4	4	4	5	5	6	6
Optional (Maximum)	4	4	5	5	5	6	6	7	7
Minimum Capacity Step (%)									
Standard	33	29	25	22	25	18	20	15	17
Optional	22	19	16	14	18	12	14	10	12
Capacity (%)									
Ckt A	67	71	50	56	50	45	40	56	50
Ckt B	33	29	50	44	50	55	60	44	50
Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COOLER	Direct Expansion, Shell and Tube Type								
Weight (empty, lb)	715	715	856	856	856	970	970	970	1518
Net Fluid Volume (gal)	28.2	28.2	31.3	31.3	31.3	45.8	45.8	45.8	73.5
Maximum Refrigerant Pressure (psig)	445	445	445	445	445	445	445	445	445
Maximum Fluid Side Pressure Without Pumps (psig)	300	300	300	300	300	300	300	300	300
Maximum Fluid Side Pressure With Pumps (psig)	150	150	150	150	150	150	150	150	150
FLUID CONNECTIONS (in.)									
Inlet and Outlet, Victaulic	4	4	4	4	4	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge								
Standard Low Noise Type									
Fan Speed (rpm) Standard/Low Noise	1140	1140	1140	1140	1140	1140	1140	1140	1140
No. Blades...Diameter (in.)	9...30	9…30	9…30	9…30	9…30	9…30	9…30	9…30	9…30
No. Fans (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Airflow (cfm)	49,600	49,600	49,600	74,400	74,400	74,400	86,800	99,200	99,200
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing								
No. Coils (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Face Area (sq ft)	94	94	94	141	141	141	164	188	188
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3	3
Max Working Refrigerant Pressure (psig)	656	656	656	656	656	656	656	656	656
HYDRONIC MODULE (Optional)	Pump(s) with pressure/temperature taps, NPT fittings, and triple duty valve.								
Pump	Single or Dual, 1800 or 3600 rpm								
CHASSIS DIMENSIONS (ft-in.)									
Length		7-11			11-10			15-9	
Width					7-4 25/32				
Height					7-6 7/16				

LEGEND

EXV — Electronic Expansion Valve

*Assume that 2 pumps are used on Models 30RB060-190. No pumps are available on models larger than 30RB190.

30RB060-300 — ENGLISH (cont)

UNIT 30RB	160	170	190	210	225	250	275	300
OPERATING WEIGHT (lb)*								
Al-Cu	10,900	11,235	12,647	13,018	13,351	14,752	16,199	17,590
Cu-Cu	12,106	12,441	14,094	14,465	14,798	16,441	18,129	19,761
REFRIGERANT TYPE	R-410A, EXV Controlled System							
Refrigerant Charge (lb) Ckt A/Ckt B/Ckt C	162/106/—	162/133/—	162/162/—	133/106/133	133/133/133	133/133/162	162/162/133	162/162/162
COMPRESSORS	Scroll, Hermetic							
Quantity	7	7	8	9	9	10	11	12
Speed (rpm)								
(Qty) Compressor Type Ckt A	(4) 25	(4) 25	(4) 25	(3) 25	(3) 25	(3) 25	(4) 25	(4) 25
(Qty) Compressor Type Ckt B	(3) 20	(3) 25	(4) 25	(3) 20	(3) 25	(3) 25	(4) 25	(4) 25
(Qty) Compressor Type Ckt C	N/A	N/A	N/A	(3) 25	(3) 25	(4) 25	(3) 25	(4) 25
Oil Charge (Pt, Ckt A/Ckt B/Ckt C)	52.5/39.4	52.5/39.4	52.5/52.5	39.4/39.4/39.4	39.4/39.4/39.4	39.4/39.4/52.5	52.5/52.5/39.4	52.5/52.5/52.5
No. Capacity Steps								
Standard	7	7	8	9	9	10	11	12
Optional (Maximum)	8	8	9	10	10	11	12	13
Minimum Capacity Step (%)								
Standard	13	14	13	10	11	10	9	8
Optional	8	10	9	6	8	7	7	6
Capacity (%)								
Ckt A	62	57	50	36	33	30	36	33
Ckt B	38	43	50	28	33	30	36	33
Ckt C	N/A	N/A	N/A	36	33	40	28	33
COOLER	Direct Expansion, Shell and Tube Type							
Weight (empty, lb)	1518	1518	1518	2382	2382	2382	2382	2382
Net Fluid Volume (gal)	73.5	73.5	73.5	86.6	86.6	86.6	86.6	86.6
Maximum Refrigerant Pressure (psig)	445	445	445	445	445	445	445	445
Maximum Fluid Side Pressure Without Pumps (psig)	300	300	300	300	300	300	300	300
Maximum Fluid Side Pressure With Pumps (psig)	150	150	150	150	150	150	150	150
FLUID CONNECTIONS (in.)								
Inlet and Outlet, Victaulic	6	6	6	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge							
Standard Low Noise Type								
Fan Speed (rpm) Standard/Low Noise	1140	1140	1140	1140	1140	1140	1140	1140
No. Blades...Diameter (in.)	9…30	9…30	9…30	9…30	9…30	9…30	9…30	9…30
No. Fans (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Airflow (cfm)	124,000	124,000	148,800	148,800	148,800	173,600	198,400	223,200
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing							
No. Coils (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Face Area (sq ft)	235	235	282	282	282	328	375	422
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3
Max Working Refrigerant Pressure (psig)	656	656	656	656	656	656	656	656
HYDRONIC MODULE (Optional)	Pump(s) with pressure/temperature taps, NPT fittings, and triple duty valve.							
Pump	Single or Dual, 1800 or 3600 rpm			Not available				
CHASSIS DIMENSIONS (ft-in.)								
Length	19-8			23-7		27-6	31-5	35-4
Width	7-4 25/32							
Height	7-6 7/16							

LEGEND

EXV — Electronic Expansion Valve

*Assume that 2 pumps are used on Models 30RB060-190. No pumps are available on models larger than 30RB190.

Physical data (cont)

30RB060-300 — SI

UNIT 30RB	060	070	080	090	100	110	120	130	150
OPERATING WEIGHT (kg)*									
Al-Cu	2134	2228	2385	2989	3090	3206	3737	3898	4449
Cu-Cu	2353	2446	2604	3318	3419	3534	4120	4335	4887
REFRIGERANT TYPE	R-410A, EXV Controlled System								
Refrigerant Charge (kg) Ckt A/Ckt B/Ckt C	18.4/40.6/—	18.4/50.8/—	31.1/31.1/—	43.5/34.5/—	43.5/43.5/—	43.5/48.1/—	43.5/60.3/—	60.3/48.1/—	60.3/60.3/—
COMPRESSORS	Scroll, Hermetic								
Quantity	3	3	4	4	4	5	5	6	6
Speed (r/s)					58.3				
(Qty) Ckt A	(2) 20	(2) 25	(2) 20	(2) 25	(2) 25	(2) 25	(2) 25	(3) 25	(3) 25
(Qty) Ckt B	(1) 20	(1) 20	(2) 20	(2) 20	(2) 25	(3) 20	(3) 25	(3) 20	(3) 25
(Qty) Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oil Charge (L, Ckt A/Ckt B/Ckt C)	12.4/6.2	12.4/6.2	12.4/12.4	12.4/12.4	12.4/12.4	12.4/18.6	12.4/18.6	18.6/18.6	18.6/18.6
No. Capacity Steps									
Standard	3	3	4	4	4	5	5	6	6
Optional (Maximum)	4	4	5	5	5	6	6	7	7
Minimum Capacity Step (%)									
Standard	33	29	25	22	25	18	20	15	17
Optional	22	19	16	14	18	12	14	10	12
Capacity (%)									
Ckt A	67	71	50	56	50	45	40	56	50
Ckt B	33	29	50	44	50	55	60	44	50
Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COOLER	Direct Expansion, Shell and Tube Type								
Weight (empty, kg)	324	324	388	388	388	440	440	440	689
Net Fluid Volume (L)	106	106	118	118	118	173	173	173	278
Maximum Refrigerant Pressure (kPa)	3068	3068	3068	3068	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure Without Pumps (kPa)	2068	2068	2068	2068	2068	2068	2068	2068	2068
Maximum Fluid Side Pressure With Pumps (kPa)	1034	1034	1034	1034	1034	1034	1034	1034	1034
FLUID CONNECTIONS (in.)									
Inlet and Outlet, Victaulic	4	4	4	4	4	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge								
Standard Low Noise Type									
Fan Speed (r/s) Standard/Low Noise	19	19	19	19	19	19	19	19	19
No. Blades...Diameter (mm)	9…762	9…762	9…762	9…762	9…762	9…762	9…762	9…762	9…762
No. Fans (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Airflow (L/s)	23 409	23 409	23 409	35 113	35 113	35 113	40 965	46 817	46 817
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing								
No. Coils (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Face Area (sq m)	8.73	8.73	8.73	13.1	13.1	13.1	15.24	17.47	17.47
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3	3
Max Working Refrigeration Pressure (kPa)	4522	4522	4522	4522	4522	4522	4522	4522	4522
HYDRONIC MODULE (Optional) Pump	Pump(s) with pressure/temperature taps, NPT fittings, and triple duty valve. Single or Dual, 29.2 or 58.3 r/s								
CHASSIS DIMENSIONS									
Length (mm)		2412			3606			4800	
Width (mm)					2255				
Height (mm)					2296.9				

LEGEND

EXV — Electronic Expansion Valve

*Assume that 2 pumps are used on Models 30RB060-190. No pumps are available on models larger than 30RB190.

30RB060-300 — SI (cont)

UNIT 30RB	160	170	190	210	225	250	275	300
OPERATING WEIGHT (kg)*								
Al-Cu	4944	5097	5737	5905	6056	6691	7348	7979
Cu-Cu	5491	5643	6393	6561	6712	7457	8223	8964
REFRIGERANT TYPE	R-410A, EXV Controlled System							
Refrigerant Charge (kg) Ckt A/Ckt B/Ckt C	73.5/48.1/—	73.5/60.3/—	73.5/73.5/—	60.3/48.1/60.3	60.3/60.3/60.3	60.3/60.3/73.5	73.5/73.5/60.3	73.5/73.5/73.5
COMPRESSORS	Scroll, Hermetic							
Quantity	7	7	8	9	9	10	11	12
Speed (r/s)	58.3							
(Qty) Ckt A	(4) 25	(4) 25	(4) 25	(3) 25	(3) 25	(3) 25	(4) 25	(4) 25
(Qty) Ckt B	(3) 20	(3) 25	(4) 25	(3) 20	(3) 25	(3) 25	(4) 25	(4) 25
(Qty) Ckt C	N/A	N/A	N/A	(3) 25	(3) 25	(4) 25	(3) 25	(4) 25
Oil Charge (L, Ckt A/Ckt B/Ckt C)	24.8/18.6	24.8/18.6	24.8/24.8	18.6/18.6/18.6	18.6/18.6/18.6	18.6/18.6/24.8	24.8/24.8/18.6	24.8/24.8/24.8
No. Capacity Steps								
Standard	7	7	8	9	9	10	11	12
Optional (Maximum)	8	8	9	10	10	11	12	13
Minimum Capacity Step (%)								
Standard	13	14	13	10	11	10	9	8
Optional	8	10	9	6	8	7	7	6
Capacity (%)								
Ckt A	62	57	50	38	33	30	36	33
Ckt B	38	43	50	28	33	30	36	33
Ckt C	N/A	N/A	N/A	36	33	40	28	33
COOLER	Direct Expansion, Shell and Tube Type							
Weight (empty, kg)	689	689	689	1080	1080	1080	1080	1080
Net Fluid Volume (L)	278	278	278	327	327	327	327	327
Maximum Refrigerant Pressure (psig)	3068	3068	3068	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure Without Pumps (psig)	2068	2068	2068	2068	2068	2068	2068	2068
Maximum Fluid Side Pressure With Pumps (psig)	1034	1034	1034	1034	1034	1034	1034	1034
FLUID CONNECTIONS (in.)								
Inlet and Outlet, Victaulic	6	6	6	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge							
Standard Low Noise Type								
Fan Speed (r/s) Standard/Low Noise	19	19	19	19	19	19	19	19
No. Blades...Diameter (mm)	9…762	9…762	9…762	9…762	9…762	9…762	9…762	9…762
No. Fans (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Airflow (L/s)	58 521	58 521	70 226	70 226	70 226	81 930	93 634	105 339
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing							
No. Coils (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Face Area (sq m)	21.83	21.83	26.2	26.2	26.2	30.47	34.84	39.21
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3
Max Working Refrigeration Pressure (kPa)	4522	4522	4522	4522	4522	4522	4522	4522
HYDRONIC MODULE (Optional)	Pump(s) with pressure/temperature taps, NPT fittings, and triple duty valve.			Not available				
Pump	Single or Dual, 29.2 or 58.3 r/s			Not available				
CHASSIS DIMENSIONS								
Length (mm)	5994	5994	7188	7188	7188	8382	9576	10 770
Width (mm)	2255							
Height (mm)	2296.9							

LEGEND

EXV — Electronic Expansion Valve

*Assume that 2 pumps are used on Models 30RB060-190. No pumps are available on models larger than 30RB190.

Physical data (cont)

30RB315-390 — ENGLISH

UNIT 30RB	315	330	345	360	390
OPERATING WEIGHT (Module A/Module B, lb)*					
Cu-Al	10,900/10,900	11,235/10,900	11,235/11,235	12,647/11,235	12,647/12,657
Cu-Cu	12,106/12,106	12,441/12,106	12,441/12,441	14,094/12,441	14,094/14,094
REFRIGERANT TYPE	R-410A, EXV Controlled System				
Circuits Qty	4	4	4	4	4
Refrigerant Charge					
Module A Ckt A/Ckt B (lb)	162/106	162/133	162/133	162/162	162/162
Module B Ckt A/Ckt B (lb)	162/106	162/106	162/133	162/133	162/162
COMPRESSORS	Scroll, Hermetic				
Total Quantity	14	14	14	15	16
Speed (rpm)	3500	3500	3500	3500	3500
Module A, (Qty) Ckt A	4 (25)	4 (25)	4 (25)	4 (25)	4 (25)
Module A, (Qty) Ckt B	3 (20)	3 (25)	3 (25)	4 (25)	4 (25)
Module B, (Qty) Ckt A	4 (25)	4 (25)	4 (25)	4 (25)	4 (25)
Module B, (Qty) Ckt B	3 (20)	3 (20)	3 (25)	3 (25)	4 (25)
Module A Oil Charge (Pt, Ckt A/Ckt B)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5	52.5/52.5
Module B Oil Charge (Pt, Ckt A/Ckt B)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5
No. Capacity Steps					
Standard	14	14	14	15	16
Optional (Maximum)	16	16	16	17	18
Minimum Capacity Step (%)					
Standard	6	6	7	7	6
Optional	5	4	6	5	5
Capacity (%)					
Module A, Ckt A	31	30	29	27	25
Module A, Ckt B	19	22	21	27	25
Module B, Ckt A	31	30	29	27	25
Module B, Ckt B	19	18	21	20	25
COOLER	Direct Expansion, Shell and Tube Type				
Module A Weight (empty, lb)	1518	1518	1518	1518	1518
Module B Weight (empty, lb)	1518	1518	1518	1518	1518
Net Fluid Volume (gal) Module A/Module B	73.5/73.5	73.5/73.5	73.5/73.5	73.5/73.5	73.5/73.5
Maximum Refrigerant Pressure (psig)	445	445	445	445	445
Maximum Fluid Side Pressure (psig)	300	300	300	300	300
FLUID CONNECTIONS (in.)					
Inlet and Outlet, Victaulic	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge				
Standard Low Noise Type					
Fan Speed (rpm) Standard/Low Noise	1140	1140	1140	1140	1140
Module A No. Blades...Diameter (in.) Ckt A/Ckt B	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30
Module B No. Blades...Diameter (in.) Ckt A/Ckt B	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30
Total No. Fans	20	20	20	22	24
Module A No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Airflow (cfm)	248,000	248,000	248,000	272,800	297,600
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing				
Module A No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Face Area (sq ft)	470	470	470	517	564
No. Rows (Ckt A or B, any module)	3	3	3	3	3
Max Working Refrigerant Pressure (psig)	656	656	656	656	656

*No pumps are available for these sizes.

30RB315-390 — SI

UNIT 30RB	315	330	345	360	390
OPERATING WEIGHT (Module A/Module B, kg)*					
Cu-Al	4944/4944	5096/4944	5096/5096	5737/5096	5737/5737
Cu-Cu	5491/5491	5643/5491	5643/5643	6393/5643	6393/6393
REFRIGERANT TYPE	R-410A, EXV Controlled System				
Circuits Qty	4	4	4	4	4
Refrigerant Charge					
Module A Ckt A/Ckt B (kg)	73.5/48.1	73.5/60.3	73.5/60.3	73.5/73.5	73.5/73.5
Module B Ckt A/Ckt B (kg)	73.5/48.1	73.5/48.1	73.5/60.3	73.5/60.3	73.5/73.5
COMPRESSORS	Scroll, Hermetic				
Total Quantity	14	14	14	15	16
Speed (r/s)	58.3	58.3	58.3	58.3	58.3
Module A, (Qty) Ckt A	4 (25)	4 (25)	4 (25)	4 (25)	4 (25)
Module A, (Qty) Ckt B	3 (20)	3 (25)	3 (25)	4 (25)	4 (25)
Module B, (Qty) Ckt A	4 (25)	4 (25)	4 (25)	4 (25)	4 (25)
Module B, (Qty) Ckt B	3 (20)	3 (20)	3 (25)	3 (25)	4 (25)
Module A Oil Charge (L, CktA/CktB)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5	52.5/52.5
Module B Oil Charge (L, CktA/CktB)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5
No. Capacity Steps					
Standard	14	14	14	15	16
Optional (Maximum)	16	16	16	17	18
Minimum Capacaity Step (%)					
Standard	6	6	7	7	6
Optional	5	4	6	5	5
Capacity (%)					
Module A, Ckt A	31	30	29	27	25
Module A, Ckt B	19	22	21	27	25
Module B, Ckt A	31	30	29	27	25
Module B, Ckt B	19	18	21	20	25
COOLER	Direct Expansion, Shell and Tube Type				
Module A Weight (empty, kg)	689	689	689	689	689
Module B Weight (empty, kg)	689	689	689	689	689
Net Fluid Volume (L) Module A/Module B	278/278	278/278	278/278	278/278	278/278
Maximum Refrigerant Pressure (kPa)	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure (kPa)	2068	2068	2068	2068	2068
FLUID CONNECTIONS (in.)					
Inlet and Outlet, Victaulic	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4
CONDENSER FANS	Shrouded Axial Type, Vertical Discharge				
Standard Low Noise Type					
Fan Speed (r/s) Standard/Low Noise	19	19	19	19	19
Module A No. Blades...Diameter (mm.) Ckt A/Ckt B	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762
Module B No. Blades...Diameter (mm.) Ckt A/Ckt B	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762
Total No. Fans	20	20	20	22	24
Module A No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Airflow (L/s)	117 042	117 042	117 042	128 747	140 452
CONDENSER COILS	3/4-in. OD, Plate Fin, Enhanced Copper Tubing				
Module A No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Face Area (sq m)	43.66	43.66	43.66	48.03	52.4
NO. Rows (Ckt A or B, any module)	3	3	3	3	3
Max Working Refrigerant Pressure (kPa)	4522	4522	4522	4522	4522

*No pumps are available for these sizes.

Physical data (cont)

UNIT WEIGHTS — STANDARD UNITS

UNITS WITHOUT PUMP — ENGLISH

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*				
	A	B	C	D	Total
060	806	856	1138	1072	3872
070	829	878	1219	1151	4077
080	913	895	1251	1276	4335
090	1095	1328	1778	1466	5667
100	1109	1362	1884	1535	5890
110	1211	1368	1891	1674	6144
120	1535	1550	2125	2104	7315
130	1544	1665	2315	2147	7671
150	1798	1762	2477	2527	8564

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	996	2055	1041	1423	2795	1345	9655
170	1033	2086	1045	1427	2912	1487	9990

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1031	1298	1393	1038	1419	1911	1844	1467	11,402
210	841	1676	1984	853	1311	2872	2324	1157	13,018
225	871	1709	1989	855	1313	2877	2452	1283	13,351
250	1070	2119	1979	850	1307	2863	3019	1544	14,752
275	627	2086	2631	1292	1866	3634	2984	1080	16,199
300	899	2418	2617	1284	1859	3621	3455	1435	17,590

UNITS WITHOUT PUMP — SI

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*				
	A	B	C	D	Total
060	366	388	516	486	1756
070	376	398	553	522	1849
080	414	406	568	579	1966
090	497	602	806	665	2571
100	503	618	855	696	2672
110	549	621	858	759	2787
120	696	703	964	955	3318
130	700	755	1050	974	3480
150	815	799	1124	1146	3885

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	452	932	472	645	1268	610	4379
170	469	946	474	647	1321	675	4531

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	468	589	632	471	644	867	836	666	5172
210	381	760	900	387	595	1303	1054	525	5905
225	395	775	902	388	596	1305	1112	582	6056
250	485	961	898	386	593	1299	1369	700	6691
275	284	946	1193	586	846	1648	1354	490	7348
300	408	1097	1187	583	843	1642	1567	651	7979

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†				
	A	B	C	D	Total
060	929	980	1255	1190	4354
070	951	1002	1337	1269	4560
080	1036	1018	1369	1393	4817
090	1278	1515	1952	1646	6391
100	1291	1550	2058	1715	6614
110	1395	1555	2066	1853	6868
120	1751	1766	2331	2311	8159
130	1789	1913	2549	2384	8635
150	2045	2008	2713	2763	9528

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1142	2364	1203	1582	3089	1481	10,861
170	1180	2394	1207	1586	3207	1623	11,196

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1194	1506	1601	1200	1578	2106	2039	1625	12,849
210	943	1917	2255	978	1427	3126	2564	1255	14,465
225	973	1950	2260	981	1429	3131	2693	1381	14,798
250	1232	2425	2249	976	1423	3117	3316	1704	16,441
275	732	2371	3018	1501	2059	4011	3262	1175	18,129
300	1064	2766	3005	1494	2053	3998	3790	1591	19,761

*Aluminum Fins/Copper Tubing.

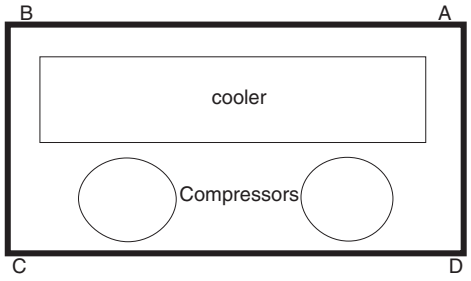
UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†				
	A	B	C	D	Total
060	421	444	569	540	1975
070	432	455	607	576	2068
080	470	462	621	632	2185
090	580	687	885	747	2899
100	586	703	934	778	3000
110	633	705	937	840	3115
120	794	801	1057	1048	3701
130	811	868	1156	1081	3917
150	928	911	1230	1253	4322

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	518	1072	546	717	1401	672	4927
170	535	1086	548	719	1455	736	5078

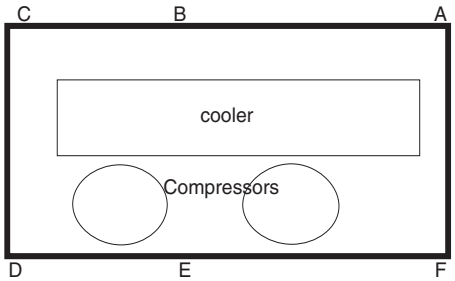
UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	542	683	726	544	716	955	925	737	5828
210	428	870	1023	444	647	1418	1163	569	6561
225	442	885	1025	445	648	1420	1222	627	6712
250	559	1100	1020	443	645	1414	1504	773	7457
275	332	1075	1369	681	934	1819	1479	533	8223
300	483	1255	1363	678	931	1814	1719	722	8964

†Copper Fins/Copper Tubing.

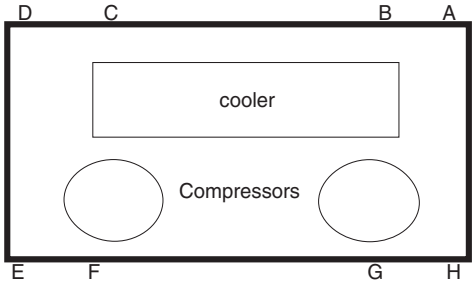
30RB060-150



30RB160-170, 315A, 315B, 330A, 330B, 345A, 345B, 360B



30RB190-300, 360A, 390A, 390B



NOTE: Corner weights are calculated at mounting locations. Refer to certified drawings starting on page 16 for mounting locations.

UNIT WEIGHTS — SINGLE PUMP UNITS

SINGLE PUMP UNITS — ENGLISH

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*				
	A	B	C	D	Total
060	1022	1070	1174	1121	4387
070	1044	1093	1256	1200	4593
080	1123	1102	1292	1318	4835
090	1289	1551	1817	1510	6167
100	1302	1586	1923	1579	6390
110	1455	1575	1899	1755	6684
120	1732	1805	2204	2115	7855
130	1737	1923	2391	2160	8210
150	2045	2042	2563	2567	9216

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	1126	2452	1041	1423	3025	1241	10,308
170	1169	2477	1045	1427	3148	1378	10,643

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1031	1420	1798	1038	1419	2085	1796	1467	12,055

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†				
	A	B	C	D	Total
060	1145	1194	1292	1239	4,869
070	1167	1216	1374	1318	5,075
080	1247	1225	1410	1435	5,317
090	1473	1738	1992	1688	6,891
100	1485	1773	2098	1758	7,114
110	1640	1761	2075	1933	7,408
120	1947	2021	2410	2321	8,699
130	1982	2171	2625	2397	9,175
150	2292	2288	2799	2803	10,181

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1270	2763	1203	1582	3317	1380	11,514
170	1313	2788	1207	1586	3440	1516	11,849

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1194	1629	2005	1200	1578	2281	1991	1625	13,502

*Aluminum Fins/Copper Tubing.

SINGLE PUMP UNITS — SI

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*				
	A	B	C	D	Total
060	463	486	533	508	1990
070	473	496	570	544	2083
080	510	500	586	598	2193
090	585	704	824	685	2797
100	591	719	872	716	2898
110	660	714	861	796	3032
120	785	819	1000	959	3563
130	788	872	1084	980	3724
150	928	926	1162	1164	4180

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	511	1112	472	645	1372	563	4676
170	530	1124	474	647	1428	625	4828

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	468	644	816	471	644	946	815	666	5468

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†				
	A	B	C	D	Total
060	519	542	586	562	2209
070	529	552	623	598	2302
080	566	556	640	651	2412
090	668	788	904	766	3126
100	674	804	952	797	3227
110	744	799	941	877	3360
120	883	917	1093	1053	3946
130	899	985	1191	1087	4162
150	1039	1038	1269	1271	4618

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	576	1253	546	717	1505	626	5223
170	595	1264	548	719	1560	688	5375

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	542	739	909	544	716	1035	903	737	6124

†Copper Fins/Copper Tubing.

UNIT WEIGHTS — DUAL PUMP UNITS

DUAL PUMP UNITS — ENGLISH

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*				
	A	B	C	D	Total
060	1155	1202	1197	1150	4705
070	1177	1225	1279	1229	4911
080	1302	1276	1327	1353	5258
090	1453	1740	1851	1546	6590
100	1466	1775	1957	1616	6813
110	1631	1719	1908	1810	7067
120	1869	1987	2258	2124	8238
130	1872	2107	2443	2171	8593
150	2267	2297	2639	2605	9808

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	1221	2834	1041	1423	3211	1169	10,900
170	1270	2854	1045	1427	3339	1301	11,235

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1031	1498	2198	1038	1419	2210	1785	1467	12,647

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†				
	A	B	C	D	Total
060	1278	1326	1315	1268	5,187
070	1300	1348	1397	1347	5,393
080	1425	1399	1445	1471	5,740
090	1638	1926	2027	1724	7,314
100	1650	1961	2132	1794	7,537
110	1815	1904	2084	1987	7,791
120	2084	2203	2464	2331	9,082
130	2118	2355	2678	2408	9,558
150	2513	2544	2875	2841	10,773

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1366	3144	1203	1582	3504	1307	12,106
170	1413	3164	1207	1586	3631	1439	12,441

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1194	1709	2402	1200	1578	2409	1977	1625	14,094

*Aluminum Fins/Copper Tubing.

DUAL PUMP UNITS — SI

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*				
	A	B	C	D	Total
060	524	545	543	522	2134
070	534	556	580	558	2228
080	590	579	602	614	2385
090	659	789	840	701	2989
100	665	805	887	733	3090
110	740	780	865	821	3206
120	848	901	1024	963	3737
130	849	956	1108	985	3898
150	1028	1042	1197	1181	4449

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	554	1286	472	645	1456	530	4944
170	576	1294	474	647	1515	590	5096

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	468	680	997	471	644	1002	810	666	5737

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†				
	A	B	C	D	Total
060	580	601	597	575	2353
070	590	612	634	611	2446
080	646	635	655	667	2604
090	743	873	919	782	3318
100	748	890	967	814	3419
110	824	864	945	901	3534
120	945	999	1118	1057	4120
130	961	1068	1215	1092	4335
150	1140	1154	1304	1289	4887

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	619	1426	546	717	1589	593	5491
170	641	1435	548	719	1647	653	5643

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	542	775	1089	544	716	1093	897	737	6393

†Copper Fins/Copper Tubing.

Options and accessories

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
Condenser Coil Options	X	
Aluminum Fins, Pre-Coated	X	
Aluminum Fins, E-Coat	X	
Copper Fins, E-Coat	X	
Cu/Cu Condenser Coils	X	
Medium Temperature Brine	X	
Hydronic Pump Package	X	
Remote Cooler	X	X
Freeze Protection — Cooler Heaters	X	
Expansion Tank		X
Motormaster® Head Pressure Control	X	X
Minimum Load Control	X	X
Compressor Suction Service Valve	X	
Suction Line Insulation	X	
Removable Core Filter Drier	X	
Unit-Mounted Main Disconnect, Non-Fused	X	
Service Option	X	X
Energy Management Module	X	X
Navigator™ Display		X
Remote Enhanced Display		X
Chillervisor System Manager III Multi-Unit Control		X
DataPort™ Control		X
DataLINK™ Control		X
BACnet™ Translator Control	X	X
LON Translator Control	X	X
Condenser Coil Covers and Security Grilles	X	X
Condenser Coil Hail Guard	X	X
Compressor Sound Reduction Enclosures	X	X

LEGEND

LON — Local Operating Network

Factory-installed options

Condenser coil options — Several options are available to match coil construction to the site conditions for the best durability. Refer to the Environmental Corrosion Protection white paper for more information.

Removable core filter drier — Standard units are equipped with a removable core filter drier. An option exists for non-removable core filter driers for value engineering purposes. This option is not available with the Medium Temperature Brine option. The removable core filter drier is only available for sizes 30RB060-100.

Compressor suction service valve — Standard refrigerant discharge isolation and liquid valves enable service personnel to store the refrigerant charge in the cooler or condenser during servicing. This factory-installed option allows for further isolation of the compressor from the cooler vessel.

Suction line insulation — Insulation is tubular closed-cell insulation. This option is required with the Medium Temperature Brine option and recommended for areas of high dewpoints where condensation may be a concern.

Hydronic pump package — This option adds circulating pumps, a triple-duty valve (isolation, modulation and check), strainer, victaulic field piping connections, insulation and heaters, and pressure/temperature taps (3). The pumps are available in single or dual (lead/lag controlled) cooler pump versions with total dynamic head external to the chiller from approximately 20 to 140 feet (6.1 m to 42.7 m). Also includes heater and insulation for freeze protection to 20 F (–29 C). The hydronic pump package is only available for sizes 30RB060-190.

Freeze protection — Cooler heaters provide protection from cooler freezeup to –20 F (–29 C).

Energy Management Module — This module provides energy management capabilities to minimize chiller energy consumption. Several features are provided with this module including leaving fluid temperature reset, cooling set point reset or demand limit control from a 4 to 20 mA signal, 2-step demand limit control (from 0 to 100%) activated by a remote contact closure, and discrete input for "Ice Done" indication for ice stage system interface.

Service option — The service option provides a remote service port for Navigator™ display connection and a factory-installed convenience outlet includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115-v female receptacle. Service option not available with 380-v.

Motormaster® head pressure control — This option permits operation of the 30RB units to –20 F (–29 C) outdoor ambient temperature. The control is also available as a field-installed accessory and may require field-installed wind baffles.

Medium temperature brine — Option allows for leaving fluid temperatures to be set between 15 and 39 F (–9.4 and 3.9 C). The expansion device is modified to correct for the lower refrigeration flow rates. Motormaster® head pressure control and suction line insulation are required.

Unit-mounted non-fused disconnect — This option provides non-fused disconnect capability for power and control located at the unit.

Minimum load control — Option allows additional capacity reduction for unit operation below the minimum step of unloading (down to 15% of the minimum unit capacity, depending on unit size). Minimum load control is also available as a field-installed accessory.

Condenser coil covers and security grilles — Coil covers and 1 x 4 in. (25 mm, 102 mm) coated wire grilles protect headers and condenser coil from damage.

Hail guards — Sheet metal hoods provide protection against damage from hail and flying debris.

Compressor enclosures — Enclosures provide sound reduction for the scroll compressors.

BACnet Translator Control — Unit shall be supplied with field-installed interface between the chiller and a BACnet Local Area Network (LAN, i.e.,MS/TP EIA-485).

LON Translator Control — Unit shall be supplied with field-installed interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1).

Remote cooler kit — Allows remote installation of cooler. Kit includes thermistor and transducer cable extension, sheet metal panels for refrigerant pipe extensions and instructions.

Field-installed accessories

Minimum load control — Option allows additional capacity reduction for unit operation below the minimum step of unloading (down to 15% of the minimum unit capacity, depending on unit size) via hot gas bypass.

Navigator™ display — Provides a portable hand-held display for convenient access to unit status, operation, configuration and troubleshooting diagnostics capability. The four-line, 80-character LCD display provides clear language information in English, French, Spanish, or Portuguese. The weatherproof enclosure and industrial grade extension cord enables the Navigator display to be ideally suited for outdoor applications. Magnets located on the back of the module allow attachment to any sheet metal component for hands-free operation.

Remote enhanced display — Accessory kit contains a remotely mounted indoor 40-character per line, 16-line display panel for unit diagnostics.

Chillervisor System Manager III multi-unit control — Accessory allows sequencing of between two and eight chillers in parallel. Pump control is also provided.

Motormaster® head pressure control — This accessory permits operation of the 30RB units to –20 F (–29 C) outdoor ambient temperature. The control is also available as a factory-installed option and required field-installed wind baffles.

Energy Management Module — This module provides energy management capabilities to minimize chiller energy consumption. Several features are provided with this module including leaving fluid temperature reset, cooling set point reset or demand limit control from a 4 to 20 mA signal, 2-step demand limit control (from 0 to 100%) activated by a remote contact closure, and discrete input for "Ice Done" indication for ice stage system interface.

Remote service port — The remote service port consists of a receptacle for Navigator connection. The port is housed in a waterproof enclosure conveniently located for easy access to information during operation and maintenance routines.

Convenience outlet — Convenience outlet includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115V female receptacle. Not available with 380V.

Remote cooler kit — Allows remote installation of cooler. Kit includes thermistor and transducer cable extension, sheet metal panels for refrigerant pipe extensions and instructions.

Chilled water expansion tank — Enables chilled water system to accommodate fluctuations in volume based on increases or decreases in fluid temperature.

DataPort™ control — The DataPort control is an interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read* values in the system elements connected to the Carrier Comfort Network (CCN) Communication Bus using plan English ASCII over the RS-232 connection. Externally remote mounted with power supply.

DataLINK™ control — The DataLINK control is an interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read and change* values in the system elements connected to the CCN Communication Bus using plan English ASCII over the RS-232 connection.

BACnet translator control — Unit shall be supplied with field-installed interface between the chiller and a BACnet Local Area Network (LAN, i.e., MS/TP EIA-485).

LON translator control — Unit shall be supplied with field-installed interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1).

CONDENSER COIL CORROSION PROTECTION OPTIONS

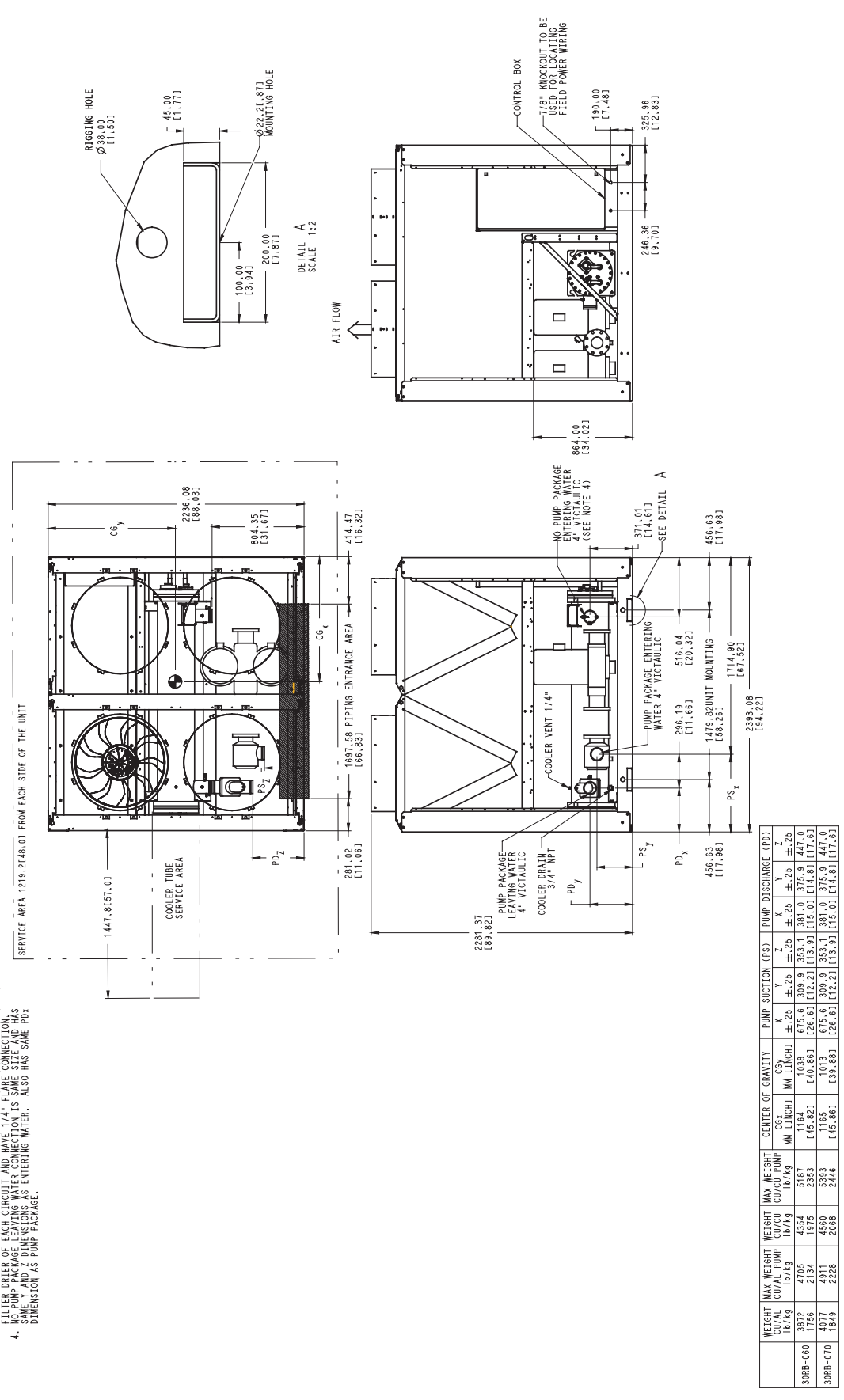
ENVIRO-SHIELD™ OPTION*	ENVIRONMENT				
	Standard	Mild Coastal	Severe Coastal	Industrial	Combined Industrial/Coastal
AL Fins (Standard Coils)	X				
CU Fins		X			
AL Fins, E-coat			X	X	X
CU Fins, E-coat			X		
AL Fins, Precoated		X			

LEGEND

AL — Aluminum
CU — Copper

*See "Environmental Corrosion Protection" for more information (Publications 810-217 and 811-019).

30RB060, 070 AIR-COOLED CHILLER

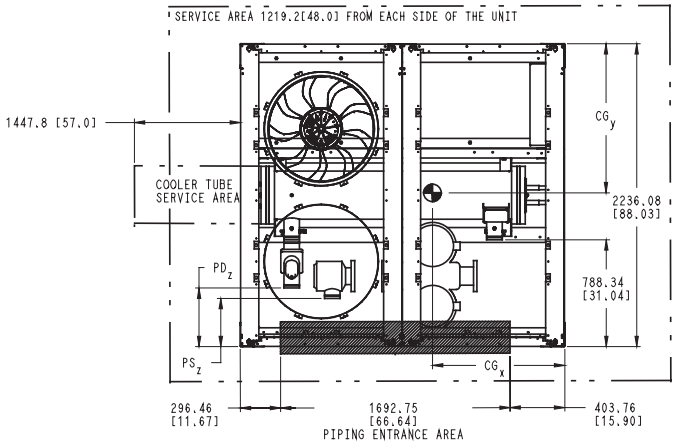


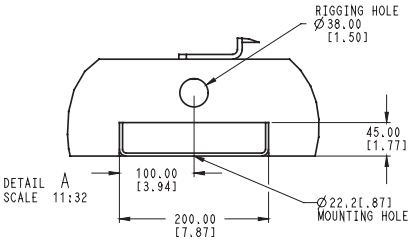
NOTES:
1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
   TOP- DO NOT RESTRICT.
   SIDES AND END- 6' FROM SOLID SURFACE
2. ALL PUMP PACKAGES LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
4. NO PUMP PACKAGE LEAVING WATER CONNECTION IS SAME SIZE AND HAS SAME Y AND Z DIMENSIONS AS ENTERING WATER. ALSO HAS SAME PDx DIMENSION AS PUMP PACKAGE.

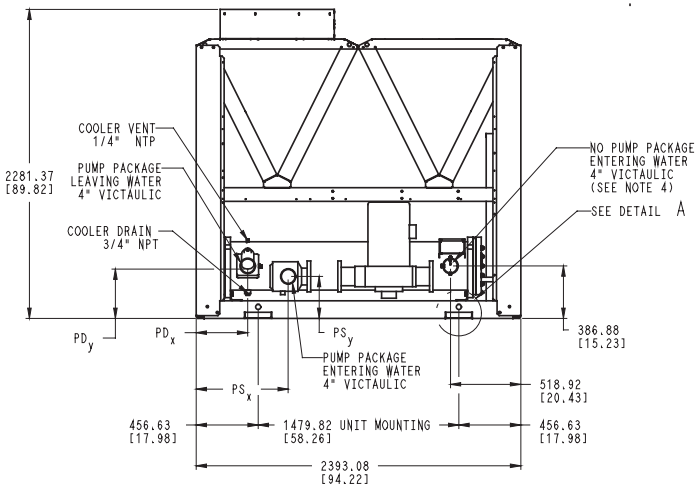
	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]	PUMP SUCTION (PS) X ±.25	Y ±.25	Z ±.25	PUMP DISCHARGE (PD) X ±.25	Y ±.25	Z ±.25
30RB-060	3872	4705	4354	5187	1164 [45.82]	1038 [40.86]	675.6 [26.61]	309.9 [12.22]	353.1 [13.9]	381.0 [15.0]	375.9 [14.8]	447.0 [17.61]
	1756	2134	1975	2353								
30RB-070	4077	4911	4560	5393	1165 [45.86]	1013 [39.88]	675.6 [26.61]	309.9 [12.22]	353.1 [13.9]	381.0 [15.0]	375.9 [14.8]	447.0 [17.61]
	1849	2228	2068	2446								

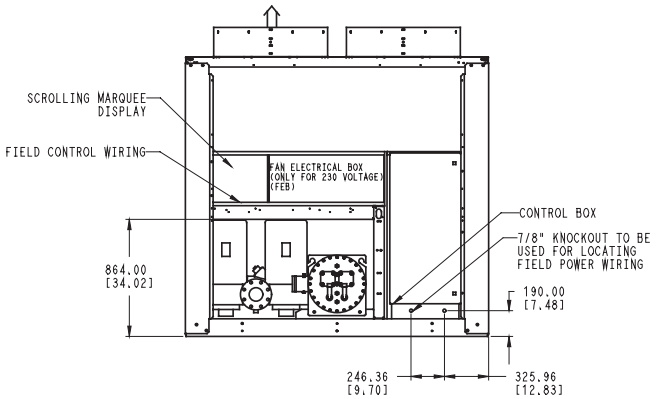
30RB080 AIR-COOLED CHILLER

NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
TOP- DO NOT RESTRICT
SIDES AND END- 6′ FROM SOLID SURFACE
2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
4. NO PUMP PACKAGE LEAVING WATER CONNECTION IS SAME SIZE AND HAS SAME Y AND Z DIMENSIONS AS ENTERING WATER. ALSO HAS SAME PDx DIMENSION AS PUMP PACKAGE.





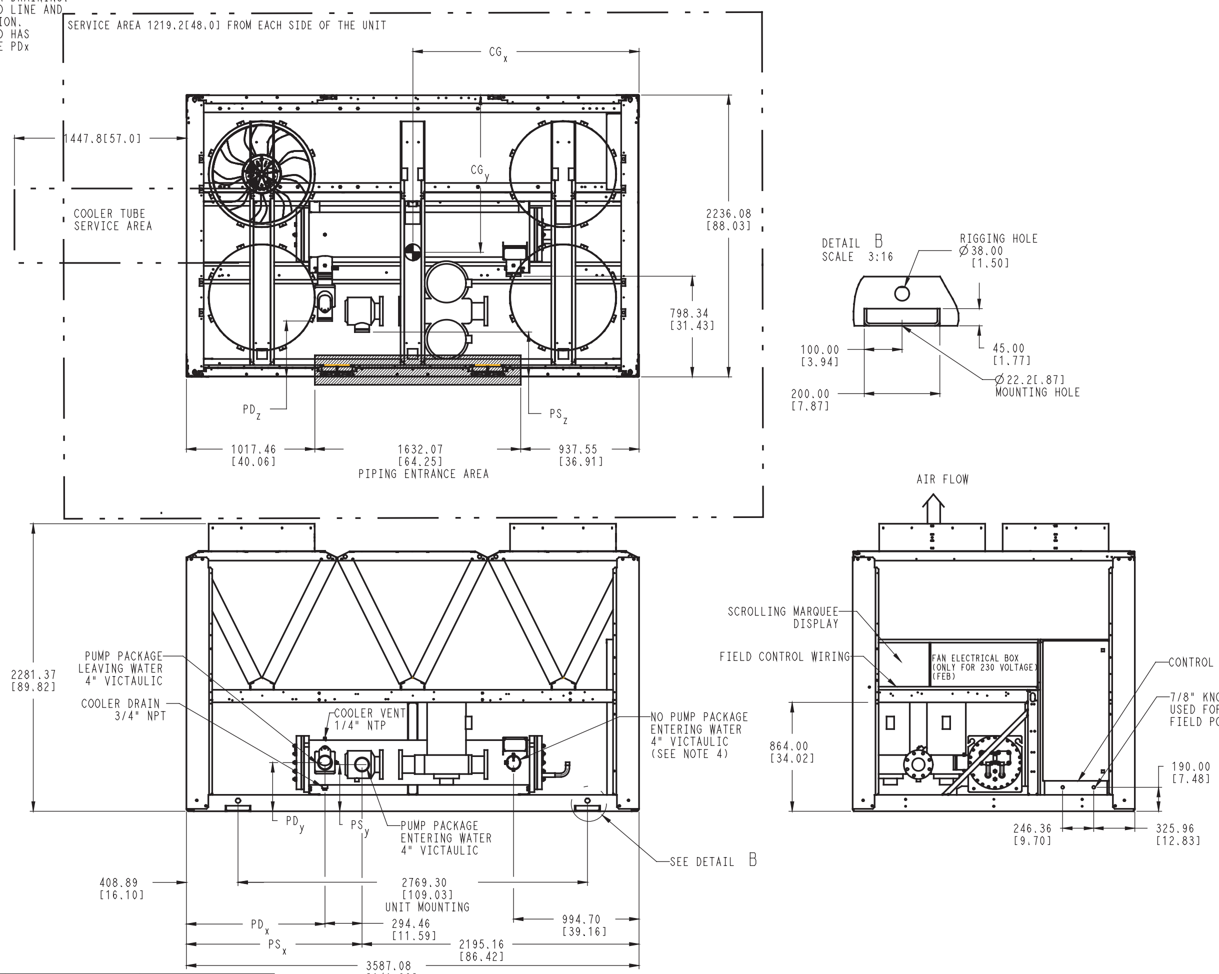




	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY		PUMP SUCTION (PS)			PUMP DISCHARGE (PD)		
					CGx MM [INCH]	CGy MM [INCH]	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25
30RB-080	4335 1966	5258 2385	4817 2185	5740 2604	1206 [47.48]	1012 [39.84]	675.6 [26.6]	309.9 [12.2]	353.1 [13.9]	381.0 [15.0]	391.2 [15.4]	429.3 [16.9]

30RB090, 100 AIR-COOLED CHILLER

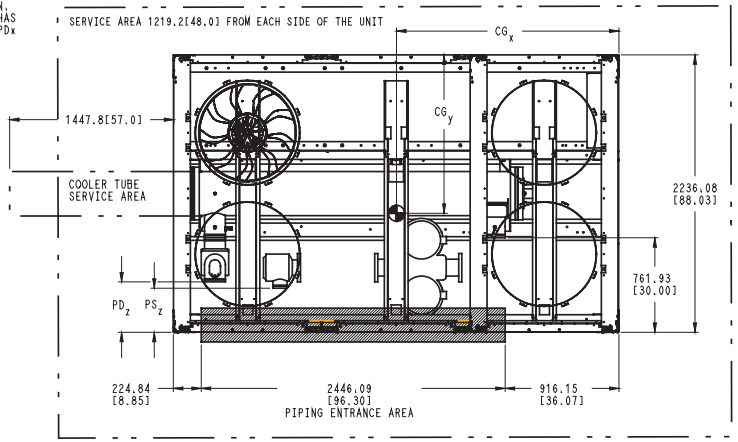
NOTES:
1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
   TOP- DO NOT RESTRICT
   SIDES AND END- 6' FROM SOLID SURFACE
2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE, LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
4. NO PUMP PACKAGE LEAVING WATER CONNECTION IS SAME SIZE AND HAS SAME Y AND Z DIMENSIONS AS ENTERING WATER. ALSO HAS SAME PDx DIMENSION AS PUMP PACKAGE.

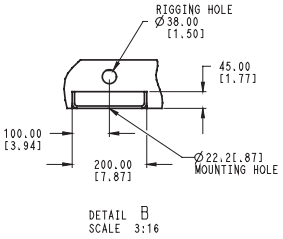


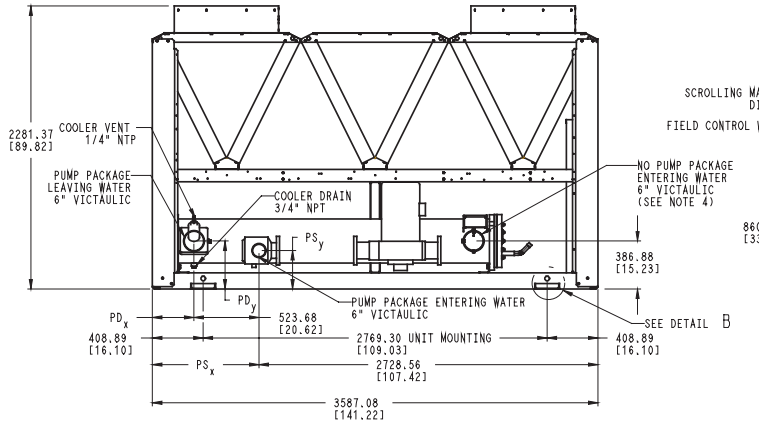
	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]	PUMP SUCTION (PS) X ±.25	Y ±.25	Z ±.25	PUMP DISCHARGE (PD) X ±.25	Y ±.25	Z ±.25
30RB-090	5667 2571	6590 2989	6391 2899	7314 3318	1625 [64.0]	1017 [40.0]	1389.4 [54.7]	309.9 [12.2]	353.1 [13.9]	1097.3 [43.2]	391.2 [15.4]	429.3 [16.9]
30RB-100	5890 2672	6813 3090	6614 3000	7537 3419	1614 [63.5]	999 [39.3]	1389.4 [54.7]	309.9 [12.2]	353.1 [13.9]	1097.3 [43.2]	391.2 [15.4]	429.3 [16.9]

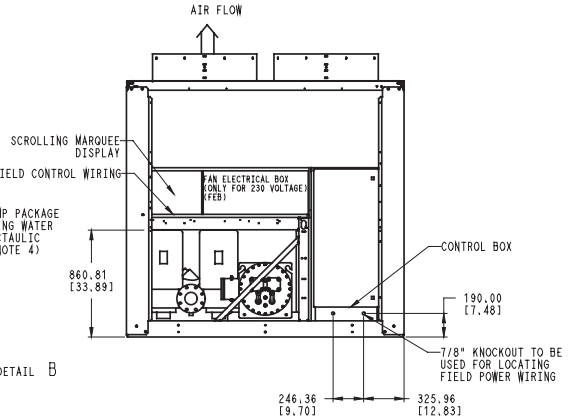
30RB110 AIR-COOLED CHILLER

NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
TOP- DO NOT RESTRICT
SIDES AND END- 6' FROM SOLID SURFACE
2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
4. NO PUMP PACKAGE LEAVING WATER CONNECTION IS SAME SIZE AND HAS SAME Y AND Z DIMENSIONS AS ENTERING WATER. ALSO HAS SAME PDx DIMENSION AS PUMP PACKAGE.





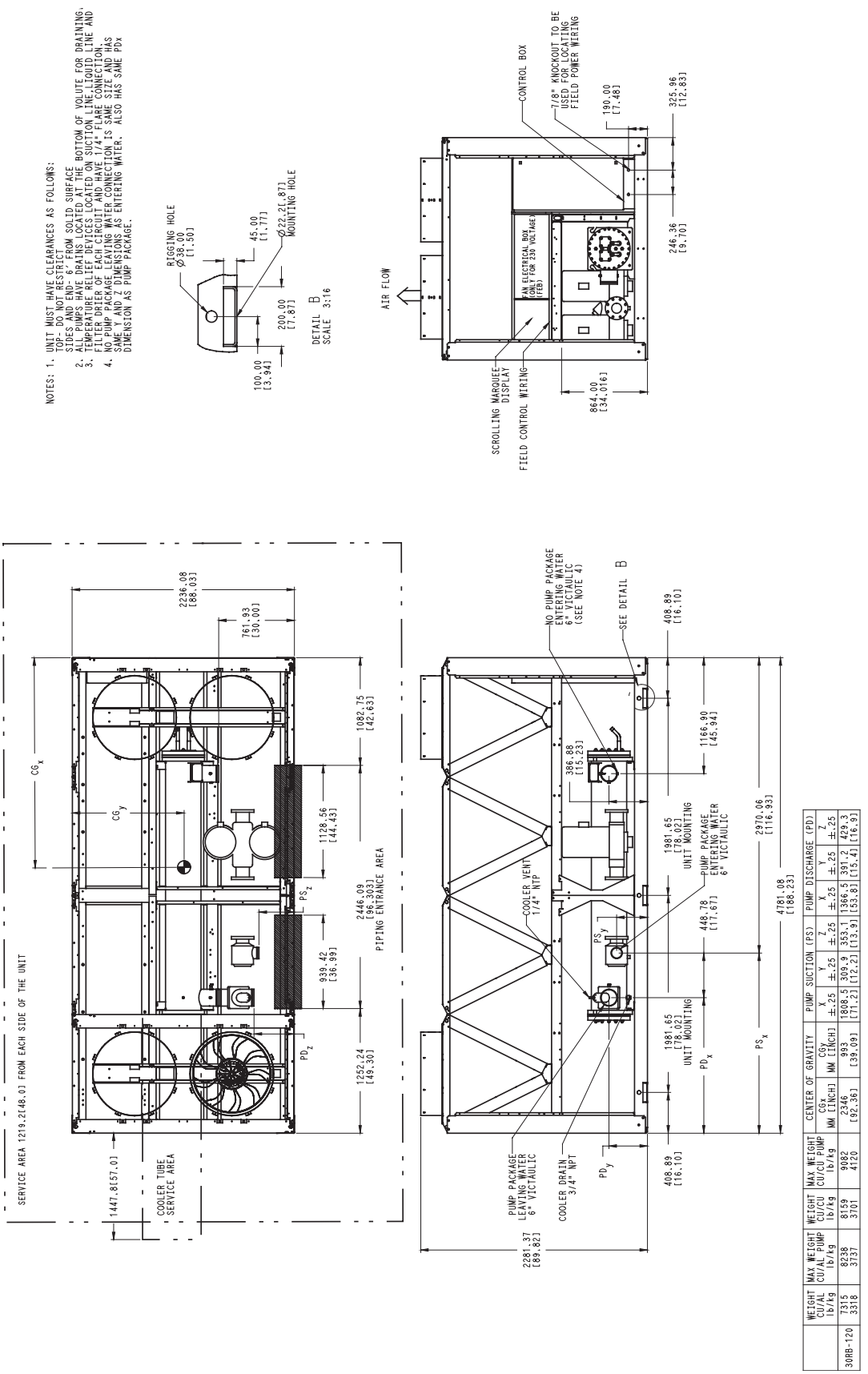




	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]	PUMP SUCTION (PS) X ±.25	Y ±.25	Z ±.25	PUMP DISCHARGE (PD) X ±.25	Y ±.25	Z ±.25
30RB-110	6144 2787	7067 3206	6868 3115	7791 3534	1713 [67.44]	997 [39.25]	856.0 [33.7]	309.9 [12.2]	353.1 [13.9]	340.4 [13.4]	391.2 [15.4]	429.3 [16.9]

Dimensions (cont)

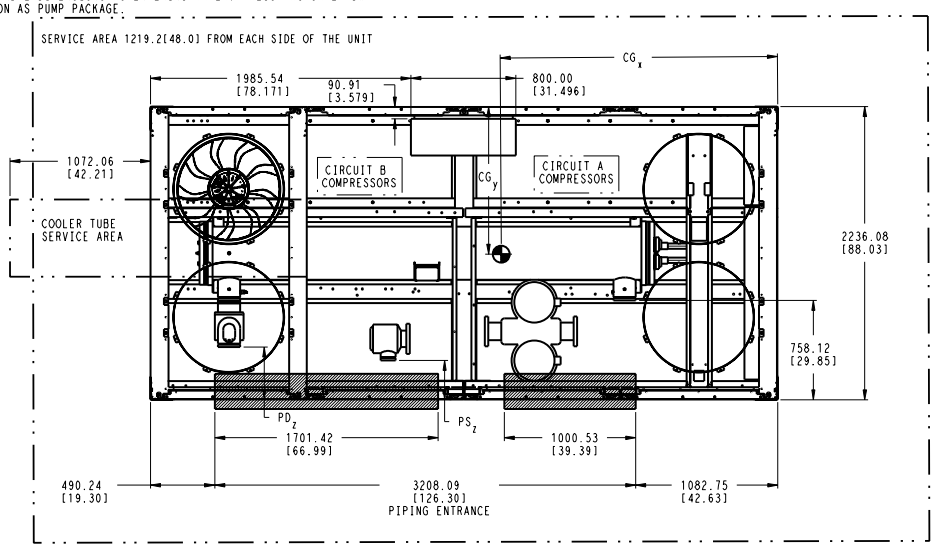
30RB120 AIR-COOLED CHILLER

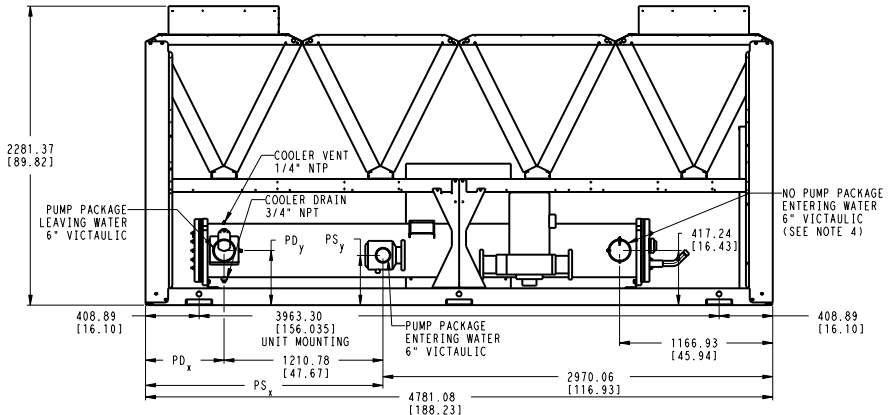


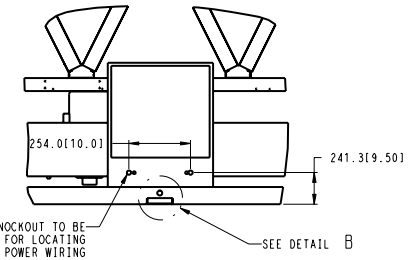
	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]	PUMP SUCTION (PS) X ±.25	Y ±.25	Z ±.25	PUMP DISCHARGE (PD) X ±.25	Y ±.25	Z ±.25
30RB-120	7315 3318	8238 3737	8159 3701	9082 4120	2346 [92.36]	993 [39.09]	1808.5 [71.2]	309.9 [12.2]	353.1 [13.9]	1366.5 [53.8]	391.2 [15.4]	429.3 [16.9]

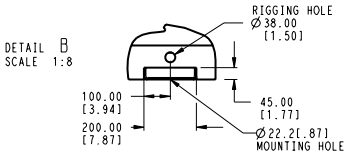
30RB130, 150 AIR-COOLED CHILLER

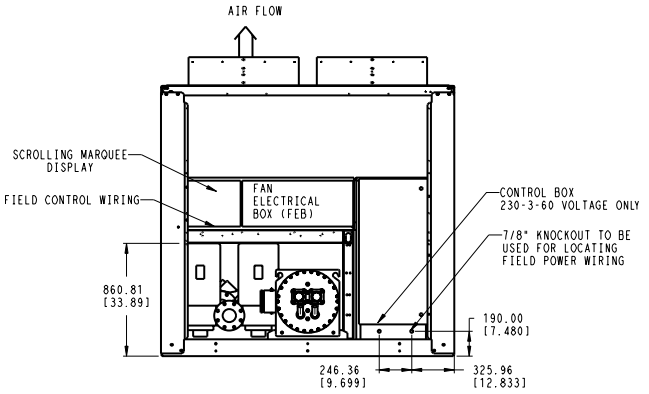
NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
TOP- DO NOT RESTRICT
SIDES AND END- 6' FROM SOLID SURFACE
2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.
4. NO PUMP PACKAGE LEAVING WATER CONNECTION IS SAME SIZE AND HAS SAME Y AND Z DIMENSIONS AS ENTERING WATER. ALSO HAS SAME PDx DIMENSION AS PUMP PACKAGE.







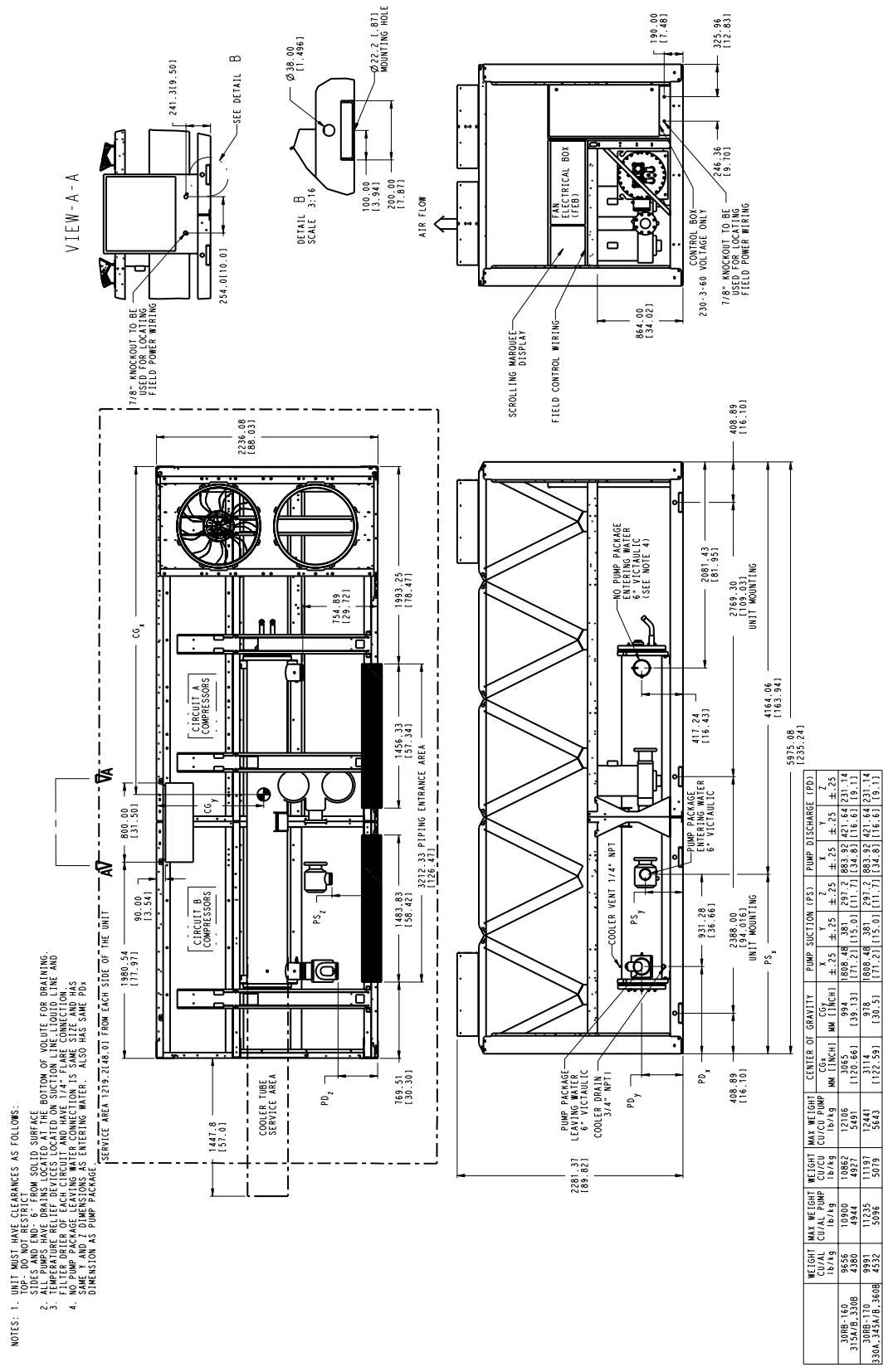




	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]	PUMP SUCTION (PS) X ±.25	Y ±.25	Z ±.25	PUMP DISCHARGE (PD) X ±.25	Y ±.25	Z ±.25
30RB-130	7671 3479	8593 3898	8635 3917	9558 4335	2272 [89.45]	983 [38.70]	1808.5 [71.2]	309.9 [12.2]	353.1 [13.9]	1366.5 [53.8]	391.2 [15.4]	429.3 [16.9]
30RB-150	8564 3884	9808 4449	9529 4322	10773 4887	2392 [94.17]	983 [38.70]	1808.5 [71.2]	381 [15.0]	297.2 [11.7]	604.5 [23.8]	421.6 [16.6]	231.1 [9.1]

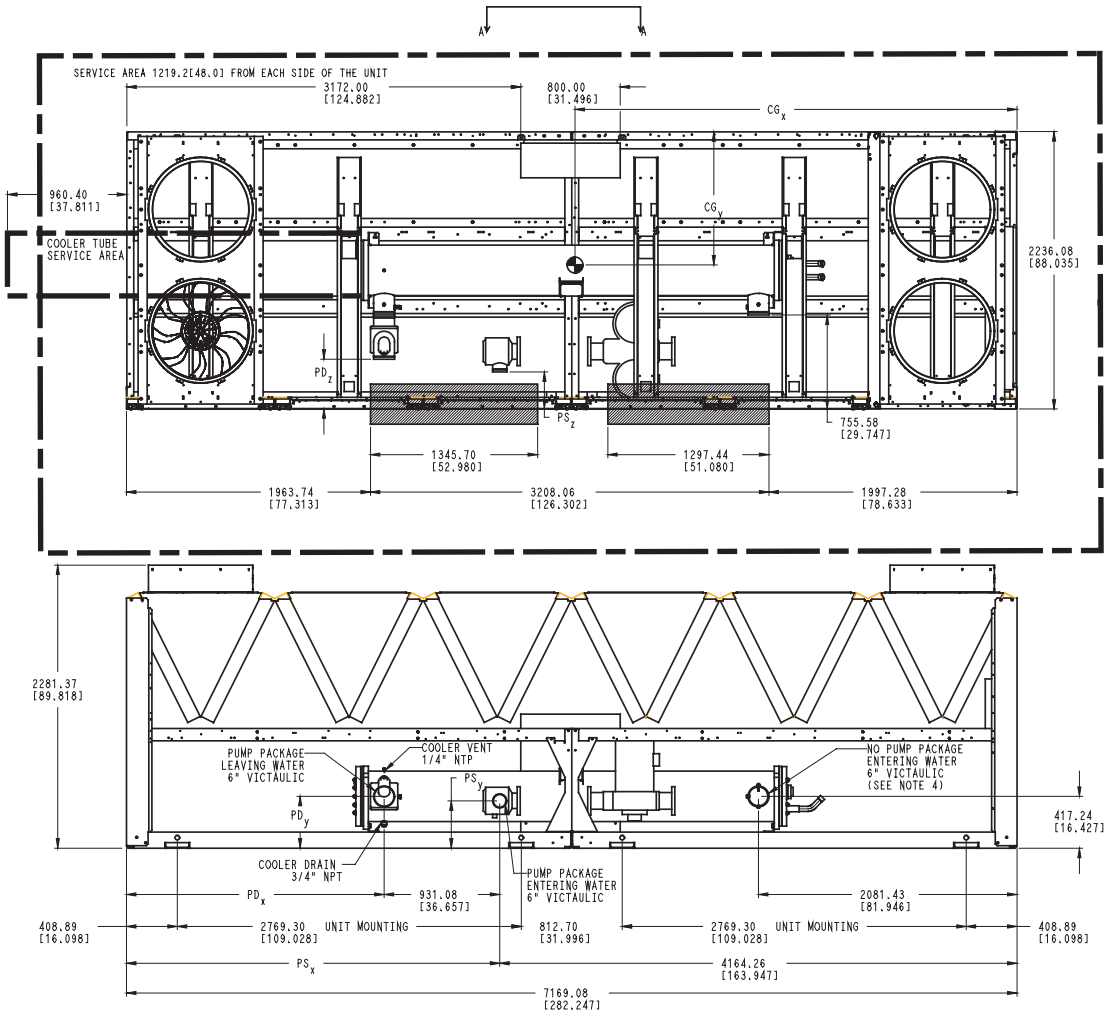
Dimensions (cont)

30RB160, 170, 315A/B, 330A/B, 345A/B, 360B AIR-COOLED CHILLER

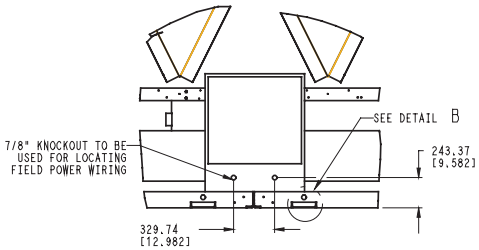


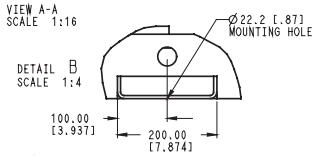
	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy	PUMP SUCTION (PS) X ±25	Y ±25	Z ±25	PUMP DISCHARGE (PD) X ±25	Y ±25	Z ±25
30RB-160	9656	10900	10862	12106	3065 [120.66]	994 [39.13]	1808.48 [71.2]	381 [15.0]	297.2 [11.7]	883.92 [34.8]	421.64 [16.6]	231.14 [9.1]
315A/B,330B	4380	4944	4927	5491								
30RB-170	9991	11235	11197	12441	3114 [122.59]	978 [30.5]	1808.48 [71.2]	381 [15.0]	297.2 [11.7]	883.92 [34.8]	421.64 [16.6]	231.14 [9.1]
330A,345A/B,360B	4532	5096	5079	5643								

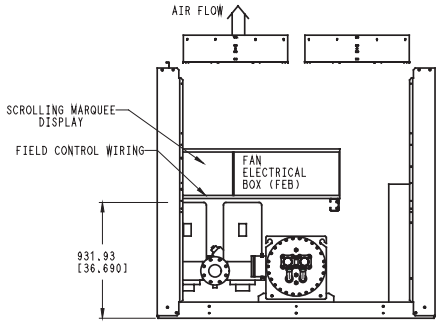
30RB190, 360A, 390A/B AIR-COOLED CHILLER



NOTES:
1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
   TOP- DO NOT RESTRICT
   SIDES AND END- 6' FROM SOLID SURFACE
2. ALL PUMPS HAVE DRAINS LOCATED AT THE BOTTOM OF VOLUTE FOR DRAINING.
3. TEMPERATURE RELIEF DEVICE LOCATED ON SUCTION LINE AND FILTER DRIER OF EACH CIRCUIT. 1/4" FLARE CONNECTION.



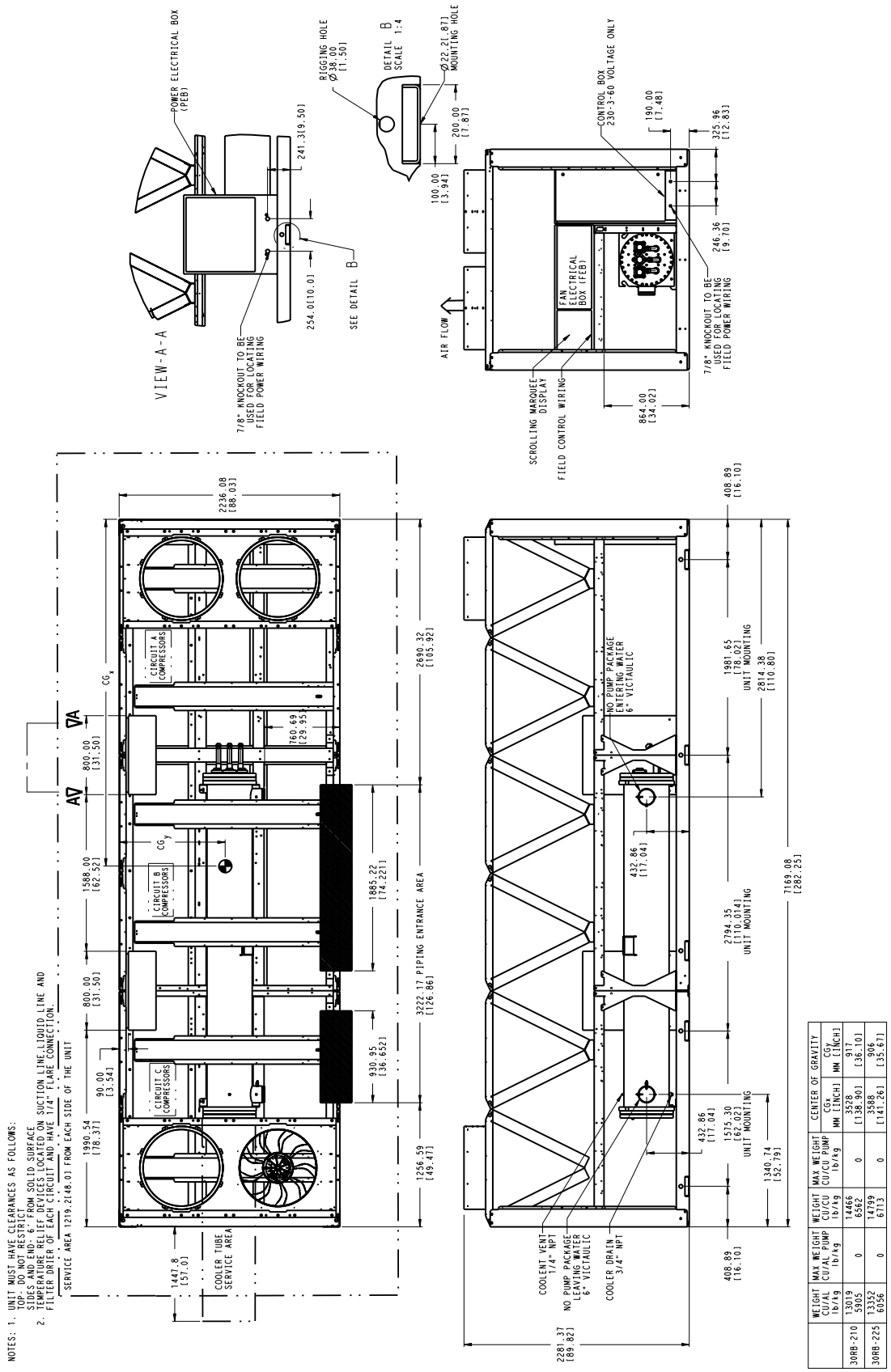




	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY		PUMP SUCTION (PS)			PUMP DISCHARGE (PD)		
					CGx MM [INCH]	CGy MM [INCH]	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25
30RB-190, 360A,390A/B	11402 5172	12647 5737	12850 5829	14094 6393	3578 [140.87]	974 [38.35]	3002 [118.2]	381 [15.0]	297.2 [11.7]	2080.3 [81.9]	421.6 [16.6]	231.1 [9.1]

Dimensions (cont)

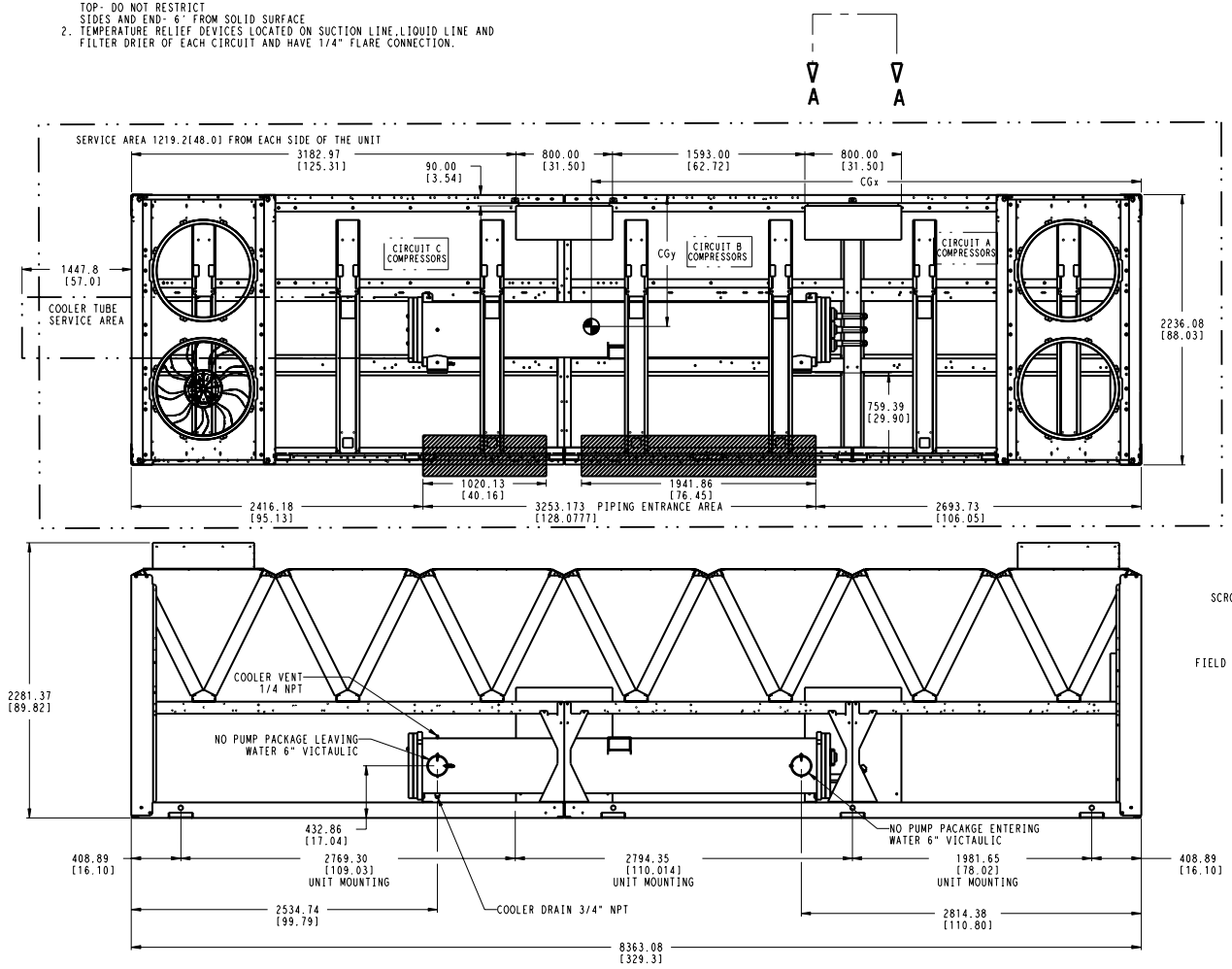
30RB210, 225 AIR-COOLED CHILLER

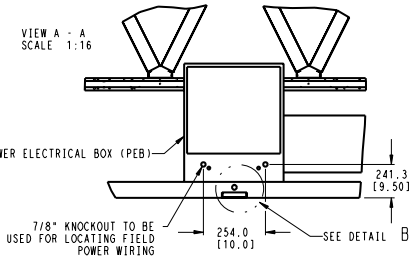


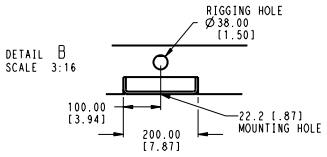
	WEIGHT (SHIPPING) lb/kg	MAX. WEIGHT (OPERATING) lb/kg	WEIGHT (OPERATING) lb/kg	MAX WEIGHT (OPTIONAL PUMP) lb/kg	CENTER OF GRAVITY	
					CG X MM [INCH]	CG Y MM [INCH]
30RB-210	13019 5905	0	14466 6562	0	3528 [138.90]	917 [36.10]
30RB-225	13352 6056	0	14799 6713	0	3588 [141.26]	906 [35.67]

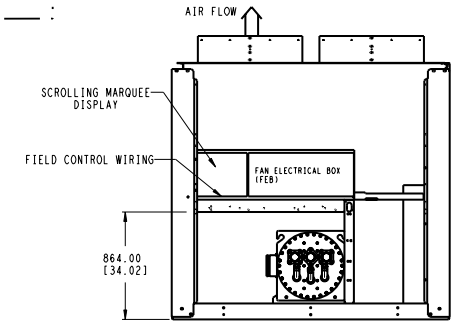
30RB250 AIR-COOLED CHILLER

NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
TOP- DO NOT RESTRICT
SIDES AND END- 6' FROM SOLID SURFACE
2. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.





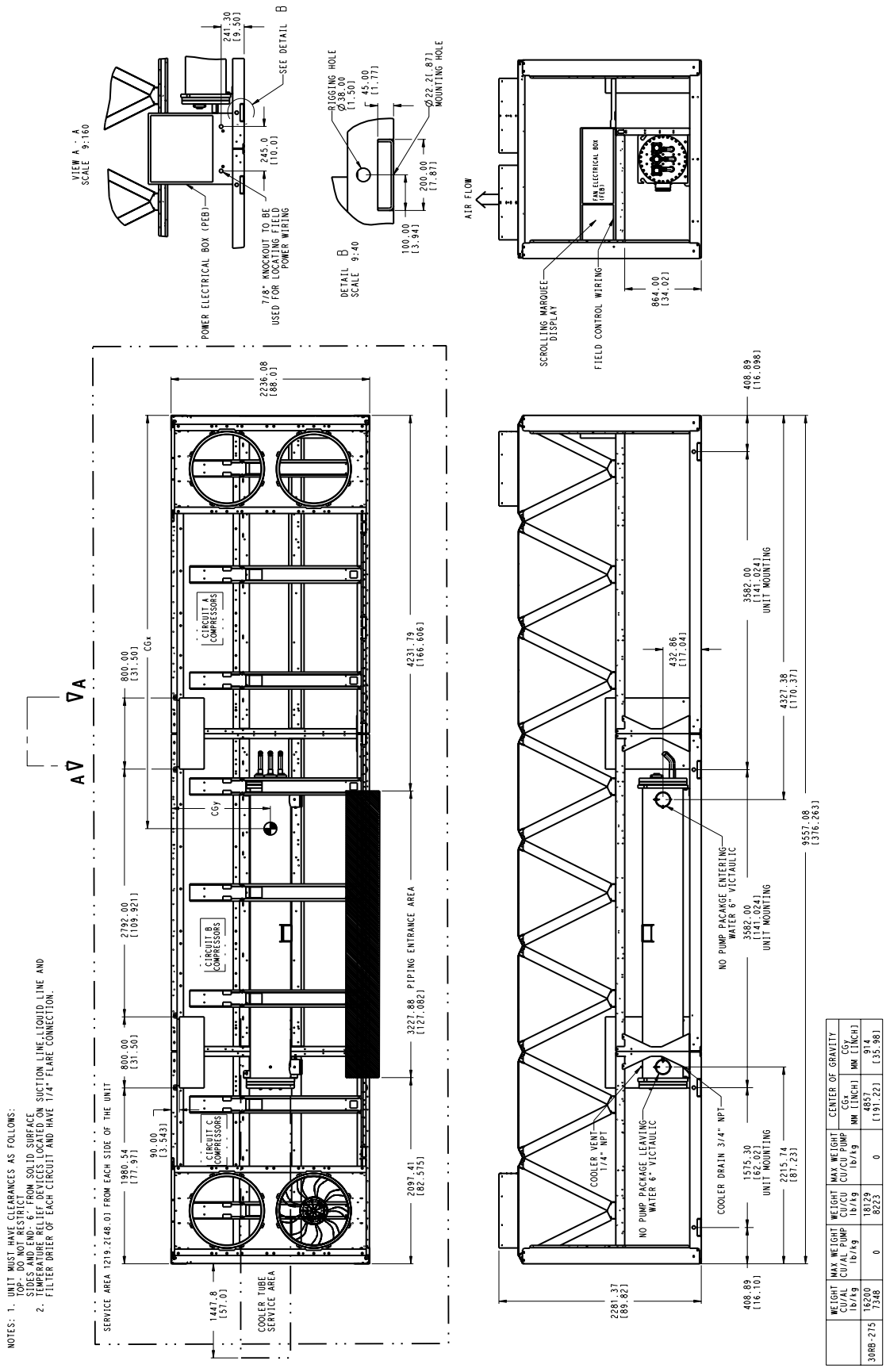




	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY	
					CGx MM [INCH]	CGy MM [INCH]
30RB-250	14753 6692	0	16441 7458	0	4022 [158.35]	910 [35.86]

Dimensions (cont)

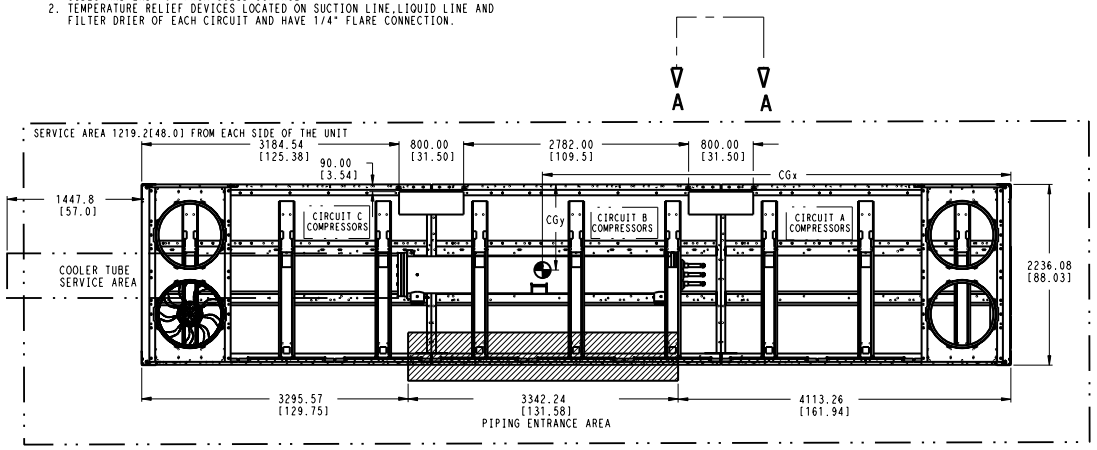
30RB275 AIR-COOLED CHILLER

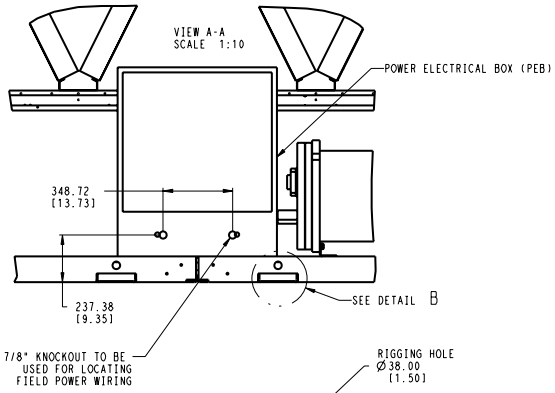


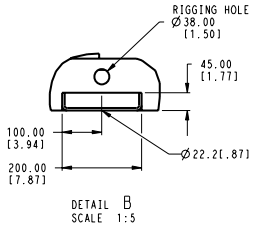
	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY CGx MM [INCH]	CGy MM [INCH]
30RB-275	16200 7348	0	18129 8223	0	4852 [191.22]	914 [35.98]

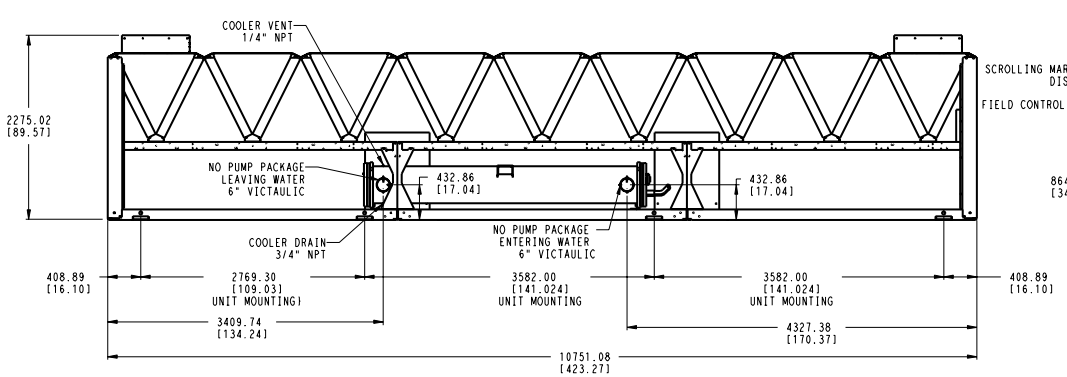
30RB300 AIR-COOLED CHILLER

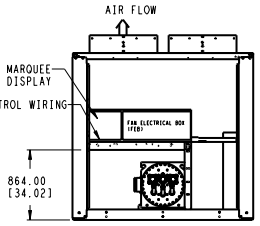
NOTES: 1. UNIT MUST HAVE CLEARANCES AS FOLLOWS:
TOP- DO NOT RESTRICT
SIDES AND END- 6' FROM SOLID SURFACE
2. TEMPERATURE RELIEF DEVICES LOCATED ON SUCTION LINE,LIQUID LINE AND FILTER DRIER OF EACH CIRCUIT AND HAVE 1/4" FLARE CONNECTION.











	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	WEIGHT CU/CU lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY	
					CGx MM [INCH]	CGy MM [INCH]
30RB-300	17591 7979	0	19762 8964	0	5317 [203.33]	916 [36.06]

Selection procedure

Carrier's Electronic Catalog Chiller Selection Program provides quick, easy selection of Carrier's air-cooled liquid chillers. The program considers specific temperature, fluid and flow requirements among other factors such as fouling and altitude corrections.

Before selecting a chiller, consider the following points:

Leaving Water Temperature (LWT)

- If the LWT is less than 40 F (4.4 C), loop freeze protection to a minimum of 15° F (8° C) below the LWT set point is required. The medium temperature brine option is also required.
- If the LWT requirement is greater than 60 F (16 C), a mixing loop is required.

Entering Water Temperature (EWT)

- If the EWT requirement is greater than 85 F (29 C), a mixing loop is required. The EWT cannot exceed 85 F (29 C) for extended operation. Pulldown can be accomplished from 95 F (35 C).

Cooler Flow Rate or Cooler Delta-T

- The cooler delta-T must fall between 5 and 20° F (3 and 11° C).
- For larger or smaller delta-T applications, a mixing loop is required.
- If the cooler flow is variable and the rate of change of flow may exceed 10% per minute, a loop volume of greater than 3 gallons per ton is recommended.

Cooler Pressure Drop

- A high cooler pressure drop can be expected when the cooler delta-T is low. A mixing loop can help to alleviate this situation.

Water Quality, Fouling factor

- Poor water quality can increase the required cooler fouling factor.
- Higher than standard fouling factors lead to lower capacity and higher input kW from a given chiller size compared to running the same application with better quality water (and lower fouling factors).

Operation below 32 F (0° C)

- Motormaster head pressure control is required.
- Consider wind baffles if average wind speed is greater than 5 mph.
- Consider higher loop volumes, 6 to 10 gallons per nominal ton.
- Loop freeze protection with glycol is strongly recommended to a minimum of 15° F (8° C) below lowest anticipated ambient temperature.
- Cooler Heater option is required if no glycol is used.
- Chilled water pump control is strongly recommended; otherwise override capability is required.
- Consider the Remote Cooler Option.

Chiller idle below 32 F (0° C)

- Loop freeze protection with glycol is strongly recommended to a minimum of 15° F (8° C) below lowest anticipated ambient temperature.
- Cooler Heater option is required if no glycol is used.
- Chilled water pump control is strongly recommended; otherwise override capability is required.
- Drain the cooler – This will require a small amount of glycol for residual water. Cooler heaters (if provided) will need to be disconnected.
- Consider the Remote Cooler Option.

Highest allowable ambient air temperature is 125 F (52 C).

Cooling Capacity Requirement

- Do not oversize the chillers by more than 15% at design conditions.
- If close capacity control is required below the standard minimum step of unloading, the minimum load control option should be employed.

Coil Corrosion Requirements

- Coastal Application
- Industrial Application
- Coastal/Industrial Application
- Urban Application
- Farming

Chilled Water Pump External Head Requirement

Capacity Control

- Temperature Reset
- Return Water
- Outside Air Temperature
- Space Temperature
- 4 to 20 mA (requires an Energy Management Module)

Demand Limit

- 2-step (requires an Energy Management Module)
- 4 to 20 mA (requires an Energy Management Module)
- CCN Loadshed

To select a chiller, use the Electronic Catalog or follow one of the procedures starting on page 29.

ENGLISH

I Determine 30RB unit size and operating conditions required to meet given capacity at given conditions.

Given:

Capacity. . . . . 126 Tons
Leaving Chilled Water Temp (LCWT) . . . . . .44 F
Cooler Water Temp Rise . . . . . 10° F
Condenser Entering Air Temp . . . . . .95 F
Fouling Factor (Cooler) 0.00010

NOTE: For other than 10° F (5.6° C) temperature rise, data corrections must be made using the chiller program in the electronic catalog.

II From Chiller Ratings table on page 38 and pressure drop curves on page 31, determine operating data for selected unit.

Unit 30RB130
Capacity. . . . . .127.3 Tons
Power Input . . . . . .158.3 kW
Cooler Water Flow . . . . . .304.3 gpm
Pressure Drop . . . . . 12.7 ft of water

III Cooler Pump selection. (With a single pump option required.)

Required gpm (from above) . . . . . .304.3 gpm
External System Pressure Drop . . . . . 40 ft wg (118 kPa)
Using Pump Curve VII on page 35

Select. . . . . .Pump 3 at the given flow rate and external system pressure drop

SI

I Determine unit size and operating conditions required to meet given capacity at given conditions.

Given:

Capacity. . . . . 270 kW
Leaving Chilled Water Temp (LCWT) . . . . . 7 C
Cooler Water Temp Rise . . . . . 5.6° C
Condenser Entering Air Temp . . . . . 35 C
Fouling Factor (Cooler) 0.018

NOTE: For other than approx. 5 to 6° C temperature rise, data corrections must be made using the chiller program in the electronic catalog.

II From Chiller Ratings table on page 41 and pressure drop curves on page 31, determine operating data for selected unit.

Unit 30RB080
Capacity. . . . . .270.3 kW
Compressor Motor Power Input . . . . . .95.7 kW
Cooler Water Flow . . . . . .11.6 L/s
Chiller Pressure Drop . . . . . 22.4 kPa

III Pump selection. (See AquaSnap® pump selection on page 30.)

Required Flow (from above) . . . . . .11.6 L/s
External System Pressure Drop . . . . . 200 kPa
Using Pump Curve 30RB080,090,100 on page 37

Select. . . . . Pump B at the given conditions

PUMP IMPELLER SIZES

UNIT 30RB	PUMP Hp	SINGLE PUMP				DUAL PUMP			
		Option Code*	Rpm	Impeller Dia. (in.)	Pump Curve	Option Code*	Rpm	Impeller Dia. (in.)	Pump Curve
060 070	3	0	1750	6.5	I	6	1750	6.5	V
	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
						9	3450	5.25	VI
	10	3	3450	5.4	II	B	3450	5.9	VI
080 090 100	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
	10	3	3450	5.4	II	B	3450	5.4	VII
	15	4	3450	6.1	II	C	3450	6.1	VII
110 120 130	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
	10	3	3450	5.4	II	B	3450	5.4	VII
	15	4	3450	6.1	II	C	3450	6.1	VII
150 160 170 190	5	1	1750	6.5	III	—	—	—	—
	7.5	2	3450	4.6	IV	8	3450	4.6	VIII
	10	3	3450	5.0	IV	B	3450	5.0	VIII
	15	4	3450	5.5	IV	C	3450	5.5	VIII

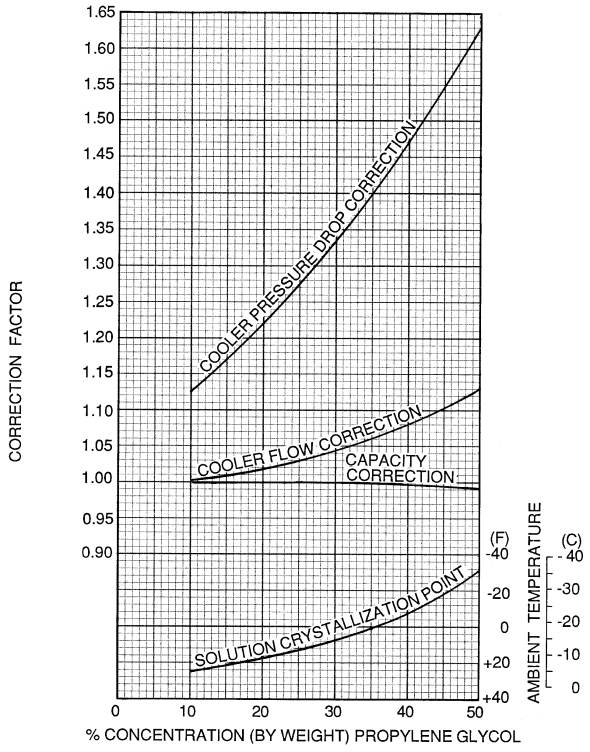
*Option Code refers to the Hydronics Option (position 11) in the model number. See the 30RB nomenclature on page 4 for option identification.

NOTE: Pump Selections are chiller size dependent. For example, dual pump “C” on a 30RB170 chiller is not the same as dual pump “C” on a 30RB130 chiller.

Selection procedure (cont)

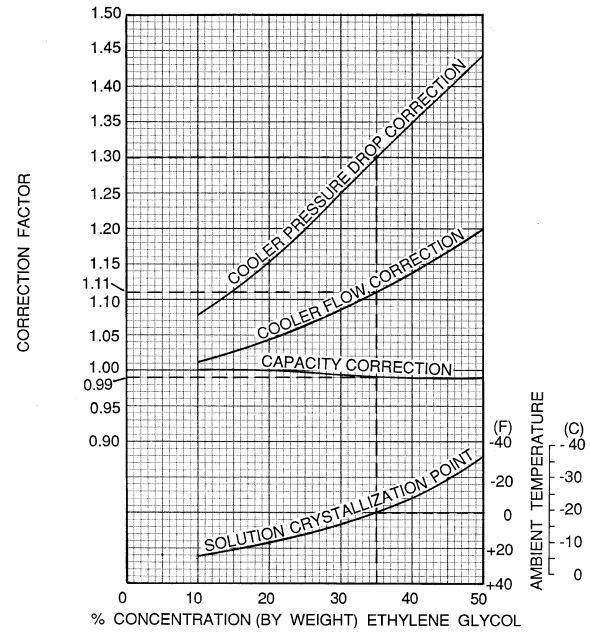
PROPYLENE GLYCOL PERFORMANCE CORRECTION FACTORS AND SOLUTION CRYSTALLIZATION POINTS

Correction factors apply to published chilled water performance ratings from 40 to 60 F (4.4 to 15.6 C) LCWT.



ETHYLENE GLYCOL PERFORMANCE CORRECTION FACTORS AND SOLUTION CRYSTALLIZATION POINTS

Correction factors apply to published chilled water performance ratings from 40 to 60 F (4.4 to 15.6 C) LCWT.



AquaSnap® pump selection

Several pump sizes are available for each AquaSnap chiller size to provide flexibility in matching water system requirements. A dual pump option is also available for primary/standby operation. The Carrier E-Cat Chiller Selection Program can be used (and is recommended) for pump selection, or selection can be done manually.

Proper water system design is critical; cooling loads, water pressure drops and proper water line sizing must be accounted for in order to ensure proper system operation. Incorrect or incomplete analysis/design of the water loop could lead to low water flow, loss of water temperature control, and excessive cycling of chiller compressors.

The following are the steps for manual selection of water pumps for the 30RB chillers (refer to Pump Curve Hydronic Package tables).

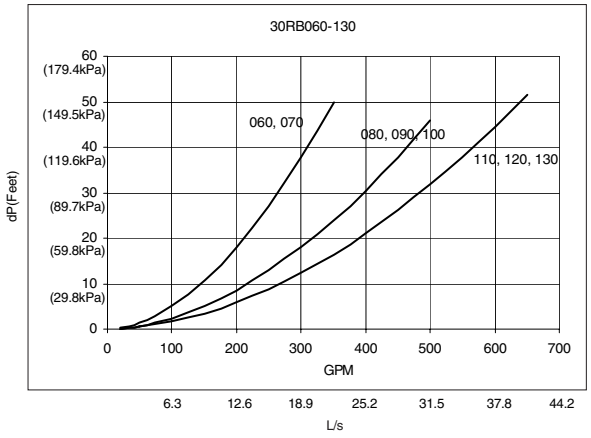
1. Calculate the water flow rate (gpm) and the total water (or brine) pressure drop of the system external to the 30RB chiller.
2. Use the pump envelope charts (page 37) to determine proper pump sizing. Plot water flow rate and total head, point on the chart. The next pump curve above this point corresponds to the correct pump.

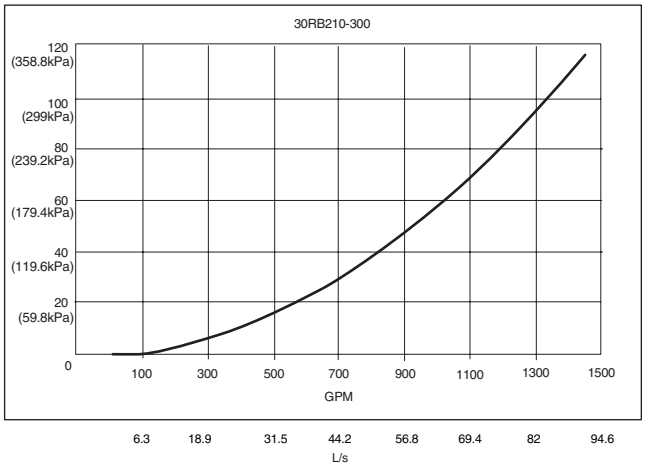
NOTE: Although pump bhp increases with glycol concentration, pumps and pump overloads are selected such that glycol concentrations up to 50% will not trip pump overloads if run within the recommended gpm ranges.

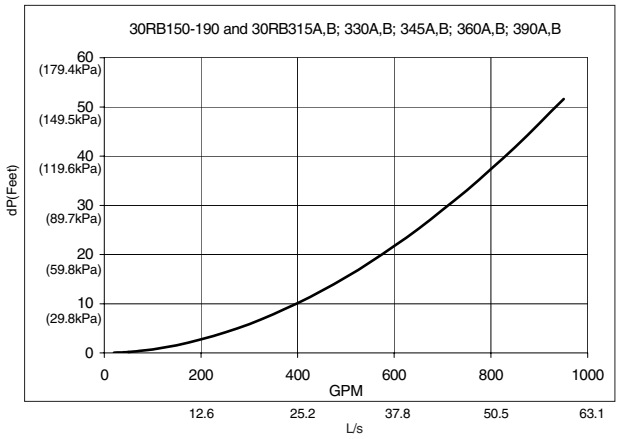
Example: Required water flow rate for a 30RB090, 60 Hz chiller is 200 gpm. The pressure drop for the water system external to the chiller is 35 feet (104 kPa). The dual pump is needed. Select the pump.

After examining the dual pump charts for the 30RB090 and using the indicated flow rate and external pressure drop, select pump 8.

COOLER PRESSURE DROP CURVES

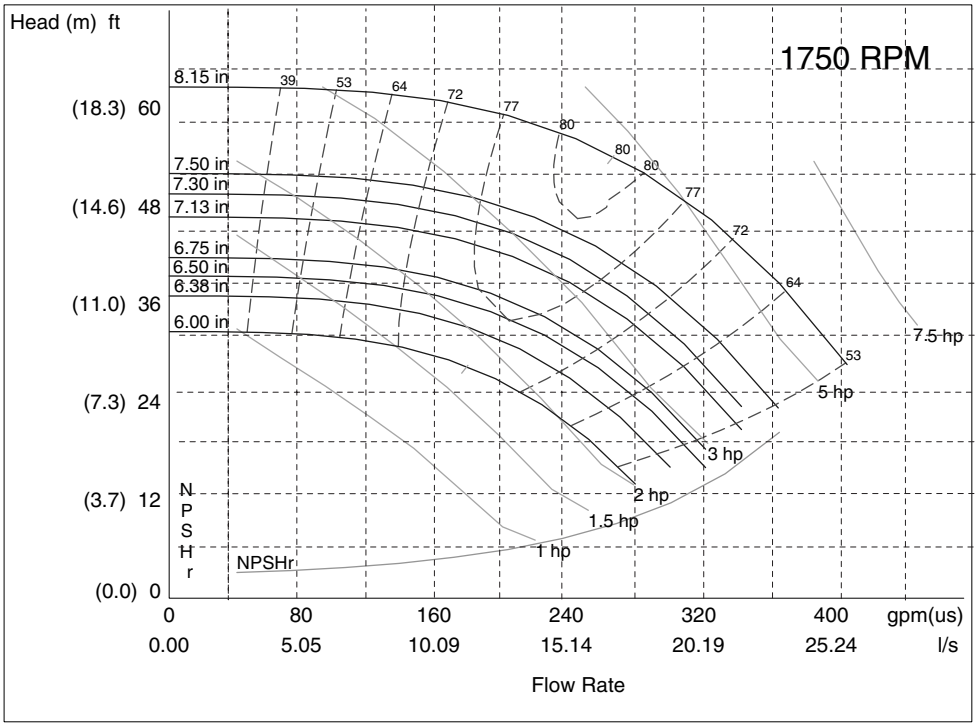




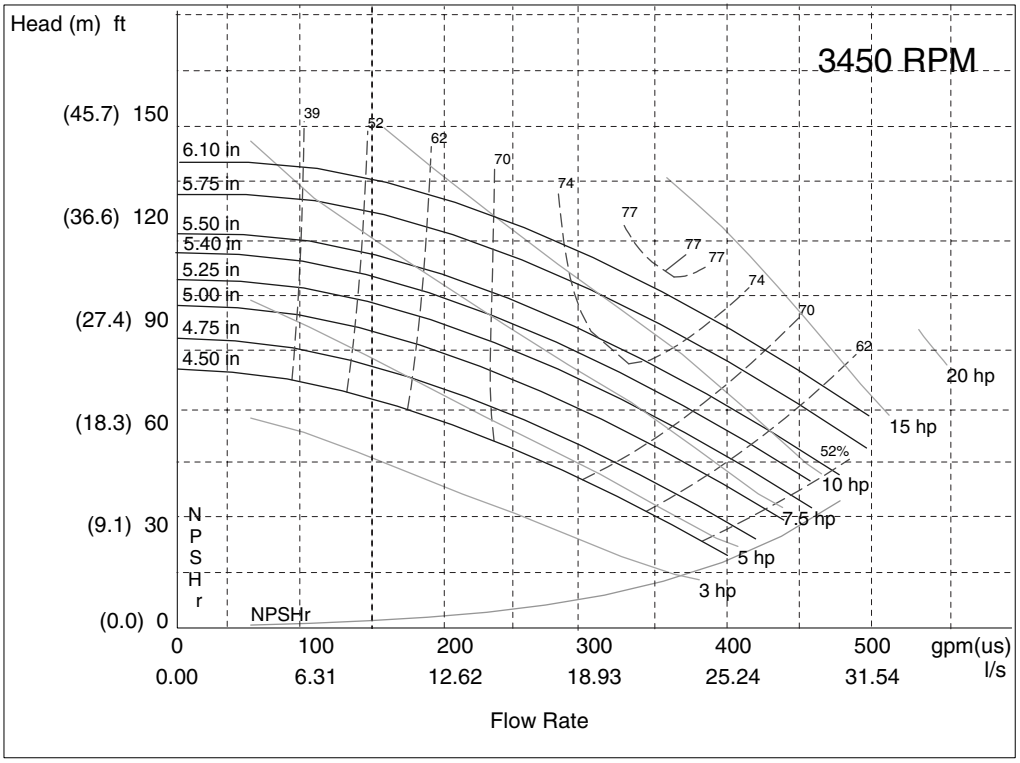


Selection procedure (cont)

PUMP CURVE I FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)

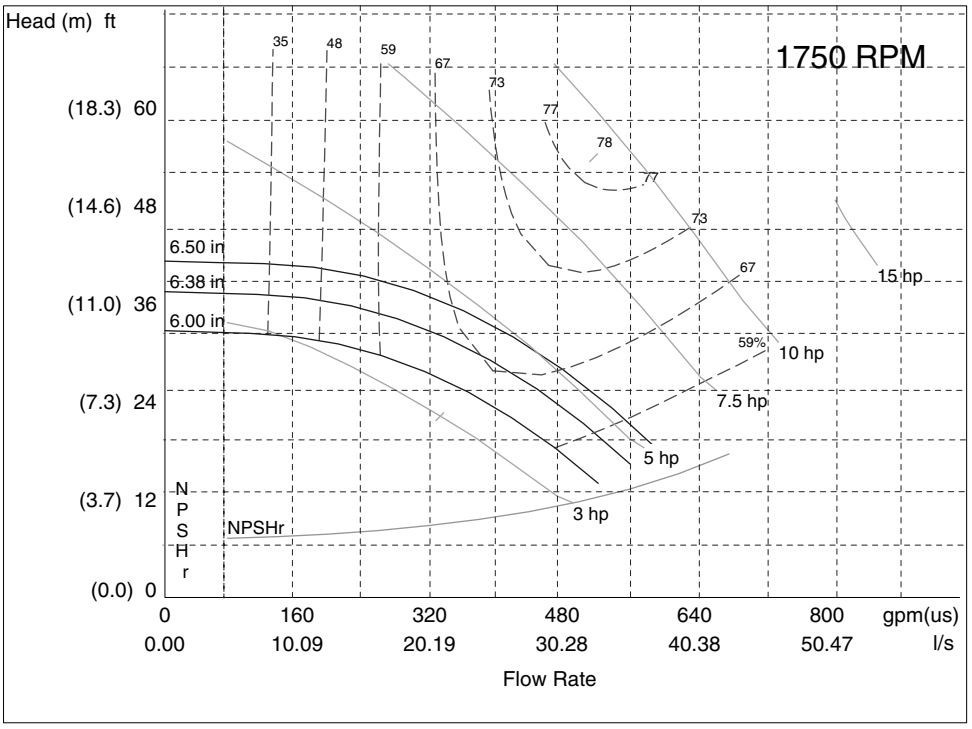


PUMP CURVE II FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)

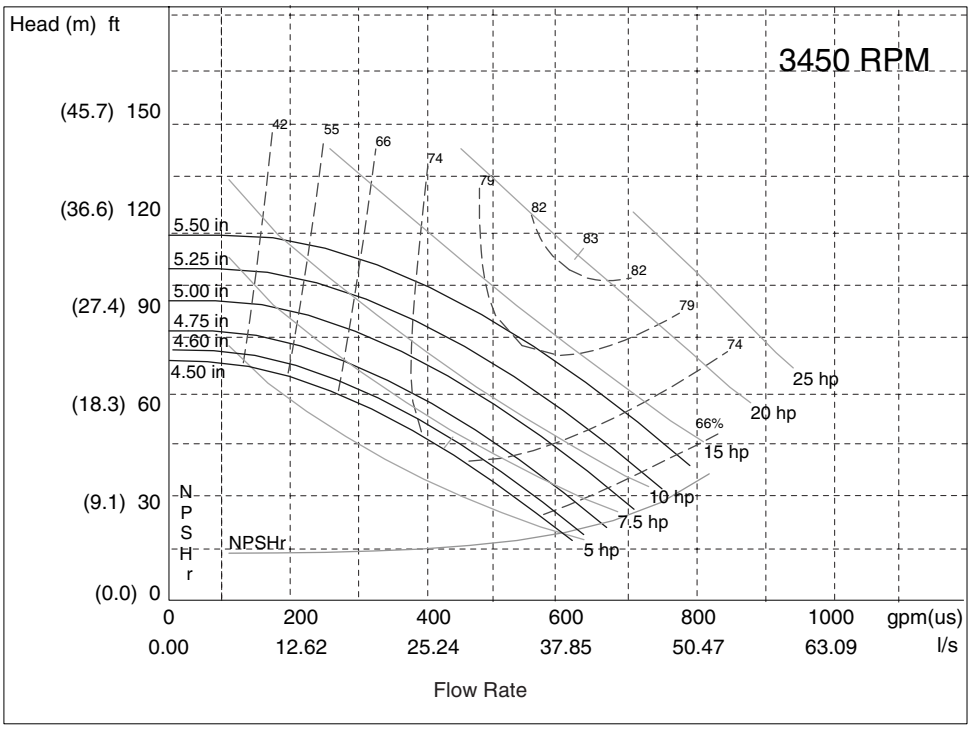


NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

PUMP CURVE III FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)



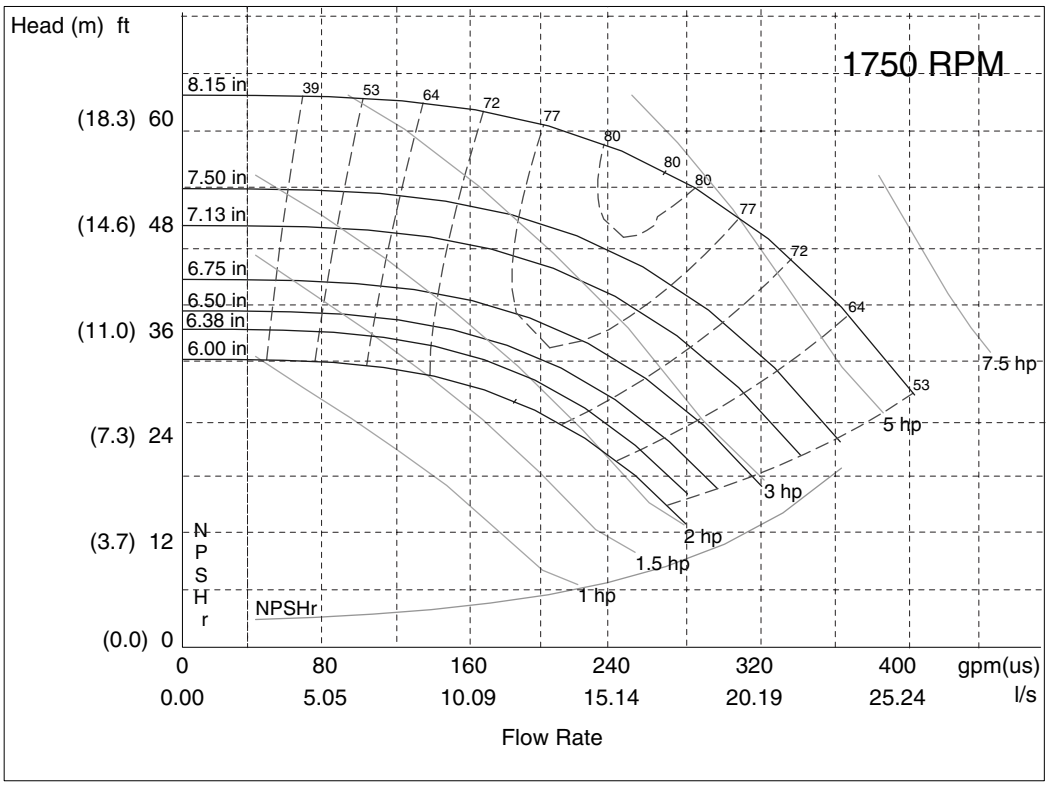
PUMP CURVE IV FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)



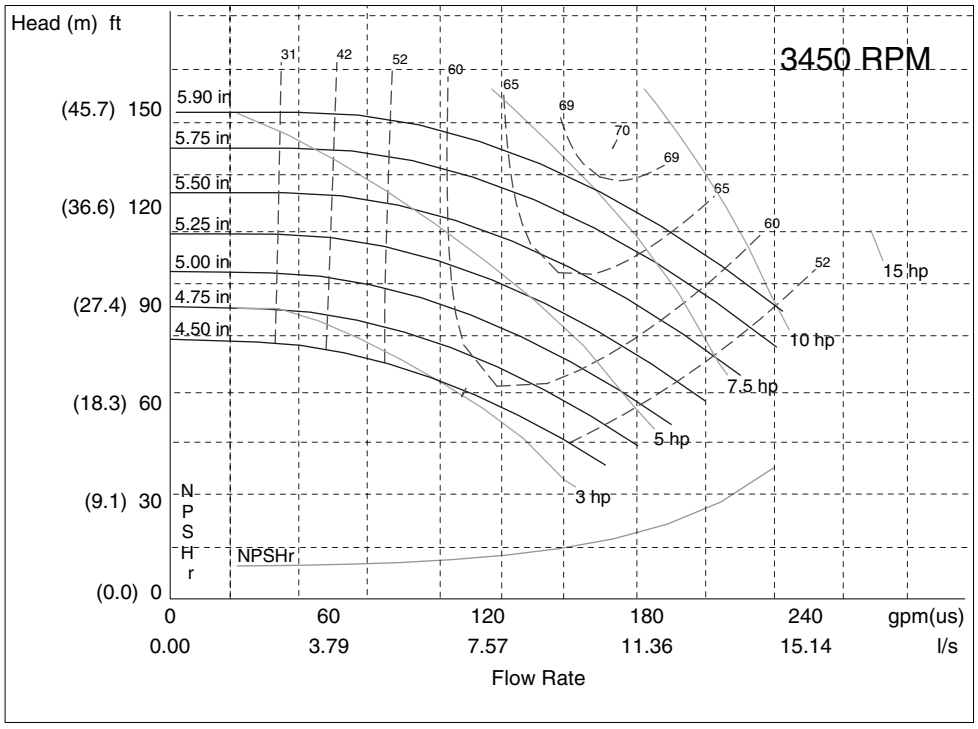
NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

Selection procedure (cont)

PUMP CURVE V FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)

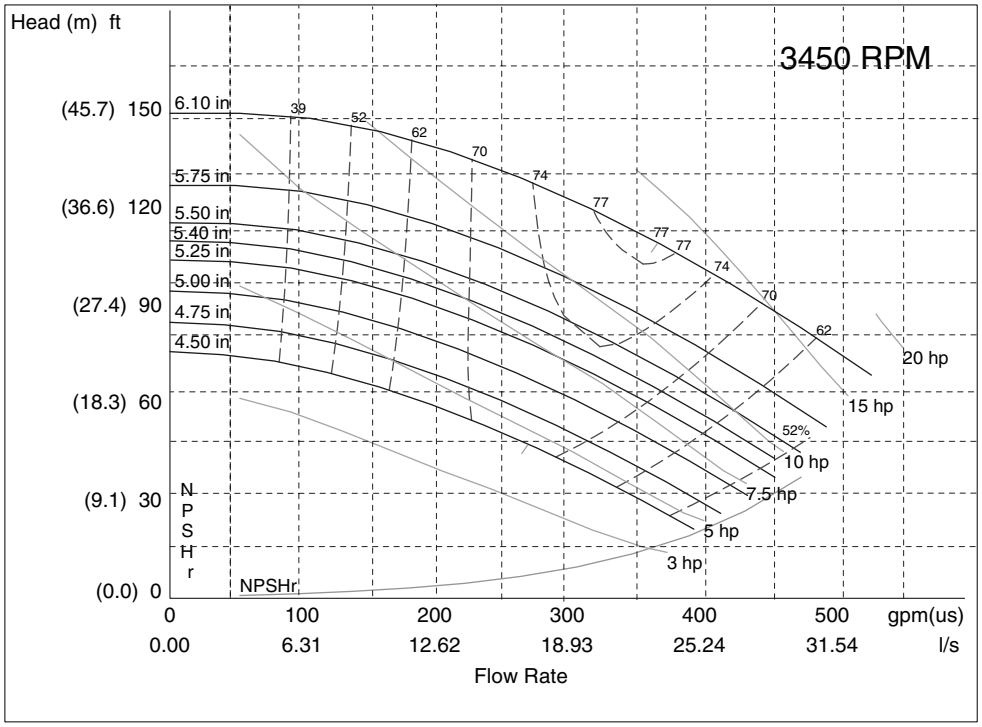


PUMP CURVE VI FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)

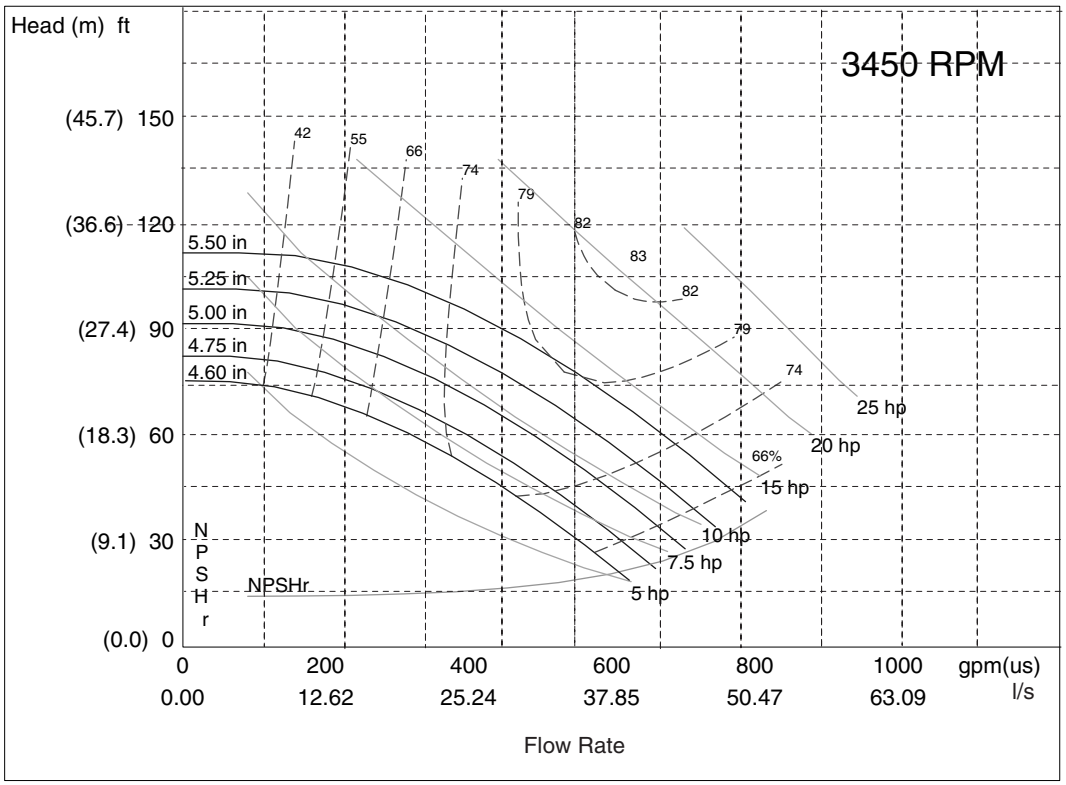


NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

PUMP CURVE VII FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)



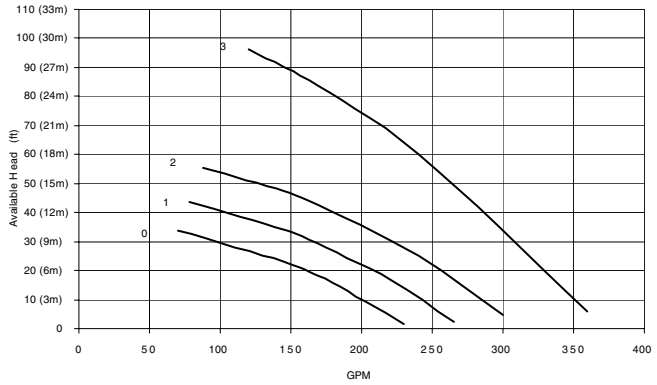
PUMP CURVE VIII FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)



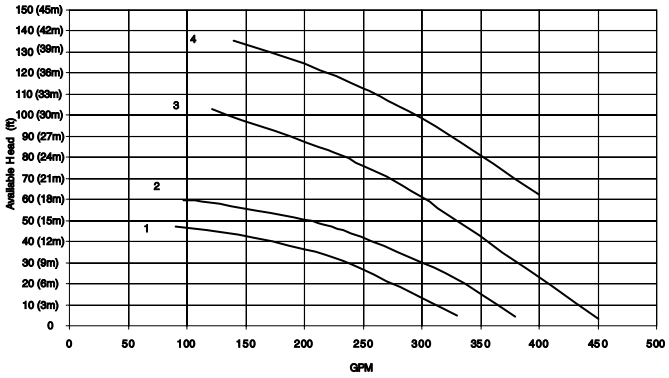
NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

Selection procedure (cont)

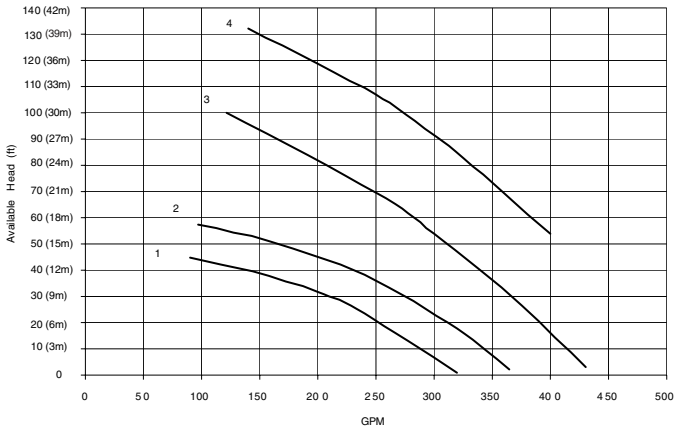
30RB060, 070 — SINGLE PUMP ENVELOPE CURVES



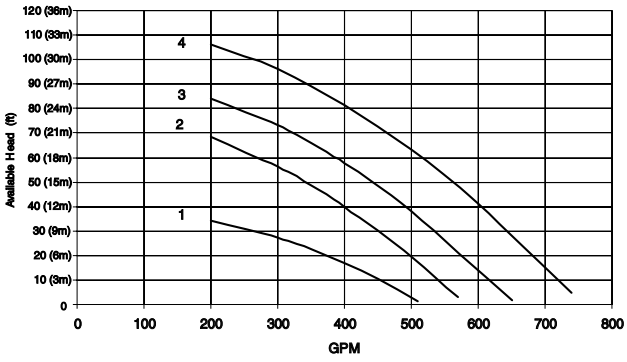
30RB110, 120, 130 — SINGLE PUMP ENVELOPE CURVES



30RB080, 090, 100 — SINGLE PUMP ENVELOPE CURVES

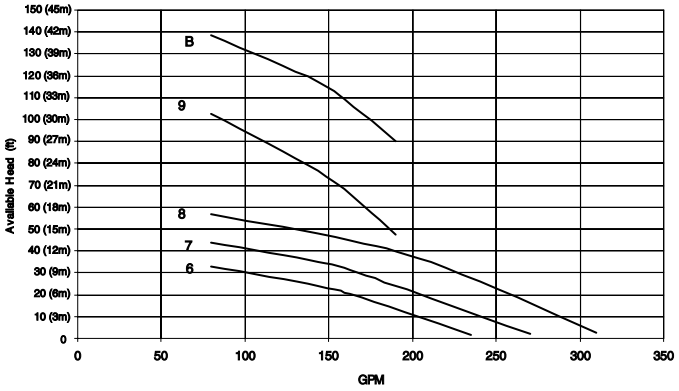


30RB150, 160, 170, 190 — SINGLE PUMP ENVELOPE CURVES

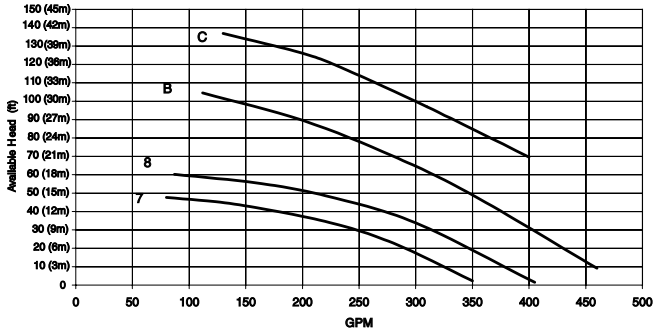


NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.

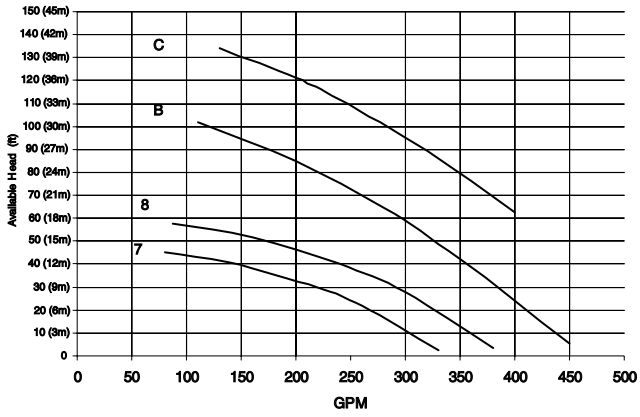
30RB060, 070 — DUAL PUMP ENVELOPE CURVES



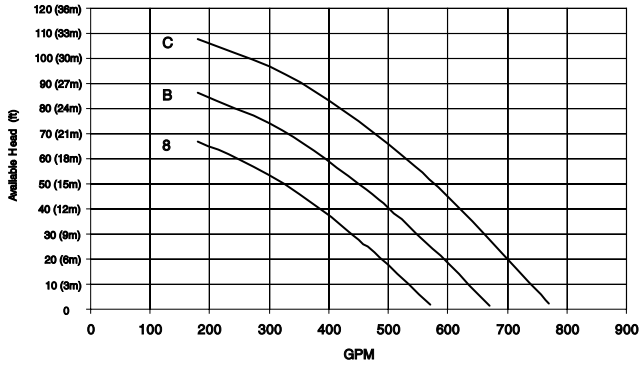
30RB110, 120, 130 — DUAL PUMP ENVELOPE CURVES



30RB080, 090, 100 — DUAL PUMP ENVELOPE CURVES



30RB150, 160, 170, 190 — DUAL PUMP ENVELOPE CURVES



NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.

Performance data

30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)
40	30RB060	56.4	63.4	134.8	52.9	69.2	126.4	49.1	75.8	117.3	45.1	83.2	107.6	42.9	87.2	102.5
	30RB070	65.9	74.9	157.4	61.8	81.9	147.7	57.5	89.8	137.4	52.8	98.5	126.2	50.3	103.3	120.1
	30RB080	75.0	85.1	179.2	70.1	93.1	167.4	64.9	102.1	154.9	59.2	112.1	141.3	56.2	117.6	134.1
	30RB090	85.5	96.0	204.1	80.3	104.9	191.7	74.7	114.8	178.3	68.6	125.9	163.8	65.3	131.8	156.0
	30RB100	94.9	107.6	226.6	89.1	117.6	212.8	83.0	128.8	198.2	76.3	141.3	182.3	72.7	148.0	173.7
	30RB110	104.6	118.3	249.7	98.0	129.5	234.2	91.1	142.2	217.4	83.6	156.3	199.7	79.7	164.0	190.2
	30RB120	117.4	132.4	280.3	110.3	144.8	263.3	102.6	158.7	244.9	94.2	174.0	224.9	89.7	182.3	214.2
	30RB130	125.9	142.3	300.7	118.2	155.4	282.2	109.9	170.1	262.4	100.8	186.4	240.7	95.9	195.2	229.0
	30RB150	142.8	160.7	340.9	133.9	175.5	319.9	124.4	192.0	297.1	114.0	210.4	272.2	108.3	220.2	258.7
	30RB160	150.7	169.6	359.8	141.6	185.1	338.1	131.7	202.4	314.6	121.0	221.7	288.8	115.1	232.1	274.9
	30RB170	164.3	186.9	392.2	154.4	204.1	368.6	143.5	223.3	342.6	131.6	244.6	314.1	125.2	256.0	299.0
	30RB190	185.9	212.8	443.8	174.7	232.1	417.1	162.7	253.8	388.4	149.5	277.8	356.9	142.3	290.7	339.7
	30RB210	199.1	223.2	475.4	187.2	243.8	446.9	174.1	266.8	415.8	159.8	292.4	381.6	152.1	306.1	363.1
	30RB225	211.6	240.2	505.2	198.9	262.5	475.2	185.0	287.4	441.7	169.8	315.0	405.3	161.5	329.8	385.6
	30RB250	235.0	267.3	561.1	221.0	292.0	527.7	205.6	319.5	490.5	188.8	350.0	450.8	179.7	366.4	429.1
	30RB275	257.0	292.5	613.8	241.8	319.2	577.5	225.3	349.3	538.1	207.0	382.4	494.5	197.1	400.3	470.5
	30RB300	279.2	319.1	666.6	262.7	348.1	627.2	244.8	380.7	584.5	225.2	416.9	537.8	214.5	436.3	512.3
	30RB315	301.4	339.2	719.6	283	370.2	676.2	263.4	404.8	629.2	242.0	443.4	577.6	230.2	464.2	549.8
	30RB330	315	356.5	752	296	389.2	706.7	275.2	445	631.4	246.7	466.3	602.9	240.3	488.1	573.9
	30RB345	328.6	373.8	784.4	309	408.2	737.2	287	446.6	685.2	263.2	489.2	628.2	250.4	512	598
	30RB360	350.2	399.7	836	329	436.2	785.7	306.2	477.1	731	281.1	522.4	671	267.5	546.7	638.7
	30RB390	371.8	425.6	887.6	349	464.2	834.2	325.4	507.6	776.8	297	555.6	713.8	284.6	581.4	679.4
42	30RB060	58.6	64.0	140.1	55.0	69.8	131.4	51.1	76.4	122.1	46.9	83.8	112.0	44.6	87.8	106.7
	30RB070	68.4	75.7	163.3	64.2	82.7	153.3	59.7	90.6	142.7	54.9	99.4	131.2	52.3	104.2	125.0
	30RB080	78.1	86.1	186.5	72.9	94.1	174.3	67.5	103.2	161.3	61.6	113.3	147.2	58.5	118.7	139.8
	30RB090	88.7	96.9	211.9	83.3	105.7	199.1	77.6	115.7	185.3	71.3	126.8	170.3	67.9	132.8	162.2
	30RB100	98.4	108.5	235.2	92.4	118.6	220.8	86.1	129.9	205.7	79.2	142.4	189.4	75.5	149.1	180.5
	30RB110	108.5	119.6	259.2	101.8	130.8	243.2	94.6	143.5	226.0	86.9	157.7	207.6	82.7	165.3	197.8
	30RB120	121.7	133.8	290.7	114.4	146.1	273.3	106.5	160.1	254.5	97.8	175.5	233.7	93.1	183.8	222.7
	30RB130	130.6	143.7	312.2	122.7	156.8	293.1	114.1	171.6	272.6	104.8	188.0	250.3	99.7	196.8	238.2
	30RB150	148.2	162.4	354.0	139.1	177.3	332.3	129.2	194.0	308.8	118.4	212.4	283.0	112.6	222.3	269.1
	30RB160	156.6	171.3	374.2	147.2	186.9	351.8	137.0	204.3	327.4	125.9	223.7	300.7	119.8	234.1	286.3
	30RB170	170.6	188.8	407.5	160.3	206.1	383.0	149.1	225.4	356.3	136.9	246.8	327.0	130.2	258.3	311.1
	30RB190	193.1	214.9	461.4	181.5	234.4	433.8	169.1	256.2	404.0	155.5	280.4	371.5	148.0	293.3	353.7
	30RB210	206.8	225.5	493.9	194.4	246.2	464.6	181.0	269.4	432.4	166.2	295.1	397.1	158.2	308.9	378.0
	30RB225	219.6	242.8	524.7	206.5	265.2	493.0	192.2	290.3	459.1	176.4	318.0	421.5	167.9	332.9	401.2
	30RB250	243.7	270.1	582.3	229.3	294.9	548.0	213.5	322.6	510.2	196.2	353.3	468.7	186.8	369.7	446.2
	30RB275	266.6	295.4	637.1	250.9	322.3	599.5	233.9	352.5	558.8	215.0	385.9	513.8	204.8	403.8	489.2
	30RB300	289.6	322.2	692.0	272.5	351.5	651.2	254.1	384.2	607.1	233.9	420.6	558.8	222.9	440.1	532.7
	30RB315	313.2	342.6	748.4	294.4	373.8	703.6	274.0	408.6	654.8	251.8	447.4	601.4	239.6	468.2	572.6
	30RB330	327.2	360.1	781.7	307.5	393.0	734.8	286.2	429.7	683.7	262.7	470.5	627.8	250.0	492.4	597.4
	30RB345	341.1	377.6	815.1	321	412.2	766	298.3	450.9	712.7	273.7	493.7	654.1	260.4	516.7	622.3
	30RB360	363.7	403.7	868.9	341.8	440.5	816.8	318.2	481.6	760.3	292.3	527.2	698.5	278.2	551.7	664.8
	30RB390	386.2	429.9	922.8	363	468.8	867.5	338.1	512.4	807.9	310.9	560.7	742.9	296.0	586.7	707.4
44	30RB060	60.8	64.8	145.3	57.1	70.5	136.6	53.1	77.1	126.9	48.7	84.5	116.5	46.4	88.5	111.0
	30RB070	70.8	76.5	169.4	66.5	83.5	159.1	61.9	91.5	148.0	57.0	100.3	136.3	54.3	105.1	129.8
	30RB080	81.3	87.2	194.3	76.0	95.3	181.6	70.2	104.4	167.9	64.1	114.5	153.3	60.8	119.9	145.5
	30RB090	92.0	98.1	220.1	86.5	106.7	206.8	80.6	116.6	192.6	74.0	127.7	177.0	70.5	133.7	168.6
	30RB100	101.9	109.8	243.9	95.8	119.6	229.1	89.2	131.0	213.4	82.2	143.6	196.6	78.4	150.3	187.5
	30RB110	112.3	121.0	268.6	105.5	132.2	252.3	98.1	144.8	234.6	90.1	159.0	215.5	85.9	166.7	205.4
	30RB120	126.0	135.4	301.3	118.5	147.7	283.2	110.4	161.5	264.0	101.5	177.1	242.7	96.7	185.4	231.3
	30RB130	135.5	145.1	324.0	127.3	158.3	304.3	118.4	173.1	283.1	108.8	189.6	260.2	103.6	198.5	247.7
	30RB150	153.9	164.3	368.0	144.5	179.3	345.4	134.2	196.0	320.9	123.0	214.5	294.2	117.0	224.4	279.8
	30RB160	162.7	173.0	388.9	153.1	188.7	366.0	142.5	206.2	340.6	130.9	225.6	313.0	124.7	236.1	298.1
	30RB170	177.1	190.8	423.5	166.5	208.2	398.1	155.0	227.7	370.6	142.3	249.2	340.2	135.4	260.7	323.7
	30RB190	200.6	217.2	479.3	188.6	236.7	450.9	175.6	258.7	419.9	161.5	283.0	386.2	153.9	296.0	368.0
	30RB210	214.7	227.9	513.2	201.9	248.7	482.5	188.0	272.0	449.4	172.7	297.8	412.9	164.4	311.7	393.1
	30RB225	228.0	245.5	545.1	214.4	268.1	512.5	199.5	293.3	476.7	183.2	321.1	438.1	174.4	336.0	416.9
	30RB250	252.9	273.0	604.6	238.0	298.0	569.0	221.8	325.8	530.2	203.7	356.6	486.7	194.0	373.2	463.9
	30RB275	276.6	298.5	661.3	260.3	325.6	622.4	242.7	355.9	580.2	223.3	389.5	533.9	212.7	407.5	508.6
	30RB300	300.4	325.5	718.2	282.7	354.9	675.9	263.6	387.8	630.3	242.7	424.4	580.3	231.4	444.0	553.4
	30RB315	325.3	346.0	777.8	306	377.4	731.9	284.9	412.4	681.3	261.8	451.3	626.0	249.3	472.2	596.1
	30RB330	339.8	363.8	812.4	319.6	396.9	764.0	297.5	433.9	711.2	273.2	474.8	653.2	260.0	496.8	621.7
	30RB345	354.3	381.7	847.0	333.0	416.5	796.2	310	455.4	741.2	284.6	498.4	680.4	270.8	521.4	647.4
	30RB360	377.7	408.0	902.8	355.1	445.0	849.0	330.6	486.4	790.5	303.8	532.2	726.4	289.3	556.7	691.7
	30RB390	401.2	434.4	958.5	377.2	473.5	901.8	351.3	517.3	839.9	323.1	565.9	772.5	307.8	592.0	736.1

LEGEND

LCWT — Leaving Chilled Water Temperature

30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH (cont)

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)
46	30RB060	63.1	65.7	151.0	59.3	71.5	141.9	55.2	77.9	132.1	50.7	85.2	121.2	48.3	89.2	115.5
	30RB070	73.4	77.6	175.5	68.9	84.5	164.9	64.2	92.4	153.6	59.1	101.3	141.4	56.3	106.1	134.8
	30RB080	84.5	88.4	202.2	79.1	96.5	189.3	73.2	105.7	175.2	66.8	115.8	159.9	63.4	121.3	151.8
	30RB090	95.4	99.4	228.3	89.7	108.0	214.6	83.6	117.7	200.0	76.9	128.7	184.1	73.3	134.7	175.4
	30RB100	105.5	111.2	252.5	99.2	121.0	237.4	92.5	132.1	221.3	85.2	144.7	203.9	81.3	151.6	194.5
	30RB110	116.3	122.8	278.2	109.3	133.8	261.4	101.7	146.3	243.3	93.5	160.5	223.7	89.1	168.2	213.2
	30RB120	130.5	137.0	312.1	122.7	149.4	293.5	114.3	163.2	273.6	105.3	178.6	251.9	100.3	187.0	240.1
	30RB130	140.5	146.5	336.0	132.0	159.8	315.7	122.8	174.7	293.9	112.9	191.3	270.2	107.6	200.2	257.5
	30RB150	159.8	166.2	382.2	150.1	181.3	359.0	139.5	198.1	333.7	127.9	216.7	306.0	121.6	226.6	291.0
	30RB160	168.8	174.7	403.8	158.9	190.5	380.1	148.0	208.2	354.2	136.1	227.7	325.6	129.6	238.2	310.1
	30RB170	183.8	192.9	439.7	172.8	210.4	413.4	160.9	230.0	384.9	147.9	251.6	353.7	140.7	263.2	336.7
	30RB190	208.0	219.5	497.4	195.6	239.1	468.0	182.3	261.2	436.0	167.7	285.6	401.2	159.9	298.7	382.4
	30RB210	222.9	230.4	533.1	209.6	251.4	501.4	195.2	274.8	467.1	179.4	300.7	429.3	170.9	314.6	408.8
	30RB225	236.6	248.3	566.0	222.7	271.1	532.6	207.3	296.4	495.5	190.4	324.4	455.4	181.2	339.4	433.6
	30RB250	262.3	276.0	627.6	246.9	301.1	590.7	230.2	329.2	550.7	211.6	360.2	506.3	201.6	376.7	482.4
	30RB275	286.9	301.6	686.2	270.0	328.9	645.9	251.7	359.4	602.2	231.8	393.2	554.4	220.9	411.2	528.5
	30RB300	311.5	328.8	745.1	293.2	358.4	701.3	273.4	391.5	654.0	251.8	428.2	602.4	240.2	447.9	574.5
	30RB315	337.6	349.5	807.6	317.8	381.0	760.2	296.1	416.3	708.3	272.2	455.4	651.2	259.3	476.4	620.3
	30RB330	352.6	367.6	843.5	331.7	400.9	793.5	309.0	438.2	739.1	284.0	479.3	679.3	270.4	501.4	646.8
	30RB345	367.6	385.8	879.4	345.6	420.8	826.8	321.8	460.0	769.9	295.7	503.3	707.5	281.5	526.4	673.3
	30RB360	391.9	412.4	937.2	368.4	449.5	881.4	343.2	491.2	821.0	315.6	537.2	755.0	300.6	561.9	719.1
	30RB390	416.1	438.9	994.9	391.3	478.3	936.0	364.5	522.3	872.0	335.4	571.2	802.4	319.7	597.4	764.9
48	30RB060	65.5	66.6	156.9	61.6	72.5	147.4	57.4	78.9	137.4	52.7	86.0	126.2	50.2	89.9	120.2
	30RB070	75.9	78.6	181.8	71.3	85.6	170.8	66.5	93.4	159.1	61.3	102.2	146.6	58.4	107.0	139.9
	30RB080	87.7	90.1	209.9	82.3	97.9	196.9	76.3	107.0	182.5	69.6	117.2	166.7	66.1	122.6	158.2
	30RB090	98.9	100.8	236.8	93.0	109.4	222.6	86.7	119.1	207.4	79.8	129.8	191.2	76.1	135.7	182.3
	30RB100	109.2	112.8	261.5	102.7	122.6	245.8	95.8	133.6	229.2	88.3	146.0	211.3	84.2	152.8	201.6
	30RB110	120.4	124.8	288.2	113.1	135.8	270.8	105.3	148.1	252.1	96.9	162.1	232.0	92.4	169.6	221.2
	30RB120	135.0	138.6	323.2	126.9	151.1	303.9	118.4	165.1	283.4	109.1	180.5	261.1	104.0	188.7	249.1
	30RB130	145.6	148.0	348.4	136.8	161.4	327.5	127.4	176.4	304.9	117.2	193.0	280.5	111.7	202.0	267.3
	30RB150	165.8	168.2	396.9	155.8	183.4	373.0	144.9	200.4	346.8	132.9	219.0	318.1	126.4	229.0	302.6
	30RB160	175.1	176.5	419.1	164.9	192.4	394.6	153.8	210.2	368.0	141.4	229.8	338.5	134.7	240.3	322.5
	30RB170	190.7	195.1	456.4	179.3	212.7	429.2	167.0	232.4	399.7	153.6	254.1	367.6	146.2	265.7	349.9
	30RB190	215.7	221.8	516.4	202.9	241.6	485.3	189.1	263.8	452.6	174.0	288.3	416.6	165.9	301.4	397.1
	30RB210	231.2	233.0	553.5	217.7	254.1	521.0	202.7	277.6	485.0	186.4	303.7	446.2	177.6	317.6	425.0
	30RB225	245.5	251.3	587.7	231.1	274.2	553.2	215.3	299.7	515.2	197.8	327.8	473.4	188.3	342.8	450.7
	30RB250	272.2	279.2	651.5	256.2	304.4	613.3	238.9	332.7	571.8	219.8	363.8	526.1	209.4	380.5	500.8
	30RB275	297.6	305.0	712.2	280.1	332.4	670.4	261.2	363.1	625.2	240.5	397.0	575.7	229.3	415.1	549.0
	30RB300	323.1	332.4	772.9	304.1	362.1	727.9	283.6	395.4	678.4	261.3	432.3	625.5	249.2	452.0	596.6
	30RB315	350.2	353.1	838.2	329.7	384.8	789.3	307.5	420.3	736.1	282.8	459.6	676.9	269.4	480.6	644.9
	30RB330	365.8	371.6	875.5	344.2	405.1	823.8	320.7	442.5	767.8	295.0	483.9	706.1	280.9	506.0	672.4
	30RB345	381.4	390.1	912.9	358.6	425.4	858.3	334.0	464.7	799.4	307.1	508.3	735.2	292.4	531.5	699.8
	30RB360	406.4	416.9	972.8	382.2	454.3	914.4	356.1	496.1	852.3	327.6	542.4	784.2	312.1	567.2	747.0
	30RB390	431.5	443.7	1032.7	405.8	483.2	970.5	378.1	527.5	905.2	348.1	576.6	833.2	331.8	602.8	794.2
50	30RB060	67.9	67.6	162.7	63.8	73.4	152.9	59.5	80.0	142.4	54.8	87.1	131.1	52.2	90.9	125.1
	30RB070	78.6	79.7	188.2	73.8	86.8	176.8	68.8	94.6	164.8	63.4	103.3	151.9	60.5	108.0	145.1
	30RB080	90.7	91.8	217.1	85.2	99.7	204.0	79.2	108.4	189.8	72.5	118.6	173.6	68.8	124.0	164.8
	30RB090	102.4	102.2	245.2	96.3	110.9	230.6	89.8	120.6	214.9	82.7	131.3	198.1	79.0	137.0	189.1
	30RB100	113.0	114.3	270.7	106.3	124.3	254.5	99.1	135.4	237.3	91.4	147.5	218.9	87.2	154.1	209.0
	30RB110	124.6	126.8	298.3	117.1	138.0	280.3	109.0	150.3	261.2	100.3	163.9	240.3	95.7	171.5	229.1
	30RB120	139.6	140.3	334.4	131.3	152.9	314.5	122.5	166.9	293.4	112.9	182.4	270.4	107.7	190.7	258.1
	30RB130	150.8	149.6	361.2	141.8	163.0	339.5	132.0	178.1	316.2	121.5	194.8	291.0	115.8	203.8	277.5
	30RB150	172.1	170.4	412.1	161.7	185.6	387.3	150.5	202.7	360.4	138.0	221.4	330.6	131.3	231.4	314.5
	30RB160	181.6	178.4	434.9	171.0	194.4	409.6	159.5	212.2	382.1	146.9	231.9	351.7	139.9	242.5	335.1
	30RB170	197.7	197.4	473.5	186.0	215.0	445.4	173.2	234.8	414.9	159.3	256.7	381.6	151.8	268.4	363.5
	30RB190	223.7	224.3	535.7	210.4	244.2	503.8	196.1	266.4	469.6	180.5	291.0	432.3	172.1	304.2	412.2
	30RB210	239.8	235.6	574.3	225.9	256.9	541.0	210.5	280.6	503.8	193.6	306.7	463.5	184.4	320.7	441.6
	30RB225	254.7	254.3	609.4	239.8	277.4	574.2	223.5	303.1	535.2	205.3	331.3	491.4	195.6	346.4	468.3
	30RB250	282.3	282.5	675.5	265.8	307.9	636.2	247.8	336.3	593.5	228.1	367.6	546.4	217.4	384.3	520.6
	30RB275	308.6	308.5	738.6	290.5	336.0	695.8	270.9	366.9	648.5	249.5	400.9	597.6	238.0	419.1	569.9
	30RB300	335.1	336.1	802.3	315.4	366.0	755.1	294.2	399.5	704.2	271.1	436.5	648.7	258.6	456.3	619.3
	30RB315	363.2	356.8	869.9	342.1	388.8	819.3	319.1	424.5	764.2	293.7	463.9	703.4	279.9	485.0	670.3
	30RB330	379.3	375.8	908.5	357.0	409.4	855.0	332.8	447.1	797.0	306.2	488.6	733.4	291.7	510.9	698.7
	30RB345	395.4	394.9	947.1	371.9	430.1	890.8	346.5	469.6	829.8	318.7	513.4	763.3	303.6	536.7	727.0
	30RB360	421.4	421.7	1009.2	396.3	459.2	949.2	369.3	501.3	884.5	339.9	547.7	814.0	323.9	572.6	775.7
	30RB390	447.4	448.6	1071.4	420.8	488.3	1007.7	392.1	532.9	939.2	361.0	582.1	864.6	344.2	608.5	824.3

LEGEND

LCWT — Leaving Chilled Water Temperature

Performance data (cont)

30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH (cont)

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input KW	Cooler Flow Rate (gpm)
55	30RB060	74.0	70.0	177.4	69.6	76.0	166.8	64.8	82.6	155.6	59.6	89.8	149.5	56.8	93.6	147.1
	30RB070	85.4	82.6	204.8	80.3	89.8	192.5	74.8	97.8	179.5	69.0	106.6	165.5	65.9	111.3	158.0
	30RB080	98.4	96.5	235.9	92.4	104.5	221.5	85.9	113.3	209.0	78.6	122.6	207.5	74.7	127.4	208.0
	30RB090	111.5	106.0	267.3	104.8	114.9	251.3	97.6	124.7	240.0	89.8	135.4	228.5	85.6	141.1	222.2
	30RB100	122.8	118.5	294.5	115.5	128.7	277.0	107.7	140.0	258.4	99.4	152.4	238.4	94.9	158.9	227.6
	30RB110	135.3	132.3	324.5	127.2	143.8	305.0	118.6	156.4	284.4	109.1	170.1	268.3	103.9	177.3	260.9
	30RB120	151.4	145.2	363.1	142.7	157.6	342.1	133.0	171.8	322.9	122.4	187.4	306.4	116.8	195.6	297.5
	30RB130	163.8	154.6	392.8	154.5	167.5	370.5	144.2	182.6	345.7	132.8	199.5	318.5	126.7	208.5	303.8
	30RB150	186.1	179.9	446.1	175.6	194.2	421.0	164.4	209.7	394.2	150.8	227.4	382.0	143.0	237.2	381.7
	30RB160	198.7	183.4	476.4	186.7	199.5	456.9	173.7	217.4	435.8	159.7	237.2	413.2	152.2	247.8	401.1
	30RB170	215.1	205.4	515.7	202.6	222.8	485.6	189.1	241.8	457.6	173.9	263.1	434.2	165.5	274.8	421.7
	30RB190	244.5	230.8	586.3	230.1	251.0	551.7	214.5	273.6	514.3	197.6	298.4	473.7	188.4	311.7	451.8
	30RB210	260.1	246.7	623.7	245.8	266.9	589.4	230.1	289.0	555.8	211.6	314.7	522.9	201.2	328.5	511.9
	30RB225	275.6	268.1	661.0	260.5	289.4	624.6	244.3	312.6	586.2	225.2	340.6	540.1	214.5	355.7	518.4
	30RB250	306.7	295.1	735.6	289.4	319.6	694.0	270.8	346.7	649.4	249.9	377.5	599.1	238.0	394.2	578.5
	30RB275	336.4	320.4	806.7	317.0	347.5	760.3	296.2	377.6	710.4	273.2	411.4	656.4	260.4	429.6	632.7
	30RB300	366.5	346.0	879.0	345.3	376.4	827.9	322.1	410.3	771.9	296.9	447.6	711.9	283.3	467.6	678.8
	30RB315	397.5	366.8	952.8	373.4	398.9	913.8	347.5	434.8	871.5	319.4	474.4	826.4	304.3	495.6	802.2
	30RB330	413.8	388.8	992.1	389.3	422.3	942.5	362.9	459.2	893.4	333.6	500.3	847.4	317.7	522.6	822.8
	30RB345	430.2	410.9	1031.4	405.2	445.6	971.3	378.3	483.6	915.3	347.8	526.3	868.4	331.0	549.6	843.4
	30RB360	459.6	436.3	1102.0	432.7	473.8	1037.4	403.6	515.4	972.0	371.4	561.6	907.9	353.9	586.5	873.5
	30RB390	489.0	461.7	1172.6	460.2	502.1	1103.5	429.0	547.1	1028.7	395.1	596.8	947.4	376.8	623.4	903.5
60	30RB060	75.9	70.8	231.0	71.0	76.7	229.1	65.7	83.1	226.8	60.1	90.1	224.0	57.2	93.9	222.5
	30RB070	89.2	84.2	264.4	83.3	91.2	262.5	77.1	99.1	260.2	70.5	107.6	257.6	67.1	112.1	256.2
	30RB080	99.6	97.2	314.1	92.9	105.0	310.9	86.0	113.4	307.3	78.6	122.6	303.2	74.7	127.4	301.1
	30RB090	115.0	107.5	343.3	107.4	116.2	340.5	99.5	125.7	337.2	91.0	136.2	333.4	86.6	141.7	331.3
	30RB100	128.2	120.9	376.5	119.7	130.8	373.4	110.9	141.7	369.8	101.5	153.6	365.7	96.5	160.0	363.5
	30RB110	139.5	134.6	420.1	130.1	145.6	417.0	120.3	157.6	413.3	109.9	170.8	409.3	104.4	177.6	407.1
	30RB120	159.1	150.3	426.5	148.9	161.9	425.3	138.3	174.7	423.9	126.6	189.3	422.1	120.3	197.3	421.1
	30RB130	172.2	159.1	479.5	161.2	171.6	478.3	149.5	185.4	476.5	136.7	201.2	474.3	129.8	210.0	472.9
	30RB150	189.1	182.1	607.0	177.2	195.5	601.5	164.8	210.1	595.4	150.8	227.4	588.1	143.0	237.2	583.8
	30RB160	206.1	186.6	611.7	192.8	201.6	607.0	178.3	219.2	601.3	162.8	238.5	595.3	154.6	248.9	592.0
	30RB170	223.0	209.2	678.3	208.9	225.2	673.0	193.6	243.6	666.8	176.9	264.5	659.5	167.9	275.9	655.2
	30RB190	256.9	236.4	754.1	240.4	254.7	748.7	222.2	276.6	742.0	202.9	300.8	735.0	192.7	313.7	730.6
	30RB210	266.5	250.9	825.3	249.6	269.8	818.5	231.9	290.6	810.6	212.1	314.9	801.5	201.2	328.5	796.4
	30RB225	283.4	273.8	872.8	265.6	293.7	865.7	247.2	315.3	857.6	226.2	341.0	847.8	214.5	355.7	842.1
	30RB250	319.6	302.2	941.8	299.4	324.7	934.9	277.8	350.3	926.7	254.2	379.4	917.2	241.1	395.7	911.7
	30RB275	353.4	328.7	1009.6	331.2	353.2	1003.1	306.7	382.0	995.5	280.4	414.5	986.4	266.1	432.2	981.3
	30RB300	388.0	355.8	1078.8	363.4	383.0	1072.8	336.0	415.7	1065.2	306.8	452.0	1056.4	291.3	471.3	1051.6
	30RB315	412.2	373.2	1223.4	385.6	403.3	1214.1	356.5	438.4	1202.5	325.5	477.1	1190.5	309.1	497.8	1184.0
	30RB330	429.1	395.8	1290.0	401.6	426.8	1280.1	371.8	462.7	1268.1	339.7	503.0	1254.7	322.4	524.8	1247.3
	30RB345	446.1	418.5	1356.6	417.7	450.3	1346.0	387.1	487.1	1333.6	353.8	528.9	1318.9	335.7	551.8	1310.5
	30RB360	479.9	445.7	1432.4	449.3	479.9	1421.7	415.8	520.2	1408.8	379.8	565.2	1394.4	360.5	589.5	1385.8
	30RB390	513.7	472.8	1508.2	480.8	509.4	1497.4	444.5	553.2	1484.0	405.8	601.5	1469.9	385.3	627.3	1461.2

LEGEND

LCWT — Leaving Chilled Water Temperature

30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — SI

LCWT (C)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (C)														
		30.0			35.0			40.0			45.0			50.0		
		Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)
5.0	30RB060	200.9	64.2	8.6	189.5	69.5	8.1	177.4	75.4	7.6	164.5	82.0	7.1	150.6	89.2	6.5
	30RB070	234.4	76.0	10.1	221.3	82.3	9.5	207.5	89.4	8.9	192.6	97.2	8.3	176.5	105.7	7.6
	30RB080	267.2	86.3	11.5	251.3	93.6	10.8	234.4	101.7	10.1	216.4	110.6	9.3	196.8	120.4	8.4
	30RB090	304.1	97.2	13.0	287.4	105.3	12.3	269.5	114.2	11.6	250.1	124.0	10.7	229.2	134.8	9.8
	30RB100	337.5	109.0	14.5	318.9	118.1	13.7	299.2	128.1	12.8	278.2	139.2	11.9	255.2	151.3	11.0
	30RB110	372.0	119.9	16.0	351.0	130.1	15.1	328.7	141.5	14.1	305.0	154.0	13.1	279.4	167.8	12.0
	30RB120	417.6	134.3	17.9	394.6	145.5	16.9	370.1	157.9	15.9	343.4	171.6	14.7	314.5	186.5	13.5
	30RB130	448.0	144.2	19.2	423.1	156.1	18.2	396.5	169.3	17.0	367.8	183.8	15.8	336.2	199.6	14.4
	30RB150	508.0	163.0	21.8	479.6	176.4	20.6	449.1	191.3	19.3	416.1	207.6	17.8	379.8	225.3	16.3
	30RB160	536.7	171.9	23.0	507.3	186.0	21.8	475.7	201.5	20.4	441.5	218.7	18.9	404.1	237.4	17.3
	30RB170	584.7	189.5	25.1	552.7	205.1	23.7	518.1	222.3	22.2	480.4	241.3	20.6	439.1	261.9	18.8
	30RB190	661.9	215.7	28.4	625.7	233.2	26.8	587.1	252.7	25.2	545.5	274.1	23.4	499.2	297.4	21.4
	30RB210	708.9	226.3	30.4	670.4	245.0	28.8	628.7	265.7	27.0	583.4	288.4	25.0	533.5	313.2	22.9
	30RB225	753.2	243.6	32.3	712.1	263.9	30.5	667.8	286.2	28.6	619.5	310.7	26.6	566.3	337.5	24.3
	30RB250	836.1	271.1	35.9	791.2	293.4	33.9	742.0	318.1	31.8	688.8	345.3	29.5	630.2	374.8	27.0
	30RB275	914.6	296.5	39.2	865.5	320.8	37.1	812.8	347.7	34.9	754.9	377.2	32.4	691.2	409.4	29.6
	30RB300	993.4	323.4	42.6	940.2	349.8	40.3	883.0	379.0	37.9	821.0	411.2	35.2	752.5	446.3	32.3
	30RB315	1073.5	343.8	46.0	1014.7	371.9	43.5	951.5	403.1	40.8	883.1	437.3	37.9	808.1	474.8	34.7
	30RB330	1121.4	361.4	48.1	1060.1	391.0	45.5	993.8	423.9	42.6	922.0	459.9	39.6	843.2	499.3	36.2
	30RB345	1169.4	378.9	50.2	1105.5	410.2	47.4	1036.1	444.7	44.4	960.9	482.5	41.2	878.2	523.8	37.7
	30RB360	1246.5	405.1	53.5	1178.5	438.3	50.6	1105.2	475.0	47.4	1025.9	515.3	44.0	938.3	559.3	40.3
	30RB390	1323.7	431.4	56.8	1251.5	466.4	53.7	1174.3	505.4	50.4	1091.0	548.2	46.8	998.4	594.8	42.8
6.0	30RB060	207.8	64.9	8.9	196.2	70.1	8.4	183.7	76.0	7.9	170.4	82.5	7.3	156.0	89.8	6.7
	30RB070	242.2	76.6	10.4	228.7	83.0	9.8	214.5	90.1	9.2	199.3	98.0	8.6	182.6	106.5	7.8
	30RB080	276.8	87.3	11.9	260.4	94.6	11.2	242.9	102.7	10.4	224.3	111.7	9.6	204.1	121.5	8.8
	30RB090	314.3	98.2	13.5	297.1	106.0	12.8	278.7	115.0	12.0	258.8	124.8	11.1	237.3	135.6	10.2
	30RB100	348.7	109.9	15.0	329.5	119.0	14.1	309.2	129.1	13.3	287.5	140.2	12.3	263.9	152.4	11.3
	30RB110	384.2	121.2	16.5	362.9	131.3	15.6	339.9	142.7	14.6	315.5	155.2	13.5	289.1	169.1	12.4
	30RB120	431.1	135.6	18.5	407.6	146.7	17.5	382.5	159.2	16.4	355.2	172.9	15.2	325.4	187.9	14.0
	30RB130	463.1	145.5	19.9	437.5	157.4	18.8	410.1	170.6	17.6	380.7	185.2	16.3	348.2	201.1	14.9
	30RB150	525.5	164.6	22.6	496.1	178.1	21.3	464.6	193.0	19.9	430.5	209.4	18.5	393.1	227.2	16.9
	30RB160	555.5	173.4	23.8	525.5	187.6	22.6	492.8	203.2	21.2	457.5	220.4	19.6	418.8	239.2	18.0
	30RB170	604.9	191.3	26.0	571.9	206.9	24.5	536.4	224.3	23.0	497.5	243.3	21.4	454.8	264.0	19.5
	30RB190	685.0	217.7	29.4	647.7	235.3	27.8	607.8	254.9	26.1	564.8	276.4	24.2	517.3	299.8	22.2
	30RB210	733.2	228.4	31.5	693.6	247.2	29.8	650.7	268.0	27.9	604.0	290.8	25.9	552.6	315.7	23.7
	30RB225	778.7	246.0	33.4	736.3	266.3	31.6	690.6	288.8	29.6	641.0	313.5	27.5	586.3	340.3	25.2
	30RB250	864.1	273.6	37.1	817.9	296.1	35.1	767.6	321.0	32.9	712.6	348.2	30.6	652.3	377.9	28.0
	30RB275	945.3	299.2	40.6	894.8	323.6	38.4	840.3	350.7	36.1	781.1	380.4	33.5	715.4	412.7	30.7
	30RB300	1026.7	326.3	44.1	971.8	352.8	41.7	912.9	382.2	39.2	849.1	414.5	36.4	778.9	449.7	33.4
	30RB315	1111.0	346.9	47.7	1050.9	375.2	45.1	985.6	406.4	42.3	915.0	440.8	39.3	837.6	478.4	36.0
	30RB330	1160.5	364.7	49.8	1097.3	394.5	47.1	1029.2	427.5	44.2	955.0	463.7	41.0	873.6	503.2	37.5
	30RB345	1209.9	382.5	51.9	1143.8	413.9	49.1	1072.8	448.6	46.0	995.0	486.6	42.7	909.6	528.0	39.0
	30RB360	1290.0	408.9	55.4	1219.6	442.3	52.3	1144.2	479.2	49.1	1062.3	519.7	45.6	972.1	563.8	41.7
	30RB390	1370.0	435.4	58.8	1295.4	470.6	55.6	1215.6	509.7	52.2	1129.6	552.7	48.5	1034.6	599.5	44.4
7.0	30RB060	214.8	65.6	9.2	203.0	70.8	8.7	190.2	76.6	8.2	176.4	83.1	7.6	161.6	90.4	6.9
	30RB070	250.1	77.5	10.7	236.3	83.8	10.2	221.6	90.9	9.5	206.0	98.8	8.8	188.9	107.4	8.1
	30RB080	287.2	88.3	12.3	270.3	95.7	11.6	252.1	103.8	10.8	232.5	112.8	10.0	211.6	122.6	9.1
	30RB090	325.0	99.3	14.0	307.3	107.1	13.2	288.4	115.8	12.4	268.0	125.7	11.5	245.6	136.5	10.5
	30RB100	359.8	111.1	15.5	340.2	120.0	14.6	319.3	130.1	13.7	297.0	141.3	12.8	272.9	153.5	11.7
	30RB110	396.5	122.5	17.0	374.7	132.7	16.1	351.2	143.9	15.1	326.0	156.5	14.0	298.9	170.3	12.8
	30RB120	444.8	137.0	19.1	420.7	148.2	18.1	395.0	160.5	17.0	367.2	174.3	15.8	336.5	189.3	14.5
	30RB130	478.5	146.8	20.5	452.1	158.8	19.4	424.0	172.0	18.2	393.7	186.7	16.9	360.5	202.7	15.5
	30RB150	543.7	166.3	23.3	513.4	179.9	22.0	480.9	194.9	20.7	445.6	211.3	19.1	407.0	229.1	17.5
	30RB160	574.7	175.0	24.7	544.0	189.2	23.4	510.4	204.9	21.9	473.9	222.2	20.4	434.0	241.0	18.6
	30RB170	625.8	193.1	26.9	591.7	208.9	25.4	555.1	226.3	23.8	515.2	245.5	22.1	471.1	266.2	20.2
	30RB190	708.5	219.7	30.4	670.0	237.5	28.8	628.9	257.1	27.0	584.5	278.7	25.1	535.8	302.2	23.0
	30RB210	758.4	230.6	32.6	717.5	249.5	30.8	673.2	270.4	28.9	625.1	293.3	26.8	572.2	318.3	24.6
	30RB225	805.5	248.5	34.6	761.9	269.0	32.7	714.6	291.5	30.7	663.3	316.3	28.5	606.8	343.2	26.1
	30RB250	893.3	276.3	38.4	845.6	298.9	36.3	794.1	323.9	34.1	737.4	351.3	31.7	675.2	381.0	29.0
	30RB275	977.0	302.0	42.0	924.8	326.6	39.7	868.7	353.7	37.3	807.8	383.6	34.7	740.3	416.0	31.8
	30RB300	1060.9	329.3	45.6	1004.2	355.9	43.1	943.5	385.5	40.5	877.7	417.9	37.7	805.7	453.3	34.6
	30RB315	1149.5	350.0	49.4	1088.0	378.5	46.7	1020.7	409.9	43.8	947.8	444.4	40.7	867.9	482.1	37.3
	30RB330	1200.5	368.1	51.6	1135.7	398.1	48.8	1065.4	431.3	45.8	989.1	467.7	42.5	905.1	507.3	38.9
	30RB345	1251.6	386.2	53.7	1183.3	417.8	50.8	1110.2	452.7	47.7	1030.3	490.9	44.2	942.2	532.4	40.5
	30RB360	1334.3	412.8	57.3	1261.7	446.3	54.2	1184.0	483.5	50.8	1099.7	524.1	47.2	1006.9	568.4	43.2
	30RB390	1417.0	439.5	60.8	1340.0	474.9	57.5	1257.8	514.2	54.0	1169.0	557.4	50.2	1071.6	604.4	46.0

LEGEND

LCWT — Leaving Chilled Water Temperature

Performance data (cont)

30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — SI (cont)

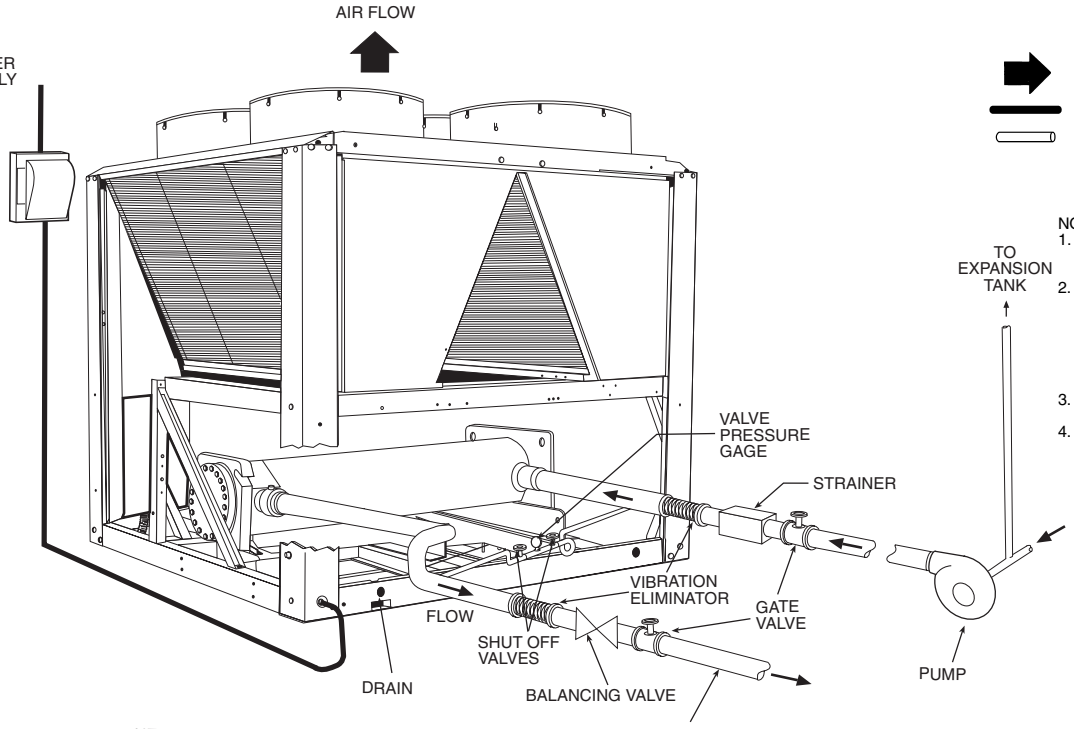
LCWT (C)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (C)														
		30.0			35.0			40.0			45.0			50.0		
		Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)
8.0	30RB060	222.2	66.4	9.5	210.0	71.7	9.0	197.0	77.4	8.5	182.8	83.8	7.9	167.4	91.0	7.2
	30RB070	258.0	78.4	11.1	243.8	84.7	10.5	228.9	91.7	9.8	212.8	99.6	9.2	195.4	108.2	8.4
	30RB080	297.4	89.5	12.8	280.2	96.8	12.0	261.5	105.0	11.2	241.5	114.0	10.4	219.7	123.8	9.4
	30RB090	335.7	100.5	14.4	317.5	108.3	13.6	298.1	116.9	12.8	277.3	126.5	11.9	254.3	137.4	10.9
	30RB100	371.3	112.5	16.0	351.1	121.3	15.1	329.7	131.1	14.2	306.8	142.3	13.2	281.9	154.6	12.1
	30RB110	409.1	124.2	17.6	386.6	134.1	16.6	362.6	145.4	15.6	336.9	157.8	14.5	308.9	171.6	13.3
	30RB120	458.9	138.5	19.7	434.0	149.7	18.6	407.6	162.1	17.5	379.3	175.7	16.3	347.8	190.8	14.9
	30RB130	494.2	148.1	21.2	467.1	160.1	20.1	438.1	173.5	18.8	407.0	188.2	17.5	373.0	204.2	16.0
	30RB150	562.2	168.0	24.2	531.3	181.7	22.8	497.8	196.8	21.4	461.4	213.3	19.8	421.5	231.2	18.1
	30RB160	594.1	176.6	25.5	562.4	190.9	24.2	528.2	206.7	22.7	490.7	224.0	21.1	449.5	242.9	19.3
	30RB170	646.9	195.0	27.8	611.7	210.9	26.3	574.0	228.4	24.7	533.2	247.6	22.9	487.8	268.5	21.0
	30RB190	732.1	221.8	31.4	692.4	239.6	29.8	650.0	259.4	27.9	604.4	281.0	26.0	554.3	304.6	23.8
	30RB210	784.4	232.9	33.7	742.2	251.9	31.9	696.5	272.9	29.9	647.0	295.9	27.8	592.4	320.9	25.5
	30RB225	832.8	251.1	35.8	788.3	271.7	33.9	739.4	294.4	31.8	686.5	319.2	29.5	628.2	346.2	27.0
	30RB250	923.4	279.0	39.7	874.1	301.8	37.6	821.0	326.9	35.3	762.9	354.4	32.8	698.7	384.3	30.0
	30RB275	1009.6	304.9	43.4	955.7	329.6	41.1	897.8	356.9	38.6	835.1	386.9	35.9	765.9	419.5	32.9
	30RB300	1096.2	332.4	47.1	1037.7	359.1	44.6	975.0	388.8	41.9	907.2	421.4	39.0	832.9	456.9	35.8
	30RB315	1188.2	353.2	51.1	1124.9	381.8	48.3	1056.3	413.4	45.4	981.3	448.1	42.2	899.0	485.9	38.6
	30RB330	1240.9	371.6	53.3	1174.1	401.8	50.4	1102.1	435.1	47.4	1023.8	471.7	44.0	937.3	511.4	40.3
	30RB345	1293.7	390.0	55.6	1223.3	421.7	52.6	1148.0	456.8	49.3	1066.4	495.3	45.8	975.5	536.9	41.9
	30RB360	1378.9	416.8	59.2	1304.1	450.5	56.0	1224.0	487.8	52.6	1137.6	528.7	48.9	1042.1	573.1	44.8
	30RB390	1464.1	443.6	62.9	1384.8	479.2	59.5	1300.1	518.7	55.9	1208.8	562.1	51.9	1108.7	609.3	47.6
10.0	30RB060	237.2	68.1	10.2	224.3	73.4	9.6	210.6	79.3	9.1	195.9	85.6	8.4	179.8	92.5	7.7
	30RB070	274.4	80.4	11.8	259.4	86.8	11.2	243.6	93.8	10.5	226.7	101.5	9.8	208.5	110.0	9.0
	30RB080	316.8	92.6	13.6	299.2	99.7	12.9	280.6	107.5	12.1	259.7	116.4	11.2	236.5	126.3	10.2
	30RB090	357.7	103.0	15.4	338.3	110.9	14.5	317.7	119.6	13.7	295.8	129.1	12.7	271.9	139.4	11.7
	30RB100	394.9	115.3	17.0	373.4	124.3	16.1	350.7	134.2	15.1	326.6	145.0	14.0	300.5	156.9	12.9
	30RB110	435.1	127.9	18.7	411.3	138.0	17.7	386.1	149.1	16.6	358.9	161.0	15.4	329.4	174.6	14.2
	30RB120	487.7	141.5	21.0	461.4	152.9	19.8	433.5	165.5	18.7	403.7	179.2	17.4	371.0	194.1	16.0
	30RB130	526.8	150.9	22.7	498.1	163.0	21.4	467.5	176.5	20.1	434.6	191.3	18.7	398.7	207.5	17.2
	30RB150	601.1	171.8	25.9	568.3	185.6	24.4	532.9	200.9	22.9	494.1	217.5	21.2	451.6	235.5	19.4
	30RB160	634.6	179.9	27.3	601.0	194.4	25.8	564.8	210.4	24.3	525.3	227.9	22.6	481.6	246.8	20.7
	30RB170	690.8	199.1	29.7	653.5	215.0	28.1	613.3	232.8	26.4	570.0	252.1	24.5	522.2	273.1	22.5
	30RB190	781.4	226.2	33.6	739.2	244.2	31.8	694.1	264.1	29.9	645.6	285.9	27.8	592.4	309.7	25.5
	30RB210	837.9	237.7	36.0	793.7	256.9	34.1	745.2	278.1	32.1	692.4	301.3	29.8	634.5	326.5	27.3
	30RB225	889.9	256.5	38.2	842.4	277.4	36.2	791.2	300.4	34.0	734.8	325.4	31.6	672.8	352.6	28.9
	30RB250	986.4	284.9	42.4	933.8	307.9	40.1	877.3	333.3	37.7	816.0	361.1	35.1	748.0	391.2	32.2
	30RB275	1078.3	311.1	46.3	1020.8	336.0	43.9	959.1	363.6	41.2	892.4	393.8	38.4	819.2	426.6	35.2
	30RB300	1170.8	339.0	50.3	1108.3	366.0	47.6	1041.5	396.0	44.8	969.3	428.8	41.7	890.4	464.5	38.3
	30RB315	1269.2	359.8	54.6	1202.0	388.8	51.7	1129.6	420.7	48.6	1050.7	455.7	45.2	963.2	493.7	41.4
	30RB330	1325.4	379.0	57.0	1254.5	409.4	54.0	1178.1	443.1	50.7	1095.4	480.0	47.1	1003.8	520.0	43.2
	30RB345	1381.6	398.1	59.4	1306.9	430.1	56.2	1226.6	465.5	52.8	1140.0	504.3	49.0	1044.3	546.3	44.9
	30RB360	1472.2	425.2	63.3	1392.7	459.2	59.9	1307.5	496.8	56.2	1215.6	538.1	52.3	1114.6	582.8	47.9
	30RB390	1562.8	452.3	67.2	1478.4	488.3	63.6	1388.3	528.2	59.7	1291.2	571.9	55.5	1184.9	619.3	51.0

LEGEND

LCWT — Leaving Chilled Water Temperature

Typical piping and wiring

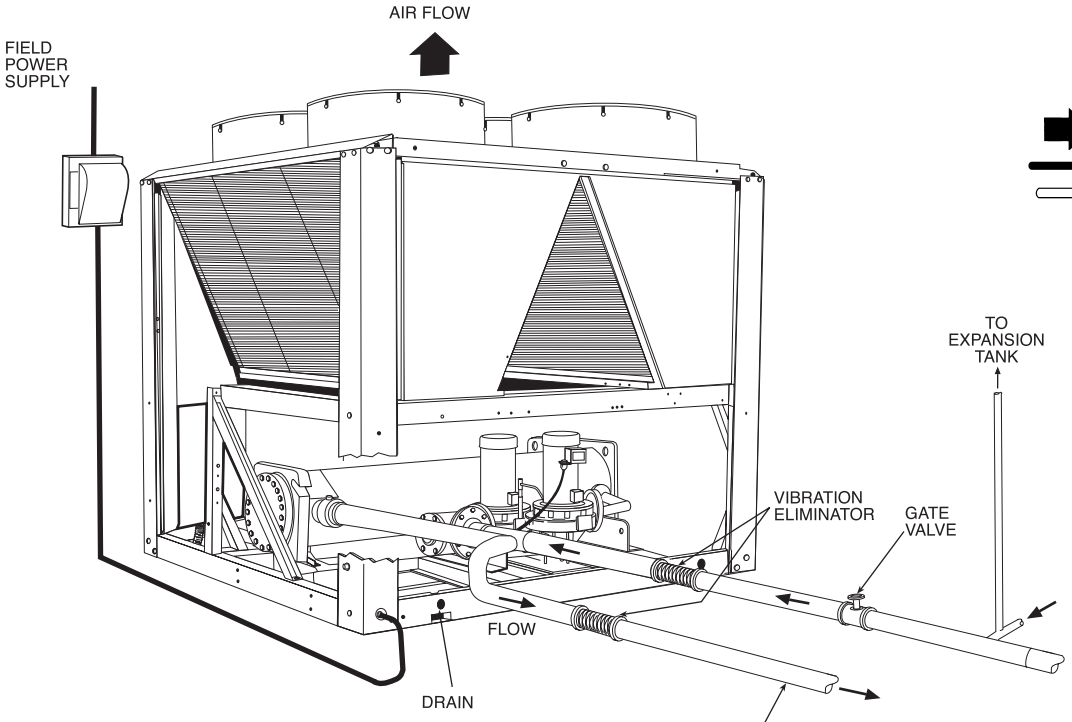
30RB UNITS WITHOUT HYDRONIC PACKAGE



NOTES:
1. Chiller must be installed level to maintain proper compressor oil return and hydraulics.
2. Piping shown are general points-of-connection guides only and are not intended for a specific installation. Wiring and piping shown are for a quick overview of system and are not in accordance with recognized standards.
3. All wiring must comply with applicable local and national codes.
4. All piping must follow standard piping techniques. Refer to Carrier System Design Manual or appropriate ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) handbook for details.

HEAT TAPE AND INSULATION ARE RECOMMENDED ON ALL EXPOSED PIPING
IF AMBIENT TEMPERATURE <32 F (0° C) AND NO ANTIFREEZE SOLUTION IS IN SYSTEM

30RB UNITS WITH HYDRONIC PACKAGE

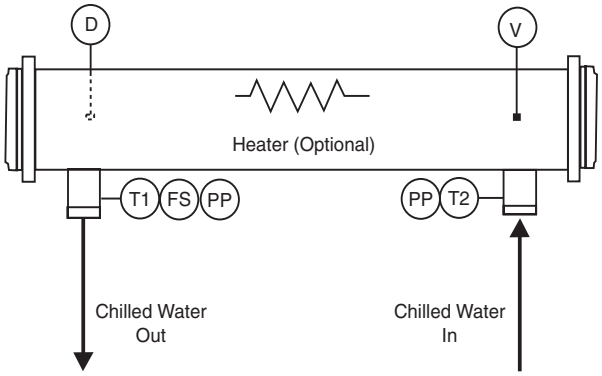


NOTES:
1. Chiller must be installed level to maintain proper compressor oil return and hydraulics.
2. Wiring and piping shown are general points-of-connection guides only and are not intended for a specific installation. Wiring and piping shown are for a quick overview of system and are not in accordance with recognized standards.
3. All wiring must comply with applicable local and national codes.
4. All piping must follow standard piping techniques. Refer to Carrier System Design Manual or appropriate ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) handbook for details.
5. Air separator required as close to chiller as possible (except primary/secondary systems).

HEAT TAPE AND INSULATION ARE RECOMMENDED ON ALL EXPOSED PIPING
IF AMBIENT TEMPERATURE <32 F (0° C) AND NO ANTIFREEZE SOLUTION IS IN SYSTEM

Typical piping and wiring (cont)

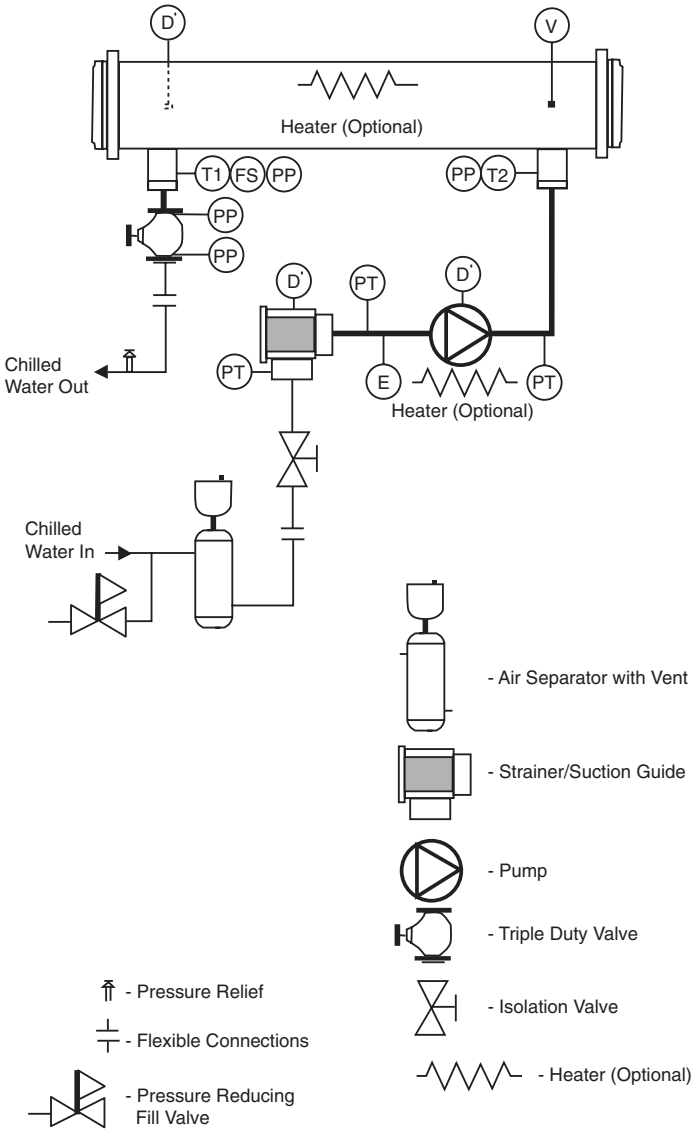
TYPICAL PIPING DIAGRAM ON 30RB UNITS WITHOUT HYDRONIC PACKAGE



LEGEND

D — Drain, 3/4-in. NPT
FS — Flow Switch
PP — Pipe Plug, 1/4-in. NPT
T1 — Leaving Water Thermistor
T2 — Entering Water Thermistor
V — Vent, 1/4-in. NPT

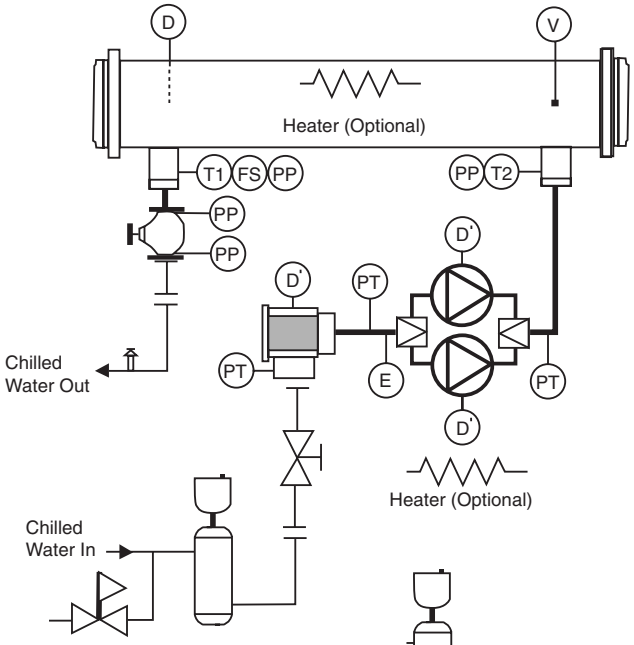
TYPICAL PIPING DIAGRAM ON 30RB UNITS WITH HYDRONIC PACKAGE — SINGLE PUMP



LEGEND

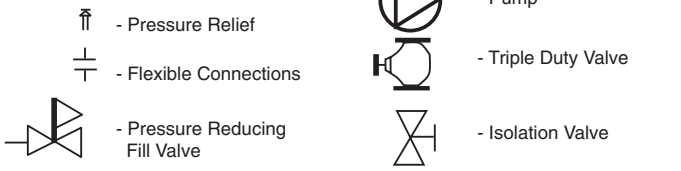
D — Drain,3/4-in. NPT
D′ — Drain, 1/4-in. NPT
E — Expansion Tank Connection, 3/4-in. NPT
FS — Flow Switch
PP — Pipe Plug, 1/4-in. NPT
PT — Pressure/Temperature Tap
T1 — Leaving Water Thermistor
T2 — Entering Water Thermistor
V — Vent, 1/4-in. NPT

TYPICAL PIPING DIAGRAM ON 30RB UNITS WITH HYDRONIC PACKAGE — DUAL PUMPS



LEGEND

D — Drain, 3/4-in. NPT
D′ — Drain, 1/4-in. NPT
E — Expansion Tank Connection, 3/4-in. NPT
FS — Flow Switch
PP — Pipe Plug, 1/4-in. NPT
PT — Pressure/Temperature Tap
T1 — Leaving Water Thermistor
T2 — Entering Water Thermistor
V — Vent, 1/4-in. NPT


- Pressure Relief

- Flexible Connections

- Pressure Reducing Fill Valve


- Air Separator with Vent


- Strainer/Suction Guide


- Reverse Flow Check Valve/Service Valve


- Service Valve


- Pump

- Triple Duty Valve

- Isolation Valve

Electrical data

30RB ELECTRICAL DATA — SINGLE POINT UNITS

UNIT 30RB	UNIT VOLTAGE			NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min	Max	XL	XL	XL		XL	XL	XL		XL	XL	XL	
060	208/230-60	187	253	291.5	350	682.8	350	302.4	350	693.6	350	309.2	350	700.5	350
	460-60	414	506	127.9	150	302.0	150	132.8	150	306.9	150	135.9	150	310.0	150
	575-60	518	633	102.4	125	244.7	110	106.4	125	248.6	125	108.8	125	251.1	125
	380-60	342	418	150.9	175	362.9	175	156.9	175	368.8	175	160.6	175	372.6	175
070	208/230-60	187	253	334.7	400	777.0	400	345.6	400	787.8	400	352.4	400	794.7	400
	460-60	414	506	147.9	175	355.9	175	152.8	175	360.8	175	155.9	175	363.9	175
	575-60	518	633	119.8	150	287.4	150	123.7	150	291.3	150	126.2	150	293.8	150
	380-60	342	418	175.5	200	428.8	200	181.4	225	434.7	200	185.2	225	438.5	200
080	208/230-60	187	253	366.5	400	757.8	400	—	—	—	—	384.2	450	775.5	450
	460-60	414	506	160.6	175	334.7	175	—	—	—	—	168.6	200	342.7	200
	575-60	518	633	128.6	150	270.9	150	—	—	—	—	135.0	150	277.3	150
	380-60	342	418	189.3	225	401.3	200	—	—	—	—	199.0	225	411.0	225
090	208/230-60	187	253	433.6	500	875.9	500	—	—	—	—	451.3	500	893.6	500
	460-60	414	506	191.4	225	399.4	225	—	—	—	—	199.4	225	407.4	225
	575-60	518	633	154.6	175	322.2	175	—	—	—	—	161.0	175	328.6	175
	380-60	342	418	226.9	250	480.3	250	—	—	—	—	236.6	250	490.0	250
100	208/230-60	187	253	472.0	500	914.3	500	—	—	—	—	489.7	500	932.0	500
	460-60	414	506	209.2	250	417.2	225	—	—	—	—	217.2	250	425.2	250
	575-60	518	633	170.0	200	337.6	200	—	—	—	—	176.4	200	344.0	200
	380-60	342	418	248.7	250	502.1	250	—	—	—	—	258.4	300	511.8	300
110	208/230-60	187	253	508.6	600	950.9	600	—	—	—	—	526.3	600	968.6	600
	460-60	414	506	224.1	250	432.1	250	—	—	—	—	232.1	250	440.1	250
	575-60	518	633	180.8	200	348.4	200	—	—	—	—	187.2	200	354.8	200
	380-60	342	418	265.3	300	518.7	300	—	—	—	—	275.0	300	528.4	300
120	208/230-60	187	253	590.1	600	1032.3	600	—	—	—	—	607.8	700	1050.0	700
	460-60	414	506	261.6	300	469.6	300	—	—	—	—	269.6	300	477.6	300
	575-60	518	633	212.5	225	380.2	225	—	—	—	—	218.9	250	386.6	250
	380-60	342	418	311.1	350	564.5	350	—	—	—	—	320.8	350	574.2	350
130	208/230-60	187	253	626.7	700	1068.9	700	—	—	—	—	644.4	700	1086.6	700
	460-60	414	506	276.5	300	484.5	300	—	—	—	—	284.5	300	492.5	300
	575-60	518	633	223.3	250	391.0	250	—	—	—	—	229.7	250	397.4	250
	380-60	342	418	327.7	350	581.1	350	—	—	—	—	337.4	350	590.8	350
150	208/230-60	187	253	684.3	700	1126.5	700	—	—	—	—	702.0	800	1144.2	800
	460-60	414	506	303.2	350	511.2	350	—	—	—	—	311.2	350	519.2	350
	575-60	518	633	246.4	250	414.1	250	—	—	—	—	252.8	300	420.5	300
	380-60	342	418	360.4	400	613.8	400	—	—	—	—	370.1	400	623.5	400
160	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	762.5	800	1204.7	800
	460-60	414	506	328.9	350	536.9	350	—	—	—	—	336.9	350	544.9	350
	575-60	518	633	265.9	300	433.5	300	—	—	—	—	272.3	300	439.9	300
	380-60	342	418	390.1	400	643.5	400	—	—	—	—	399.8	400	653.2	400
170	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	820.1	1000	1262.3	1000
	460-60	414	506	355.6	400	563.6	400	—	—	—	—	363.6	400	571.6	400
	575-60	518	633	289.0	300	456.6	300	—	—	—	—	295.4	300	463.0	300
	380-60	342	418	422.8	450	676.2	450	—	—	—	—	432.5	450	685.9	450
190	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	938.2	1000	1380.4	1000
	460-60	414	506	408.0	450	616.0	450	—	—	—	—	416.0	450	624.0	450
	575-60	518	633	331.5	350	499.1	350	—	—	—	—	337.9	350	505.5	350
	380-60	342	418	485.2	500	738.5	500	—	—	—	—	494.9	500	748.2	500
210	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	422.9	450	630.9	450	—	—	—	—	—	—	—	—
	575-60	518	633	342.3	350	509.9	350	—	—	—	—	—	—	—	—
	380-60	342	418	501.8	600	755.1	600	—	—	—	—	—	—	—	—
225	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	449.6	450	657.6	450	—	—	—	—	—	—	—	—
	575-60	518	633	365.4	400	533.0	400	—	—	—	—	—	—	—	—
	380-60	342	418	534.5	600	787.8	600	—	—	—	—	—	—	—	—
250	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	502.0	600	710.0	600	—	—	—	—	—	—	—	—
	575-60	518	633	408.0	450	575.6	450	—	—	—	—	—	—	—	—
	380-60	342	418	596.8	600	850.2	600	—	—	—	—	—	—	—	—
275	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	554.4	600	762.4	600	—	—	—	—	—	—	—	—
	575-60	518	633	450.5	500	618.1	500	—	—	—	—	—	—	—	—
	380-60	342	418	659.2	700	912.6	700	—	—	—	—	—	—	—	—
300	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	606.8	700	814.8	700	—	—	—	—	—	—	—	—
	575-60	518	633	493.0	500	660.7	500	—	—	—	—	—	—	—	—
	380-60	342	418	721.6	800	975.0	800	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units/modules have single point primary power connection. (Each unit/module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. Maximum incoming wire size for each terminal block is 500 kcmil.
5. Power includes both crankcase heaters and cooler heaters (where used).
6. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
7. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the power distribution block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

30RB ELECTRICAL DATA — SINGLE POINT UNITS (cont)

UNIT 30RB		UNIT VOLTAGE			NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
		V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
			Min	Max	XL	XL	XL		XL	XL	XL		XL	XL	XL	
315	A	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units/modules have single point primary power connection. (Each unit/module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. Maximum incoming wire size for each terminal block is 500 kcmil.
5. Power draw includes both crankcase heaters and cooler heaters (where used).
6. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
7. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the power distribution block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

Electrical data (cont)

30RB ELECTRICAL DATA — SINGLE POINT UNITS (cont)

UNIT 30RB	UNIT VOLTAGE			7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				15 HP PUMP, 3450 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min	Max	XL	XL	XL		XL	XL	XL		XL	XL	XL	
060	208/230-60	187	253	317.2	350	708.5	350	325.1	400	716.4	350	—	—	—	—
	460-60	414	506	139.5	150	313.6	150	143.1	175	317.2	175	—	—	—	—
	575-60	518	633	111.7	125	254.0	125	114.6	125	256.9	125	—	—	—	—
	380-60	342	418	165.0	200	376.9	175	169.3	200	381.3	200	—	—	—	—
070	208/230-60	187	253	360.4	450	802.7	400	368.3	450	810.6	400	—	—	—	—
	460-60	414	506	159.5	200	367.5	175	163.1	200	371.1	175	—	—	—	—
	575-60	518	633	129.0	150	296.7	150	131.9	150	299.6	150	—	—	—	—
	380-60	342	418	189.5	225	442.8	225	193.9	225	447.2	225	—	—	—	—
080	208/230-60	187	253	392.2	450	783.5	450	400.1	450	791.4	450	416.3	450	807.6	450
	460-60	414	506	172.2	200	346.3	200	175.8	200	349.9	200	183.1	200	357.2	200
	575-60	518	633	137.9	150	280.2	150	140.8	150	283.1	150	146.6	150	288.9	150
	380-60	342	418	203.4	225	415.3	225	207.7	225	419.7	225	216.6	250	428.5	250
090	208/230-60	187	253	459.3	500	901.6	500	467.2	500	909.5	500	483.4	500	925.7	500
	460-60	414	506	203.0	225	411.0	225	206.6	225	414.6	225	213.9	250	421.9	225
	575-60	518	633	163.9	175	331.5	175	166.8	200	334.4	200	172.6	200	340.2	200
	380-60	342	418	241.0	250	494.3	250	245.3	250	498.7	250	254.2	300	507.5	300
100	208/230-60	187	253	497.7	500	940.0	500	505.6	600	947.9	600	521.8	600	964.1	600
	460-60	414	506	220.8	250	428.8	250	224.4	250	432.4	250	231.7	250	439.7	250
	575-60	518	633	179.3	200	346.9	200	182.2	200	349.8	200	188.0	200	355.6	200
	380-60	342	418	262.8	300	516.1	300	267.1	300	520.5	300	276.0	300	529.3	300
110	208/230-60	187	253	534.3	600	976.6	600	542.2	600	984.5	600	558.4	600	1000.7	600
	460-60	414	506	235.7	250	443.7	250	239.3	250	447.3	250	246.6	250	454.6	250
	575-60	518	633	190.1	200	357.7	200	193.0	225	360.6	225	198.8	225	366.4	225
	380-60	342	418	279.4	300	532.7	300	283.7	300	537.1	300	292.6	300	545.9	300
120	208/230-60	187	253	615.7	700	1058.0	700	623.7	700	1065.9	700	639.8	700	1082.1	700
	460-60	414	506	273.2	300	481.2	300	276.8	300	484.8	300	284.1	300	492.1	300
	575-60	518	633	221.8	250	389.5	250	224.7	250	392.4	250	230.5	250	398.2	250
	380-60	342	418	325.2	350	578.5	350	329.5	350	582.9	350	338.4	350	591.7	350
130	208/230-60	187	253	652.3	700	1094.6	700	660.3	700	1102.5	700	676.4	700	1118.7	700
	460-60	414	506	288.1	300	496.1	300	291.7	300	499.7	300	299.0	300	507.0	300
	575-60	518	633	232.6	250	400.3	250	235.5	250	403.2	250	241.3	250	409.0	250
	380-60	342	418	341.8	350	595.1	350	346.1	350	599.5	350	355.0	400	608.3	400
150	208/230-60	187	253	709.9	800	1152.2	800	717.9	800	1160.1	800	734.0	800	1176.3	800
	460-60	414	506	314.8	350	522.8	350	318.4	350	526.4	350	325.7	350	533.7	350
	575-60	518	633	255.7	300	423.4	300	258.6	300	426.3	300	264.4	300	432.1	300
	380-60	342	418	374.5	400	627.8	400	378.8	400	632.2	400	387.7	400	641.0	400
160	208/230-60	187	253	770.4	800	1212.7	800	778.4	800	1220.6	800	794.5	800	1236.8	800
	460-60	414	506	340.5	350	548.5	350	344.1	350	552.1	350	351.4	400	559.4	400
	575-60	518	633	275.2	300	442.8	300	278.0	300	445.7	300	283.9	300	451.5	300
	380-60	342	418	404.1	450	657.5	450	408.5	450	661.9	450	417.3	450	670.7	450
170	208/230-60	187	253	828.0	1000	1270.3	1000	836.0	1000	1278.2	1000	852.1	1000	1294.4	1000
	460-60	414	506	367.2	400	575.2	400	370.8	400	578.8	400	378.1	400	586.1	400
	575-60	518	633	298.3	300	465.9	300	301.1	350	468.8	350	307.0	350	474.6	350
	380-60	342	418	436.8	450	690.2	450	441.2	450	694.6	450	450.0	500	703.4	500
190	208/230-60	187	253	946.1	1000	1388.4	1000	954.1	1000	1396.3	1000	970.2	1000	1412.5	1000
	460-60	414	506	419.6	450	627.6	450	423.2	450	631.2	450	430.5	450	638.5	450
	575-60	518	633	340.8	350	508.4	350	343.7	350	511.3	350	349.5	350	517.1	350
	380-60	342	418	499.2	500	752.5	500	503.6	600	756.9	600	512.4	600	765.7	600
210	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
225	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
250	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
275	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
300	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units/modules have single point primary power connection. (Each unit/module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. Maximum incoming wire size for each terminal block is 500 kcmil.
5. Power draw control include both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 180 watts of power.
6. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
7. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the power distribution block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

30RB ELECTRICAL DATA — SINGLE POINT UNITS (cont)

UNIT 30RB		UNIT VOLTAGE			7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				15 HP PUMP, 3450 RPM			
		V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
			Min	Max	XL	XL	XL		XL	XL	XL		XL	XL	XL	
315	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—

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   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

Electrical data (cont)

30RB ELECTRICAL DATA — DUAL POINT UNITS

UNIT 30RB	UNIT VOLTAGE			NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min	Max												
060	208/230-60	187	253	168.8/141.5	225/200	560.0/532.8	200/175	179.6/141.5	250/200	570.8/532.8	200/175	186.4/141.5	250/200	577.7/532.8	225/175
	460-60	414	506	73.6/ 62.5	100/ 90	247.7/236.6	90/ 80	78.5/ 62.5	110/ 90	252.6/236.6	90/ 80	81.6/ 62.5	110/ 90	255.7/236.6	90/ 80
	575-60	518	633	59.0/ 50.0	80/ 70	201.2/192.3	70/ 60	62.9/ 50.0	80/ 70	205.1/192.3	70 /60	65.4/ 50.0	90/ 70	207.6/192.3	80/ 60
	380-60	342	418	86.4/ 74.1	110/110	298.4/286.1	100/ 90	92.3/ 74.1	125/110	304.3/286.1	110/ 90	96.1/ 74.1	125/110	308.1/286.1	110/ 90
070	208/230-60	187	253	212.0/141.5	300/200	579.2/607.8	250/175	222.8/141.5	300/200	590.0/607.8	250/175	229.6/141.5	300/200	596.9/607.8	300/175
	460-60	414	506	93.6/ 62.5	125/ 90	256.6/281.6	110/ 80	98.5/ 62.5	125/ 90	261.5/281.6	110/ 80	101.6/ 62.5	125/ 90	264.6/281.6	125/ 80
	575-60	518	633	76.3/ 50.0	110/ 70	208.9/227.3	90/ 60	80.2/ 50.0	110/ 70	212.8/227.3	90/ 60	82.7/ 50.0	110/ 70	215.3/227.3	100/ 60
	380-60	342	418	110.9/ 74.1	150/110	309.3/341.1	125/ 90	116.9/ 74.1	150/110	315.2/341.1	150/ 90	120.6/ 74.1	150/110	319.0/341.1	150/ 90
080	208/230-60	187	253	216.5/168.8	250/225	607.8/560.0	250/200	—	—	—	—	234.2/168.8	300/225	625.5/560.0	300/200
	460-60	414	506	95.2/ 73.6	125/100	269.3/247.7	110/ 90	—	—	—	—	103.2/ 73.6	125/100	277.3/247.7	125/ 90
	575-60	518	633	76.2/ 59.0	100/ 80	218.5/201.2	90/ 70	—	—	—	—	82.6/ 59.0	100/ 80	224.9/201.2	90/ 70
	380-60	342	418	112.5/ 86.4	150/110	324.5/298.4	125/100	—	—	—	—	122.2/ 86.4	150/110	334.2/298.4	150/100
090	208/230-60	187	253	283.6/168.8	350/225	725.9/635.0	350/200	—	—	—	—	301.3/168.8	350/225	743.6/635.0	350/200
	460-60	414	506	126.0/ 73.6	150/100	334.0/292.7	150/ 90	—	—	—	—	134.0/ 73.6	175/100	342.0/292.7	150/ 90
	575-60	518	633	102.2/ 59.0	125/ 80	269.8/236.2	125/ 70	—	—	—	—	108.6/ 59.0	125/ 80	276.2/236.2	125/ 70
	380-60	342	418	150.1/ 86.4	175/110	403.5/353.4	175/100	—	—	—	—	159.8/ 86.4	200/110	413.2/353.4	175/100
100	208/230-60	187	253	283.6/212.0	350/300	725.9/654.2	350/250	—	—	—	—	301.3/212.0	350/300	743.6/654.2	350/250
	460-60	414	506	126.0/ 93.6	150/125	334.0/301.6	150/110	—	—	—	—	134.0/ 93.6	175/125	342.0/301.6	150/110
	575-60	518	633	102.2/ 76.3	125/110	269.8/243.9	125/ 90	—	—	—	—	108.6/ 76.3	125/110	276.2/243.9	125/ 90
	380-60	342	418	150.1/110.9	175/150	403.5/364.3	175/125	—	—	—	—	159.8/110.9	200/150	413.2/364.3	175/125
110	208/230-60	187	253	283.6/243.8	350/300	725.9/710.0	350/300	—	—	—	—	301.3/243.8	350/300	743.6/710.0	350/300
	460-60	414	506	126.0/106.3	150/125	334.0/325.4	150/125	—	—	—	—	134.0/106.3	175/125	342.0/325.4	150/125
	575-60	518	633	102.2/ 85.2	125/110	269.8/262.4	125/100	—	—	—	—	108.6/ 85.2	125/110	276.2/262.4	125/100
	380-60	342	418	150.1/124.8	175/150	403.5/391.8	175/150	—	—	—	—	159.8/124.8	200/150	413.2/391.8	175/150
120	208/230-60	187	253	259.7/342.0	350/400	702.0/784.2	300/400	—	—	—	—	277.4/342.0	350/400	719.7/784.2	350/400
	460-60	414	506	115.2/151.4	150/175	323.2/359.4	150/175	—	—	—	—	123.2/151.4	150/175	331.2/359.4	150/175
	575-60	518	633	93.6/123.1	125/150	261.2/290.8	110/150	—	—	—	—	100.0/123.1	125/150	267.6/290.8	110/150
	380-60	342	418	137.1/179.8	175/225	390.4/433.2	150/200	—	—	—	—	146.8/179.8	175/225	400.1/433.2	175/200
130	208/230-60	187	253	401.7/243.8	450/300	843.9/710.0	450/300	—	—	—	—	419.4/243.8	500/300	861.6/710.0	450/300
	460-60	414	506	178.4/106.3	200/125	386.4/325.4	200/125	—	—	—	—	186.4/106.3	225/125	394.4/325.4	200/125
	575-60	518	633	144.7/ 85.2	175/110	312.4/262.4	175/100	—	—	—	—	151.1/ 85.2	175/110	318.8/262.4	175/100
	380-60	342	418	212.5/124.8	250/150	465.9/391.8	225/150	—	—	—	—	222.2/124.8	250/150	475.6/391.8	250/150
150	208/230-60	187	253	401.7/306.2	450/400	843.9/748.4	450/350	—	—	—	—	419.4/306.2	500/400	861.6/748.4	450/350
	460-60	414	506	178.4/135.2	200/175	386.4/343.2	200/150	—	—	—	—	186.4/135.2	225/175	394.4/343.2	200/150
	575-60	518	633	144.7/110.2	175/125	312.4/277.8	175/125	—	—	—	—	151.1/110.2	175/125	318.8/277.8	175/125
	380-60	342	418	212.5/160.2	250/200	465.9/413.6	225/175	—	—	—	—	222.2/160.2	250/200	475.6/413.6	250/175
160	208/230-60	187	253	519.8/243.8	600/300	962.0/710.0	600/300	—	—	—	—	537.5/243.8	600/300	979.7/710.0	600/300
	460-60	414	506	230.8/106.3	250/125	438.8/325.4	250/125	—	—	—	—	238.8/106.3	250/125	446.8/325.4	250/125
	575-60	518	633	187.3/ 85.2	200/110	354.9/262.4	200/100	—	—	—	—	193.7/ 85.2	225/110	361.3/262.4	225/100
	380-60	342	418	274.9/124.8	300/150	528.3/391.8	300/150	—	—	—	—	284.6/124.8	300/150	538.0/391.8	300/150
170	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	537.5/306.2	600/400	979.7/748.4	600/350
	460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	238.8/135.2	250/175	446.8/343.2	250/150
	575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	193.7/110.2	225/125	361.3/277.8	225/125
	380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	284.6/160.2	300/200	538.0/413.6	300/175
190	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	561.4/400.4	600/450	1003.6/842.6	600/450
	460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	249.6/176.8	250/200	457.6/384.8	250/200
	575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	202.3/144.1	225/175	369.9/311.7	225/175
	380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	297.7/209.5	300/250	551.0/462.9	300/225
210	208/230-60	187	253	626.7/353.9	700/400	1068.9/796.2	700/400	—	—	—	—	—	—	—	—
	460-60	414	506	276.5/156.8	300/175	484.5/364.8	300/175	—	—	—	—	—	—	—	—
	575-60	518	633	223.3/127.5	250/150	391.0/295.1	250/150	—	—	—	—	—	—	—	—
	380-60	342	418	327.7/186.4	350/225	581.1/439.7	350/200	—	—	—	—	—	—	—	—
225	208/230-60	187	253	684.3/353.9	700/400	1126.5/796.2	700/400	—	—	—	—	—	—	—	—
	460-60	414	506	303.2/156.8	350/175	511.2/364.8	350/175	—	—	—	—	—	—	—	—
	575-60	518	633	246.4/127.5	250/150	414.1/295.1	250/150	—	—	—	—	—	—	—	—
	380-60	342	418	360.4/186.4	400/225	613.8/439.7	400/200	—	—	—	—	—	—	—	—
250	208/230-60	187	253	684.3/472.0	700/500	1126.5/914.3	700/500	—	—	—	—	—	—	—	—
	460-60	414	506	303.2/209.2	350/250	511.2/417.2	350/225	—	—	—	—	—	—	—	—
	575-60	518	633	246.4/170.0	250/200	414.1/337.6	250/200	—	—	—	—	—	—	—	—
	380-60	342	418	360.4/248.7	400/250	613.8/502.1	400/250	—	—	—	—	—	—	—	—
275	208/230-60	187	253	920.5/353.9	1000/400	1362.7/796.2	1000/400	—	—	—	—	—	—	—	—
	460-60	414	506	408.0/156.8	450/175	616.0/364.8	450/175	—	—	—	—	—	—	—	—
	575-60	518	633	331.5/127.5	350/150	499.1/295.1	350/150	—	—	—	—	—	—	—	—
	380-60	342	418	485.2/186.4	500/225	738.5/439.7	500/200	—	—	—	—	—	—	—	—
300	208/230-60	187	253	920.5/472.0	1000/500	1362.7/914.3	1000/500	—	—	—	—	—	—	—	—
	460-60	414	506	408.0/209.2	450/250	616.0/417.2	450/225	—	—	—	—	—	—	—	—
	575-60	518	633	331.5/170.0	350/200	499.1/337.6	350/200	—	—	—	—	—	—	—	—
	380-60	342	418	485.2/248.7	500/250	738.5/502.1	500/250	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units/modules have single point primary power connection. (Each unit/module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. Maximum incoming wire size for each terminal block is 500 kcmil.
5. Power draw control include both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 180 watts of power.
6. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
7. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the power distribution block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

ETL C LISTED

208/230
460
575 v only

30RB ELECTRICAL DATA — DUAL POINT UNITS (cont)

UNIT 30RB		UNIT VOLTAGE			NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
		V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
			Min	Max												
315	A	208/230-60	187	253	519.8/243.8	600/300	962.0/710.0	600/300	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/325.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/262.4	200/100	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/391.8	300/150	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/243.8	600/300	962.0/710.0	600/300	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/325.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/262.4	200/100	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/391.8	300/150	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/243.8	600/300	962.0/710.0	600/300	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/325.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/262.4	200/100	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/391.8	300/150	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
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   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

Electrical data (cont)

30RB ELECTRICAL DATA — DUAL POINT UNITS (cont)

UNIT 30RB	UNIT VOLTAGE			7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				15 HP PUMP, 3450 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min	Max												
060	208/230-60	187	253	194.4/141.5	250/200	585.7/532.8	225/175	202.4/141.5	250/200	593.6/532.8	225/175	—	—	—	—
	460-60	414	506	85.2/ 62.5	110/ 90	259.3/236.6	100/ 80	88.8/ 62.5	110/ 90	262.9/236.6	100/ 80	—	—	—	—
	575-60	518	633	68.2/ 50.0	90/ 70	210.5/192.3	80/ 60	71.1/ 50.0	90/ 70	213.4/192.3	80/ 60	—	—	—	—
	380-60	342	418	100.4/ 74.1	125/110	312.4/286.1	125/ 90	104.8/ 74.1	125/110	316.8/286.1	125/ 90	—	—	—	—
070	208/230-60	187	253	237.6/141.5	300/200	604.9/607.8	300/175	245.6/141.5	300/200	612.8/607.8	300/175	—	—	—	—
	460-60	414	506	105.2/ 62.5	125/ 90	268.2/281.6	125/ 80	108.8/ 62.5	150/ 90	271.8/281.6	125/ 80	—	—	—	—
	575-60	518	633	85.6/ 50.0	110/ 70	218.2/227.3	100/ 60	88.4/ 50.0	110/ 70	221.1/227.3	100/ 60	—	—	—	—
	380-60	342	418	125.0/ 74.1	150/110	323.3/341.1	150/ 90	129.3/ 74.1	175/ 110	327.7/341.1	150/ 90	—	—	—	—
080	208/230-60	187	253	242.2/168.8	300/225	633.5/560.0	300/200	250.1/168.8	300/225	641.4/560.0	300/200	266.3/168.8	300/225	657.6/560.0	300/200
	460-60	414	506	106.8/ 73.6	125/100	280.9/247.7	125/ 90	110.4/ 73.6	125/100	284.5/247.7	125/ 90	117.7/ 73.6	150/100	291.8/247.7	150/ 90
	575-60	518	633	85.5/ 59.0	110/ 80	227.8/201.2	100/ 70	88.4/ 59.0	110/ 80	230.7/201.2	100/ 70	94.2/ 59.0	110/ 80	236.5/201.2	110/ 70
	380-60	342	418	126.6/ 86.4	150/110	338.5/298.4	150/100	130.9/ 86.4	150/110	342.9/298.4	150/100	139.8/ 86.4	175/110	351.7/298.4	150/100
090	208/230-60	187	253	309.3/168.8	400/225	751.6/635.0	350/200	317.2/168.8	400/225	759.5/635.0	350/200	333.4/168.8	400/225	775.7/635.0	400/200
	460-60	414	506	137.6/ 73.6	175/100	345.6/292.7	150/ 90	141.2/ 73.6	175/100	349.2/292.7	175/ 90	148.5/ 73.6	175/100	356.5/292.7	175/ 90
	575-60	518	633	111.5/ 59.0	125/ 80	279.1/236.2	125/ 70	114.4/ 59.0	125/ 80	282.0/236.2	125/ 70	120.2/ 59.0	150/ 80	287.8/236.2	150/ 70
	380-60	342	418	164.2/ 86.4	200/110	417.5/353.4	200/100	168.5/ 86.4	200/110	421.9/353.4	200/100	177.4/ 86.4	225/110	430.7/353.4	200/100
100	208/230-60	187	253	309.3/212.0	400/300	751.6/654.2	350/250	317.2/212.0	400/300	759.5/654.2	350/250	333.4/212.0	400/300	775.7/654.2	400/250
	460-60	414	506	137.6/ 93.6	175/125	345.6/301.6	150/110	141.2/ 93.6	175/125	349.2/301.6	175/110	148.5/ 93.6	175/125	356.5/301.6	175/110
	575-60	518	633	111.5/ 76.3	125/110	279.1/243.9	125/ 90	114.4/ 76.3	125/110	282.0/243.9	125/ 90	120.2/ 76.3	150/110	287.8/243.9	150/ 90
	380-60	342	418	164.2/110.9	200/150	417.5/364.3	200/125	168.5/110.9	200/150	421.9/364.3	200/125	177.4/110.9	225/150	430.7/364.3	200/125
110	208/230-60	187	253	309.3/243.8	400/300	751.6/710.0	350/300	317.2/243.8	400/300	759.5/710.0	350/300	333.4/243.8	400/300	775.7/710.0	400/300
	460-60	414	506	137.6/106.3	175/125	345.6/325.4	150/125	141.2/106.3	175/125	349.2/325.4	175/125	148.5/106.3	175/125	356.5/325.4	175/125
	575-60	518	633	111.5/ 85.2	125/110	279.1/262.4	125/100	114.4/ 85.2	125/110	282.0/262.4	125/100	120.2/ 85.2	150/110	287.8/262.4	150/100
	380-60	342	418	164.2/124.8	200/150	417.5/391.8	200/150	168.5/124.8	200/150	421.9/391.8	200/150	177.4/124.8	225/150	430.7/391.8	200/150
120	208/230-60	187	253	285.4/342.0	350/400	727.7/784.2	350/400	293.3/342.0	350/400	735.6/784.2	350/400	309.5/342.0	400/400	751.8/784.2	350/400
	460-60	414	506	126.8/151.4	150/175	334.8/359.4	150/175	130.4/151.4	150/175	338.4/359.4	150/175	137.7/151.4	175/175	345.7/359.4	150/175
	575-60	518	633	102.8/123.1	125/150	270.5/290.8	125/150	105.7/123.1	125/150	273.4/290.8	125/150	111.6/123.1	125/150	279.2/290.8	125/150
	380-60	342	418	151.1/179.8	200/225	404.4/433.2	175/200	155.5/179.8	200/225	408.8/433.2	175/200	164.3/179.8	200/225	417.6/433.2	200/200
130	208/230-60	187	253	427.3/243.8	500/300	869.6/710.0	500/300	435.3/243.8	500/300	877.5/710.0	500/300	451.4/243.8	500/300	893.7/710.0	500/300
	460-60	414	506	190.0/106.3	225/125	398.0/325.4	225/125	193.6/106.3	225/125	401.6/325.4	225/125	200.9/106.3	225/125	408.9/325.4	225/125
	575-60	518	633	154.0/ 85.2	175/110	321.7/262.4	175/100	156.9/ 85.2	175/110	324.6/262.4	175/100	162.7/ 85.2	175/110	330.4/262.4	175/100
	380-60	342	418	226.6/124.8	250/150	479.9/391.8	250/150	230.9/124.8	250/150	484.3/391.8	250/150	239.8/124.8	250/150	493.1/391.8	250/150
150	208/230-60	187	253	427.3/306.2	500/400	869.6/748.4	500/350	435.3/306.2	500/400	877.5/748.4	500/350	451.4/306.2	500/400	893.7/748.4	500/350
	460-60	414	506	190.0/135.2	225/175	398.0/343.2	225/150	193.6/135.2	225/175	401.6/343.2	225/150	200.9/135.2	225/175	408.9/343.2	225/150
	575-60	518	633	154.0/110.2	175/125	321.7/277.8	175/125	156.9/110.2	175/125	324.6/277.8	175/125	162.7/110.2	175/125	330.4/277.8	175/125
	380-60	342	418	226.6/160.2	250/200	479.9/413.6	250/175	230.9/160.2	250/200	484.3/413.6	250/175	239.8/160.2	250/200	493.1/413.6	250/175
160	208/230-60	187	253	545.4/243.8	600/300	987.7/710.0	600/300	553.4/243.8	600/300	995.6/710.0	600/300	569.5/243.8	600/300	1011.8/710.0	600/300
	460-60	414	506	242.4/106.3	250/125	450.4/325.4	250/125	246.0/106.3	250/125	454.0/325.4	250/125	253.3/106.3	300/125	461.3/325.4	300/125
	575-60	518	633	196.6/ 85.2	225/110	364.2/262.4	225/100	199.4/ 85.2	225/110	367.1/262.4	225/100	205.3/ 85.2	225/110	372.9/262.4	225/100
	380-60	342	418	288.9/124.8	300/150	542.3/391.8	300/150	293.3/124.8	300/150	546.7/391.8	300/150	302.1/124.8	350/150	555.5/391.8	350/150
170	208/230-60	187	253	545.4/306.2	600/400	987.7/748.4	600/350	553.4/306.2	600/400	995.6/748.4	600/350	569.5/306.2	600/400	1011.8/748.4	600/350
	460-60	414	506	242.4/135.2	250/175	450.4/343.2	250/150	246.0/135.2	250/175	454.0/343.2	250/150	253.3/135.2	300/175	461.3/343.2	300/150
	575-60	518	633	196.6/110.2	225/125	364.2/277.8	225/125	199.4/110.2	225/125	367.1/277.8	225/125	205.3/110.2	225/125	372.9/277.8	225/125
	380-60	342	418	288.9/160.2	300/200	542.3/413.6	300/175	293.3/160.2	300/200	546.7/413.6	300/175	302.1/160.2	350/200	555.5/413.6	350/175
190	208/230-60	187	253	569.3/400.4	600/450	1011.6/842.6	600/450	577.3/400.4	600/450	1019.5/842.6	600/450	593.4/400.4	600/450	1035.7/842.6	600/450
	460-60	414	506	253.2/176.8	300/200	461.2/384.8	300/200	256.8/176.8	300/200	464.8/384.8	300/200	264.1/176.8	300/200	472.1/384.8	300/200
	575-60	518	633	205.2/144.1	225/175	372.8/311.7	225/175	208.1/144.1	225/175	375.7/311.7	225/175	213.9/144.1	225/175	381.5/311.7	225/175
	380-60	342	418	302.0/209.5	350/250	555.3/462.9	350/225	306.4/209.5	350/250	559.7/462.9	350/225	315.2/209.5	350/250	568.5/462.9	350/225
210	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
225	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
250	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
275	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
300	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

ICF — Instantaneous Current Flow
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
XL — Across-the-Line Start

NOTES:

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   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

ETL LISTED

208/230
460
575 v only

30RB ELECTRICAL DATA — DUAL POINT UNITS (cont)

UNIT 30RB		UNIT VOLTAGE			7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				10 HP PUMP, 3450 RPM			
		V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
			Min	Max												
315	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
		460-60	414	506	—	—	—	—	—	—	—	—	—	—	—	—
		575-60	518	633	—	—	—	—	—	—	—	—	—	—	—	—
		380-60	342	418	—	—	—	—	—	—	—	—	—	—	—	—

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   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.

208/230
460
575 v only

Electrical data (cont)

CONDENSER FAN ELECTRICAL DATA

UNIT 30RB	UNIT VOLTAGE V-Hz (3 Ph)	STANDARD CONDENSER FANS					
		Circuit A Quantity	FLA (each)	Circuit B Quantity	FLA (each)	Circuit C Quantity	FLA (each)
060, 070	208/230-60	3	11.9	1	11.9	—	—
	460-60	3	5.4	1	5.4	—	—
	575-60	3	4.3	1	4.3	—	—
	380-60	3	6.5	1	6.5	—	—
080	208/230-60	2	11.9	2	11.9	—	—
	460-60	2	5.4	2	5.4	—	—
	575-60	2	4.3	2	4.3	—	—
	380-60	2	6.5	2	6.5	—	—
090, 100, 110	208/230-60	3	11.9	3	11.9	—	—
	460-60	3	5.4	3	5.4	—	—
	575-60	3	4.3	3	4.3	—	—
	380-60	3	6.5	3	6.5	—	—
120	208/230-60	3	11.9	4	11.9	—	—
	460-60	3	5.4	4	5.4	—	—
	575-60	3	4.3	4	4.3	—	—
	380-60	3	6.5	4	6.5	—	—
130, 150	208/230-60	4	11.9	4	11.9	—	—
	460-60	4	5.4	4	5.4	—	—
	575-60	4	4.3	4	4.3	—	—
	380-60	4	6.5	4	6.5	—	—
160,170, 315A, 315B, 330A, 330B, 345A, 345B, 360B	208/230-60	6	11.9	4	11.9	—	—
	460-60	6	5.4	4	5.4	—	—
	575-60	6	4.3	4	4.3	—	—
	380-60	6	6.5	4	6.5	—	—
190, 360A, 390A, 390B	208/230-60	6	11.9	6	11.9	—	—
	460-60	6	5.4	6	5.4	—	—
	575-60	6	4.3	6	4.3	—	—
	380-60	6	6.5	6	6.5	—	—
210, 225	208/230-60	4	11.9	4	11.9	4	11.9
	460-60	4	5.4	4	5.4	4	5.4
	575-60	4	4.3	4	4.3	4	4.3
	380-60	4	6.5	4	6.5	4	6.5
250	208/230-60	4	11.9	4	11.9	6	11.9
	460-60	4	5.4	4	5.4	6	5.4
	575-60	4	4.3	4	4.3	6	4.3
	380-60	4	6.5	4	6.5	6	6.5
275	208/230-60	6	11.9	6	11.9	4	11.9
	460-60	6	5.4	6	5.4	4	5.4
	575-60	6	4.3	6	4.3	4	4.3
	380-60	6	6.5	6	6.5	4	6.5
300	208/230-60	6	11.9	6	11.9	6	11.9
	460-60	6	5.4	6	5.4	6	5.4
	575-60	6	4.3	6	4.3	6	4.3
	380-60	6	6.5	6	6.5	6	6.5

LEGEND
FLA — Full Load Amps

PUMP ELECTRICAL DATA

PUMP HP	UNIT VOLTAGE V-Hz (3 Ph)	HYDRONIC SYSTEM (SINGLE/DUAL) FLA (each)	USED ON 30RB SIZES
3	208/230-60	10.8	060, 070
	460-60	4.9	
	575-60	3.9	
	380-60	5.9	
5	208/230-60	17.7	060-190
	460-60	8.0	
	575-60	6.4	
	380-60	9.7	
7.5	208/230-60	25.7	060-190
	460-60	11.6	
	575-60	9.3	
	380-60	14.0	
10	208/230-60	33.6	060-190
	460-60	15.2	
	575-60	12.2	
	380-60	18.4	
15	208/230-60	49.8	080-190
	460-60	22.5	
	575-60	18.0	
	380-60	27.2	

COMPRESSOR ELECTRICAL DATA

UNIT 30RB	UNIT VOLTAGE V-Hz (3 Ph)	COMPRESSOR A1		A2		A3		A4		B1		B2		B3		B4		C1		C2		C3		C4	
		RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA	RLA	LRA
060	208/230-60	76.9	506	76.9	506	—	—	—	—	76.9	506	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	34.0	219	34.0	219	—	—	—	—	34.0	219	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	26.9	180	26.9	180	—	—	—	—	26.9	180	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	42.3	260	42.3	260	—	—	—	—	42.3	260	—	—	—	—	—	—	—	—	—	—	—	—	—	—
070	208/230-60	91.7	616	91.7	616	—	—	—	—	76.9	506	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	—	—	—	—	34.0	219	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	—	—	—	—	26.9	180	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	—	—	—	—	42.3	260	—	—	—	—	—	—	—	—	—	—	—	—	—	—
080	208/230-60	76.9	506	76.9	506	—	—	—	—	76.9	506	76.9	506	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	34.0	219	34.0	219	—	—	—	—	34.0	219	34.0	219	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	26.9	180	26.9	180	—	—	—	—	26.9	180	26.9	180	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	42.3	260	42.3	260	—	—	—	—	42.3	260	42.3	260	—	—	—	—	—	—	—	—	—	—	—	—
090	208/230-60	91.7	616	91.7	616	—	—	—	—	76.9	506	76.9	506	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	—	—	—	—	34.0	219	34.0	219	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	—	—	—	—	26.9	180	26.9	180	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	—	—	—	—	42.3	260	42.3	260	—	—	—	—	—	—	—	—	—	—	—	—
100	208/230-60	91.7	616	91.7	616	—	—	—	—	91.7	616	91.7	616	—	—	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	—	—	—	—	44.2	270	44.2	270	—	—	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	—	—	—	—	34.0	210	34.0	210	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	—	—	—	—	49.3	315	49.3	315	—	—	—	—	—	—	—	—	—	—	—	—
110	208/230-60	91.7	616	91.7	616	—	—	—	—	76.9	506	76.9	506	76.9	506	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	—	—	—	—	34.0	219	34.0	219	34.0	219	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	—	—	—	—	26.9	180	26.9	180	26.9	180	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	—	—	—	—	42.3	260	42.3	260	42.3	260	—	—	—	—	—	—	—	—	—	—
120	208/230-60	91.7	616	91.7	616	—	—	—	—	91.7	616	91.7	616	91.7	616	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	—	—	—	—	44.2	270	44.2	270	44.2	270	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	—	—	—	—	34.0	210	34.0	210	34.0	210	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	—	—	—	—	49.3	315	49.3	315	49.3	315	—	—	—	—	—	—	—	—	—	—
130	208/230-60	91.7	616	91.7	616	91.7	616	—	—	76.9	506	76.9	506	76.9	506	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	44.2	270	—	—	34.0	219	34.0	219	34.0	219	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	34.0	210	—	—	26.9	180	26.9	180	26.9	180	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	49.3	315	—	—	42.3	260	42.3	260	42.3	260	—	—	—	—	—	—	—	—	—	—
150	208/230-60	91.7	616	91.7	616	91.7	616	—	—	91.7	616	91.7	616	91.7	616	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	44.2	270	—	—	44.2	270	44.2	270	44.2	270	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	34.0	210	—	—	34.0	210	34.0	210	34.0	210	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	49.3	315	—	—	49.3	315	49.3	315	49.3	315	—	—	—	—	—	—	—	—	—	—
160, 315A, 315B, 330B	208/230-60	91.7	616	91.7	616	91.7	616	91.7	616	76.9	506	76.9	506	76.9	506	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	44.2	270	44.2	270	34.0	219	34.0	219	34.0	219	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	34.0	210	34.0	210	26.9	180	26.9	180	26.9	180	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	49.3	315	49.3	315	42.3	260	42.3	260	42.3	260	—	—	—	—	—	—	—	—	—	—
170, 330A, 345A, 345B, 360B	208/230-60	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	—	—	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	—	—	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	—	—	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	—	—	—	—	—	—	—	—	—	—
190, 360A, 390A, 390B	208/230-60	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	—	—	—	—	—	—	—	—
	460-60	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	—	—	—	—	—	—	—	—
	575-60	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	—	—	—	—	—	—	—	—
	380-60	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	—	—	—	—	—	—	—	—
210	208/230-60	91.7	616	91.7	616	91.7	616	—	—	76.9	506	76.9	506	76.9	506	—	—	91.7	616	91.7	616	91.7	616	—	—
	460-60	44.2	270	44.2	270	44.2	270	—	—	34.0	219	34.0	219	34.0	219	—	—	44.2	270	44.2	270	44.2	270	—	—
	575-60	34.0	210	34.0	210	34.0	210	—	—	26.9	180	26.9	180	26.9	180	—	—	34.0	210	34.0	210	34.0	210	—	—
	380-60	49.3	315	49.3	315	49.3	315	—	—	42.3	260	42.3	260	42.3	260	—	—	49.3	315	49.3	315	49.3	315	—	—
225	208/230-60	91.7	616	91.7	616	91.7	616	—	—	91.7	616	91.7	616	91.7	616	—	—	91.7	616	91.7	616	91.7	616	—	—
	460-60	44.2	270	44.2	270	44.2	270	—	—	44.2	270	44.2	270	44.2	270	—	—	44.2	270	44.2	270	44.2	270	—	—
	575-60	34.0	210	34.0	210	34.0	210	—	—	34.0	210	34.0	210	34.0	210	—	—	34.0	210	34.0	210	34.0	210	—	—
	380-60	49.3	315	49.3	315	49.3	315	—	—	49.3	315	49.3	315	49.3	315	—	—	49.3	315	49.3	315	49.3	315	—	—
250	208/230-60	91.7	616	91.7	616	91.7	616	—	—	91.7	616	91.7	616	91.7	616	—	—	91.7	616	91.7	616	91.7	616	91.7	616
	460-60	44.2	270	44.2	270	44.2	270	—	—	44.2	270	44.2	270	44.2	270	—	—	44.2	270	44.2	270	44.2	270	44.2	270
	575-60	34.0	210	34.0	210	34.0	210	—	—	34.0	210	34.0	210	34.0	210	—	—	34.0	210	34.0	210	34.0	210	34.0	210
	380-60	49.3	315	49.3	315	49.3	315	—	—	49.3	315	49.3	315	49.3	315	—	—	49.3	315	49.3	315	49.3	315	49.3	315
275	208/230-60	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	—	—
	460-60	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	—	—
	575-60	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	—	—
	380-60	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	—	—
300	208/230-60	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616	91.7	616
	460-60	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270	44.2	270
	575-60	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210	34.0	210
	380-60	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315	49.3	315

LEGEND

LRA — Locked Rotor Amps
RLA — Rated Load Amps

Controls

Microprocessor — The *Comfort*Link™ microprocessor controls overall unit operation. Its central executive routine controls a number of processes simultaneously. These include internal timers, reading inputs, analog to digital conversions, fan control, display control, diagnostic control, output relay control, demand limit, capacity control, head pressure control, and temperature reset. Some processes are updated almost continuously, others every 2 to 3 seconds, and some every 30 seconds. The microprocessor routine is started by switching the Emergency ON-OFF switch to ON position. Pump control of external pumps (where so configured) or optional internal pump, will energize the cooler pump to the internal (or CCN) time schedule (or input occupied signal from external system).

Where dual pumps are utilized only one pump will be operated at a time. The control will start the pump with the least hours. When the unit receives a call for cooling (based on a deviation from chilled water set point), the unit stages up in capacity to maintain the cooler fluid set point. The first compressor starts 1 to 3 minutes after the call for cooling. The *Comfort*Link microprocessor controls the capacity of the chiller by cycling compressors at a rate to satisfy actual dynamic load conditions. The control maintains leaving-fluid temperature set point shown on the Scrolling Marquee display board through intelligent cycling. Accuracy depends on loop volume, loop flow rate, load, outdoor-air temperature, number of stages, and particular stage being cycled off. No adjustment for cooling range or cooler flow rate is required, because the control automatically compensates for cooling range by measuring both return-fluid temperature and leaving-fluid temperature. This is referred to as leaving-fluid temperature control with return-fluid temperature compensation.

The basic logic for determining when to add or remove a stage is a time band integration of deviation from set point plus rate of change of leaving-fluid temperature. When leaving-fluid temperature is close to set point and slowly moving closer, logic prevents addition of another stage. If leaving-fluid temperature is less than 34 F (1.1 C) for water, or 6° F (3.3° C) below the set point for brine units, the unit is shut off until the fluid temperature goes to 34 F (1.1 C) or to 6° F (3.3° C) above the set point to protect against freezing.

If 1° F per minute (0.6° C per minute) pulldown control has been selected (adjustable setting), no additional steps of capacity are added as long as difference between leaving-fluid temperature and set point is greater than 4° F (2.2° C) and rate of change in leaving-fluid temperature is less than 1° F per minute (0.6° C per minute). If it has been less than 90 seconds since the last capacity change, compressors will continue to run unless a safety device trips. This prevents rapid cycling and also helps return oil during short on periods.

Sensors — Thermistors are used to control temperature-sensing inputs to microprocessor. Additional thermistor sensors may be used as remote temperature sensors for optional LCWT reset.

- Cooler leaving chilled fluid temperature (T1)
- Cooler entering fluid (return) temperature (T2)
- Outside air temperature (T9)

Two refrigerant pressure transducers are used in each circuit for sensing suction and discharge pressure. The microprocessor uses these inputs to control capacity and fan cycling.

- Saturated condensing temperature
- Cooler saturation temperature

Control sequence

Off cycle — If ambient temperature is below 36 F (2 C), cooler heaters (if equipped) are also energized.

Start-up — After control circuit switches on, the prestart process takes place, then microprocessor checks itself, starts pump (if configured) and waits for temperature to stabilize. The controlled pulldown feature limits compressor loading on start-up to reduce demand on start-up and unnecessary compressor usage. The microprocessor limits supply-fluid temperature decrease (start-up only) to 1° F (0.6° C) per minute.

Capacity control — On first call for cooling, microprocessor starts initial compressor and fan stage on lead circuit.

As additional cooling is required, additional compressors are energized.

Speed at which capacity is added or reduced is controlled by temperature deviation from set point and rate of temperature change of chilled fluid.

The Main Base Board (MBB) responds to the supply chilled water temperature to cycle the compressors to match cooling load requirements.

Minimum Load control valve is energized by the MBB. Valve allows hot gas to pass directly into the cooler circuit on the final step of unloading, permitting the unit to operate at lower loads with less compressor cycling.

CAPACITY CONTROL STEPS*

UNIT 30RB	STANDARD CAPACITY STEPS (%)
060	0, 33, 67, 100
070	0, 29, 64, 100
080	0, 25, 50, 75, 100
090	0, 22, 50, 72,100
100	0, 25, 50, 75, 100
110	0, 18, 41, 59, 82, 100
120	0, 20, 40, 60, 80, 100
130	0, 15, 33, 48, 67, 81, 100
150	0, 17, 33, 50, 67, 83, 100
160	0, 13, 28, 41, 56, 69, 84, 100
170	0, 14, 29, 43, 57, 71, 86, 100
190	0, 13, 25, 38, 50, 63, 75, 88, 100
210	0, 10, 21, 33, 43, 55, 67, 76, 88, 100
225	0, 11, 22, 33, 44, 56, 67, 78, 89, 100
250	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
275	0, 9, 18, 27, 36, 45, 55, 64, 73, 82, 91, 100
300	0, 8, 17, 25, 33, 42, 50, 58, 67, 75, 83, 92, 100
315	0, 6, 14, 20, 28, 34, 42, 50, 56, 64, 70, 78, 84, 92, 100
330	0, 6, 13, 19, 27, 33, 40, 48, 55, 63, 70, 78, 85, 93, 100
345	0, 7, 14, 21, 29, 36, 43, 50, 57, 64, 71, 79, 86, 93, 100
360	0, 7, 13, 20, 27, 33, 40, 47, 53, 60, 67, 73, 80, 87, 93, 100
390	0, 6, 13, 19, 25, 31, 38, 44, 50, 50, 56, 63, 69, 75, 81, 88, 94, 100

*Capacity control steps may vary due to compressor sequencing.

Standard *Comfort*Link™ controls with Scrolling Marquee display — A four-digit alphanumeric display shows all of the *Comfort*Link control codes (with 60-character expandable clear language), plus set points, time of day, temperatures, pressures, and superheat. Additional information can be displayed all at once with the accessory Navigator™ display.

Low-temperature override — This feature prevents LCWT (leaving chilled fluid temperature) from overshooting the set point and possibly causing a nuisance trip-out by the freeze protection.

High-temperature override — This feature allows chiller to add capacity quickly during rapid load variations.

Abnormal conditions — All control safeties in chiller operate through compressor protection board or control relay and microprocessor.

Loss of feedback signal to the MBB will cause the compressor(s) to shut down. For other safeties, microprocessor makes appropriate decision to shut down a compressor due to a safety trip or bad sensor reading and displays appropriate failure code on the display. Chiller holds in safety mode until reset. It then reverts to normal control when unit is reset.

Low-pressure safety — Safety cuts out if system pressure drops below minimum.

High-pressure cutout — Switch shuts down compressors if compressor discharge pressure increases to 426 psig (2937 kPa).

Compressor anti-cycling — This feature limits compressor cycling.

Loss of flow protection — Proof of flow switches are standard and installed on all 30RB chillers.

Sensor failures — Failures are detected by the microprocessor.

Dual chiller control — The *Comfort*Link controller allows 2 chillers (piped in parallel) to operate as a single chilled water plant with standard control functions coordinated through the master chiller controller. This standard *Comfort*Link feature requires a communication link between the 2 chillers.

Temperature reset — If applied, microprocessor compares either return fluid, space temperature, or outdoor-air temperature with the accessory board settings, and adjusts LCWT appropriately. The Energy Management Module can also be added for 4 to 20 mA reset.

Accessory controls — Demand can be limited by controlling the chiller capacity through the demand limit control (the Energy Management Module is required for this function). This FIOP/accessory interfaces with microprocessor to control unit so that chiller's kW demand does not exceed its setting. It is activated from an external switch or a 4 to 20 mA signal.

The standard *Comfort*Link control is programmed to accept various accessory temperature reset options (based on outdoor-air temperature [std], return-fluid temperature, or space temperature), that reset the LCWT. An accessory thermistor (T10) is required if outdoor-air temperature or space temperature reset is selected. The Energy Management Module (EMM) is only required for temperature reset that is initiated by a 4 to 20 mA signal.

Demand limit — If applied, limits the total power draw of unit to selected point by controlling number of operational compressors during periods of peak electrical demand.

The Energy Management Module is required for either 2-step or 4 to 20 mA demand limit.

Navigator display — An optional 4-line, 20-character per line display an also available as a field-installed accessory.

Electronic expansion valve (EXV) — The EXV controls refrigerant flow to the cooler for different operating conditions by moving an orifice to increase or decrease the flow area through the valve based on microprocessor input. The orifice is positioned by a stepper motor through approximately 3,600 discrete steps and is monitored every three seconds. The EXV maintains an approximate 8° F (5° C) refrigerant superheat entering the compressor.

Diagnostics — The microprocessor may be put through a service test (see Controls, Start-Up, Operation, Service, and Troubleshooting literature). Service test confirms microprocessor is functional, informs observer through display the condition of each sensor and switch in chiller, and allows observer to check for proper operation of fans and compressors.

Default settings — To facilitate quick start-ups, 30RB chillers with *Comfort*Link controls are pre-configured with a default setting that assumes stand-alone operation supplying 44 F (6.7 C) chilled water.

Configuration settings will be based on any options or accessories included with the unit at the time of manufacturing.

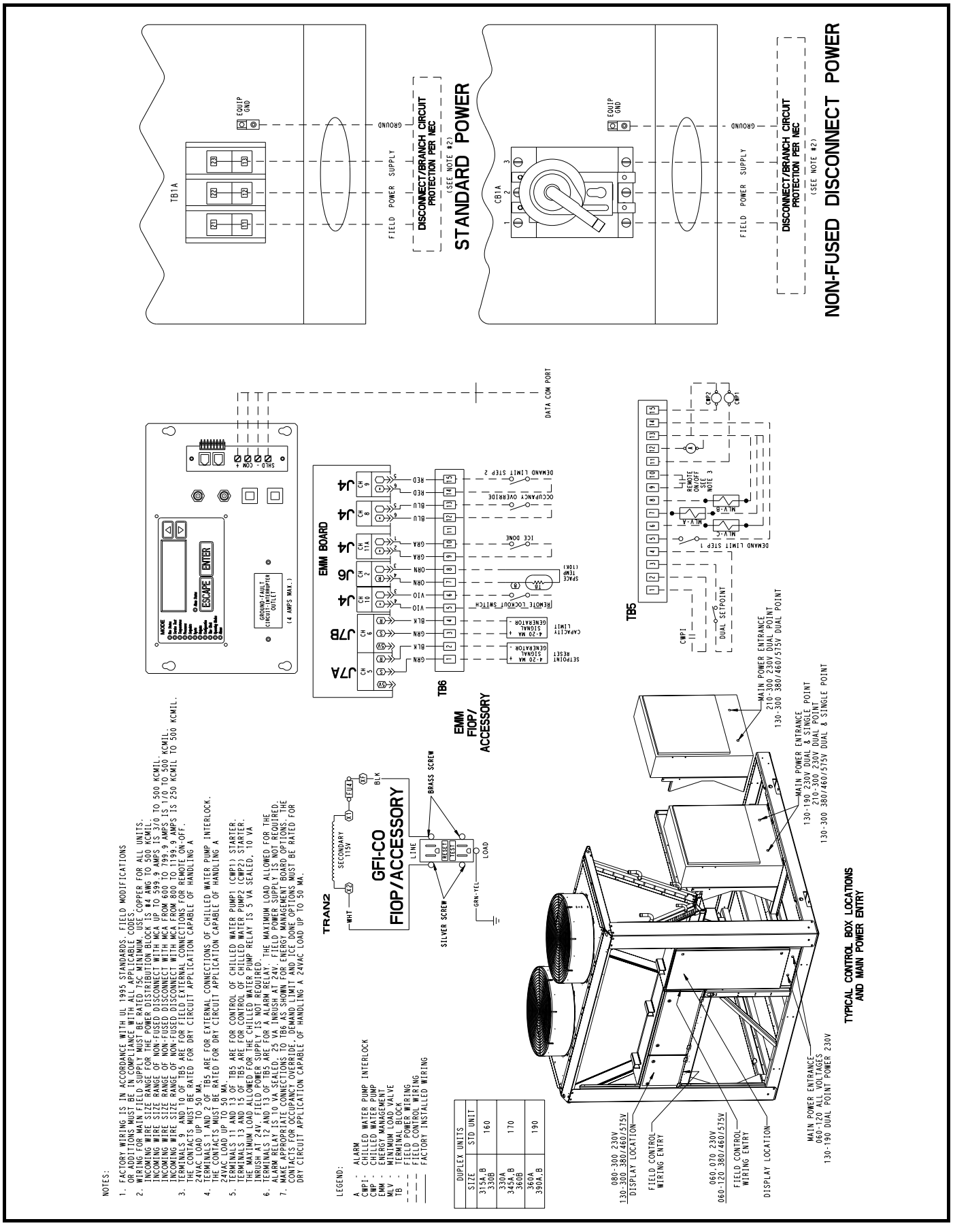
Date and time are set to U.S.A. Eastern Time zone and will need reconfiguring based on location and local time zone. If operation based on occupancy scheduling is desired, this will also need to be set during installation.

Ice duty — *Comfort*Link controls have the capability of reduced leaving fluid temperature operation for thermal storage, or ice duty. The optional Energy Management display includes input contacts for the "ice done" signal generated by the thermal storage control system. The ice duty feature may be configured to start on an external input command or by the *Comfort*Link standard internal scheduling function. The ice duty function requires brine modification for leaving fluid temperatures below 40 F (4.4 C). Ice duty may be used in combination with any other standard features offered by the Energy Management Module and *Comfort*Link controls.

The production of ice, which is stored for peak cooling demands, can significantly decrease energy costs. The unit produces ice (normally at night) by supplying ice storage tanks with low temperature cooling fluid. The chiller takes advantage of reduced ambient conditions at night for ice-making mode, so the capacity suffers a lower penalty for the low leaving fluid temperatures.

At peak cooling demands the chiller and the stored ice may share the cooling load to reduce operating costs. The thermal storage system may potentially reduce the size of the chiller plant required to meet demand loads.

Control and power wiring schematic, sizes 060-390



Application data

Chiller location and clearances

Do not locate near sound sensitive areas without proper acoustic consideration. For applications requiring mounting a chiller on a building rooftop, consideration should be given to using rubber-in-shear or spring isolators to minimize structure-borne transmission. Unit must be level when installed to ensure proper oil return to the compressors. Clearances must be provided around chillers for airflow, service and local code requirements. See dimensional drawings for specific unit clearance requirements. Ensure adequate clearance between adjacent chillers is maintained. A minimum of 10 ft (3048 mm) is recommended. Chiller fan discharge must be at least as high as adjacent solid walls. Installation in pits is not recommended.

Oversizing chillers

Oversizing chillers by more than 15% at design conditions must be avoided as the system operating efficiency is adversely affected (resulting in greater or excessive electrical demand). When future expansion of equipment is anticipated, install a single chiller to meet present load requirements and add a second chiller to meet the additional load demand. It is also recommended that 2 smaller chillers be installed where operation at minimum load is critical. The operation of a smaller chiller loaded to a greater percentage over minimum is preferred to operating a single chiller at or near its minimum recommended value. Minimum Load Control should not be used as a means to allow oversizing chillers. Minimum Load Control should be given consideration where substantial operating time is anticipated below the minimum unloading step.

Cooler fluid temperature

1. Maximum leaving chilled fluid temperature (LCWT) for unit is 85 F (29 C). Unit can start and pull down with up to 95 F (35 C) entering-fluid temperature. It is recommended that entering-fluid temperature not exceed 85 F (29 C).
2. Minimum LCWT for standard unit is 40 F (4.4 C). For leaving-fluid temperatures between 15 and 39.9 F (–9.4 C and 3.28 C) an inhibited antifreeze solution is required or greater is required. Application of chiller to 15 F (–9.4 C) is possible by ordering the factory-installed medium temperature brine option.

NOTE: Water flowing through cooler should not exceed 100 F (38 C).

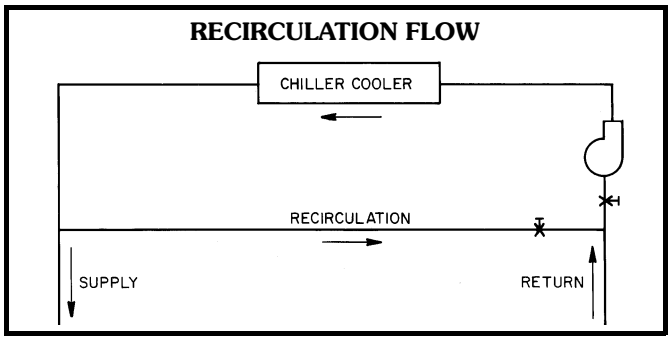
Cooler flow/range

Ratings and performance data in this publication are for a cooling temperature rise of 10° F (6° C). The 30RB chillers may be operated at a different temperature rise, providing flow limits are not exceeded and corrections to system guidelines are made. For minimum cooler flow rates, see the Minimum and Maximum Cooler Flow Rates table. A high flow rate is generally limited by the maximum pressure drop that can be tolerated by the unit. Use the electronic catalog program (ECAT) to obtain the rating if a temperature rise other than 10° F (6° C) is used.

Minimum cooler flow (maximum cooler temperature rise) — The minimum cooler flow for standard units is shown in Minimum Cooler Fluid Flow Rates table. When system design conditions require a lower flow (or higher rise) than the minimum allowable cooler flow, follow the recommendations below.

a. Multiple smaller chillers may be applied in series, each providing a portion of the design temperature rise.
b. Cooler fluid may be recirculated to raise the flow rate to the chiller. However, the mixed temperature entering cooler must be maintained a minimum of at least 5 F (2.8 C) above the LCWT.

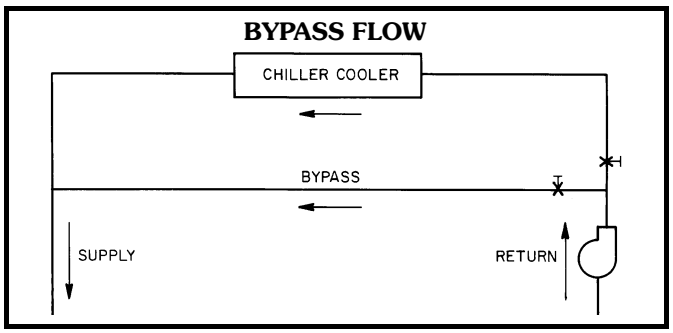
NOTE: Recirculation flow is shown below.



Maximum cooler flow — The maximum cooler flow (approximately 5° F rise) results in a practical maximum pressure drop through cooler.

Return fluid may bypass the cooler to keep pressure drop through cooler within acceptable limits. This permits a higher ΔT with lower fluid flow through cooler and mixing after the cooler.

NOTE: Bypass flow is shown below.



Variable cooler flow rates

Variable rates may be applied to standard chiller. The unit will, however, attempt to maintain a constant leaving chilled fluid temperature. In such cases, minimum flow must be in excess of minimum flow given in Minimum and Maximum Cooler Fluid Flow Rates, and minimum fluid volume must be in excess of 3 gallons per ton (3.2 L per kW). Flow rate must change in steps of less than 10% per minute. Apply 6 gal. or more per ton (6.5 L per kW) water loop volume minimum if flow rate changes more rapidly.

Application data (cont)

MINIMUM AND MAXIMUM COOLER FLOW RATES

SIZES 060-300

30RB SIZE	MINIMUM COOLER FLOW RATE (gpm)	MAXIMUM COOLER FLOW RATE (gpm)	MINIMUM LOOP VOLUME (gal.)	MINIMUM COOLER FLOW RATE (l/s)	MAXIMUM COOLER FLOW RATE (l/s)	MINIMUM LOOP VOLUME (liters)
060	72	288	180	5	18	681
070	84	336	210	5	21	795
080	96	384	240	6	24	908
090	108	432	270	7	27	1022
100	120	480	300	8	30	1136
110	132	528	330	8	33	1249
120	144	576	360	9	36	1363
130	156	624	390	10	39	1476
150	180	720	450	11	45	1703
160	192	768	480	12	48	1817
170	204	816	510	13	51	1931
190	228	912	570	14	58	2158
210	252	1008	630	16	64	2385
225	270	1080	675	17	68	2555
250	300	1200	750	19	76	2839
275	330	1320	825	21	83	3123
300	360	1440	900	23	91	3407

SIZES 315-390

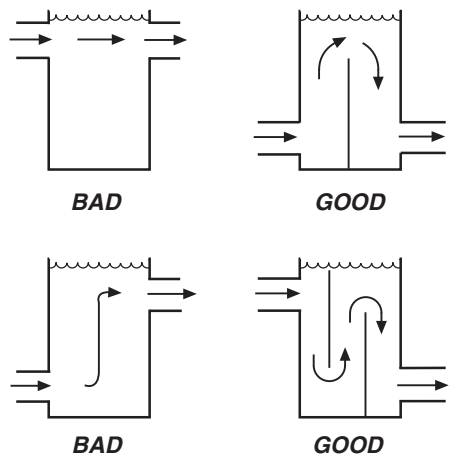
30RB SIZE	MINIMUM COOLER FLOW RATE (gpm)		MAXIMUM COOLER FLOW RATE (gpm)		MINIMUM LOOP VOLUME (gal)	MINIMUM COOLER FLOW RATE (l/s)		MAXIMUM COOLER FLOW RATE (l/s)		MINIMUM LOOP VOLUME (liters)
	Module A	Module B	Module A	Module B		Module A	Module B	Module A	Module B	
315	192	192	768	768	945	12	12	48	48	3577
330	192	204	768	816	990	12	13	48	51	3748
345	204	204	816	816	1035	13	13	51	51	3918
360	204	228	816	912	1080	13	14	51	58	4088
390	228	228	912	912	1170	14	14	58	58	4429

Fluid loop volume

The volume in circulation must equal or exceed 3 gal. per nominal ton (3.25 L per kW) of cooling for temperature stability and accuracy in normal air conditioning applications. In process cooling applications, or for operation at ambient temperature below 32 F (0° C) with low loading conditions, there should be from 6 to 10 gal. per ton (6.5 to 10.8 L per kW). To achieve this volume, it is often necessary to install a tank in the loop.

Tank should be baffled to ensure there is no stratification and that water (or brine) entering tank is adequately mixed with liquid in the tank.

TANK INSTALLATION



Cooler fouling factor

The fouling factor used to calculate tabulated ratings was 0.001 $ft^2 \cdot hr \cdot °F/Btu$ (0.000018 $m^2 \cdot °C/W$). As fouling factor is increased, unit capacity decreases and compressor power increases. Corrections to published ratings can be approximated by using following multipliers:

FOULING FACTORS

FOULING FACTOR (English) ($ft^2 \cdot hr \cdot F/Btu$)	FOULING FACTOR (SI) ($m^2 \cdot C/kW$	CAPACITY MULTIPLIER	COMPRESSOR POWER MULTIPLIER
.00025	.000044	0.991	0.995
.00050	.000088	0.977	0.987
.00075	.000132	0.955	0.979
.00175	.000308	0.910	0.952

Cooler and hydronic system freeze protection

Freeze protection for the cooler and hydronic package is available as a factory-installed option. Since power is sometimes lost for extended periods during winter storms, freeze protection provided by heater tapes will be effective only if a back-up power supply can be assured for the unit's control circuit, heater and cooler pump. If not protected with an antifreeze solution, draining the cooler and outdoor piping is recommended if the system will not be used during freezing weather conditions.

Two conditions that must be considered when determining antifreeze concentration are leaving water set point and ambient freeze conditions. Both of these parameters can help determine the recommended concentration level. Higher concentration must be used to adequately protect the machine.

NOTE: Use only antifreeze solutions approved for heat exchanger duty.

For applications in which the leaving water temperature set point is less than 40 F (4.4 C), a suitable inhibited antifreeze solution must be used. The solution concentration must be sufficient to protect the chilled water loop to a freeze protection (first crystals) concentration of at least 15° F (8.3° C) below the leaving water temperature set point.

If the chiller refrigerant or fluid lines are in an area where ambient conditions fall below 34° F (1° C), it is required that an antifreeze solution be added to protect the unit and fluid piping to a temperature of 15° F (8.3° C) below the lowest anticipated ambient temperature.

Select concentration based on either burst or freeze protection as dictated by the application. If the chiller does not operate during the winter, nor is a start-up expected, a burst protection concentration is recommended. This concentration may not be high enough to pump the fluid through the unit. Burst protection is typically a lower concentration that will provide better performance from the machine. If the chiller does operate during winter, a freeze protection concentration is recommended. This concentration will be high enough to keep the fluid in a condition that it can be pumped at low ambient conditions.

IMPORTANT: Glycol anti-freeze solutions are highly recommended since heater tapes provide no protection in the event of a power failure.

Consult glycol fluid manufacturers for burst protection recommendations and fluid specifications.

High ambient temperature operation

High outdoor ambient chiller start-up and operation (fully loaded) is possible for standard 30RB chillers at ambient temperatures up to 125 F (52 C) at nominal voltage.

Low ambient temperature operation

Units will start and operate down to 32 F (0° C) as standard.

Operation to –20 F (–29 C) requires optional Motormaster® condenser head pressure control as well as wind baffles (field fabricated and installed to all units for operation below 32 F [0° C]) if wind velocity is anticipated to be greater than 5 mph (8 km/h). Inhibited propylene glycol or other suitable corrosion-resistant anti-freeze solution must be field supplied and installed in all units for unit operation below 34 F (1° C). Solution must be added to fluid loop to protect loop down to 15° F (8° C) below minimum operating ambient temperature. Concentration should be based on expected minimum temperature and either "Burst" or "Freeze" protection levels. At least 6 gal per ton (6.5 L per kW) of fluid volume is the recommended minimum for a moderate system load.

Altitude correction factors

Correction factors must be applied to standard ratings at altitudes above 2000 ft (610 m) using the following multipliers:

ALTITUDE CORRECTION FACTORS

ALTITUDE (ft)	ALTITUDE (m)	CAPACITY MULTIPLIER	COMPRESSOR POWER MULTIPLIER
2,000	610	0.99	1.01
4,000	1220	0.98	1.02
6,000	1830	0.97	1.03
8,000	2440	0.96	1.04
10,000	3050	0.95	1.05

Multiple chillers

Where multiple chillers are required, or where standby capability is desired, chillers may be installed in parallel. The flow must be balanced according to the recommendations for each chiller.

Where applied in parallel with optional hydronic package, expansion tank must be disconnected and a single expansion tank must be installed in the common header.

Unit software is capable of controlling two units as a single plant. Refer to Controls, Start-Up, Operation, Service, and Troubleshooting guide for further details. Hydronic pump package may not be applied in series applications.

Condenser coil protection (*Enviro-Shield*™)

Refer to the Environmental Corrosion Protection white paper for more information.

Pre-coated aluminum-fin coils have a durable epoxy-phenolic coating applied to the fin prior to the fin stamping process to provide protection in mildly corrosive coastal environments. Pre-coated coils have an inert barrier between the aluminum fin and copper tube. This barrier electrically disconnects the dissimilar metals to minimize the potential for galvanic corrosion. This economical option provides substantial corrosion protection beyond the standard uncoated coil construction.

Copper-fin coils provide increased corrosion resistance in moderate coastal environments where industrial air pollution is not present. All copper coils eliminate bimetallic construction to eliminate the potential for galvanic corrosion. Application in industrial environments is not recommended due to potential attack from sulfur, sulfur oxide, nitrogen oxides, carbon and several other industrial airborne contaminants. In moderate seacoast environments, copper-fin coils have extended life compared to standard or pre-coated aluminum-fin coils.

E-coated aluminum-fin coils have an extremely flexible and durable epoxy coating uniformly applied to all coil surfaces. Unlike brittle phenolic dip and bake coatings, E-coat provides superior protection with unmatched flexibility, edge coverage, metal adhesion, thermal performance and most importantly, corrosion resistance. E-coated coils provide this protection since all coil surfaces are completely encapsulated from environmental contamination. Specify E-coated aluminum-fin coils for industrial environments with high levels of air pollution. This option also

provides better protection compared to standard or pre-coated aluminum-fin coils in industrial environments.

E-coated copper-fin coils have the same flexible and durable epoxy coating as E-coated aluminum-fin coils. However, this option combines the natural salt and environmental resistance of all-copper construction with the highest level of corrosion protection. Specify E-coated copper-fin coils in the harshest combination of coastal and industrial environments.

Electrical/utility interests

Energy management — Use of energy management practices can significantly reduce operating costs, especially during off-peak modes of operation. Demand limiting and temperature reset are 2 techniques for accomplishing efficient energy management. See Demand Limiting (also called load shedding) section below for further details.

Demand limiting (load shedding)

When a utility's demand for electricity exceeds a certain level, loads are shed to keep electricity demand below a prescribed maximum level. Typically, this happens on hot days when air conditioning is most needed. The Energy Management Module (EMM) can be added to accomplish this reduction. Demand may be limited on unit by resetting fluid temperature, or by unloading the chiller to a given predetermined percentage of the load. Demand limit may also be driven by an external 4 to 20 mA signal. These features require a signal from an intelligent central control. Do not cycle demand limiter for less than 10 minutes on and 5 minutes off. Duty cycling cycles electrical loads at regular intervals regardless of need. This reduces the electrical operating costs of building by "fooling" demand indicating devices. Duty cycling of compressors or fans is not recommended since motor winding and bearing life will suffer from constant cycling.

Remote on-off control

Remote on-off control may be applied by hard-wired connection (see Controls and Troubleshooting literature) or by connection to a Carrier Comfort Network (CCN).

Optional hydronic system selection

Select pump gpm from resulting chiller selection and total pressure loss in the system plus the chiller internal pressure loss.

NOTE: Maximum gpm (L/s), pressure and pump hp must not exceed maximum on pump curve.

Pump flow can be reduced by using the factory-supplied triple-duty valve up to 10%. Beyond that, impeller trimming is recommended to reduce energy consumption. Follow local codes or ASHRAE 90.1 recommendations. Contact your Carrier representative for specific amount of trim required.

The 30RB AquaSnap® chiller will require a field-supplied expansion tank when the optional pumping package is provided.

The expansion tank is based on fluid type, temperature range, fluid pressure and loop volume.

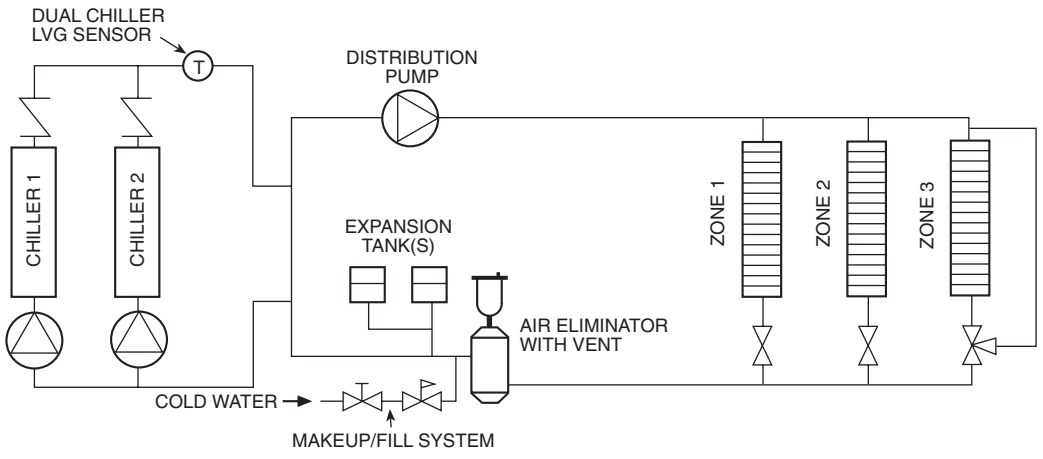
Parallel chillers with hydronic packages require that pump inlets be equalized to prevent pump cavitation. Pump expansion tanks must be removed and located together in the common pump suction header. All materials needed for expansion tank relocation are field supplied. Appropriate measures must be taken for freeze protection.

Air separation

The 30RB AquaSnap chiller will require a field-supplied air separation device when the optional pumping package is provided.

Air must be controlled in a hydronic system if it is to perform properly. Air can block the flow of chilled water to its destinations and can cause cavitation in the pump, which will aerate the pump and potentially cause pump failure. The air separator is sized according to the total flow through the system. The air separator should be located inside the building. There are several types of air separators to choose from. For more information and product selection contact your local manufacturer's representative.

TYPICAL MULTIPLE CHILLER CONFIGURATION WITH AIR ELIMINATOR AND EXPANSION TANK LOCATION



Guide specifications

Air-Cooled Liquid Chiller

HVAC Guide Specifications

Size Range: **60 to 390 Tons (210 to 1370 kW) Nominal**

Carrier Model Number: **30RB**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Microprocessor controlled, air-cooled liquid chiller utilizing scroll compressors, low sound fans and optional hydronic pump system.

1.02 QUALITY ASSURANCE

A. Unit shall be rated in accordance with ARI Standard 550/590, latest revision (U.S.A.).

B. Unit construction shall comply with ASHRAE 15 Safety Code, UL 1995, and ASME applicable codes (U.S.A. codes).

C. Unit shall be manufactured in a facility registered to ISO 9001:2000 Manufacturing Quality Standard.

D. Unit shall be full load run tested at the factory.

1.03 DELIVERY, STORAGE AND HANDLING

A. Unit controls shall be capable of withstanding 150 F (66 C) storage temperatures in the control compartment.

B. Unit shall be stored and handled per unit manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory assembled, single-piece or factory-matched duplex chassis, air-cooled liquid chiller. Contained within the unit cabinet shall be all factory wiring, piping, controls, refrigerant charge (R-410A), and special features required prior to field start-up.

B. Unit Cabinet:

1. Frame shall be of heavy-gage, painted galvanized steel.
2. Cabinet shall be galvanized steel casing with a baked enamel powder or pre-painted finish.
3. Cabinet shall be capable of withstanding 500-hour salt spray test in accordance with the ASTM (U.S.A.) B-117 standard.

C. Fans:

1. Condenser fans shall be direct-driven, 9-blade airfoil cross-section, reinforced polymer construction, shrouded-axial type, and shall be statically and dynamically balanced with inherent corrosion resistance.
2. Air shall be discharged vertically upward.
3. Fans shall be protected by coated steel wire safety guards.

D. Compressor/Compressor Assembly:

1. Fully hermetic scroll type compressors.
2. Direct drive, 3500 rpm (60 Hz), protected by motor temperature sensors, suction gas cooled motor.
3. External vibration isolation rubber-in-shear.
4. Each compressor shall be equipped with crankcase heaters to minimize oil dilution.

E. Cooler:

1. Shell-and-tube type, direct expansion.
2. Tubes shall be internally enhanced seamless-copper type rolled into tube sheets.
3. Shall be equipped with Victaulic-type fluid connections.
4. Shell shall be insulated with $^3/_4$-in. (19-mm) PVC foam (closed-cell) with a maximum K factor of 0.28.
5. Design shall incorporate a minimum of 2 independent direct-expansion refrigerant circuits.
6. Cooler shall be tested and stamped in accordance with ASME Code for a refrigerant working side pressure of 445 psig (3068 kPa). Cooler shall have a maximum fluid-side pressure of 300 psig (2068 kPa).

F. Condenser:

1. Coil shall be air-cooled with integral subcooler, and shall be constructed of aluminum fins mechanically bonded to seamless copper tubes.
2. Tubes shall be cleaned, dehydrated, and sealed.
3. Assembled condenser coils shall be leak tested and pressure tested at 656 psig (4522 kPa).

G. Refrigeration Components:

Refrigerant circuit components shall include replaceable-core filter drier, moisture indicating sight glass, electronic expansion device, discharge service valve and liquid line service valves, and complete operating charge of both refrigerant R-410A and compressor oil.

H. Controls, Safeties, and Diagnostics:

1. Unit controls shall include the following minimum components:
   a. Microprocessor with non-volatile memory. Battery backup system shall not be accepted.
   b. Separate terminal block for power and controls.
   c. Control transformer to serve all controllers, relays, and control components.
   d. ON/OFF control switch.
   e. Replaceable solid-state controllers.
   f. Pressure sensors installed to measure suction and discharge pressure. Thermistors installed to measure cooler entering and leaving fluid temperatures.
2. Unit controls shall include the following functions.
   a. Automatic circuit lead/lag.

b. Capacity control based on leaving chilled fluid temperature and compensated by rate of change of return-fluid temperature with temperature set point accuracy to 0.1° F (0.06° C).

c. Limiting the chilled fluid temperature pull-down rate at start-up to an adjustable range of 0.2° F to 2° F (0.11° C to 1.1° C) per minute to prevent excessive demand spikes at start-up.

d. Seven-day time schedule.

e. Leaving chilled fluid temperature reset from return fluid.

f. Chilled water pump start/stop control and primary/standby sequencing to ensure equal pump run time.

g. Dual chiller control for parallel chiller applications without addition of hardware modules, control panels.

h. Timed maintenance scheduling to signal maintenance activities for pumps, strainer maintenance and user-defined maintenance activities.

i. Low ambient protection to energize cooler and hydronic system heaters.

j. Periodic pump start to ensure pump seals are properly maintained during off-season periods.

3. Diagnostics:

a. The control panel shall include, as standard, a Scrolling Marquee display capable of indicating the safety lockout condition by displaying a code for which an explanation may be scrolled at the display.

b. Information included for display shall be:

1) Compressor lockout.
2) Loss of charge.
3) Low fluid flow.
4) Cooler freeze protection.
5) Thermistor or transducer malfunction.
6) Entering and leaving-fluid temperature.
7) Evaporator and condenser pressure.
8) Time of day:

a) Display module, in conjunction with the microprocessor, must also be capable of displaying the output (results) of a service test. Service test shall verify operation of every switch, thermistor, fan, and compressor before chiller is started.

b) Diagnostics shall include the ability to review a list of the 30 most recent alarms with clear language descriptions of the alarm event. Display of alarm codes without the ability for clear language descriptions shall be prohibited.

c) An alarm history buffer shall allow the user to store no less than 30 alarm events with clear language descriptions, time and date stamp event entry.

d) The chiller controller shall include multiple connection ports for communicating with the local equipment network, the Carrier Comfort Network (CCN) and the ability to access all chiller control functions from any point on the chiller.

e) The control system shall allow software upgrade without the need for new hardware modules.

9) Crankcase heater failure.

4. Safeties:

a. Unit shall be equipped with thermistors and all necessary components in conjunction with the control system to provide the unit with the following protections:

1) Loss of refrigerant charge.
2) Reverse rotation.
3) Low chilled fluid temperature.
4) Thermal overload.
5) High pressure.
6) Electrical overload.
7) Loss of phase.

b. Condenser fan and factory pump motors shall have external overcurrent protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at outdoor ambient temperatures from 32 F to 125 F (0° to 52 C) for all sizes.

2. Unit shall be capable of starting up with 95 F (35 C) entering fluid temperature to the cooler.

J. Motors:

Condenser-fan motors shall be totally enclosed single speed, 3-phase type with permanently lubricated bearings and Class F insulation.

K. Electrical Requirements:

1. Unit/module primary electrical power supply shall enter the unit at a single location (some chiller voltage/size combinations require 2 power supplies).

2. Primary electrical power supply shall be rated to operate up to 125 F (52 C) ambient temperature.

3. Unit shall operate on 3-phase power at the voltage shown in the equipment schedule.

4. Control points shall be accessed through terminal block.

5. Unit shall be shipped with factory control and power wiring installed.

L. Chilled Water Circuit:

1. Chilled water circuit shall be rated for 300 psig (2068 kPa). Units with optional pump package are rated for 150 psig (1034 kPa) working pressure.
2. Proof of flow switch shall be factory installed and wired.
3. Optional hydronic package:
   a. Field pipe connections shall be Victaulic type.
   b. Optional single or primary/stand-by operation pump systems. Dual pump systems shall have a pump discharge check valve.
   c. Pumps shall be single stage design, for installation in vertical position and capable of being serviced without disturbing piping connections.
      1) Pump casing shall be of class 30 cast iron.
      2) The impeller shall be of cast bronze, closed type, dynamically balanced, keyed to the shaft and secured by locking cap screw.
      3) The liquid cavity shall be sealed off at the motor shaft by an internally flushed mechanical seal with ceramic seal seat an carbon seal ring.
      4) Pump shall be rated for 150 psig (1034 kPa) working pressure.
      5) The pump case shall have gage tappings at the suction and discharge nozzles and include drain ports.
      6) Dual pumps shall allow for the servicing of one pump without draining the chilled water loop.
      7) Motors shall totally enclosed 3-phase type with grease lubricated ball bearings.
      8) Each pump shall be factory tested per Hydraulic Institute Standards.
   d. Pressure/temperature taps (3) shall be factory installed to measure the pressure differential across the pump and across the strainer.
   e. Triple-duty valve shall be factory installed.
   f. Hydronic assembly shall have factory supplied electric freeze protection to –20 F (–29 C).
   g. Piping shall be type-L seamless copper tubing.
   h. Cast iron body strainer with 20 mesh screen.

M. Special Features:

Certain standard features are not applicable when the features designated by * are specified. For assistance in amending the specifications, contact your Carrier representative.

* 1. Motormaster® Head Pressure Control:
   a. Unit shall be capable of starting and running at outdoor ambient temperatures down to –20 F (–29 C) with the addition of antifreeze in the cooler circuit, wind baffles, and field-installed or factory-installed solid-state Motormaster control with condenser coil temperature sensor.
2. Unit-Mounted Non-Fused Disconnect:

   Unit shall be supplied with factory-installed, non-fused electrical disconnect for main power supply.
3. Optional Condenser Coil Materials:
   a. Pre-coated aluminum fin coils:

      Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
   b. Copper-fin coils:

      Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets. Galvanized steel tube sheets shall not be acceptable. A polymer strip shall prevent coil assembly from contacting sheet metal coil pan to minimize potential for galvanic corrosion between the coil and pan. All copper construction shall provide protection in moderate coastal applications.
   c. E-Coated aluminum-fin coils:

      Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation. Color shall be high gloss black with gloss — 60° of 65-90% per ASTM ID523-89. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges. Superior hardness characteristics of 2H per ASTM D3363-92A and cross hatch adhesion of 4B-5B per ASTM D3359-93. Impact resistance shall be up to 160 in./lb (ASTM D2794-93). Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92). Corrosion durability shall be confirmed through testing to no less than 3000 hours salt spray per ASTM B117-90. Coil construction shall be aluminum fins mechanically bonded to copper tubes.
   d. E-Coated copper-fin coils:

      Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas

without material bridging between fins. Coating process shall ensure complete coil encapsulation. Color shall be high gloss black with gloss — 60° of 65-90% per ASTM D523-89. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges. Superior hardness characteristics of 2H per ASTM D3363-92A and cross hatch adhesion of 4B-5B per ASTM D3359-93. Impact resistance shall be up to 160 in./lb (ASTM D2794-93). Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92). Corrosion durability shall be confirmed through testing to no less than 3000 hours salt spray per ASTM B117-90. Coil construction shall be copper-fins mechanically bonded to copper tube sheets. Galvanized steel tube sheets shall not be acceptable. A polymer strip shall prevent coil assembly from contacting sheet metal coil pan to maintain coating integrity and minimize corrosion potential between the coil and pan.

4. Remote Enhanced Display:

   Unit shall be supplied with indoor-mounted, remote, 40-character per line, 16-line display panel for field installation.

5. Medium Temperature Brine:

   Unit shall be factory modified to start and operate at leaving chilled fluid temperatures between 15 F (–9.4 C) and 39 F (3.9 C).

6. Chillervisor System Manager Multi-Unit Control:

   Field-installed control shall sequence between 2 and 8 chillers in parallel in a single system. System shall control chilled water pumps.

7. Minimum Load Control:

   Unit shall be equipped with factory (or field) installed, microprocessor-controlled, minimum-load control that shall permit unit operation down to a minimum of 15% capacity (varies with unit size).

8. Energy Management Control Module:

   A factory or field-installed module shall provide the following energy management capabilities: 4 to 20 mA signals for leaving fluid temperature reset, cooling set point reset or demand limit control; 2-step demand limit control (from 15% to 100%) activated by a remote contact closure; and discrete input for "Ice Done" indication for ice storage system interface.

9. Coil Covers and Security Grilles:

   Unit shall be supplied with field-installed coil covers and PVC-coated grilles to protect the condenser coil and internal chiller components from physical damage.

10. Hail Guards:

    Field-installed accessory kit shall include set of metal grilles for the protection of the condensing coils from hail damage.

11. DataPort™ Control:

    Unit shall be supplied with field-installed interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read* values in system elements connected to the CCN Communication Bus using plain English ASCII over its RS-232 connection.

12. DataLINK™ Control:

    Unit shall be supplied with field installed interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read and change values* in system elements connected to the CCN Communication Bus using plain english ASCII over its RS-232 connection.

13. BACnet Translator Control:

    Unit shall be supplied with field-installed interface between the chiller and a BACnet Local Area Network (LAN, i.e., MS/TP EIA-485).

14. LON Translator control:

    Unit shall be supplied with field-installed interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1).

15. Navigator™ Hand Held Display:
    a. Portable hand held display module with a minimum of 4 lines and 20 characters per line, or clear English, Spanish, Portuguese or French language.
    b. Display menus shall provide clear language descriptions of all menu items, operating modes, configuration points and alarm diagnostics. Reference to factory codes shall not be accepted.
    c. RJ-14 connection plug shall allow display module to be connected to factory-installed receptacle.
    d. Industrial grade coiled extension cord shall allow the display module to be moved around the chiller.
    e. Magnets shall hold the display module to any sheet metal panel to allow hands-free operation.
    f. Display module shall have NEMA 4x housing suitable for use in outdoor environments.
    g. Display shall have back light and contrast adjustment for easy viewing in bright sunlight or night conditions.
    h. Raised surface buttons with positive tactile response.

16. Leaving chilled fluid temperature reset from return fluid, outdoor air temperature, space temperature (requires additional sensor) or 4 to 20 mA input (requires Energy Management Control Module).
17. Chilled Water Expansion Tank:

    Enables chilled water system to accommodate fluctuations in volume based on increases or decreases in fluid temperature.
18. Removable Core Filter Drier:

    Standard units are equipped with a removable core filter drier. An option exists for non-removable core filter driers for value engineering purposes. This option is not available with the Medium Temperature Brine option.
19. Compressor Suction Service Valve:

    Standard refrigerant discharge isolation and liquid valves enable service personnel to store the refrigerant charge in the cooler or condenser during servicing. This factory-installed option allows for further isolation of the compressor from the cooler vessel.
20. Suction Line Insulation:

    Insulation is tubular closed-cell insulation. This option is required with the Medium Temperature Brine option and recommended for areas of high dewpoints where condensation may be a concern.
21. Freeze Protection Cooler Heaters:

    Cooler heaters provide protection from cooler freezeup to –20 F (–29 C).
22. Remote Cooler Kit:

    Allows remote installation of cooler. Kit includes thermistor and transducer cable extension, sheet metal panels for refrigerant pipe extensions and instructions.
23. Service Option:

    The service option provides a remote service port for Navigator connection and a factory-installed convenience outlet includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115-v female receptacle. Service option not available with 380 v.
24. Low-Sound Compressor Enclosures:

    Provide sound reduction for the scroll compressors.

Book 2 Tab 5c | New Book 3 Tab 3RC2 Pg 68 Catalog No. 523-077 Printed in U.S.A. PC 903 Form 30RB-1PD Replaces: New