MANITOWOC ICE
2110 SOUTH 26TH STREET, MANITOWOC, WI 54220
800-545-5720
WWW.MANITOWOCICE.COM

Service Bulletin

Subject: Technical Specifications

I1406 AWN / JC1395

GENERAL SPECIFICATIONS			
Operating Temperatures	**i1406** Minimum 35°F (1.6°C) Maximum 110°F (43°C)	**JC1395** Minimum -20°F (-29°C) Maximum 120°F (49°C)	
Refrigerant Charge (R-404A)	Air-cooled Models	Water-cooled Models	Remote Air-cooled Models
	58 oz (1.64 kg)	40 oz (1.13 kg)	Line Set: 0' to 50' (0 m to 15 m) 12 lbs (5.44 kg)
			Line Set: 51' to 100' (15.5 m to 30 m) add 2 lbs (0.9 kg)
Line Set	RL20 RL35 RL50	Discharge Line: 0.5 in (12.7 mm)	Liquid Line: 0.375 in (9.5 mm)
Ice Making Water Inlet	Water Inlet Connection - 0.375" FPT (Female Pipe Thread)	Water Temperature - Minimum 35°F (1.6°C) Maximum 110°F (43°C)	Water Pressure - Minimum 20 psig (1.38 bar) Maximum 80 psig (5.52 bar)
Condenser Water Inlet	Water Inlet Connection - 0.375" FPT (Female Pipe Thread)	Water Temperature - Minimum 35°F (1.6°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.38 bar) Maximum 150 psig (10.34 bar)
Ice Making Water Drain	Connection - 0.5" FPT (Female Pipe Thread)		
Potable Water	20 gallons per 100 lbs of ice 75.7 liters per 45.5 kg of ice		
Compressor Nominal Rating	2.25 HP		
Heat of Rejection	Air Conditioning 23,500 BTU/hr (5,920 kcal/hr)	Peak 27,000 BTU/hr (6,800 kcal/hr)	
High Pressure Settings	Cut-in - 300 psig (20.7 bar)	Cut-out - 450 psig (31.0 bar)	
Dimensions	**Height**	**Width**	**Depth**
i1406	29.5 in (749 mm)	48.0 in (1220 mm)	24.5 in (622 mm)
JC1395	38 in (965 cm)	29.5 in (749 mm)	29.0 in (749 mm)

Electrical	Air-cooled Models	Water-cooled Models	Remote Air-cooled Models
208-230V/60 Hz/1 Ph	Min Circuit Amps - 15.9 Max Fuse Size - 25 amp	Min Circuit Amps - 14.3 Max Fuse Size - 25 amp	Min Circuit Amps - 14.9 Max Fuse Size - 25 amp
208-230V/60 Hz/3 Ph	Min Circuit Amps - 12.3 Max Fuse Size - 20 amp	Min Circuit Amps - 11.3 Max Fuse Size - 20 amp	Min Circuit Amps - 12.3 Max Fuse Size - 20 amp
Energy Usage **Kwh / 100 lbs**	Half Dice: 4.32 Kwh Dice: 4.52 Kwh	3.85 Kwh 3.75 Kwh	4.23 Kwh 4.22 Kwh

Installation on a Manitowoc Bin

Bin	Adapter / Ice Deflector
C-900/C-950	K-00119
F-1300/F-1650/FC-1350	K-00349

i1406A 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	11.0-12.6	12.1-14.0	13.2-14.6	0.75-2.0
80°F 27°C	12.4-13.3	13.3-14.7	14.3-15.2	
90°F 32°C	13.2-14.6	14.0-15.5	15.1-16.9	
100°F 38°C	14.0-15.5	15.2-17.1	16.6-19.3	
110°F 43°C	15.6-17.3	16.5-20.0	19.3-21.4	

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	1530 lbs 694 kgs	1400 lbs 635 kgs	1160 lbs 526 kgs
80°F 27°C	1450 lbs 658 kgs	1370 lbs 621 kgs	1295 lbs 587 kgs
90°F 32°C	1305 lbs 592 kgs	1235 lbs 560 kgs	1000 lbs 454 kgs
100°F 38°C	1235 lbs 560 kgs	1155 lbs 524 kgs	890 lbs 404 kgs
110°F 43°C	1105 lbs 501 kgs	950 lbs 417 kgs	795 lbs 361 kgs

Ice slab weight of one harvest cycle = 13.0 lbs to 14.25 lbs (6.0 kgs to 6.5 kgs).
230/50/1 is approximately 12% lower than 230/60/1

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	220-280 psig 15.2-19.3 bar	40-24 psig 2.8-1.7 bar
70°F 21°C	220-280 psig 15.2-19.3 bar	40-26 psig 2.8-1.8 bar
80°F 27°C	240-290 psig 16.5-20.0 bar	50-27 psig 3.4-1.9 bar
90°F 32°C	260-330 psig 17.9-22.8 bar	50-27 psig 3.4-1.9 bar
100°F 38°C	300-370 psig 20.7-25.5 bar	54-28 psig 3.7-1.9 bar
110°F 43°C	330-410 psig 22.8-28.3 bar	60-29 psig 4.1-2.0 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	150-180 psig 10.3-12.4 bar	70-90 psig 4.8-6.2 bar
70°F 21°C	160-180 psig 11.0-12.4 bar	70-90 psig 4.8-6.2 bar
80°F 27°C	160-180 psig 11.0-12.4 bar	70-90 psig 4.8-6.2 bar
90°F 32°C	180-200 psig 12.4-13.8 bar	80-100 psig 5.5-6.9 bar
100°F 38°C	200-220 psig 13.8-15.2 bar	90-115 psig 6.2-7.9 bar
110°F 43°C	220-250 psig 15.2-17.2 bar	100-130 psig 6.9-9.0 bar

i1496N Remote 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	12.3-14.1	12.7-14.7	13.7-15.8	0.75-2.0
80°F 27°C	12.3-14.2	12.8-14.9	14.0-16.1	
90°F 32°C	12.4-14.3	13.9-15.9	14.7-17.0	
100°F 38°C	12.8-14.9	14.1-16.3	15.3-17.7	
110°F 43°C	13.3-15.4	14.5-16.7	16.0-18.5	

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	1490 lbs 676 kgs	1360 lbs 617 kgs	1240 lbs 563 kgs
80°F 27°C	1435 lbs 651 kgs	1325 lbs 601 kgs	1235 lbs 560 kgs
90°F 32°C	1355 lbs 615 kgs	1295 lbs 587 kgs	1230 lbs 558 kgs
100°F 38°C	1290 lbs 585 kgs	1185 lbs 538 kgs	1100 lbs 499 kgs
110°F 43°C	1160 lbs 526 kgs	1275 lbs 578 kgs	1000 lbs 454 kgs

Ice slab weight of one harvest cycle = 13.0 lbs to 14.25 lbs (6.0 kgs to 6.5 kgs).
230/50/1 is approximately 12% lower than 230/60/1

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	205-220 psig 14.1-15.2 bar	50-32 psig 3.4-2.2 bar
70°F 21°C	225-260 psig 15.5-17.9 bar	60-32 psig 4.1-2.2 bar
80°F 27°C	240-170 psig 16.5-11.7 bar	60-32 psig 4.1-2.2 bar
90°F 32°C	250-270 psig 17.2-18.6 bar	60-32 psig 4.1-2.2 bar
100°F 38°C	300-375 psig 20.7-25.9 bar	85-35 psig 5.9-2.4 bar
110°F 43°C	310-375 psig 21.4-25.9 bar	90-36 psig 6.2-2.5 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	100-150 psig 6.9-10.3 bar	75-100 psig 5.2-6.9 bar
70°F 21°C	110-160 psig 7.6-11.0 bar	75-100 psig 5.2-6.9 bar
80°F 27°C	110-160 psig 7.6-11.0 bar	75-100 psig 5.2-6.9 bar
90°F 32°C	120-160 psig 8.3-11.0 bar	80-100 psig 5.5-6.9 bar
100°F 38°C	130-170 psig 9.0-11.7 bar	80-100 psig 5.5-6.9 bar
110°F 43°C	130-170 psig 9.0-11.7 bar	80-100 psig 5.5-6.9 bar

i1406W 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	11.0-12.9	12.1-14.2	13.3-14.6	0.75-2.0
80°F 27°C	11.2-13.2	12.3-14.4	13.3-14.6	
90°F 32°C	11.4-13.4	12.7-15.0	13.6-16.0	
100°F 38°C	11.6-13.6	12.8-15.0	13.6-16.7	
110°F 43°C	11.8-13.9	12.8-15.0	13.9-16.3	

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	1495 lbs 678 kgs	1360 lbs 617 kgs	1200 lbs 544 kgs
80°F 27°C	1485 lbs 674 kgs	1340 lbs 608 kgs	1195 lbs 542 kgs
90°F 32°C	1390 lbs 631 kgs	1325 lbs 601 kgs	1195 lbs 542 kgs
100°F 38°C	1380 lbs 626 kgs	1275 lbs 578 kgs	1170 lbs 531 kgs
110°F 43°C	1370 lbs 621 kgs	1205 lbs 547 kgs	1140 lbs 517 kgs

Ice slab weight of one harvest cycle = 13.0 lbs to 14.25 lbs (6.0 kgs to 6.5 kgs).
230/50/1 is approximately 12% lower than 230/60/1

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	240-250 psig 16.5-17.2 bar	40-24 psig 2.8-1.7 bar
70°F 21°C	240-250 psig 16.5-17.2 bar	40-26 psig 2.8-1.8 bar
80°F 27°C	240-250 psig 16.5-17.2 bar	50-27 psig 3.4-1.9 bar
90°F 32°C	245-255 psig 16.9-17.6 bar	50-27 psig 3.4-1.9 bar
100°F 38°C	245-260 psig 16.9-17.9 bar	54-28 psig 3.7-1.9 bar
110°F 43°C	245-265 psig 16.9-18.8 bar	60-29 psig 4.1-2.0 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	155-185 psig 10.7-12.8 bar	75-95 psig 5.2-6.6 bar
70°F 21°C	165-185 psig 11.4-12.8 bar	75-95 psig 5.2-6.6 bar
80°F 27°C	165-185 psig 11.4-12.8 bar	75-95 psig 5.2-6.6 bar
90°F 32°C	185-205 psig 12.8-14.1 bar	85-105 psig 5.9-7.2 bar
100°F 38°C	205-225 psig 14.1-15.5 bar	95-120 psig 6.6-8.3 bar
110°F 43°C	225-255 psig 15.5-17.6 bar	105-130 psig 7.2-9.0 bar

Condenser Water Consumption

Ice Production	Water Usage
100 lbs 45.4 kgs	148 Gallons 560 Liters

Water Regulating Valve set point: 240 psig (16.54 bar)