MANITOWOC ICE
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Service Bulletin

Subject: Technical Specifications

IT1830C - QUIETQUBE HEAD SECTION USED WITH CVDT1800 AIR-COOLED CONDENSING UNIT

GENERAL SPECIFICATIONS			
Operating Temperatures	**IT1830C** Minimum 35°F (2°C) Maximum 110°F (43°C)	**CVDT1800** Minimum -20°F (-29°C) Maximum 120°F (49°C)	
Refrigerant Charge (R-410A)	Line Set: 0' to 50' (0 m to 15 m) 14.5 lbs (6.6 kg)	Line Set: 51' to 100' (15.5 m to 30 m) add 2.0 lbs (0.9 kg)	Total Maximum Charge 16.5 lbs (7.5 kg)
Line Set (R-410A)	RC 30 / 50	Suction Line: 3/4 in (19 mm)	Liquid Line: 1/2 in (13 mm)
S Trap Kit Required on Rises Above 20' (6 m)	K-00166	3/4 in (19 mm)	
Ice Making Water Inlet	Water Inlet Connection - 3/8" FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4.4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.4 bar) Maximum 80 psig (5.5 bar)
Ice Making Water Drain	Connection - 1/2" FPT (Female Pipe Thread)		
Potable Water	18.5 gallons per 100 lbs of ice 70.0 liters per 45.5 kg of ice		
High Pressure Settings	Cut-in 450 psig (31 bar)	Cut-out 600 psig (41 bar)	
Compressor Nominal Rating	2.5 HP		
Dimensions	**Height**	**Width**	**Depth**
IT1830C	29.5 in (750 mm)	30.0 in (762 mm)	24.5 in (622 mm)
CVDT1800	25.75 in (654 mm)	34.0 in (864 mm)	24.1 in (613 mm)
Clearances	**Top**	**Sides**	**Front / Back**
IT1830C	2.0 in (50 mm)	8.0 in (200 mm)	5.0 in (130 mm)
CVDT1800	24.0 in (610 mm)*	24.0 in (610 mm)*	48.0 in (1220 mm)

*Recommended for Servicing.

Manitowoc De-scaler (removes lime scale and mineral deposits)	9405463
Manitowoc Sanitizer (disinfects and removes algae and slime)	9405653

Electrical			
IT1830C	**CVDT1800-261**	**CVDT1800-263**	**CVDT1800-251**
115V/60 Hz/1 Ph Max Fuse - 15 amp Min Circuit Amps - 1.2	208-230V/60 Hz/1 Ph Max Fuse - 25 amp Min Circuit Amps - 16.7 amp Min Wire Size - #10 Solid Copper Conductor	208-230V/60 Hz/3 Ph Max Fuse - 20 amp Min Circuit Amps - 13.5 amp Min Wire Size - #10 Solid Copper Conductor	208-230V/50 Hz/1 Ph Max Fuse - 25 amp Min Circuit Amps - 14.9 amp Min Wire Size - #10 Solid Copper Conductor
Energy Usage Kwh / 100 lbs	Half Dice: 4.02 Kwh Dice: 4.04 Kwh		

Cycle Times

Freeze Time + Harvest Time = Total Cycle Time

Air Temperature Entering Condenser °F / °C	Water Temperature 50°F 10°C	70°F 21°C	90°F 32°C	Harvest Time
70°F 21°C	10.4-11.4	11.4-12.4	12.5-13.6	0.75-2.0
90°F 32°C	11.1-12.1	12.3-13.4	13.9-15.1	
100°F 38°C	12.5-13.7	14.0-15.2	15.7-17.1	
110°F 43°C	14.3-15.6	16.1-17.5	18.3-19.9	

Freeze Time in minutes.
Cycle times and pressures vary with operating condition.
Production and cycle times are for dice cube - Half dice cube cycle times can be 2 - 3 minutes faster, depending on water and ambient temperature.

24 Hour Ice Production

Air Temperature Entering Condenser	Water Temperature 50°F 10°C	70°F 21°C	90°F 32°C
70°F 21°C	1871 lbs 849 kgs	1734 lbs 786 kgs	1597 lbs 724 kgs
90°F 32°C	1775 lbs 805 kgs	1614 lbs 732 kgs	1450 lbs 658 kgs
100°F 38°C	1590 lbs 721 kgs	1442 lbs 654 kgs	1295 lbs 587 kgs
110°F 43°C	1410 lbs 640 kgs	1270 lbs 576 kgs	1129 lbs 512 kgs

Ice slab weight of one harvest cycle = 15.5 lbs to 16.75 lbs (7.0 kgs to 7.6 kgs).
230/50/1 is approximately 12% lower than 230/60/1.

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	230-320 psig 15.8-22.0 bar	70-40 psig 4.8-2.7 bar
70°F 21°C	290-340 psig 4.8-23.4 bar	75-45 psig 5.1-3.1 bar
80°F 27°C	300-350 psig 20.6-24.1 bar	75-46 psig 5.1-3.1 bar
90°F 32°C	310-360 psig 21.3-24.8 bar	80-48 psig 5.5-3.3 bar
100°F 38°C	380-450 psig 26.2-31.0 bar	85-50 psig 5.8-3.4 bar
110°F 43°C	415-470 psig 28.6-32.4 bar	90-55 psig 6.2-3.7 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	120-180 psig 8.2-12.4 bar	95-115 psig 6.5-7.9 bar
70°F 21°C	150-200 psig 10.3-13.7 bar	100-125 psig 6.8-8.6 bar
80°F 27°C	160-210 psig 11.0-14.4 bar	110-130 psig 7.5-8.9 bar
90°F 32°C	180-280 psig 12.4-19.3 bar	120-140 psig 8.2-9.6 bar
100°F 38°C	200-320 psig 13.7-22.0 bar	120-160 psig 8.2-11.0 bar
110°F 43°C	210-375 psig 14.4-25.8 bar	120-170 psig 8.2-11.7 bar