MANITOWOC ICE
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Service Bulletin

Subject: UP0240 Technical Specifications

AIR-COOLED & WATER-COOLED MODELS

GENERAL SPECIFICATIONS			
Operating Temperatures	Minimum 50°F (10°C) Maximum 100°F (38°C)		
Refrigerant Charge (R-290)	**Air-cooled**	**Water-cooled**	
	5.3 oz (150 g)	5.3 oz (150 g)	
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 40 psig (1.3 bar) Maximum 80 psig (5.5 bar)
Condenser Water Inlet	Connection Size - 3/8" FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4.4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.3 bar) Maximum 150 psig (10.3 bar)
Ice Making Water Drain	Drain Connection - 1/2" FPT (Female Pipe Thread)		
Potable Water	17 gallons per 100 lbs of ice 64 liters per 45.5 kg of ice		
Electrical	**115V/60Hz/1 Ph**	**208-230V/60 Hz/1 Ph**	**230V/50 Hz/1 Ph**
	Air: Min Circuit Amps - 7.0 Max Fuse Size - 15 amp Water: Min Circuit Amps - 6.0 Max Fuse Size - 15 amp	Air: Min Circuit Amps - 3.5 Max Fuse Size - 15 amp Water: Min Circuit Amps - 3.5 Max Fuse Size - 15 amp	Air: Min Circuit Amps - 3.5 Max Fuse Size - 15 amp Water: Min Circuit Amps - 3.0 Max Fuse Size - 15 amp
Energy Usage Kwh / 100 lbs	**Air-cooled Half Dice: 6.23 Kwh Dice: 6.23 Kwh**	**Water-cooled Half Dice: 4.65 Kwh Dice: 4.65 Kwh**	
Compressor Nominal Rating	1/2 HP		
Heat of Rejection	Air Conditioning 3,700 BTU/hr (932 kcal/hr)	Peak 4,400 BTU/hr (1,109 kcal/hr)	
Fan Cycle Control	Cut-in - 200 psig (14 bar)	Cut-out - 150 psig (10 bar)	
High Pressure Settings	Cut-in - 250 psig (17 bar)	Cut-out - 350 psig (24 bar)	
Dimensions	**Height**	**Width**	**Depth**
	38.5 in (977 mm)	26 in (660 mm)	28.5 in (723 mm)
Clearances	**Top**	**Side**	**Back**
	5.0 in (130 mm)	5.0 in (130 mm)	5.0 in (127 mm)

Self Contained Air-cooled Ice Machines

Cycle Times*Freeze Time + Harvest Time = Total Cycle Time*

Air Temperature Around the Unit	Freeze Time (Minutes)			Harvest Time
	Water Temperature			
	50°F 10°C	70°F 21°C	90°F 32°C	
70°F 21°C	13.9-16.0	16.9-18.9	18.0-20.3	1.0-2.5
80°F 27°C	15.0-17.2	17.0-20.1	19.4-22.4	
90°F 32°C	16.2-18.5	19.5-22.5	21.6-25.0	
100°F 38°C	19.0-21.5	20.4-24.0	23.4-26.5	
110°F 43°C	21.6-24.6	23.6-26.6	24.5-27.7	

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 Around the Unit	Water Temperature		
	50°F 10°C	70°F 21°C	90°F 32°C
70°F 21°C	225 lbs 102 kgs	190 lbs 86 kgs	175 lbs 79 kgs
80°F 27°C	210 lbs 95 kgs	180 lbs 82 kgs	160 lbs 73 kgs
90°F 32°C	195 lbs 88 kgs	160 lbs 73 kgs	145 lbs 66 kgs
100°F 38°C	170 lbs 77 kgs	150 lbs 68 kgs	140 lbs 64 kgs
110°F 43°C	155 lbs 70 kgs	140 lbs 64 kgs	135 lbs 61 kgs

Ice slab weight of one harvest cycle = 2.3 lbs to 2.9 lbs (1.0 kgs to 1.3 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	145-205 psig 10.0-14.1 bar	40-14 psig 2.8-1.0 bar
70°F 21°C	150-210 psig 10.3-14.5 bar	42-15psig 2.9-1.0 bar
80°F 27°C	160-230 psig 11.0-15.9 bar	46-18 psig 3.2-1.2 bar
90°F 32°C	180-240 psig 12.4-16.5 bar	51-20 psig 3.5-1.4 bar
100°F 38°C	230-280 psig 15.9-19.3 bar	54-24 psig 3.7-1.7 bar
110°F 43°C	245-295 psig 16.9-20.3 bar	58-25 psig 4.0-1.7 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	90-105 psig 6.2-7.2 bar	55-65 psig 3.8-4.5 bar
70°F 21°C	90-105 psig 6.2-7.2 bar	60-70 psig 4.1-4.8 bar
80°F 27°C	95-110 psig 6.6-7.6 bar	65-85 psig 4.5-5.9 bar
90°F 32°C	105-125 psig 7.2-8.6 bar	65-95 psig 4.5-6.6 bar
100°F 38°C	115-150 psig 7.9-10.3 bar	70-105 psig 4.8-7.2 bar
110°F 43°C	160-180 psig 11.0-12.4 bar	75-110 psig 5.2-7.6 bar

Storage Capacity

Storage Bin Capacity*
90 lbs (40 kg)
*Storage Capacity is AHRI certified.

NOTE: Ice Production Derate %

- 60Hz Dice and Half Dice production derate as shown
- 60Hz Regular cube production derate is 7%.
- 50Hz Dice and Half Dice production derate is 12%.
- 50Hz Regular cube production derate is 14%.

Self Contained Water-cooled Ice Machines

Cycle Times

Freeze Time + Harvest Time = Total Cycle Time

Air Temperature Around the Unit	Freeze Time (Minutes)			Harvest Time
	Water Temperature			
	50°F 10°C	70°F 21°C	90°F 32°C	
70°F 21°C	15.9-17.9	16.9-18.9	18.0-20.3	1.0-2.5
80°F 27°C	16.3-18.4	17.3-19.5	18.4-20.5	
90°F 32°C	17.0-19.9	19.0-20.4	19.1-21.8	
100°F 38°C	18.0-21.0	19.5-21.8	20.8-24.0	
110°F 43°C	19.2-21.6	19.9-22.2	21.7-24.9	

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 Around the Unit	Water Temperature		
	50°F 10°C	70°F 21°C	90°F 32°C
70°F 21°C	210 lbs 95.3 kgs	190 lbs 86.2 kgs	180 lbs 81.6 kgs
80°F 27°C	200 lbs 90.7 kgs	185 lbs 83.9 kgs	175 lbs 79.4 kgs
90°F 32°C	190 lbs 86.2 kgs	170 lbs 77.1 kgs	160 lbs 72.6 kgs
100°F 38°C	180 lbs 81.6 kgs	165 lbs 74.8 kgs	155 lbs 70.3 kgs
110°F 43°C	170 lbs 77.1 kgs	160 lbs 72.6 kgs	150 lbs 68.0 kgs

Ice slab weight of one harvest cycle = 2.3 lbs to 2.9 lbs (1.0 kgs to 1.3 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	160-180 psig 11.0-12.4 bar	48-17 psig 3.3-1.2 bar
70°F 21°C	160-180 psig 11.0-12.4 bar	52-20 psig 3.6-1.4 bar
80°F 27°C	160-180 psig 11.0-12.4 bar	52-20 psig 3.6-1.4 bar
90°F 32°C	160-180 psig 11.0-12.4 bar	53-23 psig 3.7-1.6 bar
100°F 38°C	160-180 psig 11.0-12.4 bar	54-24 psig 3.7-1.7 bar
110°F 43°C	160-180 psig 11.0-12.4 bar	58-25 psig 4.0-1.7 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	90-105 psig 6.2-7.2 bar	60-70 psig 4.1-4.8 bar
70°F 21°C	90-110 psig 6.2-7.6 bar	60-70 psig 4.1-4.8 bar
80°F 27°C	95-110 psig 6.6-7.6 bar	65-85 psig 4.5-5.9 bar
90°F 32°C	105-125 psig 7.2-8.6 bar	65-95 psig 4.5-6.6 bar
100°F 38°C	105-145 psig 7.2-10.0 bar	65-100 psig 4.5-6.9 bar
110°F 43°C	105-145 psig 7.2-10.0 bar	65-105 psig 4.5-7.2 bar

Condenser Water Consumption

Ice Production	Water Usage
100 lbs 45.4 kgs	166 Gallons 628 Liters

Water Regulating Valve set point: 235 psig (16.2 bar)

Storage Capacity

Storage Bin Capacity*
90 lbs (40 kg)

*Storage Capacity is AHRI certified.

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- 50Hz Dice and Half Dice production derate is 12%.
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