MANITOWOC ICE
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Service Bulletin

Subject: Technical Specifications

IBT1020C-L - QUIETQUBE HEAD SECTION USED WITH CVDT1200-L AIR-COOLED CONDENSING UNIT

(50 Hz / Low Charge Unit for Select Locations Only)

GENERAL SPECIFICATIONS			
Operating Temperatures	**IBT1020C-L** Minimum 35°F (2°C) Maximum 110°F (43°C)	**CVDT1200-L** Minimum -20°F (-29°C) Maximum 120°F (49°C)	
Refrigerant Charge (R-410A)	Line Set: 0’ to 50’ (0 m to 15 m) 5.25 lbs (2.4 kg)	Line Sets: 51’ to 100’ (15.5 m to 30 m) **Not Permited**	**Total Maximum Charge** **5.25 lbs (2.3 kg)**
Line Set* (R-410A)	RC 21 / 31 / 51	Suction Line: 0.625 in (16 mm)	Liquid Line: 0.375 in (9.5 mm)
S Trap Kit Required on Rises Above 20’ (6 m)	K-00172	0.625 in (16 mm)	
Ice Making Water Inlet	Water Inlet Connection - 0.375” 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 - 0.5” FPT (Female Pipe Thread)		
Potable Water	19.9 gallons per 100 lbs of ice 75.3 liters per 45.5 kg of ice		
High Pressure Settings	Cut-in 450 psig (31 bar)	Cut-out 600 psig (41 bar)	
Dimensions	**Height**	**Width**	**Depth**
IBT1020C-L	30.5 in (775 mm)	30.0 in (762 mm)	24.5 in (622 mm)
CVDT1200-L	29.5 in (749 mm)	34.0 in (864 mm)	24.13 in (613 mm)
Clearances	**Top**	**Sides**	**Front / Back**
IBT1020C-L	2.0 in (50 mm)	8.0 in (200 mm)	5.0 in (130 mm)
CVDT1200-L	24.0 in (610 mm)**	24.0 in (610 mm)**	48.0 in (1220 mm)

*All line sets must be insulated with Armaflex: 0.5” (13 mm) Suction Line & 0.25” (7 mm) Liquid Line
**Recommended for Servicing.

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

Electrical		
IBT1020C-L-251	**CVDT1200-251**	**Energy Usage Kwh / 100 lbs**
230V/50 Hz/1 Ph Max Fuse - 15 amp Min Circuit Amps - 1.0	208-230V/50 Hz/1 Ph Max Fuse - 20 amp Min Circuit Amps - 12.8 amp Min Wire Size - #10 Solid Copper Conductor	Half Dice: 4.5 Kwh Dice: 4.5 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	10.0-10.5	10.8-11.4	11.2-12	.75-2.5
90°F 32°C	10.7-11.3	11.5-12.5	11.7-13.5	
100°F 38°C	11.1-12.5	12.1-13.2	13.2-14.2	
110°F 43°C	12.3-13.5	12.9-14.1	14.0-16.0	

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	1070 lbs 485 kg	1000 lbs 453 kg	930 lbs 421 kg
90°F 32°C	1030 lbs 467 kg	940 lbs 426 kg	890 lbs 403 kg
100°F 38°C	975 lbs 442 kg	910 lbs 412 kg	815 lbs 369 kg
110°F 43°C	900 lbs 408 kg	850 lbs 385 kg	750 lbs 340 kg

Ice slab weight of one harvest cycle = 6.2 lbs to 7.2 lbs (2.8 kgs to 3.3 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	240-340 psig 16.5-23.4 bar	70-40 psig 4.8-2.7 bar
70°F 21°C	290-330 psig 19.9-22.7 bar	75-42 psig 5.1-2.8 bar
80°F 27°C	320-360 psig 22.0-24.8 bar	80-44 psig 5.5-3.0 bar
90°F 32°C	350-390 psig 24.1-26.8 bar	88-45 psig 6.0-3.1 bar
100°F 38°C	440-515 psig 30.0-35.5 bar	95-50 psig 6.5-3.4 bar
110°F 43°C	440-515 psig 30.3-35.5 bar	95-55 psig 6.5-3.7 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	145-210 psig 9.9-14.7 bar	105-115 psig 7.2-7.9 bar
70°F 21°C	155-250 psig 10.6-17.2 bar	110-130 psig 7.5-8.9 bar
80°F 27°C	165-270 psig 11.3-18.6 bar	110-135 psig 7.5-9.3 bar
90°F 32°C	175-290 psig 12.0-19.9 bar	115-140 psig 7.9-9.6 bar
100°F 38°C	200-340 psig 13.7-23.4 bar	150-170 psig 10.3-11.7 bar
110°F 43°C	210-360 psig 14.4-24.8 bar	160-180 psig 11.0-12.4 bar