MANITOWOC ICE
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Service Bulletin

Subject: IP0620 Technical Specifications

AIR-COOLED & WATER-COOLED MODELS

60 HZ ONLY

GENERAL SPECIFICATIONS			
Operating Temperatures	Minimum 35°F (2°C) Maximum 110°F (43°C)		
Refrigerant Charge (R-290)	**Air-cooled Models** 8.5 oz (240 g)	**Water-cooled Models** 8.5 oz (240 g)	
Electrical	**Air-cooled Models**	**Water-cooled Models**	**Energy Use Kwh / 100 lbs**
115V/60 Hz/1 Ph	Min Circuit Amps - 13 amps Max Fuse Size - 20 amp	Min Circuit Amps - 12.3 amps Max Fuse Size - 20 amp	Half Dice: 5.84 Kwh Dice: 5.92 Kwh
208-230V/60 Hz/1 Ph	Min Circuit Amps - 6.4 amps Max Fuse Size - 15 amp	Min Circuit Amps - 6.1 amps Max Fuse Size - 15 amp	Half Dice: 4.52 Kwh Dice: 4.77 Kwh
Ice Making Water Inlet	Connection Size - 3/8" (10 mm) FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.3 bar) Water Pressure - Maximum 80 psig (5.5 bar)
Ice Making Water Drain	Connection Size - 1/2" (13 mm) FPT (Female Pipe Thread)		
Condenser Water Inlet IP0620W Models Only	Connection Size - 3/8" (10 mm) FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psi (1.3 bar) Water Pressure - Maximum 275 psi (18.9 bar)
Condenser Water Drain IP0620W Models Only	Connection Size - 3/8" (10 mm) FPT (Female Pipe Thread)		
Potable Water Use	14.2-15.2 gallons per 100 lbs of ice (53.8-57.5 liters per 45.5 kg of ice)		
Heat of Rejection	**Air Conditioning** 10430 BTU/hr (2630 kcal/hr)	**Peak** 12120 BTU/hr (3054 kcal/hr)	
Fan Cycle Control Settings	Cut-in (closed)- 200 psig ±5 / 13.8 bar ±0.3	Cut-out (open) - 150 psig ±5 / 10.3 bar ±0.3	
High Pressure Settings	Cut-in (closed) - 250 psig ±5 / 17.2 bar ±0.3	Cut-out (open) - 350 psig ±5 / 24.1 bar ±0.3	
Dimensions	**Height**	**Width**	**Depth**
	21.5 in (546.1 mm)	30 in (762.0 mm)	24.5 in (622.3 mm)
Clearances	**Top**	**Side**	**Back**
	12 in (304.8 mm)	12 in (304.8 mm)	5 in (127.2 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	7.1 - 8.5	7.9 - 9.3	8.2 - 9.5	1.0 - 2.5
80°F 27°C	7.9 - 9.3	8.7 - 10.2	9.0 - 10.6	
90°F 32°C	8.5 - 10.0	9.3 - 11.0	9.7 - 11.4	
100°F 38°C	9.4 - 11.0	10.4 - 12.2	10.9 - 12.5	
110°F 43°C	9.9 - 11.5	11.0 - 13.0	12. 7 - 14.5	

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	560 lbs (254 kgs)	520 lbs (236 kgs)	505 lbs (229 kgs)
80°F 27°C	520 lbs (236 kgs)	480 lbs (218 kgs)	465 lbs (211 kgs)
90°F 32°C	490 lbs (222 kgs)	450 lbs (204 kgs)	435 lbs (197 kgs)
100°F 38°C	450 lbs (204 kgs)	410 lbs (186 kgs)	395 lbs (179 kgs)
110°F 43°C	430 lbs (195 kgs)	390 lbs (177 kgs)	345 lbs (156 kgs)

Ice slab weight of one harvest cycle = 3.4 lbs to 3.9 lbs (1.5 kgs to 1.8 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	135 - 205 psig (9.3 - 14.1 bar)	13 - 50 psig (0.9 - 3.4 bar)
70°F 21°C	135 - 205 psig (9.3 - 14.1 bar)	15 - 52 psig (1.0 - 3.6 bar)
80°F 27°C	200 - 240 psig (13.8 - 16.5 bar)	15 - 52 psig (1.0 - 3.6 bar)
90°F 32°C	205 - 250 psig (14.1 - 17.2 bar)	15 - 54 psig (1.0 - 3.7 bar)
100°F 38°C	210 - 260 psig (14.5 - 17.9 bar)	18 - 55 psig (1.2 - 3.8 bar)
110°F 43°C	210 - 265 psig (14.5 - 18.3 bar)	22 - 58 psig (1.5 - 4.0 bar)

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	90 - 105 psig (6.2 - 7.2 bar)	58 - 72 psig (4.0 - 5.0 bar)
70°F 21°C	95 - 110 psig (6.5 - 7.6 bar)	60 -75 psig (4.1 - 5.2 bar)
80°F 27°C	95 - 110 psig (6.5 - 7.6 bar)	60 - 77 psig (4.1 - 5.3 bar)
90°F 32°C	100 - 115 psig (6.9 - 7.9 bar)	60 - 85 psig (4.1 - 5.9 bar)
100°F 38°C	115 - 125 psig (7.8 - 8.6 bar)	80 - 90 psig (5.5 - 6.2 bar)
110°F 43°C	115 - 130 psig (7.9 - 9.0 bar)	80 - 95 psig (5.5 - 6.5 bar)

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	7.6 - 8.9	8.7 - 10.2	9.6 - 11.3	1.0 - 2.5
80°F 27°C	7.7 - 9.0	9.0 - 10.6	10.0 - 11.7	
90°F 32°C	7.7 - 9.1	9.4 - 11.0	10.4 - 12.2	
100°F 38°C	7.9 - 9.3	9.6 - 11.3	10.7 - 12.5	
110°F 43°C	8.0 - 9.5	9.9 - 11.5	11.0 - 12.9	

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	540 lbs (245 kgs)	480 lbs (245 kgs)	505 lbs (229 kgs)
80°F 27°C	535 lbs (243 kgs)	465 lbs (243 kgs)	425 lbs (193 kgs)
90°F 32°C	530 lbs (240 kgs)	450 lbs (240 kgs)	410 lbs (186 kgs)
100°F 38°C	520 lbs (236 kgs)	440 lbs (236 kgs)	400 lbs (181 kgs)
110°F 43°C	510 lbs (231 kgs)	430 lbs (195 kgs)	390 lbs (177 kgs)

Ice slab weight of one harvest cycle = 3.4 lbs to 3.9 lbs (1.5 kgs to 1.8 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	165 - 185 psig (11.4 - 12.8 bar)	15 - 48 psig (1.0 - 3.3 bar)
70°F 21°C	165 - 185 psig (11.4 - 12.8 bar)	17 - 48 psig (1.2 - 3.3 bar)
80°F 27°C	165 - 185 psig (11.4 - 12.8 bar)	20 - 48 psig (1.4 - 3.4 bar)
90°F 32°C	165 - 185 psig (11.4 - 12.8 bar)	20 - 50 psig (1.4 - 3.4 bar)
100°F 38°C	170 - 190 psig (11.4 - 12.8 bar)	23 - 53 psig (1.6 - 3.4 bar)
110°F 43°C	175 - 200 psig (11.4 - 12.8 bar)	25 - 53 psig (1.7 - 3.7 bar)

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure psig (bar)	Suction Pressure psig (bar)
50°F 10°C	100 - 125 psig (6.9 - 8.6 bar)	60 - 75 psig (4.1 - 5.2 bar)
70°F 21°C	100 - 125 psig (6.9 - 8.6 bar)	65 - 85 psig (4.5 - 5.9 bar)
80°F 27°C	105 - 130 psig (7.2 - 9.0 bar)	65 - 85 psig (4.5 - 5.9 bar)
90°F 32°C	105 - 130 psig (7.2 - 9.0 bar)	65 - 85 psig (4.5 - 5.9 bar)
100°F 38°C	105 - 135 psig (7.2 - 9.3 bar)	70 - 90 psig (4.8 - 6.2 bar)
110°F 43°C	106 - 135 psig (7.2 - 9.3 bar)	70 - 95 psig (4.8 - 6.5 bar)

Condenser Water Usage

Cube Size	Ice Production	Water Usage
Dice	100 lbs (45.5 kgs)	120 gallons (545 liters)
Half Dice	100 lbs (45.5 kgs)	129 gallons (488 liters)

Water Regulating Valve Set Point: 170 psig (11.7 bar).