MANITOWOC ICE
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Service Bulletin

Subject: Technical Specifications

IT1430C - QUIETQUBE HEAD SECTION USED WITH CVDT1400 AIR-COOLED CONDENSING UNIT

GENERAL SPECIFICATIONS			
Operating Temperatures	**IT1430C** Minimum 35°F (2°C) Maximum 110°F (43°C)	**CVDT1400** Minimum -20°F (-29°C) Maximum 120°F (49°C)	
Refrigerant Charge (R-410A)	Line Set: 0' to 50' (0 m to 15 m) 13.0 lbs (6.0 kg)	Line Set: 51' to 100' (15.5 m to 30 m) add 2.0 lbs (0.9 kg)	Total Maximum Charge 15.0 lbs (7.0 kg)
Line Set (R-410A)	RC 31 / 51	Suction Line: 5/8 in (16 mm)	Liquid Line: 3/8 in (10 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	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**
IT1430C	25.0 in (635 mm)	30.0 in (762 mm)	24.5 in (622 mm)
CVDT1400	25.75 in (654 mm)	34.0 in (864 mm)	24.13 in (613 mm)
Clearances	**Top**	**Sides**	**Front / Back**
IT1430C	2.0 in (50 mm)	8.0 in (200 mm)	5.0 in (130 mm)
CVDT1400	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	IT1430C	CVDT1400-261	CVDT1400-263
	115V/60 Hz/1 Ph Max Fuse - 15 amp Min Circuit Amps - 1.2	208-230V/60 Hz/1 Ph Max Fuse - 20 amp Min Circuit Amps - 13.0 amp Min Wire Size - #10 Solid Copper Conductor	208-230V/60 Hz/3 Ph Max Fuse - 15 amp Min Circuit Amps - 10.4 amp Min Wire Size - #12 Solid Copper Conductor
Energy Usage Kwh / 100 lbs	Half Dice: 4.1 Kwh Dice: 4.34 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	10.5-12.5	10.7-12.7	10.7-12.8	0.75-2.0
90°F 32°C	11.8-14.1	12.3-14.6	13.8-16.3	
100°F 38°C	12.8-15.2	13.7-16.3	15.3-18.1	
110°F 43°C	14.0-16.6	15.4-18.3	17.1-20.2	

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	1436 lbs 651 kgs	1420 lbs 644 kgs	1411 lbs 640 kgs
90°F 32°C	1295 lbs 587 kgs	1252 lbs 568 kgs	1130 lbs 513 kgs
100°F 38°C	1205 lbs 547 kgs	1135 lbs 515 kgs	1030 lbs 467 kgs
110°F 43°C	1116 lbs 506 kgs	1020 lbs 463 kgs	931 lbs 422 kgs

Ice slab weight of one harvest cycle = 12.0 lbs to 14.0 lbs (5.4 kgs to 6.4 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	300-340 psig 20.7-23.4 bar	65-45 psig 4.4-3.1 bar
70°F 21°C	300-350 psig 20.6-24.1 bar	70-50 psig 4.8-3.4 bar
80°F 27°C	310-360 psig 21.3-24.8 bar	75-55 psig 5.1-3.7 bar
90°F 32°C	310-370 psig 21.3-25.5 bar	80-55 psig 5.5-3.7 bar
100°F 38°C	390-430 psig 26.8-29.6 bar	85-58 psig 5.8-3.9 bar
110°F 43°C	400-450 psig 27.5-31.0 bar	90-60 psig 6.2-4.1 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	120-200 psig 8.2-13.7 bar	90-115 psig 6.2-7.9 bar
70°F 21°C	155-230 psig 10.6-15.8 bar	100-125 psig 6.8-8.6 bar
80°F 27°C	155-230 psig 10.6-15.8 bar	120-140 psig 8.2-9.6 bar
90°F 32°C	160-235 psig 11.0-16.2 bar	115-150 psig 7.9-10.3 bar
100°F 38°C	180-275 psig 12.4-18.9 bar	125-155 psig 8.6-10.6 bar
110°F 43°C	200-290 psig 13.7-19.9 bar	130-160 psig 8.9-11.0 bar